

Build Your Own Clone 5 Knob Compressor 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 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 delivery 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 manner. 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.

<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 are 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. (not just, “It doesn’t work, help”)
2. Pic of the top side 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 answer yes to 6 and 7, what does the pedal do when it is "on"?
9. Battery or adapter.(if battery, is it good? If adapter, what type?)

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Parts Checklist for BYOC 5 Knob Compressor

Resistors:

- 2 - 1k (brown/black/black/brown/brown)
- 1 - 4k7 (yellow/purple/black/brown/brown)
- 1 - 7k5 (purple/green/black/brown/brown)
- 12 - 10k (brown/black/black/red/brown)
- 3 - 27k (red/purple/black/red/brown)
- 1 - 47k (yellow/purple/black/red/brown)
- 3 - 56k (green/blue/black/red/brown)
- 2 - 150k (brown/green/black/orange/brown)
- 2 - 220k (red/red/black/orange/brown)
- 5 - 470k (yellow/purple/black/orange/brown)
- 4 - 1M (brown/black/black/yellow/brown)

Capacitors:

- 1 - 220pf ceramic disc (small orange labelled 221)
- 2 - 1n0 film
- 3 - 10n film
- 1 - 33n film
- 6 - 100n film
- 5 - 1 μ f aluminum electrolytic
- 2 - 10 μ f aluminum electrolytic
- 1 - 220 μ f aluminum electrolytic

Diodes:

- 1 - 1N4001 (larger black plastic with silver stripe)
- 2 - 1N4148 (smaller orange glass with black stripe)

Transistors:

- 7 - 2N5088

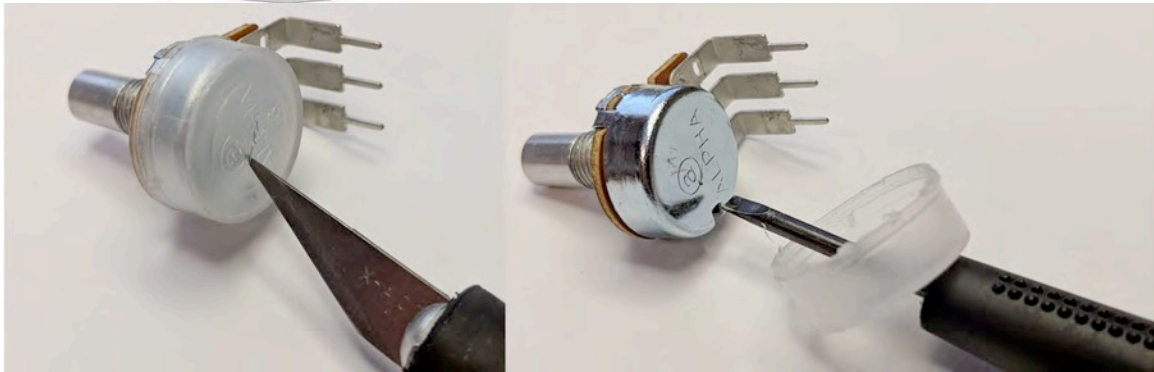
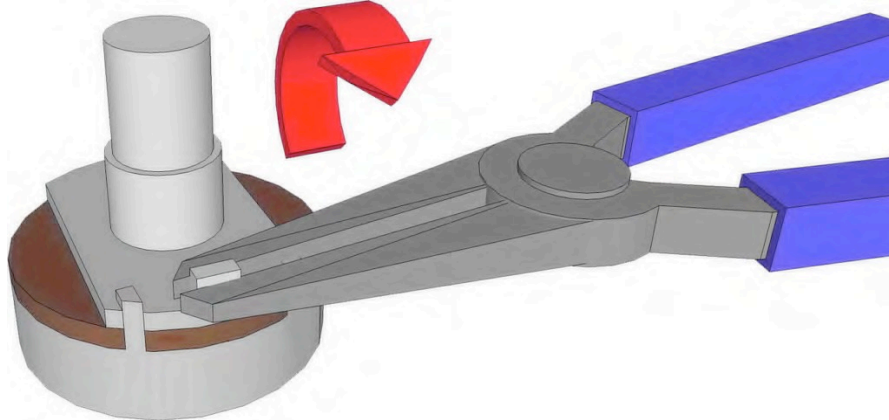
IC's:

- 1 - BA6110
- 1 - 9 pin strip socket

Trimpots:

- 1 - 2k

Potentiometers: Be sure to snap off the small tab on the side of each panel mounted pot. If your pots have covers, remove them before continuing. You might have to cut a slit in the cover with a blade and use a small screwdriver to get leverage.

