MP 5.12 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 :

- MP5 12 Schematics
- MP5 12 Components layout
- MP5 12 Parts list
- MP5 12 Test 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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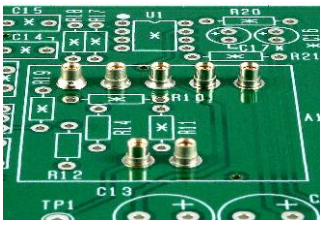
1. DOA Pin Sockets



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.

2. Diodes

Add D1 to D4, D6 to D11. 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.

3. Resistors

Add R1 to R40. The resistors marked NC in the parts-list should not be installed.
Control the resistor values with a digital multimeter. Bend the leads at 0.4" with a lead forming tool.

4. 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. Do not use a socket because it would be to high for the Di01 board.

5. Inductor

Add L1. Bend at 0.8".

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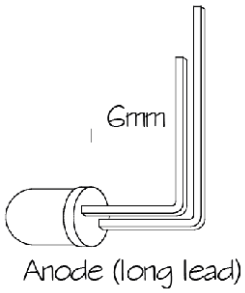
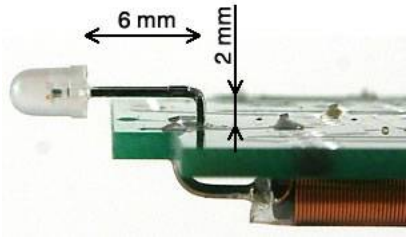
6. Led



Bend the leads of D5 right angle at 6mm from the body taking care of the anode position (the longest lead).Insert from the PCB bottom and solder with the LED body lined up with the PCB surface.

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



7. Test pins

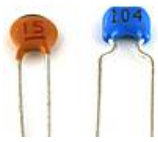
Solder the 6 test pins TP1 to TP3, V+, V- and GND.

8. Jumper header

Solder the jumper header JMP3. Solder one pin first, check verticality, then solder the other pins.

9. Connector

Solder the connector socket CN1. Solder one pin first, check verticality, then solder the other pins.



10. Ceramic capacitors

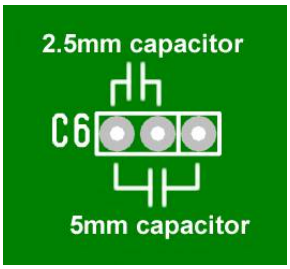
Add C5.

Warning : Some capacitors have provision for 2 sizes. Small size capacitors must be inserted in the correct holes as shown in the picture.

11. Film capacitors

Add C1, C2, C10, C11, C20.

Warning : Some capacitors have provision for 2 sizes. Small size capacitors must be inserted in the correct holes as shown in the picture.



