

Build Your Own Clone Reverb Kit Instructions



Warranty:

BYOC, LLC 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, LLC 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, LLC 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, LLC 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, LLC makes no promises or guarantees that you will successfully complete your kit in a satisfactory manner. Nor does BYOC, LLC promise or guarantee that you will receive any technical support. Purchasing a product from BYOC, LLC does not entitle you to any amount of technical support. BYOC, LLC 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.buildyourownclone.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 discription 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?)

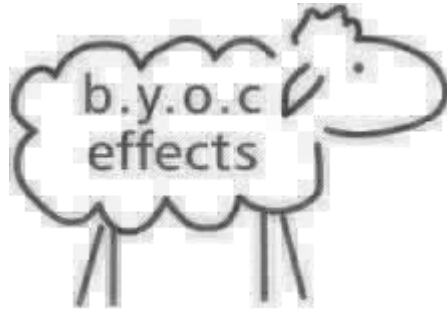
Also, please only post pics that are in focus. You're only wasting both parties' time if you post out of focus, low res pics from your cell phone.

Revision Notes:

Rev 1.0 is the only revision to date. There are no known errors.

Copyrights:

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KIT
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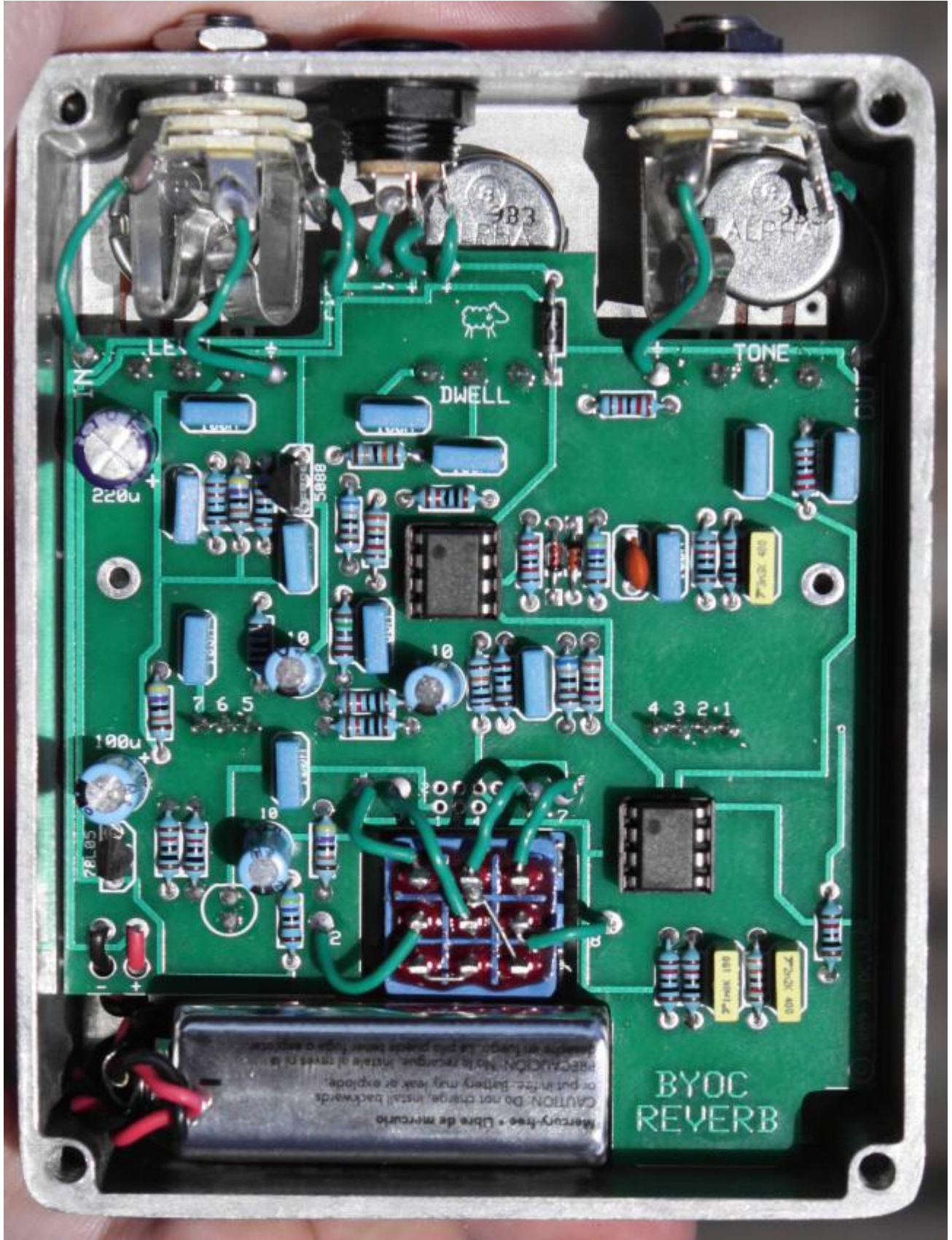
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Parts Checklist for BYOC Reverb

Resistors:

- 1 - 1k (brown/black/black/brown/brown)
- 2 - 4k7 (yellow/purple/black/brown/brown)
- 2 - 6k8 (blue/gray/black/brown/brown)
- 13 - 10k (brown/black/black/red/brown)
- 1 - 15k (brown/green/black/red/brown)
- 3 - 22k (red/red/black/red/brown)
- 3 - 33k (orange/orange/black/red/brown)
- 1 - 100k (brown/black/black/orange/brown)
- 1 - 180k (brown/gray/black/orange/brown)
- 3 - 470k (yellow/purple/black/orange/brown)

Capacitors:

- 1 - 100pf ceramic disc (101)
- 1 - .001 μ /1.0n film (102)
- 1 - .0022 μ /2.2n film (222)
- 1 - .0033 μ /3.3n film (332)
- 4 - .01 μ /10n film (103)
- 8 - 0.1 μ /100n film (104)
- 3 - 10 μ aluminum electrolytic
- 1 - 100 μ aluminum electrolytic
- 1 - 220 μ aluminum electrolytic

Diodes:

- 2 - 1N914 or 1N4148 (small orange glass with black stripe)
- 1 - 1N4001 (larger black plastic with silver stripe)

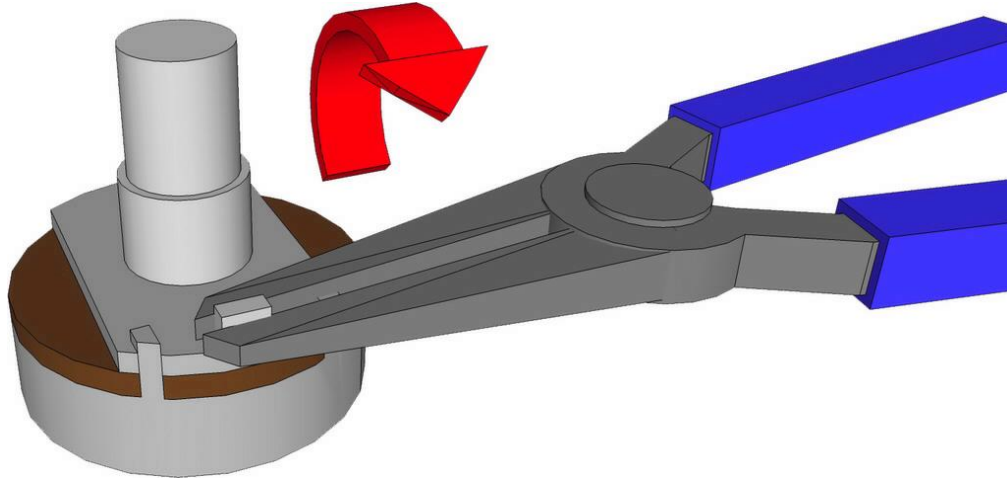
IC's:

- 1 - 78L05 5V regulator (looks like a transistor)
- 2 - TL072
- 2 - DIP 8 socket
- 1 - Belton Digi-log Reverb Module (short delay time)

Transistors:

- 1 - 2N5088

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

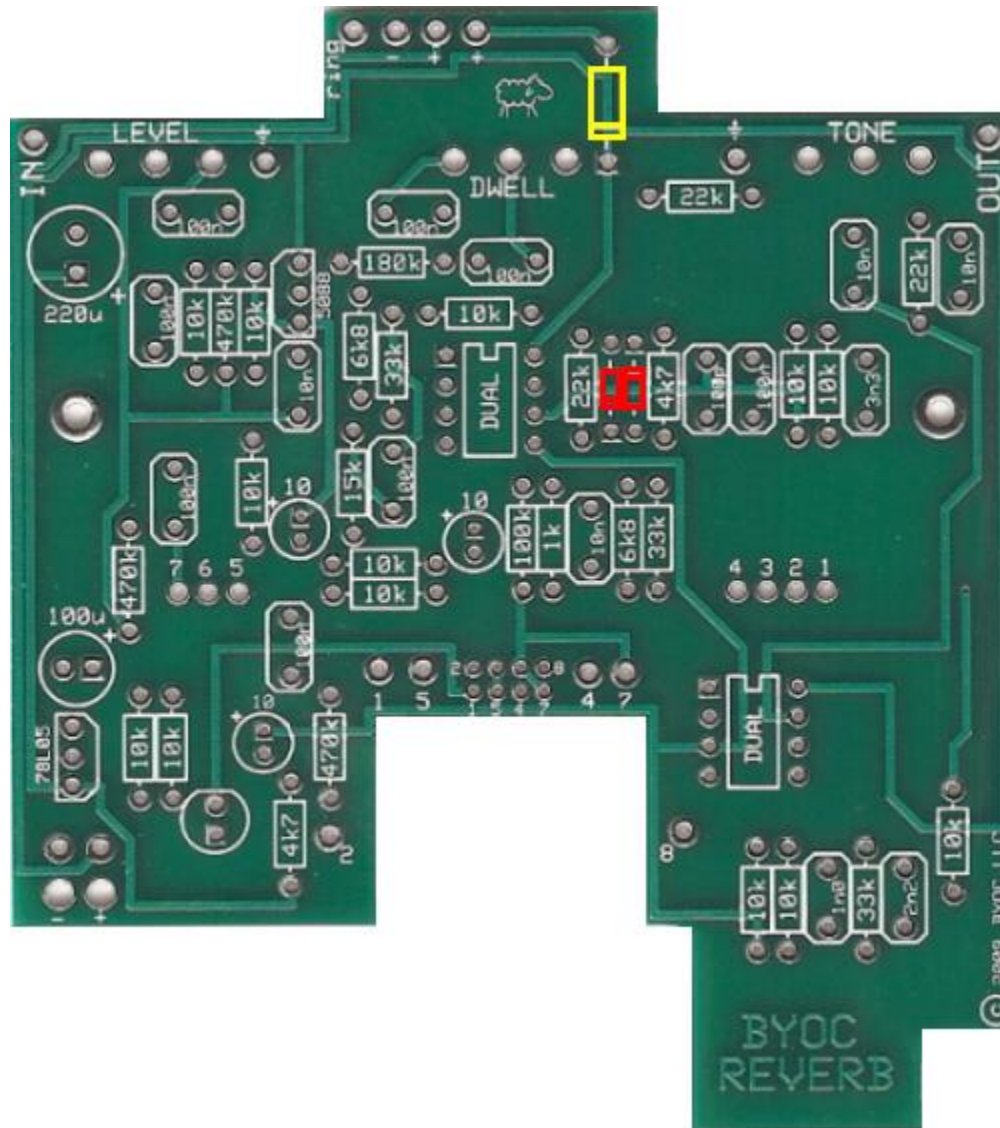


3 - B100k linear (reverb, tone, & dwell knobs)

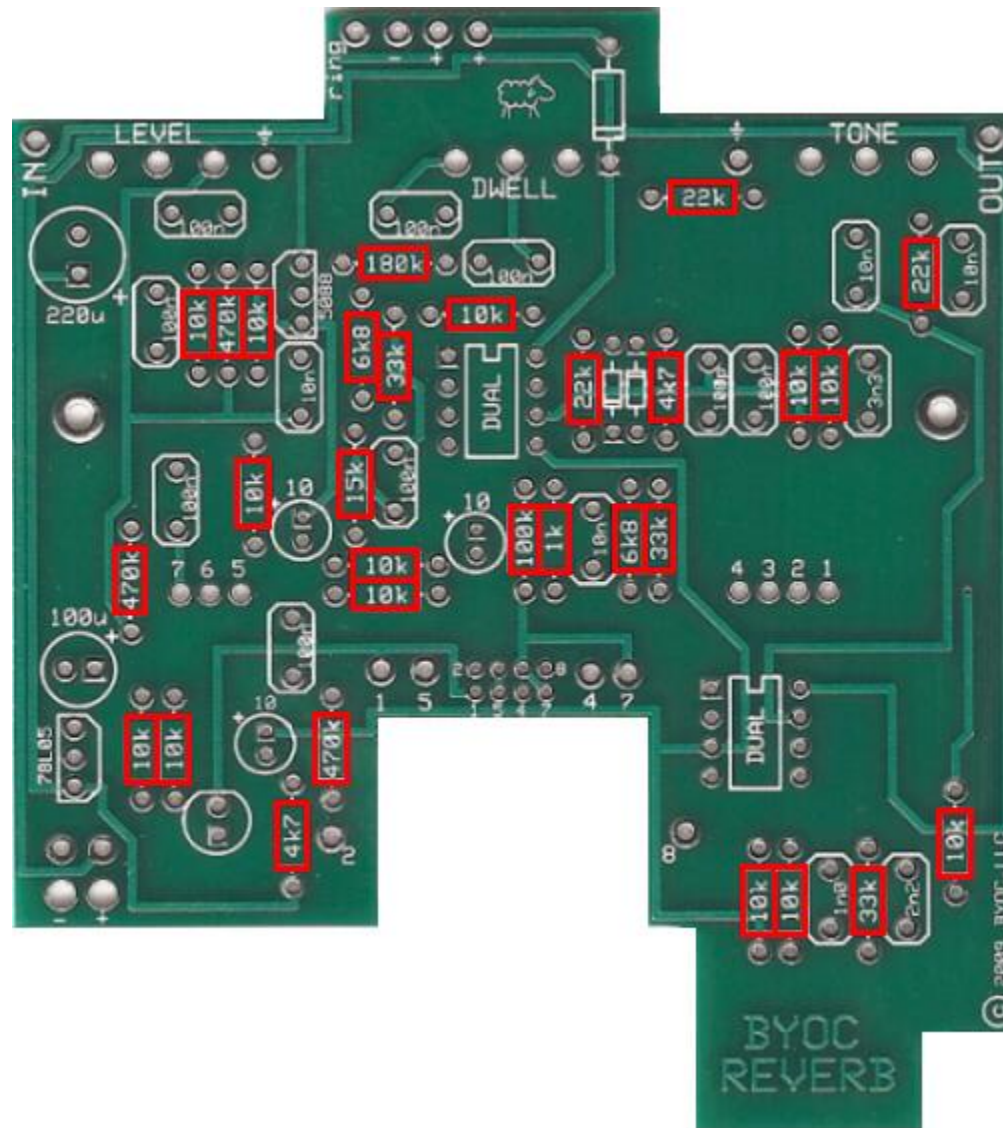
Hardware:

- 1 - drilled enclosure w/ 4 screws
- 1 - byoc reverbPCB
- 1 - 3PDT footswitch
- 3 - knobs
- 1 - AC adaptor jack
- 1 - 1/4" mono jack
- 1 - 1/4" stereo jack
- 1 - red LED
- 1 - battery snap
- hook-up wire

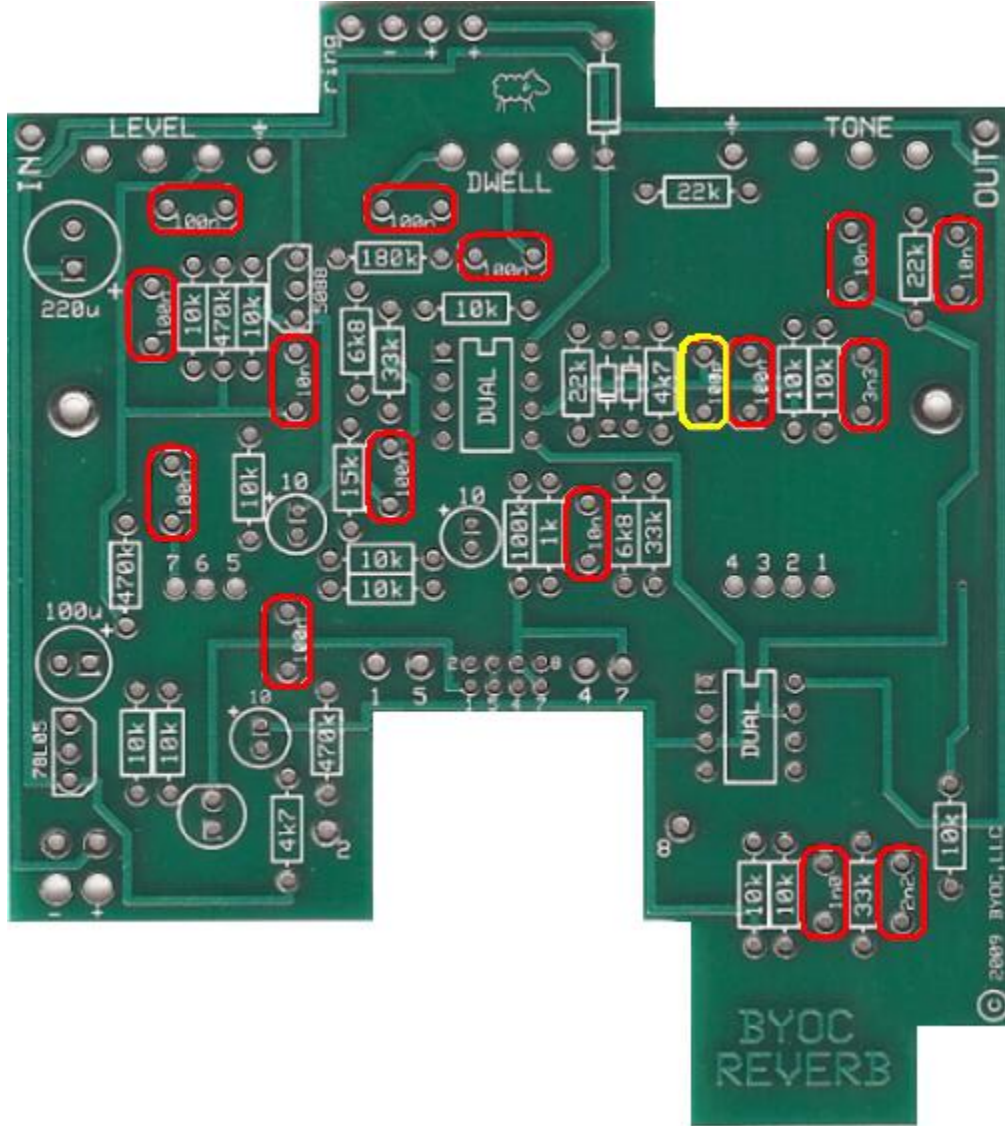
Populating the Circuit Board



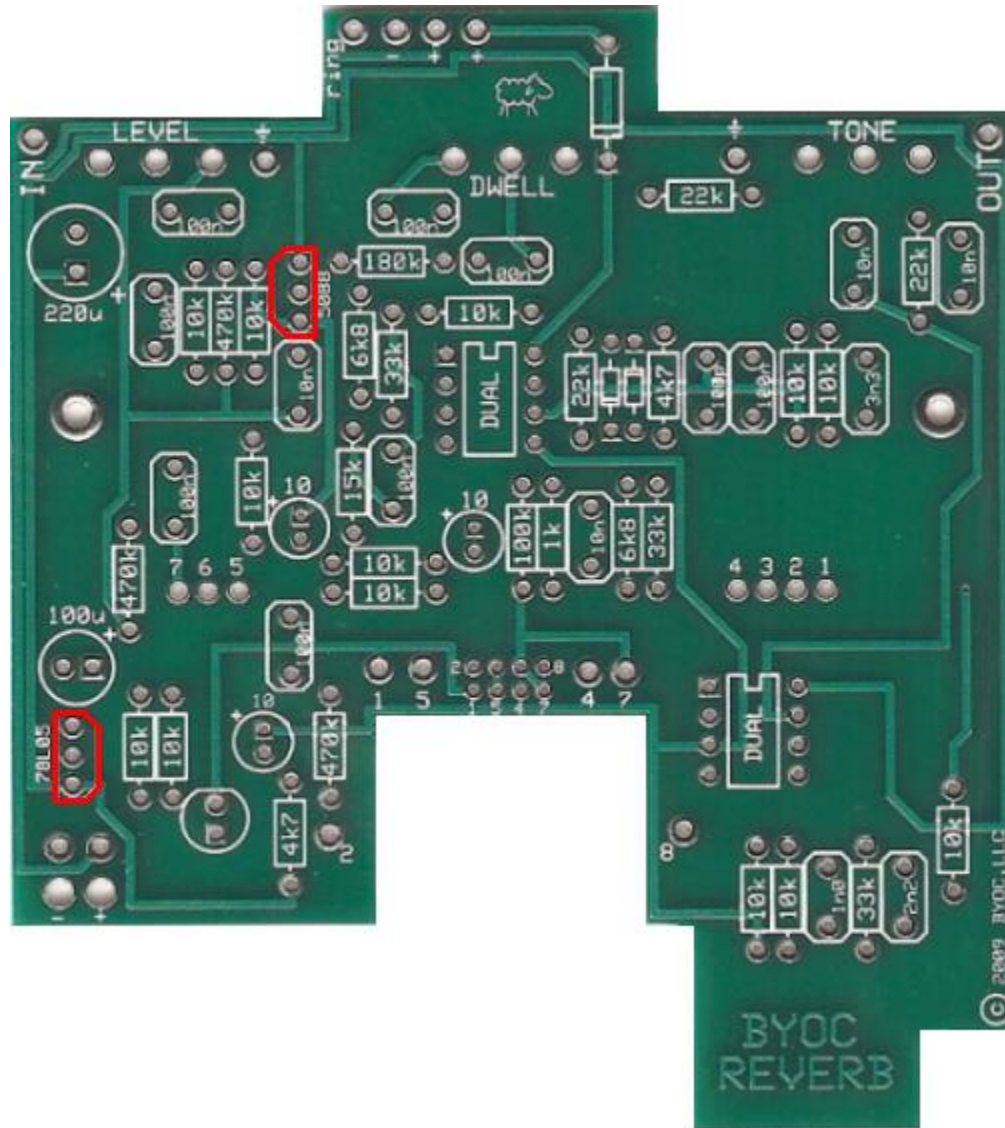
STEP 1: Add the diodes. Be sure to match the end of the diode with the stripe to the layout on the PCB. The stripped end should go in the square solder pad. Note that the 1N4001 diode goes in the space highlighted in yellow. The small orange 1N4148 diodes go in the space highlighted in red.