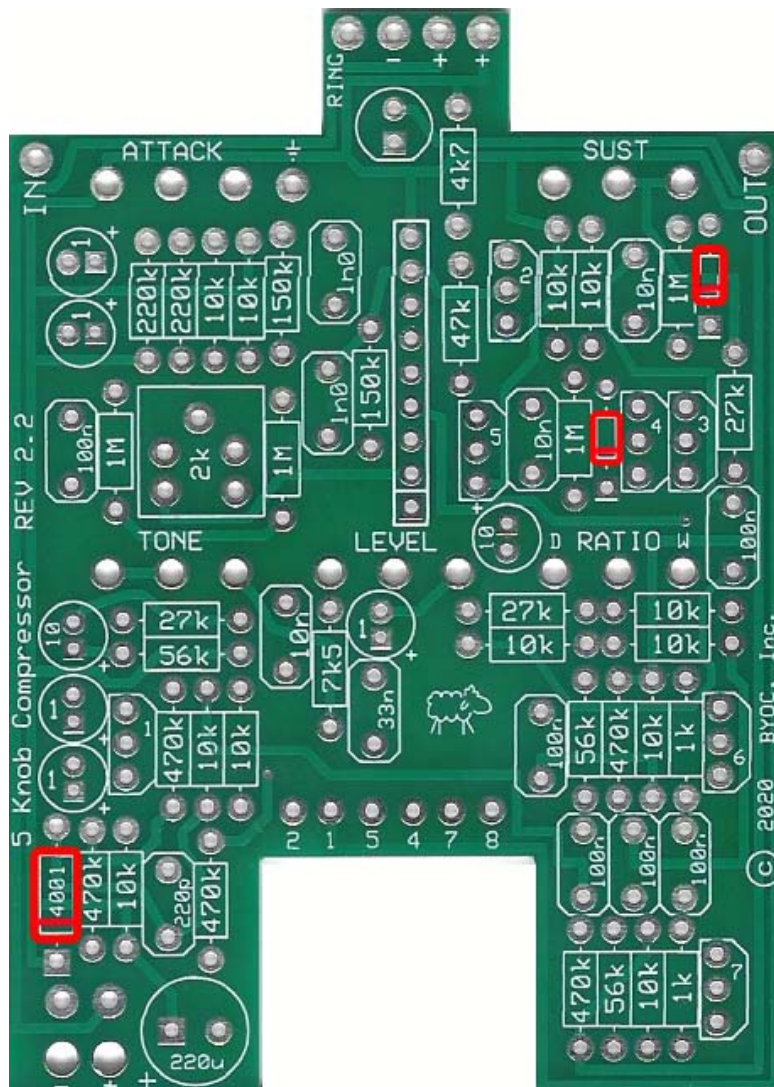


- 1 - B500k linear (Sustain knob)
- 1 - C250k reverse audio (Attack knob)
- 2 - A100k audio (Level & Tone knobs)
- 1 - B10k linear (Ratio knob)

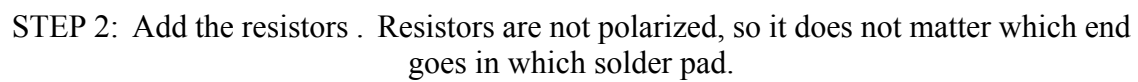
Hardware:

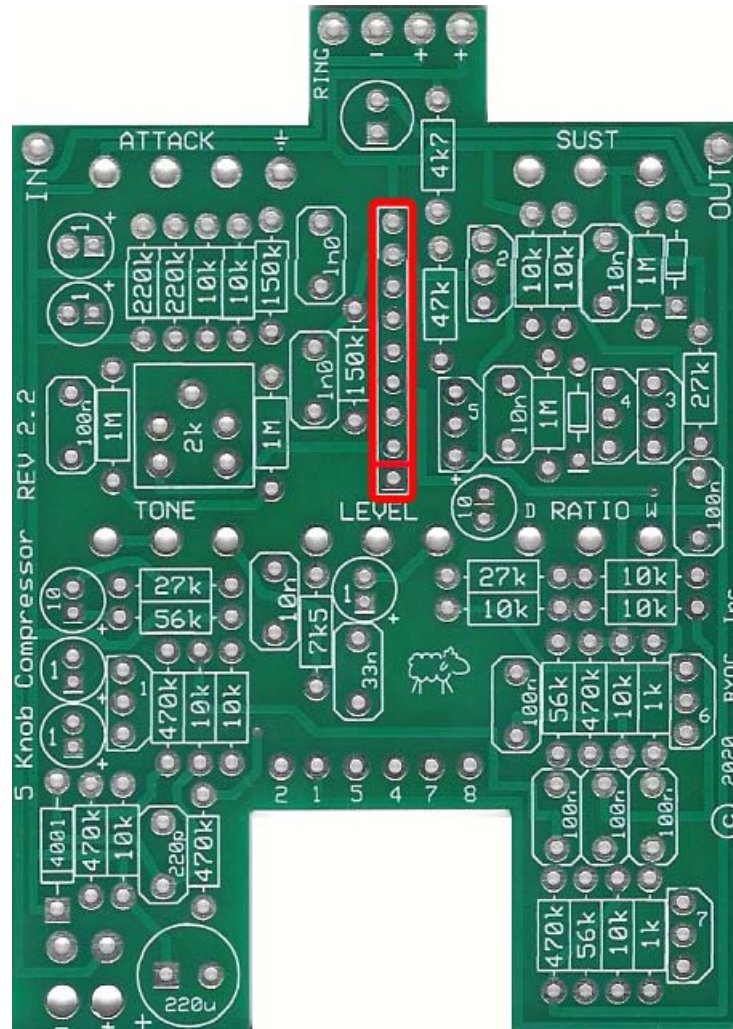
- 1 - drilled enclosure w/ 4 screws
- 1 - byoc 5 Knob Compressor PCB
- 1 - mono Footswitch PCB
- 1 - 2 x 4 pin header
- 1 - 2 x 4 pin header socket
- 1 - 3PDT footswitch
- 5 - knobs
- 1 - AC adaptor jack
- 1 - 1/4" mono jack
- 1 - 1/4" stereo jack
- 1 - red LED
- 1 - battery snap
- hook-up wire

Populating the Circuit Board



STEP 1: Add the diodes. Be sure to match the end of the diode with the stripe to the layout on the PCB. The stripped end should go in the square solder pad.

