JVM410 – BIAS-Einstellung

QUELLE: Englisches-JVM-Forum - from SurfCaster

There were two pieces advice I got before I started poking around inside amps, and they were good and I still follow them.

1) If you don't need to use your fingers, don't. Keep some wooden chopsticks (Eßstäbchen) laying around for poking around inside...they will not conduct electricity (provided they don't have duck sauce dripping from them!!) And if you do stick a screwdriver in, which you may have to do to adjust the bias pots, just use one with an insulated plastic handle and don't touch the metal part.

2) When possible, use only one hand and keep the other hand tucked under your belt behind your back or in your back pocket. That way if you do touch something you shouldn't, the electricity will flow up your arm and down your leg, avoiding your heart. If your other hand is grounded, it will flow across your chest...and that ain't good!! And keeping your hand tucked under your belt behind your back ensures you won't inadvertently grab something with it.

Having said that, it's really not all that dangerous. **The biggest risk is the large filter capacitors...the 4 big black cans close to the power transformer (the one by the power switches)...they hold lethal voltages, possibly for hours or days after the amp has been powered down.** But the outside of the cans themselves should not be charged, it would be the contacts you would want to avoid, and the contacts for those capacitors are underneath them. So unless you've got the PCB pulled out with the solder tabs on the otherside exposed, there's little risk you'll discharge them accidentally.

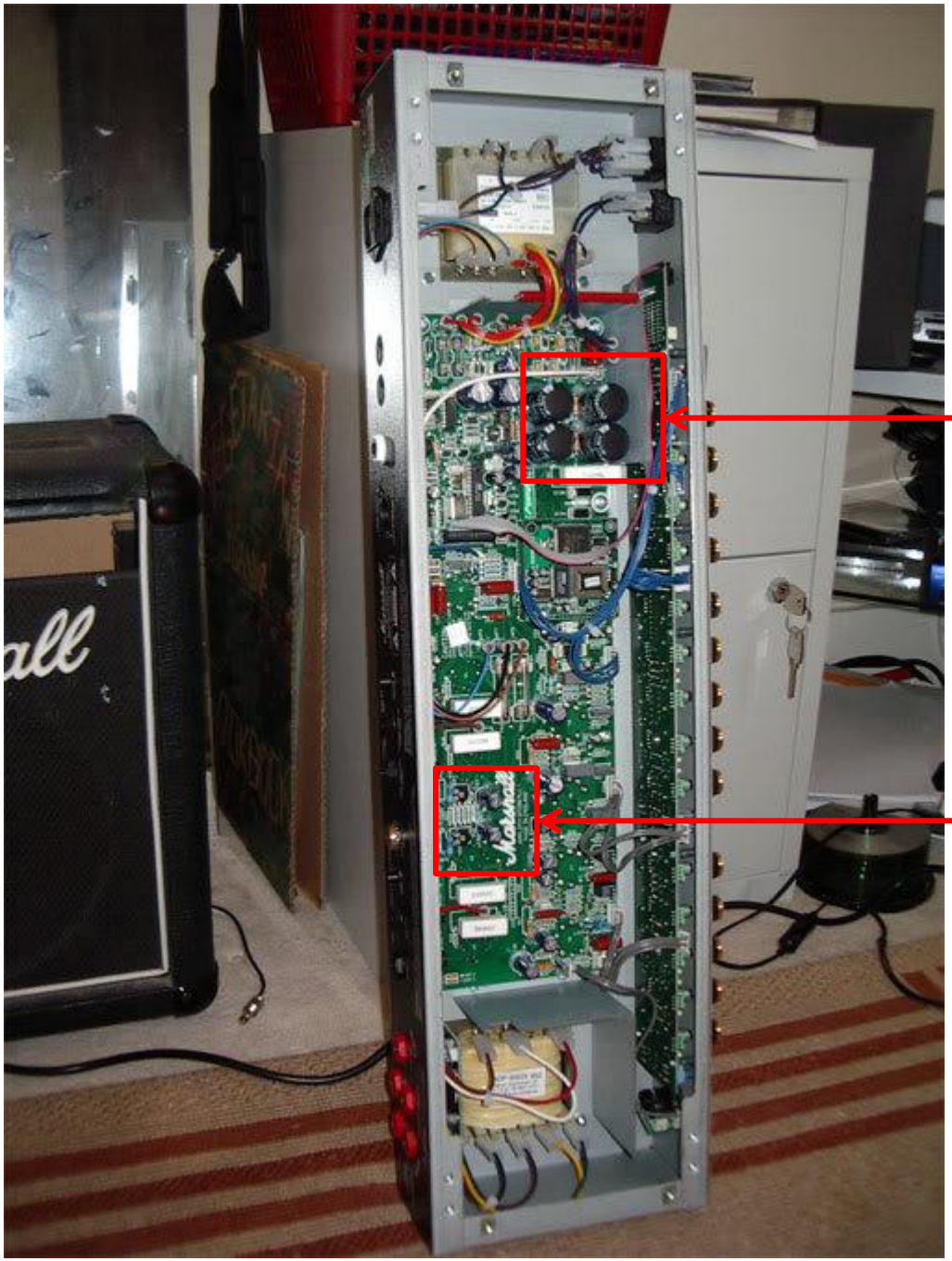
One way I've heard that helps discharge the caps is to shut the amp off without putting it in standby first. I've heard some folks disputing that, but it's easy enough to do and certainly doesn't hurt anything. But if I'm going to touch parts of the circuit with my fingers, I always check the caps with a multimeter before doing so.

Finally, the bias pots are at the other end of the amp, so that makes it even less risky to adjust them.
Just be smart (and perhaps just slightly paranoid!) and you'll be fine. Experienced amp techs will tell you it's usually when they've relaxed their guard that they ended up getting shocked. Personally, I never have been, and I'd like to keep it that way!!

