

Armstrong Twin Kit Instructions

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Parts Checklist for The Armstrong Twin Kit

Resistors:

- 1 - 1.5k (brown/green/black/brown/brown)
- 1 - 2.4k (red/yellow/black/brown/brown)
- 1 - 4.7k (yellow/purple/black/brown/brown)
- 1 - 6.2k (blue/red/black/brown/brown)
- 4 - 10k (brown/black/black/red/brown)
- 1 - 18k (brown/gray/black/red/brown)
- 2 - 22k (red/red/black/red/brown)
- 1 - 47k (yellow/purple/black/red/brown)
- 2 - 68k (blue/gray/black/red/brown)
- 1 - 82k (gray/red/black/red/brown)
- 1 - 100k (brown/black/black/orange/brown)
- 1 - 150k (brown/green/black/orange/brown)
- 1 - 220k (red/red/black/orange/brown)
- 1 - 390k (orange/white/black/orange/brown)
- 3 - 470k (yellow/purple/black/orange/brown)
- 1 - 560k (green/blue/black/orange/brown)
- 1 - 2.2m (red/red/black/yellow/brown)

IC:

- 1 - 4558 or other dual op amp.

Capacitors:

- 1 - 2200pf film (222)
- 5 - .047uf film (473)
- 1 - .1uf film (104)
- 1 - 1uf aluminum electrolytic
- 1 - 3.3uf aluminum electrolytic
- 3 - 4.7uf aluminum electrolytic
- 1 - 10uf aluminum electrolytic
- 1 - 100uf aluminum electrolytic

Transistors:

- 2 - 2N5088
- 1 - 2N6523
- 2 - 2N5457

Diodes:

- 2 - 1N4148 or 1N914 (small orange glass/black stripe)
- 1 - 1N34A germanium diode (clear glass/green stripe)
- 1 - 1N4001 (black w/silver stripe)
- 1 - Clear lens Red/Green/Blue full spectrum LED

Potentiometers:

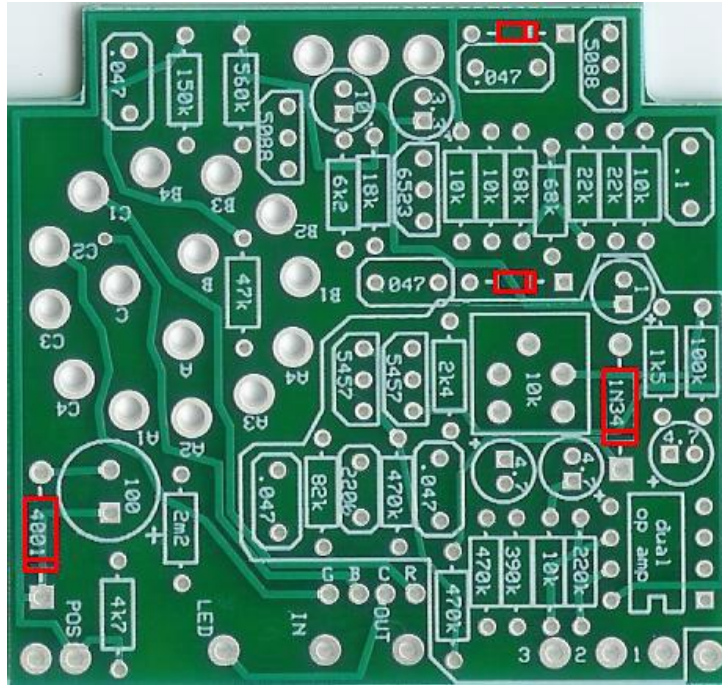
- 1 - A100k audio taper
- 1 - 10k trimpot

Hardware:

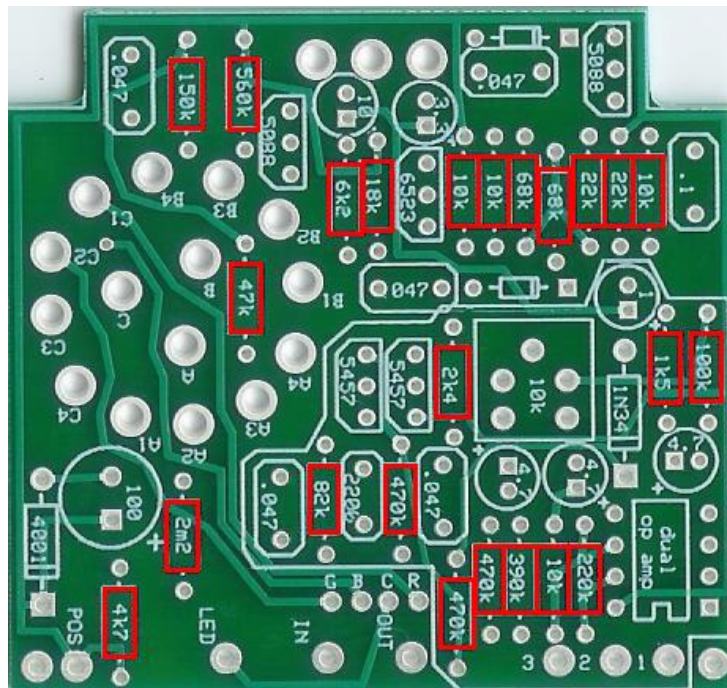
- 1 - "armstrong twin" circuit board
 - 1 - enclosure w/ 4 screws
 - 1 - 3PDT footswitch
 - 1 - SPDT "on-off-on" toggle switch
 - 1 - rotary switch
 - 1 - Stereo Jack
 - 1 - Mono Jack
 - 1 - AC Adaptor Jack
 - 1 - Battery Snap
 - 2 - Knobs
 - 4 - Self-Adhesive Rubber Feet
- Hookup wire

Populating the circuit board

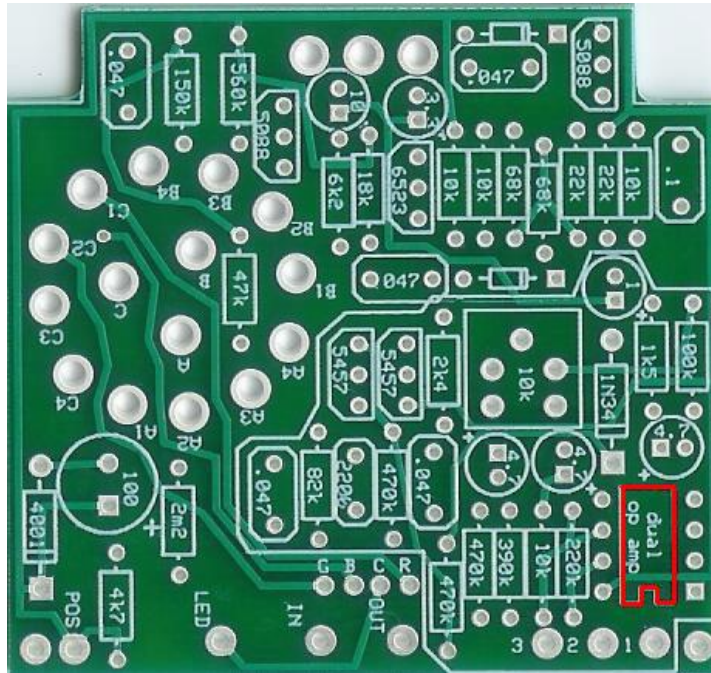
Step 1: Add the diodes. The two 1N914 will be the smaller of the three types of diodes and orange in color. The 1N4001 will be black with a silver stripe. The 1N34A will most likely be clear with a green stripe. Make sure you line up the stripe on each diode with the stripe on the PCB layout



