

EQ573 Assembly guide

**Safety warning**

The kits are main powered and use potentially lethal voltages. Under no circumstance should someone undertake the realisation of a kit unless he has full knowledge about safely handling main powered devices.

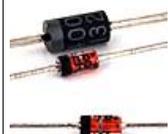
Please read the “DIY guide” before beginning.

Print or open the following documents :

- EQ573 Schematics
- EQ573 Components layout
- EQ573 Parts list
- EQ573 Setup guide

Follow this guide from item number 1 till the end, in this order. The assembly order is based on components height, from low to high profile, in order to ease the soldering process : The component you are soldering is always taller than the previously assembled ones and it is pressing nicely against the work area foam.

EQ573 Assembly guide – Main board

**1. Diodes**

Add D1 to D5. Use a lead forming tool to bend the leads at 0.4”.

Warning : Make sure to respect the direction of the diodes which is marked by a ring on the component and a double line on the PCB marking.

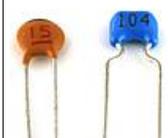
**2. Resistors**

Add R17 to R66.

Control the resistor values with a digital multimeter. Bend the leads at 0.4” with a lead forming tool.

**3. Test pins**

Solder the 5 test pins TP1 to TP5.

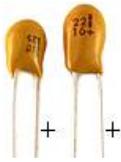
**4. Ceramic capacitors**

Add C79, C87.

**5. Film capacitors**

Add C24 to C49, C51, C53 to C55, C57 to C75, C80, C81, C84, C88, C89, C92.

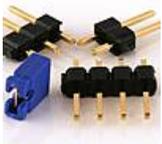
EQ573 Assembly guide – Main board



6. Tantalum capacitors

Add C78, C86. The plus lead is always on the right when facing the marking with the leads pointing down.

Warning : The +lead must go into the +hole. Do not reverse !



7. Connector

Solder the 2 x 8 pins header CN3A. Solder one pin first, check verticality, then solder the other pins.



8. SIL connector

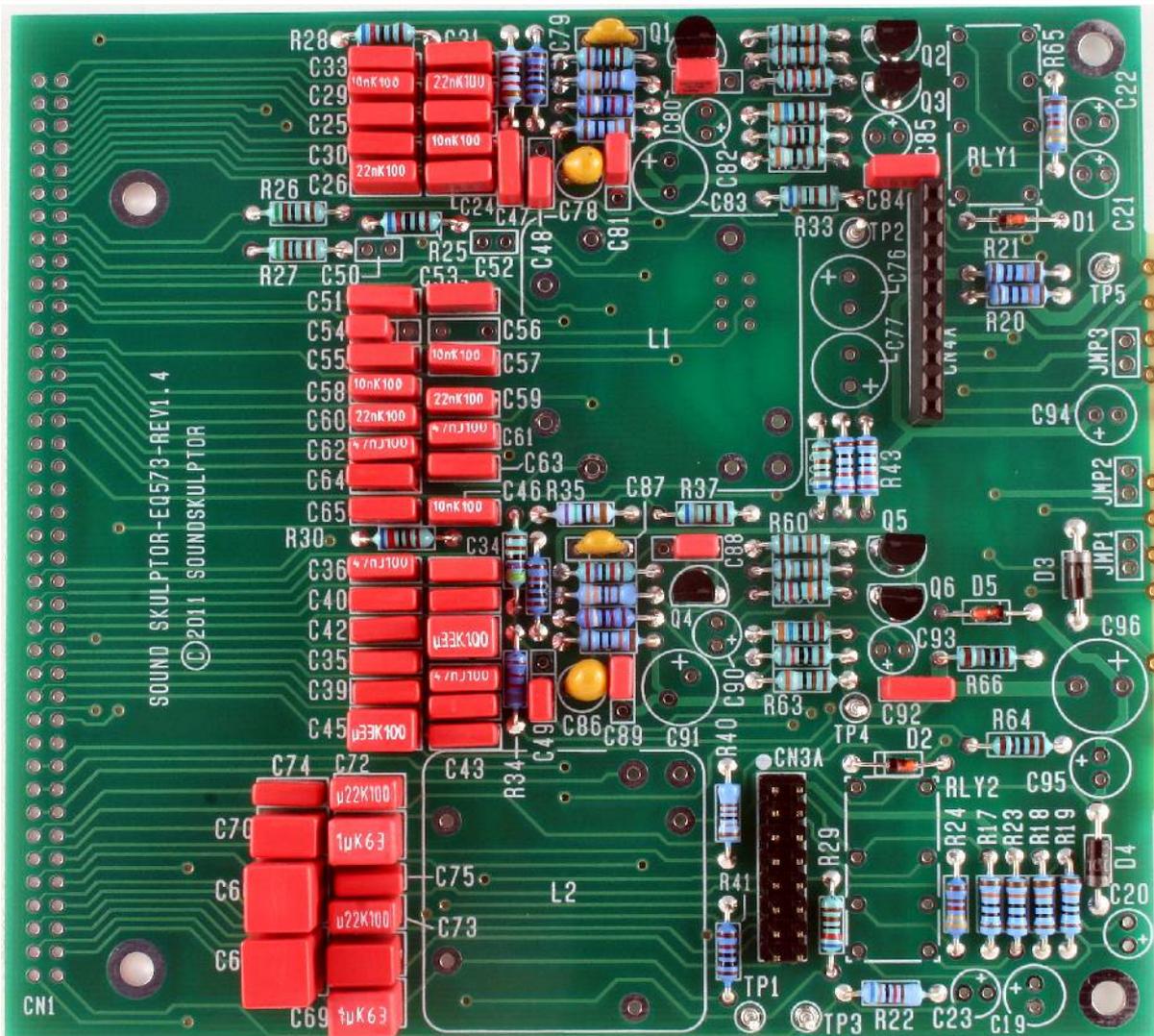
Solder the connector socket CN4A. Solder one pin first, check verticality, then solder the other pins.



