TRIPLETT

Instruction Manual
Model 666-R
Volt Ohm-Milliammeter

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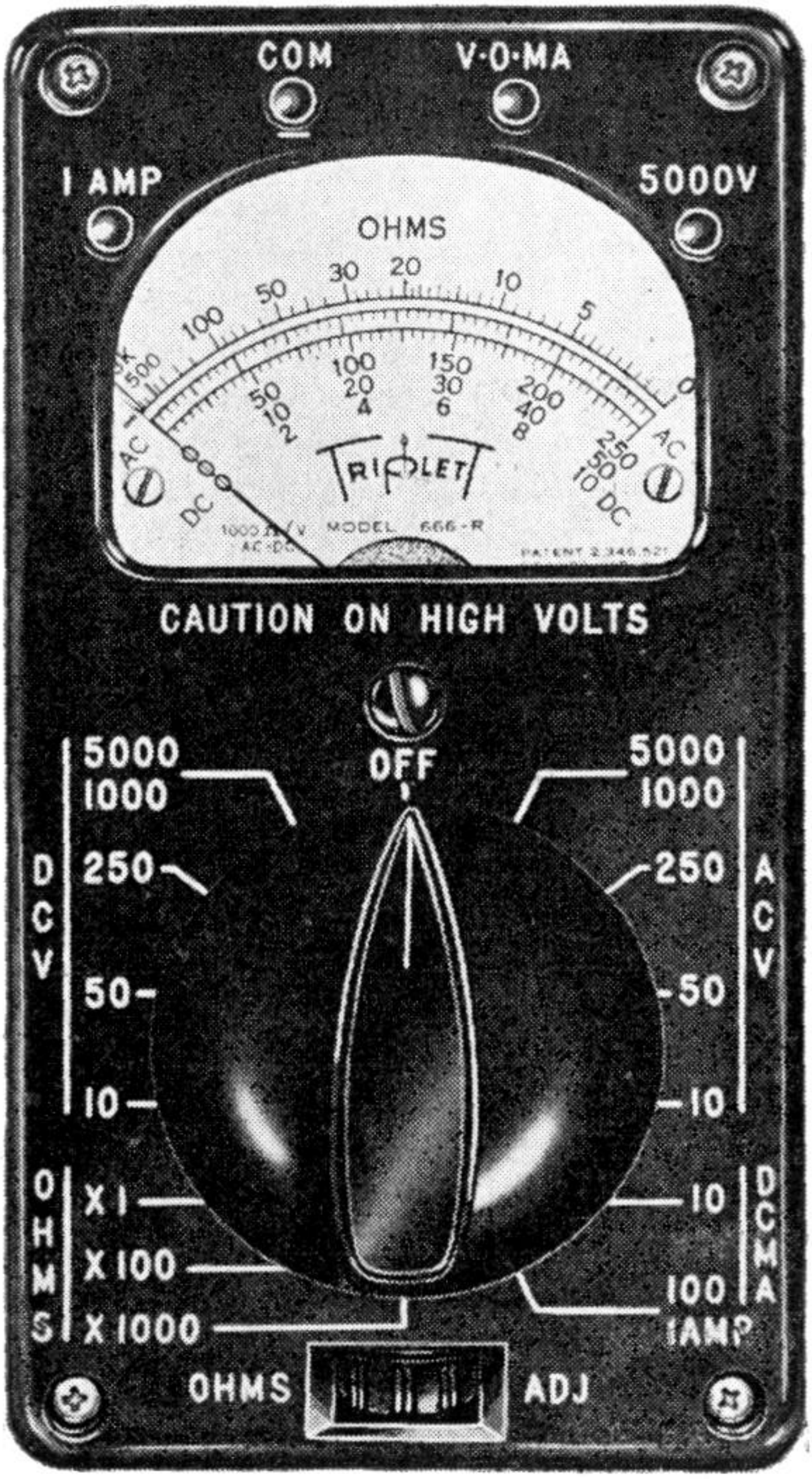
666-R

Volt-Ohm-Milliammeter


COM
V·Ω·MA
1 AMP
5000V
OHMS
30 20
10
5
100
50
500
100
20
4
50
10
2
150
30
6
200
40
8
250
50
10
AC
DC
TRIPLETT
1000 Ω/V
AC-DC
MODEL 666-R
PATENT 2,346,521
CAUTION ON HIGH VOLTS
OFF
5000
1000
250
50
10
DCV
ACV
X1
X100
X1000
OHMS
10
100
1AMP
DCMA
OHMS
ADJ

666-R

Volt-Ohm-Milliammeter

GENERAL DESCRIPTION

The model 666-R Volt-Ohm-Milliammeter is a multi-range instrument in a compact portable case. It provides the ranges commonly used in electrical maintenance and servicing radio receivers as well as those used in the experimental laboratory or at radio transmitting stations.

