

ⁱVol / Tone Mod for MMBass Amp

As cool as the stock MMBass amp is, there are just a few minor tweaks you can do to make it sound even better. The first one I recommend doing is the Vol/Tone mod, modifying the Volume and Tone controls to mimic the tweed Fender Harvard Volume / Tone control arrangement. Well, not exactly, but close enough. To mimic it exactly you'd need to swap out the stock MMBass Volume pot to a 1M linear pot. That's really not necessary, the stock 250k value actually gives you better control over the range of adjustment, a 1M linear pot tends to go from no volume to too much too quickly, the 250k gives you more sweep of the pot before reaching max volume. The downside is it does load down the preceding gain stage a little more, but in my opinion it's really not a problem; if you think you need every bit of gain you can squeeze out of the amp you may want to go to a 1M pot, but I would go with an audio taper pot, not linear, to help with the controllability. This Vol/Tone mod will give better Tone control, making the Tone pot more useful; and in my opinion better overall tonal quality. The stock arrangement is also more lossy, allowing more of the signal to bleed out of the signal path. The modified circuit helps to drive the 2nd gain stage better. It just flat works better for guitar than the stock arrangement.

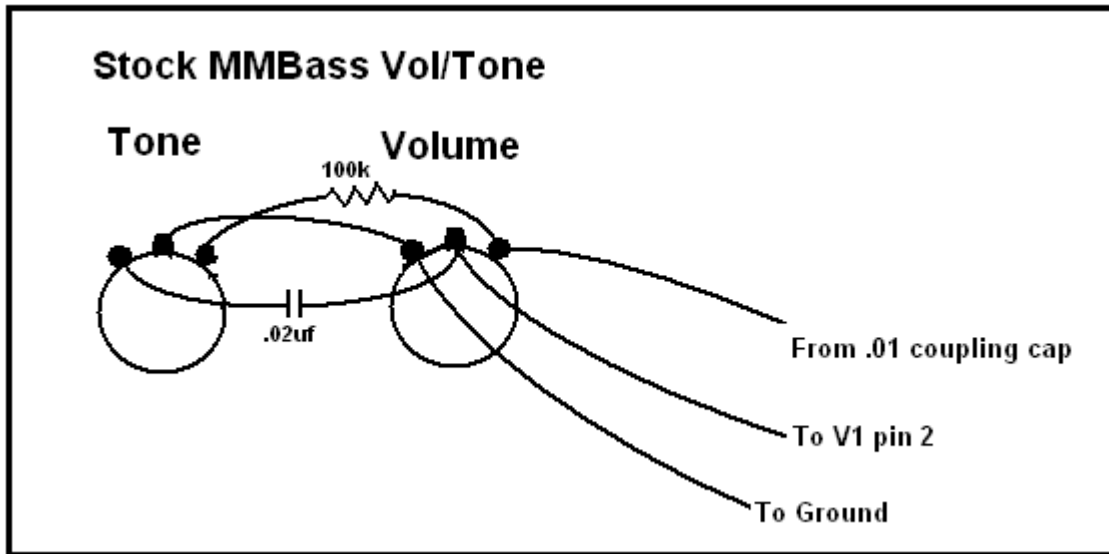
OK, so you don't need a new pot, but you do need two inexpensive parts, a 500pf cap (or .00047uf, which is functionally the same thing and may be easier for you to find) and a .0047uf cap. Both caps are shielded from high voltage, so the voltage is not really an issue. If you can pick up some low voltage caps at your local friendly Rat Shack or other electronics shop in the right capacitance value you can use them. I happen to have high voltage parts on hand, (500 volt 500pf silver mica, 630 volt .0047uf tubular polyester) as these are fairly common cap values used in tube guitar amps, so I just used them. Either way is fine. If you have to order caps from an online source, the high voltage caps may be easier to find from common amp parts sources. Note: I'm not a big believer that special caps impart special tone or mojo on the sound. The important factor is the capacitance value, not so much (in this application) the voltage rating or construction material. I see people fret over cap type all too much. Go with what works for you and don't sweat it too much.

Enough blathering, here's the details. Once you have the two caps on hand, the first thing you have to do is to pull the chassis from the cabinet. **STOP!!! Before you do anything, make sure the amp is unplugged!!! Don't work on the amp with it plugged into the wall outlet. And to be safe you should always drain the filter caps and follow standard safety practices for working on tube amps. If you're not sure what those are do some searching around the internet before you start the work. If you're not comfortable with the risks of working on a high voltage appliance don't do it. Better to be safe than sorry.**

