



## PSL2 Assembly guide



### Safety warning

THIS KIT IS NOT FOR BEGINNERS !

This kit is main powered and use potentially lethal voltages. Under no circumstance should someone undertake the realisation of this 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 :

- PSL2 Schematic
- PSL2 Components layout
- PSL2 Parts list
- PSL2 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.

### PSL2 Assembly guide



#### 1. Diodes

Add D2, D7, D12, D1, D3, D6, D8, D11, D4, D10, D13. Use a lead forming tool to cleanly bend the leads at 0.4”.



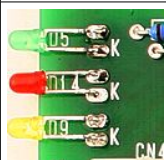
**Warning** : Make sure to respect the direction of the diodes which is marked by a ring on the component and a double line on the PCB marking.

**Warning** : Do not insert D12 in the wrong hole. It is bended at 0.4” like R7 next to it.



#### 2. Resistors

Add R1 to R9. Control the resistor values with a digital multimeter. Bend the leads at 0.4” with a lead forming tool.

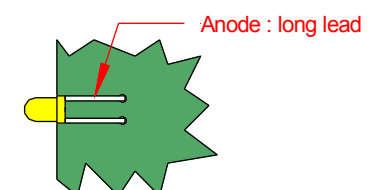
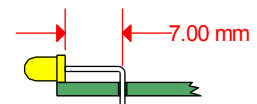


#### 3. Leds

Add D5, D9, D14

Bend the leads at 7mm from the body taking care of the anode position (the longest lead).

**Warning** : it is easy to bend the leads in the wrong direction !  
Solder the LED so it rests on the board. Start by soldering one lead, adjust the position, then solder the second lead.



#### 4. Test pins

Solder the 4 test pins TP1 to TP4.

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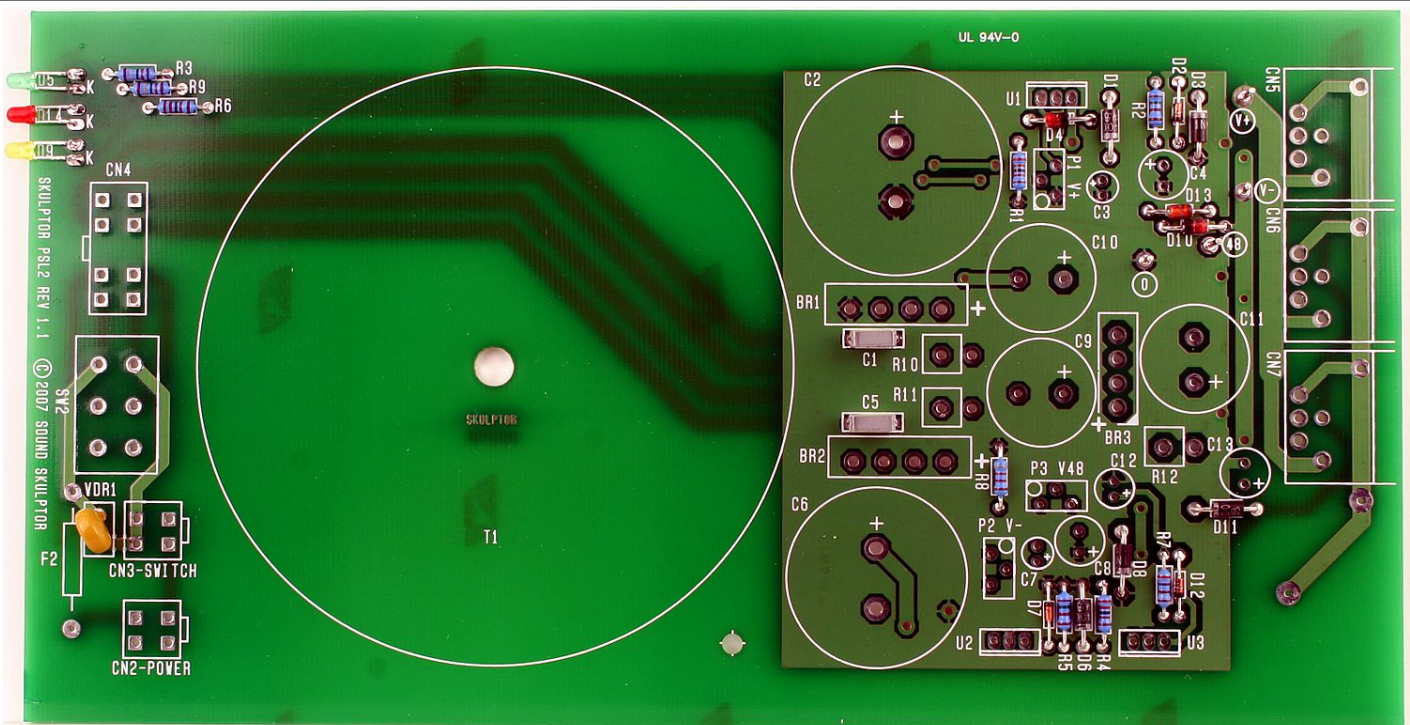
### 5. VDR1

