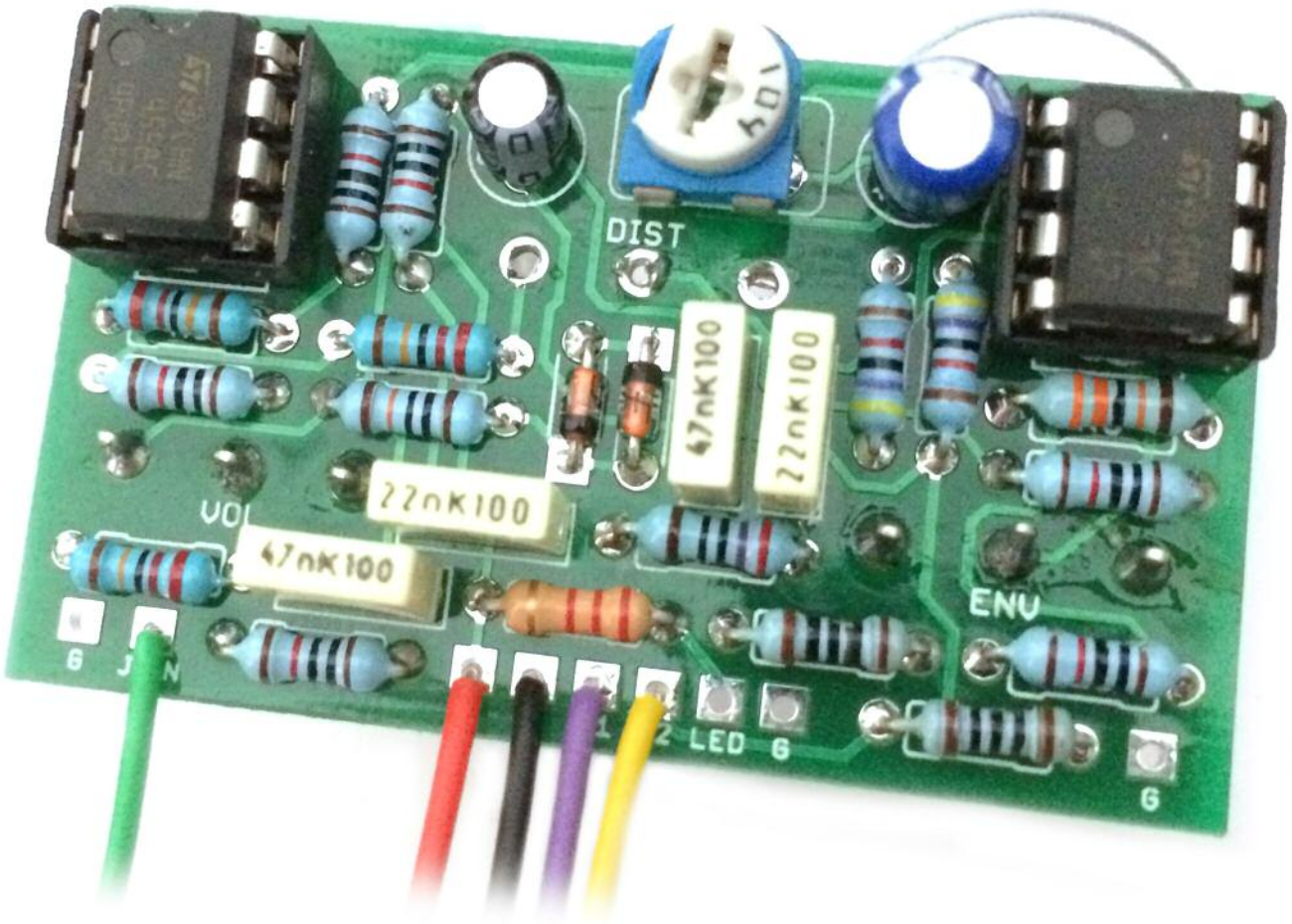
