

**OH-334  
TW 20/40  
Tri-Wheel**



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40508

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## DISASSEMBLY OF SCR CONTROL PANEL

STEP 1. Clear the nozzle of a shop air hose of all water and blow the dust and loose dirt off the panel assembly; when all loose dust and dirt have been cleared away, clean the panel with freon degreaser to flush away dirt and dissolved grease, working from top to bottom of panel and using an extension nozzle. (Fig. 15861)

### NOTE

The extension nozzle on the degreaser spray can is a handy tool for moving dropped terminal screws out from between PMT card or I card and nearby components when connecting leads.

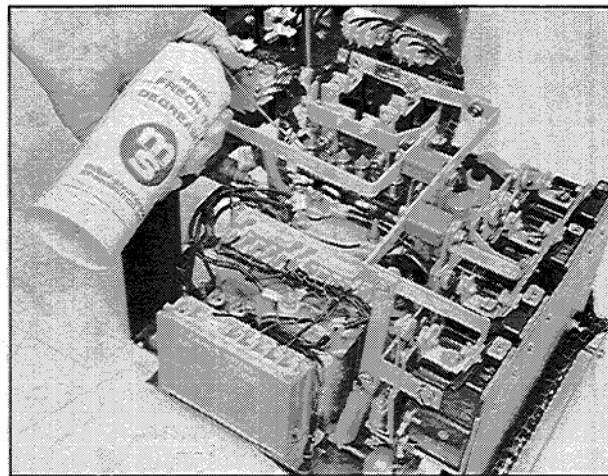


Fig. 15861

### WARNING

FULLY CHARGED CAPACITOR IS CAPABLE OF DISCHARGING OVER 100 VOLTS. 72 VOLTS CAN KILL. KEEP ONE HAND IN POCKET TO AVOID GROUNDING SPARK TO METAL FRAME UNTIL CAPACITOR IS DISCHARGED.

(FIG. 15886)

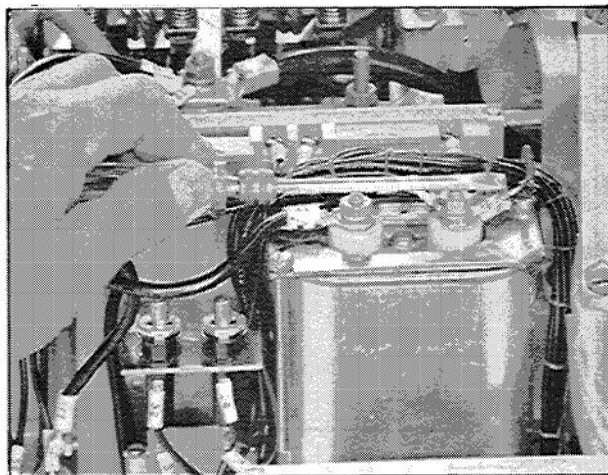


Fig. 15886

STEP 2. Note position of leads on PMT card and disconnect leads. (Fig. 15862)

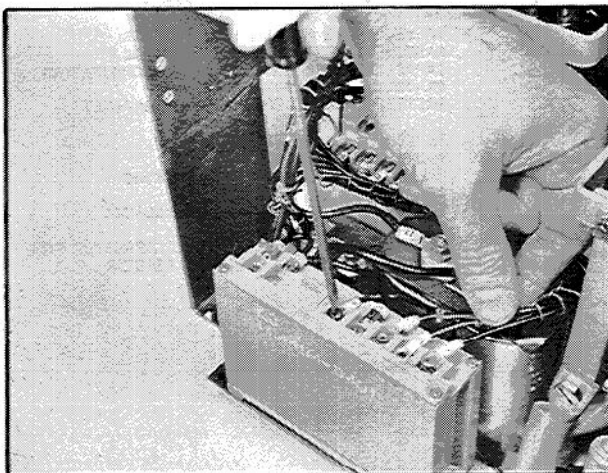


Fig. 15862

GROUP 19



- STEP 3. Loosen and remove the base mounting screws and lockwashers and remove the PMT Card.  
(Fig. 15863)