Add the VDR1 varistor.



### 6. Film capacitors

Add C1 and C5



### 7. Trimmer potentiometers

Add P1, P2, P3. Solder one pin, check verticality then solder the other pins.

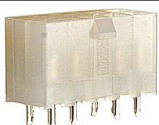


### 8. Small electrolytic capacitors

Add C3, C7, C12, C4, C8

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

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



### 9. PE connectors

Add CN2, CN3, CN4.

On CN4 remove the two central pins. To do this, you must push up the pins as much as possible from underneath then pull it out with pliers from above.

After soldering, cut the pins flush. The pins are not very long but they carry mains voltage and the clearance distance between them and the case must be respected.

**Warning** : Make sure to position the connector in the right direction which is identified by the latching pin on the PCB.

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## 10. 115/230V Selector switch

Add SW2.



## 11. Bridge rectifiers

Add BR1, BR2, BR3.

**Warning** : Make sure to respect the direction of the bridge rectifiers, It is marked by + and - signs.



## 12. Medium size electrolytics

Add C13, C9, C10

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

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

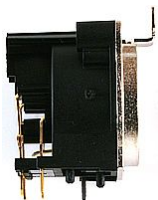
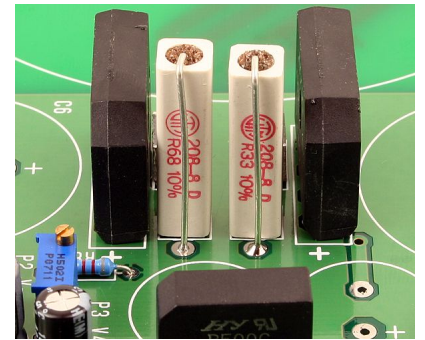
## 13. 5W resistors

Add R10, R11, R12

The resistors are placed vertically.

Do not hesitate to put some heat on the resistor pins. The solder sometimes has difficulty sticking to the metal.

**Warning** : do not confuse 33R (33 Ohms) with R33 (0.33 Ohms).



## 14. XLR Sockets

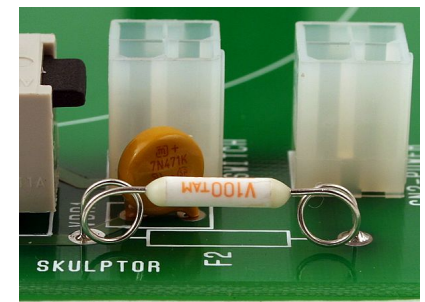
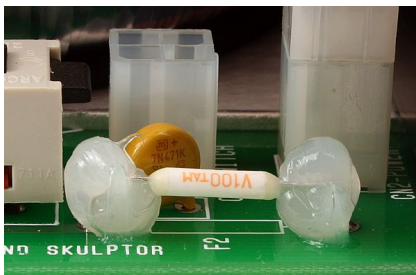
You need to cut the two small plastic pins on the sockets bottom before you can insert them. Use your cutters.