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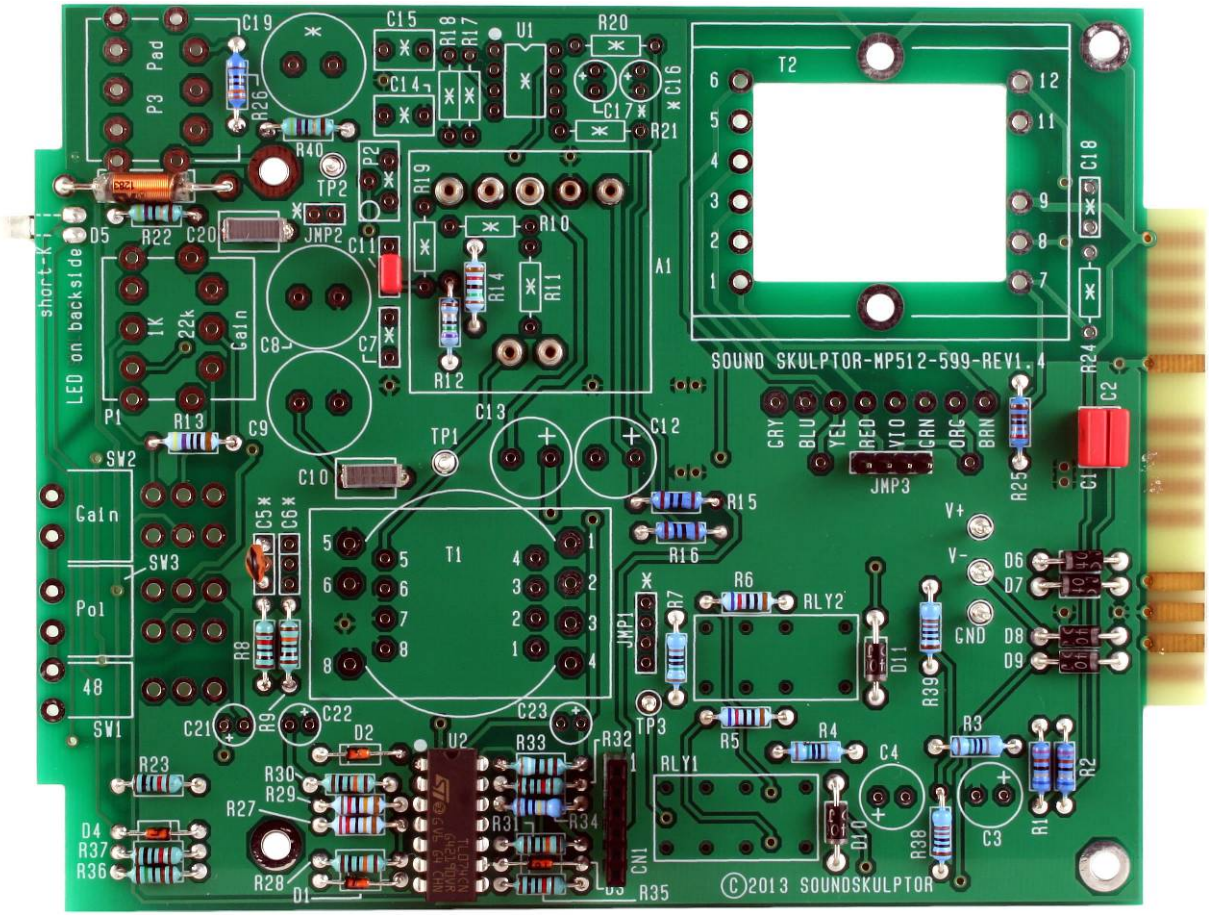

12. Relay

Add RLY1 and RLY2.

13. Small electrolytic capacitors

Add C3, C4, C12, C13, C21, C22, C23.
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 !)

14. 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.

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15. Potentiometers P1 & P3

Place the bracket on the potentiometer bush. Do not insert the nut yet. Insert potentiometer and bracket into the PCB holes. Solder the 2 central potentiometer pins, taking care that it sits perfectly flat on the PCB.

Warning : The bracket sometimes prevents a correct positioning of the pot. In that case, angle slightly the bracket so that it does not come in the way. It will take its correct position after the pot is soldered.

Once the position is correct, solder the other 4 potentiometer pins.
Now attach the washer and nut to the potentiometer bush and tighten gently.
Last, solder the 4 bracket pins.

16. Input transformer

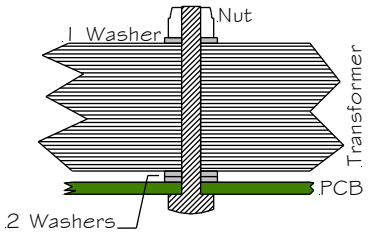
It is necessary to leave a small gap between the transformer and the PCB surface in order to avoid any electrical contact between the metal case and pads. Fit a piece of double sided adhesive tape under the transformer, between the pins. It is not necessary to remove the second protective layer from the tape as it is only used as a spacer.

Pin 1 on the transformer is identified by a red dot. Insert the transformer, pin 1 into hole number 1. Start soldering 2 opposite pins, check the position, adjust if necessary then solder the other pins.

Warning : Double check the pin 1 position because this transformer can be mounted backwards!