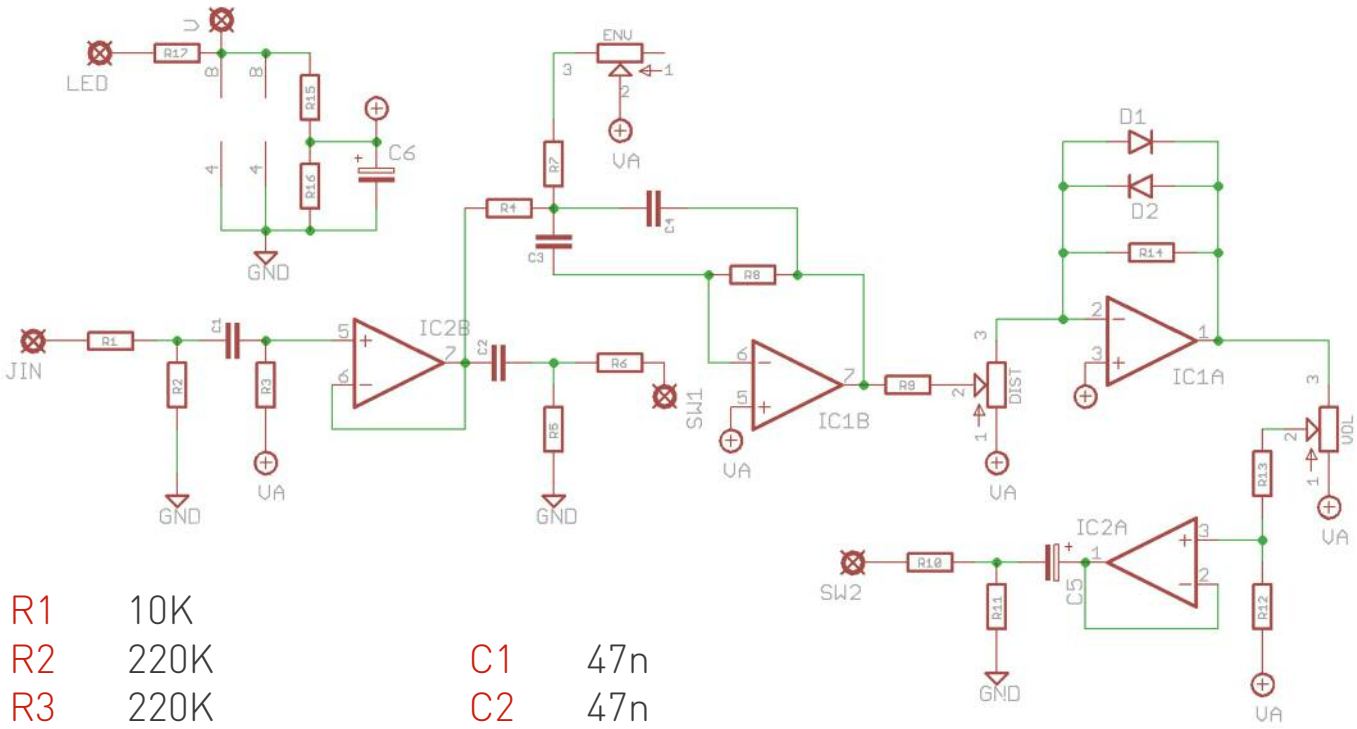


