TRIPLETT

Instruction Manual
Model 625-NA
Volt-Ohm-Milliammeter

MANUAL ONLY · $ .25

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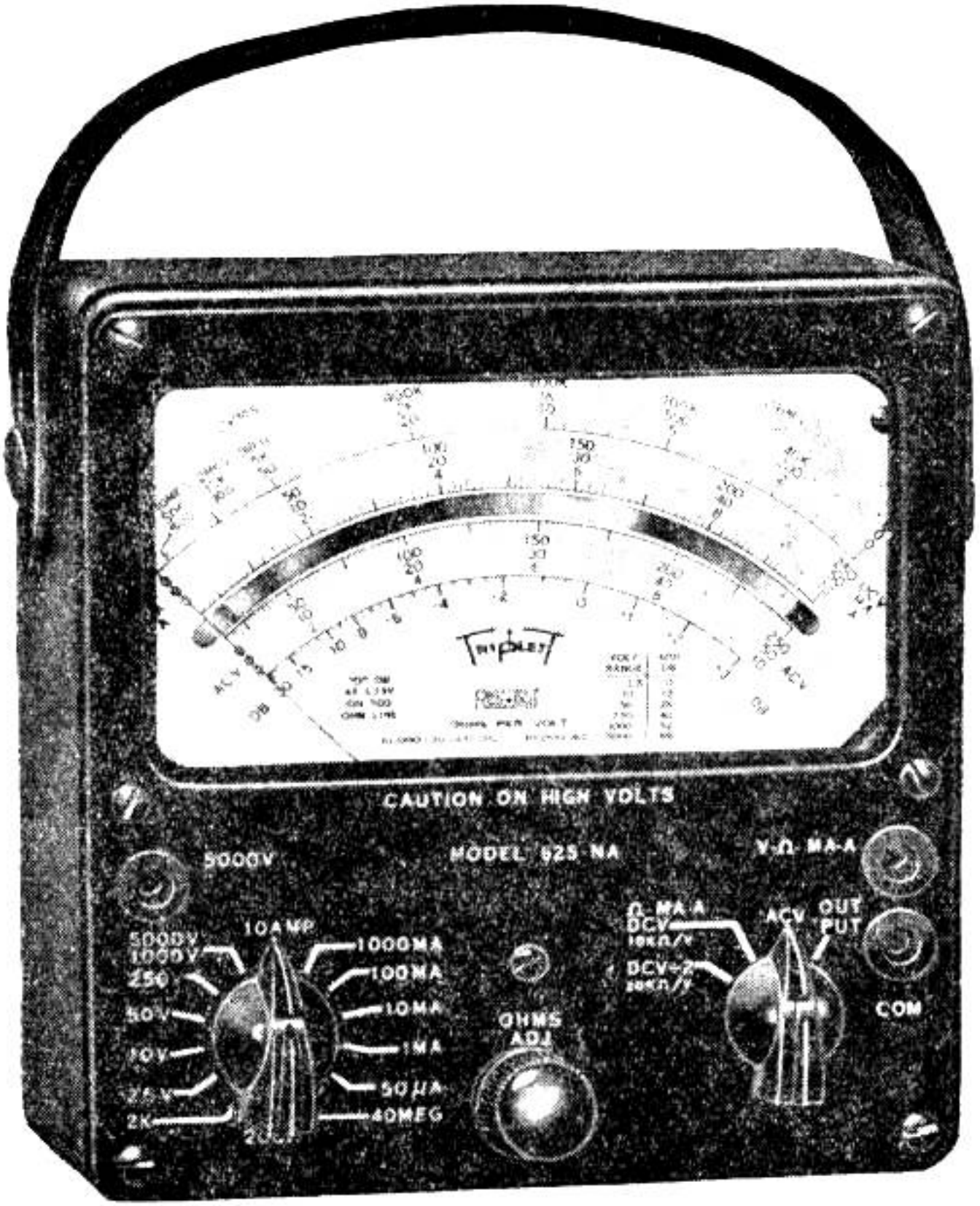

CAUTION ON HIGH VOLTS
5000V
MODEL 625-NA
V-Ω-MA-A
Ω-MA-A
DCV
10KΩ/V
DCV÷2
20KΩ/V
ACV OUT PUT
COM
10AMP
5000V
1000V
250
50V
10V
2.5V
2K
1000MA
100MA
10MA
1MA
50μA
40MEG
OHMS ADJ

Model 625-NA

RANGES

D.C. Volts: 0-1.25-5-25-125-500-2500, at 20,000 ohms per volt.
0-2.5-10-50-250-1000-5000, at 10,000 ohms per volt.