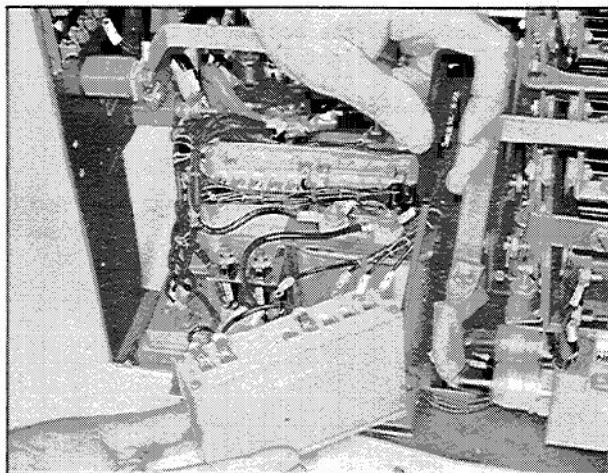


Fig. 15863

- STEP 4. Note position of leads on I Card and disconnect leads.  
(Fig. 15864)

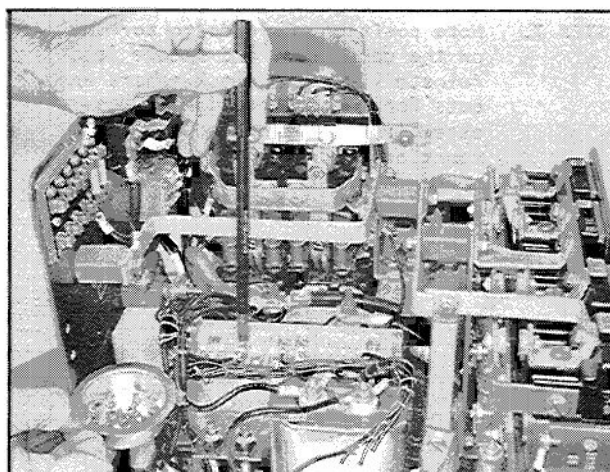


Fig. 15864

- STEP 5. Loosen and remove the base mounting screws and lockwashers and remove the I Card.  
(Fig. 15865)

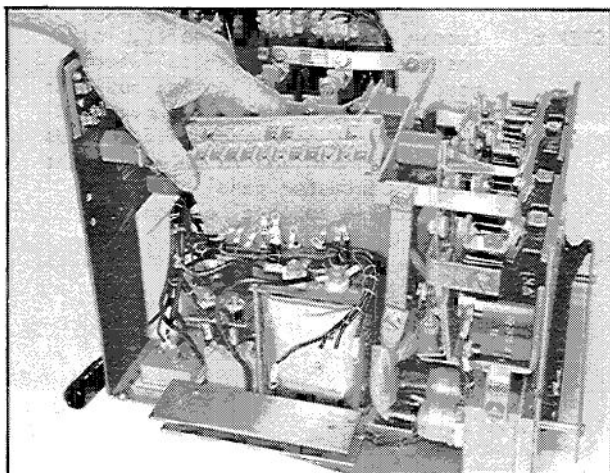


Fig. 15865



- STEP 6. Look into the bottom of the box in a strong light for inspection of 1 Card or PMT Card.  
(Fig. 15866)

**CAUTION**

NEVER REMOVE 1 CARD OR PMT CARD FROM BOX OR WARRANTY WILL BE VOID.



Fig. 15866

- STEP 7. Note position of leads to terminals on the capacitor, and remove leads; reinstall washers, lockwashers and nuts for convenience during re-assembly and loosen and remove mounting screws from mounting cover plate (bracket). Remove capacitor.  
(Fig. 15867)

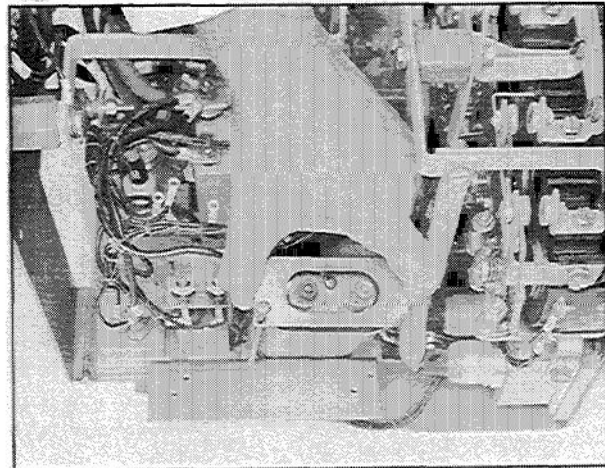


Fig. 15867

- STEP 8. Loosen and remove the bolts, lockwashers, washers and nuts (where used) as indicated, noting position of parts (matchmarking as required) and removing only enough of the bus bars to enable you to swing out the hinged contactor panel bases for easy access to panel components.  
(Fig. 15868)