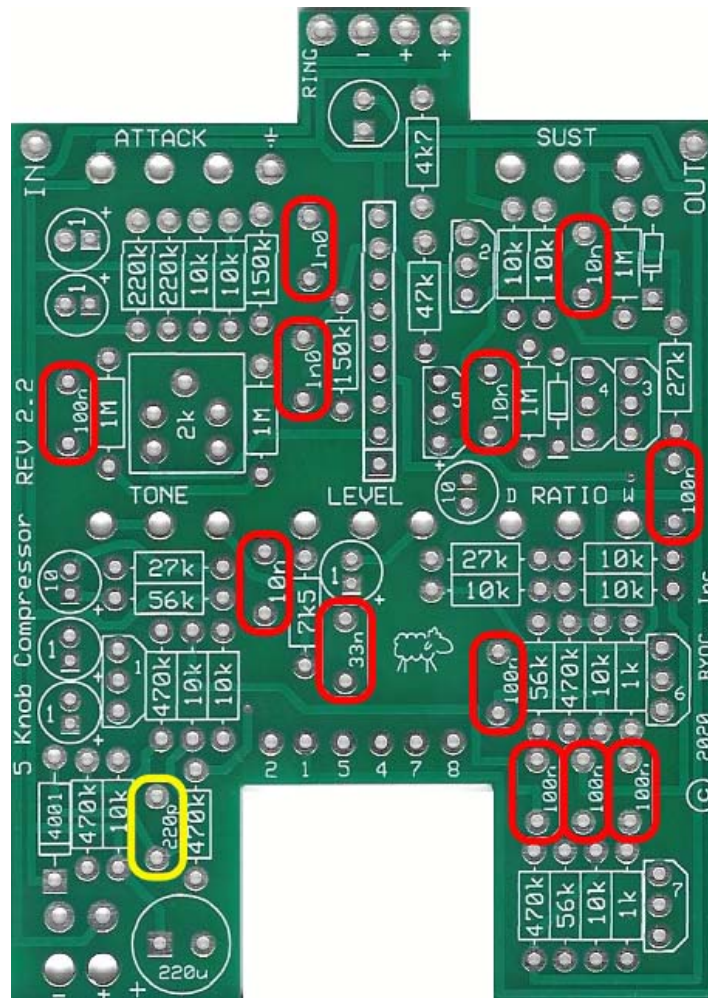




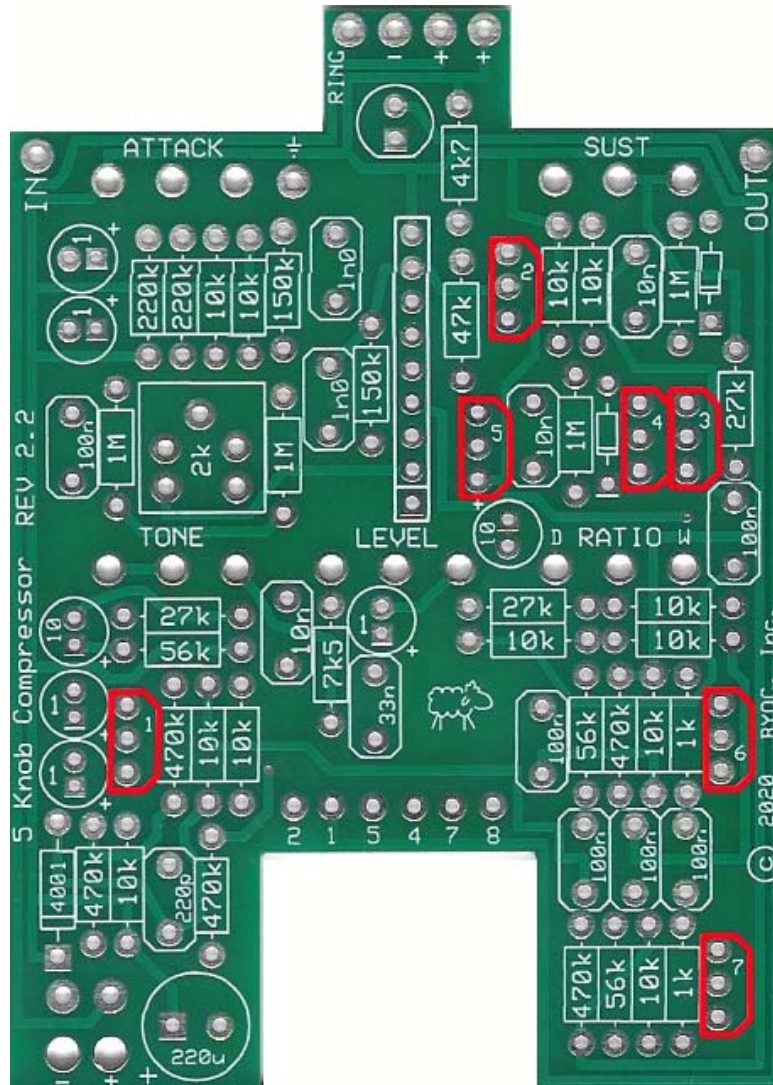
Step 3: Add the 9 pin strip socket.

Do not solder the actual BA6110 chip to the PCB or 9-pin socket. Only solder the 9-pin socket to the PCB. You will insert the BA6110 into the socket once you have completed the build. You will orient the chip so that the end that has the notch will be pointing towards the word “LEVEL” printed on the PCB, or pointing towards the footswitch.

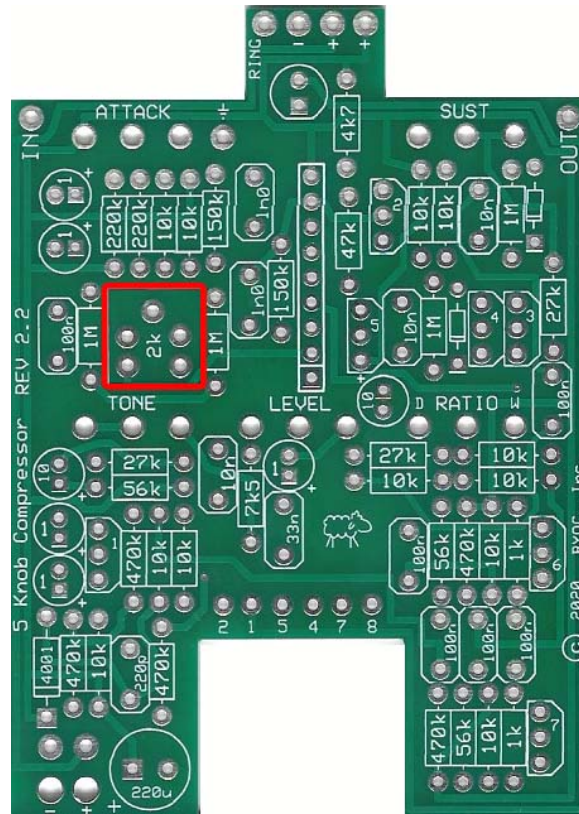
Note: The BA6110 will require a bit of force to get it securely into the socket. You should not use your fingers. Use a pair of pliers. You will definitely be able to feel when the chip is in the socket all the way. If the chip is even slightly loose or wiggles at all, you did not put it in the socket all the way.



