PuzzleSounds

GENERAL MANUAL & STEP BY STEP GUIDE



INDEX

In this document you can find the building documents common to all the pedals, including a general step by step guide for building your kit. Be sure to check the kit specific manual for updated part values and instructions.

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KIT BUILDING GENERAL GUIDELINES



Kit General Guidelines

For more detailed guidelines, you can check out the guide in our website: <u>Kit</u> <u>Assembly</u>.

POTENTIOMETERS



The potentiometer is wired to the PCB is as follows:

- Pin 1 to the dot in the PCB connector.
- Pin 2 to the middle in the PCB connector.
- Pin 3 to the last connector in the PCB.



If you want to use an enclosure, you can remove the small tab in the potentiometers with small pliers so you can correctly fit the potentiometer to the case:



SPDTs & DPDTs



For SPDTs and DPDTs, the pin 1 is at any of the sides (it doesn't matter).

As DPDTs have two gangs, you need to solder the first gang to one of the DPDT connectors and the second one to the other (the order doesn't matter):



DC CONNECTOR



The DC connector is wired to the PCB is as follows:

- Pin 1 to the dot in the PCB connector
- Pin 2 to the middle in the PCB connector
- Pin 3 to the last connector in the PCB

BATTERY CLIP



The battery clip is wired to the PCB is as follows:

- Red wire to the "+" in the PCB (PILA)
- Black wire to the "-" in the PCB (PILA)

LED



The LED is wired to the PCB is as follows:

- Longest pin to the "+" in the PCB (LED connector)
- Shortest pin to the "-" in the PCB (LED connector)

DC, BATTERY&LED CONNECTION

Pay attention to the way the battery and DC jack are connected, as connecting them the wrong way could damage some of the parts.



PARTS WITH ORIENTATION

The following parts orientation is **very important**, so pay attention when soldering them to the PCB!



ICS&SOCKETS



Instead of soldering the IC directly to the PCB, you may want to solder the socket first, and then plug the IC into the socket. This way, you can change the IC in the future or switch between different ones, and you avoid applying heat directly to the IC.

3PDT



The 3PDT must only be connected to the 6 pin connector in the PCB, as shown in the picture. Both the female pin header and the 3PDT are soldered in the side of the board marked with the letters.



If the 3PDT is not soldered using the PCB adapter (i.e. when getting only the PCB), it should be connected according to the following pictures (left: 7 pin boards, right: 6 pin boards):





RON & ROFF

RON is connected to the "RON" mark in the PCB (left bottom, as in the left picture). Roff is not used on this pedal.

JACKS

We send stereo jacks with our kits, that are directly soldered to the PCB. If you are using any other jack or if you want to wire it, you can follow this guidelines:







KIT BUILDING STEP BY STEP GUIDE

In this section we explain in detail the steps to build your pedal for a general kit, so the pictures won't correspond with the kit in front of you. This only aims to explain in details the steps you should follow to build your kit in an easy and general way.

You'll be able to find the corresponding part values and pictures in the manual available in the kit page



STEP 1 – Resistors and diodes



Place the resistors and diodes. If you have troubles reading the values, check out our "Reading Part *Values"* tutorial.

Resistors List (FIND YOURS IN THE KIT SPECIFIC MANUAL)

2	R1, R3	1M	[]]]
4	R2, R4, R10, R11	10k	
1	R5	5.1k	
3	R6, R8, R9	20k	
2	R7, R28	100k	
2	R12, R13	4.7M	
5	R14, R18, R19, R23, R24	330	
3	R15, R21, R25	4.7k	
4	R16, R20, R22, R26	6.8k	
1	R17	7.5k	
1	R27	1k	
2	R29, R30	47k	
1	R31	47	

Other (2)

1	DP	
1	RON	

1N4007	
1k	_

STEP 1 – Resistors and diodes



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2	R12, R13	4.7M	
5	R14, R18, R19, R23, R24	330	
3	R15, R21, R25	4.7k	
4	R16, R20, R22, R26	6.8k	
1	R17	7.5k	
1	R27	1k	
2	R29, R30	47k	
1	R31	47	
Other	(2)		
1	DP	1N4007	

1k

1

DP	
RON	

	ul I
-	

STEP 2 – IC sockets & Pin header



First of all place the IC sockets (without the ICs). Pay attention to the orientation! The small notch in the socket should be oriented as indicated in the PCB.

Then, connect the 6 pin header:



STEP 3 – Capacitors and Transistors



Solder the capacitors and transistors. If you have troubles reading the values, check out our "*Reading Part Values*" tutorial. Pay attention to the orientation, as well as to the polarity for electrolytic capacitors.

Capacitor List (FIND YOURS IN THE KIT SPECIFIC MANUAL)

3	C1, C8, C9	22n
1	C2	220n
2	C3, C10	1u (electro.)
1	C4	68n
1	C5	8.2n
1	C6	2.2u (electro.)
2	C7, C11	100n
1	C12	100u (electro.)

Transistor List (FIND YOURS IN THE KIT SPECIFIC MANUAL)

1	Q1	2N5457
2	Q2, Q3	BC550

STEP 4 – Regulator IC

Solder the regulator IC, paying attention to the orientation:



STEP 5 – LED and Battery Clip

Solder two wires to the LED connection (red to the "+" sign).



Then, solder then to the LED (the red wire is connected to the longer pin).



Solder the battery clip, connecting the red wire to the "+" sign:



STEP 6 – DC Power Jack wires

Solder three wires (about 5cm each) to the DC connection as shown (don't solder anything to the other end yet!):



STEP 7 – Audio Jacks

Now, solder the audio jacks to the board (DC, battery and led wires are not present to make it clearer):



STEP 8 – Potentiometers

A – Preparing the potentiometers

Cut 3 pieces of wire for each potentiometer you have to solder (i.e. 9 pieces for 3 potentiometers). Then, solder them to each lug. The first lug is the one in the left in top view (the black wire in the picture).

Here, we've cut them short (~1cm), but you can use the length you need.





Then, solder them to the board like in the picture in the left, and then place the board inside the enclosure:





DOUBLE POTENTIOMETERS

It's the same as for single potentiometers, but you have to cut 6 pieces of wire for each one (i.e. 12 pieces for 2 potentiometers). Then, solder them to each lug. The first lug for each of the 2 gangs is the one in the left in top view (the black wire in the picture).

Here, we've cut them short (~1cm), but you can use the length you need.





Then, solder them to the board like in the pictures below:





STEP 9 – DC Power Jack

First of all, insert the DC jack in the enclosure and tighten the nut:



Then, solder the three wires from the DC connector in the board to the DC jack as follows:





STEP 10 – 3PDT

A – Solder the pin to the adapter

Pay attention, the pins and the 3PDT must be soldered to the same side of the PCB adapter (the one labeled "buttons and 3PDT on this side").



B – Solder the 3PDT

Now solder the 3PDT to the PCB and remove all the nuts but one, that should be set at a middle height:



C – Solder the 3PDT directly to the board (optional)



If you prefer to solder the 3PDT directly to the board, you can wire it as shown in the schematic. We recommend to use the **provided 3PDT PCB adapter** to make the soldering easier.

(TOP VIEW)

STEP 11 – Connect the 3PDT



STEP 12 – Your pedal is finished!

By now you should have a fully functional effect pedal, we hope you enjoy it!