A.C. Volts: 0-2.5-10-50-250-1000-5000, at 10,000 ohms per volt.

D.C. Microamperes: 0-50, at 250 millivolts.

D.C. Milliamperes: 0-1-10-100-1000, at 250 millivolts.

D.C. Amperes: 0-10, at 250 millivolts.

Ohm: 0-2000-200,000 .....(12-1200 at center scale)

Megohm: 0-40 .....(240,000 Ohms at center scale)

Decibels: —20, +10, +22, +36, +50, +62, +76 on 600 Ohm line at 1Mw.

Output: Condenser in series with A.C. Volt ranges.

GENERAL DESCRIPTION

Instrument—6" 0-50 Microamps.

Mirror Scale—for excellent readability. Black markings on white except AC are red and OHMS are green on white.

Molded, Insulated Case—Black molded 2½" x 5½" x 6". Removable strap handle.

Panel—Black molded with white markings.

Batteries—Self-contained, One 15 V. Minimax Eveready No. 411; one 1.5 V. No. 935 Eveready, or equivalent.

Weight—3 lbs.

TRIPLETT

Operating Instructions for 625-NA Volt-Ohm-Milliammeter

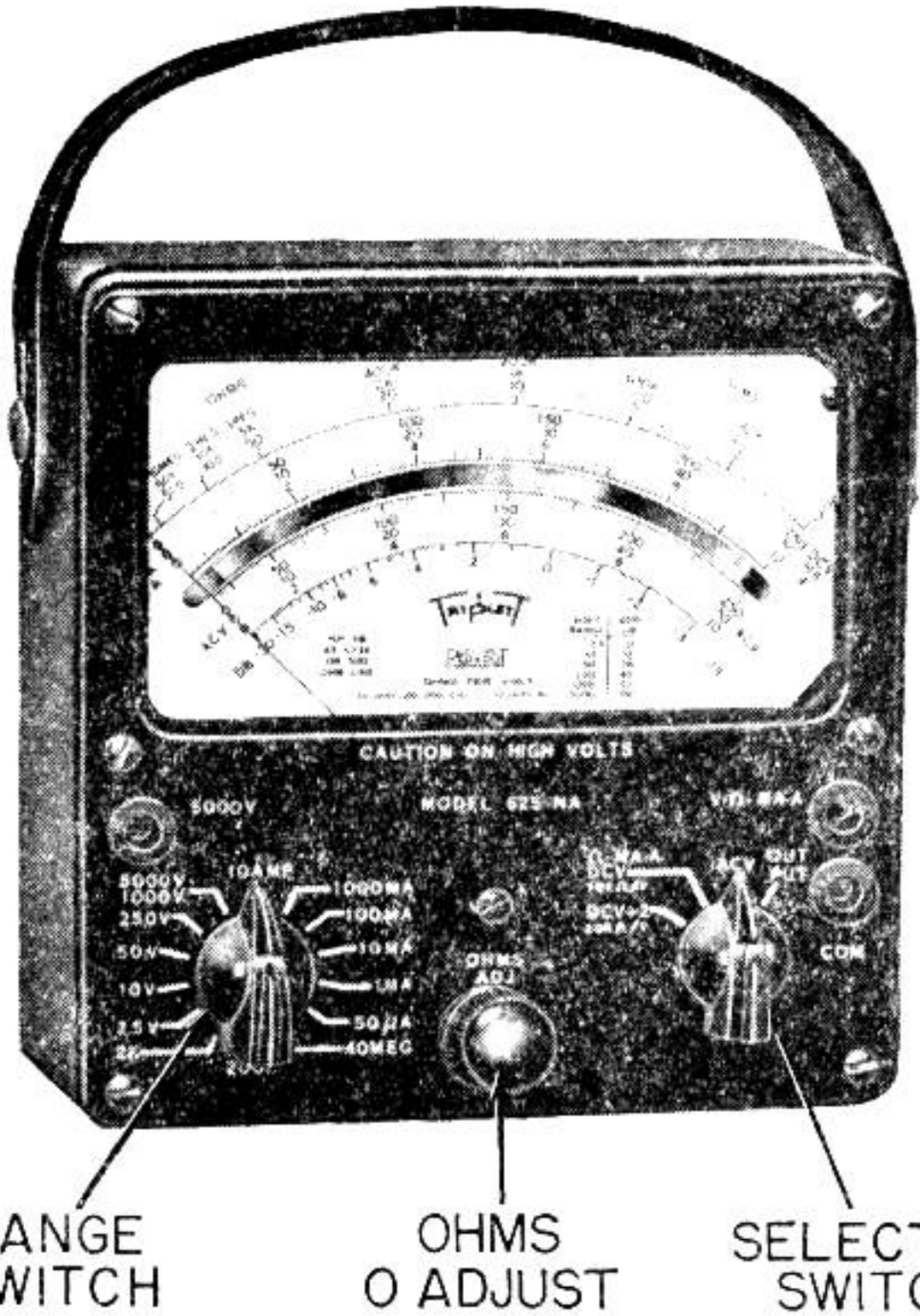
GENERAL DESCRIPTION

The Model 625-NA Volt-Ohm-Milliammeter is a long scale multi-range instrument in a compact portable case. It provides the ranges commonly used in servicing radio and TV receivers as well as those used in the experimental laboratory or at a radio transmitting station.

The selection of all ranges except 5000V is obtained by rotating the two bar knobs on the front of the panel. The Selector Switch knob is on the left side of panel. The 5000 AC or DC volt ranges require changing jack connections in addition to setting the switches. The red jacks are the positive leads for DC, and the "COM" is always negative.

The "Range Switch" is more or less self explanatory.

