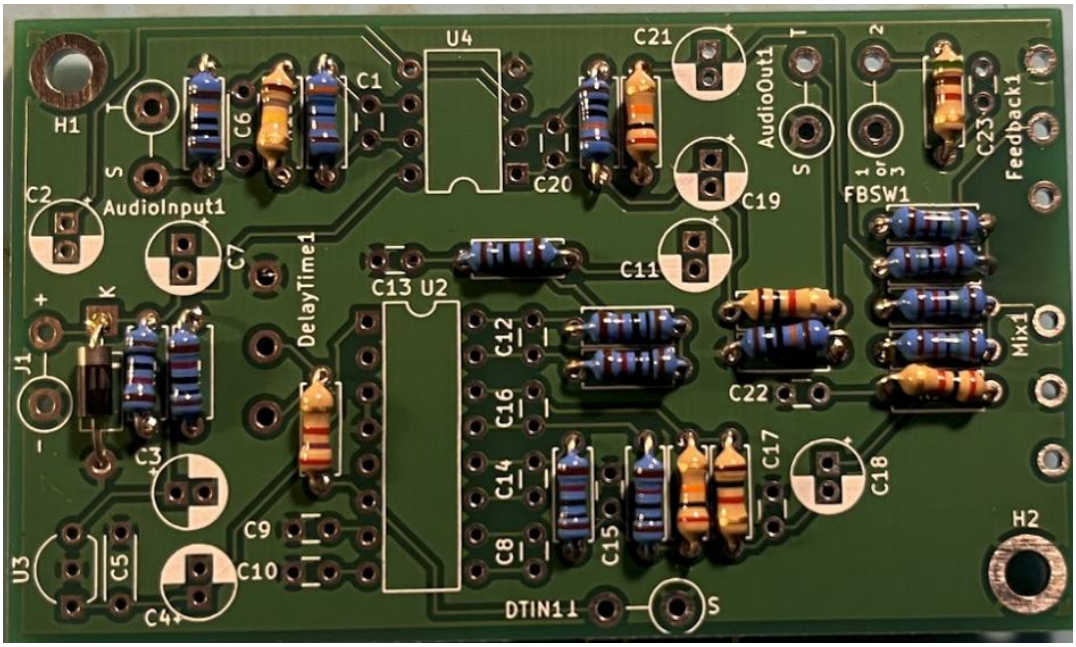
Pedal enclosure instructions

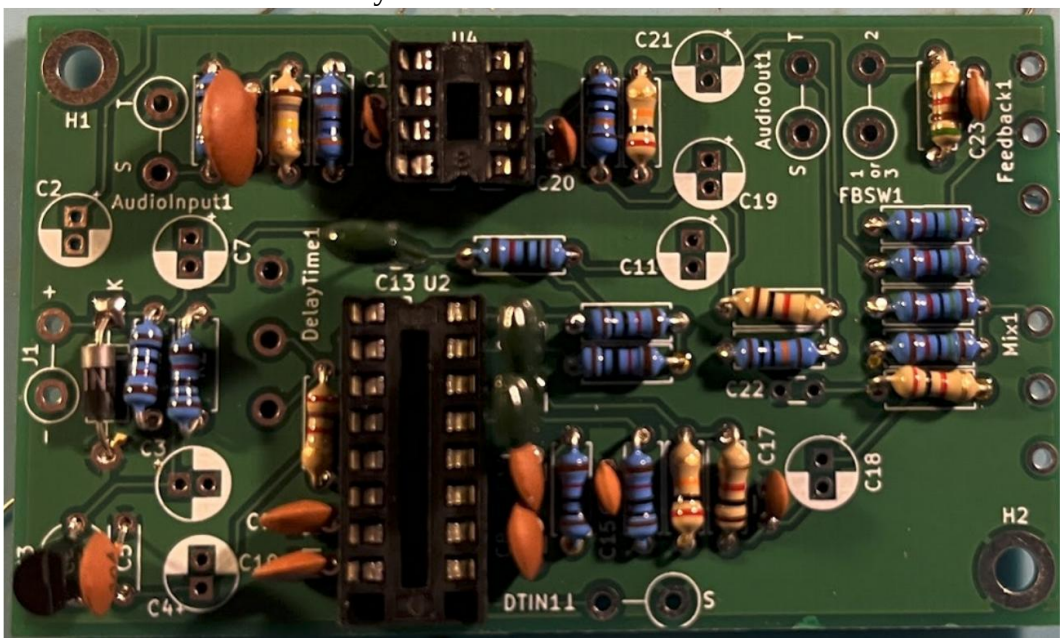
The first few steps are bog-standard in board-assembly and then I go into the enclosure assembly steps with pictures. It is recommended to use a metal enclosure to make grounding easier and to use 20G wiring. I'll attempt to write this to be a bit more friendly to newbie builders. Please read all of the instructions before starting.

