

# BYOC Modded Fuzz Kit Instructions



## **Warranty:**

BYOC, Inc. guarantees that your kit will be complete and that all parts and components will arrive as described, functioning and free of defect.

Soldering, clipping, cutting, stripping, or using any of the components in any way voids this guarantee. BYOC, INC guarantees that the instructions for your kit will be free of any major errors that would cause you to permanently damage any components in your kit, but does not guarantee that the instructions will be free of typos or minor errors. BYOC, INC does not warranty the completed pedal as a whole functioning unit, nor do we warranty any of the individual parts once they have been used. If you have a component that is used, but feel it was defective prior to you using it, we reserve the right to determine whether or not the component was faulty upon arrival. Please direct all warranty issues to:

[sales@buildyourownclone.com](mailto:sales@buildyourownclone.com) This would include any missing parts issues.

**Return:**

BYOC, Inc. accepts returns and exchanges on all products for any reason, as long as they are unused. We do not accept partial kit returns. Returns and exchanges are for the full purchase price less the cost of shipping and/or any promotional pricing. Return shipping is the customer's responsibility. This responsibility not only includes the cost of shipping, but accountability of deliver as well. Please contact sales@buildyourownclone.com to receive a return authorization before mailing.

**Tech Support:**

BYOC, Inc. makes no promises or guarantees that you will successfully complete your kit in a satisfactory manor. Nor does BYOC, Inc. promise or guarantee that you will receive any technical support. Purchasing a product from BYOC, Inc. does not entitle you to any amount of technical support. BYOC, Inc. does not promise or guarantee that any technical support you may receive will be able to resolve any or all issues you may be experiencing.

That being said, we will do our best to help you as much as we can. Our philosophy at BYOC is that we will help you only as much as you are willing to help yourself. We have a wonderful and friendly DIY discussion forum with an entire section devoted to the technical support and modifications of BYOC kits.

[www.byoelectronics.com/board](http://www.byoelectronics.com/board)

When posting a tech support thread on the BYOC forum, please post it in the correct lounge, and please title your thread appropriately. If everyone titles their threads "HELP!" then it makes it impossible for the people who are helping you to keep track of your progress. A very brief description of your specific problem will do. It will also make it easier to see if someone else is having or has had the same problem as you. The question you are about to ask may already be answered. Here is a list of things that you should include in the body of your tech support thread:

1. A detailed explanation of what the problem is. (more than, “It doesn’t work, help”)
2. Pic of the topside of your PCB.
3. Pic of the underside of your PCB.
4. Pic that clearly shows your footswitch/jack wiring and the wires going to the PCB
5. A pic that clearly shows your wiring going from the PCB to the pots and any other switches (only if your kit has non-PC mounted pots and switches)
6. Is bypass working?
7. Does the LED come on?
8. If you answered yes to 6 and 7, what does the pedal do when it is in the "on" position?
9. Battery or adapter (if battery, is it good? If adapter, what type?)

Also, please only post photos that are in focus.

**Revision Notes:**

Rev1.0 - In 2023 the name of this kit changed from “classic fuzz” to “modded fuzz”. R5 changed from a 330ohm to 1k and R6 changed from a 4.7k to a 3.9k. VR1 changed from a B1k to a C1k. The layout remained the same

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## Parts Checklist for BYOC Modded Fuzz Kit

### Resistors:

	Metal Film
1 - 47R	(Yellow/Purple/Black/Gold/Brown)
2 - 1k	(Brown/Black/Black/Brown/Brown)
1 - 3.9k	(Orange/White/Black/Brown/Brown)
1 - 4.7k	(Yellow/Purple/Black/Brown/Brown)
1 - 33k	(Orange/Orange/Black/Red/Brown)
1 - 100k	(Brown/Black/Black/Orange/Brown)
1 - 470k	(Yellow/Purple/Black/Orange/Brown)

### Carbon Composition

(Yellow/Purple/Black/Gol
(Brown/Black/Red/Gold)
(Orange/White/Red/Gold)
(Yellow/Purple/Red/Gold)
(Orange/Orange/Orange/Gold)
(Brown/Black/Yellow/Gold)
(Yellow/Purple/Yellow/Gold)

### Capacitors:

- 1 - 150pf Ceramic disc (little yellow or blue round capacitor with '151' on the body)
- 1 - 103/.01uf film (May say '103' on the body)
- 1 - 123/.012uf film (May say '123' on the body)
- 1 - 273/.027uf film (May say '273' on the body)
- 1 - 104/.1uf film (May say '104' on the body)
- 1 - 2.2uf aluminum electrolytic
- 1 - 22uf aluminum electrolytic
- 1 - 100uf aluminum electrolytic

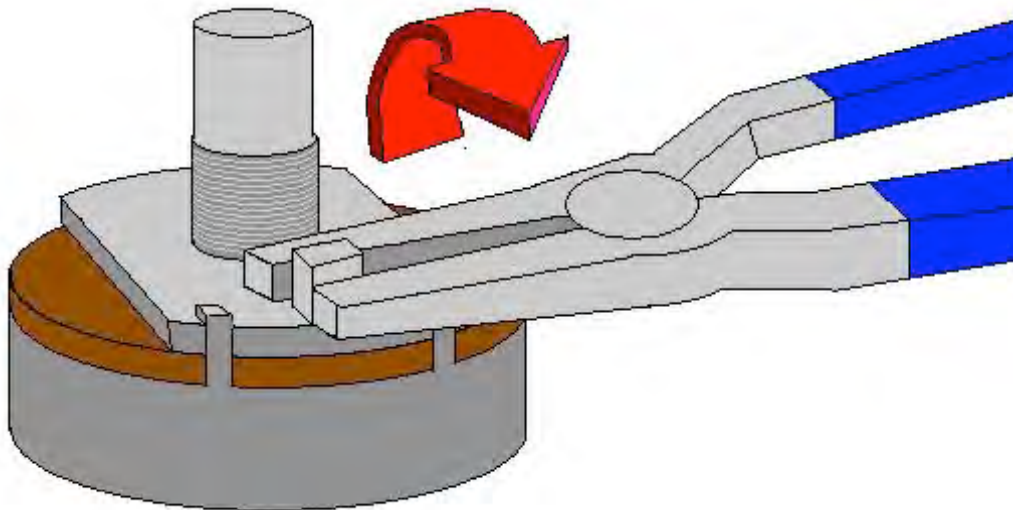
### Diodes:

- 1 - 1N4001

### Transistors:

- 2 - 2N5088 (or 2N3904, 2N5089 or similar NPN silicon)

**Potentiometers:** Be sure to snap off the small tab on the side of each pot.



- 1 - A100k (LEVEL)

- 1 - C1k (FUZZ)

- 1 - B10k (BIAS)

### Hardware:

- 1 - drilled enclosure w/ 4 screws
- 1 - BYOC Classic Fuzz circuit board
- 1 - SPDT On-Off-On toggle switch
- 1 - 3pdt footswitch
- 2 - 1/4" Enclosed Audio Jacks
- 1 - battery snap
- hook-up wire