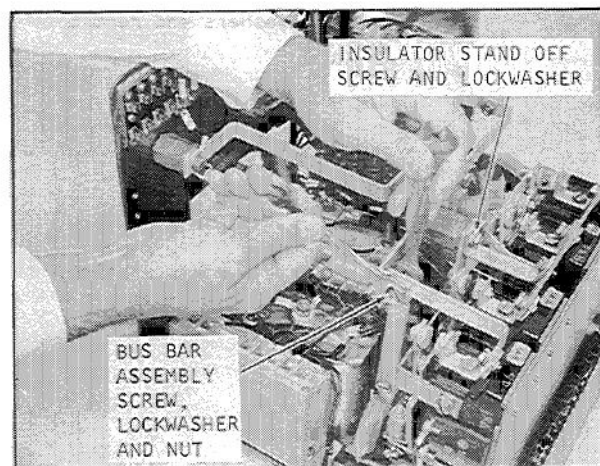


Fig. 15868

GROUP 19



- STEP 9. The leads which must be loosened and removed are from 4 REC A, wire 9A and cable lead RA-1; if not removed, they may possibly be damaged during step 10.  
(Fig. 15869)

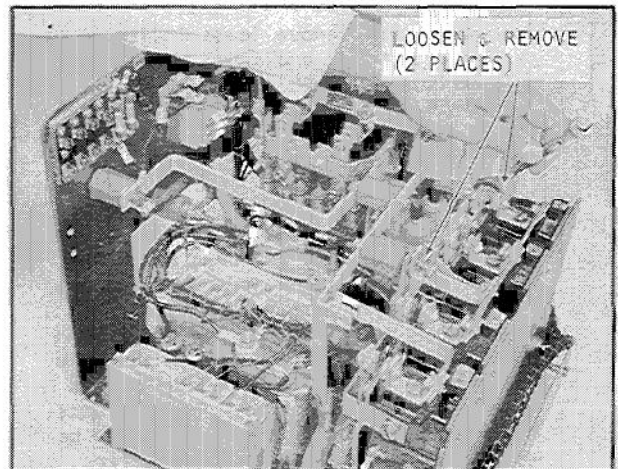


Fig. 15869

- STEP 10. Fold down the hinged portion of the base on which are mounted contactor panels FA-RA, 1A-A and 1A-B.  
(Fig. 15870)

#### NOTE

It may be necessary to move some wiring harness(es) or leads a little before folding down the contactor panel base, and to move others after folding the panel base back up into position during reassembly.

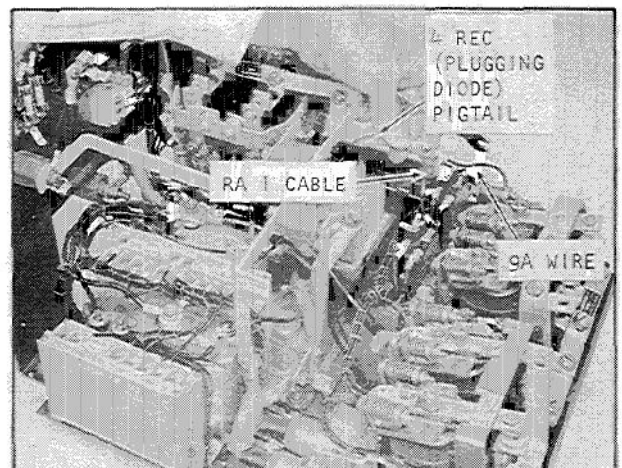


Fig. 15870

- STEP 11. Loosen and remove nuts, lockwashers and bolts (3 places) and prepare to disconnect 4 REC B pigtail and wire 9B from RB-FB contactor panel armature stop.  
(Fig. 15871)