17. Output transformer

The transformer is mounted using two 25mm M3 screws inserted from the back of the board. Two metal washers are fitted on each screw to prevent the transformer touching the PCB. One more washer is used before the nut to protect the lams.
Shorten the leads to the necessary length, around 6 cm. Strip on 5mm and tin them. Insert in the pad hole and bend the tinned tip flat on the pad before soldering. Cut flush.



Warning: There is an error in the PCB writings. It is necessary to swap the green and grey wires to keep the phase correct. The green wire goes into the GRY hole and the grey wire goes into the GRN hole.

18. Large electrolytics

Add C8, C9 and C19.

These capacitors are bipolar so they can be inserted in any direction.

19. Jumpers

Insert 2 jumpers on JMP3.

These jumpers set the output transformer ratio to 1:2. One single jumper placed on the center 2 pins would set it to 1:1.

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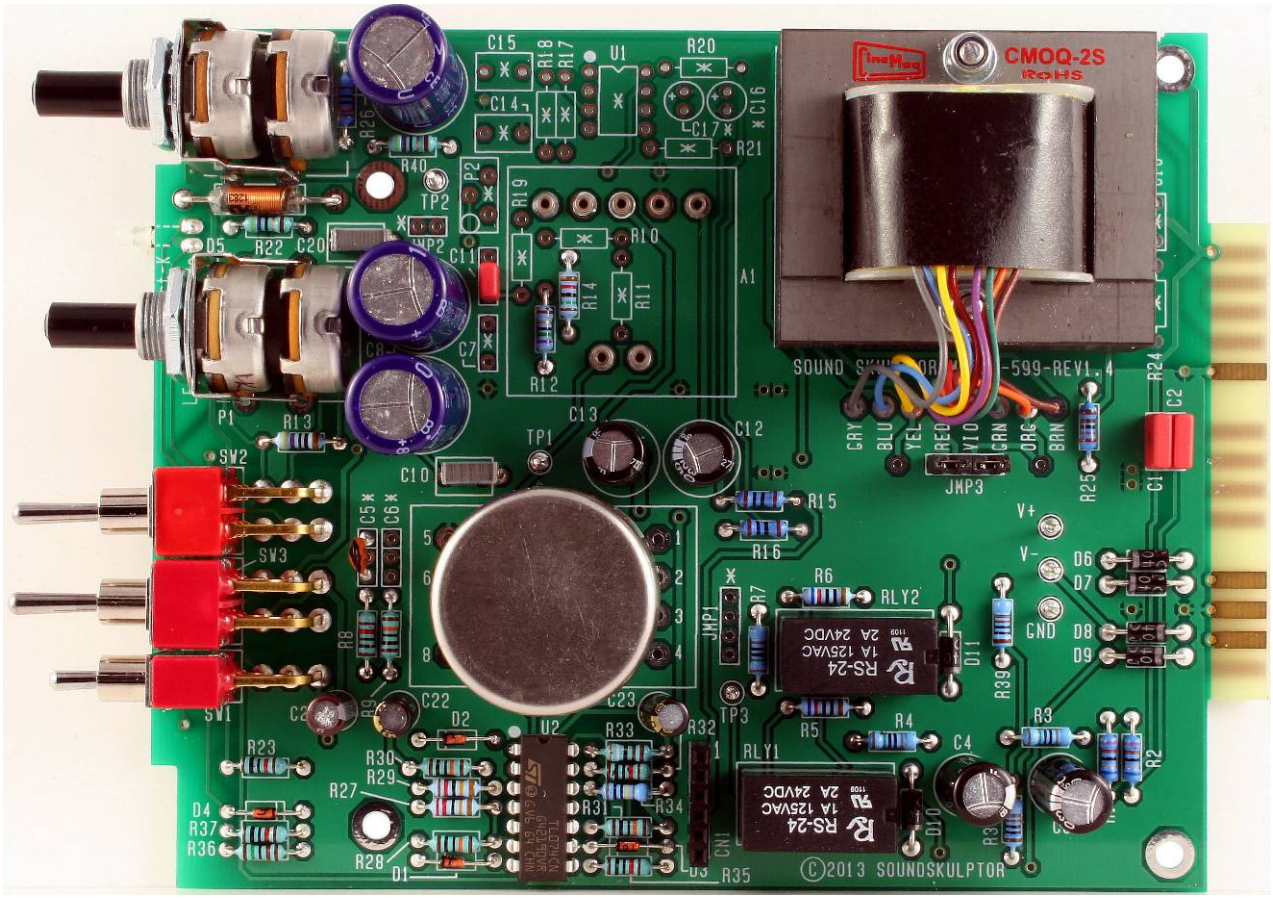


