

MP 5.99 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 :

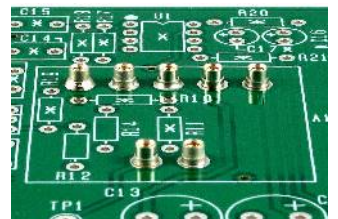
- MP599 Schematics
- MP599 Components layout
- MP599 Parts list
- MP599 Test guide

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 too high for the DIO1 board.

**5. 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.

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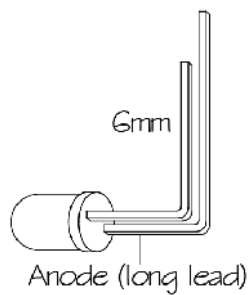


6. Inductor

Add L1. Bend at 0.8".

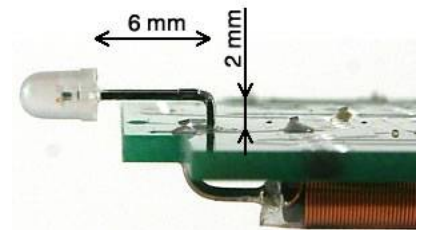


7. Led



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 !



8. Test pins

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



9. Jumper header

Solder the jumper header JMP1, JMP2, JMP3. Solder one pin first, check verticality, then solder the other pins.



10. Connector

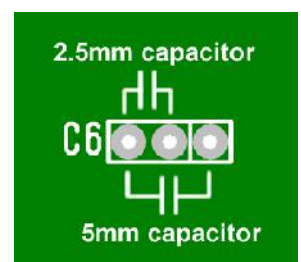
Solder the connector socket CN1. Solder one pin first, check verticality, then solder the other pins.



