

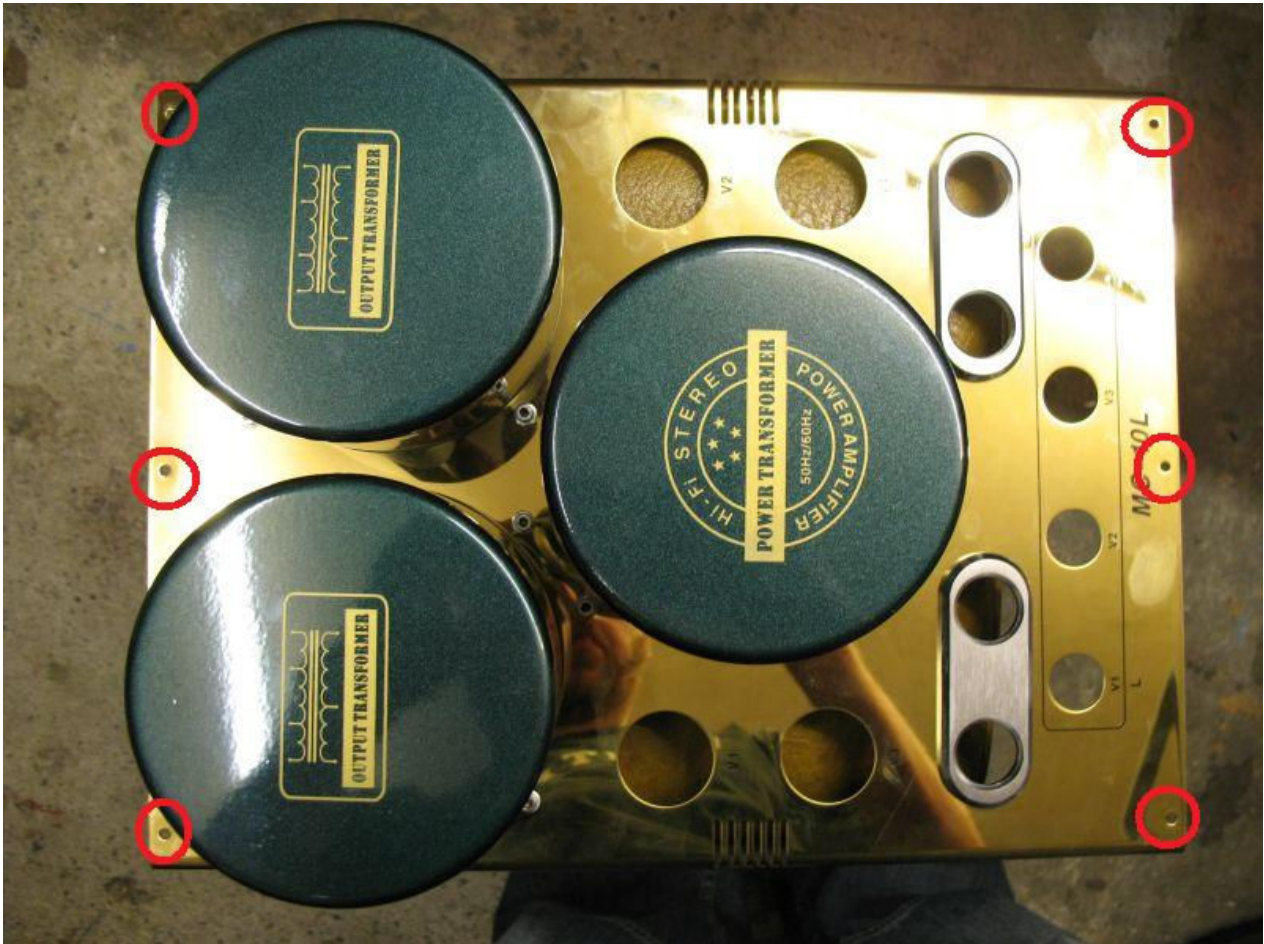
## Bias Adjustment – Yaqin MC-10L

Adjusting the bias on the MC-10L is really very easy.

You will need...

1. Allen key to fit the case screws (as supplied)
2. Multimeter with fly leads that have crocodile-clip ends
3. 2mm Allen key
4. ...to be careful – 460Vdc can (easily) be fatal