9. Transistors

Add Q1 to Q6.

Warning : Watch out the transistor direction.



EQ573 Assembly guide – Main board



10. Relays

Add RLY1 and RLY2.

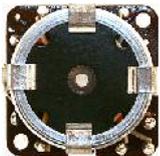


11. Electrolytic capacitors

Add C19 to C23, C76, C77, C82, C83, C85, C90, C91, C93 to C96.

Solder one lead first, adjust vertically then solder the second lead.

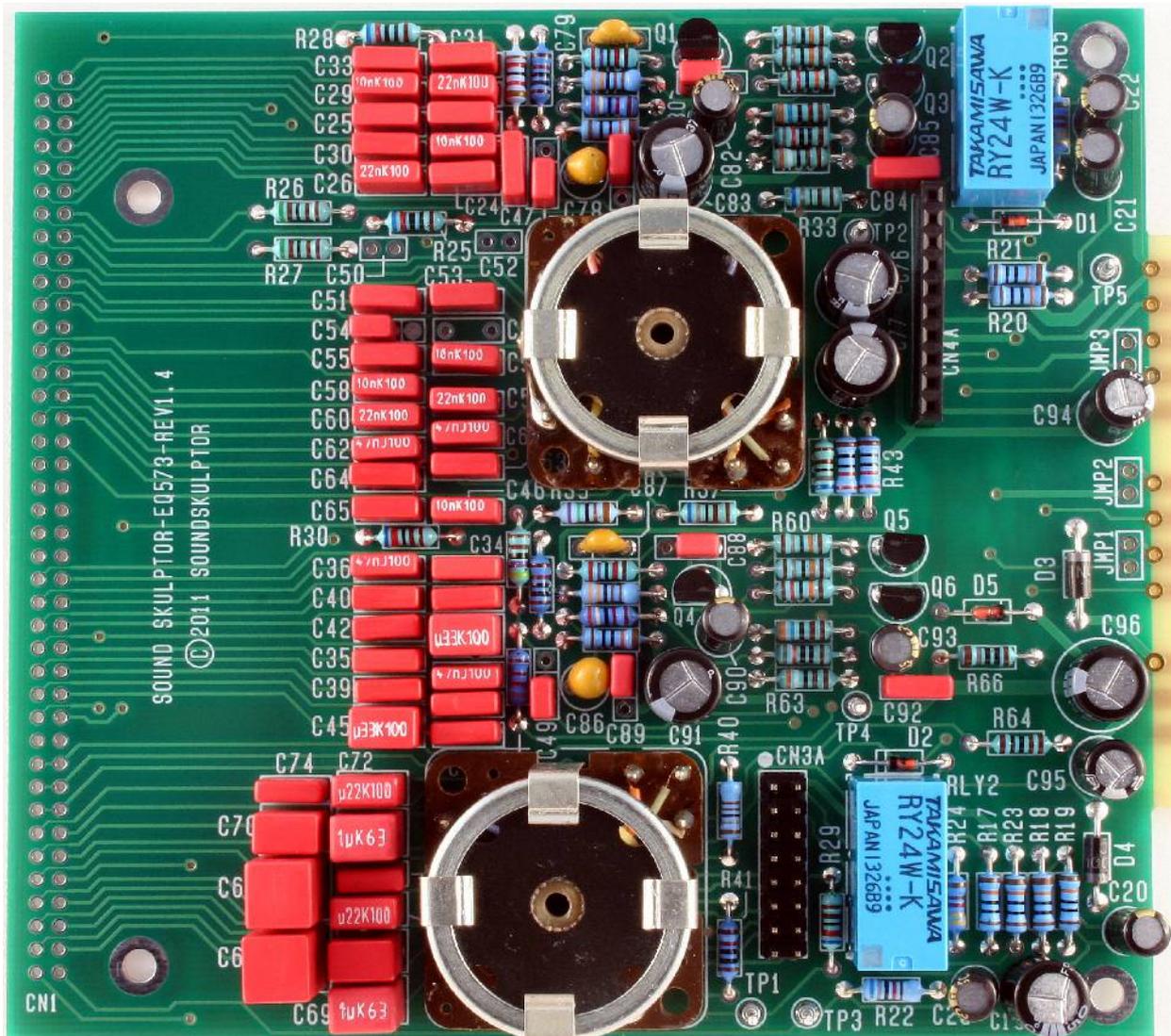
Warning : The +lead must go into the +hole. Do not reverse (they may explode !)



