

BYOC Envelope Filter Kit Instructions

Parts Checklist.....page 2

Populating the Circuit Board.....page 3 - 6

Assembly.....page 7

Wiring.....page 8 - 11

Finish up.....page 12

Copyright 2006 Build Your Own Clone

Parts Checklist for Envelope Filter Kit

Resistors:

- 1 - 2.2k (red/red/red/gold)
- 1 - 4.7k (yellow/purple/red/gold)
- 2 - 10k (brown/black/orange/gold)
- 3 - 22k (red/red/orange/gold)
- 3 - 100k (brown/black/yellow/gold)
- 3 - 220k (red/red/yellow/gold)
- 1 - 430k (yellow/orange/yellow/gold)
- 1 - 470k (yellow/purple/yellow/gold)
- 1 - 820k (gray/red/yellow/gold)
- 1 - 1M (brown/black/green/gold)
- 1 - 2.2M (red/red/green/gold)

Capacitors:

- 1 - .01uf film (103)
- 2 - .022uf film (223)
- 1 - .047uf film(473)
- 1 - 0.1uf film (104)
- 1 - 1uf aluminum electrolytic
- 1 - 4.7uf aluminum electrolytic
- 1 - 10uf aluminum electrolytic
- 1 - 47uf aluminum electrolytic

Diodes:

- 2 - 1N914

IC's:

TL022

Opto-Coupler:

VTL5C4/2

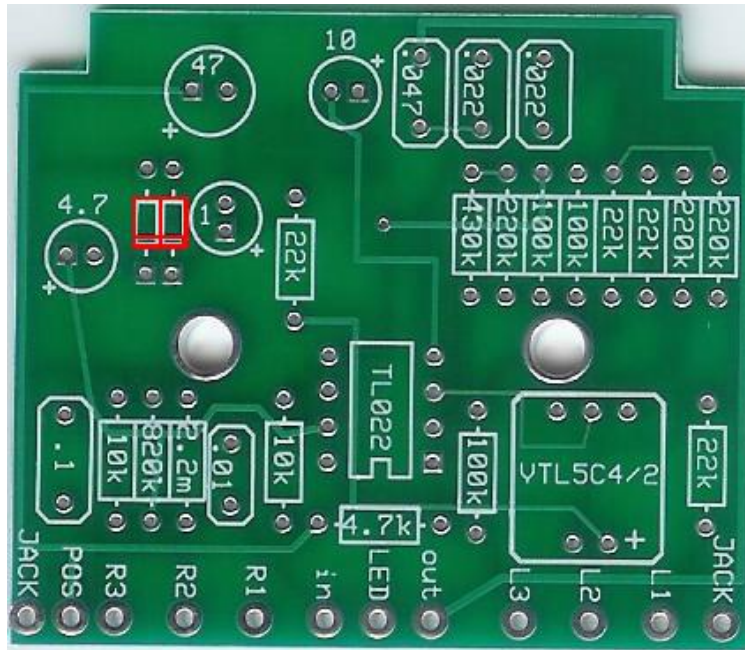
Potentiometers:

- 2 - A100k log

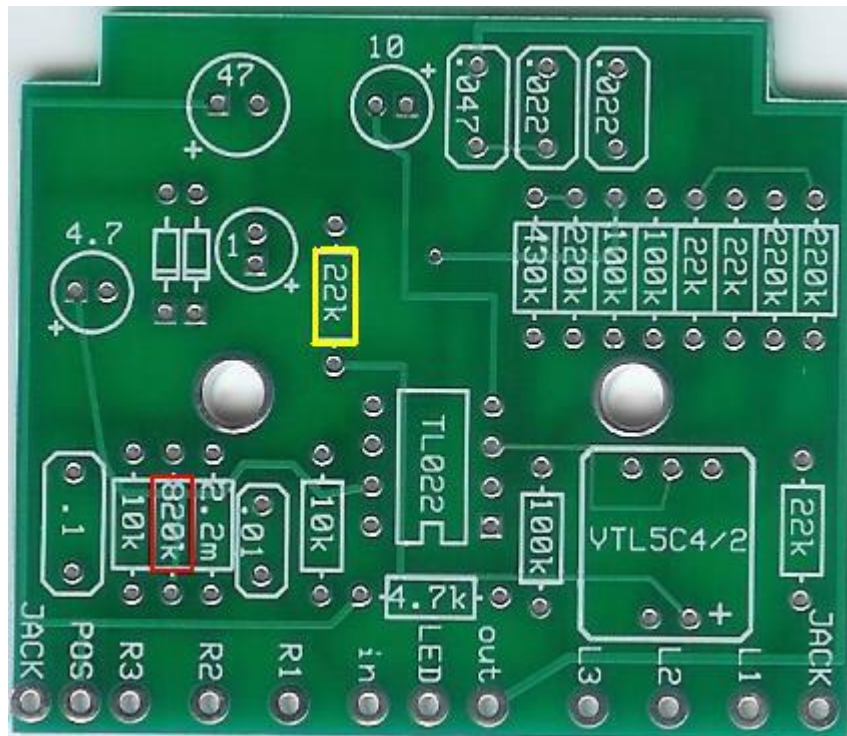
Hardware:

- 1 - enclosure w/ 4 screws
- 1 - byoc envelope filter kit circuit board
- 1 - 3pdt footswitch
- 2 - knobs
- 1 - AC adaptor jack
- 1 - 1/4" stereo jack
- 1 - 1/4" mono jack
- 1 - battery snap
- 1 - red LED
- 1 - LED bezel
- hook-up wire

Populating the Circuit Board

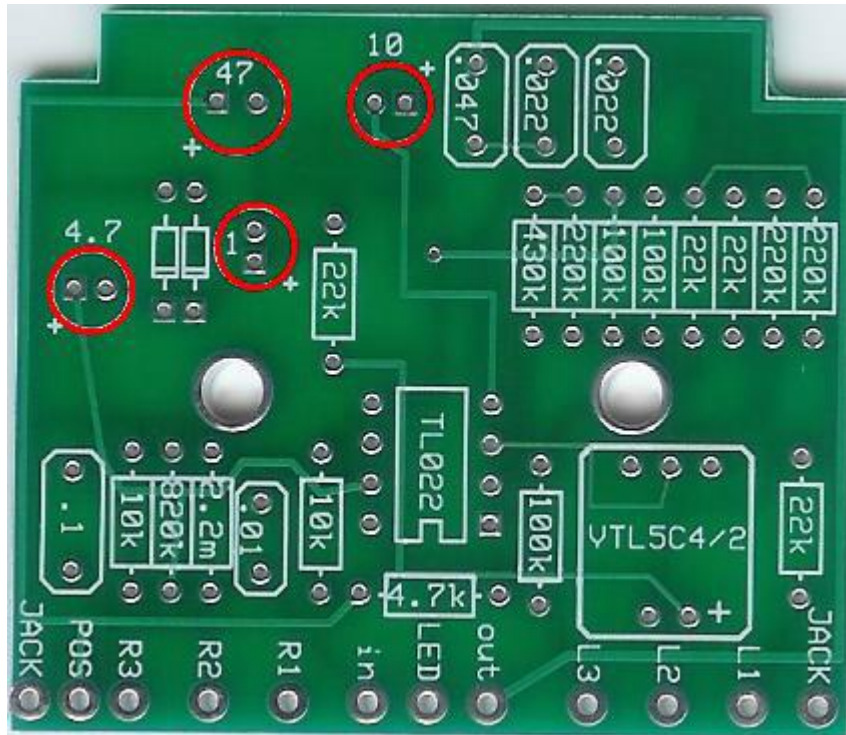


Step 1: Add the diodes. Make sure the black stripes are facing the same way as show on the layout.

