# Simpon

INSTRUMENTS THAT STAY ACCURATE



WORLD Model 260

SIMPSON ELECTRIC COMPANY

5200-5218 W. Kinzle St., Chicago 44, Illinois • In Canada: Bach-Simpson, Ltd., London, Ont.

BULLETIN No. 51

## \* Simpson

INSTRUMENTS THAT STAY ACCURATE

MODEL 260

Set Tester

World's Most Popular High Sensitivity Set Tester For Radio and TELEVISION

There are more Simpson 260 high sensitivity volt-ohm-milliammeters in use today than all others combined. No other instrument of its kind has approached the world-wide popularity of the Simpson 260. In no other tester of its kind will you find the combination of useful ranges, accuracy, ruggedness, heauty and sensitivity developed to such a high degree of perfection.

Removal of the Model 260 from its heavy, handsome case of molded bakelite, will disclose how it differs from most set testers. You will see a sub-panel with a score of small recesses each holding a separate resistor or other component. You will notice complete absence of cable wiring. All connections are short and direct, thus offering a strength and firmness of assembly and the finest of insulation to reduce chances of shorts. All components are readily accessible. The front panel is a thing of beauty and long life. Pin jacks are recessed so no metal parts are exposed. All figures and symbols are molded into a heavy Bakelite panel and filled with durable white for long wear and legibility.

At 20,000 ohms per volt the 260 is highly dependable, rugged and accurate. Its practically negligible current consumption assures remarkably accurate voltage readings. It provides DC current readings as low as 2 microamperes and up to 10 amperes. Dependable resistance readings can be made up to 20 megohms and as low as 1/5 ohm. With the 260 you can measure automatic frequency control diode balancing circuits, grid currents of oscillator tubes and power tubes, bias of power detectors, automatic volume control diode currents, high-mu triode plate voltage, as well as a wide range of other measurements which cannot be checked with ordinary servicing instruments.



#### **RANGES**

Model 260 Volt-Ohm-Milliammeter 20,000 Ohms per Volt DC, 1,000 Ohms per Volt AC Volts, AC and DC: 2.5, 10, 50, 250, 1000, 5000 Output: 2.5, 10, 50, 250, 1000 Milliamperes, DC: 10, 100, 500 Microamperes, DC: 100 Amperes, DC: 10 Decibels (5 ranges): —12 to +55 DB. Ohms: 0-2000 (1200 ohms center), 0-200,000 (1200 ohms center), 0-20 megohms (120,000 ohms center).





#### DEALER'S NET PRICES

Model 260, complete with test leads and Operator's Manual	38.95
Leather Carrying Case	6.75
Eveready Leather Carrying Case	8.75
Model 260RT in Roll Top Safety Case, complete with test leads and Operator's Manual	
(Size: 63/8"x9"x43/4". Weight: 61/2 lbs. Shipping Wt.: 9 lbs.)	40.70
Model 260 available in standard all blade and all blade	

Model 260 available in standard all black or two tone tan and brown, at above prices. Specify color desired.

#### MODEL 260RT SET TESTER IN ROLL TOP SAFETY CASE

The Model 260, when placed inside our patented housing of heavy molded bakelite and permanently fastened in position, offers the highest degree of efficient, economical instrument protection. Now you can buy the famous 260 complete in this roll top safety carrying case with its built-in lead compartment at less than the price of a 260 and an Eveready leather carrying case. A flick of the finger rolls the top up and the instrument is ready to use. A downward flick rolls the top down and your instrument is fully protected.

# STAY ACCURATE

#### MODEL 480 FM-TV GENESCOPE

The Simpson Model 480 Genescope is the result of many months of painstaking research and it is offered as our interpretation of a modern FM and TV instrument providing all of the necessary signal sources for the proper alignment and servicing of FM and TV receivers.

In addition to a signal source, the Genescope includes a high sensitivity oscilloscope of unique advanced design, complete in every detail and equipped with a high frequency crystal probe for signal tracing.

The variable oscillator sections are mounted one on each side of the oscilloscope section and are provided with large precision vernier dials having a 20:1 ratio and 1000 division logging scales. They are easy to read and can be quickly set to an exact frequency.

Modern FM and TV development and servicing requires the use of test equipment made to exacting standards. With this in mind we offer you the Genescope with the assurance that everything possible has been done to make it the most accurate, flexible and convenient instrument available.

There are many vital component parts in the Genescope, almost all of which have been made to our exacting standards within our own modern plants. Most of these vital components have been developed and designed by us and substantial sums have been spent on modern tooling. The care we have taken to properly design and produce these parts is worthwhile assurance that the Genescope will render many years of uninterrupted service and always produce accurate

The center section of the Genescope contains the oscilloscope and all associated controls. The cathode ray tube of the oscilloscope is mounted vertically in the case in order to conserve bench space. The pattern on the tube is brought into view by use of a highly polished adjustable mirror at the top of the cabinet. The mirror may be quickly adjusted for any position of the operator. The tube face is placed well below the top surface of the cabinat in order as which it is placed. face of the cabinet in order to shield it from incident light thus producing a clear, sharp image unhampered by narrow angle light shields. The mirror when closed provides adequate protection for the cathode ray tube when not in use.

Direct connection to vertical and horizontal deflection plates and other internal functions are available through removable cover on the front panel.

#### MODEL 479

#### TV-FM SIGNAL GENERATOR

A modern instrument for today's TV-FM problems. Exactly the same circuits, ranges and functions as the Model 480, described above, with the exception of the oscilloscope.

Size 17" x 14" x 71/2". Weight 29 lbs. Shipping Weight 35 lbs.

DEALER'S NET PRICE with Test Leads and Operator's Manual ..... \$269.00



#### RANGES

FREQUENCY MODULATED
OSCILLATOR
Band A—2-120 megacycles
Band B—142-260 megacycles
Sweep width variable from zero
to 15 megacycles
Sweep rate 60 cycles per second
Specially designed frequency
sweep motor
Continuously variable attenua-

Continuously variable attenua-

AMPLITUDE MODULATED
OSCILLATOR
Band A—3.2-15.6 megacycles
Band B—15-76 megacycles
Band C—75-250 megacycles
30% modulation at 400 cycles
or unmodulated
Continuously variable attenuator

tor Visual method of beat fre-

visual method of beat frequency indication tor Crystal calibrator — 5 megacycles ± .05% Audio Oscillator 400 cycles AM and FM oscillator sections provided with large, easy to read dials with 20-1 vernier control and 1000 division logging scale. Output impedance 75 ohms Step attenuator for control of output

#### OSCILLOSCOPE

\$395.00



STR STAY ACCURATE

#### **MODEL 303 VACUUM TUBE VOLT-OHMMETER**

The new Simpson 303 really is a versatile instrument. It can be used as an electronic DC voltmeter, an ohmmeter, an AC voltmeter, an AF voltmeter, an RF voltmeter (with accessory probe), an output-meter, and an FM indicator.

