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SUPPLEMENT

24 APRIL 1952

SUPPLEMENT TO TM 11-5500 MULTIMETER TS-297/U

The following information, published on Order Nos. 2978-Phila-52, 2977-Phila-52, 3061-Phila-52, and 2982-Phila-52, supplements TM 11-5500, August 1948.

Personnel using this equipment and having custody of this technical manual will enter suitable notations beside each affected paragraph and figure in the technical manual to indicate the presence of this supplementary information.

Note: Make the following changes in the manual:

Change the switch panel marking "OHMS AC DC" to read: OHMS ACV DCV/MA.

Change the ohms-adjust knob panel marking "OHMS ZERO ADJ" to read: OHMS ZERO ADJUST.

Change the common-jack panel marking "±VOLTS -MA OHMS" to read: OHMS -DCV -MA ACV.

Change Cord CX-529/U to read: Test Lead Set CX-1331/U.

Page 2. Par. 3. In subparagraph *a*, delete the second and third items from the table and substitute the following:

Quantity	Name of component	Dimensions (in.)				Unit weight (lb.)	Unit volume (cu. in.)
		Height	Width	Depth	Length		
1	Test Lead Set CX-1331/U	.....	.....	.....	48	.....	.....
1	Cord CX-1332/U	.....	.....	.....	72	.....	.....

Page 2. Par. 4. Delete the text of paragraph 4, and substitute the following: Packaged for export shipment (fig. 4), Multimeter TS-297/U is contained in a heavy cardboard carton 8½ inches long, 6 inches wide, and 4¾ inches high. The volume of the carton is 242¼ cubic inches, and the shipping weight is 3 pounds, 13 ounces.

Page 2. Par. 5. Make the following changes in paragraph 5:

In subparagraph *a*, line 2, change "black" to read: gray.

Delete subparagraph (1)(*a*), and substitute the following:

(*a*) *Meter dial.* The white meter dial is marked with three scales calibrated along parallel arcs. The upper scale, labeled OHMS, is printed in green. Divisions are marked above the scale from zero to infinity by the numerical designations: 0, 5, 10, 20, 30, 50, 100, 200, 500, 1,000, and ∞. The center scale, labeled DC, is printed in black and graduated for the measurement of d-c volts and d-c milliamperes. Every fifth division is marked below the scale; markings are in alternative series of numerals: 0 (common); 10, 20, 30, 40; and 25, 50, 75, 100. The lower scale, labeled ACV, is printed in purple-blue and is graduated for the measurement of a-c volts. Every fifth division is marked below the scale; markings are by alternative series of numerals 0 (common); 10, 20, 30, 40; and 25, 50, 75, 100.

Add the following to subparagraph *a*(1)(*c*):

A green, black, or purple-blue dot adjacent to a jack indicates the color of the associated meter scale or scales.

In subparagraph *b*, line 4, delete "(Mueller No. 60)."

Page 4. Par. 5. Make the following changes in subparagraph *c*:

Change the heading to read: Cord CX-1332/U.

In the first line, change "Cord CX-468/U" to read: Cord CX-1332/U.

In the last line, change "Plug PL-55" to read: Plug PJ-055B.

Page 3. Fig. 2. Change "Cord CX-468/U" to read: Cord CX-1332/U.

Page 4. Fig. 3. Delete figure 3 and substitute the following:

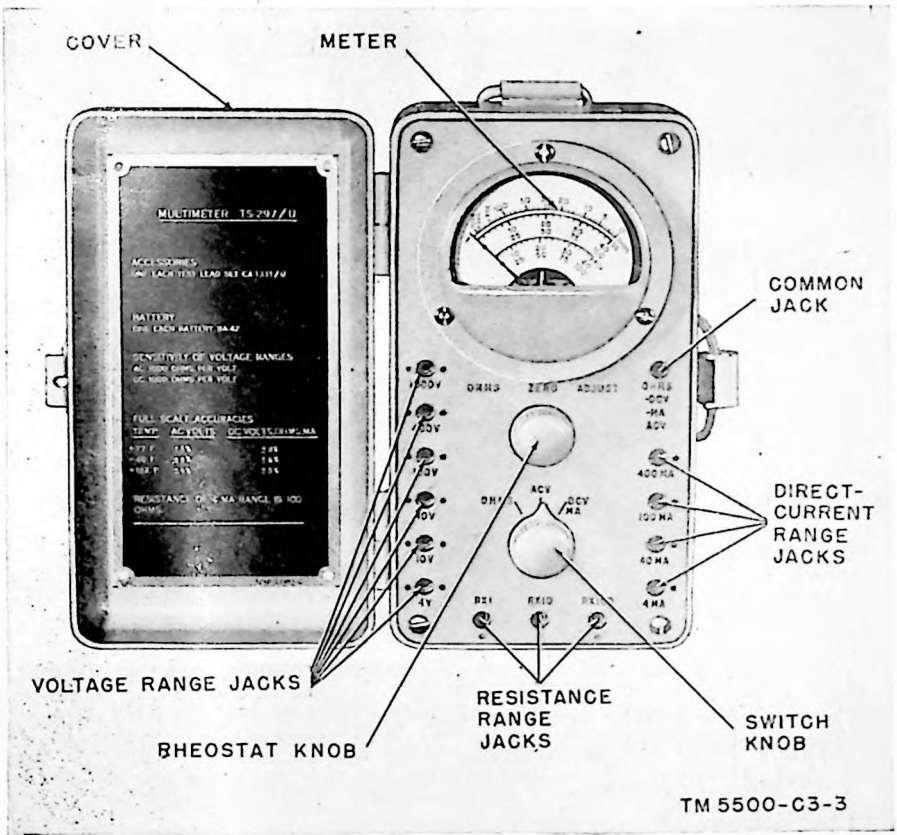

Figure 3. Multimeter, view of panel face.

Page 5. Fig. 4. Delete figure 4, and substitute the following:

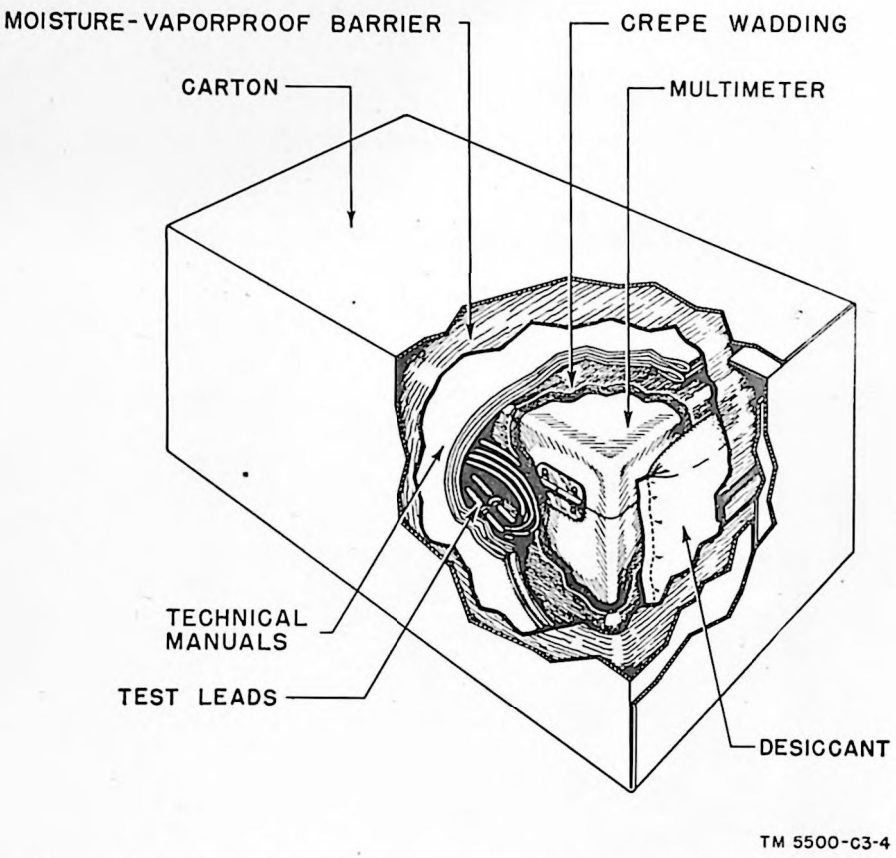

Figure 4. Multimeter TS-297/U, cutaway view showing packaging detail.

Page 5. Par. 6. Make the following changes in paragraph 6:

Delete subparagraphs *a*(1) through (4), and substitute the following:

(1) Open the carton, and remove the multimeter package.

(2) Cut off the sealed edge of the moisture-vaporproof barrier bag, and remove the multimeter, TM 11-5500, the cord set, and the desiccant. If cut carefully, the barrier bag may be used again.

(3) Remove all tape and cushioning material.

In subparagraph *b*(1) change "and cords" to read: test leads and alligator clips.

Page 8. Par. 12. Make the following changes in paragraph 12:

In line 1, change "Cords CX-529/U and CX-468/U" to read: Test Lead Set CX-1331/U and Cord CX-1332/U.

In lines 2 and 3, change "Cord CX-529/U" to read: Test Lead Set CX-1331/U.

In line 4, change "Cord CX-468/U" to read: Cord CX-1332/U.

In line 6, change "Plug PL-55" to read: Plug PJ-055B.