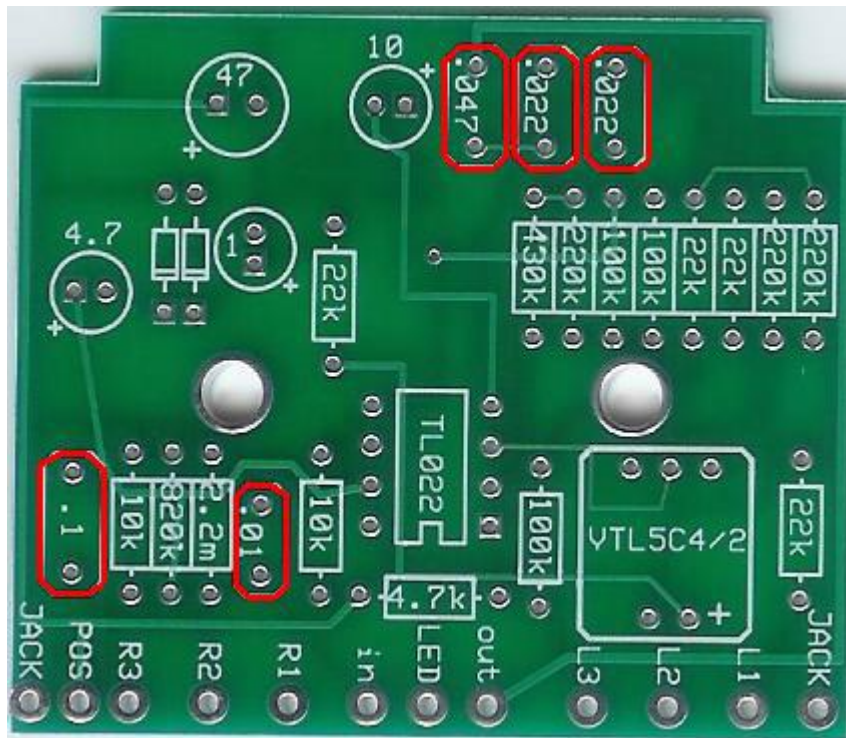


Step2: Add the resistors. The 22k resistor highlighted in yellow is a typo. It should be a

notch first.

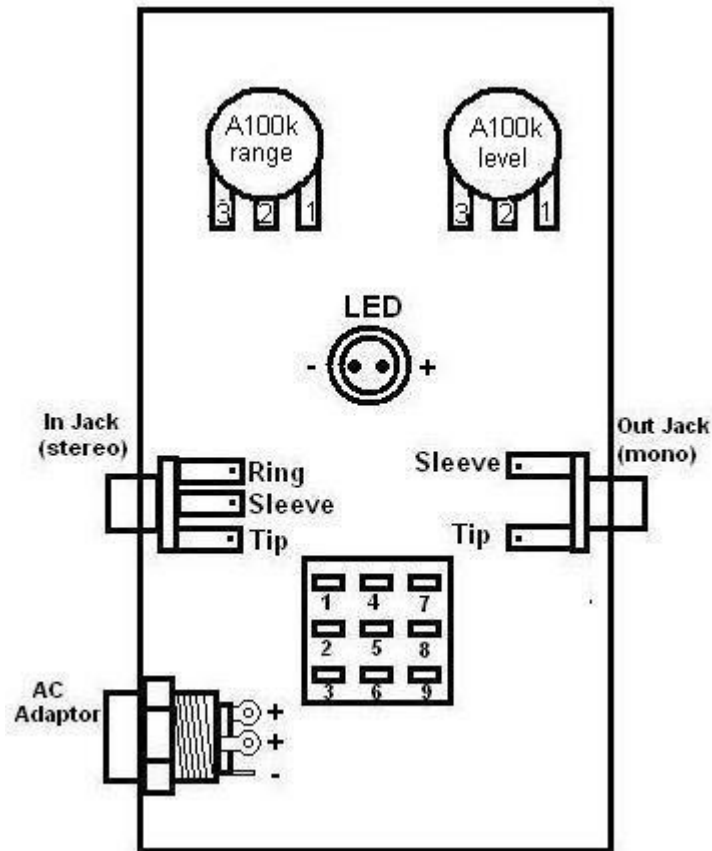


Step 4: Add the aluminum electrolytic caps. These are polarized. The positive end will have a longer lead and goes in the square solder pad.