Be careful to not touch anything inside the amp and to have one hand in your pocket if possible when working on it.

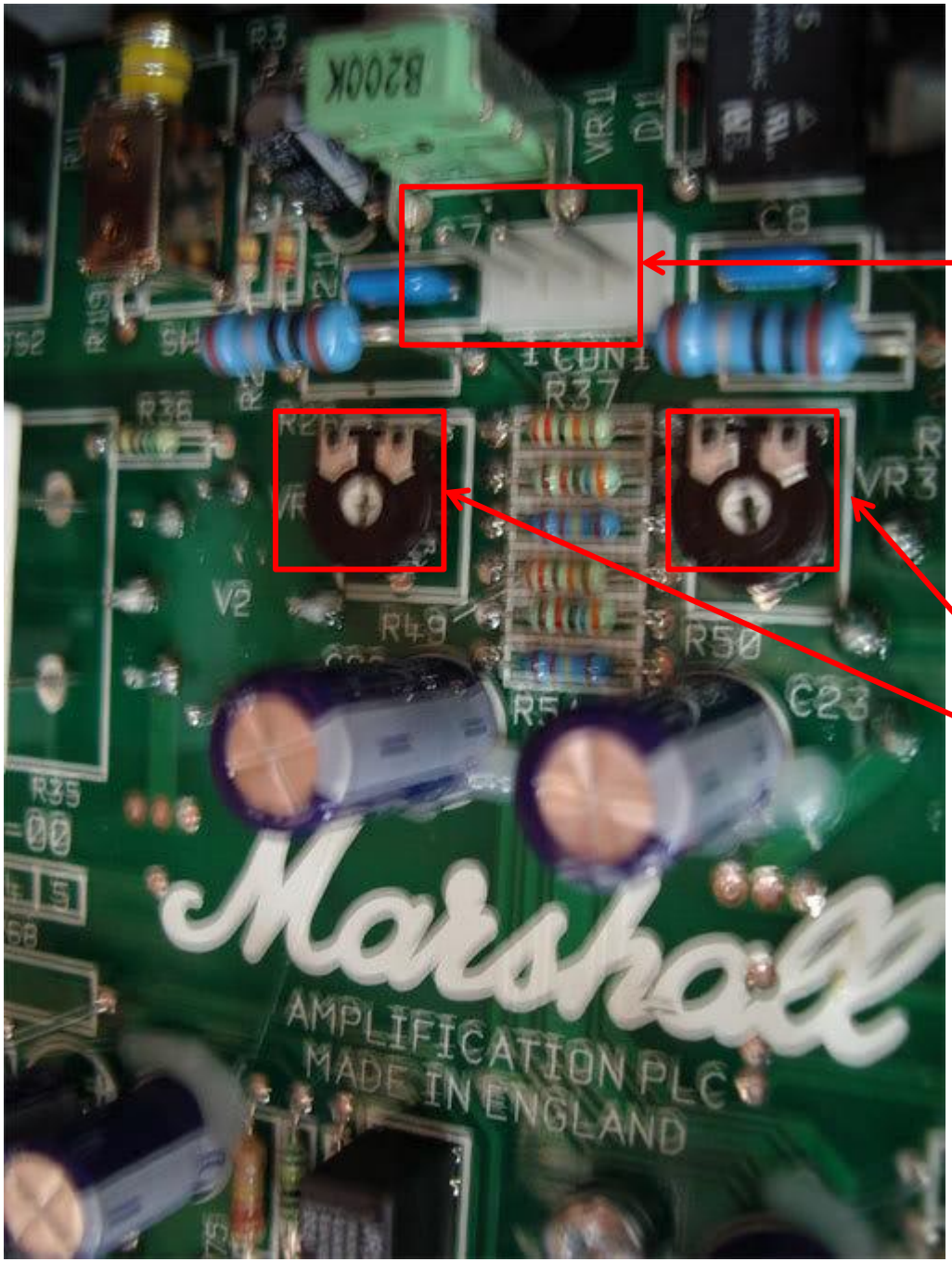
OK, take off the back grille with the 4 screws and lie the amp on it's face.

Undo the 4 bolts underneath the amp holding the chassis in place. Then put the headcase on it's side, grab the top transformer and carefully slide the chassis out of the amp.



VORSICHT:
Zylinder speichern Spannung
In ausgeschaltetem Zustand –
nicht berühren!

BIAS-Einstellungsbereich



BIAS-Messpunkte:
Links: 1. Röhrenpaar (rotes Kabel)
Mitte: Masse (schwarzes Kabel)
Rechts: 2. Röhrenpaar (rotes Kabel)
<u>Werkseinstellung pro Röhrenpaar:</u>
ca. 60 mV = 30mV pro EL34-Röhre
<u>Einstellwert pro Röhrenpaar:</u>
70 mV=35mV pro EL34-Röhre (alternativ: 75 mV = 37,5 mV pro Röhre)
Wichtig: beide Werte sollten genau gleich sein.
Measure the bias by probing the centre and left terminals of the connector with a Multimeter on the DC 200mV setting

BIAS-Einstellpunkte:
Links: 1. Röhrenpaar
Rechts: 2. Röhrenpaar
Turn both Masters to 0, add a speaker load (for safety), and plug in the power lead. Turn the amp on and leave in standby for a few minutes.
Standby of ON schalten – ansonsten keine Messung möglich.
Change the bias with small increments on the pot and allow to settle. Ditto on the right side of the tubes.
It's worth turning up the masters a little to give it a play. Remember to zero both of them (after playing) if you're going to adjust bias again.