1. Solder in all resistors and diodes. If you aren't getting fancy then bridge the FBSW1 with a cut



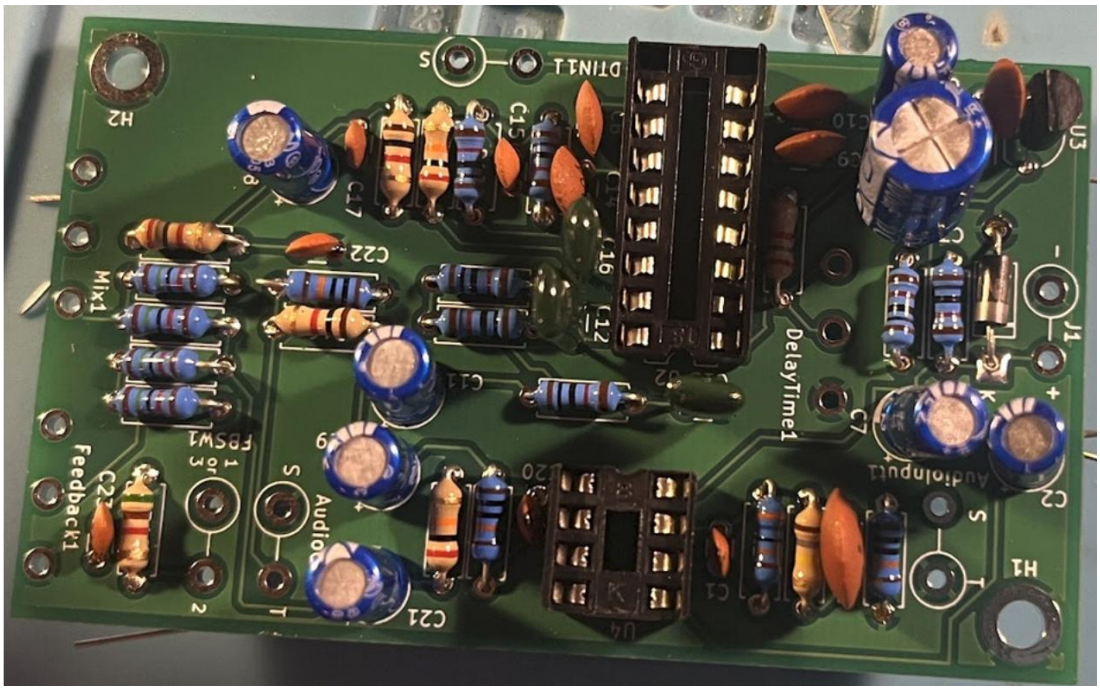
leg from a resistor.

1.
2. Solder in IC Sockets. Add in ICs now if you wish. Can be done later.