12. Inductors

It is necessary to leave a small gap between the inductors and the PCB surface in order to avoid any electrical contact between the metal parts and pads. Fit a piece of double sided adhesive tape (supplied with the kit) on the inductor, between the pins. It is not necessary to remove the second protective layer from the tape as it is only used as a spacer.

Solder L1 and L2.



EQ573 Assembly guide – Main board

13. Visual check

At this point, brush the solder side with a hard tooth brush to remove any remaining solder bits.

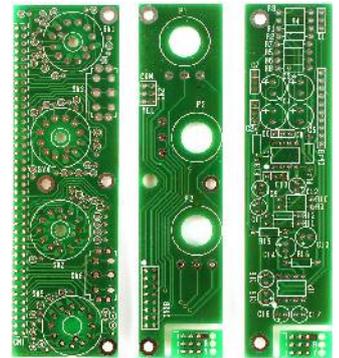
Make a full visual check. Any missing component on the board ? Any remaining component in the box ?

When everything looks correct, proceed with the other boards assembly.

EQ573 Assembly guide – Switches board

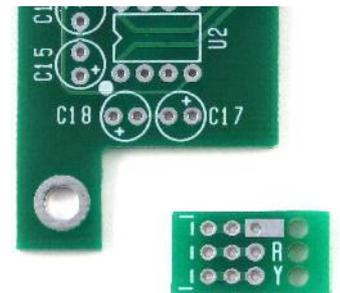
14. PCB split

Split the PCB along the pre-engraved lines in order to get 3 parts. You can polish the cut with a file.



15. PCB split (continued)

Separate the 2 tiny PCB's from the larger PCB's and smooth out the cuts with a file or sand paper.



16. Anti-clic resistors



Insert and solder 43 4M7 resistors. The resistors are placed vertically.

17. Rotary switches



Add the 12 positions rotary switch SW4.

Warning : The position of the switches is critical for a good front-plate matching and a smooth potentiometer rotation. The switch rests on 3 small feet that must sit perfectly flat on the PCB. Press the switch on the PCB and solder two opposed pins. Check position then solder the other pins.

Add the other three, 6 positions switches SW1, SW2 and SW5 in the same way.

18. Toggle switches



Add the two toggle switches SW3, SW6.

Warning : The position of the switches is critical for a good front-plate matching. They must sit flat on the PCB. Press firmly the switch on the PCB and solder two opposite pins (housing). Check position then solder the other pins.