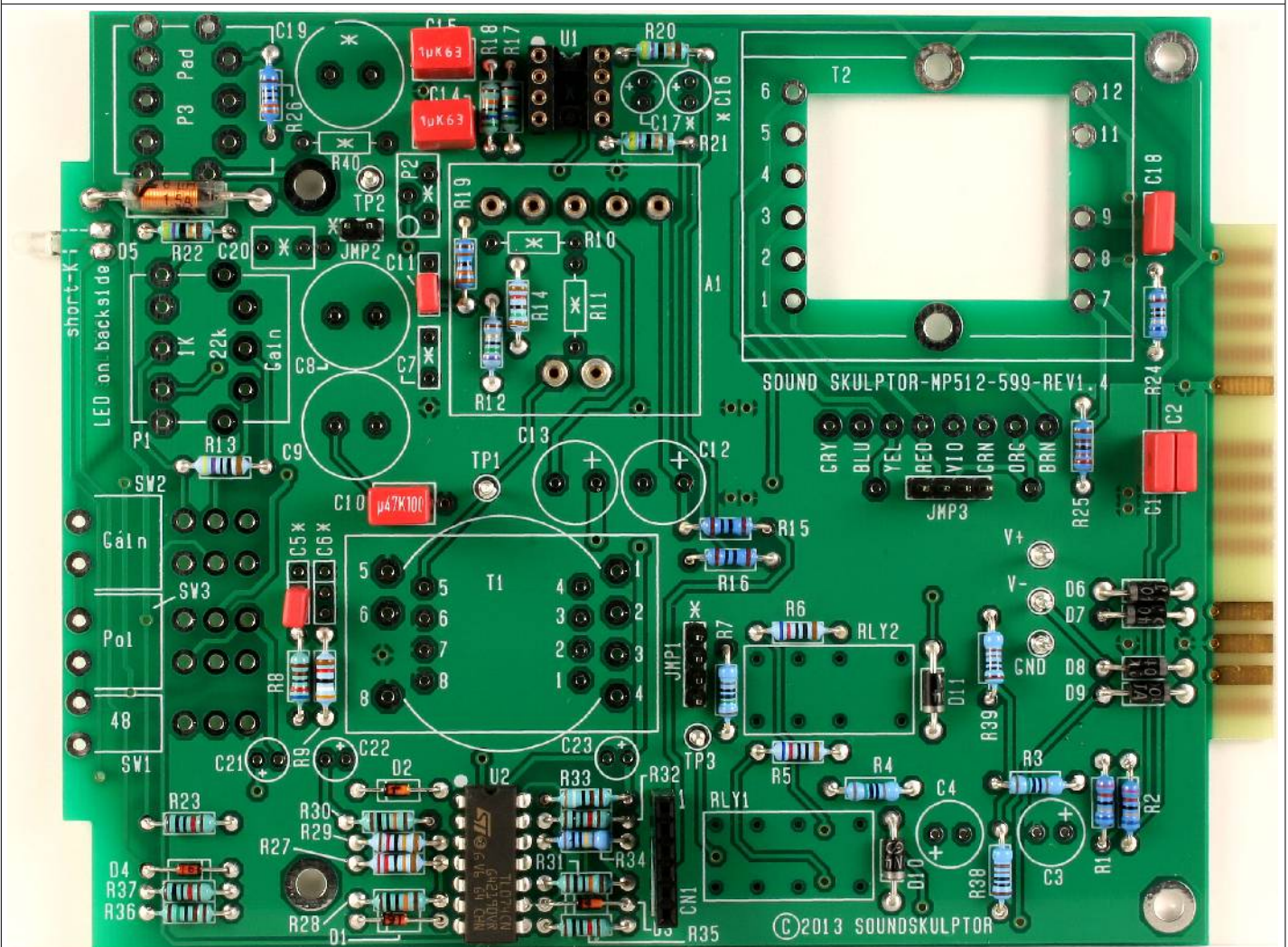
11. Film capacitors

Add C1, C2, C5, C10, C11, C14, C15, C18.

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, C16, C17, C21, C22, C23.

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 !)

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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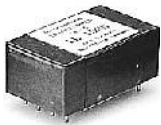


15. Potentiometers P1 & P3

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

Insert and solder the input transformer.



17. Output transformer

Insert and solder the output transformer.



18. Large electrolytics

Add C8 and C9.

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



19. Jumpers

Insert 2 jumpers on JMP1.

These jumpers set the input transformer ratio to 1:5. One single jumper placed on the center 2 pins would set it to 1:2.5.

20. Jumpers

Leave JMP2 without a jumper for now.