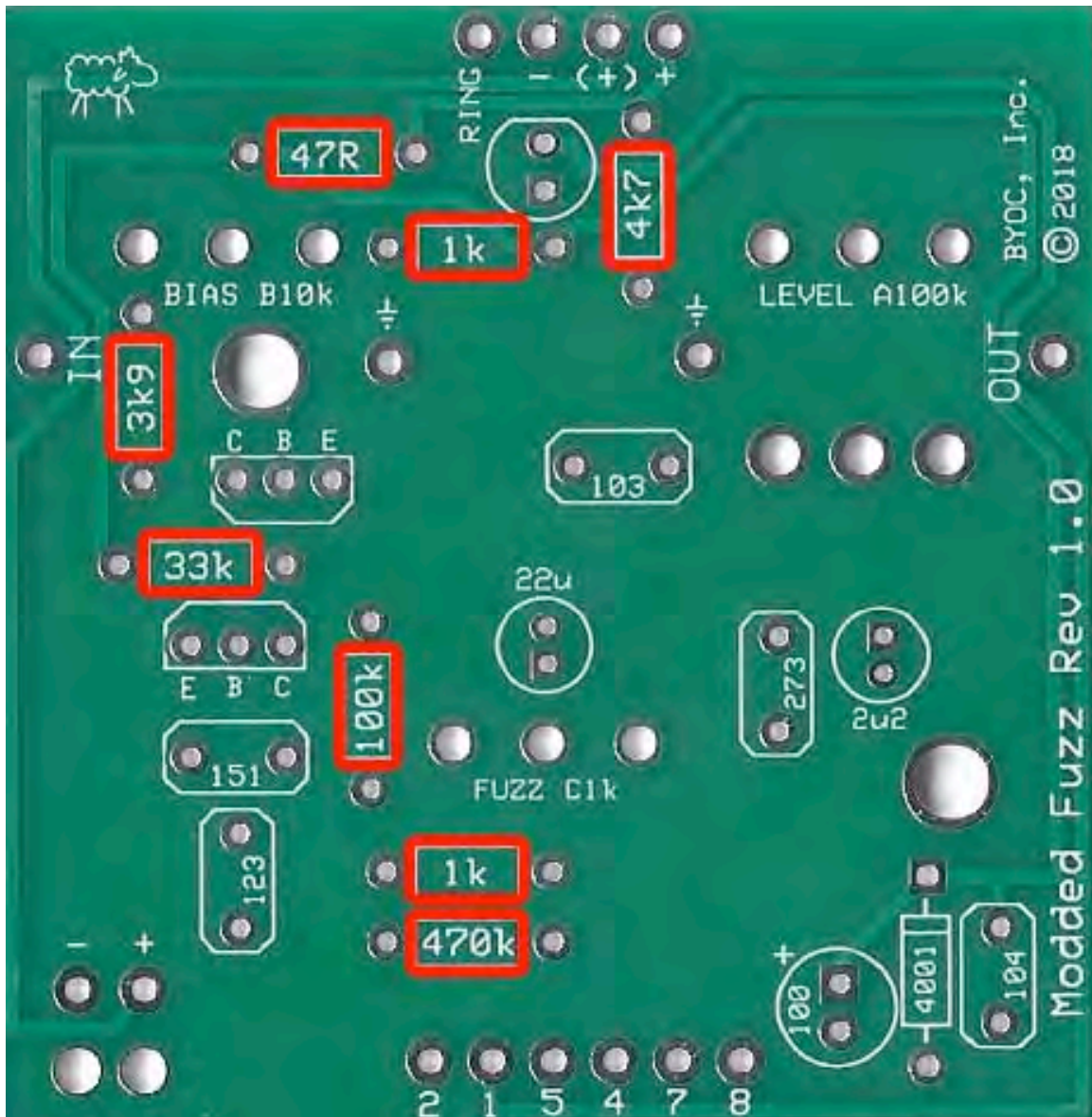




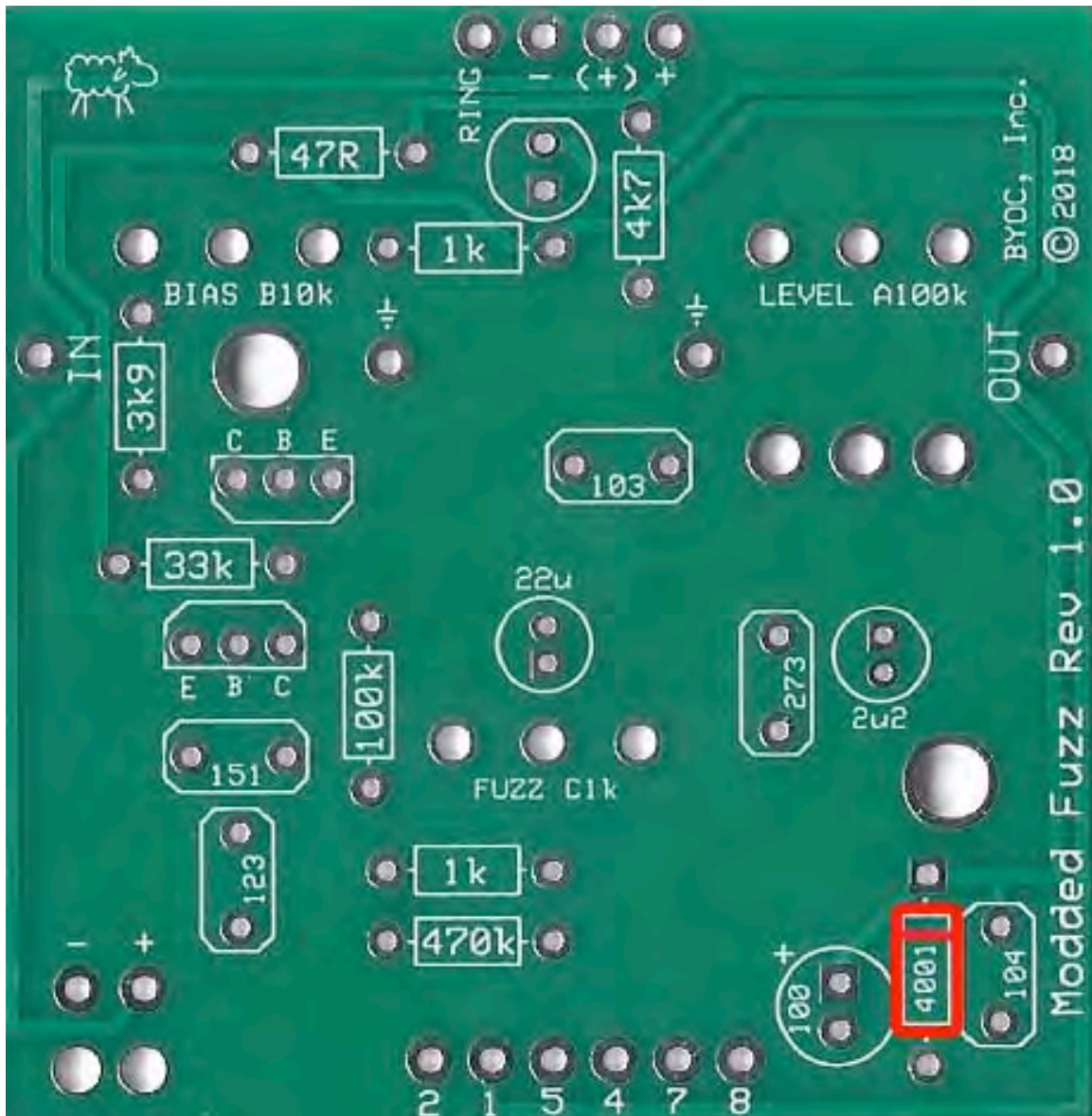
**This is what your Modded Fuzz will look like when you are finished. Note that the PCB in some of the pics will say “classic fuzz”. The name of the kit changed in 2023, but the layout is still the same.**

# Populating the Circuit Board

**Step1:** Add the resistors. Resistors will be blue or tan colored and have multicolored bands on them. See the parts list above to read the colors to value table. Resistors are not polarized so they can go in the PCB in either direction.

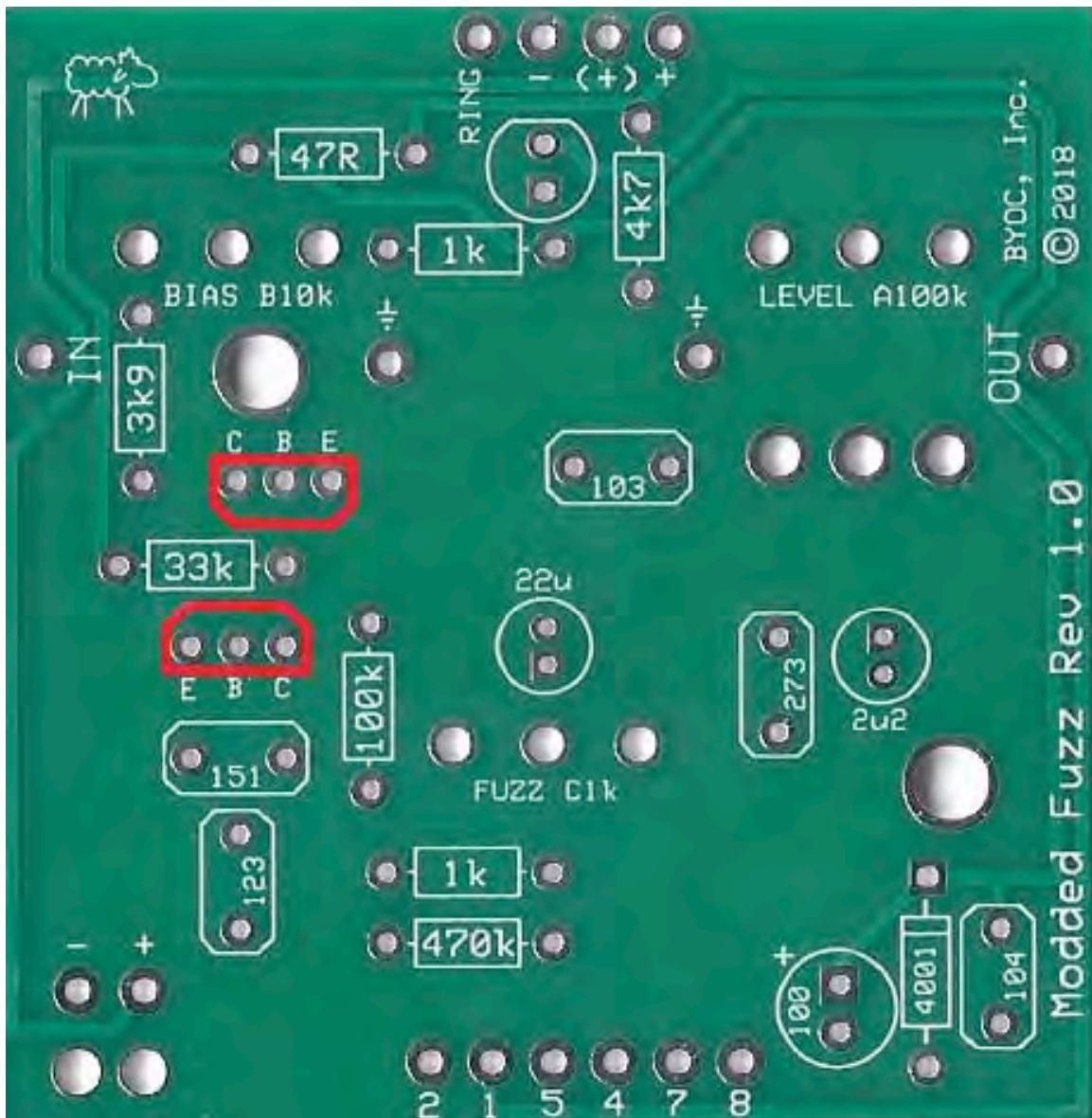


**Step 2:** Add the larger black plastic diode with silver stripe (1N4001). Make sure the stripe matches up with the layout on the PCB. The cathode (striped end) goes in the square solder pad. The anode goes in the round solder pad.

