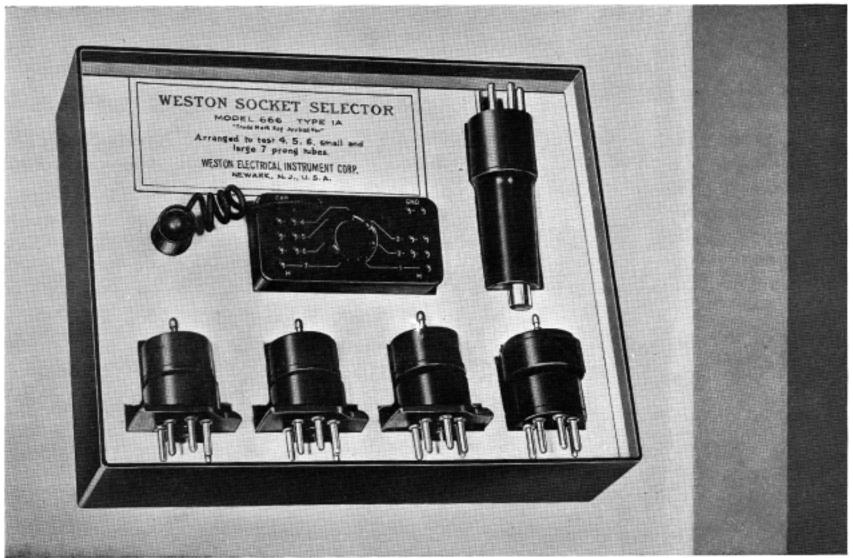
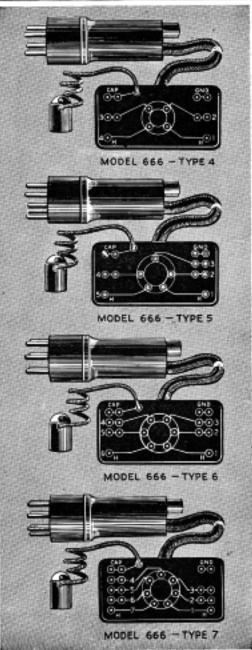
# WESTON Instruments Radio

CIRCULAR RC APRIL 1934

Since preparing this bulletin for the press the economic conditions have altered to such an extent that the prices appearing herein must not be construed as binding and hence are subject to modification. Rather than delay the issuance of the bulletin it is submitted with the reservation indicated. All prices are F.O.B. Newark, N.J.

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# MODEL 666 SOCKET SELECTORS For Use with Weston Selective Analyzers and for Modernizing Older Type Set Testers

The separation of the tube socket, cord and tester plug from the analyzer proper, as embodied in the Selective Analyzers described on pages 4 and 5, provides a very complete and flexible method of testing and practically eliminates obsolescence of the test equipment. These Selective Analyzers do not require replacement or extensive alterations each time a new tube is announced. To bring them up-to-date it is only necessary to procure a low cost adapter or socket selector to accommodate the new type tube base.

These Socket Selectors also provide a most practical and inexpensive means for modernizing any of the older analyzers not equipped to handle 6 and 7 prong tubes. Their use does not affect the original operation of the analyzer.

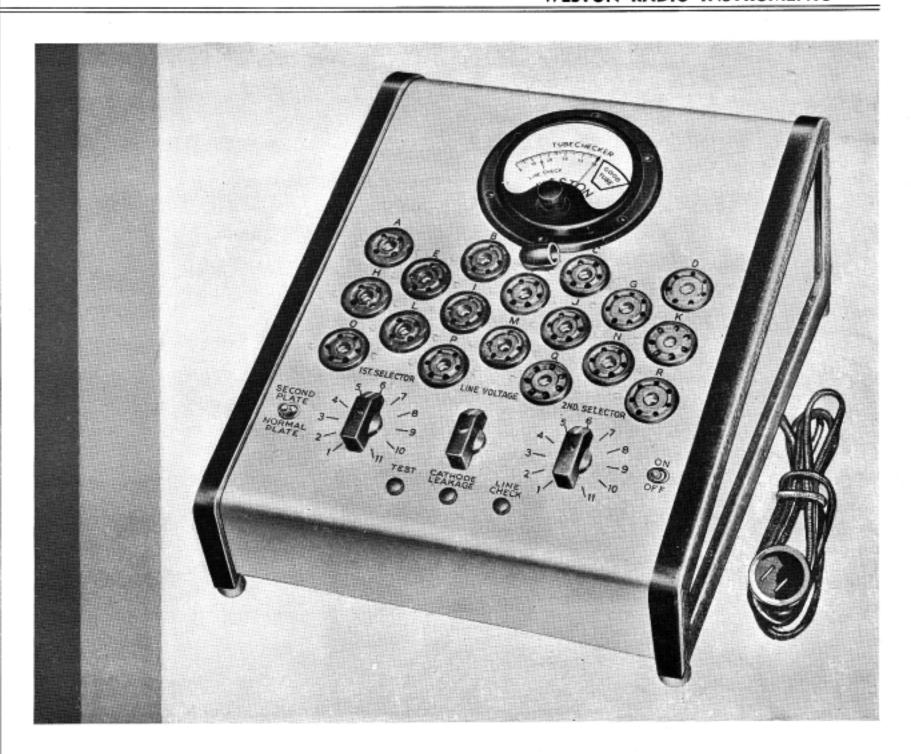
A Socket Selector consists of a tester plug with a 4 foot cable wired to a tube socket in the selector block. The socket terminals are connected as shown by white tracer lines to pin jacks on either end of the block; jacks are also provided for the cap and ground lead connection. All jacks are in duplicate except for the filament circuit. In the Model 666 Types 4, 5, 6 and 7, a separate socket selector is provided for each of the 4, 5, 6 and 7 prong tubes as shown at the left, while the Model 666 Type 1A, as shown above, has a 7 prong selector only, with differently colored adapters for 4, 5 and 6 prong tubes.

The Selector block mounts mechanically on the Analyzer by means of two pin terminals on its under side. With the tester plug inserted in the radio set socket and the tube in the Selector Socket, tube circuit conditions (voltage, current, resistance) can be checked by plugging in the pin tipped jumper cables from the jacks on the selector block to the Analyzer jacks or binding posts.

To facilitate rapid operation the pin jacks are marked with the new RMA tube base numbering system and a comprehensive tube base chart is furnished.

#### LIST PRICES (DEALER DISCOUNT 25%)

LIST PRICES (DEALER DISCOUNT 25%)							
Model 666, Type 1-A (for 4, 5, 6, small and large 7 prong tubes)	\$15.00						
Model 666, Type 4, (for 4 prong tubes)	5.00						
Model 666, Type 5, (for 5 prong tubes)	5.25						
Model 666, Type 6, (for 6 prong tubes)	5.50						
Model 666, Type 7, (for small and large 7 prong tubes)	8.00						
Jumper Cables, No. D-71785-6, per pair	.75						
Ground Lead, No. D-71787, each	.50						
Output Meter Lead, No. D-73063, each							
Test Leads, elbow terminals D-70033-4, per pair	1.25						



## WESTON MODEL 674 COUNTER TUBECHECKER

This tubechecker fosters customer confidence because of its attractive appearance and its direct indication of tube worth in terms all understand. Good tubes are indicated by the instrument pointer moving into the area marked, GOOD TUBE.