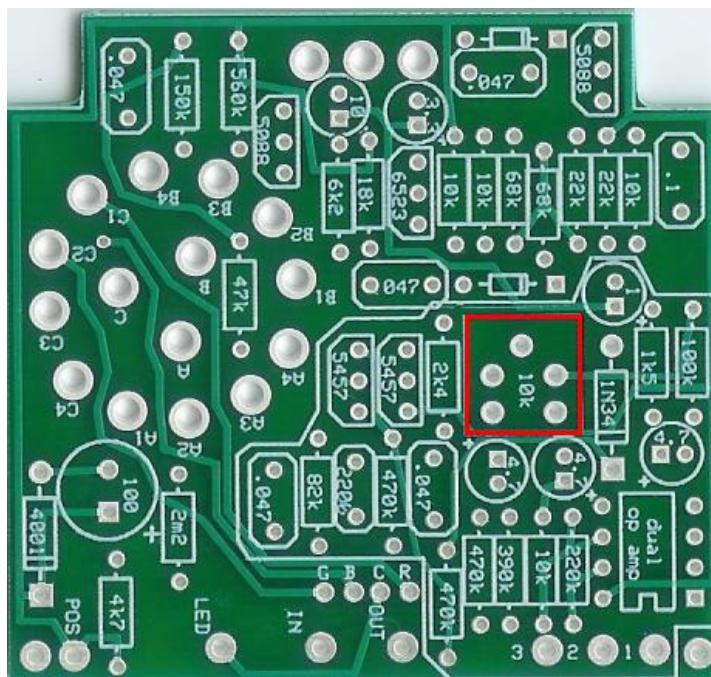
Step 2: Add the resistors. Resistors are not polarized and can be inserted into the PCB in either direction.



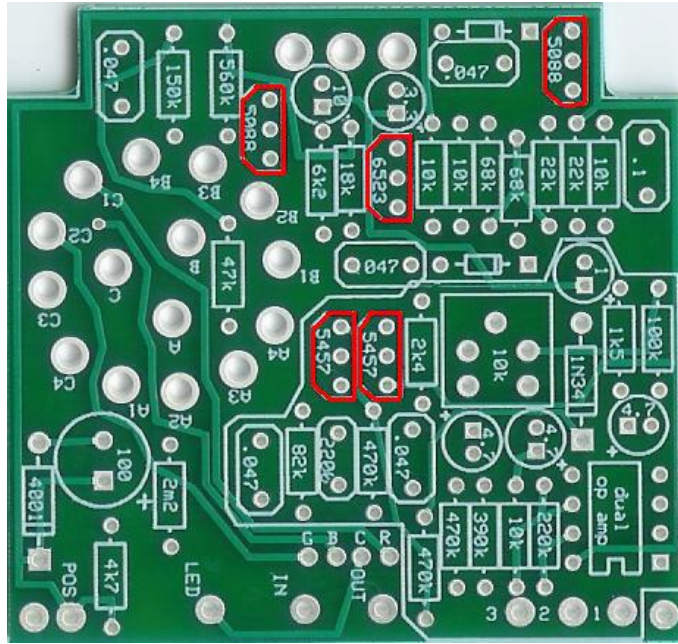
Step 3: Add the dual op amp. Your op amp should have a u-shaped notch on one end. You should match up this notch with the notch on the layout.



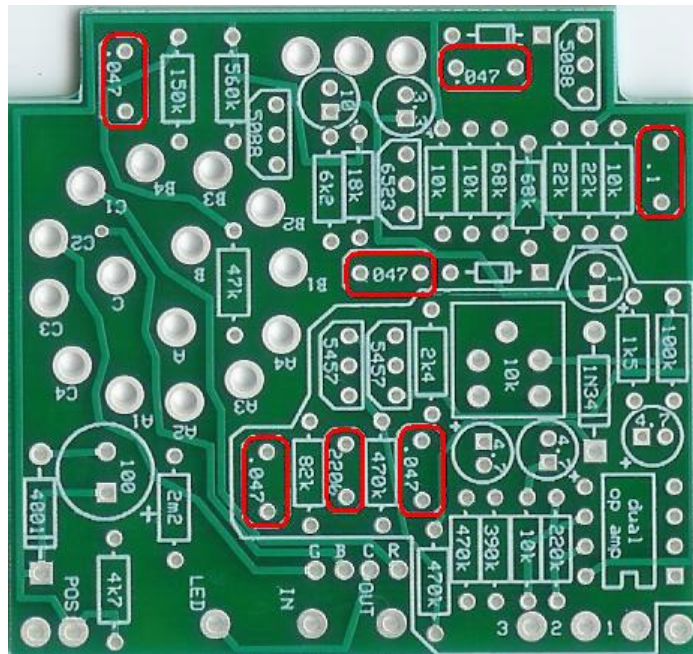
Step 4: Add a 10k trimpot. Your trimpot will only have 3 leads. The PCB will have more than 3 holes so that it can accommodate a variety of brands of trimpots, but there is only one way that your trimpot will fit in the board.