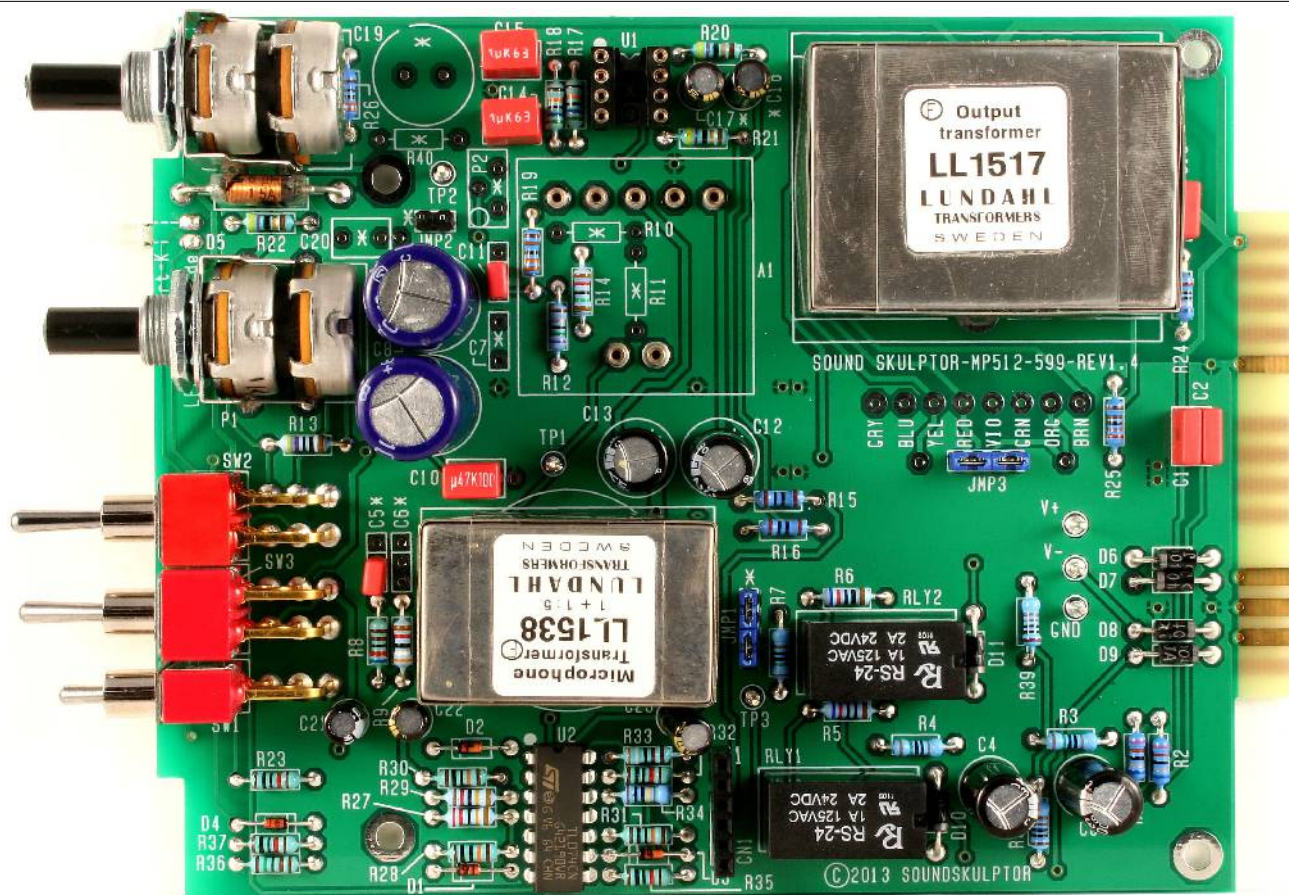


21. Jumpers

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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22. Visual check

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

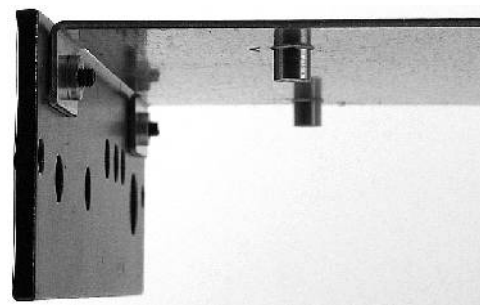
Make a full visual check. Any missing component on the board ? Any remaining component in the box ?

When everything looks correct, proceed with the frame assembly.

23. 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.



24. 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.