STEP 4: Add the film and ceramic disc capacitors. These are not polarized so they can be inserted into the PCB in either direction. The ceramic disc cap is highlighted in yellow.



STEP 5: Add the transistors. Orient the transistors so that the flat side matches up with the flat side of the PCB layout.



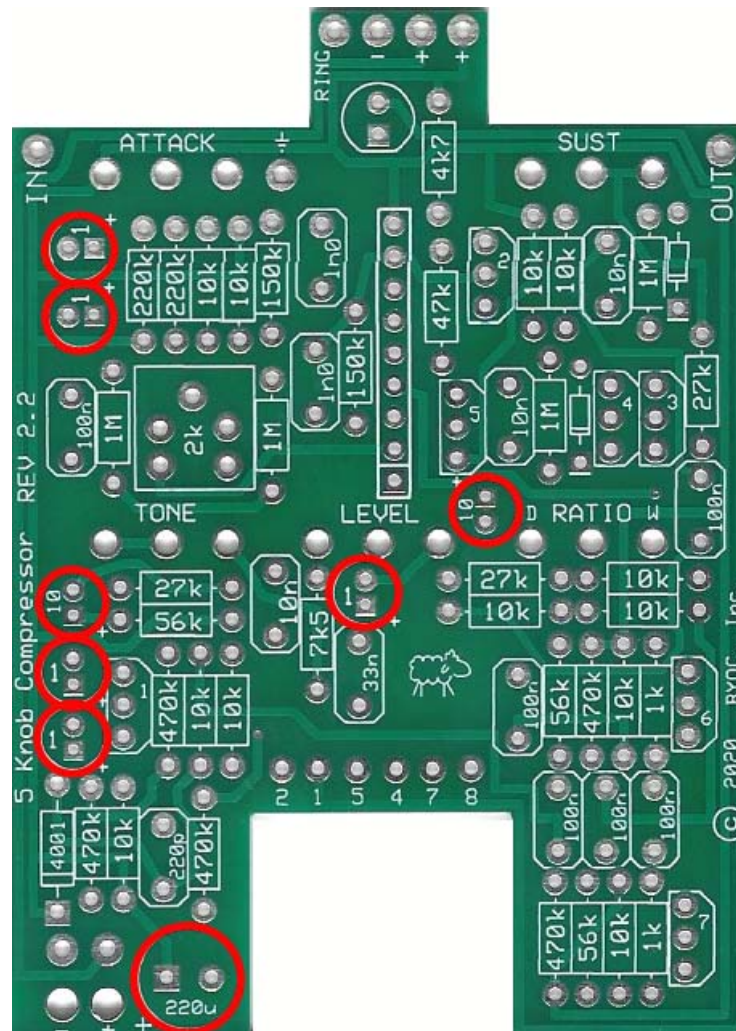
Step 6: Add the 2k trimpot. Note that the PCB has 5 holes, but the actual trimpot itself will only have 3 leads. This is so that the PCB can accommodate a variety of different makes and model of trimpots. There should only be one way in which the trim pot provided with your kit fits easily into the PCB.

ADJUSTING THE TRIMPOT:

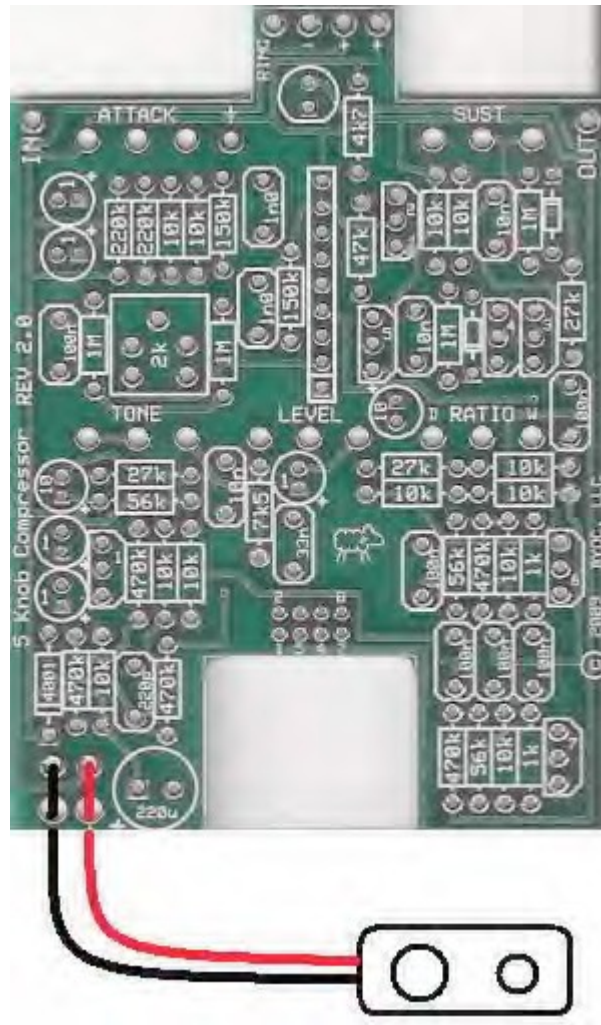
Once you have completed your build, you will need to adjust the trimpot before the compressor will actually work. There is no specific voltage that you should try to set it for. Simply use your ears! You are setting it so that the compressor has the least amount of distortion. Start by setting the knobs as follows:

1. Sustain - full turn clockwise
2. Tone - full turn counter clockwise
3. Ratio - full turn clockwise
4. Attack - noon
5. Level - to taste