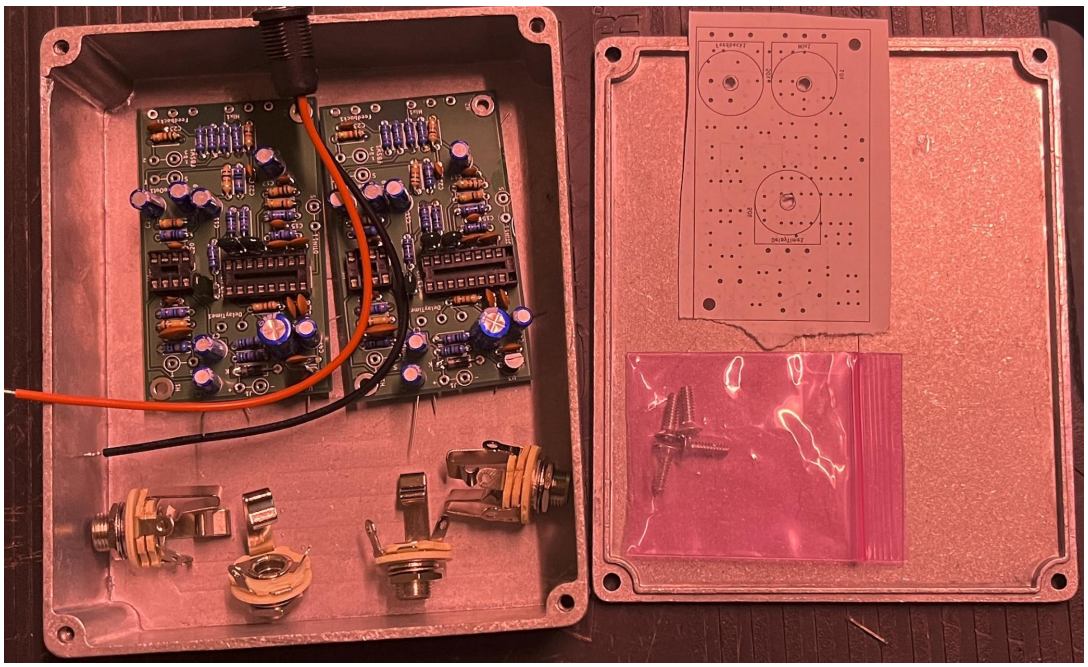


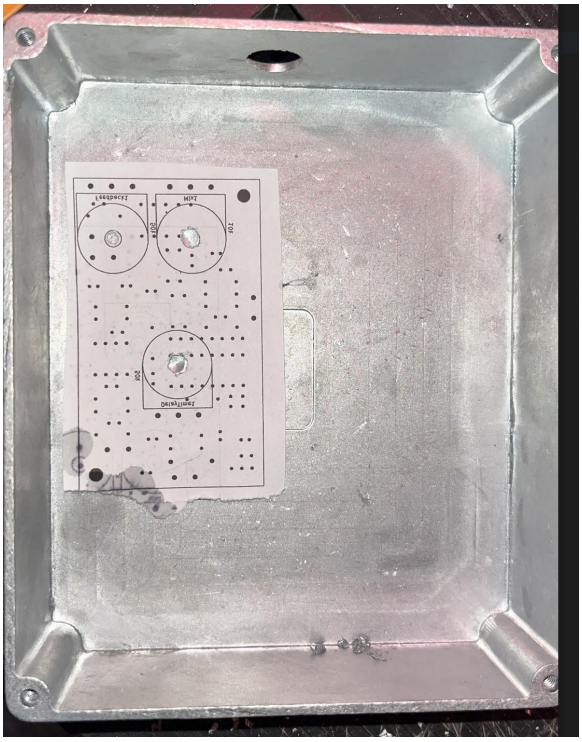
1.

3. Solder in all capacitors.
    1.

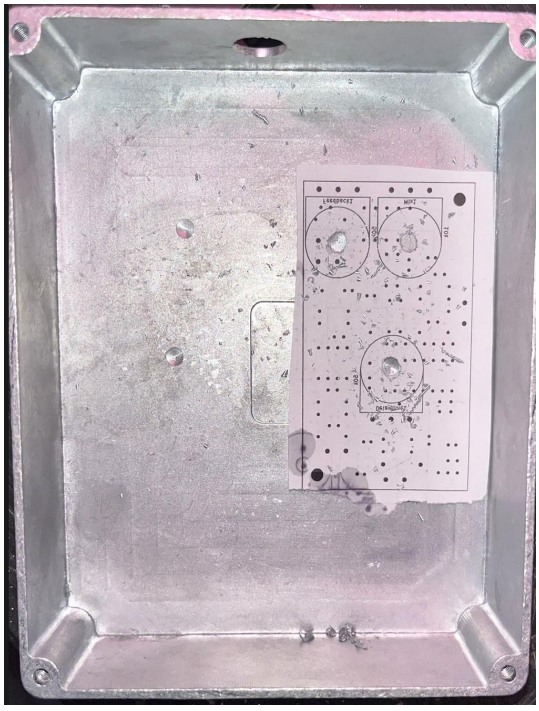


4. Space out the boards and jacks to get a rough idea where everything will go and if there will be enough space to breathe.
5. Print out 1 or 2 drill hole images. Set your printer settings to A4. If you're in the US, it scales just fine even if you are printing on regular letter.
    1. Make sure the physical board aligns with the printout for size.
    2. Cutting off the excess paper is a good idea as the easiest way to drill the holes through the paper on the diagram is through the inside out of the case.
    3.
6. Each board needs a time knob drilled. One board will have a feedback knob drilled and the other will have the dry/wet knob drilled.
    1. I prefer to keep my dry/wet knobs on the rights of my layouts so I had to keep in mind stuff is mirrored.
    2. Give the pots a bit of jiggle room in the enclosure.

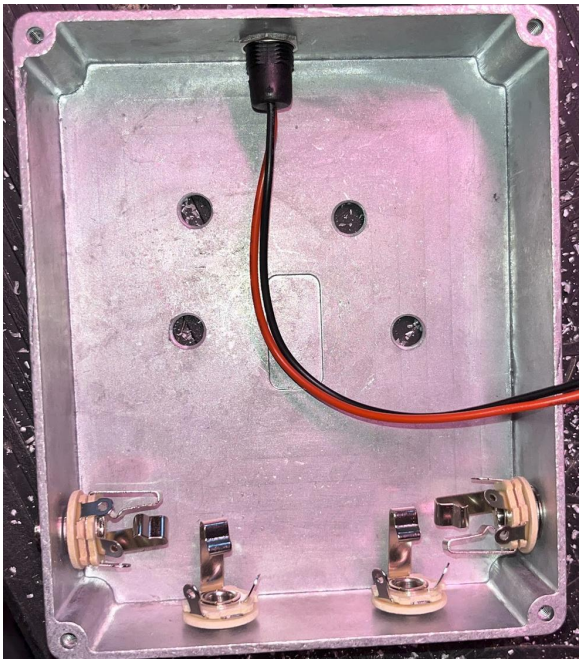




Drill holes for Time and Mix on the left from the inside of the case.