Warp Sound

Fuzzy, Filtery Shoegaze Heaven

Schematic + BOM

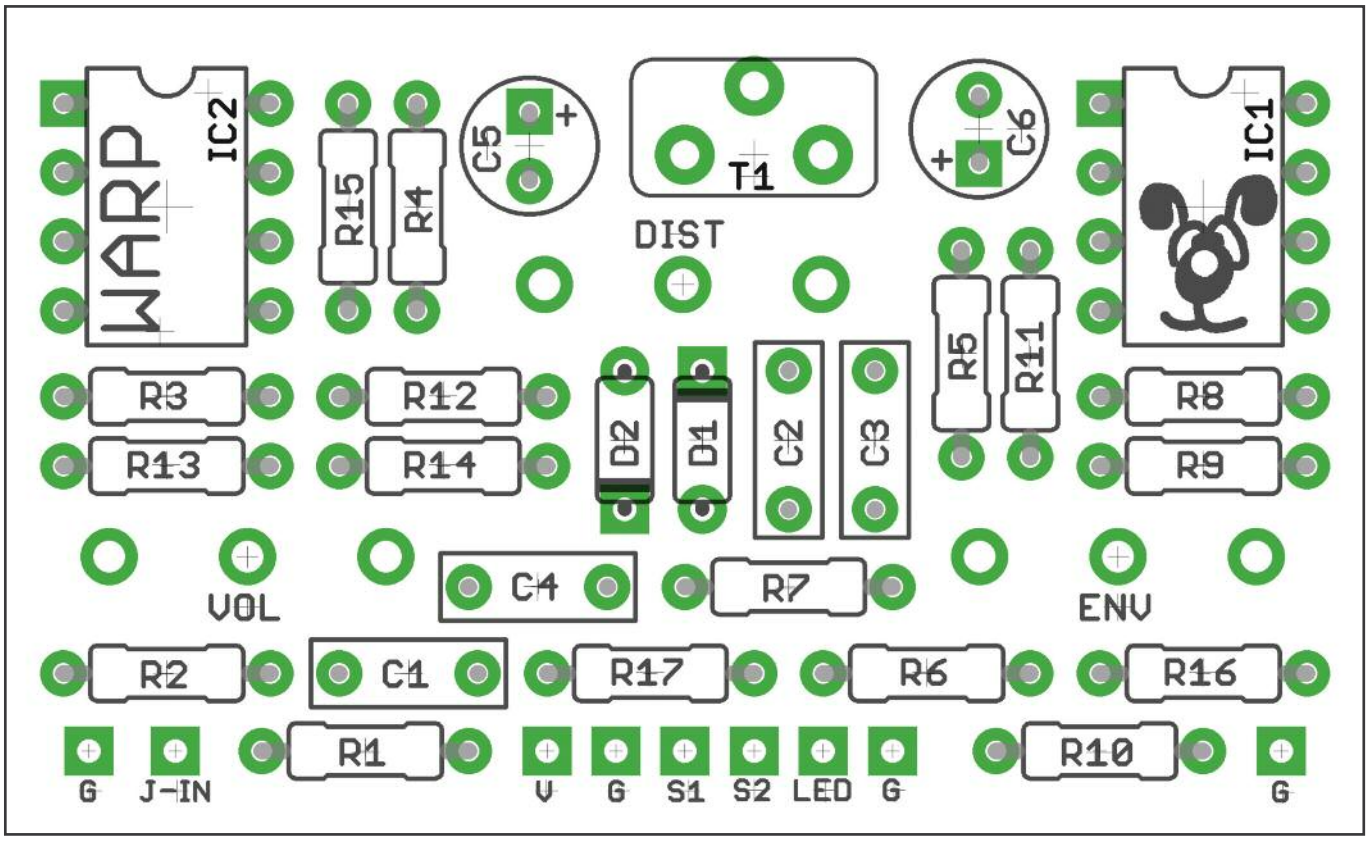


R1	10K	C1	47n
R2	220K	C2	47n
R3	220K	C3	22n
R4	10K	C4	22n
R5	47K	C5	4u7 elec
R6	100R	C6	47u elec
R7	270R		
R8	330K		
R9	10K	D1-2	1N4148
R10	100R		
R11	47K	IC1-2	Dual OpAmp*
R12	220K		
R13	10K	DIST	100KB**
R14	100K	ENV	15KB / 10KB***
R15	10K	VOL	50KA
R16	10K		
R17	2K2 (CLR)	T1	100K Trimmer**

*Original units used 251C chips, but the PCB has been designed for standard pinout dual op-amps. It has been tested with 4558, 072 and 5532 - all sounded good.

**Distortion level was originally an internal trimmer. You can still go for this option using T1, or go for an external control using a 100KB pot. Use only one or the other.

***Envelope control in the orignal is 10KB. Most of the adjustment is bunched towards the end of the turn, so a 5KB gives much better control, sacrificing only the very bottom end of the frequency range when fully CCW.



General Notes

Be very careful when soldering the LED and diodesThey're very sensitive to heat. You should use some kind of heat sink (crocodile clip or reverse action tweezers) on each leg as you solder them. Keep exposure to heat to a minimum (under 2 seconds). You should use sockets for the ICs, or be super careful not to overheat. Take your time.

Snap the small metal tag off the pots so they can be mounted flush in the box.

Positive (anode) leg of the electrolytic capacitors go into the square pads. Negative leg (cathode) of the diodes go into the square pads.