Page 9. Par. 13. In subparagraph *c*, line 1, change "AC, and DC" to read: ACV, and DCV.

Page 9. Par. 14. Delete subparagraph *a*, and reletter subparagraph *b* through *g* to read respectively: *a*, *b*, *c*, *d*, *e*, and *f*.

Page 9. Par. 15. Make the following changes in paragraph 15:

In subparagraph *a*, line 1, change "AC" to read: ACV.

In line 2, change "DC" to read: DCV.

In subparagraph *d*, line 1, change "DC" to read: black DC.

Change "AC" to read: purple-blue ACV.

Page 10. Par. 16. Make the following changes in paragraph 16:

In subparagraph *a*, change "DC" to read: DCV.

In subparagraph *d*, change "DC" to read: black DC.

Page 12. Par. 18. Make the following changes in paragraph 18:

In subparagraph *a*, change "AC" to read: ACV.

In subparagraph *c*, change "red" to read: purple-blue.

Page 14. Par. 23. Make the following changes in paragraph 23:

In subparagraph *a*(1), line 2, change "Allen wrench" to read: screw driver.

In subparagraph *a*(5), change "white or cream wiping enamel" to read: wiping enamel of the appropriate color.

Add the following to subparagraph *b*(1):

If a wire of Test Lead Set CX-1331/U becomes defective near the ends, cut off the defective section, remove the tip, and assemble it to the undamaged wire.

Page 15. Par. 24. Make the following changes in paragraph 24:

In subparagraph *b*(1), change "three" to read: seven.

In subparagraph *b*(4), change second sentence to read:

Be sure that the red wire is attached to the + end of battery holder and the black wire to the — end.

In subparagraph *b*, change subparagraph number "(5)" to read: (6), and subparagraph number "(6)" to read: (5), and transpose positions of these two subparagraphs.

Page 19. Fig. 6. Change the value of resistor R12 to read: 220Ω.

Page 22. Fig. 9. Change the value of R12 to read: 220Ω.

Page 23. Fig. 10. Add the following after the caption:

(*Change R19 to R15; change R9 above R17 to R19.*)

Page 31. App II. Delete appendix II and substitute the following:

APPENDIX II

IDENTIFICATION TABLE OF PARTS

Note. The following is an identification table of parts for Multimeter TS-297/U (Signal Corps stock No. 3F4325-297). The fact that a part is listed in this table is not sufficient basis for requisitioning the item. Requisitions must cite an authorized basis, such as a specific T/O & E, T/A, Sig 7-8-10, SIG 10, list of allowances of expendable material, or another authorized supply basis. The Department of the Army Supply Catalog applicable to the equipment covered in this manual is SIG 7 & 8-TS-297/U. For an index of available supply catalogs, in the Signal portion of the Department of Army Supply Catalog, see the latest issue of SIG 1, Introduction and Index.

Identification Table of Parts

Fig. No. and ref symbol	Name of part and description	Function of part	Signal Corps stock No.
Fig. 2	CLIP: alligator; for test lead; steel, bonderized jaw, black bakelite ins sleeve; 13/32" h x 5/16" wd x 2¼" lg; slides over test prod; ⅜" jaw opening.	Terminates test lead; provides means of connecting test lead to circuit under test.	2Z2708.28
Fig. 2	CLIP: alligator; for test lead; steel, bonderized jaw, red bakelite ins sleeve; 13/32" h x 5/16" wd x 2¼" lg; slides over test prod; ⅜" jaw opening.	Terminates test lead; provides means of connecting test lead to circuit under test.	2Z2712.188
	CONTACT, connector: insert for pin jack.	Receives and connects test cord to circuit.	2Z3193-125
Fig. 2	CORD: 2 cond; rubber covered; 72" lg; c/o Sig C Cordage CO-144, w/Sig C Plug PJ-055B at one end and 2 test prods at other end, AN Cord CX-1332/U.	Used to measure current or voltage accessible through a jack.	3E6000-1332.1
Fig. 3	KNOB: round w/pointer; for ¼" dia shaft; single #8-32 setscrew; 11/16" wd x 13/16" lg x 13/32" h o/a; shaft hole ¼" d.	Used to position function switch.	2Z5822-710
Fig. 3	KNOB: round w/o pointer; for ¼" dia shaft; single #8-32 setscrew; 11/16" wd x 13/16" lg x 13/32" h o/a; shaft hole ¼" d.	Used to position OHMS ZERO ADJUST control.	2Z5822-709
Fig. 2	LEAD SET, test: AN Test Lead Set CX-1331/U.	Used to connect multimeter with circuit or component to be measured.	3E6000-1331.1

Identification Table of Parts (cont'd)