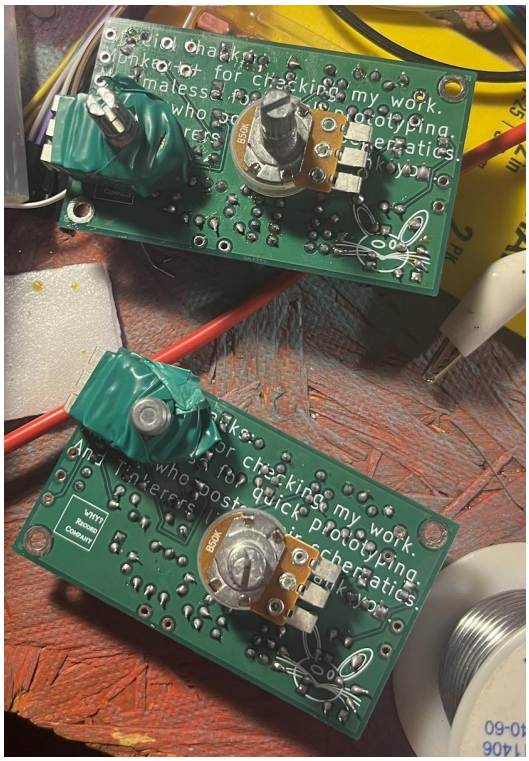


Drill holes for Time and Feedback on the right from the inside of the case.