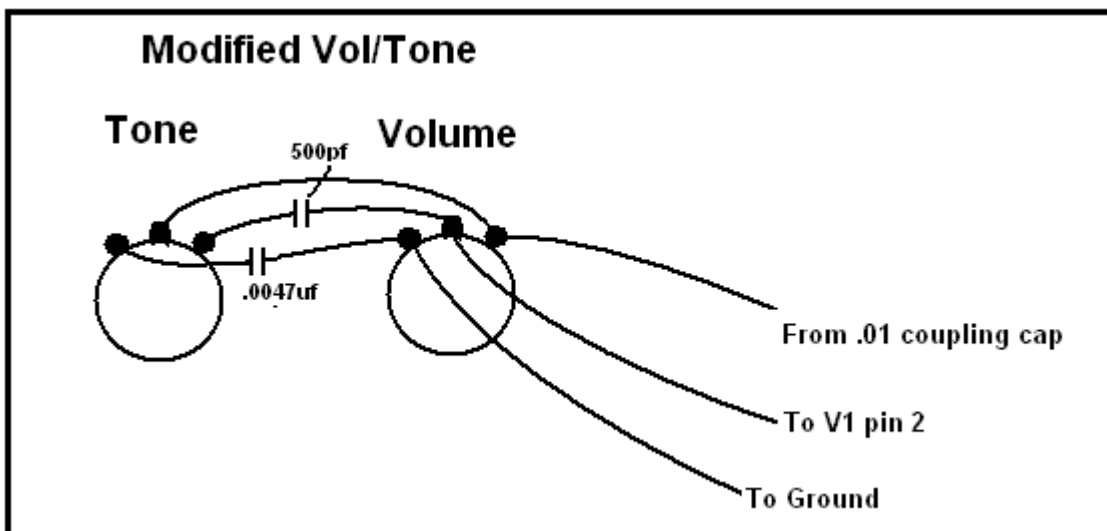
Alright, with that out of the way, set the amp face down on your work surface with the chassis end facing you. Remove the tubes and set them safely out of the way. Remove the screw securing the power cord clamp to the side of the cabinet. Unplug the speaker cables from the speaker. And finally, unscrew the four screws securing the chassis to the cabinet

(you'll probably have to hold the nuts on the bottom of the chassis to keep them from turning), and remove the screws, straps and nuts and set them aside. Then lift the chassis up out of the back of the amp and set it aside in a safe location. Remove the cabinet from your work surface to make room for the chassis, then bring it back over and set it up to work on it. A chassis rest makes the job easier, but is not necessary. Now you're ready to do the actual mod.

Below is a drawing of how the stock MMBass Vol/Tone circuit is wired up:



And below here is a drawing of the modified circuit:

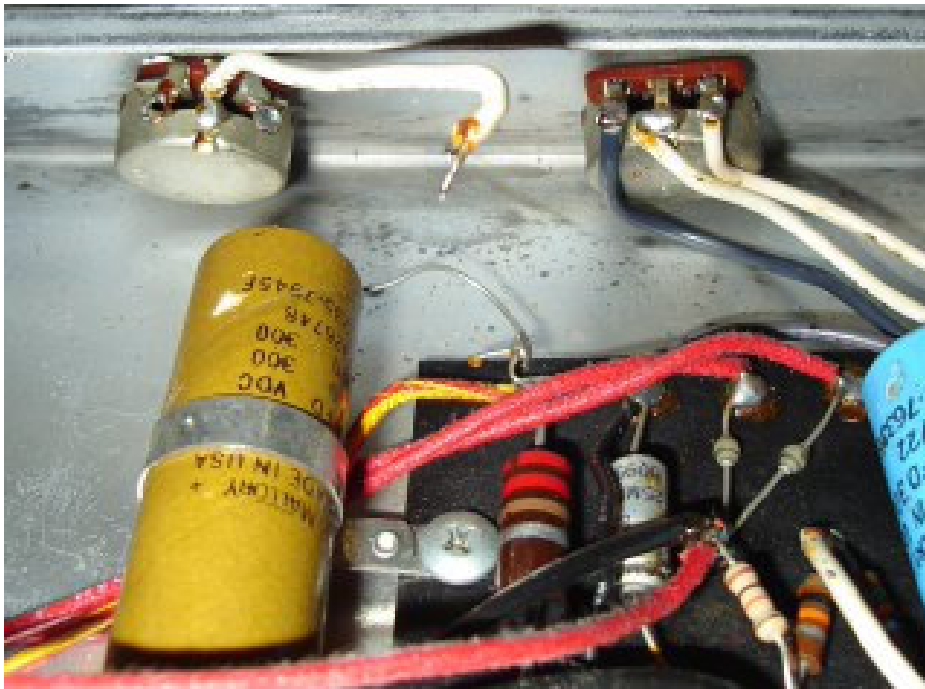


All you have to do is make the stock arrangement look like the modified. Simple, huh? It's actually a piece of cake. Anyone with some decent soldering skills can do it; even a novice can do this.

Below is a photo of my stock MMBass Vol / Tone controls.



The next step is to remove the 100k resistor and .02 capacitor, and then remove the jumper wire between the wiper terminal of the Tone pot and the ground terminal of the Volume pot so it looks like this:



Note, you can leave the jumper wire connected to the wiper terminal of the Tone pot.

Next connect the jumper wire between the Tone pot wiper terminal and the Volume pot input terminal, then install the new caps in place, the 500pf cap goes between the Volume pot wiper terminal and the Tone pot input terminal; the .0047uf cap goes between the ground terminal of both pots. It should look something like this:



Tip: If the parts won't reach between the pot terminals, you can rotate the pots just a little to bring the terminals closer together. Slip the knob off the pots and loosen the retaining nut and twist the pots slightly to angle the terminals towards each other, to make it a little easier to span the distance between the pots.

That's it, you can now put it all back together and enjoy. Although there are a couple of other mods or tweaks you can do to enhance the sound of these amps, like change out the stock .01uf first stage coupling cap to .022uf, and if your amp still has the stock electrolytic caps in it (like the brown cardboard covered cap in the picture above, it's a good idea to swap those out for fresh caps. But I'll document those items in other papers.

ⁱ Richard Hassebrock 4-09