

# hallicrafters RADIO

## SX-42 Communications Receiver

CONTINUOUS COVERAGE FROM 540 KC to 110 MC  
IN 6 BANDS . . . FM RECEPTION ABOVE 27 MC.

Tops in performance and versatility . . . preferred by Amateurs, SWL's, and discriminating AM/FM broadcast listeners everywhere. AM reception 540 KC - 110 MC; FM 27-110 MC. Temperature-compensated oscillator with voltage regulator. Two RF and three IF stages; dual IF channels (455 KC and 10.7 MC). Audio flat 50-15,000 cycles; 8-watt output.

**CONTROLS:** Band Switch — #1 540-1620 KC, #2 1620-5000 KC, #3 5.0-15.0 MC, #4 15.0-30.0 MC, #5 27.0-55.0 MC, #6 55.0-110 MC. Main tuning dial with logging scale on knob. Band spread dial calibrated for 3.5, 7, 14, and 28 MC bands plus logging scale. Two-position dial lock secures either main or band-spread knobs. AF Volume Control with power switch, AVC, Noise Limiter and Receive/Standby switches. Crystal Phasing, AM/FM/CW/Phono, CW Pitch, six-position Selectivity, four-position Tone, and RF Gain Controls. "S" meter adjustment on rear. Control settings for Broadcast and FM Bands marked in color for simplified use by others in family.

**PHYSICAL DATA:** Gray steel cabinet with satin chrome trim. Top opens on piano hinge. Size 20 in wide by 10½ in. high by 16 in. deep.

**EXTERNAL CONNECTIONS:** Doublet or single wire antenna. 500 and 5000-ohm outputs. Phone jack. Phonograph input jack. Socket for external power. Remote control connections. Power cord for 105-125 volt 50-60 cycle AC line.



13 TUBES PLUS VOLTAGE REG. AND RECT. Two 6AG5's RF Amps., 7F8 Conv., 6SK7 IF Amp., 6SG7 2nd IF Amp., 6H6 2nd Det. and ANL, two 7H7's FM Amps., 6H6 Discriminator, 6SL7 Inverter, two 6V6's Push-pull Output, 7A4 BFO and FM Amp., VR-150 Reg., 5U4G Rectifier.

SX-42. Ship. wt. 71 lbs. . . . . Amateur Net **\$275.00**

R-42 Speaker (not shown). Base reflex, 8 in. PM in metal cabinet. Two-position tone switch. 500-ohm input. Size 17 in. wide by 11¾ in. high by 12½ in. deep. Ship. wt. 30 lbs. . . . . Net **\$34.50**

## SX-43 Communications Receiver

WIDEST COVERAGE IN ITS PRICE CLASS . . . 540 KC TO 55 MC PLUS FM 88 TO 108 MC.

A medium priced set with features not ordinarily found in communications receivers — extended coverage to include two extra bands plus FM reception. AM reception 540 KC - 55 MC; FM 44-55 and 88-108 MC. Temperature-compensated oscillator. One RF and two IF stages (3rd IF stage above 44 MC). Dual IF channels (455 KC and 10.7 MC). Audio response to 10,000 cycles; 3-watt output.

**CONTROLS:** Band Switch — #1 540-1700 KC, #2 1.7-5 MC, #3 5-16 MC, #3A 14-14.4 MC, #4 15.5-44 MC, #5 44-55 MC, #6 86-109 MC. Main tuning in MC. Band Spread Dial calibrated for 3.5, 7, 14 and 28 MC bands. Two-position tone, Receive/Standby and Noise Limiter switches. Crystal Phasing, RF Gain, Phono/FM/AM-AVC/AM-MVC/CW Four-Position Selectivity, AF Gain, CW Pitch. "S" meter adjustment on rear.

**PHYSICAL DATA:** Gray steel, satin chrome trim. Piano-hinge top. 18½ by 8½ by 12 in.

**EXTERNAL CONNECTIONS:** Doublet or single wire antenna. 500 and 5000-ohm outputs. Phone jack. Phonograph input jack. Socket for external power supply. Remote standby connections. 105-125 volt 50-60 cycle AC.



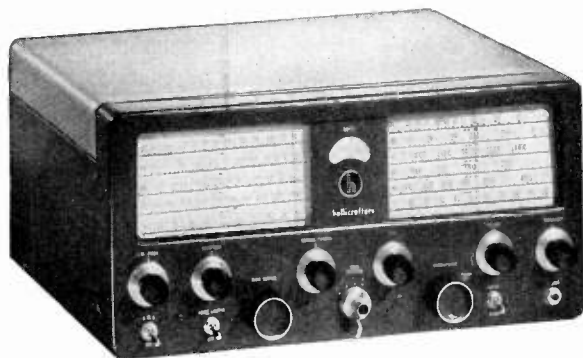
10 TUBES PLUS RECTIFIER. 6BA6 RF Amp., 7F8 Conv., 6SG7 IF Amp., 6SH7 2nd IF Amp., 6SH7 3rd IF Amp. (10.7 MC), 6H6 AM Det. and ANL, 6AL5 FM Det., 6SQ7 Audio, 6J5 BFO, 6V6 Output, 5Y3 Rectifier.

SX-43. Ship. wt. 45 lbs. . . . . Amateur Net **\$159.50**

R-44 Speaker (not shown). 6 by 9 in. oval PM type in metal cabinet matching SX-43. Two-position Tone switch. 500-ohm input. Size 18½ by 8½ by 9½ in. deep. Ship. wt. 19 lbs. . . . . Net **\$24.50**

# hallicrafters RADIO

## New SX-71 Communications Receiver



From the Hams at Hallicrafters to Hams everywhere comes this top-performing receiver in the medium price class. A new type of receiver—the first of its kind on the market—value-packed with features specifically asked for by the Hams. Extra sensitivity, selectivity, and stability, definitely superior image rejection with double superheterodyne circuit, plus built-in Narrow Band FM reception. Extra wide dials for main and bandspread tuning. Surpasses in Ham performance many receivers priced much higher.

**PERFORMANCE:** Continuous AM reception from 538 kc to 35 Mc, and 46 to 56 Mc. Built-in limiter and balanced detector stages for hiss-free NBFM reception. Double conversion (2075 and 455 kc i-f channels) gives image rejection of better than 300 to 1 at

28 Mc. One r-f, two conversion, and 3 i-f stages yield high gain for sensitivity in the order of 1 microvolt. Sharp selectivity as indicated by the 14 kc band width (1000 times down from resonance) even before cutting the crystal filter into the circuit. Audio peaked for communications frequencies, with 3 watt output.

**CONTROLS:** Band Selector 538-1650 kc, 1600-4800 kc, 4.6-13.5 Mc, 12.5-35 Mc, 46-56 Mc. Separate Main and Bandspread tuning controls; bandspread dial calibrated for 80, 40, 20, 10, and 6 Meter Bands. BFO Pitch, 3-position Selectivity, Crystal Phasing, Tone, AF Gain, and RF Gain controls. ANL, BFO, and Receive/Send switches. "S" meter adjustment on rear.

**PHYSICAL DATA:** Gray steel cabinet with satin chrome trim. Piano hinge top. Size 18½ in. wide by 8¾ in. high by 12 in. deep.

**EXTERNAL CONNECTIONS:** Use doublet or single wire antenna. 300 ohm output for separate speaker. Phone jack. Socket for external power supply. Connections for remote control. Power cord. For 105-125 volts 50/60 cycle AC.

**11 TUBES PLUS VOLTAGE REGULATOR AND RECTIFIER:** 6BA6 r-f Amp., 6C4 Osc., 6AU6 Mixer, 6BE6 2nd Conv., three 6SK7 i-f Amps., 6H6 ANL, and delayed AVC, 6SC7 BFO and a-f Amp., 6AL5 Det., 6K6GT Output, VR-150 Reg., and 5Y3GT Rect.

SX-71. Ship wt. approx. 33 lbs. Net **\$179.50**

R-44B Speaker. Matches SX-71. Tone switch. 500-ohm input Heavy Duty PM type, 6 x 9 in. oval. 18½ in. wide, 8¾ in. high, by 9¾ in. deep.

Ship. wt. 19 lbs. Net **\$24.50**

## New S-72 Portable Communications Receiver



You'll always be in touch with the outside world wherever you go with this Hallicrafters extra-sensitive all-wave portable receiver. Super-powered for superb performance with latest circuits and devices for maximum efficiency on AC, DC or battery operation. Designed both for the person who wants better than average reception even in weak signal areas and for the Radio Amateur.

**PERFORMANCE:** Covers standard broadcast band and three short-wave bands—540 kc to 30.5 Mc. One stage of tuned r-f amplification. Operates from built-in antennas—loop for broadcast and 27 in. whip for short-wave. Automatic Noise limiter. Image ratio 140 to 1 at 11 Mc, 18 to 1 at 30 Mc. Overall sensitivity

1.8 microvolts at 30 Mc, ranging to 6 microvolts at 1.7 Mc. Broadcast Band sensitivity with loop antenna 16 microvolts per meter.

**CONTROLS:** Band selector switch gives four tuning ranges: 540-1600 kc, 1500-4400 kc, 4.3-13 Mc, and 12-31 Mc. Sensitivity control. Turns on AVC when advanced to full "On" position, at the same time turning off BFO. Volume control combined with main OM/Off switch. Main tuning knob; separate bandspread control. Tone control combined with fine tuning control.

**PHYSICAL DATA:** Sturdy plywood cabinet, finished in handsome brown leatherette. Space for headphones. Size 14 in. wide, 12¼ in. high, by 7¼ in. deep. Carrying weight approx. 15 lbs., incl. batteries.

**EXTERNAL CONNECTIONS:** Phone jack on panel. Provision for attaching supplementary antenna if desired. Power cord for 105-125 volts DC or 60 cycle AC fits inside set when not in use. Automatic change-over from battery to electric power protects batteries. Power consumption on battery operation 100 ma. at 7.5 V. and 30 ma. at 90 V. Average battery pack lasts 50 to 100 hours depending upon length of continued use. Takes RCA VS018, Burgess G6M60, General 60B6F65 and similar battery packs.

**8 TUBES PLUS RECTIFIER:** 1T4 r-f Amp., 1R5 Osc., 1U4 Mixer, two 1U4 i-f Amps., 1U5 Det. and a-f Amp., 1U5 BFO and Automatic Noise Limiter, 3V4 Output, plus long-life Selenium Rectifier.

S-72. Less Battery. Ship. wt. 16 lbs. Net **\$79.95**

**LONG-WAVE MODEL — S-72L.** Covers airways radio ranges, airport control towers, and marine beacons. Same as S-72 only range 175-400 kc and 535-12,300 kc. Net **\$89.95**

# hallicrafters RADIO

## S-40A Communications Receiver

540 KC to 43 MC . . . TEMPERATURE COMPENSATED OSCILLATOR. ONE RF AND TWO IF STAGES. An outstanding value offering excellent performance in the lower medium price range. Built-in PM Speaker.

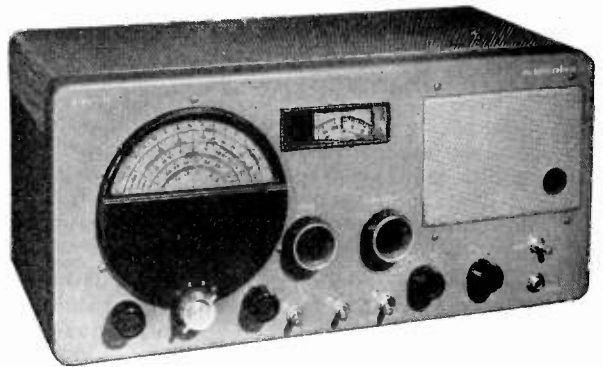
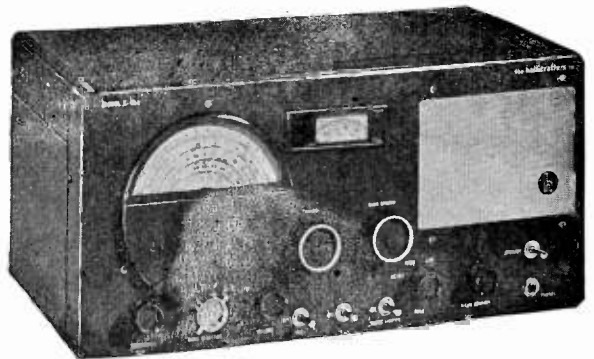
**CONTROLS:** Band Switch — #1 1540-1700 KC, #2 1.7-5.35 MC, #3 5.35-15.7 MC, #4 15.7-43.0 MC. Main tuning in MC; Bandsread has arbitrary scale. AF Gain, RF Gain; AVC, BFO and Noise Limiter switches; three-position Tone, BFO Pitch, Receive/Standby. Settings for Broadcast marked in color.

**PHYSICAL DATA:** Satin Black steel cabinet with brushed chrome trim. Top opens on piano hinge. Size 18½ in. wide by 9 in. high by 11 in. deep.

**EXTERNAL CONNECTIONS:** Doublet or single wire antenna. Phone jack. Socket for external power supply. Remote standby connections. 105-125 v. 50-60 cycle AC.

**8 TUBES PLUS RECTIFIER:** 6SG7 RF Amp., 6SA7 Conv., two 6SK7's IF Amps., 6H6 ANL and AVC, 6J5GT BFO, 6SQ7 2nd Det. and AF Amp., 6F6G Output, 80 Rectifier.

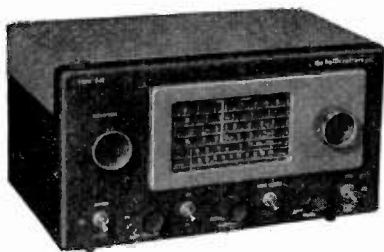
S-40A. Ship. wt. 33 lbs. . . . . Amateur Net **\$79.95**



## S-52 Communications Receiver

Exactly like the S-40A except designed for AC or DC operation. 7 Tubes plus rectifier and ballast tube: RF and IF tubes like S-40A; then 6H6 Det., 6SC7 and AF Amp., 25L6 Output, 25Z6GT Rect., and Ballast.

S-52. Ship. wt. 30 lbs. . . . . Amateur Net **\$79.95**



## S-53 Communications Receiver

540 KC - 31 MC PLUS 48-54.5 MC . . . 2 IF STAGES. Offers maximum performance in small size. 2 MC IF improves image ratio. Built-in speaker.

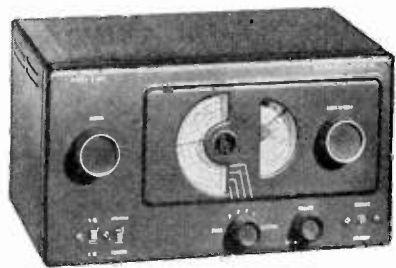
**CONTROLS:** Main tuning in MC; separate Band Spread; Receive/Standby; Band switch — #1 540-1630 KC, #2 2.5-6.3 MC, #3 6.3-16 MC, #4 14-31 MC, #5 48-54.5 MC; AM/CW; RF Gain; Noise Limiter; AF Gain; 2-position Tone, Speaker/Phones on rear.

**PHYSICAL DATA:** Steel cabinet, brushed chrome trim. Piano hinge top. Size 12¾ by 7 by 7¾ in.

**CONNECTIONS:** Doublet or single wire antenna. Phone tip jacks. Phono jack. 105-125 v. 50-60 cycle AC.

**TUBES PLUS RECTIFIER:** 6C4 Osc., 6BA6 Mixer, two 6A6's IF Amps., 6H6 Det., AVC, and ANL, 6SC7 BFO and AF Amp., 6K6GT Output, 5Y3 Rectifier.

S153. Ship. wt. 23 lbs. . . . . Amateur Net **\$69.95**



## S-38A Communications Receiver

540 KC - 32 MC in 4 BANDS . . . THE LOWEST PRICED COMMUNICATIONS RECEIVER ON THE MARKET . . . with many features of much higher priced receivers.

**CONTROLS:** Main tuning in MC; separate Band Spread, Speaker/Phones, AM/CW; Band Switch — # 1 540-1650 KC, # 2 1.65-5.0 MC, # 3 5.0-14.5 MC, # 4 13.5-32 MC, AF Gain; Receive/Standby.

**PHYSICAL DATA:** Satin black steel cabinet, brushed chrome trim. Size 12¾ by 7 by 7¾ in. deep.

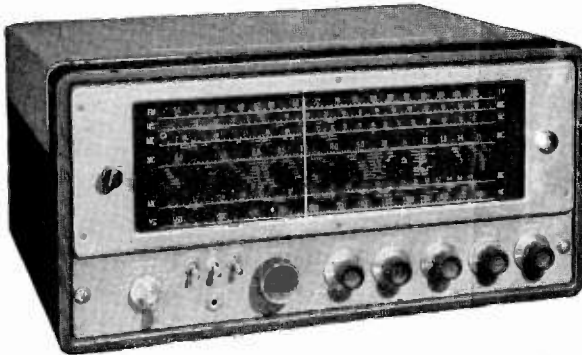
**CONNECTIONS:** Doublet or single wire antenna. Phone tip jack. Cord for 105-125 v. AC or DC.

**4 TUBES PLUS RECTIFIER:** 12SA7 Conv., 12SK7 IF Amp. and BFO, 12SQ7 Det. & AVC, 50L6GT Output, 35Z5GT Rectifier.

S-38A. Ship. wt. 14 lbs. . . . . Amateur Net **\$39.95**

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## SX-62 FM/AM All-Wave Radio



SWL VERSION OF FAMOUS SX-42 . . . COVERAGE 540 KC — 109 MC INCLUDING FM . . . BUILT-IN CRYSTAL CALIBRATOR.

Having basically the same chassis as Hallicrafters best communications receiver, the SX-62 provides communications-receiver performance in simplified form. A single tuning control covers the wide-visibility dial. Only one band lights up at a time — you always know just where you are tuning.

In addition a crystal calibration oscillator is built in. A flip of the switch at any time will put test signals at 500 KC intervals across the dial. You just tune in

the nearest one of these signals and then use the calibration-reset control to adjust the dial pointer to the exact frequency.

Continuous AM reception from 540 KC to 109 MC; FM reception 27-109 MC. Temperature-compensated oscillator with voltage regulator. Two RF and three IF stages; dual IF channels (455 KC and 10.7 MC). Audio flat 60-15,000 cycles; 8-watt push-pull output. CONTROLS: Band Selector — #1 540-1620 KC, #2 1.62-4.9 MC, #3 4.9-15 MC; #4 15-32 MC, #5 27-56 MC, #6 54-109 MC; Receive/Standby, Crystal calibration On/Off, Noise Limiter, Tuning, AF Gain, Phono/FM/AM/CW, six-position Selectivity, four-position Tone, RF Gain, and Calibration Reset.

PHYSICAL DATA: Gray steel cabinet with satin chrome trim. Top opens on piano hinge. Size 20 in. wide by 10¼ in. high by 16 in. deep.

EXTERNAL CONNECTIONS: Doublet or single wire antenna. 500 and 5000 ohm outputs. Phone jacks. Phonograph jack. Socket for external power. Remote standby connections. 105-125 volt 50-60 cycle AC line. 14 TUBES PLUS VOLTAGE REGULATOR AND RECTIFIER: two 6AG5's RF amps., 7F8 Conv., 6SK7 IF Amp., 6SG7 IF Amp., 7H7 IF Amp., 7H7 Limiter and AM Det., 6H6 Discriminator, 7A4 BFO, 6H6 ANL, 6SL7 AF Amp., two 6V6's Push-pull Output, 6CA Calibration Osc., VR-150 Regulator, 5U4G Rectifier.

SX-62. Ship. wt. 65 lbs. . . . . Amateur Net **\$269.50**



## S-51 Marine Receiver

Rugged and specially constructed for dependable sea or air use. Range 132 KC to 13 MC covers all important channels. Fixed frequency operation possible on three pre-tuned channels; facilitates switching frequency and/or standing guard. Built-in PM speaker. CONTROLS: Band Selector — 132-405 KC, 485-1530 KC, 1450-4550 KC, 4.2-13.0 MC, plus 3 fixed freq. positions in 200-300 KC and 2-3 MC range; RF gain, Volume, CW/AM, Range Filter, ANL, Tuning, 3 position Tone, CW Pitch, Rec./Standby. Gray steel cabinet: 18½ by 9 by 9½ in. deep; piano hinge top. Doublet or single wire antenna. Phone jack. Socket for 6, 12, or 32 v. vibrapack, 105-125 v. 50-60 cycle AC or DC. 9 TUBES PLUS RECTIFIER: 6SS7 RF Amp., 7A8 Conv., two 6SS7's IF Amps., 7C6 Det., 35L6 or 6V6 Output, 7A6 Noise Limiter, 6SS7 BFO, 35Z5 Rectifier. S-51. Ship. wt. 31 lbs. . . . . Amateur Net **\$149.50**  
Vibrapack for 6, 12, or 32 v. operation . . . . . **\$22.50**

## HT-18 Variable Freq. Oscillator

Complete exciter with calibrated band-switching and built-in power supply. Xtal or VFO, NBFM or CW on 5 Bands. Output 2.5-4.5 watts. Temperature compensated, voltage regulated. Built-in speech amp.

Variable frequency oscillator (used as ECO or Pierce xtal), frequency modulator with speech amplifier, plus 6L6 output. Operation switch, Band Selector (80, 40, 20, 10, 6 meters). Check, Plate, Power, and Deviation switches. Single tuning control. Mike, keying, remote control connections. 72-ohm output. 3 6BA6, 6L6, VR-150, VR-105, 5Y3GT. Size 12¼ x 7 x 7¼ in. deep. HT-18. Ship. wt. 25 lbs. . . . . Amateur Net **\$110.00**





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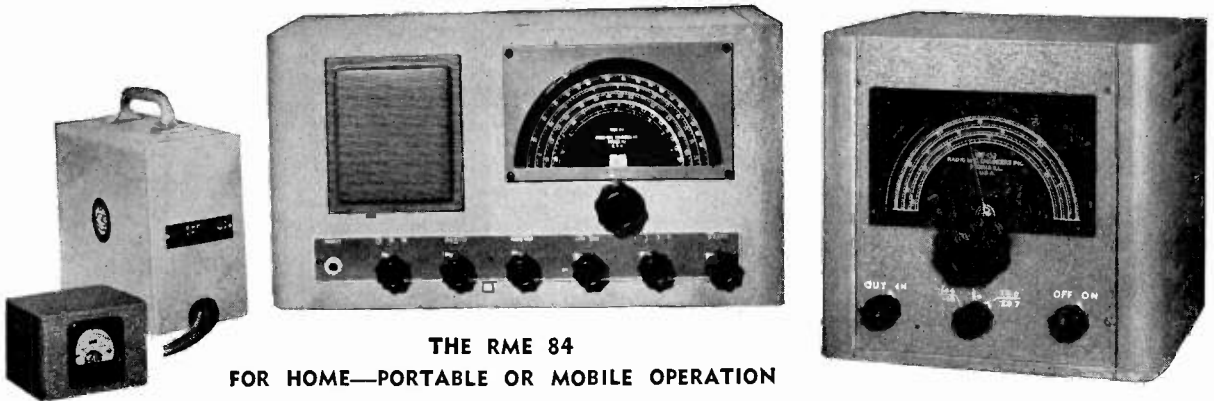


**RME**

FINE COMMUNICATIONS EQUIPMENT

**RADIO MFG. ENGINEERS, INC.**

Peoria 6, Illinois U. S. A.



**THE RME 84  
FOR HOME—PORTABLE OR MOBILE OPERATION**

RME 84 at right, VP-2—6 volt power pack with cable attached, optional for RME 84 in center, CM-1—Carrier Level "S" Meter with cord and plug, optional for RME 84 at left.

**The Coverage Is Complete .540 to 44 Megacycles**

An important feature is the continuous coverage ranging from 540 kc to 44 megacycles. This coverage, in addition to providing for the regular broadcast band, takes in the 80, 40, 20, 15 and 10 meter amateur bands. The calibration is made on a 7 inch diameter scale. In addition, a smooth-running vernier dial gives band spread on any setting of the main scale. The vernier scale makes five complete revolutions for the 180 degree rotation of the tuning condenser.

**Seven Tubes Have Been Chosen For The RME 84**

1. A 7B7 loctal radio frequency amplifier is ahead of the first detector.
2. A 7S7 loctal is used as a first detector and radio frequency oscillator.
3. A 7B7 serves as the first IF operating at 455 kc.
4. A 7B7, second IF further amplifies the signal.
5. A 7K7 loctal acts as second detector and first audio amplifier.
6. Another 7K7 provides the beat frequency and acts as noise limiter.
7. The 6G6G provides the final audio frequency output.
8. A 5Y3GT is the power rectifier tube.

**Portability Built Into The RME 84**

Conscious of the fact that many thousands of amateurs want a receiver for portable operation, the new RME 84 is equipped with a special socket connection making possible connections to either a B battery and an A battery supply or a similar source of power such as an external vibropack. 135 volts of B and 6 volts of A battery will operate the RME 84 at full power. The drain on the B battery is only 32 milliamperes at 135 volts and the 6 volt A battery provides 1.5 amps, including the two dial lights.

The new noise limiter, of the series type, performs exceptionally well. Also made available for future use with the RME 84 is a signal strength meter to be connected through the special socket located on the rear of the chassis apron.

**SENSITIVITY:** The average sensitivity of the RME 84 is of the order of 2 microvolts over the entire range of the instrument.

RME 84, CODE HANDY, complete for 115 volt, 60 cycle operation and for use with external battery supply. May also be had for 230 volt, 25 cycle operation at additional cost. f.o.b. Peoria, Illinois, Net Selling Price \$98.70

VP-2, CODE HOMER, A 6 volt power pack with cable attached, optional equipment for RME 84. f.o.b. Peoria, Illinois, Net Selling Price \$28.20

CM-1, CODE HURST, Carrier Level "S" Meter with cord and plug, optional equipment for RME 84. f.o.b. Peoria, Illinois, Net Selling Price \$14.00

**VHF-152A  
3 BAND  
CONVERTER**

Reception on the new high frequencies, 50 to 54 mc. and 144 to 148 mc. bands, and better reception on the 27 to 29.7 mc. band, using the double detection system, image free, at a cost which any amateur can afford—that is what the new VHF-152 is designed to give. . . . Every owner of a communications receiver can, with the acquisition of this new converter, do a much better job of working high frequency signals than is possible with most any higher priced, specially designed receiver.

This converter provides an order of stability at 50 mc. much higher than most communications receivers have when operating at 5 mc. New engineering design and construction make this possible.

Miniature tubes are used, a 6AK5 rf amplifier and a 6J6 detector and a 6J6 oscillator complete the converter proper. The built-in power supply uses a 5Y3GT rectifier tube and a VR150 voltage regulator. The three bands are calibrated to cover the full sweep of a seven-inch diameter scale, indirectly illuminated. . . . The tuning mechanism is of the same sturdy, positive construction characteristic of all RME units. Smooth, velvety operation of the large knob makes operation a pleasure.

The sensitivity of the VHF-152 is of the order of 2 microvolts. Its output frequency is 7000 kc.

Separate connections are provided for the 10, 6 and 2 meter antennas and for the antenna used with the receiver. Each band has its own especially designed antenna input circuit of approximately 300 ohms impedance. The input of the receiver is changed from the VHF-152 output to the receiver antenna by a front panel switch. Another front panel switch selects the 10, 6 or 2 meter band for VHF-152 operation.

Interconnecting plug and cord are also furnished, which permanently connect the VHF-152 direct to the input terminals of the receiver.

The cabinet is designed to match the RME-45 communications receiver, both in streamlined appearance and in two tone gray and black crinkle finish.

Dimensions are as follows: 11" high, 12" wide, 11" deep, with hinged lid. Standard operation is for 115 volt, 50-60 cycle power source.

Complete with tubes, interconnecting plug and cord. CODE: HAMPY, f.o.b. Peoria, Illinois, Net Selling Price \$86.60.

SINCE  
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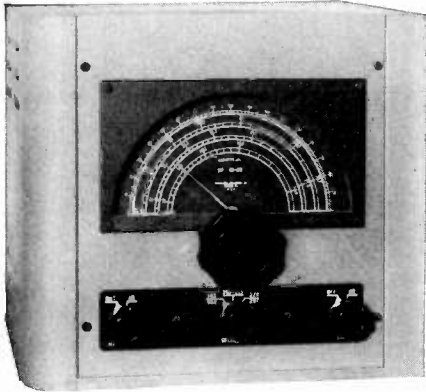


RME

FINE COMMUNICATIONS EQUIPMENT

RADIO MFG. ENGINEERS, INC.

Peoria 6, Illinois U. S. A.

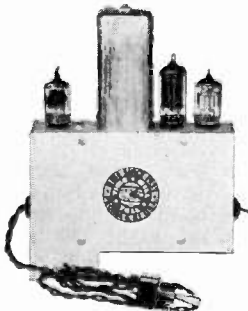


**THE HF 10-20 CONVERTER**  
For 10-11-15 and 20 Meters

Because of the double conversion system, the HF 10-20 provides outstanding and imageless reception on 10-11-15 and 20 meters. And it's an especially vital adjunct to those receivers that tune only up to 18 mc. or possess inadequate bandspread. The HF 10-20 provides an average of 7.8 linear inches of calibrated bandspread on each of the three bands. Images are non-existent. The output (I. F. frequency) of the HF 10-20 is 7 mc. It can be used with any all-wave or amateur receiver. Features include provision for separate antennae, self-contained power supply, antenna selector switch, band selector and high gain. The increase in gain, depending on the receiver and receiving conditions, is approximately 30 DB over the entire range of frequencies covered. Tubes used are a 6BA6 RF amplifier and a 6J6 twin triode mixer. Built-in power supply uses a 5Y3GT rectifier and a VR150 voltage regulator. Model HF 10-20 Converter, Standard Model, CODE HORN, in cabinet to match RME 45 Receiver in appearance. Dimensions: 11" high, 12" wide, 11" deep. Amateur Net Price.....\$77.00 Model HF 10-20 Type "S" Converter, CODE HILL, in cabinet to match RME 84 in appearance. Dimensions: 9 1/8" high, 10 1/4" wide, 10 1/4" deep. Amateur Net Price.....\$77.00

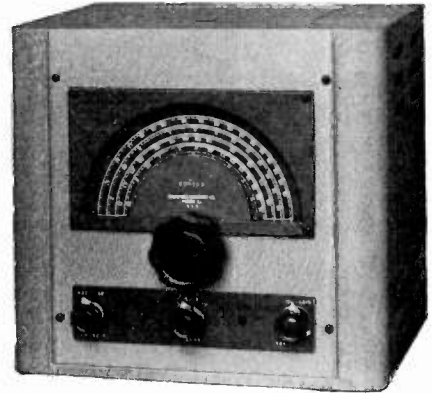
**THE NEW RATIO DETECTOR (NBF4)**  
For Optimum Narrow Band FM Performance

With this plug-in unit and an RME 45 receiver, the noise reducing advantages of NFM are fully realized. NFM Signals that can't be heard with good AM communications receivers come in loud and clear against a noiseless background.



Equal sensitivity can be enjoyed on AM or NFM. It employs a highly efficient ratio-type detector and a limiter for noiseless reception of NFM signals. Only RME 45 receivers can employ the unit.

Amateur Net Price.....\$19.50



**THE DB22A PRESELECTOR**  
Coverage .54 to 44 Mc. — Average Gain 30 DB

Here's the new DB22A completely redesigned for greater efficiency and higher signal to noise ratio. It uses new 6BA6 miniatures. Image ratio is better than 50 DB with a communications receiver having a single stage of RF. It's calibrated, has smooth planetary tuning, self contained power supply, antenna by-pass switch, gain control and many other features. Model DB22A Preselector, Standard Model, CODE BONET, in cabinet to match RME 45 Receiver in appearance. Dimensions: 11" high, 12" wide, 11" deep. Amateur Net Price.....\$71.00 Model DB22A—Type "S" Preselector, CODE CLEAR, in cabinet to match RME 84 Receiver in appearance. Dimensions: 9 1/8" high, 10 1/4" wide, 10 1/4" deep. Amateur Net Price.....\$71.00

**THE BOOMERANG (MB-3)**  
A Break-In & Monitoring Device for CW & Fone

The "Boomerang" is the solution to rapid and efficient break-in, and the avoidance of needless QRM. Dots and dashes are heard in the headphones or the speaker while sending—a great help in perfecting the fist and avoiding errors.

When the key is down, any signal normally going through the receiver is automatically suppressed. Raise the key and instantaneously the receiver functions.

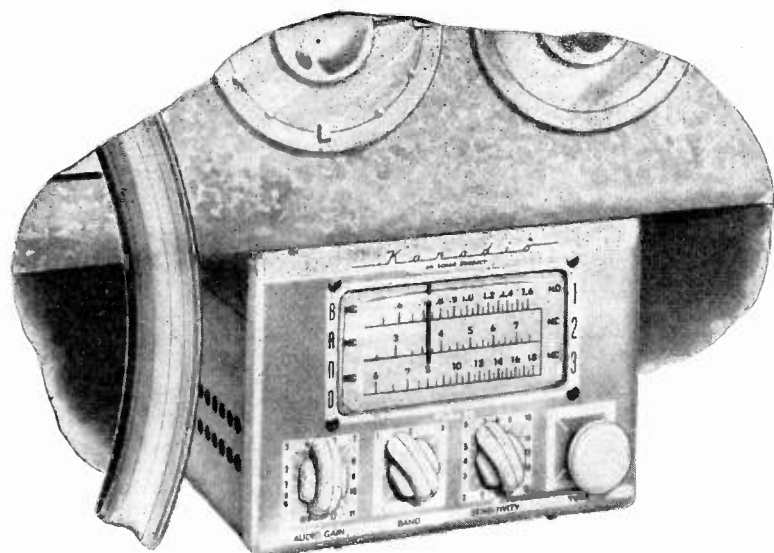
The "Boomerang" can be used as a handy monitor for phone operation, as a code practice oscillator and a tone modulator. Tubes include a 7K7, a 6SL7 and a 6x4 rectifier. Cabinet is two-tone grey finish.



Amateur Net Price.....\$29.50

# Karadio

TRULY FINE MOBILE RECEIVERS SINCE 1927



presents the new  
**MODEL 80-C-3  
3 BAND RECEIVER**

**BROADCAST BAND  
- - - PLUS - - -**

**Amateur  
75 - 40 - 20 METER BANDS**

Band 1—Broadcast ..... 535-1700 KC  
Band 2—Short Wave ..... 2.7-7.3 MC  
Band 3—Short Wave ..... 5.4-18 MC

## MODEL 80B for the PILOT

Band 1—Range ..... 190-450 KC  
Band 2—Broadcast ..... 535-1700 KC  
Band 3—Aviation ..... 2.4-6.8 MC

**KNOW THE WEATHER BEFORE YOU FLY!**

**SMALL-NEAT  
CONVENIENT**

*for your car*

## Specifications

**Controls:** On/off and audio gain, Band selector, Sensitivity, Band Tuning.

**6 Tubes:** RF Amplifier ..... 6BA6  
Power Amplifier ..... 6AQ5  
IF Amplifier ..... 6BA6  
Converter & Oscillator ..... 6BE6  
2nd Detector, 1st Audio and AVC ..... 6AT6  
Rectifier ..... 6X5GT

**Power:** Operates off 6 Volt car battery. No special power units required.

**Dimensions:** Receiver—6¾" wide, 4¾" high, 6¼" deep.  
Speaker and power supply unit—8" by 8" by 4¼".

**Shipping Weight:** 18 lbs.

**Accessories:** Diode current jack and phone jack on special order.

## Check These Features!

- **High Sensitivity** . . . Three gang tuning capacitor. Tuned RF stage on all bands. Sensitivity runs below 5 microvolts for .5 watt output.
- **Positive Action Tuning** . . . controls mounted directly to radio chassis . . . no backlash from flexible shafts or gear assemblies.
- **Easy to install** . . . in car or truck . . . easy to remove. Accessibility of all parts simplifies repairs or replacements.
- **High Quality 6"** permanent magnet speaker combined with power supply unit. Developed specially for communications use in car or truck.
- **Sturdy Construction.** Housing of sheet steel, hammered metal finish. Steel chassis with heavy plating of cadmium.
- **Special Design** coils for optimum selectivity and sensitivity.
- **Accurately Calibrated,** large, easy-to-read slide rule dial.

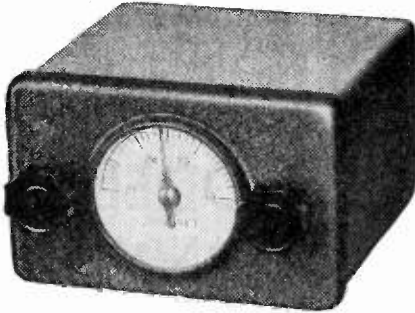
Other Karadios available in single band or fixed frequency receivers. For further information see your jobber or write direct.

**ECKSTEIN RADIO AND TELEVISION CO.**  
**LEROY, MINNESOTA**

Export Sales Division: SCHEEL INTERNATIONAL, INC., 4237 N. Lincoln Ave., Chicago 18, Illinois, Cable Address: Harscheel, Chicago



**GONSET CO.**  
**BURBANK, CALIF.**



### STANDARD MOBILE CONVERTER

The GON-SET 10-11 Meter Converter, complete with built-in pre-selection, is designed for use with either broadcast, auto, or communications receivers. Attaching the Converter to your present radio provides unexcelled mobile or fixed reception. GON-SET converters have been manufactured since 1938 and are used world-wide. Long experience, together with precision design and construction assures a superior product. Ideal for surplus receivers.

#### SPECIFICATIONS

- Tubes: 6AK5 - R.F. 6AK5 - Mixer. 6C4 - OSC. 0B2 Voltage Regulator.
- Output: 1500-2000 KC.
- 8-1 Vernier.
- Illuminated Dial.
- Connecting Cables included.
- Weight: 2 lbs.
- Single Dial Control.

#### MODELS AVAILABLE

6 (50-54 M.C.)    10-11 (27-30 M.C.)    15 (21-22 M.C.)    20 (14-14.5 M.C.)    75 (3-4 M.C.)

- Other Frequencies on Special Order •

Price Complete **\$39.95\***



### "100% 'r'"

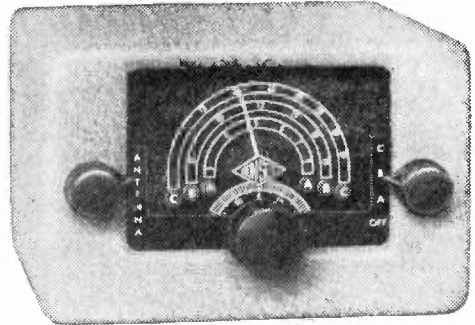
- ACCURATE
- INDEPENDENT OF WAVE FORM
- WORKS ON ANY AM RIG
- NO METER OR SCOPE TO WATCH

The GONSET "100% 'r'" is a modulation indicator of the "peak flash" type which flashes a warning light whenever the peak modulation percentage exceeds a predetermined value.

A selector switch giving the option of 85 % or 100% permits you not only to tell when overmodulation occurs, but also tells if the average speech level is up high enough.

The GONSET "100% 'r'" is a must for adjusting a rig using a low level speech clipper. With it you can set the clipper threshold accurately in a matter of seconds.

Price Complete **\$19.95\***



### "3-30" MOBILE CONVERTER

- Continuous coverage, 3 to 30 Mc.
- Bandsread dial with plenty of bandsread on amateur bands.
- High sensitivity on a short whip.
- High stability. No "warm up" drift.
- Four working (r.f.) tubes give lots of reserve gain.
- Extremely compact. Same size as famous GONSET "10-11" mobile converter, only 5 1/4" by 3 1/2" by 5 1/4" deep.
- Low plate current drain (approximately 10 ma.).

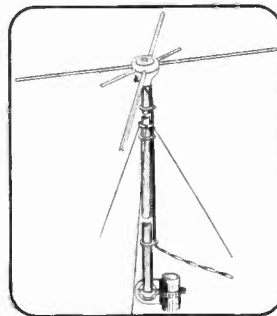
Price Complete **\$39.95\***



### CLIPPER

A simple, inexpensive noise silencer designed specifically to aid in reduction of such interference as ignition noise, power leaks, electric razors, etc. The unit is small in size, 2" x 4" x 1 1/2", and weighs less than one pound. This silencer makes an ideal attachment for communication and mobile receivers. Complete with installation instructions and connecting cables.

Price Complete **\$8.25\***



MODEL "W-W"

### ALL CHANNEL TELEVISION BEAM ANTENNA

- Operates on new principle.
- Rapid assembly. No screws or nuts to install.
- Highly efficient on all channels, 2 through 13.
- 9-foot aluminum mast.
- Weatherproof twin lead connections.
- Designed by antenna engineers.

The GONSET "Double-W" all-channel television beam antenna provides results heretofore obtainable only in the highest priced antennas and in addition offers several new features.

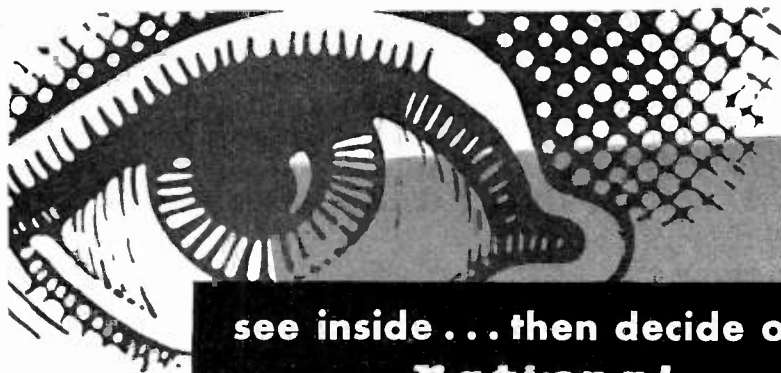
The gain of the "Double-W" increases with frequency, a desirable characteristic when it is considered that receiver sensitivity decreases and line losses increase as the frequency is raised.

The directivity of the "Double-W" also increases with frequency, a valuable feature when it is considered that "ghost" problems increase with frequency.

Due to new electrical operating principles no "holes" in reception will be found in any of the channels.

Throughout the high band the directivity pattern is sharper than that of a dipole and reflector combination, or a dipole, director and reflector combination. This provides better discrimination against spurious reflections from buildings and other tall objects slightly to one side of the main signal path. Such reflections often produce a particularly tough "ghost" problem on the high band which cannot be resolved satisfactorily with a dipole-and-reflector combination.

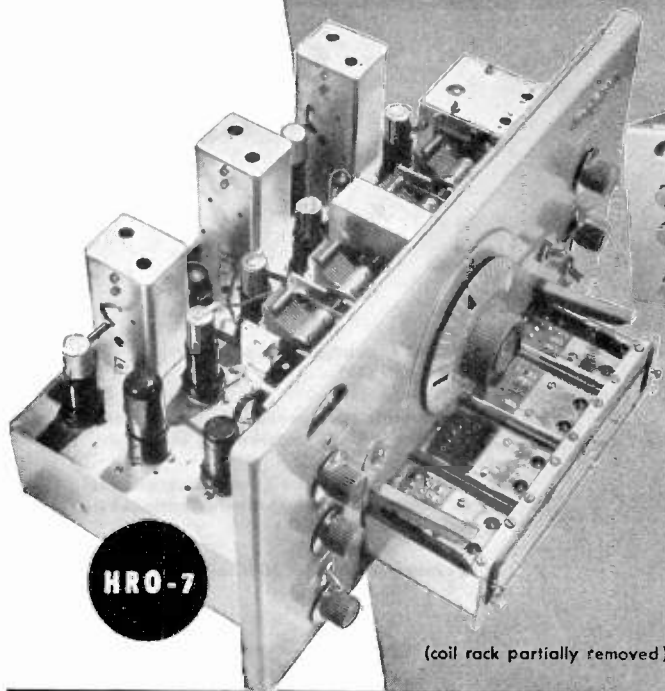
"DOUBLE W" complete with 9-foot mast..... **\$14.95 List**  
 "DOUBLE W" complete with 5-foot mast..... **13.25 List**  
 STACKING KIT (2 "Double-W" required in addition)..... **3.25 Net**  
 REFLECTOR KIT..... **4.95 Net**



see inside . . . then decide on world-famous



RECEIVERS



**HRO-7**

(coil rack partially removed)



## the finest amateur receiver National has ever made!

Subjected to the severest tests of government, commercial and amateur use for 14 years, the basic HRO design has set a new high in receiver performance. Now, here it is in its newest, finest form. As always, the major components are National designed and made.

**RANGE:** 1.7 to 30 mcs (Additional coils available for 50 to 430 kcs. 480 to 2050 kcs, 30 to 35 mcs.)

**SENSITIVITY:** 1 microvolt or better.

**IMAGE REJECTION:** Better than 30 db at 30 mcs.

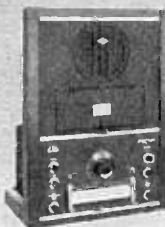
**SIGNAL-TO-NOISE RATIO:** Exceeds 16 db with 5 microvolts input.

**AVC CHARACTERISTIC:** to  $\pm 10$  db between 1.0 and 100,000 microvolts input.

**\$312.86\***

(Complete with coils and power supply, less speaker)

1. Automatic adjustable-threshold noise limiter.
2. Lever handles for coil set changing.
3. Slide rule calibration on all coil sets.
4. 500-degree micrometer dial (effective scale length 12 feet). 400 degrees of bandspread on 80, 40, 20, 11-10 meters!
5. Accessory socket and switch for NFM adaptor or phonograph.
6. Two tuned RF stages.
7. Two IF stages.
8. Precision gear drive eliminates backlash.
9. Voltage-regulated high frequency oscillator for exceptional stability.



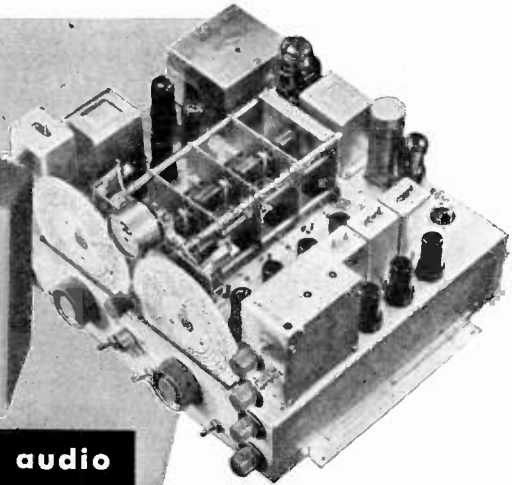
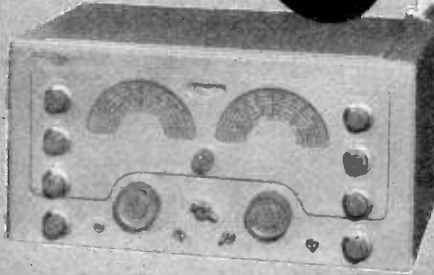
### Deluxe HRO-7C

The incomparable HRO-7 power supply 10" speaker, coils and coil compartment all in one convenient table unit.

**\$358.50\***



**NC-183**

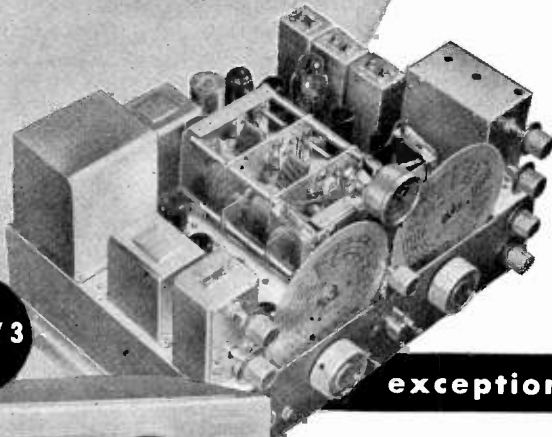
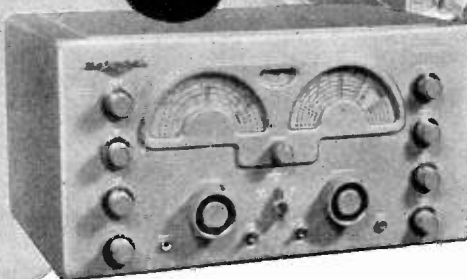


**2 RF stages plus high-fidelity audio**

- Covers 540 kcs to 31 mcs plus 48-56 mcs. Calibrated amateur bandsread for 6, 10-11, 20, 40 and 80 meter bands. Gear drive tuning dials.
- Two RF stages on all bands! Image rejection 40 db at 28 mc!
- New automatic "double-diode" noise limiter, effective on both phone and CW!
- New Crystal filter provides 6 steps of selectivity!
- 5-meter with adjustable sensitivity for both phone and CW!
- Temperature compensation and voltage regulator provide outstanding stability!
- High-fidelity push-pull audio output! Ideal for phonograph attachment. Continuously variable tone control.
- Accessory socket for NFM adaptor!

**\$268\***  
 (less speaker)

**NC-173**



**exceptional sensitivity, stability**

- Covers 540 kcs to 31 mcs plus 48-56 mcs. Calibrated electrical bandsread for 6, 10-11, 20, 40 and 80 meter amateur bands!
- Automatic noise limiter effective on both phone and CW, with adjustable threshold!
- Highly flexible crystal filter provides 6 steps of selectivity!
- 5-meter for both phone and CW!
- New temperature compensation and voltage regulation assure exceptional stability!
- Accessory socket for NFM-73 adaptor!
- Trimmer control permits panel adjustment of RF stage!
- Tone control. Phono input jack also provided.

**\$189.50\***  
 (less speaker)

\*Prices slightly higher west of the Rockies.



# components

NATIONAL CO. MALDEN, MASS.

see inside ... then decide on world-famous

**National RECEIVERS**



HFS

### EXPLORE VHF

Check MUF! Be ready for those DX contacts whether it's on 1, 2, 6 or 10 meters! Here is the latest in VHF design — compact, dependable, modestly-priced — ideal for both your car and your shack.

(less power supply) **\$142.00\***

### COMPLETE COVERAGE 27 MCS — 250 MCS!

... in 6 bands, including 1 1/4, 2, 6, 10 and 11 meter amateur bands.

### AM — FM — CW!

Operation assures optimum signal-to-noise ratio.

### MOBILE, PORTABLE OR FIXED!

Operates from standard National 5886 power supply, National 686S vibrator power supply or "A" and "B" batteries! Built-in speaker. Light.

### RECEIVER OR CONVERTER!

Makes any receiver capable of tuning to 10.6 mcs a top VHF receiver. All features of connected receiver are usable on VHF.



NC - 57

### GREATEST RANGE IN ITS CLASS!

Complete coverage 540 kc to 55 mc. Separate 6SG7 tuned RF amplifier. Bandsread tuning over entire range. Separate RF gain control for adjusting sensitivity. Pitch control to adjust beat note on CW. Voltage regulated oscillator circuit. Automatic threshold noise limiter to minimize ignition noise, static, etc. Simple 5-position switch for band switching. RF trimmer control to match various types of antenna for maximum efficiency. Provision for battery operation. Accessory socket for SM-57 signal strength meter.

**\$89.50\***



NC - 33

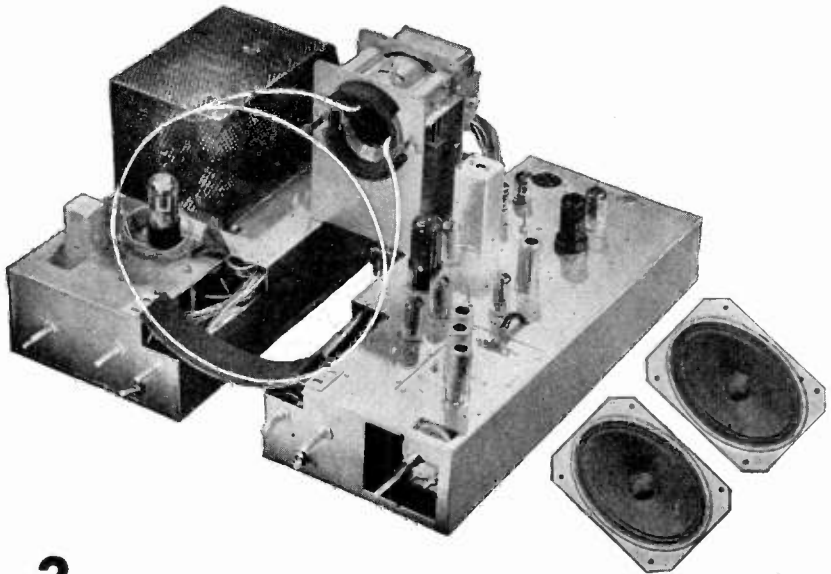
Operates from 110-120 volts AC or DC. Ideal for shipboard and other uses where DC only is available. Covers from 500 kc distress frequency to 35 mcs. Electrical bandsread on all bands! Broadcast, amateur, police and foreign bands plainly marked. Automatic noise limiter assures optimum reception under all operating conditions. CW oscillator with pitch control provides superb CW reception.

**\$57.50\***

\* Prices slightly higher west of the Rockies. (with built-in speaker)

1  
2  
3

**NATIONAL TELEVISION** chassis



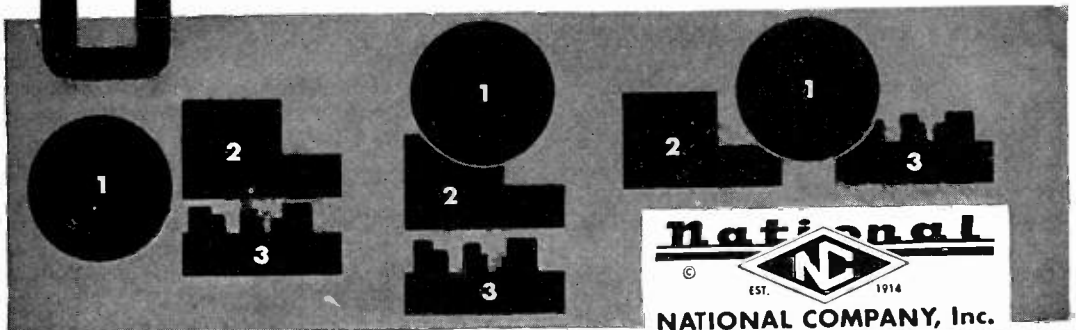
**3-UNIT DESIGN FITS ANY CABINET . . .**

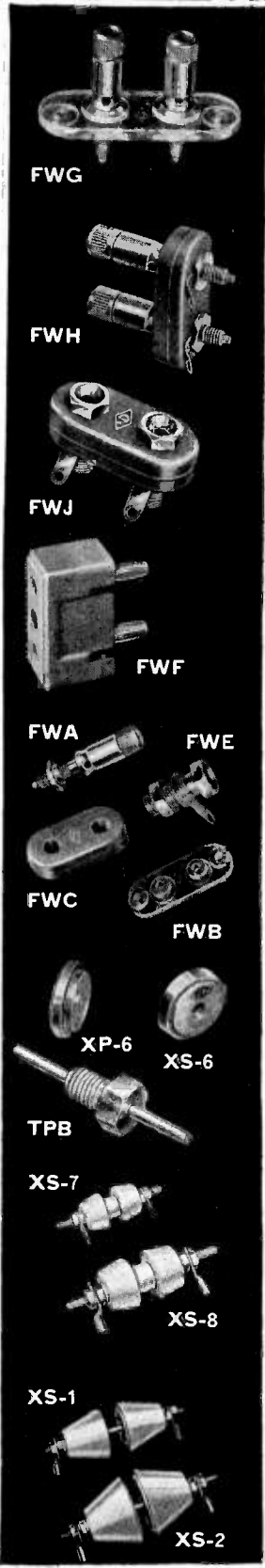
The most versatile television chassis yet designed! Three basic units — power supply chassis, RF chassis and deflection yoke assembly — may be placed side by side, one above the other, etc., to conform to any cabinet. Simply plug in the cable connectors. Each unit is soundly engineered and built to famous National standards of performance.

1. Operates 10" or 12" picture tube.
2. Tunes all 12 channels.
3. Wired, pre-tuned and tested — not a kit.
4. RF stage employs tuned grid and plate for maximum gain and optimum band width.
5. Unique 36 mc IF minimizes interference.
6. Fine tuning control covers range of 2-3 mc. for maximum tuning accuracy.
7. Improved intercarrier sound.
8. Magnetic deflection and "flyback" high voltage supply.
9. 72-ohm unbalanced and 300-ohm balanced inputs.
10. Supplied with two six-inch PM speakers.

**\$149<sup>50</sup>** (less picture tube)

Supplied with mounting bracket for 10" or 12" picture tube





**FWG** Net \$ .60  
A Victron terminal strip for high frequency use. The binding posts take banana plugs at the top, and grip wires through hole at the bottom, simultaneously, if desired.

**FWH** Net \$ .66  
The insulators of this terminal assembly are molded R-39 and have serrated bosses that allow the thinnest panel to be gripped firmly, and yet have ample shoulders. Binding posts same as FWG above.

**FWJ** Net \$ .54  
This assembly uses the same insulators as the FWH above, but has jacks. When used with the FWF plug (below), there is no exposed metal when the plug is in place.

**FWF** Net \$ .70  
This molded R-39 plug has two banana plugs on 3/4" centers and fits FWG, FWH or FWJ above. Leads may be brought out through the top or side.

**FWA**, Post Net, each \$ .20  
Brass Nickel plated

**FWE**, Jack Net, each \$ .15  
Brass Nickel Plated

**BWA** (not illustrated) Net \$ .10

Standard banana plug, silver plated to reduce contact resistance in r.f. circuits.

**BWE** (not illustrated) Net \$ .15

Matching jack for BWA, silver plated.

**FWC**, Insulator Net, per pair \$ .24

R-39 Insulation.

**FWB**, Insulator Net, each \$ .15

Polystyrene insulation.

**XS-6** Net, each \$ .12

A low-loss steatite bushing for 1/2" holes. Passes 6-32 screw.

**XP-6** Net, box of ten \$ .51

Same as above but polystyrene.

**TPB** Net, per dozen \$ .75

A threaded polystyrene bushing with removable .093 conductor moulded in, 1/4" diam., 32 thread.

**XS-7**, (3/8" Hole) Net \$ .36

**XS-8**, (1/2" Hole) Net \$ .48

Steatite bushings. Prices include male and female bushings with metal fittings.

**XS-1**, (1" Hole) Net \$ .72

**XS-2**, (1 1/2" Hole) Net \$ .81

**AA-3** Net \$ .36  
A low-loss steatite spreader for 6 inch line spacing. (600 ohms impedance with No. 12 wire.)

**AA-5** Net \$ .30  
A low-loss steatite aircraft-type strain insulator.

**AA-6** Net \$ .54  
A general purpose strain insulator of low-loss steatite.

**GS-1**, 1/2" x 1 3/8" Net \$ .24

**GS-2**, 1/2" x 2 7/8" Net \$ .30

**GS-3**, 3/4" x 2 7/8" Net \$ .60

**GS-4**, 3/4" x 4 7/8" Net \$ .75

**GS-4A**, 3/4" x 6 7/8" Net \$ 1.05

Cylindrical low-loss steatite standoff insulators with nickel plated caps and bases.

**GSJ**, (not illustrated) Net \$ .10

A special nickel plated jack top threaded to fit the 3/4" diameter insulators GS-3, GS-4 & GS-4A.

**GS-10**, 3/4" high Net, box of ten \$ .90

**GS-10S** (not illustrated) but same as GS-10 except includes threaded stud in top end. Net, box of ten \$ 1.00

**GS-5**, 1 1/4" high Net \$ .30

**GS-6**, 2" high Net \$ .42

**GS-7**, 3" high Net \$ .75

These cone type standoff insulators are of low loss steatite. They are molded with a tapped hole in each end for mounting as follows:

**GS-5**, 8-32 tap 7/16" deep; **GS-6 & GS-7**, 10-24 tap 11/16" deep; **GS-10**, 6-32 tap 1/4" deep and **GS-10S** as noted above.

**GS-8**, with terminal Net \$ .54

**GS-9**, with jack Net \$ .75

These low-loss steatite stand-off Insulators are also useful as lead-through bushings.

**XS-3**, (2 3/4" hole) Net \$ 3.60

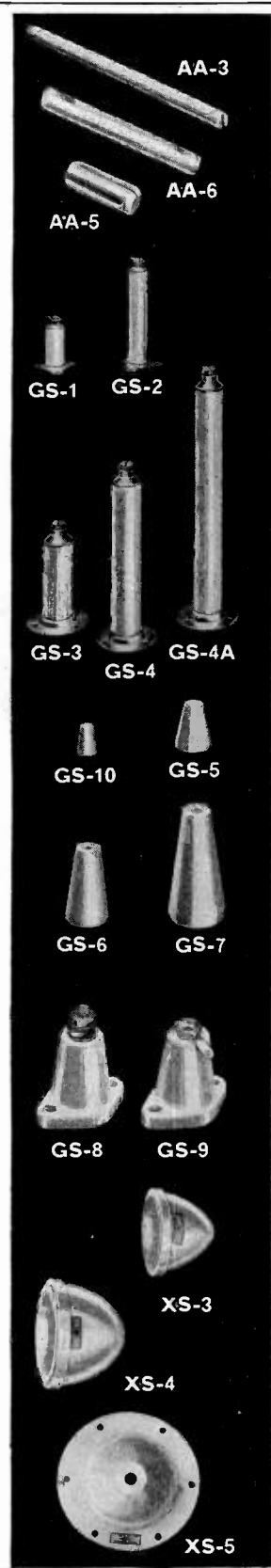
**XS-4**, (3 3/4" hole) Net \$ 4.35

Prices are per pair and include nickel plated spindles, lugs and hardware. These low-loss steatite bowls are ideal for lead-in purposes at high voltages.

**XS-5**, Without Fittings Net, each \$ 4.95

**XS-5F**, With Fittings Net, per pair \$ 10.20

These big low-loss bowls have an extremely long leakage path and a 5/4" flange for bolting in place. Insulation steatite. Fittings include nickel plated brass spindles, lugs, nuts and washers.





**HRT**



**HRS-1**



**HRS-2**



**HRS-3**



**HR**



**HRB**



**SB**



**ODD**



**R**



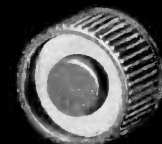
**HRP-P**



**HRP**



**HRK**



**HRT-M**



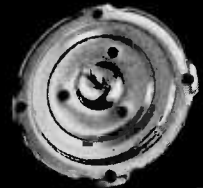
**ODL**



**RSL**



**AN**



**AVD**

**HRT (gray or black) Net \$ .75**

The HRT knob is 2 1/8" in dia. and fits 1/4" shafts. This knob has a chrome appearance circle and combined with the HRS series shown below gives the new look to panel layouts.

**HRS (gray or black) Net \$ .50**

The HRS series knobs are a popular easy to grip knob. They are molded of high quality plastic and have 1 3/8" dia. chrome plated bevel skirts fit 1/4" shafts available in the following scales:

HRS-1	ON-OFF	through 30°
HRS-2	5-0-5	through 180°
HRS-3	0-10	through 300°
HRS-4	Single etched line	

**HR (gray or black) Net \$ .30**

An HRS type knob without the chrome plated skirt but with a white dot for spotting relative control settings.

**HRB Net \$ .45**

Ideal for bandswitching or other applications where a switch is turned to several index positions, the new HRB lever knob has just the right feel — a bright zinc alloy die casting.

**SB Net \$ .18**

A nickel plated brass bushing 1/2" dia. (Fits 1/4" shaft).

**ODL Net \$ .33**

A locking device which clamps the rim of O, K, L and M Dials. Brass, nickel plated.

**ODD Net \$ .42**

Vernier pinch drive for O, L, or other plain dials.

**AN Vernier Mechanism Net \$ 1.80**

A vernier mechanism ratio 5-1 has an insulated output shaft coupling for 1/4" shafts. Drive Shaft fits 3/16" knob.

**AVD Vernier Mechanism Net \$ 1.65**

Similar to AN-Output shaft coupling is non insulated.

For commercial uses many variations available. Write for further particulars.

**R Net \$ .60**

This small dial has a 1 5/8" dia. scale calibrated 0-10 in 180° for increased reading with clockwise rotation. Black bakelite knob. Fits 1/4" shaft.

**HRP-P Net \$ .24**

Black bakelite knob 1 1/4" long and 1/2" wide. Equipped with pointer. Especially suitable for use on wafer and other rotary switches on laboratory equipment and the like. (Fits 1/4" shaft).

**HRP Net \$ .18**

The type HRP knob has no pointer but is otherwise the same as the knob above. Recommended for uncalibrated or hard-tuning controls. (Fits 1/4" shaft).

**HRK Net \$ .57**

Black bakelite knob 2 3/8" dial — extremely rugged. This is the knob used on National type O and type L dials.

**HRT-M Net \$ .50**

This is a smaller version of the HRT and was designed originally for use on the NC-57 Receiver — now available in choice of gray or black — is 1-7/16" in diameter.





# components

NATIONAL CO. MALDEN, MASS.

**N Dial** Net \$4.50  
**AD Dial** Net \$3.00

The four-inch N and AD Dials have engine divided and die stamped scales respectively. The N Dial has a decimal vernier; the AD Dial employs a pointer. The planetary drive has a ratio of 5 to 1, and is contained within the body of the dial. 2, 3, 4 or 5 scale. Fits 1/4" shaft. Specify scale.

**B Dial** Net \$2.70

"Velvet Vernier" Dial, Type B, has a compact variable ratio 6 to 1 min., 20 to 1 max. drive that is smooth and trouble free. The case is black bakelite. 1 or 5 scale. 4" dia. Fits 1/4" shaft. Specify scale.

**BM Dial** Net \$2.10

The BM Dial is a smaller version of the B for use where space is limited. The drive ratio is fixed. Although small in size, the BM Dial has the same smooth action as the larger units. 1 or 5 scale. 3" dia. Fits 1/4" shaft. Specify scale.

**AM Dial** Net \$2.25

The original "Velvet Vernier" mechanism in a metal skirted dial 3" in dia. ratio 5 to 1. It is available with 2, 3, 4, 5 or 6 scale and fits 1/4" shaft.

**P Dial** Net \$1.00

The new P dial is the same as the AM except direct drive.

**Type O**, 3 1/2" dia., scale 2, with HRK knob, fits 1/4" shafts. Net \$1.00

**Type L**, same as O except 5" dia., scale 2 only. Net \$1.95

**Type K**, same as O except less knob, complete with CDD vernier drive, scale 2 only. Net \$1.50

**Type M**, same as K except 5" dia., scale 2 only. Net \$2.25

The dials at the right are for individual calibration; all four employ the noted 5:1 drive ratio Velvet Vernier mechanism and are of excellent quality.

**MCN Dial** Net \$2.70

The MCN dial has been scaled down to lend itself ideally to mobile installations and small converters and tuners. It may also be mounted on the standard 3 1/2" rack panel where such mounting may be desirable. The dial provides three calibrating scales and a 0-100 logging scale. On the rear side of the dial, the mechanism extends 1/4" below the dial frame. 2 3/4" H. x 3 7/8" W.

**SCN Dial** Net \$3.00

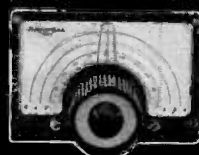
The SCN dial provides the same dial scales as the ACN dial but in a reduced size. It is used where economy of panel-mounting space is desirable and where a smaller dial would be out of proportion with the size of the panel. 4-7/16" H. x 6 1/4" W.

**ICN Dial** Net \$6.00

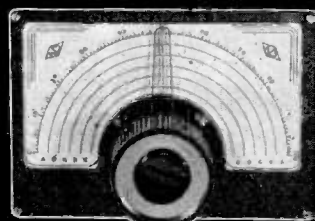
The ICN dial meets those hundreds of requests from amateurs the world over for an illuminated ACN dial. Two dial lights mounted on the top corners of the dial provide efficient and even illumination on all bands. The dial window has been blanked out in semi-circular shape to prevent shadow casting. Dial scales are the same as those used on the ACN dial. 5 1/8" H. x 7 1/4" W.

**ACN Dial** Net \$3.30

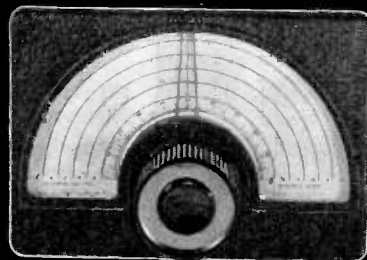
The ACN is the original of this type dial, a National design for the benefit of experimenters who "build their own" and desire direct calibration 5" H. x 7 1/4" W.



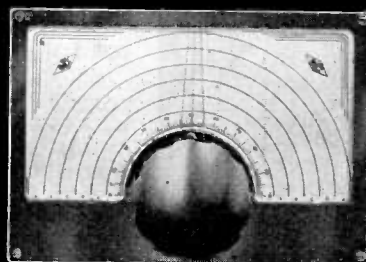
MCN



SCN



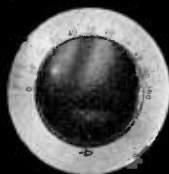
ICN



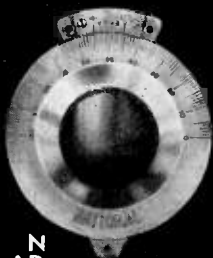
ACN

## DIAL SCALES

Scale	Divisions	Rotation	Direction of Condenser Rotation for increase of dial reading
1	0-100-0	180°	Either
2	0-100	180°	Counter Clockwise
3	100-0	180°	Clockwise
4	150-0	270°	Clockwise
5	200-0	360°	Clockwise
6	0-150	270°	Counter Clockwise



AM



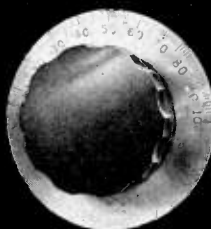
N  
AD



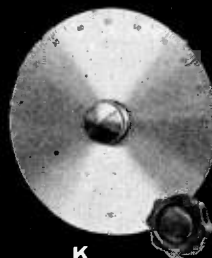
B



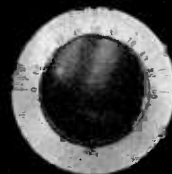
BM



O  
L



K  
M



P



**XLA**

**XLA** Net \$ .99  
 A low-loss socket for the 6F4 and 950 series acorn tubes for frequencies as high as 600 Mc. Conventional by-pass condensers may be compactly mounted between the contact terminals and the chassis. Low contact resistance, short and direct leads and low and constant inductance are features.



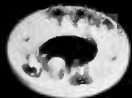
**XLA-S**

**XLA-S** Net \$ .36  
 An internal shield fitting the XLA socket and suitable for tubes such as the 956.



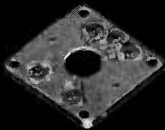
**XLA-C**

**XLA-C** Net \$ .36  
 This miniature by-pass condenser may be mounted inside the socket, directly below the contact. Capacities of 50 or 100 mmf. available.



**XCA**

**XCA** Net \$ .99  
 A low-loss steatite socket for acorn triodes. Pin grips are designed to accept tube prongs with minimum strain but exert maximum pressure when seated.



**XMA**

**XMA** Net \$ 1.32  
 For pentode acorn tubes, this socket has built-in by-pass condensers. The base is a copper plate.

**XOA-7** (mica-filled bakelite) Net \$ .50

**XOA-C-7** (ceramic) Net \$ .50

**XOR-7** (mica-filled bakelite) Net \$ .50



**XOA-7 (Axial)**

**XOA-C-7**

**XOR-C-7** (ceramic) Net \$ .50  
 These high quality sockets for the 7 pin miniature tubes have silver plated beryllium copper contacts that correctly grip the tube pins close to the base of the tube to provide the short leads and low inductance so necessary in ultra-high frequency design.

A novel feature of these new sockets is the interchangeability of the contacts, which are easily removed for replacement. This permits the use of a mixture of axial (XOA) and radial (XOR) type contacts in the same socket to obtain the shortest possible leads, or minimum size in tight places. The above sockets all mount with two 4-40 screws on .875" centers. Chassis cutout should be 3/4" dia. Shields for use with these sockets are on page 21.



**XOR-7 (Radial)**

**XOR-C-7**

**XOA-C-9** (ceramic) Net \$ .57

**XOR-C-9** (ceramic) Net \$ .57  
 These sockets are for the new 9-pin miniature tubes. The XOR-C-9 (not illustrated) has radial contacts. Both have all of the features described above for the 7-pin types



**XOA-C-9**

and they also mount with 4-40 screws. Mounting center dimension is 1 1/8", the chassis cutout should be 13/16" dia.

## CIR SERIES SOCKETS

**Any Type** Net \$ .30  
 Always a popular National component, type CIR Sockets feature low-loss steatite insulation, a contact that grips the tube prong for its entire length, and a metal ring for six position mounting.

XC-4, 5, 6, 7S, 7L and CIR-4, 5, 6, 7S and 7L all have 1-27/32" mounting centers. CIR-8E has slotted holes in plate but will mount on 1-27/32" center. CIR-8 and XC-8 have 1 1/2" mounting centers.



**CIR-5**



**CIR-8**



**CIR-8E**

## XC SERIES SOCKETS

**XC-4** ..... Net \$ .36

**XC-5** ..... Net \$ .39

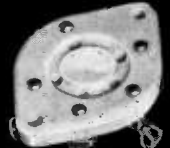
**XC-6** ..... Net \$ .42

**XC-7S** ..... Net \$ .45

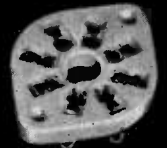
**XC-7L** ..... Net \$ .45

**XC-8** ..... Net \$ .39

National wafer sockets have exceptionally good contacts with high current capacity together with low loss steatite insulation. All types have a locating groove to make tube insertion easy. The XC-6 is ideal for use with AR-17 coils shown on page 24.



**XC-5**



**XC-8**

**HX-29** Net \$ .81

A low-loss wafer socket with steatite insulation for the popular 829 and 832 tubes.