RANGES

DC VOLTS 0-10-50-250-1000-5000 at 1,000 ohms per volt.

AC VOLTS 0-10-50-250-1000-5000 at 1,000 ohms per volt.

DC MILLIAMPERES 0-10-100 at 250 MV.

DC AMPERES 0-1 at 250 MV.

OHMS 0-3000-300,000 with center scale reading of 20-2000.

MEGOHMS 0-3 with center scale reading of 20,000.

Operating Instructions

The selection of all ranges except 5000V. and 1A. is obtained by rotating the bar knob on the front of the panel. The 5000 AC and DC volt and 1A. ranges require changing a jack connection in addition to setting the switch.

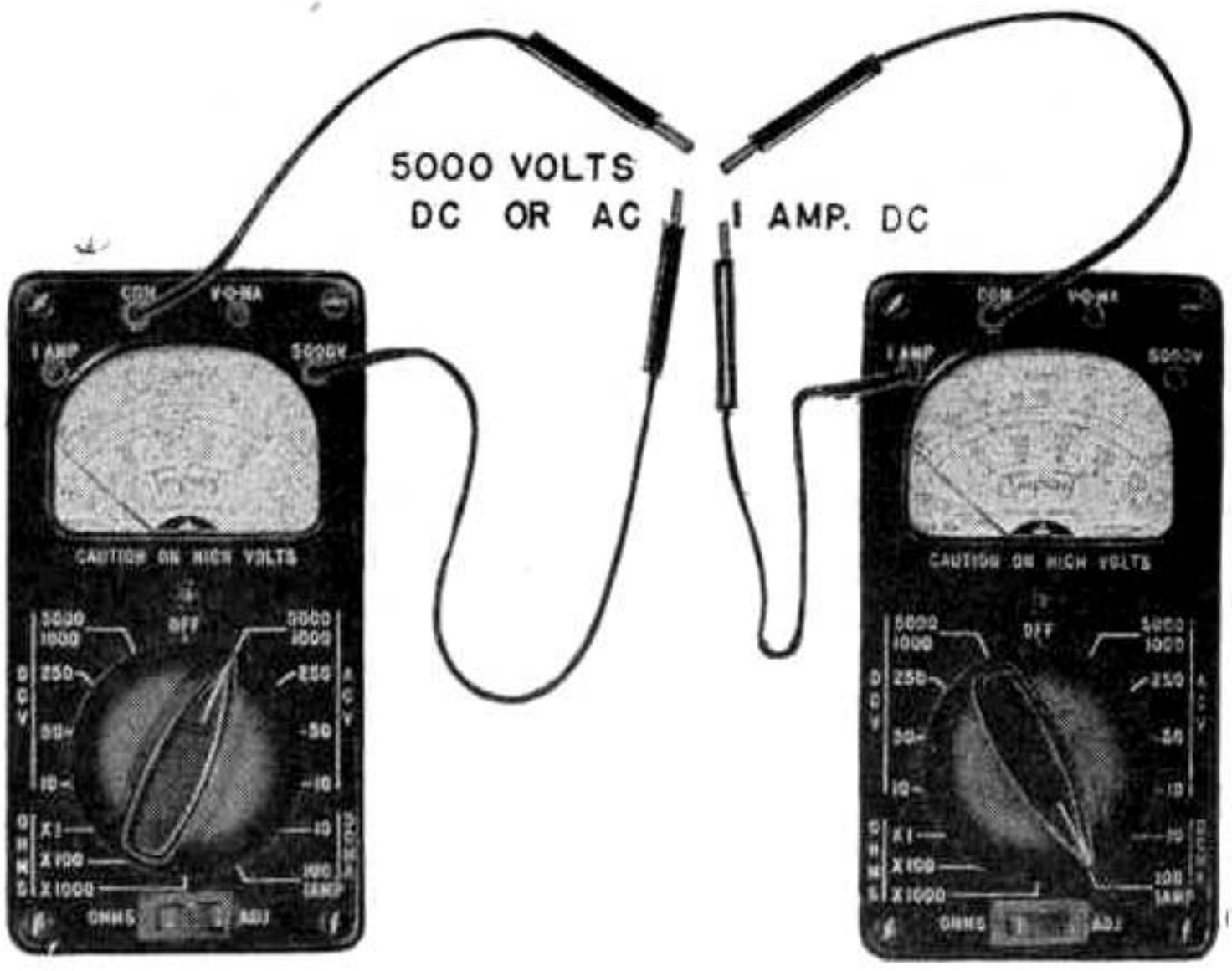
Triplett Model 666-R Volt-Ohm-Milliammeter is completely self-contained, with the following ranges—see page 5➤

