

FB-220 FILTER CAPACITOR BLOCK v3.0 INSTALLATION INSTRUCTIONS

PARTS SUPPLIED WITH THIS KIT:

- | | |
|---|----------------------------------|
| (1) FB-220 Filter Capacitor Block v3.0 PC Board | (8) 100kΩ 3-Watt Resistors |
| (8) 210µF 450VDC Electrolytic Capacitors | (2) Plastic Support Frames |
| (8) 1N4005 Diodes | (3) #10-32x3/8" Screw (Non-SEMS) |
| (13) #10-32x3/8" SEMS Screws (with lock washer) | (3) Bent #10 Solder Lugs |

WARNING: Voltages inside the amplifier CAN & WILL KILL YOU! You MUST also know how to work around HIGH VOLTAGE safely. If you do not, get assistance from someone who does.

- () **Read, re-read and fully understand these instructions prior to beginning this upgrade.**
Make sure to perform the steps in the order they are listed. Also, be sure to label wires as they are disconnected from various points inside the amplifier. This will help when the time comes to re-attach the wires that will be disconnected during installation of the kit.

FB-220 FILTER CAPACITOR BLOCK ASSEMBLY INSTRUCTIONS

- () Solder diodes and resistors to the top (silk screened) side of the PC board according to parts layout diagram. **Note: Diodes D21-D27 mount flat to the PC board and resistors R12-R19 must be raised above the PC board, but no more than ¼" above the PC board.**
- () Press the electrolytic capacitors through both sets of plastic holders one capacitor at a time. Note proper orientation so they match the positive/negative pads on the PC board. **NOTE: Depending on the thickness of the plastic coating on the electrolytic capacitors, you may have to enlarge the inner diameter of the holes slightly using a razor blade or razor knife. You should remove only enough from the inner diameter so that the capacitors fit very snugly.** The plastic holders should be spaced so that the bottom holder is approximately 1" from the bottom of the capacitors and the top holder is approximately 2-1/2" above the bottom spacer. You may use a few beads of hot melt glue to affix the holders to the capacitors, but this is not required.
- () Mount the assembled PC board to the top of the capacitor assembly using #10-32x3/8 SEMS screws (screws with the integral washer). **NOTE: Use a regular #10-32x3/8" screw and a bent #10-32 solder lug on the holes marked L1B+, L2AC and L3B-.**

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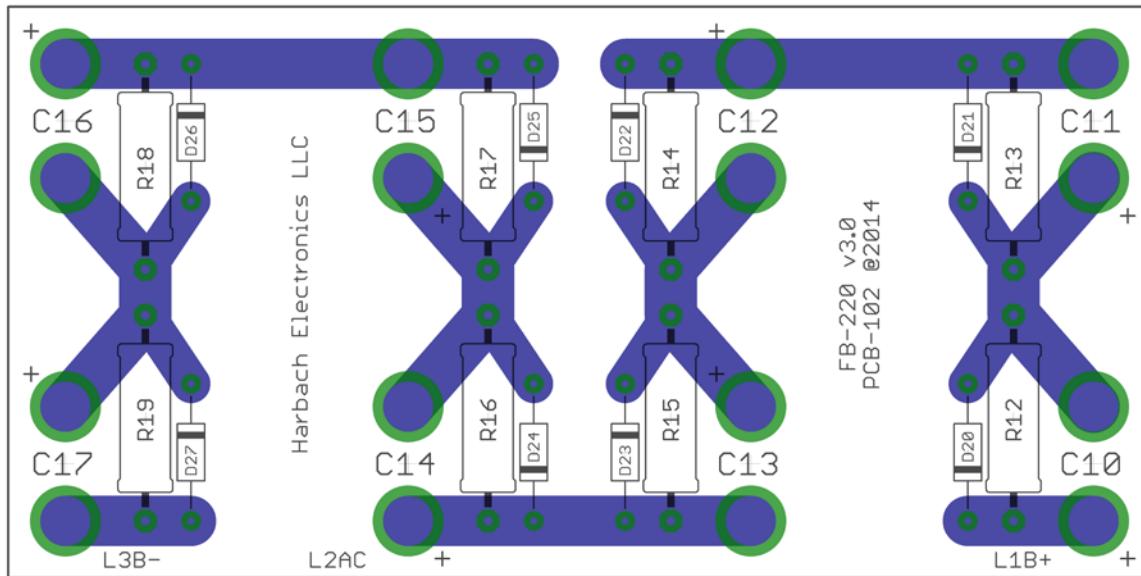
- () Unplug the amplifier power cord from the AC mains and let any high voltage stored in the electrolytic capacitors bleed down. Verify the HV has bled down as shown on the HV meter. Place the amplifier on a book, front panel up, and remove the bottom screws holding the feet and case in place.
- () Remove the 15 sheet metal screws that hold the perforated cover in place and remove this along with the top rear plate cover.
- () Use a shorting bar or "chicken stick" to short the HV to ground to make sure any high voltage is completely bled off from the capacitors.

- () Remove the top rear #6-32 screw, nut and washer holding the right side panel in place along with the 4 sheet metal screws that attach the right side panel to the chassis.
- () Remove the top front Phillips-head screw on the right side of the front panel. This will release the right side panel for removal.
- () Tip the amplifier onto its left side.
- () Unsolder and label the 3 wires attached to the old filter capacitor block. There is a **BLACK** wire from the rectifier board, a **BLUE** wire also from the rectifier board and a **RED & YELLOW** wire from the HV transformer.
- () Remove the (4) #6-32 nuts and washers securing the filter capacitor bank support bracket. Now lift the bracket up about $\frac{1}{2}$ ".
- () Remove the old filter capacitor block assembly. This task can be made easier by cutting some of the wires between the capacitors (they are no longer needed).
- () Slip the new filter capacitor bank into the cavity vacated by the old capacitor bank with the solder lugs toward the front panel. **Make sure that you fully slide the block to the rear of the cavity. Now, slide the assembly approximately 1/16" out of the cavity.**
- () Press down on the capacitor bank bracket and reinstall the (4) #6-32 nuts and washers. Depending on the tolerances of the bracket, you may have to leave off the washers. Tighten the nuts securely.
- () Solder the 3 wires you removed earlier; The **BLUE** to the bottom solder lug at hole **L1B+**, the **RED & YELLOW** to the middle solder lug at hole **L2AC** and the **BLACK** to the top solder lug at hole **L3B-**.
- () Place the right side panel in position and secure with the 4 sheet metal screws removed earlier.
- () Reinstall the top front Phillips-head screw on the right side of the front panel and tighten and reinstall the #6-32 screw, nut and washer in the top rear of the back panel.
- () Replace the perforated cover and top rear plate cover. Reinstall the 15 sheet metal screws holding these pieces in place. **DO NOT** over tighten these screws, as it is fairly easy to strip the screw threads in the aluminum underneath.
- () Reinstall the case and feet using a book to support the amplifier.

This completes the installation of the FB-220 filter capacitor block. It will provide you with a better power supply that provides the necessary B+ filtering and regulation. Your amplifier should not experience any filtering problems in the future.

PC BOARD PARTS DESIGNATION:

| | | | |
|----------------|--|----------------|----------------------|
| C10-C16 | 210 μ F 450VDC Electrolytic Capacitors | D20-D27 | 1N4005 Diodes |
| R2-R19 | 100k Ω 3-Watt Resistors | L1-L3 | #10 Bent Solder Lugs |



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