**JX-51** Net \$ .81

A low loss steatite wafer socket for the 813 and other tubes having the Giant 7-pin base. (not illustrated)

**XM-10** Net \$ .90

A heavy duty metal shell socket for tubes having the XU 4-pin base.

**XM-50** Net \$ 1.20  
 (see XM-10 for style)

A heavy duty metal shell socket for tubes having the Jumbo 4-pin base ("fifty watters").

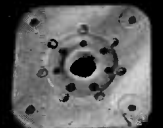
**HX-100S** Net \$ 1.65

With Standoff Insulators

A low loss wafer socket suitable for the type 4-125-A, 4-250-A and other tubes using the Giant 5-pin base. Shield grounding clips are supplied which mount on the chassis with the socket mounting screws to ground the tube shield at three points. Air holes are provided in the socket to permit forced air cooling.

**HX-100** Net \$ .99

Same as above less standoff insulators.



**HX-29**



**XM-10**



**HX-100S**

## SHAFT COUPLINGS

TX-19 Net \$1.25

A steatite insulated flexible coupling for 1/4" shafts. Conservatively rated at 5000 volts peak. Diameter 1 3/8", length 1". Length and flashover voltage can be increased by turning collars outboard.

TX-11 Net \$.42

The flexible shaft of this coupling connects shafts at angles up to 90 degrees, and eliminates misalignment problems. Fits 1/4" shafts. Length 4 1/4".

TX-12, Length 4 5/8" Net \$.90

TX-13, Length 7 1/8" Net \$1.05

These couplings use flexible shafting like the TX-11 above, but are also provided with steatite insulators at each end.

TX-1, Leakage path 1" Net \$.65

TX-2, Leakage path 2 1/2" Net \$.75

Flexible couplings with glazed steatite insulation which fit 1/4" shafts.

TX-20 Net \$1.25

A small bakelite insulated flexible coupling of the "Hooke's joint" type. Accommodates up to five degrees angular misalignment as well as 1/64" offset of centers. For 1/4" shafts.

TX-8 Net \$.60

A non-flexible rigid coupling with steatite insulation. 1" diam. Fits 1/4" shaft.

TX-10 Net \$.40

A very compact insulated coupling free from backlash. Insulation is canvas bakelite. 1-1/16" diam. Fits 1/4" shaft.

TX-10F (Not illustrated) Net \$.45

A new version of the TX-10 which employs thin canvas bakelite strips for flexibility.

TX-22 (not illustrated) Net \$.40

A non-insulated coupling identical to TX-10 except of all metal construction. Makes good electrical connection between coupled shafts.

TX-9 Net \$.75

This small insulated flexible coupling provides high electrical efficiency when used to isolate circuits. Insulation is steatite. 1 5/8" diam. Fits 1/4" shaft.

TX-21 (not illustrated) Net \$.40

Similar to TX-10 except 13/16" long and couples 1/4" shaft to 5/32" shaft.

## SAFETY GRID AND PLATE CAPS

SPP-9 Net \$.21

Ceramic insulation. Fits 9/16" diameter.

SPP-3 Net \$.21

Ceramic insulation. Fits 3/8" diameter.

National Safety Grid and Plate Caps have a ceramic body which offers protection against accidental contact with high voltage caps on tubes.

## GRID AND PLATE GRIPS

Type 12, for 9/16" Caps Net \$.06

Type 24, for 3/8" Caps Net \$.03

Type 8, for 1/4" Caps Net \$.03

National Grid and Plate Grips provide a secure and positive contact with the tube cap and yet are released easily by a slight pressure on the ear.

## RIGHT ANGLE DRIVES

ACD-1 .....Net \$3.75

ACD-2 .....Net \$3.90

ACD-3 .....Net \$3.90

These sturdy drives were developed for use with the new National AMT condensers (see page 26). They are as compact as the torque requirements will allow and have nickel plated cast frames and bronze gears which operate smoothly without chatter or binding. The ACD-1 has 32 pitch gears and a 1/4" dia. dial shaft and drives 1/4" shafts. ACD-2 has 24 pitch gears (for heavier service) and 1/4" dia. shaft driving 1/4" shafts. ACD-3 is the same as ACD-2 except that it drives 3/8" diameter shafts.



SPP-9



SPP-3



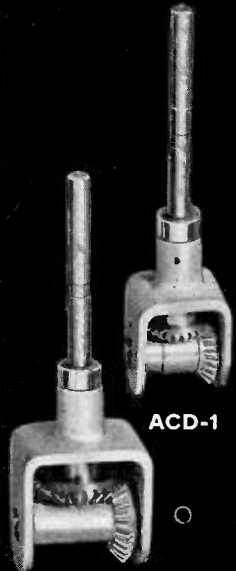
12



24



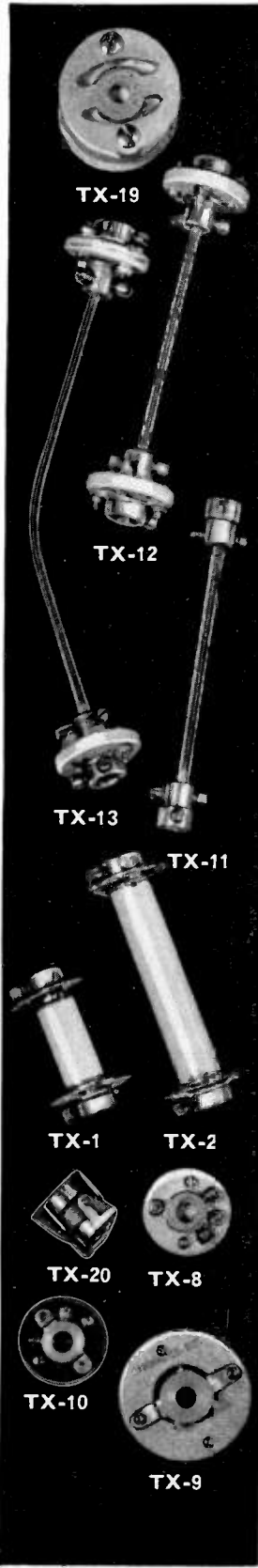
8



ACD-1

ACD-2

RIGHT ANGLE DRIVES



R-100	Net \$ .35
R-100U	Net \$ .42
R-100S	Net \$ .42
R-100ST	Net \$ .40

These RF chokes are identical electrically, but differ in mounting provisions. The R-100 employs pigtail leads; the R-100U has pigtail leads and a removable stand-off insulator; the R-100S has cotter-pin lug terminals and a non-removable stand-off insulator; the R-100ST has a 6-32 threaded stud at each end. These chokes are available in 2.5, 5 and 10 millihenry sizes and are rated at 125 milliamperes.

R-33	Net \$ .35
------	------------

The R-33 series chokes are 2-section RF chokes available in 10, 50, 100 and 750 microhenry sizes. Also available in this series is a single layer solenoid choke of 1 microhenry inductance. All are rated at 33 milliamperes. The chokes are wound on a 5/8" long form and range in diameter up to 5/16" maximum.

R-50	Net \$ .35
R-50-I	Net \$ .53

The R-50 series chokes are 3 and 4-section RF chokes and available in 0.5, 1, 2.5, and 10 millihenry sizes. They are rated at 50 milliamperes. The chokes are wound on a 1" long form and have a maximum diameter of 15/32". The 10 millihenry R-50-I choke is wound on an iron core.

R-33G	Net \$3.66
-------	------------

The R-33G choke is a 2-section 750 microhenry RF choke hermetically sealed in glass with a current rating of 33 milliamperes. The choke body is 1" long by 5/8" diameter.

R-60	Net \$ .35
------	------------

The R-60 choke is a high current RF choke (500 milliamperes) available in 2 and 4 microhenry sizes. The choke is 1 1/8" long by 5/16" diameter.

R-300	Net \$ .38
R-300U	Net \$ .42
R-300S	Net \$ .42
R-300ST	Net \$ .40

These RF chokes are similar in size to R-100 series but have higher current capacity. The R-300U is provided with a removable stand-off insulator at one end. The R-300S has a non-removable stand-off insulator and cotter-pin lug terminals. The R-300ST has a 6-32 threaded stud at each end. Inductance values of 0.5, 1.0, 2.5 and 5.0 millihenries are available with a current rating of 300 milliamperes. R-300, R-300U, R-300S and R-300ST are identical electrically.

R-152	Net \$1.75
-------	------------

For use in the range between 2 and 4 Mc. Ideal for high power transmitter stages operated in the 80 meter amateur band. Inductance 4 m.h., DC resistance 10 ohms, DC current 600 ma. Coils honeycomb wound on steatite core.

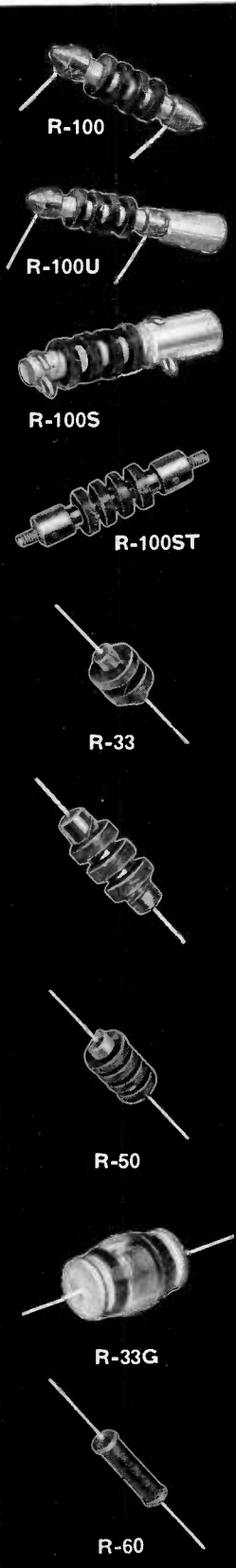
R-154	Net \$1.75
R-154U	Net \$1.40

For the 20, 40 and 80 meter bands, Inductance 1 m.h., DC resistance 6 ohms, DC current 600 ma. Coils honeycomb wound on steatite core. The R-154U does not have the third mounting foot and the small insulator, but is otherwise the same as R-154. See illustration.

R-175	Net \$2.25
-------	------------

The R-175 Choke is suitable for parallel-feed as well as series-feed in transmitters with plate supply up to 3000 volts modulated or 4000 volts unmodulated. Unlike conventional chokes, the reactance of the R-175 is high throughout the 10 and 20 meter bands as well as the 40 and 80 meter bands. Inductance 225 μh, distributed capacity 0.6 mmf., DC resistance 6 ohms, DC current 800 ma., voltage breakdown to base 12,500 volts.

Manufacturers: We have facilities for quantity production of RF chokes of practically any type. Send us your specifications,



**I. F. TRANSFORMERS**

IFC, Transformer, Net \$4.25  
 IFCO, Oscillator, Net \$4.25  
 Litz coils wound on a polystyrene form and ceramic insulated air-dielectric trimming condensers make these transformers inherently stable and exceptionally retentive of tuning. The 4 1/2" x 2 3/8" x 2" shield can has two 6-32 spade bolts for mounting. Available for either 175 KC or 450-550 KC. Specify frequency.  
 IFL FM Discriminator

IFM IF Transformer Net \$6.90  
 IFN IF Transformer Net \$6.45  
 IFO FM Ratio Discriminator Net \$6.98

IFL, IFM, IFN and IFO transformers operate at 10.7 Mc. and are designed for use in FM Superheterodyne receivers. Coils are precision wound on grooved polystyrene forms and tuning is accomplished by movable iron cores. Bandwidth is not affected by tuning slug position. The transformer cans are 1 3/8" square and stand 3 1/8" above the chassis. Two 6-32 spade bolts are provided for mounting.

The IFL transformer is a 10.7 Mc. FM discriminator transformer suitable for use in conventional FM receiver discriminator circuit and is linear over a band of ±100 Kc.

The IFM transformer is a 10.7 Mc. IF transformer with a 150 Kc. bandwidth at 1.5 db attenuation. Approximate stage gain of 30 is obtained with IFM Transformer and 6SG7 tube.

The IFN transformer is a 10.7 Mc. IF transformer with a 100 Kc. pass band at 1.5 db attenuation. Approximate stage gain of 30 is obtained with IFN Transformer and 6SG7 tube.

The IFO transformer is a 10.7 Mc. FM discriminator transformer of the ratio type and is linear over a band of ±100 Kc.

IFJ, with variable coupling Net \$8.25

IFK, with fixed coupling Net \$7.25

15 Mc. IF transformers suitable for ultra high frequency superheterodynes. They are made in two models with and without variable coupling. Approximate stage gain of 10 is obtained with IFJ or IFK Transformer and 6AB7 tube.

SA:4842 Net \$4.50

A 456 kc. discriminator transformer for narrow band frequency modulation. This unit is the nucleus of the NFM adapter described by Harrington and Bartell in November 1947 QST. Two slug-tuned secondaries are employed and discrimination is accomplished by resonating one at approximately 10 kc. above, the other at approximately 10 kc. below the center frequency of the i.f. channel.

CD-1, 1/4 pint can Net \$ .95  
 Liquid Polystyrene Cement — is ideal for windings as it will not spoil the properties of the best coil form.

**COILS AND COIL FORMS**

AR-2 High Frequency Coil Net \$1.13

AR-5 High Frequency Coil Net \$ .97

The AR-2 and AR-5 coils are high Q permeability tuned RF coils on low loss mica-filled bakelite forms. The AR-2 coil tunes from 75 Mc. to 220 Mc. with capacities from 100 to 10 mmfd. The AR-5 coil tunes from 37 Mc. to 110 Mc. with capacities from 100 to 10 mmfd. The inductive windings supplied may be replaced by other windings as desired to modify the tuning range.

XR-50 Net \$ .60

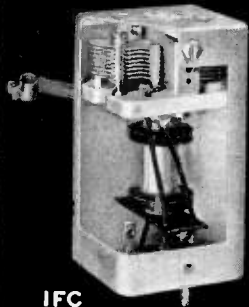
These mica-filled bakelite coil forms may be wound as desired to provide a permeability tuned coil. The form winding length is 1 1/16" and the form winding diameter is 1/2 inch. The iron slug is 3/8" dia. by 1/2" long.

OSR Net \$1.80

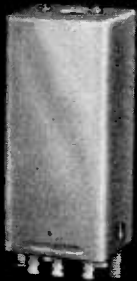
A shielded oscillator coil which tunes to 100 kc. with .00041 mfd. Two separate inductances, closely coupled. Excellent for interruption-frequency oscillator in super-regenerative receivers.

Symbol	Outside Diameter	Length	Net
PRC-1	3/8"	3/8"	.15
PRC-2	3/8"	1/2"	.15
PRC-3	3/8"	3/4"	.15
PRD-1	1/2"	1/2"	.15
PRD-2	1/2"	1"	.15
PRE-1	9/16"	3/4"	.18
PRE-2	9/16"	1"	.18
PRE-3	9/16"	2"	.24
PRF-1	3/4"	3/4"	.24
PRF-2	3/4"	1 1/4"	.30

These small coil forms are of molded polystyrene, open at one end and closed at the other except for a hole which permits mounting by a single 6-32 screw. A size for every application.



IFC  
IFCO



IFL  
IFM  
IFN  
IFO



OSR



XR-50



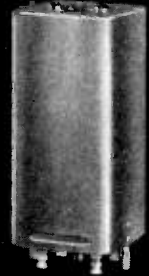
AR-5



AR-2



IFJ  
IFK



SA-4842



CD-1



PRC

PRD

PRE

PRF



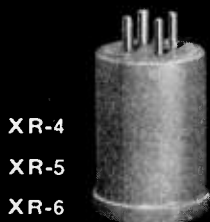




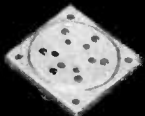
XR-1  
XR-2



XR-3



XR-4  
XR-5  
XR-6



XC-6C



SC-1



CFA



PH-1



PLUG-IN BASE  
AND SHIELD

Coil Forms molded of R-39 mica-filled bakelite permitting them to be grooved and drilled. Coil Form diameter 1", length 1 1/2".

XR-1 Four Prong, Net \$3.50  
 XR-2, without Prongs Net \$2.25

XR-3, molded of R-39 Diameter 9/16", length 3/4" without prongs. Net \$2.00

XR-4, Four Prong, Net \$5.10  
 XR-5, Five Prong, Net \$5.10  
 XR-6, Six Prong, Net \$6.60  
 Molded of R-39 permitting them to be grooved and drilled. Coil Form Diameter 1 1/2", length 2 1/4". A special socket is required for the XR-6.  
 National type XC-6C Net \$5.10

SC, Crystal Sockets Net \$3.20

The SC-1, SC-2, and SC-3 are crystal mounting sockets for crystal holders with mounting pins spaced 0.5000", 0.486", and .750" respectively and pin diameters of 1/8" and 3/32" and 1/8" respectively, steatite insulation. Single 4-36 or 4-40 screw mounting for SC-1 and SC-2; single 6-32 screw mounting for SC-3.

CFA Net \$3.50  
 The National chart frame is supplied with a celluloid sheet to cover the chart size 2 1/4" x 3/4" with sides 1/4" wide. Durable finish.

PH-1 An attractive and rugged pull handle of cast zinc alloy chrome plated, with 10-32 Tapped Holes on 3 3/4" mounting centers. Net \$4.45

PH-2 same as PH-1 but with black or gray finish. Net \$2.25

The plug in base and shield includes the low loss R-39 base which is ideal for mounting condensers and coils when it is desirable to have them shielded and easily removable. Shield is 2" x 2 3/8" x 4 1/2".

5 Prong base and shield PB-10-5 Net \$7.75  
 6 Prong base and shield PB-10-6 Net \$7.75  
 5 Prong base only PB-10-A-5 Net \$5.10  
 6 Prong base only PB-10-A-6 Net \$5.10

RZ Coil Shield Net \$3.35  
 1 3/8" square x 4" high.  
 RS Coil Shield Net \$3.35  
 1-7/16" x 1 7/8" x 3 1/2" high.

RO Coil Shield Net \$3.35  
 2" x 2 3/8" x 4 1/8" high. National Coil Shields are formed from a single piece of pure aluminum. They are mechanically strong and have ample thickness to mount small parts on the walls, and include spade belts, for chassis mounting.

T-78 Tube Shield Net \$2.27  
 National Tube Shield type T-78 is a three-piece pure aluminum shield suitable for shielding glass tubes with ST-12 bulb, such as the 6C6 and 6D6 tubes.

JS-1 Jack Shield Net \$3.30  
 For shielding small standard jacks mounted behind a panel, or on the ends of extension coils. Indispensable for reducing hum pickup.

XOS Tube Shields Net \$4.48  
 The XOS tube shield is a two-piece shield for the miniature Button 7 pin base tubes. The shield is available in three sizes corresponding to the tube body heights XOS-1 for 1-5/16", XOS-2 for 1 1/2", XOS-3 for 2".

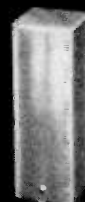
The shield contains a spring which centers tube in shield and holds tube and shield firmly in place. The two 4-40 spade bolts serve to mount the XOA or XOR Socket and the XOS Tube Shield.

FXT Fixed tuned exciter tank similar in general construction to National I.F. transformers, this unit has two 25 mmf., 2000 volt air condensers and an unwound XR-2 Coil Form.

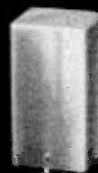
FXT, (without plug-in base) Net \$3.45  
 FXTB-5 (with 5 prong base) Net \$3.90  
 FXTB-6 (with 6 prong base) Net \$3.90

Paint (not illustrated)

CP-1, dark gray Net \$4.40  
 CP-2, black Net \$4.40  
 A high quality air-drying paint that may be applied with a brush.  
 CP-3, light gray, matches newest National receivers—for spraying and baking. Net \$5.50



RZ



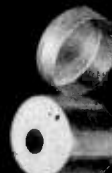
RS



RO



T-78



JS-1



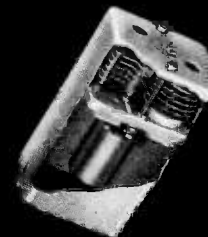
XOS-1



XOS-2



XOS-3

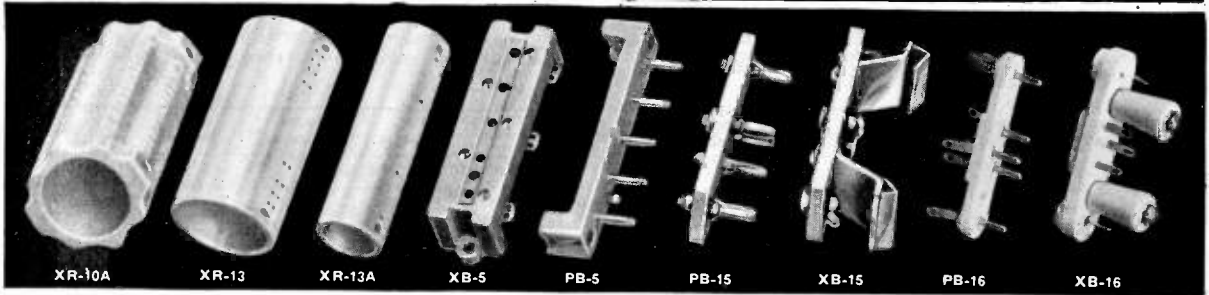


FIXED-TUNED  
EXCITER TANK



# components

NATIONAL CO. MALDEN, MASS.



## TRANSMITTER COIL FORMS

The Transmitter Coil Forms and Mounting are designed as a group, and mount conveniently on the bars of a TMA condenser. The larger coil form, Type XR-14A, (not illustrated) has a winding diameter of 5", a winding length of 3 3/4" (30 turns total) and is intended for the 80 meter band. The smaller form, Type XR-10A, has a winding length of 3 3/4" and a winding diameter of 2 1/2" (26 turns total). It is intended for the 20 and 40 meter bands.

Either coil form fits the PB-15 plug. For higher frequencies, the plug may be used with a self-supporting coil of copper tubing. The XB-15 Socket may be mounted on breadboards or chassis, as well as on the TMA Condenser.

### SINGLE UNITS

XR-10A, Coil Form only	Net \$ .99
XR-14A, Coil Form only	Net \$2.40
PB-15, Plug only	Net \$1.05
XB-15, Socket only	Net \$1.20

### ASSEMBLIES

UR-10A, Assembly (including small Coil Form, Plug and Socket)	Net \$3.24
UR-14A, Assembly (including large Coil Form, Plug and Socket)	Net \$3.60

## BUFFER COIL FORMS

National Buffer Coil Forms are designed to mount directly on the tie bars of a TMC condenser using the PB-5 Plug and XB-5 Socket. Plug and Socket are of molded R-39.

The two coil forms are of steatite, left unglazed to provide a tooth for coil dope. The larger form, Type XR-13, is 1 3/4" in diameter and has a winding length of 2 3/4". The smaller form, Type XR-13A, is 1" in diameter and provides a winding length of 2 3/4". Both forms have holes for mounting and for leads.

### SINGLE UNITS

XR-13, Coil Form only	Net \$ .75
XR-13A, Coil Form only	Net \$ .60
PB-5, Plug only	Net \$ .51
XB-5, Socket only	Net \$ .51

### ASSEMBLIES

UR-13A, Assembly (including small Coil Form, Plug and Socket)	Net \$1.65
UR-13, Assembly (including large Coil Form, Plug and Socket)	Net \$1.65

## EXCITER COILS

There is a National exciter coil for every application. AR-15 coils are mounted on 5 pin bases which fit any standard 5 contact tube socket. AR-16 coils are mounted on the well known National PB-16 plug which fits the National XB-16 socket. The AR-17 coils have 6 pin bases which fit standard 6 contact tube sockets and the link windings of this series have center taps which may be grounded for harmonic reduction. All center link models are center tapped for use in balanced circuits. Insulation polystyrene and steatite. For use where plate power input does not exceed 50 watts. Available with fixed or swinging end or center links for all amateur bands, 6 through 80 meters.

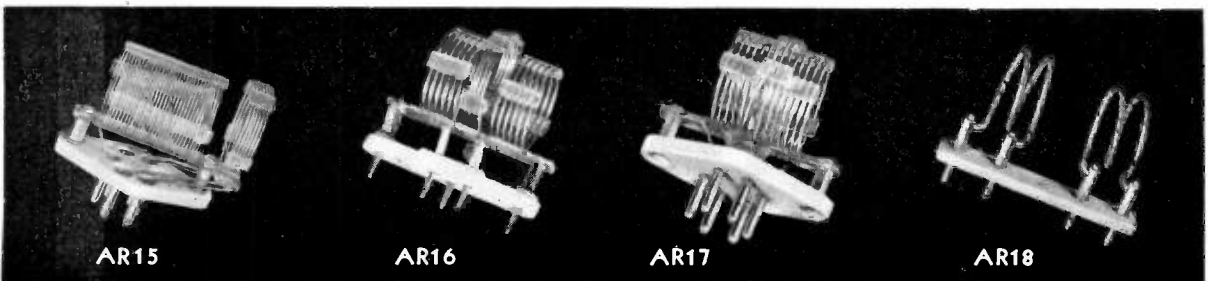
The XR-16 Coil Form (not illustrated) fits the PB-16 Plug-in Base; it has a winding length of 1 3/4", diameter 1 1/4".

AR-15, AR-16, AR-17 Coil, any type	Net \$1.25
XR-16 Coil Form	Net \$ .42
PB-16 Plug-in Base	Net \$ .45
XB-16 Socket for PB-16	Net \$ .45

## 500 WATT COILS

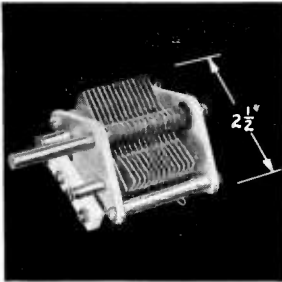
Air-wound coils designed to mount on the split stator models of National AMT condensers. The AR18-C coils have fixed center links and require the XB18-C socket. The AR18-S coils are designed to accommodate the swinging link furnished with the XB18-S socket. Link winding of the XB18-S has a center tap which may be grounded for harmonic reduction. Plugs and jacks are silver plated to insure low contact resistance. Insulation, steatite. The sockets (not illustrated) are 7 1/4" in length. AR-18 coils are available for all amateur bands, 6 through 80 meters.

(See your National distributor for prices)



**TYPE TMS TRANSMITTING CONDENSERS**

This is a condenser designed for transmitter use in low power stages. It is compact, rigid, and dependable. Provision has been made for mounting either on the panel, on the chassis, or on two stand-off insulators. Insulation is steatite. Voltage ratings listed are conservative.

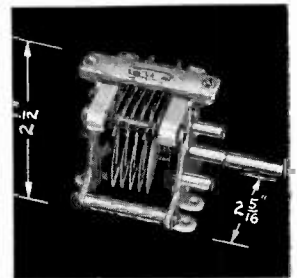


Capacity	Minimum Capacity	Length	Air Gap	Peak Voltage	No. of Plates	Catalog Symbol	Net
<b>SINGLE STATOR MODELS</b>							
100 Mmf.	9.5	3"	.026"	1000v.	9	TMS-100	\$2.60
150	11	3"	.026"	1000v.	14	TMS-150	2.80
250	13.5	3"	.026"	1000v.	22	TMS-250	3.30
300	15	3"	.026"	1000v.	27	TMS-300	3.80
35	8	3"	.065"	2000v.	7	TMSA-35	3.90
50	11	3"	.065"	2000v.	11	TMSA-50	4.40
<b>DOUBLE STATOR MODELS</b>							
50-50 Mmf.	6-6	3"	.026"	1000v.	5-5	TMS-50D	\$3.00
100-100	7-7	3"	.026"	1000v.	9-9	TMS-100D	3.20
50-50	10.5-10.5	3"	.065"	2000v.	11-11	TMSA-50D	4.40

**TYPE TMK TRANSMITTING CONDENSERS**

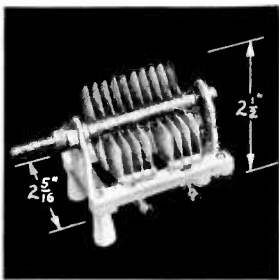
This is a new condenser for exciters and low power transmitters. Special provision has been made for mounting AR-16 coils in a swivel plug-in mount on either the top or rear of the condenser. For stand-off or panel mounting-steatite insulation.

Capacity	Minimum Capacity	Length	Air Gap	Peak Voltage	No. of Plates	Catalog Symbol	Net
<b>SINGLE STATOR MODELS</b>							
35 Mmf.	7.5	2 7/8"	.047"	1500v.	7	TMK-35	\$3.45
50	8	2 8/16"	.047"	1500v.	9	TMK-50	3.55
75	9	2 9 1/16"	.047"	1500v.	13	TMK-75	3.80
100	10	3"	.047"	1500v.	17	TMK-100	3.95
150	10.5	3 5/8"	.047"	1500v.	25	TMK-150	4.65
200	11	4 1/8"	.047"	1500v.	33	TMK-200	5.25
250	11.5	4 7/8"	.047"	1500v.	41	TMK-250	5.75
<b>DOUBLE STATOR MODELS</b>							
35-35 Mmf.	7.5-7.5	3"	.047"	1500v.	7-7	TMK-35D	\$3.80
50-50	8-8	3 5/8"	.047"	1500v.	9-9	TMK-50D	3.95
100-100	10-10	4 3/8"	.047"	1500v.	17-17	TMK-100D	5.25
Swivel Mounting Hardware for AR 16 Coils						SMH	\$ .10



**TYPE TMH TRANSMITTING CONDENSERS**

A condenser that features very compact construction. Excellent power factor, and aluminum plates .0400" thick with polished edges. It mounts on the panel or on removable stand-off insulators. Steatite insulators have long leakage path. Stand-offs included in listed price.

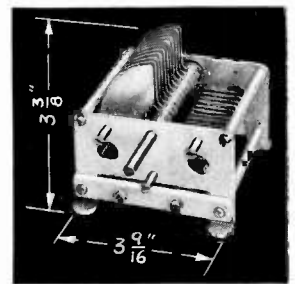


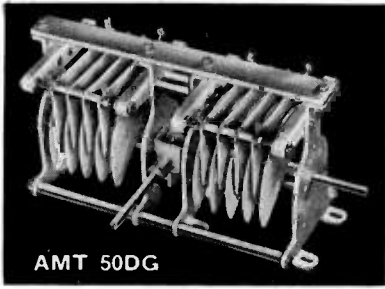
Capacity	Minimum Capacity	Length	Air Gap	Peak Voltage	No. of Plates	Catalog Symbol	Net
<b>SINGLE STATOR MODELS</b>							
50 Mmf.	9	3 3/8"	.085"	3500v.	15	TMH-50	\$3.95
75	11	3 5/8"	.085"	3500v.	19	TMH-75	4.15
100	12.5	3 7/8"	.085"	3500v.	25	TMH-100	4.35
150	18	6 1/8"	.085"	3500v.	37	TMH-150	4.95
35	11	5 3/8"	.180"	6500v.	17	TMH-35A	4.25
<b>DOUBLE STATOR MODELS</b>							
35-35 Mmf.	6-6	3 3/4"	.085"	3500v.	9-9	TMH-35D	\$4.15
50-50	8-8	5 1/8"	.085"	3500v.	13-13	TMH-50D	4.35
75-75	11-11	6 1/2"	.085"	3500v.	19-19	TMH-75D	4.95

**TYPE TMC TRANSMITTING CONDENSERS**

A condenser designed for use in the power stages of transmitters where peak voltages do not exceed 3000 volts. The frame is extremely rigid and arranged for mounting on panel, chassis or stand-off insulators. The plates are aluminum with buffed edges. Insulation is steatite. The stator in the split stator models is supported at both ends.

Capacity	Minimum Capacity	Length	Air Gap	Peak Voltage	No. of Plates	Catalog Symbol	Net
<b>SINGLE STATOR MODELS</b>							
50 Mmf.	10	3"	.077"	3000v.	7	TMC-50	\$3.60
100	13	3 1/2"	.077"	3000v.	13	TMC-100	4.25
150	17	4 3/8"	.077"	3000v.	21	TMC-150	5.25
250	23	6"	.077"	3000v.	32	TMC-250	5.70
300	25	6 3/4"	.077"	3000v.	39	TMC-300	6.10
<b>DOUBLE STATOR MODELS</b>							
50-50 Mmf.	9-9	4 5/8"	.077"	3000v.	7-7	TMC-50D	\$4.35
100-100	11-11	6 3/4"	.077"	3000v.	13-13	TMC-100D	5.95
200-200	18.5-18.5	9 3/4"	.077"	3000v.	25-25	TMC-200D	7.25





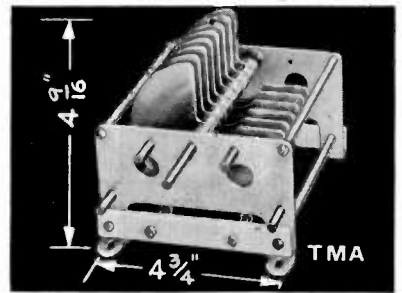
AMT 50DG

**TYPE AMT**

A larger and sturdier model of the TMK condenser. The frame is extremely rigid, with mounting feet a part of the end plates. Heavy steatite insulation.

The solid aluminum tie bar across the top of the condenser acts as a mounting for AR-18 series coils in the double stator models.

The double stator models are available in either standard end drive (D series) or center-drive (DG series) with 1/4" dia. shaft extension.



TMA

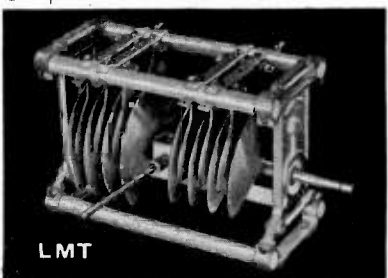
**TYPE TMA**

This is a larger model of the popular TMC. The frame is extremely rigid and arranged for mounting on panel, chassis or stand-off insulators. The plates are of heavy aluminum with rounded and buffed edges. Insulation is steatite located outside of the concentrated field.

Maximum Capacity	Minimum Capacity	Length	Air Gap	Peak Voltage	No. of Plates	Catalog Symbol	Net
<b>SINGLE STATOR MODELS</b>							
50 Mmf. 100	13 20	4 3/8" 6 3/8"	.177" .177"	6000 v. 6000 v.	9 17	AMT-50 AMT-100	\$ 5.20 6.10
300 50 100 150 230 100 150 50 100	19.5 15 19.5 22.5 33 30 40.5 21 37.5	4 3/8" 4 3/8" 6 3/8" 6 3/8" 9 1/4" 9 1/4" 12 1/2" 7 1/2" 12 1/2"	.077" .171" .171" .171" .171" .265" .265" .359" .359"	3000 v. 6000 v. 6000 v. 6000 v. 6000 v. 9000 v. 9000 v. 12,000 v. 12,000 v.	23 7 15 21 33 23 33 13 25	TMA-300 TMA-50A TMA-100A TMA-150A TMA-230A TMA-100B TMA-150B TMA-50C TMA-100C	7.60 4.95 5.85 6.45 7.95 8.50 9.95 5.55 8.95
75 150 100 50 245 150 100 75 500 350 250	25 60 45 22 54 45 32 23.5 55 45 35	18 1/4" 18 1/4" 13 3/8" 8 3/8" 18 1/4" 13 3/8" 10 15/16" 8 3/8" 18 1/4" 13 3/8" 10 15/16"	.719" .469" .469" .469" .344" .344" .344" .344" .219" .219" .219"	20,000 v. 15,000 v. 15,000 v. 15,000 v. 10,000 v. 10,000 v. 10,000 v. 10,000 v. 7,500 v. 7,500 v. 7,500 v.	17 27 19 9 35 21 15 11 49 33 25	TML-75E TML-150D TML-100D TML-50D TML-245B TML-150B TML-100B TML-75B TML-500A TML-350A TML-250A	18.35 18.50 16.60 11.50 20.15 18.35 17.55 12.80 24.60 19.65 18.35
<b>DOUBLE STATOR MODELS</b> D—End drive    DG—Center drive							
50-50 100-100 50-50 100-100	13-13 20-20 13-13 20-20	9 3/8" 13 3/8" 9 3/8" 13 3/8"	.177" .177" .177" .177"	6000 v. 6000 v. 6000 v. 6000 v.	18 34 18 34	AMT-50D AMT-100D AMT-50DG AMT-100DG	7.00 9.00 10.75 12.75
200-200 180-180 50-50 100-100 60-60 40-40	15-15 10-10 12.5-12.5 17-17 19.5-19.5 18-18	6 1/4" 12 3/8" 6 1/4" 9 3/8" 12 1/2" 12 1/2"	.077" .140" .155" .155" .249" .343"	3000 v. 4000 v. 6000 v. 6000 v. 9000 v. 12,000 v.	16-16 24-24 8-8 14-14 15-15 11-11	TMA-200D TMA-180D TMA-50DA TMA-100DA TMA-60DB TMA-40DC	9.40 12.90 6.75 8.75 8.95 8.50
30-30 60-60 100-100 60-60 200-200 100-100	12-12 26-26 27-27 20-20 30-30 17-17	18 1/4" 18 1/4" 18 1/4" 13 3/8" 18 1/4" 10 15/16"	.719" .469" .344" .344" .219" .219"	20,000 v. 15,000 v. 10,000 v. 10,000 v. 7,500 v. 7,500 v.	7-7 11-11 15-15 9-9 21-21 11-11	TML-30DE TML-60DD TML-100DB TML-60DB TML-200DA TML-100DA	18.55 20.15 12.35 19.15 24.60 20.15

**TYPE LMT**

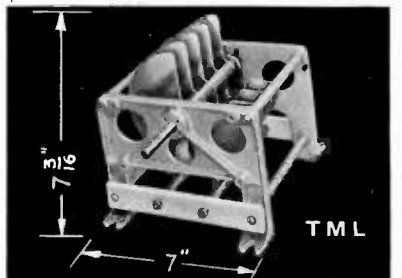
A heavy duty transmitting condenser that completely eliminates troublesome closed loops, vastly simplifying the problem of unwanted harmonics. The rotor shaft is completely insulated from the end plates. Long leakage path (higher safety factor). Plates and parts are extra heavy with highly polished rounded edges to prevent flash-over. Adjustable stator plate mounting and end bearings. Available in single-stator, double-stator, or double-stator right angle center drive models. Same capacities and prices as National TML Condenser. Condensers with right angle drive add \$3.90 to price shown.



LMT

**TYPE TML**

is a heavy duty job throughout. The frame structure (rugged aluminum castings with dural tie bars) and precision bearings assure permanent rotor alignment. All plates are extra thick with rounded and polished edges. This, plus specially treated steatite insulators and a husky self-cleaning rotor contact, provides high flashover, current and voltage ratings.



TML



PSR



M30



W100



NC-600U



STN

**MINIATURE CONDENSERS:**

Type PS variable condensers are compact silver plated units of soldered construction for use as semi-fixed bandsets or padders. Base is steatite — bearing is "snug" but smooth. PSR models are screwdriver adjust type; PSE have 1/4" diameter shafts both ends; PSL are similar to PSR but include rotor shaft lock.

Type M-30 Net \$2.22

The M-30 is a tiny (13/16" x 9/16" x 1/2") mica trimmer — 30 mmf. max. — steatite base.

Type W-75, 75 mmf. Net \$1.60

Type W-100, 100 mmf. Net \$1.76

Small air-dielectric padding condensers having a very low temperature coefficient. They are mounted in 1/4" diameter aluminum shields and have 1/4" hex heads for socket-wrench adjustment.

Capacity	Catalog Symbol			Net
25 mmf.	PSR-25	PSE-25	PSL-25	\$1.70
50	PSR-50	PSE-50	PSL-50	1.85
75	PSR-75	PSE-75	PSL-75	2.00
100	PSR-100	PSE-100	PSL-100	2.15

Capacity	Minimum Capacity	No. of Plates	Air Gap	Catalog Symbol	Net
15 mmf.	1.5	6	.017"	UM-15	\$1.02
35	2.5	12	.017"	UM-35	1.15
50	3	16	.017"	UM-50	1.25
75	3.5	22	.017"	UM-75	1.45
100	4.5	28	.017"	UM-100	1.60
10	1	8	.042"	UM-10D	1.40
25	3.4	14	.042"	UMA-25	1.75

**BALANCED STATOR MODEL**

25	2	4-4-4	.017"	UMB-25	\$2.40
50	5	8-8-8	.017"	UMB-50	2.70

**NEUTRALIZING CONDENSERS:**

NC-600U Net \$3.38

With standoff insulator

NC-600 Net \$3.32

Without insulator

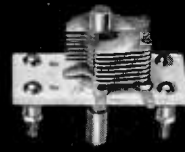
For neutralizing low power beam tubes requiring from .5 to 4 mmf., and 1500 max. total volts such as the 6L6. The NC-600U is supplied with a GS-10 standoff insulator screwed on one end, which may be removed for pigtail mounting.

STN Net \$2.07

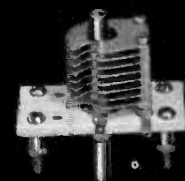
The Type STN has a maximum capacity of 18 mmf. (3000 V), making it suitable for such tubes as the 809. It is supplied with two standoff insulators.

The UM condensers are low-loss, aluminum plate staked construction miniature variables designed for UHF converters, VFOs and the like — minimum capacity is exceptionally low. The UMs can be mounted in PB-10 or RO shield cans and have 1/4" dia. shafts front and rear for ganging (see pages 21, 23 and 24 for shield cans and couplings). Plates: straight-line-cap., 180° rotation. Dimensions: Base 1" x 2 1/4", mtg. holes on 5/8" x 1-23/32" centers, 2-5/16" max. length.

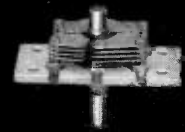
The UMB-25 and UMB-50 are differential (balanced stator) models. UM-10D and UMA-25 are double-spaced and the latter is bolted construction for experimental capacity reduction. Hardware for panel or chassis mounting is supplied with all UM condensers.



UM



UMA-25



UMB-25



NC-800A



NC-75  
 NC-150  
 NC-500

NC-800A Net \$3.00

The NC-800A disk-type neutralizing condenser is suitable for the T40, 35TG, 808 and similar tubes. It is equipped with a clamp for locking. The chart below gives capacity and air gap for different settings.

NC-75 Net \$3.60

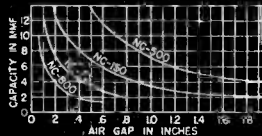
For 812, 75TH and similar tubes.

NC-150 Net \$5.25

For RK36, 100TH, HK354, 250TH, etc.

NC-500 Net \$8.75

For WE-251, 304TH, 833A and the like. These large disk-type neutralizing condensers are for the higher powered tubes. Disks are aluminum, insulation steatite.





**PRECISION CONDENSERS**

Originally developed for the famous HRO and NC-100 receivers, National PW and NPW condensers and drive units are well known to professional and amateur radio men throughout the world. Sturdily constructed of the finest materials and carefully adjusted by skilled hands, they have become "standard specifications" for applications requiring smooth, precise control and high re-set accuracy.

The Micrometer Dial reads direct to one part in 500. Division lines are approximately 1/4" apart. The drive, at the mid-point of the rotor, is through an enclosed preloaded worm gear with 20 to 1 ratio. Each rotor is individually insulated from the frame, and each has its own individual rotor contact. Stator insulation is steatite. Plate shape is straight-line frequency when the frequency range is 2:1.

PW Condensers are available in 1, 2, 3 or 4 sections, in either 160 or 225 mmf per section. Larger capacities cannot be supplied.

- PW-1R Single section right Net \$13.50
- PW-1L Single section left Net \$13.50
- PW-2R Double section right Net \$18.00
- PW-2L Double section left Net \$18.00
- PW-2S Single section each side Net \$18.00
- PW-3R Double section right; single left Net \$24.00
- PW-3L Double section left; single right Net \$24.00
- PW-4 Double section each side Net \$27.00
- NPW-3 Three sections, each 225 mmf. Net \$24.00

Similar to PW models, except that rotor shaft is perpendicular to panel.

**NPW-O** Net \$9.00  
 Uses parts similar to the NPW condenser. Drive shaft perpendicular to panel. One TX-9 coupling supplied.

**PW-O** Net \$9.90  
 Uses parts similar to the PW condenser. Drive shaft parallel to panel. Two TX-9 couplings supplied.

**PW-D** Net \$5.25  
 The Micrometer Dial used on the condensers and drives above is available

separately. It revolves ten times in covering the complete range and as there is no gear reduction unit furnished, the driven shaft will revolve ten times, also. The PW-D dial fits a shaft 5/16" in diameter.

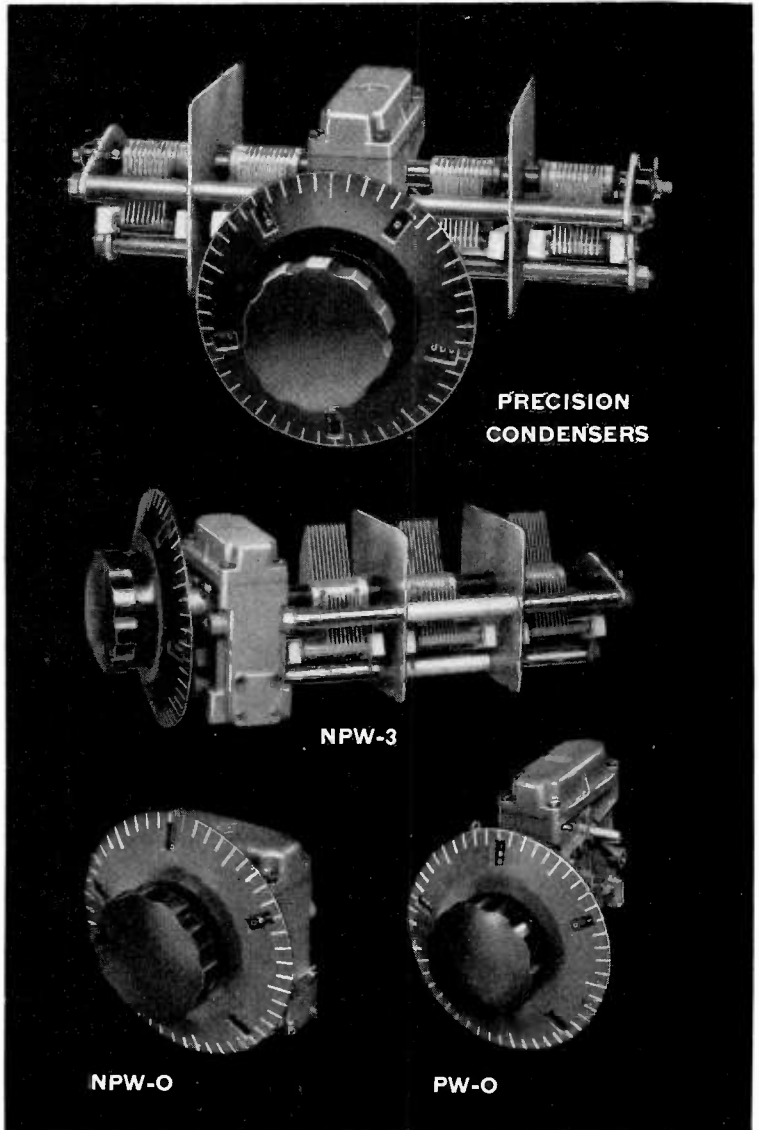
**MULTI-BAND TANK ASSEMBLY**

The unique MB-150 Multi-Band Tank tunes all amateur bands from 80 through 10 meters with 180° rotation of the shaft; the coils are never changed. The unit is built around a circuit which tunes to two harmonically unrelated frequencies at the same time. Thus, it becomes possible to cover a wide frequency range and yet maintain a reasonably constant L/C ratio. 3" wide x 8 1/4" high (including the GS-10 standoffs) x 9" long overall including the 1/4" dia. shaft and output terminals.

Features of the MB-150:

- (1) For use as the all-band plate tank in push-pull or single-ended stages running up to 150-watts input (1500 volts peak). It is ideal for a pair of 807s or 809s or a single 829B.
  - (2) Separate link coupling coil has special clips which adjust to match impedances up to 600 ohms directly. Output couples into a higher powered amplifier, an antenna or an antenna tuning network.
  - (3) Fast band changing is accomplished without handling coils, thus removing one of the danger points in the amateur station.
- MB-150 Multi-Band Tank Assembly

Net \$18.75

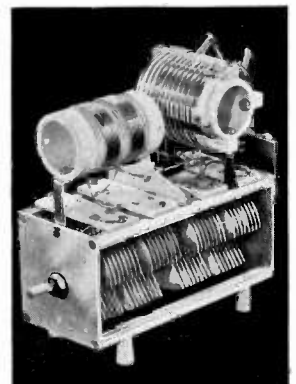


**PRECISION CONDENSERS**

**NPW-3**

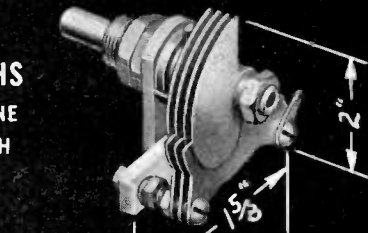
**NPW-O**

**PW-O**



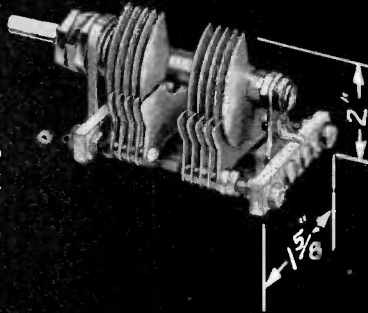
**TYPE STHS**  
STRAIGHT-LINE  
WAVELENGTH

180° Rotation



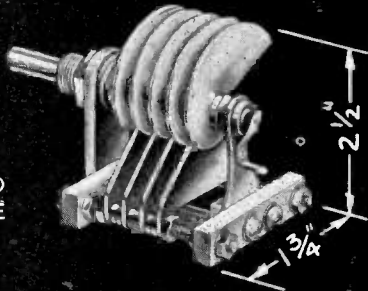
**TYPE ST**  
(Type STD Illustrated)  
STRAIGHT-LINE  
WAVELENGTH

180° Rotation



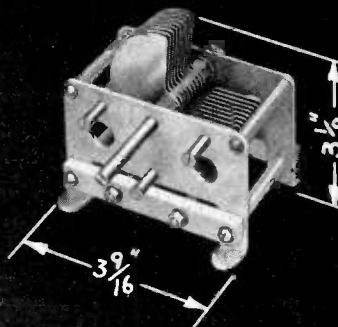
**TYPE SE**  
(Type SEU Illustrated)  
STRAIGHT-LINE  
FREQUENCY

270° Rotation



**TYPE EMC**  
STRAIGHT-LINE  
WAVELENGTH

180° Rotation



The **ST Type** condenser has Straight-Line Wavelength plates. All double-bearing models have the front bearing insulated to prevent noise. On special order a shaft extension at each end is available, for ganging. On double-bearing single shaft models, the rotor contact is through a constant impedance pigtail. Steatite insulation.

Capacity	Minimum Capacity	No. of Plates	Air Gap	Length	Catalog Symbol	Net
<b>SINGLE BEARING MODELS</b>						
15 Mmf.	3 Mmf.	3	.018"	1 3/8"	STHS-15	\$ .65
25	3.25	4	.018"	1 3/8"	STHS-25	.90
50	3.5	7	.018"	1 3/8"	STHS-50	2.10

**NOTE** → Type SS Condensers, having straight-line capacity plates but otherwise similar to the Type ST, are available. Capacities and Prices same as Type ST.

**SPLIT STATOR DOUBLE BEARING MODELS**

50-50	5-5	11-11	.026"	2 3/4"	STD-50	\$3.60
100-100	5.5-5.5	14-14	.018"	2 3/4"	STHD-100	3.90

**DOUBLE BEARING MODELS**

35 Mmf.	6 Mmf.	8	.026"	2 1/4"	ST-35	\$1.85
50	7	11	.026"	2 1/4"	ST-50	1.90
75	8	15	.026"	2 1/4"	ST-75	2.00
100	9	20	.026"	2 1/4"	ST-100	2.10
140	10	27	.026"	2 1/4"	ST-140	2.30
150	10.5	29	.026"	2 1/4"	ST-150	2.30
200	12.0	27	.018"	2 1/4"	STH-200	2.50
250	13.5	32	.018"	2 1/4"	STH-250	2.70
300	15.0	39	.018"	2 1/4"	STH-300	2.90
335	17.0	43	.018"	2 1/4"	STH-335	3.10

**TYPE SE** — All models have two rotor bearings, the front bearing being insulated to prevent noise. A shaft extension at each end, for ganging, is available on special order. On models with single shaft extension, the rotor contact is through a constant impedance pigtail. The SEU models (illustrated) are suitable for high voltages as their plates are thick polished aluminum with rounded edges. Other SE condensers do not have polished edges on the plates. Steatite insulation.

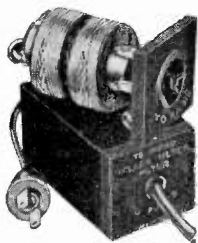
15 Mmf.	7 Mmf.	6	.055"	2 1/4"	SEU-15	\$2.80
20	7.5	7	.055"	2 1/4"	SEU-20	2.95
25	8	9	.055"	2 1/4"	SEU-25	3.10
50	9	11	.026"	2 1/4"	SE-50	2.30
75	10	15	.026"	2 1/4"	SE-75	2.40
100	11.5	20	.026"	2 1/4"	SE-100	2.60
150	13	29	.026"	2 1/4"	SE-150	2.75
200	12	27	.018"	2 1/4"	SEH-200	2.80
250	14	32	.018"	2 1/4"	SEH-250	3.00
300	16	39	.018"	2 1/4"	SEH-300	3.25
335	17	43	.018"	2 1/4"	SEH-335	3.50

**TYPE EMC** — A general purpose condenser available in large sizes and having Straight-Line wavelength plates. They are similar in construction to the TMC Transmitting condenser, and have high efficiency and rugged frames. Insulation is Steatite, and Peak Voltage Rating is 1000 volts. Same sizes available with straight line capacity plates, type DXC condenser.

Capacity	Minimum Capacity	No. of Plates	Length	Catalog Symbol	Net
150 Mmf.	9 Mmf.	9	2 15/16"	EMC-150	\$4.10
250	11	15	2 15/16"	EMC-250	4.75
350	12	20	2 15/16"	EMC-350	6.00
500	16	29	4 3/8"	EMC-500	6.75
1000	22	56	6 3/4"	EMC-1000	10.25

# Miller

## ALL WAVE INTERFERENCE FILTER

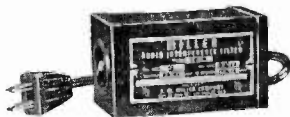


These filters are designed to eliminate radio interference caused by small household appliances such as sewing machines, vacuum cleaners, food mixers and other similar devices requiring less than 150 watts. Inductive-capacitive circuit assures maximum attenuation of interference.

Dimensions: 2 1/2" square x 4" long.

Cat. No.	Volts	Watts	List Price
7818	115	150	\$7.00

## APPLIANCE FILTER



Similar to the Cat. No. 7818, except wound with larger wire to be used with all types of plug-in devices with power requirements up to 550 watts.

Dimensions: 2 1/4" square x 4" long.

Cat. No.	Volts	Watts	List Price
7815	115	550	\$7.00

## GENERAL PURPOSE FILTER

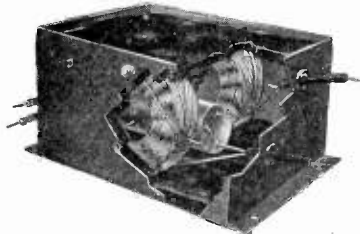


This filter is recommended for use with marine and D.C. appliances and radios. It is also for use with extremely noisy A.C. appliances. A good, permanent connection to ground should be used with this filter.

Dimensions: 2 1/2" square x 5" long.

Cat. No.	Volts	Watts	List Price
7813	115	200	\$7.50

## INDUSTRIAL FILTERS



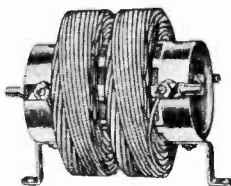
Miller industrial filters are designed for use with all types of radio interference producing devices. Duo-lateral wound chokes and non-inductive condensers result in a high degree of noise attenuation. Completely sealed in metal cases having provision for standard junction boxes at each end of the case.

Dimensions: 9-3/42" x 6-1/2" x 5" high.

Weight: 16 lbs. Approx.

Cat. No.	Volts	Amps.	List Price
7841	220	5	\$30.00
7842	220	10	32.50
7843	220	20	35.00
7844	220	30	37.50
7845	220	40	40.00

## LINE FILTER CHOKES



All Miller line filter chokes are duo-lateral wound on ceramic forms (except #7825 & D-7825 are on bakelite). They are for installation in noise producing equipment such as

flasher signs, farm lighting plants, motor generators, etc. Also used with radio transmitters to prevent r.f. energy feed-back into the power circuits. Typical circuit diagrams are supplied with each choke. Always select chokes having a current rating at least as high as the maximum current load of the circuit to be filtered.

## SINGLE LINE FILTER CHOKES

For use in filtering individual and branch circuits.

Dimensions: #7825 1-7/8" x 1-3/4"

Others: 2-1/2" x 4"

Cat. No.	Amps.	Ohms.	MH	List Price
7825	2	.75	.60	\$1.50
7826	5	.28	.57	4.00
7827	10	.15	.37	4.50
7828	20	.08	.20	5.00
7829	30	.05	.13	5.50

## DUAL LINE FILTER CHOKES

For use in filtering both sides of single phase circuits.

Dimensions: #D-7825 3-1/4" x 2-1/8"

Others: 4-1/2" x 4"

Cat. No.	Amps.	Ohms.	MH	List Price
D-7825	2	.75	.60	\$3.00
D-7826	5	.28	.57	6.00
D-7827	10	.15	.37	7.00
D-7828	20	.08	.20	8.00
D-7829	30	.05	.13	9.00

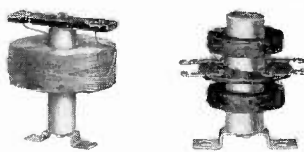
Specifications are for each winding.

## TOWER LIGHTING CHOKES

Similar in construction and size to the D-7826, except of 2-pi construction and recommended for use in the circuits of obstruction and warning lights of antenna towers.

Cat. No.	Amps.	Ohms.	MH	List Price
7870	5	.56	1.20	\$6.00
7871	10	.30	.75	7.00
7872	20	.17	.45	8.00

## RECTIFIER HASH FILTER CHOKES



Duo-lateral wound chokes for use in series with the plate leads of mercury vapor rectifiers to prevent r.f. hash feed-back. The single chokes are insulated for use up to 10,000 volts to ground. The dual choke is insulated for 2500 volts plate to plate. Wound on Alsimag forms with two hole mounting brackets.

Dimensions: 2" dia. by 2-3/8" high.

Cat. No.	MH	Ohms	MA	List Price
7867	4.50	4.5	500	\$2.00
7868	2.75	2.3	1000	2.50

Dual Choke Dimensions: 1-1/4" Dia. x 1-3/4" high

7865	3.25 (per Coil)	15	250	1.50
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## HIGH TENSION FILTER CHOKES



These chokes are used to prevent radio interference caused by high tension (secondary) circuit neon sign animators and lead radiation of border tubing. The chokes are sectional wound and enclosed in weatherproof bakelite cases. They are insulated for 15,000 volts and continuous current operation up to 100 milliamperes. Designed for ease of installation and trouble-free service. Circuit diagram supplied with each choke.

Dimensions: 1-3/8" dia. x 3-1/4" high.

Cat. No.	Volts	Amps.	List Price
7875	15,000	.1	\$2.50

## ELECTRIC SHAVER FILTER



Carefully designed and constructed, this filter is the inductive-capacitive type and requires no ground connection.

Shock-proof moulded rubber construction. For use with all electric shavers. Fully guaranteed.

Dimensions: 1-1/8" dia. x 3" long.

Cat. No.	Volts	Watts	Finish	List Price
7817	115	50	Black	\$2.50
7817-1	115	50	Ivory	2.50

## RADIO INTERFERENCE FILTER CONDENSERS



Highest quality non-inductive wound paper dielectric condensers manufactured for use with Miller Filters and Filter chokes. These condensers are rated at 220 volts AC or DC and are designed to withstand surges up to 1000 volts. Uncased type for installation within the equipment. Wax impregnated and sealed.

Maximum operating voltage—220 AC.

Cat. No.	Capacity	Dimensions	List Price
7803	2.x2. Mfd.	1-7/8" x 1-1/4" x 4-1/2"	\$4.50
7804	2. mfd.	1-7/8" x 3/4" x 3-1/2"	2.50

## FLUORESCENT LIGHT FILTER CHOKES



Radio interference generated by fluorescent lights and tubing may be prevented from getting into the supply line by the use of these filter chokes. Chokes are installed as close to the ballast as practical. Complete instructions are supplied with each choke.

Dimensions: 1-1/4" dia. x 1-1/2" long.

Cat. No.	Volts	Watts	List Price
7876	220	20	\$1.50
7877	220	40	1.50
7878	220	80	1.50
7879	220	160	1.50

## FILAMENT CHOKES



Enclosed solenoid wound chokes for use in the filament and vibrator circuits of battery operated receivers, transmitters, etc.

Dimensions: 3/4" Dia. x 1-7/8" long, plus 3" leads.

Cat. No.	uH	Ohms	Amps.	List Price
5221	10	.02	8	\$ .60

For a Complete Listing of MILLER PRODUCTS ask for a copy of our Latest General Catalog.

[A]

# Miller

## UNSHIELDED CHOKES



These single section R.F. Chokes are ideally suited for general purpose applications in receiver and filter circuit. Solder lug terminals and single hole mounting.

### AIR CORE TYPE

Dimensions: 1-1/8" dia. x 3/8" high.

Cat. No.	MH	Ohms	MA	List Price
610	.25	8	125	\$.40
620	.75	17	125	.40
630	1.50	21	125	.40
640	2.50	28	125	.50
650	5.0	41	125	.50
660	7.5	53	125	.50
670	10.0	64	125	.60
680	12.5	74	125	.60
690	15.0	83	125	.60
691	20.0	97	125	.75
692	30.0	120	100	.75
693	60.0	175	100	1.00
694	80.0	230	100	1.25

### Center Tapped Chokes

Cat. No.	MH	Ohms	MA	List Price
670-T	10.0	64	125	.70
691-T	20.0	97	100	.85
693-T	60.0	175	100	1.10

## IRON CORE TYPE

These chokes are similar in construction to the No. 600 series except that they are wound on powdered iron cores.

Cat. No.	MH	Ohms	MA	List Price
951	.5	6.8	125	\$.90
952	1.0	10.9	125	1.00
953	2.5	19.5	125	1.05
954	5.0	23.0	125	1.20
955	7.5	37.0	125	1.25
956	10.0	45.0	125	1.30
957	25.0	78.0	100	1.60
958	50.0	130.0	100	1.75
959	75.0	172.0	100	2.00
960	100.0	210.0	100	2.25
961	150.0	268.0	100	2.50



## SHIELDED CHOKES

Single section wound R.F. R.F. Chokes assembled in round aluminum shield with two spade bolts for mounting. Solder lug terminals.

Dimensions: 1-1/4" dia. x 1" high (No. 758 is 1-5/8" dia.)

Cat. No.	MH	Ohms	MA	List Price
751	.5	10	125	\$.75
752	1.0	17	125	.75
753	2.5	30	125	.85
754	5.0	49	125	.85
755	7.5	61	125	.85
756	10.0	75	125	.95
757	25.0	125	125	1.10
758	50.0	186	100	1.35

## IRON CORE TYPE

Similar to the No. 700 series except wound on powdered iron cores for lower circuit loss.

Dimensions: 1-1/4" dia. x 1" high.

Cat. No.	MH	Ohms	MA	List Price
851	.5	8.6	125	\$1.25
852	1.0	11.5	125	1.35
853	2.5	22.0	125	1.40
854	5.0	31.0	125	1.55
855	7.5	42.0	125	1.60
856	10.0	47.0	125	1.65
857	25.0	100.0	125	1.95

Dimensions: 1-5/8" dia. x 1" high.

858	50.0	160.0	100	2.10
859	75.0	222.0	100	2.35
860	100.0	348.0	100	2.60
861	150.0	520.0	100	2.85

## LOW POWER AND RECEIVER CHOKES



These chokes are wound on 1/4" dia. forms and feature the exclusive Miller 'Sta-on' terminal clips. Low distributed capacity and accurate inductance values.

Dimensions: (form) 1/4" dia. x 1-1/2" long.

Cat. No.	MH	Ohms	MA	List Price
4531	.5	11	200	\$.75
4532	1.5	21	200	.75
4537	2.5	26	200	.75
4538	5.0	40	125	1.00
4539	7.5	79	125	1.25
4540	10.0	95	125	1.50
4541	25.0	160	125	1.75

## UHF CHOKES

Dimensions: 1/4" Dia. x 1-1/2" long.

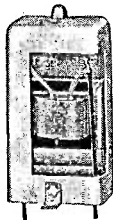
Cat. No.	uH	Ohms	MA	List Price
4528	2.5	.07	200	\$.60
4529	4.0	.25	200	.60

## SINGLE STUD MOUNTING CHOKE

Dimensions: 5/8" O.D. x 1-1/4" high (plus #6-32 stud)

Cat. No.	MH	Ohms	MA	List Price
4530	2.5	23	200	\$.85

## PHONO SCRATCH FILTER



The Miller Phono Scratch Filter is designed to reduce needle and surface noise and may be used with any type of high impedance phonograph pick-up. The resonant frequency of the parallel tuned circuit is adjustable between 2000 and 3000 cycles. The attenuation is approximately 22 db. Assembled in an aluminum shield with two mounting brackets.

Dimensions: 1-3/8" x 1-7/8" x 3" high.

Cat. No.	Item	List Price
EL-59	Scratch Filter	\$7.50

## TV POWER TRANSFORMER (R.F.)



These R.F. power supply transformers for use with television receivers and cathode ray oscilloscope make it possible to construct an inexpensive source of high voltage D.C. Two types are available, the #4525 for voltages to 4000 DC and the #4526 for voltages to 10,000 DC (or 30,000 DC in a voltage rectifier tripler circuit). Type 1B3-GT tubes are used as rectifiers and the R.F. oscillator circuit uses one or more type 6V6 or 6Y6 tubes connected in parallel. The high frequency AC source permits use of simple and inexpensive resistive capacitive filters with low ripple content in the output. Typical circuit diagrams are supplied with each coil.

Cat. No.	Item	List Price
4525	H.V. R.F. Trans. (to 4 KV)	\$7.50
Dimensions—1 1/4" Dia. x 3 3/4" high		(Illustrated)
4526	H.V. R.F. Trans. (to 30 KV)	\$12.50
Dimensions—2 1/4" Dia. x 6" high		(not illustrated)

## HEAVY DUTY TRANSMITTER CHOKES

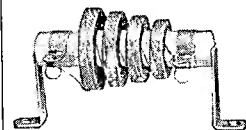


These heavy duty Navy Type R.F. chokes are sectional wound on Alsimag forms and are provided with removable mounting brackets. Ends of form are tapped for #6-32 machine screw. For general use in amateur and commercial transmitters.

Dimensions: (form) 1/2" dia. x 3-1/2" long.

Cat. No.	MH	Ohms	MA	Meters	List Pr.
4534	1.0	2.5	1000	20	\$2.00
4535	1.5	3.6	1000	40	2.25
4533	2.5	4.5	750	80	2.50
4536	4.0	5.5	750	160	2.75

## MEDIUM DUTY TRANSMITTER CHOKES



For use in medium power transmitters, these chokes are similar in construction to our Heavy Duty types.

Low distributed capacity and accurate inductance values are features.

Dimensions: (form) 1/2" dia. x 2-1/2" long.

Cat. No.	MH	Ohms	MA	List Price
4550	2.0	6.5	400	\$1.50
4551	4.0	10.0	400	1.75

## 10 K. C. FILTERS



This filter is used to eliminate the 10 KC heterodyne 'whistle' present in high fidelity broadcast receivers. It is used in the detector load circuit of a diode or infinite impedance detector. The 10,000 cycle attenuation is approximately 30 db. The filter consists of a parallel resonant circuit with an iron

core coil and a variable condenser providing a tuning range from 7500 to 12,000 cycles.

Dimensions: 1-3/8" sq. x 2-1/4" high.

Cat. No. Use List Price

EL-58	10 KC Filter	\$6.00
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This band elimination circuit 10,000 cycle filter has sharper cut-off characteristics than our type EL-58. It should be connected in the plate circuit of a triode audio stage. The cut-off frequencies are 9000 and 11,000 cycles. The load resistance R is 10,000 ohms. The attenuation is approximately 30 db. Recommended for general use with any high fidelity broadcast band receiver.

Dimensions: 1-3/8" x 1-7/8" x 2-7/8" high.

Cat. No. Use List Price

EL-60	10 KC Filter	\$12.50
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## PHONO-OSCILLATOR COIL



The Miller Phono-Oscillator coils are permeability tuned and are assembled in an aluminum shield, together with the grid coupling condenser and resistor. The tuning range of the coil is from 540 to 700 KC, by core adjustment. A typical circuit diagram is supplied with each coil.

Dimensions: 1-7/16" square x 2-1/2" high.

Cat. No. Use Freq. Range List Price

522	Phono-Oscillator	540-700 KC	\$3.00
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# Miller

## REPLACEMENT I. F. TRANSFORMERS

(Double Tuned)



These transformers are an essential part of the stock of every serviceman and dealer. In many cases they will give better performance than the original transformer. All have been pretuned and should require only slight adjustment after installation. Leads are color coded, and the transformers are assembled in aluminum shields. These transformers may be used as replacements in most makes of

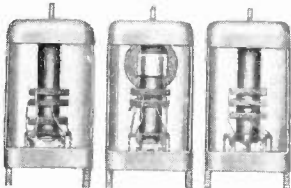
receivers using transformers of the same physical size. Be sure to order a transformer of the correct frequency.

Dimensions: 1-3/8" square x 2-5/8" high.

Cat. No.	Freq.	KC Range	Use	List Price
512-K1	175	160-190	Input	\$2.25
512-K2	175	160-190	Interstage	2.25
512-K3	175	160-190	Full-Wave	2.25
512-K4	175	160-190	Half-Wave	2.25
512-H1	262	240-280	Input	2.00
512-H2	262	240-280	Interstage	2.00
512-H3	262	240-280	Full Wave	2.00
512-H4	262	240-280	Half Wave	2.00
512-C1	455	425-500	Input	2.00
512-C2	455	425-500	Interstage	2.00
512-C3	455	425-500	Full Wave	2.00
512-C4	455	425-500	Half Wave	2.00

## UNIVERSAL REPLACEMENT COILS

(Permeability Tuned)



This series of variable inductance iron core coils are well suited for general replacement use and new designs. The inductance may be adjusted to cover the standard broadcast band with tuning condensers having a maximum capacity of between 250 and 450 mmfd. The oscillator coils may be used with any I.F. amplifier operating in the 100 to 550 KC range. Complete instructions are supplied.

UNSHIELDED

Dimensions: 7/8" dia. x 2" high. "L" mtg. Bracket.

Cat. No.	Use	Freq. Range	List Price
72-A	Antenna Stage	500-1800 KC	\$2.00
72-RF	R.F. Stage	500-1800 KC	2.00
72-Osc.	Oscillator Coil	100-550-KC I.F.	2.00

SHIELDED

Dimensions: 1-3/8" square x 2-1/2" high

Cat. No.	Use	Freq. Range	List Price
73-A	Antenna Stage	500-1800	\$2.50
73-RF	R.F. Stage	500-1800	2.50
73-Osc.	Oscillator Coil	100-550 KC I. F.	2.50

## ANTENNA COIL PRIMARIES



High impedance duo-lateral wound replacement primary windings. Dimensions given are for outside diameter of coil secondary.

Cat. No.	Diameter	List Price
352	1/2"	\$.35
353	3/4"	.35
354	3/8"	.35
355	7/8"	.35
356	1"	.35
357	1-1/4"	.35

## DE-LUXE BROADCAST COILS



These coils are used in the finest quality receivers for lasting performance and stability. All coils are wound on XXX grade bakelite tubing and the secondaries are Litz wire wound (except oscillator coils) for maximum "Q". The antenna and R.F. coils are inductive-capacitive coupled for uniform gain. For use with standard 365 mmfd. tuning condensers.

SHIELDED COILS

Dimensions: 1-7/8" dia. x 3" high.

Cat. No.	Use	Freq. Range	List Pr.
242-A	Antenna	540-1750	\$1.50
242-RF	Interstage	540-1750	1.50
242-BP	Band-pass	540-1750	1.25
277-C	2-coil Oscillator	540-1750*	1.25
279-C	Tapped Oscillator	540-1750*	1.10

NOTE: \*Oscillator coils are for use with 455KC intermediate frequency and require a 400 mmfd. series pad condenser.

UNSHIELDED COILS

Dimensions: 7/8" dia. (form) x 2-3/4" high.

Cat. No.	Use	Freq. Range	List Pr.
241-A	Antenna	540-1750	\$1.00
241-RF	Interstage	540-1750	1.00
241-BP	Band-pass	540-1750	.85
276-C	2-coil Oscillator	540-1750*	1.00
278-C	Tapped Oscillator	540-1750*	.85

NOTE: \*Oscillator coils are for use with 455 KC intermediate frequency and require a 400 mmfd. series pad condenser.

## HIGH GAIN T.R.F. COILS

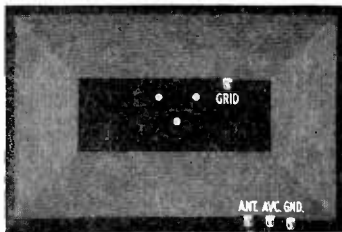


These coils are excellent for use in 2-tuned circuit TRF receivers and beginners circuits. They feature high impedance primaries and Litz wire wound secondaries wound on XXX grade bakelite tubing. Single "L" mounting brackets. For use with standard 365 mmfd. tuning condensers.