The "Selector Switch" requires a little more explanation. Position No. 1 (DCV÷2, 20KΩ/V) indicates you divide the scale reading by 2 according to the position of the range switch setting, etc. If the range switch is on 50V, the selector switch on (DCV÷2, 20KΩ/V) position and your meter reads 30 on the 50V scale, the true voltage would be 15 volts. With this feature you



have twice as many ranges available.

With selector switch in the 2nd position (Ω-MA-A, DCV, 10KΩV) you read the scale direct.

With selector switch in the 3rd position (ACV) you read AC volts on the red scales below the mirror.

The "Output" position places a condenser in series with the "com" lead to blank DC voltage so only the AC audio will read.

OHMS

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. Follow the Operation Chart as noted.

Condensers may be checked for shorts or leakage resistance with the ohm ranges. *Discharge Condensers Before Making Test.* The tests are made at 1.5 volts on the "2K" and "200K" ohm ranges, and at 15 volts on the "40 MEG" range.

To extend the ohm range from 0-40 megohms to 0-400 megohms, connect a 150 volt battery and a 2.2 megohm resistor in series with one of the test leads. Figure 1. Set Range switch to "40 MEG", adjust ohms control and read on 0-40 megohm scale multiplied by 10.

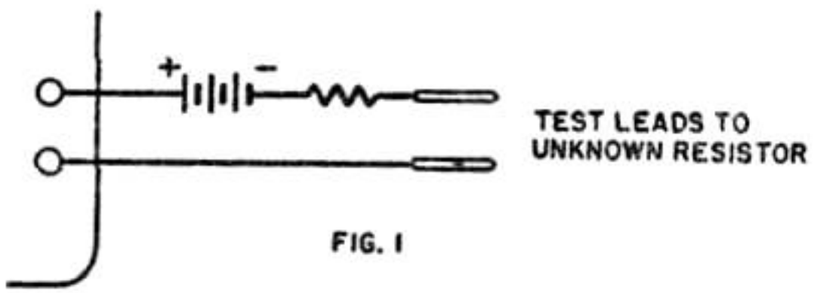


FIG. 1

MILLIAMPERE MEASUREMENTS

Do not test directly across any potential circuits when on milliampere ranges as this may burn out the instrument and shunt.

RESISTANCE MEASUREMENTS

Under no condition apply voltage between leads when on ohmmeter position as the instrument will thereby be overloaded and damaged.

AMPERES

For 0-10 Amp DC, see Operation Chart.

Plug the desired external 250 millivolt shunt into the "Com" and the "V-O-MA-A" jacks and set the range switch on the 10 Ma. 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 special order.

