

DATE 3-10-61SH. 1 OF 15

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WAA

## TMC SPECIFICATION NO. S-552

TITLE: GPT-10K H.V. RESISTOR BOARD AND FEEDTHRU

JOB

A

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JRB

CAPACITOR MODIFICATION KIT (TMC NO. KIT-103)

I. EQUIPMENT AFFECTED

A. All TMC Model GPT-10K &amp; GPT-40K, general purpose Transmitters.

II. PURPOSE

To decrease resistor dissipation of R816, R819, and R820 by rerouting the current return and deleting the bleeder resistors, and to eliminate voltage breakdown of the P.A. Deck & REG-1 feedthru capacitors by replacing them with insulated feedthru bushing assemblies.

III. MATERIALS SUPPLIED IN KITITEM NO.DESCRIPTION

1	One each, TMC No. CA-412-18- 5.00 Cable Assembly Jumper.
2	One each, TMC No. CA-412-17- 16.00 Cable Assembly Jumper.
3	16 each, TMC No. TE-101-3 Insulator, Feedthru. (NOTE: Three are spares in case of breakage)
4	Two each, TMC No. TE-132 Terminal, Lug.
5	Seven each, TMC No. TE-149-144 Terminal, Lug.
6	One each, TMC No. NP-362-1 Nameplate, Modification.

NOTE: Items 1 & 2 are used for HV Resistor Board Modification.  
Items 3,4 & 5 are used for Feedthru Capacitor Modification.  
Item 6 is used for overall Modification.

IV. TOOLS REQUIRED

To be provided by installing activity.

1. Pliers, 6 inch longnose.
2. Pliers, 6 inch diagonal cutting.
3. Screwdriver, 7 inch.
4. Soldering Iron.
5. Spintight, 5/16 inch.
6. Spintight, 3/8 inch.
7. Wrench, open end, 3/8 by 7/16 inch.

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V. PROCEDURE

A. HV RESISTOR BOARD MODIFICATION (Figures 1,2,3)

1. Remove High Voltage Rectifier Unit (Section AX-103) and the Relay Panel (Section AX-139). Open rear door to gain access to the power supply section.
2. Remove resistors, symbol no's. R800, (5K,140W) R801, R802, and R803 (18K, 140W) See Figure 1.
3. Remove jumper between R803 and R805 (Figure 1). This jumper may be found on the Front or rear of the resistor board.
4. If jumper exists between R805 and ground, leave it alone.
5. If jumper exists between R803 and ground, remove it and add new jumper, item 1, from R805 to convenient ground. (On slide Mtg. Screw)
6. Make sure there is a jumper connection between spring contact E1007 and R805. (For ground connection)
7. Remove the two leads, the short connecting plate, and the Resistor Clip from R800. Remove the long connecting plate between R800 and R802. Make sure jumper from J1003 (HV INPUT TO IPA) is connected to R800 connecting plate screw.
8. Add new jumper, item 2, from R802 to L801. Re-Connect the two leads (removed in Step 7) to R800, using the R800 short connecting plate screw. Tighten nuts, etc. to R800 and R802 connections.

NOTE: Long connecting plate, removed in Step 7, must be left off.

9. Remove the two center Resistor Clips and connecting plate from R800 to R801.

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10. Remove white main cable leads from R801. Remove R801 Resistor Clip. Assemble long connecting plate (from step 7) between R801 and R803. Re-assemble white main cable leads to R801. Re-assemble and tighten hardware.
11. Remove the "R800" and "R801" stamping from board.
12. Replace two 18K, 140W resistors (removed in Step 2). Plug one resistor into the "R802" Clips, and one into "R803" Clips.  
(See Figure 2)
13. Check Board Assembly against Figure 2 to see if it conforms.  
See Figure 3 for schematic changes.
14. Replace HVR Drawer and Relay Panel.