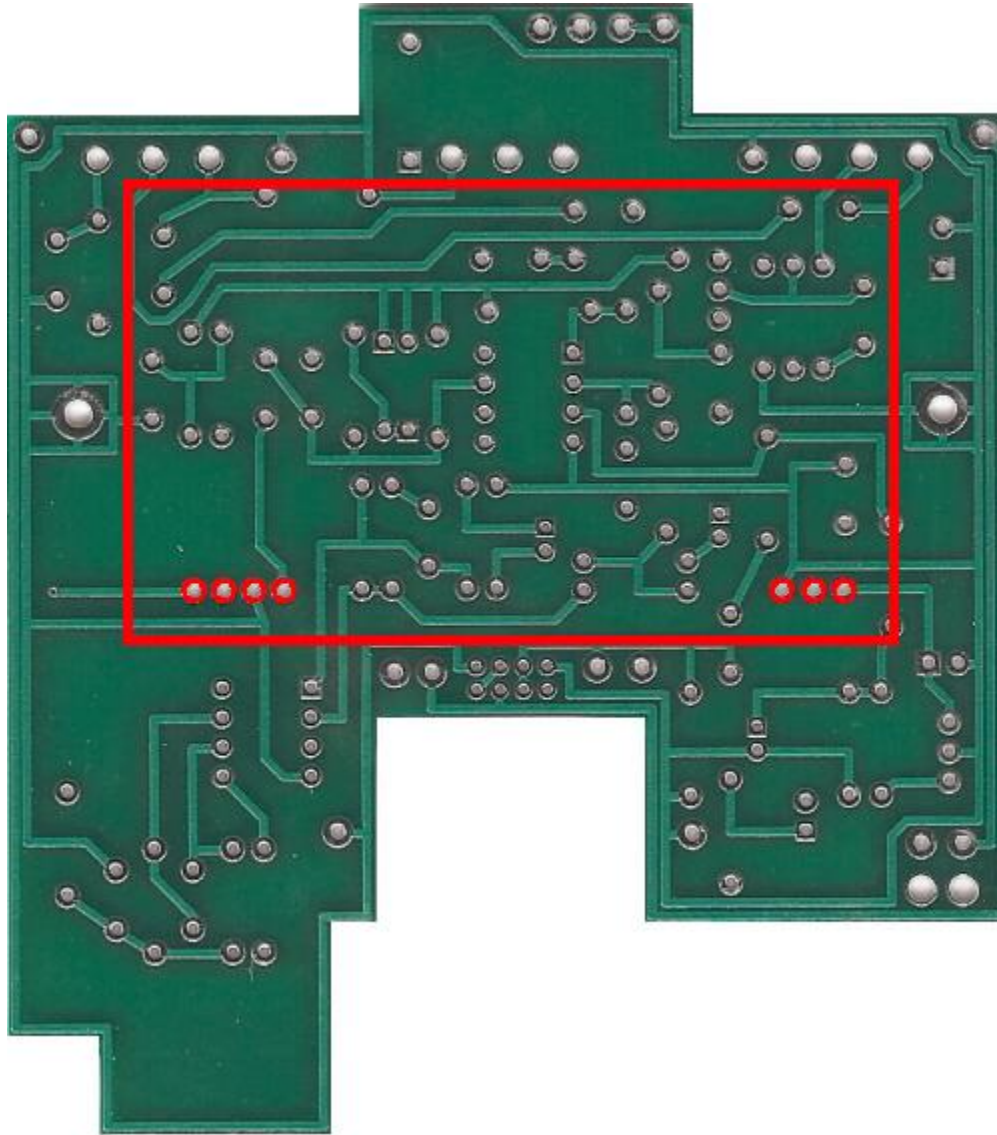
STEP 2: Add the resistors . Resistors are not polarized, so it does not matter which end goes in which solder pad.



STEP 4: Add the film capacitors(highlighted in red) and the ceramic disc capacitor(highlighted in yellow). These are not polarized so they can be inserted into the PCB in either direction.