MEASURING OUTPUT VOLTS (DB)

Output is generally measured in units called the decibel, a terminology used to indicate power levels in amplifiers or telephone work.

Do not confuse the DB with the VU (Volume Unit). The VU is based on .001

watt dissipated in a 600 ohm line and is measured with a meter having special ballistic characteristics.

Rotate the selector switch to the appropriate AC volt range. Refer to the small chart on the meter dial for the range to use. Always start with the highest range if in doubt as to the approximate number of decibels.

MICROFARADS

Set right hand Selector Switch to "ACV" and connect a 0.5 mfd. condenser across the "Com" and the "V-O-MA-A" jacks. Connect this combination in series with the unknown condenser and a 110 volt 60 cycle line as shown in Figure 2. Read capacitance as noted below on the 0-10 "ACV" scale.

CAUTION: This test is for paper condensers only!

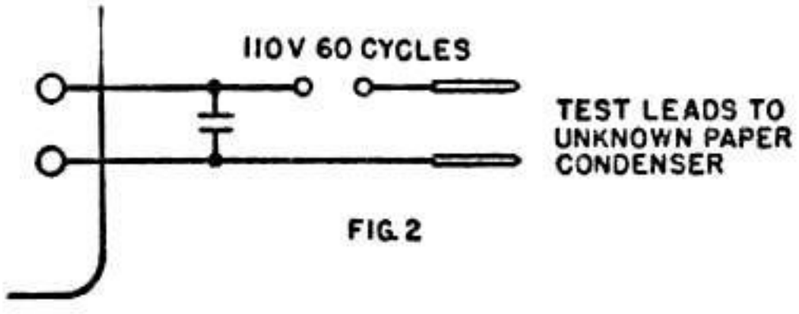


FIG. 2

MODEL 625-NA EXTERNAL CONNECTIONS

TO MEASURE MFD.	SET LEFT HAND RANGE SWITCH TO	DEFLECTION ON RED 0-10 "ACV" SCALE
.002	2.5V	1.65
.004		3.05
.006		4.65
.008		6.15
.010		7.80
.012		9.60
.020	10.0V	4.50
.04		7.80
.05		9.90
.08	50V	3.00
0.10		3.70
0.2		6.30
0.4		9.60
0.6	250V	2.45
0.8		2.70
1.0		2.95
2.0		3.50
4.0		3.90
6.0		4.10
10.0		4.25

OPERATION CHART

TO MEASURE	SET RIGHT HAND SELECTOR SWITCH TO	SET LEFT HAND RANGE SWITCH TO	USE BLACK JACK	USE RED JACK	READ ON	EACH SCALE DIV. EQUALS
10,000Ω/V					**BLACK SCALE**	
0-2.5 Volts DC	ΩMA-A DCV 10,000Ω/V	2.5 V	Com	V-O-MA-A	0-250 DC÷100	0.025 Volt
0-10 Volts DC		10 V			0-10 DC×1	0.10 Volt
0-50 Volts DC		50 V			0-50 DC×1	0.5 Volt
0-250 Volts DC		250 V			0-25 DC×1	2.5 Volts
0-1000 Volts DC		1000-5000 V			0-10 DC×100	10 Volts
0-5000 Volts DC		1000-5000 V	Com	5000V	0-10 DC×500	50 Volts
20,000Ω/V					**BLACK SCALE**	
0-1.25 Volts DC	DCV÷2 20,000Ω/V	2.5 V	Com	V-O-MA-A	*0-250 DC÷200*	*0.0125 Volt*
0-5 Volts DC		10 V			0-50 DC÷10	0.05 Volt
0-25 Volts DC		50 V			0-250 DC÷10	0.025 Volt
0-125 Volts DC		250 V			0-250 DC÷2	1.25 Volt
0-500 Volts DC		1000-5000 V			0-50 DC×10	5 Volts
0-2500 Volts DC		1000-5000 V	Com	5000V	0-250 DC×10	25 Volts
10,000Ω/V					**RED SCALE**	
0-2.5 Volts AC	ACV	2.5 V	Com	V-O-MA-A	0-250 AC÷100	0.025 Volt
0-10 Volts AC		10 V			0-10 AC×1	0.10 Volt
0-50 Volts AC		50 V			0-50 AC×1	0.5 Volt
0-250 Volts AC		250 V			0-250 AC×1	2.5 Volts
0-1000 Volts AC		1000-5000 V			0-10 AC×100	10 Volts
0-5000 Volts AC		1000-5000 V	Com	5000V	0-50 AC×100	50 Volts
0-50 UA DC	ΩMA-A DCV 10,000Ω/V	50 UA	Com	V-O-MA-A	**BLACK SCALE**	
0-1 MA DC		1 MA			0-50 DC×1	0.5 UA
0-10 MA-DC		10 MA			0-10 DC÷10	0.01 MA
0-100 MA DC		100 MA			0-10 DC×1	0.10 MA
0-1000 MA DC		1000 MA			0-10 DC×10	1.0 MA
0-10 Amps DC		10 Amps			0-10 DC×100	10 MA
					0-10 DC×1	0.10 Amps
0-2000 Ohms	ΩMA-A DCV 10,000Ω/V	2K	Com	V-O-MA-A	*GREEN SCALE*	
0-200,000 Ohms		200K			0-2K ohms×1	
0-40 Megohms		40 Meg			0-200K ohms×1	
					0-40 Megohms×1	
		2.5 V	Com	V-O-MA-A	**BLACK SCALE**	
—20 to +10 DB	Output	10 V			—20 to +10 DB plus 0	
— 8 to +22 DB		50 V			—20 to +10 DB plus 12	
+ 6 to +36 DB		250 V			—20 to +10 DB plus 26	
+20 to +50 DB		1000 V			—20 to +10 DB plus 40	
+32 to +62 DB		5000 V	Com	5000V	—20 to +10 DB plus 52	
+46 to +76 DB					—20 to +10 DB plus 66	