Step5: Add the film caps. These are not polarized and can go in either way.

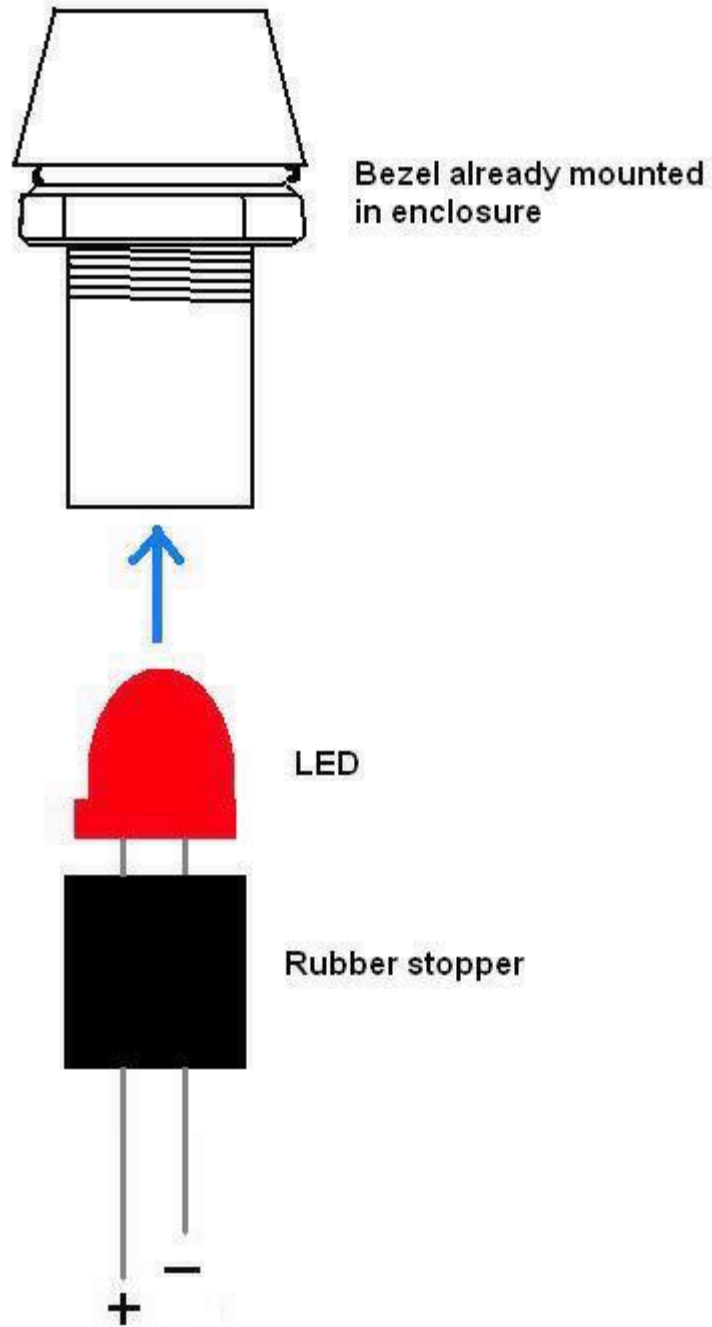
Assembly



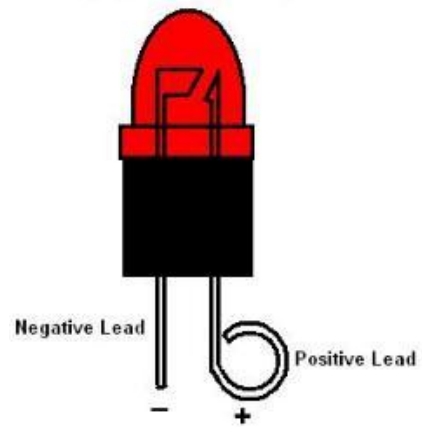
1. Install the jacks first. If you are looking down inside the enclosure, the mono jack goes on the right side and the stereo jack goes on the left. Place the washer on the outside of the enclosure. Use a 1/2" wrench to tighten.
2. Install the AC adaptor jack. The bolt goes on the inside. Use a 3/4" or 14mm wrench to tighten.
3. Install the bezel. The washer and bolt go on the inside. Use a 10mm wrench to tighten.
4. Install the potentiometers so that the solder lugs are pointing down. The washers go on the outside. Use a 10mm wrench to tighten but only snug. Do not over tighten the pots.
5. Install the footswitch. The first bolt and metal washer go inside. The plastic washer and second bolt go on the outside. It does not matter which side you designate as the "leading edge" of the footswitch as long as you orientate it so that the flat sides of the solder lugs are aligned in horizontal rows, not vertical columns.

Wiring

So many people make the mistake of inserting the LED in through the top of the bezel.
You insert the LED in through the bottom



LED (Light Emitting Diode)



After you mount and install the LED/bezel, Bend the leads of the LED into circles so that you will have something to solder the hookup wire to. DON'T lose track of which lead is negative and positive. The positive lead will be longer. The negative side has a flat side.

Keith's tips to for a cleaner build

1. Use the left over clippings from you capacitors and resistors when ever possible. But don't use them if it may cause a short. You wouldn't want to use them to make the connection from the sw2 eyelet to lug 2 of the footswitch and for sw1 to lug 1 of the footswitch because those would overlap and probably touch. I like to use them to make the jumper from Lug 3 of the footswitch to lug 6 of the footswitch and Lug 4 to lug 9 as well. I also like to use the clippings to connect the “Jack” eyelets of the circuit board to the sleeves of the jacks because these are very very short connections. When you use wire for these connections you have to use a length that is longer than what is actually needed because the distance from the sleeve lug to the eyelet when the board is mounted is much to short to strip. **BUT!!!