EQ573 Assembly guide – Switches board

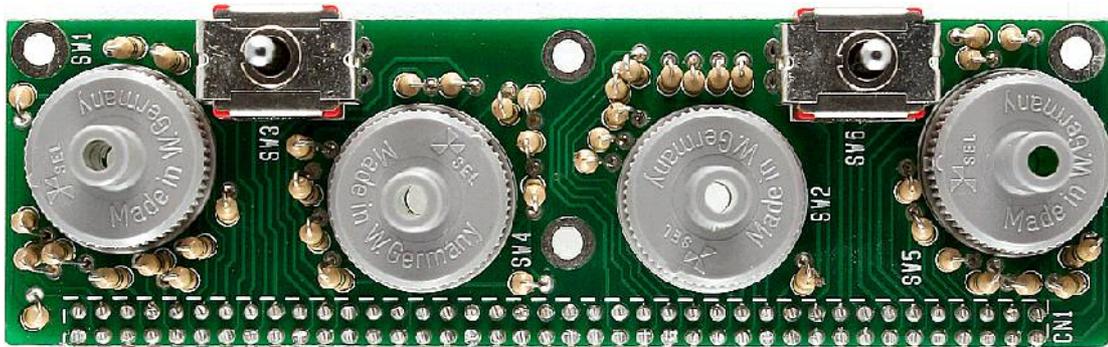
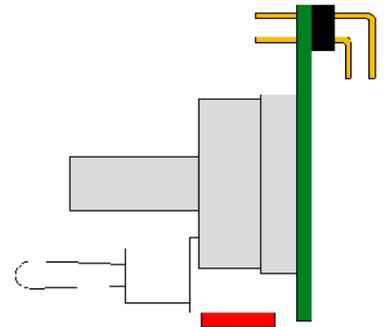
19. Pin header

This part requires some care and you will need a good soldering iron with a thin tip.

Insert the 2x40 pins header, straight pins forward from the solder side, as shown on the diagram. Make sure it sits perfectly flat on the PCB. Solder 2 extreme pins and adjust the position if needed. Solder one more pin around the centre, while pressing it down on the PCB.

Now solder all the pins on the external row. Cut the soldered pins flush, in order to get access to the second row. Solder the second row then cut the pins flush.

Warning : The position of the header is very important to the final assembly. Do not overheat when soldering because if the black plastic base melts, the pins are no longer held in position.



EQ573 Assembly guide – Potentiometers board



20. CN2 Connector

Solder the 3 pins header in the 3 right holes (circled in red on the picture). The plastic tab is on the left. Solder one pin first, check position then solder the other pins.



21. Connector

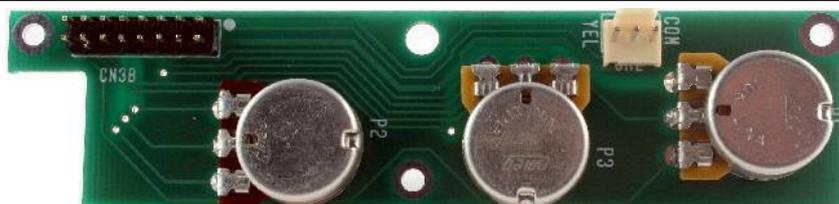
Solder the 2x8 pins header. Solder one pin first, check position then solder the other pins.



22. Potentiometers

Add P1 and P3 (10KA). Insert the potentiometers into the PCB holes from the components side, making sure the pins fit into the corresponding PCB pads. Attach with washer and nut on the solder side, then solder.

Add P2 (47KA) in the same way.

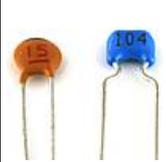


EQ573 Assembly guide – IO board

**23. Resistors**

Add R1 to R16.

Control the resistor values with a digital multimeter. Bend the leads at 0.4" with a lead forming tool.

**24. Ceramic capacitors**

Add C1, C2, C7, C8, C10.

**25. IC Sockets**

Insert and solder the 8 pins sockets of U1 and U2. Do not insert U1 at this time.

Warning : Make sure to respect the socket direction, marked by a notch.

**26. Electrolytic capacitors**

Add C9, C11, C12, C15 to C18, C13, C14, C3 to C6.

Solder one lead first, adjust vertically then solder the second lead.

Warning : The +lead must go into the +hole. Do not reverse (they may explode !)