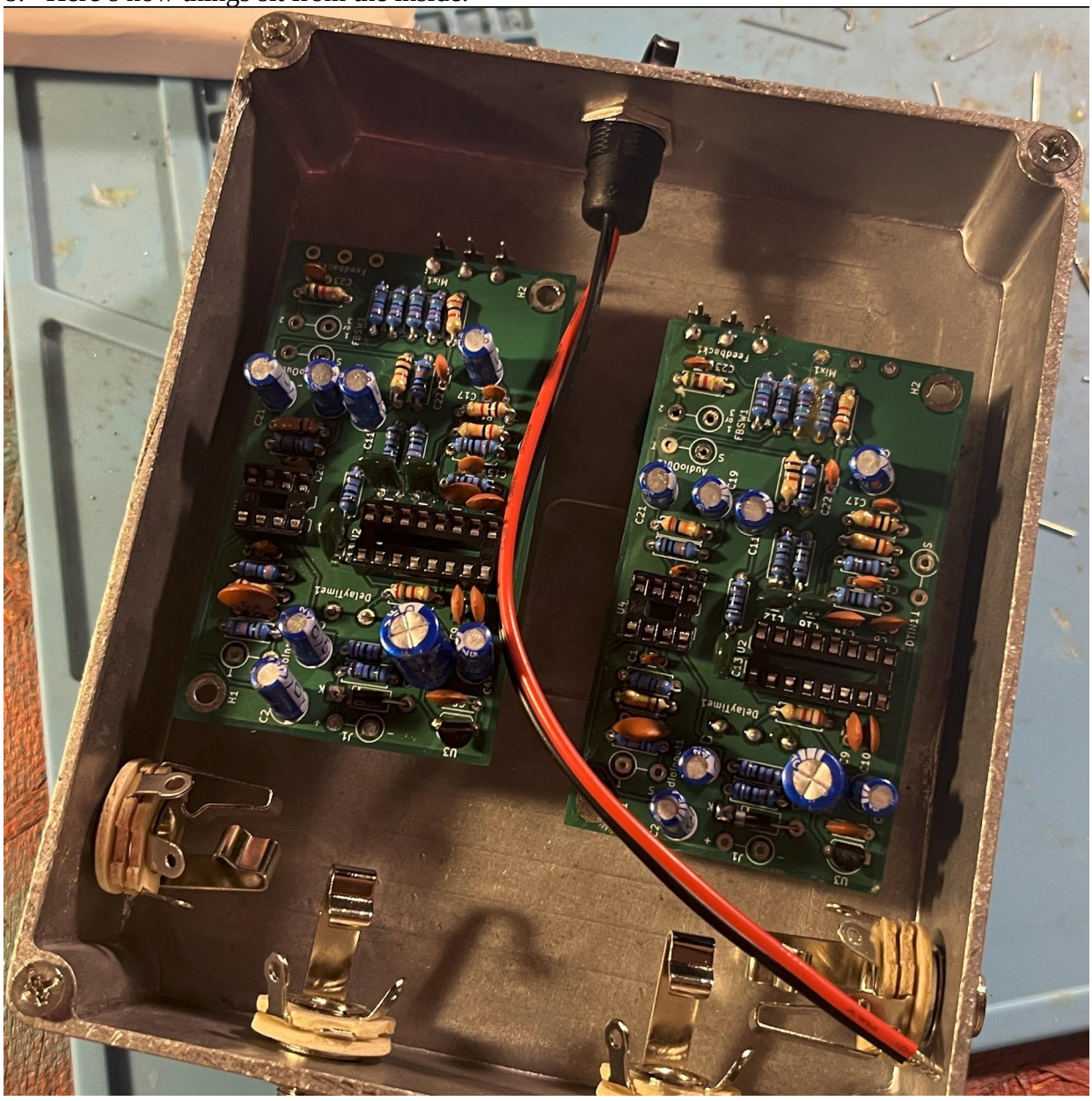


End result. If you drill from the top you'll have to do some funny paper flipping stuff.

7. You're not crazy, the holes look off-center intentionally. I wanted 2 pots holding up each board. One board holds a time knob(50k mono) and wet(Stereo 10k), while the other holds a time knob and feedback(Stereo 50k). If you're building this in mono then all 3 are just on 1 board. Notice how 1 pot covers up the WRC logo while the other doesn't. Tape is used to ensure that the bottoms do not touch.
    1. It might be easier to wire up the Audio Out wire before soldering in the pot that blocks that section but bending won't do much harm.