All present 4, 5, 6, large 7 and small 7 prong receiving tubes are checked in thirteen of its eighteen sockets, the five spares are available for new tubes as developedthus obsolescence is reduced to a minimum. The second plate of double diode, duplex class B and full wave rectifier tubes are checked independently by throwing a toggle switch. It tests for cathode leakage between cathode and heater—leaks up to 1 megohm can be detected.

Model 674 is simple and direct in its operation. For example, to test a 45 tube proceed as follows: the instruction card states that the 1st SELECTOR be set at 3, the 2nd SELECTOR at 10, the tube be inserted in socket H and the pointer be reset to 25. For a good tube the pointer will move into the GOOD TUBE area.

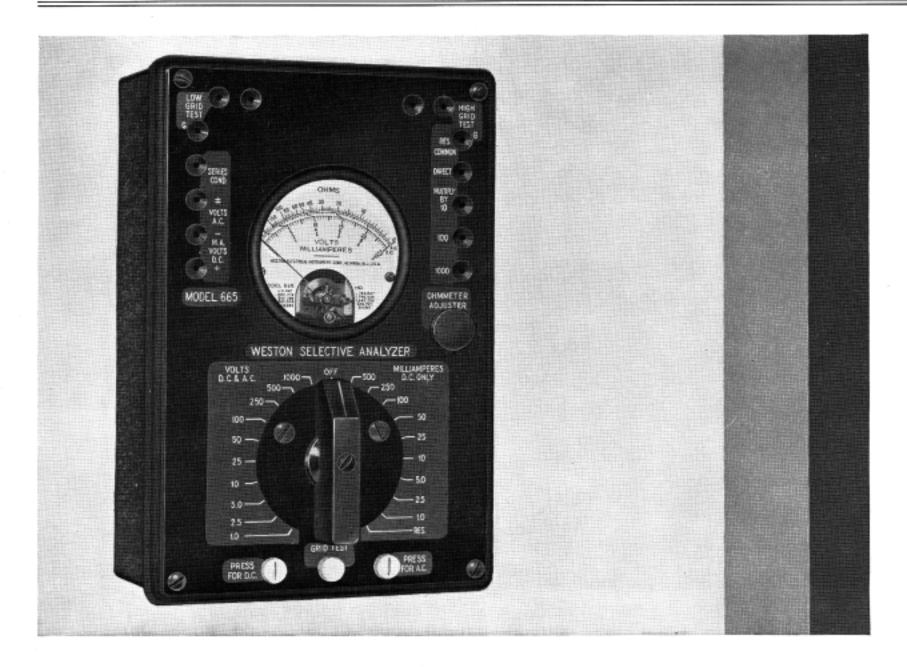
The checker operates from any 100-130 volt, 50-60 cycle AC line and is protected from burn-out by a small fuse underneath the panel. The proper filament, plate, screen and grid voltages are automatically supplied for the particular type of tube being tested.

Model 674 is attractively finished in three harmonious tones of brown.

Size 11" wide x 13 34" deep; height, front 3 3%", back 7". Shipping weight 22 lbs.

MODEL 674...........Dealer Price \$52.50......List Price \$70.00

Includes Instruction-Tube Limit Chart with metal frame holder.



# MODEL 665 SELECTIVE ANALYZER

### Type 1—Rotary Switch Model

The Weston plan of Selective Analysis is a unique method of servicing that employs a combination of a basic measuring device and Socket Selectors. This combination simplifies servicing procedure and banishes obsolescence in test equipment. Its broad range scope takes care of all necessary voltage, current and resistance measurements, continuity and grid tests in any radio receiver.

The basic measuring device of the combination is the Model 665 Analyzer—a Weston Standardized Service Unit and the Socket Selector—Model 666 Type 1-A (described on page 6), which carries the tester plug and cord serving to bring the tube socket connections to the measuring device.

Model 665 Selective Analyzer incorporates a rotary switch for rapid selection of all ranges and is offered as the ideal Selective Analyzer using the Model 666 Selector Units. It has the following broad list of ranges: a-c and d-c volts; 1,000-500-250-100-50-25-10-5-2.5-1, all with a sensitivity of 1,000 ohms per volt. The current ranges are 500-250-100-50-25-10-5-2.5-1 milliamperes, d-c only. Resistance readings may be made from 1 to 1,000,000 ohms. The customary analyzer grid test, including both high and low grid tubes, can be made on tubes. The a-c ranges, for ordinary a-c measurements as well as for output readings, are obtained through the use of a copper oxide full wave bridge type rectifier.

The indicating instrument, a Model 301 type, is mounted on a "Standardized Service Unit" bakelite panel. The assembly is supplied in a sturdy pressed steel case attractively finished in black. A leatherette carrying case can be provided to accommodate the Model 665 Analyzer and a Model 666 1-A Socket Selector.

Dimensions of Model 665- 51/2" x 81/4" x 3"; Approx. Weight-4 lbs. 10 ozs.



# MODEL 665 SELECTIVE ANALYZER

# Type 2-Pin Jack Model

The Weston method of Selective Analysis simplifies servicing operations and banishes obsolescence in test equipment. It is unique in that the equipment consists of a combination of two units, a basic measuring device and a Socket Selector, rather than the conventional self-contained analyzer.

Model 665 Type 2 Selective Analyzer, the basic measuring device of the combination, is a "Pin Jack Model", employing a series of pin jacks in place of a rotary switch for the selection of ranges. It is a Weston Standardized Service Unit. The Socket Selector, Model 666 Type 1-A (described on page 6), carries the tester plug and cord serving to bring the tube socket connections to the measuring device. All necessary voltage, current and resistance measurements, continuity and grid tests in any radio receiver are within the wide ranges of this most flexible equipment.

Model 665 has the following broad list of ranges; a-c and d-c volts; 1,000-500-250-100-50-25-10-5-2.5-1, all with a sensitivity of 1,000 ohms per volt. The current ranges are 1,000-500-250-100-50-25-10-5-2.5-1 milliamperes, d-c only. Resistance readings may be made from 1 ohm to 1 megohm. The customary analyzer grid test, including both high and low grid tubes, can be made on tubes. The a-c ranges, for ordinary a-c measurements as well as for output readings, are obtained through the use of a copper oxide full wave bridge type rectifier.

The indicating instrument, a Model 301 type, is mounted on a "Standardized Service Unit" bakelite panel. The assembly is supplied in a sturdy pressed steel case attractively finished in black. A leatherette carrying case can be provided to accommodate the Model 665 Analyzer and a Model 666 1-A Socket Selector.

Dimensions of Model 665-51/2" x 81/4" x 3"; Approx. Weight-4 lbs. 6 ozs.

MODEL 665 Type 2 (less carrying case and Model 666 1-A Socket Selector).....

