

ⁱCoupling Cap mod for MMBass amp

In my previous paper I outlined the process for modifying the Volume & Tone controls using the tone circuit of the tweed Harvard amp for inspiration. That's the first mod to make to these amps in my opinion, but while you're at it, while you've got the chassis on the work bench to do that mod I highly recommend swapping out the coupling cap between the input gain stage and the Volume / Tone control circuit. The stock cap is a .01uf cap (typically ceramic disc) which limits the bottom end response of the amp. Increasing that cap to a .022uf cap will help fatten up the tone. Going larger will fatten it up even more, but go too large and the bottom end can start to get loose and ratty. In my opinion the .022uf is just enough to fatten up the tone without causing it to get woofy. You'll need a cap rated at least 300 volts, though you can go with higher voltage cap and it won't be a problem. The cap I used is rated at 630volts (a Mallory 150 polyester tubular cap). Again, I'm not a stickler for cap type; mylar, polyester, polypropylene, paper-in-oil, even ceramic disc if that's what you want to use. There may be slight differences in sound, it's not worth sweating too much over. It's the capacitance value that is important, as well as making sure it has a high enough voltage rating. And of course of good enough quality that it won't fail on you and reduce the reliability of the amp. That is a good reason to go with name brands parts.

The procedure is simple, if you've got the chassis out and the filter caps drained just remove the cap and replace it with the new cap. **If you're just getting into the chassis to do this mod then you'll need to drain the caps to prevent electrical shock.*** The cap you want to change is the round ceramic disc cap circled in the photo of the circuit board below.



To remove the cap just heat the eyelet that each lead is soldered to until the solder melts and you can pull the lead loose with a pair of small pliers.

Once you've got the old cap out, prep the new cap by bending the leads to fit the span between the eyelets and trimming the excess length. Then tin the leads first before you install the cap, by heating them with your soldering iron and applying solder until the solder melts and covers the lead where it will sit in the eyelet. Some folks like to clean the leads with steel wool or emery cloth to ensure good adhesion of the solder. Applying some flux to the bare lead before you apply the heat and solder will make the solder flow smoothly onto the leads. Then set the cap into place, heat the eyelet up again with your iron and when the solder melts gently press the leads into place. Let the solder cool, then you can reapply solder a second time to fill the eyelet, if needed. When done it should look something like this:



And that's it, put it all back together and you're ready to play again.

- Be aware that tube amps can contain lethal voltages, even when they are unplugged. Before you start to work on an amp take the time to educate yourself regarding safe practices with tube amps. Information is available, it is up to you to find it and know what you are doing before you get started. In general, safe practices are:
 - Always unplug the amp before starting to work on it
 - Drain the filter caps
 - Never touch anything inside the amp chassis with your bare hands, always use insulated tools to work on the amp
 - Do not stand on a bare concrete floor, use a rubber floor mat to insulate yourself from the floor
 - Work one handed, place your other hand in your back pocket to help keep you from using it.
- Check the internet and technical manuals for more information on safely working on tube guitar amplifiers.