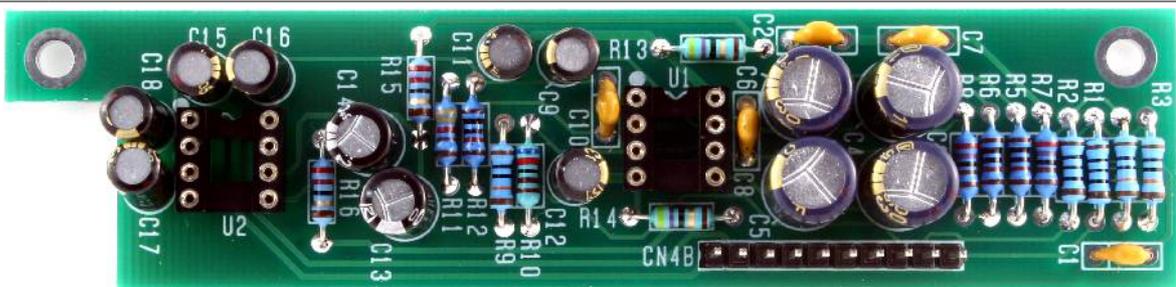
**27. Connector**

Solder the connector CN4B. Solder one pin first, check verticality, then solder the other pins.

Warning : the connector pins must be exactly perpendicular to the PCB to allow proper insertion into the main board.

28. IC's

Insert U1 and U2 in their respective socket.

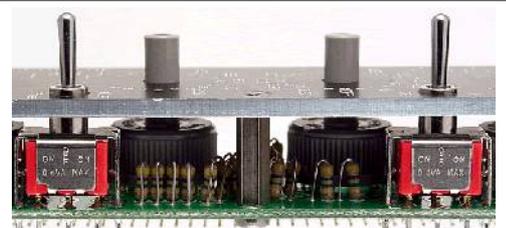


EQ573 Assembly guide – Final assembly

**29. Front pannel assembly**

Attach the 15mm female/female spacer to the front panel with an M3x6 countersunk black screw.

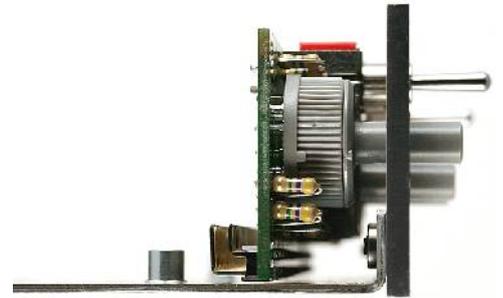
Next, insert the switches into the front panel and attach the switches board to the 15mm spacer with one M3x6 screw.



EQ573 Assembly guide – Final assembly

30. Side panel

Attach the side panel to the front plate with two M3x6 black countersunk screws.

**31. Main PCB**

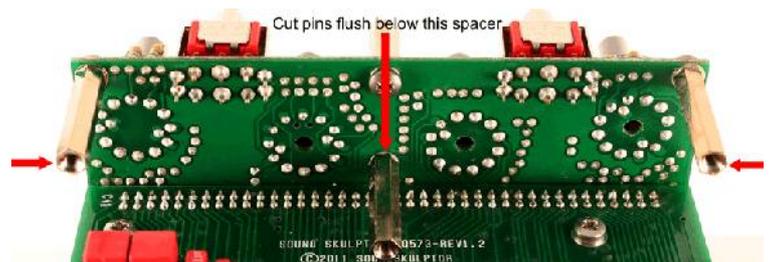
Install the main PCB on the side panel, inserting the 2x40 pins header into the PCB holes. Attach it with two M3x6 screws and two shake-proof washers in the front and two M3x20 male/female spacers in the back.

**32. Header soldering**

Solder the header's 2x40 pins that link the two PCB's, starting with the row that is close to the PCB edge. Cut flush 4 or 5 pairs of pins near the centre of the header, where a spacer will be installed.

33. 25mm Spacers

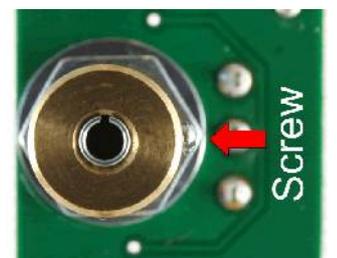
Remove the front panel by unscrewing three M3x6 black screws. Attach three 25mm spacers to the switches PCB, on the solder side, with three M3x6 screws.