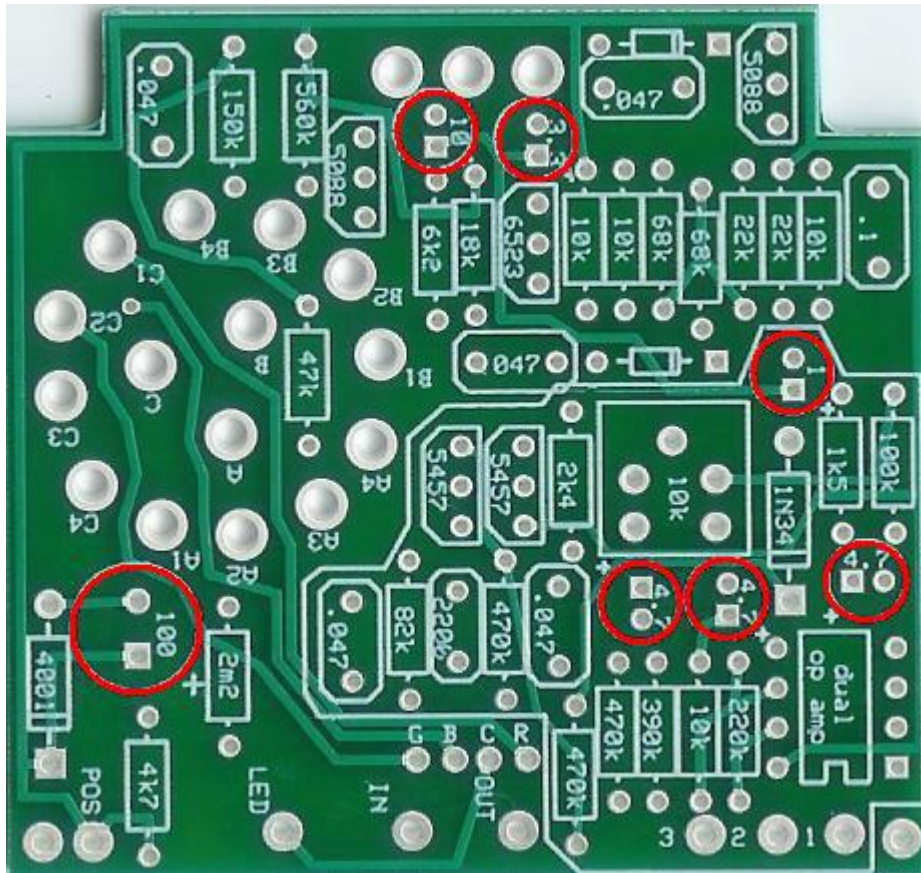
Step 5: Add the transistors. Make sure you line up the rounded side of the transistor with the rounded side of the layout. Make sure you place the two 2N5088's in their correct spot. Make sure you place the MPS6523 in the correct place. Make sure you place the two 2N5457's in their correct spot.