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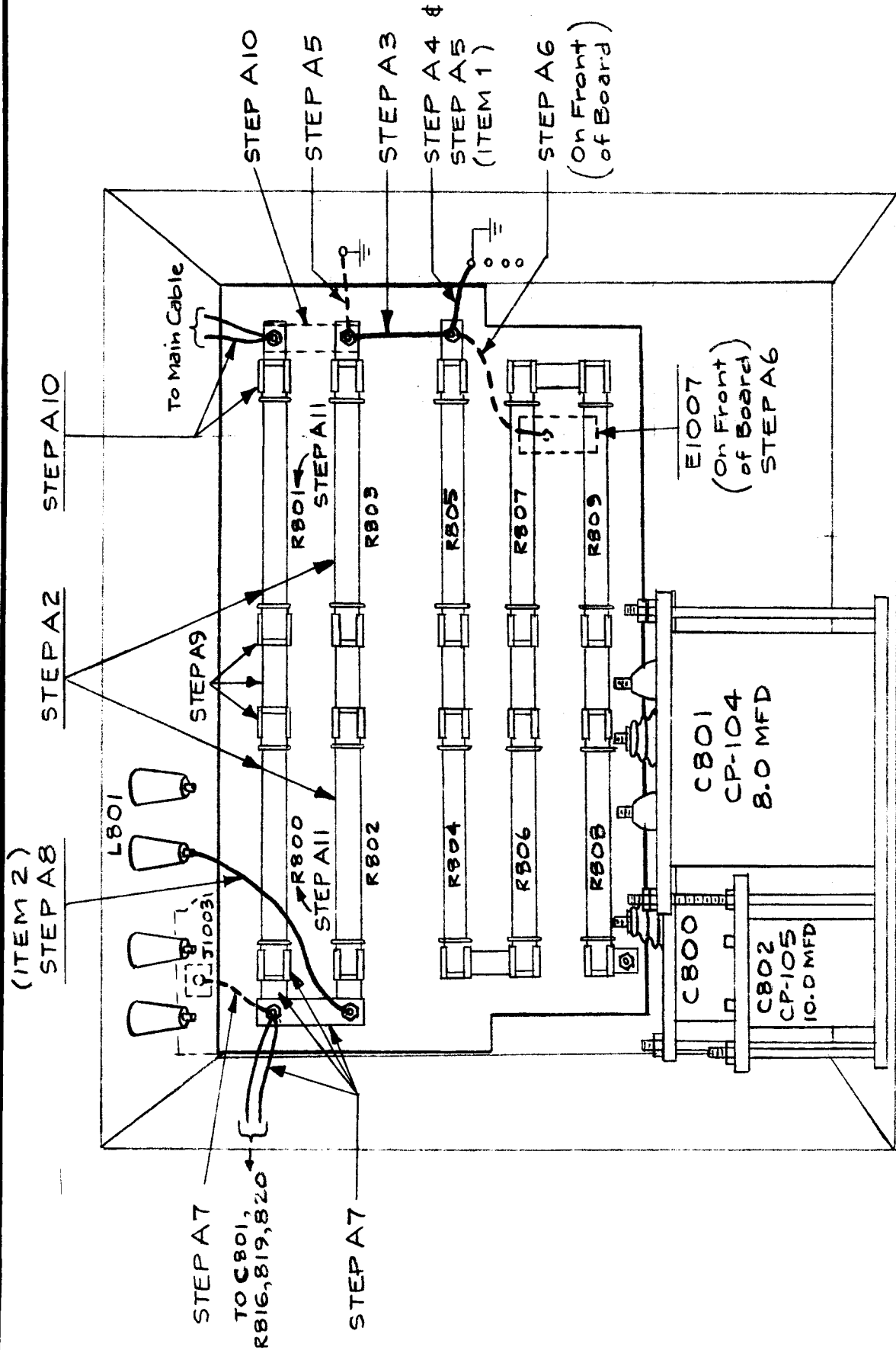
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NOTE - Some items, not pertinent to the modification, are not shown in pictorial.

