

# PM-800 REPLACEMENT POWER SUPPLY MODULE INSTALLATION INSTRUCTIONS

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## PARTS SUPPLIED WITH THIS KIT:

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| (1) PM-800 Circuit Board                       | (2) 1M $\Omega$ 3-Watt Resistors              |
| (17) 1N5408 Diodes                             | (1) 1.5M $\Omega$ 3-Watt Resistors            |
| (9) 100K $\Omega$ 3-Watt Resistors             | (1) 2200 $\mu$ F 35VDC Electrolytic Capacitor |
| (8) 220 $\mu$ F 450VDC Electrolytic Capacitors |   |
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**WARNING: This upgrade is not for the inexperienced in amplifier theory and repairs as the voltages inside the amplifier CAN and WILL KILL YOU! Different versions of the LK-450/500/550/800 amplifiers used different wiring colors and parts layouts. You MUST be able to read your schematic and understand the design, theory, wiring and construction of your particular amplifier to properly perform this upgrade.**

To start the installation, read these instructions very carefully. Now unplug the power cord from the mains outlet and let the HV bleed down. Remove the top cover. Be sure to use a shorting bar to short the HV to ground to make sure the HV is bled completely off. You are now ready to proceed with the assembly and installation of the new power supply module.

- ( ) Assemble the PM-800 according to the parts layout diagram and silkscreen on the PC board. All parts mount on the top side of the new PC board **except resistors R4-R10**. A suggested assembly sequence is resistors R4-R10 (mounted on underside of PC board), then diodes D1-D17 (mounted upright) (**pay attention to polarity!**), followed by resistors R18-R21 (mounted upright), then electrolytic capacitor C3 (**pay attention to polarity!**) and finally electrolytic capacitors C4-C10 (**pay attention to polarity!**). **NOTE: Resistors R4-R10 MUST be spaced approximately ¼" below the PC board for proper heat dissipation. Use any kind of spacer you have to help secure the resistor while soldering it, but make sure the resistors are ¼" below the board!**
- ( ) Two components, R2 (the plate current shunt) and R3 (the grid current shunt) will be installed later.
- ( ) Before removing the old power supply board, make notes as to the placement of wires on that board. This is important as all wires connected to the old board will need to be connected to the corresponding connection points on the new board. You should use the new PC board as a reference. These points are labeled A, B, C, D, E, F, G, H, I, J, K and XFMR (2 pads). Some of these connection points may not be used as different versions used slightly different wiring schemes. In most amplifiers, the XFMR (2 wires) and K (B+) leads are soldered to the underside of the PC board. Also Note: The connection at J may be a wire or resistor lead depending on the combination of metering resistors used during assembly at the factory.
- ( ) Remove all screws holding the old power supply board in place. Most units have 7. Unsolder all wires connected to the old PC board (make sure they are each labeled!). Remove the old PC board from the chassis.
- ( ) Remove all the mounting posts from the old board. Only 4 posts will be used on the new PC board. Install 4 of them on each corner of the new power module.

- ( ) Carefully unsolder and remove R2 and R3 from the old PC board one at a time. Then install them in the appropriate locations on the new PC board. These resistors are also mounted upright. Some versions of the old PC board may have R2 and R3 reversed. Read or measure the value of both resistors. R2 is the plate current sense resistor which should be the smaller value. R3 is the grid current sense resistor which should be the larger value.
- ( ) Reattach the appropriate wires to points A, B, C, D, E, F, G, H, I, J, K and XFMR (2 wires).  
Note: The two leads from the HV transformer that attach at XFMR should be soldered on the underside of the new PC board.
- ( ) Solder the HV plate wire to solder pad K on the underside of the new PC board. To avoid a B+ short to chassis ground, be sure that nothing uninsulated protrudes from this pad as it is very close to the center chassis partition.
- ( ) Once all wires have been attached to the new PC board, mount the new PC board in the amplifier using 4 mounting screws removed earlier. Be sure to dress these wires away from any HV components.
- ( ) **Review and recheck your wiring and soldering at this point!!!**
- ( ) Replace the top cover of the amplifier.

This completes the installation of the PM-800 replacement power supply module. Due to the use of modern components and design, it will provide you with additional years of reliable service from your Amp Supply LK-Series amplifier.