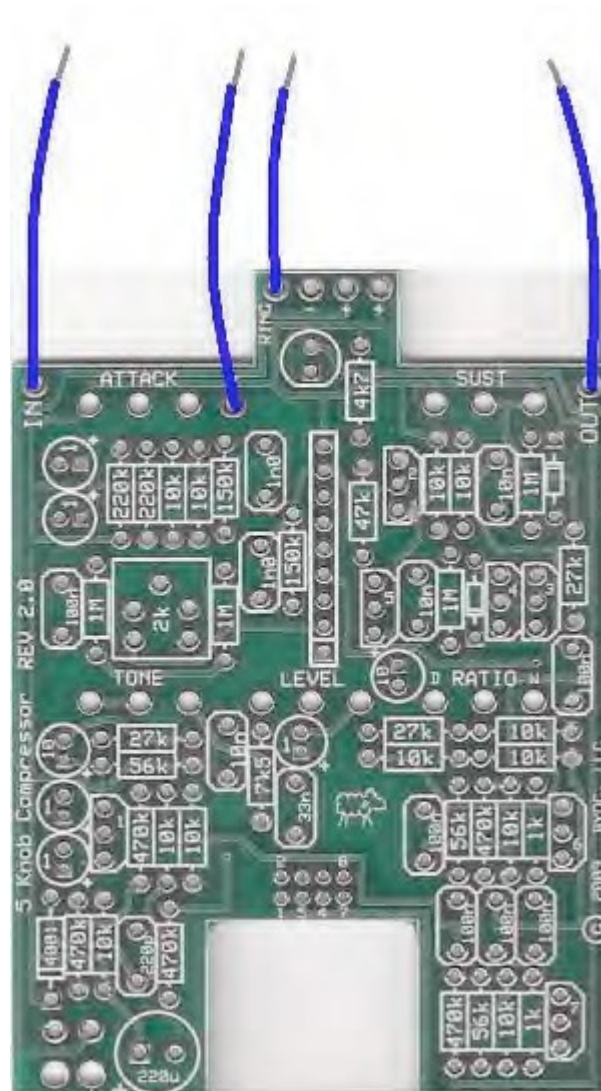
Plug into your guitar and amp. Make sure you have power to the pedal and the LED comes on. Strum a good hard chord. Slowly turn the trimpot till you find the setting that gives you the cleanest sound. It will usually be right at noon. If you have an 18VDC power supply, this is even better for setting the trimpot even if you don't plan on using an 18VDC power supply when you actually use the pedal. This because 18VDC will make the trimpot more sensitive and you will find the best setting more easily.



STEP 7: Add the aluminum electrolytic capacitors. These are polarized. The positive end will have a longer lead and should go in the square solder pad. The negative end will have a shorter lead with a black strip running down the body of the capacitor.



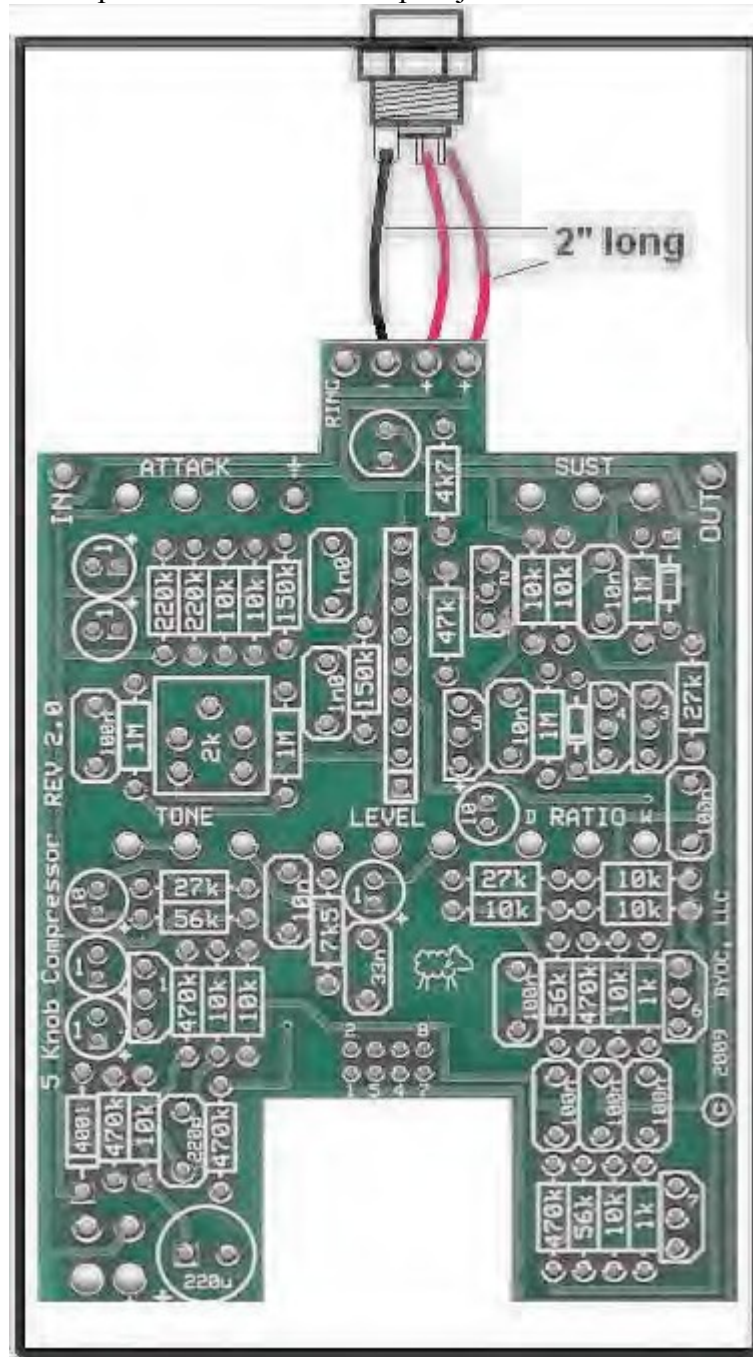
Step 8: Add the battery snap. Thread the solder ends of the battery snap into the strain relief holes from the bottom solderside of the PCB and out through the top. Insert the solder ends of the battery snap wires into the topside of their respective solder pads. Solder on the bottom side of the PCB. Remember the red wire goes in the “+” hole and the black wire goes in the “-” hole.