Dimensions: 1" dia. (form) x 2" high.

Cat. No.	Use	Freq. Range	List Pr.
42-A	Antenna	540-1600 KC	\$.90
42-RF	Interstage	540-1600 KC	.90

## LOOP ANTENNA



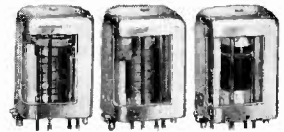
Using the patented "Air Loop" construction, the No. 703-A Loop Antenna provides high "Q" and mechanical rigidity. The loop as supplied has a secondary inductance of 253 microhenries, which may be reduced as needed. Instructions are supplied. May be used in older sets to replace the antenna coil for local reception without an antenna.

Dimensions: 8-1/8" 5-3/8" x 1/8" thick.

\*Mfg. under Franklin Airloop Co. Pat. #2,401,472

Cat. No.	Use	Frequency	List Price
703-A	Loop Antenna	540-1700 KC	\$1.75

## STANDARD BROADCAST COILS



High gain general purpose coils featuring high impedance coupled antenna and R.F. units with progressive wound Litz wire secondaries (except oscillator coils). For use with standard 365 mmfd. tuning condenser. All windings are thoroughly impregnated with tropicalized R.F. lacquer.

SHIELDED COILS

Dimensions: 1-3/8" square x 2-1/2" high.

Cat. No.	Use	Freq. Range	List Pr.
44-A	Antenna	540-1700	\$1.15
44-RF	Interstage	540-1700	1.15
44-BP	Band-Pass	540-1700	1.15
44-C	2-coil Oscillator	540-1700*	1.15
41-C	Tapped Oscillator	540-1700*	1.15

NOTE: \*Oscillator coils are for use with 455 KC intermediate frequency amplifier and a 400 mmfd. series pad condenser.

UNSHIELDED COILS

Dimensions: 5/8" dia. (form) x 2-1/2" high.

Cat. No.	Use	Freq. Range	List Pr.
43-A	Antenna	540-1700	\$.85
43-RF	Interstage	540-1700	.85
43-BP	Band-Pass	540-1700	.85
43-C	2-coil Oscillator	540-1700*	.85
45-C	Tapped Oscillator	540-1700*	.85

NOTE: \*Oscillator coils are for use with 455 KC intermediate frequency amplifier and a 400 mmfd. series pad condenser.

## REPLACEMENT OSCILLATOR COILS



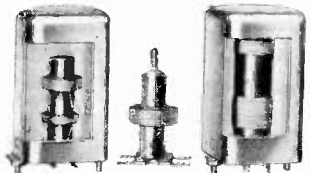
These solenoid wound general purpose coils may be used as general replacements in many makes of standard broadcast band receivers. For use with 365 mmfd. variable condensers to cover the band from 540 to 1700 KC. Wound on XXX grade bakelite tubing with enamelled copper wire.

UNSHIELDED

Dimensions: 3/4" dia. x 1-3/4" long. "Z" mtg. Bracket.

Cat. No.	I.F. Freq.	Series Pad	List Price
480-K	175	.001 mfd.	\$.70
480-H	262	.0006 mfd.	.70
480-C	455	.0004 mfd.	.70

## ALL WAVE TEST OSCILLATOR COILS



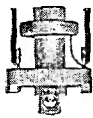
A set of high quality coils for use in building an electron coupled test oscillator. A 2-gang 365 mmfd. condenser with sections connected in parallel is required. The fundamental frequency range, in five bands, is from 50 KC to 20 MC. The low frequency coil is unshielded, the other coils are in two shields measuring 1-3/4 square x 3" high.

Cat. No.	Use	Frequency	List Price
T-550	Test Oscillator	50-20,000 KC	\$7.50

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# Miller

## LOOP ANTENNA WAVE TRAPS

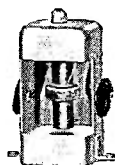


These traps are designed especially for use with receivers having built-in loop antenna. Similar in construction to our Series #811, except with a separate low inductance winding which is to be connected in series with the loop antenna of the receiver. Slight readjustment of the loop tuning circuit after the trap has been installed is desirable. Trap circuit is parallel connected.

Dimensions: 1-3/8" square x 1-3/4" high.

Cat. No.	Band	KC Range	List Pr.
815-X1	I.F. & Commercial	250-500	\$1.50
815-X2	I.F. & Commercial	125-250	1.50
815-BC1	Broadcast	900-1800	1.50
815-BC2	Broadcast	500-900	1.50
815-A	Amateur	160 Meters	1.50
815-B	Amateur	80 Meters	1.50

## SHIELDED WAVE TRAPS

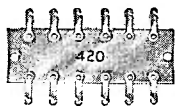


Parallel resonant wave traps assembled in aluminum shields are well suited for use in older types of radio receivers and in locations where the signal strength of the interfering station is high in relation to the signal to be received. Screw-driver frequency adjustment from top of shield. Two mounting brackets are attached to the shield.

Dimensions: 1-3/8" square x 2-1/2" high.

Cat. No.	Band	KC Range	List Pr.
812-X1	I.F. & Commercial	425-525	\$1.75
812-X2	I.F. & Commercial	225-325	1.75
812-X3	I.F. & Commercial	150-225	1.75
812-BC1	Broadcast	1200-1600	1.75
812-BC2	Broadcast	800-1200	1.75
812-BC3	Broadcast	500-800	1.75
812-A	Amateur	160 Meters	1.75
812-B	Amateur	80 Meters	1.75
812-C	Amateur	40 Meters	1.75
812-D	Amateur	20 Meters	1.75
812-E	Amateur	10 Meters	1.75

## BAKELITE TERMINAL PLATES



These terminal plates, provided with securely riveted solder type terminal lugs, are particularly adaptable to the assembly of groups of resistors and by-pass condensers. Lugs are on 1/16" thick bakelite sheet stock and the terminal spacing is 7/16".

Cat. No.	Dimensions	Lugs per Side	List Pr.
420	1" x 3"	6	\$ .30
430	1-3/4" x 2-1/2"	5	.35
440	1" x 5-3/4"	14	.50
450	1-3/4" x 3-3/4"	8	.50
460	1-3/4" x 5-1/4"	11	.70
470	1-3/4" x 8-3/8"	19	1.00

## BAND SELECTOR SWITCHES



Miller band switches will make positive noise-free contact through an indefinite period of operation. These switches are positive self-cleaning type with silver plated contacts. Switches have an adjustable stop to be set for your requirements. Single hole mounting through a 3/8" diameter hole. Supplied with nut and lockwasher. Switches are 1-7/8" diameter.

Cat. No.	Circuits	Positions	Length	List Price
205	2	5	3/4"	\$2.50
402	4	2	3/4"	2.50
405	4	2 to 5	2-1/4"	3.25
605	6	2 to 5	4-1/2"	4.25

## DUAL WAVE TRAPS

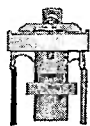


Finest quality iron core dual wave traps having both a series and a parallel tuned circuit. Each circuit is tuned by a knob accessible at the top of the shields. Circuits may be tuned to the same frequency for maximum attenuation, or may be tuned to different stations within the range of the trap.

Dimensions: 1-3/8" x 2-3/4" x 2-1/4" high.

Cat. No.	Band	KC Range	List Pr.
813-X1	I.F. & Commercial	250-500	\$3.75
813-X2	I.F. & Commercial	125-250	3.75
813-BC1	Broadcast	900-1600	3.75
813-BC2	Broadcast	500-900	3.75
813-A	Amateur	1500-3000	3.75

## UNSHIELDED WAVE TRAPS

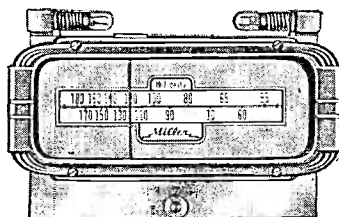


These unshielded wave traps may be installed within the cabinet or on the chassis. They are parallel resonant and provided with screw driver adjustment. Several traps may be connected in series with the antenna to provide simultaneous rejections of more than one interfering station.

Dimensions: 1-3/8" square x 1-3/4" high.

Cat. No.	Band	KC Range	List Pr.
811-X1	I.F. & Commercial	250-500	\$1.25
811-X2	I.F. & Commercial	125-250	1.25
811-BC1	Broadcast	900-1800	1.25
811-BC2	Broadcast	500-1000	1.25
811-A	Amateur	160 Meters	1.25
811-B	Amateur	80 Meters	1.25
811-C	Amateur	40 Meters	1.25
811-D	Amateur	20 Meters	1.25
811-E	Amateur	10 Meters	1.25

## SLIDE RULE DIALS



Miller Series No. 152 Slide Rule dials are designed for top-of-chassis mounting. The dimension from top of chassis to center of dial shaft bushing is 1-13/16". Dials are supplied with hubs for 3/8" diameter shafts. Two screw type dial light sockets are packed with each dial. The attractive escutcheon plate is finished in antique bronze with a protective lacquer coating. The dial scales are calibrated for use with condensers having counter-clockwise rotation. The escutcheon requires a panel cut-out measuring 1-7/8" high by 5-1/4" wide.

Dimensions:  
6-5/8" wide by 4-1/2" high (plus 1/2" for dial lights), 1/4" diameter shaft extends 1-1/4" beyond front of dial. The dial tuning ratio is approximately 5-1/2 to 1 and the effective scale length is 4-3/8".

Cat. No.	Calibration	List Price
152	.540-1800 KC	\$6.00
152-A	.54-1.7 MC/0-100	6.00
152-B	.54-1.7/1.7-5.5 MC	6.00
152-C	.54-1.7/5.5-18. MC	6.00
152-D	.54-1.7/1.7-5.5/5.5-18 MC	6.00
152-E	.14-.42/.54-1.7/2.5-7 MC	6.00
152-F	.14-.42/2.5-7. MC	6.00

## MIDGET I.F. TRANSFORMERS



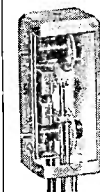
These mica compression tune intermediate frequency transformers are well suited for use in small receivers of all types. They measure only 1-1/8" square and 2" high. In spite of their small size, only the highest quality of parts and workmanship has been used in the construction of the Miller Midget transformers.

Dimensions: 1-1/8" square x 2" high.

Cat. No.	Use	Freq.	KC Range	List Price
<b>AIR CORE TYPES</b>				
112-K1	Input	175	165-185	\$2.00
112-K2	Interstage	175	165-185	2.00
112-K3	Full Wave	175	165-185	2.00
112-K4	Half Wave	175	165-185	2.00
112-C1		455	450-475	1.75
112-C2		455	450-475	1.75
112-C3		455	450-475	1.75
112-C4		455	450-475	1.75
112-W1		1500	1400-1600	1.75
112-W2		1500	1400-1600	1.75
112-W3		1500	1400-1600	1.75
112-W4		1500	1400-1600	1.75

Cat. No.	Use	Freq.	KC Range	List Price
<b>IRON CORE TYPES</b>				
012-K1		175	165-185	2.25
012-K2		175	165-185	2.25
012-K3		175	165-185	2.25
012-K4		175	165-185	2.25
012-H1		262	250-275	2.00
012-H2		262	250-275	2.00
012-H3		262	250-275	2.00
012-H4		262	250-275	2.00
012-C1		455	450-475	2.00
012-C2		455	450-475	2.00
012-C3		455	450-475	2.00
012-C4		455	450-475	2.00
012-W1		1500	1400-1600	2.00
012-W2		1500	1400-1600	2.00
012-W3		1500	1400-1600	2.00
012-W4		1500	1400-1600	2.00

## PERMEABILITY TUNED TRANSFORMERS



Miller permeability tuned intermediate frequency transformers are recommended for all applications where a high degree of frequency stability and operation under humid conditions are used. The two iron core adjusting screws are accessible from the side of the aluminum shield. These transformers have excellent gain and selectivity characteristics. An internal spring clip prevents vibration from affecting the adjustment.

Dimensions: 1-3/8" square x 3-1/4" high.

Cat. No.	Use	Freq.	KC Range	List Price
912-M1	Input	132	127-137	\$4.00
912-M2	Interstage	132	127-137	4.00
912-M3	Full Wave	132	127-137	4.00
912-M4	Half Wave	132	127-137	4.00
612-K1		175	165-185	4.00
612-K2		175	165-185	4.00
612-K3		175	165-185	4.00
612-K4		175	165-185	4.00
612-H1		262	250-275	3.50
612-H2		262	250-275	3.50
612-H3		262	250-275	3.50
612-H4		262	250-275	3.50
612-C1		455	450-475	3.50
612-C2		455	450-475	3.50
612-C3		455	450-475	3.50
612-C4		455	450-475	3.50
912-W1		1500	1400-1600	3.50
912-W2		1500	1400-1600	3.50
912-W3		1500	1400-1600	3.50
912-W4		1500	1400-1600	3.50
912-X1		3000	2900-3100	3.50
912-X2		3000	2900-3100	3.50
912-X3		3000	2900-3100	3.50
912-X4		3000	2900-3100	3.50

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# Miller

## MINIATURE I.F. TRANSFORMERS\*



Designed for experimental and custom receivers as well as replacements for 'personal' radios, these transformers are permeability tuned and comparable in performance to standard size components. Expressly designed for use with the new miniature tubes. Plastic insulation throughout. Screw driver adjustment of primary and secondary from top and bottom of shield. Supplied with spring clip for mounting to the chassis.

Dimensions: 3/8" square x 2" high.

\*Mfg. under K-Trans. Pats. and Pats. Pend.

Cat. No.	Use	Freq.	KC Range	List Price
12-H1	Input	262	250-275 KC	\$2.25
12-H2	Output	262	250-275 KC	2.25
12-C1		455	440-480 KC	2.00
12-C2		455	440-480 KC	2.00

## UNIVERSAL I.F. TRANSFORMERS



This new series of Miller transformers is used for general replacement purposes and in new designs. High gain and excellent stability are combined in a small transformer designed for use in both home and auto radio receivers. The ceramic mica compression trimmers have been heat cycled for temperature stability. All transformers are assembled in aluminum shields with screw-driver adjustment accessible at the top of the shield.

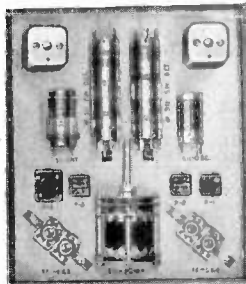
Dimensions: 1-1/4" square x 2-1/2" high.

Cat. No. Use Freq. KC Range List Price

AIR CORE TYPES				
312-H2	Input	262	250-275	\$1.50
312-H4	Output	262	250-275	1.50
312-C2		455	440-475	1.50
312-C4		455	440-475	1.50

IRON CORE TYPES				
412-H2	Input	262	250-275	\$2.00
412-H4	Output	262	250-275	2.00
412-C2		455	440-470	2.00
412-C4		455	440-470	2.00

## ALL WAVE COIL KIT

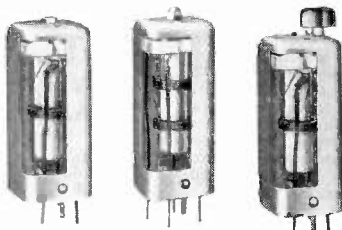


A simple, inexpensive coil kit for the construction of an all-wave receiver capable of out-performing many commercial sets costing much more than the Miller #511. Easy to construct by following the instructions supplied with each kit. 5 Tubes, including rectifier and 2 dual purpose tubes are used.

Frequency Range: 540-25,000 KC (in four bands)

Cat. No.	Quantity	Item	List Price
241-A	1	B. C. Ant. Coil	\$1.00
276-C	1	B. C. Osc. Coil	1.00
511-SWA	1	Short Wave Ant. Coil	2.25
511-SWC	1	Short Wave Osc. Coil	2.25
512-C2	1	455 KC Input I.F.	2.00
512-C4	1	455 KC Output I.F.	2.00
MA-2	2	H. F. Trimmers (dual)	1.00
	4	Osc. Series Pad Cond.	4.85
405	1	Bond Selector Switch	3.25
511-CD	1	Circuit Diagram & Data	.50
MILLER #511		Coil Kit List Price	\$20.00

## SPECIAL I.F. TRANSFORMERS



For communications receivers, converters and special applications, we maintain a stock of special purpose transformers. The following types are typical of the varieties available.

### BEAT FREQUENCY OSCILLATORS

Cathode tapped transformers with adjustment knob at top of aluminum shield.

Dimensions: 1-3/8" square x 3-1/4" high.

Cat. No.	Frequency	KC Range	List Price
512-C5	455	450-475 KC	\$2.25
512-W5	1500	1400-1600 KC	2.25
512-X5	3000	2900-3100 KC	2.25
512-Y5	5000	4900-5100 KC	2.25

### REGENERATIVE I.F. TRANSFORMERS

Double tuned transformers with a tapped secondary for cathode regenerative feedback.

Dimensions: 1-3/8" square x 3-1/4" high.

Cat. No.	Frequency	KC Range	List Price
AIR CORE TYPES			
512-RC	455	450-475 KC	\$2.00
512-RW	1500	1400-1600 KC	2.00
512-RX	3000	2900-3100 KC	2.00
IRON CORE TYPES			
612-RC	455	450-475	\$2.50
612-RW	1500	1400-1600	2.50

### CONVERTER OUTPUT TRANSFORMERS

Used to couple high frequency converters to existing radio receivers and using the receiver as an intermediate frequency amplifier.

Dimensions: 1-3/8" square x 3-1/4" high.

Cat. No.	Frequency	KC Range	List Price
512-QT	525	500-550 KC	\$2.00
512-WT	1500	1400-1600 KC	2.00
512-XT	3000	2900-3100 KC	2.00
512-YT	5000	4500-5500 KC	2.00

### IRON CORE TRANSFORMERS

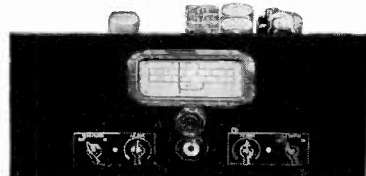


These iron core transformers provide higher gain and selectivity than the conventional air core transformers of similar size. The mica compression trimmers, adjustable from the top of the shield, have been heat cycled for capacity stability. Gain and selectivity of a single stage using iron core transformers is often equal to two stages of air core transformers.

Dimensions: 1-3/8" square x 3-1/4" high.

Cat. No.	Use	Freq.	KC Range	List Price
612-H1	Input	262	250-275	\$2.50
612-H2	Interstage	262	250-275	2.50
612-H3	Full Wave	262	250-275	2.50
612-H4	Half Wave	262	250-275	2.50
612-C1		455	450-475	2.50
612-C2		455	450-475	2.50
612-C3		455	450-475	2.50
612-C4		455	450-475	2.50
612-W1		1500	1400-1600	2.50
612-W2		1500	1400-1600	2.50
612-W3		1500	1400-1600	2.50
612-W4		1500	1400-1600	2.50

## HIGH FIDELITY TUNER KIT



Essential parts for the construction of a band-pass T.R.F. broadcast receiver which, with a good amplifier and speaker system will enable you to really appreciate some of the fine high fidelity programs being broadcast by the better stations. Band width is 20 KC and a 10KC adjacent channel filter is included with the kit. Form #11941 gives complete details, it's yours for the asking.

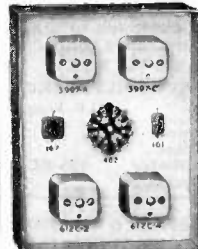
The Coil Kit consists of the following:

Cat. No.	Quantity	Item	List Price
472-UA	1	Untuned Ant. Coil	\$1.75
242-RF	2	Interstage Coils	3.00
242-BP	2	Band-Pass Coils	2.50
472-UT	1	Untuned Def. Coil	2.25
EL-56	2	Coupling Coils	2.00
EL-58	1	10 KC Filter	6.00
2104	1	4-Gang Condenser	15.00
570-CD		Circuit Diagram & Data	.25
MILLER #EL-575		Coil Kits List Pr.	\$32.75

The foundation Kit consists of:

Cat. No.	Quantity	Item	List Price
EL-570	1	Coil Kit	\$32.75
570-T	1	Tuner Chassis	12.00
570-TB	1	Chassis Bottom	3.00
152	1	Slide Rule Dial	6.00
570-P2	1	Relay Rack Panel	6.00
440	1	Terminal Plate	.50
3093	1	Dial Knob	.75
570-EP	1 Pr.	Engraved Plates	4.00
MILLER #EL-575		Foundation Kit List Price	\$65.00

## SKIP BAND COIL KIT



This new 2-Band coil kit covers the standard Broadcast band and the popular international short wave band. Shielded coils are used throughout. High frequency trimmers are incorporated in the coils. Requires a 2-gang 365 mmfd. tuning condenser.

Frequency range: 540-1500/5500-18,000 KC

The kit contains the following:

Cat. No.	Quantity	Item	List Price
3997-A	1	Antenna Coil	\$3.50
3999-C	1	Oscillator Coil	3.50
612-C2	1	455 KC Input I.F.	2.75
612-C4	1	455 KC Output I.F.	2.75
402	1	Band Selector Switch	2.50
161	1	400 mmfd. Osc. Pod	.60
167	1	.01 mfd. Osc. Pod	2.25
3997-CD	1	Circuit Diagram	.50
MILLER #3997		Coil Kit List Price	\$18.35

## ADJUSTABLE PADDER CONDENSERS



These adjustable oscillator padder condensers are of the finest quality mica-compression type with ceramic body. Capacity adjustable from both top and bottom of condenser.

Dimensions: 7/8" x 1" x 3/8" thick.

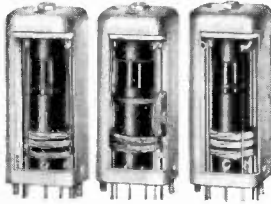
Cat. No.	Capacity Range	List Price
160-A	360-1000 mmfd.	\$.75
160-B	50- 400 mmfd.	.75

For a Complete Listing of MILLER PRODUCTS ask for a copy of our Latest General Catalog.

[E1]

# Miller

## TWO BAND COILS



High quality 2-band shielded coils provided with built-in high frequency trimmers, accessible from the top of the shield. Solenoid and universal windings on XXX grade bakelite tubing, thoroughly impregnated against moisture, make these coils suitable for marine and tropical use as well as for general home receiver use. For use with standard 365 mmfd. tuning condenser.

Dimensions: 1-3/8" square x 3" high.

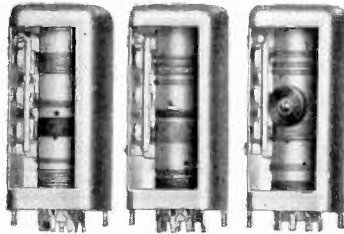
### BROADCAST & MARINE 540-1600/1600-4500 KC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
3996-A	Antenna			\$3.50
3996-RF	Interstage			3.50
3996-C	2-coil Oscillator	455 KC	{ 400 mmfd. }	3.50
3998-C	Tapped Oscillator		{ 1000 mmfd. }	

### BROADCAST & SHORT WAVE 540-1600/5500-18,000 KC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
3997-A	Antenna			\$3.50
3997-RF	Interstage			3.50
3997-C	2-coil Oscillator	455 KC	{ 400 mmfd. }	3.50
3999-C	Tapped Oscillator		{ 5000 mmfd. }	

## THREE BAND COILS



Communications receiver type coils especially designed for fine quality custom built entertainment receivers and commercial marine and aircraft use. These coils are all wound on XXX grade bakelite tubing and thoroughly impregnated against moisture. Individual high frequency trimmers for

each band are adjustable from the side of the aluminum shield. All coil terminals are connected to solder lugs at the bottom of the coil form for under chassis wiring.

Dimensions: 2" square x 4-1/4" high.

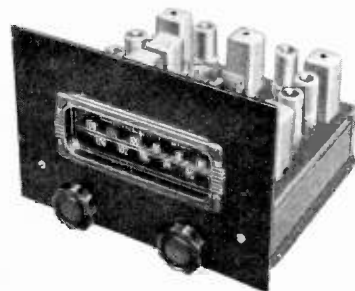
### ALL WAVE COILS 540 KC to 18. MC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
626-A	Antenna			\$5.50
626-RF	Interstage			5.50
626-C	2-coil Oscillator	455 KC	{ 400, 1600 }	5.50
625-C	Tapped Oscillator		{ 5000 mmfd. }	

### AIRCRAFT & MARINE COILS 140-425/540-1600/2500-7000 KC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
628-A	Antenna			\$5.50
628-RF	Interstage			5.50
628-C	2-coil Oscillator	455 KC	{ 120, 400 }	5.50
629-C	Tapped Oscillator		{ 1600 mmfd. }	

## F. M. TUNER KIT



This Kit contains the R.F. components to construct the finest FM tuner for home and professional use. Uses 8 miniature tubes in a circuit using cascade limiters ahead of the discriminator. Requires separate power supply and audio amplifier. The copper plated chassis measures only 7-1/2" deep x 8" wide x 2" high. All Miller Parts in the Kit may be purchased separately, if desired.

Frequency Range: 88-108 MC. The Kit contains the following:

## DOWELL TYPE COILS



Single section Litz wound secondary coils wound on 1/2" Dia. lo-loss ceramic dowels, these coils are provided with solder lugs on a bakelite terminal plate and with a #6-32 threaded stud for single hole chassis mounting. For use with standard 365 mmfd. tuning condenser.

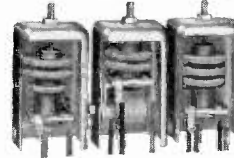
Dimensions: 3/4" square base x 1" high.  
(ABP & RF types 2-1/8" high)

Cat. No.	Use	Freq. Range	List Price
5480-A	Antenna	540-1600	\$1.00
5480-RF	Interstage	540-1600	1.25
5480-BP	Band-Pass	540-1600	1.50
5480-K	2-coil Oscillator	540-1600**	1.00
5480-H	2-coil Oscillator	540-1600**	1.00
5480-C	2-coil Oscillator	540-1600***	1.00
5481-K	Tapped Oscillator	540-1600*	1.00
5481-H	Tapped Oscillator	540-1600**	1.00
5481-C	Tapped Oscillator	540-1600***	1.00

NOTE: \* For 175 KC I.F. with 1000 mmfd. series pad  
\*\* Far 262 KC I.F. with 600 mmfd. series pad  
\*\*\* For 455 KC I.F. with 400 mmfd. series pad

## MIDGET R.F. COILS

(Adjustable Inductance)



This series of compact shielded coils is provided with an adjustable powdered iron core permitting approximately plus or minus 30% secondary inductance deviation from nominal values. Particularly recommended for aircraft, marine and mobile equipment and general custom receiver construction. Core is adjustable from top of aluminum shield. Coils are designed for use with standard 365 mmfd. tuning condenser.

Dimensions: 1-1/8" square x 2" high. (All Types)

### LONG WAVE BAND 140-425 KC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
X-320-A	Antenna			\$2.50
X-320-RF	Interstage			2.50
X-320-M	2-coil Oscillator	132 KC	400 mmfd.	2.00
X-320-C	2-coil Oscillator	455 KC	120 mmfd.	2.00
X-321-M	Tapped Oscillator	132 KC	400 mmfd.	2.00
X-321-C	Tapped Oscillator	455 KC	120 mmfd.	2.00

### BROADCAST BAND 540-1700 KC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
A-320-A	Antenna			\$1.75
A-320-RF	Interstage			1.75
A-320-M	2-coil Oscillator	132 KC	1600 mmfd.	1.75
A-320-C	2-coil Oscillator	455 KC	400 mmfd.	1.75
A-321-M	Tapped Oscillator	132 KC	1600 mmfd.	1.75
A-321-C	Tapped Oscillator	455 KC	400 mmfd.	1.75

### MARINE & AIRCRAFT BAND 2100-6300 KC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
B-320-A	Antenna			\$1.75
B-320-RF	Interstage			1.75
B-320-M	2-coil Oscillator	132 KC	6000 mmfd.	1.75
B-320-C	2-coil Oscillator	455 KC	1600 mmfd.	1.75
B-321-M	Tapped Oscillator	132 KC	6000 mmfd.	1.75
B-321-C	Tapped Oscillator	455 KC	1600 mmfd.	1.75

### SHORT WAVE BAND 6.0-18. MC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
C-320-A	Antenna			\$1.75
C-320-RF	Interstage			1.75
C-320-C	2-coil Oscillator	455 KC	5000 mmfd.	1.75
C-321-C	Tapped Oscillator	455 KC	5000 mmfd.	1.75

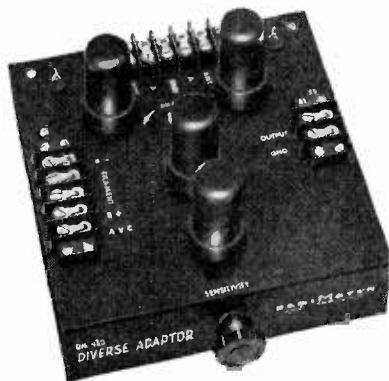
Cat. No.	Quantity	Item	List Price
1451	3	10.7 MC I.F.	\$6.00
1452	1	10.7 MC Disc.	3.00
1454	1	Antenna Coil	2.00
1455	1	Interstage Coil	2.00
1456	1	Oscillator Coil	2.00
1457	1	Filament Choke	.70
1458	1	Chassis & connectors	8.00
1459	1	Slide Rule Dial	7.00
1460	3	3 x 500 mmfd. cond.	4.50
1461	1	FM Tuning Condenser	5.50
420	1	Terminal Plate	.30
440	1	Terminal Plate	.50
3093	2	Tuning Knobs	1.50
Circuit Diagram Instructions & Hardware			1.00
MILLER #1450 FM. Tuner Kit			List Price \$44.00

(F) For a Complete Listing of MILLER PRODUCTS ask for a copy of our Latest General Catalog.

A New Tool for Research—

# DECIMETER

## Progressive Products



### The DM-430 Diverse Adaptor

The DM-430 brings the known benefits of diversity reception to the ham rig AT **LOW COST.** The Diverse Adaptor is connected to two antennas of different characteristics, and automatically

and instantly selects the best antenna for best reception. The DM-430 minimizes the deep fading which often occurs in HF communications by using two antennas spaced a wavelength or more apart, or of different directional properties or polarization. The DM-430 is ideal for any communications receiver, and is used without tuning.

Range of 3 to 30 Megacycles

Neon bulb indication of antenna being used  
For AM and FM phone signals and frequency-shift keying

For either or both balanced or unbalanced antennas

**Net price assembled \$29.50**  
**Kit 14.95**

For further information write for Bulletin RM-12

### The DM-103W "Slipstick" Wavemeter



The Slipstick gives quick, accurate frequency readings on oscillators, receivers, or transmitters in the UHF field. It is a sturdy, every-day tool for the engineer and experimenter. Use of the 103W is easy—the Slipstick is coupled to the oscillator, receiver or transmitter by inserting its tip into the rf field, or the antenna circuit.

Enormous range—

90 to 3000 MC

Rapid, direct-reading scale

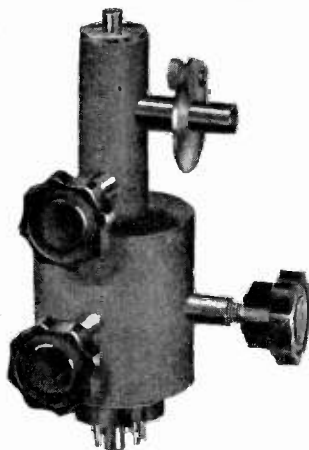
2% accuracy or better; sturdy construction

Polystyrene insulation for permanence and low loss

**Net price \$16.50**

For further information write for Bulletin RM-13

### A New Band for Amateurs



The DM-240A Oscillator leads the way to practical receivers and transmitters on 13 CM. It is made to feed RG-8/U cable directly and uses a 2C40 tube. Precise adjustments control tuning, feedback, and output coupling. Supplied complete with all hardware, instructions, and suggested circuits.

Brass construction with heavy silver plating to assure low rf losses

High precision manufacture for concentric contacts

Tuning range of 2000 to 2500 MC

One watt output

**Net price \$19.50**  
(less tube)

For further information write for Bulletin RM-15

### Decals for Electronics . . . the modern way of labeling equipment

The world's largest assortment of Decals for Electronics contains over 200 different title plates, dial plates, alphabets and numerals, high-voltage signs in red, call letters in black and gold, and television terms. The Decals are printed in neat, opaque letters on a clear, tough backing. Top surface has a tough protective coating which provides high resistance to wear. Superior adhesive qualities of Decimeter Decals, and the toughness of the backing material, bonds the Decal in place so tightly that danger of peeling or chipping is eliminated.



Water-type "slip-off" decals

Adhere to any clean surface

Very economical to use

Improves appearance and safety of equipment

Self-service display assortment for jobbers

For further information write for Bulletin RM-14

# DECIMETER

INC.

1430 MARKET ST. DENVER 2, COLO

# STANWYCK COILS

Mfrd. by STANWYCK WINDING CO.

TELEVISION - I.F. - ANT. - R.F. - F.M. - OSCILLATOR COILS

## TELEVISION COILS

These components when used in a properly designed circuit can provide a gain of approximately 10,000 × in the picture I.F. amplifier with overall response as illustrated. The sound I.F. system can supply a gain of approximately 7,000 × from the converter grid to the grid of the last I.F. tube and a discriminator slope sensitivity of approximately 0.08 volts/kc. with 1.0 volt signal level at the last I.F. amplifier tube grid. The overall sound I.F. and discriminator response is linear over 150 mc.

### TELEVISION REPLACEMENT COMPONENTS

#### R.C.A. REPLACEMENTS

R.C.A. PART No.	STANWYCK PART No.	DESCRIPTION	LIST PRICE
211-T1	S-948	9 K.V. Horizontal H.V. Output (Flyback)	\$9.00
203-L1	S-943	Video Peaking Coil	.55
203-L2	S-944	Video Peaking Coil	.55
203-L3	S-945	Video Peaking Coil	.55
203-L4	S-946	Video Peaking Coil	.55
202-K2	S-949	1st Pix I.F.	2.70
202-K3	S-950	2nd Pix I.F.	1.90
202-L1	S-951	3rd and 4th Pix I.F.	.70
202-K4	S-952	Cathode Trap	2.30
201-K1	S-953	Sound I.F.	1.90
203-K1	S-954	Sound Disc.	2.30
202-K1	S-955	Converter Transformer	2.40
204-L1	S-956	Filament Choke	.20
201-R1	S-957	Horizontal Width Control	.75
201-R3	S-958	Linearity Control	.80
208-T8	S-959	Syncrolop	2.50
203-R1	S-966	Syncoguide	2.00

#### DuMONT REPLACEMENT

Stanwyck No. S-934 — DuMont High Voltage Pulse Oscillator Transformer \$9.50

#### REPLACEMENTS FOR MOTOROLA - TELETONE - HALLICRAFTERS AND OTHER TRANSFORMLESS TELEVISION RECEIVERS

Stanwyck No. S-928 — 4.5 K.V. (4500-Volt) R.F. Power Supply Transformer \$ 7.50  
 Stanwyck No. S-930 — 10 K.V. (10,000-Volt) R.F. Power Supply Transformer 10.50

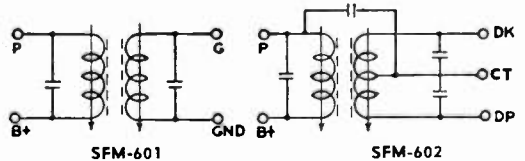
#### TRANSVISION REPLACEMENTS

TRANSVISION PART No.	STANWYCK PART No.	DESCRIPTION	LIST PRICE
308	S-948	9 K.V. Horizontal H.V. Output (Flyback)	\$9.00
16	S-903	250 μh Video Peaking Coils	.65
17	S-901	73 μh Video Peaking Coils	.65
174	S-931	1st Pix I.F.	2.25
174	S-932	3rd Pix I.F.	2.25
175	S-913	2nd Pix I.F.	2.70
176	S-933	4th Pix I.F.	2.25
177 & 318	S-916	Sound I.F.	2.50
317	S-917	Sound Disc.	2.75
319	S-900	500 μh Video Peaking Coils	.65
365	S-961	Slug Coil	.75

#### SOUND TRAP

Recommended for use in any make Television Receiver to remove sound interference in the picture channel. Stanwyck No. S-919 \$0.75

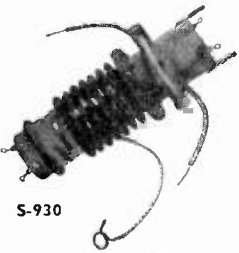
**S-958 LINEARITY CONTROL** — Directly interchangeable with R.C.A. No. 201-R3, this linearity control has extremely wide inductance variation and can be set to provide a linear operating condition in the horizontal deflection circuit.  
 List Price, \$0.80



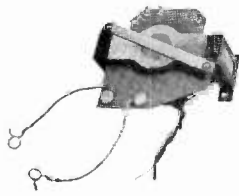
S-949



S-928



S-930



S-948

**S-928 4.5 Kv. POWER TRANSFORMER**—A 4.5 Kv. R.F. power transformer of high efficiency for use in electrostatic deflection circuits employing a 7" tube.  
 List Price, \$7.50

**S-930 10 Kv. R.F. POWER TRANSFORMER**—A 10 Kv. R.F. power transformer thoroughly vacuum impregnated for efficient operation. Mechanically designed for "corona-less" performance at full rated output.  
 List Price, \$10.50

**S-948 HIGH VOLTAGE FLYBACK**—This horizontal output transformer is similar to the R.C.A. No. 211-T1. Used in electromagnetic deflection circuit, it provides approximately 9 Kv. for excellent picture brilliancy in a 10" or 12" tube.  
 List Price, \$9.00

**S-968 HORIZONTAL OUTPUT TRANSFORMER** similar to R.C.A. No. 211-T3 (Wired same as S-948).  
 List Price, \$9.00

## HIGH VOLTAGE COILS

## F.M. COILS

**S-605 RATIO DETECTOR 10.7 mc.**—To meet the critical demands for a sensitive and unusually stable F.M. detector, the S-605 was developed. Embodying every characteristic of a high quality product, this detector will outperform similar products. A peak to peak band width of 350 kc. with linearity exceeding plus or minus 125 kc. results in unusual quality of audio reproduction. High "Q" iron cores, stable ceramic capacitors plus ceramic construction throughout result in the ultimate for fine F.M. reproduction.  
 List Price, \$3.85

**S-613 MIDGET F.M. RATIO DETECTOR**—A 10.7 megacycle midget ratio detector for miniature F.M. set design. Although small in size, its performance is comparable to the larger type. Permeability tuned from top and bottom.  
 List Price, \$2.55

**S-601 F.M. DISCRIMINATOR**—Identical to I.F. electrically and mechanically. The electrically centered secondary results in perfect symmetry between positive and negative peaks. High output and excellent discrimination are obtained. A high quality transformer for production or replacement.  
 List Price, \$3.65

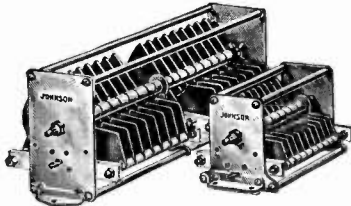
**S-609 F.M. CHOKE**—An excellent parasitic in the oscillator plate circuit.  
 List Price, \$0.40

**S-614 MIDGET F.M. I.F.**—High performance in gain and band width is obtained with this high quality F.M. miniature I.F. Symmetrical wave shape is a result of correct L/C Ratio. High "Q" threaded iron cores and high "Q" silver mica capacitors make this a much desired I.F. for modern F.M. set design.  
 List Price, \$2.10

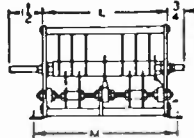
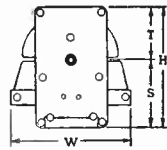


## VARIABLE CONDENSERS

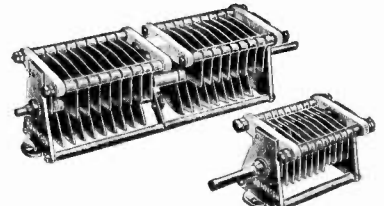
TYPES C AND D



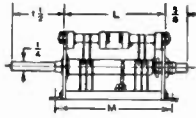
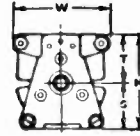
Type C Dual		Type D Single		
Type	T	S	W	H
C	2 1/8"	3 3/8"	5 1/2"	5 1/2"
D	1 3/8"	2 3/8"	4 1/4"	4"



TYPES E AND F



Type E Dual		Type F Single		
Type	T	S	W	H
E	1 1/8"	1 3/8"	2 5/8"	2 1/8"
F	1 3/8"	3 3/8"	2 1/8"	2"



JOHNSON C and D condensers are sturdily constructed to give trouble-free operation under the most severe service. Only the finest materials are employed yet these units are lower in price than any other quality condensers.

All dual models have center rotor connections, to insure balanced operation at ultra-high frequencies. Heavy laminated phosphor bronze contact springs insure low resistance circuits.

Important features include: Heaviest aluminum plates of any similar condenser, .051" thick—Stearite insulation—Large laminated rotor brushes—Center rotor contacts on all dual condensers—Heavy 5/16" diameter aluminum tie rods for frame strength and rigidity—1/4" cadmium-plated steel shafts.

Supplied with single hole mounting brackets which fit either top or bottom of end plate so that stators may be mounted to top or bottom as preferred.

Panel space, Type C, 5 1/2" wide x 5 3/8" high panel space, Type D, 4 1/4" wide x 4" high.

Mounting (M) dimension, on both C and D Types, 7/8" more than L dimension.

Designed as rugged, compact units for medium and low power transmitters, type E and F condensers are in a class by themselves. They have more capacity per cubic inch and occupy less panel space for their rating than any other condenser on the market. Their rapid adoption by manufacturers of high grade equipment and discriminating amateurs is ample proof of their excellence.

Points of superiority: Heavy aluminum plates, .032" thick, with rounded edges for maximum voltage rating—Heavy aluminum tie rods 1/4" diameter for frame strength and rigidity—Stearite insulation—Stator mounted above to reduce capacity to ground—heavy phosphor bronze contact springs, cadmium plated—Center contact on dual models—Chassis or panel mounting—Stainless steel shafts.

In addition to mounting foot shown, removable single hole brackets are furnished so that condenser may be inverted from position shown, or other components mounted above.

Panel space, Type E, 2 5/8" wide x 2 1/8" high panel space, Type F, 2 1/8" wide x 2" high. Mounting (M) dimension, on both E and F Types, 7/8" more than L dimension.

### TYPE C SINGLE SECTION

Cat. No.	List Price	Cap. per Sect.		Spacing	Number Plates	L
		Max.	Min.			
250C70	\$16.50	252	34	.175"	24	6 1/8"
500C70	23.50	496	56	.175"	47	12 3/8"
250C90	19.50	245	45	.250"	31	12 3/8"
350C90	23.00	337	63	.250"	43	14 1/8"
50C110	11.75	51	19	.350"	8	4 1/8"
100C110	15.00	103	30	.350"	17	8 1/8"
250C110	23.25	251	66	.350"	41	18 1/8"
50C130	13.00	51	24	.500"	10	7 1/8"
100C130	17.00	102	42	.500"	21	13 1/8"

### TYPE C DUAL SECTION

Cat. No.	List Price	Cap. per Sect.		Spacing	Number Plates	L
		Max.	Min.			
200CD45	20.50	204	21	.125"	15	8 1/8"
300CD45	24.00	290	26	.125"	21	10 1/8"
200CD70	23.50	198	27	.175"	19	12 1/8"
300CD70	31.00	305	37	.175"	29	16 1/8"
150CD90	25.00	147	30	.250"	19	14 1/8"
200CD90	29.00	196	38	.250"	25	18 1/8"
50CD110	17.50	50	18	.350"	8	10 1/8"
65CD110	19.25	66	21	.350"	11	12 1/8"
100CD110	24.50	103	32	.350"	17	16 1/8"
50CD130	20.00	51	24	.500"	10	14 1/8"

### TYPE D SINGLE SECTION

Cat. No.	List Price	Cap. per Sect.		Spacing	Number Plates	L
		Max.	Min.			
50D35	8.00	49	12	.080"	5	2 1/8"
100D35	8.75	99	14	.080"	8	2 1/8"
150D35	9.75	151	18	.080"	12	2 1/8"
250D35	11.25	252	24	.080"	20	4 1/8"
350D35	12.50	343	27	.080"	27	5 1/8"
500D35	14.75	496	36	.080"	39	6 1/8"
100D45	9.50	104	19	.125"	12	4 1/8"
150D45	11.00	146	23	.125"	17	4 1/8"
50D70	8.75	51	17	.175"	7	2 1/8"
70D70	9.75	72	18	.175"	11	4 1/8"
100D70	10.75	98	23	.175"	15	4 1/8"
150D70	12.50	151	31	.175"	23	6 1/8"
250D70	15.50	244	45	.175"	37	10 1/8"
350D70	19.00	351	62	.175"	53	13 1/8"
50D90	10.00	53	20	.250"	10	4 1/8"
70D90	11.00	73	25	.250"	14	5 1/8"
100D90	12.00	99	30	.250"	19	7 1/8"
150D90	14.25	149	43	.250"	29	10 1/8"
250D90	18.75	249	68	.250"	49	15 1/8"

### TYPE D DUAL SECTION

Cat. No.	List Price	Cap. per Sect.		Spacing	Number Plates	L
		Max.	Min.			
100DD35	11.75	95	13	.080"	8	4 1/8"
150DD35	13.25	147	15	.080"	12	5 1/8"
200DD35	15.75	202	19	.080"	16	7 1/8"
300DD35	18.75	291	24	.080"	23	9 1/8"
500DD35	25.50	496	38	.080"	39	13 1/8"
150DD45	16.25	155	24	.125"	18	9 1/8"
200DD45	18.50	198	27	.125"	23	12 1/8"
50DD70	12.50	52	15	.175"	8	5 1/8"
70DD70	14.25	72	17	.175"	11	7 1/8"
100DD70	16.00	97	22	.175"	15	9 1/8"
150DD70	20.75	151	31	.175"	23	13 1/8"
200DD70	23.75	199	39	.175"	30	16 1/8"
50DD90	14.50	52	19	.250"	10	9 1/8"
100DD90	19.50	97	30	.250"	19	14 1/8"

### TYPE E SINGLE SECTION

Cat. No.	List Price	Cap. per Sect.		Spacing	Number Plates	L
		Max.	Min.			
250E20	\$ 6.20	244	12	.045"	23	2 1/8"
350E20	7.00	353	15	.045"	33	3 1/8"
500E20	8.10	488	19	.045"	45	4 1/8"
35E30	4.75	39	8	.075"	6	1 1/8"
50E30	4.95	52	9	.075"	8	1 1/8"
70E30	5.25	73	9	.075"	11	2 1/8"
100E30	5.60	100	11	.075"	15	2 1/8"
150E30	6.30	154	14	.075"	23	3 1/8"
250E30	7.50	251	20	.075"	37	4 1/8"
350E30	8.90	347	25	.075"	51	6 1/8"
35E45	5.15	38	9	.125"	9	2 1/8"
50E45	5.50	53	11	.125"	12	2 1/8"
70E45	5.85	74	13	.125"	17	3 1/8"
100E45	6.35	101	16	.125"	23	4 1/8"
150E45	7.35	145	20	.125"	33	6 1/8"
250E45	9.35	241	32	.125"	55	9 1/8"

### TYPE E DUAL SECTION

Cat. No.	List Price	Cap. per Sect.		Spacing	Number Plates	L
		Max.	Min.			
200ED20	9.60	200	10	.045"	19	5 1/8"
300ED20	11.20	312	13	.045"	29	6 1/8"
50ED30	7.85	52	8	.075"	8	4 1/8"
70ED30	8.35	72	8	.075"	11	4 1/8"
100ED30	9.15	99	10	.075"	15	5 1/8"
150ED30	10.50	153	13	.075"	23	7 1/8"
200ED30	11.75	196	15	.075"	29	8 1/8"
50ED45	8.35	52	10	.125"	12	6 1/8"
70ED45	9.40	74	12	.125"	17	7 1/8"
100ED45	10.85	100	15	.125"	23	9 1/8"

### TYPE F SINGLE SECTION

Cat. No.	List Price	Cap. per Sect.		Spacing	Number Plates	L
		Max.	Min.			
35F20	4.50	35	7	.045"	6	1 1/8"
50F20	4.70	54	8	.045"	9	1 1/8"
70F20	4.90	66	8	.045"	11	1 1/8"
100F20	5.35	106	10	.045"	17	2 1/8"
150F20	6.05	154	12	.045"	25	2 1/8"
250F20	7.25	252	17	.045"	41	4 1/8"
35F30	4.80	36	8	.075"	9	1 1/8"
50F30	5.10	52	9	.075"	13	2 1/8"
70F30	5.45	67	11	.075"	17	2 1/8"
100F30	6.10	99	14	.075"	25	3 1/8"
150F30	7.15	148	18	.075"	37	4 1/8"

### TYPE F DUAL SECTION

Cat. No.	List Price	Cap. per Sect.		Spacing	Number Plates	L
		Max.	Min.			
50FD20	7.65	53	7	.045"	9	3 1/8"
70FD20	8.15	66	7	.045"	11	3 1/8"
100FD20	8.95	104	9	.045"	17	4 1/8"
150FD20	10.30	153	11	.045"	25	6 1/8"
200FD20	11.55	202	14	.045"	33	7 1/8"
50FD30	8.30	51	8	.075"	13	4 1/8"
70FD30	9.30	66	10	.075"	17	5 1/8"
100FD30	10.75	99	13	.075"	25	7 1/8"

### DEPARTURES FROM STANDARD

Special plate spacings, capacities, shaft extensions, insulation, mounting brackets, terminals, etc., can be furnished to specifications for commercial applications.

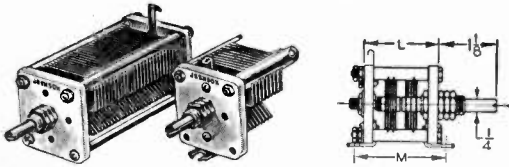
### CONDENSERS FOR HIGHER VOLTAGES

The JOHNSON line includes heavy duty pressurized or air dielectric fixed and variable condensers for high voltage commercial applications. Data sheets furnished on request.



# E. F. JOHNSON Company WASECA, MINNESOTA

## TYPE H CONDENSER



Two End Plates Single End Plate

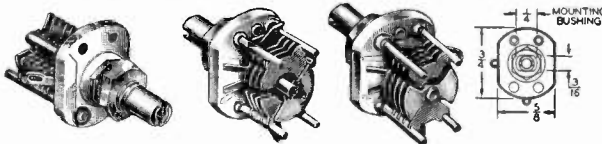
The Type H condenser was designed for aircraft transmitters and combines a minimum of weight and size with simple but rugged construction. Capacities and spacings are provided for low and medium power stages. Use of steatite for end plates avoids any possibility of "short circuit loops" and permits panel mounting with both rotor and stator insulated from ground. Has aluminum plates .020" thick. End plate 1 1/2" square. Capacity measurements are taken with condenser in position shown above.

Mounting (M) dimension is 1/4" more than the L dimension.

### TYPE H SINGLE SECTION

Cat. No.	List Price	Cap. per Sect.		Number Plates	L
		Max.	Min.		
<b>Single End Plate</b>					
25H15	\$2.70	25	4	.030"	6
35H15	2.80	35	4	.030"	8
50H15	2.95	49	4	.030"	11
70H15	3.20	69	6	.030"	15
100H15	3.50	97	7	.030"	21
<b>Double End Plate</b>					
150H15	5.00	146	9	.030"	31
250H15	6.60	242	13	.030"	51
25H30	4.10	28	7	.080"	13
35H30	4.50	37	8	.080"	17
50H30	5.05	54	11	.080"	25
70H30	5.75	74	13	.080"	35
<b>DUAL SECTION</b>					
35HD15	4.70	31	6	.030"	7
50HD15	5.05	51	7	.030"	11
70HD15	5.55	71	8	.030"	15
100HD15	6.25	99	10	.030"	21
35HD30	6.05	38	12	.080"	17
50HD30	7.15	55	15	.080"	25

### MINIATURE AIR VARIABLE CONDENSERS



The smallest air variables ever built. A necessity in all types of high frequency equipment. Available in single, differential and butterfly types. Single hole mounting flats on mounting bushing to prevent turning. Split sleeve rotor bearings — no shaft wobble. Steatite end frames.

Cat. No.	List Price	Capacity		Number Plates	L
		Max.	Min.		
<b>Single</b>					
5M11	\$1.45	5.1	1.5	5	1 3/8"
9M11	1.55	8.7	1.7	9	1 3/8"
15M11	1.75	14.6	2.1	15	1 3/8"
20M11	2.00	19.7	2.6	21	1 3/8"
<b>Differential</b>					
6MA11	\$2.10	5.6	1.8	7	1 3/8"
9MA11	2.30	9.3	2.0	13	1 3/8"
15MA11	2.60	14.8	2.3	22	1 3/8"
19MA11	3.00	19.3	2.7	31	1 3/8"
<b>Butterfly</b>					
3MB11	\$2.10	3.3	1.7	7	1 3/8"
5MB11	2.30	5.3	2.1	13	1 3/8"
9MB11	2.60	8.5	2.7	22	1 3/8"
11MB11	2.90	11.0	3.2	31	1 3/8"

L: Length Behind Panel

Voltage breakdown is 1250 V. peak. Nickel-plated finish.

Panel mounting space is 3/4" by 5/8". Mounting hole 1/4". Slotted for screw driver adjustment or takes a 3/16" knob. Improved terminal provides dual low inductance path to both stator supports, eliminates possibility of loosening plates when soldering, avoids binding stresses on stator supports caused by wiring.

See Page J-35 for knob for these condensers.

### MOUNTING BRACKETS FOR C, D, E AND F CONDENSERS

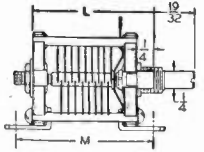


Cat. No.	List Price
115-100—Single Hole Bracket for C or D condenser.....	\$0.15
115-101—Two Hole Bracket for C or D condenser.....	.15
115-102—Single Hole Bracket for E condenser.....	.10
115-103—Single Hole Bracket for F condenser.....	.10

## NEW JOHNSON TYPE L VARIABLES (167 Series)

Ceramic Soldered for Stability, Strength

With the introduction of this new line of air variables, JOHNSON brings many important design advantages never before available.



Outstanding of these is the use of perfected ceramic soldering which assures absolute — and permanent — rigidity and strength, absolute — and permanent — maintenance of capacities!

There are no eyelets, nuts or screws to work loose, causing stator wobble and fluctuations in capacity. JOHNSON ceramic soldering leaves a bond which is stronger than the rugged steatite end plates themselves. There's nothing to come loose, because the stator terminals, mounting posts and rotor bearings are ceramic soldered!

Silent operation on the highest frequencies is assured with a split sleeve tension bearing that also prevents fluctuations in capacity.

These new variables are ideal for peak efficiency even under the severest conditions, such as portable — mobile operation.

Two sets of stator contacts are provided for connecting components to either side of condenser without appreciably increasing inductance of the circuit. New bright alloy plating is used. It has high corrosion resistance and possesses lower electrical resistance than other common platings.

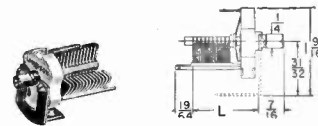
Mounting (M) dimension is 1/4" more than the L dimension.

• Other capacities and spacings available on special order •

### TYPE L SINGLE SECTION

Cat. No.	List Price	Cap. per Sect.		Number Plates	L
		Max.	Min.		
<b>Single End Plate</b>					
10L15	\$2.40	11	2.8	.030"	3
25L15	2.55	27	3.5	.030"	7
50L15	2.80	51	4.6	.030"	13
75L15	3.00	75	5.7	.030"	19
<b>Double End Plate (Also Available in .080" Spacing)</b>					
100L15	4.85	99	6.8	.030"	25
200L15	6.10	202	11.6	.030"	51
<b>Dual Section (Also Available in .080" Spacing)</b>					
25LD15	4.70	27	3.5	.030"	14
50LD15	5.45	51	4.6	.030"	26
100LD15	6.55	99	6.8	.030"	50
<b>Differential (Also Available in .080" Spacing)</b>					
10LA15	2.90	11	2.8	.030"	4
25LA15	3.10	27	3.5	.030"	10
50LA15	3.50	51	4.6	.030"	19
<b>Butterfly</b>					
10LB15	3.35	10.5	2.8	.030"	7
25LB15	3.80	26	4.3	.030"	18
50LB15	4.40	51	6.5	.030"	34

### TYPE J CONDENSER



The Type J condenser is a midget with big condenser characteristics. It has wider spacing than most small types, yet occupies little more space and is ideal for oscillator and low power stages. The spacing is .025" and universal type mounting brackets make possible a variety of mountings including chassis, panel, or inside tube socket type inductors. Steatite end plate is 1 1/8" wide.

Cat. No.	List Price	Cap. per Sect.		Spacing	Number Plates	L
		Max.	Min.			
7J12	\$1.95	8	2.6	.025"	3	1 1/8"
15J12	2.10	17	3.3	.025"	6	1 1/8"
25J12	2.30	29	3.6	.025"	10	1 1/8"
50J12	2.70	52	4.9	.025"	19	1 1/8"
75J12	3.15	73	6	.025"	26	1 1/8"
100J12	3.75	102	7	.025"	36	1 1/8"

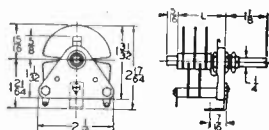
### EXPLANATION OF TYPE NUMBERS

The first part of the type number indicates the capacity per section in mmfd. The following letter indicates the frame size or type. A second letter D indicates a two section type. The final number multiplied by 100 is the approximate peak breakdown voltage. Capacity measurements of the E and F types are made with the condensers in the position shown in the above illustration. The C and D types are measured in inverted position.





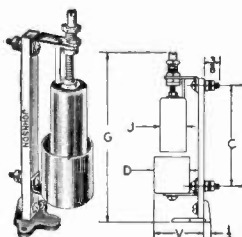
## TYPE G CONDENSER



The Type G condenser is extremely popular as a neutralizing condenser for medium and low power stages. It is also widely used for grid and plate tuning at high and ultra-high frequencies. A wide range of capacities and spacing make it adaptable to many applications. It has a single end plate of steatite and low minimum capacity. .032" rounded aluminum plates, universal mounting bracket locking nut, and front and rear shaft extension are among outstanding features.

Cat. No.	List Price		Cap. per Sect.		Spacing	Number Plates	L
	Max.	Min.	Max.	Min.			
25G20	\$3.40		27	4	.045"	5	1 3/8"
50G20	3.75		52	5	.045"	9	1 7/8"
8G45	3.25		7.7	3.6	.125"	3	1 1/8"
13G45	3.45		13	4.7	.125"	5	1 1/8"
23G45	3.75		23	6.4	.125"	9	1 1/8"
6G70	3.75		5.7	3.5	.225"	3	1 1/8"
12G70	4.25		12	6	.225"	7	2 3/8"

## TYPE N CONDENSER



Small mounting space requirements, extremely high voltage rating in proportion to size, fine adjustment with uniform voltage breakdown rating throughout the full capacity range, and low cost, make these neutralizing condensers ideal for the modern transmitter. "Plates" are aluminum cups supported on a steatite frame with cast aluminum mounting bracket. Because of the design these condensers will withstand much higher voltage than conventional flat plate condensers of the same

spacing. The N375 has been improved and now features a bushing for the guide shaft for greater stability and a beaded lower cup for high voltage rating. Peak R.F. Breakdown Ratings at 2 Mc.; N125 8,500, N250 11,500, N375 14,500.

Cat. No.	List Price	Capacity		D	C	G	V	Spacing
		Max.	Min.					
N125	\$6.50	11.0	1.1	1 3/8"	3 1/8"	6 1/8"	1 1/8"	.125"
N250	7.50	10.6	1.4	1 1/2"	3 3/4"	7 1/2"	2 3/8"	.250"
N375	9.50	10.7	1.7	2 3/8"	5 1/2"	8 3/4"	2 1/8"	.375"

## TINNED COPPER SOLDERING TERMINALS



Terminals Illustrated in the Order Listed

Available in eleven sizes, JOHNSON soldering terminals meet the requirements of most applications. Composed of copper for low resistance, they are tinned to permit easy soldering.

Cat. No.	List Price Per C	Size Hole	Length
110-881	.75	1/4"	1 1/2"
110-882	1.50	3/8"	1 1/2"
110-883	2.75	10-32	1 1/2"
110-884	2.75	10-32	1 1/2"
110-885	4.00	1/4"	1 1/2"
110-886	1.90	.180"	1 1/2"
110-887	2.75		1 1/2"
110-888	2.75		1 1/2"
110-889	4.25		1 1/2"
110-890	4.25		1 1/2"

## INDUCTOR CLIPS



235-804

Clip No. 235-804 is plated phosphor bronze and is designed for making connections to the JOHNSON edgewise wound or similar inductors. No. 235-860 will take wire from No. 20 to No. 10 without danger of tilting and shorting adjacent turns.



235-860

Cat. No.	List Price	Type
235-804	\$0.30	LC4
235-860	.15	860

## FUSE CLIP



115-840

This cadmium plated phosphor bronze clip provides sure grip for 3/8" diameter fuse or resistor. Mounts with No. 8 screw.

Cat. No.	List Price
115-840	\$0.03
110-112	.07

## SCREW TERMINAL

A convenient and substantial clip for use as antenna and ground connections and power terminals. Furnished complete with 2 screws.



110-112

## COUPLINGS



104-251



104-250



104-262



104-252



104-258



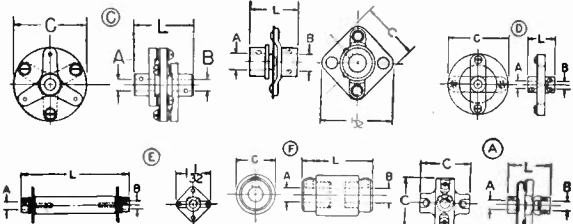
104-264



104-259



104-261



All JOHNSON insulated shaft couplings are characterized by best steatite insulation properly proportioned for electrical and mechanical strength, by accurate metal parts heavily plated, by advanced design, and by skillful manufacture.

The phosphor bronze springs of the -250 and -251 series couplings provide flexibility without backlash and adjust to minor shaft misalignments. Rigid types -252, -262 and -261 meet the requirements of accurate shaft alignment and high torque.

The -259 and -2593 are bar type couplings recommended for high voltages or very high frequencies.

The -264 is a small bakelite insulated flexible coupling for DC or low voltage RF applications.

Cat. No.	List Price	Modulated Dim. Peak Volt. Dwg.	C	Dimension		
				L	A	B
104-250	\$1.00	4000 A	1 3/8"	1 1/8"	1/4"	1/4"
104-2503	1.10	4000 A	1 1/8"	1 1/8"	1/4"	3/8"
104-251	1.40	5000 A	2 1/8"	1 1/8"	3/8"	3/8"
104-251A	1.40	5000 A	2 1/8"	1 1/8"	1/4"	1/4"
104-251B	1.40	5000 A	2 1/8"	1 1/8"	3/8"	3/8"
104-252	.90	1000 F	1 1/4"	1 1/4"	1/4"	1/4"
104-258	.35		3/4"	3/4"	1/4"	1/4"
104-259	1.50	8000 E	1/2"	3 3/8"	1/4"	1/4"
104-2593	1.45	5000 E		2 3/8"	1/4"	1/4"
104-261	4.25	7500 C	2 1/2"	1 1/8"	3/8"	3/8"
104-262	.85	5000 D	2"	1 1/8"	1/4"	1/4"
104-264	.60	400 B	1 1/4"	1 1/4"	1/4"	1/4"

## PANEL BEARINGS

Nickel plated brass for 1/4" shaft and up to 3/8" panels. Also with 3" and 6" nickel-plated brass shafts.



115-255, 256, 2562

Cat. No. 115-255	Panel bearing only	List Price	\$0.20
Cat. No. 115-256	Bearing and 3" shaft	List Price	.40
Cat. No. 115-2562	Bearing and 6" shaft	List Price	.60

## FLEXIBLE SHAFTS

Phosphor bronze, non-rusting with 1/4" hubs.

Permit out of line or up to 90 degree angular control.



115-253, 254

Cat. No. 115-253	3" flexible shaft	List Price	\$0.50
Cat. No. 115-254	6" flexible shaft	List Price	.70

## BAKELITE KNOB



A new and extremely versatile knob for screwdriver or hand operation. Has set-screw for attachment. 1 1/8" long, skirt 3/4" diameter.

Cat. No. 116-214-1	for 1/4" shaft	List Price	\$0.50
Cat. No. 116-214-2	for 3/8" shaft	List Price	.50

## RADIO FREQUENCY CHOKES



762



750



760

Uniformly flat in response, JOHNSON R.F. chokes are equally effective over the entire range for which they are designed. Coils are of enamelled silk-covered wire impregnated with high grade R.F. lacquer, and are wound on steatite cores. Current ratings are of continuous service and may be increased for intermittent use.

Cat. No.	List Price	Frequency	Current Rating	Lgh.
102-750	\$1.75	1.7 to 30 mc	150 ma	1 1/2"
102-752	2.50	1.7 to 30 mc	500 ma	2 7/8"
102-754	3.00	1.7 to 30 mc	750 ma	4 1/8"
101-760	.60	Ultra-high	250 ma	1 1/2"
754	1.15	Ultra-high	1500 ma	2 7/8"



# E. F. JOHNSON Company WASECA, MINNESOTA

## NEW JOHNSON AIR-WOUND HAM INDUCTORS

A Coil to Match Your Tube —  
A Link to Match Your Line

There are two models for most bands for use with either high voltage low current, or low voltage high current tubes.

With these new JOHNSON Ham Inductors and "plug-in" Swinging Link Assemblies the amateur can instantly match coil to tube — link to line. These outstanding inductors are also available in semi-fixed models.

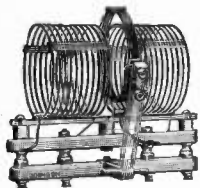
Heavier Windings on All Models

Efficiency is further increased because coil windings are a wire-size larger than on most available in-

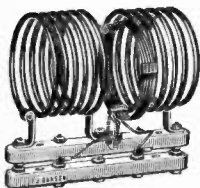
ductors — resulting in less heating, lower loss and consequently higher efficiency.

The new JOHNSON Inductors and "plug-in" Link Assemblies fit all conventional inductor assemblies.

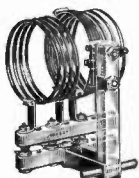
**HCS**—Inductors match high voltage, low current tubes — swinging link type.  
**LCS**—Inductors match low voltage, high current tubes — swinging link type.  
**HCF**—Inductors match high voltage, low current tubes — semi-fixed link.  
**LCF**—Inductors match low voltage, high current tubes — semi-fixed link.



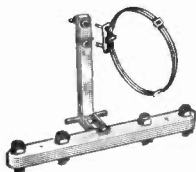
Inductor 1000HCS40  
Link 1000SL5



Inductor 500HCF20  
Link 150/500FL5



Inductor 150H/LCS14  
Link 150/500SL5



Jack Bar 1000JBS with  
1000SLA Arm Assembly  
and 1000SL5 Link



Jack Bars  
1000JBS, 500JBS, 150JBS

### SWINGING LINK INDUCTORS

Catalog Number	List Price
1000HCS160	\$11.50
1000LCS160	11.50
1000HCS80	10.25
1000LCS80	10.25
1000HCS40	9.25
1000LCS40	9.25
1000HCS20	8.50
1000LCS20	8.50
1000H/LCS14	8.00
1000H/LCS10	7.50
500HCS160	6.25
500LCS160	6.25
500HCS80	5.75
500LCS80	5.75
500HCS40	5.25
500LCS40	5.25
500HCS20	4.50
500LCS20	4.50
500H/LCS14	3.50
500H/LCS10	3.25
500H/LCS6	3.25
150HCS160	5.50
150LCS160	5.50
150HCS80	5.00
150LCS80	5.00
150HCS40	4.50
150LCS40	4.50
150HCS20	4.00
150LCS20	4.00
150H/LCS14	3.25
150H/LCS10	3.00
150H/LCS6	3.00

### SEMI-FIXED LINK INDUCTORS

Catalog Number	List Price	Wire Size	Cap.* mmids.
1000HCF80	\$9.90	10	99
1000LCF80	9.90	10	140
1000HCF40	8.90	10	46
1000LCF40	8.90	10	73
1000HCF20	8.50	8	24
1000LCF20	8.50	8	55
1000H/LCF14	8.15	8	19
1000H/LCF10	7.65	8	26
1000H/LCF6	7.15	8	19
		.250**	18
		.250**	100
		.250**	148
500HCF80	5.60	14	45
500LCF80	5.60	12	76
500HCF40	5.10	12	27
500LCF40	5.10	10	50
500HCF20	4.35	6	25
500LCF20	4.35	6	37
500H/LCF14	3.35	6	19
500H/LCF10	3.10	6	19
500H/LCF6	3.10	6	18
		18	102
		16	151
150HCF80	4.85	16	51
150LCF80	4.85	16	68
150HCF40	4.35	14	28
150LCF40	4.35	12	57
150HCF20	3.85	12	21
150LCF20	3.85	12	32
150H/LCF14	3.10	8	19
150H/LCF10	2.85	8	19
150H/LCF6	2.85	8	16

\*Total circuit capacity required to effect resonance at low frequency end of band. Actual condenser capacity will be smaller by the sum of the tube output and wiring capacities, generally between 5 and 20 mmfd.  
\*\*.250 diameter copper tubing.

### JACK BAR ASSEMBLIES

Cat. No. 150JBS 150 Watt Jack Bar	List Price \$1.45
Cat. No. 500JBS 500 Watt Jack Bar	List Price 2.00
Cat. No. 1000JBS 1000 Watt Jack Bar	List Price 3.00

### SWINGING LINK ARM ASSEMBLIES

Cat. No.	List Price
150/500SLA—Arm Assembly for 150/500 Watt Inductors.....	\$1.70
1000SLA—Arm Assembly for 1000 Watt Inductors.....	2.10

### BRACKETS

Cat. No.	List Price
150/500FLB—150/500 Watt Bracket for Semi-Fixed Link Inductor.....	\$0.45
1000FLB—1000 Watt Bracket for Semi-Fixed Link Inductor.....	.80

### "PLUG-IN" LINKS

Cat. No.	No. Turns	List Price
150/500SL12.....	12.....	\$3.00
150/500SL5.....	5.....	1.90
150/500SL2.....	2.....	1.60
1000SL10.....	10.....	3.10
1000SL5.....	5.....	2.40
1000SL2.....	2.....	1.80

### SEMI-FIXED LINKS

Cat. No.	No. Turns	List Price
150/500FL12.....	12.....	\$2.20
150/500FL5.....	5.....	1.40
150/500FL2.....	2.....	1.20
1000FL10.....	10.....	2.10
1000FL5.....	5.....	1.60
1000FL2.....	2.....	1.30

### TUBE CAP CONNECTORS

Collet types, numbers 119-838 through 119-841 are recommended for heavy current industrial uses. The outside diameter is 7/8" and connector may be tightened with spanner wrench listed below. The 119-843 is a part of the 124-212 socket for 833A tubes and is recommended for other tubes having .567" diameter caps and requiring radiator type connectors for high R.F. currents. The flexible strap is 5 1/8" long and 5/8" wide.



119-838  
119-839  
119-840  
119-841



119-843



119-852  
119-854



119-850  
119-851

Cat. No.	List Price	Tube Cap Dia.
119-838	\$1.35	.375
119-839	1.40	.437
119-840	1.50	.567
119-841	1.75	.676
119-843	1.50	.567
119-846	.35	.125

Cat. No.	List Price	Tube Cap Dia.
119-848	\$0.16	.070
119-849	.12	.048
119-850	1.80 C	.250
119-851	1.80 C	.360
119-852	.06	.360
119-854	.12	.566
119-838 Spanner wrench for use with Nos. 119-838 through -841.....	List Price \$1.25	

### EDGEWISE WOUND "HI-Q" INDUCTORS

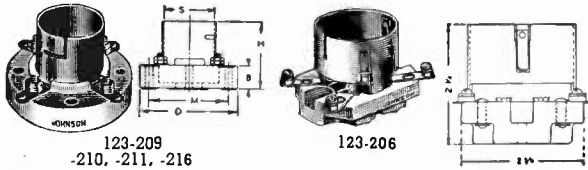


Design improvements and mycalex insulation are new features in this inductor of plated edge-wound copper strip. They are widely used in commercial equipment, and will safely handle more than 1000 watts in continuous service. Other sizes and types of inductors are manufactured for commercial broadcast and industrial electronic applications. More information available on request.

Cat. No.	List Price	Inductance $\mu$ h	Winding L x ID
232-610	\$8.50	31	7 1/8" x 2 1/2"
232-611	6.50	13	4 1/8" x 2 1/2"
232-619	6.00	19	3 1/8" x 4"
232-620	9.50	84	8 3/8" x 4"
232-622	7.50	41	6 7/8" x 3 1/4"
232-623	5.50	8	6 7/8" x 3 1/4"
232-624	7.00	20	4 3/8" x 3 1/4"
232-626	6.60	10	4 3/8" x 2 1/2"
232-627	5.20	2.8	1 7/8" x 2 1/2"
232-628	6.30	4.4	4 9/8" x 2 1/2"



## TUBE SOCKETS



No. 123-206 industrial bayonet socket with rugged metal shell for extremely high voltage applications. Will accommodate 8008, 5C22, FG104, GL146 and other tubes with similar bases. Has steatite insulation, silver plated beryllium copper contacts, screw terminals and three heavy springs in shell insure tube being held securely in place.

Nos. -209, -210, -211 and -216 all have heavy phosphor bronze, side wiping type contacts, metal shells and white, glazed porcelain bases.

No. -209 is similar to No. -210, but provides greater spacing between contacts and shell, for higher voltages, No. -211, the standard "50 watt" socket has double filament contacts for carrying heavy currents.