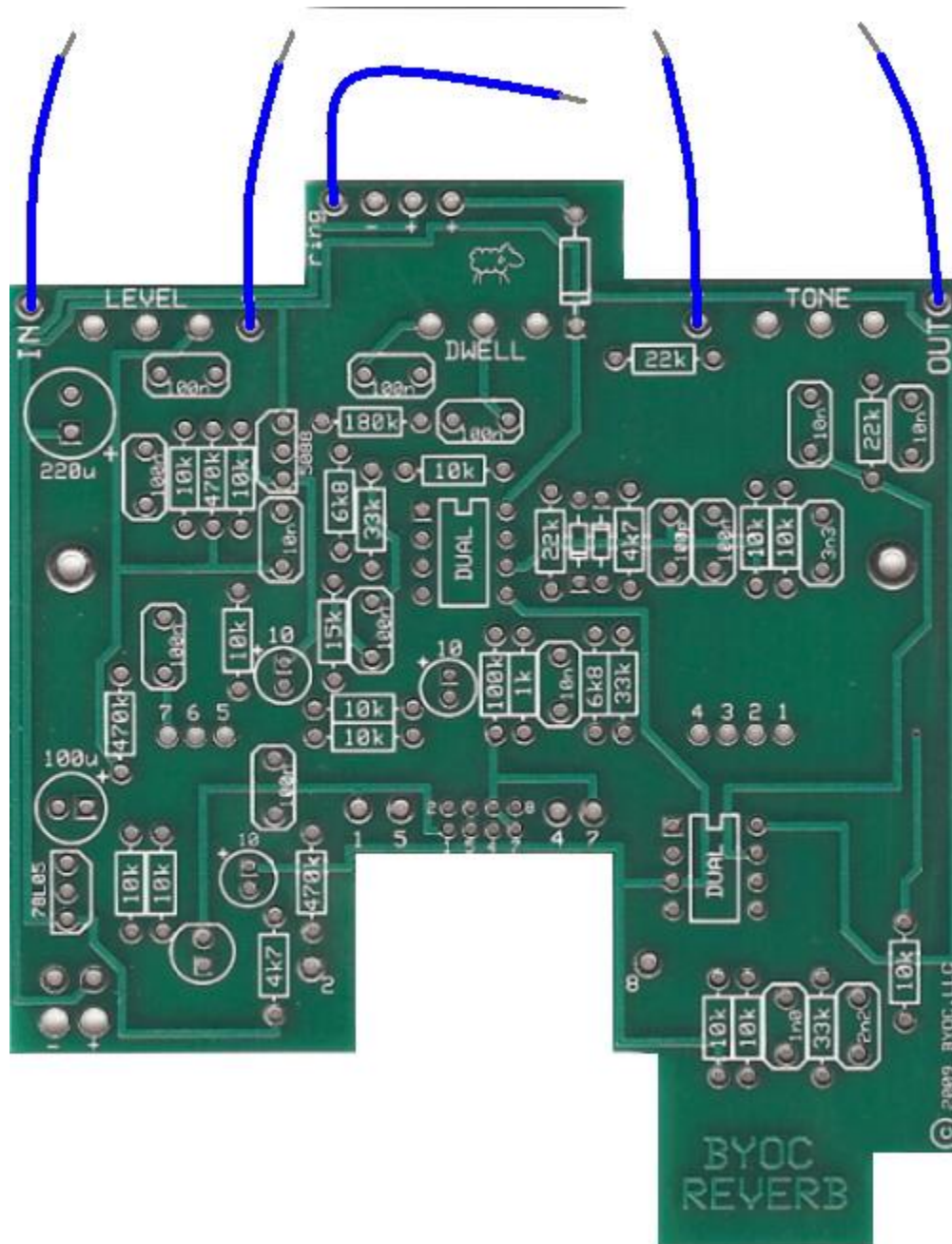


Step 5: Add the transistor and voltage regulator. Insert these components into the PCB so that the flat side of the component matches up with the flat side of the PCB layout. Be sure not to mix up the 2N5088 with the 78L05.

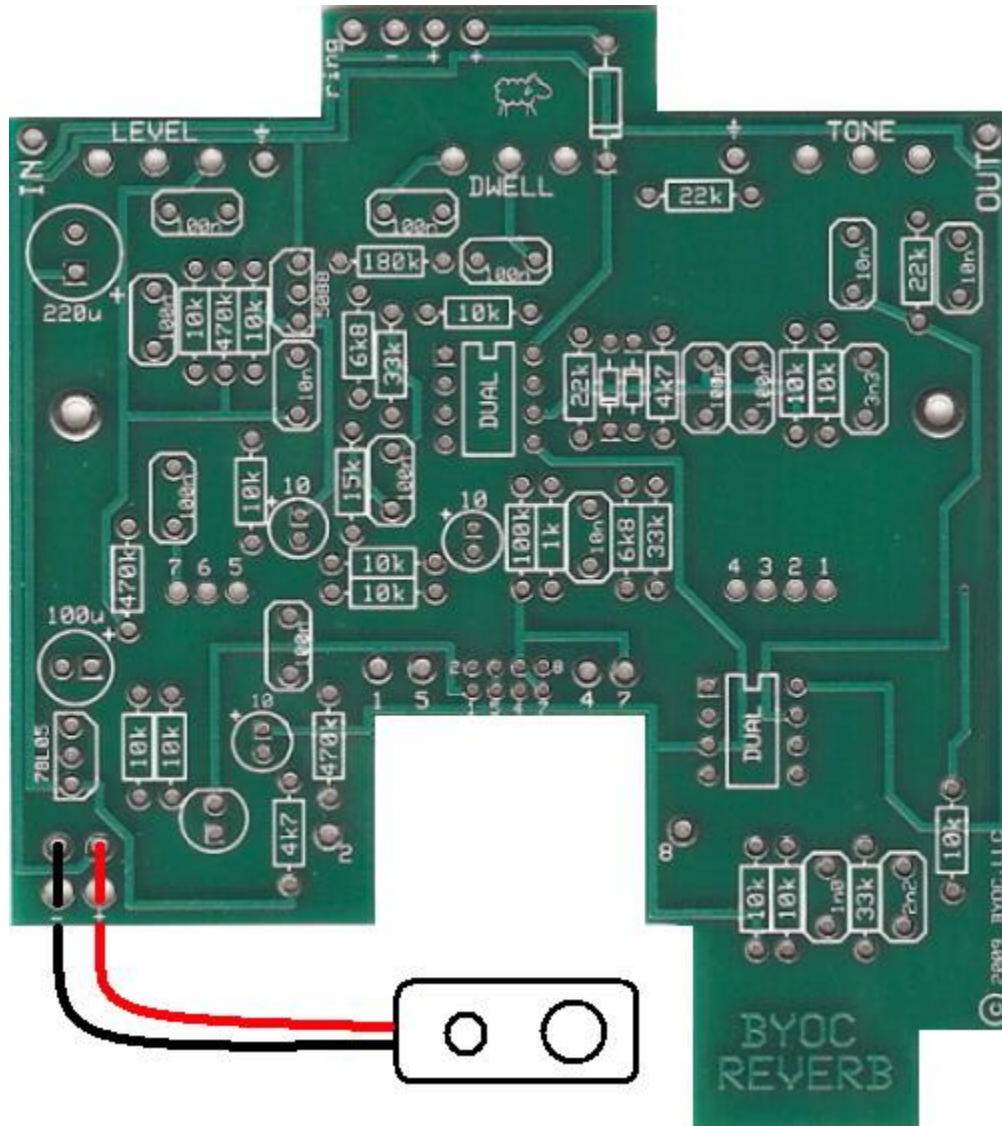


STEP7: Add the Reverb Module to the underside of the PCB. BUT FIRST!!!! Take a break. Once you've soldered the reverb module in place, you will have locked many of the components that are on the other side of the PCB in. And to get to them, you'll need to desolder and remove the Reverb Module. It's not the end of the world if you do, but you want to avoid having to desolder and fix mistakes whenever possible. So take a rest at this point. Then come back and check your work so far. Are you absolutely certain you have all the resistors and capacitors in their correct spots? How do your solder joints look? Once you've done this, install and solder the Reverb Module to the underside of the PCB.

There is only one way the Module will fit in the PCB if you are inserting it into the underside. Solder the 7 pins. There are spaces to add mounting screws. These are not necessary, but they are there if you have some small machine screws handy and wish to do so. The kit does not come with the screws.