Dealer Price—\$41.25......List Price—\$55.00

Carrying Case.............Dealer Price-\$3.75......List Price-\$5.00



#### WESTON STANDARDIZED SERVICE UNITS

#### Modern Equipment for Profitable Servicing

Engineers the world over know the pioneering and subsequently continuous contributions Weston has made to the art of Electrical Measurement. The development of Standardized Service Units for radio work is another outstanding achievement which, in itself, reflects the vast wealth of instrument manufacturing experience gained in 46 years of leadership in instrument building.

These Standardized Units adequately cover the ever increasing service requirements on all types of radio receivers. They have panels which are exceedingly compact and identical in size. They are made as an analyzer, tubechecker, oscillator, volt-ohmmeter and capacity meter. Each device is housed in an attractively finished sheet metal case.

Each Unit can be supplied in a leatherette covered carrying case. For ease of portability three to five units, as desired, can be lifted from their individual cases and slid into compartments in a large carrying case. (See illustrations.)

A careful examination of the scope and flexibility of these Standardized Service Units will show you exactly why they have been accepted as the finest portable radio testing devices obtainable at any cost.

#### MODEL 661 TUBECHECKER

A Tubechecker especially designed for portable service work. It tests 4, 5, 6, large 7 and small 7 prong tubes.

It operates from any 100-130 volt 50-60 cycle a-c line. A line voltage control compensates for variations in line voltage and insures proper test voltages at the tube sockets.

The instrument is a Model 301 type having a single reading 60 division scale. Two ranges are used so as to provide set readings on all tubes.

Testing a tube is very simple. Insert the plug in any 100-130 volt 50-60 cycle a-c outlet and check line voltage by pushing LINE CHECK button and turning the LINE VOLT-AGE adjuster so that a center scale reading indicates normal conditions. Then set FILAMENT VOLTAGE selector and place tube in socket as indicated on tube limit chart. Reset pointer of instrument to zero after tube has thoroughly heated. Press test button and compare reading obtained with limit shown on tube limit chart.

The Model 661 is shipped complete with Instruction-Tube Limit Chart and Guarantee-Registration Card.

#### MODEL 694 TEST OSCILLATOR

The Model 694 is a new portable test oscillator embodying many improvements in circuit design. It gives a clear, sharp signal with approximately 30% modulation on all bands. In servicing superheterodynes, an oscillator giving the intermediate frequency for which these stages were designed will allow for peaking the intermediate stages when sensitivity is desired, or for "flat topping" when maximum quality is of importance. In tuned radio frequency sets, as well as in the radio frequency stages of a superheterodyne, correct adjustment of the condenser gang is easily possible through the use of a separately modulated R. F. signal controlled as to intensity and frequency. Model 694 performs these functions and gives a clean, well modulated signal.

This Oscillator is separately modulated and supplies intermediate frequency ranges of 100 to 300 k.c., and 200 to 600 k.c.; broadcast frequencies from 500 to 1600 k.c.; and short waves from 1500 to 3000 k.c., all these frequencies are supplied on their fundamentals, the use of harmonics being unnecessary. However, the instrument is so designed that strong harmonics are available for higher frequencies. The signal from both the low and high output jacks is controlled by the attenuator thus affording a continuously variable attenuation from a very high maximum to a minimum of well below 1 microvolt.

A filament rheostat provides proper filament voltage control. A multiple position switch selects the frequency bands. Batteries and radio frequency coils are completely shielded. Each Model 694 is individually calibrated on all bands against a crystal controlled frequency standard and is shipped complete and ready for operation. A shielded output lead, instruction chart, calibration curve for each wave band and Registration-Guarantee Card are included.

#### MODEL 663 VOLT-OHMMETER

Model 663 supplies the demand for an ohmmeter capable of measuring very low and very high resistances.

This volt-ohmmeter is made possible by the use of a supersensitive instrument requiring only 50 microamperes for full scale deflection. This instrument is connected into the circuit network by means of a control switch which selects the desired range of the six available ohmmeter ranges, or as a milliammeter or voltmeter for d-c current and voltage measurements.

Resistance measurements from .1 ohm to 10 megohms; voltage measurements to 1,000 volts and current measurements to 100 milliamperes are available.

Since this device indicates in fundamental units—volts, milliamperes, ohms—and has such a wide selection of ranges, it becomes independent of circuit and tube changes and avoids the early obsolescence heretofore common in service equipment.

Model 663 is shipped complete with batteries, test leads and Guarantee-Registration Card.

#### MODEL 664 CAPACITY METER

A service unit with a wide range of capacity and a-c voltage measurements. Ranges—Microfarads: 10-200, 1-20, 0.1-2, 0.01-0.2, 0.0001-0.02; volts: 4-8-40-200-400-800 a-c, 1,000 ohms per volt.

Like the Model 663 this unit has a very low obsolescence factor because of its wide ranges and because it indicates in fundamental units—microfarads and volts.

It is operated much like the volt-ohmmeter. A main switch selects capacity or voltage ranges. Power supply is from a self-contained transformer operating from any 60 cycle 105 to 130 yell line through a voltage adjuster.

to 130 volt line through a voltage adjuster.

Turn switch to CHECK position and adjust LINE VOLTAGE CONTROL until pointer indicates exactly full scale. To measure capacity place test leads in the CAPACITY jacks and turn control switch to desired range. The instrument is then ready for use—the condenser to be tested is connected to the free end of the test leads, the pointer indicating capacity directly in microfarads. The capacity of electrolytic condensers can be measured. Short circuited condensers will indicate full scale and open condensers, zero. Model 664 shipped with test leads, instructions and Guarantee-Registration Card.

#### PRICES

INICES	I INICES							
Service Unit	Dealer	List						
(Less carrying case)	Price	Price						
Model 661 Tubechecker	\$33.75	\$45.00						
Model 694 Oscillator	41.25	55.00						
Model 663 Volt-Ohmmeter	45.00	60.00						
Model 664 Capacity Meter	41.25	55.00						
Single Unit Carrying Case	3.75	5.00						
Multiple Unit Carrying Case		15.00						
<ul> <li>Specify model number w</li> </ul>	hen ordering.							

#### **ANALYZERS**

Two analyzers are available in addition to the above listings of Standardized Service Units, the rotary switch type Model 665 Type 1 and the pin jack type Model 665 Type 2. Both of these Units are termed Selective Analyzers and form a part of the Weston Selective Analysis Method of Radio Servicing. Illustrations and complete descriptions are shown on pages 4 and 5 of this circular.





#### WESTON MATCHED TEST UNITS

This group of Test Units offers an alternate choice in Weston Service Equipment to the buyer desiring quality and accuracy in a smaller line of "Standardized" or matched units.

Models 564, 571 and 695 have panels  $5\frac{1}{2}$ " x  $3\frac{5}{8}$ " mounted in dentical cases  $2\frac{1}{2}$ " deep. Both the panel and case are of moulded Bakelite assuring the user a rugged and attractive instrument.

The indicating instruments are the  $3 \frac{1}{4}$ " type used in larger testing equipment.

#### MODEL 564 VOLT-OHMMETERS

These Volt-ohmmeters offer a useful selection of voltage and resistance ranges. Model 301 instruments are utilized as indicators and have plainly marked legible scales.

