

DT-50 Tube Biasing

How to bias the DT-50

by whiteop on 2011-09-22 16:55:38

Well, my DT-50 just had a bad preamp tube but I went ahead and put a higher grade set of tubes in as the ones that come stock don't seem to be the highest quality. I'm willing to bet everyone will have change their tubes within 2 years as they are not the better quality tubes that EH puts out. I went ahead and ordered and installed some Tungsol 12AX7 preamp tubes and some EL34B power tubes which many guys seem to like for the rich harmonics. I thought I'd share a photo of the BIAS adjustment pot and how I biased it as it might help others. I know I don't have to remind most of you but be very careful not to touch any of the electronics in the amp when you open it up. There are voltages in there that could potentially kill you and a cap can discharge and shock you if you accidentally touch one of it's exposed leads.:

Tools needed:

- Dual Bias Tester like this one: http://www.amp-head.com/product_info.php?cPath=21&products_id=70
- VOM / Voltmeter
- Screwdriver - Phillips head
- Plastic adjustment tool. Actually I use the Radio Shack TV Adjustment Tool pack. Lots of plastic adjustment tools in there to choose from.

Steps:

- Turn the amplifier off and unplug it.
- Take off the upper back panel of the amplifier cabinet (just 4 screws).
- Turn the amp upside down.
- Take off the power tube cage; It's held in with 4 screws. I turned my amp upside down as that makes it a lot easier. You can go ahead and take out the old tubes; both the EL34 power amp tubes and the 12AX7 preamp tubes at this point.
- Turn the amplifier side back to it's original position (the way it usually sits) and unscrew the 4 screws on top of the amp that holds the control panel / electronics then slide it out of the amp. At this point you will have to unplug the speaker cable because you need to set the amplifier innards on the table out of the amp so that you can access the electronic components of the amp. **NOTE WHICH JACK THE SPEAKER CABLE NEEDS TO BE PLUGGED INTO ON THE BACK PANEL.** If you have an

extension speaker cable, go ahead and plug the speaker into and hook it up to the correct jack on the back panel that you noted earlier. If you don't have one you may have to do what I did and take a regular guitar cable, chop the end off then solder two connectors or even alligator clips and use it the same way. **THE BOTTOM LINE IS YOU NEED TO HAVE THE SPEAKER(S) HOOKED UP WHILE YOU BIAS THE AMP. IF YOU DON'T YOU CAN DAMAGE THE AMPLIFIER'S CIRCUITRY.**

- Next, put the preamp tubes in (nothing to adjust on preamp tubes) then plug the bias tester probes into the power tube receptacles of the amp, then plug the tubes into the bias tester probes which look just like the bottom of a regular tube. Basically, the power tubes are plugged into the bias probe which is, in turn, plugged into the power tube receptacle (they are stacked on top of each other).
- Connect the leads of the Bias Tester to your VOM and turn it on to the 200ma setting.

Next, look for a little blue potentiometer on the amp circuit board that word "BIAS" next to it. There is only one (1) and it's located almost directly across from the power tube nearest the middle of the amp. **NOTE THAT THERE IS ONLY ONE (1) BIAS ADJUSTMENT POT TO SET THE VOLTAGES OF BOTH TUBES WHICH SHOULD READ ABOUT THE SAME VALUES ON THE VOM.**

- Now, plug the amplifier back in and turn on the the amp and change the Class setting to A/B. Note that you don't have to bias Class A; automatically biased). You don't have to turn it all the way up like I've seen elsewhere. I just turned mine up about halfway. Use a plastic tipped screwdriver or alignment tool to and turn the potentiometer slowly and carefully until it reads approximately 36mv.

You should get a readout that ranges from about 34mv to 45mv or thereabouts which is what I saw. The recommended bias setting for this amp is 36mv as was told to me on a forum here by a Line 6 rep. Actual settings on my amp were 36.4 for each tube. Note that you will have to switch between the tubes to check voltages by flipping the switch in the middle of the bias tester.

- Turn off your amp, take the power tubes out of the bias tester receptacle and plug them into the regular power tube receptacle and reinstall the cage. Next put everything back together and **MAKE SURE YOU PLUG THE SPEAKER(S) BACK UP THE WAY IT WAS BEFORE YOU DISCONNECTED IT.**

I hope this helps those of you that want to bias your amps yourself. It's easier than it sounds. Just use common sense.

WhiteOp

DT-25 Tube Biasing

Re: RE: bias voltage dt25
by andrewtorres on 2011-12-08 22:27:42

Sure Marcel, I am by no means an expert. When I saw the bias locations I figured it had to be pretty easy. I have biased an amp or two in the past. Here are the steps I used in biasing the DT25 Head:

1. Remove the upper panel on the back. It is six screws and then you might have to gently use a screw driver or some other object to pull the panel out. The tolex is sticky.
2. Remove the 4 screws on the bottom.
3. You have to use some force here but be careful and gently wiggle the amp out of the chassis. You might want to remove the tubes but it isn't required. Push from the front and pull from the back. Again the sticky tolex makes it difficult but it will finally come out.
4. You will see round holes identified as Bias V2, Bias V3, Ground and Adjust Bias V2 and V3
5. Set your multimeter to DCV 200m or volts 200m
6. I stuck a black in the ground and red in the V2 and powered on the head. I let it warm up and then after making sure I had a speaker load and the other end hooked to my guitar I took it out of standby.
7. Make sure you are in AB mode and you should get a reading close to 25.0. If it's off, turn the adjustment screw with a small screwdriver until it is at 25 +/- 3. I then put it in standby and moved the red lead to the V3 side and did the same.

Note – V2 and V3 are the two power tubes. There is only one adjustment knob for both tubes so you may need to average the readings around 25V. Spec is 25 +/- 3 so for example, 23 on V2 and 26 on V3 is in spec.

- slightly edited for clarity...