The 303 truly is a worthy companion of the world famous Simpson Model 260 Volt-Ohm-Milliammeter. Simpson engineers spent months of painstaking research in the laboratory, working in close co-opera-tion with TV set manufacturers to produce the 303. This ruggedly built instrument has a dimension of only 120 cubic inches, and is 60 to 70% more compact than any similar instrument. In achieving this compactness for greater portability Simpson did not sacrifice accuracy or functional value. Its large 4½-inch meter is easy to read.

Also, the 303 has a low current consumption. Features such as low current consumption and wide voltage and resistance ranges make the 303 an extremely versatile instrument.

Like all other instruments bearing the Simpson name, the 303 is of the highest quality construction throughout, but sells at an amazingly low price.



#### SPECIFICATIONS

DC VOLTAGE: Ranges—1.2, 12, 60, 300, 1200 (30,000 with Accessory High Voltage Probe)
Input Resistance—10 megohms for all ranges
DC Probe—with one megohm isolating resistor
Polarity reversing switch Polarity reversing switch
OHMS: Ranges—1000 (10 ohm center)
100,000 (1000 ohms center)
1 megohm (10,000 ohms center)
10 megohms (100,000 ohms center)
1000 megohms (10 megohms center) AC VOLTAGE: Ranges—1.2, 12, 60, 300, 1200 Impedance (with cable) approx. 200 mmf shunted by 275,000 ohms AF VOLTAGE: Ranges—1.2, 12, 60 Frequency Response—Flat 25 to 100,000 cycles DECIBELS: Ranges——20 to +3, -10 to +23, +4 to +37, +18 to +51, +30 to +63

Zero Power Level-1 M. W., 600 ohms

GALVANOMETER: Zero center for FM discriminator alignment and other galvanometer applications

R. F. VOLTAGE: (Signal tracing with Accessory High Frequency)

Crystal Probe)
Range—20 volts maximum
Frequency—Flat 20 KC to 100 M.C.

LINE VOLTAGE: 105-125 V. 50-60 cycles

SIZE: 51/4"x7"x31/8" (bakelite case). Weight: 4 lbs. Shipping Wt.:

DEALER'S NET PRICE: Model 303, including DCV Probe, ACV— Ohms probe and Ground Lead with Operator's Manual—\$58.75 Accessory High Frequency Probe. \$7.50 Accessory High Voltage Probe, \$9.95 Also available with roll top case, Model 303RT—\$66.70

#### **MODEL 266 VACUUM TUBE VOLTMETER**

Ideal for TV - AM - FM

Extremely accurate and packed full of important features. This fine Simpson instrument offers a 1 volt range for the full scale deflection necessary in measuring low RF voltages; a zero center switch embracing all DC voltage ranges for discriminator circuit alignment; a special probe with low input capacitance of approximately 4 micro-microfarads for checking RF voltages.

> DC volt input resistance ranges from 50 to 200 megohms; AC volt input impedance at 60 cycles is approximately 10 megohms. The primary of the power transformer is well-regulated—holding close control over filament as well as plate voltage, and the DC input circuit is filtered so that the pressure of superimposed alternating currents does not affect DC measurements.

> > Housed in a sturdy case of attractive hardwood with lead compartment in rear of case. There is a large, clearly marked 41/2" meter for quick, easy readings.

#### 25,000 Volt DC Probe for Television Testing

RANGES

Volts: (AC and DC) 0-1, 5, 10, 50, 100, 250, 500, 1000, 5000
Milliamperes, DC: 0-1, 5, 10, 50, 100, 250, 500
Amperes DC: 0-10
Ohns: 0-1000 (10 ohms center)

0-10,000 (100 ohms center) 0-100,000 (1000 ohms center) 0-1 megohm (10,000 ohms center) 0-10 megohms (100,000 ohms center) 0-100 megohms (1 megohm center) 0-1000 megohms (10 megohms center)

For 105-125 volts, 50-60 cycle.
Size: 81/2"x91/2"x8". Weight: 101/4 lbs.
Shipping Weight: 14 lbs.
DEALER'S NET PRICE, complete with
Leads, AC Probe and Operator's Man-

#### **MODEL 476 MIRROSCOPE**

Simpson takes pleasure in presenting the new and revolutionary Model 476 Mirroscope.

The objectives behind the design of the Model 476 were to eliminate certain inherent disadvantages found in the conventional type of oscilloscope.

By use of the Mirroscope principle the 5" cathode ray tube is mounted in a vertical position. This construction reduces bench space requirements to an area of only 9" x 8" thereby permitting better concentration of associated equipment for any type of test procedure.

The cathode ray image is reflected from a high grade mirror mounted in the adjustable cover at the top of the cabinet, thus the viewing surface is brought near eye level when the instrument is used on benches of normal height. The mirror angle is quickly and easily adjusted to any position of the operator.

The cover with integral side wings forms an effective shield against external light sources or may be closed down for protection of the tube and mirror when the instrument is not in use.

The upright construction permits location of controls and connections for maximum convenience and allows for internal cathode ray tube connections at the front of the panel instead of the rear.

These and many other advantages will be disclosed when the construction and specifications of the Model 476 Mirroscope are considered fully.



#### SENSITIVITY:

Vertical direct — 12 volts rms per inch.

Vertical amplifier — 20 millivolts rms per inch.

Horizontal direct — 14 volts rms per inch.

Horizontal amplifier — 38 millivolts rms per inch.

Horizontal trace expansion is over 4 times tube diameter. This makes it possible to examine minute portions of a response pattern for finer detail.

Linear Sweep frequency is continuously adjustable in five overlapping ranges from 15 cycles to 60,000 cycles. Internal, external or line frequency synchronization with variable amplitude is available.

Means for intensity or "Z axis" modulation is provided. Approximately 14 volts peak will blank a trace of normal intensity.

The vertical amplifier frequency response is within 3DB from 20 cycles to over 300,000 cycles and is usable to well over four megacycles. Square wave slant and overshoot is held to less than 5 per cent of amplitude. This response will be found adequate for all phases of television receiver service including observation and diagnosis of Sync. signals,

#### INPUT IMPEDANCE:

Vertical direct — 10 megohms, 15 mmf.