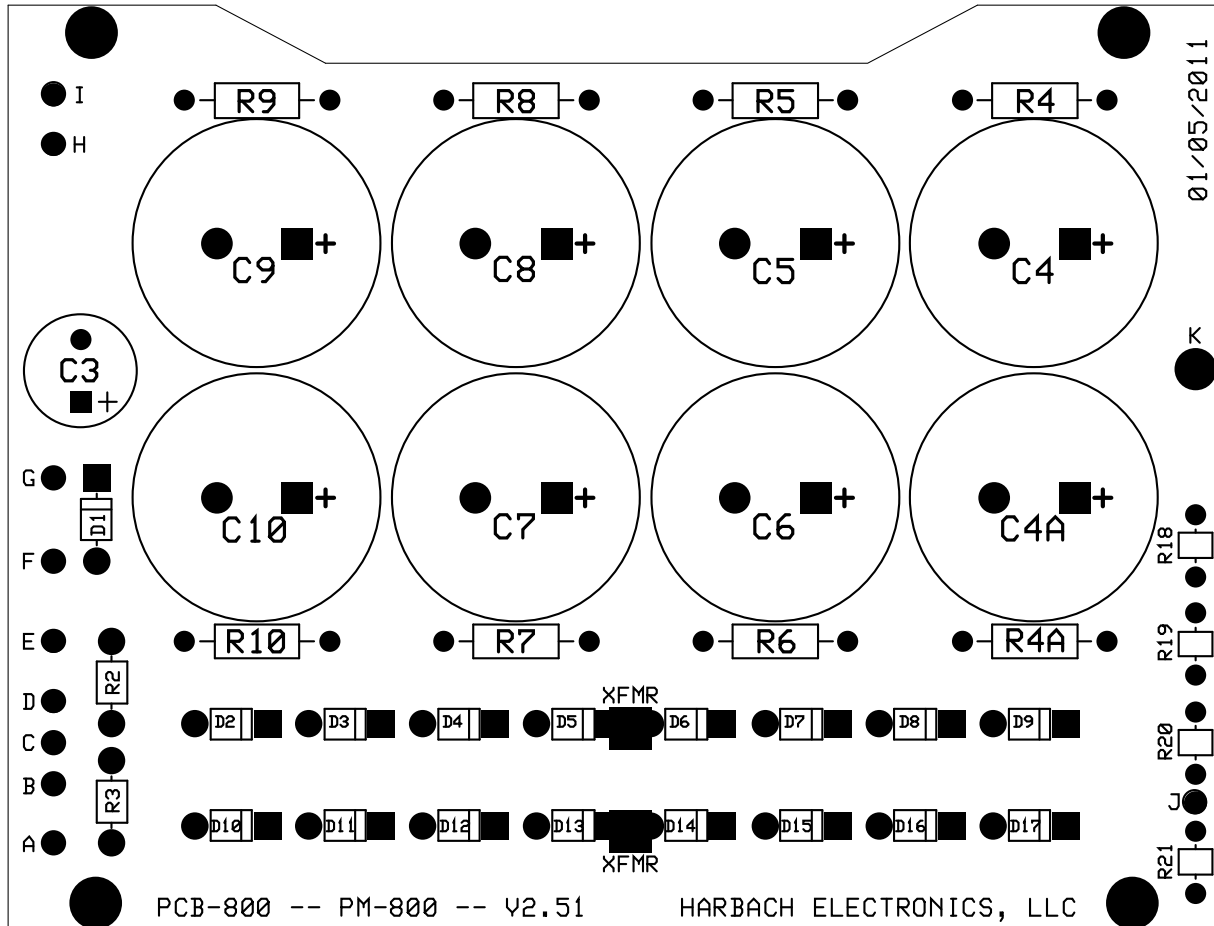
For comparison purposes, the following wiring information is provided. **Note:** This may or may not be accurate for your particular model and/or version, but is provided to assist in troubleshooting. These were the wires in the LK-450 used to develop this kit.

Also see the schematic on page 4. Thanks to Jason Cooper, KN7AZ, for this schematic!

<b>A</b>	WIRE FROM PLUG J1 (GROUND)
<b>B</b>	WIRE FROM J1 (PLATE CURRENT METER)
<b>C</b>	WIRE FROM GRID SIDE OF MULTIMETER SWITCH
<b>D</b>	WIRE FROM ZENER DIODE/BIAS BOARD
<b>E</b>	WIRE FROM J1 (PLATE CURRENT METER)
<b>F</b>	WIRE FROM FILAMENT XFMR CENTER TAP (LOW VOLTAGE AC)
<b>G</b>	WIRE FROM STANDBY/XMIT SWITCH
<b>H</b>	WIRE FROM VOLTAGE SELECTOR BOARD (LOW VOLTAGE AC GROUND)
<b>I</b>	WIRE FROM FILAMENT XFMR (GROUND)
<b>J</b>	WIRE FROM HV SIDE OF MULTIMETER SWITCH
<b>K</b>	HIGH VOLTAGE B+
<b>XFMR</b>	HV AC FROM TRANSFORMER (2 HEAVY GAUGE WIRES)