All voltage ranges are brought out to pin jacks. A toggle switch connects the meter in the circuit as a voltmeter or ohmmeter. Changes in potential of the self-contained battery are compensated for by short circuiting the resistance pin jacks of the range being used and adjusting the pointer to the zero ohm position by turning the knurled Battery Adjustment knob.

Two types are available, both having voltage ranges of 600-300- 30-3 volts, with a sensitivity of 1,000 ohms per volt. Type 3A has resistance ranges of 100,000 and 1,000 ohms maximum.

Type 3B has three ranges, 1,000,000, 100,000 and 1,000 ohms full scale.

Model 564 is supplied complete with a  $4\frac{1}{2}$  volt self-contained battery for potential and a pair of 50 inch test leads.

Model 564 Type 3A...Dealer's Price \$22.50...List Price \$30.00

Model 564 Type 3B...Dealer's Price \$26.63...List Price \$35.50

#### MODEL 571 OUTPUT METER

This Output Meter is a rectifier type a-c voltmeter designed for output or volume measurements where a constant impedance type is desired.

Five voltage ranges, 150-60-15-6-1.5, are available at pin jacks and are selected by a dial switch. A self-contained condenser for blocking any d-c component is connected to a separate pin jack for use when desired.

Model 571 has a constant impedance of 4,000 ohms.

A long pair of test leads for connection to the speaker voice coil and an adapter for the output tube socket are provided.

Model 571 Type 3A...Dealer's Price \$22.50...List Price \$30.00

#### MODEL 695 POWER LEVEL METER AND VOLTMETER

This instrument was designed for power level measurement work in the laboratory and in servicing all types of sound equipment and radio receivers where readings are desired in decibels.

The Model 695 is essentially a rectifier type, multiple scale voltmeter. It has a resistance of 2,667 ohms per volt, or 4,000 ohms total on its lowest range and 400,000 ohms total on its highest range. As a voltmeter, readings may be taken direct on the voltage scale.

As a power level meter, this instrument is bridged across the load. It provides five voltage and eleven DB ranges selected through a marked dial switch.

The decibel reading is indicated in decibels above or below 6 milliwatts for a 500 ohm load, or a total spread of 56 DB. A chart on the back of the instrument is furnished to give corrections for decibel readings on any load of known resistance from 5 to 50,000 ohms, at 6 milliwatts zero level.

Model 695 Type 3A...Dealer's Price \$27.00...List Price \$36.00

#### WESTON COMPACT TEST UNITS

Model 687 Output Meter and Model 689 Ohmmeters were designed to give radio technicians accurate and dependable equipment in compact form, truly "pocket size".

Both instruments have full moulded Bakelite cases of identical size, measuring 2% " x 5" x 13%" and employ a 3%" instrument, the same type as used in larger Weston Units.

#### MODEL 689 OHMMETERS

The Model 689 Ohmmeters were designed for the serviceman who relies upon resistance and continuity tests in checking radio receivers. There are six types of this instrument, two of which are illustrated at the right. Type 1B, at the top, is a single range instrument calibrated to read up to 20,000 ohms. Type 1E is calibrated with a double range and resistance readings are available from 0-5,000 and 0-50,000 ohms.

A 1½ volt No. 2 unit-cell battery, mounted inside the case, makes it independent of an outside source of potential. A magnetic shunt provides convenient adjustment to compensate for variations in battery voltage. This adjustment may be made before each series of tests, thus assuring accurate resistance readings.

Model 689 Type 1F, with ranges of 10 and 1,000 ohms, is of the normal series type when used on the 1,000 ohm scale. To use the 10 ohm scale, the high range terminals are shorted by means of a special link supplied, and readings are taken in shunt to the movement, giving low range readings of good accuracy.

In using this style ohmmeter, best accuracy may be had by confining readings to the center portion of the scale.

The following ohm readings are given as a guide for each type of Model 689 listed below:

Type 1A— 50 ohms Type 1C— 5,000 ohms Type 1E—125-1,250 ohms " 1B—500 " " 1F—2-50 "

Each Model 689 Ohmmeter is furnished complete with battery and a long pair of test leads.

#### MODEL 689 OHMMETERS

Туре	Range Ohms	Dealer's Price	List Price
1A	0-2,000	\$12.38	\$16.50
1 B	20,000	12.38	16.50
1C	200,000	13.50	18.00
1D	500,000	13.50	18.00
1 E	5,000-50,000	14.63	19.50
1F	10-1,000	18.75	25.00

#### MODEL 687 OUTPUT METER

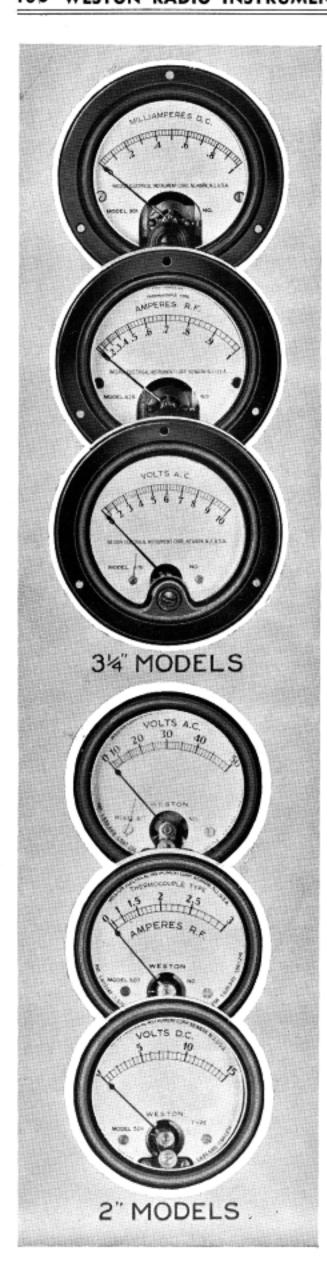
Model 687 is a reasonably priced output meter recommended for use with portable test oscillators. It has a-c voltage ranges of 2-10-50 available at pin jacks. A self-contained condenser is provided for blocking any d-c component which might be present in the circuit under test. This condenser is brought out to a separate pin jack so that it may be introduced into the circuit when desired.

A Model 301 rectifier type instrument measures the a-c component of the current in the receiver output circuit.

Model 687 is provided with a long pair of test leads for connection to the speaker voice coil and an adapter for connection at output tube sockets.

Model 687..... Dealer's Price \$15.00..... List Price \$20.00





#### WESTON PANEL INSTRUMENTS

The 2" and  $3\frac{1}{4}$ " groups of panel instruments offer a wide variety of d-c, a-c, a-c rectifier and R. F. thermocouple ranges. They are carefully engineered and manufactured to meet the demands for accurate and dependable instruments. Other ranges than are listed on these pages are obtainable. Specifications and prices will be promptly supplied upon request.

The 31/4" instruments are available with flush and surface metal cases, in Models 301, 476 and 425; flush and surface Bakelite cases in Models 301 and 425; flush Bakelite in Model 476.

