

Echobender Machine Kit Building Manual



Effect Pedal Kits: Echobender Machine

The **Echobender Machine** is a fun **multieffect** pedal that works perfectly with any electric instrument like guitars, basses, keyboards and even microphones. It has a lot of functioning modes:

- Analog warm sounding echo
- Highly adjustable distortion
- Ring mod style feedback
- Complex noise generator

Besides all these modes of the **Echobender Machine** can be used either on their own or they can be mixed together to achieve effects ranging from melodic and dreamy to chaotic and screamy. The noises that can be generated with the Echobender are especially interesting!

This is a quick reference for the Echobender Machine potentiometers:

- Feedback adds distortion to the wet signal
- Fine and Coarse set the delay time of the repetitions
- Decay controls the amount of repeats that are delayed

 Dry and Wet set the amount of the original and the processed signal that go through the pedal

BOM (1/2)

Resistors (21)				Capacitors (24)			
2	R1, R4	1M		3	C1, C15, C16	82n	
1	R2	330k		1	C2	5p (ceramic)	
1	R3	510k		6	C3, C5, C6, C9, C21, C22	1u (electrolytic)	
9	R5, R6, R10, R11, R12, R17,	10k		1	C4	100p (ceramic)	
	R18, R20, R21						
1	R7	4.7k		2	C7, C19	10n	
1	R8	12k		2	C8, C17	2.7n	
1	R9	100k		3	C10, C23, C24	47u (electrolytic)	
2	R13, R16	15k		3	C11, C12, C14	100n	
2	R14, R15	1k		1	C13	100u (electrolytic)	
1	R19	100		1	C18	27n	
				1	C20	4.7u (electrolytic)	

BOM (2/2)

Diodes, Transistors and ICs			Generic Parts and Potentiometers			
1 1 1	U1 U2 U3	Diodes, Transistors and ICs TL072 PT2399 LM7805	1 1 1 1 1 2	Generic Parts and PotentiometersBattery clipDC JackRLEDLED Bezel3PDTIN, OUT6.35mm Jacks		
			1 3 1	500kB Linear Potentiometer 100kB Linear Potentiometer 5kB Linear Potentiometer 10kB Linear Potentiometer	Coarse Decay, Dry, Wet Fbk Fine	

Component Placement



Board Layouts

<u>3PDT PCB</u>



Effect PCB



Building Tips

1- Pay attention to the **orientation of the 3PDT**! In the following picture you can see how the 3PDT pins should be positioned (inserting the pins in the holes can be a bit tight to avoid movement while soldering):



2- For a proper soldering you just have to apply the right amount of solder wire. A right solder joint should have a concave shape around the joint and look like this:



- 3- Don't apply too much heat! When soldering, the time you hold the solder iron against the joint should be **as short as posible** to avoid damaging any part (a few seconds should be enough). If you can't get a solder joint right, **let it cool** a bit before trying again.
- 4- If having troubles with the building, checking the schematic in the last page will help you find **where the audio signal stops**. When you find the spot, check out that **everything around that joint is ok** (components placed at their right place, solder joints...).

Building Tips

5- Pay attention to the **parts that have a polarity** and make sure they are connected as in the component placement picture:

- <u>ICs</u> (they have a small dot or indication that must fit the indication in the board

	\sim	0		0
0		0	0	0
0		0	0	0
0	111	0	0	0
0	0.	0	0	0
0		0	0	0
0		0	0	0
0		0	0	0

- **<u>Electrolytic capacitors</u>** (longer pin is connected to the "+" hole):



- **Diodes** (check for the mark and make it fit with the one in the PCB):



- Leds (longer pin is connected to the "+" hole)



- **<u>Transistors</u>** (inserted to fit the drawing in the PCB)



Building Tips

6- With the kit we include plastic PCB supports with an adhesive bottom. You can use them to anchor the PCB to your enclosure for a better stability. Just insert the PCB support tip into the 3.5mm holes and remove the adhesive protective film.



To avoid any issue always check the latest building manual. Use the pictures only as a reference! Colors/shapes of wires, PCB or parts can change slightly, this doesn't affect their functionality in any way.

Always double check part polarity, resistor and capacitor values, potentiometer placement, IC orientation... before soldering.

Schematic

