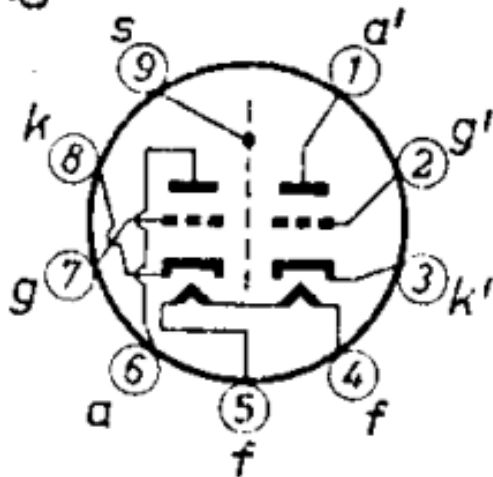


Let's wire that thang! [cit.]

A quick series of steps to let this tube stage work:

- This guide start from the board with all components (R,C,T,SMD) already soldered.
- Install the tube socket with two M3 screws and bolts.
- Download datasheet of the tube you're using to have a look at the pinout: in this case I'll go on with a ECC88:

ung



here we have:

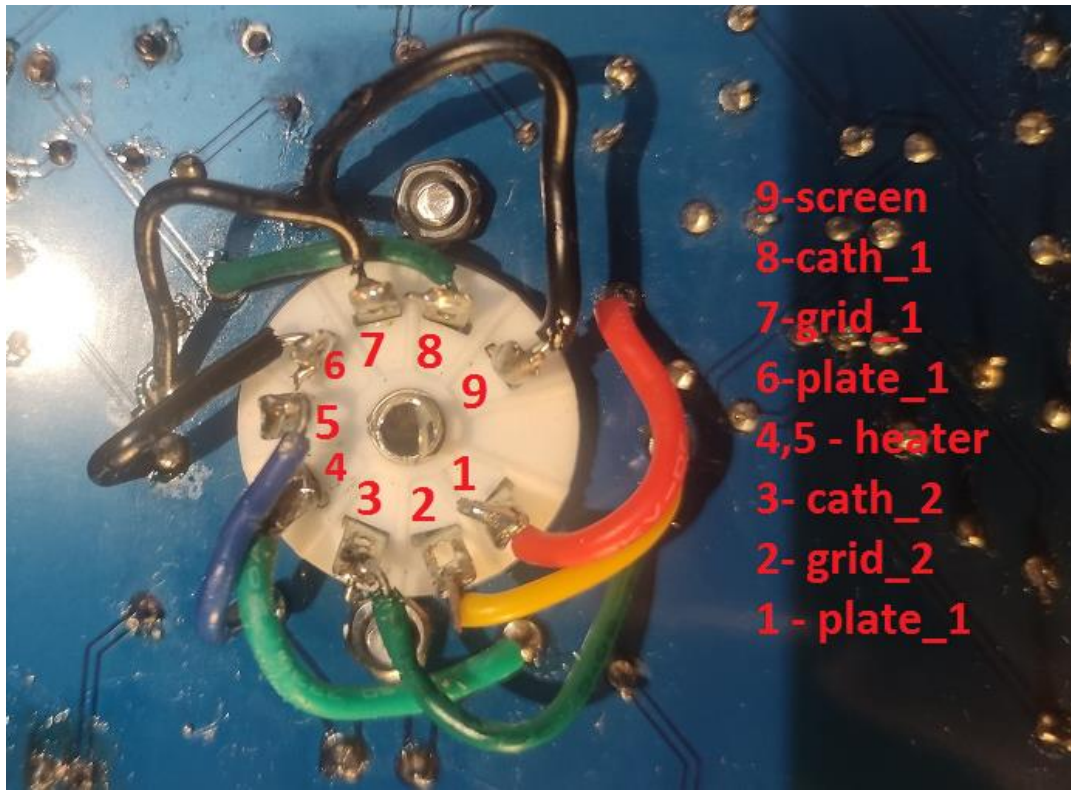
- 1 – plate2
- 2 – grid2
- 3 – cathode2
- 4, 5 – heater
- 6 – plate1
- 7 – grid 1
- 8 – cathode1
- 9 – screen.