No. -216 is for tubes having a GIANT 5 pin bayonet base such as the 803, RK28, etc.

Suffix letters "SB" identify sockets with beryllium copper contacts and steatite bases.

Cat. No.	List Price	D	H	M	B	Base
123-206	\$3.00	2 5/8 x 3 7/8	2 1/2	2 3/4	7/8	Four-Pin Super Jumbo
123-209	1.50	2 1/2	1 3/4	2 5/8	7/8	Medium Four-Pin Bayonet
123-209SB	2.50	2 1/2	1 3/4	2 5/8	7/8	
123-210	1.50	2 1/2	1 7/8	2 5/8	7/8	Standard Jumbo Four-Pin
123-211	1.85	3 3/8	2 3/8	2 1/2	7/8	
123-211SB	3.50	3 3/8	2 3/8	2 1/2	7/8	Giant Five-Pin Bayonet
123-216	3.00	3 3/4	2 7/8	3 1/8	3/4	
123-216SB	5.15	3 3/4	2 7/8	3 1/8	3/4	



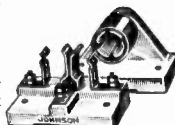
124-213

No. -213 takes Eimac 152TL and 304TL. Contacts arranged for either series or parallel filaments.

No. -214 takes Eimac 1500TH and similar tubes. Has air jet tube for cooling filament tube seals.

No. -215 is for "250 watt" tubes such as 204A, 849, etc. The plate terminal has a "safety cup" which prevents accidental dislodgement of the tube.

Cat. No.	List Price	Base
124-213	\$2.00	"Eimac"
124-214	2.75	"Eimac"
124-215	4.25	"250 Watt"



124-215



120-277B

120-267

### MINIATURE SOCKETS

Cat. No.	Description	List Price
120-267	Miniature socket, all ceramic	\$0.50
120-277B	Miniature socket with shield base	.75
133-277S	Miniature socket, shield base only	.15
133-278A	1 3/8" shield for 277 B or S	.20
133-278B	1 3/4" shield for 277 B or S	.20



121-265

### ACORN SOCKETS

The -265 was designed for "acorn" tubes. Contacts silver-plated beryllium copper, base grade L-4 Steatite

Cat. No.	List Price	Mfg. Cen.
121-265	\$1.10	1 1/2

### SPECIAL SOCKETS



124-212

The No. -212 socket for RCA833 or 833A. Base of steatite. Filament clamps incorporate "springs" which minimize strains on the glass tube seals and prevent breakage. Plate leads include laminated phosphor bronze strips for flexibility. Regularly supplied with 5/16" plate leads. Other lengths available on special order.

Cat. No. 124-212.....List Price \$10.00



122-234

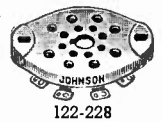
No. -234 for Western Electric 5D21, 705A, 715A, 715B includes heavy steatite base and special locking device for retaining tube in socket.

Cat. No. 122-234.....List Price \$3.00

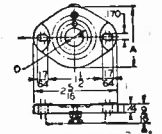
### WAFFER SOCKETS

JOHNSON wafer sockets are insulated with grade L 4 steatite or better, top and sides glazed, underside impregnated in conformance with latest Army Navy specifications. Contacts are brass with steel spring, cadmium plated and are mounted against phenolic washers in molded recesses to prevent movement. Rivets are countersunk and mounting holes bossed to permit sub-panel mounting. Locating grooves facilitate tube insertion.

	\$0.75	7-pin small
122-224	.60	4-pin
122-225	.65	5-pin
122-226	.70	6-pin
122-227	.75	7-pin med.
122-228	.80	Octal



122-228

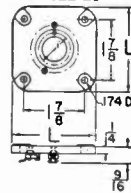


122-217, -224, -225, -226, -227

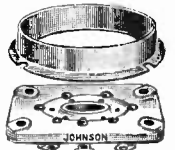


122-237

No. -247 is a 7-pin steatite wafer socket for transmitting tubes such as the 826. It is furnished with etched aluminum base shield



The 122-244 is a 4-pin wafer socket of steatite insulation, for transmitting tubes having a Super Jumbo base such as the 8008. Brass clip contacts and reinforcing steel springs are cadmium-plated and are designed for high currents. Four mounting holes spaced 1 7/8" between centers.



122-247

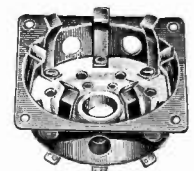
Cat. No.	List Price	Dimension L
122-237	\$1.10	2 5/8
122-244	2.00	2 5/8
122-247	1.25	2 5/8



122-244

The 122-101 is a 7 pin steatite wafer socket of special design incorporating a base shield, retainer springs and provision for mounting button mica capacitors directly to the socket. Socket is specially designed for UHF use with tubes such as the 826, 829 and 832. Contacts and spring are silver plated and recessed to prevent movement. Grid terminals are designed so connecting wires may be isolated from other circuits and permit small grid coils to be mounted on the terminal ends. Four mounting holes are equally spaced 2.312 inches between centers.

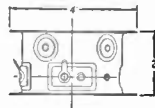
Cat. No. 122-101.....List Price \$3.00



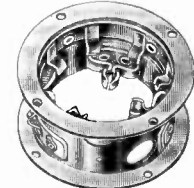
122-101

The 122-102 is designed for high frequencies. Accommodates Eimac 4X-500A tube. Mounting holes in both top and bottom rims. Widely used for coaxial circuits, with coaxial line mounted directly on the tube socket. Terminals so arranged to provide by-pass capacity to ground through the insulation. Mounting holes are provided for adding by-pass condensers for additional capacity. Socket is 2 1/8" high and 4" in diameter.

Cat. No.	List Price
122-102	\$18.00

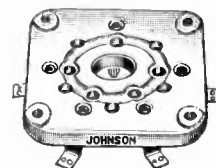


122-102



The 122-275 is a 5 pin steatite wafer socket for transmitting tubes having a GIANT 5 pin base such as the 4-125A and RK48. Contacts are of a superior construction, brass clip and steel spring, both cadmium plated, and are designed for high currents. Adequate ventilation for tubes is provided by five 1/4" holes spaced between contacts. Four mounting holes are equally spaced 2 1/4" between centers.

Cat. No. 122-275.....List Price \$1.75



122-275

THE JOHNSON TUBE SOCKET GUIDE IS AVAILABLE UPON REQUEST.



# E. F. JOHNSON Company

WASECA, MINNESOTA

## MULTIPLE WIRE CONNECTORS

JOHNSON cable connectors provide a most efficient means of quickly connecting or disconnecting multiple electrical circuits in low-voltage control, audio and instrument service. Contacts accommodate No. 16 stranded wire, or No. 14 solid. Minimum surface creepage path for 12 contact types  $\frac{1}{8}$ " for 7 contact types  $\frac{3}{8}$ ". Body material of molded black bakelite, back shells are brass dull black finished, shell liners are fibre. Plug and receptacle polarized for quick accurate insertion. The cadmium plated steel mounting yokes fit standard switch boxes and cover plates and are supplied with necessary hardware.

The multiple Wire connectors, tip plugs and jacks appearing on this page are former Mallory-Yaxley products.



Catalog Number	List Price	No. of Contacts	Connector Type
<b>RECEPTACLES</b>			
111-614	\$2.00	12	Chassis Cord
111-615	2.30	12	Chassis Cord
111-644	1.00	7	Chassis Cord
111-645	1.25	7	Cord
<b>PLUGS</b>			
111-617	2.10	12	Chassis Cord
111-625	2.40	12	Cord
111-631	1.45	7	Chassis Cord
111-635	1.70	7	Cord
<b>PIN PLATE BRACKET MOUNTED</b>			
111-682	1.60	12	
<b>MOUNTING YOKE</b>			
111-6002	.25	for 7 wire connectors	
111-6003	.25	for 12 wire connectors	

PIN PLATE Bracket Mounted



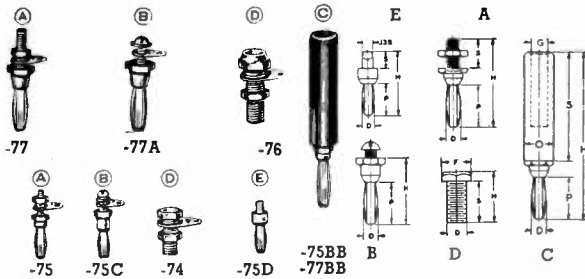
111-682

MOUNTING YOKES



111-6002, -6003

## PLUGS AND JACKS



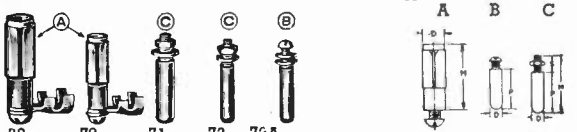
### "BANANA SPRING" TYPE

Nickel-silver springs and high grade nickel plated brass screw machine parts with accurate threads and milled nuts. Studs extend full length of springs for added support.

75D is designed for riveting. Spring is beryllium copper. 75BB has  $\frac{1}{8}$ " black plastic handle; 75BR same but red. 77BB has  $\frac{1}{4}$ " black plastic handle; 77BR same but red. 75 or 75A can be furnished with beryllium copper spring on special order, and all plugs can be furnished with nickel, cadmium or silver plating if required.

108-7451 is a red plastic insulated jack similar to the 108-74 and furnished with fibre washers. 108-7452 same but black. If washers used for insulated mounting fits  $\frac{1}{8}$ " holes,  $\frac{3}{32}$ " maximum panel thickness.

Cat. No.	List Price	Illus. Dwg.	S	D	H	G	O	Thread
108-75	\$0.12	A	$\frac{3}{8}$	.53	.170	1.115		6-32
108-75A	.13	A	$\frac{3}{4}$	.53	.170	1.490		6-32
108-75BB	.40	C	$\frac{1}{8}$	.53	.170	2.115	.215	$\frac{1}{8}$
108-75BR	.40	C	$\frac{1}{8}$	.53	.170	2.115	.215	$\frac{1}{8}$
108-75C	.13	B		.53	.170	.94		6-32
108-75D	.10	E	$\frac{7}{8}$	.40	155	.81		
108-77	.30	A	$\frac{5}{8}$	.74	300	1.77		$\frac{1}{4}$ -28
108-77A	.35	B	$\frac{5}{8}$	.74	300	1.15		10-32
108-77BB	.50	C	$\frac{1}{4}$	.74	300	2.90		$\frac{5}{8}$
108-77BR	.50	C	$\frac{1}{4}$	.74	300	2.90		$\frac{5}{8}$



### "SPRING SLEEVE" TYPE

These jacks have maximum current carrying capacity, minimum resistance, great mechanical strength, and snug fit. Wiping action of spring on insertion insures good electrical contact. Tension is maintained by phosphor bronze "spring sleeves", two sizes available. Furnished regularly nickel plated, but cadmium or silver can be supplied on special order.

Cat. No.	List Price	D	S	P	H	Thread
106-71	\$0.25	.375	$\frac{1}{2}$	$\frac{11}{8}$	$\frac{15}{8}$	$\frac{1}{4}$ -28 screw
106-73	.15	.250	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{11}{8}$	10-32 screw
106-73A	.15	.250		$\frac{1}{2}$	$\frac{11}{8}$	10-32 tapped

## PLASTIC HEAD TIP JACKS

### REMOVABLE ROUND HEAD TIP JACK



105-520

Removable plastic heads in choice of colors listed. Supplied with fibre shoulder bushing and nickel plated hex nut. Standard finish is nickel plate on body. Mounts in  $\frac{3}{8}$ " hole. Maximum panel thickness  $\frac{3}{8}$ " where insulating washers are used,  $\frac{1}{4}$ " where omitted.  $\frac{1}{4}$ "-.32 thread.

### MOLDED ROUND HEAD TIP JACK

Description: similar to removable head type except that brass body is molded integral with head, and additional phenolic washer is furnished.  $\frac{3}{8}$ "-.40 thread.

105-418 Red List Price \$ .30 105-419 Black List Price \$ .30 105-418

### INSULATED COMBINATION JACK



105-420

Supplied with shoulder bushing, phenolic washer and one piece contact and nut. Maximum chassis thickness  $\frac{1}{8}$ ". Mounts in  $\frac{3}{8}$ " diameter hole. Provides insulated jack for phonetip plugs and No. 75 series "Banana Spring" plugs.

No. 105-420 Red List Price \$0.30 No. 105-421 Black List Price \$0.30

### METAL HEAD TIP JACKS

#### Large Round Head



105-16

Supplied with fibre shoulder bushing, phenolic washer and hex nut. Mounts in  $\frac{1}{2}$ " hole if shoulder bushing is used. Maximum panel thickness. Contact is phosphor bronze cadmium plated.

105-16 List Price \$0.50

#### Headless Tip Jack



105-1

Metal parts brass. Body nickel plated.  $\frac{1}{4}$ "-.32" thread.

105-1 List Price \$0.10

#### Long Solderless Tip Plug



105-15

For use with tip jacks Nos. 105-16, and 105-420.

No. 105-15.....List Price \$0.20

No. 105-14—Solderless Tip Plug

Long Sharpened Point List Price \$0.22



105-401

Circuit closes automatically when tips are removed.

No. 105-432—Black

List Price \$0.60

#### Small Round Head

$\frac{5}{16}$ "-.40" thread. Supplied with fiber bushing to fit  $\frac{3}{8}$ " panel hole. Maximum panel thickness.

No. 105-416 List Price \$0.20



105-416

#### Small Hex Head

Similar to 105-416 except has hex head and  $\frac{1}{4}$ "-.32" thread. Supplied with fiber bushing to fit  $\frac{3}{8}$ " panel hole.

No. 105-417 List Price \$0.15



105-417

#### Short Solderless Tip Plug



105-415

For use with tip jacks Nos. 105-416, 105-417, 105-418, and 105-529.

No. 105-415.....List Price \$0.18

### TWIN TIP JACKS

Mounting holes  $\frac{7}{8}$ " centers. Molded black phenolic.

Cat. No.	List Price	Marking
105-401	\$0.60	Blank
105-402	.60	Speaker
105-4015	.60	Phono

### SHORTING TYPE TWIN TIP JACKS

No. 105-433—Red

List Price \$0.60



105-432



# E. F. JOHNSON Company WASECA, MINNESOTA

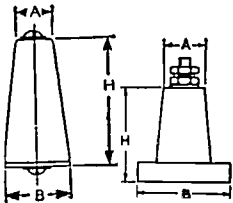
## INSULATORS AND BUSHINGS

JOHNSON insulators were introduced in the early twenties, and soon established the sort of dominance that occurs occasionally when one line offers more in choice of style and size; in advanced but practical design; and in mass production economy than others. This position has been maintained through the years by careful attention to the product, the line, and the needs of the user.

JOHNSON insulators are specifically designed for high frequencies. Insulating materials were selected after exhaustive laboratory tests. Superior grade, low absorption, well glazed electrical porcelain, and Grade L 4 or better steatite are used.

Of the insulators appearing under the headings "Steatite" all but the 500 series and the 135-55 are offered in this finer material for the first time. Their dielectric losses are but a fraction of those for the same parts in porcelain, and they are particularly recommended for high frequency work.

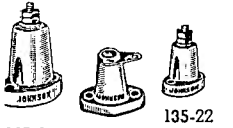
In addition to fine quality insulating materials the JOHNSON line distinguishes itself with perfection of ceramic design logical proportions; clean-cut, accurate molding; and high grade nickel-plated brass hardware, with milled (not stamped) nuts.



### STAND-OFF AND CONE INSULATORS

The stand-off insulators feature heavy, breakage-resistant bases and adequate "glaze grooves" around mounting screw holes. Numbers 135-65, 135-66, 135-67 and 135-68 have unbreakable, drawn and etched aluminum bases.

The No. 500 cone insulator series are steatite for better high frequency insulation. Threads are tapped directly into the ceramic. Furnished complete with machine screws, brass and cushion washers.



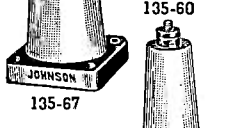
135-20 135-22J 135-22



135-65 135-68



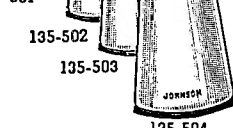
135-62 135-60



135-67 135-66



500 501



135-502 135-503



135-866 -867 135-865



135-15-1

### STAND-OFF INSULATORS

Cat. No.	List Price	Dimensions				Hard-ware
		A	B	M*	H	
Steatite						
135-20	\$0.22	3/4	1 3/4	1 1/8	1 1/8	10-32
135-20J	.27	3/4	1 3/4	1 1/8	1 1/8	74 Jack
135-22	.18	1 1/8	1 3/8	1 1/8	1	8-32
135-22J	.23	1 1/8	1 3/8	1 1/8	1	74 Jack
135-24	.14	3/8	1	1 1/8	5/8	6-32

Porcelain						
Cat. No.	List Price	A	B	M*	H	Hard-ware
135-60	.90	1 1/8	2 1/2	1 7/8	4 1/2	1/4-20
135-62	.50	7/8	1 7/8	1 3/8	2 3/4	1/4-20

Metal Base Types						
Cat. No.	List Price	A	B	M*	H	Hard-ware
135-65	.30	5/8	1 7/8	1 1/2	1 3/8	10-32
135-65J	.35	5/8	1 7/8	1 1/2	1 3/8	74 Jack
135-66	.70	1 1/8	1 3/4	1 3/8	2 3/4	1/4-20
135-66J	.90	1 1/8	1 3/4	1 3/8	2 3/4	76 Jack
135-67	.85	1 1/8	2 1/4	1 3/4	4 1/2	1/4-20
135-67J	1.10	1 1/8	2 1/4	1 3/4	4 1/2	76 Jack
135-68	.40	3/8	1 3/4	1 3/8	2	10-32
135-68J	.50	3/8	1 3/4	1 3/8	2	74 Jack

\* Mounting centers.

### STEATITE CONE INSULATORS

135-500	.30	1 1/8	3/8	5/8	6-32
135-501	.35	1/2	3/4	1	8-32
135-502	.65	1/2	1	1 1/2	8-32
135-503	.75	5/8	1 1/8	2	10-32
135-504	1.45	3/4	1 1/2	3	10-32

### METAL BASES

Aluminum bases for replacement on 135-65, -66, -67 and -68 insulators.

Cat. No.	List Price	For Use With
135-865	\$0.12	135-65
135-866	.15	135-66, 135-68
135-867	.20	135-67

### FEED-THRU BOWL

Glass bowl 7" diam. by 4 3/8" deep. Flange 7 3/4" O.D.

Furnished with cork gaskets. 135-15-1 is single with 10 1/4" stud. 135-15-3 is double with 16" stud. 135-15-7 is double with 24" stud.

Cat. No.	List Price	Single bowl	Double bowl
135-15-1	\$17.00		
135-15-3	30.00		
135-15-7	31.00		

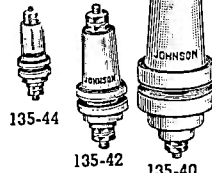
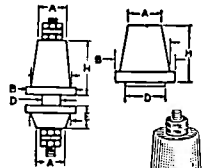
### THRU-PANEL INSULATORS AND BUSHINGS

In the thru-panel and bushing series special attention has been given to obtaining high mechanical strength through heavier construction and at the same time increasing the breakdown voltage. Flat mounting surfaces with cushion washers eliminate breakage. Bottom pieces have long internal and external portions for higher breakdown voltage rating, and grooved surfaces to increase leakage path. Jack types have terminals permitting connection above as well as below the panel.

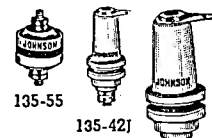
JOHNSON lead-in bushings are designed to have even greater mechanical strength and long leakage path in proportion to size. Numbers 135-53 and 135-54 are supplied as single porcelain parts including cushion washers.

Nos. 135-50 and 135-55 are steatite and have a special interlocking feature which permits mounting on thin panels without extra spacing washers.

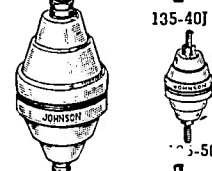
Nos. 20, 20J, 22, 22J and 24 are now also steatite with heavily plated brass hardware.



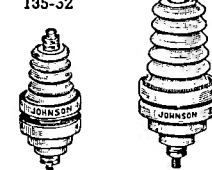
135-44 135-42 135-40



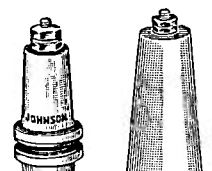
135-55 135-42J



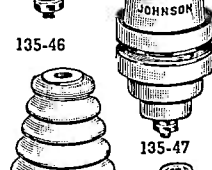
135-52 135-40J



135-45 135-48



135-46 135-47



135-54 135-53

### THRU-PANEL INSULATORS

Cat. No.	List Price	Dimensions				Hard-ware
		A	B	D	E	H
Steatite						
135-40	\$0.35	1 1/8	1 1/8	1 1/8	1/2	1 1/4
135-40J	.45	1 1/8	1 1/8	1 1/8	1/2	1 1/4
135-42	.30	1 1/2	3/4	.400	3/8	7/8
135-42J	.40	1 1/2	3/4	.400	3/8	7/8
135-44	.25	3/8	1	.305	5/8	6-32

Porcelain						
Cat. No.	List Price	A	B	D	E	H
135-45	.45	5/8	1 1/4	1/2	1 1/8	10-32
135-45J	.60	5/8	1 1/4	1/2	1 1/8	74 Jack
135-46	1.00	1 1/8	1 5/8	1 1/8	1	2 3/4
135-46J	1.25	1 1/8	1 5/8	1 1/8	1	2 3/4
135-47	1.40	1 1/8	2 1/8	1 1/8	1 1/2	4 1/2
135-47J	1.65	1 1/8	2 1/8	1 1/8	1 1/2	4 1/2
135-48	.65	1 1/8	1 5/8	1 1/8	1 1/2	2
135-48J	.80	1 1/8	1 5/8	1 1/8	1 1/2	2

### LEAD-IN BUSHINGS

Steatite						
Cat. No.	List Price	A	B	D	E	H
135-50	.35	3/4	1 1/4	1 1/8	1/2	6-32
135-51	.50	5/8	1 1/4	1 1/8	1/2	10-32
135-52	.80	7/8	1 3/4	1 1/8	1 1/8	1 1/8
135-55	.30	1/2	3/4	1 1/8	1/4	6-32

Porcelain						
Cat. No.	List Price	A	B	D	E	H
135-53	.30	1 1/8	2 1/2	1 1/8	1 3/4	
135-54	.75	1	3 1/2	2 1/8	4	

### MOUNTING FLANGES

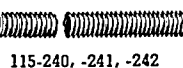
Stamped aluminum Mounting Flanges for Lead-in Bushings 135-53 and 135-54.

Cat. No.	For Bushing No.	List Price
135-90	135-53	\$0.35
135-91	135-54	.70

### THREADED BRASS ROD

Intended primarily for use with lead-in bushings 135-53 and 135-54. Accurately cut threads, heavy nickel plating, complete with 4 washers and 4 nuts, 1/4" diameter, 1/4-20 thread. It has many other uses in radio construction.

Cat. No.	List Price	Length
115-240	\$0.50	8"
115-241	.60	10"
115-242	.70	15"



115-240, -241, -242



## RADIO CABINETS

### A Host of Features Aluminum for Lightness Steel for Strength

These new JOHNSON cabinets represent the first real advance in cabinet design since the introduction of the first Amateur relay panel cabinet years ago. JOHNSON'S extensive "know-how" and production facilities developed during more than ten years of experience building commercial cabinets for Broadcast Phasing Equipment and Transmitters, is now being applied to the design and manufacture of these superb Amateur cabinets.

### FLOOR MODELS — REAR DOOR ONLY

They feature unique adjustable rails for standard relay panels. These rails may be moved forward or backward to suit the user making vertical chassis construction practical by allowing additional room at the front for mounting some components so they project forward. Later a DeLuxé door will be available to allow full use of this feature. Present cabinets are arranged so that the door may be added at any time. Both vertical panel construction and front doors are widely used commercially, and now for the first time these features are offered to the Amateur at Amateur prices.



197-103-3

Other exclusive features include recessed toe spaces at front and sides; inside ventilation with inlets in the bottom of the cabinet and outlets in the top, allowing cabinets to be placed directly against other objects without restricting the air circulation; and reversible rear door (may be installed to hinge either way) with positive handle lock.

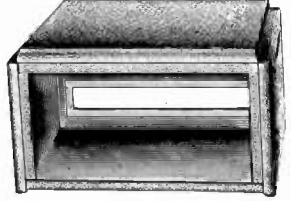
Side panels and rear doors are constructed of heavy (.051") aluminum for lightness, and sturdy steel frames, tops and bottoms for strength. Rails for panels tapped for 10-32 screws and will accommodate either Amateur or Western Electric notching. Shipped knocked-down for your convenience and to save you freight charges; easily assembled in a few minutes with screws and nuts, no self-tapping screws. Available in either fine black wrinkle outside and flat satin black inside or a beautiful silver gray (no purple) outside with a matching flat gray inside.

Cat. No.	List Price	Color	Overall Height	Panel Space	Net Weight	Ship. Weight
197-103-3	\$80.00	Gray	68"	61 1/4"	65 lbs.	77 lbs.
197-103-4	80.00	Black	68"	61 1/4"	65 lbs.	77 lbs.
197-102-3	57.50	Gray	48 3/4"	42"	56 lbs.	67 lbs.
197-102-4	57.50	Black	48 3/4"	42"	56 lbs.	67 lbs.

Size: 22" wide by 17 1/2" deep.  
Panel Width: 19"

### TABLE MODELS — TOP DOOR ONLY

More than mere cabinets, these JOHNSON units are superbly engineered as fine pieces of equipment. Built for a life-time of hard usage and handsomely styled to be in keeping with the most expensive apparatus. All aluminum construction for lightness, heavy .064" metal for strength. Rails for attaching panel are double thickness, tapped for 10-32 screws and on universal centers for either Amateur or Western Electric notched panels. Gracefully rounded top and front corners add to appearance and rugged mechanical strength. Opening at the bottom rear for attachment of plugs and cables to the chassis, also provides ventilation which is completed through inside baffles in the sides near the top.



197-111-3

Shipped knocked-down for your convenience and to save you freight charges, easily assembled in a few minutes with screws and nuts, not self-tapping screws. Available in either fine black wrinkle outside and flat satin black inside or a beautiful silver gray (not purple) outside with a matching flat gray inside.

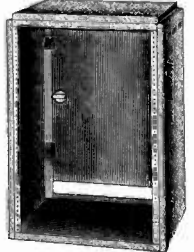
Cat. No.	List Price	Color	Overall Height	Panel Space	Net Weight	Ship. Weight
197-111-3	\$17.50	Gray	11 1/4"	8 3/4"	10 lbs.	13 lbs.
197-111-4	17.50	Black	11 1/4"	8 3/4"	10 lbs.	13 lbs.
197-110-3	19.00	Gray	13"	10 1/2"	10 3/4 lbs.	14 lbs.
197-110-4	19.00	Black	13"	10 1/2"	10 3/4 lbs.	14 lbs.
197-112-3	21.00	Gray	14 3/4"	12 1/4"	11 1/2 lbs.	14 lbs.
197-112-4	21.00	Black	14 3/4"	12 1/4"	11 1/2 lbs.	14 lbs.

Size: 21" wide by 15" deep.

Panel Width: 19"

### TABLE MODELS — BOTH TOP AND REAR DOOR

Same, identical description as the three smaller sizes except for the addition of the rear door. This door is equipped with a positive flush snap-catch and may be installed to hinge from either side. Cabinet is much more rugged than ordinary types with rear doors. Includes top door also.



197-115-3

Cat. No.	List Price	Color	Overall Height	Panel Space	Net Weight	Ship. Weight
197-115-3	\$32.50	Gray	28 3/4"	26 1/4"	18 1/2 lbs.	23 lbs.
197-115-4	32.50	Black	28 3/4"	26 1/4"	18 1/2 lbs.	23 lbs.

Size: 21" wide by 15" deep.

Panel Width: 19"

### RELAY RACK PANELS

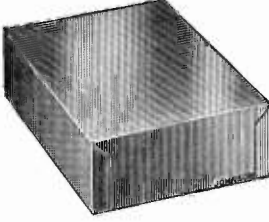
1/8" thick aluminum for lightness and easy working, W. E. notching. 19" long to fit standard relay racks or cabinets. Strength adequate for heaviest equipment. Beautiful, fine black or silver gray wrinkle finish.



Same colors can be furnished in 1/8" thick steel on special orders. Write for prices and delivery.

Black Cat. No.	Gray Cat. No.	List Price	Height
196-161-4	196-161-3	\$0.90	1 3/4"
196-162-4	196-162-3	1.55	3 1/2"
196-163-4	196-163-3	2.20	5 1/4"
196-164-4	196-164-3	2.85	7"
196-165-4	196-165-3	3.55	8 3/4"
196-166-4	196-166-3	4.25	10 1/2"
196-167-4	196-167-3	4.95	12 1/4"
196-168-4	196-168-3	5.65	14"
196-169-4	196-169-3	6.35	15 3/4"
196-170-4	196-170-3	7.05	17 1/2"
196-171-4	196-171-3	7.75	19 1/4"
196-172-4	196-172-3	8.45	21"

### NEW DIE-CUT CHASSIS AND BOTTOM PLATES



Cat. No.	List Price	Size	Gauge
195-150	\$1.35	7 x 5 x 2	20
195-151	1.45	7 x 7 x 2	20
195-152	1.50	9 x 7 x 2	20
195-153	1.45	9 1/2 x 5 1/2 x 2	20
195-154	1.65	10 x 5 x 3	20
195-155	1.85	10 x 8 x 2 1/2	20
195-156	1.75	11 x 7 x 2	20
195-157	1.90	12 x 7 x 3	20
195-158	2.15	12 x 10 x 3	20
195-159	1.75	13 x 7 x 2	20
195-160	1.75	13 x 7 x 3	20
195-161	1.65	13 x 7 x 3	20
195-163	2.50	14 x 10 x 3	18
195-164	2.25	15 x 7 x 3	18
195-166	2.10	17 x 4 x 3	18

### STEEL CHASSIS (Continued)

Cat. No.	List Price	Size	Gauge
195-167	\$2.40	17 x 7 x 3	18
195-168	2.20	17 x 8 x 2	18
195-169	2.55	17 x 8 x 3	18
195-170	2.40	17 x 10 x 2	18
195-171	2.75	17 x 10 x 3	18
195-172	3.15	17 x 10 x 4	18
195-173	3.55	17 x 10 x 5	18
195-174	2.70	17 x 11 x 2	18
195-175	2.95	17 x 11 x 3	18
195-176	3.00	17 x 12 x 2	16
195-177	3.40	17 x 12 x 3	16
195-178	3.85	17 x 12 x 4	16
195-179	3.25	17 x 13 x 2	16
195-180	3.75	17 x 13 x 3	16
195-181	4.25	17 x 13 x 4	16
195-182	4.60	17 x 13 x 5	16

### STEEL BOTTOM PLATES

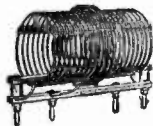
Cat. No.	List Price	Size	Gauge
195-250	\$0.70	5 x 7	20
195-251	.75	7 x 7	20
195-252	.80	9 x 7	20
195-257	.85	12 x 7	20
195-258	1.00	12 x 8	20
195-259	1.05	12 x 10	20
195-260	.90	13 x 7	20
195-267	1.00	17 x 7	20
195-268	1.05	17 x 8	20
195-270	1.25	17 x 10	20
195-274	1.30	17 x 11	20
195-276	1.35	17 x 12	20
195-279	1.60	17 x 13	20





# AIR INDUCTORS

BARKER & WILLIAMSON • UPPER DARBY, PA.



## ANTENNA INDUCTORS TYPES TA AND HDA

Wound with tinned copper wire for ease in tapping feeders to coils. Equipped with fixed center links for coupling to either fixed or variable linked final tank circuits through a low impedance line. Two tinned clips come with each coil. TYPE TA COILS for power input up to 500 watts. TYPE HDA COILS for power inputs of one kilowatt.

### SPECIFICATIONS

Band	Stock No.	Type	Capacity to Res. L.F. End of Band mmfd.	Net Price
<b>TA TYPES</b>				
10	3601	10TA	20	\$2.89
15	3602	15TA	23	2.96
20	3603	20TA	23	2.96
40	3604	40TA	34	3.30
80	3605	80TA	50	3.65

Stock No. 3321 Jack Bar Assembly for TA Inductors.

Band	Stock No.	Type	Capacity to Res. L.F. End of Band mmfd.	Net Price
<b>HDA TYPES</b>				
10	3607	10HDA	20	5.85
15	3608	15HDA	20	6.54
20	3609	20HDA	20	6.54
40	3610	40HDA	20	6.88
80	3611	80HDA	34	7.56

Stock No. 3721 Jack Bar Assembly for HDA Inductors.

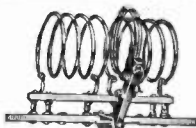


## B & W MINIINDUCTORS

For use in limited space—can be cut to size. Amazingly high Q characteristic. Useful for tank circuit coils, R-F chokes, high-frequency I-F transformers, loading coils, etc.

### SPECIFICATIONS

Catalog No.	Diameter	Turns per Inch	Length	Net Price
3001	1/2"	4	2"	\$0.31
3002	3/8"	8	2"	.31
3003	1/2"	16	2"	.31
3004	1/2"	32	2"	.31
3005	5/8"	4	2"	.37
3006	5/8"	8	2"	.37
3007	5/8"	16	2"	.37
3008	5/8"	32	2"	.37
3009	3/4"	4	3"	.44
3010	3/4"	8	3"	.44
3011	3/4"	16	3"	.44
3012	3/4"	32	3"	.44
3013	1"	4	3"	.50
3014	1"	8	3"	.50
3015	1"	16	3"	.50
3016	1"	32	3"	.50



## TYPE TVH INDUCTORS

For Powers up to 500 Watts Input

A special group of units with eight contact plug bars which gives greater flexibility than otherwise possible.

### SPECIFICATIONS

Band	Stock No.	Type	*Capacity to Res. L.F. End of Band mmfd.	Net Price
10	3501	10TVH	11	\$3.93
15	3502	15TVH	23	3.93
20	3503	20TVH	23	3.93
40	3504	40TVH	28	3.93
80	3505	80TVH	49	3.93

Stock No. 3507—Jack Bar Assembly for Type TVH Inductor 5.16

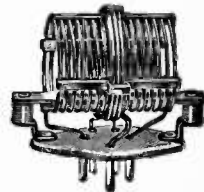
\*Actual condenser capacity will be smaller by the sum of the tube output and wiring capacities, generally between 5 and 20 mmfd.

## JUNIOR INDUCTORS

For Powers Up to 75 Watts Input

Fitted with standard five-prong steatite base. Small size for compact construction. May be used in the oscillator, buffer or final amplifier stage with input powers up to 75 watts and plate voltages up to 850. Three different assemblies provided, any of which may be used in capacity-coupled circuits by omitting connection to the links.

AMATEUR NET ..... \$1.38 ea.



### SPECIFICATIONS

Band	Stock No.	Type	*Capacity to Res. L.F. End of Band mmfd.
<b>End Linked Models</b>			
5	3100	5JEL	15
10	3101	10JEL	22
15	3102	15JEL	22
20	3103	20JEL	34
40	3104	40JEL	47
80	3105	80JEL	60
<b>Center Linked Models</b>			
5	3107	5JCL	15
10	3108	10JCL	16
15	3109	15JCL	16
20	3110	20JCL	16
40	3111	40JCL	33
80	3112	80JCL	63
<b>Variable Link Models</b>			
5	3114	5JVL	15
10	3115	10JVL	22
15	3116	15JVL	27
20	3117	20JVL	21
40	3118	40JVL	31
80	3119	80JVL	46

\*Actual condenser capacity will be smaller by the sum of the tube output and wiring capacities, generally between 5 and 20 mmfd.

## B & W TURRET ASSEMBLIES

Makes possible fast, positive band switching. Unique switching assembly allows unused coils to be shorted, thus eliminating absorption effects. All units cover 80, 40, 20, 15 and 10 meter bands.

B & W 75 WATT 2A "BAND HOPPERS"

Uses same coil design as B & W Juniors. Unusually compact panel controlled unit.

It may be used for interstage coupling between two beam power tubes or between beam power tubes and triodes.

Stock No. 3121 ..... Amateur Net \$4.81

B & W 75-WATT TURRETS—provide a means for link coupling single ended or push-pull low power stages. Complete assembly is mounted on a positive action switch arranged for panel mounting through a single 3/8" hole. Turrets may be used with tubes operating at voltages up to 850.

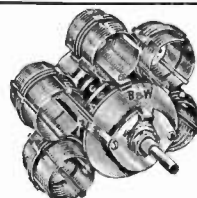
Stock No. 3810—Type JTCL—Center linked, center tapped coils. Amateur Net \$9.38

Stock No. 3811—Type JTEL—End linked, untapped coils. Amateur Net \$9.38

B & W 150-WATT TURRETS—Supplied in both center and end link models for both single- and double-ended circuits. Operation is by a positive action switch arranged for panel mounting through a single 3/8" hole. Turrets may be used with tubes operating at voltages up to 1000 volts.

Stock No. 3812—Type BCL—Center linked, center tapped coils. Amateur Net \$11.69

Stock No. 3813—Type BEL—End linked, untapped coils. Amateur Net \$11.69



## 3400 SERIES INDUCTORS

FOR POWERS UP TO 500 WATTS

Give the utmost in sturdy construction and electrical flexibility. Same as those supplied by B & W to the armed forces during the war. Each coil has an individual internal center coupler, adjustable over 360°—permitting precise impedance matching up to 600 ohms, thus providing flexibility far in excess of any installation requirements.

Amateur Net \$7.50 each

### SPECIFICATIONS

Band	Stock No.	*Capacity to Res. L.F. End of Band mmfd.
10	3401	24
15	3402	25
20	3403	30
40	3404	30
80	3405	60

Stock No. 3321—Steatite Jack Bar Assembly.

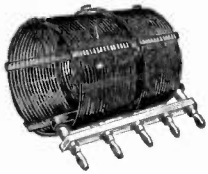
\*Actual condenser capacity will be smaller by the sum of the tube output and wiring capacities, generally between 5 and 20 mmfd.

# B&W

# AIR INDUCTORS

BARKER & WILLIAMSON • UPPER DARBY, PA.

- MINIMUM DIELECTRIC IN THE FIELD OF THE COIL
- EXTREMELY LOW LOSSES
- RUGGED CONSTRUCTION
- EXCELLENT APPEARANCE
- LOW COST



TYPE HD1 (Fixed Link)

Each AIR INDUCTOR is a completely finished unit. All coils are equipped with banana type plugs . . . Type "B" is for use in oscillator and buffer—doubler stages developing up to 100 Watts power. Type "T" is especially suited for high powered neutralized buffer and final tank stages where powers of 500 Watts are developed. Type "HD" is for maximum power — handles a Kilowatt with ease.

## SPECIFICATIONS

Band	Stock No.	Type	Net Price
<b>TYPE B</b>			
MODELS WITHOUT LINK—CENTER TAPPED			
5	3207	5B	\$1.38
10	3201	10B	1.38
15	3202	15B	1.45
20	3203	20B	1.45
40	3204	40B	1.79
80	3205	80B	2.14

Band	Stock No.	Type	Net Price
<b>END LINK MODELS—WITHOUT TAP</b>			
5	3207	5REL	2.41
10	3208	10BEL	2.41
15	3209	15BEL	2.48
20	3210	20BEL	2.48
40	3211	40BEL	2.83
80	3212	80BEL	3.16

Band	Stock No.	Type	Net Price
<b>CENTER LINK MODELS—CENTER TAPPED</b>			
5	3214	5BCL	2.41
10	3215	10RCL	2.41
15	3216	15RCL	2.48
20	3217	20BCL	2.48
40	3218	40RCL	2.83
80	3219	80BCL	3.16

Band	Stock No.	Type	Net Price
<b>VARIABLE LINK MODELS—CENTER TAPPED</b>			
5	3221	5BVL	1.93
10	3222	10BVL	1.93
15	3223	15BVL	2.00
20	3224	20BVL	2.00
40	3225	40BVL	2.28
80	3226	80BVL	2.61

Stock No. 3228—Steatite Jack Bar Assembly for end or center link type B Inductors, old Type A56.  
Stock No. 3229—Jack Bar and Swinging Link for BVL Inductors.

Band	Stock No.	Type	Net Price
<b>TYPE T</b>			
10	3301	10T	1.51
15	3302	15T	1.59
20	3303	20T	1.59
40	3304	40T	1.93
80	3305	80T	2.28

Band	Stock No.	Type	Net Price
<b>CENTER LINKED MODELS—CENTER TAPPED</b>			
10	3308	10TCL	\$2.89
15	3309	15TCL	2.96
20	3310	20TCL	2.96
40	3311	40TCL	3.30
80	3312	80TCL	3.65

Band	Stock No.	Type	Net Price
<b>VARIABLE LINKED—CENTER TAPPED</b>			
10	3315	10TVL	2.20
15	3316	15TVL	2.28
20	3317	20TVL	2.28
40	3318	40TVL	2.61
80	3319	80TVL	2.96

Stock No. 3321—Steatite Jack Bar Assembly for end or center link Type T Inductors, old Type A54.  
Stock No. 3322—Base Assy. and Swinging Link for BVL Inductors.

Band	Stock No.	Type	Net Price
<b>TYPE HD</b>			
MODELS WITHOUT LINK—CENTER TAPPED			
10	3701	10HD	3.10
15	3702	15HD	3.79
20	3703	20HD	3.79
40	3704	40HD	4.13
80	3705	80HD	4.81

Band	Stock No.	Type	Net Price
<b>CENTER LINKED MODELS—CENTER TAPPED</b>			
10	3708	10HDCL	5.85
15	3709	15HDCL	6.54
20	3710	20HDCL	6.54
40	3711	40HDCL	6.88
80	3712	80HDCL	7.56

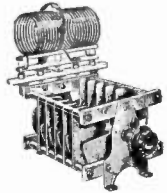
Band	Stock No.	Type	Net Price
<b>VARIABLE LINKED MODELS—CENTER TAPPED</b>			
10	3715	10HDVCL	4.48
15	3716	15HDVCL	5.16
20	3717	20HDVCL	5.16
40	3718	40HDVCL	5.50
80	3719	80HDVCL	6.19

Stock No. 3721—Jack Bar Assembly for HD and HDCL Inductors.  
Stock No. 3722—Base Assembly and SL for HDVL Inductors.

## TYPE CX CONDENSER

Superior design! Only half the length of conventional units. Perfect electrical and mechanical symmetry. Designed for built-in neutralization. Integral mounting of B & W coils reduces lead lengths and resulting lead inductance to an absolute minimum.

Stock No. 3722-1—Type HD Jack Bar and SL assembly mounted on any type of condenser.  
Stock No. 3721-1—Type HD or HDL Jack Bar mounted on condenser.  
Stock No. 3507-1—Type TVII Jack Bar and SL mounted on condenser.  
Stock No. 3930-1—Single Vacuum Condenser mount.  
Stock No. 3930-2—Twin Vacuum Condenser mount.



## NEUTRALIZING PLATES AVAILABLE IN FOUR TYPES, DESIGNATED N1, N2, N3, and N4.

- N1—will neutralize the HY114, HK24, RK31, HK51, TW75, and similar tubes.  
N2—will neutralize the 75T, 35T, 808, RK35, 852, and similar tubes.  
N3—will neutralize the 801, T-TZ20, T-TZ40, RK18, HK154, 811, 812, T95, 100TH1, .0TH1, 806, 810, and similar tubes.  
N4—will neutralize the 833, T200, 805, GL152, 838, 203A, RK52, and similar tubes.

## "A" TYPE—500" AIRGAP

Type	Capacity Per Section		Capacity Sections In Series		Net Price
	Max.	Min.	Max.	Min.	
CX11A	11	8	8	6	\$12.52
CX20A	20	11	13	8	15.32
CX30A	30	14	18	10	17.59
CX40A	40	18	23	12	19.81
CX49A	49	21	28	14	22.08
CX59A	59	24	33	16	24.29
CX68A	68	27	38	18	26.50
CX77A	77	30	43	20	28.78
CX87A	87	34	48	22	30.99
CX96A	96	37	53	24	33.20
CX105A	105	40	58	26	35.47
CX115A	115	43	62	29	37.69
CX124A	124	46	68	30	39.90

## "B" TYPE—375" AIRGAP

Type	Capacity Per Section		Capacity Sections In Series		Net Price
	Max.	Min.	Max.	Min.	
CX11B	11	8	9	6	12.17
CX22B	22	11	15	8	14.91
CX34B	34	14	21	10	17.18
CX45B	45	17	28	12	19.34
CX58B	58	20	33	13	21.49
CX70B	70	23	38	15	23.71
CX82B	82	26	45	17	25.80
CX94B	94	29	50	19	28.08
CX106B	106	32	56	20	30.17
CX118B	118	36	62	22	32.33
CX130B	130	39	68	24	34.60
CX141B	141	42	74	26	36.76
CX153B	153	45	80	27	38.91

## "C" TYPE—250" AIRGAP

Type	Capacity Per Section		Capacity Sections In Series		Net Price
	Max.	Min.	Max.	Min.	
CX13C	13	8	10	6	11.88
CX30C	30	11	18	8	14.56
CX45C	46	13	26	9	16.72
CX62C	62	16	34	11	18.81
CX78C	78	19	42	12	20.97
CX95C	95	22	50	14	23.13
CX111C	111	25	59	15	25.16
CX127C	127	28	67	17	27.32
CX143C	143	31	75	18	29.42
CX159C	159	33	83	20	31.46
CX175C	175	36	91	21	33.73
CX192C	192	39	100	23	35.82
CX208C	208	42	110	24	37.86

Standard plate thickness in all models, 1/16". • Available on special order, 3/32" plates at 10% additional. • Special features. • Explanation: The type of each condenser designates its capacity and plate spacing as follows: CX100 indicates 100 mfd. per section. • Letters A, B, C, or D denotes plate spacing: A—500", B—375", C—250", D—187". Following N# denotes Neutralizing plates.

## "BABY" AIR INDUCTORS

(25 WATT RATING)

Just the thing for crowded layouts, portables, field transmitters! The smallest, most efficient, most practical 25-Watt coils ever available to amateurs. "BABIES" measure only 1 1/2" x 1 1/4", are made by a special B&W process which insures

perfect air-spacing, maximum strength, fine appearance and ultra-high efficiency with an absolute minimum of insulating material. Available in five types, from 10 to 160 mhos. Conservatively rated. Universal 5-prong Alismag 196 bases. . . . . Net Any Type \$1.04

Straight Coil	Center Tapped	End Linked	Center Linked	Inductance	*Capacity
80M	MC	MEL	MCL	40	50
40M	MC	MEL	MCL	14	35
20M	MC	MEL	MCL	3.5	35
15M	MC	MEL	MCL	2.7	35
10M	MC	MEL	MCL	1.1	30

\*Total effective capacity required to effect resonance on low frequency end of specified band.



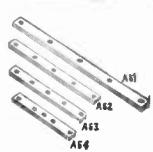
## "BABY" TURRETS

35-WATT RATING

These compact 5-band switching units cover amateur bands from 10 to 80 meters. They may be tuned in all types of service with any of the 50 mfd. midjet condensers. Their sturdy construction and unique design assure permanent coil alignment and maximum efficiency with a minimum number of tubes. Four types—BTM, straight untapped BTCT, center tapped; BTCL, end linked and BTCL, center linked—provide vastly improved band-switching efficiency in low-power transmitters and exciter stages. Net, Any Type . . . . . \$8.44

## B & W PLUG AND JACK BARS

Made of high quality steatite. Ample size to insure excellent strength. They provide experimentation with the same units that are used in B & W inductors. Can also be used as spreaders for feeders and other parts of the antenna system.



## SPECIFICATIONS

Stock No.	Type	Length	Width	Thick. ness	Mounting Dimension	Used Series	Net Price
3914	Plug	3 1/2"	3/4"	3/8"		B	\$0.20
3915	Jack	4 1/2"	3/4"	3/8"	4 1/2"	B	.60
3916	Plug	5 1/2"	3/4"	3/8"		T	.30
3917	Jack	7"	3/4"	3/8"	6 1/2"	T	1.00
3918	Plug	6 1/2"	3/4"	3/8"		TVII	.60
3919	Jack	8 1/4"	3/4"	3/8"	7 1/2"	TVII	1.10
3920	Plug	8 1/4"	3/4"	3/8"		HD	1.10
3921	Jack	10 3/4"	1"	3/8"	9 1/2"	HD	1.25



# TEST EQUIPMENT

BARKER & WILLIAMSON • UPPER DARBY, PA.

## B & W NEW PLUG-IN LINKS

FOR IMPEDANCE MATCHING  
Adaptable to all B & W Swinging Link assemblies, these B & W plug-in links solve the quick change problem. Just pull out one coil and plug in another with the required number of turns. Old link arm easily replaced with new plug-in type.

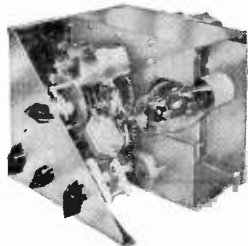


ORDERING NUMBERS FOR B & W PLUG-IN LINKS					
For Types TVH, TVL, BVL Swinging Link Assemblies		For Type HDV Swinging Link Assemblies			
Ordering	No.	Price	Ordering		
Arm Only	3550	\$ .70	Arm Only	3750	\$1.40
Arm and Hinge	3565	1.00	Arm and Hinge	3765	1.80

PLUG-IN LINK COILS					
Ordering		No.		Price	
1 turn	3551	\$ .60	1 turn	3751	\$1.25
3 turns	3553	.60	3 turns	3753	1.25
6 turns	3556	.60	6 turns	3756	1.25
10 turns	3560	.95	10 turns	3760	1.75

Above are standard. Other turns available on request.

## B & W FREQUENCY MULTIPLIER



Price: \$85.00 Amateur Net. Complete with tubes. Dimensions: 6 1/2" x 7" x 9 3/4".

This B & W all-band frequency multiplier solves the difficult problem of developing frequency step-up stages. Packaged unit covers 80-40-20-15-11 and 10 meter bands. Just flip a switch on the attractive reverse etched aluminum panel plate, to get the required band. Operates on either YFO or Crystal input and not less than 25 watt output.

## B & W SINE WAVE CLIPPER Model 250

Equipped with a pair of input terminals, a pair of output terminals, an output volume control and a selector switch.

Net Price: \$10.00.

Dimensions: 2" x 4" x 5 1/2".

SPEEDS ACCURATE ANALYSIS OF AUDIO CIRCUITS. SIMPLIFIES SELECTIONS OF COMPONENTS. SAVES VALUABLE TIME. Here's an instrument that will do most of the jobs usually assigned to a square wave generator costing about 10 times as much! The B & W Sine Wave Clipper provides a test signal particularly useful in examining the transient and frequency response of audio circuits. Designed to be driven by an audio oscillator, the clipper provides a clipped sine wave — hence the name "Sine Wave Clipper." Used in engineering work, repairs, or with equipment under development, it will quickly pay for itself many times over.

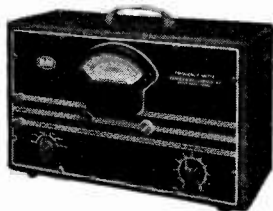


## B & W FREQUENCY METER Model 300

Net Price: \$105.00.

Dimensions: 13 3/4" x 7 1/4" x 9 1/2".

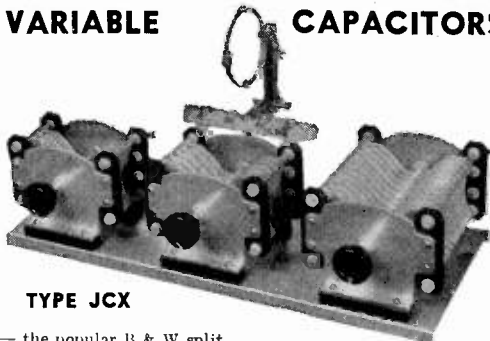
An accurate and convenient means of making direct measurements of unknown audio frequencies up to 30,000 cycles. Integral power supply. Extremely useful for routine checking of audio oscillators or tone generators. Housed in an attractive black crackle finished steel cabinet with carrying handle and rubber feet.



### FEATURES

- Frequency Range: 20 to 30,000 cycles in 6 ranges.
- Sensitivity: minimum .5 volts input.
- Wave Form: will operate on any wave form with peak ratios of less than 8 to 1.
- Calibration: when referenced against 60 cycle line frequency, all other frequencies will fall within 2%.

## B & W NEW, SMALL BUTTERFLY VARIABLE CAPACITORS



TYPE JCX

Now — the popular B & W split stator, butterfly type of variable condenser construction has been adapted to small, compact units for general ham and other uses! Having just 25% of the frontal area of CX types, these new B & W JCX Variable Capacitors are ideal for medium powered triode or tetrode stage plate circuit applications.

Featuring stainless steel shafts, heavy rounded aluminum plates and high quality insulating materials, the B & W Midget Butterfly will be a welcome addition for the amateur who is looking for peak efficiency in low and medium power transmitter stages.

### "E" TYPE .125" AIRGAP

Type	Catalog Stock No.	Capacity Section in Series		Capacity Per Section		Mounting Length	Net Price
		Max.	Min.	Max.	Min.		
JCX100E	100	50	15	99	23	5 1/2"	\$9.00
JCX50E	101	25	10	42	13	3 3/8"	6.75
JCX25E	102	16	8	25	10	2 3/4"	5.50

## B & W AUDIO OSCILLATOR Model 200

Net Price: \$115.00.  
Dimensions: 13 3/4" x 7 1/4" x 9 1/2".

Ideal for use in distortion measurements, frequency measurements or in any application where a stable, accurately calibrated source of frequencies between 30 and 30,000 cycles is required. No zero reset or line calibration is required. Self-contained power supply. Housed in an attractive black crackle finished steel cabinet with carrying handle and rubber feet. Panel is of 1/8" reverse etched aluminum.



### FEATURES

- Voltage Output: 12.5 volts open circuit. 11 volts output on 500 ohm load.
- Wave Form: RMS harmonics at 5 volts output on 500 ohm load, less than 1%. On open circuit (10,000 ohms up) approximately .5% on all frequencies between 50 and 15,000 cycles.
- Frequency Response: better than ±1 D.B. from 30 to 30,000 cycles.
- Stability: better than 1%.
- Calibration: ±2.5%.

## B & W DISTORTION METER Model 400

Net Price: \$140.00.  
Dimensions: 13 3/4" x 7 1/4" x 9 1/2".

A sensitive instrument having a wide range of applications in the audio frequency measurements field. Ideal for measuring low level audio voltage and determining noise and harmonic content of same. Variable frequency selective filter provides a single frequency suppression circuit for the frequency range of 50 to 15,000 cycles. Small size, light weight and outstanding performance make this instrument an ideal unit for either laboratory or field work.



### FEATURES

- Frequency Range:
  - (a) Distortion meter. For fundamentals from 50 to 15,000 cycles, measuring harmonics up to 45,000 cycles.
  - (b) As voltmeter and D.V. meter from 30 to 30,000 cycles.
- Sensitivity:
  - (a) Noise and distortion measurements, minimum input .3 volts.
  - (b) Voltmeter, full scale readings of .3, .1, .03, .01, .003 volts.
- Calibration:
  - For distortion measurements: ±10%.
  - For noise measurements: ±1 D.B.
  - For voltage measurements: ±5%.

# JAMES MILLEN

MALDEN · MASSACHUSETTS

## SECONDARY FREQUENCY STANDARD

A precision frequency standard for both laboratory and production uses, adjustable output, provided at intervals of 10, 25, 100 and 1000 kc, with magnitude useful to 50 mc. Harmonic amplifier with tuned plate circuit and panel range switch. 800 cycle modulator with panel control switch. In addition to oscillators, multivibrators, modulators and amplifiers, a built-in detector with phone jack and gain control is incorporated. Self-contained power supply.

Model 90505, with tubes . . . . . \$155.00

## ABSORPTION WAVEMETERS

The 9060C series of absorption wavemeters are available in several styles and many different ranges. Most popular is kit of four units, covering range of 3.0 to 140 mc.

Model 90600 . . . . . \$18.00

## FREQUENCY CALIBRATORS

The cavity type frequency calibrator covers a range of 200 to 700 mc., with a maximum error of not over 0.25%. This range is covered by two plug-in cavity type tuning units, which may be easily interchanged. The calibrator consists of an accurately calibrated cavity-type tuning unit, a crystal detector, a two-stage video amplifier and a peak reading VT voltmeter.

Model 90630, with tubes . . . . . \$375.00

## LABORATORY SYNCHROSCOPES

The 5" laboratory synchroscopes are available with and without detector-video strips.

Model P-4-2, with tubes . . . . . \$350.00

Model P-4E-2, with tubes . . . . . 445.00

## MINIATURE SYNCHROSCOPE

The compact design of the No. 90952, measuring only 7½" x 5½" x 13", and weighing only 17 lbs., makes available for the first time a truly DESIGNED FOR APPLICATION "field service" Synchroscope.

No. 90952, with tubes . . . . . \$375.00

## CATHODE RAY OSCILLOSCOPES

The No. 90902, No. 90903 and No. 90905 Rack Panel Oscilloscopes, for two, three and five inch tubes, respectively, are inexpensive basic units comprising power supply, brilliancy and centering controls, safety features, magnetic shielding, switches, etc. As a transmitter monitor, no additional equipment or accessories are required. The well-known trapezoidal monitoring patterns are secured by feeding modulated carrier voltage from a pickup loop directly to vertical plates of the cathode ray tube and audio modulating voltage to horizontal plates. By the addition of such units as sweeps, pulse generators, amplifiers, servo sweeps, etc., all of which can be conveniently and neatly constructed on companion rack panels, the original basic 'scope unit may be expanded to serve any conceivable industrial or laboratory application.

No. 90902, less tubes . . . . . \$ 42.50

No. 90903, less tubes . . . . . 49.50

No. 90905, less tubes . . . . . 100.00

## 'SCOPE AMPLIFIER—SWEEP UNIT

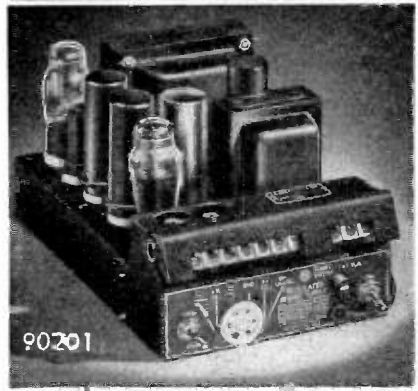
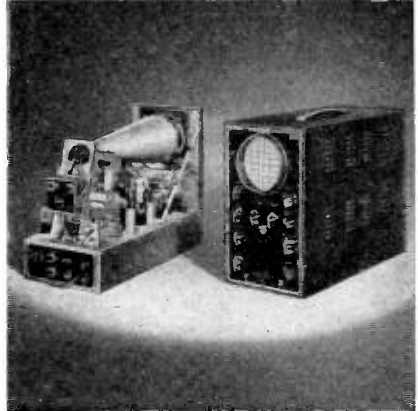
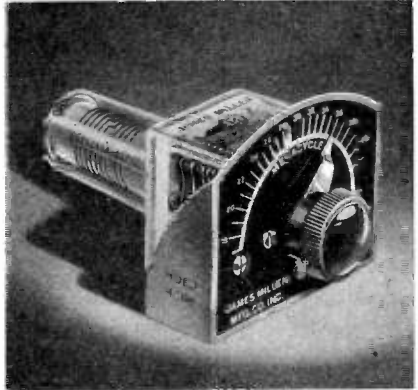
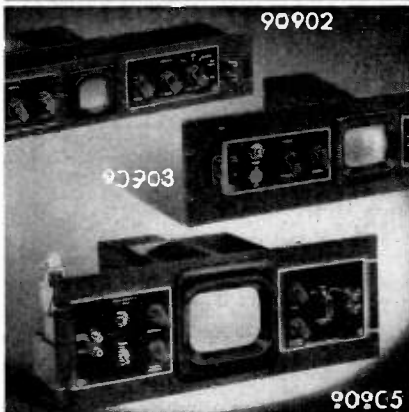
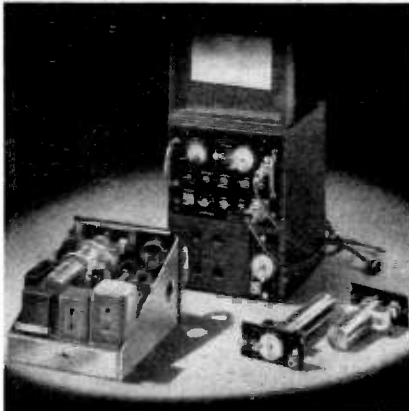
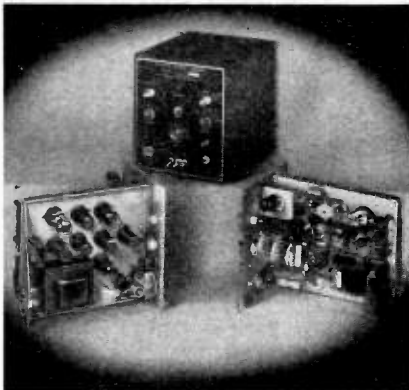
Vertical and horizontal amplifiers along with hard-tube, saw tooth sweep generator. Complete with power supply mounted on a standard 5¼" rack panel.

No. 90921, with tubes . . . . . \$75.00

## REGULATED POWER SUPPLIES

A compact, uncased, regulated power supply, either for table use in the laboratory or for incorporation as an integral part of larger equipments. 50 watts, with regulated voltage from 0 to 200 volts.

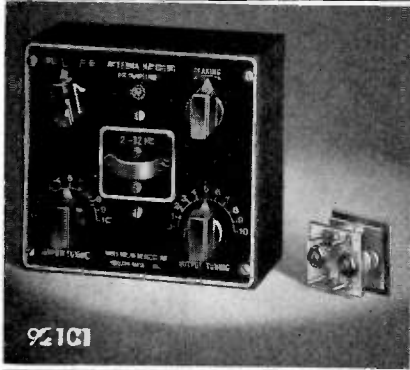
Model 90201, less tubes . . . . . \$100.00



9C921

# JAMES MILLEN

MALDEN MASSACHUSETTS



92101

### 92101er MATCHING PREAMPLIFIER

The Millen 92101 is an electronic impedance matching device and a broad-band preamplifier combined into a single unit, designed primarily for operation on 6 and 10 meters. Coils for 20 meter band also available.

No. 92101, less tubes . . . . . \$24.75

### SINGLE SIDEBAND SELECTOR

The No. 92105 is designed to permit Single Sideband Selection with existing receivers. Full technical details in April 1948 QST. Produced in co-operation and under exclusive U. S. patent license (2,364,863 and others) with the J. L. A. McLaughlin Research Laboratories.

No. 92105, with tubes and crystals . . . . \$75.00

### FREQUENCY SHIFTER

A favorite frequency shifter, plugs in, in place of crystal, for instant finger-tip control of carrier frequency. Low drift, chirpless keying, vibration immune, big band spread, accurate calibration.

Model 90700, with tubes . . . . . \$42.50

### VARIABLE FREQUENCY OSCILLATOR

The No. 90711 is a complete transmitter control unit with 6SK7 temperature-compensated, electron coupled oscillator of exceptional stability and low drift, a 6SK7 broad-band buffer or frequency doubler, a 6A67 tuned amplifier which tracks with the oscillator tuning, and a regulated power supply. Output sufficient to drive an 807 is available on 160, 80 and 40 meters and reduced output is available on 20 meters. Close frequency setting is obtained by means of the vernier control arm at the right of the dial. Since the output is isolated from the oscillator by two stages, zero frequency shift occurs when the output load is varied from open circuit to short circuit. The entire unit is unusually solidly built so that no frequency shift occurs due to vibration. The keying is clean and free from all annoying chirp, quick drift, jump, and similar difficulties often encountered in keying variable frequency oscillators.

No. 90711, with tubes . . . . . \$89.75

### 50 WATT TRANSMITTER

Based on an original Handbook design, this flexible unit is ideal for either low power amateur band transmitter use or as an exciter for high power PA stages.

Model 90800, less tubes . . . . . \$42.50

### OCTAL BASE AND SHIELD

Low loss phenolic base with octal socket plug and aluminum shield can  $1\frac{1}{8} \times 1\frac{1}{8} \times 3\frac{1}{8}$ .

No. 74400 . . . . . \$7.75

### TRANSMISSION LINE PLUG

An inexpensive, compact, and efficient polyethylene unit for use with the 300 ohm ribbon type polyethylene transmission lines. Fits into standard Millen No. 33102 (crystal) socket. Pin spacing  $\frac{1}{2}$ " diameter .095".

No. 37412 . . . . . \$2.10

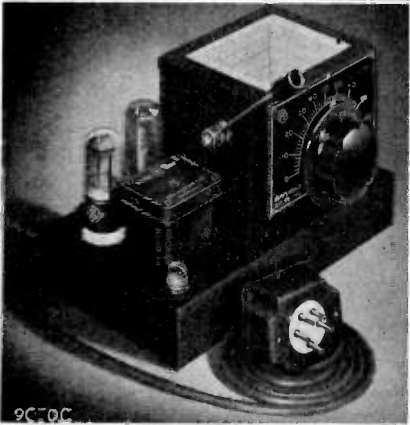
### PERMEABILITY TUNED CERAMIC FORMS

In addition to the popular shielded plug-in permeability tuned forms, 74000 series, the 69040 series of ceramic permeability tuned unshielded forms are available as standard stock items. Winding diameters and lengths of winding space are  $1\frac{3}{32} \times \frac{7}{32}$  for 69041-2;  $\frac{1}{4} \times \frac{3}{8}$  for 69043-7-8;  $\frac{1}{2} \times 1\frac{1}{16}$  for 69045-6;  $\frac{3}{16} \times \frac{3}{16}$  for 69044.

No. 69041—(Copper Slug) . . . . .	\$7.75
No. 69042—(Iron Core) . . . . .	.75
No. 69043—(Iron Core) . . . . .	.75
No. 69044—(Copper Slug) . . . . .	.75
No. 69045—(Copper Slug) . . . . .	.90
No. 69046—(Iron Core) . . . . .	.90
No. 69047—(Copper Slug) . . . . .	.90
No. 69048—(Iron Core) . . . . .	.90



92105



90700



90711



90800



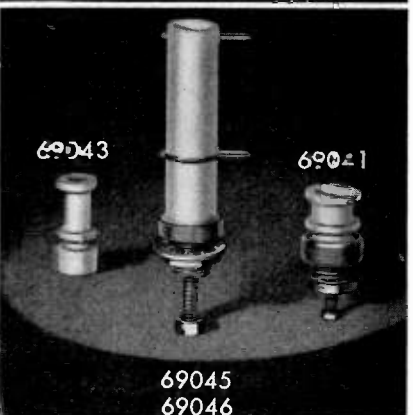
74400



37412

33102

FULL SIZE



69043

69041

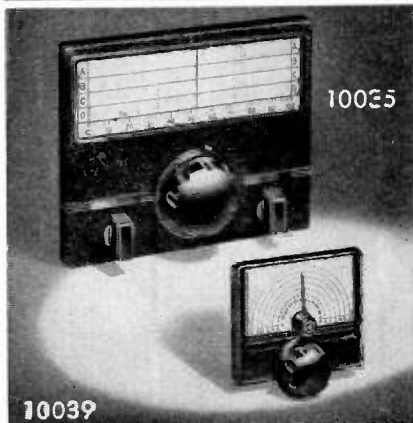
69045

69046



# JAMES M MILLEN

MALDEN · MASSACHUSETTS



10035

10039

### INSTRUMENT DIALS

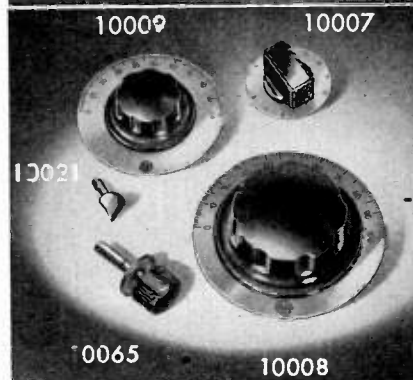
The No. 10030 is an extremely sturdy instrument type indicator. Control shaft has 1 to 1 ratio. Veeder type counter is direct reading in 99 revolutions and vernier scale permits readings to 1 part in 100 of a single revolution. Has built-in dtol lock and 1/4" drive shaft coupling. May be used with multi-revolution transmitter controls, etc., or through gear reduction mechanism for control of fractional revolution capacitors, etc., in receivers or laboratory instruments.

The No. 10035 illuminated panel dial has 12 to 1 ratio; size, 8 1/2" x 6 1/2". Small No. 10039 has 8 to 1 ratio; size, 4" x 3 1/4". Both are of compact mechanical design, easy to mount and have totally self-contained mechanism, thus eliminating back of panel interference. Provision for mounting and marking auxiliary controls, such as switches, potentiometers, etc., provided on the No. 10035. Standard finish, either size, flat black art metal.

No. 10039..... \$ 2.70  
 No. 10035..... 6.00  
 No. 10030..... 25.00



10030



10009

10007

10021

10065

10008

### DIALS AND KNOBS

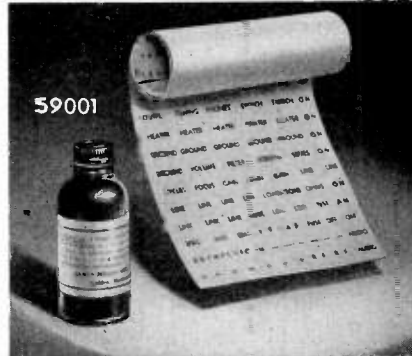
Just a few of the many stock types of small dials and knobs are illustrated herewith. 10007 is 1 1/4" diameter, 10009 is 2 1/2" and 10008 is 3 1/2".

No. 10007..... \$ .60  
 No. 10008..... 1.00  
 No. 10009..... .85  
 No. 10021..... .15  
 No. 10065..... .45

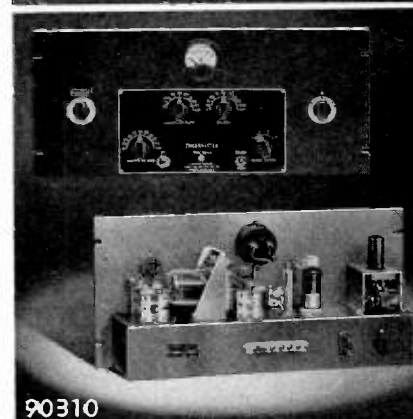
### PANEL MARKING TRANSFERS

The panel marking transfers have 1/4" black letters. Special solution furnished. Must not be used with water. Equally satisfactory on smooth or wrinkle finished panels or chassis. Ample supply of every popular word or marking required for amateur or commercial equipment.

No. 59001, white letters..... \$1.25  
 No. 59002, black letters..... 1.25



59001



90310

### HIGH FREQUENCY TRANSMITTER

The No. 90810 crystal control transmitter provides 75 watt output (higher output may be obtained by the use of forced cooling) on the 20, 10-11, 6 and 2 meter amateur bands. Provisions are made for quick band shift by means of the new 48000 series high frequency plug-in coils.

No. 90810, less tubes and crystals..... \$69.75

### HIGH FREQUENCY RF AMPLIFIER

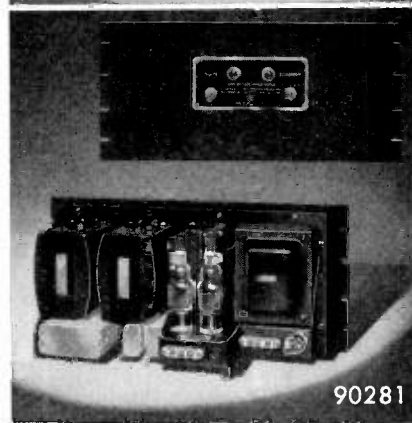
A physically small unit capable of a power output of 70 to 85 watts on 'phone or 87 to 110 watts on C-W on 20, 15, 11, 10, 6 or 2 meter amateur bands. Provision is made for quick band shift by means of the new No. 48000 series VHF plug-in coils. The No. 90811 unit uses either on 829-B or 3E29.

No. 90811 with 10 meter band coils, less tube..... \$33.00

### HIGH VOLTAGE POWER SUPPLY

The No. 90281 high voltage power supply has a d.c. output of 700 volts, with maximum current of 250 ma. In addition, a.c. filament power of 6.3 volts at 4 amperes is also available so that this power supply is an ideal unit for use with transmitters, such as the Millen No. 90800, as well as general laboratory purposes. The power supply uses two No. 816 rectifiers and has a two section pi filter with 10 henry General Electric chokes and a 2-2-10 mfd. bank of 1000 volt General Electric Pyranol capacitors. The panel is standard 8 3/4" x 19" rack mounting.

No. 90281, less tubes..... \$84.50



90281

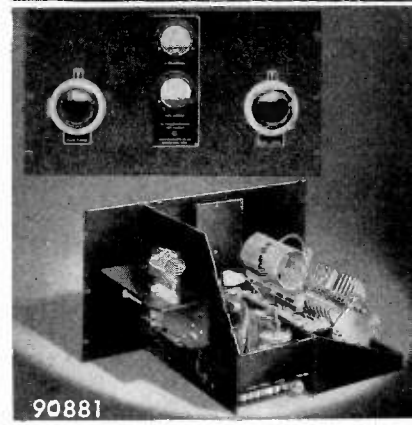


90881

### RF POWER AMPLIFIER

This 500 watt amplifier may be used as the basis of a high power amateur transmitter or as a means for increasing the power output of an existing transmitter. As shipped from the factory, the No. 90881 RF power amplifier is wired for use with the popular RCA or G.E. "812" type tubes, but adequate instructions are furnished for readjusting for operation with such other popular amateur style transmitting tubes as Taylor TZ40, Eimac 35T, etc. The amplifier is of unusually sturdy mechanical construction, on a 10 1/2" relay rack panel. Plug-in inductors are furnished for operation on 10, 20, 40 or 80 meter amateur bands. The standard Millen No. 90800 exciter unit is an ideal driver for the new No. 90881 RF power amplifier.