8. Here’s how things sit from the inside.



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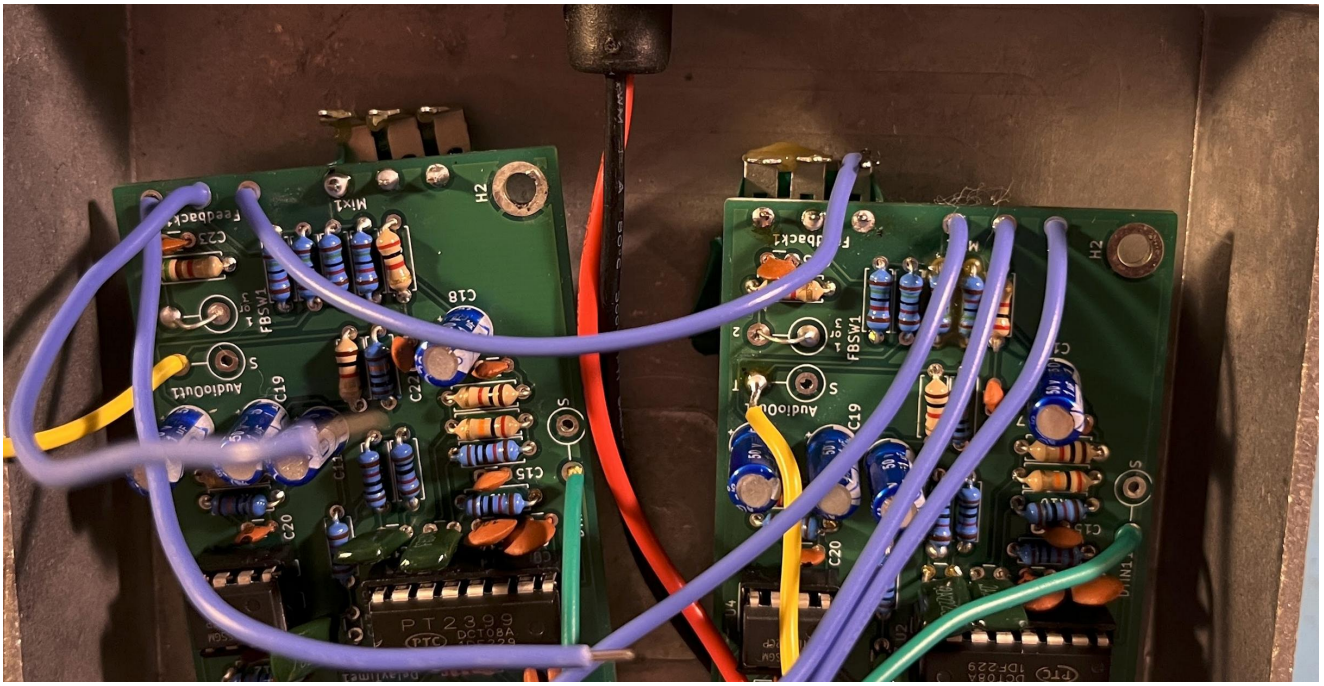
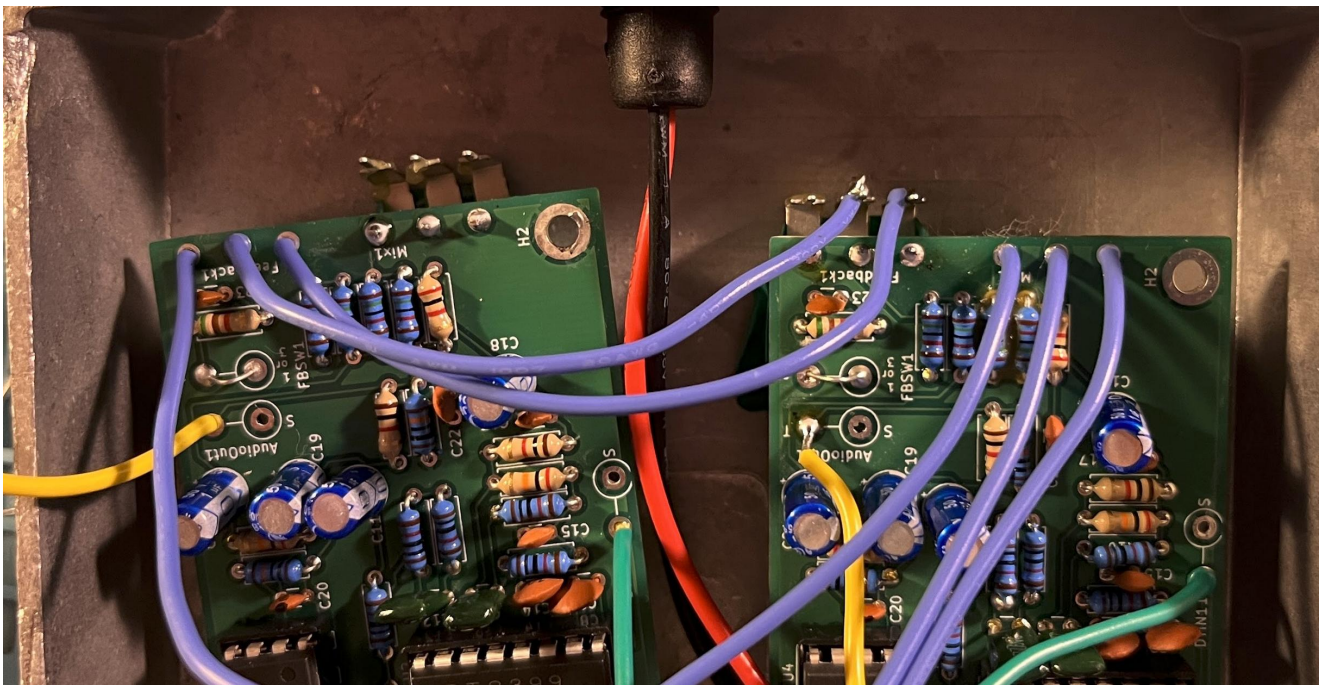