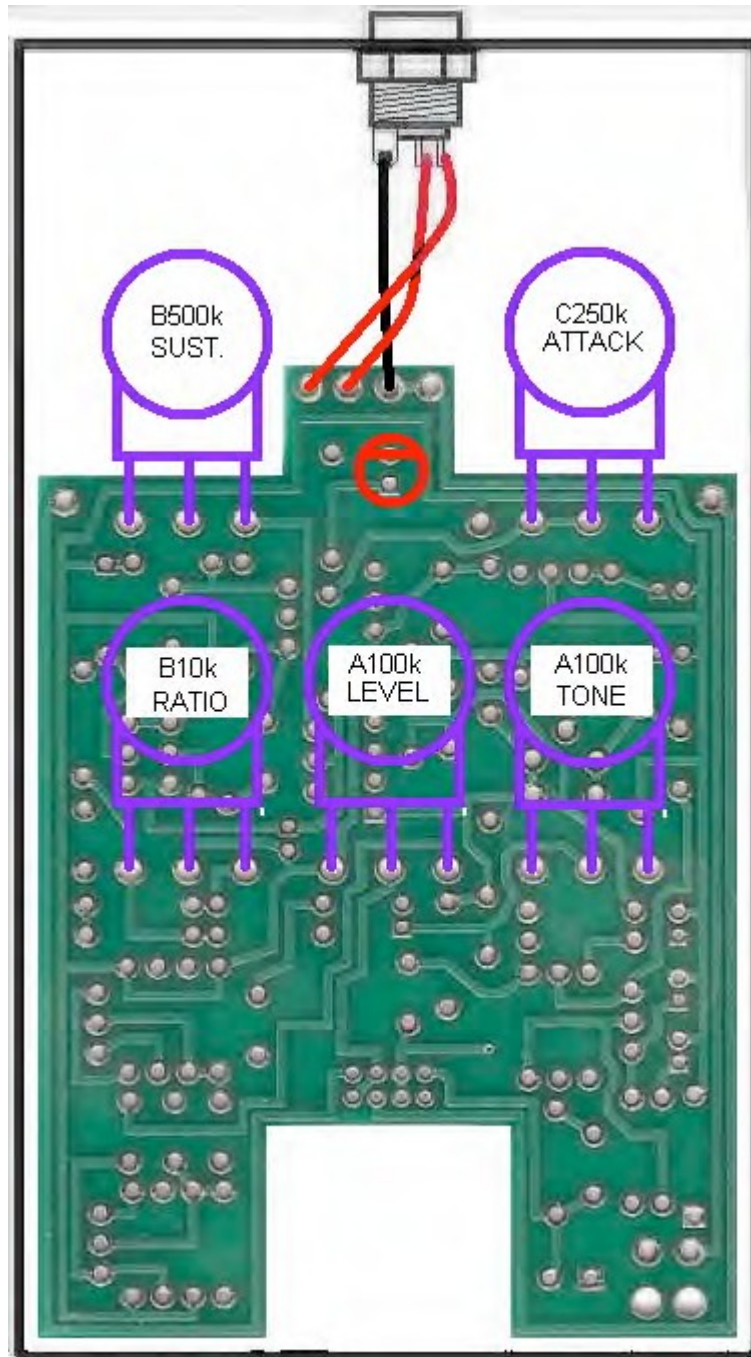
Step 9: Add wires to the IN, OUT, Ground, and RING eyelets. Start by cutting four 2.5" pieces of wire and one 1.5" piece of wire. Strip 1/4" off each end and tin the ends. Tinning means to apply some solder to the stripped ends of the wires. This keeps the strands from fraying and primes the wire for soldering. Solder a 2.5" piece of wire to each of the IN, OUT, and Ground eyelets on the PCB. Solder the 1.5" piece of wire to the RING eyelet on the PCB. Load the wires in from the top and solder on the bottom of the PCB.

Main PCB Assembly

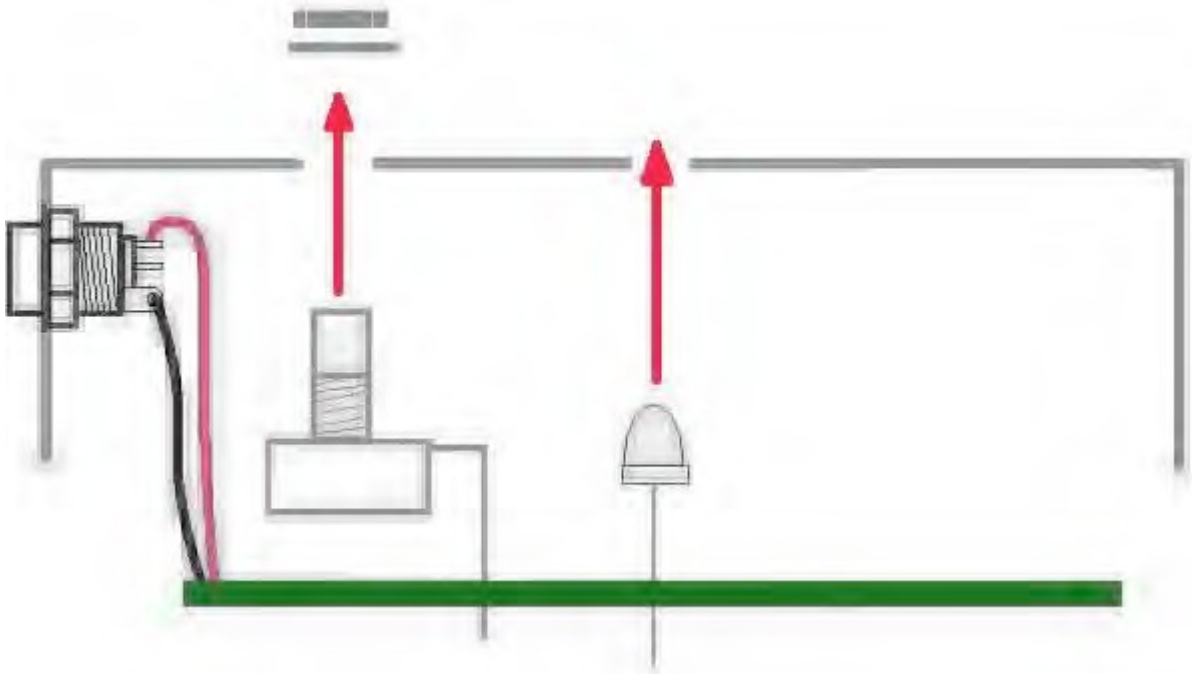
Step 1: Mount the DC adaptor jack to the enclosure.