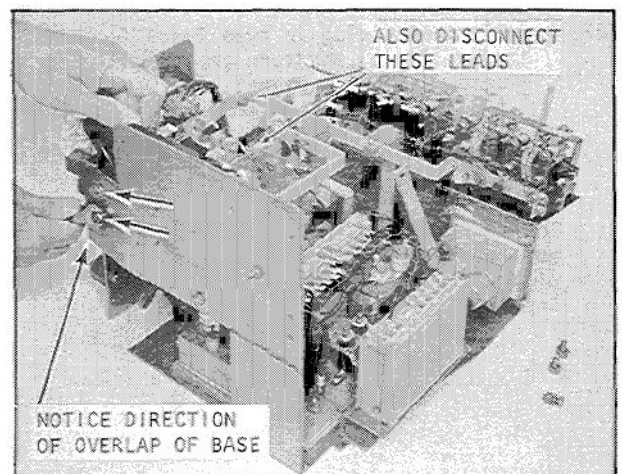


Fig. 15871



STEP 12. Loosen and remove leads indicated in previous step and fold down the hinged portion of the base with contactors RB-FB, noting direction of lapping of parts at the corner.  
(Fig. 15872)

### NOTE

Procedures outlined in Steps 8 through 12 are preliminary procedures to general disassembly and overhaul of panel and give very good access to contactors and some of the rectifiers. It is possible to remove and replace individual parts without these four steps. For instance, a boxsocket or deep socket wrench may be used to remove and replace rectifiers.

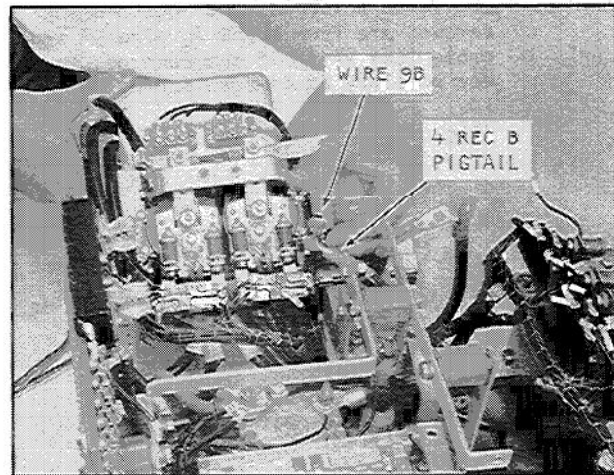


Fig. 15872

STEP 13. To remove TP (thermal protector or thermal cutout) from the heatsink in which 1 REC and 2 REC are located, it will be necessary to loosen the TP from the heatsink with a 9/16 open end wrench through the opening in the base.  
(Fig. 15873)  
Illustration shows lead wires 29 and 4 still connected to TP for reference.

### NOTE

When installing thermal protector (TP), grease all threads and flats with a heat transfer grease such as GE Versilube G350-M or equivalent just prior to installation and tighten to torque value of 20-25 lb. in.

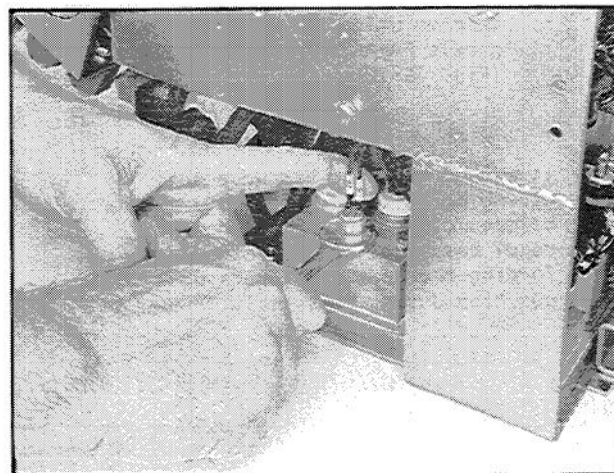


Fig. 15873

STEP 14. Disconnect plug-in type leads from TP (Fig. 15874) and turn the thermal protector out of the heat sink with the fingers as soon as the threads are free.

### NOTE

The TP is non-polarity type, but will not work unless the leads are both firmly plugged in after the TP is properly installed in the heatsink.