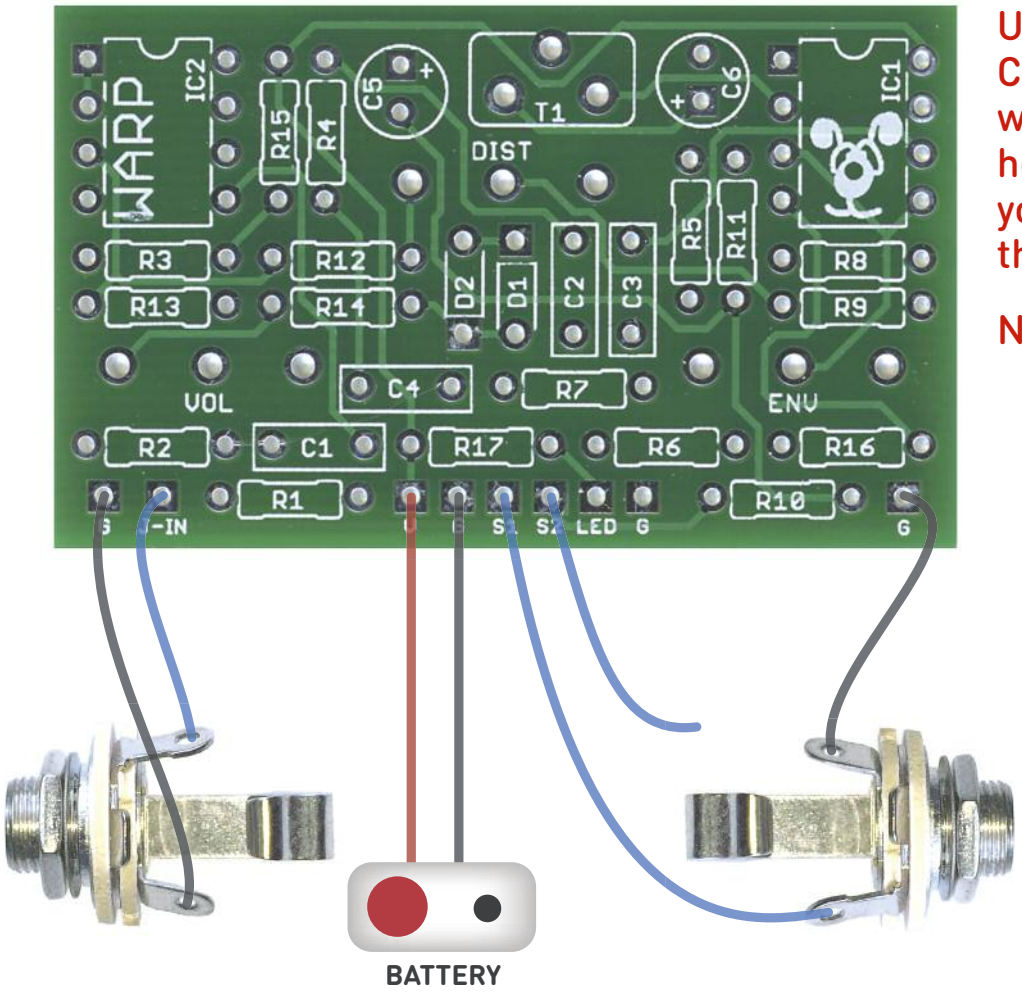
Pots mount on the back side of the board. You can use vertical-mount pots or just wire up 'normal' ones. It's a good idea to place the pots in their holes in the enclosure when you're soldering them in place on the PCB. That way you know they're going to line up ok. Best way to do it is to solder a single pin of each pot in place, then do a visual check to see that they're all sitting at the same height. If not, melt the joints and readjust any that are off.

If your pots don't have protective plastic covers you should place a strip of thick card between them and the board when soldering to keep them a good distance from the pcb to avoid shorting other components.

You should solder all other board-mounted components before you solder the pots. Once they're in place you'll have no access to much of the underside of the board.

The original circuit is buffered, and the PCB has been designed to retain that. It can be wired true bypass but the buffers will still be in the circuit when the effect is engaged. See overleaf.

Test the board!



UNDER NO CIRCUMSTANCES will troubleshooting help be offered if you have skipped this stage.