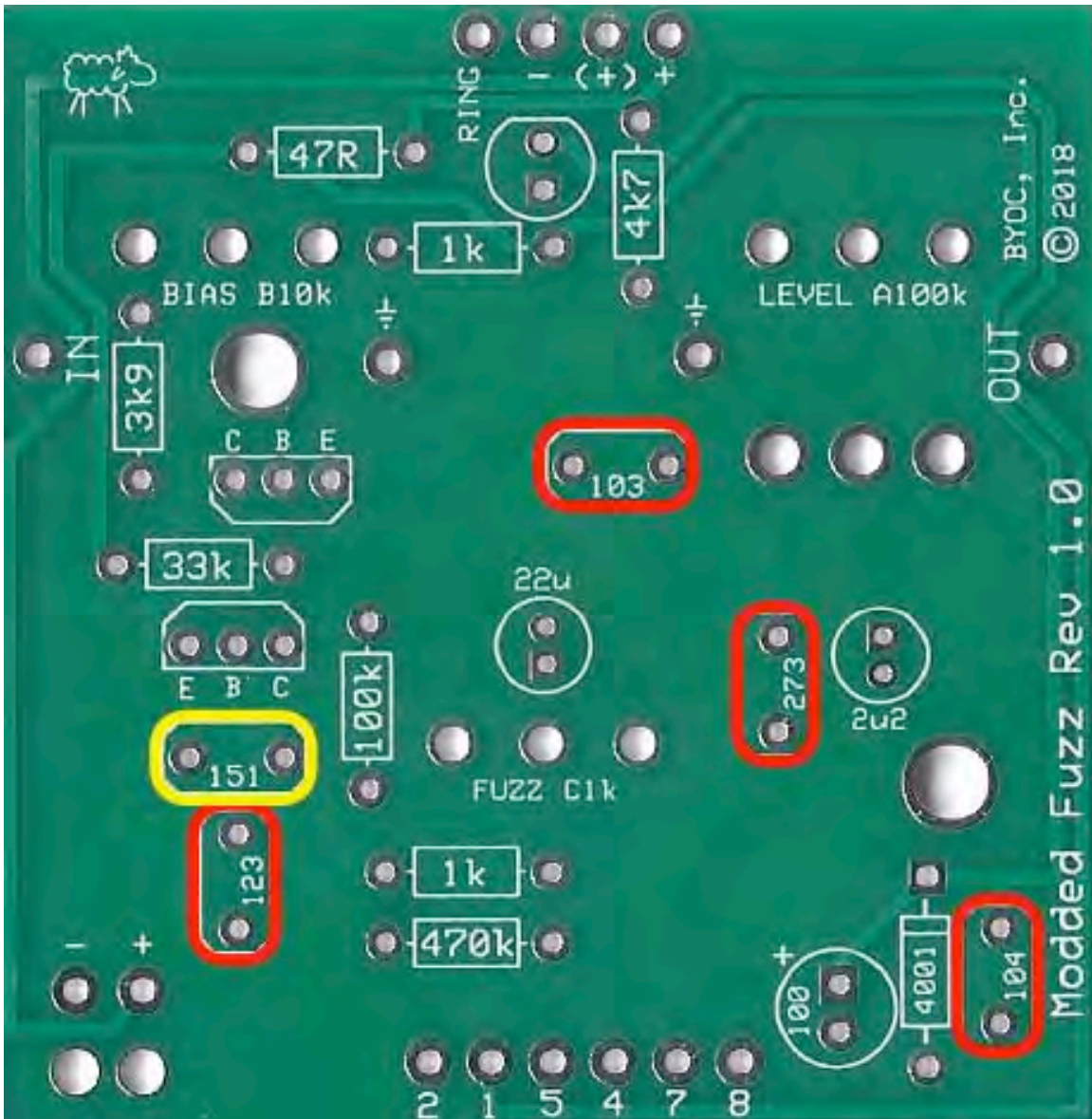




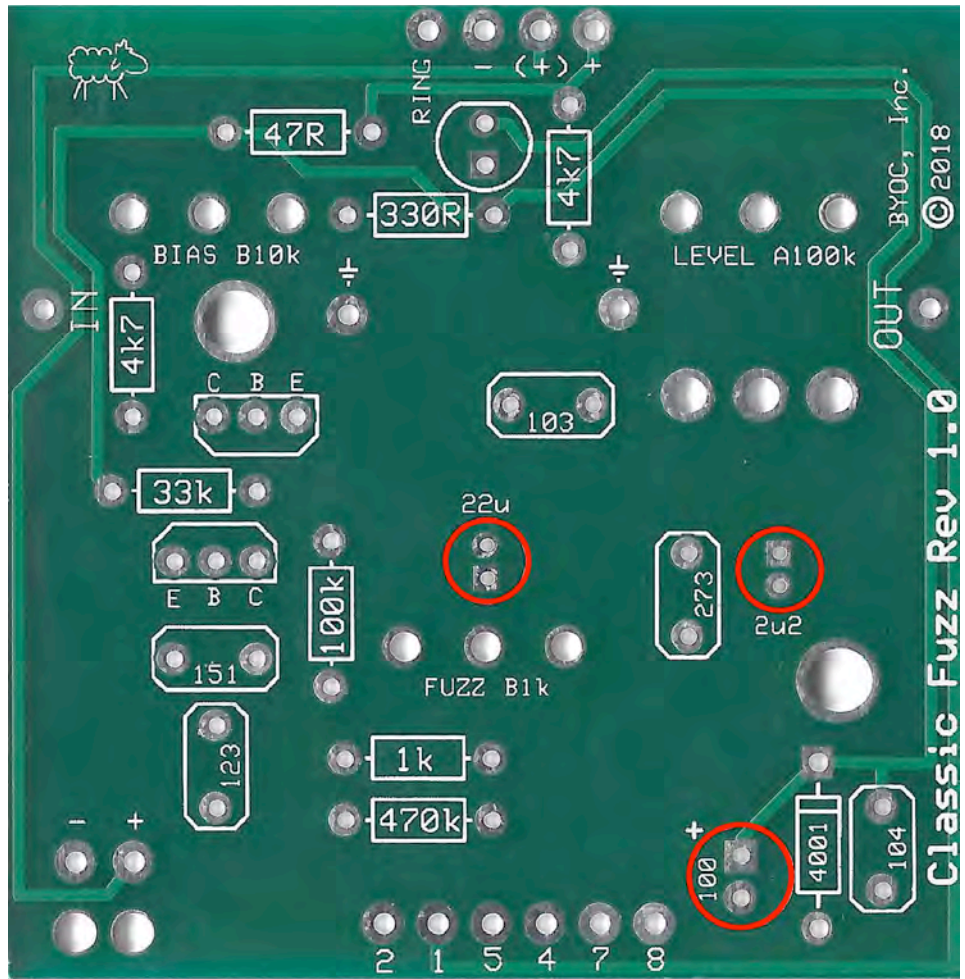
**Step 3:** Add the transistors. Transistors are the three-leg components with a curved face. Be sure to line up the curved face on the transistors with the outline on the PCB, as highlighted below.



**Step 4:** Add the film and ceramic disc capacitors. The film capacitors will have two legs and a red, rounded-square body. The ceramic disc capacitor will also have two legs, but will usually be blue or yellow and have a circular body. These are not polarized and can be inserted in any orientation. The ceramic disc capacitor is highlighted in yellow below.