Horizontal direct — 10 megohms, 15 mmf.

Vertical amplifier — 300,000 ohms, 30 mmf.

Horizontal amplifier — 500,000 ohms, 15 mmf.

#### TUBE COMPLEMENT:

5UP4	Cathode Ray Tube.				
4—6J6	Horizontal and Vertical Amplifiers.				
1—12AU7	Vertical pre-amplifier.				
1—6J6	Linear Sweep oscillator and Sync. injector.				
2—6X4	High voltage rectifiers.				
LINE VOLTAGE: 105-125 volts, 50-60 cycles.					
SIZE: Height 161/4" Width 91/8" Depth 8" over all					
WEIGHT: 24 lbs.; Shipping weight 30 lbs.					
High Frequ	ency Crystal Probe\$7.50				
	NET PRICE including operators				



## MODEL 488 FIELD STRENGTH METER

The Simpson Model 488 Television Field Strength Meter provides means for the measurement of Television signals in any locality.

Although special consideration was given to fringe area applications in the design of this instrument it will be found of extreme value in all types of installations.

Location of maximum signal areas, antenna orientation, comparison of antenna systems, adjustment of boosters and checking antenna and lead-in installations are only a few of the many functions available.

THE 50 MICROVOLT FULL SCALE RANGE IS AN OUTSTANDING FEATURE FOR THOSE CONCERNED WITH FRINGE AREA INSTALLATIONS WHERE MAXIMUM EFFICIENCY MUST BE ATTAINED. The 500, 5,000 and 50,000 microvolt ranges extends the usefulness of the Model 488 into areas of higher signal strength.

The large 4½ inch modernistic meter is easily read from a considerable distance and all controls and connections arranged for greatest accessibility.

Model 488 is housed in a beautiful gray hammerloid finished case with heavy leather handle for greater portability.



SIZE: 8" x 11" x 8½".

WEIGHT: 11½ lbs. Shipping wt. 15 lbs.

LINE VOLTAGE: 105-125 volts, 50-60 cycle.

DEALER'S NET PRICE, including operating instructions and shoulder strap..\$89.50

## MODEL 381 CAPACITY BRIDGE

Once again Simpson has demonstrated its leadership in the industry by introducing an entirely new, small, compact, easy to use capacity bridge.

The Model 381 embodies a new and revolutionary circuit which enables even the inexperienced to make capacity measurement with ease and assurance.

Simplicity and ease of operation are features of this new instrument. You merely press a button for the desired range, adjust the bridge arm for maximum meter deflection and read the capacity on the scale.

The small size of this tester, together with its wide range of capacity measurement and low price makes the Model 381 the ideal instrument for Radio and Television service dealers, broadcast engineers, electric repair shops, X-ray servicing, industrial maintenance departments or any other service where condensers are tested.

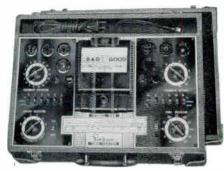
Housed in a beautiful bakelite case with a durable etched aluminum panel and many specially designed parts, the Model 381 Capacity Bridge exemplifies the usual high quality construction found in all Simpson instruments.



Four ranges of capacity are available as follows:						
Range	110 mmfd, to 500 mmfd,					
Range	20005 mfd. to .05 mfd.					
Range	305 mfd. to 5 mfd.					
Range	45 mfd. to 500 mfd.					

SIZE: 3%" x 5½" x 2¾". WEIGHT: 1¾ lbs. Shipping weight: 3 lbs. LINE VOLTAGE: 105-125 volts, 50-60 cycle DEALER'S NET PRICE.....\$22.75

#### STAY ACCURATE



For 100-130 volts, 50-60 cycles. Size: 165½"x12½"x6". Weight: 14 lbs. Shipping Weight: 19 lbs. DEALER'S NET PRICE, complete with Operator's Manual ...

#### MODEL 555 Tube Tester

Here is a tube tester Simpson engineered to test all tubes for today's radio receivers and any that may be developed within the foreseeable future. It is outstanding in its simplicity of operation and its attractive appearance.

Check These Many Features

Basic RMA recommended circuit. Tests any tube regardless of base connections or internal connections of elements.

Simpson designed 3-position lever operated toggle switches with molded rotor carrying silver plated contacts, self-cleaning through wiping action.

Sockets for all receiving tubes on the market.

Provision for future tube developments.

No adapters or special sockets required.

Properly fused, provides for line adjustment from 100 to 130 volts; smooth vernier control.

nier control.

Beautiful modern panel of shining, silver and black anodized enduring aluminum.

Large illuminated meter for easy readings.

Unique jewel-like molded lucite housing encloses Neon bulb indicating shorts and inter-element leakages.

Line adjustment control below dial opening. Easy to operate.

Case of sturdy plywood with heavy fabricoid covering, slip hinges.

Simpson Patented "No Backlash" Roll Chart.



For 105.125 volts, 50-60 cycle. Size: 16"x12½"x6¾". Weight: 17½ lbs. Shipping Weight: 27 lbs.

DEALER'S NET PRICE, complete with Operator's Manual ......\$108.50

Tan and brown panel with brown leatherette

#### **MODEL 335** Plate Conductance Tube Tester

#### With Simpson Patented "No Backlash" Roll Chart

Model 335 tests tubes under conditions simulating actual use in a radio set. The dial indicates percentage of rated plate conductance. With a minimum of settings a reading is quickly obtained which is a percentage of the tube's rated value.

Regardless of tube load, filament voltages are automatically maintained with minimum variation.

Each tube element is individually connected to the proper potential. Reliable short test is provided and Diodes are tested on low voltage. When you have finished a tube test, the Simpson one button automatic reset returns all switches to the normal position.

Tests all receiving tubes, including 9 pin miniatures, and sub-miniatures as used in hearing-aids, etc. Space is provided for new sockets.

#### MODEL 445

#### Tube and Set Tester with the famous Simpson "No Backlash" Roll Chart

Model 445 combines a 20,000 ohms per volt Set Tester and a Plate Conductance Tube Tester. The tube tester dial indicates percentage of rated plate conductance which can also be considered as a percentage of mutual conductance since, in most cases, the amplification factor remains constant. Tests the new 9-pin miniature tubes and sub-miniature tubes.