Fig. No. and ref symbol	Name of part and description	Function of part	Signal Corps stock No.
M1 (fig. 3)	METER, multiscale: dc; range 40/100 linear scale, 40/100 ac, 1/1000 ohms; round metal case, flush mounting; HS; calibrated for nonmagnetic panel; 20-scale divisions; black, green, and purple-blue numerals on white background.	Indicates current, voltage, or resistance reading.	3F3299-12.1
SA1 (fig. 3)	PANEL, blank: for mtg parts of unit.	Used as mounting for electrical parts.	2Z6960-106
SA2 (fig. 10)	RECTIFIER SUBASSEMBLY: four wire-wound and one temperature-compensating resistor and one metallic rectifier mounted on bakelite strip; consists of resistors R22, R23, R24, R25, R26, and rectifier RE1.	Restifier subassembly.	3Z6963-2
R14 (fig. 10)	RESISTOR, fixed: compensating; nominal value 150 ohms ±10% at 25° C; ½ w.	Compensates for resistance variations in circuit due to temperature variations.	3Z6015-94
R12 (fig. 11)	RESISTOR, fixed: composition, 220 ohms, ±10%; ½ w; JAN type RC20BF221K.	Shunt in ohmmeter circuit to obtain full-scale needle deflection.	3RC20BF221J
R21 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 1.06 ohms ±1%; ¼ w; 2 solder lug term.	Universal shunt on d-c readings.	3Z5991F6-3
R20 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 3.2 ohms ±1%; ¼ w; 2 solder lug term.	Universal shunt on d-c readings.	3Z59993B
R6 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 6 ohms ±1%; ¼ w; 2 solder lug term.	Shunt used in measuring resistance.	3Z5996-38

Identification Table of Parts

Fig. No. and ref symbol	Name of part and description	Function of part	Signal Corps stock No.
R19 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 6.40 ohms ±1%; ¼ w; 2 solder lug term.	Universal shunt on d-c readings.	3Z5996D4
R7 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 23.45 ohms ±1%; ¼ w; 2 solder lug term.	Used to adjust ohmmeter circuit for center scale readings.	3Z6002C3-12
R8 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 54 ohms ±1%; ¼ w; 2 solder lug term.	Shunt used in measuring resistance.	3Z600504-2
R18 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 96 ohms ±1%; ¼ w; 2 solder lug term.	Universal shunt on d-c readings.	3Z6009F6-1
R9 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 245 ohms ±1%; ¼ w; 2 solder lug term.	Adjusts ohmmeter circuit for correct center scale readings.	3Z6024E5-4
R17 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 320 ohms ±1%; ¼ w; 2 solder lug term.	Universal shunt on d-c readings.	3Z6032-5
R10 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 540 ohms ±1%; ¼ w; 2 solder lug term.	Shunt used in measuring resistance.	3Z6054-2
R15 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 880 ohms ±1%; ¼ w; 2 solder lug term.	Universal shunt on d-c readings.	3Z6088-1
R23, R24 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 1000 ohms ±1%; ¼ w; 2 solder lug term.	Used with RE1 to form rectifier bridge.	3Z6100-268
R11 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 2864 ohms ±1%; ¼ w; 2 solder lug term.	Used to adjust ohmmeter circuit for correct center scale readings.	3Z6280-9

Identification Table of Parts (cont'd)

Fig. No. and ref symbol	Name of part and description	Function of part	Signal Corps stock No.
R16 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 3686 ohms ±1%; ¼ w; 2 solder lug term.	Multiplier for 4-volt range for measuring d-c voltage.	3Z6368
R5 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 6000 ohms ±1%; ¼ w; 2 solder lug term.	Multiplier for 10-volt range.	3Z6560-78
R4 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 30,000 ohms ±1%; ¼w; 2 solder lug term.	Multiplier for 40-volt range.	3Z6630-103
R3 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 60,000 ohms ±1%; ¼ w; 2 solder lug term.	Multiplier for 100-volt range.	3Z6660-44
R2 (fig. 10)	RESISTOR, fixed: wire-wound, noninductive; 300,000 ohms ±1%; 1/3 w; 2 solder lug term.	Multiplier for 400-volt range.	3Z6730-45
R1 (fig. 10)	RESISTOR, fixed: wire-wound, 600,000 ohms ±1%; ½ w; 2 solder lug term.	Multiplier for 1,000-volt range.	3Z6760-12
R13 (fig. 11)	RESISTOR, variable: potentiometer; composition; 2500 ohms ±20%; 1/3 w; 3 solder lug term; inclosed case.	Shunt across meter; OHMS ZERO ADJUST rheostat.	3Z7325-26
SW1 (fig. 11)	SWITCH, rotary: 3 poles, 3 positions, 1 sect; steel body, nonshorting contacts; single hole mtg.	OHMS ACV DCV/MA switch.	3Z9826-4.15