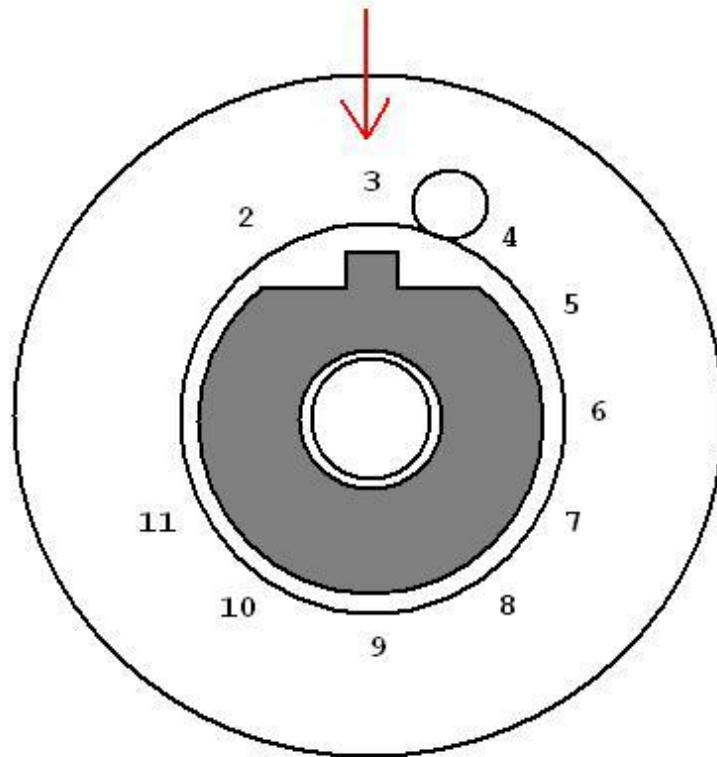
Step 6: Add the film capacitors. These are not polarized and can go in the PCB in either direction.



Step 7: Add the electrolytic capacitors. These are polarized. The positive lead will be the longer of the two and go into the square solder pad. The negative lead will be the shorter of the two and go into the round solder pad. The negative side will have a stripe down the side of the body of the capacitor as well.