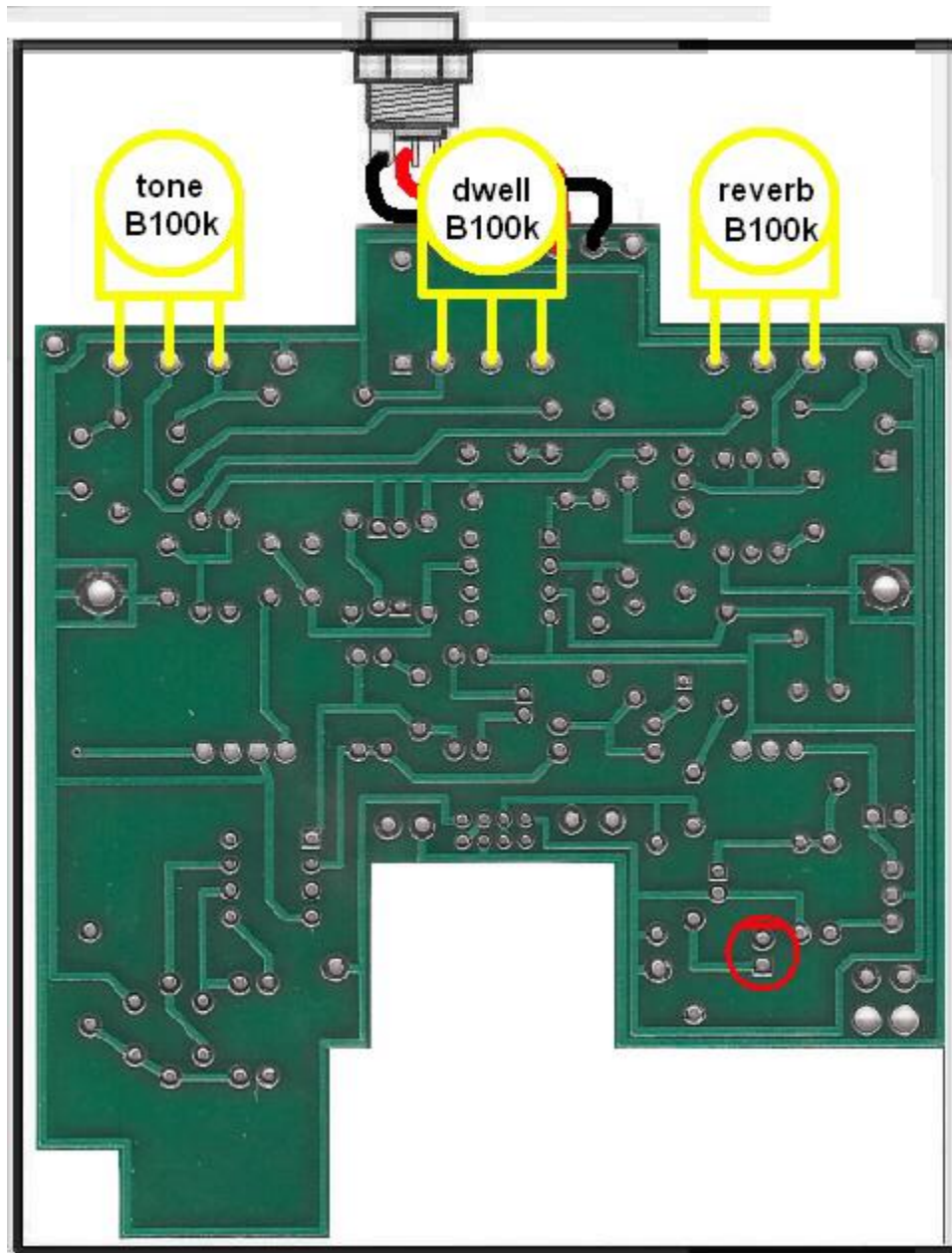


Step 8: Add wires to the IN, OUT, ring, and two ground eyelets. Start by cutting five 2.5" pieces of wire. Strip 1/4" off each end and tin the ends. Tinning means to apply some solder to the stripped ends of the wires. This keeps the strands from fraying and primes the wire for soldering. Solder a piece of wire to each of the eyelets on the PCB. Load the wires in from the top and solder on the bottom of the PCB.

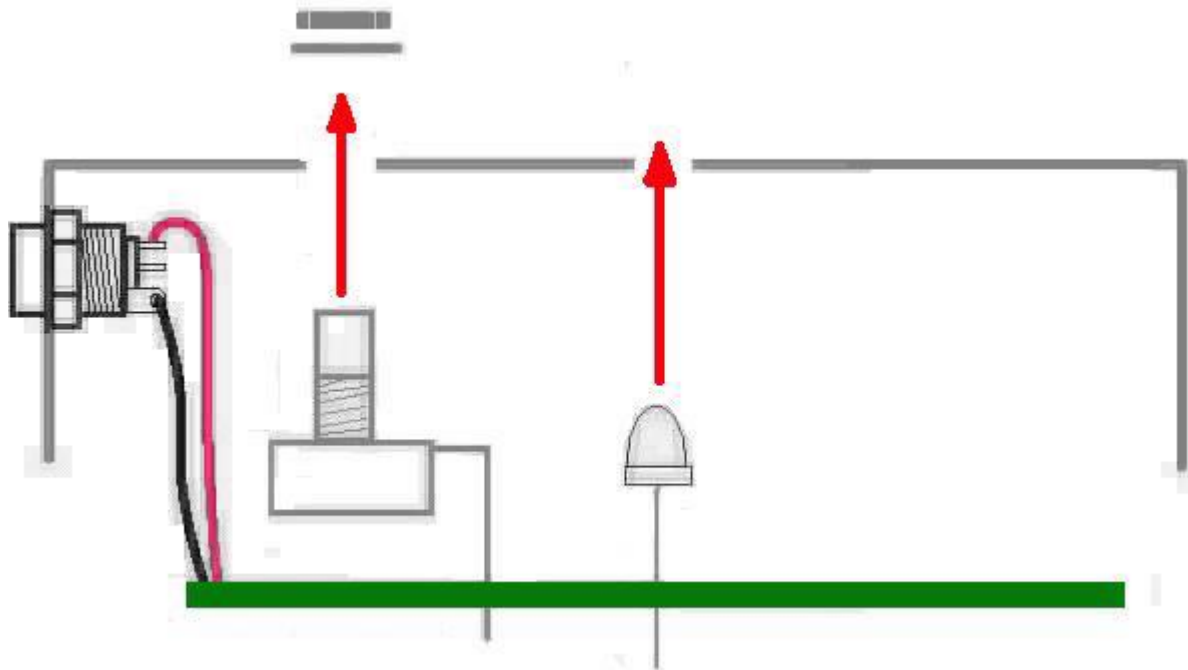


Step 9: Add the battery snap. Thread the solder ends of the battery snap into the strain relief holes from the bottom solderside of the PCB and out through the top. Insert the solder ends of the battery snap wires into the topside of their respective solder pads. Solder on the bottom side of the PCB. Remember the red wire goes in the “+” hole and the black wire goes in the “-” hole. The battery snap will probably be much longer than needed. It's a matter of preference though. If you'd like a shorter batter snap length, trim to taste. Usually, cutting it exactly in half is a good lenth. Remember to strip and tin the ends if you do.

important that you orient the DC adaptor jack just as in the picture. If you orient it a quarter turn off, you will know it because the pedal will work when you plug in a DC power supply, but not work when it is running on only battery power.



Step 3: Flip the PCB over so that the bottom or solder side is up. Insert the three B100k(reverb, dwell,and tone) potentiometers, and 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 of the square solder pad.