No. 90881, with one set of coils, but less tubes..... \$89.50



90881



# JAMES MILLEN

MALDEN • MASSACHUSETTS



## SHAFT LOCKS

In addition to the original No. 10060 and No. 10061 "DESIGNED FOR APPLICATION" shaft locks, we can also furnish such variations as the No. 10062 and No. 10063 for easy thumb operation as illustrated above. The No. 10061 instantly converts any plain "1/4 shaft" volume control, condenser, etc. from "plain" to "shaft locked" type. Each to mount in place of regular mounting nut.

No. 10060	.....	\$36
No. 10061	.....	.36
No. 10062	.....	.45
No. 10063	.....	.45

## TRANSMITTING TANK COILS

A full line—all popular wattages for all bands. Send for special catalog.

## DIAL LOCK

Compact, easy to mount, positive in action, does not alter dial setting in operation! Rotation of knob "A" depresses finger "B" and "C" without imparting any rotary motion to Dial. Single hole mounted.

No. 10050	.....	\$45
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## RIGHT ANGLE DRIVE

Extremely compact, with provisions for many methods of mounting. Ideal for operating potentiometers, switches, etc., that must be located, for short leads, in remote parts of chassis.

No. 10012	.....	\$3.75
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## THRU-BUSHING

Efficient, compact, easy to use and neat appearing. Fits 1/4" hole in chassis. Held in place with a drop of solder or a "nick" from a crimping tool.

No. 32150	.....	\$0.5
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## FLEXIBLE COUPLINGS

The No. 39000 series of Millen "Designed for Application" flexible coupling units include, in addition to improved versions of the conventional types, also such exclusive original designs as the No. 39001 insulated universal joint and the No. 39006 "slide-action" coupling (in both steatite and bakelite insulation).

The No. 39006 "slide-action" coupling permits longitudinal shaft motion, eccentric shaft motion and out-of-line operation, as well as angular drive without backlash.

The No. 39005 is similar to the No. 39001, but is not insulated and is designed for applications where relatively high torque is required. The steatite insulated No. 39001 has a special anti-backlash pivot and socket grip feature. All of the above illustrated units are for 1/4" shaft and are standard production type units.

No. 39001	.....	\$42
No. 39002	.....	.42
No. 39003	.....	.21
No. 39005	.....	.42
No. 39006	.....	.42

## CATHODE RAY TUBE SHIELDS

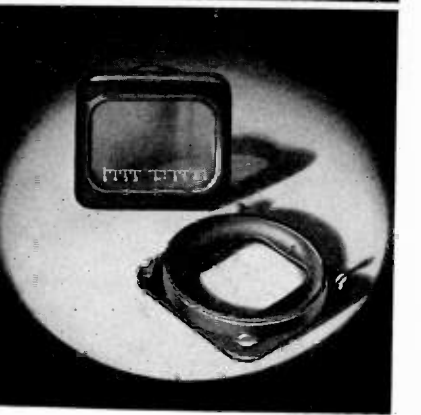
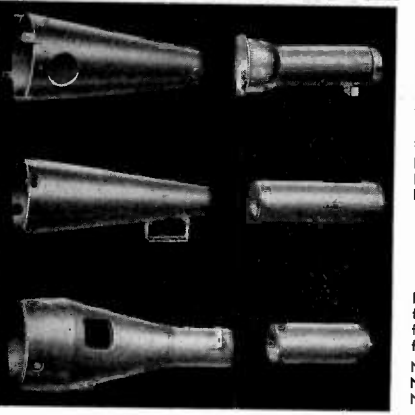
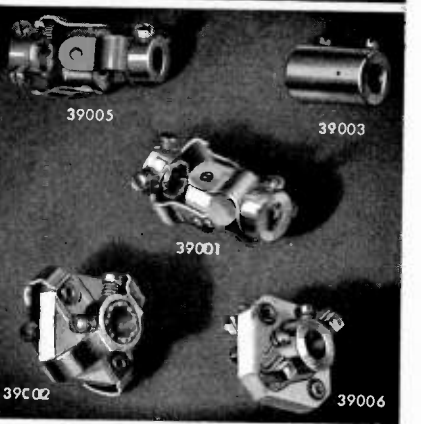
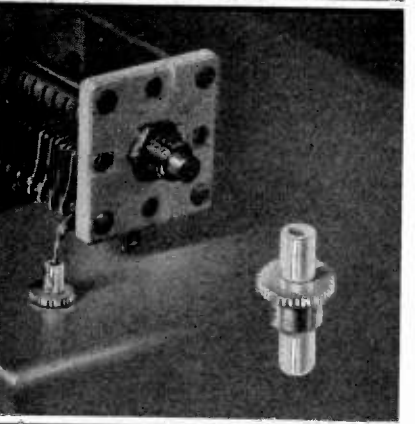
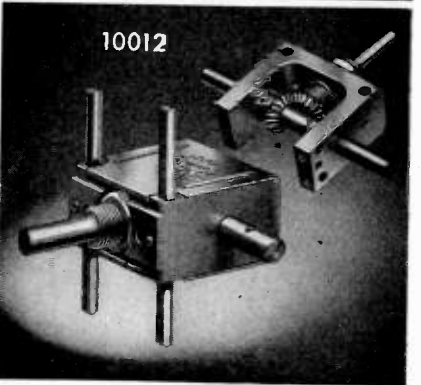
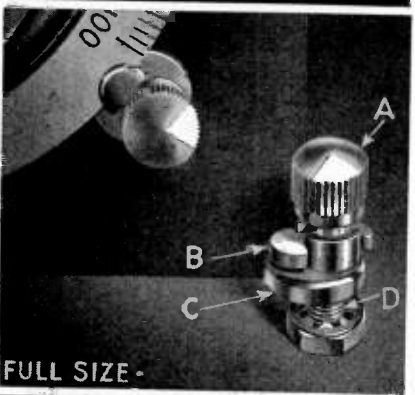
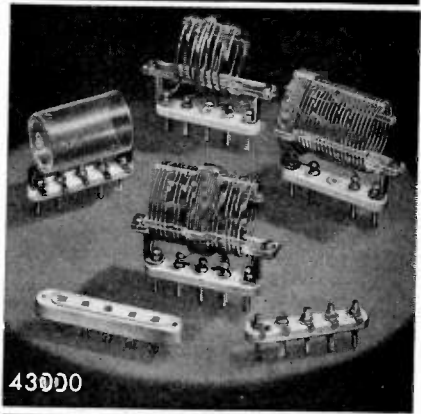
For many years we have specialized in the design and manufacture of magnetic metal shields of nicoloi and mumetal for cathode ray tubes in our own complete equipment, as well as for applications of all other principal complete equipment manufacturers. Stock types as well as special designs to customers' specifications promptly available.

No. 80045—Nicoloi for 5" tube	.....	\$10.50
No. 80043—Nicoloi for 3" tube	.....	6.00
No. 80042—Nicoloi for 2" tube	.....	5.25

## BEZELS FOR CATHODE RAY TUBES

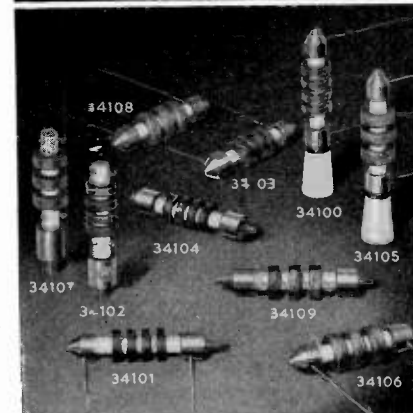
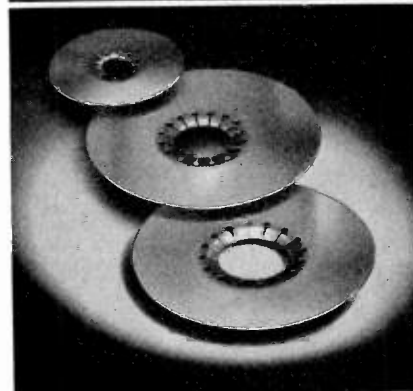
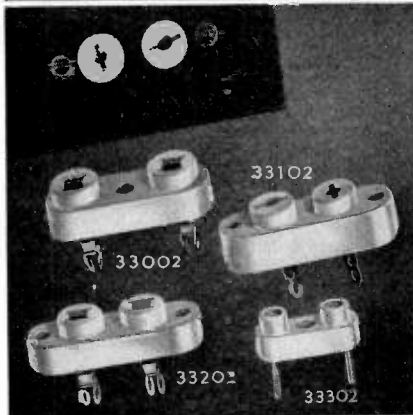
Five inch bezel is of cast aluminum with black wrinkle finish. Complete with neoprene cushion, green lucite filter scale and four screws for quick detachment from panel when inserting tube.

No. 80075—5"	.....	\$7.50
No. 80073—3"	.....	3.90
No. 80072—2"	.....	1.25



# JAMES MILLEN

MALDEN · MASSACHUSETTS



## TUBE SOCKETS DESIGNED FOR APPLICATION

**MODERN SOCKETS for MODERN TUBES!** Long Flashover path to chassis permits use with transmitting tubes, 866 rectifiers, etc. Long leakage path between contacts. Contacts are type proven by hundreds of millions already in government, commercial and broadcast service, to be extremely dependable. Sockets may be mounted either with or without metal flange. Mounts in standard size chassis hole. All types have barrier between contacts and chassis. All but octal and crystal sockets also have barriers between individual contacts in addition.

The No. 33888 shield is for use with the 33008 octal socket. By its use, the electrostatic isolation of the grid and plate circuits of single-ended metal tubes can be increased to secure greater stability and gain.

The 33087 tube clamp is easy to use, easy to install, effective in function. Available in special sizes for all types of tubes. Single hole mounting. Spring steel, cadmium plated.

Cavity Socket Contact Discs, 33446 are for use with the "Lighthouse" ultra high frequency tube. This set consists of three different size unhardened beryllium copper multi-finger contact discs. Heat treating instructions forwarded with each kit for hardening after spinning or forming to frequency requirements.

Voltage regulator dual contact bayonet socket, 33991 black Bakelite insulation and 33992 with low loss high leakage mica filled Bakelite insulation.

No. 33004.....	\$ .30
No. 33005.....	.30
No. 33006.....	.30
No. 33007.....	.34
No. 33008.....	.30
No. 33888.....	.18
No. 33087.....	.30
No. 33002.....	.30
No. 33102.....	.30
No. 33202.....	.30
No. 33302.....	.21
No. 33446*.....	5.00
No. 33991.....	.45
No. 33992.....	.55

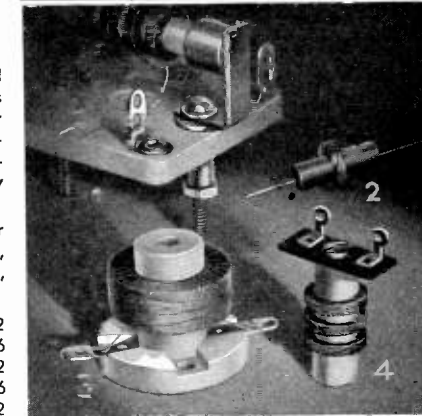
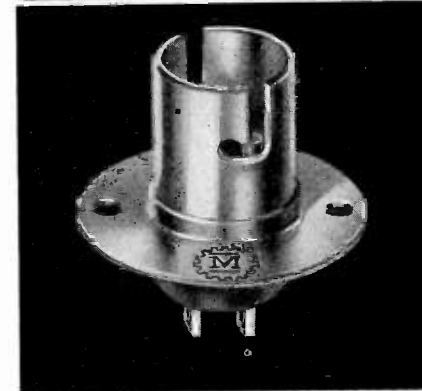
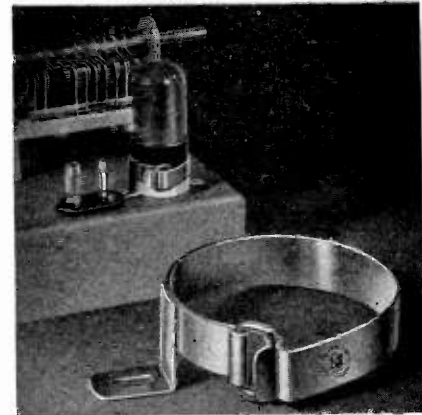
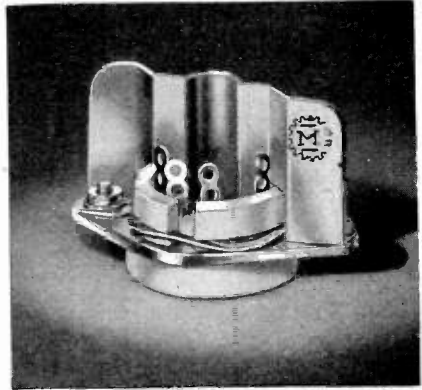
\* For set of 3. Single discs \$2.00 each.

## RF CHOKES

Many have copied, few have equalled, and none have surpassed the genuine original design Millen Designed for Application series of midget RF Chokes. The more popular styles now in constant production are illustrated herewith. Special styles and variations to meet unusual requirements quickly furnished.

General Specifications: 2.5 mH, 250 mA for types 34100, 34101, 34102, 34103, 34104, and 1 mH, 300 mA for types 34105, 34106, 34107, 34108, 34109.

No. 34100.....	\$ .42
No. 34101.....	.36
No. 34102.....	.42
No. 34103.....	.36
No. 34104.....	.42



# JAMES MILLEN

MALDEN · MASSACHUSETTS

## CERAMIC PLATE OR GRID CAPS

Soldering lug and contact one-piece. Lug ears annealed and solder dipped to facilitate easy combination "mechanical plus soldered" connection of cable.

No. 36001—9/16"	\$.21
No. 36002—3/8"	.21
No. 36004—1/4"	.21

## SNAP LOCK PLATE CAP

For Mobile, Industrial and other applications where tighter than normal grip with multiple finger 360° low resistance contact is required. Contact self-locking when cap is pressed into position. Insulated snap button at top releases contact grip for easy removal without damage to tube.

No. 36011—9/16"	\$.60
No. 36012—3/8"	.60

## SAFETY TERMINAL

Combination high voltage terminal and thru-bushing. Tapered contact pin fits firmly into conical socket providing large area, low resistance connection. Pin is swivel mounted in cap to prevent twisting of lead wire.

No. 37001, Black or Red	\$.40
No. 37501, Low loss	.55

## TERMINAL STRIP

A sturdy four-terminal strip of molded black Textolite. Barriers between contacts. "Non turning" studs, threaded 8/32 each end.

No. 37104	\$.60
-----------	-------

## POSTS, PLATES and PLUGS

Designed for Application! Compact, easy to use. Made in black and red regular bakelite as well as low loss brown mica filled bakelite or steatite for R.F. uses. Posts have captive head.

No. 37202 Plates (pr.)	\$.30
No. 37212 Plugs	.70
No. 37222 Posts (pr.)	.40

## STEATITE TERMINAL STRIPS

Terminal and lug are one piece. Lugs are Navy turret type and are free floating so as not to strain steatite during wide temperature variations. Easy to mount with series of round holes for integral chassis bushings.

No. 37302	\$.60
No. 37303	.70
No. 37304	.80
No. 37305	.90
No. 37306	1.00

## MIDGET COIL FORMS

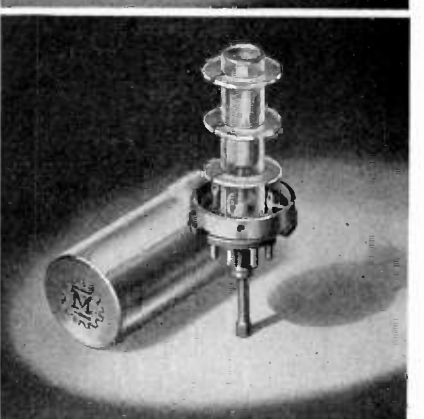
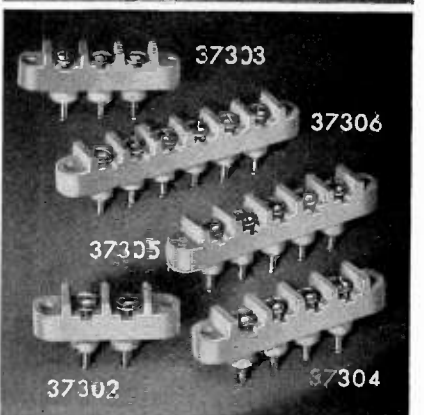
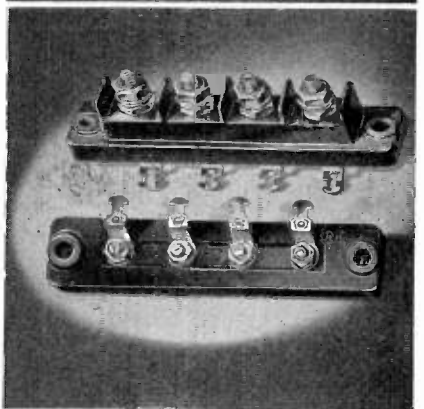
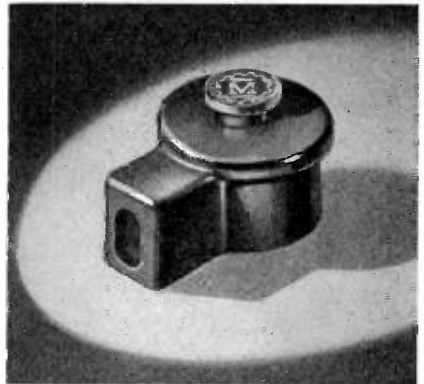
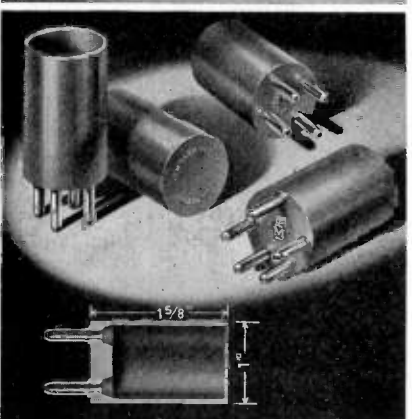
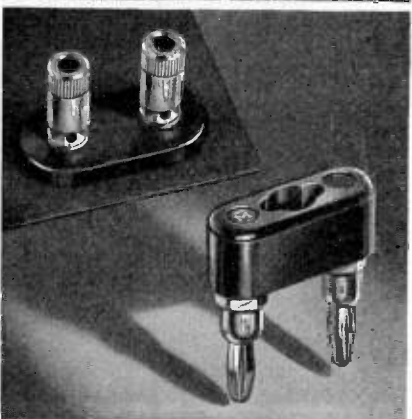
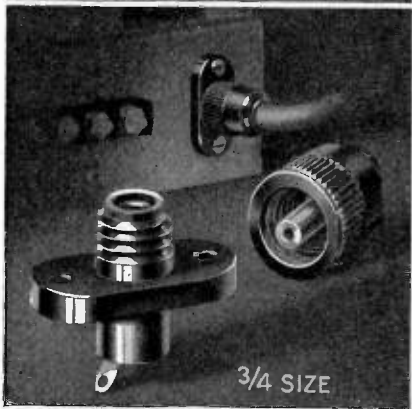
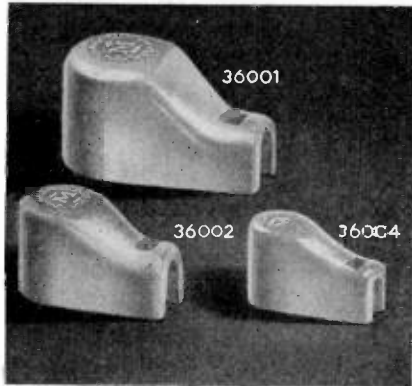
Made of low loss mica filled brown bakelite. Guide funnel makes for easy threading of leads through pins.

No. 45000	\$.35
No. 45004	.45
No. 45005	.45

## TUNABLE COIL FORM

Standard octal base of low loss mica-filled bakelite, polystyrene 1/2" diameter coil form, heavy aluminum shield, iron tuning slug of high frequency type, suitable for use up to 35 mc. Adjusting screw protrudes through center hole of standard octal socket.

No. 74001, with iron core	\$.185
No. 74002, less iron core	1.50



# JAMES MILLLEN

MALDEN · MASSACHUSETTS

## 04000 and 11000 SERIES TRANSMITTING CONDENSERS

A new member of the "Designed for Application" series of transmitting variable air capacitors is the 04000 series with peak voltage ratings of 3000, 6000, and 9000 volts. Right angle drive, 1-1 ratio. Adjustable drive shaft angle for either vertical or sloping panels. Sturdy construction, thick, rounded-edged, polished aluminum plates with  $1\frac{3}{4}$ " radius. Constant impedance, heavy current, multiple finger rotor contactor of new design. Available in all normal capacities.

The 11000 series has 16/1 ratio center drive and fixed angle drive shaft.

Code	Volts	Capacity	Price
11035	3000	35	\$ 6.90
11050	3000	50	7.14
11070	3000	70	7.80
04050	6000	50	16.00
04060	9000	60	18.00
04100	6000	90	18.00
04200	3000	205	20.00

## 12000 and 16000 SERIES TRANSMITTING CONDENSERS

Rigid heavy channeled aluminum end plates. Isolantite insulation, polished or plain edges. One piece rotor contact spring and connection lug. Compact, easy to mount with connector lugs in convenient locations. Same plate sizes as 11000 series above.

The 16000 series has same plate sizes as 04000 series. Also has constant impedance, heavy current, multiple finger rotor contactor of new design. Both 12000 and 16000 series available in single and double sections and many capacities and plate spacing.

## THE 28000-29000 SERIES VARIABLE AIR CAPACITORS

"Designed for Application," double bearings, steatite end plates, cadmium or silver plated brass plates. Single or double section .022" or .066" air gap. End plate size:  $1\frac{9}{16}$ " x  $1\frac{11}{16}$ ". Rotor plate radius:  $\frac{3}{4}$ ". Shaft lock, rear shaft extension, special mounting brackets, etc., to meet your requirements. The 28000 series has semi-circular rotor plate shape. The 29000 series has approximately straight frequency line rotor plate shape. Prices quoted on request. Many stock sizes.

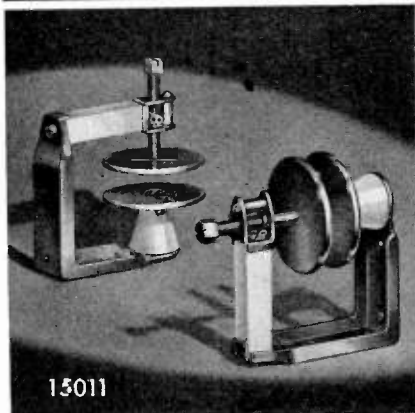
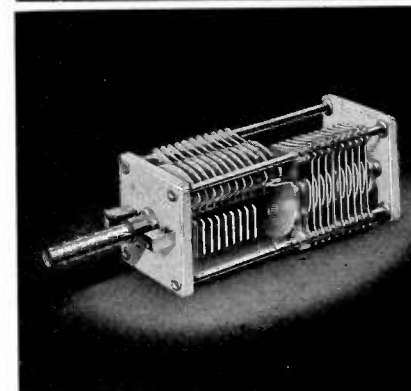
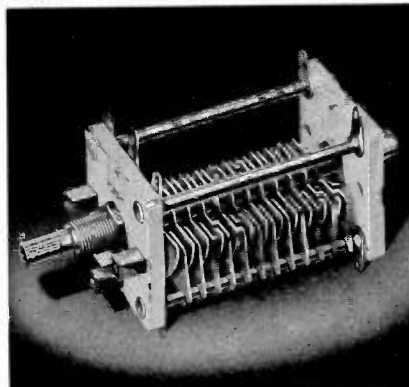
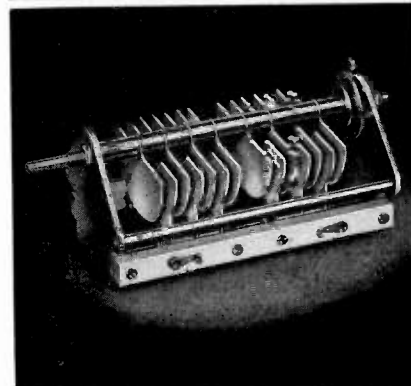
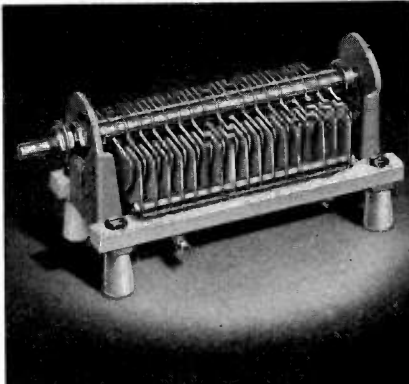
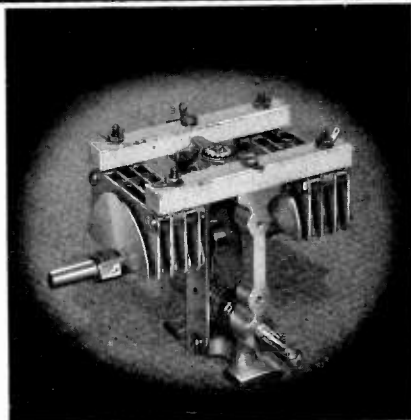
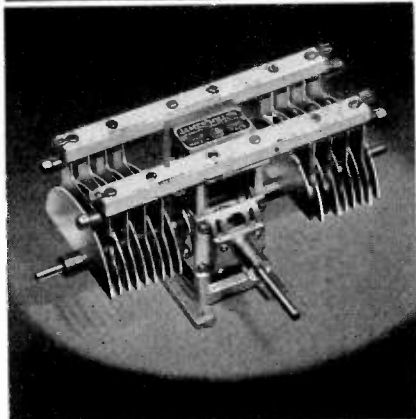
## NEUTRALIZING CAPACITOR

Designed originally for use in our own No. 90881 Power Amplifier, the No. 15011 disc neutralizing capacitor has such unique features as rigid channel frame, horizontal or vertical mounting, fine thread over-size lead screw with stop to prevent shorting and rotor lock. Heavy rounded-edged polished aluminum plates are 2" diameter. Glazed Steatite insulation.

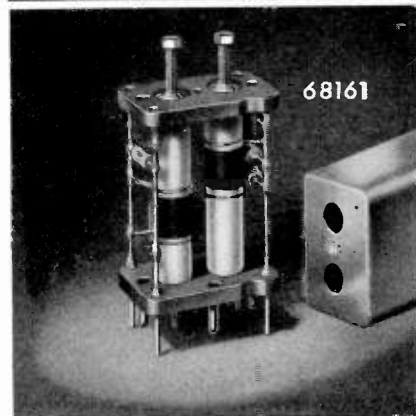
No. 15011..... \$3.15

## I.F. TRANSFORMERS

The Millen "Designed for Application" line of I.F. transformers includes air condenser tuned, and permeability tuned types for all applications. Standard stock units are for 456, 16C0 and 5000 kc.B.F.O. also available.



15011



68161



# STANDARDS OF COMPARISON

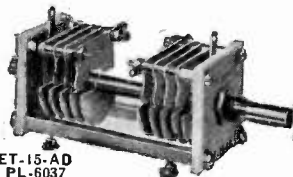
## TRIM-AIR MIDGET CAPACITORS

Combine essential sturdiness with the flexibility obtained only in a spacer-built rotor and stator type of assembly.

ZR-35-AS  
PL-6003



ET-15-AD  
PL-6037



### GENERAL SPECIFICATIONS:

#### CAPACITY CHARACTERISTIC: S.L.C.

FRAME: End Plates of 5/32" thick Isalantite.

SHAFT: 1/4" diameter, nickel plated brass.

PLATES: .020" thick aluminum, specially treated to remove burrs.

FINISH: Spacers, bushing nuts and screws nickel plated brass.

MOUNTING: Singles require one 3/8" hole in panel; Duals provided with four No. 4-36 screws in square brass tie rods. Trim-Air mounting posts or brackets fit both single and dual types. Singles are fitted with tapered nuts acting on a split bushing for locking rotor shaft for fixed tune. Duals have rear shaft extension for coupling to other units and have a removable intersection shield, on airgaps of .020 and .030.

Note: Single section Trim-Airs normally stocked with full length shaft for knob or dial. Stub shaft equivalents, with slot for screw driver adjustment only, available to order. "ZS" type singles have .040" thick plates with rounded buffed edges.

#### SINGLE TRIM-AIR CONDENSERS (Long Shaft Construction)

Parts List No.	Type	Max. Cap.	Min. Cap.	No. Plates	Air Gap	Length	List Price
PL 6016	ZU-75-AS	75	2.7	15	.020	1 3/8	\$2.50
PL 6017	ZU-100-AS	100	3	19	.020	1 1/2	2.55
PL 6018	ZU-140-AS	140	5	27	.020	1 23/32	4.60
PL 6000	ZR-10-AS	10	1.2	3	.030	7/8	1.85
PL 6001	ZR-15-AS	15	1.5	5	.030	31/32	1.90
PL 6002	ZR-25-AS	25	2	7	.030	1 1/16	2.10
PL 6003	ZR-35-AS	35	2.5	11	.030	1 9/32	2.20
PL-6004	ZR-50-AS	50	2.8	13	.030	1 3/8	2.30
PL 6055	ZR-100-AS	108	6.6	29	.030	2 3/4	3.30
PL 6024	ZV-5-TS*	5	1.5	3	.060	7/8	1.85
PL 6044	ZT-5-AS	5	2	3	.070	31/32	2.10
PL 6010	ZT-10-AS	11	3.6	6	.070	1 1/16	2.15
PL 6011	ZT-15-AS	15	3	9	.070	1 1/2	2.25
PL 6012	ZT-30-AS	30	4	17	.070	2 1/16	2.75
PL 6022	ZS-4-SS	4	1.5	5	.140	1 1/2	2.75
PL 6023	ZS-7-SS	7	4	7	.140	1 23/32	3.05

\* Supplied with 2 segment stator for UHF circuits. Extra plate also supplied, making 3 plates as listed.

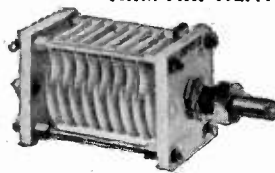
#### DUAL TRIM-AIR CONDENSERS

Per Section

Parts List No.	Type	Max. Cap.	Min. Cap.	No. Plates	Air Gap	Length	List Price
6041	EU-75-AD	75	2.7	15	.020	3 1/32	\$4.80
6042	EU-100-AD	100	3	19	.020	3 1/32	5.00
6043	EU-140-AD	140	5	27	.020	3 11/16	8.85
6028	ER-10-AD	10	1.2	3	.030	2 3/16	3.85
6029	ER-15-AD	15	1.5	5	.030	2 3/16	3.85
6030	ER-25-AD	25	2	7	.030	2 3/16	3.95
6031	ER-35-AD	35	2.5	11	.030	3 1/32	4.30
6032	ER-50-AD	50	2.8	13	.030	3 1/32	4.55
6065	ER-100-AD	100	6.9	25	.030	3 11/16	8.15
6037	ET-15-AD	15	3	9	.070	3 1/32	4.40
6039	ET-30-AD	30	4	17	.070	4 13/32	5.30
6033	ES-4-SD	4	1.5	5	.140	3 1/32	5.30
6035	ES-7-SD	7	4	7	.140	3 11/16	5.90
6293	ER-25-ADI*	25	2	7	.030	2 3/16	5.80

\* Insulated coupling between rotor sections.

## TRIM-AIR HEAVY DUTY SPECIALS



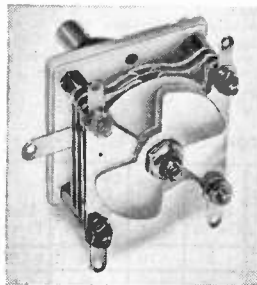
ET-30-ASP  
PL-6058

Four-tie-rod frame, ball and strap rear bearing construction, augmenting the simplified Trim-Air construction, to give even greater strength and rigidity. General characteristics otherwise same as standard Trim-Airs.

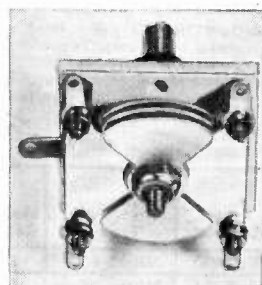
Dual section units have balanced rotor and stator sections and both single and dual section types may be single hole mounted or used with standard Trim-Air mounting accessories. Standard Trim-Air shaft locking nut may be used for fixed tune. PL-6069 and PL-6068 are duals with rear shaft extended; all others have ball and strap type rear bearing.

SINGLES	LIST	DUALS	LIST
PL 6056 ER-50-ASP	\$4.35	PL 6057 ER-50-ADP	\$4.80
PL 6059 EU-75-ASP	3.95	PL 6069 ER-50-ADP (rear sh. ext.)	8.70
PL 6058 ET-30-ASP	4.05	PL 6068 EU-140-ADP (rear sh. ext.)	11.60

## A NEW LINE OF CARDWELL MIDGET CONDENSERS FOR V.H.F.



PL-6113



PL-6076

Cardwell offers a new line of 90 degree condensers with butterfly rotor plates, fulfilling a demand created by engineers and amateurs since the publication of an article "Stabilizing The 144 Megacycle Transmitter" in April, 1946 "QST." Also see pages 351 to 353 inclusive in the 1946 ARRL Radio Amateurs Handbook. PL-6113 and PL-6076 are specified in these articles. Features of these 90 degree midget condensers are as follows:

- Electrical Symmetry
- Low Distributed Inductance.
- No Moving Contacts.
- Plates easily removable to change capacity range.
- Isalantite Insulation.
- Single Hole Mounting.

Small Size; 1 7/16" x 1 13/32" per general outline dimensions for differential "Trim-Airs" as shown on Page 6 of Catalog No. 46. These condensers are made to fit all standard Cardwell "Trim-Air" hardware.

Note maximum and minimum capacity values shown are measured from stator-to-stator and are effective values as used when a coil is connected stator-to-stator, with rotor floating.

#### CARDWELL V.H.F. 90 DEGREE TRIM-AIR MIDGETS

Part List No.	Type	Max. Cap.	Min. Cap.	No. Plates Rotor	No. Plates Stator	Air Gap	Length Overall	List Price
6075	ER-3-BF/S	3	1.5	2	1	.030"	1 1/4"	\$2.60
6076	ER-6-BF/S	5	1.5	3	2	.030"	1 1/4"	2.70
6077	ER-8-BF/3	7	2.0	4	3	.030"	1 1/4"	2.80
6078	ER-15-BF/S	13	3.0	7	6	.030"	2 3/8"	3.40
6079	ER-25-BF/S	20.4	3.4	8	7	.020"	2 3/8"	3.65
6080	EU-35-BF/S	27	4.0	10	9	.020"	2 3/8"	3.80
**6081	EU-50-BF-S	38	6.0	14	13	.020"	2 3/4"	7.65
*6113	ER-14-BF/SL	13	10.4	(3) Disc (2) 90°	(2) 180° (2) 90°	.030"	2 1/4"	4.00

\* Minimum capacity loaded by circular rotor plates.

\*\* Isd. rear end plate—ball and strap rear bearing.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

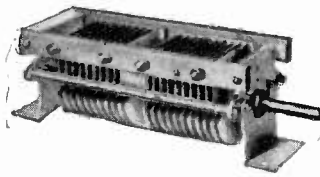
# CARDWELL CONDENSERS

THE ALLEN D. CARDWELL MANUFACTURING CORPORATION

# STANDARDS OF COMPARISON

## MIDWAY TRANSMITTING CAPACITORS

The Midway is ideal for low and medium power transmitters for portable Mobile and aircraft equipment, due to its light weight, compact size and extremely sturdy construction. Incorporates original patented features of the larger "X" type standard transmitting condenser.



MT-100-GD PL-7030  
with PL-5051 Mtg. Brackets

### GENERAL SPECIFICATIONS:

**CAPACITY CHARACTERISTIC:** S.L.C.

**FRAME:** All aluminum end plates and tie rods.

**SHAFT:** 1/4" C.R. steel, cadmium plated.

**PLATES:** .025" aluminum. On sizes having airgap of .070" or over, plates have rounded edges, buffed to minimize corona loss.

**BEARINGS:** Brass, nickel plated shoulder type front bearing with ball thrust rear bearing.

**INSULATION:** Mycalex.

**MOUNTING:** 3 point front panel mounting by means of 3 screws and hex. posts. Two aluminum mounting feet with screws, Cardwell Part List No. 5052 for regular chassis mounting, provided instead, if so ordered. Type "M" special brackets (Part List No. 5051) permit inverted mounting.

### MIDWAY SINGLE CONDENSERS

Parts List No.	Type	Max. Cap.	Min. Cap.	No. Plates	Air Gap	Length Over End Plates	List Price
PL7000	MR-25-BS	25	6	3	.030	1 3/4	\$3.95
PL7001	MR-50-BS	50	6	5	.030	1 3/4	5.00
PL7002	MR-70-BS	70	7	7	.030	1 3/4	5.15
PL7003	MR-105-BS	112	9	11	.030	1 3/4	5.35
PL7004	MR-150-BS	150	10	15	.030	1 3/4	5.80
PL7005	MR-260-BS	260	13	25	.030	2 3/4	6.40
PL7006	MR-365-BS	365	16	35	.030	2 3/4	7.00
PL7015	MT-20-GS	25	8	5	.070	1 3/4	4.80
PL7016	MT-35-GS	35	6	7	.070	1 3/4	5.15
PL7017	MT-50-GS	50	10	11	.070	1 3/4	5.75
PL7018	MT-70-GS	70	10	15	.070	2 3/4	6.55
PL7019	MT-100-GS	100	14	21	.070	2 3/4	7.20
PL7020	MT-150-GS	150	18	31	.070	3 1/4	8.85
PL7021	MG-35-NS	35	14	15	.171	3 1/4	8.85
PL7024	MO-165-BS	165	15	25	.050	2 3/4	4.90

### MIDWAY DUAL CONDENSERS

Parts List No.	Type	Per Section			Air Gap	Length Over End Plates	List Price
		Max. Cap.	Min. Cap.	No. Plates			
PL7007	MR-25-BD	25	5	3	.030	1 3/4	\$6.40
PL7008	MR-50-BD	47	7	5	.030	2 3/4	6.85
PL7009	MR-70-BD	70	8	7	.030	2 3/4	7.20
PL7010	MR-100-BD	112	9	11	.030	2 3/4	7.50
PL7011	MR-150-BD	150	10	15	.030	2 3/4	7.75
PL7013	MR-260-BD	260	13	25	.030	3 1/4	8.75
PL7026	MT-20-GD	20	6	5	.070	2 3/4	8.15
PL7027	MT-35-GD	35	8	7	.070	2 3/4	8.85
PL7028	MT-50-GD	50	9	11	.070	2 1/2	9.35
PL7029	MT-70-GD	70	11	15	.070	3 1/4	10.30
PL7030	MT-100-GD	100	13	21	.070	5 1/4	11.75
PL7031	MO-180-BD	190	15	29	.050	5 1/4	11.75

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

## "N" TYPE TRANSMITTING CAPACITORS

Designed for medium power high frequency transmitters and short wave therapy apparatus, the Cardwell "N" series maintains the customary high standard of Cardwell construction, yet eliminates closed circuit loops completely.



NP-35-DD  
PL-7107

### GENERAL SPECIFICATIONS:

**CAPACITY CHARACTERISTIC:** S.L.C.

**FRAME:** Improved aluminum end plates support heavy lateral ceramic insulating bars which carry the stators.

**SHAFT:** 1/4" diameter cadmium plated steel.

**PLATES:** Aluminum, .040" thick, with rounded edges. PL-7106 and 7116 have buffed and polished edges. PL-7105 has .025" thick plates, buffed and polished edges.

**BEARINGS:** Cardwell shoulder type front bearing, with ball thrust rear bearing.

**MOUNTING:** Can be single hole mounted, or by three mounting posts and screws, to front panel. Chassis mounting on feet which form part of end plates, or use Cardwell "M" brackets, Cardwell part No. 301, for inverted mounting, for lowest stator-to-ground capacity.

### ULTRA-HIGH FREQUENCY SINGLE CONDENSERS

Parts List No.	Type	Max. Cap.	Min. Cap.	No. Plates	Air Gap	Length Back of Panel	List Price
PL7100	NP-50-DS	50	9	13	.084	3 3/8	\$5.15
PL7101	NP-75-DS	75	11	19	.084	4 3/8	6.05
PL7102	NP-100-DS	100	13	25	.084	5 3/8	6.85
PL7103	NP-150-DS	150	19	39	.084	6 1/4	8.95
PL7104	NG-35-DS	35	11	15	.171	5 3/8	6.75

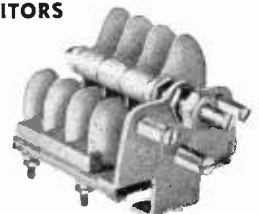
### ULTRA-HIGH FREQUENCY DUAL CONDENSERS

Parts List No.	Type	Per Section			Air Gap	Length Back of Panel	List Price
		Max. Cap.	Min. Cap.	No. Plates			
PL7105	NT-50-GD	50	7	11	.070	4 3/8	\$8.85
PL7116	NP-15-ND	17	4	5	.084	4 3/8	8.40
PL7106	NI-35-ND	35	5	9	.084	4 3/8	8.85
PL7110	NP-15-DD	17	4	5	.084	4 3/8	7.50
PL7107	NP-35-DD	35	5	9	.084	4 3/8	7.90
PL7108	NP-50-DD	50	9	13	.084	5 3/8	8.85
PL7109	NP-75-DD	75	11	19	.084	6 1/4	10.60
PL7115	NA-12-NDI	13	6	7	.218	5 1/4	22.10

Note: NA-12-NDI is dual neutralizer, rotor sections insulated from each other. Capacity and nr. plates shown, is PER SECTION.

## "NA" NEUTRALIZING CAPACITORS

The "NA" group offers 180° neutralizing capacitors of restricted range, for dial or screw driver adjustment. Shaft lock for permanent setting. Adjustable airgap on NA-4-NS only by adjusting threaded bushing in aluminum end plate. Single rotor bearing with beryllium tension washer and special bushing for rigidity. Plates are .040" thick aluminum, rounded and buffed edges. Three point panel mounting or foot mounting.



NA-16-NS  
PL-7114

Parts List No.	Type	Max. Cap.	Min. Cap.	No. Plates	Air Gap	Length Back of Panel	List Price
PL7111	NA-4-NS	4	3.25	2	.218	1 1/2	\$5.30
PL7112	NA-6-NS	6	4	3	.218	1 1/2	5.30
PL7113	NA-10-NS	12	6	6	.218	2 1/2	6.65
PL7114	NA-16-NS	16	7	8	.218	3 3/8	7.40

# CARDWELL CONDENSERS

THE ALLEN D. CARDWELL MANUFACTURING CORPORATION



# STANDARDS OF COMPARISON

## "X" TYPE STANDARD TRANSMITTING CAPACITOR

The original grounded rotor, metal frame variable air capacitor.

Rounded edges, polished aluminum plates, .040" thick on all but "XT" and "XR" types.

Frames, tie rods, bearing bushings, spacers and stator blocks, nicked brass. Cadmium plated 1/4" steel shaft supports securely locked rotor assembly. Mycalex insulation. Panel spaces 4/8" x 3/8". Panel mounting. N.P. brass mounting feet provided on special order, for chassis mounting. See Accessories.



XC-100-XS  
PL-8023

## "T" TYPE HEAVY DUTY TRANSMITTING CAPACITORS

6/4" wide, 5 1/2" high, plates unmeshed. Corona shields on stators for wider airgap types. End plates 1/8" thick, heavy nickel plated. Massive bearings, 3/8" stainless steel shafts; heavy, two finger phosphor bronze rotor contactor bears on sturdy contact ring built to carry very heavy current without power loss. Rotor plates 4 1/2" diameter, .050" thick aluminum. Heavy mounting feet formed as part of end plates. Ball thrust rear bearing. Mycalex insulation.



TK-300-US  
PL-9110

### "X" TYPE STANDARD SINGLES

Parts List No.	Type	Max. Cap.	Min. Cap.	No. Plates	Air Gap	Length Over End Plates	List Price
PL8000	XR-50-PS	50	11	3	.030	1 1/2	\$5.05
PL8001	XR-100-PS	100	12	5	.030	1 1/2	5.15
PL8002	XR-150-PS	150	12.5	7	.030	1 1/2	5.30
PL8003	XR-250-PS	250	13	11	.030	1 1/2	5.40
PL8004	XR-375-PS	375	16	17	.030	2 1/8	6.15
PL8005	XR-500-PS	475	18	21	.030	2 1/8	7.55
PL8007	XR-1000-PS	950	30	41	.030	3 3/8	14.50
PL8013	XR-1500-PS	1500	50	65	.030	5	16.00
PL8048	XT-220-PS	220	20	21	.070	3 3/8	7.35
PL8050	XT-440-PS	440	40	43	.070	5	11.30
PL8040	XP-90-KS	90	16	11	.084	2 1/8	6.65
PL8041	XP-165-KS	165	22	19	.084	3 3/8	9.55
PL8043	XP-290-KS	290	35	33	.084	5	14.00
PL8044	XP-330-KS	330	37	37	.084	5 5/8	16.00
PL8029	XE-120-XS	120	19	17	.100	3 3/8	8.85
PL8031	XE-240-XS	240	30	33	.100	5 5/8	16.00
PL8025	XD-160-XS	160	28	27	.125	5 5/8	13.30
PL8032	XG-25-XS	25	8	5	.171	2 1/8	5.15
PL8033	XG-50-XS	50	15	11	.171	3 3/8	9.55
PL8034	XG-110-XS	110	26	23	.171	5 5/8	14.25
PL8020	XC-18-XS	19	8	5	.200	2 1/8	6.65
PL8021	XC-40-XS	40	15	11	.200	3 3/8	9.55
PL8022	XC-65-XS	65	20	17	.200	5	12.50
PL8023	XC-100-XS	100	28	25	.200	6 5/8	15.50
PL8037	XR-55-XS	55	20	15	.230	6	14.75

### "X" TYPE STANDARD DOUBLES

Parts List No.	Type	Per Section			Air Gap	Length Over End Plates	List Price
		Max. Cap.	Min. Cap.	No. Plates			
PL8018	XR-500-PD	500	18	21		3 3/8	\$14.00
PL8068	XT-80-PD	80	11	9	.070	3 3/8	9.30
PL8070	XT-210-PD	210	22	21	.070	5	12.80
PL8065	XP-90-KD	95	15	11	.084	3 3/8	11.05
PL8066	XP-165-KD	165	23	19	.084	5 5/8	16.20
PL8067	XP-325-KD	325	38	37	.084	10 3/8	32.45
PL8061	XE-120-XD	120	19	17	.100	5 5/8	14.75
PL8062	XE-240-XD	240	32	33	.100	10 3/8	30.85
PL8060	XD-160-XD	160	28	27	.125	10 3/8	28.05
PL8063	XG-50-XD	50	14	11	.171	5 5/8	15.75
PL8064	XG-110-XD	110	27	21	.171	10 3/8	26.50
PL8056	XC-40-XD	40	14	11	.200	6 5/8	16.95
PL8057	XC-75-XD	75	21	19	.200	10 3/8	22.10
PL8081	XE-160-70-XQ	Multi-Band			.100	10 3/8	40.60

### SINGLE HEAVY DUTY TRANSMITTING CONDENSERS

Parts List No.	Type	Max. Cap.	Min. Cap.	No. Plates	Air Gap	Length Inside End Plates	List Price
PL9009	TJ-315-US	315	36	31	.168	8 3/4	\$40.50
PL9001	TC-200-US	200	35	23	.200	7	35.40
PL9002	TC-300-US	300	42	35	.200	10	40.50
PL9036	TK-300-US	312	53	39	.230	12 1/4	47.00
PL9011	TL-50-US	45	15	7	.294	3 3/8	20.90
PL9013	TL-80-US	85	24	13	.294	5 5/8	26.55
PL9014	TL-100-US	98	26	15	.294	6 3/8	27.85
PL9016	TL-160-US	160	40	25	.294	9 3/4	37.95
PL9019	TZ-40-RS	43	18	11	.500	7	30.35
PL9020	TZ-80-RS	83	32	21	.500	12 1/2	40.50

### DOUBLE HEAVY DUTY TRANSMITTING CONDENSERS

Parts List No.	Type	Per Section Max. Cap.	Per Section Min. Cap.	Per Section No. Plates	Air Gap	Length Inside End Plates	List Price
PL9026	TJ-150-UD	150	21	15	.168	8 3/4	\$40.50
PL9027	TJ-200-UD	211	30	21	.168	10 3/4	45.55
PL9021	TC-100-UD	112	20	13	.200	8 3/4	39.20
PL9022	TC-160-UD	160	30	19	.200	11	43.00
PL9023	TC-200-UD	200	35	23	.200	13	48.05
PL9024	TC-250-UD	255	40	29	.200	16	53.15
PL9030	TL-50-UD	45	15	7	.294	6 3/8	31.65
PL9031	TL-70-UD	70	19	11	.294	9	36.70
PL9033	TL-100-UD	98	26	15	.294	11 3/8	43.65
PL9034	TL-160-UD	160	40	25	.294	18 3/4	55.65
PL9029	TKD-100-UD	110	30	21	.350	18 3/4	55.65
PL9035	TZ-40-RD	43	18	11	.500	13 3/8	48.55

### TYPE "J" PLUG-IN FIXED AIR CONDENSERS

For fixed capacity loading. Plates easily removed. All "J" types have 2 1/2" square x 1/4" Alsmag No. 196 ceramic end plates. Supplied with banana plugs to fit "JB" Jack Base. On special order provided with hexagonal brass mounting pillars and mounting screws for permanent installation.



JCO-50-OS  
PL-9705



"JB" Jack Base  
PL-5102

### TYPE "J" PLUG-IN FIXED AIR CONDENSERS

Parts List No.	Type	Capacity	No. Plates	Air Gap	Length Overall	List Price
PL9705	JCO-50-OS	50 mmf.	13	.250	5 5/8	\$8.10
PL9704	JCO-25-OS	25 mmf.	7	.250	3 3/4	5.85
PL9703	JD-100-OS	100 mmf.	17	.125	4 3/8	9.55
PL9702	JD-80-OS	80 mmf.	13	.125	4	8.10
PL9701	JD-50-OS	50 mmf.	8	.125	3 3/8	5.85
PL9700	JD-25-OS	25 mmf.	4	.125	2 1/2	4.10
PL9706	JR-750-OS	750 mmf.	33	.030	4 5/8	13.00
PL9707	JKD-50-OS	50 mmf.	18	.350	8 3/8	9.70

### JACK BASE FOR "J" FIXED AIR CONDENSERS

Size: 2 1/2" x 3 1/2" x 1/4". Material: Alsmag No. 196. Complete with mounting posts, screws and nuts. Type "JB" (PL-5102) ..... List Price \$1.25

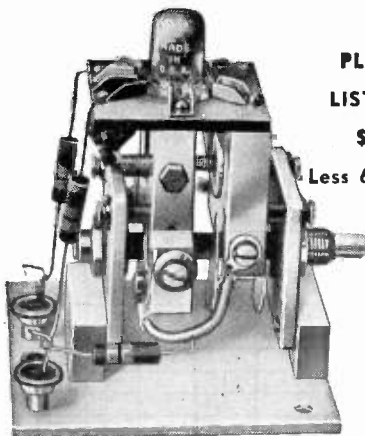
PRICES SUBJECT TO CHANGE WITHOUT NOTICE

# CARDWELL CONDENSERS

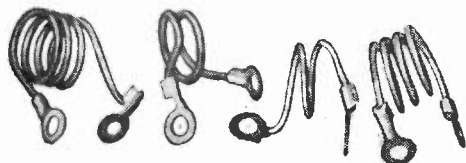
## THE ALLEN D. CARDWELL MANUFACTURING CORPORATION

# STANDARDS OF COMPARISON

## V.H.F. OSCILLATOR KIT



**PL-20,024**  
**LIST PRICE**  
**\$18.00**  
 Less 6-F-4 Tube

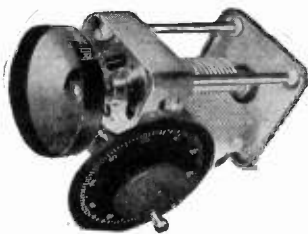


This kit includes 3 sets of coils covering 144-148 mc, 220-225 mc, 420-450 mc bands. (The 6F4 tube is not included.) Ideally suited for local oscillator, for super-heterodyne receiver,

as plate modulated oscillator for low power transmitter or transceiver, driver unit for amplifier tube in higher powered transmitter, V.H.F. signal generator, etc., etc.

## CARDWELL PRECISION CAPACITOR Type PL-24,050

Designed for frequency meters requiring maximum mechanical and electrical precision. Type No. 4.080 gear and worm driven capacitor incorporates special design features representing years of research and usage of this component in special measurement equipment which has successfully withstood most rigorous usage our armed forces could give it.

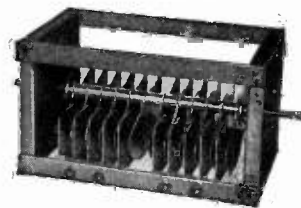


Frequency Meter Capacitor  
 PL-24,050

**CAP. RANGE:** Max. Cap. 220 mmfd., Min. Cap. 21 mmfd.  
**PLATE SHAPE:** S.L.F.  
**DI-ELECTRIC SUPPORTS:** Steatite.  
**BACKLASH:** Negligible.  
**RESETABILITY:** To 10 parts in one million.  
**GEAR DRIVE:** Precision split worm gear, equipped with precision ball bearings. Ratio—100 : 1 over 360 degrees.  
**DIALS:** 3" DRUM: 50 divisions over 180° condenser rotation. 3" FAST RUNNING DIAL: Graduated 100 divisions, makes 1 revolution for each drum division. VERNIER RING: Divides each division on fast running dial into 10 parts.  
**DIMENSIONS:** 5 5/8" lg. (over drum dial) x 3 1/8" deep x 3 1/8" high.  
**WEIGHT:** 1 1/4 lbs. (with cast aluminum frame).  
**ROTOR CONTACT:** Silver plated phosphor bronze spring, with 2 silver contacts bearing on silver plated disc.  
**MOUNTING:** 3 point, to bottom of main casting.  
**PRICE:** Capacitor, PL-24,050, Type 4.080, only.....List \$95.00  
 Drum Dial .....List \$ 5.95  
 Fast Running Dial .....List \$12.75  
 Vernier Ring .....List \$ 2.50

## TYPE "P" LIGHT HEAVY WEIGHT TRANSMITTING CAPACITORS

Designed to accommodate capacitance values up to 150 mmfd. per section in a dual section type having an airgap of .500", the "P" type construction permits higher capacity for a given airgap, and therefore a shorter frame than the "T" type construction. Typical Cardwell sturdiness is built-in, and the "P" type is probably the lightest transmitting condenser built for its size, yet completely satisfactory for heavyweight use. No single section types are catalogued; parallel or series connect for double or half single section capacity listed in table.



PK-125-QD  
 Special

### GENERAL SPECIFICATIONS:

**FRAME:** End plates are 1/8" thick formed aluminum, satin finish.  
**SHAFT:** 3/8" diameter, non-magnetic stainless steel, extended both front and rear end.  
**PLATES:** .064" thick, rounded and buffed edges. Rotor plates are 6 3/4" in diameter.  
**BEARINGS:** Heavy nickel plated brass front and rear shoulder bearings.  
**ROTOR CONNECTION:** Heavy, two finger N.P. phosphor bronze wiper bears on 1/8" thick N.P. brass contact ring, at each end.  
**STATOR CONSTRUCTION:** Plates permanently staked into slotted, rounded edge aluminum stator blocks.  
**INSULATION:** Mycalex (glass bonded mica).  
**MOUNTING:** 3 clearance holes for No. 10 screws in each side of each end plate permitting mounting on any side, as well as provision for mounting associated components such as inductance coil mountings, etc.

### TYPE "P" LIGHT HEAVYWEIGHT DUAL CONDENSERS

Parts List No.	Type	Per Section			Air Gap	Length Over End Plates	List Price
		Max. Cap.	Min. Cap.	No. Plates			
PL9208	PJ-750-QD	750	50	35	.168	20 1/2	Special
PL9210	PK-200-QD	210	30	13	.230	11 3/4	Special
PL9203	PKD-70-QD	70*	15*	7	.350	9 3/4	\$75.00
PL9204	PKD-100-QD	115	22	9	.350	11 3/4	\$83.50
PL9205	PZ-50-QD	50*	15*	7	.500	11 3/8	\$82.25
PL9206	PZ-70-QD	70*	20*	9	.500	14 1/4	\$87.90
PL9207	PZ-100-QD	91	23	11	.500	16 1/2	100.00
PL9209	PZ-150-QD	150	40	19	.500	24 1/2	125.00

\* Estimated value.

Tolerance for maximum and minimum capacity values: ±10%.

## DISC TYPE NEUTRALIZER

For neutralizing low capacity transmitting triodes. Glazed steatite insulation. Polished aluminum discs. Fine screw thread adjustment in long nickel silver bearing—no wobble. Knurled thumb nut for easy locking. Heavy satin finish aluminum support and base plate.



ADN, Neut. Conds.  
 PL-7118

### DISC TYPE NEUTRALIZING CONDENSERS

Item No.	Parts List No.	Type	Max. Cap.	Air Gap	Min. Cap.	Air Gap	List Price
1	PL7118	ADN	7 mmfd.	.100"	1 mmfd.	.700"	\$4.40
2	PL7119	BDN	15 mmfd.	.200"	3 mmfd.	1.000"	7.40

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

# CARDWELL CONDENSERS



THE ALLEN D. CARDWELL MANUFACTURING CORPORATION

# STANDARDS OF COMPARISON

## INSULATED COUPLINGS

For isolating R.F. controls. Ceramic insulation (Alsimag No. 196). All flexible types have N.P. phosphor bronze springs, and heavy N.P. brass hubs, permanently swaged or spin riveted into the springs. Two fillister head, cup point, case hardened steel set screws in each hub insure positive lock to shaft.

All rigid types have improved three-point-spider construction, carefully machined solid brass castings, and are absolutely rigid.

Flexible types C, D, E and F fit both 1/4" diameter shaft or a 3/8" shaft by removing bushing supplied.



"ENF" Rigid Coupling  
PL-5201



"FNF"  
PL-5013



"C"  
PL-5004



"A"  
PL-5000

### INSULATED COUPLINGS—Flexible

Parts List No.	Type	DIMENSIONS		Peak Flashover	To Fit Shaft Diameter	List Price
		"A" (Width)	"B" (Length)			
5000	A	1 3/8"	3/4"	3,700 V.	1/4"	\$0.75
5002	B	1 3/8"	1 1/2"	7,000 V.	1/4"	.75
5202	AB	1 3/8"	3 1/2"	5,000 V.	1/4"	1.00
5004	C	2 5/8"	2 3/8"	13,500 V.	1/4 & 3/8"	3.55
5006	D	2 5/8"	1 3/8"	9,000 V.	1/4 & 3/8"	3.55
5008	E	2 1/8"	1 3/4"	10,000 V.	1/4 & 3/8"	1.90
5010	F	2 1/8"	1 1/8"	5,000 V.	1/4 & 3/8"	1.90

### INSULATED COUPLINGS—Rigid

5014	CNF	2 1/4"	2 1/8"	12,000 V.	3/8"	4.45
5201	ENF	1 3/8"	1 1/8"	10,000 V.	1/4"	1.50
5013	FNF	1 3/8"	1 1/8"	7,500 V.	1/4"	1.25

## ACCESSORIES

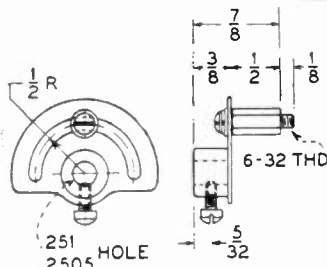
### "MIDWAY" MOUNTING FEET

Heavy aluminum, with 2 screws; for Midway condensers. Parts List No. 5052.....List (Pair) \$0.25

### INDUCTANCE CLIPS

For tapping air-wound inductors. Cadmium plated phosphor bronze spring clips for No. 12 or 14 wire. Thin blades prevent shorting turns. Type 804-A. Parts List No. 5104.....List Price \$0.20

### ROTOR LOCK



For locking "X" standard or "M" Midway rotor shafts in position for fixed tune. Can be set behind panel or attached to any 1/4" shaft, mounted directly on front of panel. Nickel plated brass; diameter 1/2".

Parts List No. 5100 (Type ARL).....List Price \$0.75

### SHAFT LOCK PANEL BUSHING

Long panel bushing for 1/4" shafts, has tapered nut for locking shaft in position. Fits 3/8" hole in panel. Complete with panel nuts. Nickered brass. Parts List No. 5055 (Type ALB).....List Price \$0.40

### TYPE "M" BRACKET

Use with type "N" U.H.F. duals or "M" Midway condensers. Turns condenser upside down for shortest plate leads in balanced R.F. amplifier. Regular mounting feet can be used to support a tank coil or jack base. Made of strong, satin finished, 1/16" aluminum, and supplied with proper screws and lock washers.

Parts List No. 5051.....List Price, each \$0.25

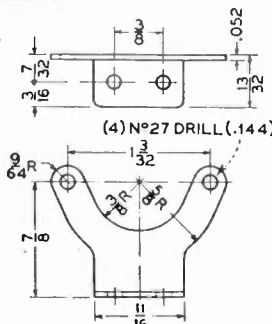
### "STANDARD" TYPE "X" MOUNTING FEET

Heavy nickel plated brass; for "X" transmitting types, with four screws. Parts List No. 5053.....List Price, pair \$0.25

### TRIM-AIR ACCESSORIES

As catalogued, Trim-Air singles are equipped for single hole mounting. Additional mounting accessories listed below are sold separately.

MOUNTING POSTS—(1/4" hex. x 3/4" long, tapped 6-32 N.P. brass). Pair, with screws and lockwashers. Parts List No. 5054.....List Price \$0.25



### "TRIM-AIR" MOUNTING BRACKET

For dual and single Trim-air condensers. Insulated from rotor and stator; N.P. brass, with two screws and nuts.

Parts List No. 5050.....List Price, each \$0.20

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

# CARDWELL CONDENSERS



THE ALLEN D. CARDWELL MANUFACTURING CORPORATION



# HAMMARLUND

SINCE 1910



## "HQ-129-X" AMATEUR RECEIVER



The Hammarlund "HQ-129-X" amateur communications receiver is designed to meet the demands of the most critical amateurs. Its design includes every feature essential to finest performance.

The "HQ-129-X" has a continuous range from .54 to 31 megacycles in six separately calibrated bands with continuous bandspread throughout the entire range. In addition, the bandspread dial is calibrated for each of the four most important amateur bands—3.5 - 4 mc, 7 - 7.3 mc, 14 - 14.4 mc and 28 - 30 mc.

The "HQ-129-X" has the Hammarlund patented variable wide-band crystal filter which works exceptionally well on phone or short wave broadcast signals.

There are many other features: Variable antenna compensator, beat oscillator, voltage regulator, series noise limiter, send-receive switch, automatic volume control, calibrated "S" meter, audio gain control, sensitivity control—plus all that goes into a receiver built by engineers who have spent a lifetime designing commercial communication equipment.

The "HQ-129-X" is available complete in a two-tone gray finish including tubes and a 10 inch P. M. dynamic speaker.

"HQ-129-X" Less Speaker Amateur Net Price \$177.30

SC-10—Speaker in cabinet finished to match Amateur Net Price \$ 11.85

*Send for twenty-page technical booklet*

## SERIES 600 "SUPER-PRO"

### DESCRIPTION

Cheers from the experts — The new Series 600 SUPER-PRO is the finest communications receiver that money can buy. No "warmed over" model, the Series 600 is entirely new in electrical concept and mechanical design—truly "years ahead" of present day receivers. When you check this entirely new SUPER-PRO for such things as image rejection, stability, calibration accuracy, etc. . . . you will find performance that you would not have thought possible. You'll find that "years ahead" in design mean "years ahead" in performance.

Band changing in the new SUPER-PRO is accomplished by means of an ingeniously designed rotary turret which places the coil assemblies of the two R.R., Mixer and Oscillator stages directly adjacent to their respective sections of the four gang tuning condenser where they are electrically most efficient.

By means of the mechanical system used in the SUPER-PRO 600-X both the main and band spread dials are tuned simultaneously with one control and the need for first setting the main dial is eliminated. The dial drive mechanism is entirely gear coupled to the main tuning condenser, producing the kind of calibration accuracy usually associated only with costly laboratory standards.



**Technical Information will be  
Available Late Fall of 1949**

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

PRICES SLIGHTLY HIGHER ON WEST COAST

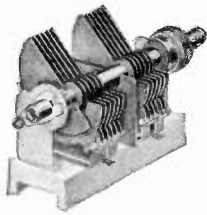


# HAMMARLUND

SINCE 1910



**MC Midget**



**MCD Split-Stator**

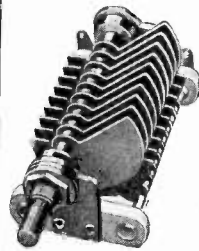
Code	Capacity	Net
MC-20-S	20 mmf.	\$1.80
MC-35-S	35 mmf.	1.86
MC-50-S	50 mmf.	1.92
MC-50-M	50 mmf.	1.92
MC-75-S	80 mmf.	2.04
MC-75-M	80 mmf.	2.04
MC-100-S	100 mmf.	2.16
MC-100-M	100 mmf.	2.16
MC-140-S	140 mmf.	2.34
MC-140-M	140 mmf.	2.34
MC-200-M	200 mmf.	2.58
MC-250-M	260 mmf.	2.70
MC-325-M	320 mmf.	2.94

"M"—Midline Plates.

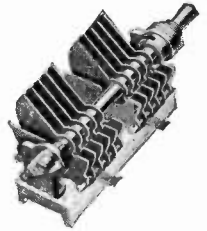
"S"—Straight Line Cap. Plates.

Code	Capacity per sect.	Net
MCD-50-M	50 mmf.	\$3.60
MCD-100-S	100 mmf.	3.90
MCD-100-M	100 mmf.	3.90
MCD-140-M	140 mmf.	4.20

Ideal variables for high frequency tuning Isolantite Insulation. Vibration proof. New type split rear bearing with noiseless wiping contact. Soldered brass plates, nickel plated. Dual types have shield between sections and are mounted on strong Isolantite base. Single hole panel mounting.



**MCX Double-Spaced**



**MCDX Dual Section Double-Spaced**

Code	Capacity	Net
MC-20-SX	20 mmf.	\$2.04
MC-20-MX	20 mmf.	2.04
MC-35-SX	32 mmf.	2.22
MC-35-MX	32 mmf.	2.22
MC-50-SX	50 mmf.	2.52
MC-50-MX	50 mmf.	2.52
MC-100-SX	100 mmf.	2.94

"MX"—Midline Plates.

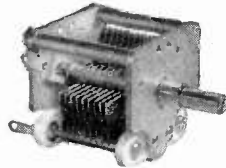
Same construction as MC and MCD Types but with widely spaced plates (.072") for transmitters and neutralizers.

"SX"—Straight Line Cap. Plates.

## "RMC" CAPACITOR

The new "RMC", Rugged Midget Capacitor, is particularly designed for use in applications where strength and solid construction is as important as sound electrical design.

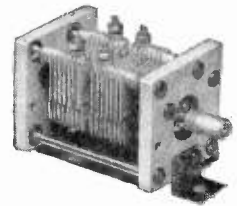
Two low loss silicone treated ceramic insulated bars are used to support the stator. Bearings are hand-fitted sleeve in the front and single ball thrust in the rear—torque is smooth and uniform. Contact to the rotor is made through a silver-plated beryllium forked spring bearing on a wide disk on the rotor shaft.



Code	Capacity	Net
RMC-50-S	50. mmf.	\$2.22
RMC-100-S	105. mmf.	2.55
RMC-140-S	143.5 mmf.	2.70
RMC-325-S	327. mmf.	3.39

## "VU" UHF CAPACITOR

The capacitors listed below are available for use by manufacturers, engineers and amateurs for all types of communications equipment having tuned circuits operating as high as 500 mc. The many advantages of these new capacitors are of course due to the silent electrical operation made possible through the use of pyrex glass ball bearings. Elimination of the rotor contact further precludes the possibility of noise. Two sets of contacts are provided, so that the vacuum tube can be mounted on one side and the inductor on the other side of the capacitor. Voltage rating—700 V.



Code	Capacity	Net
VU-20	22.5 mmf.	\$6.45
VU-30	31.5 mmf.	6.90
VU-45	45.0 mmf.	7.62

## "HF" MICRO CAPACITORS

For tuning or trimming on high and very high frequencies. Cadmium plated soldered brass plates. Isolantite. Base mounting, single hole panel mount, or panel mounting with bushings. 140 mmf. size 1 1/2" high x 1 1/2" behind panel.



Code	Capacity	Net
HF-15	17.5 mmf.	\$1.02
HF-35	35 mmf.	1.17
HF-50	50 mmf.	1.23
HF-100	100 mmf.	1.53
HF-140	140 mmf.	1.74
*HF-15-X	15 mmf.	1.23
*HF-30-X	30 mmf.	1.38

\*Double spaced.

## "HFD" MICRO DUAL CAPACITORS

A compact dual—ideal as a high frequency tuning capacitor, for tuning and neutralizing low-powered short wave and for very high frequency transmitters, etc. Heavy Isolantite base. Equipped with new outstanding Hammarlund split rear bearing and individual noiseless wiping contact for each section.



Code	Capacity	Net
HFD-50	50 mmf. per sect.	\$2.82
HFD-100	100 mmf. per sect.	3.18
HFD-140	140 mmf. per sect.	3.60
*HFD-15-X	15 mmf. per sect.	2.76
*HFD-30-X	28.5 mmf. per sect.	3.00

\*Double-spaced.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

Net



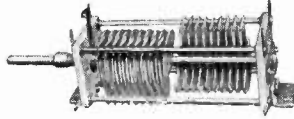
# HAMMARLUND

SINCE 1910



## "HFBD" TRANSMITTING CAPACITORS

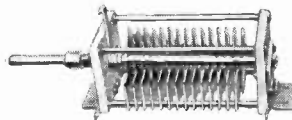
High efficiency, high frequency dual capacitors with isolated rotor. Both mounting brackets and control shafts are insulated. DC can be applied to rotor as well as stator. Isolantite end plates, soldered brass construction, cadmium plated. End plate size 1 1/8". Type "E" has rounded edge plates.



Code	Capacity	Length	Air Gap	Net
HFBD-50-C	50 mmf.	2 7/8"	.050"	\$5.40
HFBD-100-C	100 mmf.	4 5/8"	.050"	6.36
HFBD-35-E	35 mmf.	3 1/4"	.070"	4.77
HFBD-65-E	65 mmf.	4 1/8"	.070"	5.46

## "HFB" CAPACITORS

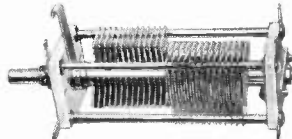
Same as above but single stator types. Stator is mounted at top to reduce capacity to chassis. The "HFB" has insulated mounting brackets and control shaft.



Code	Capacity	Length	Air Gap	Net
HFB-50-C	50 mmf.	1 7/8"	.050"	\$4.20

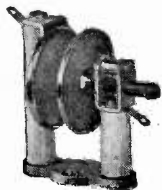
## "HFA" AND "HFAD" CAPACITORS

"HFAD" has the same general construction as "HFBD" except that it is smaller in size and does not have the insulated control shaft. Ideal for high frequency operation. End panels 1 3/8" square. "HFA" same construction, except end panel 1 1/8" x 1 1/8". Both can be single hole panel mounted or can be mounted to the panel with stand-off bushings. Plain edge plates.



Code	Capacity	Type	Length	Air Gap	Net
HFAD-25-B	25 mmf.	Dual	1 3/8"	.030"	\$3.60
HFA-100-A	100 mmf.	Single	1 1/8"	.020"	1.98
HFA-140-A	140 mmf.	Single	1 3/4"	.020"	2.31
HFA-10-B	10 mmf.	Single	3/8"	.030"	1.53
HFA-15-B	15 mmf.	Single	7/8"	.030"	1.62
HFA-25-B	25 mmf.	Single	3/4"	.030"	1.68
HFA-50-B	50 mmf.	Single	1 1/8"	.030"	1.86
HFA-100-B	100 mmf.	Single	2 1/8"	.030"	2.46
HFA-15-E	15 mmf.	Single	1 3/8"	.070"	1.68

## "NZ-10" NEUTRALIZING CAPACITOR

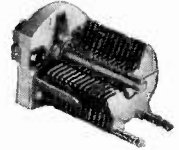


Rounded edges, Isolantite. Fine adjusting screw. Positive lock. Horizontal adjustment. Dimensions: 2 1/8" high x 1 1/8" deep.

Code	Net
NZ-10—(2.3—10 mmf.)	\$3.15

## MIDGET "APC" CAPACITORS

This new midget variety of the well known APC condenser is designed for use where space is limited. Size of 100 mmf., 1 1/8" x 3/8" x 1 1/8". Mounting holes 1/8" apart. Ideal for I.F. circuits. Isolantite insulation. Nickel plated soldered brass plates.



Code	Capacity	Net
MAPC-15	15 mmf.	\$0.99
MAPC-25	25 mmf.	1.02
MAPC-35	36 mmf.	1.08
MAPC-50	49 mmf.	1.14
MAPC-75	75 mmf.	1.26
MAPC-100	99 mmf.	1.38

## "APC" MICRO CAPACITORS

For H.F. and very H.F. For I.F. tuning, trimming R.F. Coils or gang capacitors, general padding, etc. Constant capacity under any condition of temperature or vibration. Size 100 mmf. 1 1/8" x 1/8" x 1 1/8". Isolantite base. Cadmium plated soldered brass plates.



