PM-300 COLLINS 30L-1 REPLACEMENT POWER SUPPLY MODULE INSTALLATION INSTRUCTIONS

PARTS SUPPLIED WITH THIS KIT:

(1) PM-300 Circuit Board
(6) 100KΩ 3-Watt Resistors
(6) 180µF 450VDC Electrolytic Capacitors
(1) 1.5KΩ 3-Watt Resistor
(4) 1MΩ 3-Watt Resistors
(2) 2Ω 3-Watt Resistors
(12) 1N5408 Diodes

To start the installation, read these instructions carefully. Unplug the amplifier and remove any input, output and/or control cables that may be connected to the back of the amplifier. Place the amplifier on a well-lighted work bench. Lift the lid and remove the two countersunk screws that pass through the front panel trim ring. Now close the lid and turn the amplifier over onto a towel or cloth to protect the paint. Remove the 4 feet from the bottom of the cabinet, as well as the additional screw located between the rear feet. Examine the plug on the line cord. It may be necessary to remove the plug from the cord to get the cord out of the cabinet. If this is necessary, note the connection of the wires on the plug on a piece of paper then remove the plug. Turn the amplifier over again and open the lid. Work the amplifier out of the cabinet through the front trim ring. Set the cabinet aside. Place the amplifier on the bench with the left side (power supply side) facing you and the front panel to the right. Remove the cover over the power supply. Observe the shorting interlock ring and verify that it has contacted the shorting screw. Remove two screws from the rear panel that connect the rear panel to the side panel. Now remove all screws from the left side panel and put the panel aside. You are now ready to proceed with the installation.

( ) Assemble PM-300 according to the assembly instructions and parts layout diagram and silkscreen on the PC board.

( ) Unsolder the two 10Ω 2-Watt resistors (R17 & R18) from the HV terminal on the dividing partition between the power supply and RF sections of the amplifier.

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( ) Turn the amplifier over exposing the old rectifier circuit board. Remove the four #6-32 pan head screws in the corners of the board. Save the screws.

( ) Lift the rectifier board as clear of the chassis as possible. Remove and save the 4 spacers. Even though this board will not be going back in the chassis, this hardware will be re-used.

( ) Unsolder the following 6 wires attached to the rectifier board as follows; a **RED** wire in a **CLEAR** sheath, a **WHITE/BROWN/RED** wire, two (2) **BROWN** wires on a terminal post; a **WHITE** ground wire and a **WHITE/RED** wire in the corner of the rectifier board.

( ) Now roll the diode PC board to expose the printed circuit side. Unsolder the **RED** wire coming from the power transformer. The diode PC board is now free from the amplifier.

( ) As a result of removing the screws securing the rectifier board in place, the capacitor board on the top side of the chassis is now loose. Turn the amplifier back over.

( ) Now unsolder the **BROWN** wire and the **WHITE/RED** wire from the front corner of the capacitor board near the center chassis divider. At this time unsolder and remove the pair of 10Ω 2-Watt resistors (R17 & R18) from the board and set them aside. Leave them soldered in parallel with each other. They will be put back in the amplifier with the new PM-300.

( ) Unsolder the **YELLOW** wire coming from the transformer. Unsolder the **RED** wire with **CLEAR** sheath from the capacitor board. This **RED** wire with **CLEAR** sheath should be free on both ends, pull it out and discard it.

( ) At this point you should be able to remove the capacitor board from the amplifier. Remove 4 #6-32 screws and 4 hexagonal standoffs from the old capacitor board. The old capacitor board and the old rectifier board can now be discarded.

( ) Fish the **RED** wire you unsoldered up through the grommet so it is now in the power supply compartment with the other wires that were unsoldered earlier.

( ) Install the four hexagonal standoffs onto the circuit side (bottom) of the new PM-300 circuit board. Tighten the 4 #6-32 screws securely. Now stand the amplifier on its side with the RF deck side down, power supply side and the transformer closest to you.

( ) On the top side of the chassis in the wiring harness is a **BROWN** wire that was connected to the old capacitor circuit board. The other end of this wire is not connected to anything; it was unsoldered in a previous step. You can either pull the unused **BROWN** wire from the wire harness and discard it or clip the ends of the wire and leave it in the harness. **NOTE: The other brown wire unsoldered earlier runs through a wiring harness and connects to 2nd feed-through capacitor up at the rear of the amp. This is the ALC line and will be connected to the new PM-300 later. Make sure you remove the correct brown wire! Use a VOM to make sure the wire you are going to remove is not the one going to the feed-through capacitor at the rear of the amp.**

In the next steps, all wires are soldered to the underside (bottom) of the new PM-300 PC board. The R17/R18 resistor pair will be soldered to the top (silk screened) side of the PC board.

