

CHAPTER 4

ORGANIZATIONAL MAINTENANCE

40. General

Organizational maintenance of the tube tester is limited to preventive maintenance (par. 42) and to the replacement of the test adapters (fig. 10), electrical plug connector, electrical clip, insulator clip, knobs (04 through 031, fig. 1), indicator light lens, and electron tube retainer and shield. The operating instructions for the tube tester are contained in paragraphs 13 through 31.

41. Tools and Materials Required

The tools and materials required for organizational maintenance are as follows:

a. *Tools.* The only tools required are those tools normally available to the repairman-user because of his assigned mission.

b. *Materials.*

- (1) Cleaning compound.
- (2) Cleaning cloth.
- (3) Sandpaper, fine.

42. Preventive Maintenance

a. *DA Form 11-266.* DA Form 11-266 (fig. 9) is a preventive maintenance checklist to be used by the second echelon. Items not applicable to the equipment are lined out in the figure. References to the ITEM block in the figure are to paragraphs that contain additional maintenance information pertinent to the particular item. Instructions for the use of the form appear on the form.

b. *Items.* The information shown in this subparagraph is supplementary to DA Form 11-266. The item numbers correspond to the ITEM numbers on the form.

Warning: Disconnect all power before performing the following operations. After power is disconnected, some capacitors still may retain dangerous voltages. Before touching exposed electrical parts, short-circuit the parts to ground. When maintenance is completed, replace the equipment in its case, reconnect the power, and check for satisfactory operation.

Item	Maintenance procedures
12	See that the electron tube shields for V2 and V3 are firmly in position and secure. See that the electron tube retainer for V1 is clamped tight.
19	Inspect fixed capacitors on the underside of the tube tester chassis for leaks, bulges, and discoloration.

43. Visual Inspection

Before operating the equipment, inspect it. Inspection will save repair time and may also avoid further damage. Inspect the following for obvious defects:

- a. The seating of all tubes in their sockets.
- b. Wiring connections on the terminal board.
- c. Wiring connections to the switches and meters on the front panel.

44. Equipment Performance Checklist

a. *General.* The equipment performance checklist provides a procedure for systematically checking equipment performance. All corrective measures that the second echelon repairman can perform are given in the *Corrective measure* column. When using the checklist, start at the beginning and follow each step in order. If the corrective measures indicated do not fix the equipment, troubleshooting is required by higher echelon. Note on the repair tag how the equipment performed and the corrective measures that were taken.

b. *Procedure.* Place the tube tester in operation as shown in the checklist in *c* below.

c. Equipment Performance Checklist.

Step	Action or condition	Normal indication	Corrective measure
1	Connect the TV-2(*)/U to a power source and set the ON-OFF switch to ON.	PILOT lamp lights -----	Replace PILOT lamp (par. 39b). Replace fuses F1 and F2 (par. 39a). Higher echelon repair required.
2	Set FILAMENT RANGE switch to several voltages and adjust FILAMENT fine control for each of the voltages selected.	Pointer of FILAMENT VOLTS meter indicates approximate voltage selected, then indicates exact voltage selected.	Higher echelon repair required.
3	Set GM-SIGNAL RANGE switch to each position and adjust SIGNAL-V.R. fine control for each position.	Pointer of SIGNAL meter can be adjusted to redline for each position of range switch.	Higher echelon repair required.
4	Set the ON-OFF switch to OFF -----	PILOT lamp goes out -----	Higher echelon repair required.
5	Set all switches to positions specified on tube test data roll chart for an available octal tube known to be in good condition, insert tube in OCTAL tube socket, and set the ON-OFF switch to ON.	PILOT lamp lights -----	Higher echelon repair required.
6	Set SHORT TEST switch to V position and depress PRESS TO TEST P1 switch.	FIL. CONT. SHORT lamp lights -----	Replace FIL. CONT. SHORT lamp (par. 39b). For TV-2B/U only, replace test adapter X3B (par. 45). Higher echelon repair required.
7	Adjust FILAMENT fine control -----	FILAMENT VOLTS meter indicates exact voltage selected.	

