

## Fender Capacitor Kit FCK-21D Installation Guidelines '94 Twin Amp – Rev D & E

**Warning:** Tube amplifiers contain high voltage which is stored in the filter capacitors even after the amplifier has been turned off. Always unplug the amplifier from commercial power, and discharge all filter capacitors before working on the amplifier circuitry. If you are unsure about this procedure, we strongly recommend that you leave your amplifier in the care of a professional service person.

**Polarity:** Electrolytic capacitors are polarized. The old capacitors will be marked with + indicators at the positive end, and – indicators at the negative end. It is extremely important that the new capacitors be installed in the same orientation. Look for polarity markers on the PC board. You can also take photos of the old capacitors in place in case there are any questions about placement after they are removed.

**Procedure:** After unplugging the amplifier from commercial power, remove the chassis from the cabinet and safely discharge the two 220uF/300V main filter capacitors. Carefully remove the PC boards, be especially careful not to break any interconnecting wires. Do not remove all of the capacitors in the beginning! Use rosin flux and solder wick to remove the old solder and free the old capacitor lead. If you use a solder sucker, be aware that the printed traces on most Fender boards are quite fragile and lift off the board very easily, so proceed with caution. If a trace does lift up, or a pad breaks its connection with a trace, you will need to use wire to patch that connection.

**Mounting:** A bead of silicone caulk (RTV) or hot glue under each large capacitor to secure them to the PC board is highly recommended. If the capacitors are mounted using only their leads, vibration will eventually crack the leads and dislodge the capacitor.

**Capacitor Inventory:** The kit contains two 220uF-300V, two 47uF-500V, five 22uF-500V, two radial 100uF-100V, four radial 22uF-63V, seven 22uF-50V, one 4.7uF-50V, two radial 220uF-50V, two

radial 1000uF-35V, and one radial 47uF-50V capacitors.

| Capacitor  | Board location                                      |
|------------|---|
| 220uF/300V | C38, C39 (Replaces 220uF/285V)                      |
| 47uF/500V  | C40, C41 (Replaces 47uF/350V)                       |
| 22uF/500V  | C22, C42, C43, C44, C51                             |
| 100uF/100V | C45, C50  |
| 22uF/63V   | C36, C37, C59, C62                                  |
| 22uF/50V   | C1, C5, C11, C24, C28, C53, C61 (replaces 22uF/25V) |
| 4.7uF/50V  | C35   |
| 220uF/50V  | C46, C49  |
| 1000uF/35V | C47, C48  |
| 47uF/50V   | C60   |

**Questions?** If you have any questions whatsoever about the installation process, please contact us through our website before you proceed with the installation.

Studio Sound Electronics  
www.amprepairparts.com  
Clearwater, Florida USA