

VI. SERVICE INFORMATION

VI-1. Disassembly Procedure.

CAUTION: WAIT ABOUT 15 MINUTES AFTER THE AMPLIFIER HAS BEEN POWERED DOWN BEFORE BEGINNING DISASSEMBLY PROCEDURE, TO ALLOW THE POWER SUPPLY CAPACITORS TO DISCHARGE.

1. Remove the bottom cover: 4 ea. #6 x $\frac{3}{8}$ " phillips screws on the side rails and 10 ea. #6 x $\frac{1}{4}$ " phillips screws on the edges of the bottom cover.
2. To remove a module (PCB card):
 - a. Remove the input/output plate on the rear panel by removing 7 phillips screws, 6 ea. $\frac{3}{8}$ " nuts and washers from the input jacks and 12 ea. #8 tapping screws from the output terminal blocks.
 - b. Remove the 7 phillips screws on the front panel just below the signal/limit/clip LEDs.
 - c. Remove the 8 ea. #6/32 x $\frac{3}{4}$ " machine screws from the left and right edges of the heatsink mounting flange. Now the entire heatsink/module assembly is free to slide to the rear--this will provide the clearance necessary to remove any of the six amp modules.
 - d. To remove a module, first de-solder the purple wire running to the adjacent card. Then remove 7 ea. of the #4-40 machine screws holding the output, driver and bias transistors to the heatsink. Now pull firmly straight up to disengage the module from the connector--use a rocking motion to ease removal, as the connector is very tight.

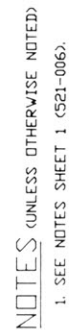
NOTE: Be sure that all of the transistor sil pads (insulators) stay on the heatsink--some of these may stick on the transistor and be inadvertently lost or thrown away with the defective component.

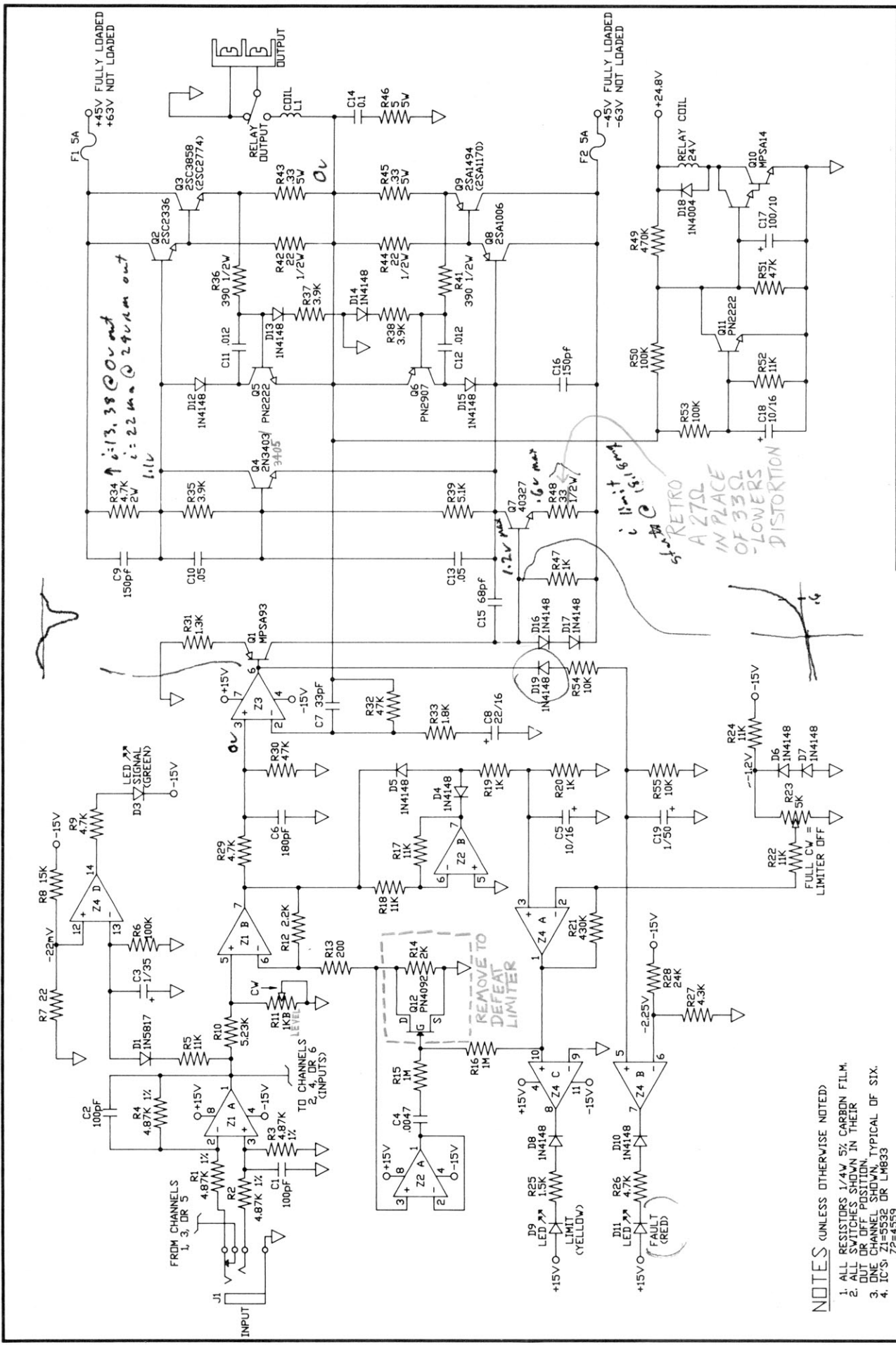
3. Module replacement: Factory supplied modules are pre-tuned and ready for installation. If you have made repairs on a module, be sure that ALL diodes are measured and replaced as necessary prior to installation of the module.