**PC BOARD PARTS DESIGNATION:**

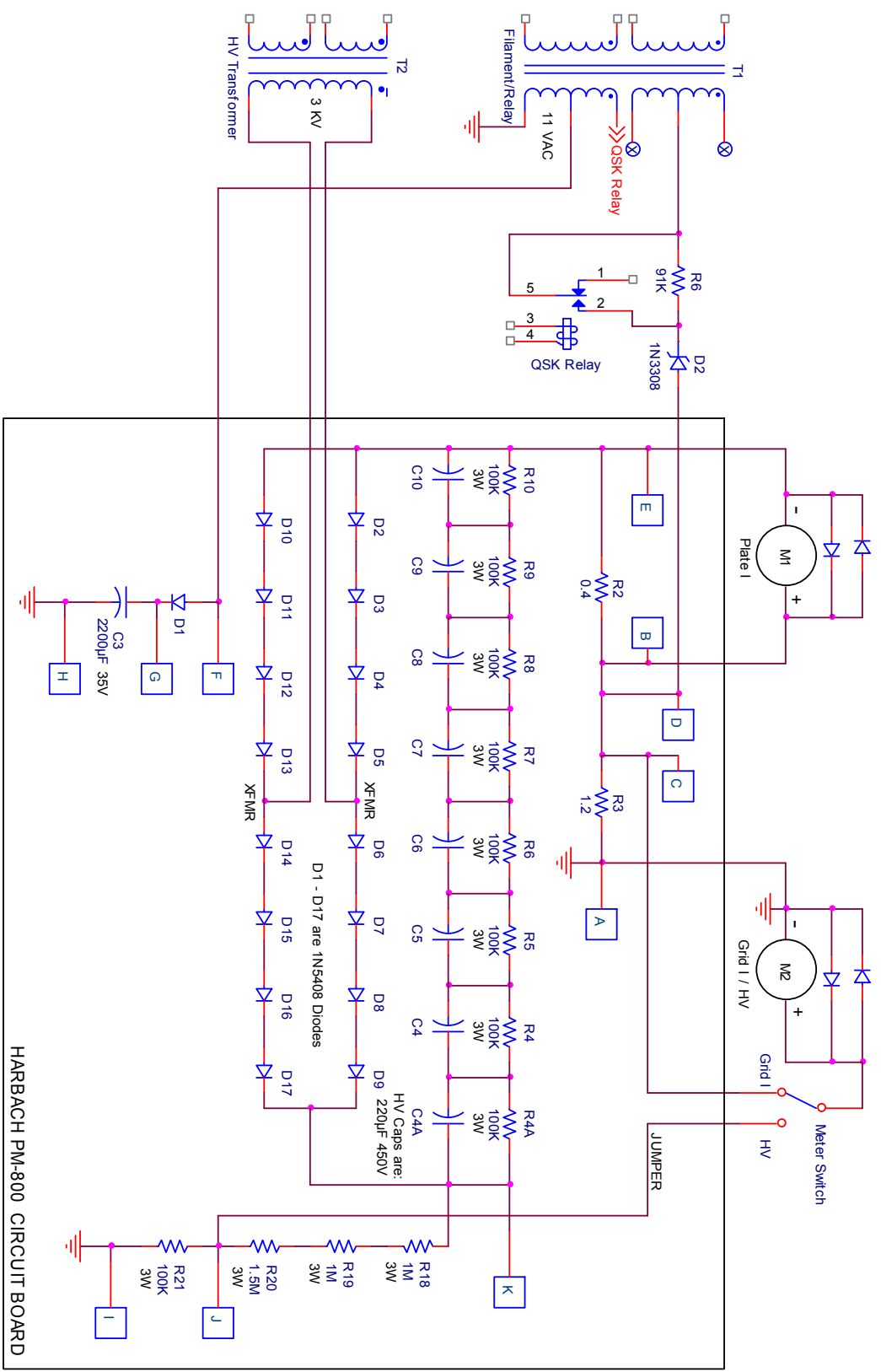
<b>C3</b>	2200 $\mu$ F 35VDC Electrolytic Capacitor	<b>C4-C10</b>	220 $\mu$ F 450VDC Electrolytic Capacitors
<b>D1-D17</b>	1N5408 Diodes	<b>R4-R10</b>	100K $\Omega$ 3-Watt Resistors
<b>R18-R19</b>	1M $\Omega$ 3-Watt Resistors	<b>R20</b>	1.5M $\Omega$ 3-Watt Resistor
<b>R21</b>	100K $\Omega$ 3-Watt Resistor	<b>R2</b>	Plate Current Shunt Resistor
<b>R3</b>	Grid Current Shunt Resistor		



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HARBACH PM-800 CIRCUIT BOARD

Title		HARBACH PM-800 REPLACEMENT MODULE	
Size	Document Number	Rev	
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