The volt-ohm-milliammeter set tester provides the ranges that have made the Simpson Model 260 the most famous set tester in the world,

**RANGES** Volts (20,000 ohms per volt D.C., 1000 ohms per volt A.C.): 0-2.5, 10, 50, 250, 1000, 5000.

Miliamperes (D.C.): 0-10, 100, 500, Microamperes (D.C.): 0-100.

Output (A.C.) volts: 2.5, 10, 50, 250, 1000.

Ohms: 0-2000 (12 ohms center) 0-200,000 (120 ohms center) 0-20 megohms (120,000 ohms center) center).

center).

Size: 16"x12½"x6¾". Weight: 20 lbs. Shipping Weight: 26 lbs. DEALER'S NET PRICE, complete with Test Leads and Operator's Manual \$137.50 Tan and brown panel with brown leatherette case.



The exclusive "No-Backlash" feature automatically takes up the slack in the paper chart and, by keeping the chart in constant tension, makes it impossible to turn the selector wheel without moving the chart. This results in precision selection at all times. The "No-Backlash" feature also prevents the paper chart from tearing, insures proper alignment, and presents at all times a neat, flat surface.

The selector wheel gear ratio makes it possible for tube selections to be obtained with a minimum of effort.

The entire Roll Chart mechanism is securely fastened to the instrument panel. Quick access to the roll chart can be obtained by removing four panel screws, so that the addition of tube data or the mounting of a new chart is a matter of a few minutes.

In addition to the neat, flat reading surface made possible by the "No-Backlash" feature, the lucite window was designed so that only two settings appear, which is especially convenient for the settings of multi-purpose tubes.



#### **MODEL 340 SIGNAL GENERATOR**

75 Kilocycles to 120 Megacycles—fundamentals to 30 Megacycles. From its lustrous black anodized panel to the big nine-inch dial and knife edge pointer that mean easy readability, the Model 340 is an instrument packed with Simpson engineering refinements for greatest utility and long-lasting accuracy.

An electron coupled circuit, using three tubes-full wave rectifier, modulator, and oscillator - and standard 30% modulation at 400 cycles, assures extreme stability and output uniformity. Close settings are permitted by a smooth vernier control.

RF coils provide range of 75-220; 200-600; 550-1700 KC; and 1.5-4.5, 4.2-14; 9-30; 36-120 megacycles. Fundamentals range to 30 MC, and the dial is direct reading to 120 MC.

Shielding in the Model 340 is complete; coils, attenuator, and signal selector being individually shielded. The oscillator and modulator are sealed in a rigidly welded, entirely closed chassis. In addition, the line cord is shielded, thus reducing leakage to a negligible point.

The signal output is controlled through a step attenuator and non-inductive potentiometer, providing smooth and complete control of the signal output. A special jack is provided in the Model 340 to obtain high output on the 120 MC band.



For 105-130 volts, 50-60 cycles.
Size: 16"x10"x6". Weight: 151/4 lbs.
Shipping Weight: 20 lbs.
DEALER'S NET PRICE, complete with Operator's Manual

\$84.50



Twenty-five separate meters at the turn of a switch. That is what you get in the new Simpson Model 221 Roto Ranger. The necessity of reading numerous scales, so common in ordinary volt-ohm-milliammeters, is forever eliminated when you own a Roto Ranger. The chances for errors in making readings are reduced to a minimum. The Model 221 provides a separate direct reading scale for each range and does it automatically. Calibrations are not cramped. Each scale is full size, the same as it would be for a separate instrument. As the selector switch on the panel is moved to the range desired, an ingenious mechanism rotates the proper range into position behind the meter window.

#### MODEL 221

#### ROTO RANGER

#### (High Sensitivity AC-DC Volt-Ohm-Milliammeter) RANGES

20,000 ohms per volt DC, 1000 ohms per volt AC. Volts, AC: 2.5, 10, 50, 250, 1000, 5000.

Volts, DC: 2.5, 10, 50, 300, 1000, 5000.

Milliamperes, DC: 10, 100, 500. Microamperes, DC: 100.

Amperes, DC: 10.

Output: 2.5, 10, 50, 250, 1000.

Ohms: 0-2000 (12 ohms center), 0-200,000 (1200 ohms

center). 0-20 megohms (120,000 ohms center).

Size:  $12\frac{3}{4}$ " x  $10\frac{1}{8}$ " x  $5\frac{3}{8}$ ".

Weight: 9 lbs. Shipping Weight: 13 lbs.

DEALER'S NET PRICE, complete with Test \$69.85

Leads and Operator's Manual

#### HIGH VOLTAGE PROBE AVAILABLE FOR TELEVISION SERVICING

30,000 V. DC - 20,000 ohms per volt. Weight: 6 oz. Shipping Weight: 8 oz.

DEALER'S NET PRICE, complete with Instructions ......\$9.95



#### INSTRUMENTS THAT STAY ACCURATE

#### LEATHER AND LEATHERETTE CARRYING CASES









1-114299

1-113413 Leatherette Covered Carrying Case for 391-392 ..........Dealer's Net 5.50
1-113644 Leatherette Covered Carrying Case for Model 380........Dealer's Net 8.00

1-114236---Closed

## HIGH VOLTAGE TV PROBE

1-114236-Open

Here are Simpson's four High Voltage Test Probes for Television servicing, each designed for use with the models listed here. They are molded of high temperature polystyrene to provide high dielectric strength and maximum insulation. Their small diameter permits reaching in small spaces and narrow openings.

Size diameter 9/16", Length 111/2", Weight 6 oz. Shipping Weight 2 lbs.

#### DEALER'S NET PRICES

High Voltage Probe for 260 (25000 V) Complete, nothing to add	9.95
High Voltage Probe for 221 (30000 V) Complete, nothing to add	9.95
High Voltage Probe for 303 (30000 V) Complete, nothing to add	9.95
High Voltage Probe for 266 (25000 V) Complete, nothing to add	11.35

#### **TEST LEADS**





With Test Prods or Alligator Clips as shown. Colored red and black for easy identification. Length 48". Rubber insulated. Dealer's net prices.

0-008380	With Test Prods and Elbow Terminals\$1.	25
0-008379	With Test Prods and Spade Terminals 1.	25
0-008377	With Alligator Clips and Elbow Terminals	25
0-008376	With Alligator Clips and Spade Terminals	25

#### ACCURATE STAY

#### MODELS 240 and 230 VOLT-OHM-MILLIAMMETERS



These two "Micro-Tester" portables are famous throughout the world for their ruggedness and built-in accuracy. They exemplify the construction features and utility that distinguish the entire Simpson line shown in this section.