- a. Be sure that all four sil pads (insulators) are in place on the heatsink.
 - b. BE SURE THAT THE NYLON SHOULDER WASHERS ARE IN PLACE ON BOTH DRIVER TRANSISTORS Q2 and Q8 (TO-220 cases). Install the #4-40 screws in these and snug up only: DO NOT OVERTIGHTEN THESE DRIVER SCREWS AS THIS MAY DAMAGE THE THIN SHOULDER WASHERS AND CAUSE A SHORT.
 - c. Install the remaining 5 ea. #4-40 screws on the outputs and bias transistor and TIGHTEN THESE FIRMLY TO ENSURE PROPER HEAT TRANSFER TO THE HEAT-SINK.
 - d. Slide heatsink assembly forward so that all LEDs are properly aligned in the front panel holes. Install and tighten the 8 heatsink mounting screws.
 - e. Replace the seven screws on the front panel.
 - f. Replace the input/output plate and bottom cover (don't forget the four screws holding the bottom cover to the side rails).
4. Power supply repairs.
- a. Power supply PCB: Do not attempt removal of this card. Instead, remove amplifier modules #1 and #2 as necessary to allow clear access to the foil side of the power supply PCB; then replace any defective components by de-soldering.

b. Transformer removal: The transformer is held in place by four ¼" bolts into separate nuts on the right side and a retaining nut plate on the left side. To remove the two right-side bolts, it is necessary to remove the heatsink assembly to gain access to the two nuts. Remove the 8 heatsink mounting screws, 7 front panel screws and 7 input/output plate screws: now you may slide the heatsink assembly to the rear and lift it up, out and to the left to gain access to the transformer nuts. The two left-side transformer bolts can simply be loosened until the nut plate falls off. Pull all transformer spade plugs from the power PCB and lift the transformer out of the chassis (brace yourself). To replace the transformer, reverse the above procedure; it is necessary to hold the nut plate in place with your fingers to install the two left-side transformer bolts. Reconnect all transformer spade plugs as shown on the power board assembly diagram.

VI-2. Schematics and assembly diagrams.

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NOTES (UNLESS OTHERWISE NOTED)

1. ALL RESISTORS 1/4W 5% CARBON FILM.
2. ALL SWITCHES SHOWN IN THEIR OUT OR OFF POSITION, TYPICAL OF SIX.
3. ONE CHANNEL SHOWN.
4. IC'S: Z1=LM358 Z2=LM358 Z3=LM358 Z4=LM324

Z3=LF351 Z4=LM324										RANE Corp. 10802 47th Avenue West, Everett WA 98204-3400 (206) 355-6000									
REV. E		ACTION		REVISED FOR ADDITION OF LEVEL CONTROL				DATE 22JAN87		CHECKED A. CLAXTON		DATE 23JAN87		SHEET 1		OF 2		DO NOT SCALE DRAWING	
REV. E		REV. NO.		521-006		TITLE SCHEMATIC MA 6 AMP MODULE													