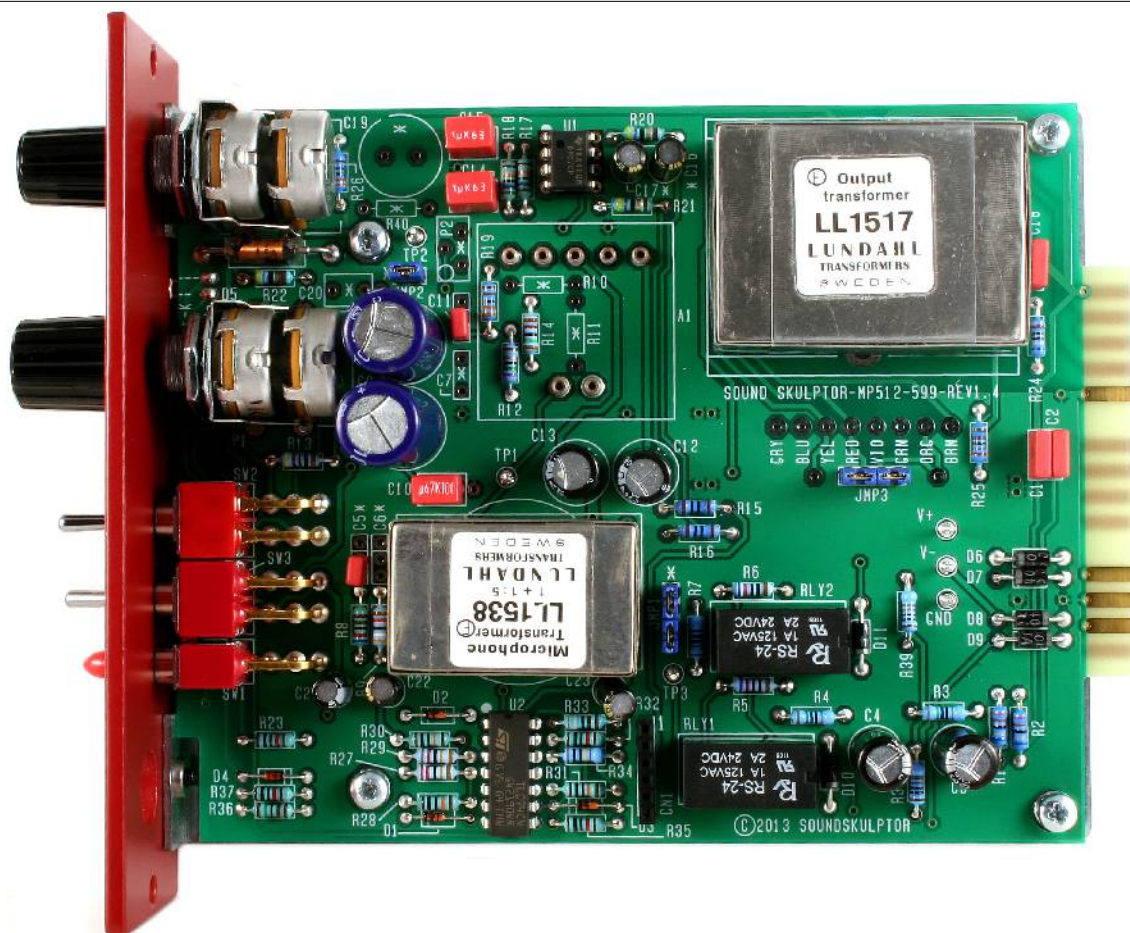
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25. Knobs

Attach the 2 knobs.

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26. Test

Your MP 5.99 is now ready for test. Please follow instructions in the “MP599 Test” document.

DiO1 Assembly guide

Print or open the following documents :

- DiO1 Schematics
- DiO1 Components layout
- DiO1 Parts list



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.

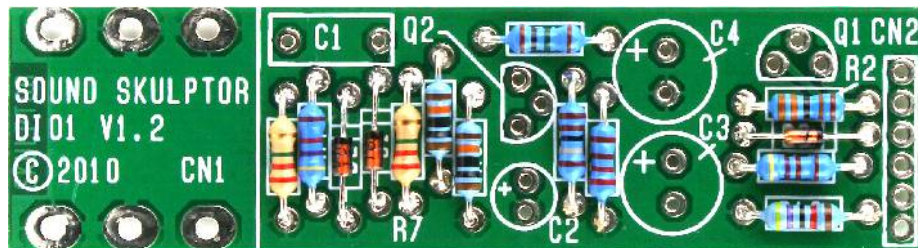
DI01 Assembly guide



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 vertically 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

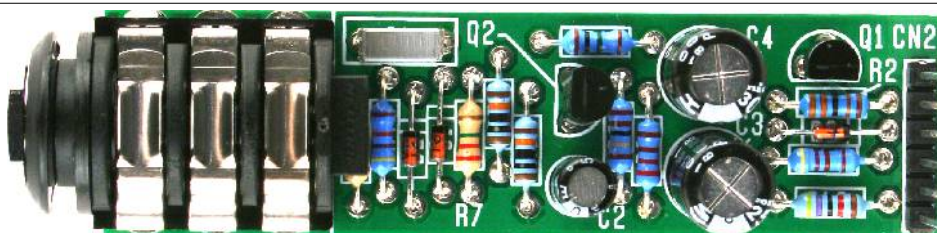
Solder the connector CN2. Solder one pin first, check verticality, then solder the other pins.

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 !



DI01 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.