MAINTENANCE

Battery Replacement

One battery 1.5 volt and one 15 volt battery are provided for the ohmmeter circuit. These batteries may be easily replaced by removing the six screws holding the panel. When the ohmmeter circuit can no longer be adjusted by means of the variable resistance on the panel, replace the 1.5V battery with Eveready No. 935 or its equivalent, and the 15V battery with Eveready No. 411 or its equivalent.

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 supply.

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

CARRYING CASE

Model 629 leather case for 625-NA

CAUTION

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

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 element may be damaged.

Pointer Setting: Be sure instrument pointer is on zero before taking any readings. The pointer may be set on zero by turning the bakelite screw just above the "Ohms Adj."

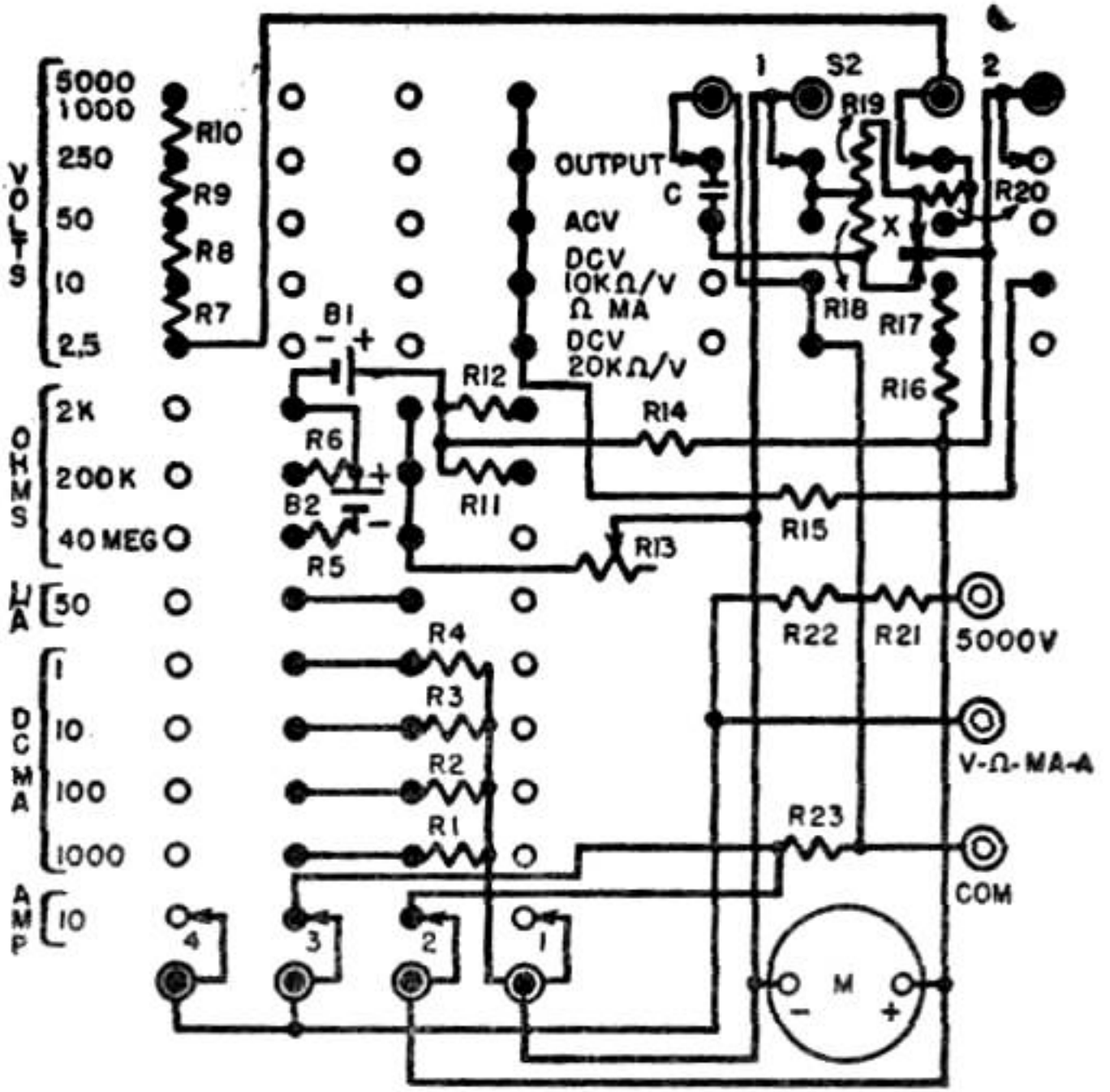
High Voltage Measurements: Exercise extreme caution. Make connections only with apparatus turned off. Make certain that no condensers are charged to a high voltage, such as filter condensers or power packs. Make certain switch is on 1000-5000V position.

High Voltage Testing Probes

Part T-79-83.....0-10,000 D. C. Volts
Part T-79-74.....0-10,000 A. C. Volts
Part T-79-130.....0-25,000 D. C. Volts
Part T-79-75.....0-25,000 A. C. Volts