Both are shock-proof and incorporate the celebrated Simpson movement with its FULL BRIDGE-TYPE CONSTRUCTION AND SOFT IRON POLE PIECES. Resistors are in matched pairs to provide the

greatest possible accuracy for all ranges.

Model 240 — the "Hammeter" — was designed for the additional voltage and sensitivity demanded in radio testing. With its maximum voltage range of 3000 AC or DC, it was the first self-contained pocket portable instrument built expressly to check high voltage and all the component parts of transmitters and receivers.

Model 230, with a maximum voltage of 1000 volts AC or DC, is ideal for most industrial testing. Its ranges are adequate for most line voltages, for telephone, teletype,

and general purpose testing.

Both models are housed in heavily molded bakelite cases, with all numbers and symbols recessed in the panel and filled with white enamel for greatest legibility and ease of reading. Both have full size 3' meters.



#### MODEL 240

AC Volts: 0-15, 150, 750, 3000 (1000 ohms per volt)
DC Volts: 0-15, 75, 300, 750, 3000 (1000 ohms per volt)
DC Milliamperes: 0-15 150, 750
Ohms: 0-3000 (center scale 300)
0-3000 (center scale 3000)
Accuracy: DC 3% — AC 5%
Size: 3"x57/k"x21/2". Weight: 11/4 lbs. Shipping Weight: 3 lbs.
DEALER'S NET PRICE, complete with Leads and
Printed Instructors

Printed Instructions

#### MODEL 230

AC Volts: 0-10, 250, 1000 (400 ohms per volt)
DC Volts: 0-10, 50, 250, 1000 (1000 ohms per volt)
DC Milliamperes: 0-10, 50, 250
Ohms: 0-1000, 0-100,000
Accuracy: DC 3% — AC 5%
Size: 3"x5/8"x21/2". Weight: 11/4 lbs. Shipping Weight: 3 lbs.

DEALER'S NET PRICE, complete with Leads and Printed Instructions

#### MODEL 380 WAVEMETER MODULATION INDICATOR

The ideal instrument for the Ham.

- 1. An accurate band-spread wavemeter. and a sensitive 0-100 microammeter as a resonance indicator.
- Separate plug-in coils for 10, 20, 40 and 80 meter bands supplied coils for other bands available at slight extra cost.
- 3. Additional between-band coverage available at the flip of a switch.
- Push button switch for dual meter sensitivity.
- Provision for headphones for use in station monitoring and quality control.
- A direct-reading Percentage Modula-tion Indicator with the instrument calibrated at 0-110% Modulation.
- 7. Designed to function on the 144, 235, and 420 megacycle bands without coils, but with a quarter wave antenna section.
- Used as a field strength indicator to determine radiation pattern.



#### **MODEL 351 TV ANTENNA COMPASS**

Model 351 takes the physical form of a ruggedly built pocket-size meter which connects by a simple insulation-piercing alligator clip to the video input of the cathode ray tube in the television receiver. One man can do a better installation job in less time than it used to take two men.

By an extension cord, it is carried to the antenna site. With a test pattern tuned in on the area's weakest station, the antenna is simply located and rotated for maximum deflection of the TV Antenna Compass.

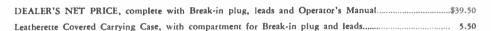


#### INSTRUMENTS THAT STAY ACCURATE

#### **MODEL 390 VOLT-AMP-WATTMETER**

Ruggedly constructed for full load, continuous operation, the Simpson Model 390 is the first tester of its size ever made to give you volt, ampere and wattage readings in one compact instrument. It embraces two ranges each of voltage and current, providing four wattage ranges which cover practically all types and makes of appliances. The panel has volt-ampere combinations clearly indexed to the proper wattage range on the scale, which makes the instrument easy to use. All readings are shown on one meter. In normal position, the meter indicates volts. Ampere and watt readings are obtained by depressing button on the panel. The widely separated binding posts make it possible for the Model 390 to be used as an individual voltmeter or as an ammeter. The Model 390 has a molded bakelite case with all figures recessed in the panel, which are filled with white enamel for better legibility.

Size: 3"x57/8"x21/2". Weight: 11/2 lbs. Shipping Weight: 4 lbs.





**RANGES** 

AC Current, 60 cycles Volts: 0-150, 0-300 Amperes: 0-3, 0-15 Watts: 0-300, 0-600, 0-1500, 0-3000

## MODELS 391 and 392 AC-DC VOLT-WATTMETERS

Designed for simultaneous reading of volts and watts, each of these handy little testers has two separate 3" square meters, one for volts and one for watts. Each has a built-in cord and plug for connection to the line outlet, and a receptacle for connecting the appliance under test. The ranges for each meter are selected by separate toggle switches recessed in the molded bakelite case. The low power consumption combined with the high efficiency of these instruments results in negligible loss and error in reading.

#### Model 391 (3000 watts max.)

Ranges: AC or DC

#### Model 392 (5000 watts max.)

Ranges: AC or DC
Volts: 0-130, 0-260
Watts: 0-1000, 0-5000
Size: 3"x57/6"x21/2". Weight: 11/2 lbs.
Shipping Weight: 4 lbs.
DEALER'S NET PRICE, with Operating Instructions \$35,00
Leatherette carrying case \$5.50



#### MODEL 385 TEMPERATURE INDICATOR

This is the newest addition to the Simpson Appliance Tester line. You will find this a compact instrument which is ideal for measuring temperatures from  $+70^{\circ}$  F to as low as  $-50^{\circ}$  F, where fast accurate temperature readings are important. The scale is designed so that the center portion is expanded, making the most widely used temperatures easy to read. The Model 385 is ideal for use in the refrigeration service field and wherever temperature readings are important, such as deep freeze units, home refrigerators, walk-in coolers and air conditioning units. The temperature readings can be taken at the end of the 15' lead which is supplied with the unit. The lead cord is small in diameter, making it possible to close the door of the equipment, thus obtaining temperature indications under actual conditions.

The probe can also be immersed in liquids where critical temperatures must be maintained.



STAY ACCURATE

#### **MODEL 370 AC AMMETER**

(With self-contained current transformer) (For use on 60 cycles)

In the Model 370, a current transformer and indicating instrument have been combined in one small case to meet the consistent demand for a small multiple range AC ammeter, at a price that you can afford. Its many uses include the measurement of current drawn by all types of electric appliances and motors, heating elements, lamps, radio sets, etc.