The 2" instruments are available in flush type, narrow or wide flange metal and wide flange Bakelite cases.

Dimensional drawings of the various case styles are shown on the next page.

#### TYPES AVAILABLE

D-C MODELS 301 AND 506. Permanent magnet moving coil type. Accurate within 2%.

A-C MODELS 476 AND 517. Movable iron type for a-c. Accurate within 2%.

CONDENSER METERS—MODEL 476. Reads capacity in microfarads, Movable iron type and accurate within 3% when used on the voltage for which they are adjusted.

THERMOCOUPLE MODELS 425 AND 507. For a-c including radio frequencies. Accurate within 2%.

A-C RECTIFIER TYPE MODEL 301. Extremely high sensitivity a-c instruments obtained by using a full-wave copper oxide rectifier with a d-c movement. Excellent damping, even scale characteristics and reasonable overload capacity. Accurate within 5%.

#### D-C VOLTMETERS-MODELS 301 AND 506

,	Model 301	Model 506	ı		Model 506		Model 301	Model 506
Range	List Price	List Price	Range	List Price	List Price	Range	List Price	List Price
3	\$9.00 9.00	\$7.50 7.50	30	\$9.00	\$7.50	500	\$19.50 28.50	\$18.00
5	9.00	7.50	50	9.00	7.50	1000	28.50	27.00
8	9.00	7.50	100	10.00	8.50	1500	36.50	35.00
10	9.00 9.00	7.50	150	11.25	9.75	2000	45.00	43.50
15	9.00	7.50	200	13.00	11.50	3000	61.00	59.50
20	9.00	7.50 7.50 7.50 7.50	300	16.50	15.00			

Approximate resistance in ohms per volt, Model 301; 3 to 40 V., 62; 50 to 150 V., 200; 200 V., 250; 250 V., 300; 300-500 V., 666; 600 to 2000 V., 62; above 2000 V., 100. Model 506: 3 to 150 V., 125; 200 V., 200; 300 to 600 V., 500; above 600 V., 125. Ranges above 500 Volts use external Resistors.

#### D-C VOLTMETERS—MODELS 301 AND 506

#### 1000 Ohms per Volt

		Model 506			Model 506		Model 301	Model 506
Range	List Price	List Price	Range	List Price	List Price	Range	List Price	List Price
	\$12.00 12.50	\$10.50	500	\$17.25	\$15.75	500/100†	\$15.75 0t 17.50	\$14.25 16.00
50 100	12.50	11.00	1000	21.00	19.50	750/250/1	0† 17.50	16.00
200	14.00	12.50	200/81	15.00	13.50	750/250/1	00/	
300	15.00	13.50	250/50	0† 15.00	13.50	50/10/511	22.50	21.00
				E-t	h			

† Self-contained for low range. External box for other ranges. †† Spool Resistors supplied for all but low range.

#### D-C AMMETERS-MODELS 301 AND 506

Range 1 1.5 2	\$9.00 \$9.00 9.00 9.00	Model 506 List Price \$7.50 7.50 7.50	Range 10 15 20	\$9.00 9.00 9.00	\$7.50 7.50 7.50 7.50	Range 2-0-2 5-0-5 10-0-10	\$9.00 9.00 9.00	Model 506 List Price \$7.50 7.50 7.50	
3	9.00 9.00	7.50 7.50	30	9.00	7.50	20-0-10	9.00	7.50 7.50	

Ammeters: Self-contained up to 50 amps. incl. — drop 50 MV  $\pm$  5%.

#### D-C MILLIAMMETERS-MODELS 301 AND 506

	Model 301	Model 506		Model 301	Model 506		Model 301	Model 506
Range	List Price	List Price	Range	List Price	List Price		List Price	List Price
1	\$10.00	\$8.50	15	\$9.00	.\$7.50	200	\$9.00	\$7.50 7.50 7.50 12.50
1.5	10.00	8.50	20	9.00	7.50	300	9.00	7.50
2	10.00	8.50	30	9.00	7.50	500	9.00	7.50
3	10.00	8.50	50	9.00	7.50	150/15	† 14.00	12.50
5	9.00	7.50	100	9.00	7.50	150/30	† 14.00	12.50
10	0.00	7.50	150	9.00	7.50			

Milliammeters above 30 MA are shunted—drop approx. 100 MV. † Double range Milliammeters are 3 binding post type, self-contained.

#### D-C MICROAMMETERS-MODEL 301

	Model 301		Model 301
Range	List Price	Range	List Price
200†	\$14.25	500†	\$14.25

† These instruments are adjusted for use on horizontal or 45° positions.

#### VOLT-OHMMETER-MODEL 301

Range Volts Range Ohms List Price
1000/250/50 0-100,000 \$10.00

Adjusted to 1 MA. at 50 MV. Price for instrument only, no resistors included.

Dealer Discount-25%

#### OHMMETERS-MODEL 301

					01111111	16161		50.				
0-1000 1.5 100 \$10.50   0-100,000 4.5 400 \$13.50   0-2,000,000 90.0 400 \$	0-1000	cale Volt	Ohms 100	List Price \$10.50	Scale 0-100,000	Voltage 4.5	Ohms 400	List Price \$13.50			Model 3 List Pri \$15.0	ce

These Ohmmeters are independent of battery voltage. Price does not include battery and rheostat.

#### RECTIFIER TYPE VOLTMETERS-MODEL 301

Volts	1000 Ohms per Volt List Price	Volt List Price	Volts	1000 Ohms per Volt List Price	Volt List Price	Volts	Volt List Price	Volt List Price
1		\$19.25	5	\$17.00	\$19.25	100	\$17.50	\$21.50
1.5		\$19.25 19.25	15	17.00	19.25	150	19.00	23.00
3	\$17.00	19.25	50	17.00	19.75	300	20.00	

† These instruments should be used in the horizontal or 45° positions.

#### RECTIFIER TYPE MILLIAMMETERS-MODEL 301

Milliamps. List Price Milliamps. List Price 519.25 2 \$15.00 14.00	Range 15 25 50	Model 476 List Price \$9.00 9.00 9.00	Model 517 List Price \$7.50 7.50 7.50	Range 100 250 500
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†This instrument should be used in the horizontal or 45° positions.

#### RECTIFIER TYPE MICROAMMETERS-MODEL 301

Microamps.	Model 301 List Price
500†	\$19.25

† This instrument should be used in the horizontal or 45° positions.

#### A-C VOLTMETERS-MODELS 476 AND 517

_		Model 517		Model 476	Model 517
Range	List Price	List Price	Range	List Price	List Price
1.5	\$9.00	\$7.50	150	\$11.25	\$9.75
2	9.00	7.50	250	14.50	13.00
3	9.00	7.50	300	16.50	15.00
3 5 8	9.00	7.50	500	19.50	18.00†
8	9.00	7.50	750	23.50†	22.00†
10	9.00	7.50	1000	28.00†	26.50†
15	9.00	7.50	150/8/4	16.00††	
20	9.00	7.50	150/15/3	16.00††	
30	9.00	7.50	300/8/4	18.00††	
50	9.00	7.50	750/150/16/8/		
100	9.00	7.50	1000/200/16/8/	4 25.00†††	

† Supplied with external multiplier box.
†† Self-contained, four binding post instrument.
†† Four binding post instrument self-contained, for 150/8/4 volts.
External spool resistors for 750/16 volt ranges.
††† Three binding post instrument self-contained for 100/4 volts.
External spool resistors (7) for 1000/200/16/8 volts.

