



MP12 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 :

- MP12 Schematics
- MP12 Components layout
- MP12 Parts list
- MP12 Circuit options
- MP12 Input transformer options
- MP12 Output transformer options
- SKMP Assembly guide
- MP12 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.

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1. Transformer cut-out

First of all, check if you have to extend the transformer cut-out in the “[MP12 Output Transformer Options](#)” document. If so, follow instructions in this document. It is an easy operation if performed first. It become difficult once components have been soldered to the board.



2. DOA Pin Sockets

Next you should solder the 7 pin sockets for the DOA. Solder one at a time. Insert one socket, turn over the PCB and press against a solid but flexible surface like cork or dense foam then solder. The correct positioning of the sockets is very important for easy insertion of the DOA.



3. Diodes

Add D1 to D4, D9, D6, D7, D8. 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.



4. Resistors

Add R1 to R38. Check the values of RL1 and RZ1 in the “Input transformer options” document. Check the value of RZ2 in the “Output transformer options” document.

Control the resistor values with a digital multimeter. Bend the leads at 0.4” with a lead forming tool, except for R38 which is bended at 0.6”.

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5. Integrated Circuit

Insert U2 and solder. You will need to bend the pins slightly inwards before inserting. Make sure you are not charged with electrostatic electricity before handling the IC (or remove your shoes).

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



6. IC Socket

Insert and solder the socket of U1. Do not insert U1 at this time.

Warning : Make sure to respect the socket direction, marked by a notch. This is necessary because the socket will hide the PCB marking.



7. Inductor

Add L1. Bend at 0.8".

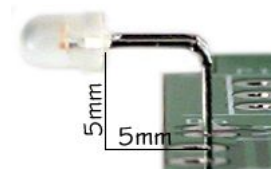
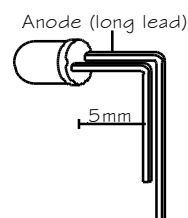


8. Led

Bend the leads of D5 at 5mm from the body taking care of the anode position (the longest lead).

Warning : it is easy to bend it in the wrong direction !

Solder the LED at 5mm from the board. Start by soldering one lead, adjust the position, then solder the second lead.



9. Test pins

Solder the 3 test pins TP1, TP2, TP3.



10. Jumpers

Solder the jumper headers JMP3, JMP4. Look at the "Input transformers options" document to check if you need JMP1 and JMP2. Look at the "Output transformers options" document to check if you need JMP5. Solder one pin first, check the position, then solder the other pins.



11. Ceramic capacitors

Add C2, C23, C24, C25. Check the values of CZ1 in the "Input transformer options" document.