FIGURE 1  
 POWER SUPPLY SECTION, REAR VIEW  
 MODIFICATION PROCEDURE

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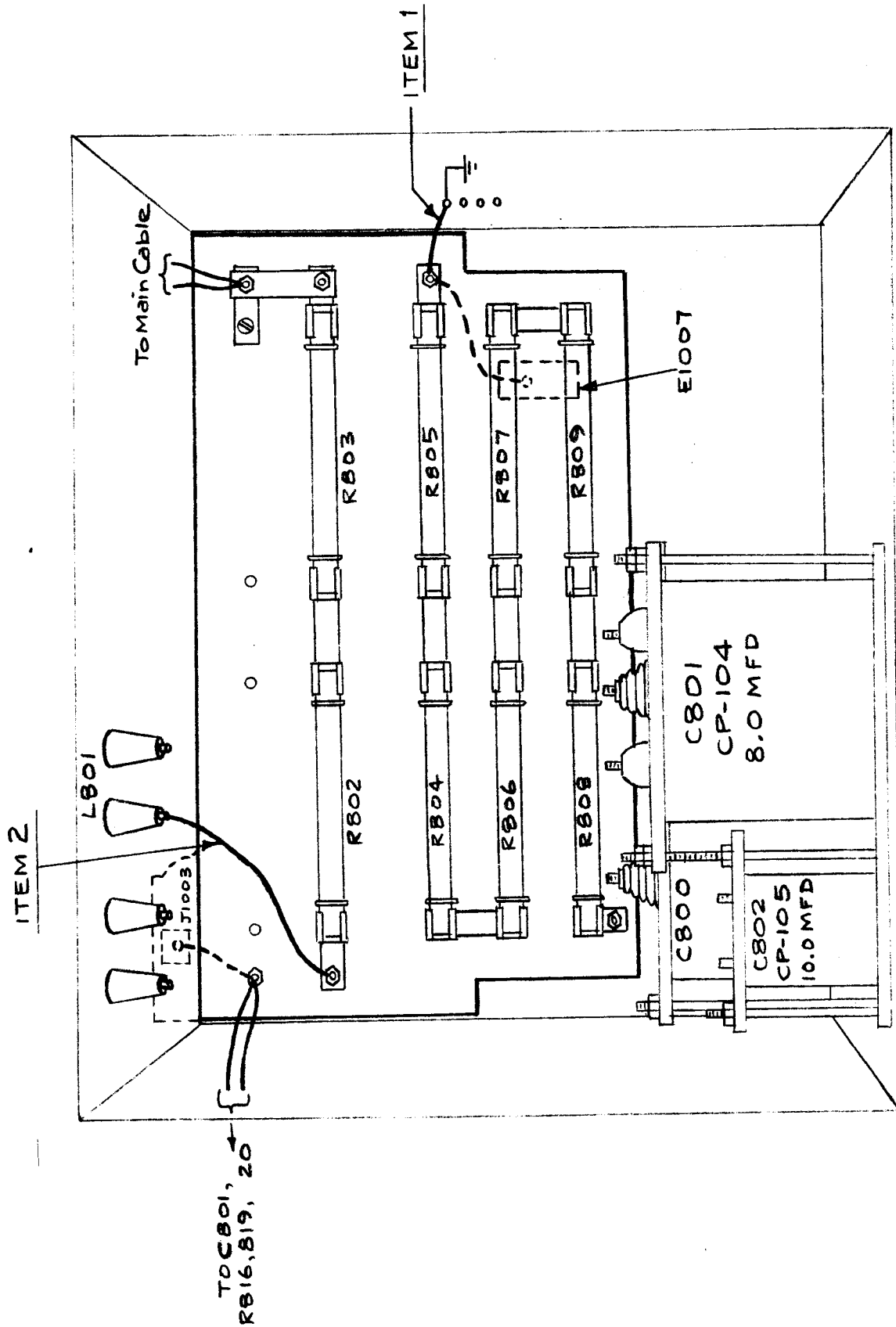


FIGURE 2  
FINISHED MODIFIED BOARD

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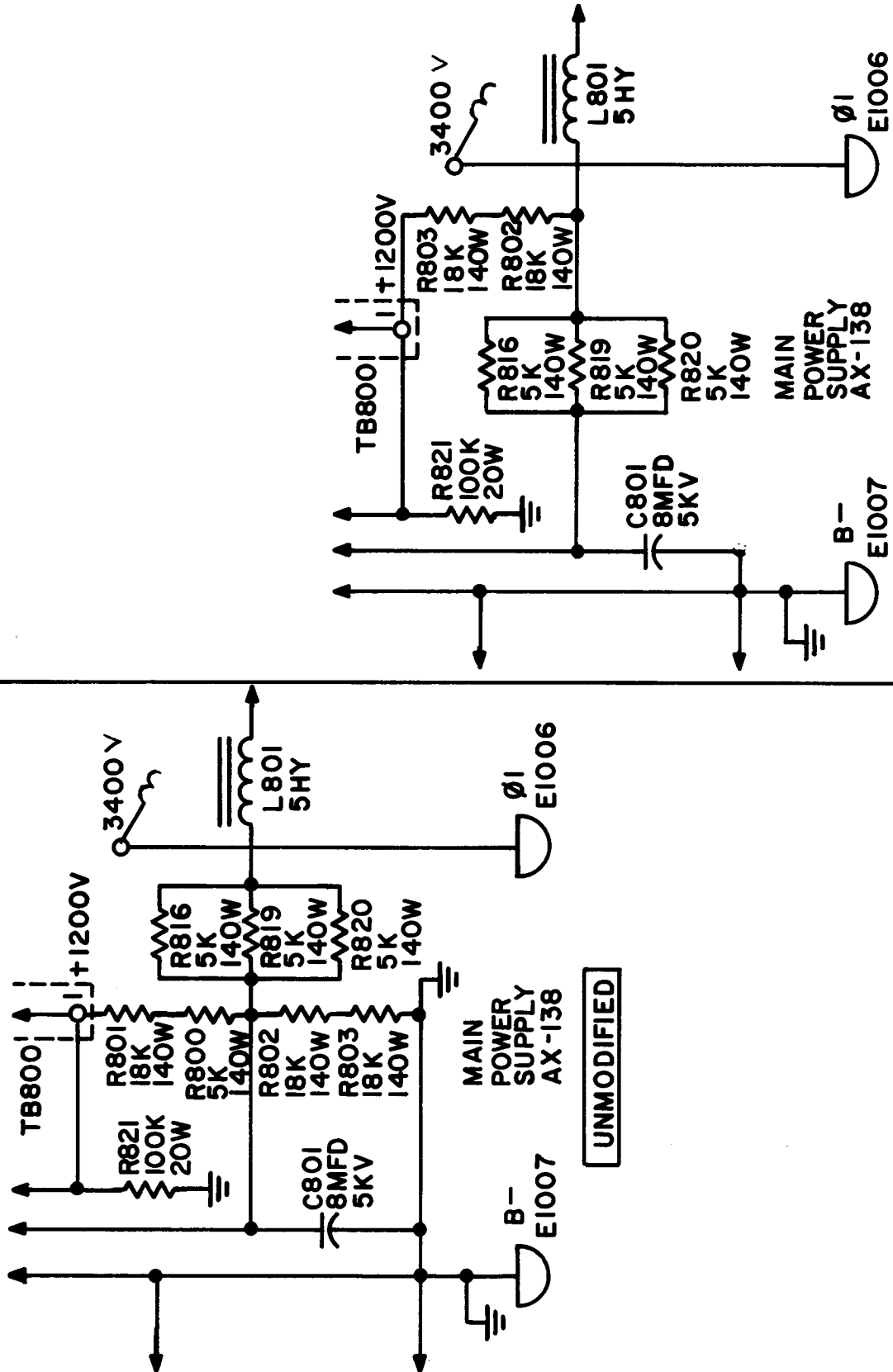
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MODIFIED