#### A-C AMMETERS-MODELS 476 AND 517

Range	Model 476 List Price \$9.00	Model 517 List Price \$7.50	Range	Model 476 List Price \$9.00	Model 517 List Price \$7.50
1.5	9.00	7.50 7.50	15	9.00 9.00	7.50 7.50
3	9.00	7.50	30	9.00	7.50

#### A-C MILLIAMMETERS-MODELS 476 AND 517

	Model 476	Model 517	1	Model 476	Model 517
Range	List Price	List Price	Range	List Price	List Price
Range 15	\$9.00	\$7.50	100	\$9.00	\$7.50
25	9.00	7.50	250	9.00	7.50
50	9.00	7.50	500	9.00	7.50

#### CONDENSER METER—MODEL 476 0-1.5-15 Mfds.....\$29.00 List

Supplied with an external box.

Adjusted for use on 110 volts, 60 cycles. Other voltages and frequencies on special order.

#### THERMOCOUPLE AMMETERS-MODELS 425 AND 507

Range	Model 425 List Price	Model 507 List Price	Range	Model 425 List Price	Model 507 List Price
1 _	\$16.00	\$14.50	5	\$16.00	\$14.50
1.5	16.00	14.50	10	16.00	14.50
2	16.00	14.50	15	16.00	14.50
3	16.00	14.50	20	16.00	14.50

Power consumption—1 to 4 amperes inclusive—varies from 0.2 to 0.4 watt per ampere approximate,—5 amperes and above—0.15 watt per ampere.

#### THERMOCOUPLE MILLIAMMETERS-MODELS 425 AND 507

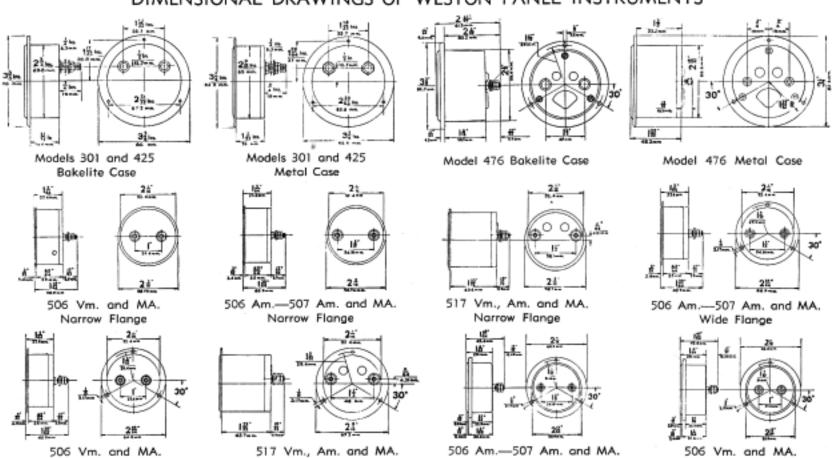
Range 10	Model 425 List Price \$50.00≎	Model 507 List Price	Range 150	Model 425 List Price \$18.00	Model 507 List Price \$16,50
10					
20	50.00*		250	18.00	16.50
50	50.00*		500	18.00	16.50
120†	18.00	16.50	1		

\* Vacuum thermocouple type. †This instrument should be used in the horizontal or 45° positions.

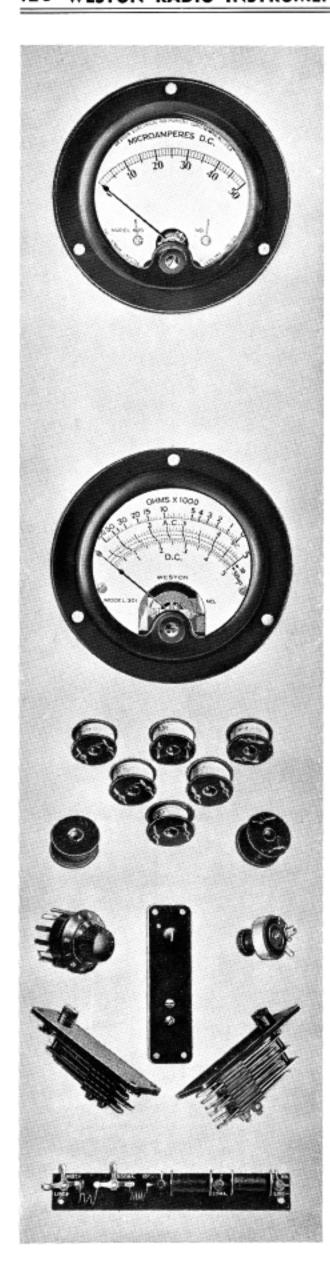
#### THERMOCOUPLE GALVANOMETERS-MODELS 425 AND 507

Model 425 List Price Model 507 List Price Range 115 milliamps., 5.2 ohms \$18.00 \$16.50 Accurate within two scale divisions. Has evenly divided 50 division scale calibrated 0-100. For horizontal or 45° mounting.

#### DIMENSIONAL DRAWINGS OF WESTON PANEL INSTRUMENTS



Wide Flange Wide Flange Bakelite Case Bakelite Case Note—Model 517 with wide flange Bakelite case has the same drilling dimensions as the Model 506 Bakelite case.



#### MODEL 600 HIGH SENSITIVITY INSTRUMENTS

The recent development of the Model 600 has made available extremely low current ranges in a panel type of instrument possessing unusual characteristics.

It is magnetically shielded, has ample torque for vertical or horizontal mounting even on the lowest ranges, excellent damping and quick response —all features that have not heretofore been possible.

In appearance, the Model 600 is similar to the Model 301. It is regularly furnished in a flush type Bakelite case having a flange diameter of 3.5 inches and a body diameter of 2.8 inches. Its weight is approximately one pound. All scales are hand calibrated and basically have an accuracy of 2% except in the rectifier type where the percentage of accuracy is about 5% due to the inherent properties of the rectifier.

	D-C MICROAMMETERS						CROAMM	
2	Approx. Resis. Ohms 2000 2000	Price \$26.00 23.50	Range 200 300 500	Approx. Resis Ohms 65 55 30	Price \$14.25 14.25	Range 100† 200	Approx. Re Ohms 3700 2500 2300	esis. List Price \$26.00 19.25

A-C RECTIFIER TYPE

Range 30 50 75 100 † Despite its low range this instrument is subject to a temperature error of but 1% per degree Centigrade.

Higher ranges can be supplied upon request. Correspondence necessary.

21.00

1300

NOTE—Rectifier instruments in this model can be made with very high sensitivity and for many laboratory and field measurements voltmeters with a resistance of as high as 10,000 ohms per volt can be had. Such instruments can be used for power level measurements across high resistance loads and for any other position where extremely small energy drain is required.