( ) Clean, prepare and tin the ends of the **RED** and **YELLOW** wires from the transformer. Pass the **RED** wire up through the grommet in the chassis toward top side. Solder the **RED** and **YELLOW** wires from the transformer to the bottom of the PM-300 PC board in the holes marked **XFMR RED** and **XFMR YELLOW**, respectively. Trim the leads on the top side of the board as necessary.

( ) Solder the remaining **BROWN** wire to the PM-300 PC board at the hole marked **ALC BROWN**. Trim the lead on the top of the PC board as necessary.

( ) Straighten the wires on the pair of 10Ω 2-Watt resistors (R17 & R18) set aside earlier. Insert one end of this resistor pair into the hole on the top side of the PM-300 PC board marked **B+** and solder. Leave the other end free for the moment. Trim the lead on the bottom of the PC board as necessary.

( ) Solder the **WHITE** wire to the bottom of the PM-300 PC board at the hole marked **GND WHITE**. Trim the lead on the top of the PC board as necessary.

( ) At this point there will be 2 unconnected **WHITE/RED** wires that were unsoldered earlier, one that was connected to the old rectifier board below the chassis and another that was connected to the old capacitor board above the chassis. These 2 wires are connected together at an unused lug on the meter function switch. Route the end of the **WHITE/RED** wire that was connected to the old rectifier board below the chassis up through the large hold near the meter switch. Clean, prepare and tin the end of this wire and solder to the bottom of the PM-300 PC board at the hole marked **B- WHITE/RED.** Trim the lead on the top of the PC board as necessary. The other **WHITE/RED** wire can be cut flush and the end insulated with shrink tubing or other suitable insulating material and tucked back out of the way or it can be pulled back to the meter switch, cut off and discarded. **Be careful to cut the correct wire if you choose this method. I recommend just cutting the wire end flush and insulating and tucking it back out of the way!**

( ) Pull some of the **WHITE/BRN/RED** wire from the end that was removed from the old diode board out of the harness back about 1-1/2" to 2". Pass the free end of this wire up through the chassis

and solder to the bottom side of the PM-300 PC board at the hole marked **HVMETER WHITE/BRN/RED**. Trim the lead on the top of the PC board as necessary.

( ) **Review the above steps and compare to the new PM-300 Power Supply Module. Carefully examine all solder connections and wire colors. When satisfied, continue.**

( ) Carefully insert the new PM-300 into position on top of the chassis folding wires underneath as required. The board should be arranged so that the 4 1MΩ HV metering resistors are near the transformer and the rectifier diodes are near the center chassis partition. Secure in place using the 4 #6-32 screws and spacers set aside earlier.

( ) Solder the top of the R17 & R18 pair to the HV terminal in the center chassis partition.

( ) Replace the side cover with 5 #6-32 screws on the side and 2 #6-32 screws and washers to join the rear panel to the side cover.

( ) Turn the amplifier right side up and set the cabinet on a towel or cloth on the bench behind the chassis. Inspect one more time for loose wires, scraps of wires or other debris. Replace the top cover over the power supply. Secure with 5 #6-32 round head screws and 3 #6-32 flat head screws.

( ) Feed the line cord through the front bezel then through the appropriate hole in the back of the cabinet. Gently slide the amplifier into the cabinet through the front bezel pulling excess line cord as you go along. Adjust the position of things at the rear panel to allow the fuses and coax connector to pass through their respective holes.

( ) Tilt the amplifier on its side with the transformer down and the bottom facing you. Reattach the 4 rubber feet into their respective holes and secure them using a screwdriver. Install the chassis screw between the two rear feet.

( ) Set the amplifier on its feet with the front panel facing you. If the plug was removed from the line cord, replace it now.

( ) Verify that the **ON/OFF** switch is set to **OFF**.

( ) Plug the line cord into an appropriate AC receptacle.

( ) Set the **METER** switch to **DC VOLTS**.

( ) While observing the meter, turn the **ON/OFF** switch to **ON** for a couple of seconds and then back to **OFF**. The meter should have indicated approximately **2 KV DC**. If it did not, go back and check you work for errors, incorrect wiring, bad solder joints or incorrect polarity on components.

If the meter reading is correct, installation of the PM-300 is complete. The modern diodes and resistors and the fresh electrolytic capacitors should provide clean, stable HV and greatly extend the life of this classic linear amplifier.