No exceptions.

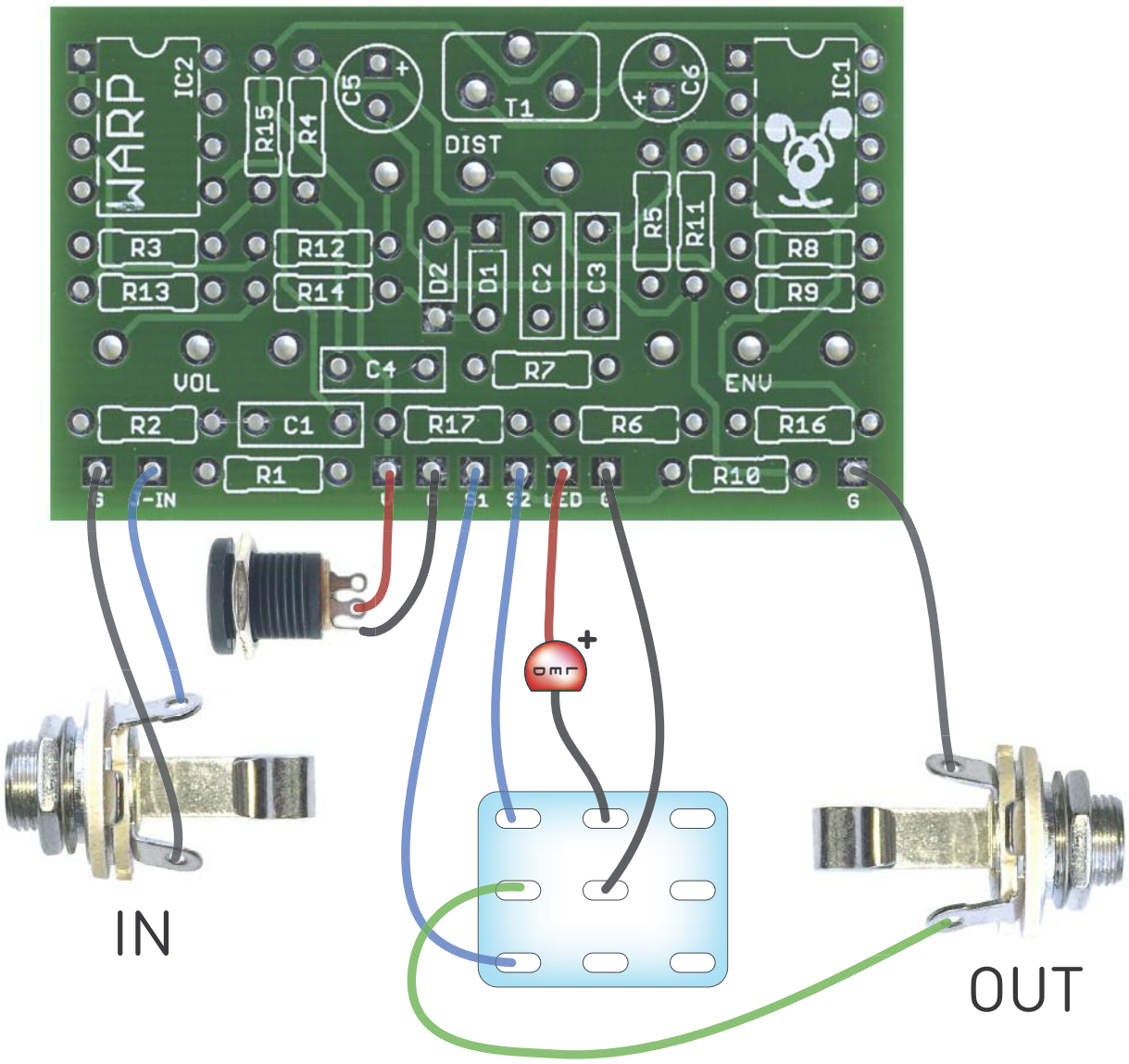
Battery clip is supplied to test the circuit.

Once you've finished the circuit it makes sense to test is before starting on the switch and LED wiring. It'll cut down troubleshooting time in the long run. If the circuit works at this stage, but it doesn't once you wire up the switch - guess what? You've probably made a mistake with the switch.