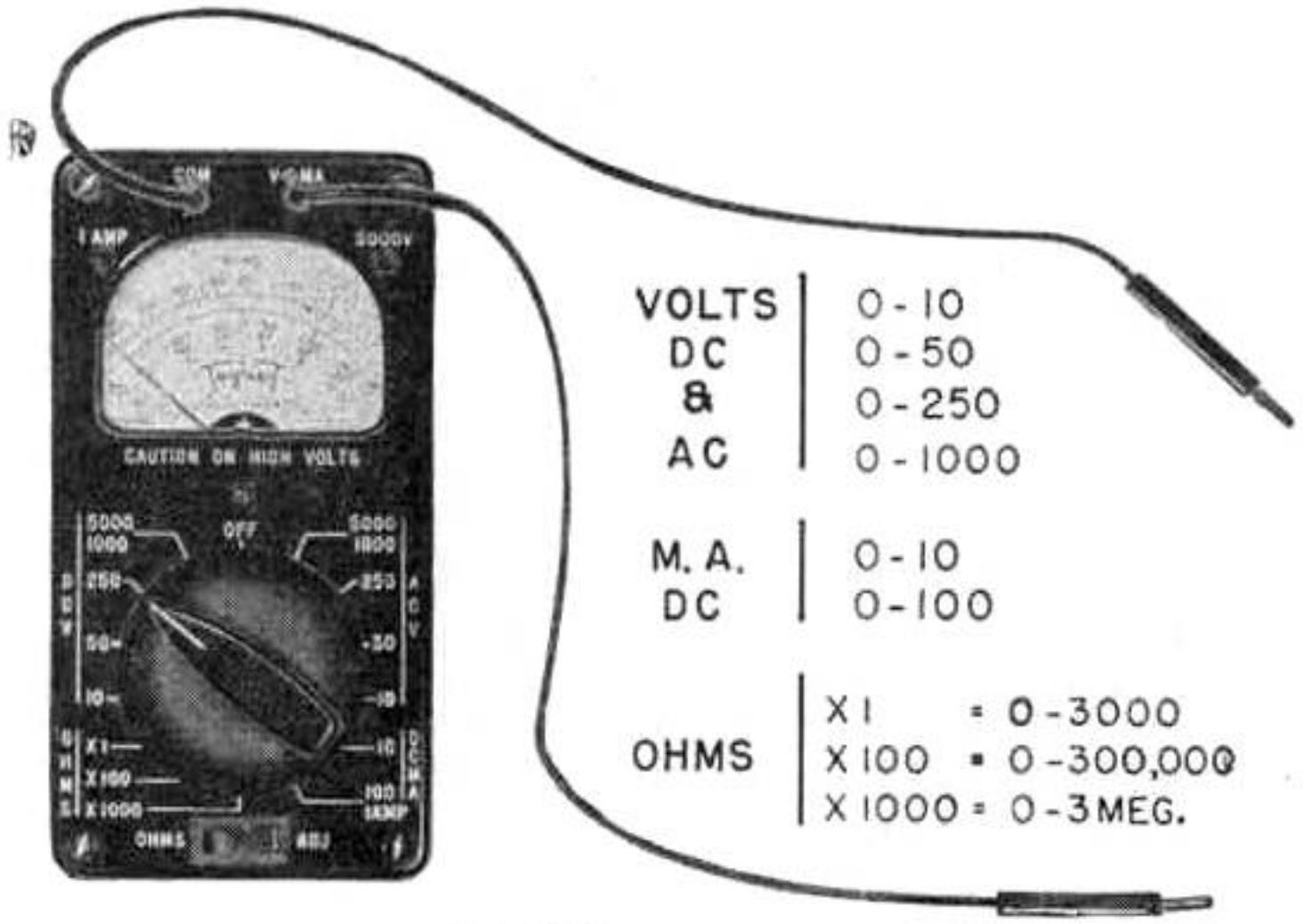
Two connecting leads each 4 ft. long are provided for connecting to the jacks of the tester. For utmost safety, do not touch these leads when they are connected to a high voltage.

Two alligator clips are provided for fastening to the end of the test prods to make clip-on connections.

Leather carrying cases, Models 669 and 669-OS with strap handles may be obtained from your local Triplett distributor.

POINTER SETTING: Be sure instrument pointer is on zero before taking any readings. The pointer may be set on zero by turning the zero adjust screw just below the meter.