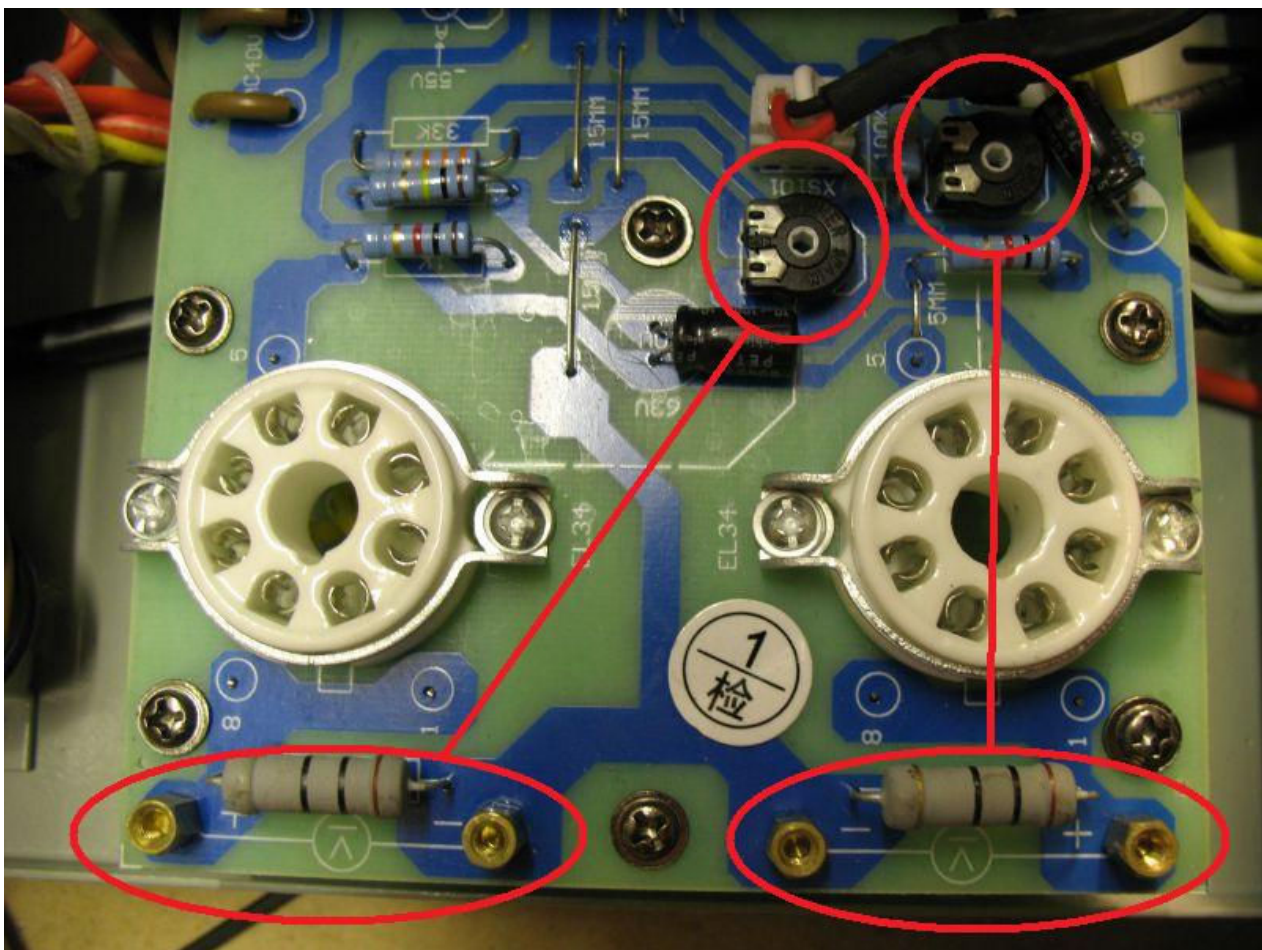
Remove the valves, then remove the top cover by removing the Allen bolts where indicated below – note the valve positions or you won't be able to check the bias as it was (this is not essential – but may give peace of mind/interest to some).



(yes, you can see me taking the picture!)

Replace all the valves. Plug in and fire up the amp. Be VERY careful, there is the around 460Vdc floating around in there, not to mention the ~230 Vac from the mains. Perform all operations with only one hand. Use multimeter fly leads that have crocodile clip ends – if you don't have some, buy them – it's well worth it to stay alive!

The image below shows an example of the locations (for each output valve) where you would connect the crocodile clips of your multimeter and the pots that adjust the bias. Yaqin have conveniently used 10 Ohm resistors to make calculations trivial. Really keen people may want to measure each resistor with a multimeter (with the valves out) and use that figure for their calculations. The calculation is a simple application of Ohm's law –  $V=IxR$ . In this case we can measure the voltage across a known value of resistance (10 Ohms) and calculate the current. So for example, if you measure 420mV across the 10 Ohm resistor you can calculate that  $420/10=42\text{mA}$  (or perhaps more clearly  $0.42\text{ Volts}/10\text{ Ohms}=0.042\text{ Amps}$ ). Based on the desired anode current for the valves supplied and the operating voltage, around  $\sim 40\text{mA}$  is spot on.



The image above shows the 10 Ohm resistors which have convenient posts near them for connecting your multimeter. It also shows the pots that (effectively) adjust the anode current.

[dan@slickpepper.co.uk](mailto:dan@slickpepper.co.uk)  
<http://yaqin.slickpepper.org.uk>