You'll be testing both buffered bypass and full circuit. Connect everything up as shown above using good lengths of wire as you may be disconnecting them from the jacks afterwards. If you have a stereo input jack ignore the ring tab on it for now.

Connect pad S1 to your output jack. This is your buffered bypass output. You should get a clean, unity gain signal. If all's well, disconnect that wire from the output jack and connect S2 instead. You should now have your fuzzy, filtered signal. If not, check your build as you've done something wrong.

Wire it up - Buffered Bypass



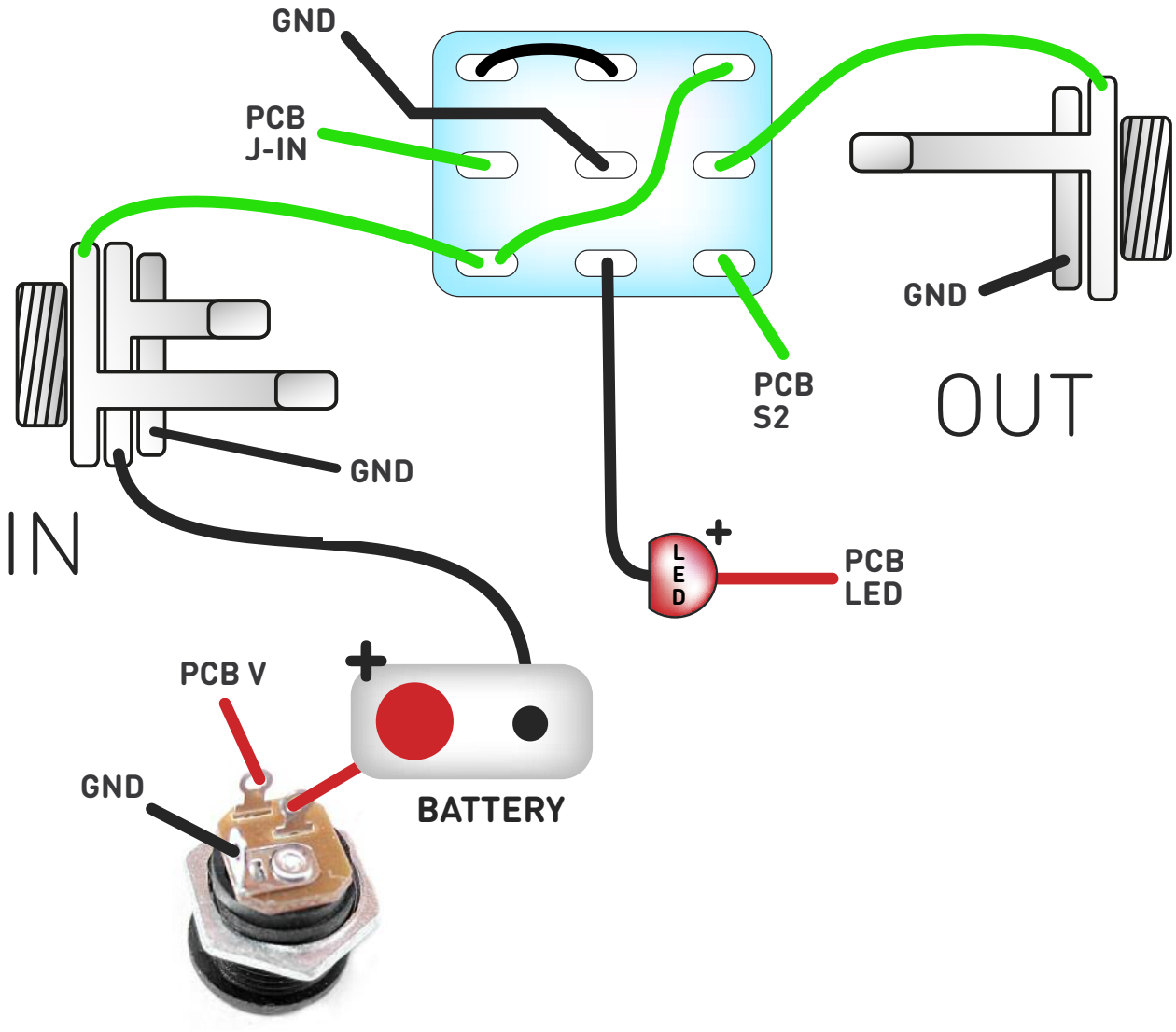
This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

You can use a DPDT footswitch instead of a 3PDT. Just ignore the blank row shown above.