**If you do use the clippings to connect the board to the jacks, you should save this till near the end when you've got your board mounted because you aren't going to be able to move the board very much after that. When you use solid wire without a protective plastic coating, it's called bare bus wire.
2. Wire up the potentiometer first and then do a mock up mount. By this I mean, install the self adhesive standoffs, but DO NOT remove the paper backings. Then put the circiut into position as if you were actually going to mount it. From here, you will be able to better measure the shortest length of wire needed for the rest of the connections...which means a cleaner build.
3. Solder the pot wires to the underside of the circuit board. It's a doublesided board! The less wire you see, the cleaner it will look.
4. Make one joint for each lug. Take the negative terminal of the AC jack for example. You have 2 wires connected to it, right? It is infinitely easier if you stick both wires in the hole and solder them at the same time then if you solder one first, then try to heat up the joint so you can fit the second wire in. The same thing goes for the sleeve of the in jack and lug 4 of the footswitch.
5. Take your time. Don't strip the wires any more than is needed. You'll only need to strip the wires about 1mm for the footswitch lugs. But for the jack and pot lugs you'll want about 1/4”. This will make it look cleaner and also help prevent shorts.

Finishing Touches

If you were holding out to bus bar wire the sleeves of the jacks don't forget to do that. Install the base of the enclosure with the 4 screws that came with your kit. Add the rubber bumper feet...unless you're a velcro person. That's it. You're done. If you've got any problems that you can't figure out yourself, visit board.buildyourownclone.com for technical support