5000 VOLTS
DC OR AC
1 AMP. DC
COM
V-Ω-MA
1 AMP
5000V
CAUTION ON HIGH VOLTS
OFF
DCV
ACV
OHMS
DCMA
X1
X100
X1000
ADJ


COM
V-Ω-MA
1 AMP
5000V
CAUTION ON HIGH VOLTS
OFF
DCV
ACV
OHMS
DCMA
X1
X100
X1000
ADJ
VOLTS DC & AC
0-10
0-50
0-250
0-1000
M. A. DC
0-10
0-100
OHMS
X1 = 0-3000
X100 = 0-300,000
X1000 = 0-3MEG.

GENERAL:

Set switch, connect to jacks and read on scale called for in the Operation Chart.

In choosing ranges for measuring always endeavor to have the readings fall in the upper (or right hand) half of the scale for greatest accuracy. Thus, a slight error in noting the exact division on the scale will be a smaller per cent of the true reading than if the same degree of error were made in the lower portion of the scale.

TESTER POSITION: Operate in a horizontal position for greatest accuracy.

HANDLING: Do not drop or severely jar the tester, as the pivots, jewels or moving elements may be damaged.

C A U T I O N

For Maximum Safety Do Not Handle Tester or Leads When Connected to High Voltages.

HIGH VOLTAGE MEASUREMENTS: Exercise extreme caution. Make connections only with apparatus turned off. Make certain that no condensers are charged to a high voltage, such as filter condensers or power packs. Make certain switch is on 1000-5000 V position.

AC-DC Volts—DC Ma-DCA

Follow Operation Chart as noted. AC Voltage ranges are calibrated on a 60 cycle sine wave supply at a room temperature of 77°F.

Milliampere Measurements: Do not test directly across any potential circuits when on "DCMA" ranges as this may burn out the instrument and shunt.

Resistance Measurements: Under no condition apply voltage between leads when on "OHMS" position as the instrument will thereby be overloaded and damaged.

Connect test leads together and adjust "OHMS ADJ." for full scale deflection before measuring ohms. This ohms control adjusts for variations in voltage of the self-contained batteries. The "K" on the dial designates 1000.

To extend the ohm range from 0-3 to 0-30 meg ohms, connect a 40.5 volt DC supply and a 180,000 ohm resistor in series with one of the test leads, see Fig. 1. Set selector switch to ohms × 1000. Multiply scale reading by 10,000.

NOTE: In the ohms circuit the battery polarity at the leads is reversed from what the lead colors would seem to indicate (i. e. the red lead is actually the negative of the battery). In checking diodes and transistors it is well to keep this in mind.

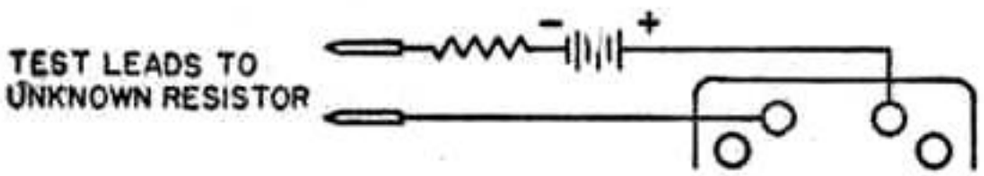


FIG. 1

AMPERES (External shunts)

Plug the desired external 250 millivolt shunt into the "COM" and the "V-O-MA" jacks and set the Range switch on the "10 DCMA" position. Connect the test leads or the line to be measured to the binding posts on the shunt. Triplett plug-in shunts are not supplied with the tester but may be obtained to order in the following DC amp ranges: 1, 5, 10 and 25.

External shunts of 50 and 100 ampere values are available with millivolt leads that could be plugged into the "COM" and "V-O-MA" jacks for reading on the "10 DCMA" position.

DECIBELS

Set Selector Switch on appropriate "ACV" range.

Connect the "COM" and "V-O-MA" jacks across the source of voltage to be measured. Refer to table below and read decibels opposite voltage values on red scale. Values are based on 1 mw, at 0 DB on a 600 ohm line. If there is DC present, connect a 1 mfd. 600 volt condenser in series with one of the test leads as shown in Figure 2.

AC VOLTS	DB	AC VOLTS	DB
.24	—10	24.5	+30
.44	—5	43.6	+35
.77	0	77.5	+40
1.38	+5	137.8	+45
2.45	+10	245	+50
4.36	+15	436	+55
7.75	+20	775	+60
13.8	+25	1378	+65