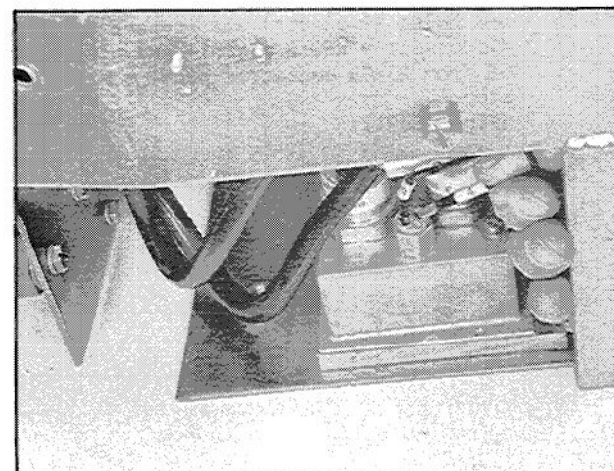


Fig. 15874

GROUP 19



- STEP 15. Disconnect the pigtail (cathode lead) of the 1 REC from NEG terminal of the transformer and the gate lead of the 1 REC (wire 37) from the terminal on the 1 card in preparation for removing the 1 REC (main power rectifier, acting as a switch for drive motor current).  
(Fig. 15875)



Fig. 15875

- STEP 16. It will be necessary to cut the waxed string on the wiring harness containing wire 37. Slip a small screwdriver in under the loop of string to be cut to avoid damaging insulated wires.  
(Fig. 15876)  
Cut as little as possible off the end of the waxed string and untie the rest.



Fig. 15876

- STEP 17. Slip the ends of 1 REC pigtail and gate lead (wire 37) through box wrench and loosen stud end of 1 REC from heatsink.  
(Fig. 15877)

### NOTE

It will be necessary to loosen and remove the terminal screw holding transformer T1 lead, and the 1 REC latch from the heatsink before using box wrench. Torque to tighten 1 REC stud in heatsink is 285 - 360 lb. in.

### CAUTION

Use care to avoid breaking off gate lead at soldered point, especially on new REC.

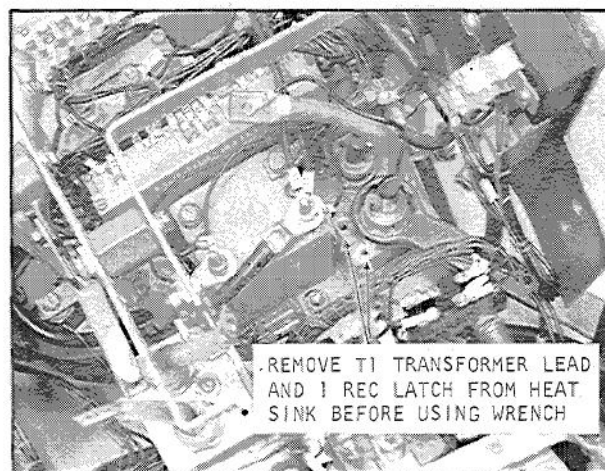


Fig. 15877



- STEP 18. As soon as stud is loose enough to turn with the fingers, carefully remove the wrench to avoid breaking off the gate lead and remove the 1 REC. (Fig. 15878)

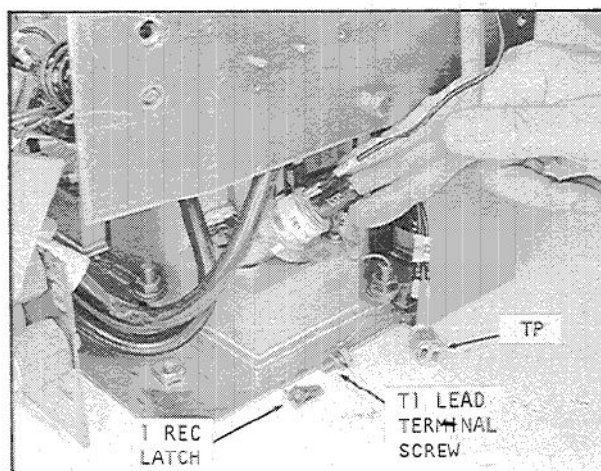


Fig. 15878

- STEP 19. Retie harness (after overhaul and testing) with waxed harness string tied in standard harness stitches (a series of half hitches with two together making a clove hitch at the end). (Fig. 15879)

### NOTE

Do not bother to restitch any wire harness until you are reasonably sure there are no leads running through that may have to be separated out later during the overhaul procedure.