Code	Capacity	Net
APC-25	25 mmf.	\$1.02
APC-50	50 mmf.	1.14
APC-75	75 mmf.	1.26
APC-100	100 mmf.	1.38
APC-140	140 mmf.	1.62

## FLEXIBLE COUPLINGS

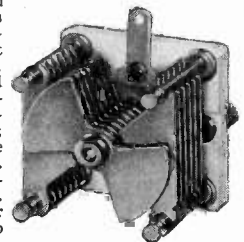
These flexible couplings are designed for both insulated and non-insulated applications. The FC-46-S is insulated for 6000 volts with silicone treated ceramic, will compensate for considerable shaft misalignment, but will not give spring action. Overall depth 1 1/8", diameter 1 1/4". The FNC-46-S is a non-insulated coupling for use where insulation is unnecessary. The general design is the same as the FC-46-S but has a heavy metal body instead of ceramic. Overall depth 3/8", diameter 1 1/4".



Code	Net
FC-46-S—Insulated	\$0.66
FNC-46-S—Non-insulated	.66

## BUTTERFLY CAPACITOR

The new butterfly capacitor is designed for use in VHF and UHF applications where the butterfly design is indispensable. Can be used as a single series unit or as a split stator with grounded rotor. This new butterfly capacitor is ideal for use in transmitters as well as receivers. Has soldered rotor and stator assembly; is plated to resist corrosion; silver plated rotor contact; sleeve type bearing, low-loss ceramic end panel. Approximately 1 3/8" square. Depth behind panel depends on number of plates. Insulated mounting studs prevent rotor from being grounded when mounted to metal.

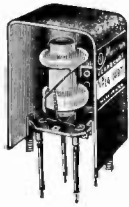


Code	MMF. Cap. per Sec.		Series Cap.		Net
	Max.	Min.	Max.	Min.	
BFC-12	14.5	3.5	7.9	2.2	\$1.50
BFC-25	27.5	5.0	14.5	3.0	1.68
BFC-38	40.5	6.3	21.0	3.7	1.98

PRICES SUBJECT TO CHANGE WITHOUT NOTICE



**UNIVERSAL ADJUSTABLE COILS**



These Adjustable - Inductance Ferrocart (iron-core) coils will replace the Broadcast band coils in practically any receiver. It is no longer necessary to order hard-to-get "exact duplicates" when an Antenna, R.F. or Oscillator coil requires replacement.

Continuously variable in inductance over a wide range, these coils will accurately "track" with the other coils in the receiver when properly adjusted. The exact inductance of the old coil is easily matched by a simple screwdriver adjustment, regardless of the value of the tuning condenser.

High "Q" iron cores used in these coils add gain and selectivity to the receiver. The oscillator coil provides complete adjustment for intermediate frequencies between 175 and 520 kc. May be used in either "cut-plate" tuning condenser or padded circuits. Available shielded or unshielded, furnished with complete instructions, 1 3/4" square by 3 1/2" high.

**UNSHIELDED**

No.	Description	List
14-1026	Universal Ant. Coil	\$1.75
14-1027	Universal R.F. Coil	1.75
14-1028	Universal Osc. Coil	1.75

**SHIELDED**

No.	Description	List
14-7413	Universal Ant. Coil	\$2.80
14-7558	Universal R.F. Coil	2.80
14-7560	Universal Osc. Coil	2.80

**SLIP-OVER PRIMARIES**



Designed to provide economical replacement of burned out primaries on all types of Antenna and R.F. coils. All windings are high-impedance type for improved performance. Sizes given below are outside diameter of coil over which the replacement winding will fit. Complete instructions for repair and replacement given.

No.	Size	List
14-6850	For 1 1/4" O.D. Coil	\$0.40
14-6852	For 1" O.D. Coil	.35
14-6854	For 7/8" O.D. Coil	.35
14-6856	For 3/4" O.D. Coil	.35
14-8418	For 1/2" O.D. Coil	.30

**STANDARD ANTENNA R. F. COILS**

Standard type air-core coils of superior construction, designed to cover the Broadcast band from 545 to 1620 kc with a 365-mmfd. tuning condenser. These coils make excellent replacement units and are used as original parts by discriminating set-builders and experimenters in the design and construction of Broadcast receivers.



All coils have high-impedance primaries. Secondaries are wound with Litz wire. Fully protected against humidity. Shielded coils are in non-magnetic cans, 1 1/2" diameter by 2 1/2" high.

**UNSHIELDED**

No.	Type	List
14-1010	Standard Antenna Coil	\$0.95
14-1011	Standard R.F. Coil	.95

**SHIELDED**

No.	Type	List
14-1004	Standard Antenna Coil	\$1.25
14-1005	Standard R.F. Coil	1.25

**DOWEL TYPE PRIMARY**

Popular replacement for burned out primaries in high impedance antenna coils. Universal wound on 1/4" dia. by 1/2" long dowels moisture protected. Inductance 1700 uh.



No. 14-6865 List Price..... 42

**FM-AM "COMPOSITE" I.F. TRANSFORMER**



Contains a 455 kc. AM and a 10.7 mc. FM I.F. transformer. Can size: 1 3/8" square x 2 1/2" long. Saddle bolt mounting.

16-6675 10.7 mc.-455 kc. I.F. Trans., List \$4.00

**STANDARD OSCILLATOR COILS**

High-quality Broadcast band oscillator coils designed for use with any of the Antenna and R. F. coils listed above, using a 365-mmfd. tuning condenser. Frequency coverage is 545 to 1580 kc; units are provided for all popular intermediate frequencies.



Coils are mounted on bakelite base with tinned soldering lugs for connections. Unshielded coils have single-hole stud mounting. All coils are thoroughly impregnated to resist severe climatic conditions. Shielded coils are in cans, 1 1/2" diameter by 1 1/4" high, black crackle finish.

**UNSHIELDED**

No.	I.F. Freq.	Padder Required	List
14-3732	175 kc	900 mmf	\$1.05
14-6590	262 kc	700 mmf	1.05
14-6592	370 kc	350 mmf	1.05
14-4034	456 kc	350 mmf	1.05

**SHIELDED**

No.	I.F. Freq.	Padder Required	List
14-4242	175 kc	900 mmf	\$1.35
14-4243	456 kc	350 mmf	1.35

14-1033 Special Unshielded Osc. for 6SA7; 456 kc 350 mmf \$0.85

**REPLACEMENT I. F. WINDINGS**

Coils are wound on wood dowels, 3/8" diameter and 1 1/2" long; coupling is adjustable by sliding primary coil. Complete instructions furnished with each coil.



No.	Freq.	Type	List
16-6600	175	Standard	\$0.85
16-6601	455	Standard	.85
16-6602	175	Center-tap	1.10
16-6603	455	Center-tap	1.10

**"PLASTIC" I. F. TRANSFORMERS**



Particularly suitable for use in small receivers, where space is at a premium and yet superior performance is required, these remarkable transformers are only 1 1/4" square and 2 1/2" high! Made in a complete series of frequency ranges and positions, they will provide results second to none in any type of receiver.

The one-piece molded plastic coil-form and trimmer-base eliminates many separate parts that were required with other types of construction. The assembly is, therefore, simpler and more rigid. The iron core series are highly recommended for use in compact receivers and auto sets where only one I-F stage is permitted. It is not recommended that they be used in a two-stage system because of their high-gain which would cause instability and oscillation.

**Selectivity Band Width**

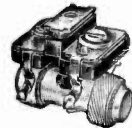
No.	Freq. Range	Peak Factory Setting	2x	10x	Use
16-6649	140-200	175	6.0	17.5	Input
16-6650	140-200	175	5.7	15.0	Interstage
16-6651	140-200	175	11.2	29.5	Output
16-6652	200-310	262	9.5	24.7	Input
16-6653	200-310	262	10.4	27.6	Interstage
16-6654	200-310	262	20.5	52.1	Output
16-6655	305-480	370	8.4	24.4	Input
16-6656	305-480	370	11.3	30.0	Interstage
16-6657	305-480	370	18.8	47.7	Output
16-6658	400-550	455	18.8	46.6	Input
16-6659	400-550	455	12.5	33.0	Interstage
16-6660	400-550	455	17.5	50.5	Output

Air-Core "PLASTIC" I-F Transformers, List Price Each ..... \$1.40  
IRON-CORE "PLASTIC" I-F's

16-6662	380-600	455	80	11.2	30.0	Input
16-6663	380-600	455	85	15.0	41.0	Output

Iron-Core "PLASTIC" I-F Transformers, List Price Each ..... \$2.10

**CARTWHEEL I. F. TRANSFORMER**

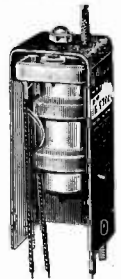


A brand new, ultra-compact, unshielded I-F Transformer, complete with dual trimmers; finds useful application in many types of compact AC-DC or Midget type receivers. Only 1 1/2" by 1 1/2" by 1 1/4" high; one-piece molded plastic trimmer base; for 456-kc only.

No. 16-6661 List Price ..... \$1.40

**STANDARD I. F. TRANSFORMERS**

The Meissner series of Air-Core I. F. Transformers has been accepted as "standard" for general replacement purposes. Gain characteristics have been designed to correspond closely with average values found in the majority of commercial receivers. All transformers are double-tuned with ceramic-base, mica-dielectric trimmers. Windings are fully impregnated. Well-insulated RMA color-coded lead wires. Bright aluminum finish shield is 1 3/8" square by 3" high.



No.	Freq. Range	Peak Factory Setting	Use
16-5700	121-235	175	Input
16-5702	121-235	175	Output
16-3731	121-235	175	Output C. T.
16-5704	220-360	262	Input
16-5706	190-325	262	Output
16-5712	425-650	455	Input
16-6133	435-1000	455	Interstage
16-5714	425-650	455	Output
16-3736	255-550	455	Output C. T.

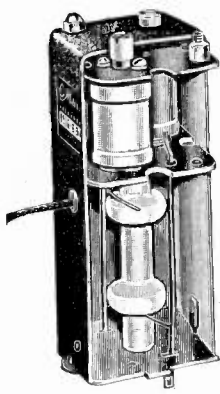
List Price Each ..... \$2.10

**FERROCART I. F. TRANSFORMERS**

Designed primarily as original parts in high-gain receivers of superior quality, these transformers find consistent application in stepping up the performance of old receivers. The special powdered-iron core used in the coils permits higher "Q" with resultant increase in selectivity and gain. All units are double-tuned with ceramic-base, mica-dielectric trimmers. Windings are of high-grade Litz wire, thoroughly impregnated. Shield is bright aluminum finish, 1 3/8" square by 3" high.

No.	Freq. Range	Peak Factory Setting	Use
16-5728	127-206	175	Input
16-5730	127-206	175	Output
16-5740	360-600	455	Input
16-5742	360-600	455	Output
16-8091	1050-2000	1500	Input-Interstage
16-8099	1050-2000	1500	Output

List Price Each ..... \$2.80



### "ALIGN-AIRE" I-F TRANSFORMERS

The result of years of engineering experience in designing high grade transformers for the finest commercial receivers! The exacting requirements of modern high-fidelity and communications type receivers demand units that can be depended upon under any and all conditions. They must be absolutely stable under temperature and humidity variation and unaffected by vibration. These requirements are all met by

the "Align-Aire" I-F Transformer. Provides 3600 degrees of micro-meter smooth trimmer adjustment instead of the usual 180 degree rotation! Accurate trimming can thus be readily accomplished. Available with special "Iron-core" design for maximum gain and selectivity. Double-tuned and offered in a complete range of frequencies for any application. Shield cans are black crackle finish, 2"x2"x4 3/4".

No.	Frequency Range (kc)	Peak Factory Setting	Gain Factory Setting	Selectivity Band Width			Use
				2X	10X	20X	
16-6643	415-540	456	77	7.0	16.0	22.0	Input
16-6123	415-540	456	29	7.0	18.0	21.1	Interstage
16-6645	415-540	456	105	9.0	25.6	36.2	Output
16-6139	415-540	456	100	9.5	23.2	33.5	Output C.T.

LIST PRICE, EACH ..... \$6.95

### AIR-CORE R-F CHOKES

Accurately wound and individually tested; coils wound on specially treated forms, mounted on bakelite terminal base and thoroughly moisture proofed. Available in shields or without; both single-hole mounting. Shielded chokes have terminals thru top of can so unit may be mounted on inside wall of chassis. Shields are bright aluminum finish, 1 3/4" square.



MH Induct.	Shielded		Unshielded	
	No.	List	No.	List
2.5	19-5582	\$0.90	19-1994	\$0.65
5.5	19-5584	.90	19-4551	.65
8.0	19-5588	.95	19-2078	.70
16.0	19-1900	1.05	19-8770	.75
16.0	19-5590	1.10	19-1995	.85
30.0	19-5592	1.20	19-2330	.90
60.0	19-5594	1.35	19-3247	1.05
80.0	19-5596	1.40	19-2709	1.10

### TRANSMITTER CHOKES

Highly efficient for Amateur and Commercial use; six lateral wound sections provide effective action over wide frequency range. Windings on ceramic form with tapped ends; mounting brackets included.



Cat. No.	Induct.	Current	Ohms	Net
19-3019	2.8 MH	1000 MA	5.0	\$1.68
19-3022	5.5 MH	500 MA	12.5	1.47
19-3025	5.9 MH	200 MA	34.9	1.47

### IRON-CORE R-F CHOKES

Universal-wound on special powdered iron cores, these chokes provide maximum efficiency—lower DC resistance per MH. Coils are wax-impregnated; laminated bakelite terminal base; single-hole mounting; without shielding.



No.	MH	List	No.	MH	List
19-6834	2.5	\$0.95	19-6844	60.0	\$1.60
19-6840	10.0	1.20	19-6846	80.0	1.80
19-6842	30.0	1.40	19-6848	125.0	2.30

### PHONO-OSCILLATOR COIL

For use in building either wireless or direct-connected phonograph-oscillator units for record reproduction through the radio receiver. Knob adjustment permits selection of clear frequency in the broadcast band. Coil is in bright aluminum shield, 1 3/4" square by 3 1/2" high.



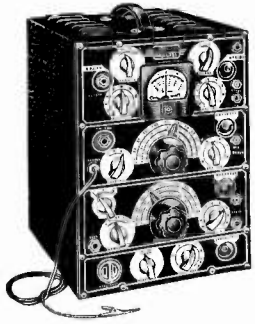
No. 17-9373 List ..... \$2.80

### B. F. O. COIL

For use with standard I. F.'s in superhet receivers. They supply the "beat" note necessary to reception of C. W.;

### MEISSNER "ANALYST"

**THE MODERN SERVICE INSTRUMENT**—Undoubtedly the most modern complete servicing instrument on the present day market. Handles the receivers of yesterday, today and tomorrow — with equal efficiency and facility! Entirely fundamental in its testing procedure. Will never become obsolete. **SAVES TIME — SAVES MONEY**—The use of the new Meissner ANALYST will not only permit you to make more money by handling a greater number of service jobs in a given time but it will give you additional assurance that these jobs will "stay sold." **SERVICES BY "SIGNAL TRACING"**—The Meissner ANALYST tests receivers and locates faults by the "Signal tracing" method—proven to be the fastest and most reliable method known at the present time. It is NOT, however, just another signal tracer! It is completely equipped with all devices that might be needed to make simultaneous checks on various parts of the receiver circuit.



Five separate and distinct "channels" provide as many different functions; all controls are accurately calibrated with functions clearly indicated.

### Complete—Ready to Go to Work

The Meissner ANALYST is completely wired, aligned and laboratory tested. Furnished complete with a full set of 12 tubes, it is all ready to be put into service the minute it is unpacked and connected to the 110-volt line! No alignment or adjustments are necessary—just read the instructions, hook it up and go to work! Complete Book of Instructions, supplied with the new Meissner ANALYST, gives detailed directions for use of this instrument in locating all kinds of radio troubles. No. 9-1046—New Meissner ANALYST, complete with tubes, prods, and Instruction Book; ready to operate. Net Price.....\$113.85\*

materially aid in tuning and locating weak stations. Mica trimmed. Freq. Range 290-650 KC. Peaked at 456 KC. In 1 1/2" sq. x 3 1/2" h. can with knob for pitch control. No. 17-6753 Net Price ..... \$2.45

### F. M. COILS—I. F. TRANSFORMER

Permeability tuned; designed for use on newly assigned F. M. Frequencies. Mounted in 1-7/16" x 7/8" x 1-29/32" can. Tuned to 10.7 mc. No. 16-6665 List Price ..... \$2.95

### DISCRIMINATOR TRANSFORMER

Mounted in same size can as I.F. Transformer listed above. Permeability tuned to 10.7 mc. No. 17-3484 List Price ..... \$3.90



### "6SA7" OSCILLATOR COIL



Tapped type coil for currently popular 6SA7 tube. For use with 420 uufd. condenser and padler 14-1033 List ..... \$0.85 For use with 162 uufd. "cut" section condenser 14-1053 List ..... \$0.85

### "UNIVERSAL" ADJ. IND. OSCILLATOR COIL

A truly universal oscillator coil for 455 kc. I.F. Primary is tapped for use with any of 25 different type oscillator tubes. Instructions included. 14-1040 List ..... \$2.00

### MIDGET SHIELDED ANT. AND R.F. COILS

A compact, super quality shielded antenna and R.F. coil. Provides full coverage of the broadcast band with a 365 tuning condenser. Special wound litz wire secondaries. High impedance primaries. Capacity coupling used to level gain over frequency range. Coil forms are bakelite 1/2" diameter; winding protected by wax impregnation. Shields are 1 3/4" square x 2" high. 14-2436 Shielded Ant. Coil, List ..... \$1.25 14-2437 Shielded R.F. Coil, List ..... \$1.25



### MIDGET UNSHIELDED B.C. ANT.—R.F. COILS

Highly efficient antenna and R.F. coils, especially designed for use where space is at a premium. Cover the regular broadcast band with a 365 uufd. tuning condenser. Coils have high impedance primaries and litz wire secondaries. Windings are impregnated for moisture protection and wound on 3/8" diameter x 1 1/2" long forms. 14-1022 Unshielded Ant. Coil, List ..... \$0.85 14-1023 Unshielded R.F. Coil, List ..... \$0.85



### NEW MEISSNER WAVE-TRAPPERS



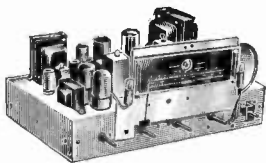
AVAILABLE IN 5 MODELS 6 to 13 mc, 13 to 27 mc, 27 to 54 mc, 54 to 108 mc, 108 to 216 mc You can now attenuate interfering signals on fundamental or harmonic frequencies with these new, highly efficient tunable wave traps. Several may be connected in series if interference exists on more than one frequency. Efficient with any balanced or unbalanced line from 50 to 400 ohms impedance. List Price.....\$5.00

### NEW MEISSNER LINE FILTERS



(Grounded & Shielded) Reject interference from electric shavers, electric fans, food mixers, vacuum cleaners, etc. 300-watt rating. List Price.....\$6.50

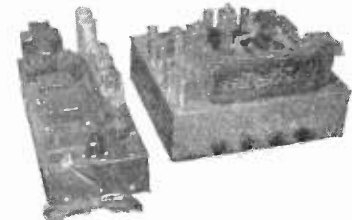
### Meissner AM-FM TUNER MODEL 9-1091-C



High fidelity reception! Covers AM Broadcast Band from 527 to 1620, FM Band from 88 to 108 MC (channels 200 to 300). Frequency response is flat with plus or minus 2 db from 30 to 15,000 cycles! Input jack provided for crystal or high level magnetic type phonograph pickup. Extreme sensitivity and selectivity.

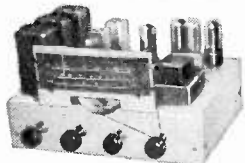
List Price ..... \$245.00

### MODEL 9-1093 AM-FM TUNER AND AMPLIFIER



A high-quality AM-FM tuner and amplifier that is hard to beat. Power output, 18 watts at less than 2% harmonic distortion. Audio fidelity flat within plus or minus 2 db from 50 to 15,000 CPS. Hum level 65 db below full output. Slide rule dial is calibrated in kilocycles (535 to 1620 KC) on the AM band and in megacycles (88 to 108 MC) on the FM band. Sensitivity less than 20 microvolts. A phonograph input jack controlled by a front switch is mounted in rear. The circuit is com-

### MODEL 68K 3-BAND AC KIT



Frequency Range: 535 KC to 18 MC in 3 overlapping bands.  
Sensitivity: 15 microvolts on all bands.  
Audio Output: 3 watts maximum, 2 watts at 5% distortion.  
Intermediate Frequency: 455 KC.  
Tube Complement: 2-6SK7, 1-6SA7, 1-6SQ7, 1-6V6GT and 1-5Y3GT.  
Size: Chassis size — 12" x 10" x 3". Mounting space required — 12 1/2" w. x 7 1/2" h. x 1 1/2" d.  
Power Supply: 105 to 125 and 210 to 250 volts, 50 to 60 cycles. Power consumption, 55 watts.  
Controls: Band switch, combination volume-line switch, continuous tone control and tuning control.  
Dial: Slide rule, 5 1/2" x 1 3/4", calibrated in megacycles on all three bands. Dial edge lighted.  
Speaker: Speaker not supplied with kit. Any good-quality PM type of speaker may be used which has an impedance of 3.2 ohms and the ability to handle the power of this set.  
Assembly: Easily assembled from detailed pictorial diagram and simplified schematic. Wire, hardware and solder included.  
Weight: 8 1/2 lb. actual.  
List Price ..... \$67.25

### Meissner MODEL BC FM RECEPTOR



Adds superb frequency modulation to any regular AM set. Precision built for simple connection to your present AM radio. Audio fidelity: Flat within plus or minus 2 db from 50 to 15,000 CPS. Frequency range 88 to 108 MC. Power supply 115 volts AC.  
List Price ..... \$57.50

### MODEL 9-1093 AM-FM TUNER AND AMPLIFIER

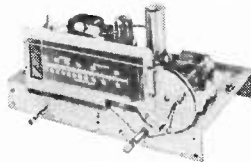
designed for either magnetic or crystal pickup. The Tuner can also be used with the new GE Reluctance Pick-up because of a new phonograph preamplifier that has been incorporated in the circuit. Simply plug a 6SCT in the socket provided. The 6SCT is not supplied. A combination tone control provides bass boost up to 11 db at 40 CPS and treble attenuation up to 13 db at 10,000 CPS. Amplifier is designed for an 8 to 16-ohm speaker. Power supply: 105-125 volts, 50-60 cycles; consumption, 190 watts.  
Tube Complement: 3-6SK7, 1-6SA7, 1-6H6, 5-6AG5, 1-6C4, 2-9001, 1-6AL5, 2-6J5, 1-6SN7GT, 2-6L6 Power Amplifiers, 1-5Y3G Rectifier, 1-5V4G Rectifier and 1-6U5/6G5 Tuning Eye.  
Chassis Mounting Space: Tuner — 11 1/2" w. x 12 1/2" d. x 8 3/8" h. Amplifier — 7 1/2" w. x 16 1/2" d. x 7" h. (Allow clearance above amplifier for ventilation). Tuner weight is 18 lbs.; amplifier, 27 lbs.  
Supplied complete with tubes, two antennas and all hardware required to mount chassis units in cabinet. Antennas consist of a low impedance, 12" x 16", noise reducing loop for AM broadcast and an indoor type folded dipole, 300-ohm, for FM broadcast. Cabinet and speaker not included.  
List Price ..... \$310.00

### New Meissner SIGNAL SHIFTER KIT



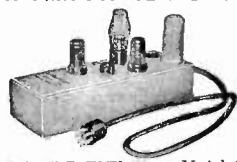
For the amateur with limited budget, the new MEISSNER Signal Shifter Kit is ideal, making it possible for him to save 50% by building it himself.  
Everything is provided including tubes — even wire and solder. All coil strips are furnished, plus a blank for an additional band.  
Directions for assembly are comprehensive and clear, supplemented with schematic diagram, a host of photos and pictographs, all large size and easy to read. Directions are so simple to follow that even the beginning ham will have no trouble. The only two difficult jobs are already completed. The complicated shielded turret assembly and the band spread gear mechanism come already built up — ready to install!  
Only equipment needed is a pair of pliers, a screw-driver and a soldering iron.  
No difficulty at all will be encountered to exactly duplicate the peak performance of the factory-built model.  
Complete Meissner Signal Shifter Kit, Part No. 10-1207, Amateur Net. .... \$64.75

### MODEL 8CK RECEPTOR KIT



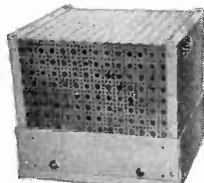
Frequency Range: New FM band, 88 to 108 MC. Audio Fidelity: Flat within plus or minus 2 db from 50 to 15,000 CPS.  
Sensitivity: 40 microvolts.  
Audio Output: 3 volts R.M.S. at minimum usable signal input, 30% modulation. For greater signal inputs, output voltages as high as 15 volts R.M.S. may be obtained without distortion.  
Amplifier Requirements: Any high-quality audio power amplifier may be used which has high impedance input (100,000 ohms or greater) and which will produce full output with 3 volts R.M.S. audio input. The MEISSNER Model 4A and 4AK amplifiers are suitable for use with this Model 8CK FM Receptor.  
Antenna Input Impedance: Standard 300-ohm balanced line.  
Controls: Tuning control and combination volume control-line switch.  
Tube Complement: 2 type 6AW6, 2 type 6H6, 2 type 6C4, 1 type 6AL5 and 1 type 6X3GT/G.  
Power Supply: 105 to 125 volts, 50 or 60 cycle AC. Consumption, 35 watts.  
Dial: Slide rule, 5 1/2" x 1 3/4", calibrated in megacycles and in channel numbers. Edge lighted.  
Assembly: Easily assembled from detailed pictorial diagram and simplified schematic. Front end factory assembled and aligned. Wire, hardware and solder included. IF Coils pre-aligned.  
Weight: 4 1/2 lb. actual.  
List Price ..... \$44.95

### THE NEW FMX PHASE MODULATOR



The new MEISSNER FMX Phase Modulator is designed exclusively for use with the Model EX Signal Shifter. Combination of the two — the FMX Modulator and EX Signal Shifter — gives the radio amateur a complete low power phone and cw transmitter at a very low price. Higher power, up to one KW, can be obtained with a power amplifier driven by the Signal Shifter.  
The deviation control of the FMX Phase Modulator allows a swing of 5 to 10 KC on all amateur frequencies including the 80-meter band. Input for high impedance crystal or dynamic mike is provided. Any class C amplifier that the Signal Shifter is capable of driving becomes a phase modulated amplifier.  
The FMX Modulator is installed in the position normally occupied by the power supply, the latter becomes a remotely located unit. Input for plate and filament voltages for the FMX are secured from the Signal Shifter power supply.  
Tubes required are 6SL7, 6SG7, and VR-150. The FMX Phase Modulator is another precision-built product, designed by MEISSNER for the discriminating amateur who wants only the best.  
Model FMX Phase Modulator, complete, less tubes, Amateur Net. .... \$15.00

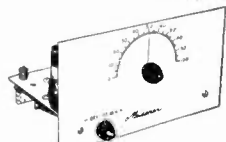
### MODEL 4AJ POWER AMPLIFIER



Fidelity: Flat within 2 db from 45 to 20,000 CPS. Power Output: 20 watts with 1.5% harmonic distortion.  
Power Input: 105-125 volts, 50-60 cycles only.  
Power Consumption: 87 watts.  
Hum and Noise: 150 db below full output.  
Output Impedance: 4, 8, 15, 250 and 500 ohms. Unbalanced.  
Controls: On-off power switch and pilot lamp on front skirt. All other connections made at rear. Volume control on rear skirt with screwdriver slot adjustment.  
Input: High impedance (500,000 ohms) through standard RMA phone jack.  
Input Requirements: 3 volts RMS for full output.  
Tube Complement: 1-6SN7GT, 2-6L6G, 1-5Y3GT.  
Size: 10" x 8 3/8" x 10" deep.  
Weight: 17 lb. actual.  
Cover: Well ventilated protective cover.  
Finish: Etched aluminum.  
List Price ..... \$91.25

### MODEL 4AK POWER AMPLIFIER KIT

Easily assembled from detailed pictorial diagram and simplified schematic. Wire, hardware and solder included.  
List Price ..... \$78.50



Assembly: The kit is easily assembled from detailed pictorial diagram and simplified schematic. Wire, hardware and solder included. • Size: 7 3/4" x 4 1/4" tall x 4 1/2" deep. • Weight: 1 1/2 lb. actual.  
List Price ..... \$15.50  
Extra Coils: 170 to 540 KC and 540 to 1500 KC ..... List Price 2.10  
1.4 to 4.50 MC, 3.2 to 8.2 MC, 8 to 18 MC and 15 to 34 MC. Weight each 1 oz. .... List Price .85

### MODEL 3BK AC-DC TRAINER KIT

Circuit: Regenerative grid leak detector with resistance coupled pentode audio stage and AC-DC type power supply. • Tube Complement: 1-6BJ6 and 2-50B5. • Tuning Range: Shipped with coil to cover the broadcast range of 520 to 1530 KC. Other coils available to cover the following ranges: 175 to 540 KC, 1350 KC to 5.4 MC, 3.5 to 8 MC, 7.9 to 18.5 MC and 15 to 34 MC. • Controls: Combination regenerative control battery switch and vernier tuning control. • Dial: 1 1/2" pointer swings through 180 degrees are over scale graduated 0 to 100. • Batteries Required: Shipped less batteries. Requires 4 1/2-volt "A" battery and 90-volt "B" battery. Battery drain: "A" — 50 mA, "B" — 5 mA. • Headphones: Shipped less phones. Uses any good-quality magnetic type phones having an impedance of 2,000 ohms or more. • Assembly: Easily assembled from detailed pictorial diagram and simplified schematic. Wire, hardware and solder included. • Size: 7 3/4" x 4 1/4" tall x 4 1/2" deep. • Weight: 1 1/2 lb. actual.  
List Price ..... \$18.50  
Extra Coils: 170 to 540 KC and 540 to 1500 KC ..... List Price 2.10  
1.4 to 4.50 MC, 3.2 to 8.2 MC, 8 to 18 MC and 15 to 34 MC. Weight each 1 oz. .... List Price .85

*Thank You!*

When writing for additional  
information or when ordering  
from sources of supply listed  
in this book, please mention

*RADIO'S MASTER*

## BUD DE LUXE RELAY RACKS

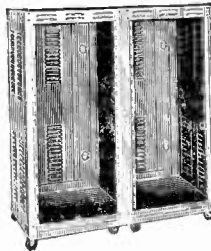


These relay racks are made of 16 gauge steel with 1/8" panel supports. The panel mounting supports are recessed so that no edges of the panel will be exposed.

The front and back of the top, the two sides and the door are well louvered to provide adequate ventilation. Snap catches are positioned on the door. A stream-lined appearance is achieved by the use of rounded corners and red-lined chrome trim. The relay rack is shipped knocked-down and complete with all necessary hardware for assembly. All standard 19" panels will fit these racks.

A SPECIAL FEATURE IS THE USE OF FOUR STURDY SUPPORTS ON THE BOTTOM SO THAT CASTERS CAN BE FASTENED DIRECTLY TO THE BASE, THEREBY ACHIEVING READY MOBILITY. Bud RC-7756 casters will fit this unit. Casters are not included in price of cabinet. These relay racks are supplied in either black or grey wrinkle finish. The overall width is 22" and the depth is 17 1/4" on all sizes listed.

Catalog No.	Overall Height	Panel Space	Shipping Wt.	Dealer Cost
CR-1774	42 1/2"	36 1/4"	90 lbs.	\$28.50
CR-1771	47 1/2"	42"	100 lbs.	35.45
CR-1772	66 1/2"	61 1/4"	135 lbs.	42.30
CR-1773	82 1/2"	77"	155 lbs.	50.40



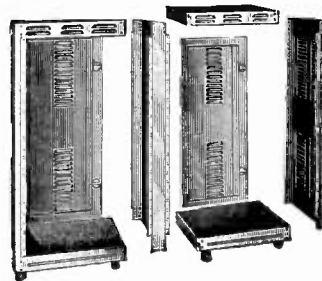
## NEW BUD ADD-a-RACK SERIES

It has always been necessary to buy special racks without louvers on one side to obtain a maximum of panel space with a minimum of floor space. Now, you no longer need to buy a whole new cabinet when you want additional panel space. Through our new and exclusive Add-a-Rack series, BUD not only offers additional racks at a lower cost, but provides you with a sturdier, better looking assembly.

The illustration at top shows two Add-a-Rack cabinets assembled together. The illustration below shows the unique and ingenious method of adding a unit to your present equip-

ment. Instead of buying an entire new outfit, you purchase only four parts: (1) a door (2) a top (3) a bottom and (4) an Add-a-Rack coupling-unit. The right (or left) hand side of your present relay rack is removed and replaced by the Add-a-Rack coupling-unit; next, a top and bottom is fastened into place, and the side taken from the first rack is fastened onto the second rack which has been added. Place the additional door into position and you have two racks properly and efficiently coupled together. In the same simple way, more racks can be added at any time and every one will be in a CONTINUOUS ONE-PIECE assembly.

This series is available in two ways. (1) a double unit consisting of two racks and the Add-a-Rack coupling unit, (2) Add-a-Rack unit, consisting of a door, a top, a bottom and an Add-a-Rack coupling-unit. These units are furnished with all necessary assembling and panel mounting hardware.



Add-a-Rack Unit	Used to Add-a-Rack to	Dealer Cost
AR-1778	CR-1774	\$26.25
AR-1775	CR-1771	32.50
AR-1776	CR-1772	40.75
AR-1777	CR-1773	48.00

Complete unit consisting of the knocked-down parts necessary for two relay racks coupled together.

CR-1779	two coupled relay racks same size as CR-1774	\$54.75
CR-1780	two coupled relay racks same size as CR-1771	67.95
CR-1786	two coupled relay racks same size as CR-1772	83.05
CR-1799	two coupled relay racks same size as CR-1799	98.40

Bud RC-7756 Casters will fit this unit. Casters are not included in price of cabinet.

## BUD DE LUXE CABINET RACKS



These cabinet racks have rounded corners and attractive red-lined chrome trim. There is a recessed, hinged door on the top with a snap catch. These cabinet racks are made of heavy gauge steel and are of sturdy construction. The three large sizes have a hinged rear door, while the small sizes have a welded panel in the rear.

Adequate ventilation is assured by means of louvered sides and a two inch opening in the bottom of the back extends the entire width.

"NO-SCRATCH" EXTENDED METAL FEET ARE EMBOSSED ON THE BOTTOM TO MINIMIZE MARRING OF A TABLE TOP. These relay racks are furnished in either black or grey wrinkle finish. Depth 14 1/4", width 22". Will fit standard 19" panels.

Catalog No.	Overall Height	Panel Space	Shipping Wt.	Dealer Cost
CR-1741	10 1/2"	8 3/4"	29 lbs.	\$10.05
CR-1740	12 1/2"	10 1/2"	31 lbs.	11.30
CR-1742	14 1/2"	12 1/4"	32 lbs.	12.25
CR-1739	15 1/2"	14"	36 lbs.	13.85
CR-1743	19 1/2"	17 1/2"	40 lbs.	16.77
CR-1727	22 1/2"	21"	45 lbs.	18.00
CR-1744	28 1/2"	26 1/4"	50 lbs.	19.20
CR-1728	37 1/2"	31 1/2"	55 lbs.	21.20
CR-1745	36 1/2"	35"	60 lbs.	21.57

## BUD JUNIOR CABINET RACKS



This cabinet rack is a multi-purpose unit that is inexpensive. The cabinet is constructed to accommodate two panels, one is 10 1/2" by 18 1/2", the other 8 3/4" by 18 1/2", these panels are supplied with the cabinet. The BUD Junior Cabinet Rack is spacious enough to accommodate a chassis up to 10" by 17".

The rear of the cabinet is covered by a hinged door with a locking device. The cabinet is furnished in black wrinkle finish only.

Catalog No.	Overall Height	Depth	Width	Shipping Wt.	Dealer Cost
RC-1749A	21 1/4"	10 1/2"	19 1/2"	25 lbs.	\$14.50

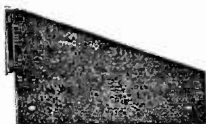
## BUD DESK TYPE RELAY RACKS



Perfect for table mounting of low and medium power transmitters, public address systems, and other electronic instruments. Rack has strong chassis for mounting heavy component. Shipped knocked-down, with necessary hardware, easy to assemble. Standard notched 19" wide panels can be used, panels set in recess so that no edges are exposed. Furnished in black wrinkle finish only. Depth 12".

Catalog No.	Height	Panel Space	Shipping Wt.	Dealer Cost
RR-1248	24"	21"	15 lbs.	\$5.55
RR-1249	31"	28"	17 lbs.	6.93

## BUD CHASSIS MOUNTING BRACKETS



Mounting brackets are essential to insure proper support of the chassis. Formed of heavy gauge steel, cut away at the bottom to provide chassis clearance so that chassis can be mounted flush against panel. Finished in Black. Numbers MB-450 and MB-451 designed for chassis height of 4". Sold in pairs only.

Catalog No.	Height	Depth	Dealer Cost Per Pair
MB-458	6 1/2"	8"	\$0.69
MB-448	6 1/2"	10"	.93
MB-459	6 1/2"	11"	1.02
MB-449	6 1/2"	12"	1.20
MB-460	6 1/2"	13"	1.23
MB-450	8 1/2"	10"	1.45
MB-451	8 1/2"	13"	1.55

Where materials are specified Black Wrinkle Finish only, and Grey is desired, a charge of 15% additional will be made.

Prices slightly higher west of the Mississippi River





### BUD STANDARD RELAY RACK PANELS

STEEL			MASONITE			ALUMINUM		
Catalog No.	Height	Dealer Cost	Catalog No.	Height	Dealer Cost	Catalog No.	Height	Dealer Cost
PS-1250	1 3/4"	\$ .60	PM-1588	1 3/4"	\$ .48	PA-1101	1 3/4"	\$ .66
PS-1251	3 3/4"	.69	PM-1589	3 3/4"	.60	PA-1102	3 3/4"	.87
PS-1252	5 3/4"	.84	PM-1590	5 3/4"	.75	PA-1103	5 3/4"	1.04
PS-1253	7"	.93	PM-1591	7"	.87	PA-1104	7"	1.37
PS-1254	8 3/4"	1.08	PM-1592	8 3/4"	1.05	PA-1105	8 3/4"	1.56
PS-1255	10 3/4"	1.32	PM-1593	10 3/4"	1.20	PA-1106	10 3/4"	1.85
PS-1256	12 3/4"	1.59	PM-1594	12 3/4"	1.35	PA-1107	12 3/4"	2.12
PS-1257	14"	1.80	PM-1595	14"	1.50	PA-1108	14"	2.40
PS-1258	15 3/4"	2.10	PM-1596	15 3/4"	1.65	PA-1109	15 3/4"	2.70
PS-1259	17 3/4"	2.28	PM-1597	17 3/4"	1.92	PA-1110	17 3/4"	3.00
PS-1260	19 3/4"	2.46	PM-1598	19 3/4"	2.07	PA-1111	19 3/4"	3.30
PS-1261	21"	2.76	PM-1599	21"	2.31	PA-1112	21"	3.60

Made of Steel, Masonite or Aluminum. Steel Panels are made of high grade steel 1/8" thick. Masonite Panels are made of 3/16" Tempered Masonite. Aluminum Panels are made of 1/8" thick Aluminum. All Panels are 19" wide. Furnished in either Black or Grey Wrinkle. Aluminum panels 3/16" thick may be had if desired at 60% increase in cost over 1/8".

### BUD ENCLOSED METER PANEL

PS-439 Meter Panel is designed to give maximum protection to meters. The steel panel has a large cut-out, behind which is mounted a blank Masonite sub-panel. This sub-panel has a meter mounting area of 4 1/2" x 15 1/2" — sufficient space to mount four 3" meters. The meters are protected by a glass insert that mounts in slides. Due to danger from breakage during shipment, this glass is not supplied with the panel. The glass insert should be cut 16" long x 4 3/4" wide. Finished in either Black or Grey Wrinkle.

Cat. No.	Length	Width	Dealer Cost
PS-439	19"	5 1/4"	\$4.68

### BUD METER PANELS STEEL AND MASONITE

All meter panels are 5 1/4" high, 19" wide, available in either black or grey wrinkle finish. Small holes fit either 2" square or round meters, large holes fit either 3" square or round meters.

Catalog No.	Number of Holes	Diameter	Type Material	Dealer Cost
PM-509	3	2 3/16"	Masonite	\$1.20
PM-510	4	2 3/16"	Masonite	1.32
PM-511	3	2 13/16"	Masonite	1.20
PM-512	4	2 13/16"	Masonite	1.32
PS-440	3	2 3/16"	Steel	1.14
PS-441	5	2 3/16"	Steel	1.65
PS-442	3	2 13/16"	Steel	1.14
PS-443	5	2 13/16"	Steel	1.65

### BUD METAL DOOR RACK PANELS

If it is desirable to have accessibility to component parts on the chassis, this panel is very useful. Door opening on No. 615—15 3/8" x 6"; door opening on No. 616—15 3/8" x 7 1/2". These panels are available in either Grey or Black Wrinkle finish. Panels are made of 1/8" high grade sheet steel.

Catalog No.	Length	Width	Dealer Cost
PS-615	19"	10 1/2"	\$3.45
PS-616	19"	12 1/4"	3.90

### BUD MASONITE PANELS

This line is intended for all uses requiring an insulated panel that is easily worked. Made from 3/16" thick Tempered Masonite and finished in Black Wrinkle only.

Cat. No.	Width	Length	Dealer Cost	Cat. No.	Width	Length	Dealer Cost
PM-607	7"	10"	\$0.60	PM-610	8"	12"	\$0.78
PM-608	7"	12"	.66	PM-611	8"	14"	.87
PM-609	7"	14"	.75	PM-612	8"	16"	.99
PM-606	8"	10"	.66	PM-613	9"	15"	1.05

### BUD METAL PANELS

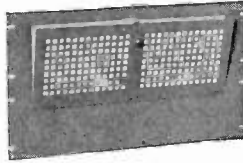
For general experimental and construction applications, this line of steel panels fills all usual requirements. Finished on both sides in fine durable Black Wrinkle Enamel only.

Cat. No.	Width	Length	Dealer Cost	Cat. No.	Width	Length	Dealer Cost
PS-1200	7"	8"	\$0.52	PS-240	8"	12"	\$0.72
PS-1201	7"	10"	.54	PS-1204	8"	14"	.80
PS-1202	7"	12"	.60	PS-1205	8"	16"	.88
PS-1203	7"	14"	.70	PS-1187	8"	18"	.92
PS-238	7 3/8"	15"	.82	PS-1188	8"	19"	1.18
PS-239	8"	10"	.66	PS-700	9"	15"	1.00

Where materials are specified Black Wrinkle Finish, and Grey is desired, a charge of 15% additional will be made.

Prices slightly higher west of the Mississippi River

### BUD VENTILATED DOOR RACK PANEL



These panels have a generous perforated area in the door, providing adequate ventilation for adjacent units. The panels are 19" long and available in either Black or Grey Wrinkle finish. Door opening on P. S. 814 15 3/8" x 6". Opening on P. S. 815 15 3/8" x 7 1/2".

Cat. No.	Height	Door Height	Dealer Cost
PS-814	10 1/2"	6"	\$4.65
PS-815	12 1/4"	7 1/2"	5.25

### BUD RACK SHELVES



Heavy power supplies, modulator units, etc., can be mounted on these rack shelves which are supported in the cabinet by the chassis-supporting angles listed on this page. They are designed to slide in from the rear of the cabinet. Made of heavy gauge steel, finished in Black Wrinkle Enamel only.

Catalog No.	Width	Height	Depth	Dealer Cost
CB-1976	19"	1"	15"	\$2.85
CB-1977	19"	1"	12"	2.25

### BUD HEAVY DUTY CHASSIS (Furnished with Bottom Plates)



These chassis, made of heavy gauge steel, are intended for applications requiring unusual sturdiness and where large weights are involved. Available in either Black Wrinkle finish or Electro-Zinc Plate.

Black Wrinkle	Zinc Plated	Cat. No.	Depth	Width	Height	Dealer Cost
CB-1757	CB-1764		8"	17"	2"	\$2.16
CB-1758	CB-1765		8"	17"	3"	2.40
CB-1759	CB-1766		11"	17"	2"	2.43
CB-1760	CB-1767		11"	17"	3"	2.64
CB-1761	CB-1768		13"	17"	2"	2.85
CB-1762	CB-1769		13"	17"	3"	3.12
CB-1763	CB-1770		13"	17"	4"	3.45

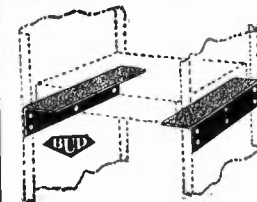
### BUD TRIANGULAR MOUNTING BRACKETS



For panel and chassis assemblies where large weights are involved, these Triangular Mounting Brackets make convenient supports. Constructed of heavy steel. Black finish. Sold in pairs only.

Cat. No.	Height	Depth	Dealer Cost Per Pair
MB-1266	5"	5"	\$0.73
MB-1267	7"	7"	.85
MB-1268	9"	9"	1.00

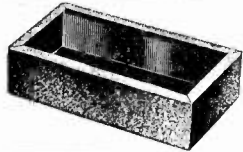
### BUD CHASSIS SUPPORTING ANGLES



When heavy weights are encountered in chassis construction, Bud Chassis Supporting Angles will distribute the weight on the sides of the rack and relieve the panel. Made in two sizes from Black Painted Steel, 1/8" thick. Sold in pairs only.

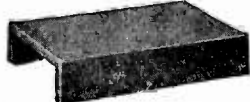
Cat. No.	Length	Width	Dealer Cost Per Pair
SA-1349	14 1/2"	3"	\$1.50
SA-1350	12"	3"	1.50





**BUD STEEL CHASIS BASES**  
 These chassis are made from one piece of steel, all corners are reinforced and spot welded. The four sides are folded on bottom for additional strength. This also permits a bottom plate to be attached if desired. These Chassis Bases are furnished in either Black Wrinkle or Electro-Zinc plated.

Black Wrinkle Cat. No.	Zinc Plated Cat. No.	Depth	Width	Height	Gauge	Dealer Cost
CB-628	CB-629	5"	7"	2 1/2"	22	\$0.72
CB-644	CB-645	5"	9 1/2"	2 1/2"	22	.60
CB-788	CB-776	5"	9 1/2"	1 1/2"	22	.60
CB-604	CB-605	5"	10"	3"	22	.90
CB-789	CB-1191	7"	7"	2"	22	.90
CB-790	CB-1192	7"	9"	2"	22	.90
CB-791	CB-1193	7"	11"	2"	20	1.05
CB-792	CB-793	7"	12"	3"	20	1.96
CB-646	CB-1194	5"	13"	2 1/2"	20	1.08
CB-647	CB-1198	7"	13 1/2"	2 1/2"	20	1.23
CB-649	CB-1189	7"	15"	3"	20	1.41
CB-365	CB-666	4 1/2"	15"	3"	20	1.02
CB-1068	CB-1066	7"	17"	2 1/2"	20	1.29
CB-648	CB-1199	7"	17"	2 1/2"	20	1.17
CB-701	CB-702	8"	10"	2 1/2"	20	1.25
CB-703	CB-704	8"	12"	2 1/2"	20	1.32
CB-650	CB-774	8"	17"	3"	20	1.38
CB-651	CB-775	8"	17"	3"	20	1.38
CB-652	CB-1195	10"	12"	3"	20	1.32
CB-653	CB-779	10"	14"	3"	20	1.38
CB-654	CB-769	10"	17"	3"	20	1.32
CB-636	CB-637	10"	17"	3"	20	1.32
CB-655	CB-1196	10"	17"	3"	18	1.74
CB-656	CB-1197	10"	23"	3"	18	1.65
CB-657	CB-770	11"	17"	2"	18	1.85
CB-658	CB-771	11"	17"	2"	18	1.50
CB-663	CB-661	12"	17"	3"	18	1.62
CB-664	CB-662	12"	17"	3"	18	2.05
CB-659	CB-772	13"	17"	3"	18	2.20
CB-660	CB-773	13"	17"	3"	18	1.74
CB-640	CB-641	10"	17"	4"	18	2.65
CB-642	CB-643	13"	17"	5"	18	3.15
CB-623	CB-624	10"	17"	5"	18	3.50
CB-625	CB-626	13"	17"	5"	18	3.50



**BUD OPEN-END CHASSIS**  
 Primarily intended to be used with the various sizes and styles of Bud metal cabinets, these chassis are ideal for any type of small built-up unit such as a record amplifier, code oscillator, etc. U-shaped construction is used with ends folded over 3/8" for additional strength. Finish is Electro-Zinc Plating.

Cat. No.	Depth	Width	Height	Fits Cab. No.	Dealer Cost
CB-38	7"	6"	2"	C-1584	\$0.60
CB-30	5"	7"	1 1/2"		.54
CB-41	7"	7"	1 1/2"	C-973	.62
CB-39	7"	8"	2"	C-1585	.76
CB-996	5 1/2"	9"	1 1/2"	C-993	.60
CB-976	7 1/2"	9"	1 1/2"	C-999, C-1746	.82
CB-40	7"	10"	2"	C-1586	.82
CB-997	7"	11"	1 1/2"	C-994, C-1747	.86
CB-998	7"	13"	1 1/2"	C-995, C-1748	1.00
CB-34	10 3/4"	14"	2"	C-975A	1.38
CB-35	7 3/4"	15"	2"	C-1190A	1.26



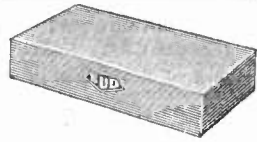
**BUD CHASSIS DECKS**  
 These chassis are suitable for use in carrying cases and utility cabinets. Each unit is folded over 1 1/2" on the front, 1/2" on the side and made from Zinc Plated steel. These decks are also useful for interstage shielding and supports in regular panel-end chassis layouts.

Cat. No.	Width	Depth	Fits Cab. No.	Dealer Cost
CB-522	4 1/2"	5 1/2"	CU-1098	\$0.46
CB-523	4 1/2"	4 1/2"	CU-1099	.43
CB-524	6 1/2"	6 1/2"	CU-879	.56
CB-525	5 1/2"	5 1/2"	CU-1124, CC-1096	.50
CB-526	8 1/2"	7 1/2"	CU-880	.79
CB-527	9 1/2"	7 1/2"	CU-881	.82
CB-528	7 1/2"	6 1/2"	CU-882	.66
CB-36	6 1/2"	6 1/2"	CC-1097	.60
CB-37	8 1/2"	6 1/2"	CC-1100	.76



**BUD INTERSTAGE SHIELDS**  
 These shields are useful on receiver and transmitter chassis for eliminating interstage coupling and isolating individual circuits. Formed angles on front and bottom facilitate mounting on either chassis or panel. Both angles punched with two mounting holes.

Cat. No.	Height	Depth	Dealer Cost
IS-1246	5 1/4"	7"	\$0.45
IS-1247	5 1/4"	10"	.47
IS-1245	6 1/4"	10"	.50



**BUD ALUMINUM CHASSIS**  
 The construction and design of these chassis is exactly the same as our steel chassis. The aluminum chassis are welded on government approved spot welders that are the same as used in the welding of aluminum airplane parts. The gauges in table below are aluminum gauges. As a result, you can depend on BUD Aluminum Chassis to do a perfect job.

Catalog Number	Depth	Width	Height	Gauge	Dealer Cost
AC-402	5"	7"	2"	18	\$0.69
AC-403	5"	9 1/2"	2"	18	.81
AC-421	5"	9 1/2"	3"	18	.89
AC-404	5"	10"	3"	18	.99
AC-422	5"	13"	3"	18	.98
AC-405	7"	7"	2"	18	.81
AC-406	7"	9"	2"	18	.90
AC-407	7"	11"	2"	18	.96
AC-408	7"	12"	2"	18	1.14
AC-409	7"	13"	2"	18	1.02
AC-411	7"	15"	3"	16	1.68
AC-423	7"	17"	3"	16	1.43
AC-424	8"	17"	3"	16	1.38
AC-425	8"	17"	2"	16	1.52
AC-412	8"	17"	3"	16	1.77
AC-413	10"	12"	3"	16	1.44
AC-414	10"	14"	3"	16	1.92
AC-415	10"	17"	2"	16	1.80
AC-416	10"	17"	3"	16	2.04
AC-426	11"	17"	2"	14	1.89
AC-417	11"	17"	3"	14	2.40
AC-418	12"	17"	3"	14	2.52
AC-419	13"	17"	2"	14	2.25
AC-420	13"	17"	3"	14	2.67
AC-427	10"	17"	4"	14	2.36
AC-428	13"	17"	4"	14	3.05



**BUD REMOVABLE TOP CHASSIS**  
 Amateurs and experimenters who make periodic changes can do so with a minimum of waste by just discarding the top that has been drilled and replacing it with a new top. Supplied in Black Wrinkle finish or Electro-Zinc Plated.

Black Wrinkle Cat. No.	Zinc Plated Cat. No.	Depth	Width	Height	Dealer Cost
RT-196	CB-193	10"	17"	3"	\$2.75
CB-197	CB-194	10"	17"	4"	3.00
CB-251	CB-210	13"	17"	3"	3.15
CB-252	CB-211	13"	17"	4"	3.90

**REPLACEMENT CHASSIS TOPS**

RT-198	RT-195	10"	17"	1/16"	\$1.00
RT-253	RT-212	13"	17"	1/16"	1.32



**BUD CHASSIS BOTTOM PLATES**  
 These bottom plates make excellent dust covers and protect all wiring and component parts under the chassis. Each plate has four formed bosses that prevent sharp edges from scratching the table top. Supplied in Black Wrinkle finish or Electro-Zinc Plated finish.

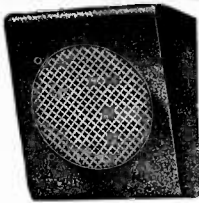
Black Wrinkle Cat. No.	Zinc Plated Cat. No.	Width	Length	Dealer Cost
BP-705	BP-706	5"	7"	\$0.36
BP-680	BP-667	5"	9 1/2"	.33
BP-536	BP-538	5"	10"	.39
BP-681	BP-668	7"	7"	.45
BP-682	BP-669	7"	9"	.48
BP-683	BP-670	7"	11"	.54
BP-537	BP-539	7"	12"	.57
BP-684	BP-671	7"	13"	.57
BP-685	BP-672	5"	13 1/2"	.45
BP-516	BP-513	7"	15"	.63
BP-541	BP-540	8 1/2"	15"	.65
BP-1069	BP-1067	4"	17"	.48
BP-686	BP-673	7"	17"	.66
BP-707	BP-708	8"	10"	.57
BP-709	BP-710	8"	12"	.66
BP-687	BP-674	8"	17"	.69
BP-688	BP-675	10"	12"	.69
BP-517	BP-514	10"	14"	.75
BP-689	BP-676	10"	17"	.84
BP-690	BP-677	11"	17"	.84
BP-691	BP-678	12"	17"	.90
BP-692	BP-679	13"	17"	1.08
BP-518	BP-515	10"	23"	1.15



**BUD INTERLOCK SWITCH-BRACKET**  
 The Interlock Switch-Bracket is offered as a means for mounting an essential safety switch used in interlock circuit in rack cabinet. All voltage will automatically be off when the cabinet is opened.

Cat. No.	Height	Width	Depth	Dealer Cost
SB-1348	3 1/4"	1 1/2"	2"	\$0.39

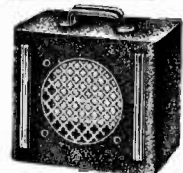
Where materials are specified Black Wrinkle Finish, and Grey is desired, a charge of 15% additional will be made. Prices slightly higher west of the Mississippi River



### BUD WALL OR TABLE TYPE SPEAKER CASE

A distinctive line of new metal speaker cabinets with reproduction capabilities equal to wood cabinets. All troubles with wood warping and splitting are eliminated. Keyway holes are provided for wall mounting and four embossed feet on the bottom are provided to prevent damaging table surfaces. Finished in Brown Wrinkle only.

Cat. No.	Hole Size	Speaker Size	Height	Width	Depth	Dealer Cost
CS-1948	3 1/2"	4"	7 1/2"	6 1/2"	4 1/2"	\$2.85
CS-1939	4"	5"	7 1/2"	6 1/2"	4 1/2"	3.00
CS-1940	4 3/4"	6"	9 1/2"	8"	5 5/8"	3.40
CS-1941	6 1/2"	8"	11 1/2"	9 1/2"	7"	3.90
CS-1942	8 1/2"	10"	13 1/2"	11 1/2"	8 1/4"	4.50
CS-1943	10 1/2"	12"	15 1/2"	13 1/2"	9 3/4"	5.00



### BUD STREAMLINED SPEAKER CASES

For an attractive Speaker Housing that is portable, choose these Speaker Cases. No baffle required with these Speaker Cases. Quality of reproduction is equal to that of a good wood speaker housing. Each case has the front vertical corners rounded and the speaker opening is covered with an artistic metal grille. Two strips of chrome trim are mounted on the front. All Speaker Cases are drilled to take the size of speaker that is intended for the case. These cases are available in either Black or Grey Wrinkle finish.

Cat. No.	Hole Size	Speaker Size	Height	Width	Depth	Dealer Cost
CS-1935	4 3/4"	6"	8"	9"	6"	\$3.35
CS-1936	6 1/2"	8"	9 3/4"	11"	7"	4.20
CS-1937	8 1/4"	10"	11 1/2"	13"	8"	5.70
CS-1938	11"	12"	13 1/2"	15"	8"	7.00



### BUD GENERAL SPEAKER CABINETS

In making permanent or portable public address installations, this line of speaker cabinets will be found very useful. No baffle required with these speaker housings. Quality of reproduction is equal to that of fine wood speaker cases. Construction is of heavy, cold-rolled steel. A carrying handle is attached to each cabinet for portable purposes. Finished in Black Wrinkle Enamel only.

Cat. No.	Hole Size	Speaker Size	Height	Width	Depth	Dealer Cost
CS-471	4 3/4"	6"	9"	9"	6"	\$2.88
CS-472	6 1/2"	8"	11"	11"	7"	3.60
CS-473	8 1/4"	10"	13"	13"	8"	4.65
CS-474	11"	12"	15"	15"	8"	6.15



### TRUCK CASTERS

No. RC-7756—Heavy Duty type casters, for weights of 400 lbs. or less. No. RC-7757 Casters are Light Duty for lighter weights. Wheels, hard rubber composition and ball bearing.

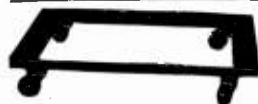
Catalog No.	Height	Type	Dealer Cost
RC-7756	2 3/4"	Heavy Duty	\$ .90
RC-7757	2"	Light Duty	.40

### RELAY RACK SCREWS AND WASHERS



No. RS-7140 Machine Screws, 1/2" long, threaded 10-32, Oval Head, finished in Nickel Plate. No. RW-7161 Cup Washers, to fit 10-32 Screws. Nickel plated, finish. These are available in packages of 100, 250, 500 and 1000.

Catalog No.	Description	Dealer Cost
RS-7140	Screw	\$ .90 per 100
RW-7161	Washer	1.00 per 100



### BUD CABINET RACK DOLLIES

These dollies have been introduced to overcome the difficulty of moving heavy relay racks when repairs are necessary. They will fit cabinets having bases measuring from 14" x 18" to 17" x 21" and are especially suited for our Standard Relay Racks.

No. RD-505 Dolly is furnished with light duty casters. No. RD-506 is furnished with heavy duty casters. Finished in Black Wrinkle only. Bud De Luxe Relay Racks require four RC-7756 casters only.

Cat. No.	Length Outside	Length Inside	Width Outside	Width Inside	Dealer Cost
RD-505	21 1/2"	17 3/4"	17 1/2"	13 1/2"	\$6.00
RD-506	21 1/2"	17 3/4"	17 1/2"	13 1/2"	7.75

Where materials are specified Black Wrinkle Finish, and Grey is desired, a charge of 15% additional will be made.

Prices slightly higher west of the Mississippi River

### BUD STREAMLINED AMPLIFIER FOUNDATIONS



Use this unit to obtain beauty in an amplifier and similar apparatus. Each foundation consists of a standard chassis on which is mounted a removable top cover. Chromium trim is used to add additional attractiveness to the equipment. All chassis are 3" high and complete units are 9" high. Sturdy Easy Grip handles are attached to chassis, excepting No. 1750 where handle is attached to top. Finished in either Black or Grey Wrinkle.

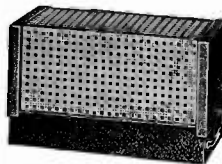
Cat. No.	Width	Depth	Dealer Cost
CA-1750	10 1/16"	5"	\$3.48
CA-1751	12 1/16"	7"	3.21
CA-1752	17 1/16"	7"	4.29
CA-1753	17 1/16"	10"	5.10

### BUD SLOPING PANEL AMPLIFIER FOUNDATIONS



Each foundation consists of a 4" sloping front chassis on which is mounted a removable top cover. The top cover contains gridded cutouts and louvers for adequate ventilation. The CA-1980 has a handle mounted on top of cover. All others have handles mounted on chassis. All chassis are 3 1/2" high and all units are 9 1/2" overall height. Cover is finished in Grey Wrinkle with chrome trim and the chassis is finished in Black Wrinkle.

Cat. No.	Top Depth	Chassis Length	Chassis Depth	Dealer Cost
CA-1980	5"	10"	8"	\$4.65
CA-1981	7"	12"	10"	5.40
CA-1982	7"	17"	10"	6.24
CA-1983	10"	17"	13"	6.90



### BUD AMPLIFIER FOUNDATIONS

Each unit consists of a regular chassis on which is attached a perforated metal cover which provides a lot of ventilation. Chassis have easy grip handles attached to same. Finished in Black Wrinkle only.

Cat. No.	Height	Width	Depth	Chassis Height	Dealer Cost
CA-699	8 3/16"	9 3/8"	5 1/8"	2 1/2"	\$3.30
CA-1125	8 3/16"	13 3/8"	5 1/8"	2 1/2"	3.52
CA-1126	8 3/16"	17 3/8"	7 1/8"	2 1/2"	4.24
CA-1127	8 3/16"	17 3/8"	10 1/8"	3"	5.22
CA-1128	8 3/16"	12 3/8"	10 1/8"	3"	4.60

### BUD IMPROVED UTILITY HANDLES



These handles are designed to provide sufficient strength and comfortable hand-grip. They are made from aluminum tubing and are given an etched aluminum finish. Made in two sizes and furnished complete with screws, washers and nuts.

Catalog Number	Overall Length	Overall Width	Mtg. Hole Center	Dealer Cost
UH-70A	5 3/4"	3/4"	4 5/8"	\$0.22
UH-71A	3 3/4"	3/4"	3 3/4"	.18

### BUD MOUNTING BRACKETS



These Brackets are designed to permit the mounting of Midget Condensers, volume controls, etc., at any desired position under or on top of a chassis, at the proper distance from the chassis. Bracket is made of steel, cadmium-plated. AB-550 same as AB-549 except that slot does not have 1/2" hole in center.

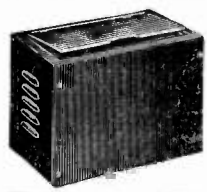
Cat. No.	Height	Width	Slot	Dealer Cost
AB-549	2"	3/4"	3/8" & 1/2"	\$0.06
AB-550	2"	3/4"	3/8"	\$0.06

### BUD ANGLES AND BRACKETS

A wide selection in sizes of these angles provides for numerous uses as brackets in all types of radio transmitter and receiver construction, and other electronic equipment. Made of Brass, Nickel Plated.

	TYPE 2	Dealer Cost
AB-633	2" x 3/8" x 3/8"	\$4.20
AB-634	3" x 3/4" x 3/8"	5.00
AB-635	4" x 3/4" x 3/8"	6.00

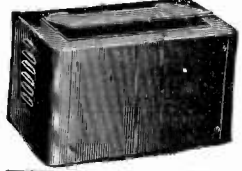
	TYPE 1	Dealer Cost
AB-444	1 1/2" x 1/2" x 3/8"	\$2.10
AB-445	3/4" x 3/8" x 3/8"	2.85
AB-446	1" x 1" x 3/8"	3.15
AB-447	1 1/2" x 1 1/2" x 3/8"	4.05
AB-631	1" x 1 1/2" x 3/8"	2.65
AB-632	1 1/2" x 1 1/2" x 3/8"	3.50



### BUD INSTRUMENT & RECEIVER CABINETS

Each cabinet has an evenly recessed hinged cover with convenient finger lift. The panel on front of cabinet is readily attached with self-tapping screws. Louvers provide ample ventilation. These Cabinets are finished in Black Wrinkle only. For chassis to fit these cabinets see Open End Chassis listed on other page.

Cat. No.	Height	Width	Depth	Dealer Cost
C-973	7"	8"	8"	\$2.52
C-993	7"	10"	8"	2.18
C-994	7"	12"	8"	3.15
C-995	7"	14"	8"	3.24
C-1190	8"	16"	8"	5.10
C-975	9"	15"	11"	6.15



### BUD STREAMLINED CABINETS

Distinctive features of these cabinets are the rounded front corners and recessed hinged top. All parts built into this cabinet are easily accessible. Overall height, 8". Depth, 8 1/4". Finished in Black Wrinkle only. Suitable chassis may be found under listing of Open End Chassis on other page.

Catalog Number	Panel Size	Cabinet Width	Cabinet Height	Dealer Cost
C-1783	8" x 8"	10 1/2"	8"	\$3.00
C-1745	8" x 10"	12 1/2"	8"	3.30
C-1747	8" x 12"	14 1/2"	8"	3.70
C-1748	8" x 14"	16 1/2"	8"	4.50
C-1790	8" x 16"	18 1/2"	8"	4.26

### BUD DELUXE STREAMLINED CABINETS

These cabinets are identical with those listed above, except that they have a 1/2" vertical chrome strip at each side of the panel, and are supplied in Gray Wrinkle Enamel only.

Catalog Number	Panel Size	Cabinet Width	Cabinet Height	Dealer Cost
C-1791	8" x 8"	10 1/2"	8"	\$3.75
C-1781	8" x 10"	12 1/2"	8"	4.20
C-1782	8" x 12"	14 1/2"	8"	4.50
C-1783	8" x 14"	16 1/2"	8"	5.10
C-1792	8" x 16"	18 1/2"	8"	6.50

### BUD METAL CARRYING CASES

These carrying cases have many uses. An easy grip handle is fastened to the top. Front and back panels are removable. Steel welded construction assures maximum strength with minimum weight, an important requirement for portable work. Finish is Black Wrinkle only. For chassis to fit these cabinets see Chassis Decks on other page.



Cat. No.	Depth	Width	Height	Dealer Cost
CC-1095	5"	9"	9"	\$2.15
CC-1091	5"	9"	6"	2.15
CC-1096	6"	7"	6"	2.50
CC-1092	6"	12"	7"	2.95
CC-1097	7"	7 1/4"	15"	3.00
CC-1100	8"	10"	10"	2.95
CC-1093	7"	15"	9"	4.30

### BUD CODE PRACTICE OSCILLATOR AND MONITOR



The BUD CODEMASTER is a real money-saver. No longer do you have to consider your code practice oscillator useless after you have learned the code. A flip of the switch and you have a good CW monitor. This is a really versatile instrument.

It has a 4" built-in permanent magnetic dynamic speaker and will operate up to twenty ear-phones.

A volume control and pitch control permit adjustments to suit individual requirements. Any number of keys can be connected in parallel to the oscillator for group practice.

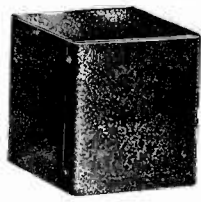
This unit will operate on 110 volts A.C. or D.C. An external speaker may be plugged in without the use of an output transformer. All controls are placed on the front of the unit and all jacks are in the rear. The unit is 6 1/2" high, 5 1/2" wide and 3 1/2" deep. It is finished in black enamel with white lettering.

Catalog Number CPO-128	Dealer Cost \$12.50
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Where materials are specified Black Wrinkle Finish, and Grey is desired, a charge of 15% additional will be made.

Prices slightly higher west of the Mississippi River

### BUD STREAMLINED SCOPE AND UTILITY CABINETS

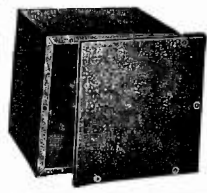


These are attractive cabinets that are adaptable to a variety of uses. All cabinets are supplied with chassis. Prices shown below include chassis. The chassis height on all except CU-1991 and CU-1992 is 1 1/2". CU-1991 is designed for 3" cathode ray tube and has a hinged cover to provide easy access to tube or other components. Chassis height is 2". CU-1992 is designed for a 5" cathode ray tube and also has a hinged cover. Chassis height, 3".

Catalog Number	Width	Depth	Height	Dealer Cost
CU-1990	5 1/2"	8 1/2"	8"	\$2.75
CU-1984	7 1/2"	8 1/2"	8"	3.20
CU-1985	9 1/2"	8 1/2"	8"	3.57
CU-1986	11 1/2"	8 1/2"	8"	3.91
CU-1987	13 1/2"	8 1/2"	8"	4.56
CU-1988	15 1/2"	8 1/2"	8"	5.06
CU-1989	17 1/2"	8 1/2"	8"	5.72
CU-1991	7 1/2"	13"	8"	5.40
CU-1992	9 1/2"	19"	12"	7.65

### BUD METAL UTILITY CABINETS

The large number of sizes available makes this line useful for all sorts of electronic equipment, monitors, frequency meters, etc. These cabinets have two removable sides for easy accessibility and are finished in Black Wrinkle.



Cat. No.	Depth	Width	Height	Dealer Cost
CU-883	2"	4"	4"	\$0.66
CU-728	3"	5"	4"	.75
CU-729	4"	5"	6"	.95
CU-1098	6"	6"	6"	1.00
CU-1099	5"	6"	9"	1.44
CU-879	7"	6"	9"	1.30
CU-1124	6"	7"	10"	1.90
CU-880	8"	10"	10"	2.40
CU-881	8"	11"	12"	3.00
CU-882	7"	9"	15"	3.35

### BUD SLOPING PANEL CABINETS



The entire front panel is removable if desired. This cabinet is also provided with a hinged top for easy accessibility to tubes or other parts that are mounted on chassis. All cabinets are finished in Black Wrinkle only.

Catalog Number	Height	Width	Depth	Fits Chassis	Dealer Cost
C-1584	6 1/2"	7 1/8"	7 1/2"	7" x 6" x 2"	\$2.88
C-1585	6 1/2"	9 1/8"	7 1/2"	7" x 8" x 2"	3.25
C-1586	6 1/2"	11 1/8"	7 1/2"	7" x 10" x 2"	3.60
C-1892	8"	13 1/8"	8 1/2"	8" x 12" x 2 1/2"	4.32
C-1893	10"	18 1/8"	10 1/2"	10" x 17" x 3"	5.85

### BUD BOX SHIELDS



This shield has many uses: Shielding power transformers and chokes, and for covering and protecting various other components in power supplies, transmitters, receivers and other electronic units.

Top and sides are one-piece steel. No. BS-1244 has perforated steel ends for ventilation. BS-1891 has solid ends. Flanges at bottom provide for mounting. Finished in Black Wrinkle Enamel only.

Cat. No.	Ends	Length	Depth	Height	Dealer Cost
BS-1244	Ventilated	7 1/2"	4 1/2"	5"	\$1.45
BS-1891	Solid	7 1/2"	4 1/2"	5"	1.35



### BUD VERNIER DIAL—GEARED TYPE

Freedom of back-lash is obtained by the use of spring-loaded laminated steel gears with a ratio of ten to one. Dial furnished with three paper dial scales on which calibration marks can be printed. Dial scales are printed with five calibration arcs for wave-band identification and each arc is divided into five equal sections over 180 degrees, which makes each section the equivalent of one rotation of the circular dial, or 100 dial divisions. Automatic clutch and stop prevents pointer from being turned off scale and eliminates possibility of damage to the gears.

The dial is furnished mounted, complete with all hardware. An escutcheon outlines the dial scale, which is further protected by a "Plastacel" window. Dial scale assembly mounts independent of the gear unit, and may be removed when desired without disturbing the dial drive.

Mounting area of the dial 5 1/4" x 5 3/4". Depth behind panel 1 1/2".	
D-1729	Dealer Cost \$3.00



**BUD MINIATURE UTILITY CABINETS with attached Chassis**



Filling a long wanted need for a small cabinet with a chassis attached to the front panel, these cabinets are indispensable when building electronic devices using miniature tubes. Front and rear panels are removable and fastened with self-tapping screws, permitting easy accessibility. Especially useful for HF converters, television amplifiers and power supplies. Finished in black wrinkle.

Cat. No.	Height	Width	Depth	CHASSIS SIZE	Dealer Cost
C-1793	4"	2"	1"	3 1/8" 1 7/8"	\$ .95
C-1794	4"	5"	3"	1" 4 1/8" 2 7/8"	1.05
C-1795	5"	4"	3"	1 1/4" 3 3/8" 2 7/8"	1.05
P-1796	5"	5"	4"	1 3/4" 4 1/8" 3 7/8"	1.15
C-1797	5"	4"	4"	1 1/4" 5 1/8" 3 7/8"	1.15
C-1798	6"	6"	6"	1 3/4" 4 7/8" 5 7/8"	1.20

**BUD SLOPING PANEL UTILITY BOX**



A compact, sloping panel cabinet, providing a streamlined appearance and enough space to house conveniently a 2 or 3 miniature tube amplifier or gadget. A 3/8" flange around the rear opening of the cabinet provides a convenient back cover mounting. Designed to accommodate a Bud miniature chassis. Finished in black wrinkle.