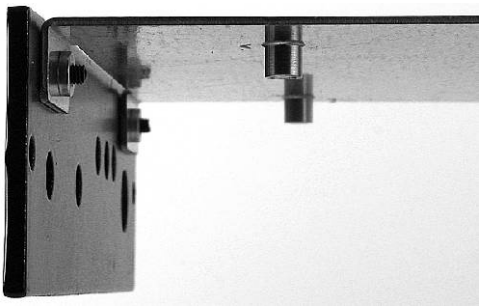
20. Visual check

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 frame assembly.

21. Frame assembly



Attach the side panel to the front plate with two M3x8 black countersunk screws.

Warning : Do not confuse the M3x8mm countersunk black screws with the #4-40 3/8" black screw that are used to attach the module in the lunchbox.

22. PCB mounting

Put the PCB in place, switches and pots going through the front panel. Watch out the LED position. Attach the PCB with 4 M3x6mm screws and 4 shake-proof washers.

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23. Knobs

Attach the 2 knobs.

24. Test

Your MP 5.12 is now ready for test. Please follow instructions in the "MP5 12 Test" document.

DI01 Assembly guide

Print or open the following documents :

- DI01 Schematics
- DI01 Components layout
- DI01 Parts list

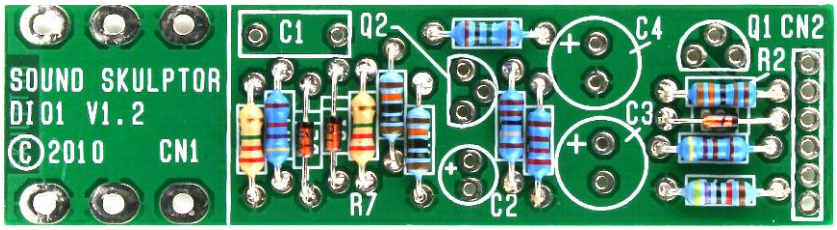
DI01 Assembly guide

1. Diodes

Add D1, D2 and D3. 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 R1 to R11.
Control the resistor values with a digital multimeter. Bend the leads at 0.4" with a lead forming tool.



3. Film capacitor

Add C1.

4. Transistors

Add Q1 and Q2.

Warning : Watch out the transistor direction.

5. Electrolytic capacitors

Add C2, C3, C4.
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 !)

6. Jack connector

Add CN1. The position of the socket is important for a good front-plate matching. It must sit flat on the PCB. Press firmly the socket on the PCB and solder one of the pins. Check position then solder the other pins.

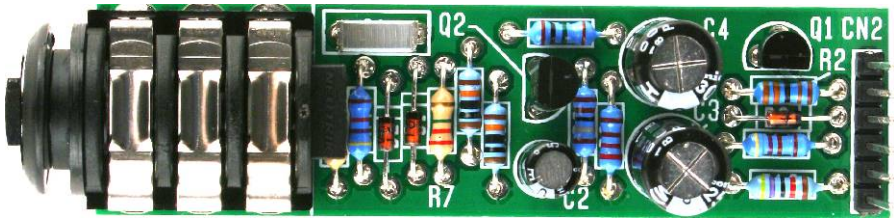
7. Connector

Solder the connector CN2. 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 in the preamp board.

8. Visual check

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 ?
The DI01 is ready for testing !

D101 Assembly guide



9. Board installation

Place one 1.2mm plastic spacer on the jack sockets and insert into the front panel while fitting the CN2 connector pins into the socket on the preamp PCB. Screw in the front nut through the bevelled front spacer with an M12 socket spanner.