UNMODIFIED

FIGURE 3  
 SCHEMATIC CHANGES

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V. PROCEDURE (CONTINUED)

B. FEEDTHRU CAPACITOR MODIFICATION PA DECK (Figures 4, 5, 6, & 7)

1. Unscrew the ten binder screws from the Power Amplifier Front Window Panel and remove Panel. (Figure 4).
2. Remove control panel shield cover. (Figure 4).
3. Remove all wires connected to the front indicator lamp sockets on rear of Control Panel. Make note of connections for future re-connection. (Figure 4).
4. Unsolder and remove wires connected to the toggle switch on rear of Control Panel. (Some transmitters may not have this switch, in which case, this step must be disregarded). (Figure 4).
5. Remove all cable clamps on rear of Control Panel. (Figure 4).
6. Set the PA TUNE, PA LOAD and OUTPUT BAL. counters to read 000. (Figure 4).
7. Set the BANDSWITCH counter to the lowest reading (2 to 3 Mc or 4 to 6 Mc, depending upon type of transmitter). (Figure 4).
8. Set OUTPUT LOADING counter to 000 or TUNE position. (depending upon type of transmitter). (Figure 4).
9. Loosen set screws and remove the five Front Panel Control Knobs. Remove any burrs left by Knobs screws. (Figure 4).
10. Unscrew the two flat head screws and nine binder head screws from the Control Panel and remove the panel. (Figure 4).
11. On the right sideplate, unsolder and remove wires from the top and bottom of the seven feedthru capacitors, symbols C1000, 1001, 1002, 1004, 1006, 1007, and C1008 and the two ground lugs mounted on C1001. (Figure 4 & 5). Using Figure 6, mark the wire colors of leads removed.

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PROCEDURE CONTINUED

12. Remove the seven feedthru capacitors. Discard capacitors. (Figure 5).

13. Solder the wires (located inside the sideplate) to the slotted ends of the seven new feedthru bushings (item 3).

Do not connect the ground shield. (Figure 7).

14. Mount the insulated feedthru assemblies onto the sideplate. Be sure to mount the feedthru assemblies in the same holes the corresponding capacitor was in. This can be determined by checking the wire colors against Figure 6.

IMPORTANT: One feedthru assembly must be mounted with two ground lugs (item 4) and all feedthru assemblies must be mounted with terminal lug (item 5) as shown in Figure 7.

15. Solder the wires going to the top of the sideplate to the feedthrus. (Use Figure 6 again for correct connections).

16. Solder the ground shield inside the sideplate and the ground wire above the sideplate to the ground lugs of the upper right hand corner feedthru assembly.

17. Make final check of sideplate wiring.

18. Re-assemble the Control Panel, making sure that the vacuum capacitors in the PA Deck have not been moved from the minimum position and that the counters on the panel are still at the settings indicated in steps 6,7, and 8. Tighten all screws.

19. Re-assemble the control knobs and tighten setscrews.

20. Connect and solder all wires to the indicator light sockets and the toggle switch.



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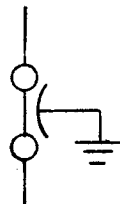
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PROCEDURE CONTINUED

21. Re-assemble cable clamps.
22. Re-assemble the control panel shield cover.
23. Re-assemble the Window Panel.
24. Affix modification nameplate (item 6) immediately to the right of existing nameplate on the Relay Panel protective cover.
25. On schematic diagram from the instruction manual, circle the power supply portion to indicate a change, and locate capacitors C1000, 1001, 1002, 1004, 1006, 1007, and C1008. Change capacitor symbols:

FROM



TO



26. On parts list section of instruction manual:
  - a. Locate the "800" Series and do the following:
    - (1) Delete R800.
    - (2) Delete R801.
  - b. Locate the "1000" Series and do the following:
    - (1) Delete C1000, 1001, 1002, 1004, 1006, 1007, 1008.