Size: 3"x57/s"x21/y". Weight 1½ lbs. Shipping Weight: 3 lbs.
DEALER'S NET PRICE.

S19.95
Test Leads with Prods.

\$1.25 extra
Test Leads with Alligator Clips and Insulated Sleeves.

1.25 extra

#### **RANGES**

0-1, 0-2.5, 0-5, 0-10, 0-25 Amps.



#### **MODEL 371 AC VOLTMETER**

This instrument is a "must" for the industrial service kit or the lineman. Designed primarily for testing line voltages applied to motors, heating equipment or other industrial installations, the ranges are such that many additional applications will suggest themselves.

Size: 3"x57/8"x21/2". Weight: 11/4 lbs. Shipping Weight: 3 lbs. DEALER'S NET PRICE.... 

#### **RANGES**

0-150, 0-300, 0-600 volts



#### **MODEL 372 OHMMETER**

A complete instrument with self-contained batteries. Has a wide range from .2 ohms to 50 megohms. "Ohms" adjuster compensates for variations in battery voltages. Wire wound and matched metallized resistors are used throughout. The basic movement has a sensitivity of 85 microamperes.

Size: 3"x57/8"x21/2". Weight: 11/2 lbs. Shipping Weight: 3 lbs. DEALER'S NET PRICE, complete with Test Leads.....\$25.50

#### **RANGES**

- 0-500 ohms (5 ohms center)
- 0-5000 ohms (50 ohms center)
- 0-50,000 (500 ohms center)
- 0-500,000 (5000 ohms center) 0-5 Meg. (50,000 ohms
- center)
- 0-50 Meg. (500,000 ohms center)



#### MODEL 373 DC MILLIAMMETER

The Model 373 provides for DC current measurements from .02 to 1000 MA. This tester is ideal for radio servicing and experimental work; checking burglar alarm circuits, railroad signal systems, telephone work, etc.

Size: 3"x57/8"x21/2". Weight 11/4 lbs. Shipping Weight: 3 lbs. DEALER'S NET PRICE......\$19.95 Test Leads with Prods ..... .....\$1.25 extra 

#### **RANGES**

0-1, 5, 10, 25, 50, 100, 250, 0-1000 MA.



#### MODEL 374 DC MICROAMMETER

Incorporates a basic movement of 50 microamperes sensitivity with self-contained shunts for all other ranges. This tester can be used with external resistors or multipliers as a high sensitivity voltmeter at 20,000 

Test Leads with Prods.....
Test Leads with Alligator Clips and Insulated Sleeves...... ......\$1.25 extra

#### **RANGES**

0-50, 100, 250, 500, 1000 Microamperes



#### INSTRUMENTS THAT STAY ACCURATE

#### **MODEL 375 DC AMMETER**

(Self-Contained)

A new multi-range instrument which is extremely useful in testing the current in DC circuits. Provides a complete range from a fraction of an ampere to 25 amperes without the necessity of using auxiliary external shunts. Excellent for checking auto radios and experimental work in DC circuits.

Size: 3"x57/a"x21/2", Weight: 11/2 lbs. Shipping Weight: 3 lbs.

	/ A5/8 A=/2 • 11 0-8111 - /2 11 0
DEALER'S NET	PRICE\$19.95
Test Leads with	Prods\$1.25 extra
Test Leads with	Alligator Clips and Insulated Sleeves 1.25 extra

#### **RANGES**

0-1, 2.5, 5, 10, 25 Amperes



#### **MODEL 376 AC VOLTMETER**

(Rectifier Type 1000 ohms per volt)

An AC Voltmeter, especially useful in circuits where a limited amount of current is present. Makes an excellent output meter when used with proper condenser. The wide variety of ranges covers both primary and secondary voltage ranges of transformers used in radio sets, toys and appliances.

#### **RANGES**

0-5, 10, 25, 50, 100, 250, 500, 1000 AC Volts



#### **MODEL 377 DC VOLTMETER**

(Resistance 1000 ohms per volt)

Measures all dry battery voltage, both A and B, for radio sets, also grid and plate voltage and filament voltage in battery-operated sets. High ranges may be used for checking DC line voltage.

Size: 3"x5\%"x2\\2". Weight: 1\\2 lbs. Shipping Weight: 3 lbs.

DEALER'S NET	PRICE	\$19.95
Test Leads with	Prods\$	1.25 extra
Test Leads with	Alligator Clips and Insulated Sleeves	1.25 extra

#### **RANGES**

0-1, 2.5, 5, 10, 25, 50, 100, 250, 500, 1000 DC Volts



#### **MODEL 378 AC MILLIAMMETER**

(With self-contained current transformer)

Here is the instrument that answers your need for a low cost, handy size milliammeter that combines a current transformer and an indicating instrument in one case. It offers five separate ranges, making it suitable for a wide variety of testing jobs.

Size: 3"x57,8"x21/2". Weight: 11/2 lbs. Shipping Weight: 3 lbs.

DEALER'S NET	PRICE	·	***************************************	\$22.60
Test Leads with	Prods			\$1.25 extra
Test Leads with	Alligator Clips:	and Insulated S	leeves	1.25 extra

#### **RANGES**

0-5, 25, 100, 250, 1000 MA.



#### **MODEL 379 BATTERY TESTER**

Designed in accordance with the engineering specifications of leading battery manufacturers, this compact instrument is so ruggedly built that it will stand a lifetime of hard usage. The loading resistors have an accuracy of 1% and properly load all radio and hearing aid A and B batteries.

A single rotary switch selects the voltage of the battery under test and brings into line the correct loading resistor. The full 3" dial has three separate arcs, one for all radio A batteries, one for hearing aid A batteries, and one for all B batteries.

A percentage scale shows the exact condition of the battery in percentage of full voltage. The voltage reading can be quickly obtained by multiplying the percentage reading by the selector-switch voltage setting.

Size: 3"x57/g"x21/2". Weight 11/4 lbs. Shipping Wt. 3 lbs.

DEALER'S NET PRICE, including Test Leads and Operator's Manual......\$23.70





**MODELS** 125, 135, 145, 155 2½" ROUND CASE—OPEN FACE STYLE. Flange diameter, 2½"; depth overall, 25/16"; body diameter, 211/64"; scale length., 1½". Bakelite case.



**MODELS** 127, 137, 147, 157
21/2" RECTANGULAR CASE. Width
21/2"; height, 21/2". Mounts in round
hole. Body diameter, 2 3/16". Scale
length 17/2". Bakelite case.