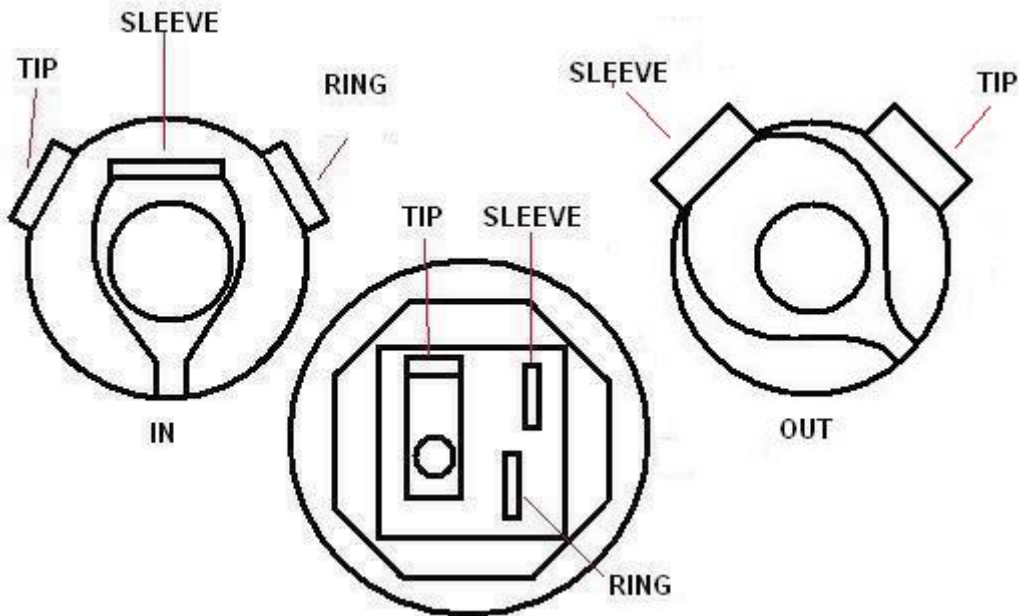


Step 4: Hold the PCB in one hand so that the component side of the PCB is in the palm of your hand and the bottom side with the pots, toggle switch and LED is facing up. Now use your other hand to guide the predrilled enclosure onto the PCB assembly so that the pots and LED all go into their respective 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 PCB 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.

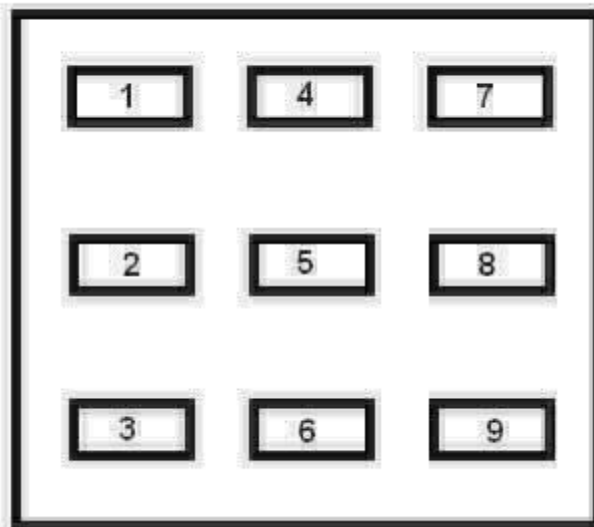
Step 6: Solder the pots and LEDs. You will solder these parts on the component side of the PCB. After you have soldered them in place, be sure to tighten up their nuts.

Wiring the jacks

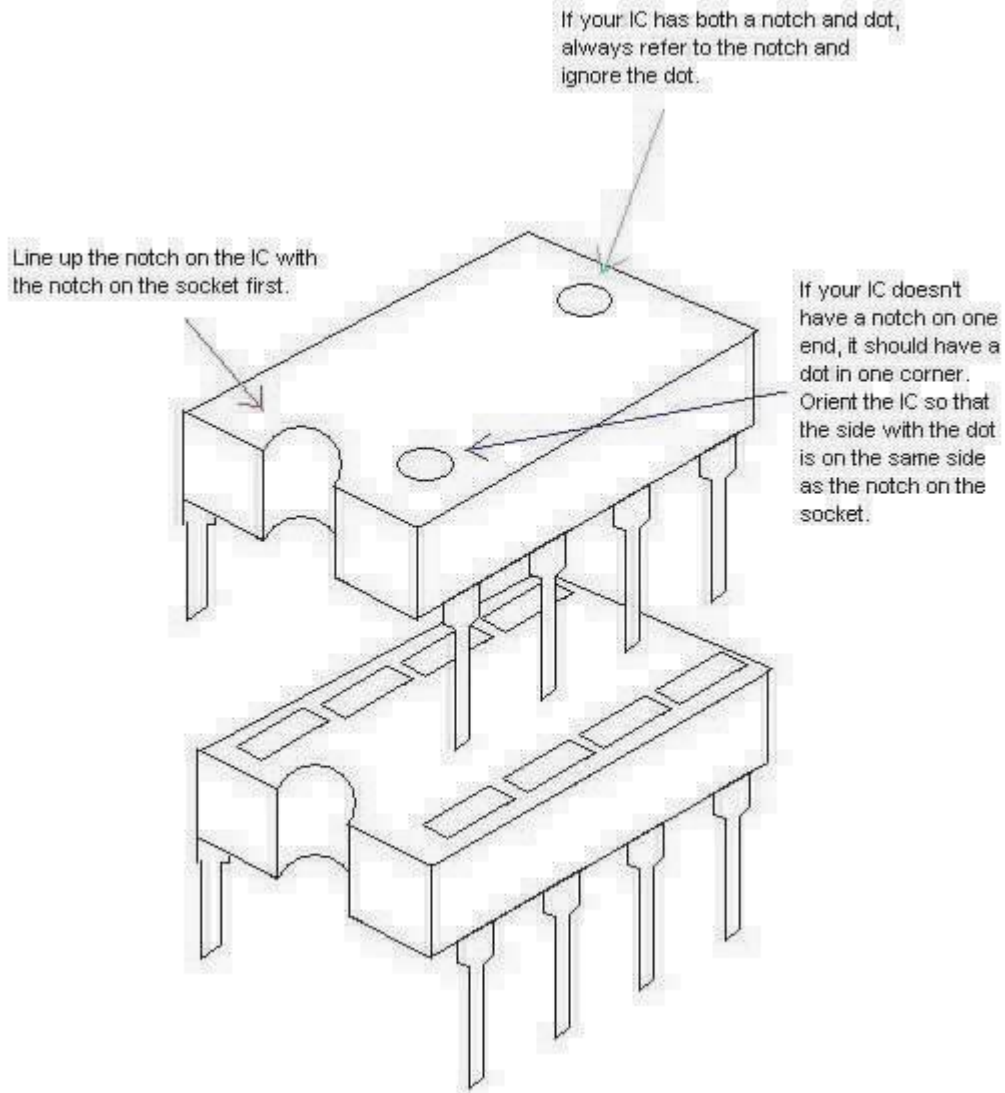


Step 1: Install the 1/4" jacks to the enclosure. Be sure to turn the OUT jack a 1/4 turn clockwise so that contact prong is at about 7 or 8 o'clock and is not shorting out against the Tone potentiometer. Keep in mind that the sleeve of the jack is a ground connection, so if that is touching the enclosure or the back of a potentiometer, that is OK.