S T A R T

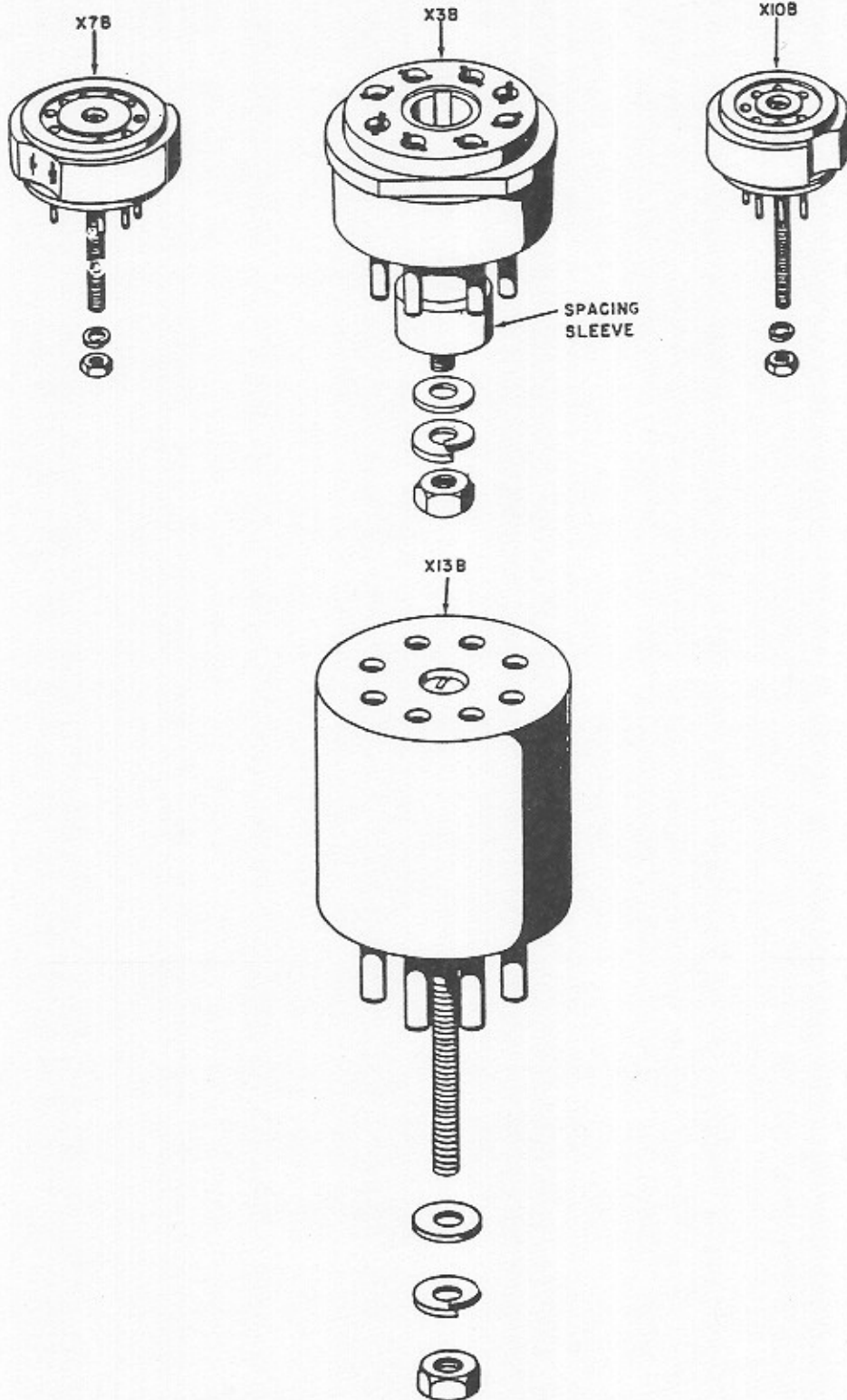
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EQUIPMENT PERFORMANCE