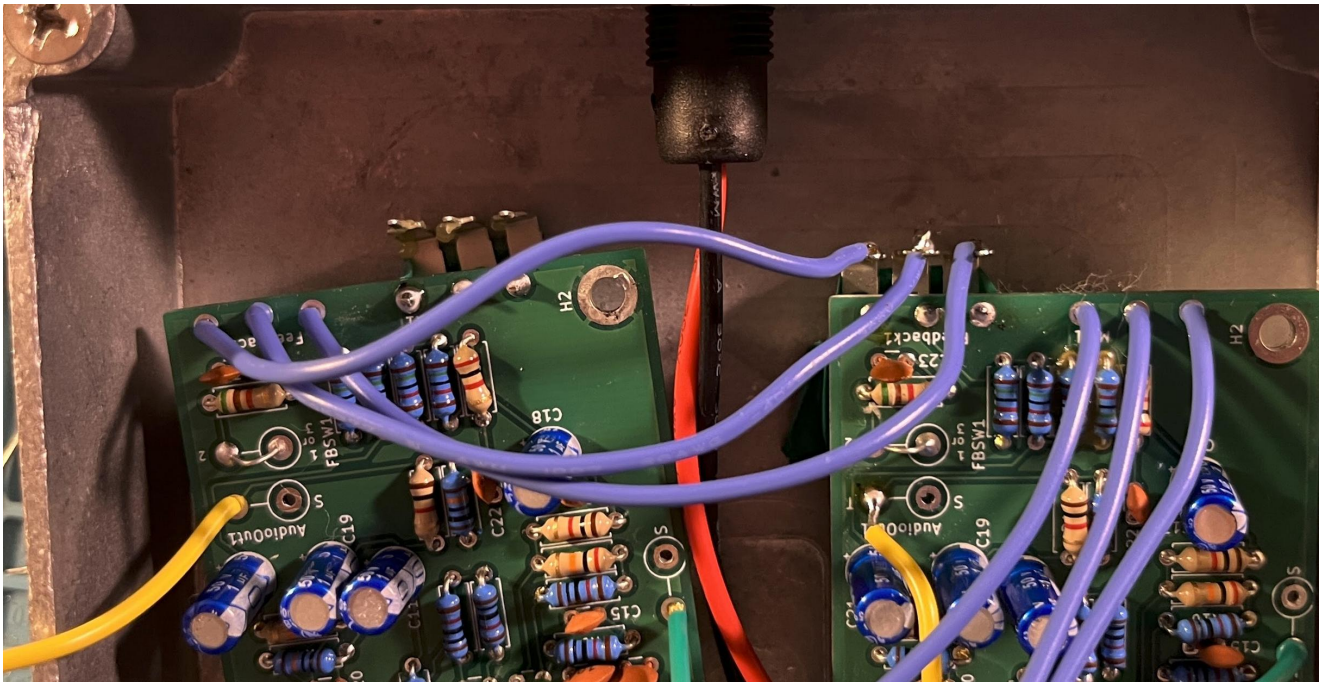
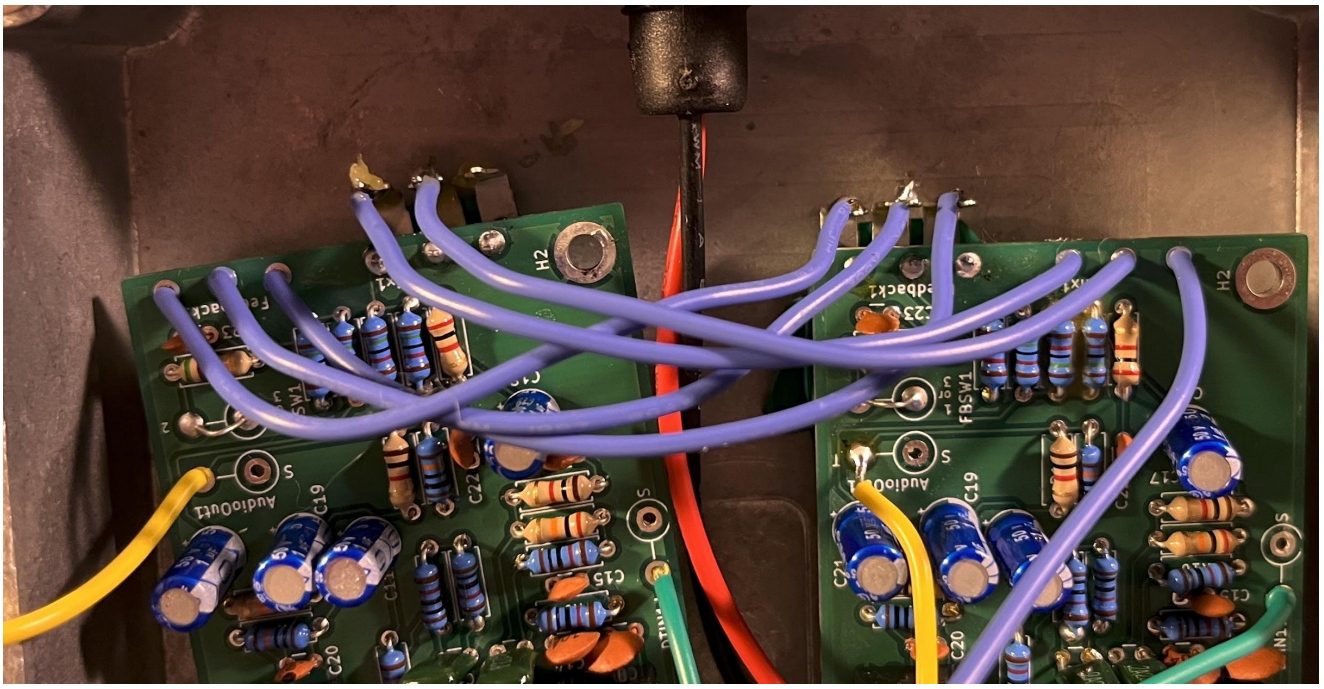
9. Here’s the step-by-step photos of wiring up the 2 stereo pots. All wires leave the component side.