MODEL 27-37-57 ILLUMINATED 3½" RECTANGULAR CASE. Width 3"; height 3½". Mounts in round hole. Body diameter 2½". Scale length 1 5/16". Bakelite case.

The 2½" and 3½" rectangular instruments indicated (\*) are also carried in stock with lucite illuminated dials. Supplied complete with socket and 6 volt bulb for an additional cost of \$1.50 dealer's net. R.F. ammeters lucite illuminated must be supplied with external thermocouple. Add \$4.95 for couple. All instruments are calibrated for use on non-magnetic panels.

#### **VOLTMETERS**

MODEL→	125-127	25-27	29	155-157	55-57	59
RANGE		D. C.			A. C.	
0-1.5			• • • •	\$ 7.95	\$ 8.85	\$ 9.75
0-3	\$ 7.95	\$ 8.85	\$ 9.75	7.95	8.85	9.75
0-5	7.95	8.85	9.75	7.95	8.85	9.75
0-8	7.95	8.85	9.75			
0-10	7.95*	8.85*	9.75	7.95*	8.85*	9.75
0-15	7.95	8.85	9.75	7.95*	8.85*	9.75
0-25	7.95	8.85	9.75	7.95	8.85	9.75
0-50	7.95*	8.85*	9.75	7.95	8.85	9.75
0-100	7.95	8.85	9.75	7.95	8.85	9.75
0-150	7.95*	8.85*	9.75	8.85*	9.60*	10.50
0-200	7.95	8.85	9.75			
0-250	7.95	8.85	9.75	8.85	9.60	10.50
0-300	7.95*	8.85*	9.75	8.85*	9.60*	10.50
0-500	7.95	8.85*	9.75	12.75	13.50	14.40
0-750	7.95	8.85	9.75	12.75	13.50	14.40
0-1000	11.85	12.75*	13.65	12.75	13.50	14.40
0-1500	11.85	12.75	13.65			
0-2000	11.85	12.75*	13.65		****	
0-2500	11.85	12.75	13.65			
0-3000	11.85	12.75*	13.65			
0-4000	11.85	12.75*	13.65		****	
0-5000	11.85	12.75*	13.65			
xternal resistors	are furnished on A.	C. meters having a r	ange of 500 volts o	r higher. D.C. 1000	volts or higher.	

#### **MILLIAMMETERS**

MODEL→	125-127	25-27	29	155-157	55-57	59
RANGE		D. C.	_	11	A. C.	
0-1	\$7.65*	\$8.70*	\$9.75			1
0-1.5	7.65	8.70	9.75			
0-3	7.65	8.70	9.75			
0-5	7.65	8.70	9.75			
0-10	7.65*	8.70*	9.75	\$7.50	\$8.10	\$9.90
0-15	7.65*	8.70*	9.75	7.50	8.10	9.90
0-20	7.65	8.70	9.75			
0-25	7.65*	8.70*	9.75	7.50	8.10	9.90
0-50	7.65*	8.70*	9.75	7.50	8.10	9.90
0-75	7.65	8.70	9.75			
0-100	7.65*	8.70*	9.75	7.50	8.10	9.90
0-150	7.65	8.70*	9.75			
0-200	7.65*	8.70*	9.75			
0-250	7.65	8.70	9.75	7.50	8.10	9.90
0-300	7.65*	8.70*	9.75	,,,,	****	
0-500	7.65*	8.70*	9.75	7.50	8.10	9.90
0-750	7.65	8.70	9.75	,,,,		
0-1000	7.65	8.70	9.75			

#### **MICROAMMETERS**

		T	
MODEL→	125-127	25-27	29
RANGE		D. C.	
0-25	\$13.65	\$14.85	\$17.10
0-50	10.80	11.85	13.05
0-100	10.20	11.25	12.60
0-200	8.55	9.60	10.95
0-500	7.95	9.15	10.35

#### **MILLIVOLTMETERS**

MODEL→	125-127	25-27	29
RANGE		D. C.	
0-50	\$7.65	\$8.70	\$9.75
0-100	7.65	8.70	9.75



MODELS 25, 35, 45, 55 3½" ROUND CASE—OPEN FACE STYLE. Flange diameter, 3½"; depth overall, 2½"; body diameter, 2½"; scale length, 2 9/16". Bakelite case.



MODELS 27, 37, 47, 57
3½" RECTANGULAR CASE. Width,
3"; height, 3½". Mounts in round
hole. Body diameter, 2¾". Scale length
2 9/16". Bakelite case.



MODELS 29, 39, 49, 59 4½" RECTANGULAR CASE. Width 421/32"; height, 413/64". Mounts in round hole. Body diameter 2¾". Scale length 3 29/32". Bakelite case.

#### AMMETERS

MODEL→	125-127	25-27	29	155-157	55-57	59
RANGE		D. C.		11	A. C.	
0-1	\$7.65	\$8.70	\$9.75	\$7.50	\$8.10	\$ 9.90
0-1.5	7.65	8.70	9.75	7.50	8.10	9.90
0-2	7.65	8.70	9.75	7.50	8.10	9.90
0-3	7.65	8.70	9.75	7.50	8.10	9.90
0-5	7.65	8.70	9.75	7.50	8.10	9.90
0-10	7.65	8.70	9.75	7.50	8.10	9.90
0-15	7.65	8.70	9.75	7.50	8.10	9.90
0-25	7.65	8.70	9.75	7.80	8.40	10.50
0-50	7.65	8.70	9.75		9.30	12.60
15-0-15	7.65	8.70	9.75			
30-0-30	7.65	8.70	9.75			
50-0-50	7.65	8.70	9.75			

AC-DC ammeters are self-contained for ranges up to and including 50 amperes. Higher range DC ammeters can be supplied with external shunts and include 6 foot leads. Higher range AC ammeters can be supplied with external current transformers and include 2 foot leads.