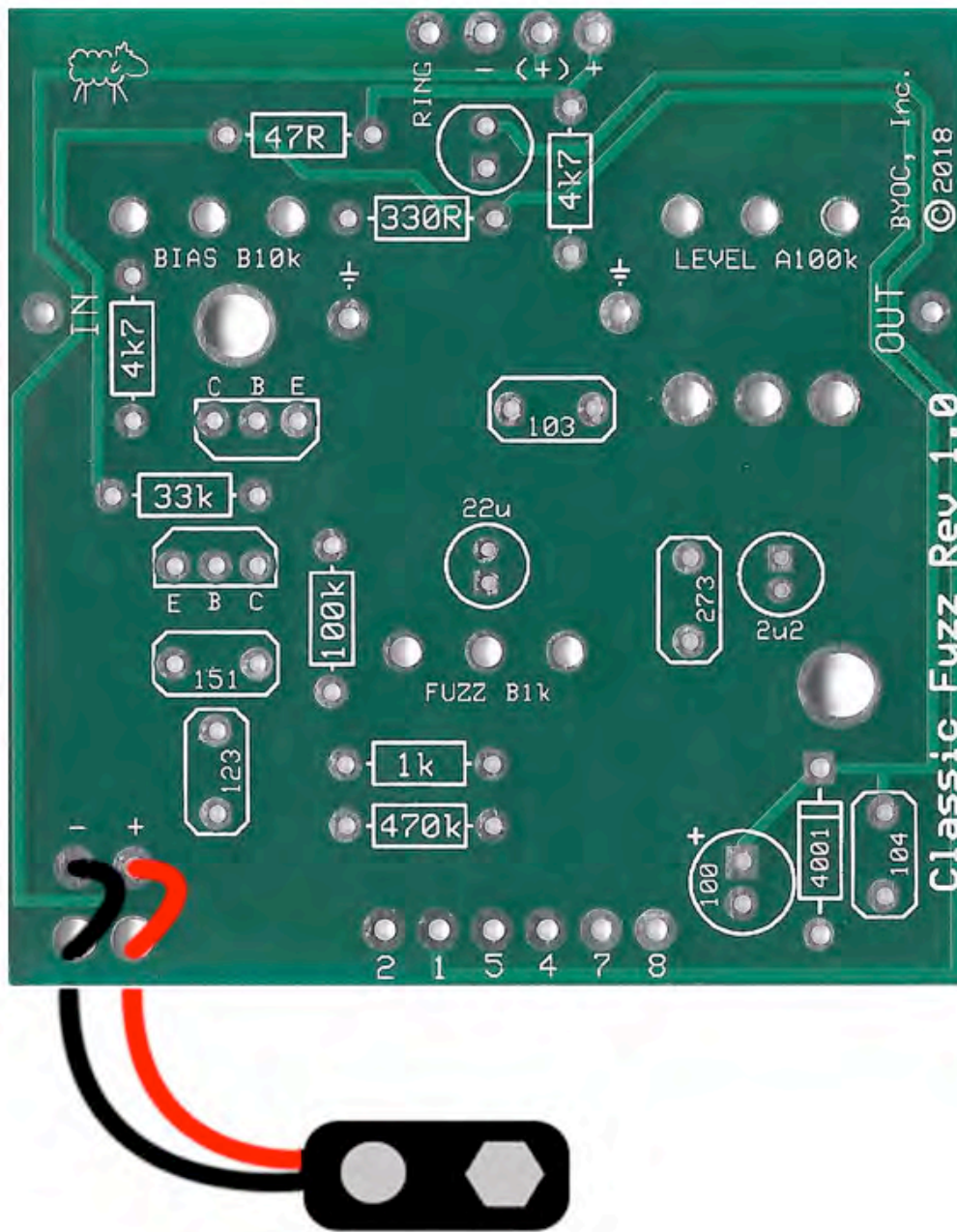


**Step 5:** Add the aluminum electrolytic capacitors. The aluminum electrolytic capacitors will be cylindrical in shape and have two legs. These are polarized meaning there is a positive and negative side. The longer lead will go into the square hole; this is the positive side. The negative side will go into the round hole, and usually will have a line along the body of the capacitor.



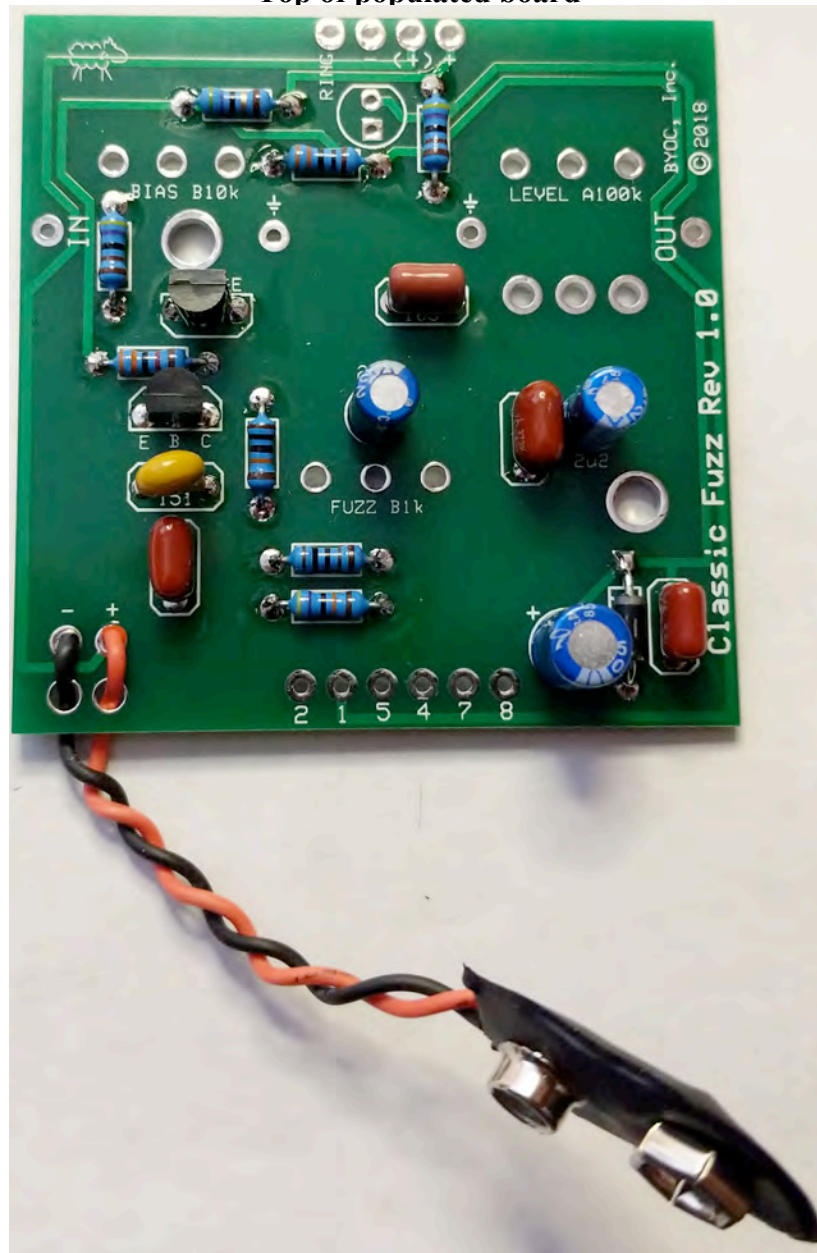


**Step 6:** Add the battery snap. Thread the solder ends of the battery snap into the strain relief holes from the bottom solder side of the PCB and out through the top. Insert the solder ends of the battery snap wires into the topside of their respective solder pads. Solder on the bottom side of the PCB. **Remember the red wire goes in the “+” hole and the black wire goes in the “-” hole.**