Similarly, d-c instruments may be supplied in this model with sensitivities as high as 30,000 ohms per volt for special applications.

Usually special damping is involved so it is important to supply complete specifications as to scale, range, resistance, etc., when corresponding for information.

#### MODEL 301 A-C-D-C UNIVERSAL METER KIT

A practical A-C—D-C Kit for general measurement work.

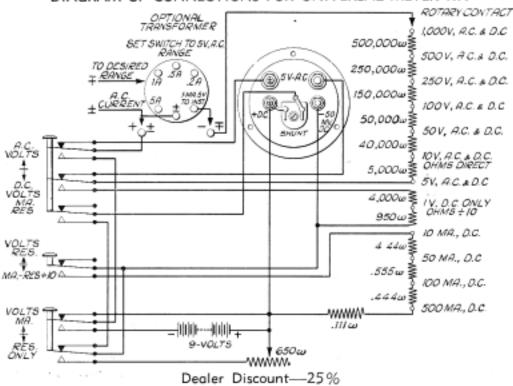
The instrument is a Model 301 Universal Meter, with self-contained d-c ranges of 50 M.V., 1 MA., and an a-c range of 5 volts. All voltage readings are on the basis of 1000 ohms per volt. A resistance scale is also supplied for use with a 9 volt battery, in conjunction with the 10 volt d-c calibration, requiring external resistors. The kit also contains 3 push button locking switches: 1—T.P.D.T., 1—D.P.D.T. and 1—S.P.D.T.; 1—12 position Rotary Switch; 1-650 ohm rheostat and the following resistors and shunts:

		SHUNTS			
1-500,000	ohms	1-40,000	ohms	4.444	ohms
1-250,000	ohms	1- 5,000	ohms	.555	ohms
1-150,000	ohms	1-4,000	ohms	.444	ohms
1 50,000	ohms	1 950	ohms	.111	ohms

With this combination connected according to the diagram shown below, the following ranges are available: 1000/500/250/100/50/10/5 volts a-c and d-c; 1 volt d-c; 100,000/10,000 ohms; 500/100/50/10 milliamperes d-c.

As a d-c instrument, the accuracy is within 2%. For a-c measurements, the accuracy is within 5%, due to the inherent properties of the rectifier. Model 301 Universal Kit (without batteries) . . . . . . . List Price \$45.00 Model 301 Universal Meter only.....List Price 20.00

#### DIAGRAM OF CONNECTIONS FOR UNIVERSAL METER KIT



#### WESTON GALVANOMETERS

In many test circuits a center reading galvanometer is required as an indicator. The group of Weston Galvanometers shown below gives a wide range of sensitivities covering practically all normal requirements.

When ordering a galvanometer it is important to specify model number, sensitivity required in microamperes per scale division and whether or not a mounting stand is required with Model 699 or 375.

#### MODEL 699 GALVANOMETER

The Model 699 is the latest addition to the group of Weston double pivoted movable coil type galvanometers. It has a sensitivity midway between the Model 375 Student Galvanometer and the Model 440 High Sensitivity Galvanometer, making it most suitable for many laboratory applications where medium sensitivity is required.

The instrument itself is similar to the Model 600. This Galvanometer has a resistance of approximately 125 ohms and a sensitivity of 2 microamperes per division. The scale has 30 divisions each side of the center zero. The external critical damping resistance is approximately 750 ohms so that the instrument is suitable for low resistance bridges, as well as applications where the circuit resistance is high.

Model 699 with Mounting Base	. Dealer's Price \$17.25
	List Price 23.00
Model 699 without Mounting Base	Dealer's Price\$15.75
	List Price 21.00

#### MODEL 375 STUDENT GALVANOMETER

The Model 375 Galvanometer is suited for general use wherever a direct current Galvanometer of high sensitivity is not essential but where extreme durability and moderate cost are factors.

The instrument proper is a Model 301 with a sensitivity of approximately 22 microamperes per division and has a resistance of 23 ohms. The scale has 30 divisions each side of center zero, each division being approximately 1 millimeter.

It is regularly supplied in the 45° mounting base, as illustrated, but is also available without the base for mounting in special apparatus.

MODEL 440 CALVANIONETED AND MICROSINGE	
List Price	10.00
Model 375 Galvanometer without Mounting BaseDealer's Price	\$6.60
List Price	13.00
Model 375 Galvanometer with Mounting BaseDealer's Price	\$8.58

#### MODEL 440 GALVANOMETER AND MICROAMMETER

The Model 440 Galvanometer is a supersensitive, double pivoted movable coil type instrument having such characteristics that it may be used to considerable advantage in place of the suspended coil, reflecting type galvanometer in many kinds of service such as for Wheatstone Bridge work, low resistance potentiometers, insulation or high resistance testing and thermocouple work.

It is made in two case types—one for use as a portable instrument (surface type) and the other (flush type) for inserting into sets such as potentiometers, bridges, etc. Both types have aluminum cases finished in dull black.

The portable type is provided with two contact keys controlled by push buttons—one key closing the galvanometer circuit through a high resistance (2,000 to 5,000 ohms depending upon range) thus preventing damage to the movable system in case of a badly out of balance circuit, the other key closing the galvanometer circuit directly for maximum sensitivity.

#### Galvanometers

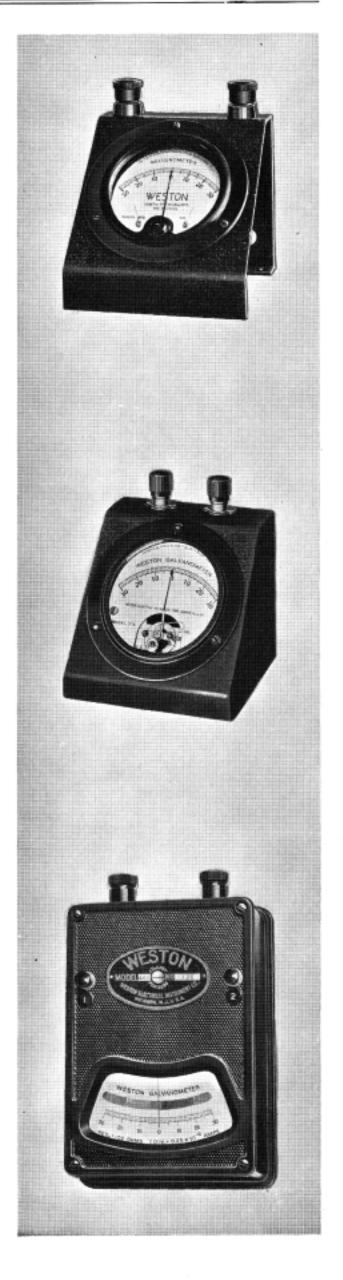
		External Critical			
Per	Movable Coil	Resistance	in Seconds	Dealer's	List Price
Division	in Ohms	in Ohms	Approximate	Price	Model 440
0.25 s	150	1,000	2.7	\$30.36	\$46.00
0.5 s	50	1,000	2.5	26.40	40.00
2.2 s	3.5	10	2.3	26.40	40.00
Scale Divisions	-30 millimete	rs each side of :	zero.		