If you want to add a battery see overleaf for how to connect that up using a stereo jack.

Wire it up - with battery

(if using a daughterboard please refer to the relevant document)

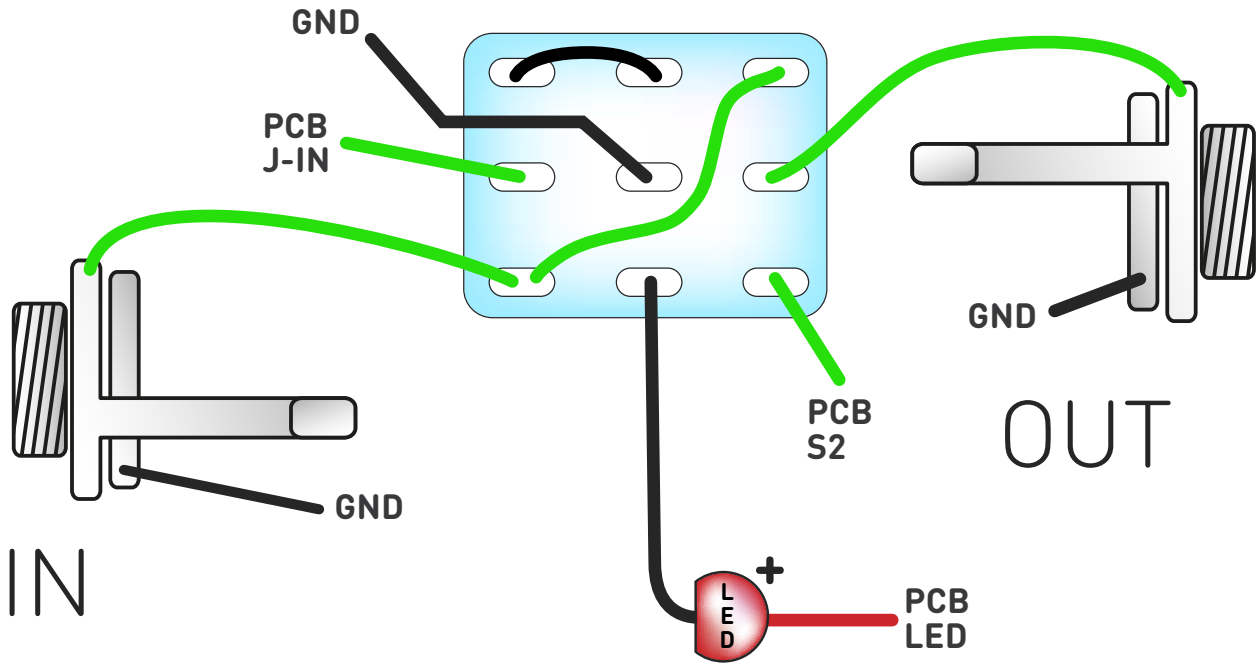


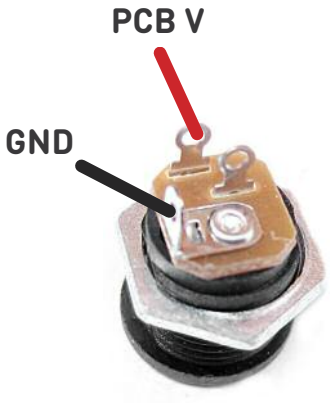
This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

The BOARD GND connections don't all have to connect to one point. They can be daisy-chained around the circuit, using larger connection points (such as jack socket lugs) for multiple connections. As long as they all connect together in some way. All the pads marked G on the PCB are connected together, so any or all of them can be used for GND connections referenced on the diagram.

Wire it up - DC only version

(if using a daughterboard please refer to the relevant document)





This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

The BOARD GND connections don't all have to connect to one point. They can be daisy-chained around the circuit, using larger connection points (such as jack socket lugs) for multiple connections. As long as they all connect together in some way. All the pads marked G on the PCB are connected together, so any or all of them can be used for GND connections referenced on the diagram.