**34. Potentiometer 6/4mm shaft adapters**

On the potentiometers PCB, set all three pots fully clockwise. Insert the three 6mm/4mm adapters all the way down, with the screws facing towards the PCB edge that carries the two connectors. Tighten the screws.

**35. Potentiometer 4/3mm shaft adapters**

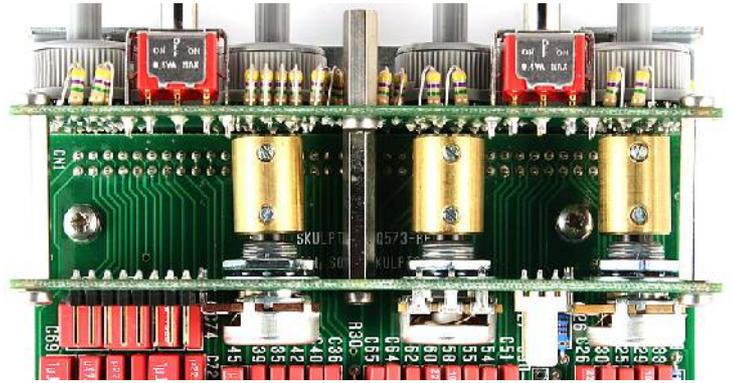
While keeping the pots in their full clockwise position, insert the three 4mm/3mm adapters with their slot perpendicular to the screw (facing up). Tighten gently, just enough to hold them into position.



EQ573 Assembly guide – Final assembly

36. Potentiometers PCB assembly

Attach the potentiometers PCB to the switches PCB with three M3x6 screws. Do not tighten yet. Attach the front panel again with three M3x6 black countersunk screws.



37. 19mm buttons

Set all the rotary switches fully anti-clockwise. Place the three 19 mm red knobs on the three top switches, lining up the white lines to the "off" labels. Tighten gently the screws with the supplied 1.5mm hex key.

Warning : To not tighten too hard in order not to warp the switch shaft.



38. 3mm shafts

Insert the three 3mm shafts into the three top switches. Tighten firmly the screws on the 6/4mm adapters.



39. 12.7mm buttons

Set all the potentiometers to 12 o'clock by turning the 6/4mm adapters. You must feel the centre click in this position.

Insert the three 12.7mm black knobs into the three top switches, lining the white lines vertically. Tighten the two screws with the supplied 1.5mm hex key.

Attach the last knob to the lowest rotary (high pass), lining up the white line to the "off" label.

40. PCB tightening

Tighten the 3 screws that attach the potentiometers board.

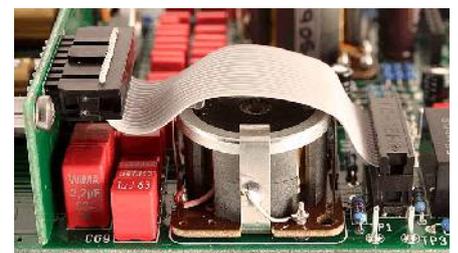
41. I/O board assembly

Insert the IO pins header from the I/O board into the corresponding socket on the main PCB. Attach the board to the 20mm spacers with two M3x6 screws.