8	Set PLATE-SCREEN RANGE switch to position specified for tube on tube test data roll chart and adjust PLATE and SCREEN fine controls.	PLATE and SCREEN VOLTS meter indicates exact voltage indicated for tube on tube test data roll chart.	Replace tubes V1 and V3 (pars. 36 and 37). For TV-2B/U only, replace test adapter X3B (par. 45). Higher echelon repair required.
9	Set BIAS RANGE switch to position specified for tube on tube test data roll chart, and adjust BIAS fine control.	GRID BIAS VOLTS meter indicates exact voltage indicated for tube on tube test data roll chart.	Replace tube V2 (pars. 36 and 37). For TV-2B/U only, replace test adapter X3B (par. 45). Higher echelon repair required.
10	Set quality SHUNT control to position indicated for tube on tube test data roll chart, and set GM-SIGNAL RANGE switch to position F.		
11	Depress PRESS TO TEST P4 switch to locking position.	Pointer of PERCENT QUALITY meter may deflect slightly.	
12	Adjust GM CENTERING control -----	PERCENT QUALITY meter indicates exactly 0.	Higher echelon repair required.
13	Set GM-SIGNAL RANGE switch to position specified for tube on tube test data roll chart.	Pointer of PERCENT QUALITY meter deflects.	Higher echelon repair required.
14	Adjust SIGNAL-V.R. fine control -----	Pointer of SIGNAL meter adjusts exactly to redline.	Higher echelon repair required.
15	Depress the appropriate PRESS TO TEST switch to locking position and read percent quality of tube on PERCENT QUALITY meter.	PERCENT QUALITY meter indication is above minimum requirement of tube as specified on tube test data roll chart.	Higher echelon repair required.
16	For TV-2B/U only, insert a 9-pin tube known to be in good condition into the NOVAL tube socket and test as specified on tube test data roll chart.	Tube checks good -----	Replace test adapter X7B (par. 45). Higher echelon repair required.

Step	Action or condition	Normal indication	Corrective measure
17	For TV-2B/U only, insert a 7-pin miniature tube known to be in good condition into the MIN. SEVEN tube socket and test as specified on tube test data roll chart.	Tube checks good -----	Replace test adapter X10B (par. 45). Higher echelon repair required.
18	Insert an 8-pin long lead subminiature tube known to be in good condition into the SUB-MIN. EIGHT LONG LEAD tube socket and test as specified on tube test data roll chart.	Tube checks good -----	Replace test adapter X13B (par. 45). Higher echelon repair required.
19	Insert a tube that has external connections for plate and grid and known to be good into appropriate tube socket and test as specified on tube test data roll chart.	Tube checks good -----	Replace electrical clips A and B. Higher echelon repair required.
STOP			
20	Set ON-OFF switch to OFF.		

EQUIP. PERF.



NOTE:
 X3B, X7B, AND X10B USED
 IN TV-2B/U ONLY, X13B USED
 IN TV-2/U, TV-2A/U, AND
 TV-2B/U.

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Figure 10. Test adapters.

45. Replacement of Test Adapters (fig. 10)

Replace test adapter X13B (used in TV-2/U, TV-2A/U, and TV-2B/U) and test adapters X3B, X7B, and X10B (used in TV-2B/U only) as follows:

a. Removal.

- (1) Remove the tube tester chassis (par. 36) from the case.
- (2) Remove the hexagonal nut from the threaded stud of the test adapter to be replaced. Remove the spacing sleeve when replacing test adapter X3B.
- (3) Remove the test adapter from the test socket.

b. Replacement.

- (1) Plug the adapter into its corresponding test socket. Be sure to place the spacing sleeve over the threaded stud of test adapter X3B.
- (2) Replace and tighten the hexagonal nut.
- (3) Replace the tube tester chassis in the case.