Cat. No.	Height	Width	Depth	Use Chassis No.	Dealer Cost
C-1602	4"	4"	4 1/4"	CB-1617	\$1.10
C-1603	4"	5"	4 1/4"	CB-1618	1.20
C-1604	4"	6"	4 1/4"	CB-1619	1.30
C-1605	4"	7"	4 1/4"	CB-1620	1.50

**BUD HANDY BOXES**

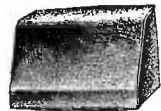


Something new in box design permits a large number of small components to be easily wired or serviced. The cover is held by 4 self-tapping screws. Black wrinkle finish.

Cat. No.	Height	Width	Depth	Dealer Cost
HB-1621	2 1/4"	4 1/4"	1 1/2"	\$ .90
HB-1622	2"	4"	2 3/4"	1.00

**BUD SLOPING PANEL UTILITY CABINET**

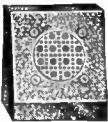
A metal box that can be used for numerous purposes. Finished in Black Wrinkle Enamel only.



Cat. No.	Height	Width	Depth	Dealer Cost
C-1578	4 1/4"	4"	4"	\$ .90
C-1579	4 1/4"	5"	4"	1.05
C-1580	4 1/4"	6"	4"	1.20
C-1581	4 1/4"	7"	4"	1.45

**BUD MIDGET SPEAKER CASES**

A safe, convenient housing for midget 2" and 3" speakers. Size 4" wide, 4" deep, 4 1/4" high. Finished in Black Wrinkle Finish only.



Catalog Number	Hole Diameter	Speaker Size	Dealer Cost
CS-1685	2 3/8"	2"	\$1.25
CS-1686	2 1/8"	3"	1.25

Prices slightly higher west of the Mississippi River.

**BUD MINIATURE AMPLIFIER FOUNDATION**



With the increased use of miniature tubes, smaller cabinets can be used when designing a compact amplifier. This amplifier foundation was designed expressly for this purpose. The chassis is a 5" x 7" x 2". The cover is made of perforated metal. A streamlined handle makes this cabinet portable. Finished in black wrinkle.

Cat. No.	Height	Width	Depth	Chassis Height	Dealer Cost
CA-1754	6"	7"	5"	2"	\$3.00

**BUD ALUMINUM MINIATURE CHASSIS**



These small, open end aluminum chassis are just the thing for miniature tube applications or sub-assemblies. Made of hard aluminum with 1/4" flange on bottom, allowing the chassis to be fastened down or a bottom plate to be attached. Extremely useful for small receivers, outboard uses, such as narrow band FM adapters or any use where space is limited. Finish is etched aluminum.

Cat. No.	Depth	Width	Height	Fits Cabinet No.	Dealer Cost
CB-1623	2 5/8"	2 3/4"	1 1/4"	C-1784	\$ .30
CB-1624	1 3/4"	3 1/8"	1 1/4"	CU-883	.33
CB-1625	3 1/4"	4 1/2"	2"	C-1788	.36
CB-1626	2 3/4"	4 1/8"	1"	CU-728	.36
CB-1627	3 3/4"	4 1/8"	1 1/2"	CU-729	.36
CB-1628	3"	6 1/8"	1 1/2"	C-1785	.42
CB-1629	5 3/4"	4 7/8"	1 1/2"	CU-1098	.45
CB-1617	4 1/4"	3 1/8"	1"	C-1602	.36
CB-1618	4"	4 1/8"	1"	C-1603	.39
CB-1619	4"	5 1/8"	1"	C-1604	.42
CB-1620	4"	6 1/8"	1"	C-1605	.45

**BUD STREAMLINED MULTI-PURPOSE CABINETS**



Handsome streamlined metal cabinet, finished in grey wrinkle. Back of Cabinet open for ventilation.

Cat. No.	Height	Width	Depth	Use Chassis No.	Dealer Cost
C-1784	4 1/2"	3 5/8"	3 1/8"	CB-1623	\$1.35
C-1785	4 1/2"	7 1/8"	3 1/8"	CB-1628	1.75
C-1787	6 1/2"	5 1/2"	3 1/2"	CB-1625	1.70
C-1788	4 1/2"	5 1/2"	3 1/2"	CB-1625	1.75

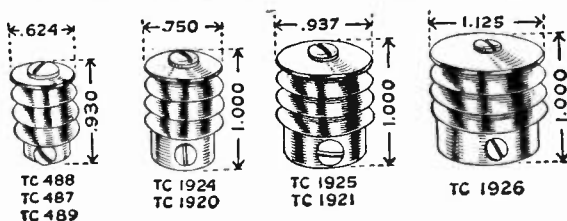
**BUD STREAMLINED METER CASES**

Designed for all applications requiring a modern meter case. All cases have a sloping front with top corner rounded. Meter cases CM-1241 and CM-1242 have insulators on top for leads to meter. CM-1965 and CM-1966 are furnished without indicators. Finished in Black Wrinkle.



Catalog Number	Hole Diameter	Fits Meter Size	Dealer Cost
CM-1241	2 3/8"	2"	\$1.12
CM-1242	2 1/8"	3"	1.12
CM-1965	2 1/8"	2"	.95
ZB-1966	2 1/8"	3"	.95

**HEAT RADIATING PLATE AND GRID TUBE CONNECTORS**



Bud heat radiating connectors fit all sizes of industrial and transmitting vacuum tubes. These connectors serve a dual purpose, not only are they useful to make connections to plate or grid terminals, but they provide a large heat radiating surface that will dissipate heat from the glass seal and tube element.

Eight sizes fit all grid and plate leads and also provide sufficient heat radiation for any tube operating in the range of 50 to 2000 watts. All radiators are machined from special aluminum rod. Edges are rounded to minimize corona loss.

Table below lists Connectors to fit various Tubes

Cat. No.	Hole Size for Lead	Heat Radiating Connectors to Fit the Following Tubes	Dealer Cost
TC-488	.052	3C24, 24, 24G, 25T, 27	\$ .36
TC-487	.062	UH50, HK24, 304B, 829B, 832A, 834	.36
TC-489	.072	35T, 35TG, 75TH, HK254, HK257B, 484, 8001	.36
TC-1924	.125	HK57, 152TH	.50
TC-1920	.375	4-125A, 150TH, 2-150D, 250R, 250TH, 250TL, 420A, 802, 803, 804, 807, 808 Grid, 814, 815, 828	.50
TC-1925	.125	304TH, 304TL	.60
TC-1921	.570	ZB60, HF60, HF100, 111H, 211H, 203H, HF175, HF300 Grid, 100R, HK357C, 450TH, 454, 750TH, 805, 806, 808, 809, 810, 811, 812, 813, 828, 833, 866, 854, 1500T, 2000T, 1054, 5331, 5332, 8000, 8003, 8005	.60
TC-1926	.810	WL468, WL463, WL460, HF200, HF201, HF300	.90

NOTE: TC-1923 Heat Radiating Connector with hole size of .110", is still in our line and can be furnished. Dealer Cost \$ .50

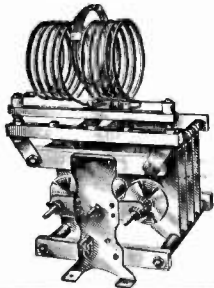


### BUD BUTTERFLY TRANSMITTER CONDENSERS

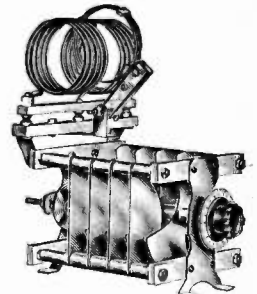
These Butterfly condensers are unequalled for mechanical and electrical balance in push-pull amplifier circuits. Where space behind the panel will not permit the use of our Giant or Master condensers, these dual condensers are ideal.

Rotor and Stator plates are made from .062" thick, highly polished aluminum with all edges rounded and surfaces highly polished to minimize corona loss and danger of peak voltage flash-over. Steatite bars are used as insulators.

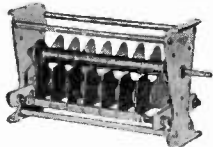
These condensers are so designed that a pair of single plate neutralizing condensers can be fastened to the end plate. Brackets for mounting coil jack bars are furnished with the condensers. All condensers that have an air gap of .5" are furnished with brackets for kilowatt coils and the condensers that have .3" air gap are furnished with brackets for the mounting of 500 watt coils. The height of the condensers is 6 1/4" and the width is 7".



Catalog Number	Overall Length	Mounting Hole Dim.	Air Gap	Capacity MMFD Per Section		Capacity MMFD Sections in Series		Dealer Cost
				Max.	Min.	Max.	Min.	
GC-1825	8 1/2"	6 1/4"	.500	25	13	13	7	\$15.00
GC-1826	10 1/2"	9 1/4"	.500	38	17	18	8	18.00
GC-1827	12 1/2"	11 1/4"	.500	54	25	28	13	22.50
GC-1828	15"	13 1/4"	.500	70	32	38	17	26.00
GC-1829	17 1/2"	15 1/4"	.500	86	38	43	19	29.50
GC-1830	6 1/4"	5 1/4"	.300	31	10	12	3	14.50
GC-1831	8 1/2"	7 1/4"	.300	51	15	21	4	17.50
GC-1832	10"	8 1/2"	.300	71	19	31	6	21.80
GC-1833	11 1/2"	10"	.300	92	24	43	9	25.00
GC-1834	12 1/2"	11 1/4"	.300	114	29	51	11	29.00
GC-1835	A pair of Neut. Cond. for above condensers . . . . . per pair							3.75



### BUD GIANT TRANSMITTER CONDENSERS—SINGLE SECTION



Modern design, plus precision production methods, makes BUD GIANT TRANSMITTER CONDENSERS the first choice of critical engineers for use in such applications as broadcast transmitters, high-power trans-oceanic communications equipment, and many other types of highly specialized electronic devices.

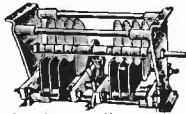
BUD GIANT TRANSMITTER CONDENSERS are built with a sturdy frame consisting of 3/16" thick aluminum end plates, connected by 5/8" diameter duraluminum rods. Formed brackets at top and bottom of end plates provide for mounting these units, and permit placing of associated inductances directly on the condenser.

Rotor and stator plates are accurately stamped from 0.064" thick highly polished aluminum with all edges rounded to minimize corona loss and danger of peak-voltage flash-over. The plates are separated by accurately machined duraluminum spacers that insure a constant air-gap throughout the entire length of the condenser.

The large two-finger rotor-contact spring, made from plated spring brass, assures positive contact with noise-free operation. Steatite bars insulate the stator, and are placed well outside the electrostatic field to keep dielectric losses at a minimum.

Catalog Number	Max. Cap. MMFD.	Min. Cap. MMFD.	No. of Plates	Air Gap	Mtg. Hole Spcg.	Over-all Length	Dealer Cost
GC-1800	195	24	15	.250"	8 1/2"	12 3/8"	\$21.60
GC-1801	345	32	27	.250"	12 1/2"	16 3/8"	30.25
GC-1802	530	48	41	.250"	16 3/8"	20 3/8"	41.00
GC-1803	55	19	7	.500"	7 1/2"	11 3/8"	17.25
GC-1804	95	25	15	.500"	12"	15 3/8"	25.35
GC-1805	150	33	21	.500"	15 3/8"	19 3/8"	29.00
GC-1806	255	52	35	.500"	23 1/2"	27 3/8"	40.50
GC-1807	50	22	9	.750"	10 5/8"	14 1/2"	20.00
GC-1808	75	27	13	.750"	13 3/8"	17 3/8"	24.25
GC-1809	110	40	19	.750"	18 3/8"	22 3/8"	27.00
GC-1810	160	50	29	.750"	26 3/8"	30 3/8"	38.75
GC-1811	55	30	11	1.000"	14 3/8"	18 3/8"	23.25
GC-1812	85	40	17	1.000"	21 1/8"	25"	29.80
GC-1813	105	45	23	1.000"	27 1/8"	31 3/8"	36.70

### BUD GIANT TRANSMITTER CONDENSERS—DUAL SECTION



These GIANT DUAL-SECTION TRANSMITTER CONDENSERS compare in quality with the GIANT SINGLE-SECTION TUNING CONDENSERS described above, and have the same general constructional features. Insulated tie-rods in these split-stator units eliminate closed loops in the frame.

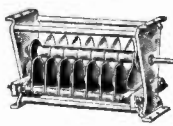
The rotor-contact consists of four fingers made from heavy-plated spring brass, placed in the center of the rotor assembly under heavy spring tension. This construction reduces series resistance and improves the efficiency of the unit at the higher frequencies.

When these dual condensers are used in split-stator circuits, the capacity is reduced to one-half the listed value and the voltage ratings are doubled.

Catalog Number	Cap. Per Sec. Max. Min.	No. Plates Per Sec.	Air Gap	Mtg. Hole Spcg.	Overall Length	Dealer Cost
GC-1815	110 15	9	.250"	11 1/4"	15"	\$29.00
GC-1816	215 23	17	.250"	16 1/4"	20"	39.00
GC-1817	320 30	25	.250"	21 1/4"	25"	50.00
GC-1818	55 18	7	.500"	13 1/4"	17 1/4"	28.00
GC-1819	80 22	11	.500"	18 1/4"	22 3/4"	34.50
GC-1820	110 25	15	.500"	22 3/4"	26 1/4"	41.50
GC-1821	30 15	5	.750"	13 1/2"	17 1/4"	25.92
GC-1822	52 20	9	.750"	20"	23 1/4"	34.00
GC-1823	70 25	13	.750"	26 1/4"	30 1/4"	38.80
GC-1824	35 18	7	1.000"	19 3/4"	23 1/4"	32.40

Panel space for mounting Giant Condenser 6 3/4" wide by 8 1/4" high.

### BUD MASTER TRANSMITTING CONDENSERS—SINGLE SECTION

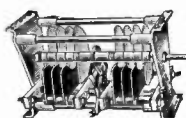


Each condenser is built in a rigid and sturdy frame consisting of two highly polished 1/8" thick aluminum end plates connected by four 5/16" diameter tie-rods. The end-plates have formed angles on top and bottom to facilitate mounting and to enable the associated inductance to be attached directly to the condenser itself.

The rotors and stators are assembled with plates made from 0.051" thick aluminum on which the edges have been rounded and highly polished. These plates are separated by accurately machined spacers. Large surface cone bearings assure proper alignment and smooth running of rotor with correct tension. Laminated, phosphor bronze wiper springs are placed at each end of the condenser bracket to assure positive rotor contact and noise-free operation. The stator assembly is insulated from the unit by large Steatite bars which are placed outside the electrostatic field. Rotor shaft is 1/4" diameter.

Catalog Number	Cap. in MMFD. Max. Min.	No. of Plates	Air Gap	Mtg. Hole Spcg.	Over-all Length	Dealer Cost
BC-1607	25 10	5	.200"	3 5/8"	4 1/8"	\$5.40
BC-1609	50 13	11	.200"	4 1/8"	6 1/8"	6.00
BC-1610	75 16	15	.200"	5 1/8"	7 1/8"	6.60
BC-1611	100 20	21	.200"	7 5/8"	8 1/8"	7.50
BC-1612	145 35	29	.200"	9 5/8"	10 1/8"	8.40
BC-1613	35 14	9	.300"	5 1/8"	6 3/8"	6.15
BC-1614	55 18	15	.300"	7 1/8"	8 3/8"	7.20
BC-1615	75 21	21	.300"	9 5/8"	10 1/8"	8.40
BC-1616	100 28	28	.300"	12 1/8"	13 3/8"	9.00

### BUD MASTER TRANSMITTING CONDENSERS—DUAL SECTION



While the general style and construction is identical with the single Master units, all tie-rods in this series are insulated by glazed Steatite pillars, thus completely eliminating all closed metallic loops in the condenser frame. A special outstanding feature, developed by BUD engineers, is that of placing the positive double wiping rotor contact between the two sections at the center of the rotor. These features contribute to perfect circuit balance and eliminate the majority of difficulties encountered in ultra-high frequency equipment due to parasitics, circulating currents and poor neutralization. Use BUD condensers throughout and be trouble free.

Catalog Number	Cap. Per Sec. Max. Min.	No. Plates Per Sec.	Air Gap	Mtg. Hole Spcg.	Over-all Length	Dealer Cost
BC-1635A	25 9	5	.200"	6 1/4"	8 1/2"	\$11.10
BC-1636A	35 12	7	.200"	7 1/4"	9 1/2"	12.15
BC-1637A	50 13	11	.200"	9 1/4"	11 1/2"	13.20
BC-1638A	75 16	15	.200"	11 1/4"	13 1/2"	14.30
BC-1639A	100 20	21	.300"	14 1/4"	16 1/2"	16.00
BC-1634A	50 15	13	.300"	12 1/4"	14 1/8"	14.00

Panel space for mounting Master Condensers 3 3/4" wide by 4 1/8" high.

#### OHM'S LAW

$$E = IR \quad R = \frac{E}{I} \quad I = \frac{E}{R} \quad P = I^2R$$

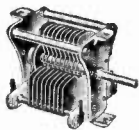
where:  
 R = resistance in Ohms  
 I = current in Amperes  
 E = electro-motive force in Volts

#### POWER

$$P = EI \quad P = \frac{E^2}{R} \quad P = I^2R$$

where:  
 P = power in Watts  
 I = current in Amperes  
 R = resistance in Ohms  
 E = electro-motive force in Volts





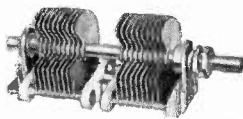
**BUD JUNIOR SINGLE SECTION CONDENSERS**

Construction of these condensers features BUD electro-soldered plate assemblies, assuring correct plate spacing, overall rigidity, and light weight. Losses are reduced to a minimum by this method of assembly. End-plates are rigidly constructed. Frame has formed angles on top and bottom for mounting the condenser in any position, allowing associated tuning inductance to be mounted on the condenser frame. The edges of the brass rotor and stator plates are rounded and the assemblies are finished in cadmium plating. Steatite insulation is used throughout. Large surface front sleeve bearing, and ball and cup rear bearings, provide consistently smooth operation. A two-finger spring brass pressure contact wiper assures noise-free and positive rotor contact at all times.

The low minimum capacities of these units make them especially suitable for multi-band applications where a high maximum-to-minimum capacity is desirable.

Catalog Number	Cap. in MMFD.		No. of Plates	Air Gap	Length Overall	Dealer Cost
	Max.	Min.				
JC-1525	50	4	7	.051"	3 <sup>1</sup> / <sub>2</sub> "	\$2.00
JC-1526	100	7	13	.051"	3 <sup>1</sup> / <sub>2</sub> "	2.25
JC-1527	145	9	19	.051"	4 <sup>1</sup> / <sub>2</sub> "	2.50
JC-1528	250	12	33	.051"	5 <sup>3</sup> / <sub>4</sub> "	3.10
JC-1529	340	15	43	.051"	5 <sup>3</sup> / <sub>4</sub> "	3.90
JC-1530	25	4	5	.078"	3 <sup>3</sup> / <sub>4</sub> "	1.95
JC-1532	55	8	11	.078"	3 <sup>3</sup> / <sub>4</sub> "	2.25
JC-1534	110	10	21	.078"	4 <sup>1</sup> / <sub>2</sub> "	2.76
JC-1535	150	11	29	.078"	5 <sup>1</sup> / <sub>2</sub> "	3.22
JC-1536	190	15	37	.078"	6 <sup>1</sup> / <sub>2</sub> "	4.00
JC-1537	245	17	47	.078"	7 <sup>1</sup> / <sub>2</sub> "	4.25
JC-1538	20	5	7	.144"	3 <sup>3</sup> / <sub>4</sub> "	2.25
JC-1540	55	10	17	.144"	3 <sup>3</sup> / <sub>4</sub> "	2.76
JC-1541	80	12	25	.144"	6 <sup>3</sup> / <sub>4</sub> "	3.15
JC-1542	105	15	33	.144"	8 <sup>1</sup> / <sub>2</sub> "	3.66
JC-1543	18	6	7	.175"	3 <sup>1</sup> / <sub>2</sub> "	2.50
JC-1544	40	11	15	.175"	5 <sup>1</sup> / <sub>2</sub> "	3.15
JC-1545	55	13	19	.175"	6 <sup>1</sup> / <sub>2</sub> "	3.54
JC-1547	100	18	37	.175"	9 <sup>3</sup> / <sub>4</sub> "	4.70

**BUD DOUBLE GANG MIDGET CONDENSERS**



Where space is at a premium and split-stator capacitors are specified, BUD Double Gang Midgets are desirable.

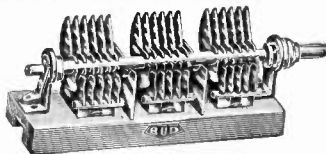
Plate construction and finish, workmanship and materials, are identical with other Midget Condensers. These condensers are designed for chassis and panel mounting.

**MID-LINE PLATE TYPE (STRAIGHT LINE WAVE LENGTH)**

Catalog Number	Cap. Per Section		Air Gap	No. Plates Per Section	Overall Length	Dealer Cost
	Max.	Min.				
MC-929A	50	5	.024"	7	3 <sup>1</sup> / <sub>2</sub> "	\$2.70
MC-911A	100	6	.024"	14	4"	3.05
MC-912A	140	7	.024"	19	4 <sup>3</sup> / <sub>4</sub> "	3.30
MC-942A	20	4	.060"	6	3 <sup>3</sup> / <sub>4</sub> "	2.85
MC-913A	35	5	.060"	11	4 <sup>1</sup> / <sub>2</sub> "	3.10
MC-330A	50	7	.060"	15	5 <sup>3</sup> / <sub>4</sub> "	3.40
MC-331A	75	8	.060"	23	6 <sup>1</sup> / <sub>2</sub> "	3.55
MC-329A	35	9	.095"	15	6 <sup>1</sup> / <sub>2</sub> "	3.55

**SEMI-CIRCULAR PLATE TYPE (STRAIGHT LINE CAPACITY)**

Catalog Number	Cap. Per Section		Air Gap	No. Plates Per Section	Overall Length	Dealer Cost
	Max.	Min.				
MC-1883A	50	5	.024"	7	3 <sup>1</sup> / <sub>2</sub> "	\$2.60
MC-1882A	100	7	.024"	14	4"	2.90
MC-1884A	20	4	.060"	6	3 <sup>3</sup> / <sub>4</sub> "	2.75
MC-1885A	35	5	.060"	11	4 <sup>1</sup> / <sub>2</sub> "	2.95
MC-1887A	50	7	.060"	15	5 <sup>3</sup> / <sub>4</sub> "	3.30
MC-1888A	75	8	.060"	23	6 <sup>1</sup> / <sub>2</sub> "	3.45

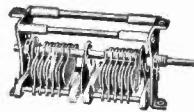


**BUD MIDGET CONDENSERS TRIPLE SECTION**

These mid-line plate type, three-gang condensers fill the need for a tuning unit suitable for short wave super-heterodyne receivers having an R.F. stage for

gang-tuned exciters, and numerous other applications. These condensers are mounted on a glazed ceramic base, assuring perfect rigidity. General construction is the same as other types of midget condensers. A shield plate is provided between each stator section. Base or panel mounting may be used.

Catalog Number	Cap. Per Section		Air Gap	No. Plates Per Section	Length Behind Panel	Dealer Cost
	Max.	Min.				
MC-886	20	4	.060"	6	5 <sup>1</sup> / <sub>4</sub> "	\$4.20
MC-887	35	6	.060"	11	5 <sup>1</sup> / <sub>4</sub> "	4.50
MC-888	100	6	.024"	14	5 <sup>1</sup> / <sub>4</sub> "	4.80
MC-889	140	7	.024"	19	5 <sup>1</sup> / <sub>4</sub> "	5.15



**BUD JUNIOR DUAL SECTION CONDENSERS**

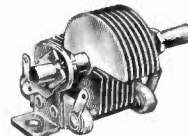
Rotor contact is made by a four-finger, plated pressure spring placed at the center of the rotor shaft between the two sections, thereby providing perfect balance and improving the high frequency characteristics.

The tie-rods are insulated at both ends with Steatite insulators to prevent inductive loops in condenser frame. All other constructional features and materials are the same as used on Junior single section condenser.

Catalog Number	Capacity Per Section		No. Plates Per Section	Air Gap	Length Overall	Dealer Cost
	Max. MMFD.	Min. MMFD.				
JC-1550A	20	3	3	.051"	4 <sup>3</sup> / <sub>4</sub> "	\$3.35
JC-1551A	50	5	7	.051"	4 <sup>3</sup> / <sub>4</sub> "	3.65
JC-1552A	70	6	9	.051"	5 <sup>1</sup> / <sub>2</sub> "	3.85
JC-1553A	100	7	13	.051"	5 <sup>7</sup> / <sub>8</sub> "	4.15
JC-1554A	145	9	19	.051"	6 <sup>3</sup> / <sub>8</sub> "	4.75
JC-1569A	200	10	25	.051"	7 <sup>1</sup> / <sub>8</sub> "	5.10
JC-1556A	250	12	33	.051"	8 <sup>2</sup> / <sub>8</sub> "	6.00
JC-1570A	25	4	5	.078"	4 <sup>1</sup> / <sub>2</sub> "	3.80
JC-1572A	55	8	11	.078"	5 <sup>3</sup> / <sub>8</sub> "	4.45
JC-1573A	80	9	15	.078"	6 <sup>2</sup> / <sub>8</sub> "	4.70
JC-1561A	110	10	21	.078"	7 <sup>1</sup> / <sub>8</sub> "	5.10
JC-1562A	150	11	29	.078"	9 <sup>3</sup> / <sub>8</sub> "	5.80
JC-1574A	20	5	7	.144"	5 <sup>7</sup> / <sub>8</sub> "	4.40
JC-1575A	40	8	13	.144"	7 <sup>7</sup> / <sub>8</sub> "	4.90
JC-1576A	55	10	17	.144"	9 <sup>1</sup> / <sub>4</sub> "	5.10
JC-1566A	18	6	7	.175"	6 <sup>1</sup> / <sub>4</sub> "	4.75
JC-1567A	40	11	15	.175"	9 <sup>1</sup> / <sub>8</sub> "	5.25

Panel Space for mounting Junior Condensers, 2<sup>3</sup>/<sub>4</sub>" wide by 2<sup>7</sup>/<sub>8</sub>" high.

**BUD MIDGET CONDENSERS**



Small size, sturdy construction and high mechanical and electrical efficiency are the outstanding features. Insulation used is Steatite. Rotor and Stator plates are brass and are electro-soldered to their respective rods. All metal parts are cadmium plated.

These condensers have both front and rear bearings and are furnished in either mid-line type plates (straight line wave length), or semi-circular plates (straight line capacity).

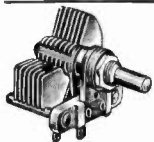
**SEMI-CIRCULAR TYPE--DOUBLE BEARING**

Catalog Number	Cap. in MMFD.		Air Gap	Number Plates	Dealer Cost
	Max.	Min.			
MC-1850	15	3	.024"	3	\$1.25
MC-1852	33	4	.024"	5	1.35
MC-1853	50	5	.024"	7	1.60
MC-1855	100	7	.024"	14	1.75
MC-1856	140	7	.024"	19	2.00
MC-1858	190	9	.024"	27	2.15
MC-1859	235	10	.024"	33	2.40
MC-1860	300	12	.024"	43	2.64
MC-1861	15	4	.060"	5	1.34
MC-1862	35	5	.060"	11	1.74
MC-1863	50	7	.060"	15	1.93
MC-1864	75	9	.060"	23	2.25
MC-1865	100	12	.060"	31	2.45
MC-1866	35	8	.095"	15	2.00
MC-1867	50	10	.095"	23	2.25
MC-1868	75	13	.095"	33	2.65

**MID-LINE TYPE--DOUBLE BEARING**

Catalog Number	Cap. in MMFD.		Air Gap	Number Plates	Dealer Cost
	Max.	Min.			
MC-900	25	4	.024"	4	\$1.40
MC-902	35	5	.024"	6	1.48
MC-903	50	6	.024"	8	1.67
MC-904	75	7	.024"	11	1.75
MC-905	100	7	.024"	15	1.88
MC-906	140	7	.024"	20	2.15
MC-908	190	9	.024"	27	2.25
MC-909	250	11	.024"	36	2.45
MC-910	300	13	.024"	43	2.75
MC-565	15	4	.060"	5	1.15
MC-897	35	6	.060"	11	1.75
MC-898	50	7	.060"	16	1.98
MC-899	75	8	.060"	23	2.30
MC-941	100	11	.060"	31	2.55
MC-965	35	8	.095"	15	2.15
MC-966	50	12	.095"	23	2.35
MC-967	75	14	.095"	33	2.75





### BUD SINGLE BEARING MIDGET CONDENSERS

Construction of these condensers is identical to Midget Condensers described, with the exception that these condensers have a front bearing only.

#### SEMI-CIRCULAR TYPE — SINGLE BEARING

Catalog Number	Cap. in MMFD.		Air Gap	Number Plates	Dealer Cost
	Max.	Min.			
MC-1870	15	3	.024"	3	\$ .90
MC-1872	33	4	.024"	5	1.00
MC-1873	50	5	.024"	7	1.10
MC-1875	100	7	.024"	14	1.25
MC-1876	140	8	.024"	19	1.40
MC-1877	5	2	.060"	2	1.10
MC-1879	15	4	.060"	5	1.10
MC-1880	35	5	.060"	11	1.25
MC-1881	50	7	.060"	15	1.40

#### MID-LINE TYPE — SINGLE BEARING

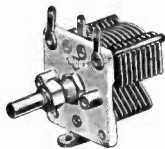
Catalog Number	Cap. in MMFD.		Air Gap	Number Plates	Dealer Cost
	Max.	Min.			
MC-324	10	2	.024"	2	\$ .95
MC-323	25	4	.024"	4	1.05
MC-148	50	5	.024"	8	1.15
MC-901	75	6	.024"	11	1.30
MC-321	100	6	.024"	15	1.40
MC-396	140	7	.024"	20	1.50
MC-327	5	2	.060"	2	1.00
MC-311	15	4	.060"	5	1.15
MC-319	35	6	.060"	11	1.35
MC-312	50	7	.060"	16	1.55

### BUD "CE" MIDGET CONDENSERS SINGLE SECTION DOUBLE BEARING

These Midget Condensers were designed to meet the rigid requirements in design of efficient ultra-high frequency electronic devices and precision laboratory equipment. Brass rotor and stator plate stacks are assembled into permanent units by means of electro-soldering, which assures long life and accurate plate spacing. End-plates of Steatite insulate the mounting bushings and angles from the rotor and stator assemblies. A large front sleeve bearing and rear ball thrust bearing provide for smooth rotation. Special wiper contact provides noise-free tuning. All metal parts are cadmium plated.

Rotor plates are semi-circular shaped. Provision for either panel or base mounting.

Catalog Number	Max. Cap. MMFD.	Min. Cap. MMFD.	Air Gap	No. of Plates	Over-all Length	Dealer Cost
CE-2001	35	6	.030"	7	2 23/32"	1.55
CE-2002	50	7	.030"	9	2 27/32"	1.90
CE-2003	75	8	.030"	14	3 5/16"	2.80
CE-2004	100	9	.030"	18	3 11/16"	2.30
CE-2005	150	10	.030"	27	3 19/16"	2.50
CE-2006	200	11	.030"	35	4 1/8"	2.85
CE-2007	250	12	.030"	44	4 8/16"	3.20
CE-2008	300	15	.030"	52	5 5/16"	3.40
CE-2011	15	5	.060"	5	2 3/8"	1.60
CE-2012	35	7	.060"	11	3 1/4"	1.85
CE-2013	50	8	.060"	15	3 9/16"	2.25
CE-2014	75	10	.060"	23	3 3/4"	2.70
CE-2015	100	13	.060"	31	4 5/16"	2.95
CE-2016	35	9	.095"	15	4 1/16"	2.15
CE-2017	50	10	.095"	23	5 1/32"	2.45
CE-2018	75	14	.095"	33	6 7/32"	2.90

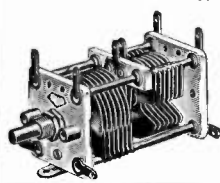


### BUD "CE" MIDGET CONDENSERS SINGLE BEARING

Locking nuts on the rotors of these single-bearing condensers assure trouble-free, portable and mobile operation. A screw-driver slot in rotor provides means of adjustment. Either insulated panel mounting or bracket mounting can be used. General construction is same as "CE" double-bearing condensers.

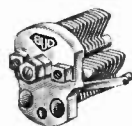
Catalog Number	Max. Cap. MMFD.	Min. Cap. MMFD.	Air Gap	No. of Plates	Over-all Length	Dealer Cost
CE-2021	35	6	.030"	7	1 29/32"	1.30
CE-2022	50	7	.030"	9	2 1/8"	1.40
CE-2023	75	8	.030"	14	2 3/4"	1.60
CE-2024	100	9	.030"	18	2 11/16"	1.80
CE-2025	150	10	.030"	27	3 1/8"	2.00
CE-2028	15	5	.060"	5	1 11/16"	1.35
CE-2029	35	7	.060"	11	2 1/16"	1.60
CE-2030	50	8	.060"	15	2 23/32"	1.75

### BUD "CE" TYPE DUAL MIDGET CONDENSERS



These well constructed dual condensers are similar in design to the double-bearing "CE" types. They feature a rotor wiping contact placed at center of the rotor assembly to assure maximum efficiency at ultra-high frequency. Opposed rotor construction assures perfect counterbalance and provides even torque at any position of rotation. Steatite insulation eliminates closed induction loop in frame.

Catalog Number	PER SECTION		No. of Plates	Air Gap	Distance Behind Panel	Dealer Cost
	Max. Cap.	Min. Cap.				
CE-2032	35	6	7	.030"	3 1/2"	\$2.30
CE-2033	50	7	9	.030"	3 1/2"	2.45
CE-2034	75	8	14	.030"	3 1/2"	2.95
CE-2035	100	9	18	.030"	4 3/8"	3.15
CE-2036	150	10	27	.030"	5 1/2"	3.75
CE-2039	15	5	5	.060"	3 1/16"	2.70
CE-2040	35	7	11	.060"	4 1/8"	3.15
CE-2041	50	8	15	.060"	4 3/8"	3.40



### BUD TINY MITE PADDERS

For applications requiring a constant padder capacity under all temperature and humidity conditions, these units are ideal. They lend themselves readily to I. F. transformer applications, fixed tuned circuits for exciters, ganged condenser air trimmers, and plug-in-coil padding as they fit inside of standard 1 1/2" diameter coil forms.

Bud Numbers CF-125, CF-126 and CF-310. Rotor and stator assemblies are made up of brass plates (0.015" thick) and rods electrically soldered into a solid unit and then are bright cadmium plated. Insulation is Steatite. Each unit may be adjusted in capacity by either a screw-driver or a 1/4" hex. wrench.

Catalog Number	Max. Cap. MMFD.	Min. Cap. MMFD.	Air Gap	No. of Plates	Dealer Cost
LC-2077	25	2.5	.017"	7	1.15
LC-2078	35	3	.017"	10	1.20
LC-2079	50	3.9	.017"	14	1.25
LC-2080	75	4.5	.017"	20	1.40
LC-2081	100	5.5	.017"	27	1.55
LC-2082	140	6.5	.017"	37	1.90



### BUD TINY MITE TUNING CONDENSER SINGLE SECTION

This series of condensers has been designed for applications where space or weight are limiting factors and for tuning of ultra-high frequency circuits. Rigid construction, close fitting bearing, positive rotor contact and Steatite insulation are the outstanding features. Cadmium plated, soldered, brass plates and rods insure high frequency efficiency.

Catalog Number	Max. Cap. MMFD.	Min. Cap. MMFD.	Air Gap	No. of Plates	Dealer Cost
LC-1641	15	3	.017"	5	1.15
LC-1642	25	4	.017"	9	1.20
LC-1643	35	5	.017"	13	1.35
LC-1644	50	6	.017"	19	1.45
LC-1645	75	7	.017"	29	1.60
LC-1646	100	9	.017"	37	1.72
LC-1648	10	4	.037"	7	1.18
LC-1649	15	5	.037"	11	1.28
LC-1650	25	5.5	.037"	17	1.50
LC-1651	35	6	.037"	21	1.65
LC-1652*	50	8	.037"	35	2.10
LC-1653	6	3.5	.073"	21	1.25
LC-1654	15	5.5	.073"	15	1.52
LC-1655*	25	9	.073"	27	2.05

\* Denotes double bearing.

### BUD TINY MITE DUAL CONDENSERS

The construction of these units is similar to the regular Tiny Mite Tuning Condensers. The two end pieces are held together firmly with two tie-rods.

A separate round plate is soldered on rotor rod to shield the two stator sections. Large surface front-sleeve bearing, and ball and cup rear bearing, provide smooth rotation.

Catalog Number	CAP. PER SECTION		Air Gap	No. Plates	Over-all Length	Dealer Cost
	Max. MMFD.	Min. MMFD.				
LC-1659	8	2.5	.017"	3	1 15/16"	\$2.15
LC-1660	15	3	.017"	5	2 1/16"	2.35
LC-1661	25	4	.017"	9	2 11/16"	2.60
LC-1662	50	6	.017"	19	3 1/2"	2.72
LC-1663	100	9	.017"	37	4 1/2"	2.95
LC-1664	10	4	.037"	7	2 15/16"	2.25
LC-1665	15	5.5	.037"	11	2 11/16"	2.50
LC-1666	25	5.5	.037"	17	3 1/4"	2.65
LC-1667	35	6	.037"	21	4"	2.90



### NEW BUD THREE-GANG TINY MITE CONDENSERS



Hams, Radio Constructors and Experimenters can find many uses for these compact, three-gang condensers. Designed particularly for high frequency use, they are adaptable for use in converters, preselectors and receivers covering the Amateur, Television and F.M. bands. Well constructed with soldered brass plates and ceramic brackets. Rotor shaft extended 1/4" at rear. Height 1 1/8". Width 1 1/8". Length behind panel 3 3/8". Mounting holes 2 3/8" apart.

Catalog Number	Cap. Per Section Max.	Per Section Min.	No. of Plates Per Section	Dealer Cost
LC-1845	11	5	3	\$3.00
LC-1846	17	5	4	3.20
LC-1847	25	6	5	3.45

### MIDGET TRIMMER CONDENSERS



Primarily intended for antenna coupling, interstage coupling, tracking applications. Base made of ceramic.

Catalog Number	Capacity MMFD. Max.	Min.	Dealer Cost
MT-833	3	36	\$ .15
MT-828	94	420	.30

### BUD NEUTRALIZING AND HIGH FREQUENCY TUNING CONDENSERS



This line of condensers will fill every neutralizing and high frequency tuning requirement that modern circuits pose. The two-pyler construction makes this unit unusually sturdy and eliminates any possibility of capacity variation due to vibration. The movable plate is adjusted by means of the threaded shaft to which it is attached, and it is permanently locked in any position by the lock-nut provided. Any loose thread is taken up by a special nut and locked to give smooth operation. All metal parts are of aluminum. Plates have rounded edges. Steatite insulation is used.

No. 890 and No. 852 are ideal neutralizers for popular low power beam tubes. No. 890 condenser is base mounted only.

Catalog Number	Plate Diameter	MMFD. Capacity Max.	Min.	Dealer Cost
NC-1000	1 7/8"	11	1	\$2.25
NC-1001	2 1/8"	24	2	3.24
NC-1002	4 3/4"	27	6	4.55

### BUD FEED-THROUGH AND BASE MOUNTED NEUTRALIZING CONDENSERS

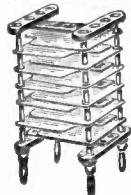


In circuits utilizing tubes with the grid lead terminated in the base, feed-through type of neutralizing condenser is particularly suited. One hole is required for mounting of feed-through condensers. Neutralizing condenser illustrated is feed-through type. Plates are made of aluminum, rounded at edges to cut down losses. After proper tuning is attained, movable plate can be locked with the knurled nut.

No. 890 and No. 852 are ideal neutralizers for popular low power beam tubes. No. 890 condenser is base mounted only.

Catalog Number	Plate Diameter	Size Hole for Mtg.	MMFD. Capacity Max.	Min.	Dealer Cost
NC-852	1"	5/16"	11	.5	\$1.00
NC-853	1 7/8"	13/32"	6	1	2.25
NC-890	1"	.....	6	.5	1.00

### BUD STAT-AIR CONDENSERS



It is difficult to design a radio-frequency amplifier to cover any large frequency range and maintain a proper L/C ratio due to variable condenser limitations. By paralleling the proper Stat-Air condenser in this series with the tuning condenser, this difficulty is easily overcome.

The finish of these electro-soldered brass plate assemblies is cadmium plating, and Steatite insulation is used. They are furnished in either Junior or Senior types.

#### JUNIOR TYPE—MOUNTING DIMENSIONS—1 1/4" x 1 1/2"

Catalog Number	Cap. MMFD.	Air Gap	No. of Plates	Dealer Cost
FA-777	25	.144"	8	\$2.35
FA-780	50	.144"	17	2.30
FA-544	75	.144"	23	3.20
FA-781	100	.144"	29	3.45
FA-782	100	.078"	19	3.00
FA-783	150	.078"	27	3.35

#### SENIOR TYPE—MOUNTING DIMENSIONS—2" x 2 1/4"

Catalog Number	Cap. MMFD.	Air Gap	No. of Plates	Dealer Cost
FA-778	25	.238"	5	\$2.75
FA-784	50	.238"	11	3.20
FA-545	75	.238"	15	3.50
FA-786	100	.238"	19	3.90
FA-785	100	.100"	11	2.68
FA-787	150	.100"	15	3.30

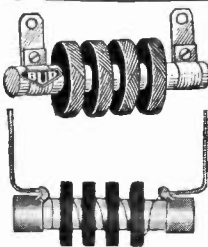
### COMPACT NEUTRALIZING CONDENSERS



In applications where space is the prime factor, these units are ideal for neutralizing and high frequency tuning. Low loss Steatite is used for dielectric. These condensers feature either one hole mounting or fastening to solder lugs provided. All brass parts are nickel plated. A knurled lock-nut permits locking of movable plate.

Catalog Number	Cap. Range in MMFD.	Overall Length	Max. Diam.	Dealer Cost
NC-1928	.75 to 4	2 1/8"	5/8"	\$ .55
NC-1929	1 to 6	2 1/8"	3/4"	1.20
NC-1930	2 to 12	3 7/16"	7/8"	1.55

### PIE WOUND R. F. CHOKES



Each choke has a continuous winding of silk covered enameled copper wire and the pies constituting this winding are wound on a 1/4" diameter ceramic core. Chokes are made with both strap and wire leads. The CH-876 is a heavy duty choke intended for circuits, such as transmitter plate circuits, where high currents are present. All chokes in this series have an overall length of 1 1/2".

#### WITH STRAP LEADS

Catalog Number	Inductance mh.	D. C. Resistance	Current Rating	Dealer Cost
CH-920S	2.5	45 ohms	125 ma	\$ .42
CH-922S	5.5	60 ohms	125 ma	.50
CH-923S	8.0	72 ohms	100 ma	.60
CH-924S	10.0	78 ohms	100 ma	.68
CH-876S	2.5	16 ohms	250 ma	.65

#### WITH WIRE LEADS

Catalog Number	Inductance mh.	D. C. Resistance	Current Rating	Dealer Cost
CH-920W	2.5	45 ohms	125 ma	\$ .42
CH-922W	5.5	60 ohms	125 ma	.50
CH-923W	8.0	72 ohms	100 ma	.60
CH-924W	10.0	78 ohms	100 ma	.68
CH-876W	2.5	16 ohms	250 ma	.65

### LATTICE WOUND R. F. CHOKES



For all general purpose applications requiring a high quality choke at a reasonable price, this line finds wide acceptance. Each choke is wound from silk-covered enameled copper wire on a white ceramic bobbin. Leads are terminated with two convenient soldering lugs. Chokes can be mounted with a 6-32 screw through the center of the form, and each winding is thoroughly impregnated against moisture. The wide range of sizes fills practically every choke requirement in standard radio circuits. Choke base diameter 1 1/8", distance between ends of leads 1 3/8".

Catalog Number	Inductance mh.	D. C. Res. Ohms	Current M. A.	Height	Dealer Cost
CH-1212	2.5	28	125	11/16"	\$ .40
CH-1213	3.4	36	125	11/16"	.50
CH-1214	5.5	46	125	11/16"	.50
CH-1215	8.	60	125	11/16"	.60
CH-1216	10.	65	125	11/16"	.65
CH-1217	16.	84	125	11/16"	.68
CH-1218	30.	190	100	15/16"	.70
CH-1219	60.	279	90	15/16"	.80
CH-1220	80.	332	80	15/16"	.90

### TRANSMITTING CHOKES



Here are two heavy duty R. F. Chokes that can really take it in high powered transmitter plate circuits. Each choke is wound on 9/16" dia. Steatite rod, has connection lugs and a mounting foot.

All chokes have a heavy ceramic coating which prevents moisture absorption and enables them to withstand momentary overloads without collapsing the individual pies.

Consists of five graduated pies wound in continuous winding. Care has been taken to prevent any of the pies from being resonant on an amateur band and to keep the distributed capacity at a minimum. Overall height 3 1/4".

Catalog Number	Inductance	Current Capacity	D. C. Resistance	Dealer Cost
CH-568	2.2 mh.	1 amp.	5 ohms	\$1.65
CH-569	4.3 mh.	.6 amp.	12 ohms	1.50

### ULTRA HIGH FREQUENCY R. F. CHOKES



These chokes were designed to meet the requirements of builders of ultra-high frequency receivers and transmitters. Consists of ceramic rod with a single layer winding terminated with strap leads at each end. Particularly suitable for use on 2 or 6 meters. CH-570 is supplied with a mounting foot and is sometimes used as a filament choke in certain types of high frequency oscillator and amplifier circuits.

Catalog Number	Inductance mh.	Max. Current	D. C. Resistance	Lengths	Dealer Cost
CH-925	5.7 uh.	750 ma	1.4 ohms	1 1/2"	\$ .28
CH-570	1.5 uh.	1.7 a	0.2 ohms	2 3/4"	.95

## IRON CORE R. F. CHOKES



The efficiency of any circuit requiring an R. F. choke will be definitely improved by utilizing one of these chokes with a finely divided molded metallic core. The improved "Q" possible with this construction results from the D. C. resistance of these chokes being from 40 to 50% less for a given inductance than for regular air-core types. Thus, the D. C. voltage drop through the choke is considerably less, yet the choking action is equally as good. Windings are made with silk-covered enameled wire terminated on convenient soldering lugs, and the chokes are mounted in small square shield cans measuring 1 1/8" x 1 1/8" x 1 1/8".

Catalog Number	Inductance mh.	D. C. Resistance Ohms	Current ma.	Dealer Cost
CH-1277	1.5	11.5	125	\$ .72
CH-1278	2.5	16.	125	.75
CH-1279	3.4	19.5	125	.81
CH-1280	5.5	27.5	125	.81
CH-1281	8.	36.	125	.87
CH-1282	10.	42.5	125	.87
CH-1283	16.	53.	125	.96
CH-1284	30.	82.	100	1.00
CH-1285	60.	131.	100	1.15
CH-1286	80.	163.	90	1.26
CH-1287	125.	221.	90	1.56
CH-294	Shield Can Only		....	.21

## SINGLE CONTACT CABLE CONNECTORS



Positive unbreakable contacts for single-conductor microphone cable are provided by these shielded connectors. Body is made of brass, bright nickel-plated. Accidental disconnections are rendered impossible by coupling ring which, when tightened, insures perfect contact between soldered connections. Cord protectors of steel spring wire will take cables up to 1/4" diameter.

Catalog Number	Description	Length	Bushing Diameter	Dealer Cost
CN-244	Single Contact, Female	2"	23/32"	\$ .33
CN-245	Single Contact, Male	1 3/4"	5/8"	.27

## CHASSIS UNIT CONNECTOR



Male connector CN-246 is designed for chassis mounting in connection with CB-244. Where ground to chassis desired, mount in 3/8" hole; to insulate from chassis, mount in 15/32" hole; insulating washers are furnished.

Catalog Number	Description	Dealer Cost
CN-246	Chassis Connector Unit	\$ .20

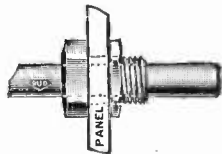
## PHONO PLUG AND JACK



This is a pin plug and jack combination that will fit into a multitude of applications: Receivers, auto radio, recording and reproducing equipment, experimental units, etc.

Catalog Number	Description	Dealer Cost
PL-247	Plug	\$ .06
JP-248	Jack	.09

## PANEL BEARING ASSEMBLIES



Nos. PB-530 and PB-531 consist of a regular 1/4" shaft bearing with 6" and 3" length of 1/4" brass rod inserted and held in place by washers to prevent shaft from shifting. These two assemblies will facilitate the panel control of condensers, potentiometers, etc., which must be mounted a distance from the panel. Bearing fits in 13/32" hole and panel. Bearing fits in bearing only without shaft.

Catalog Number	Overall Length	Distance in front of panels	Dealer Cost
PB-530	6"	4 3/8"	\$ .33
PB-531	3"	1 3/4"	.28
PB-532	Bearing Only	....	.12

## SOLDERING IRON TIPS



This tip is made of a special copper base rod. It is 3/8" diameter x 4" long and is made particularly as a replacement for American Beauty Irons. However, it will fit many other types of irons that are designed to accommodate 3/8" diameter tips.

Catalog Number	Fits American Beauty No.	Dealer Cost
IT-372	3138	\$ .42

## BUD PHONE PLUGS



All metal parts on these excellent phone plugs are machined from brass, and are nickel plated. Unshielded plugs have handles of black bakelite; shielded types have attractive brass knurled handles, bright nickel plated.

No. FP-1946 is supplied *Without a Handle*, and is used as an adapter between a female microphone cable connector and a regular plug jack.

Catalog Number	Contacts	Handle	Overall Length	Bushing Diam.	Dealer Cost
FP-230	2	Bakelite	2 3/8"	3/4"	\$ .30
FP-282	2	Shielded	2 3/8"	3/4"	.54
FP-1057	3	Bakelite	2 3/8"	3/4"	.66
FP-284	3	Shielded	2 3/8"	3/4"	.85
FP-1946	2	None	1 1/8"	1 1/16"	.24

## BUD MIDGET JACK



The construction of this jack allows its use in applications having limited space behind the panel. The spring brass contact assures a good connection. These jacks come with insulating washers and accommodate standard phone plugs.

Catalog No.	Type	Distance Behind Panel	Dealer Cost
J-232 A	Open Circuit	13/16"	\$ .27
J-233 A	Closed Circuit	13/16"	.33

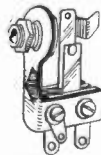
## BUD SMALL JACKS



These panel mounting jacks are desirable for control panels and similar applications where space is at a premium. Parts are accurately machined, with nickel plated finish and contacts are formed from spring brass. Each jack comes complete with insulated washers and will accommodate standard plugs. Overall length 1 1/8".

Catalog No.	Contacts	Distance Behind Panel	Dealer Cost
J-1038	2	15/16"	\$ .30
J-1058	3	15/16"	.46

## BUD ALL PURPOSE JACKS



Although small in size, this is one of the finest lines of jacks available. The careful design and high quality materials used in these components assure long, dependable service. Circuit opening contacts are made of pure silver and the laminated bakelite insulation prevents breakdown between springs at all ordinary voltages. Supplied with panel insulating washers. Height 1 1/8", distance behind panel 7/8".

Catalog Number	Circuit Design	Contact Arrangement	Dealer Cost
J-1324		Open Circuit	\$ .30
J-1325		Closed circuit	.36
J-1326		3-Contact open circuit	.39
J-1327		Break contact on tip and ring spring	.42
J-1328		Separate make-contact springs	.42
J-1329		Break contact on tip spring — separate make-contact spring	.48
J-1330		Break-make contact on tip spring	.45

## BAKELITE OUTLET BOX AND COVER



This bakelite outlet box is an ideal unit for housing numerous radio and electrical specialties in compact form. The box is 2 1/2" wide x 4 3/8" long x 1 1/2" high. A solid bakelite cover is available for this item.

Catalog No.	Item	Dealer Cost
RO-400	Box	\$ .54
RO-401	Cover	.15

## ALLIGATOR CLIPS

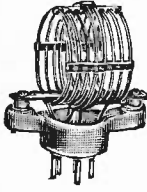


Accurately made; supplied with or without insulated ends. No. CL-485 Clip only. No. CL-486-R Alligator Clip with Red insulated end. No. CL-486-B Alligator Clip with Black insulated end.

Catalog No.	Type	Dealer Cost
CL-485	Regular	\$ .06
CL-486	Insulated	.12



**BUD 75-WATT TRANSMITTER COILS**

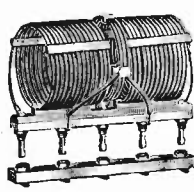


These coils are distinguished by their rigid construction, attractive appearance and conservative power rating. The ceramic mounting base keeps the coil a safe distance from the chassis—it also permits easy coil removal without disturbing the winding. All coils are air-wound and mount in 5 prong tube sockets.

OEP and OCP Coils are designed for use in circuits using Pentode tubes with high output capacity such as 6L6, 807, etc.

OEL coils have fixed link and are not tapped.  
 OCL have fixed center link with main winding center tapped.  
 OLS have adjustable center link, main winding center tapped.  
 OES have adjustable end link and are not tapped.  
 OEP have adjustable end link and are not tapped.  
 OCP have adjustable center link main winding center tapped.

Catalog No. Fixed End Link	Catalog No. Fixed Center Link	Cat. No. Adjust-able Center Link	Cat. No. Adjust-able End Link	Band	Capacity*	Dealer Cost
.....	.....	OLS-160	.....	160 Meter	100 MMFD	\$1.65
.....	.....	.....	OES-160	160 Meter	86 MMFD	1.65
OEL-80	OCL-80	OLS-80	OES-80	80 Meter	75 MMFD	1.38
OEL-40	OCL-40	OLS-40	OES-40	40 Meter	52 MMFD	1.38
OEL-20	OCL-20	OLS-20	OES-20	20 Meter	40 MMFD	1.38
OEL-15	OCL-15	OLS-15	OES-15	15 Meter	30 MMFD	1.35
OEL-10	OCL-10	OLS-10	OES-10	10 Meter	25 MMFD	1.32
OEL-6	OCL-6	.....	.....	6 Meter	17 MMFD	1.08
.....	.....	OCP-10	OEP-10	10 Meter	45 MMFD	1.30
.....	.....	OCP-20	OEP-20	20 Meter	50 MMFD	1.38
AM-1299 Coil Base only.....						54



**BUD ADJUSTABLE LINK TRANSMITTER COILS**

Listed are two types of Coils. CL type of coil has an adjustable CENTER link. ES type of coil has an adjustable END link. The CL and ES can be used where fixed links are specified. No additional cost is involved and more efficient coupling is assured because of this special adjustable link, an exclusive BUD feature.

**150 WATT RATING**

Catalog No. Center Link Adjustable	Catalog No. End Link Adjustable	Band	Capacity*	Dealer Cost
RCL-160	RES-160	160 Meters	110 MMFD	\$4.15
RCL-80	RES-80	80 Meters	68 MMFD	3.45
RCL-40	RES-40	40 Meters	36 MMFD	3.09
RCL-20	RES-20	20 Meters	27 MMFD	2.76
RCL-15	RES-15	15 Meters	27 MMFD	2.76
RCL-10	RES-10	10 Meters	25 MMFD	2.64
AM-1932 — Mounting Base for RCL and RES Coils .... .85				

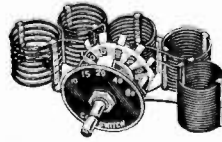
**500 WATT RATING**

VCL-160	VES-160	160 Meter	95 MMFD	\$4.35
VCL-80	VES-80	80 Meter	71 MMFD	3.96
VCL-40	VES-40	40 Meter	26 MMFD	3.63
VCL-20	VES-20	20 Meter	21 MMFD	3.30
VCL-15	VES-15	15 Meter	23 MMFD	3.27
VCL-10	VES-10	10 Meter	26 MMFD	3.17
VCL-6	VES-6	6 Meter	13 MMFD	2.31
AM-1356 — Mounting Base for VCL and VES Coils ..... 1.05				

**ONE KILOWATT RATING**

MCL-80	MES-80	80 Meter	67 MMFD	\$7.56
MCL-40 <td>MES-40</td> <td>40 Meter</td> <td>38 MMFD</td> <td>6.87</td>	MES-40	40 Meter	38 MMFD	6.87
MCL-20 <td>MES-20</td> <td>20 Meter</td> <td>23 MMFD</td> <td>6.54</td>	MES-20	20 Meter	23 MMFD	6.54
MCL-15 <td>MES-15</td> <td>15 Meter</td> <td>30 MMFD</td> <td>6.54</td>	MES-15	15 Meter	30 MMFD	6.54
MCL-10 <td>MES-10</td> <td>10 Meter</td> <td>25 MMFD</td> <td>5.85</td>	MES-10	10 Meter	25 MMFD	5.85
MCL-6 <td>MES-6</td> <td>6 Meter</td> <td>18 MMFD</td> <td>5.07</td>	MES-6	6 Meter	18 MMFD	5.07
AM-1354 — Mounting Base for MCL and MES Coils..... 1.40				

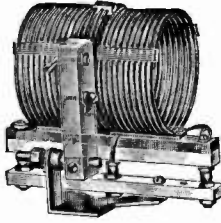
**BUD 50 WATT BAND SWITCH ASSEMBLY**



ONS-1 — 50 watt, 10-15-20-40-80 meter band switch assembly, ideal for all low-power oscillators, buffer or amplifier stages where the input power does not exceed 50 watts and where capacity coupling is used. A 5-position dial plate with suitable marking is furnished.

Catalog Number	Width	Height	Depth	Dealer Cost
ONS-1	5 1/2"	2 1/2"	3"	\$5.40

**BUD VARIABLE LINK TRANSMITTER COILS**



The most effective method of varying the loading of an R. F. Stage is by the use of a variable link to the plate tank, a feature incorporated in all Bud Variable Link Coils. The link winding is connected to the jack bar into which the coils are plugged, and this link may be used with any of the coils regardless of the band being worked. The link winding is so arranged that it may be readily controlled from the panel by means of an extension shaft if required.

**150 WATT RATING**

Catalog Number	Band	Capacity*	Length Mounting Strip Dim.	Mounting Hole Dim.	Dealer Cost
RLS-160	160 M	95 MMFD	3 1/2"	3 1/2"	\$3.15
RLS-80	80 M	78 MMFD	3 1/2"	3 1/2"	2.85
RLS-40	40 M	38 MMFD	3 1/2"	3 1/2"	2.46
RLS-20	20 M	30 MMFD	3 1/2"	3 1/2"	2.19
RLS-15	15 M	30 MMFD	3 1/2"	3 1/2"	2.19
RLS-10	10 M	28 MMFD	3 1/2"	3 1/2"	2.07
AM-1339 — Base and Link Assembly for 150 Watt Coils ... 3.00					

**500 WATT COILS**

VLS-160	160 M	85 MMFD	5 1/2"	5"	\$3.60
VLS-80	80 M	70 MMFD	5 1/2" <td>5" <td>3.21</td> </td>	5" <td>3.21</td>	3.21
VLS-40	40 M	36 MMFD	5 1/2" <td>5" <td>2.85</td> </td>	5" <td>2.85</td>	2.85
VLS-20	20 M	28 MMFD	5 1/2" <td>5" <td>2.49</td> </td>	5" <td>2.49</td>	2.49
VLS-15	15 M	25 MMFD	5 1/2" <td>5" <td>2.46</td> </td>	5" <td>2.46</td>	2.46
VLS-10	10 M	25 MMFD	5 1/2" <td>5" <td>2.40</td> </td>	5" <td>2.40</td>	2.40
AM-1352 — Base and Link Assembly for 500 Watt Coils ... 4.98					

**ONE KILOWATT RATING**

MLS-80	80 M	65 MMFD	8 1/2"	5 3/8"	\$6.15
MLS-40	40 M	37 MMFD	8 1/2" <td>5 3/8" <td>5.49</td> </td>	5 3/8" <td>5.49</td>	5.49
MLS-20	20 M	33 MMFD	8 1/2" <td>5 3/8" <td>5.16</td> </td>	5 3/8" <td>5.16</td>	5.16
MLS-15	15 M	30 MMFD	8 1/2" <td>5 3/8" <td>5.16</td> </td>	5 3/8" <td>5.16</td>	5.16
MLS-10	10 M	25 MMFD	8 1/2" <td>5 3/8" <td>4.44</td> </td>	5 3/8" <td>4.44</td>	4.44
AM-1340 — Base and Link Assembly for Kilowatt Coils ... 6.00					

**BUD 100 WATT BAND SWITCH ASSEMBLY**



Made in two types, XCS-1 and XES-2. Each unit covers the 10-15-20-40 and 80 meter bands. XCS-1 is designed for use in push-pull plate or grid circuits or where plate neutralization is used. The coils in this assembly are center-tapped and center-linked. A dual section 200 mmfd. condenser is required to tune all bands. The JC-1569 condenser is especially recommended for circuit applications in order to obtain the highest possible efficiency on the high frequency bands.

XES-2 is designed for use in single-ended plate or grid circuits. The coils in this assembly are end-linked. A 100 mmfd. condenser such as Bud JC-1534 is required to tune all bands.

Catalog Number	Width	Height	Depth	Ship. Weight	Dealer Cost
XCS-1	8"	4 1/4"	5"	3 lbs.	\$10.00
XES-2	8"	4 1/4"	5"	3 lbs.	9.00

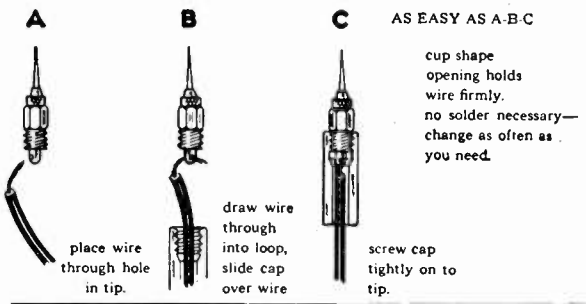
\* Denotes tube plus circuit plus tank plus output coupling capacity required to resonate coil at low frequency end of band.

**PLUG-IN COIL FORMS**



Three sizes are available in these Plug-in Coil Forms to suit all requirements. The material used is a special bakelite having a very low loss factor. Eight ribs are molded on the walls of each form to hold the winding away from the form itself and give the coil higher efficiency. Each form has a molded flange at the top to aid in removing the coil from its socket, and the pins fit standard tube sockets.

Catalog Number	Prong	Diameter	Winding Space	Height	Dealer Cost
CF-734	4	2 1/2"	3 1/2"	3 1/2"	\$.60
CF-735	5	2 1/2"	3 1/2"	3 1/2"	.63
CF-736	6	2 1/2"	3 1/2"	3 1/2"	.66
CF-125	4	1 1/2"	2 1/2"	2 1/2"	.36
CF-126	5	1 1/2"	2 1/2"	2 1/2"	.36
CF-310	6	1 1/2"	2 1/2"	2 1/2"	.39
CF-594	4	1 1/2"	2 1/2"	2 1/2"	.30
CF-595	5	1 1/2"	2 1/2"	2 1/2"	.33
CF-596	6	1 1/2"	2 1/2"	2 1/2"	.33


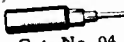
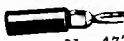

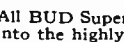


AS EASY AS A-B-C  
cup shape opening holds wire firmly. no solder necessary—change as often as you need.

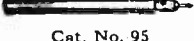
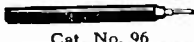
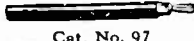

**NEW SENSATIONAL!**  
**BUD "VISE-GRIP" TEST PRODS**  
(Pat. applied for)

No longer is it necessary to use a soldering iron or screw-driver to replace a broken or worn lead on a test prod or plug. To install a wire in this unique, patented prod, merely insert end of wire in hole, screw down handle to finger tightness and a positive contact is assured. By far the fastest, most efficient way of doing this job.

**BUD VISE-GRIP TEST PRODS WITH 1" PLASTIC HANDLE**

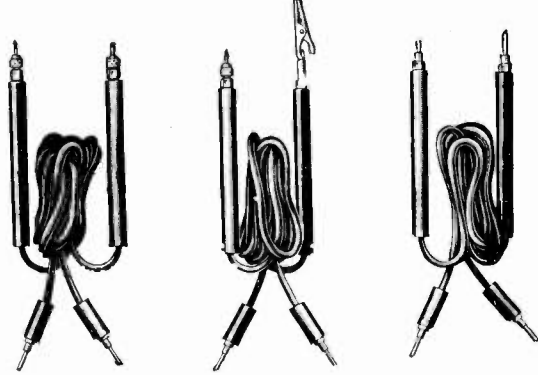
-  Prod is made of brass rod, and is nickel plated. 1" plastic handle is threaded at one end and prod screws into same.  
Cat. No. 93
-  Needle Chuck — Black or Red.  
Cat. No. 94
-  Phone Tip — Black or Red.  
Cat. No. TP-93..... Dealer Cost \$ .15
-  Banana Plug — Black or Red.  
Cat. No. TP-94..... Dealer Cost \$ .15
-  Banana Plug — Black or Red.  
Cat. No. TP-477A..... Dealer Cost \$ .15

**BUD VISE-GRIP TEST PRODS WITH 4" PLASTIC HANDLE**

-  Prods are identical to those described on the left. Plastic handle is 4" long and made of the best material obtainable.  
Cat. No. 95
-  Needle Chuck — Black or Red.  
Cat. No. TP-95..... Dealer Cost \$ .27
-  Phone Tip — Black or Red.  
Cat. No. TP-96..... Dealer Cost \$ .25
-  Banana Plug — Black or Red.  
Cat. No. TP-97..... Dealer Cost \$ .25

**BUD SUPER TEST LEADS**

All BUD Super Test Leads use BUD "Vise-Grip" Prods that screw into the highly polished 4" or 1" plastic handles on each end of the leads. The finest, flexible, kinkless, rubber covered wire obtainable is used on all BUD Test Leads.



- No. TL-178 is supplied with 4" handles at one end of the wires with removable needle points and on other end 1" handle with phone tips.  
Cat. No. TL-178..... Dealer Cost \$1.10
- No. TL-179—4" handles, one with removable needle point and the other with phone tip and removable alligator clip. 1" handles with phone tips.  
Cat. No. TL-179..... Dealer Cost \$1.25
- No. TL-180 have 4" plastic handles with phone tips on one end. Other end, 1" handles with phone tips as illustrated above.  
Cat. No. TL-180..... Dealer Cost \$1.00

**BUD INSULATED FLEXIBLE COUPLINGS**



Tandem operation of two or more units is readily accomplished through the use of these couplers. Direct shaft alignment is not essential, and all couplers are made to fit 1/4" shafts.

Catalog No.	Diameter	Height	Insulation	Dealer Cost
FC-795	1 1/8"	1 1/8"	Ceramic	\$ .39
FC-845	1 1/8"	5/8"	Bakelite	.30
FC-855	1 1/2"	1 1/8"	Bakelite	.35



**BUD HIGH VOLTAGE FLEXIBLE COUPLINGS**





A new type spring construction in these couplings permits a wide gap between shaft connections, freedom from back-lash, and unusual flexibility. The springs are attached to glazed Steatite discs 1 1/2" in diameter and 3/16" thick, and the overall diameter of the finished coupling is 1 1/4". Coupling accommodates standard 1/4" shaft. Springs are also attached to Bakelite discs 1 1/2" in diameter.

Catalog No.	Insulation	Dealer Cost
FC-614	Steatite	\$ .54
FC-619	Bakelite	.39

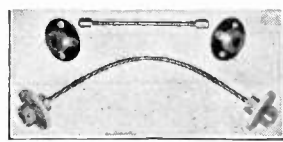
**BANANA PLUGS AND JACKS**  
(Brass Nickel Plated)

- Banana plug jack, threaded 1/4 - 28, supplied with nut and solder lug.  
Cat. No. PJ-949  
Dealer Cost \$ .09
- Banana plug Overall Length 1 1/4" Shank threaded 6-32, supplied with 6-32 nut.  
Cat. No. PL-470  
Dealer Cost \$ .12
-  PJ-949 PL-470
-  PJ-478 PL-469
- Insulated banana plug jack, complete with insulated washers, solder lug and nut.  
Cat. No. PJ-478  
Dealer Cost \$ .12
- Banana plug. Shank tapped for 6-32 screws. Nickel plated.  
Cat. No. PL-469  
Dealer Cost \$ .09

**GIANT BANANA PLUGS AND JACKS FOR HEAVY DUTY APPLICATIONS**

- Giant banana jack, complete with nut and solder lug. For mounting, drill 3/8" hole.  
Cat. No. PJ-963  
Dealer Cost \$ .15
- Giant plug, spring 10-32. Positive spring action assures firm contact.  
Cat. No. PL-962  
Dealer Cost \$ .18
-  PJ-963 PL-962
-  PJ-476A PL-475A
- Giant insulated banana plug jack, complete with insulated washers, solder lug and nut. To mount, drill 1/2" hole.  
Cat. No. PJ-476A  
Dealer Cost \$ .24
- High voltage insulated banana plug. Over all length 2 1/2". Excellent for heavy duty applications.  
Cat. No. PL-475A  
Dealer Cost \$ .30

**BUD FLEXIBLE SHAFTS AND COUPLERS**



When construction necessitates the mounting of condensers or potentiometers away from the panel and at unusual angles, these Flexible Shafts simplify panel control problems. Both lengths are remarkably free from back-lash and will turn at any angle up to 90°.

Nos. FS-859 and FS-860 have 1/4" bushings sweated to each end to fit either plain or insulated couplings. Nos. FS-862 and FS-863 have Steatite insulated couplings attached to each end to fit 1/4" shafts.

Catalog Number	Overall Length	Dealer Cost
FS-859	3 1/2"	\$ .33
FS-860	6 1/2"	.42
FS-862	4 1/2"	1.00
FS-863	7 1/2"	1.15

# PAR-METAL RACKS · CHASSIS · CABINETS for ELECTRONIC APPARATUS

## TYPE "C" CABINET RACKS—for 19" Rack Panels

These are professional type racks that have been used on many commercial installations, and make a DeLuxe job of any amateur or broadcast transmitter. The racks are of all-steel construction, welded into an integral unit, to give a lifetime of service.

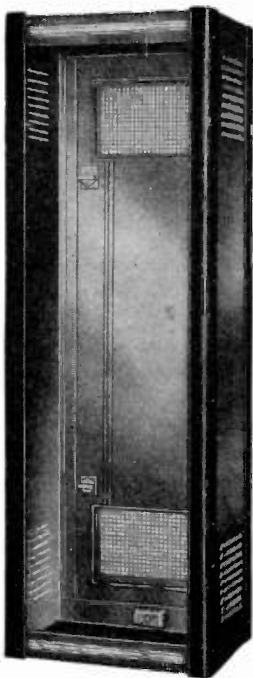
All panel mounting screws are concealed by means of a full length corner trim on each side at the front. In keeping with modern design, this front trim is rounded on the vertical corners. The rear corners are finished with regular angle trim. The front of the rack is trimmed with chrome moulding top and bottom. The door has a grille at top and bottom, and is hung on sturdy loose-joint hinges; it is held closed by two flush snap-action catches. Additional ventilation is provided

by louvres at the sides. The panel mounting angle irons are  $\frac{3}{16}$ " thick, with mounting holes accurately drilled and tapped 12/24 thread on multiple  $1\frac{1}{4}$ "— $\frac{1}{2}$ " spacings. The rack is made from  $\frac{1}{16}$ " thick cold rolled steel, rigidly braced and reinforced throughout; the bottom is  $\frac{7}{8}$ " thick steel. A rectangular opening is provided in the bottom for conduits, leads, etc. A duplex receptacle and outlet box are provided in the back under the door.

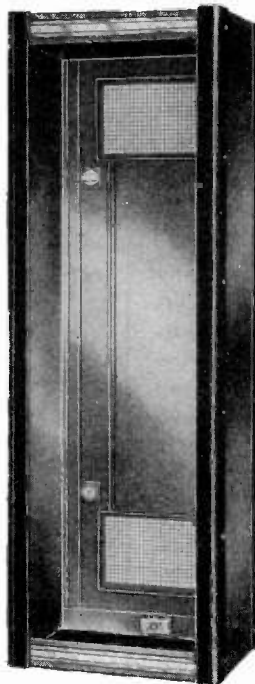
**FINISHES:** Either black ripple or slate grey ripple enamel. Corner trims are supplied in dull black, slate grey smooth enamel, or aluminum grey lacquer at extra cost.

**RACKS WITHOUT LOUVRES:** To permit racks to be set up in gangs or rows of two or more, the louvres at sides are omitted. Racks may be joined by a flat trim fastened to front of adjacent racks, overlapping both racks. Shipped with corner trim as illustrated; where specified, front joining trim will be substituted in place of corner trim at same price. Front joining Trims cannot be used on racks with front doors.