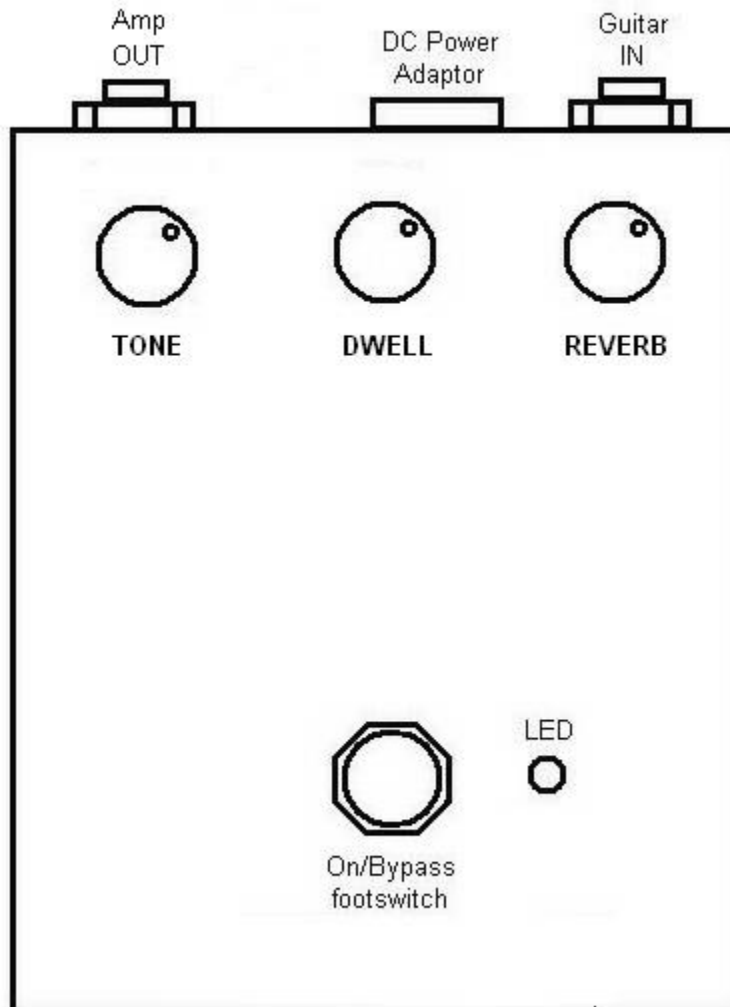
Footswitch Solder Lug Designations



Installing the IC



Operating Overview



Reverb - Controls the amount of wet reverb signal that is mixed in with the dry signal.

Dwell - Controls how quickly the wet reverb signal will decay.

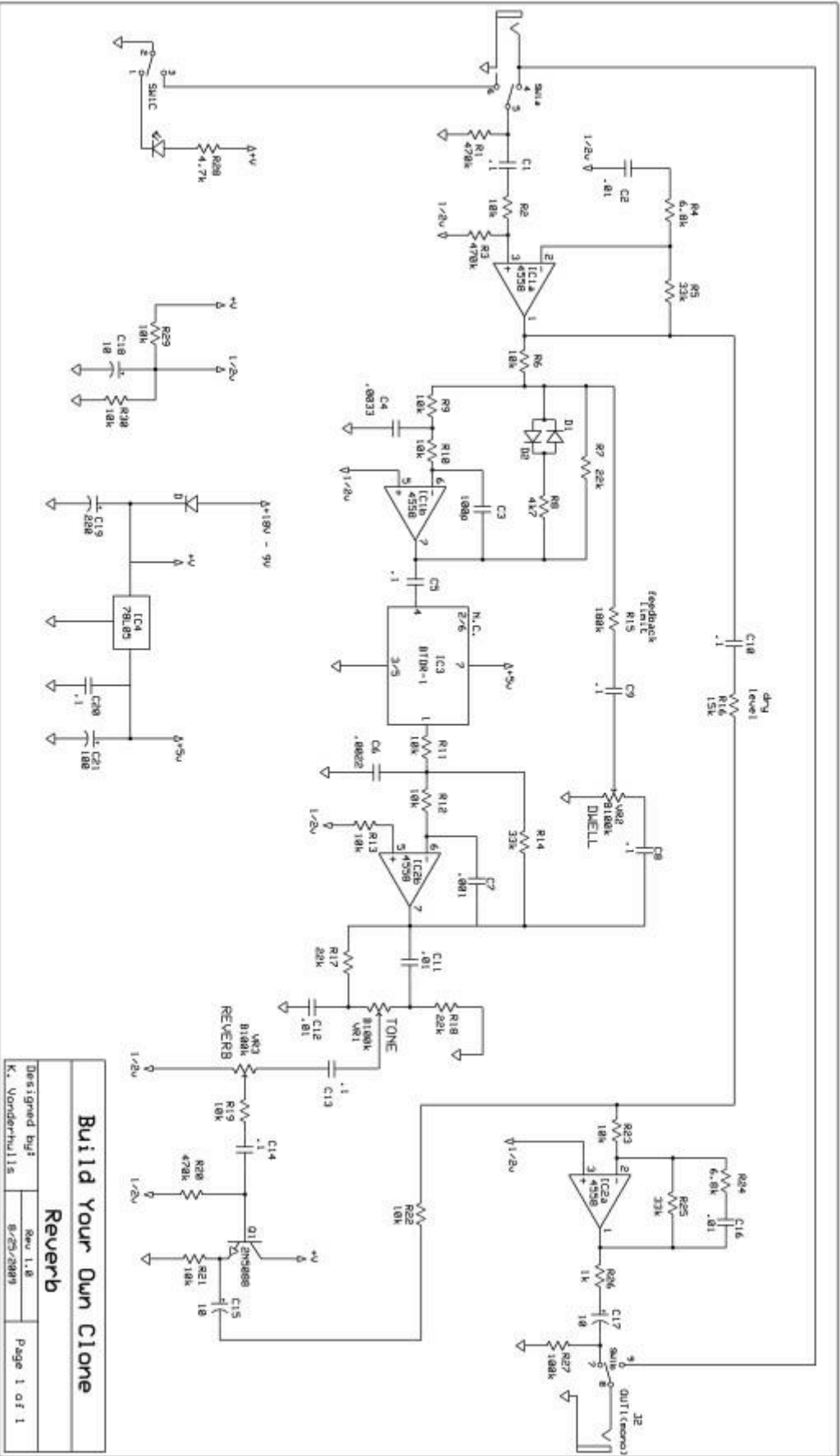
Tone - Turning clockwise adds treble and cuts bass. Turning counter clockwise adds bass and cuts treble.

DC power supply - Use a single 9v battery or 2.5mm negative tip adaptor (this is your standard guitar fx style adaptor). This unit can run on 9 - 18VDC.

Current Draw - 30mA

Input Impedance - 470k ohms

Output Impedance - 100k ohms



Build Your Own Clone

Reverb

Designed by: K. Vanderhulst
 Rev 1.0
 8/25/2003
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<http://buildyourownclone.com/board>
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