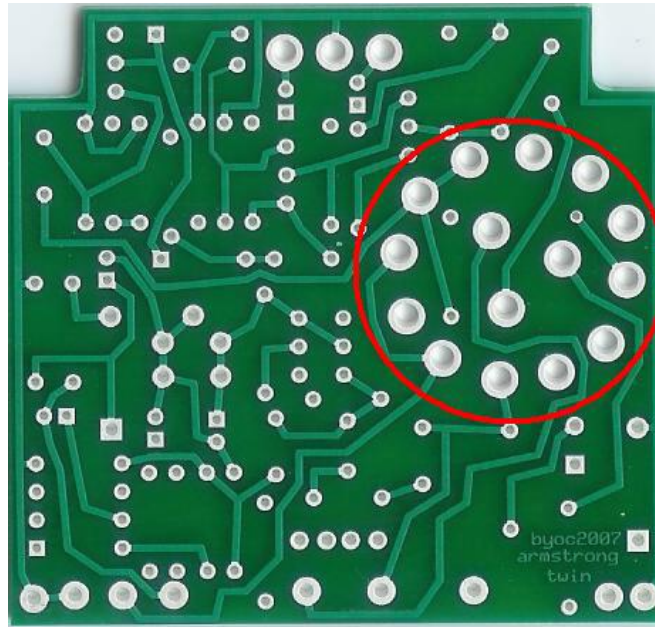


Front of rotary switch

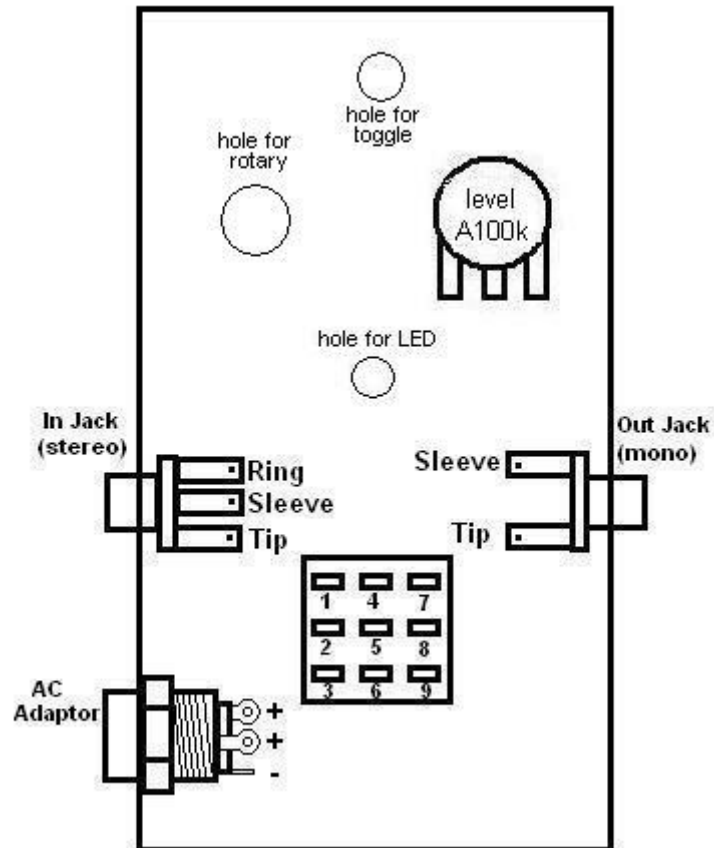


You will need to set the rotary switch so that it only turns to 3 positions. It has the ability to go up to 4. On the front of the switch, remove the bolt and first serrated washer. There will be a second washer with a notch on it. Lift the washer up and place it in the #3 hole. The rotary switch is now set to be a 3 pole/3 position switch.

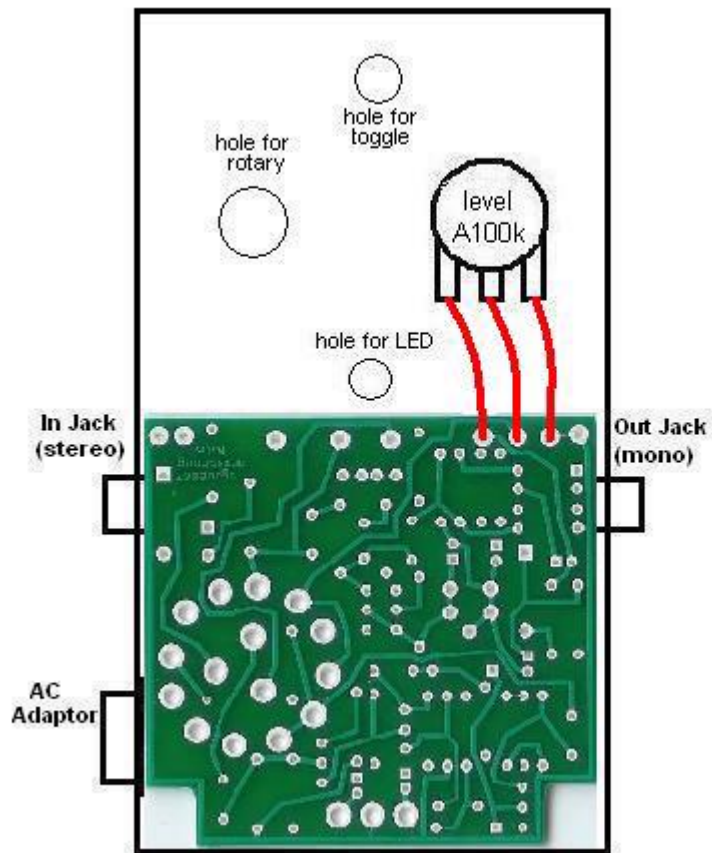
Step 9: Add the rotary switch. **INSERT THE SWITCH TO THE UNDERSIDE OF THE PCB!!!!**



Step 10: Add the jacks, footswitch AC adaptor jack, and A100k to the enclosure.