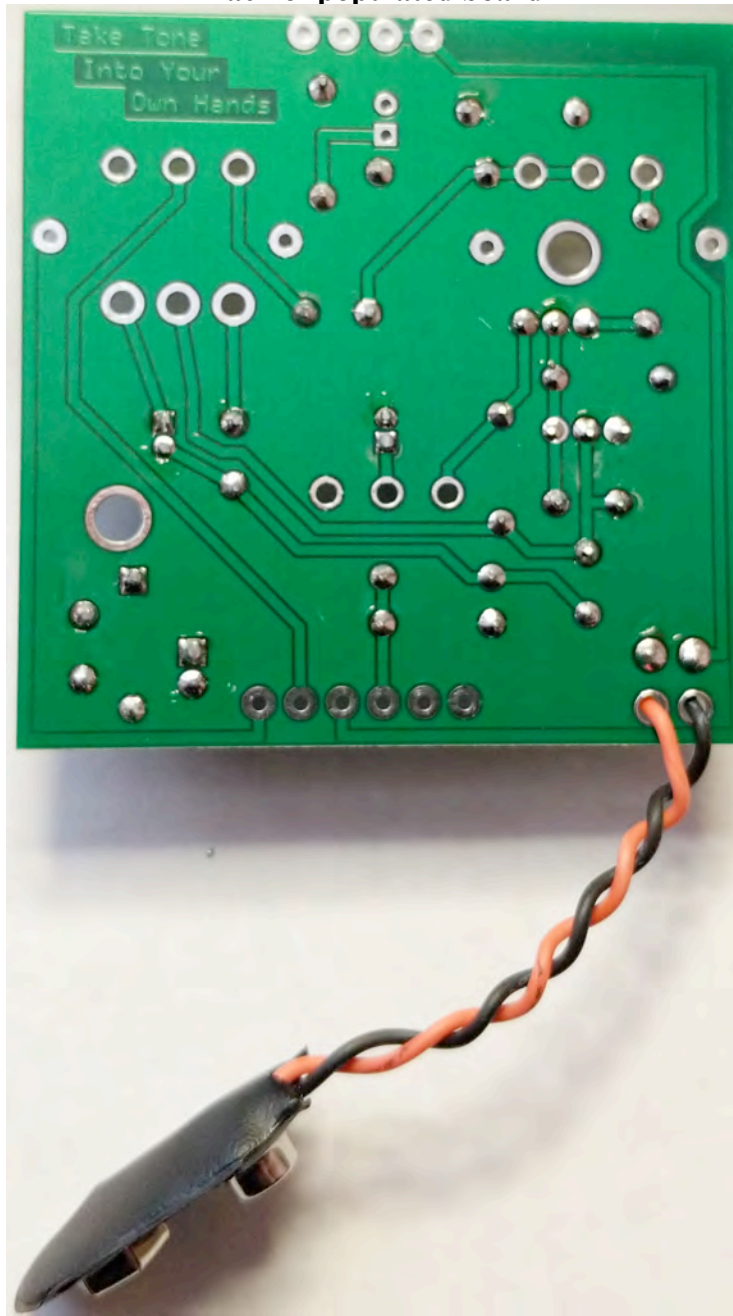


**Top of populated board**



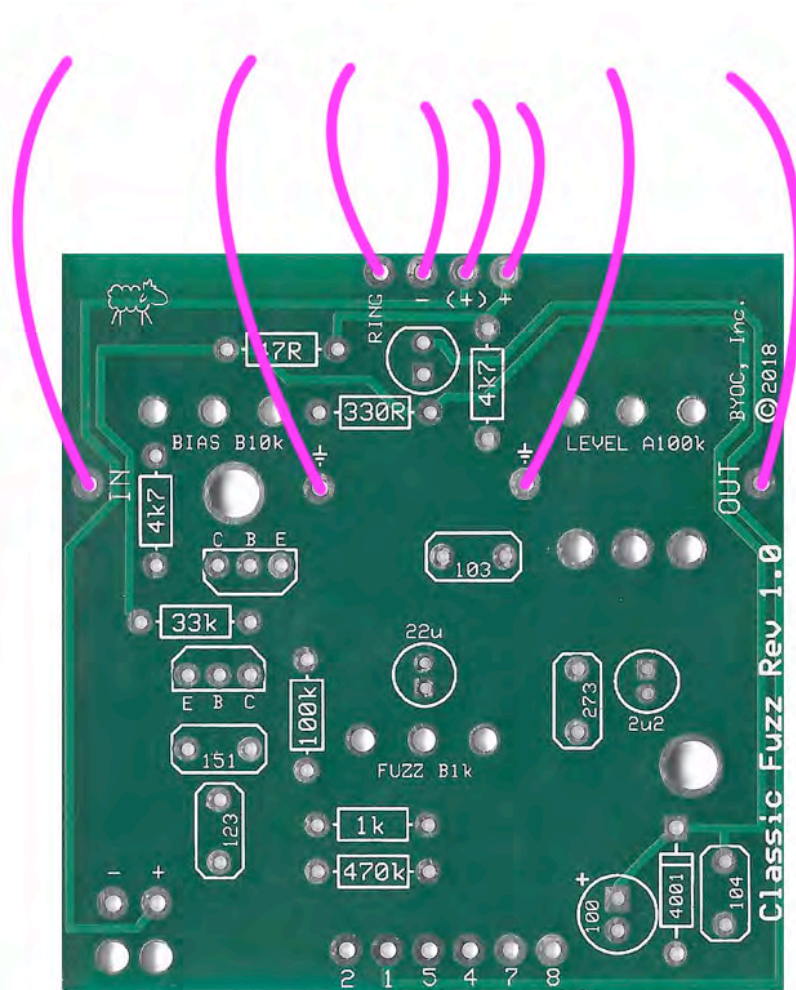
**At this point, your board will look like this. If it doesn't, go back and fix any issues you might have.**

### Back of populated board



**This is what the back of your populated board will look like. Note the clean, shiny solder joints, the close trim of the back leads, and the lack of solder bridges or stray bits of solder. If you have long leads on the back-side, or have blobby or dull solder joints, go back over them with a hot soldering iron, also known as ‘reflowing’ to achieve a clean solder joint.**

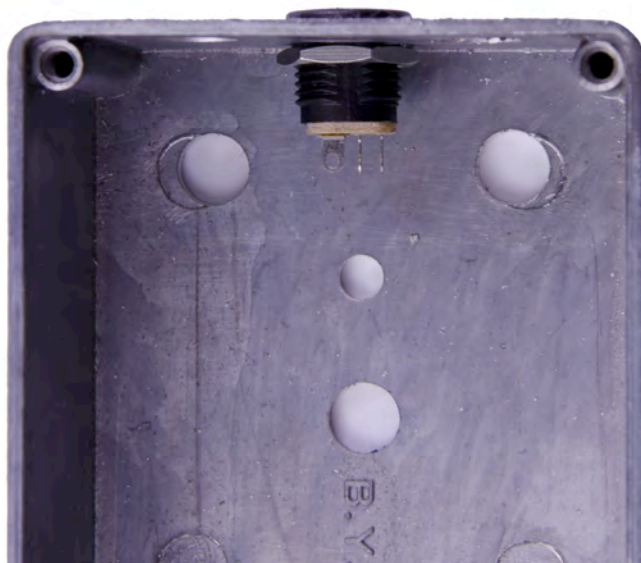
**Step 7:** Add wires to the IN, OUT, RING, two Ground eyelets, and DC adapter eyelets. Start by cutting five 2.5" pieces of wire, and three 1" pieces. Strip 1/4" off each end and tin the ends. Tinning means to apply some solder to the stripped ends of the wires. This keeps the strands from fraying and primes the wire for soldering. Solder a 2.5" piece of wire to each of the IN, OUT, RING, and Ground eyelets on the PCB. Solder a 1" piece to each of wire to the DC adapter jack eyelets on the PCB. Load the wires in from the top and solder on the bottom of the PCB.



# Main PCB Assembly

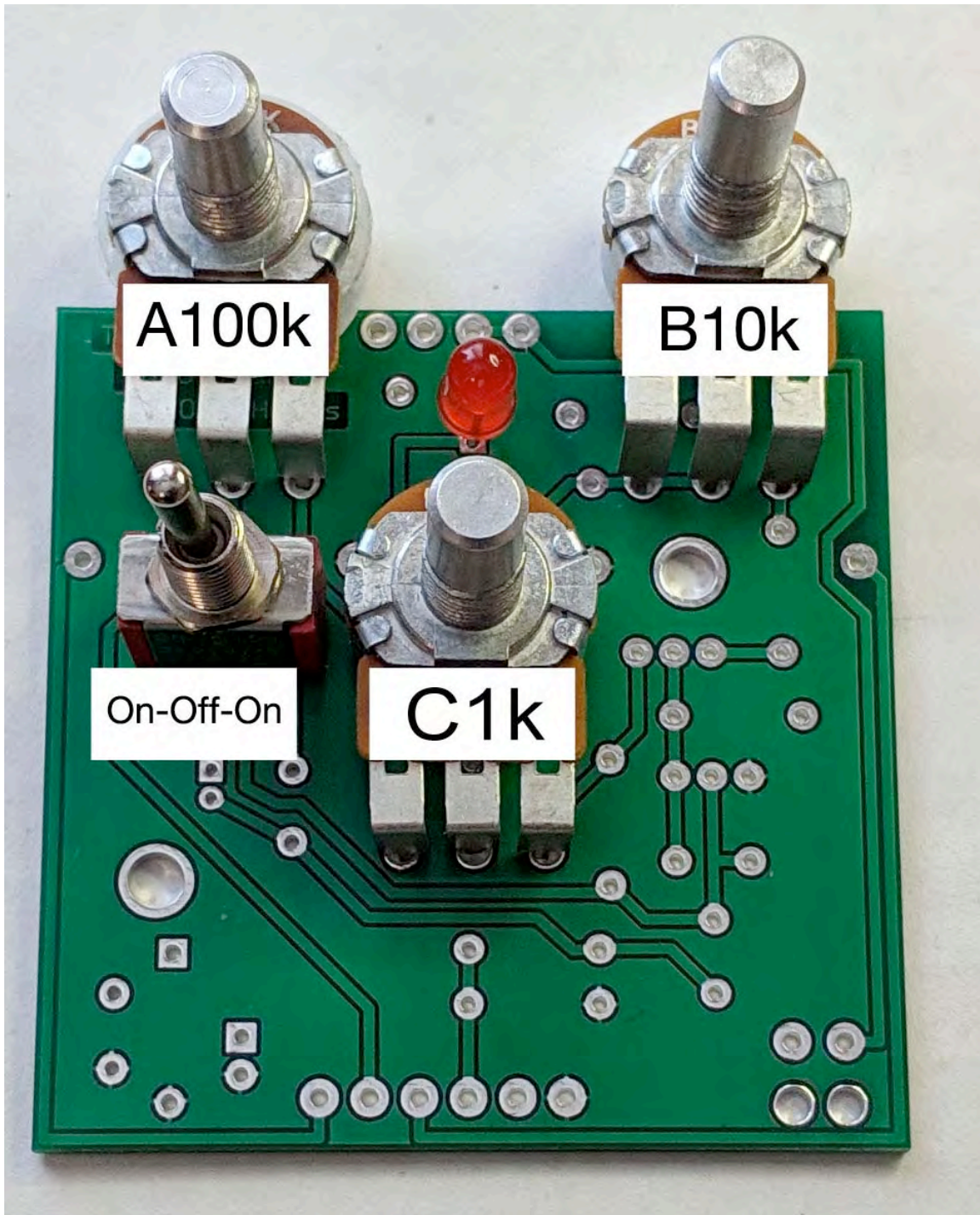


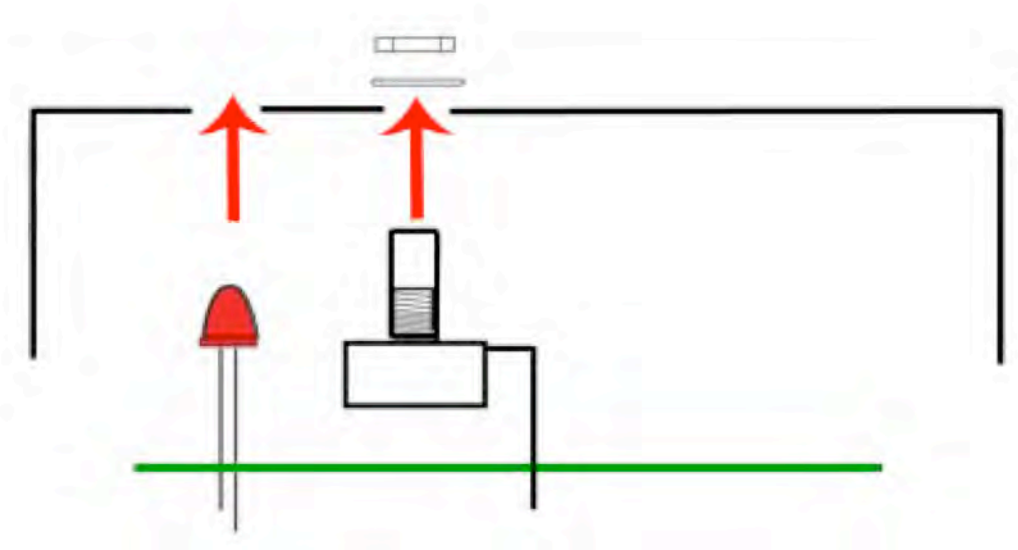
**Step 1:** Mount the AC adapter jack to the enclosure. Your kit may come with either an external thread or internal thread. Don't get confused by this. They still function exactly the same. You just thread the external nut on the outside and the internal nut on the inside. The picture below is of an internal nut jack.