42. Ribbon cable

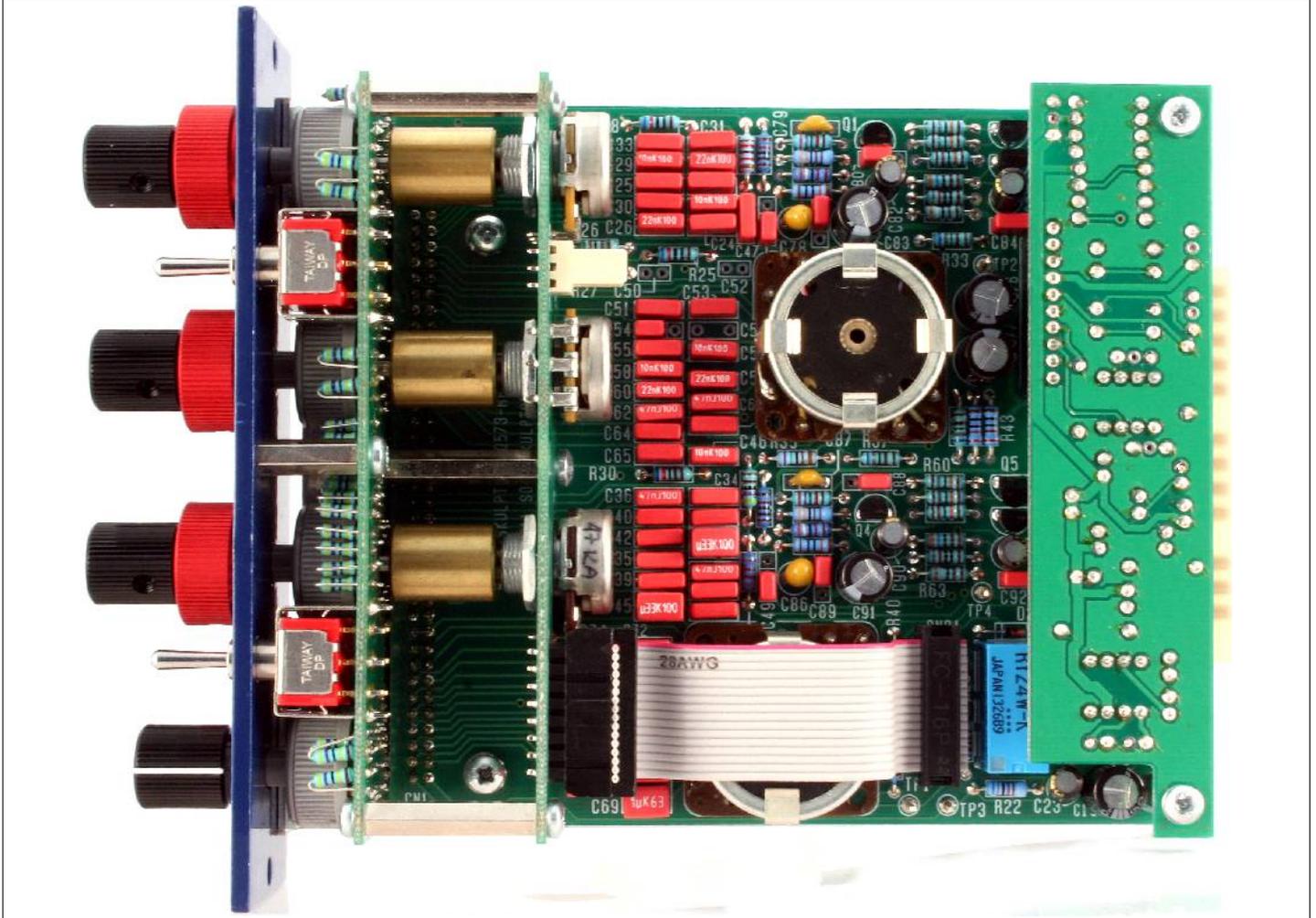
Connect the 16 conductors ribbon cable between the pots and the main PCB.



EQ573 Assembly guide – Final assembly

43. Congratulations

You're done!

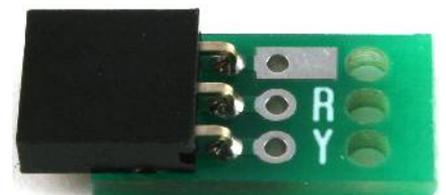
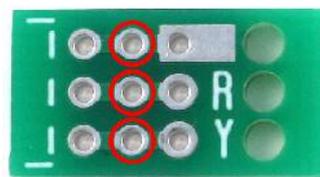


EQ573 Assembly guide – Link cable assembly (for connecting to MP573)



1. Connector soldering

Insert the 3 pins female connector into the second row of holes (circled red). You can add a drop of instant glue between connector and PCB to improve reliability. And solder. Repeat for the second PCB.



2. Cable stripping

Split the 2 sections of the wire on a length of 3cm.
Strip 2cm of each section.
Merge the shield wires from the 2 sections and twist, red in the middle.
Strip red and yellow wires on 4mm.
Tin the wire tips to keep them together, with very little solder or they won't fit into the PCB holes.

EQ573 Assembly guide – Link cable assembly (for connecting to MP573)

3. Cable soldering

Insert the cable 3 wires from beneath the PCB into the 3 unplated holes, red in centre, yellow on the “Y” side. Insert the red and yellow wire tips into the corresponding PCB holes and solder.

Cut the shield cable to the good length, flatten it on the rectangular pad and solder.

Repeat for the other side of the cable.