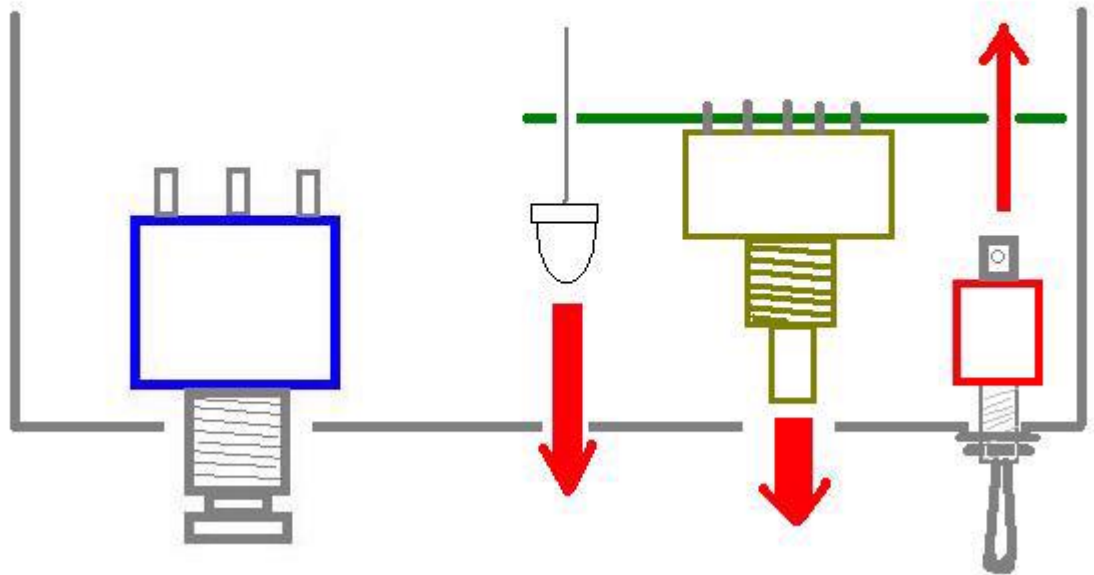
Step 11: Connect the A100K level pot to the PCB.



Step 12: Insert the LED into the UNDERSIDE of the PCB, but do not solder it yet. The longest lead should go in the "c" hole.



Step 13: Mount the PCB to the enclosure. Loosely mount the toggle switch to the enclosure. Then slide the PCB into place so that the toggle switch fits into its hole. Then push the toggle switch so that it fits into its solder pads on the PCB by grabbing it by the toggle bat that is sticking out of the enclosure and guiding it in. Then push the LED into its hole by grabbing the leads that are sticking out of the topside of the board and guiding it in.



Finishing up & Troubleshooting

1. Test the pedal to make sure it works. Full turn counter clockwise on the rotary switch is the compressor and should produce a red light. Full turn clockwise is the Compressor into the ringer and should produce a blue light. Center position on the rotary switch is the ringer and should produce a green light
2. Bias the compressor by ear by adjusting the trimpot. You want to turn your amp down low and strum hard. Continue strumming hard while turning the trimpot with a very small screwdriver until you get a good clean tone with minimal distortion, good volume boost, and noticeable compression. Note that the compressor will produce a small amount of distortion even when it is biased properly.
3. Test the toggle switch. The toggle switch only affects the compressor portion of the circuit, so you should test your toggle switch with the red light on. Center position is “fast attack”. To the left is “slow attack” and to the right is “medium attack”.
4. Put the cover on and screw it down
5. Apply the rubber feet.

Is your pedal working? Here's a few common mistakes:

1. **No sound at all in either the bypass or on position.** If you aren't getting sound in bypass then you did not wire your footswitch correctly. Getting the bypass to work is the first thing you need to worry about
2. **Bypass works and the LED lights up when “on”, but there's no sound.** You either have a problem with the wiring from the in to the out of the circuit board and foot switch. The green wire is the in and the brown wire is the out. Or you have a problem with something on the circuit board
3. **Bypass works, but there's sound when on and the LED does not come on.** You probably aren't getting any power to the circuit. Check all the black and red wires
4. **Everything works, but the boost is weak.** You've probably got your transistor in backwards
5. **The volume completely cuts out when I turn the knob all the way counter clockwise.** It's supposed to do that

If none of this helps, and you can't seem to figure out the problem, I always find that it is best to just set the pedal aside for a day or 2 and then come back to it with a fresh pair of eyes. Then the problem usually jumps right out at you...usually.

If you still can't get it working, start a thread on the BYOC forum and ask for help.
board.buildyourownclone.com