#### Microammeters

Accurate Within 11/2 %

Range	Approx.	Critical	Scale	Dealer's	List Price
Microamps.	Res. Ohms	Res. Ohms	Divisions	Price	Model 440
⇒15 15 s 30 s 150 s	100,000 150 50 3.5	1,000 150 10	75 75 60 75	\$42.90 42.90 39.60 38.61	\$65.00 65.00 60.00 58.50

\*Used by radio tube manufacturers in production tube testing for gas content. Instrument is self-protected against shorted tubes.





#### MODEL 301 POWER LEVEL INDICATOR

The Model 301 Power Level Indicator indicates directly the relative strength of a given signal to a standard reference signal of 6 milliwatts in a 500

The instrument itself is of the self-contained, two stud, rectifier type, having a scale reading in decibels, -10, 0, +6 DB. To read 0 DB on its scale a voltage of 1.73 volts is required,  $(6 \, \text{MW} \text{ in 500 ohms})$ ; full scale deflection (+6 DB) is had on 3.46 volts. The instrument alone has a resistance of 5,000 ohms.

The range of this instrument can be increased by adding the necessary series resistance. A convenient way of accomplishing this is to add a series of resistance. A convenient way of accomplishing this is to dad a series of resistors of such values that the zero DB point on the scale becomes successively higher in value in steps of 1, 2, 3, 4, 5 or 6 DB. A switch can be arranged to cut in the successive resistors with a dial marked in the number of DB that must be added to the scale indication due to the total series resistance that has been added.

A complete description of the Model 301 Power Level Indicator is contained in Circular M-10 which is available upon request.

Model 301 Power Level Indicator.....List Price \$20.00

#### WESTON MINIATURE PORTABLE A-C AND D-C INSTRUMENTS

These Miniature Portable A-c and D-c Instruments are of sterling quality and accurate within 2%. They are rugged and serviceable for all-round checking purposes where the accuracy of a precision portable is not required.

The d-c group have black Bakelite cases; the a-c mottled red and black. Their legible silver etched scales are calibrated with black markings. Single range meters are equipped with binding posts, double and triple range have pin-jacks. The double and triple range instruments are supplied with pintipped cables.

#### A-C INSTRUMENTS—MODEL 528

Voltmeters										
Ranges 150/15 300/150 600/150 600/300	Approx. Tot Resis. Ohm 7350/735 31600/158 100000/250 100000/500	s Div. 30 00 30 00 30	List Price \$13.50 18.75 23.25 23.25	Ranges 150/15/3 150/8/4 300/8/4	Approx. To Resis. Ohr 8700/150 10000/80 43000/80	ns Div /30 30/3 /40 30/4	List Price 30 \$16.50 40 16.50			
			. Amm	eters						
	prox. Total Resis. Ohms .2040 .0249 .0108 .0067 .0030 .0025 .0016	Scale Div. 50 30 50 50 50 40 30	List Price \$13.50 13.50 13.00 13.00 13.00 13.50 15.50		prox. Total Resis. Ohms .0014	Scale Div. 50 30 30/50 30 30 30 30/50	List Price \$15.50 21.00 21.00 21.00 23.00 23.00			
			Milliam							
Range 15 25 50	prox. Total Resis. Ohms 2000 690 175	Scale Div. 30 25 50	List Price \$13.50 13.50 13.50		pprox. Total Resis. Ohms 28 4.7 1.1	Scale Div. 50 25 50	List Price \$13.50 13.50 13.50			
	D-C	INST	RUMEN	ITS—MC	DEL 48	9				
	Voltmeters—125 ohms per volt									
Ranges 150/7.	Scale I		ist Price 13.50	Ranges 200/8		le Div. 40	List Price \$15.25			
	Vo	Itmete	rs1,0	00 ohms	per volt					
Ranges 200/8 250/50	Scale ( 40 50	5	ist Price 16.25 16.75	Ranges 750/250	/10 Sca 75	le Div. /50	List Price \$23.50			
	Volt-	Millian	meter-	_125 oh	ms per v	olt (				
200/8 v	olts,		2 milliam	peres			\$18.75			
	y suited for									
			Amm	eters						
Range 1 10 30	Scale 1 20 20 30	5	list Price \$13.50 13.50 13.50	Ranges 10/1 15/3 30/3	Scale 2: 3: 3:	0	\$15.50 15.50 15.50			
			Millian	nmeters						
Ranges 150/15		Scale Di	٧.	Approx. Re	4.1		\$13.50			

Dealer Discount 25%

60

Leather case for Model 489 or 528, \$2.50.

150/30

0.7/2.6

#### GUARANTEE AND REGISTRATION OF WESTON RADIO TESTING EQUIPMENT

Each complete testing unit described in this circular is shipped with a Guarantee-Registration Card consisting of a detachable mailing card for ownership registration of the units at the Weston Home Office and a clearly defined guarantee card, a facsimile of which is shown below. Registration, by returning the registration section of these cards, properly filled in, insures the purchaser of this guarantee.

#### GUARANTEE

This is to certify that we, the WESTON ELECTRICAL INSTRUMENT CORPORATION, Newark, N. J., U. S. A., guarantee the piece of Weston Radio Equipment known as MODEL SERIAL manufactured by us, to be free from defects in material and workmanship under normal use and service. Our obligation under this guarantee is limited to repairing or replacing this instrument through an authorized Weston Repair Representative or through the Factory Repair Station, provided it is returned to such a Repair Depot prepaid within three months from date of sale.

This guarantee is expressly in lieu of all other guarantees, expressed or implied and of all other obligations on our part, and no other Representative or person is authorized or permitted to make any guarantee or to assume for this Corporation, any liability not strictly in accordance with the foregoing.

This guarantee will not apply to any product which has been tampered with or altered in any way, or which has been subjected to misuse, negligence or accident, or which has the serial number altered, effaced or removed.

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29 No. 6th St.
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420 Market St.
660 So. 18th St.
168 E. Matson Ave.
171 John St.

#### WHEN YOU BUY AN INSTRUMENT

When buying an instrument, look first for the name the instrument bears for it is your means of measuring design and craftsmanship. There is one name that you can accept as the symbol of quality and dependability—the name which the entire electrical industry has long accepted as the standard in instrument manufacture. That name is WESTON.

Make it your guide in selecting radio instruments.

It is not mere chance that brought this universally recognized leadership that the Weston organization enjoys. Founded in 1888 by Dr. Edward Weston, this Company has pioneered in the development of electrical indicating instruments, and since that time has been responsible for practically every important development made to that art. Its highly specialized engineer-

ing organization enables it to keep constantly in the vanguard in instrument progress; and its vast manufacturing facilities assure a product embodying the utmost in reliability, accuracy and value. This is important to you as an instrument buyer—for the organization behind the product is a true index of its worth. Its worth to you is the most if it's a WESTON.



WESTON ELECTRICAL INSTRUMENT CORPORATION
614 FRELINGHUYSEN AVENUE NEWARK, NEW JERSEY, U. S. A.

Circular RC-25M-April, 1934

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