#### WATTMETERS-DYNAMOMETER TYPE

RANGE	MAX.	MAX.	MODEL	MODEL	MODEL	RANGE	MAX.	MAX.	MODEL	MODEL	MODEL
WATTS	VOLTS	AMPS.	175-177	75-77	79	WATTS	VOLTS	AMPS.	175-177	75-77	79
0-75	150	.75	\$18.60	\$19.80	\$25.80	0-600	300	3.0	\$20.70	\$21.75	\$27.75
0-150	150	1.5	18.60	19.80	25.80	0-1500	300	7.5	20.70	21.75	27.75
0-300	150	3.0	18.60	19.80	25.80	0-3000	300	15.0	20.70	21.75	27.75
0-750	150	7.5	18.60	19.80	25.80	- 11					

#### A. C. VOLTMETERS-RECTIFIER TYPE

A. C.	V O E I ME I ENS	-KECIII IEK	
RANGE	MODEL→ APPROX. RESISTANCE	45-47	49
0-1		\$12.75	\$13.65
0-3		12.75	13.65
0-5		12.75	13.65
0-10	1000	12.75	13.65
0-15	ohms	12.75	13.65
0-50	per volt	12.75	13.65
0-100	1 1	12.75	13.65
0-150		12.75	13.65
0-300		12.75	13.65
0-1		13.05	14.25
0-3		13.05	14.25
0-5		13.05	14.25
0-10	2000	13.05	14.25
0-15	ohms	13.05	14.25
0-50	per volt	13.05	14.25
0-100		13.05	14.25
0-150		13.05	14.25
0-300		13.05	14.25

#### MILLIAMMETERS

0-1	600 ohms	\$12.60	\$13.65
0-2	400	12.60	13.65
0-5	200	12.60	13.65

#### MICROAMMETERS

0-100	3400 ohms	\$15.15	\$16.50
0-200	2400	13.50	14.85
0-300	1800	13.35	14.55
0-500	1200	13.05	

#### D. C. GALVANOMETERS

1		SENSITIVITY					
	SCALE	MICRO- AMPERES	RESIST.	125-127	25-27		
١	50-0-50	500-0-500	46 ohms	\$7.65	\$ 8.70		
ı	50-0-50	75-0-75	2000	9.45	10.50		

#### R. F. AMMETERS INTERNAL THERMOCOUPLE

MODEL→ RANGE	135-137	35-37	39
0-1	\$9.30*	\$10.50*	\$12.75
0-1.5	9.30	10.50	12.75
0-2	9.30*	10.50*	12.75
0-2.5	9.30	10.50	12.75
0-3	9.30*	10.50*	12.75
0-5	9.30*	10.50*	12.75
0-8	9.30	10.50	12.75
0-10	9.30	10.50	12.75

#### RF MILLIAMMETERS

†0-115		\$21.45	
0-150		12.60	\$14.55
0-250		12.60	14.55
0-500		12.60	14.55
†0-100 linear	scale—50 divisio	ns.	

### VOLUME LEVEL INDICATORS—DECIBEL METERS ZERO POWER LEVEL—6 MW. 500 OHM LINE

MODEL→ RANGE	145-147	45-47	49
GENERAL PURPOSE TYPE -10 to +6 db 5000 ohms	\$11.25	\$12.30	¢13.05
HIGH SPEED TYPE			
-10 to +6 db 5000 ohms LOW SPEED TYPE			14.85
-10  to  +6  db  5000  ohms		13.20	14.85

### VOLUME LEVEL INDICATORS—VU METERS REFERENCE LEVEL—1 MW. 600 OHM LINE

Not illuminated A or B Scale—3900 ohms Illuminated A or B Scale—		\$15.90	\$16.80
3900 ohms			19.50
Model	142-4	Rectangu	lar A

## \* Simpson

#### INSTRUMENTS THAT STAY ACCURATE







Model 880

## MODEL 880 DYNAMOMETER INSTRUMENTS — A.C. — D.C. ACCURACY ½ OF 1%

These Simpson Precision Portable Instruments are offered in a wide selection of ranges, to meet practically every demand for general purpose testing. They provide a high degree of accuracy plus the stamina to maintain that accuracy. Large 4½-inch hand drawn scales, mirrored, with knife edge pointers. Cases are of heavily molded bakelite, with leather carrying handles.

		SINGLE PHASE	WATTMETERS						
AMPERES WATTS									
MAX. VOLTS	NORMAL	MAXIMUM	LOW RANGE	HIGH RANGE	PRICE				
150-300	1	1.5	100	200	\$60.45				
150-300	2	3.0	200	400	60.45				
150-300	5	7.5	500	1000	60.45				
150-300	10	15.	1000	2000	60.45				
150-300	20	30.	2000	4000	66.00				
150-300	50	75.	5000	10000	66.00				
		DOUBLE CURP	RENT RANGES						
150-300	2.5- 5	3.75- 7.5	250-500	0-1000	\$76.95				
150-300	5-10	7.5 -15.	500-100	00-2000	76.95				
		VOLTA	AETERS						
0-150		\$60.45	0-75-150-300 (Tri	iple Range)riple Range)	\$76,95				
0-150-300 (Double R	lange)	71.55	0-150-300-600 (T	riple Range)	76,95				
		AMM	ETERS						
	0-1-2 ( <b>I</b>	Oouble Range)		\$66.00					

## MODEL 9 AND 10 SERIES

These Models are supplied in the same heavy molded bakelite cases used for Model 880 with a large 4½" hand drawn scale, mirrored, and knife edge pointer.

#### MODEL 9 — D'ARSONVAL MOVEMENT (ACCURACY ½ OF 1%) MODEL 10 — IRON VANE MOVEMENT (ACCURACY 1%)

Range	MODEL 9 (DC)	MODEL 10 (AC)	Range		MODEL 10 (AC)	Range	MODEL 9 (DC)	Range	MODEL 9 (DC)
Volts			M:01:			Double Range		Triple Range	
50	\$49.50	\$43.95	Milliampere	5		Milliamperes			
100	49.50	43.95	1	\$57.15	*******			Amperes	
150	49.50	43.95	50	49.50	\$43.95	10-100	\$55.00	2.5-10-25	\$60.45
300	55.00	49.50	100	49.50	43.95	25-250	55.00	10-25-50	60,45
Double Ran	age		500	49.50	43.95	100-500	55.00		
Volts	0 -		1 /**	.,,,,	,,	1			
15-150	55.00					Double Range		Microamperes	
150-300	60.45	55.00	Amperes			Amperes		50	\$71.55
300-750	66.00	60.45	5	49.50	43.95	2,5-5	55.00	100	67.00
Triple Rang			15	49.50	43.95	5-10	55.00	200	64.95
Volts	50		30	49.50	43.95	3-10	)).00	200	04.77
15-150-300	63,75		50	49.50	43.95	1			
150-300-600		60.45	100	49.50	マン・ブン	I			
1700700000	, 00.00	00.40	100	47.00	******				

All portable instruments above can be furnished in the Simpson Roll Top Safety Case at an additional price of \$8.00