

EF440 (DOD Envelope Filter 440™ Replica) Instructions

Version 2012January20

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This is a replica of the **DOD Envelope Filter 440** referred to as **EF440** in these documents. It's got a nice fat auto-wah sound, a lot of fun to build and play.

Use the project documents provided, starting with the General Build Instructions. The EF440 project has a minor upgrade from the original. R5 is listed as 470k on some schematics, this project uses R5 of 2M2 value which gives a much improved Range control. We decided to make R5 of value 2M2 as the default in this project since it provides vast improvement on the overall sound of the unit.

You must use the VTL5C4/2 LED/LDR unit listed, or equivalent for OC1. The "/2" at the end of the part number is essential. It is a unit with one LED controlling 2 LDRs with a common leg so it has a total of 5 legs. The schematic shows the internal workings of this unit, highlighted by a dashed, purple outline. Other LED/LDR units can be used, including DIY units, but we have found this to be the best sounding unit.

The C4 capacitor can be film (non-polar) or aluminum electrolytic. If you use the film, there is no concern about polarity when installing the capacitor.

The controls on this stompbox are strange. As far as I can tell, it has to be tuned in to one sweet spot and that's about the best it can do. Most of the controls rotations don't produce the filter "wah type" sound at every (or any) input sound frequency. Anyway, the sweet spot is very sweet.

Here's an inside view of the unit I built to give you some general ideas if needed. We built ours in a 125B enclosure.

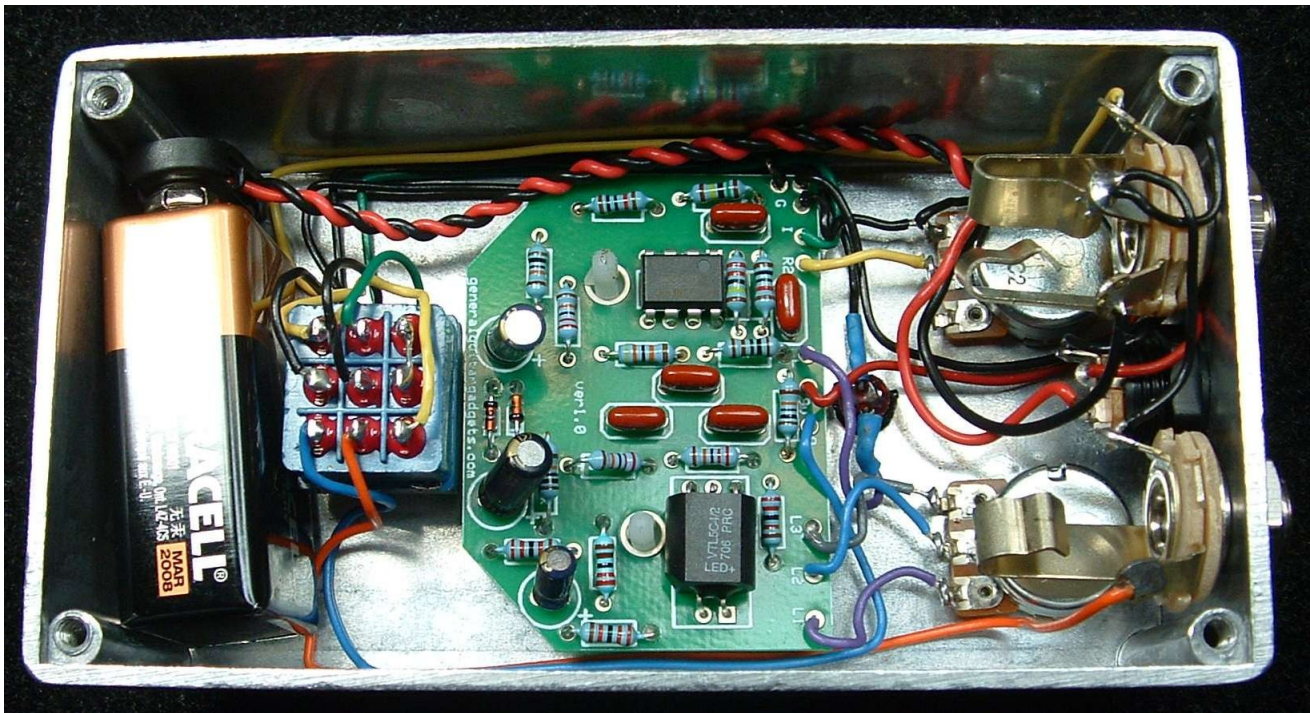
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Have fun, comments and questions are welcome and can be sent to info@generalguitargadgets.com

Here is a chart of voltages taken at the IC pins. This information can be used as reference to help find and fix problems if needed.

Component	Location	Voltage
9 volt power supply		8.7v



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IC1	Pin 1	4.34v
	Pin 2	4.30v
	Pin 3	4.37v
	Pin 4	0v
	Pin 5	4.30v
	Pin 6	4.37v
	Pin 7	4.36v
	Pin 8	8.7v