The position of the sockets is critical for a good backplate matching. It must sit flat on the PCB. Press firmly the socket on the PCB and solder one of the centre pins. Check position then solder the other pins.



## 15. Thermal fuse F2

Make 2 loops with the legs of the thermal fuse using a screw driver. Then solder in place quickly : we do not want to blow our fuse with too much heat.



For security, hide the exposed wires of the thermal fuse with some silicon sealant.

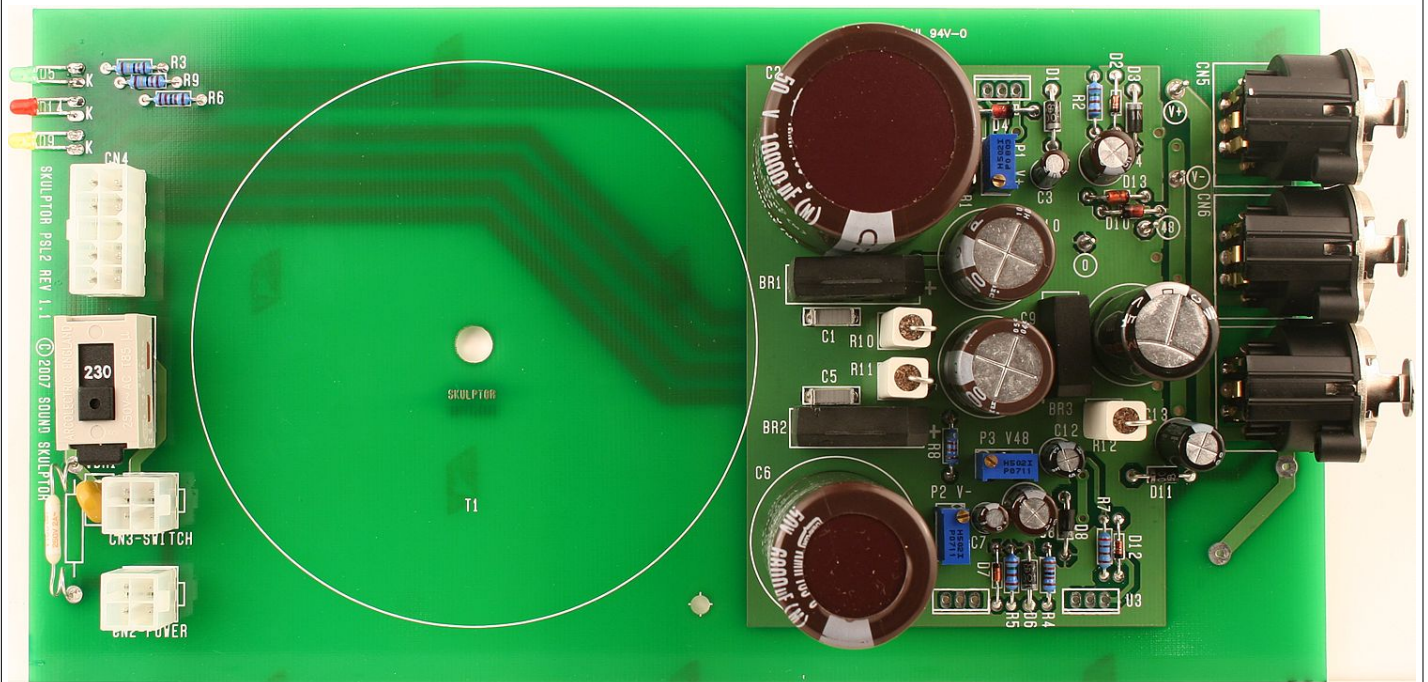
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### 16. Large Electrolytics

Add C11, C2, C6

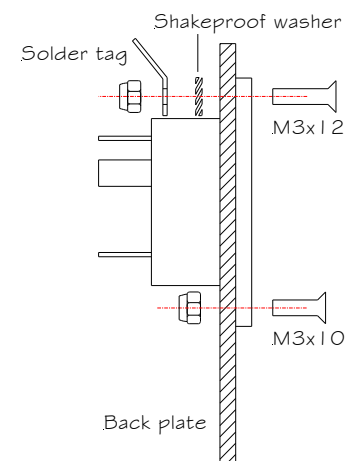
Solder one lead first, adjust verticality then solder the second lead.