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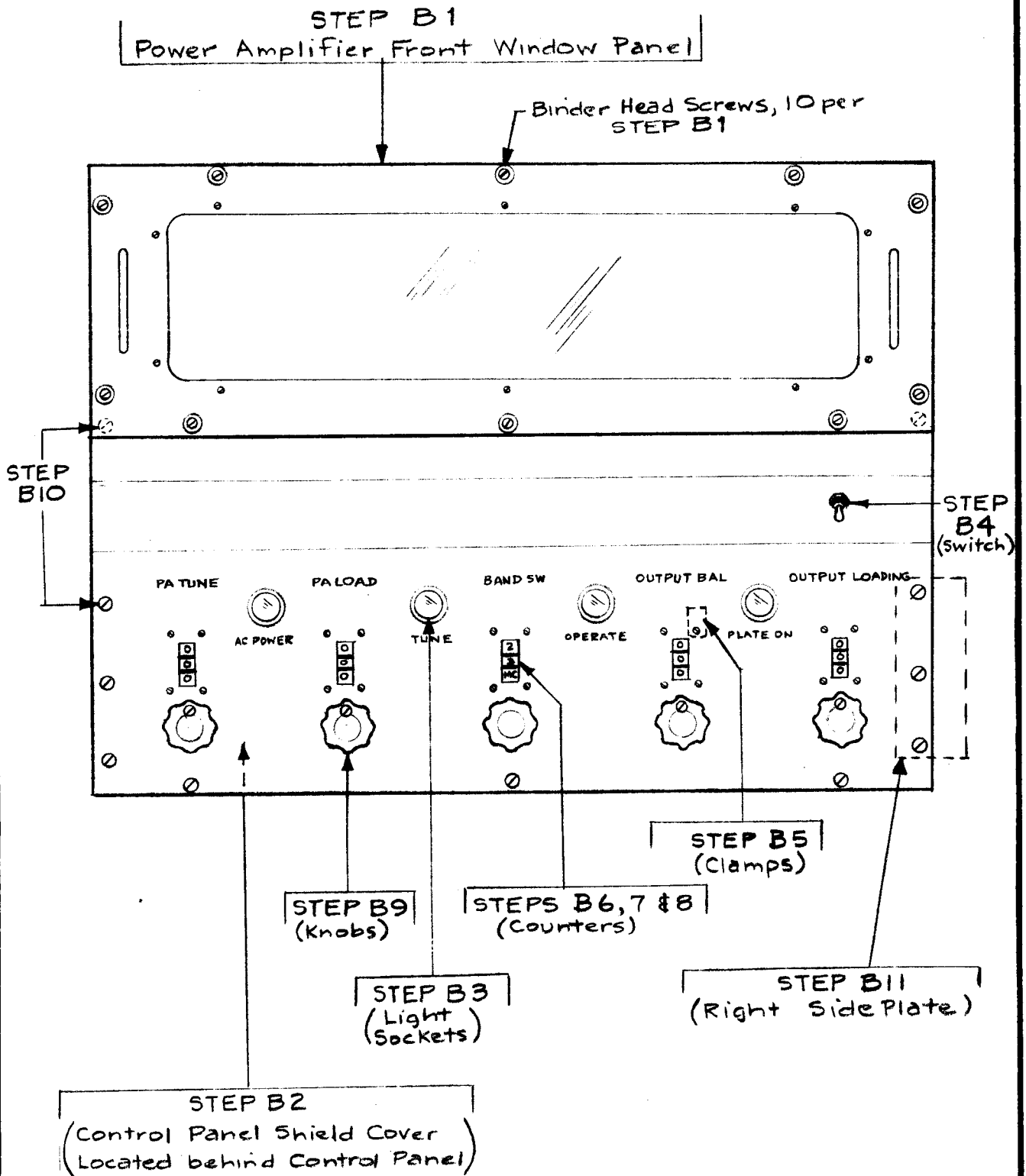


FIGURE 4  
FRONT PANELS

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The Capacitor listed in Step B11 and B12 are shown below, labeled "A".