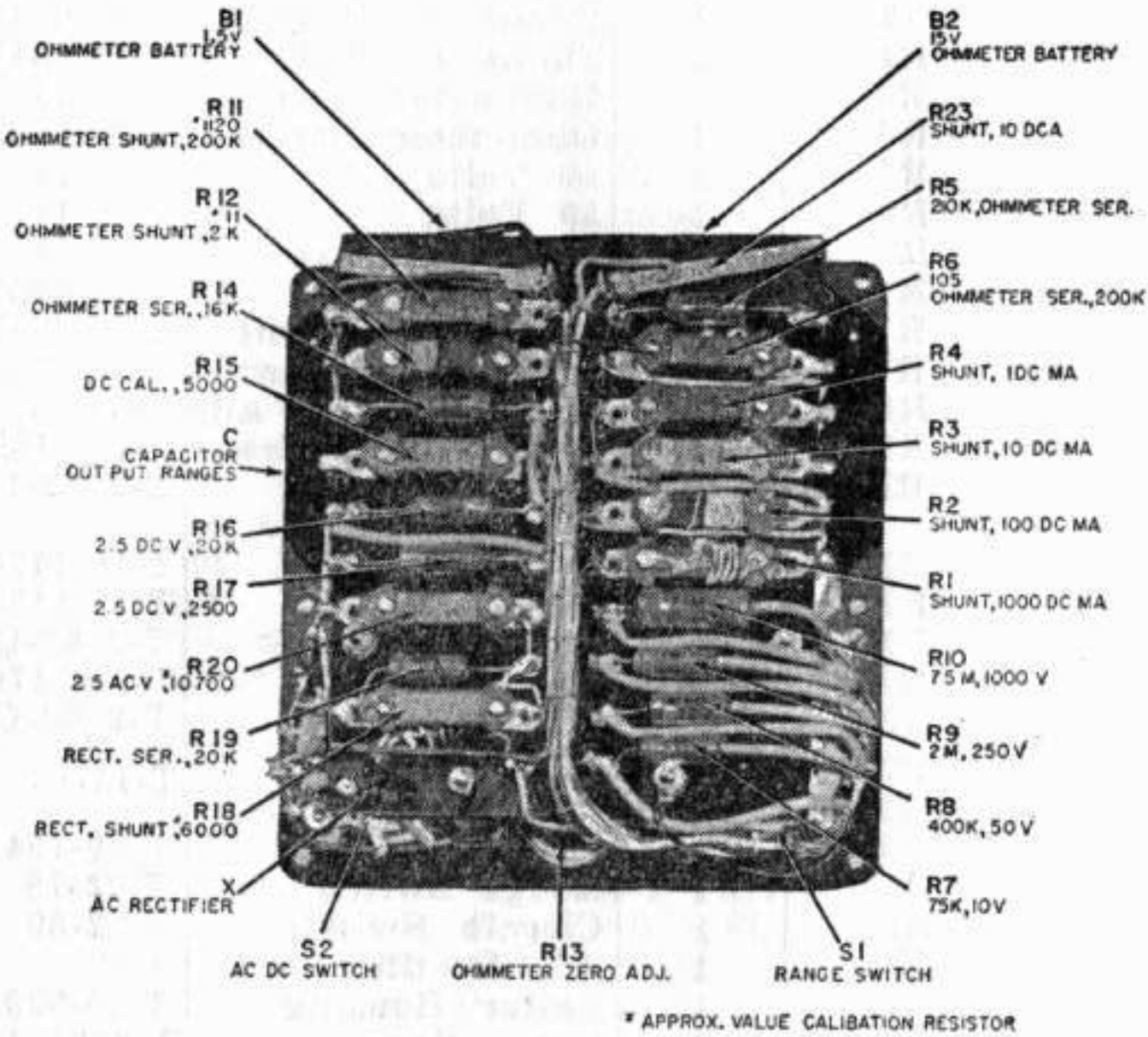
Replacement Leads

LEADS for Models 630, 630-A, 666-HH, 666-R and 625-NA. Rubber (T-79-127).



MODEL 625-NA WIRING DIAGRAM

PARTS LOCATION



Model 625-NA

REPLACEABLE PARTS 625-NA

REF. NO.	QUAN.	FUNCTION	TRIPLETT PART NO.
B1	1	Ohmmeter Battery	T-2426-2
B2	1	Ohmmeter Battery	T-37-16
C	1	Output Ranges	T-2631-P8
M	1	Indication	T-52-416
R1	1	Shunt 1000 DCMA	T-2603-C-.263
R2	1	Shunt 100 DCMA	T-2603-C-2.63
R3	1	Shunt 10 DCMA	T-2603-C-26.31
R4	1	Shunt 1 DCMA	T-2603-C-263.1
R5	1	Ohmmeter Series	T-15-1165
R6	1	Ohmmeter Series	T-2603-C-105
R7	1	10 Volts	T-15-1166
R8	1	50 Volts	T-15-1167
R9	1	250 Volts	T-15-1168
R10	1	1000 Volts	T-15-1006
R11	1	Ohmmeter Shunt	T-2603-C-1120
R12	1	Ohmmeter Shunt	T-2603-C-11
R13	1	Ohmmeter Zero Adj	T-16-24
R14	1	Ohmmeter Series	T-15-1169
R15	1	DC Calibrating 1000 ohm/V	T-2603-1-5000
R16	1	2.5V DC	T-15-1170
R17	1	2.5V DC	T-15-1134
R18	1	Rectifier Shunt	T-2603-C-6000
R19	1	Rectifier Series	T-15-1170
R20	1	2.5V AC	T-2603-C-10700
R21, R22	2	5000 Volts	T-15-1674
R23	1	Shunt 10A DC	T-90-164
S1	1	Range Switch	T-22-78
S2	1	Circuit Switch	T-22-80
X	1	AC Rectifier	8679
	1	Tester Housing	T-10-599
	2	Connections	T-2563-A
	2	Connections	T-33-13
	2	Connections	T-33-12
	2	Switch Knobs	5804
	1	Ohms Adj. Knob	T-2558-1
	1 Pr.	Connections	T-79-127