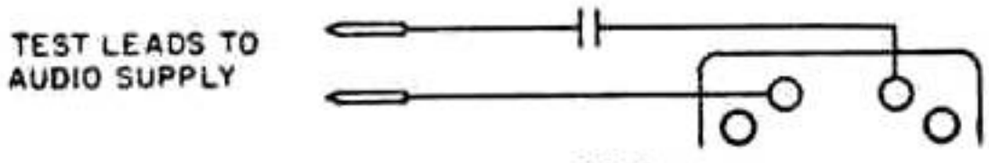


FIG 2

OPERATION CHART

TO MEASURE		SET SWITCH TO		USE JACK	USE JACK	READ ON	EACH SCALE DIV. EQUALS
						BLACK SCALE	
0-10	DC Volts	10				0-10 × 1	0.20 Volt
0-50	DC Volts	50				0-50 × 1	1 Volt
0-250	DC Volts	250	DCV	Com–	V-O-Ma	0-250 × 1	5 Volts
0-1000	DC Volts	1000-5000				0-10 × 100	20 Volts
0-5000	DC Volts	1000-5000	DCV	Com–	5000 V	0-50 × 100	100 Volts
						RED SCALE	
0-10	AC Volts	10				0-10 × 1	0.20 Volt
0-50	AC Volts	50				0-50 × 1	1 Volt
0-250	AC Volts	250	ACV	Com–	V-O-Ma	0-250 × 1	5 Volts
0-1000	AC Volts	1000-5000				0-10 × 100	20 Volts
0-5000	AC Volts	1000-5000	ACV	Com–	5000 V	0-50 × 100	100 Volts
						BLACK SCALE	
0-10	DC Ma	10				0-10 × 1	0.20 Ma.
0-100	DC Ma	100	DC Ma	Com–	V-O-Ma	0-10 × 10	2.0 Ma.
0-1	DC A	100	DC Ma	Com–	1 AMP	0-10 × 0.1	0.02 A
						BLACK SCALE	
0-3000	Ohms	X1	Ohms	Com–	V-O-Ma	Ohms × 1	
0-300,000	Ohms	X100	Ohms			Ohms × 100	
0-3	Megohms	X1000	Ohms			Ohms × 1000	

MICROFARADS

Connect a 0.5 mfd. condenser across the "COM" and the "V-O-MA" jacks. Connect this combination in series with the unknown condenser and a 110 Volt 60 cycle line as shown in Figure 3. Set Selector switch to the proper "ACV" range and read capacitance as noted below on the chart.

CAUTION: This test is for paper condensers only!

"10ACV" Range		"50ACV" Range		"250ACV" Range	
AC Volts	Mfd.	AC Volts	Mfd.	AC Volts	Mfd.
1.0	.006	12.0	.06	57.5	.6
1.4	.008	15.0	.08	65.0	.8
1.8	.010	18.0	.1	70.0	1.0
4.0	.02	32.0	.2	85.0	2.0
7.4	.04	48.5	.4	95.0	4.0
9.3	.05			100.	6.0
				102.	10.0