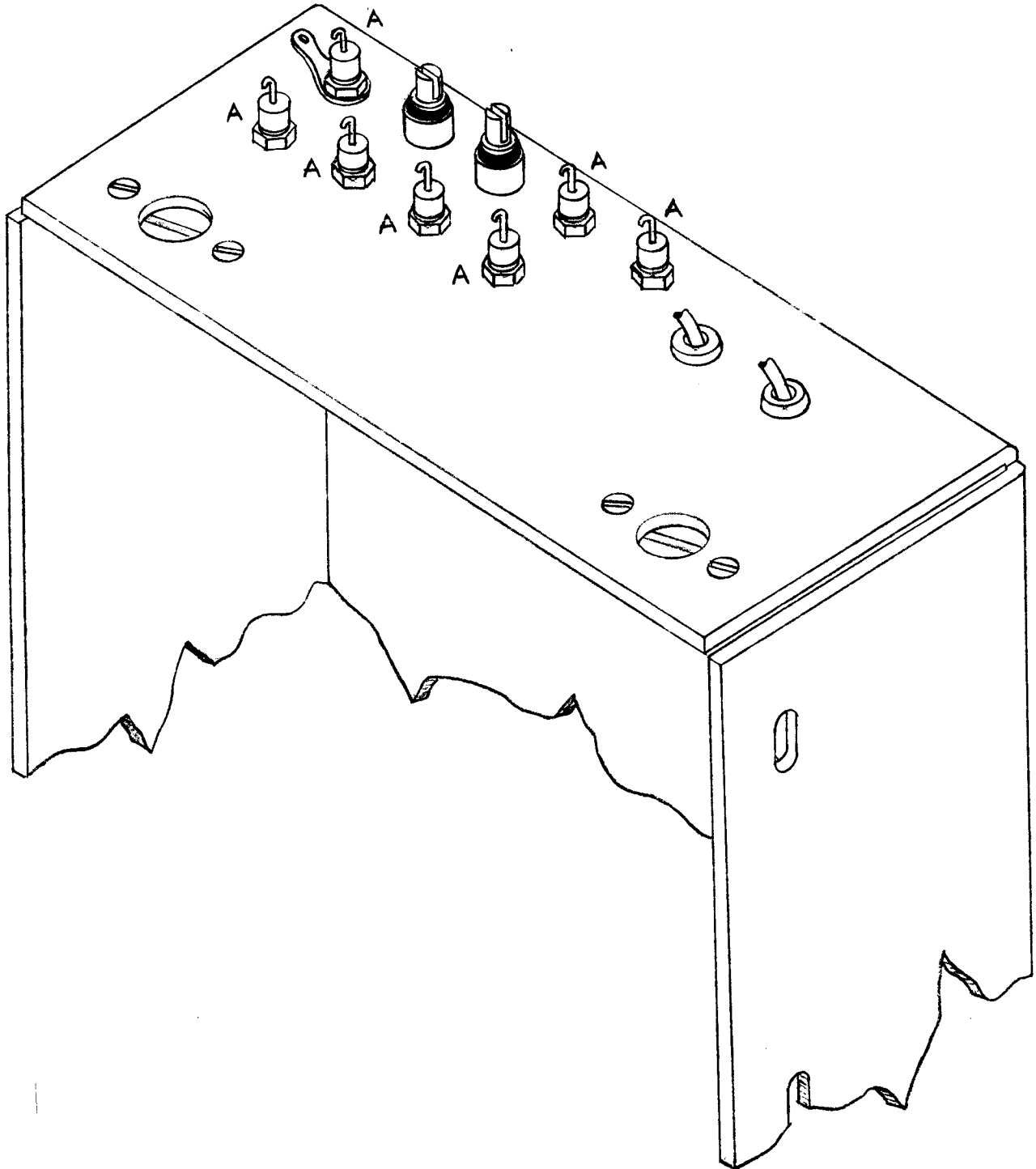


FIGURE 5  
RIGHT SIDEPLATE, UNMODIFIED

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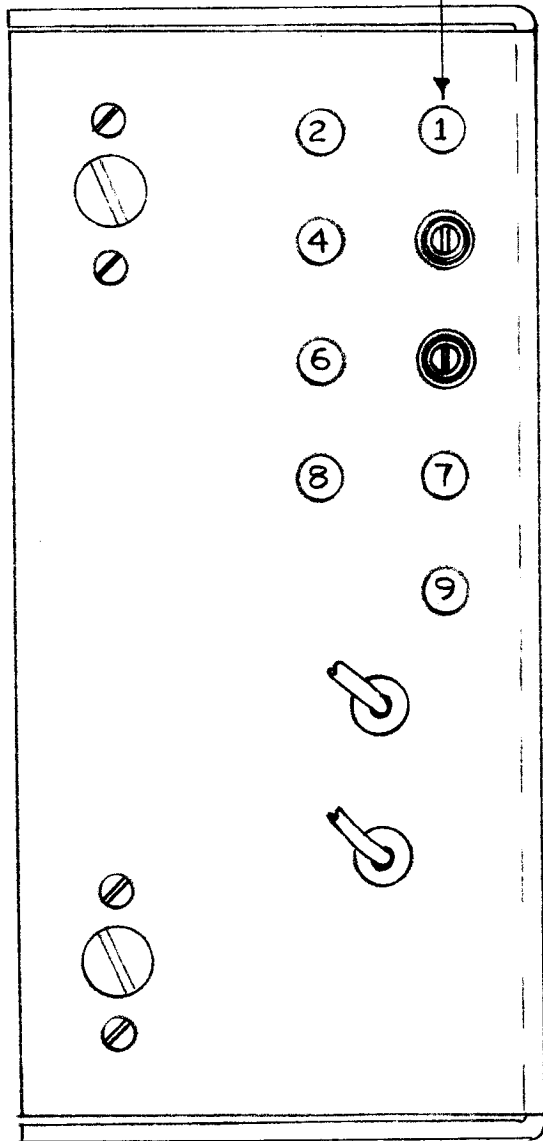
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WHEN UNSOLDERING WIRES AS PER  
 STEP B11, WRITE COLORS  
 IN CHART. THEN USE  
 FOR RE-ASSEMBLY,  
 STEPS B14 & B15