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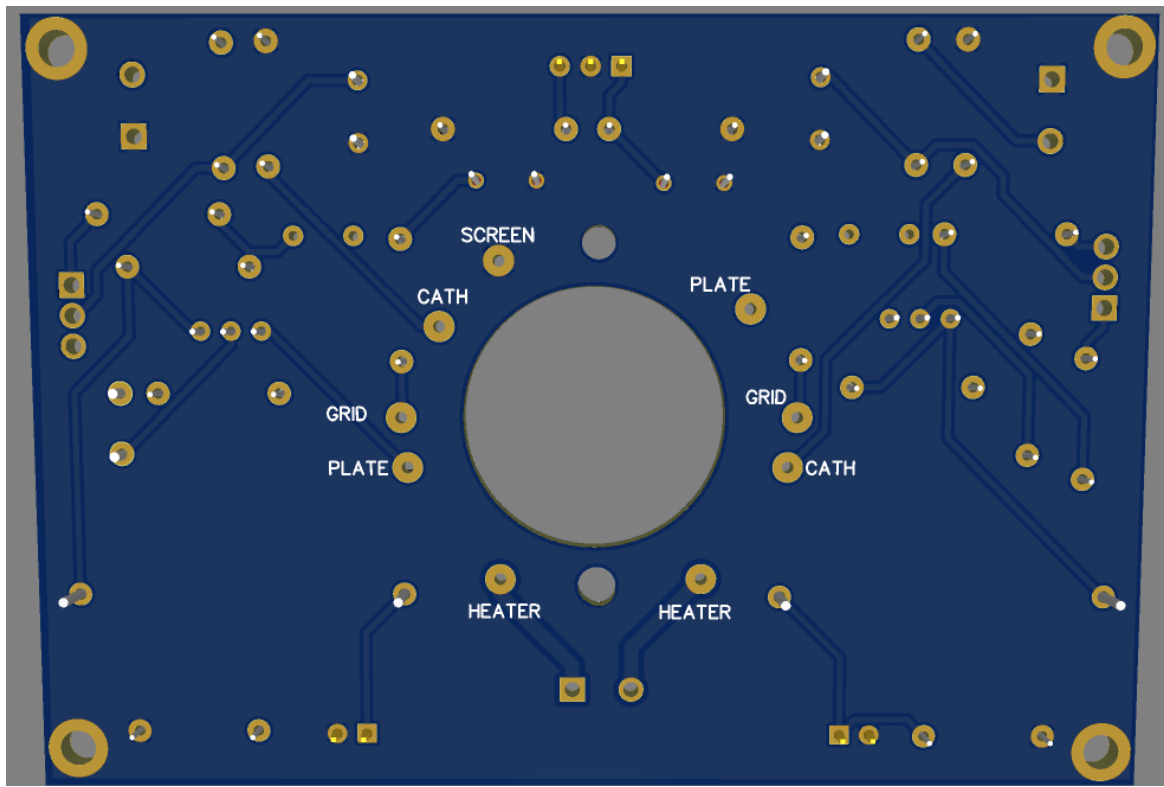
For a Russian 6n23-P the pinout remains the same, for other tubes, better have a look at the datasheet

Following the pinout, and the silkscreen on the back side of the board (from v3), start wiring pins, be consistant keeping plate1, grid1, cathode1 on one side, and plate2, grid2, cathode2 on the other side. Pin 9, screen, goes to ground. Heaters pins can be wired with no particular order.



Remember : socket from bottom, pin counting is CW (clockwise) (#1 is first after the gap)

Socket from top, pin counting is CCW.

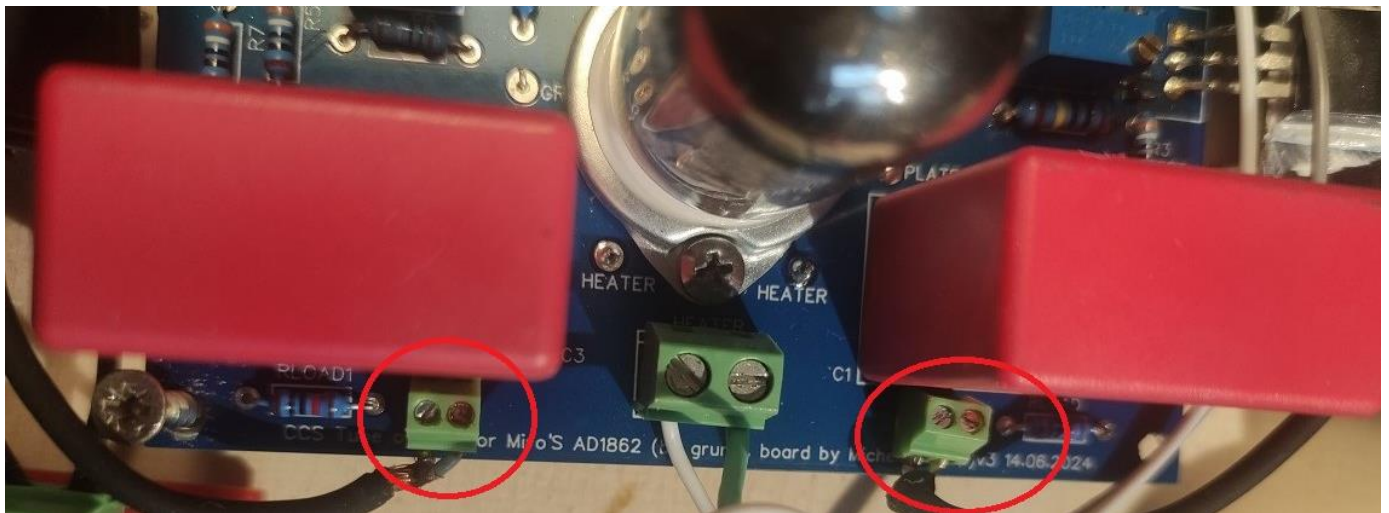


Other hints:

- Connect B+ ground from one side only, to prevent ground loops:



- Pay attention to the audio output (marked on silkscreen from v3): signal is always on right pin, ground left.



First Power on:

- In case you have a dimmer bulb light, use it now to check for shorts.
- Without tube, verify B+ and Heater voltages are here. According to your PT, B+ referenced to ground should be around 200/240 VDC, heater (without tube) around 7.4 VDC.
If everything measures fine, read next. Otherwise, check soldering and continuity between components legs according to the schematic.
- Plug tube in.
- Connect your DMM(s) to plate(s) and ground, power on: with the trimmer (after 10-20 seconds that the tube starts to draw current) you should be able to regulate plate(s) voltage(s): here a right value is around 100VDC +/- 5VDC.

- If you are not able to regulate, check all soldering and continuity between components' legs as per schematic. I had the case where a resistor leg, in the CCS area, was not having contact to the pad, and could not regulate.
- Smile in your face ? 😊 Good. Sit back and enjoy. Verify that heater voltage (directly at the terminal block) is around 6.1/6.6 VDC. If heater voltage is too off of these values, consider a small variation in R1 (R0.5 5W). Read in the datasheet what is filament current and make $V = R \times I$, $6.3 = R \times I_{\text{heater}}$
- At this point you should be set and good to go!

For other FAQs, let me know, will be happy to expand the guide!

Best,

Michelang