**Step 2:** Flip the PCB over so that the bottom or solder side is up. Insert the C1k (FUZZ), A100k (VOLUME), B10k (BIAS) potentiometers, the toggle switch, and the LED into the bottom side of the PCB. **DO NOT SOLDER ANYTHING YET!!!** The LED will have one lead that is longer than the other. **MAKE SURE THE LONGER LEAD GOES IN THE SQUARE HOLE.**

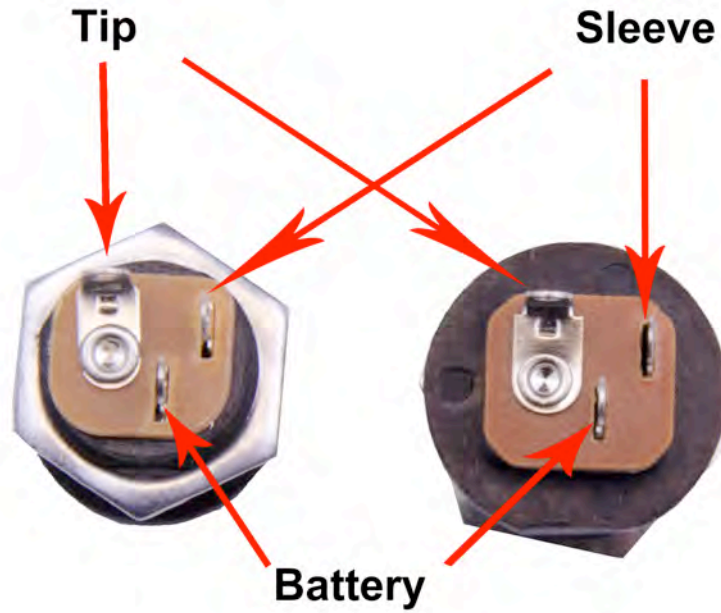




**Step 3:** Hold the PCB in one hand so that the component side of the PCB is in the palm of your hand and the bottom side with the pots, toggle switch and LED is facing up. Now use your other hand to guide the predrilled enclosure onto the PCB assembly so that the pots and LED all go into their respective holes. Once the PCB assembly is in place, secure it by screwing on the washers and nuts for the pots. Only tighten them with your fingers. **You do not want them very tight yet.**

**Step 4:** Turn the entire pedal over so that the component side of the PCB is facing up. Lift the PCB up off the pots about 2mm just to make sure that the back of the PCB does not short out against the pots. Make sure the PCB is level and symmetrically seated inside the enclosure.

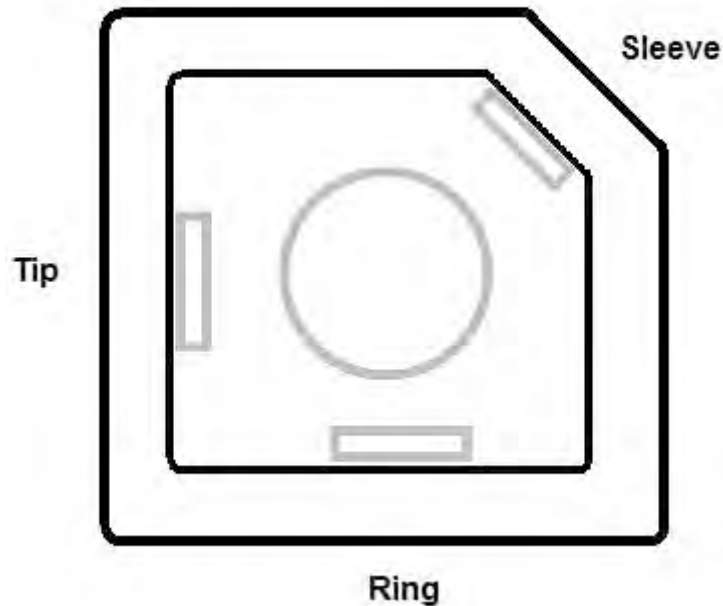
**Step 5:** Solder the pots, switch, and LED. You will solder these parts on the component side of the PCB. After you have soldered them in place, be sure to tighten up their nuts.



**Step 6:** Connect the TIP (negative) terminal of the DC adaptor jack to the eyelet on the PCB labeled “-“. Connect the SLEEVE of the DC adaptor jack to the eyelet on the PCB labeled “+”. Connect the battery disconnect terminal of the DC adaptor jack to the eyelet on the PCB labeled “(+)”. See diagram on the next page.

# WIRING

## Enclosed Jack



You will want to place the jacks into the enclosure so the sleeve terminal is facing the right like the picture below. Be sure to remember the lock washers so the jacks don't spin on their own.

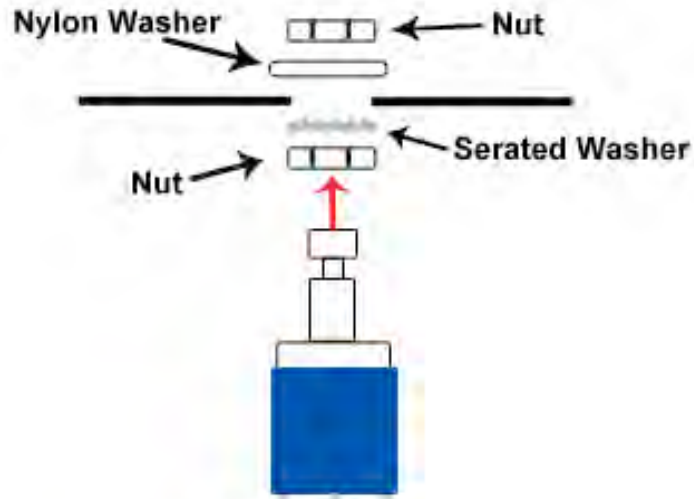
**Step 1:** Install the 1/4" Enclosed jacks.

**Step 2:** Install the footswitch. Orient the footswitch so that the flat sides of the solder lugs are like the diagram below.

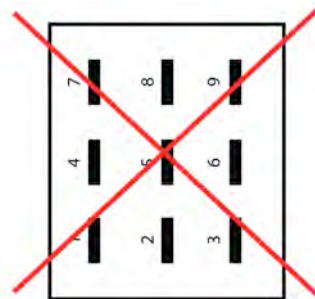
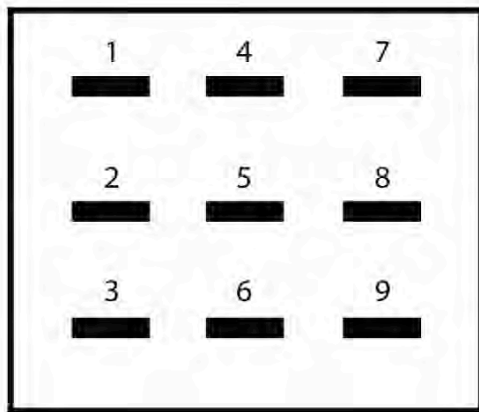
**NOTE:** There are no actual number markings on the footswitch. There are two correct ways you can orient the footswitch. They are both 180 degrees of each other. Either way is fine. It does not matter as long as the flat sides of the solder lugs are running horizontal, not vertical.

**NOTE:** It may be easier to wire up the foot switch before installing it into the pedal. There will be more room to work & it will be much easier to thread the lug 4 to lug 9 jumper.