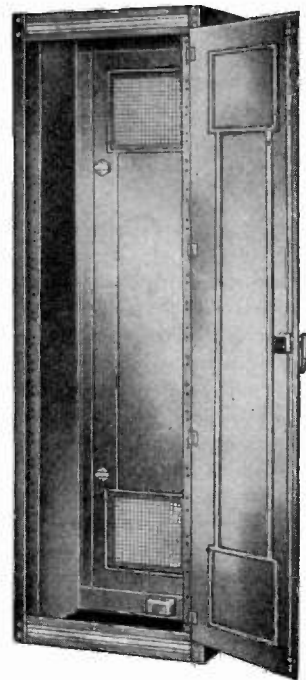
### WITH LOUVRES



### WITHOUT LOUVRES



### WITH FRONT DOORS



#### \*BLACK RIPPLE ENAMEL

##### 15 $\frac{1}{4}$ " Deep Racks

Cat. No.	Overall Size	Panel Space	Wt. lbs.	Net Price
R-3675	42 $\frac{7}{8}$ "x22"x15 $\frac{1}{4}$ "	36 $\frac{3}{4}$ "	150	\$49.50
R-6625	67 $\frac{3}{8}$ "x22"x15 $\frac{1}{4}$ "	61 $\frac{1}{4}$ "	210	66.00
R-8325	83 $\frac{1}{8}$ "x22"x15 $\frac{1}{4}$ "	77"	240	87.00

##### 18" Deep Racks

R-3618	42 $\frac{7}{8}$ "x22"x18"	36 $\frac{3}{4}$ "	160	54.00
R-6618	67 $\frac{3}{8}$ "x22"x18"	61 $\frac{1}{4}$ "	230	72.00
R-8318	83 $\frac{1}{8}$ "x22"x18"	77"	280	93.00

\*If slate grey ripple enamel is required substitute letters "RG" instead of "R" when ordering.

#### \*BLACK RIPPLE ENAMEL

##### 15 $\frac{1}{4}$ " Deep Racks

Cat. No.	Overall Size	Panel Space	Wt. lbs.	Net Price
P-3675	42 $\frac{7}{8}$ "x22"x15 $\frac{1}{4}$ "	36 $\frac{3}{4}$ "	150	\$49.50
P-6625	67 $\frac{3}{8}$ "x22"x15 $\frac{1}{4}$ "	61 $\frac{1}{4}$ "	210	66.00
P-8325	83 $\frac{1}{8}$ "x22"x15 $\frac{1}{4}$ "	77"	240	87.00

##### 18" Deep Racks

P-3618	42 $\frac{7}{8}$ "x22"x18"	36 $\frac{3}{4}$ "	160	\$54.00
P-6618	67 $\frac{3}{8}$ "x22"x18"	61 $\frac{1}{4}$ "	230	72.00
P-8318	83 $\frac{1}{8}$ "x22"x18"	77"	270	93.00

\*If slate grey ripple enamel is required, substitute letters "PG" instead of "P" when ordering.

#### \*BLACK RIPPLE ENAMEL

Racks are 22" wide, 18" deep. Panels mount 2" from front allowing 14" clear inside depth behind panels to rear door.

	Catalog F-6618	Number F-8318
Overall Height	67 $\frac{3}{8}$ "	83 $\frac{1}{8}$ "
Available panel space	61 $\frac{1}{4}$ "	77"
Clear inside width (front)	19 $\frac{3}{8}$ "	19 $\frac{3}{8}$ "
Clear inside width (rear)	17 $\frac{3}{4}$ "	17 $\frac{3}{4}$ "
Net Price	\$96.00	\$120.00

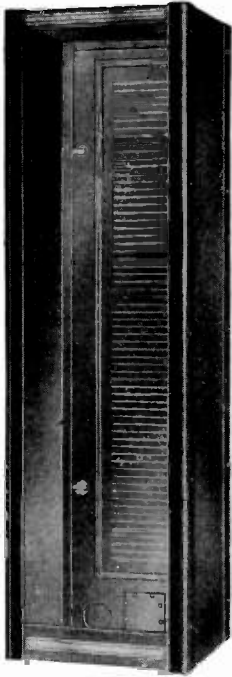
\*If slate grey ripple enamel is required, substitute letters "FG" instead of "F" when ordering.



# PAR-METAL RACKS · CHASSIS · CABINETS for ELECTRONIC APPARATUS

## TYPE "C" TRANSMITTER RACKS

**STANDARD TYPE**—for 19" & 30" Rack Panels



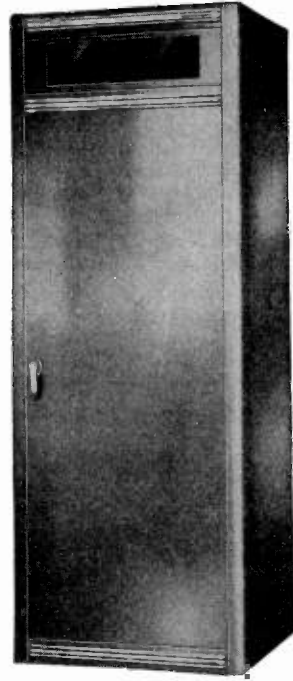
Similar to standard type "C" racks listed on page J-85 except that they have been reinforced at rear corners for use with heavier apparatus. At the rear, knockouts are provided for conduit and 4" square duct, as well as a double convenience outlet with receptacle. Knockouts are also supplied at sides for conduit, suitable for entry of cables when units are ganged. The rear door, which is removable, has ample louvres for ventilation, and is covered on the inside with mesh screening. Front trim rounded on vertical corners. Racks are regularly supplied with corner trim for use as a single unit, but will be furnished with suitable front connecting strips for ganging in rows of two or more without additional charge.

**FINISH:** Black ripple enamel with dull black corner trim is standard. Slate grey ripple enamel furnished without additional charge, if so specified. For aluminum grey lacquer finish, add 10% to prices.

**PANELS:** Type "C" panels to fit the G-2218 and G-2219 racks are listed on page J-89. For cost of 30" blank panels to fit the G-3024 rack, add 100% to prices of 19" panels on page J-89.

Catalog No.	Overall Size	Panel Space	Clear Depth	Ship. Wt. Lbs.	Net Price
G-2218	76½ x 22 x 18"	70 x 19"	16¾"	270	\$96.00
G-2219	83½ x 22 x 18"	77 x 19"	16¾"	290	106.50
G-3024	76½ x 33 x 24"	70 x 30"	22¾"	450	159.00

**DELUXE TYPE**—for 24" Rack Panels



This rack is undoubtedly the finest standard transmitter rack which we have ever made. It is constructed of 1/16" sheet steel, with a base of 1/8" steel, and is reinforced for use with heavy duty apparatus. The meter panel at the top is 7" high, has a glass front, and is provided with a blank bakelite sub-panel. The inner sides of the rack are reinforced with 1/8" steel channels, to which may be attached angle brackets to support the chassis. These channels may also be used as wiring ducts.

The rack will accommodate panels 24" wide; the front panel mounting angles are recessed to allow 2" clearance behind the front door for dials, knobs, etc. The front door is mounted on concealed hinges; the rear door has loose-joint hinges so that it may be removed. Both doors are equipped with handles, and the front door also has a lock. Blank panels 24" wide can be supplied at prices listed on page J-89 plus 50%.

**No. G-8024**

Overall dimensions: 83½" x 30½" x 27".

Available panel space: 70" x 24".

Clear inside width at front: 24"

Clear inside width at rear: 26½".

Clear inside depth behind front panels: 23".

Shipping weight: 540 lbs.

Net Price: \$225.00.

Black ripple enamel finish is optional.

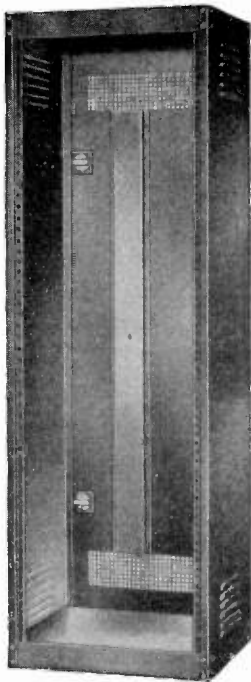
# PAR-METAL RACKS · CHASSIS · CABINETS for ELECTRONIC APPARATUS

## TYPE "A" ENCLOSED RELAY RACKS FOR 19" RACK PANELS

All of the racks on this page are shipped "knocked-down" for easy assembly with all necessary bolts supplied. Made for standard 19" wide panels, they are substantially constructed from 1/16" cold rolled steel; panel mounting angles are of  $\frac{7}{64}$ " steel, accurately drilled on universal centers for either "Amateur" or type "C" panels, tapped for 10/32

machine screws. Panels fit into a recess, so that edges are not exposed. Louvres in sides and screen sections in rear door provide ample ventilation. Rear door is hung on sturdy loose-joint hinges, and closed by a flush snap catch. Ample panel mounting screws and washers supplied with each rack.

### STANDARD TYPE



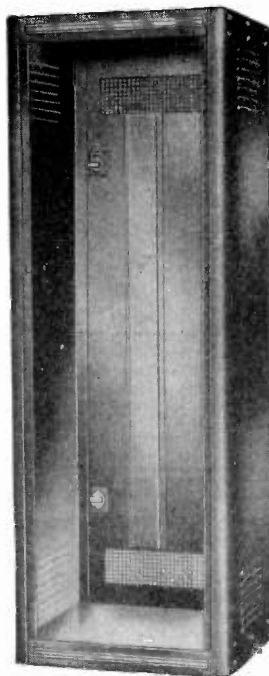
This completely enclosed rack will give your job the "professional appearance" so desirable on transmitters, test equipment, public address systems, etc. It is made in three heights in accordance with specifications below:

#### \*BLACK RIPPLE ENAMEL

Cat. No.	Overall Size	Panel Space	Shpg.	
			Wt. lbs.	Net Price
ER203	42 x 21 x 16 1/2"	36 3/4"	85	\$24.00
ER205	66 1/2 x 21 x 16 1/2"	61 3/4"	120	36.00
ER207	82 1/4 x 21 x 16 1/2"	77"	145	44.10

\*Slate grey ripple is optional

### ROUNDED CORNER TYPE



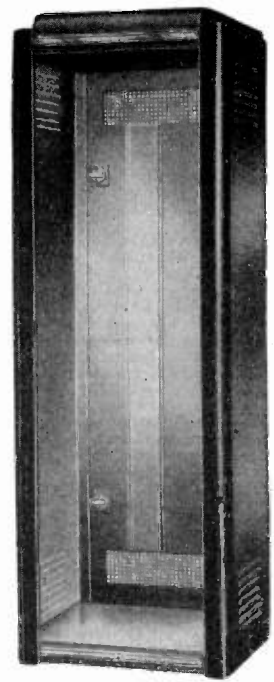
The ideal streamlined rack for your next transmitter or P.A. system. The vertical corners at the front of the rack are rounded, and the top and bottom are nicely trimmed with red striped chrome finished mouldings. The uniform slate grey ripple finish gives the assembly a superb exterior appearance. Combines modern styling and an attractive price.

#### \*SLATE GREY RIPPLE ENAMEL

Cat. No.	Overall Size	Panel Space	Shpg.	
			Wt. lbs.	Net Price
ER213	42 x 22 x 16 1/2"	36 3/4"	85	\$28.50
ER215	66 1/2 x 22 x 16 1/2"	61 3/4"	125	42.30
ER217	82 1/4 x 22 x 16 1/2"	77"	150	50.40

\*Black ripple is optional.

### DELUXE TYPE



Produced in the new "streamlined" style, this rack is fully in keeping with modern design. The removable vertical corner mouldings are rounded and cover the panel mounting screws, the same as is used on our Type "C" commercial racks. The top, which has also been "streamlined," is perforated at the back to provide additional ventilation. The top and bottom are trimmed with red striped chrome finished mouldings.

#### \*SLATE GREY RIPPLE ENAMEL

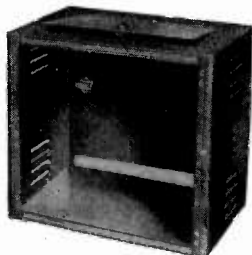
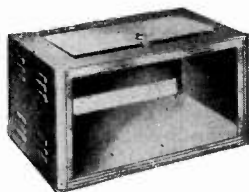
Cat. No.	Overall Size	Panel Space	Shpg.	
			Wt. lbs.	Net Price
ER223	43 3/4 x 22 x 18"	36 3/4"	90	\$39.30
ER225	67 3/4 x 22 x 18"	61 3/4"	135	50.10
ER227	83 1/2 x 22 x 18"	77"	165	59.70

\*Black ripple is optional.

# PAR-METAL RACKS · CHASSIS · CABINETS for ELECTRONIC APPARATUS

## DELUXE TYPE "A" DESK PANEL CABINET RACKS

For Standard 19" Rack Panels  
Black Ripple Finish



Streamlined styling. In keeping with our other Deluxe racks, the vertical front corners are rounded and the top and bottom are trimmed with chrome finished mouldings. Panels fit into a recess, so that the edges are not exposed. Panel mounting holes accurately drilled on universal centers, for either "Amateur" or type "C" panels; holes are tapped for 10/32 machine screws. May be used with any chassis up to 13" x 17" in size. All cabinets constructed of  $\frac{1}{8}$ " thick sheet steel. Louvres provide ample ventilation through sides and back. Piano type hinges are used on the top doors, which are provided with snap catches. Panel mounting screws and washers are furnished. Black ripple enamel is standard. Slate grey is optional at same price.

Cat. No.	Overall Size	Panel Space	Net Price
	With door in top only		
DL128	10 $\frac{1}{2}$ x 21 $\frac{1}{2}$ x 15" deep	8 $\frac{3}{4}$ "	\$10.08
DL1225	14 x 21 $\frac{1}{2}$ x 15" deep	12 $\frac{3}{4}$ "	12.30
DL1413	15 $\frac{3}{4}$ x 21 $\frac{1}{2}$ x 15" deep	14"	13.86
	With door in top and door on rear panel		
DL1713	19 $\frac{1}{4}$ x 21 $\frac{1}{2}$ x 15" deep	17 $\frac{1}{2}$ "	16.95
DL2613	28 x 21 $\frac{1}{2}$ x 15" deep	26 $\frac{1}{2}$ "	19.20
DL3513	36 $\frac{1}{4}$ x 21 $\frac{1}{2}$ x 15" deep	35"	21.60

## TYPE "A" CHANNEL RELAY RACKS

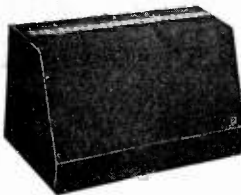
For Standard 19" Rack Panels  
Black Ripple Finish



Ideal for use on all types of transmitters and public address systems. Substantially constructed of  $\frac{3}{16}$ " pressed steel. Vertical members and top cross-brace securely welded together. Base is 22" deep and extends both front and rear on the RR-195 rack; it is 19" deep on the RR-193 rack. Panel mounting holes accurately drilled on universal centers for either "Amateur" or type "C" panels, tapped for 10/32 machine screws. Ample supply of panel mounting screws and finishing washers supplied.

Cat. No.	Overall Size	Panel Space	Shpg. Wt.	Net Price
RR-195	73 $\frac{1}{4}$ x 20 x 20 $\frac{3}{8}$ "	71 $\frac{3}{4}$ "	85	\$17.40
RR-193	38 $\frac{3}{4}$ x 20 x 18 $\frac{3}{8}$ "	36 $\frac{3}{4}$ "	57	14.55

## SLOPING FRONT CABINETS



Adaptable as instrument cases for studios, laboratories, etc. Top corner rounded and trimmed with chromemoulding. Slate grey ripple finish. A chassis may be mounted to front panel and removed as a unit. Rear of case ventilated, with opening for connections. Prices do not include chassis.

Cat. No.	H. W. D.	Size of Chassis	Net Price
SF-500	8 x 8 x 8"	7 x 7 x 2"	\$3.30
SF-501	8 x 10 x 8"	7 x 9 x 2"	3.54
SF-502	8 x 14 x 8"	7 x 13 x 2"	3.93
SF-503	9 x 18 x 8"	7 x 17 x 3"	5.70
SF-504	12 x 18 x 12"	10 x 17 x 3"	7.20

## ROLLER TRUCKS FOR RACKS



Designed for use on our racks. Overall size 3" wider than racks for better distribution of weight. Has rubber composition wheels. Finished in slate grey ripple, with chrome trim. Will fit Rack No. RT-401 ER-203, ER-205, ER-207 \$7.50  
RT-410 DL-2613, DL-3513 9.25  
RT-411 ER-213, ER-215, ER-217 9.30  
RT-412 All 18" deep racks 10.50  
RT-415 All 15 $\frac{1}{4}$ " deep racks 10.65

## TABLE TYPE RELAY RACKS

Useful where a regular floor type heavy duty rack is not required. Mounting holes accurately drilled on universal centers. Tapped for 10/32 screws. Finished in black ripple enamel and shipped "knocked-down" with all necessary screws. Shipping weight of rack is 20 pounds.



Cat. No.	Overall Size	Panel Space	Net Price
TR-2520	25 x 21 x 12"	21 x 19"	\$5.55
TR-3220	32 x 21 x 12"	28 x 19"	6.93

## STEEL UTILITY CASES

These cases have flat tops and bottoms, which are removable. Made from 20 gauge sheet steel, with flanged edges and spot-welded corners. Finished in black ripple enamel.



Cat. No.	Overall Size	Ship Wt. Lbs.	Net Price
MC-442	4 x 4 x 2"	2	\$0.66
MC-453	4 x 5 x 3"	3	.75
MC-596	5 x 9 x 6"	3	1.44
MC-666	6 x 6 x 6"	3	.99
MC-8101	8 x 10 x 10"	7	2.34
MC-1128	11 x 12 x 8"	9	2.55
MC-1576	15 x 7 $\frac{3}{4}$ x 6 $\frac{1}{2}$ "	11	2.22
MC-1597	15 x 9 x 7"	9	2.61
MC-8107	8 x 10 x 7"	6	1.92

## HINGED STEEL CABINETS DE LUXE TYPE

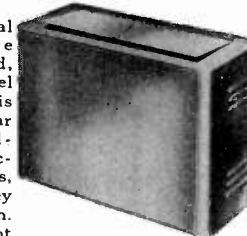


Has double roll on front vertical corners, and chrome finished mouldings. Ventilating louvres are stamped in each end, and a full width opening is provided at the rear for leads, etc. Finish is slate grey ripple enamel. Prices do not include chassis.

Cat. No.	H. L. D.	Panel Size	For Chassis	Net Price
CA-300	8 $\frac{1}{2}$ x 12 $\frac{3}{4}$ x 8"	8 $\frac{1}{2}$ x 10"	7 x 9 x 2"	\$4.80
CA-301	8 $\frac{1}{2}$ x 16 $\frac{3}{4}$ x 8"	8 $\frac{1}{2}$ x 14"	7 x 13 x 2"	5.55
CA-302	9 $\frac{1}{2}$ x 17 $\frac{3}{4}$ x 11"	9 $\frac{1}{2}$ x 15"	10 x 14 x 3"	7.95
CA-303	9 $\frac{1}{2}$ x 20 $\frac{3}{4}$ x 9"	9 $\frac{1}{2}$ x 18"	8 x 17 x 3"	7.95
CA-304	12 $\frac{1}{2}$ x 20 $\frac{3}{4}$ x 12"	12 $\frac{1}{2}$ x 18"	10 x 17 x 3"	8.70

## ROUNDED CORNER TYPE

Front vertical corners are streamlined, and a panel type door is provided. Rear opening allows for necessary leads, etc. Slate grey ripple finish. Prices do not include chassis.



Cat. No.	H. L. D.	Panel Size	For Chassis	Net Price
CA-200	8 x 10 x 8"	8 x 8"	7 x 7 x 2"	\$3.15
CA-201	8 x 12 x 8"	8 x 10"	7 x 9 x 2"	3.30
CA-202	8 x 16 x 8"	8 x 14"	7 x 13 x 2"	4.26
CA-203	9 x 17 x 11"	9 x 15"	10 x 14 x 3"	6.60
CA-204	12 x 20 x 12"	12 x 18"	10 x 17 x 3"	7.89

## STANDARD TYPE

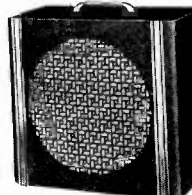
Full piano hinged doors, front panels removable. Top corner at front is rounded. Finished in black ripple. Prices do not include chassis bases.



Cat. No.	H. L. D.	For Chassis	Net Price
CA-100	7 $\frac{1}{4}$ x 10 $\frac{1}{2}$ x 6"	5 $\frac{1}{2}$ x 9 $\frac{1}{2}$ x 1 $\frac{1}{2}$ "	\$2.52
CA-101	7 $\frac{1}{4}$ x 8 x 8"	7 x 7 x 2"	2.52
CA-102	7 $\frac{1}{4}$ x 10 x 8"	7 x 9 x 2"	2.88
CA-103	7 $\frac{1}{4}$ x 14 x 8"	7 x 13 x 2"	3.24
CA-104	9 x 15 x 10 $\frac{3}{4}$ "	10 x 14 x 3"	5.19
CA-105	12 x 18 x 12 $\frac{1}{2}$ "	10 x 17 x 3"	6.00

## De Luxe Speaker Cabinets

To match streamlined metal equipment. Rounded corners with chrome mouldings and handles. New modern grille. Finished in slate grey ripple enamel. Removable back cover.



Cat. No.	Hole Size	Spkr. Size	Cabinet Size	Shpg. Wt.	Net Price
SC1060	4 $\frac{3}{8}$ "	6"	10 x 10 x 6"	8 lbs.	\$3.75
SC1270	6 $\frac{1}{2}$ "	8"	12 x 12 x 7"	9 lbs.	4.50
SC1480	9"	10"	14 x 14 x 8"	15 lbs.	5.85
SC1680	11"	12"	16 x 16 x 8"	20 lbs.	7.50

# PAR-METAL RACKS · CHASSIS · CABINETS for ELECTRONIC APPARATUS

## TYPE "C" RACK PANELS—19" WIDE

Unless otherwise indicated, these panels are made from  $\frac{1}{8}$ " thick steel and are uniformly slotted to fit type "C" cabinet racks and all type "A" racks. They will also fit any other rack equipment having multiple

$1\frac{1}{4}$ " -  $\frac{1}{2}$ " spacings or what is commonly termed as "W.E. spacing." They may be obtained in either black ripple enamel or slate grey ripple enamel. Panels can be furnished in aluminum grey lacquer at extra charge.

### BLANK PANELS $\frac{1}{8}$ " STEEL



These panels are made from  $\frac{1}{8}$ " thick steel and are uniformly slotted to fit type "C" cabinet racks made for 19" panels, and all type "A" racks. They will also fit any other rack equipment having multiple  $1\frac{1}{4}$ " x  $\frac{1}{2}$ " spacings or what is commonly termed as "W.E. spacing." They may be obtained in either black ripple enamel or slate grey ripple enamel.

Cat. No. Black	Cat. No. Grey	Height	Net Price
6600	G-6600	1 $\frac{3}{4}$ "	\$0.60
6601	G-6601	3 $\frac{1}{2}$ "	.69
6602	G-6602	5 $\frac{1}{4}$ "	.84
6603	G-6603	7"	.93
6604	G-6604	8 $\frac{3}{4}$ "	1.08
6605	G-6605	10 $\frac{1}{2}$ "	1.32
6606	G-6606	12 $\frac{1}{4}$ "	1.59
6607	G-6607	14"	1.80
6608	G-6608	15 $\frac{3}{4}$ "	2.10
6609	G-6609	17 $\frac{1}{2}$ "	2.28
6610	G-6610	19 $\frac{1}{4}$ "	2.46
6611	G-6611	21"	2.76

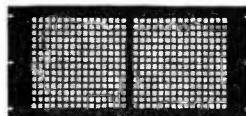
### BLANK PANELS $\frac{1}{8}$ " ALUMINUM



These panels are similar to those listed above, except that they are made from  $\frac{1}{8}$ " aluminum. They can also be supplied from  $\frac{3}{16}$ " stock, at an additional cost of 60%.

Cat. No. Black	Cat. No. Grey	Height	Net Price
6675	G-6675	1 $\frac{3}{4}$ "	\$0.96
6676	G-6676	3 $\frac{1}{2}$ "	1.38
6677	G-6677	5 $\frac{1}{4}$ "	1.74
6678	G-6678	7"	2.04
6679	G-6679	8 $\frac{3}{4}$ "	2.49
6680	G-6680	10 $\frac{1}{2}$ "	3.18
6681	G-6681	12 $\frac{1}{4}$ "	3.75
6682	G-6682	14"	4.26
6683	G-6683	15 $\frac{3}{4}$ "	4.74
6684	G-6684	17 $\frac{1}{2}$ "	5.07
6685	G-6685	19 $\frac{1}{4}$ "	5.73
6686	G-6686	21"	6.72

### GRILLE PANELS $\frac{1}{8}$ " STEEL

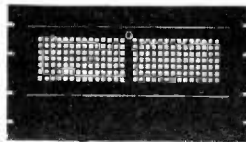


This modern type ventilating grille is stamped into the panel itself; it is not a pieced assembly.

Cat. No. Black	Cat. No. Grey	Panel Size	Grille Size	Net Price
P-661	G-661	5 $\frac{1}{4}$ "	3 $\frac{3}{8}$ x 14 $\frac{3}{8}$ "	\$2.31
P-662	G-662	7"	4 $\frac{1}{2}$ x 14 $\frac{3}{8}$ "	2.46
P-663	G-663	8 $\frac{3}{4}$ "	6 $\frac{1}{2}$ x 14 $\frac{3}{8}$ "	3.00
P-664	G-664	8 $\frac{3}{4}$ "	*3 $\frac{1}{2}$ x 14 $\frac{3}{8}$ "	2.70
P-665	G-665	10 $\frac{1}{2}$ "	8 $\frac{3}{8}$ x 14 $\frac{3}{8}$ "	3.30
P-666	G-666	10 $\frac{1}{2}$ "	*5 $\frac{1}{2}$ x 14 $\frac{3}{8}$ "	3.00
P-667	G-667	12 $\frac{1}{4}$ "	*7 $\frac{3}{8}$ x 14 $\frac{3}{8}$ "	3.45

\*Allows  $3\frac{1}{2}$ " space at bottom for chassis mounting.

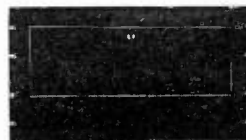
### GRILLE DOOR PANELS $\frac{1}{8}$ " STEEL



These panels have flush hinged doors with modern type ventilating grille. Doors are equipped with piano hinges, knob and concealed catch. All doors start 1" from top to allow space for chassis at bottom. Regular chassis brackets may be used.

Cat. No. Black	Cat. No. Grey	Panel Size	Door Size	Net Price
P-680	G-680	8 $\frac{1}{4}$ "	4 $\frac{1}{2}$ x 15 $\frac{3}{8}$ "	\$4.35
P-681	G-681	10 $\frac{1}{2}$ "	6 x 15 $\frac{3}{8}$ "	4.65
P-682	G-682	12 $\frac{1}{4}$ "	7 $\frac{1}{2}$ x 15 $\frac{3}{8}$ "	5.25

### SOLID DOOR PANELS $\frac{1}{8}$ " STEEL



These panels have flush hinged doors with full length piano hinges; they are equipped with a knob and concealed catch. All doors are located 1" from top to allow space for chassis at bottom. Regular chassis brackets may be used.

Cat. No. Black	Cat. No. Grey	Panel Size	Door Size	Net Price
P-670	G-670	8 $\frac{3}{4}$ "	4 $\frac{1}{2}$ x 15 $\frac{3}{8}$ "	\$3.15
P-671	G-671	10 $\frac{1}{2}$ "	6 x 15 $\frac{3}{8}$ "	3.45
P-672	G-672	12 $\frac{1}{4}$ "	7 $\frac{1}{2}$ x 15 $\frac{3}{8}$ "	3.90

### RECESSED METER PANELS $\frac{1}{8}$ " STEEL



These panels are made so that the meters may be recessed from the front of the panel. Meters are protected by a plate glass insert, allowing  $\frac{3}{4}$ " clearance in back of panel. A blank bakelite sub-panel is provided. The clear sub-panel space is 4 $\frac{1}{4}$ " x 15" on the 19" wide panel which is sufficient for 4-3" meters. On the 24" and 30" wide panel the clear sub-panel space is 5 $\frac{3}{4}$ " x 20" and 5 $\frac{3}{4}$ " x 26" respectively.

Cat. No. Black	Cat. No. Grey	Size	Net Price
P-690	G-690	5 $\frac{1}{4}$ " x 19"	\$4.80
P-691	G-691	7" x 24"	8.40
P-692	G-692	7" x 30"	11.40

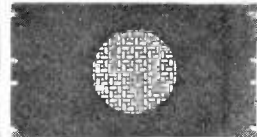
### METER PANELS $\frac{1}{8}$ " STEEL



All meter panels are 5 $\frac{1}{4}$ " x 19".

Cat. No. Black	Cat. No. Grey	No. of Holes	Meter Size	Net Price
MP-632	MG-632	3	2"	\$1.14
MP-652	MG-652	5	2"	1.65
MP-633	MG-633	3	3"	1.14
MP-653	MG-653	5	3"	1.65

### SPEAKER PANELS $\frac{1}{8}$ " STEEL



To fit either 6", 8", 10", or 12" speakers. The opening is covered with a steel grille.

Cat. No. Black	Cat. No. Grey	Panel Size	Speaker Size	Net Price
SP-875	SG-875	8 $\frac{3}{4}$ x 19"	6"	\$1.95
SP-1050	SG-1050	10 $\frac{1}{2}$ x 19"	8"	2.40
SP-1225	SG-1225	12 $\frac{1}{4}$ x 19"	10"	3.00
SP-1400	SG-1400	14 x 19"	12"	3.30

### STANDARD DESK PANELS



Tables are rigidly made of  $\frac{1}{16}$ " thick steel. Securely mounted to regular  $\frac{1}{4}$ " steel panels, size 10 $\frac{1}{2}$ " x 19". Tables 22" wide give full working space across front of racks when mounted in place.

Cat. No.	Width	Depth	Finish	Net Price
BT-2220	22"	20"	Black enamel	\$12.30
BT-2216	22"	16"	Black enamel	11.70
AT-2220	22"	20"	Aluminum grey	13.80
AT-2216	22"	16"	Aluminum grey	12.90

# PAR-METAL RACKS · CHASSIS · CABINETS for ELECTRONIC APPARATUS

## BLANK STEEL CHASSIS BASES

### STANDARD TYPE

Construction is the same as our heavy-duty chassis. Stamped from one piece of cold rolled steel, and have four solid sides with welded corners. Bottom edges are flanged in on four sides to provide additional reinforcement, and they are drilled for bottom plates. The chassis are made from #20 gauge steel, except those marked (\*) which are stamped from  $\frac{1}{16}$ " steel exactly like our heavy-duty type.

Black Ripple Cat.No.	Net Price	Size	Zinc Plated Cat.No.	Net Price
B-4500	\$0.60	5½x9½x1½"	C-4500	\$0.66
B-4508	.84	5x10x3"	C-4508	.96
B-4509	.99	6x14x3"	C-4509	1.11
B-4510	.69	7x7x2"	C-4510	.72
B-4511	.81	7x9x2"	C-4511	.87
B-4512	.90	7x11x2"	C-4512	.93
B-4513	.96	7x13x2"	C-4513	1.02
B-4514	1.23	7x15x3"	C-4514	1.32
B-4518	1.02	4x17x3"	C-4518	1.14
B-4515	1.20	7x17x3"	C-4515	1.26
B-4531	1.32	8x17x2"	C-4531	1.38
B-4532	1.38	8x17x3"	C-4532	1.44
B-4525	1.32	10x12x3"	C-4525	1.38
B-4524	1.38	10x14x3"	C-4524	1.44
B-4528	1.38	10x17x2"	C-4528	1.44
B-4529	1.74	10x17x4"	C-4529	1.89
B-4526	1.32	10x17x3"	C-4526	1.44
B-4527	1.74	10x23x3"	C-4527	1.89
B-4533*	1.74	11x17x2"	C-4533*	1.95
B-4534*	1.92	11x17x3"	C-4534*	2.28
B-4516	1.50	12x17x2"	C-4516	1.62
B-4517	1.62	12x17x3"	C-4517	1.74
B-4530	1.86	12x17x4"	C-4530	2.04
B-4535*	2.10	13x17x2"	C-4535*	2.22
B-4536*	2.22	13x17x3"	C-4536*	2.49
B-4537*	2.64	13x17x4"	C-4537*	3.03

\* Made from  $\frac{1}{16}$ " thick steel.

### BOTTOM PLATES

Bottom plates have holes to match the chassis, and have pressed "bumpers" at the corners.

Black Ripple Cat.No.	Zinc Plated Cat.No.	Size	Net Price
BP-4500	CP-4500	5½x9½x½"	\$0.33
BP-4508	CP-4508	5x10"	.36
BP-4509	CP-4509	6x14"	.48
BP-4510	CP-4510	7x7"	.36
BP-4511	CP-4511	7x9"	.39
BP-4512	CP-4512	7x11"	.45
BP-4513	CP-4513	7x13"	.51
BP-4514	CP-4514	7x15"	.57
BP-4518	CP-4518	4x17"	.45
BP-4515	CP-4515	7x17"	.60
BP-4531	CP-4531	8x17"	.60
BP-4525	CP-4525	10x12"	.60
BP-4524	CP-4524	10x14"	.63
BP-4528	CP-4528	10x17"	.78
BP-4527	CP-4527	10x23"	1.05
BP-4533	CP-4533	11x17"	.81
BP-4516	CP-4516	12x17"	.87
BP-4535	CP-4535	13x17"	.93

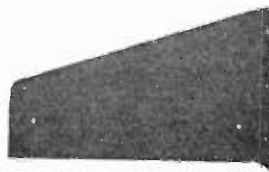
### HEAVY DUTY TYPE



All of the chassis listed on this page may be used with the various Par-Metal racks and cabinets. Substantially constructed for "heavy duty" uses, being formed from one piece of  $\frac{1}{8}$ " sheet steel, with all corners and bottoms reinforced. Bottom covers and mounting screws supplied. Ends drilled to fit standard brackets listed below. Finished in either uniform black ripple enamel or zinc plated.

Black Ripple Cat.No.	Net Price	Dimensions W.L.D.	Zinc Plated Cat.No.	Net Price
15280	\$2.16	8x17x2"	15208	\$2.34
15281	2.40	8x17x3"	15209	2.64
15282	2.43	11x17x2"	15218	2.76
15210	2.64	11x17x3"	15219	3.06
15212	2.85	13x17x2"	15214	3.15
15213	3.12	13x17x3"	15215	3.39
15216	3.45	13x17x4"	15217	3.93
15283	4.65	17x17x4"	15284	5.25

### CHASSIS MOUNTING BRACKETS



These brackets will fit any of the chassis listed above, as the mounting holes are drilled to match. Panels must be at least 7" high. Finished in black enamel.

Cat.No.	Dimensions	Shpg. Wt.	Net Price
SB-78	For 8" Base	2 lbs.	\$0.69
SB-710	For 10" Base	2 lbs.	.93
SB-711	For 11" Base	3 lbs.	1.02
SB-713	For 13" Base	3 lbs.	1.23
SB-717	For 17" Base & larger	5 lbs.	1.86

### STANDARD TYPE Amplifier Foundation Chassis



Rounded corners effectively streamline the covers on these units. Grille type ventilation gives them a modern appearance. Chassis stamped from one piece of cold rolled steel, with corners securely spot welded. Covers finished in slate grey, chassis in black ripple enamel. Chassis are drilled for bottom plates.

Chassis stamped from one piece of cold rolled steel, with corners securely spot welded. Covers finished in slate grey, chassis in black ripple enamel. Chassis are drilled for bottom plates.

Cat.No.	Size	Depth of Cover	Shpg. Wt.	Net Price
F-510	5x10x3"	6"	9 lbs.	\$2.25
F-615	6x14x3"	6"	10 lbs.	2.55
F-717	7x17x3"	6"	11 lbs.	3.15
F-1012	10x12x3"	6"	11 lbs.	3.15
F-1017	10x17x3"	6"	11 lbs.	3.81
F-1317	13x17x3"	6"	15 lbs.	4.50

### DELUXE TYPE

#### Amplifier Foundation Chassis



For those who prefer a deluxe unit with recessed panel.

Panel slopes slightly and attaches to chassis with screws. Screen cover may be raised without disturbing the panel. Cover finished in slate grey ripple. Chassis finished in black ripple and is drilled for bottom plates.

Cat. No.	Chassis Size	Depth of Cover	Panel Size	Net Price
FC-510	5 x 10 x 3"	6"	4 x 7"	\$4.50
FC-615	6 x 14 x 3"	6"	4 x 10"	5.10
FC-717	7 x 17 x 3"	6"	4 x 13"	5.70
FC-1012	10 x 12 x 3"	6"	4 x 9"	5.55
FC-1017	10 x 17 x 3"	6"	4 x 13"	6.60
FC-1317	13 x 17 x 3"	6"	4 x 13"	7.35

### SLOPING FRONT TYPE Amplifier Foundation Chassis



Latest trend in amplifier design. Combination of sloping front panel and streamlined cover enables you to build up a job similar to that used on commercial deluxe type amplifiers. All parts finished in slate grey ripple enamel trimmed with chrome moulding and handles. Front panel removable and protrudes 3" from face of screen cover. Chassis supplied complete WITH bottom plates.

Cat. No.	Chassis Size	Screen Cover	Net Price
F10120	10x12x3"	6½" high	\$5.70
F10170	10x17x3"	6½" high	6.60
F13170	13x17x3"	6½" high	7.35

### ROUNDED CORNER TYPE Amplifier Foundation Chassis

Modern professional type. Rounded corners on screen cover. Chrome mouldings & handles. Cover finished in slate grey, with black ripple chassis.



Cat.No.	Chassis Size	Depth of Cover	Shpg. Wt.	Net Price
DF510	5x10x3"	6"	9 lbs.	\$3.21
DF615	6x14x3"	6"	10 lbs.	3.75
DF717	7x17x3"	6"	11 lbs.	4.29
DF1012	10x12x3"	6"	11 lbs.	4.29
DF1017	10x17x3"	6"	13 lbs.	5.10
DF1317	13x17x3"	6"	15 lbs.	5.85





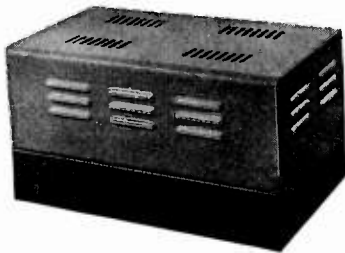
# MIDDLETOWN MANUFACTURING CO.

## METAL PRODUCTS — ELECTRONIC DIVISION

### CABINETS • CHASSIS • CASES • PANELS

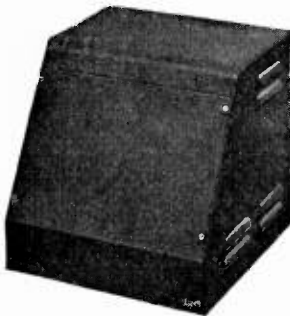
#### AMPLIFIER FOUNDATIONS—DeLuxe Models

This unit is designed to meet the most critical requirements. It has rounded corners, special Middletown designed louvres on all 4 sides and elongated holes on top to give maximum ventilation. Chassis are finished in Black wrinkle. Covers are finished in Grey wrinkle. Chassis are drilled for bottom plates which are listed separately. Covers all have a depth of 6".



Cat. No.	Size	Net Price
A.F.-5103	5 x 10 x 3"	\$2.31
A.F.-6143	6 x 14 x 3"	2.64
A.F.-7173	7 x 17 x 3"	3.24
A.F.-10123	10 x 12 x 3"	3.36
A.F.-10173	10 x 17 x 3"	3.90
A.F.-13173	13 x 17 x 3"	4.65

#### SLOPING FRONT PANEL CABINETS

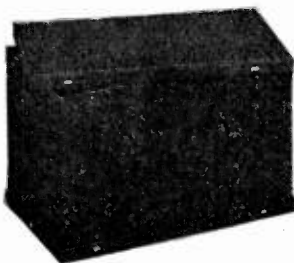


Sloping front panel cabinets have a wide application in the electronic field since they are adaptable for various uses. They are constructed of heavy gauge steel electrically spot-welded. Top corner is rounded, front panel is removable, and louvres on sides provide ventilation.

Back panel is ventilated on top and an opening is provided on the bottom so that connections can be made directly to the rear of the chassis. Finished in Grey wrinkle.

Cat.No.	H.W.D.	Chassis Size	Net Price
S.F.-888	8 x 8 x 8"	7 x 7 x 2"	\$3.36
S.F.-8108	8 x 10 x 8"	7 x 9 x 2"	3.60
S.F.-8148	8 x 14 x 8"	7 x 13 x 2"	4.02
S.F.121812	12 x 18 x 12"	10 x 17 x 3"	7.35

#### STEEL UTILITY CANS



These Utility Cans are substantially made from sheet steel with spot welded reinforced corners. Tops and bottoms are removable and are flanged on all four sides. Held in place with self-tapping screws.

Cat. No.	Size	Weight	Net Price
U.C. 565	5 1/2 x 6 x 5 1/2"	3 lbs.	\$ .99
U.C. 596	5 x 9 x 6"	5 lbs.	1.47
U.C. 8107	8 x 10 x 7"	6 lbs.	1.98
U.C. 81010	8 x 10 x 10"	7 lbs.	2.40
U.C. 11128	11 x 12 x 8"	9 lbs.	2.61

#### STEEL RACK PANELS — 19" LONG

These panels are made from 1/8" steel and are slotted for standard amateur mounting. Twelve standard sizes. Furnished in black or grey wrinkle finish. These panels are also supplied with commercial (W.E.) slotting. When ordering commercial type indicate by adding W to our catalogue number below.



Cat. No.	Width	Weight	Net Price
R.P. 1	1 3/4"	2 lbs.	\$ .60
R.P. 3	3 1/2"	5 lbs.	.75
R.P. 5	5 1/4"	7 lbs.	1.11
R.P. 7	7"	8 lbs.	1.41
R.P. 8	8 3/4"	9 lbs.	1.59
R.P. 10	10 1/2"	10 lbs.	1.92
R.P. 12	12 1/4"	12 lbs.	2.28
R.P. 14	14"	13 lbs.	2.67
R.P. 15	15 3/4"	14 lbs.	3.09
R.P. 17	17 1/2"	15 lbs.	3.54
R.P. 19	19 1/4"	16 lbs.	4.02
R.P. 21	21"	17 lbs.	4.44

When Ordering Specify Black or Grey.

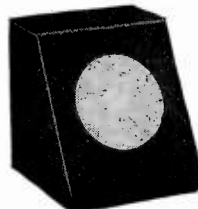
#### METER PANELS



Middletown Meter Panels are made 5 1/4" high and are made to the same specifications as our Rack Panels—are available to fit 3" meters

Cat. No.	Holes	Hole Size	Net Price
R.P.M. 33	3	2 3/8"	\$1.41
R.P.M. 35	5	2 1/4"	1.92

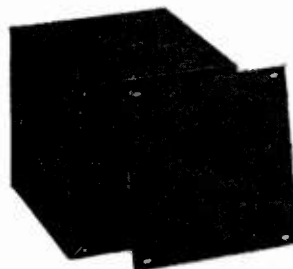
#### METER CASES



These cases have sloping front panel with rounded top corner which blends with streamline equipment. They are sturdily constructed from sheet steel with welded joints.

Cat. No.	Meter	Hole Size	H.W.D.	Net Price
M.C. 13	Single 3"	2 1/8"	4 1/2 x 4 x 4	\$1.02
M.C. 33	3-3" Meters	2 1/8"	4 1/2 x 11 1/4 x 4	2.40

#### STEEL CASES — STANDARD

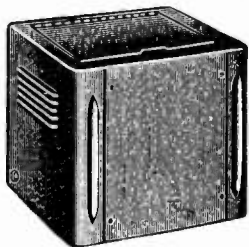


These cases are similar to our standard steel utility cans except they have flat tops and bottoms which are held in place with self tapping screws and are removable. These cases are of sturdy construction and have spot welded corners. Case has flanges on all edges. Finished in black wrinkle.

Cat. No.	Size	Weight	Net Price
S.C. 442	4 x 4 x 2"	2 lbs.	\$ .69
S.C. 453	4 x 5 x 3"	3 lbs.	.81
S.C. 666	6 x 6 x 6"	3 lbs.	1.05
S.C. 1276	12 x 7 x 6"	5 lbs.	1.95
S.C. 1597	15 x 9 x 7"	9 lbs.	2.70
S.C. 1287	12 x 7 3/4 x 6 1/4"	9 lbs.	1.98
S.C. 1576	15 x 7 3/4 x 6 1/2"	11 lbs.	2.31

# ICA INSULINE RADIO PRODUCTS ICA

## ICA DE LUXE HINGED STEEL CABINETS



The cabinets have rounded corners with specially designed Chrome plated "Air-Gate" ventilators on sides; and vertical Chrome Plated Trim moulding on front. Modern grille type ventilators are provided on the back panels which also have an opening on the bottom to allow for leads, cable connections, etc.

Bottoms have 4 embossed feet.

Finished in a beautiful Marine Gray Ripple Enamel.

No.	H.	W.	D.	Panel Size	List
3860	8" x 10" x 8"	8" x 8"			\$7.25
3861	8" x 12" x 8"	8" x 10"			7.50
3862	8" x 14" x 8"	8" x 12"			9.00
3863	12" x 20" x 12"	12" x 18"			14.00

## ICA STANDARD HINGED STEEL CABINETS

Designed in the same style and appearance as the De Luxe cabinets shown above except that the Chrome trim is eliminated. Sides and backs have ventilating louvres. Backs have opening for cable connections, etc. Top panel hangs on full sized piano type hinge. Bottoms have 4 embossed feet. Finished in Marine Gray Ripple Enamel.

No.	H.	W.	D.	Panel Size	List
3925	8" x 10" x 8"	8" x 8"			\$5.00
3926	8" x 12" x 8"	8" x 10"			5.50
3927	8" x 14" x 8"	8" x 12"			7.00
3928	12" x 20" x 12"	12" x 18"			13.00

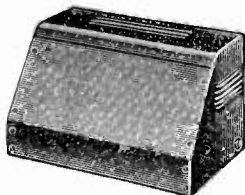
## CHASSIS FOR ICA CABINETS

No.	Size	For Cabinet Numbers	List
4024	7" x 7" x 2"	3860 and 3925	\$1.40
4004	7" x 9" x 2"	3861 and 3926	1.50
4005	7" x 11" x 2"	3862 and 3927	1.65
4033	10" x 17" x 3"	3863 and 3928	2.20

## ICA DE LUXE SLOPING PANEL CABINETS

The top corners are rounded and trimmed with an attractive striped chrome trim. The sides of the cabinets have the beautiful "Air-Gate" Chrome ventilators.

The front panel is removable so that the chassis can be attached to it and used as one unit. Beautifully finished in Marine Gray Ripple Enamel.



No.	H.	W.	D.	List
3990	8" x 8" x 8"			\$6.60
3991	8" x 10" x 8"			7.25
3992	8" x 14" x 8"			9.50
3993	12" x 18" x 12"			12.75

## CHASSIS FOR ICA CABINETS

No.	Size	For Cabinet Number	List
4024	7" x 7" x 2"	3990	\$1.40
4004	7" x 9" x 2"	3991	1.50
4007	7" x 13" x 2"	3992	1.80
4033	10" x 17" x 3"	3993	2.20

## ICA DE LUXE SLOPING CHASSIS AMPLIFIER UNITS



Chassis are sloped and are equipped with beautiful chrome trimmed handles. Slope provides ample space for mounting instruments.

The top covers have beautiful Chrome Plated "Air-Gate" Ventilators with striped chrome trim. Supplied with ventilating louvres on sides and back. Have raised rectangular screen opening on the tops, embellished with chrome moulding. Marine Gray Ripple finish.

No.	Overall Size	Chassis Bottom	Chassis Slope Height	Size	List
3962	7" x 17" x 9 1/2"	10" x 17"	3 1/2"	4"	\$10.25
3963	10" x 14" x 9 1/2"	13" x 14"	3 1/2"	4"	11.00
3964	10" x 17" x 9 1/2"	13" x 17"	3 1/2"	4"	11.50

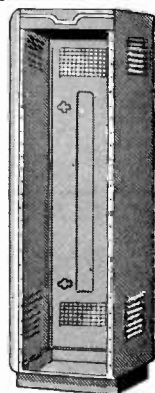
## ENCLOSED RELAY RACKS

A beautifully streamlined designed rack for transmitters and public address systems. Front vertical; corners rounded. Rack is fabricated of 1/16" cold rolled steel; panel mounting angles of 1/8" steel. Universally drilled for either Amateur or Western Electric type panels. Panels fit into recess so edges are not exposed. Screen ventilators on rear door and louvres on sides afford proper ventilation. Rear door hung on sturdy hinges and equipped with two flush snap catches. Shipped "KNOCKED DOWN" with all necessary hardware. Finished in Marine gray ripple finish. Black Ripple furnished only if specified.

No. 3870 List \$43.50	Overall Size	42" x 22" x 16 1/2"
	Panel Space	36 3/4" x 19"
	Interior Width	17 5/8"
	Interior Depth	15 1/4"
Shipping Weight 97 Lbs.		

No. 3871 List \$63.50	Overall Size	66 1/2" x 22" x 16 1/2"
	Panel Space	61 1/4" x 19"
	Interior Width	17 5/8"
	Interior Depth	15 1/4"
Shipping Weight 145 Lbs.		

No. 3872 List \$74.50	Overall Size	82 1/4" x 22" x 16 1/2"
	Panel Space	77" x 19"
	Interior Width	17 5/8"
	Interior Depth	15 1/4"
Shipping Weight 172 Lbs.		



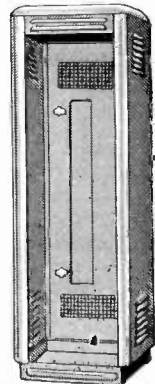
## ICA DE LUXE TRANSMITTER RACKS

New modern design, streamlined transmitter and public address racks. Removable vertical corner mouldings are rounded and completely cover panel edges and mounting screws. Chrome trim. Rack is made of 1/16" cold rolled steel. Panel mounting angles drilled for either Amateur or Western Electric type panels. Screen ventilators on rear door and louvres afford ample ventilation. Easily assembled. Supplied in Marine gray ripple finish. Black ripple finish furnished only on specification.

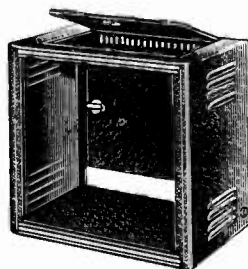
No. 3865 List \$61.75	Overall Size	43 1/4" x 22" x 18"
	Panel Space	36 3/4" x 19"
	Interior Width	17 5/8"
	Interior Depth	16 3/4"
Shipping Weight 110 Lbs.		

No. 3866 List \$78.90	Overall Size	67 3/4" x 22" x 18"
	Panel Space	61 1/4" x 19"
	Interior Width	17 5/8"
	Interior Depth	16 3/4"
Shipping Weight 162 Lbs.		

No. 3867 List \$94.50	Overall Size	83 1/2" x 22" x 18"
	Panel Space	77" x 19"
	Interior Width	17 5/8"
	Interior Depth	16 3/4"
Shipping Weight 190 Lbs.		



## ICA MULTI-USE METAL CABINETS



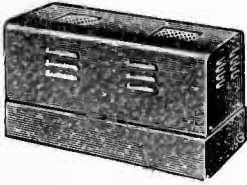
An ideal unit for public address systems, transmitters, receivers, test equipment, etc. Has rounded corners on front of Cabinet. Trimmed with handsome chrome trim moulding. Equipped with hinge doors, and nickel brass snap locks. Completely assembled, ready for use. Finished in Black or Marine Gray Ripple Enamel. Black will be supplied unless Gray is specified.

		SINGLE UNITS	List
No. 3880	Size 10 1/2" x 21" x 15" Deep.		\$16.50
	Door on top only. Panel space 8 3/4" x 19".		
No. 3881	Size 14" x 21" x 15" Deep.		20.00
	Door on top only. Panel space 12 1/4" x 19".		
	DOUBLE UNIT		
No. 3882	Size 19 1/4" x 21" x 15" Deep.		27.75
	Doors on top and rear. Panel space 17 1/2" x 19".		
	TRIPLE UNIT		
No. 3883	Size 28" x 21" x 15" Deep.		32.00
	Door on rear panel only. Panel space 26 1/4" x 19".		
	QUADRUPLE UNIT		
No. 3884	Size 36 3/4" x 21" x 15" Deep.		35.50
	Door on rear panel only. Panel space 35" x 19".		

# ICA INSULINE ICA

## RADIO PRODUCTS

### ICA STANDARD AMPLIFIER FOUNDATION UNITS

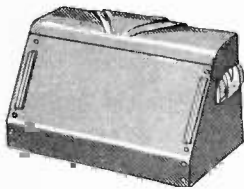


Top covers have rounded corners. The front, sides and back are equipped with louvre ventilators. The tops have raised screen openings for additional ventilation.

Finished in beautiful Marine Gray Ripple Enamel.

No.	Size	Height of Chassis	List
3980	5 1/2" x 10" x 9"	3"	\$3.75
3981	8" x 12" x 9"	3"	5.50
3982	7" x 17" x 9"	3"	5.75
3983	10" x 14" x 9"	3"	6.25
3984	10" x 17" x 9"	3"	6.50

### FUTURA STREAMLINED SLOPING PANEL CABINETS



Can be used as instrument cases in studios, laboratories, etc. Raised "Futura" design — streamlined corners. Ventilator openings for cable connectors. Removable front panel. Finished in Marine Gray Ripple enamel with chrome moulding.

No.	H.	W.	D.	List
3840	8"	8"	8"	\$8.00
3841	8"	10"	8"	9.00
3842	8"	14"	8"	11.00
3843	8"	18"	8"	13.50
3844	12"	18"	12"	15.00

### ICA DE LUXE AMPLIFIER FOUNDATION CHASSIS

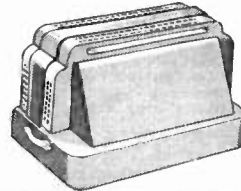
Top covers have rounded corners and fronts are embellished with the newly created Chrome plated "Air-Gate" Ventilators. Additional ventilation is obtained through the raised screen openings on the top as well as louvres on both sides and back.

Have beautiful Chrome mouldings and Chrome handles. Finished in Marine Gray Ripple Enamel.



No.	Size	Height of Chassis	List
3971	5 1/2" x 10" x 9"	3"	\$6.15
3972	8" x 12" x 9"	3"	8.00
3973	7" x 17" x 9"	3"	8.25
3974	10" x 14" x 9"	3"	9.00
3975	10" x 17" x 9"	3"	9.50

### "SUPER" STREAMLINED SLOPING-FRONT AMPLIFIER CHASSIS



New, modern design amplifier chassis. Front panel sloped with streamlined top cover. Removable front panel Marine Gray Ripple finish with Chrome trim. Bottom plates supplied. Top cover 6 1/2" high.

No.	Chassis Size	List
3930	10" x 12" x 3"	\$10.00
3931	10" x 17" x 3"	11.50
3932	13" x 17" x 3"	13.00

### ICA HINGED COVER CABINETS



Supplied in knocked-down form for easy handling. Easily assembled. Finished in Black Ripple Enamel.

No.	W.	D.	H.	List
3825	9"	5"	6"	\$4.00
3826	10"	8"	7"	5.00
3828	12"	8"	7"	5.75
3829	12"	11"	8"	6.85
3830	14"	8"	7"	6.85
3831	18"	12"	9"	8.60

### CHASSIS FOR ICA CABINETS

No.	W.	D.	H.	Number	List
4000	8 1/2"	4 3/4"	1 1/2"	3825	\$1.05
4004	9"	7"	2"	3826	1.50
4005	11"	7"	2"	3828	1.65
4007	13"	7"	2"	3830	1.80
4023	17"	11"	2"	3831	3.30



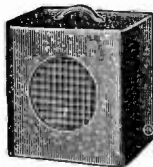
### ICA DE LUXE SPEAKER CABINETS

Features rounded corners; neatly chrome trimmed front; equipped with chrome handle. Steel grille. Marine Gray Ripple finish.

No.	Size	Hole Size	Speaker Size	List
3935	10" x 10" x 6"	4 3/4"	6"	\$7.00
3936	12" x 12" x 7"	6 1/2"	8"	8.80
3937	14" x 14" x 8"	9"	10"	11.00
3938	16" x 16" x 8"	11"	12"	14.50

### ICA STANDARD SPEAKER CABINETS

Finished in Black Ripple Enamel with plain black steel handles to match.



No.	Size	Hole Size	Speaker Size	List
3942	10" x 10" x 6"	4 3/4"	6"	\$5.10
3943	12" x 12" x 7"	6 1/2"	8"	6.10
3944	14" x 14" x 8"	9"	10"	8.00
3945	16" x 16" x 8"	11"	12"	10.75

### ICA METAL CABINETS

#### Black Ripple Finish

Have various uses such as input stages, mixers, transceivers, amplifiers, monitors, etc. Front and back covers are removable and can be fastened to cabinet with self tapping machine screws. Finished in Black Ripple Enamel.



No.	W.	D.	H.	List
3810	4"	2"	4"	\$1.35
3811	4"	3"	5"	1.45
3800	6"	6"	6"	1.65
3801	9"	5"	6"	2.55
3802	10"	8"	7"	3.25
3803	11"	8"	10"	4.00
3804	12"	11"	8"	4.30

### ICA SLOPING PANEL CABINETS

#### Small—Compact



New streamlined cabinets, rugged, small and compact, have various uses such as speaker cabinets, oscillator cases, input stages, small receivers, teletalk systems, monitors, etc.

Beautifully designed, with rounded corners and finished in marine gray ripple.



No.	W.	H.	D.	List
3905	4 1/2" x 4 1/2" x 4 1/2"			\$2.15
3906	7 1/2" x 4 1/2" x 4 1/2"			3.85

### ICA PORTABLE STEEL CABINETS



Ideal for housing oscillators, transceivers, test equipment, etc. Both front and back panels are removable and are held with self-tapping screws which are supplied. Equipped with leather handle. Finished in black ripple.

No. 3850	Size 12" x 7 3/4" x 7"	List \$4.25
No. 3851	Size 15" x 7 3/4" x 7"	List 4.95

### ICA DE LUXE METER CASES

Finished in Marine Gray Ripple Enamel with rounded tops and trimmed with beautiful Chrome band. Available for 2" or 3" meters.



No.	D.	W.	H.	Hole	List
3995	4 1/4"	4 3/8"	4 1/2"	2 3/8"	\$2.25
3996	4 1/4"	4 1/8"	4 1/2"	2 1/8"	2.25

### STREAMLINED METER CASES



Modern streamlined cases, with raised "futura" design on top of cabinet. Finished in Marine Gray Ripple Enamel and trimmed with chrome band.

No.	D.	W.	H.	Hole	List
3997	4 1/4"	4 3/8"	4 1/2"	2 3/8"	\$3.00
3998	4 1/4"	4 1/8"	4 1/2"	2 1/8"	3.00

### ICA CHROME TRIM MOULDING

Beautiful chrome trim mouldings to dress up any cabinet, chassis, receiver, speaker cabinet, transmitter, etc. Finished with mounting tracks or clips.



No.	List
3510—Chrome Moulding with single Stripe—size 1/8" w. by 4" l.	\$ .80
3513—Chrome Moulding with double Stripe—size 3/4" w. by 8" l.	1.30
3514—Chrome Moulding with double Stripe—size 3/4" w. by 12" l.	1.50
3515—Chrome Moulding with double Stripe—size 3/4" w. by 18 7/8" l.	1.85
3505—Bullet Shape all Chrome Moulding—size 1/8" w. by 6" l.	.80

### ICA CHROME HANDLES

No. 3500—Length 4"; width 1 1/8"	List \$ .75
No. 3501—Length 6 1/4"; width 1/2"	List .75

# ICA INSULINE ICA

## RADIO PRODUCTS



**STEEL OR ALUMINUM CHASSIS BASES**  
 For receivers, transmitters, etc. Bases are folded over on bottom for additional strength and drilled to permit attaching of bottom plates. Solidly constructed. **STEEL BASES**—one piece; heavy duty; zinc plated or black ripple finish. **ALUMINUM BASES**—First grade aluminum, electronically welded. Thickness: .055— $\frac{1}{4}$  Hard.

### ICA CHASSIS BOTTOM PLATES



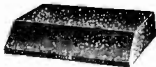
Designed to fit all ICA Chassis Bases and amplifier units listed to the left. Four raised bosses prevent marring or scratching. Supplied in steel or aluminum.

Steel—Zinc Plated Finish		Steel—Black Ripple Finish		Aluminum			
No.	List	No.	List	Gauge	Size	No.	List
1560	\$1.05	4000	\$1.05	20	4 1/2 x 8 x 1 1/2	29000	\$1.10
1530	1.10	4001	1.15	20	5 x 9 1/2 x 1 1/2	29001	1.30
1565	1.45	4002	1.40	20	5 x 9 1/2 x 3	29002	1.65
1582	1.55	4032	1.55	20	5 1/2 x 10 x 3	29004	1.95
1566	1.75	4003	1.75	20	5 x 13 x 3	29003	1.80
1526	1.40	4024	1.40	20	7 x 7 x 2	29005	1.60
1569	1.50	4004	1.50	20	7 x 9 x 2	29006	1.80
1570	1.65	4005	1.65	20	7 x 11 x 2	29007	1.95
1527	1.95	4006	1.90	20	7 x 12 x 3	29008	2.20
1571	1.80	4007	1.80	20	7 x 13 x 2	29009	2.10
1572	2.15	4008	2.15	20	7 x 15 x 3	29010	2.50
1528	2.15	4009	2.15	20	7 x 17 x 3	29011	2.65
1527	2.15	4013	2.15	20	8 x 12 x 3	29012	2.55
1573	2.30	4014	2.30	20	8 x 17 x 2	29013	2.80
1575	2.45	4035	2.45	20	8 x 17 x 3	29014	2.95
1520	2.35	4016	2.35	20	10 x 12 x 3	29015	2.85
1568	2.45	4017	2.45	20	10 x 14 x 3	29016	2.95
1583	2.20	4033	2.20	20	10 x 17 x 3	29017	3.20
1521	2.65	4018	2.65	18	10 x 17 x 3		
1522	3.30	4019	3.30	18	10 x 23 x 3	29018	3.95
1577	3.00	4027	3.00	18	11 x 17 x 2	29019	3.50
1519	3.30	4023	3.30	18	11 x 17 x 3	29020	3.85
1574	3.00	4020	3.00	18	12 x 17 x 2	29021	3.60
1578	3.30	4028	3.30	18	12 x 17 x 3	29022	3.95
1579	3.60	4029	3.60	18	13 x 17 x 2	29023	4.35
1524	4.15	4021	4.15	18	13 x 17 x 3	29024	4.85
1580	3.50	4030	3.50	18	10 x 17 x 4	29025	4.35
1581	4.70	4031	4.70	18	13 x 17 x 4	29026	5.65
					4 x 17 x 3	29027	2.40

Steel Zinc Plated	Black Ripple	List Price	Size	Aluminum No.	List Price
1601	4051	\$.65	5 x 9 1/2	8725	\$.90
1625	4075	.70	5 1/2 x 10	8702	.95
1602	4052	.75	5 x 13	8723	.90
1623	4073	.75	7 x 7	8703	.95
1603	4053	.75	7 x 9	8704	1.05
1604	4054	.90	7 x 11	8705	1.10
1605	4055	.95	7 x 12	8706	1.20
1606	4056	.95	7 x 13	8707	1.25
1607	4057	1.05	7 x 15	8708	1.35
1608	4058	1.10	7 x 17	8712	1.30
1612	4062	1.10	8 x 12	8713	1.50
1613	4063	1.15	8 x 17	8715	1.45
1615	4065	1.15	10 x 12	8716	1.55
1616	4066	1.20	10 x 14	8717	1.75
1617	4067	1.40	10 x 17	8718	2.10
1618	4068	1.80	10 x 23	8727	2.00
1622	4072	1.40	11 x 17	8719	2.25
1619	4069	1.50	12 x 17	8720	2.35
1620	4070	1.80	13 x 17		
1624	4074	1.50	13 x 14		

### ICA SLOPING FRONT CHASSIS

Has a sloping front for mounting instruments. Has the effect of a beautiful open cabinet receiver, or amplifier unit, when used without top covers. Heavy Duty Steel, finished in Black Ripple Enamel.



No.	Top of Bottom of Base	Base	Hgt.	Slope	List
3320	7x17"	10x17"	3 1/2"	4"	\$3.30
3321	10x14"	13x14"	3 1/2"	4"	3.65
3322	10x17"	18x17"	3 1/2"	4"	4.15

### ICA CHASSIS MOUNTING BRACKETS

Made to fit on 17" relay rack chassis. Panels must be at least 7" high. Black ripple finish.



No.	For	List
3955	For 8" base.....	Per Pair \$1.25
3958	For 10" base.....	Per Pair 1.70
3956	For 11" base.....	Per Pair 1.90
3957	For 13" base.....	Per Pair 2.20

### ICA MASONITE RELAY RACK PANELS

Made of Tempered Masonite—a non-magnetic material, sturdy and tough yet easily drilled and worked with ordinary wood-working tools and punches. Finished in Black or Gray. Supplied in Black Ripple finish unless Gray is specified.

No.	Size	List
3662	1 3/4" x 19"	\$.85
3663	3 1/2" x 19"	1.10
3664	5 1/2" x 19"	1.45
3665	7" x 19"	1.60
3666	8 3/4" x 19"	2.00
3667	10 1/2" x 19"	2.25
3668	12 1/4" x 19"	2.50
3669	14" x 19"	2.80
3670	15 3/4" x 19"	3.10
3671	17 1/2" x 19"	3.60
3672	19 1/4" x 19"	4.00
3673	21" x 19"	4.35

**SPECIAL SIZES RACK PANELS TO ORDER**  
 We can supply Rack Panels in any thickness from 1/8" to 3/4" in Steel, Aluminum or Masonite; in any finish to specifications.

### STANDARD RELAY RACK PANELS

Supplied in Amateur Rack notching, first notch 7/8" from edge of panel and 1 1/4" between centers. 19" long. Completely slotted, 1/8" thick. Made of steel (in black ripple or gray finish) or aluminum.



Steel			Aluminum		
No.	Gray	List Price	Size	No.	List Price
3600	3612	\$1.10	1 3/4"	8600	\$1.22
3601	3613	1.25	3 1/2"	8601	1.61
3602	3614	1.45	5 1/2"	8602	1.92
3603	3615	1.55	7"	8603	2.58
3604	3616	1.95	8 3/4"	8604	2.99
3605	3617	2.20	10 1/2"	8605	3.41
3606	3618	2.70	12 1/4"	8606	3.92
3607	3619	3.10	14"	8607	4.46
3608	3620	3.60	15 3/4"	8608	5.00
3609	3621	3.85	17 1/2"	8609	5.58
3610	3622	4.15	19 1/4"	8610	6.11
3611	3623	4.70	21"	8611	6.68

### ICA RELAY RACK BRACKETS



Black Ripple Finish. Used to reinforce racks and for mounting of panels, shelves, chassis, etc.

No.	List
3950—5" Base Brackets.....	Per Pair \$1.05
3951—8" Base Brackets.....	Per Pair 1.50
3952—11" Base Brackets.....	Per Pair 2.00

### TABLE MOUNT RELAY RACKS



Sturdily constructed heavy duty table rack with one piece base. Accurately drilled mounting holes. Finished in black ripple. Supplied "KNOCKED DOWN" with all necessary hardware.

No.	W.	H.	D.	Panel Space	List
3910	21"	x 25"	x 12"	21" x 19"	\$9.00
3911	21"	x 32"	x 12"	28" x 19"	10.50

### ICA METER PANELS

Slotted to fit all standard racks. Finished in Baked Black or Gray Ripple. Size 5 1/2" x 19". Black will be shipped unless Gray is specified.



#### STEEL PANELS

No.	Holes	Meter Size	Hole	List
3651	5	2"	2 3/8"	\$3.60
3652	3	2"	2 3/8"	2.50
3653	5	3"	2 3/8"	3.60
3654	3	3"	2 3/8"	2.50

#### MASONITE PANELS

No.	Holes	Meter Size	Hole	List
3641	3	2 1/2"	2 3/4"	\$2.25
3642	4	2 1/2"	2 3/4"	2.50
3643	3	2 1/2"	2 3/8"	2.25
3644	4	2 1/2"	2 3/8"	2.50

### ICA STEEL PANELS

Thickness of Panels 1/8" Black Ripple Finish



No.	Size	List
3175	7" x 10"	\$.80
3176	7" x 12"	.90
3177	7" x 14"	1.20
3178	7" x 18"	1.50
3183	8" x 12"	1.15
3184	8" x 14"	1.30
3186	8" x 18"	1.50
3191	10" x 14"	2.00
3192	10" x 18"	2.35
3194	10" x 24"	2.75

### ICA MASONITE PANELS

Black Ripple Finish Thickness of panel 3/16"

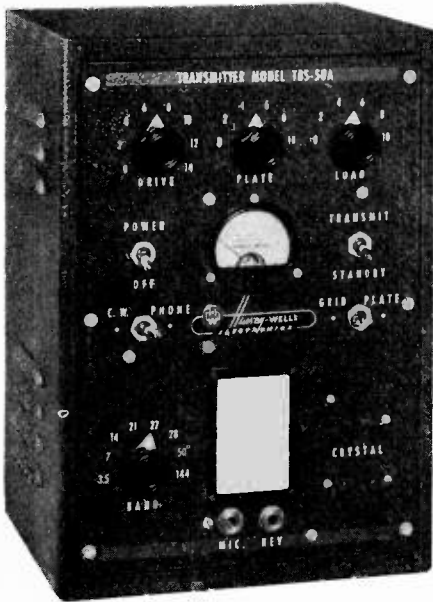


No.	Size	List
810	7" x 10"	\$1.00
811	7" x 12"	1.10
812	7" x 14"	1.25
813	7" x 18"	1.50
814	7" x 21"	1.65
815	8" x 12"	1.35
816	8" x 14"	1.45
817	8" x 16"	1.65
818	8" x 18"	1.80



# Harvey-WELLS ELECTRONICS, INC.

SOUTHBRIDGE, MASS.



## TBS-50 TRANSMITTER

America's Most Versatile Small Transmitter

**50 WATTS — 8 BANDS — PHONE OR CW**  
**NO PLUG-IN COILS**  
**80, 40, 20, 15, 11, 10, 6 and 2 METERS**  
 (Completely wired and tested—not a kit)

Everything about the TBS-50 was designed to please any operator of this 50 Watt. Crystal controlled on all bands, yet requires no oscillator or multiplier tuning. Eight bands from 80 to 2 meters with band switch and no plug-in coils. Compact, the TBS-50 serves equally well for fixed station or mobile operation. Will operate from AC power packs up to 450 volts at 275. ma. or dynamotor supply for portable mobile operation. As an exciter unit, R.F. output is capable of driving 1000 watt Class C amplifier. Separate winding on modulation transformer permits audio system to be used to drive 500 watt modulator. Employs Pi antenna matching network. Separate coaxial output terminal for 144-148 Mc. antenna. Power input to final is 50 watts with 450 volt power supply on Bands 1 through 7, 30 watts on Band 8. All circuits are sufficiently broad to tune completely over any band with adequate excitation for any frequency on the first six bands. Retuning may be necessary to cover the entire 6 and 2 meter bands. No tuning adjustments are necessary except those necessary to resonate the final output to the antenna. TBS-50 may be mounted on rack panel with power supply.

**CONTROLS:** Band Switch, Excitation Control, Antenna Loading, Amplifier Tuning, Power On Switch, Carrier On Switch, Meter Switch, CW-Phone Switch. Antenna network will match non-reactive feeder of approximately 50-500 ohms. Microphone input designed to use inexpensive single button carbon type microphone. Frequency calibration chart on front panel as well as 0-10 ma. DC milliammeter.

**TUBES:** 6AQ5 Crystal Oscillator, 6AQ5 Buffer-Multiplier, 807 Final Amplifier, 2-6L6 Class B Modulators. In sturdy steel cabinet, 8" wide by 12" high by 8" deep.

TBS-50 Complete with Tubes.....

**\$99.50**

### TBS-50A WITH CRYSTAL-MICROPHONE AMPLIFIER

The TBS-50 amateur transmitter was originally designed to use a simple, inexpensive button carbon microphone. There have been so many requests, however, for a crystal microphone model that we have developed a small three-tube pre-amplifier which is incorporated in the TBS-50A at time of manufacture. This pre-amplifier has sufficient gain so that any high impedance microphone having an output level of approximately -50 db can be used.

The first speech amplifier tube (6AU6) is pentode connected and feeds the second speech amplifier (6AU6) triode connected. This in turn drives a twin triode (12AU7) as phase inverter which drives the grids of the regular 6L6 modulators.

TBS-50A Complete with Tubes.....

**\$121.25**



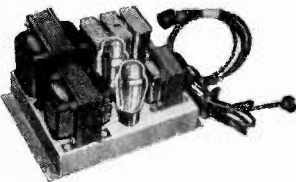
Left side view showing 807 final amplifier, band switch assembly and final tank coils.



Right side view showing 6AQ5 oscillator and multiplier tubes and 6L6G modulators.

## POWER SUPPLIES

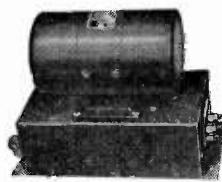
Developed specially for use with the TBS-50 and TBS-50A



APS-50

Delivers 425 volts at 275. ma. and 6.3 volts at 4 amps. With Hi-Lo switch. May be mounted on Rack Panel as shown at right.

APS-50—for 110 volt AC input.....\$39.50



DPS-50

For portable operation. Delivers same voltages and current as APS-50.

DPS-50—for 6 volt operation 300 volts 275 ma.....\$87.50

DPS-50—for 12 volt operation, same as APS-50.....\$54.30

## RACK PANEL



TBS-1A

Size 12 1/2" by 19" — Specially drilled for mounting TBS-50 or TBS-50A and Power Supply APS-50. In new black crackle finish.

**\$5.75**

*Thank You!*

When writing for additional  
information or when ordering  
from sources of supply listed  
in this book, please mention

*RADIO'S MASTER*