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



### 17. IEC connector assembly

Tie the IEC inlet to the back plate with 2 countersunk screws. M3x12 on top, M3x10 on bottom. The top screw also takes a shakeproof washer and a solder tag to make the case connection.



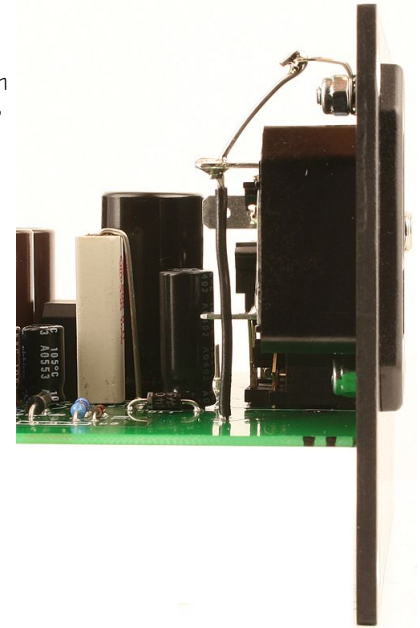
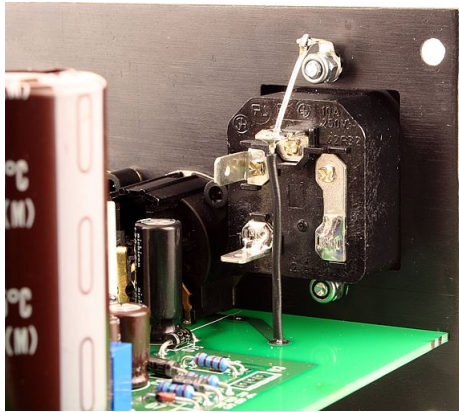
### 18. Back panel assembly

Tie the back plate to the PCB with 6 self tapping screws on the XLR plugs.

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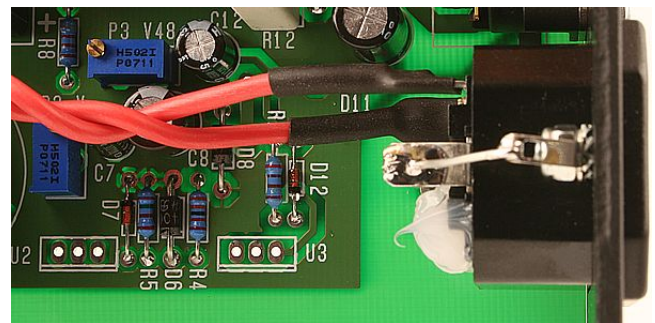
### 19. Earth connection

Solder 4cm of black insulated wire between the pcb hole and the earth pin on the IEC connector and 2cm of bare copper wire between the same earth pin and the solder tag previously attached to the top screw of the connector.



### 20. IEC to CN2 wiring

Insert two 15mm pieces of heatshrink tubing on the 27cm red wires. Strip of on 5mm and solder to the IEC connector pins. Move the tubing on the pins then heat up with an air gun until it retracts.



### 21. IEC insulating

For security, spread some silicon sealant to cover the exposed metal part on the IEC connector.



### 22. Front panel wiring

Insert SW1 into the front panel.

Insert two 15mm pieces of heatshrink tubing on the 10 cm red wires and solder to the switch. Heat the tubing with an air gun until it retracts.



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### 23. Single heatsink assembly

Place a drop of thermal compound on the heatsink front face, the volume of a grain of rice. The back face can be identified by the countersunk hole.