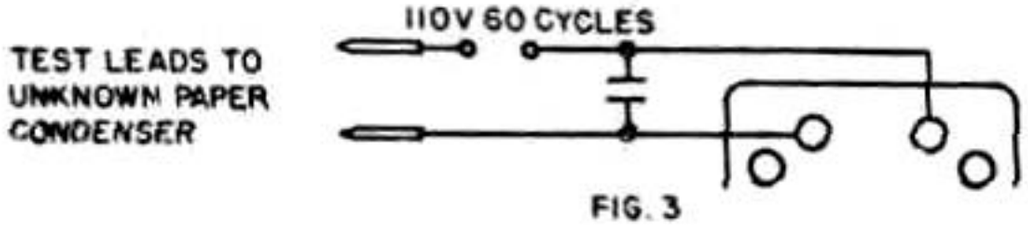


FIG. 3

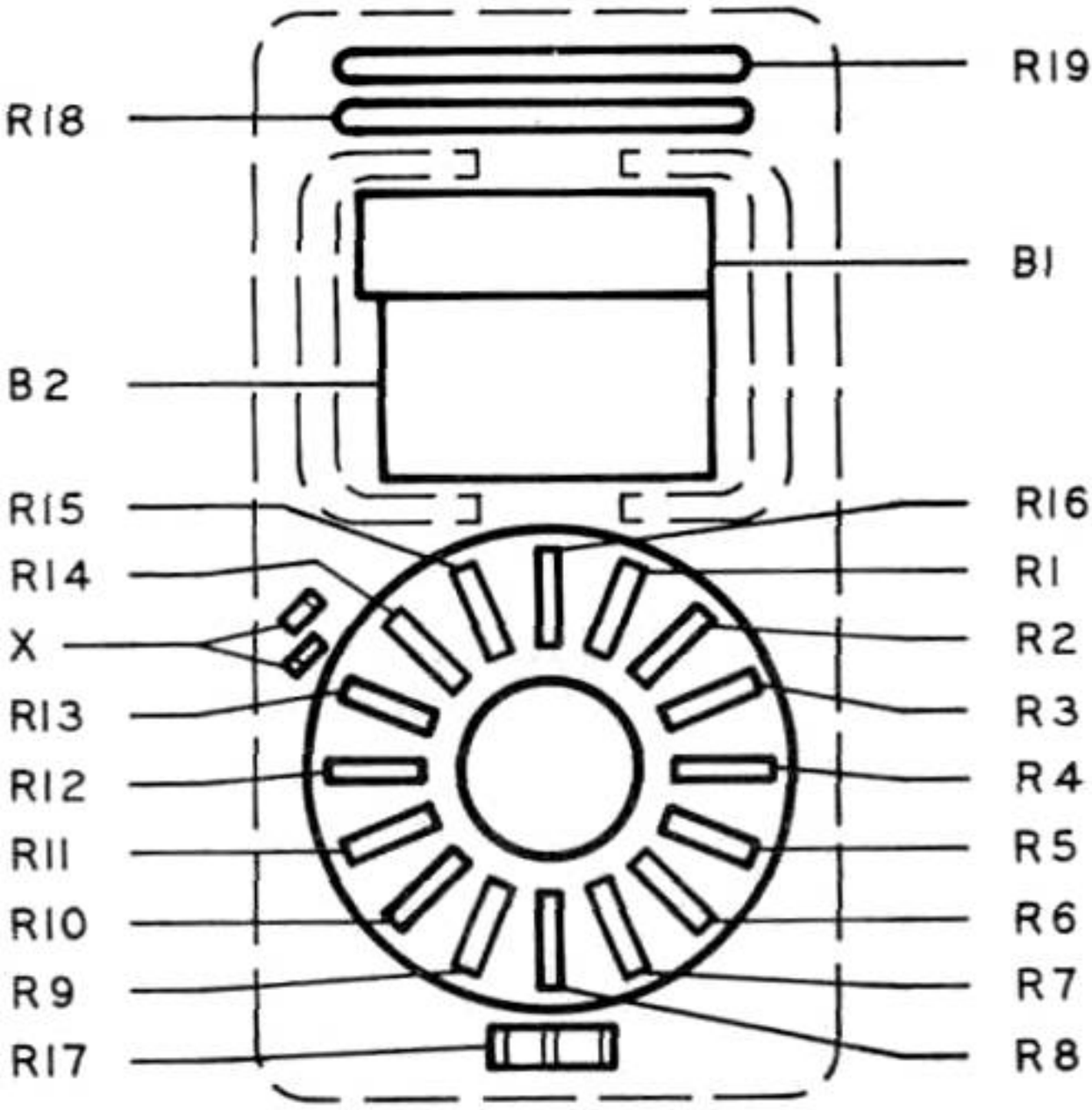
Maintenance

This multi-range instrument will require little or no maintenance if used with care. Be sure the range selector switch is in the correct position before touching test leads to circuit.

When you are unable to adjust pointer to zero on ohm scale the batteries should be replaced.