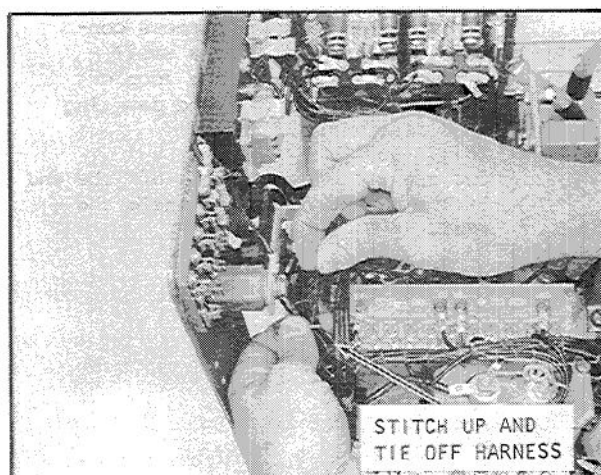


Fig. 15879

- STEP 20. Steps 15 through 19 are similar to the procedure for removing 2 REC (which acts as a capacitor discharge switch), except that the pigtail must be disconnected from the other top terminal on the transformer (the one with the choke wire), and the gate lead is wire 30.

- STEP 21. Remove latch and loosen and remove 4 REC (plugging diode) from heatsink. (Fig. 15880)

### NOTE

Torque to tighten 4 REC stud in heatsink is 98 - 110 lb. in. Thread pigtail through box wrench and loosen only enough to allow removal from heatsink with fingers. It is not important which 4 REC is connected to which armature stop, just so one each is connected to FA-RA contactor and FB-RB.

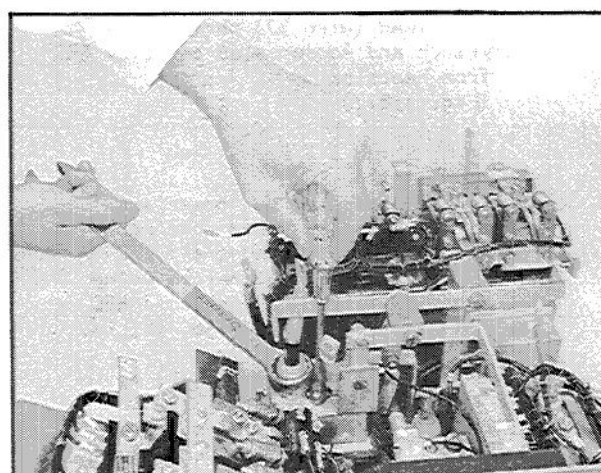


Fig. 15880

GROUP 19



- STEP 22. Remove latch from vertical heatsink and loosen and remove blocking rectifiers B REC-A and B-REC-B, matchmarking and removing bus bars from the bus bar assembly as required.  
(Fig. 15881)

### NOTE

Blocking diodes B REC-A and B REC-B must be connected to the bus bar assembly, but the connection points are interchangeable; each B REC blocks current going to one drive motor from going to the other drive motor while turning. Assembling torque is 98 - 110 lb. in.

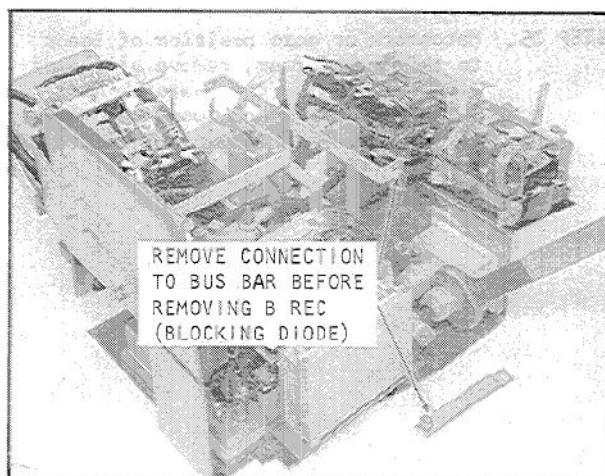


Fig. 15881

- STEP 23. Remove latch from flyback diodes (3 RECs) and disconnect pigtails from bus bars. Thread end of pigtail through box wrench and loosen stud just enough to turn with fingers.  
(Fig. 15882)

### NOTE

Assemble 3 RECs in heatsink to a tightening torque of 98 - 110 pound inches. Be sure both pigtails are connected to the bus bars, but position of each is interchangeable with the other.