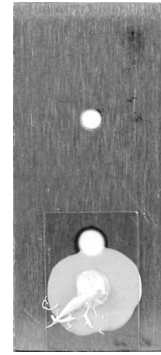
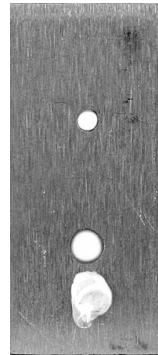
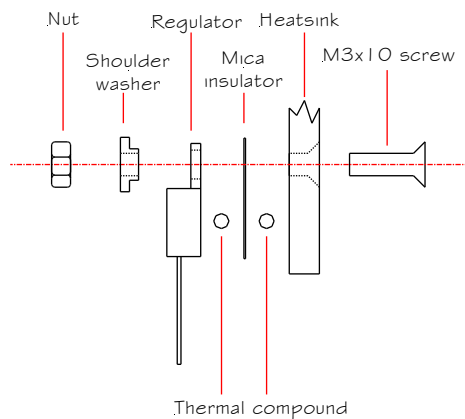
Next place the mica insulator.

Place a second drop of thermal compound on the mica insulator.

Insert the M3x10 countersunk screw from the back, the LM350 regulator and the Insulating shoulder washer.

Place the M3 nut and tighten all together.

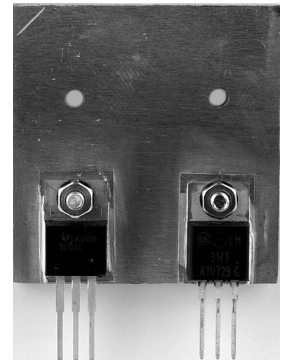
Use your digital multimeter in the Ohm position to check that there is no connection between the heatsink and the center pin of the regulator.



### 24. Dual heatsink assembly

Repeat the same operations for the two regulators of the dual heatsink.

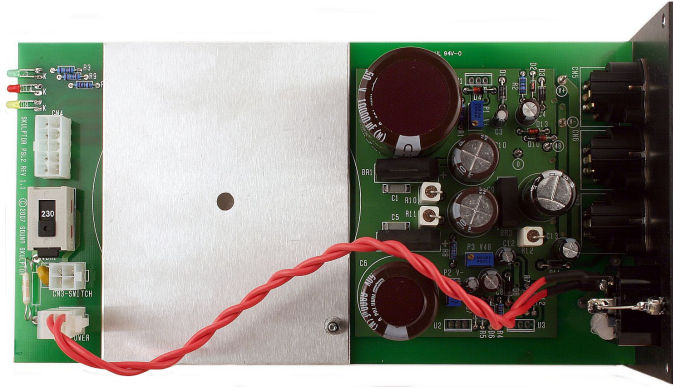
TL783 on the left,  
LM317 on the right.



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### 25. Transformer plate assembly

Attach the transformer plate to the PCB with one M3x10 screw and one self locking nut.



### 26. Case assembly

Assemble the front plate and the two sides of the case with four black M4 countersunk screws.

The internal face of the sides is the one with two grooves.



### 27. Regulators heatsink assembly

Place one and two M3x10 pan head screws with two nuts on the regulator heatsinks. Insert the regulator pins into the PCB. Do not solder yet.



### 28. Top and bottom cover fixing nuts

Add 2 nuts in the top and bottom grooves of both sides of the case (for a total of 8 nuts). They will be used to attach top and bottom covers.



### 29. PCB insertion

Insert the PCB into position by sliding the heatsink screws into the case grooves. Make sure the LEDs fit into the front plate holes.

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### 30. Back plate assembly

Attach the back plate with four M4 countersunk screws.

### 31. Heatsinks assembly

Tighten firmly the fixing screws of both heatsinks.

Solder the 3 regulators. Cut the pins flush.