LOCATION NO.	WIRE COLOR (INSIDE)	WIRE COLOR (OUTSIDE)
1	(HOT)	(HOT)
	(GND)	(GND)
2		
3		
4		
5		
6		
7		



TOP VIEW, OUTSIDE

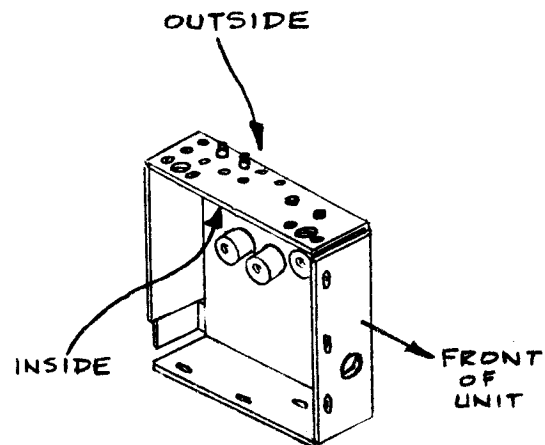


FIGURE 6

RIGHT SIDEPLATE, TOP VIEW,  
 WIRE LOCATION DETAIL

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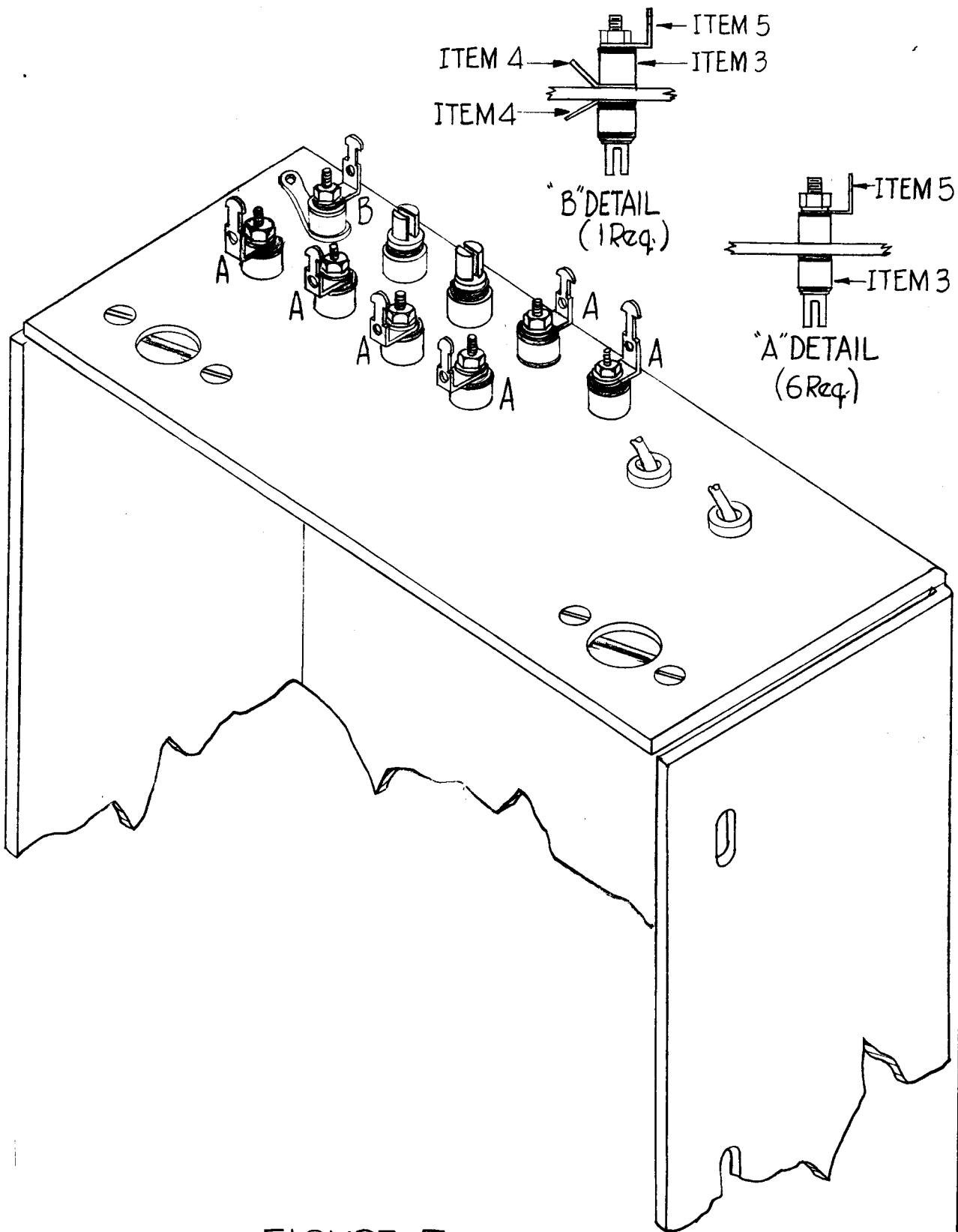