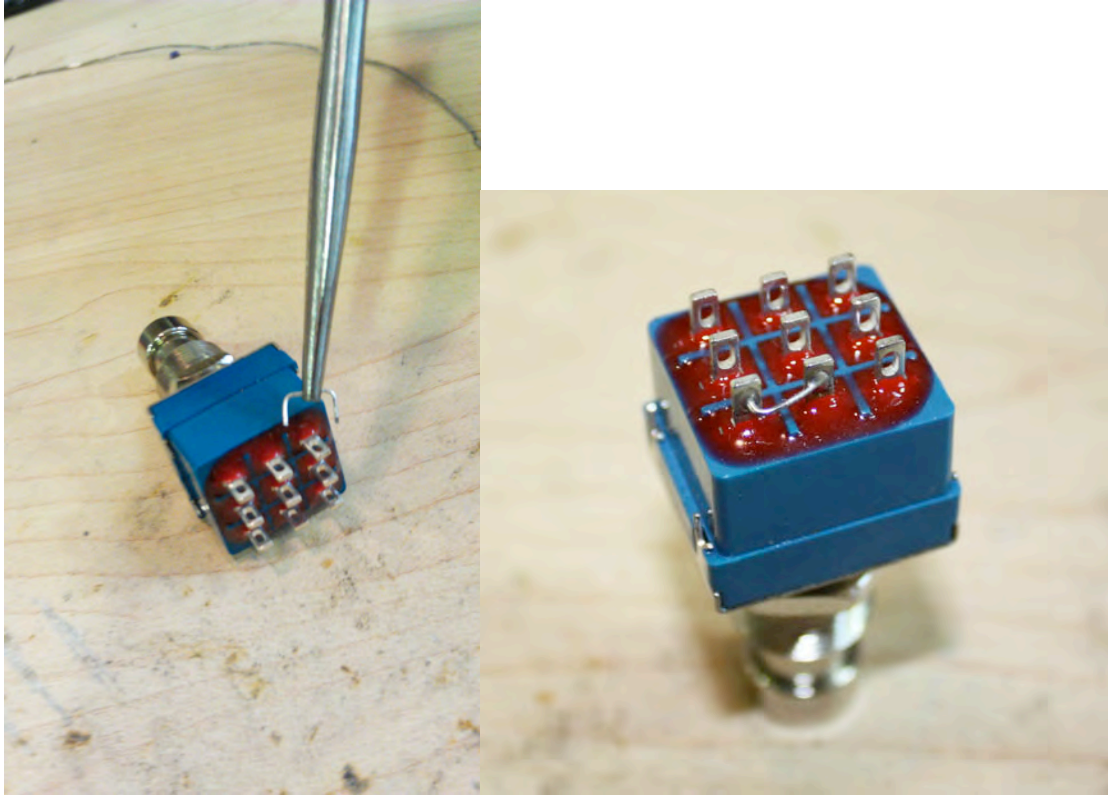


### FOOT SWITCH SOLDER LUG DESIGNATIONS

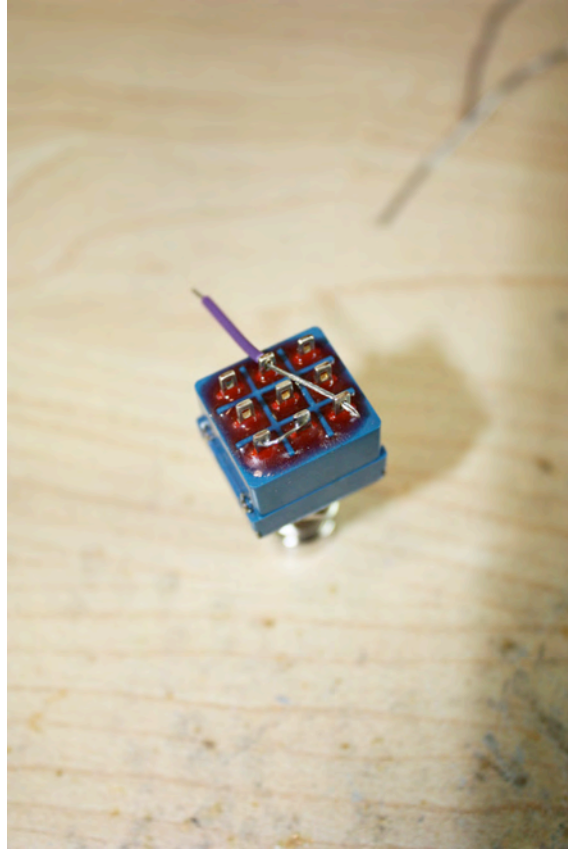


#### Step 3: Wiring the foot switch.

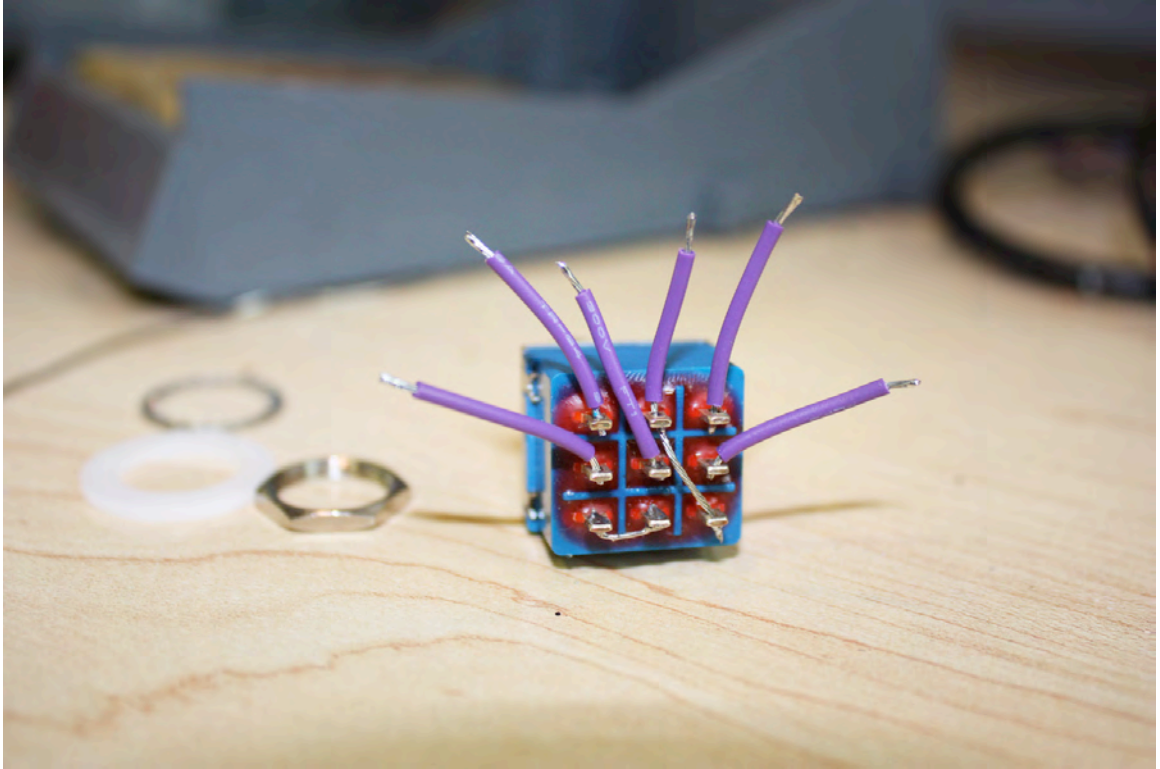
- Make a jumper between lugs 3 & 6 from clippings from the resistors. Simply use your needle nose pliers to make a U shape & insert into lugs 3 & 6, then solder.



- Cut a 1.5" piece of wire. Strip 1/8" of one end. Strip 1/2" off the other end. Tin both ends. This will be used to connect lug/eyelet 4. The longer stripped end will be used to jumper lug 4 to 9.



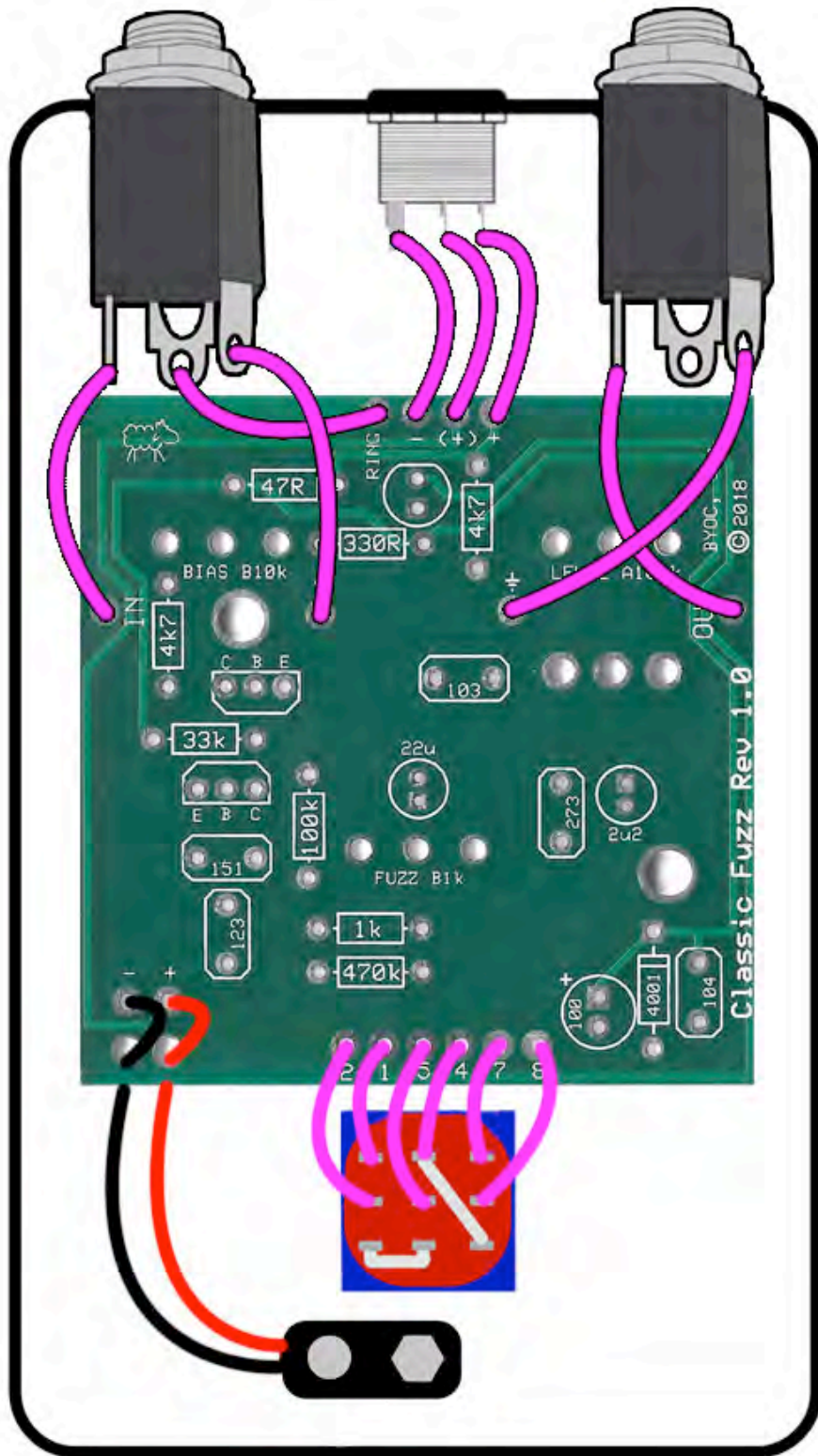
- Cut two 1" pieces of wire. Strip 1/8" off each end and tin. These will be used to connect lugs/eyelets 1 & 7
- Cut three 1.25" pieces of wire. Strip 1/8" off each end and tin. This will be used to connect lugs/eyelets 2, 5, & 8



**Step 4:** Install the foot switch into the enclosure if it isn't already. Insert the foot switch wires into their respective eyelets on the PCB. You can insert them into the top side and solder on the top side as well. The solder pads should be large enough (if you are using a soldering iron that isn't too big) to allow you to do this without burning the PVC coating on the wires if you are careful. If you do singe the plastic on the wires, it's OK. It's not going to hurt anything. It's purely aesthetic.