*Approx. Value Calibration Resistor

PART NAME	DESCRIPTION
Battery	1.5V Eveready 935 or equivalent
Battery	15V Eveready 411 or equivalent
Capacitor	.1 Mfd 600 DCWV, paper
Instrument	50 Ua, 250 MV with panel
Resistor	.263* ohm wirewound 1W
Resistor	2.63* ohm wirewound 1W
Resistor	26.31* ohm wirewound 1W
Resistor	263.1* ohm wirewound 1W
Resistor	210K ohm ±1% Film ½W
Resistor	105* ohm Wirewound 1W
Resistor	75K ohm ±1% Film ½W
Resistor	400K ohm ±1% Film ½W
Resistor	2 Megohm ±1% Film ½W
Resistor	7.5 Megohm ±1% Film 1W
Resistor	1120* ohm wirewound 1W
Resistor	11* ohm Wirewound IW
Resistor	20K ohm Variable
Resistor	16K ohm ±1% Film ½W
Resistor	5K ohm ±1% Wirewound 1W
Resistor	20K ohm ±1% Film ½W
Resistor	2500 ohm ±1% Film ½W
Resistor	6000* ohm Wirewound 1W
Resistor	20K ohm ±1% Film ½W
Resistor	10700* ohm Wirewound 1W
Resistor	20 Megohm ±1% Film 2W
Shunt	10 Amp 250 MV Strip type
Switch	14 Pos. 4 Deck Cutoff
Switch	14 Pos. 2 Deck 4 Pole 4 Throw
Rectifier	Copper Oxide, Conant BT-160 3 Lead
Case	Bakelite with strap handle
Clip	Alligator, Mueller No. 60
Jack	Red for banana plug
Jack	Black for banana plug
Knob	Bar 1¼" long
Knob	Round 11/16 OD
Leads	Banana plug type

TRIPLETT WARRANTY AND CONDITIONS OF SALE

The Triplett Electrical Instrument Company warrants instruments manufactured by it to be free from defective material or factory workmenship 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 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 an 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 Electrical Instrument Company 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 Electrical Instrument Company shall incure no liability for direct or consequential damage of any kind.

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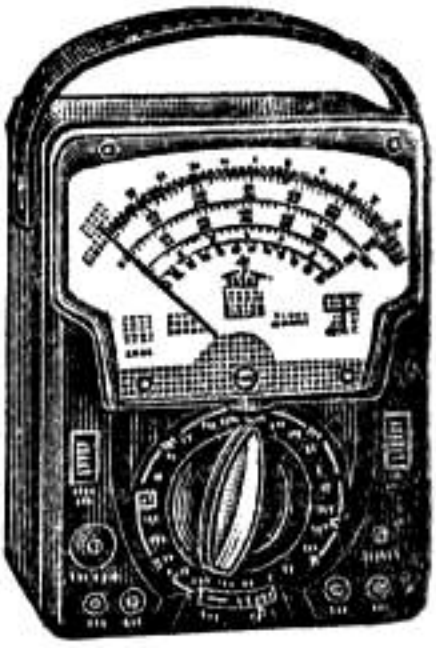
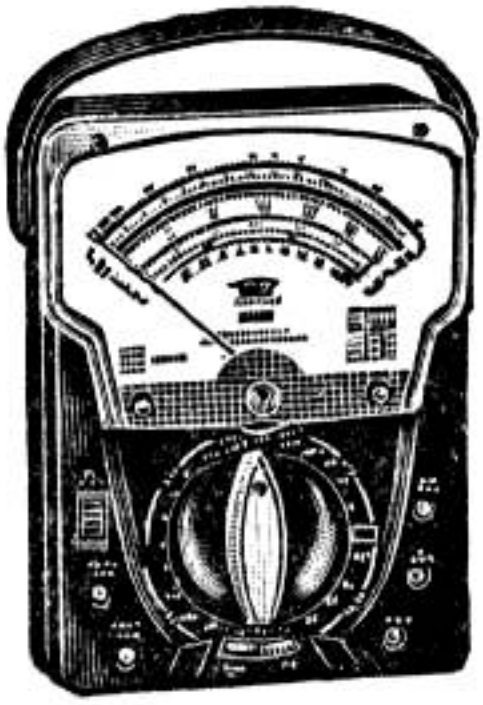


631

Combination V-O-M—VTVM

310

The Smallest Complete V-O-M With Switch



630-NA

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