FIGURE 7  
RIGHT SIDEPLATE, MODIFIED

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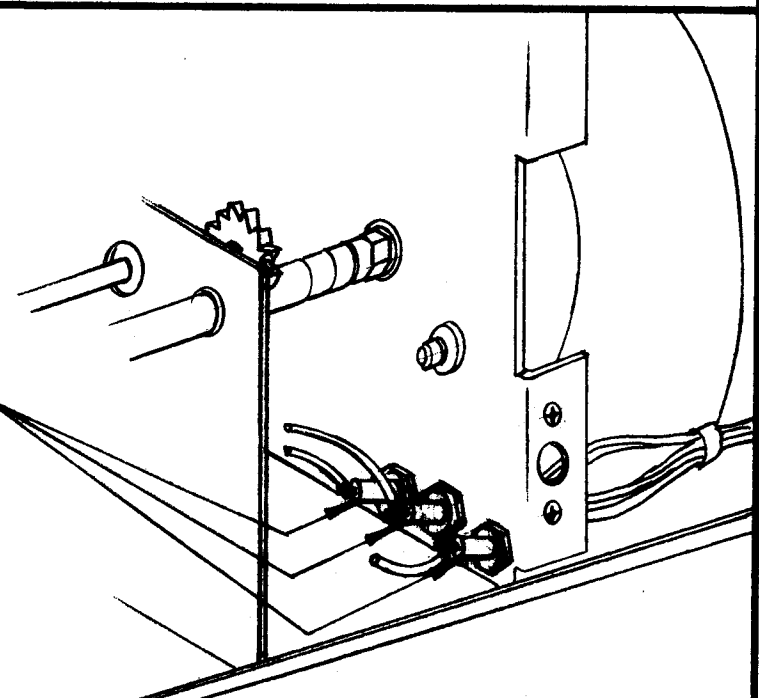
## V. PROCEDURE (CONT.)

### C. Feedthru Capacitor Modification, RFC-1 (Fig. 8 & 9)

1. Remove the RFC-1 from the transmitter.
2. Remove the top and bottom covers and stand unit on its side.
3. Remove the three feedthru capacitors C244, C280 and C281 from the bottom of the unit as shown in Fig. 8. Be sure to mark the wires for replacement.
4. Remove the three feedthru capacitors; C235, C236 and C256 from the top of the unit as shown in Fig. 9. Be sure to mark the wires for replacement.
5. Replace the six feedthru capacitors with insulated feedthrus, item 3, TE-101-3.
6. Resolder the wires in the proper positions and replace the RFC-1 in the transmitter.
7. Remove the lettering for the capacitors; C235, 236, 244, 256, 280, 281.
8. Put back the covers and replace the RFC-1 in the transmitter.

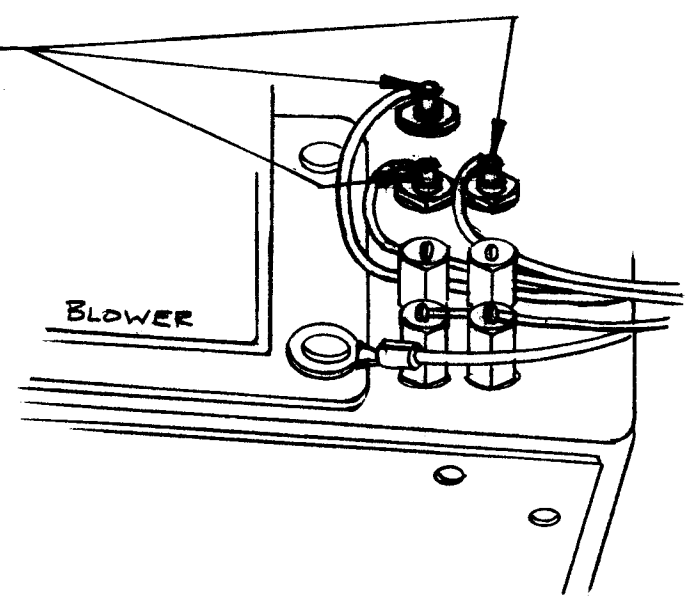
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FEEDTHRU CAPACITORS  
C235, C236 AND C256  
REPLACED BY  
3 FEEDTHRUS TE-101-3



TOP VIEW  
FIG. 9

FEEDTHRU CAPACITORS  
C244, C280 AND C281  
REPLACED BY  
3 FEEDTHRUS TE-101-3



BOTTOM VIEW  
FIG. 8