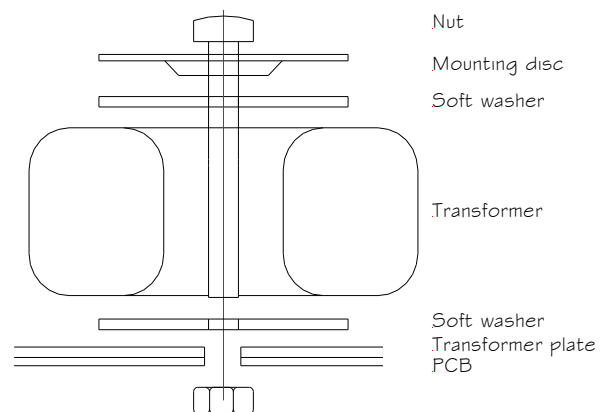
### 32. Connectors plugging

Insert CN2 (from IEC connector) and CN3 (On/Off switch) in their respective sockets.

### 33. Transformer installation

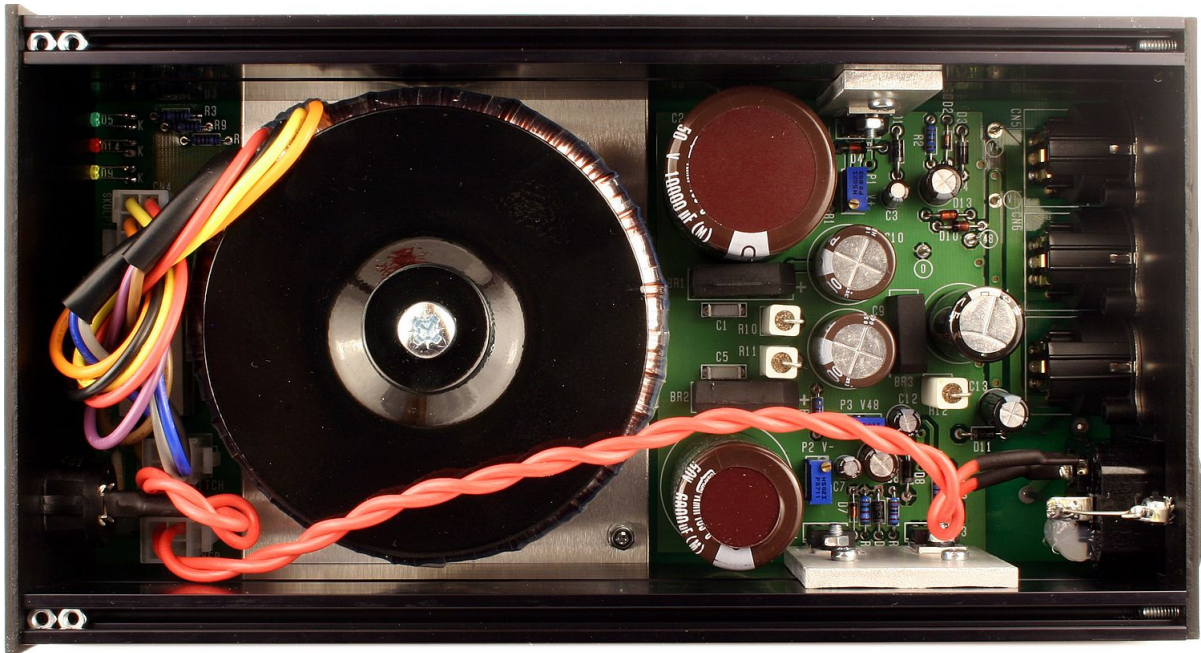
Attach the transformer. The nut should be tightened to prevent any transformer movement but without crushing the windings.

Plug in the transformer connector.





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### 34. Visual check

Brush the solder side of the PCB 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 ?

### 35. Setup

Your PSL2 is now ready for test and setup. Please follow instructions in the “PSL2 Setup” document.

### 36. Closing the case

With the help of the bottom cover, position the fixing nuts in front of the holes.

Place the bottom cover and secure it with 4 black screws.

Place the top cover and secure it with 4 black screws.

Stick the four self adhesive rubber feet on the bottom of the case.

Stick the warning label on the bottom of the case.

### 37. Congratulations, you're done !