**Step 5:** Connect the pre stripped and tinned wires to the 1/4" jack. Your kit provides purple wire; you may choose to decorate these in a wire color of your choice





## Operating Overview



**Level:** This controls the overall output volume.

**Bias:** This controls the voltage to Q2. Use it to adjust the characteristic of the fuzz effect.

**Fuzz:** This controls the amount of fuzz in the effect.

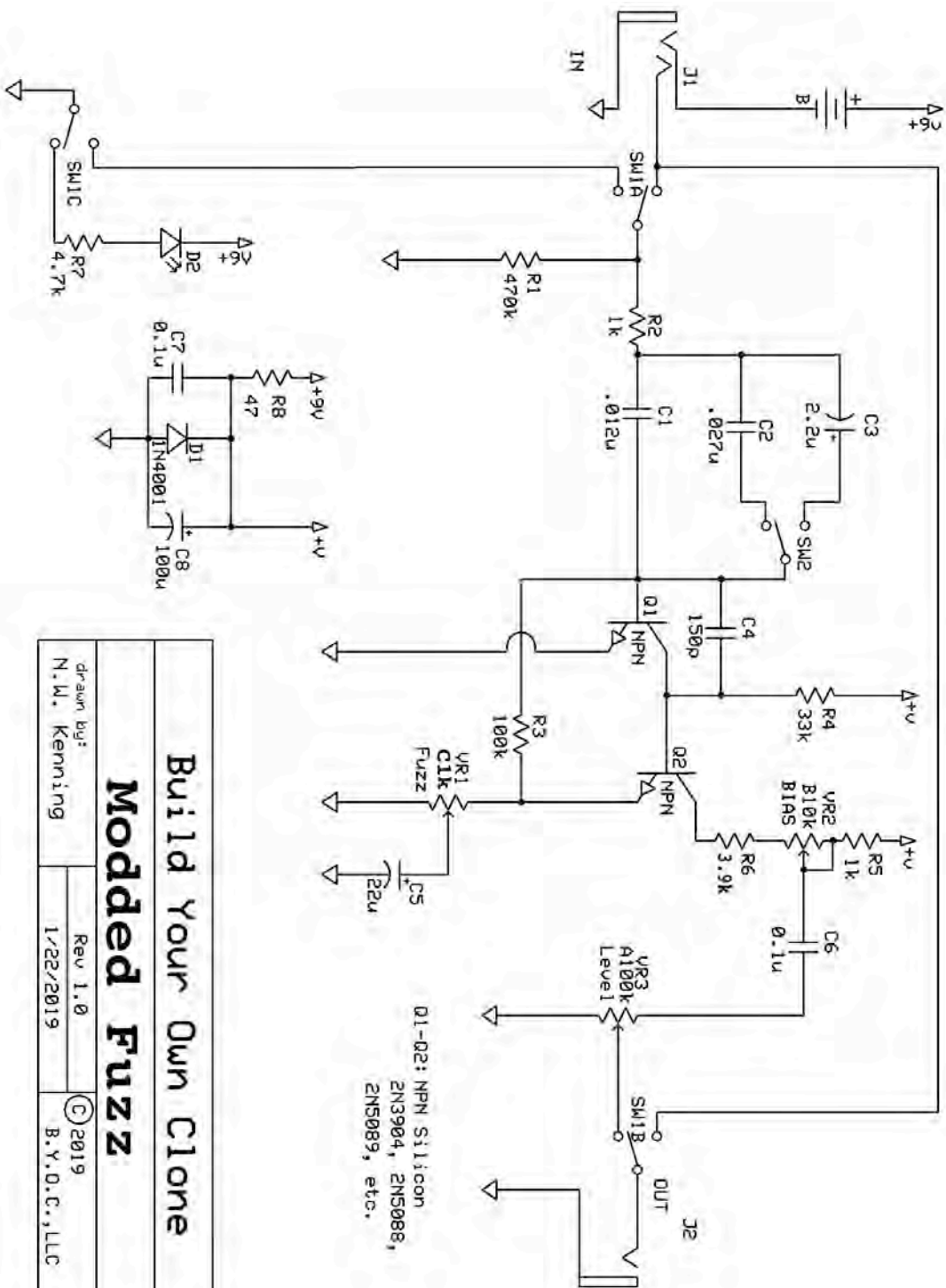
**Tone Toggle:** This allows you to select between three different input capacitors to fine tune the overall tone of the effect; FULL, THIN, and FAT.

**Power Supply:** 9V battery or 2.1mm negative-tip 9VDC adapter.

**Current Draw:**

**Input Impedance:** 470k ohms

**Output Impedance:** 100k ohms



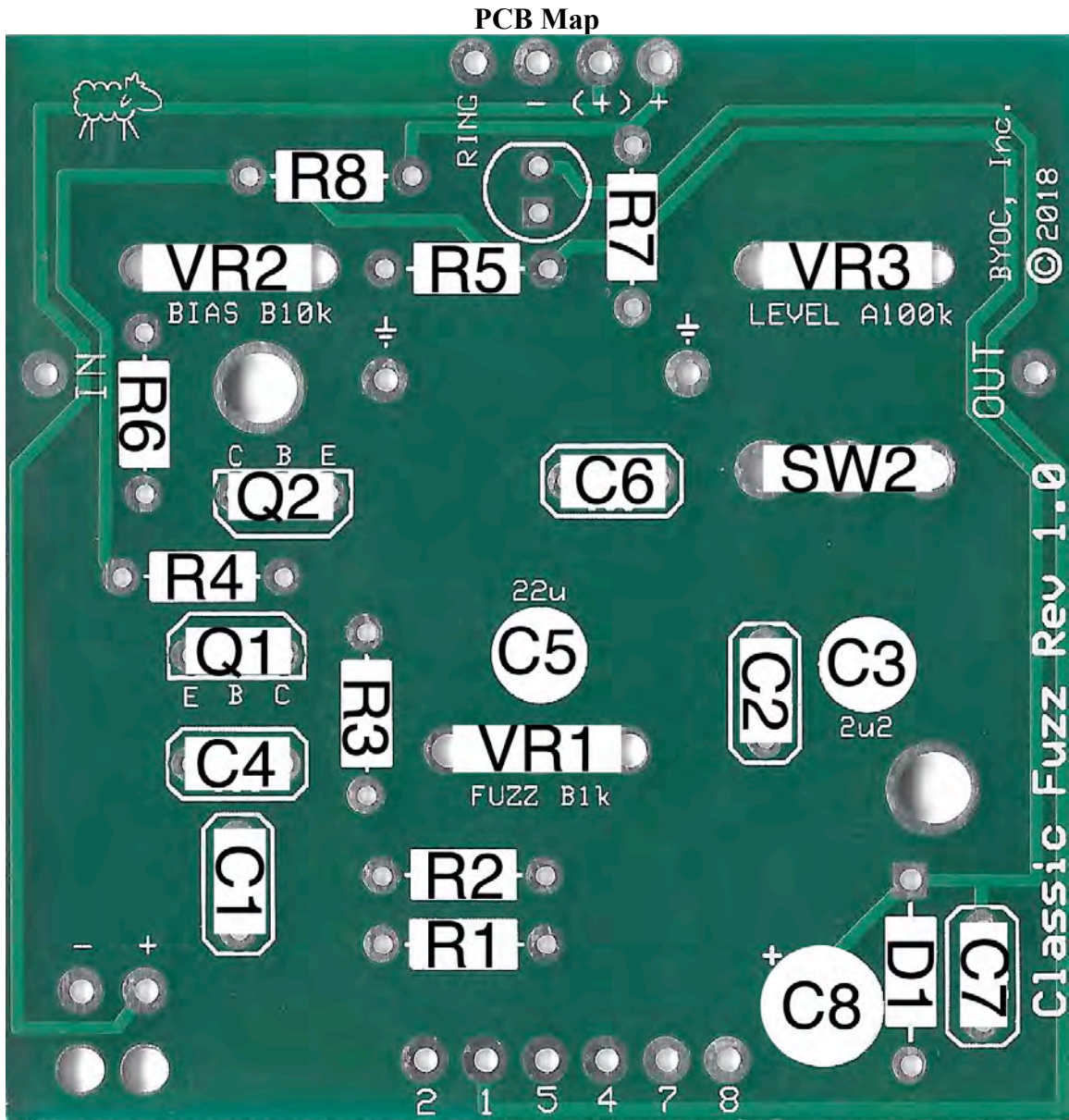
Q1-Q2: NPN Silicon  
 2N3904, 2N5088,  
 2N5089, etc.

# Build Your Own Clone Modded Fuzz

drawn by:  
 N.W. Kenning

Rev 1.0  
 1/22/2019

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 B.Y.O.C., LLC



The numbers above correspond to the component numbers on the schematic above. This will help troubleshoot any issues you might have after your build is complete. Note that the PCB may say “classic fuzz” but the layout is still the same as the modded fuzz.