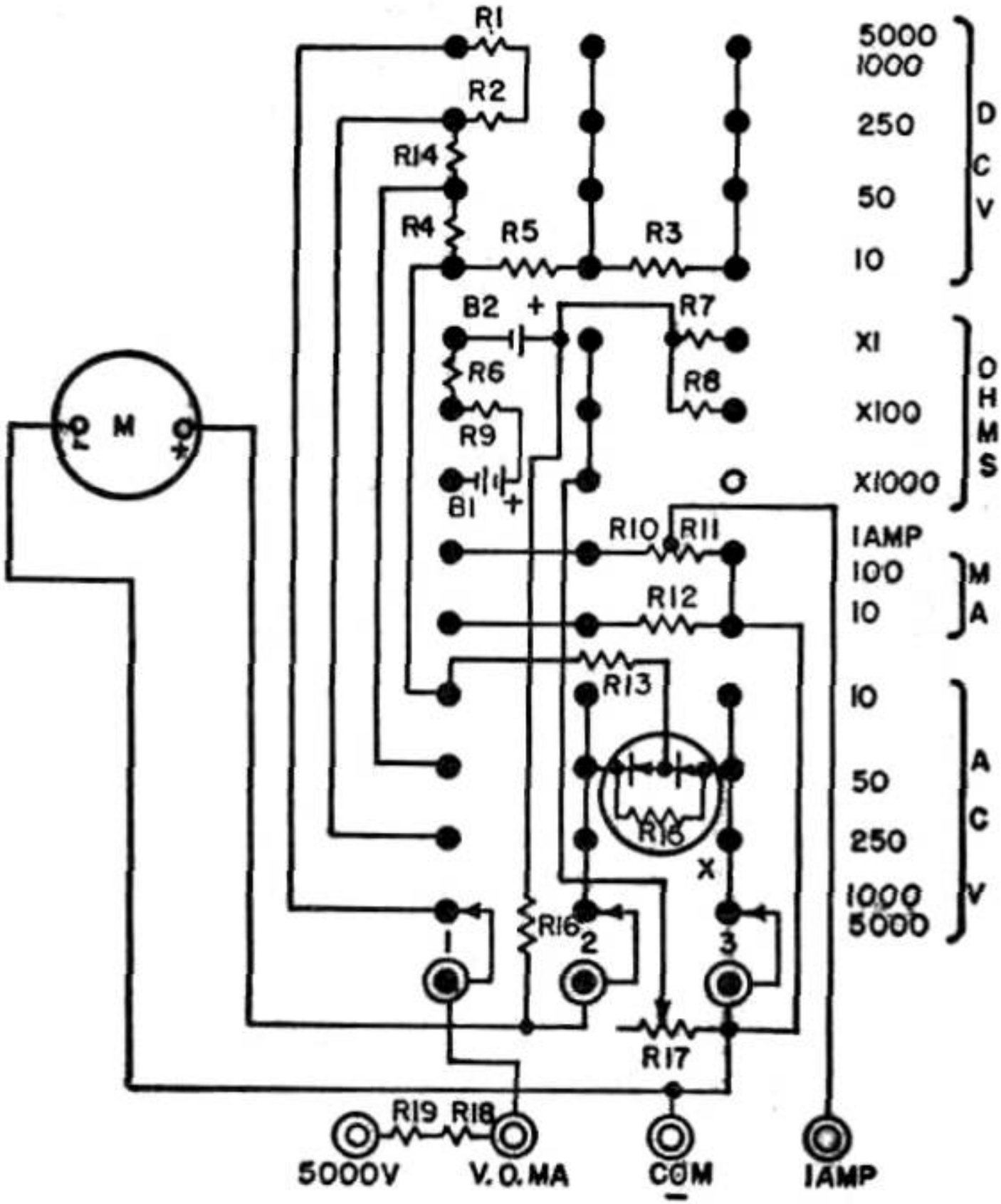
Three 1.5 volt batteries (one size C and two penlite) are provided for the ohmmeter circuit. These batteries may be easily replaced by removing the 4 screws holding the panel. When the ohmmeter circuit can no longer be adjusted on the X1 and X100 ranges by means of the variable resistance on the panel, replace the size C battery. When the X1,000 range cannot be adjusted replace the two penlite cells. Most battery manufacturers give their product a thin transparent coating. In rare cases this may prevent positive contacts. This condition can easily be remedied by lightly scraping both ends of the battery to remove the coating.

Parts Location



Repair or Service

In the event repair or service is required, please outline the nature of the difficulty incurred. By providing this information, Triplett can supply more efficient service.


R1
R2
R14
R4
R5
R3
5000
1000
250
50
10
D
C
V
B2
+
R7
R6
R8
R9
B1
+
XI
X100
X1000
OHMS
O
R10
R11
1AMP
100
10
M
A
R12
R13
10
50
250
1000
5000
A
C
V
R16
X
R16
1
2
3
R17
R19
R18
5000V
V.O.MA
COM
1AMP

REPLACEABLE PARTS, 666-R

Above Serial No. 115,000

REF. NO.	QUAN.	DESCRIPTION	PART NAME	FUNCTION	TRIPLETT PART NO.
B1	2	1.5V Eveready 915 or NEDA #815	Battery	Ohmmeter battery	T-2426-3
B2	1	1.5V Eveready 935 or NEDA #814	Battery	Ohmmeter battery	T-2426-2
M	1	200 μa, 250 Mv, with panel	Instrument	Indication	52-1426
R16	1	5070 ohm ±1% Film type ½W	Resistor	Ohmmeter Series	T-15-1514
R1-R2	2	375K ohm ±1% Film type ½W	Resistor	1000 Volt	T-15-1261
R3	1	312 ohm ±1% Film type ½W	Resistor	All Volts DC	T-15-1517
R4	1	40K ohm ±1% Film type ½W	Resistor	50 Volt	T-15-1131
R5	1	9750 ohm ±1% Film type ½W	Resistor	10 Volt DC	T-15-1164
R6	1	80 ohm ±1% Film type ½W	Resistor	Ohmmeter Series	15-2841
R7	1	19.2 ohm ±1% Film type ½W	Resistor	Ohmmeter Shunt	T-15-1525
R8	1	2800 ohm ±1% Film type ½W	Resistor	Ohmmeter Shunt	T-15-1516
R9	1	14K ohm ±1% Film type ½W	Resistor	Ohmmeter Series	T-15-1515
R10	1	2.255 ohm ±1% Wirewound	Resistor	Shunt 100 DCMA	T-15-1527
R11	1	0.25 ohm ±1% Wirewound	Resistor	Shunt 1 DCA	T-15-1528
R12	1	25.5 ohm ±1% Film type ½W	Resistor	Shunt 10 DCMA	T-15-1526
R13	1	9200 ohm ±1% Film type ½W	Resistor	10 Volt AC	T-15-1163
R14	1	200K ohm ±1% Film type ½W	Resistor	250 Volt	T-15-1061
R17	1	20K ohm Variable	Resistor	Ohmmeter zero adj.	T-16-31
R18 R19	2	2 Meg ohm ±1% Film type 2 W	Resistor	5000V	T-15-989
X	1	Rectifier and Calib. Res. (R15)	Rectifier Assem.	AC Rectifier	9893
	1	666 black bakelite	Case	Tester Housing	T-2421-2
	2	Alligator, Mueller No. 60	Clip	Connections	T-2563-A
	4	Jack, Banana type	Contact	Connections	8944
	1	Red, Knob with Clip	Knob	Switch Knob	34A-60
	1	Banana Plug type	Pr. Leads	Connections	T-79-127
	1	14 Pos. 3 deck with resistor mounting plate	Switch Assem.	Range Switch	22A-309