Drilling template

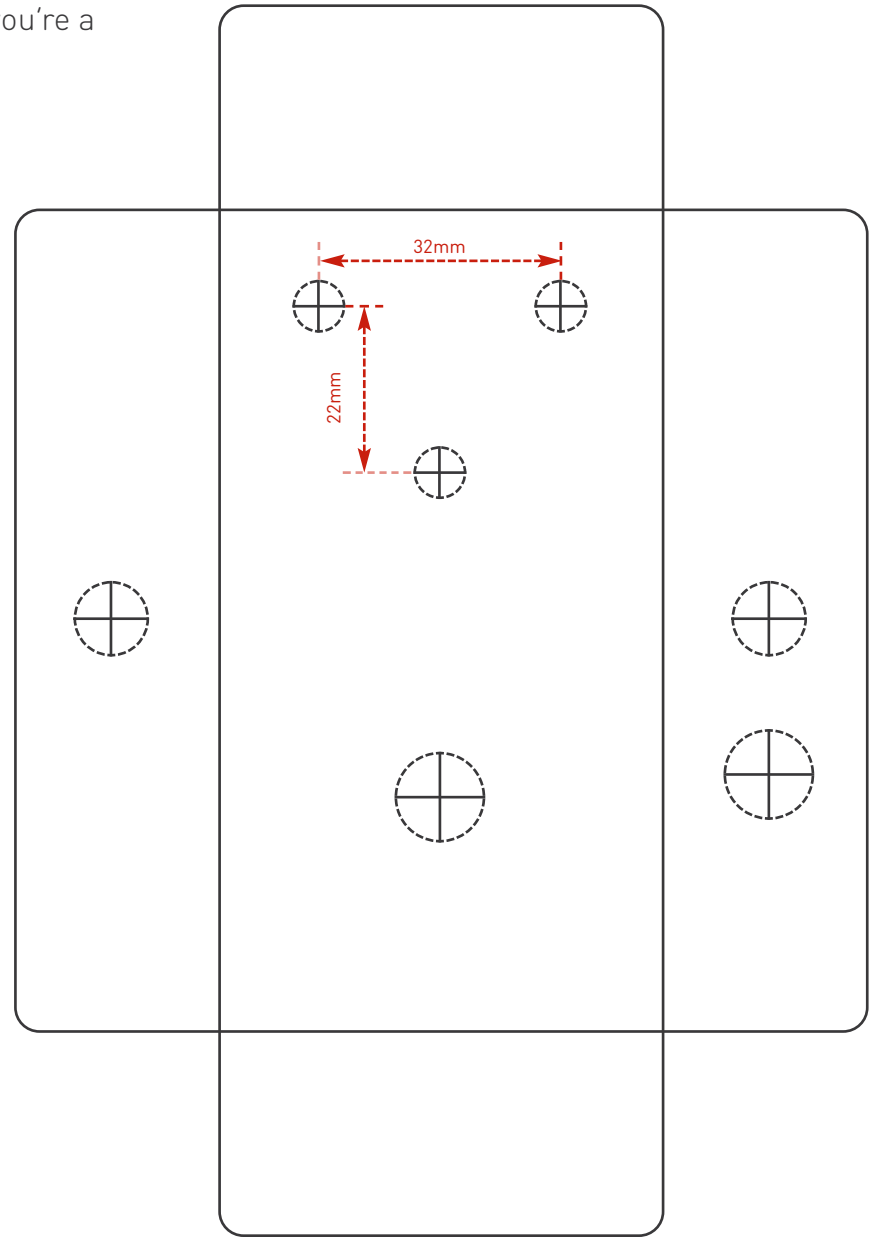
Hammond 1590B

60 x 111 x 31mm

Recommended drill sizes:

Pots	7mm
Jacks	10mm
Footswitch	12mm
DC Socket	12mm

It's a good idea to drill the holes for the pots 1mm bigger to give yourself some wiggle room, unless you're a drill ninja.



This template is a rough guide only. You should ensure correct marking of your enclosure before drilling. You use this template at your own risk.
Pedal Parts Ltd can accept no responsibility for incorrect drilling of enclosures.

PedalParts.co.uk