Fig. 15882

- STEP 24. Remove 3 REC (flyback diode) from heat sink with the fingers.  
(Fig. 15883)

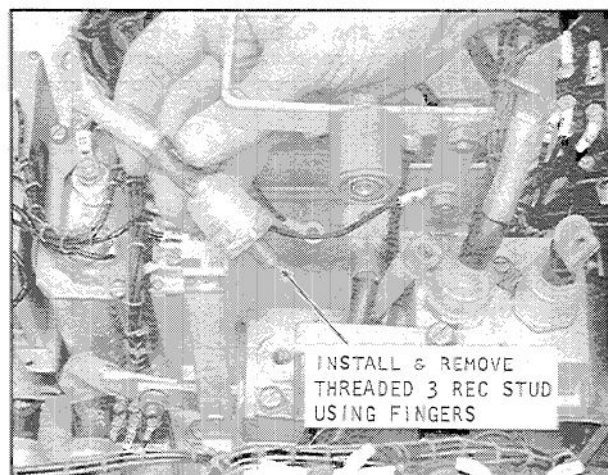


Fig. 15883



STEP 25. Matchmark or note position of leads to the transformer, remove all leads (including T1 to the heatsink near 1 REC and 2 REC) and loosen and remove the transformer mounting screws and washers.  
(Fig. 15884)



Fig. 15884

STEP 26. Lift out and remove the transformer  
(Fig. 15885)

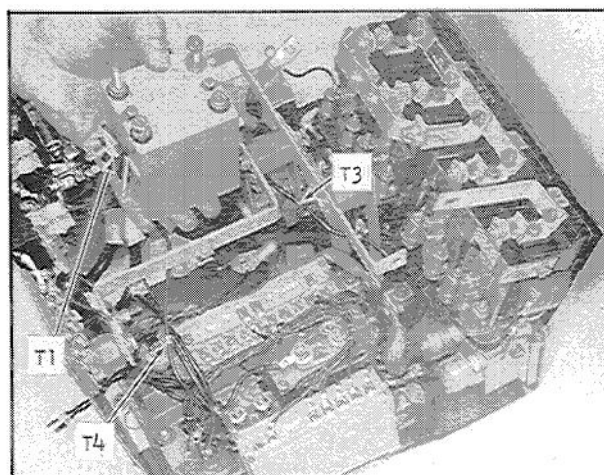


Fig. 15885

STEP 27. To remove the fuses FU A and FU B, press down and rotate 90 degrees or until released from fuseholders, and lift out.  
(Fig. 15887)

#### NOTE

Replace with 1.25 amp fuses, making sure the wire is intact, and unmarked end is down in fuseholder.

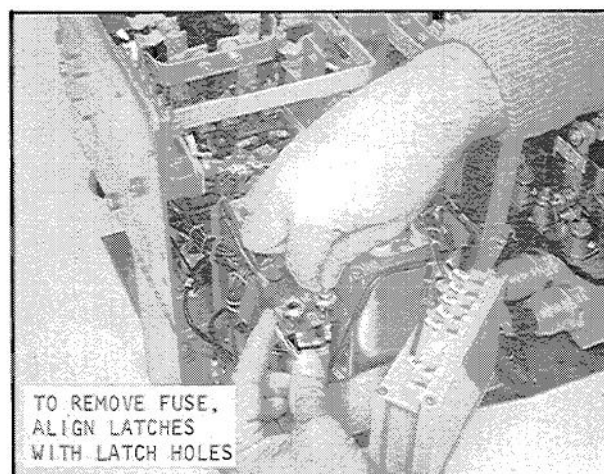


Fig. 15887

GROUP 19