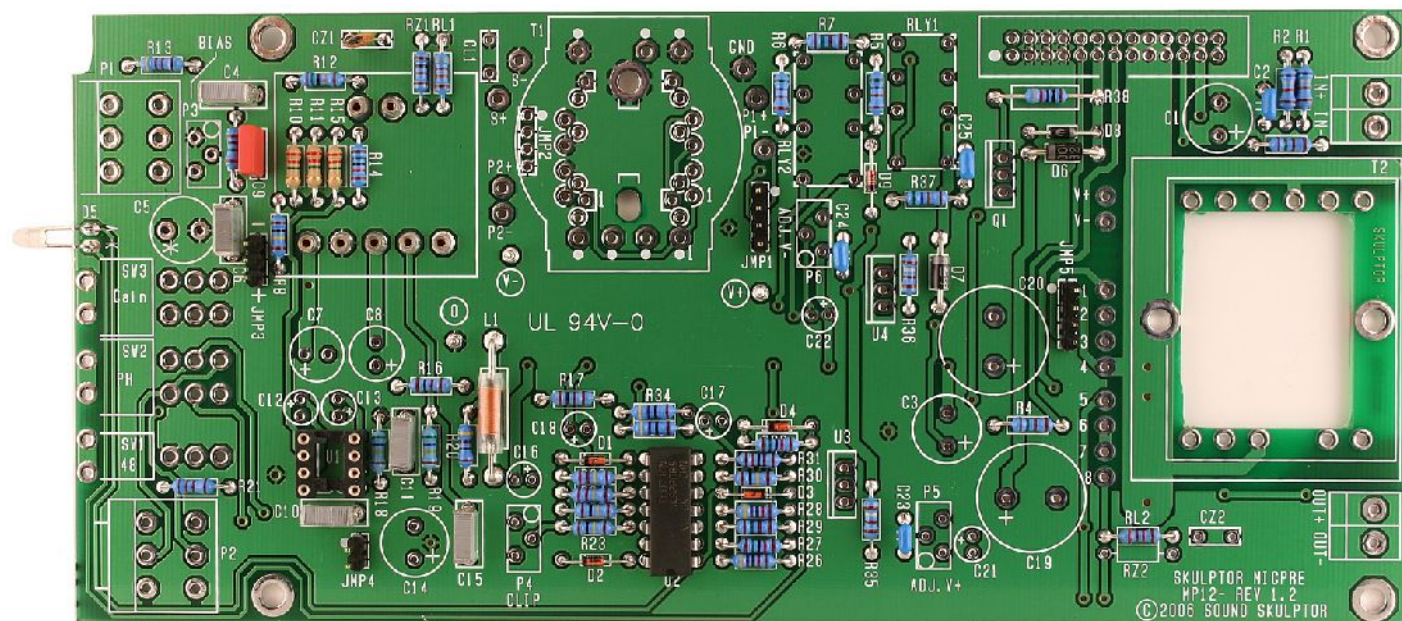


12. Film capacitors

Add C9 unless your DOA is an SK47. In that case, just leave the capacitor unconnected.

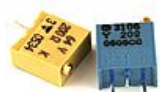
Add C4, C6, C10, C11, C15. Check the values of CL1 and CZ1 in the "Input transformer options" document. Check the value of CZ2 in the "Output transformer options" document.

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**13. Connector**

Add CN3. Start soldering one pin, check the position, then solder the other pins.

Warning : Check the position of the slot, it must not be mounted backwards.

**14. Trimmer potentiometers**

Add P3 to P6. Solder one pin, check verticality then solder the other pins.

**15. Relays**

Add RLY1 and RLY2

**16. Small electrolytic capacitors**

Add C16, C12, C13, C17, C18, C21, C22, C7, 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 !)

**17. Terminals**

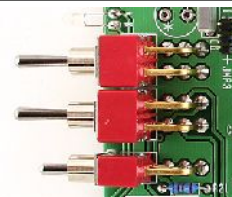
Add CN1 and CN2. Screw down the terminals all the way before soldering.

Warning : the wire apertures should point towards the outside of the board !

**18. Switches**

Add SW1, SW2 and SW3. 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 one of the front pins (housing). Check verticality and horizontality. Then solder the other pins.

Warning : SW2 and SW3 look the same but they are not ! SW2 is 2 positions, SW3 is 3 positions.



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19. Potentiometers

Add P1 and P2. The position of the potentiometers is critical for a good front-plate matching. They must sit flat on the PCB. Press firmly the potentiometers on the PCB and solder one of the centre pins. Check verticality and horizontality. Then solder the other pins.

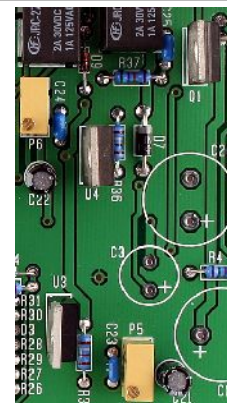
Warning : P1 and P2 are different, don't swap them !



20. Regulators and power transistor

Add Q1, U3 and U4. Insert them as far down as possible, solder one pin, adjust the verticality, then solder the two other pins.

Warning : Watch out the direction, the metal tab at the back of the device is symbolized by a double line on the PCB marking.



21. Large electrolytics

Add C1, C3, C14, C5, C19, C20.

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

Warning : The +lead must go into the +hole (except C5 which is bipolar). Do not reverse (they will explode !)



22. Input and output transformers

Follow instructions from the "Input transformer options" and "Output transformer options" documents.



23. Heatsinks

Clip on the heatsinks of Q1, U3 and U4

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After your board has been stuffed, 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 is correct, install the input and output XLR's as described in the SKMP Assembly Guide.

Your MP12 is now ready for test and setup. Please follow instructions in the "MP12 Setup" document.