TRIPLETT WARRANTY AND CONDITIONS OF SALE

The Triplett Corporation warrants instruments manufactured by it to be free from defective material or factory workmanship and agrees to repair or replace such instruments which under normal use and service, disclose the defect to be the fault of our manufacturing. Our obligation under this warranty is limited to repairing or replacing any instrument or test equipment which proves to be defective, when returned to us transportation prepaid, within ninety (90) days from the date of original purchase.

This warranty does not apply to any of our products which have been repaired or altered by unauthorized persons or service stations in any way so as, in our judgment, to injure their stability or reliability or which have been subject to misuse, negligence, or accident, or which have had the serial number altered, effaced, or removed. Neither does this warranty apply to any of our products which have been connected, installed, or adjusted otherwise than in accordance with the instructions furnished by us. Accessories including all vacuum tubes and batteries not of our manufacture used with this product are not covered by this warranty.

The Triplett Corporation reserves the right to discontinue models at any time, or change specifications or design, without

notice and without incurring any obligation.

Upon acceptance of the material covered by this invoice the purchaser agrees to assume all liability for any damages and bodily injury which may result from the use or misuse of the material by the purchaser, his employees, or others, and that the Triplett Corporation shall incur no liability for direct or consequential damage of any kind.

Parts will be made available for a maximum period of five (5) years after the manufacture of this equipment has been discontinued. Parts include all materials, charts, instructions, diagrams, accessories, et cetera, which were furnished in the standard or special models.

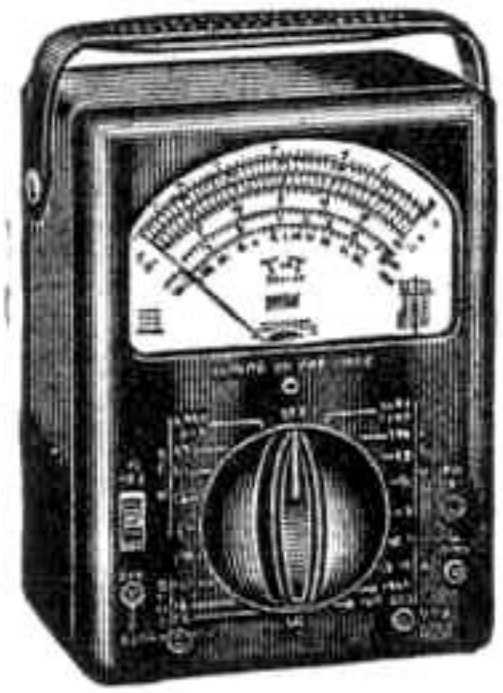
This warranty and conditions of sale are in lieu of all others expressed or implied and no representative or person is authorized to assume for us any other liability in connection with the sale of our products.

TRIPLETT CORPORATION

Bluffton, Ohio 45817

Printed in U. S. A. **84-84A**

If you find you need a VOM with greater sensitivity, ask your Distributor to show you the 630 or 631.



Model 630

Sensitivity:

20,000 ohms per V DC

5,000 ohms per V AC

Ohms:

1/10 to 100 Megs.

Model 631

Combination VOM & VTVM All-around Electronic service meter.

AVAILABLE FROM YOUR LOCAL TRIPLETT DISTRIBUTOR

A COMPLETE LINE OF TESTERS FOR COLOR TV AND ELECTRONICS

ALSO PANEL METERS