Step 2: Connect the TIP (negative) terminal of the DC adaptor jack to the “-” eyelet on the PCB with 2 inches of hook up wire. Connect the SLEEVE of the DC adaptor jack to the “+” eyelet on the far right side of the PCB with 2 inches of hook up wire. Connect the battery disconnect terminal of the DC adaptor jack to the “+” eyelet more towards the center of the PCB with 2” of hookup wire. Load the wires in from the bottom of the PCB and solder on the topside.



Step 3: Flip the PCB over so that the bottom or solder side is up. Insert the A100k(tone), A100k(level), B500K(sustain), C250k (attack), B10k (ratio) potentiometers, **If your pots have covers, remove them before continuing. You might have to cut a slit in the cover with a blade and use a small screwdriver to get leverage.** Also insert the LED into the bottom side of the PCB. **DO NOT SOLDER YET!!!** The LED will have one lead that is longer than the other. The longer lead goes in the hole with the square solder pad.

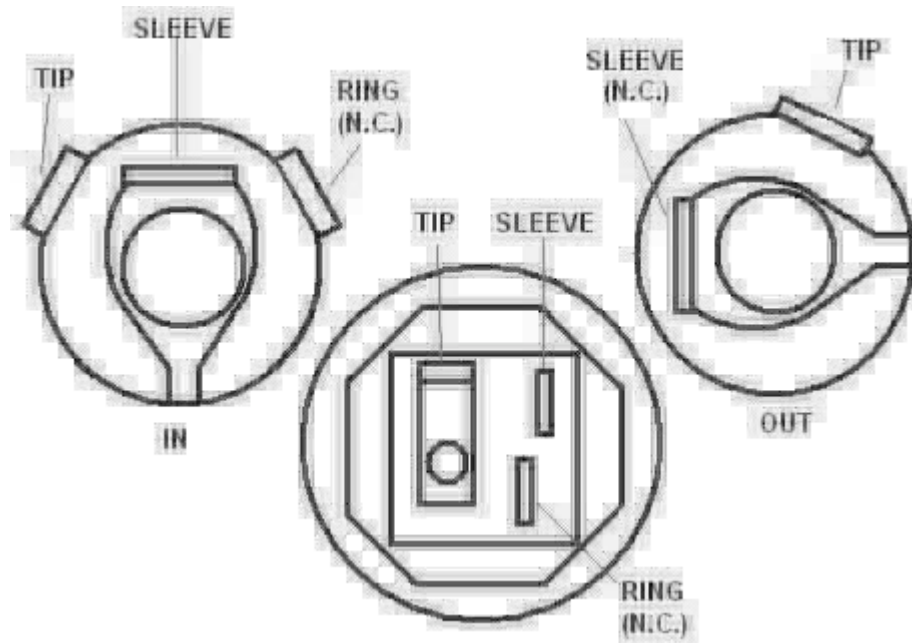


Step 4: Hold the PCB in one hand so that the component side of the PCB is in the palm of your hand and the bottom side with the pots, toggle switch and LED is facing up. Now use your other hand to guide the predrilled enclosure onto the PCB assembly so that the pots and LED all go into their respective holes. Once the PCB assembly is in place, secure it by screwing on the washers and nuts for the pots and toggle switch. Only tighten them with your fingers. You do not want them very tight yet. Be sure to keep your hand on the PCB so that it does not fall off the PC mounting posts of the pots and toggle switch.

Step 5: Turn the entire pedal over so that the component side of the PCB is facing up. Lift the PCB up off the pots and toggle switch 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.

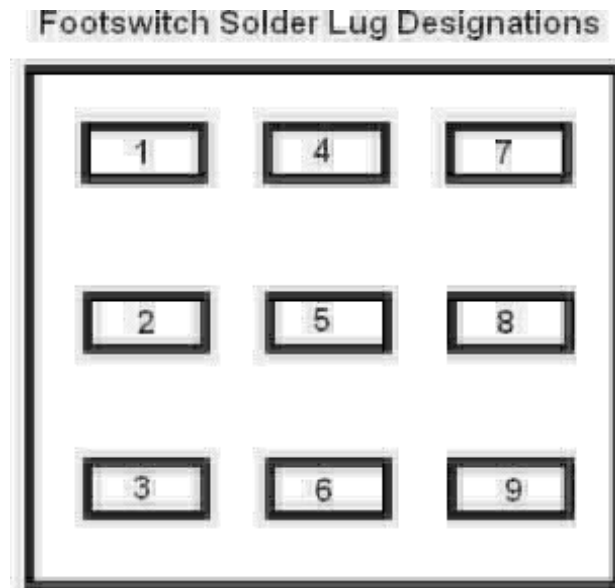
Step 6: Solder the pots and LEDs. You will solder these parts on the component side of the PCB. After you have soldered them in place, be sure to tighten up their nuts.