PM-300 POWER SUPPLY MODULE ASSEMBLY INSTRUCTIONS

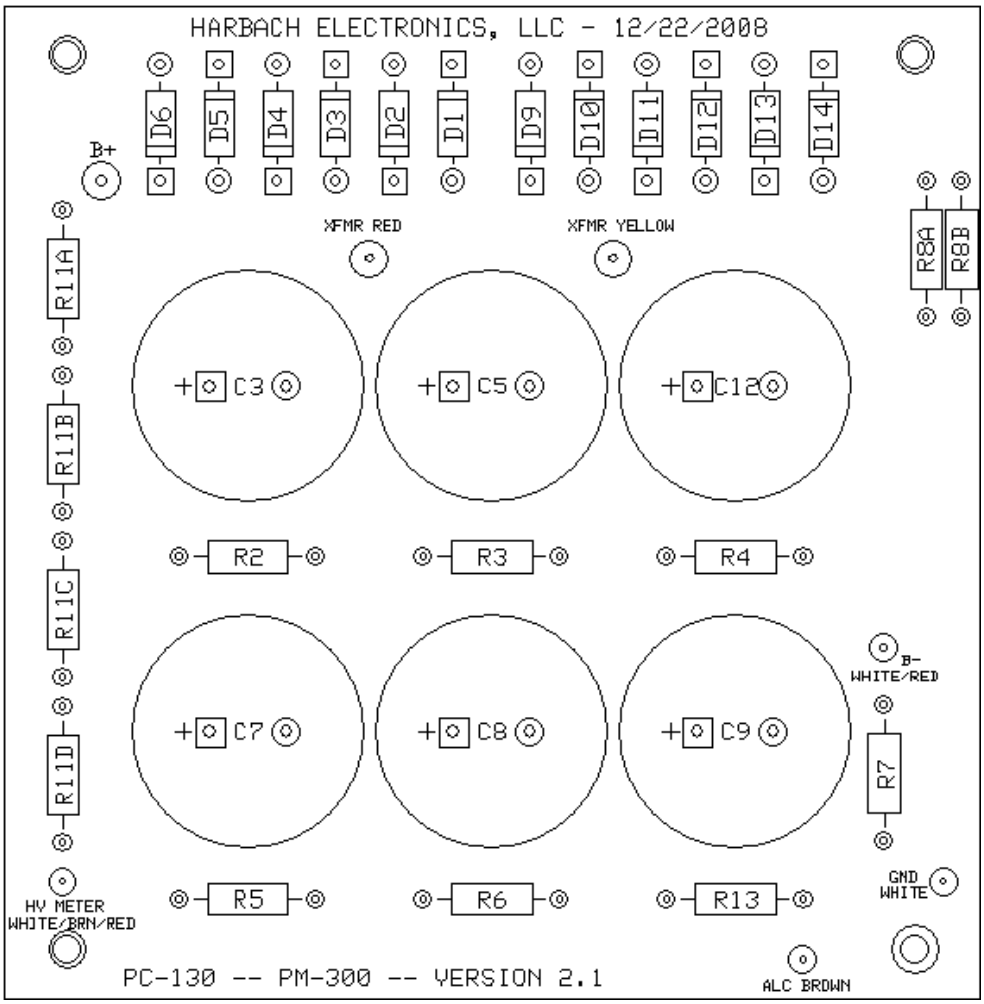
( ) Solder all diodes and resistors to the top (silk screened side) of the PC board according to parts layout diagram and silk screen. Trim the leads as necessary. **NOTE: Resistors R2-R6 & R13 (resistors across each capacitor) must be raised above the PC board approximately 1/8", but not more than 1/4", above the board to allow for proper air circulation and heat dissipation.** This is easily accomplished using a popsicle stick or similar item as a shim.

Remove the shim as each component is soldered in place. All other components are soldered flush to the board.

( ) Press the six electrolytic capacitors through the holes in the PC board. The capacitors should be firmly against the PC board. Be certain to observe correct polarity for the capacitors. Solder the capacitors in place and trim the leads.

PC BOARD PARTS DESIGNATION;

C3, C5, C12	180μF 450VDC Electrolytic Capacitors	D1-D6	1N5408 Diodes
C7, C8, C9	180μF 450VDC Electrolytic Capacitors	D9-D14	1N5408 Diodes
R2-R6, R13	100kΩ 3-Watt Resistors	R7	1.5KΩ 3-Watt Resistor
R8A, R8B	2Ω 3-Watt Resistors	R11A-R11D	1 MΩ 3-Watt Resistors



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