H2
C18
C19
C22
C15
C20
PT2399
DCT08A


H2
C18
C19
C22
C15
C20

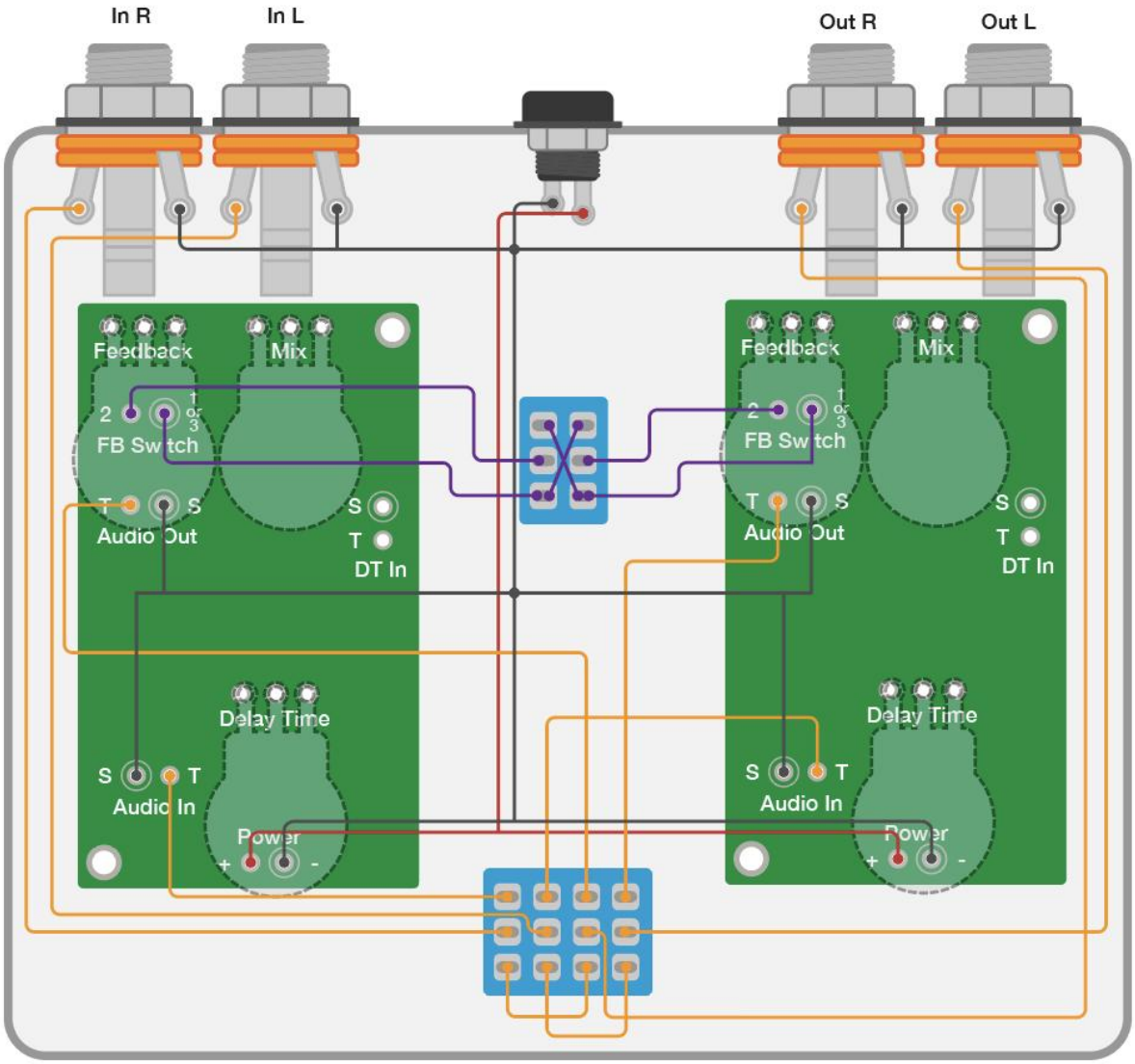


You get the idea. Keep the order respective as if you would directly solder in the pot on the side with wires. Left-most to left-most. Middle to Middle. Right to right.



10. If in stereo, the board that you assign as the “right” will need to go to the “ring” connection of a TRS jack socket, while the “left” will go to “tip”. Applies to both input and output respectively.
    1. Guitar pedal convention has flow going from right to left for audio so FROM THE INSIDE your inputs will be on the left while the outputs will be on the right.

11. Each board needs just 1 connection to the case ground and power needs to connect to connect to case ground. In a metal enclosure the jack grounds will be conductive to the case. If using a plastic enclosure then daisy-chain all of the jack grounds and make sure 1 board ground is conductive to the other board ground.
12. The T and S denote “Tip”(Signal) and “Sleeve”(Ground). “Ring” is a Signal, just for the right ear instead of left. If you don’t want to deal with that then the wiring diagram below for using dedicated Left/right jacks will help you. I just used TRS to save space but the 1590XX case should be enough.
13. If you want to check your work, Check pin 1 of the 2399 chip to be around 5V to GND, Pin 8 of the TL072 to be 9V relative to GND. Pins 3 and 5 of the TL072 to be 4.5V to GND.
14. Here is a wiring diagram for the guitar players who like their foot bypass switches. I made this thing as a send FX for my mixer so the main thing I was chasing was the Wet/Dry replacing an echo volume. This includes the feedback switcher but in the last photo of step 9 you see it shorted in case you don’t want to get silly.



15. Below is a wiring picture of a finished pedal with TRS sockets. Yellow for audio(Should have used white for output but oh well). Red for power. Black for GND. Green for CV. Blue for the stereo pots. The black grounds go to the middles of the TRS jacks as that is the “Sleeve”

connections. Both Left Input and Output get wired to the “TIP” connections of the sockets while the Right I/O go to the “RING” connections. In this image, the left is input while the right it output. When you flip it over, yes the signal will flow right to left.