Wiring the jacks

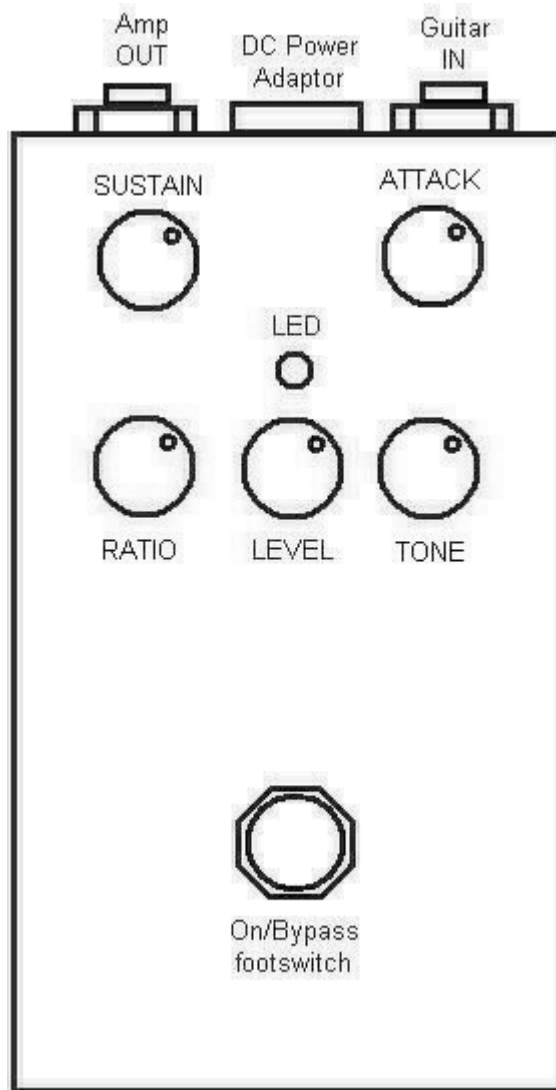


Step 1: Install the 1/4" jacks to the enclosure. Be sure to turn the OUT jack a 1/4 turn counter clockwise so that solder terminal for the tip does not short out against the enclosure

There are no actual number markings on the footswitch. Orient the footswitch so that the flat sides of the solder lugs are running horizontally, not vertically. There is no “top side” or “bottom side” of the switch until you actually solder something to it and designate it as such.



Operating Overview



LEVEL: Controls overall volume

RATIO: Controls the mix of dry & compressed signal. Clockwise = more compressed signal. Counter Clockwise = more dry signal

SUSTAIN: Controls the amount of sustain and sensitivity of the compression

ATTACK: Controls how quickly the compressor reacts to pick attack

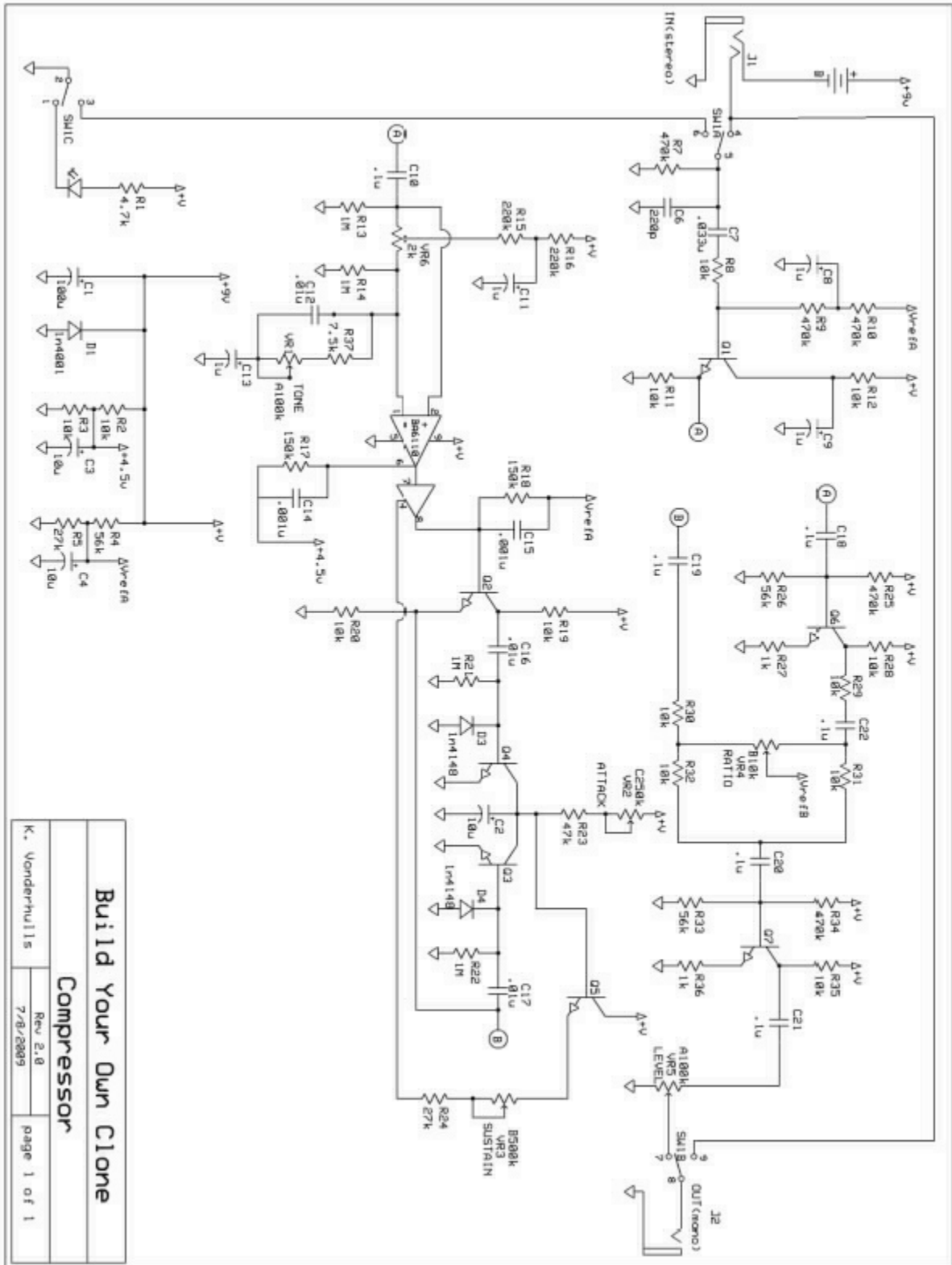
TONE: This is a bass cut. Turning it clockwise will cut more bass.

DC power supply - Use a standard 2.5mm negative tip 9VDC FX power supply

Current Draw - 5.5mA

Input Impedance - 470k ohms

Output Impedance - 100k ohms



Please
visit <http://byoceletronics.com/board>
for any technical support

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