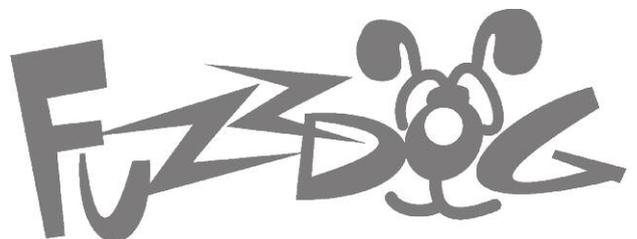


Eight Two Zero

Klon Kompetitor



Important notes

If you're using any of our footswitch daughterboards, DOWNLOAD THE DAUGHTERBOARD DOCUMENT

- Download and read the appropriate build document for the daughterboard as well as this one BEFORE you start.
- DO NOT solder the supplied Current Limiting Resistor (CLR) to the main circuit board even if there is a place for it. This should be soldered to the footswitch daughterboard.

COMPONENT SPECS

Unless otherwise stated in this document:

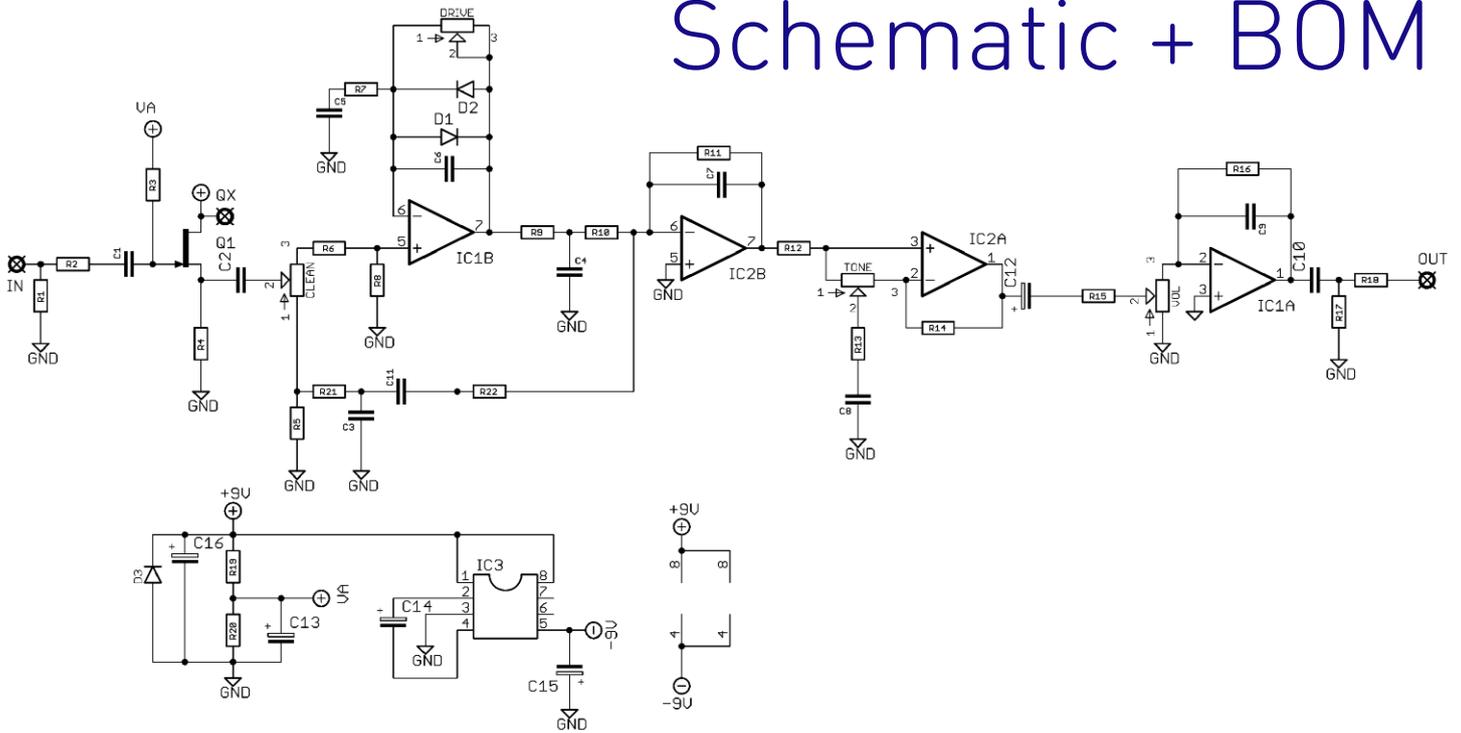
- Resistors should be 0.25W. You can use those with higher ratings but check the physical size of them.
- Electrolytics caps should be at least 25V for 9V circuits, 35V for 18V circuits. Again, check physical size if using higher ratings.

LAYOUT CONVENTIONS

Unless otherwise stated in this document, the following are used:

- **Electrolytic capacitors:**
Long leg (anode) to square pad.
- **Diodes:**
Striped leg (cathode) to square pad.
- **ICs:**
Square pad indicates pin 1.

Schematic + BOM



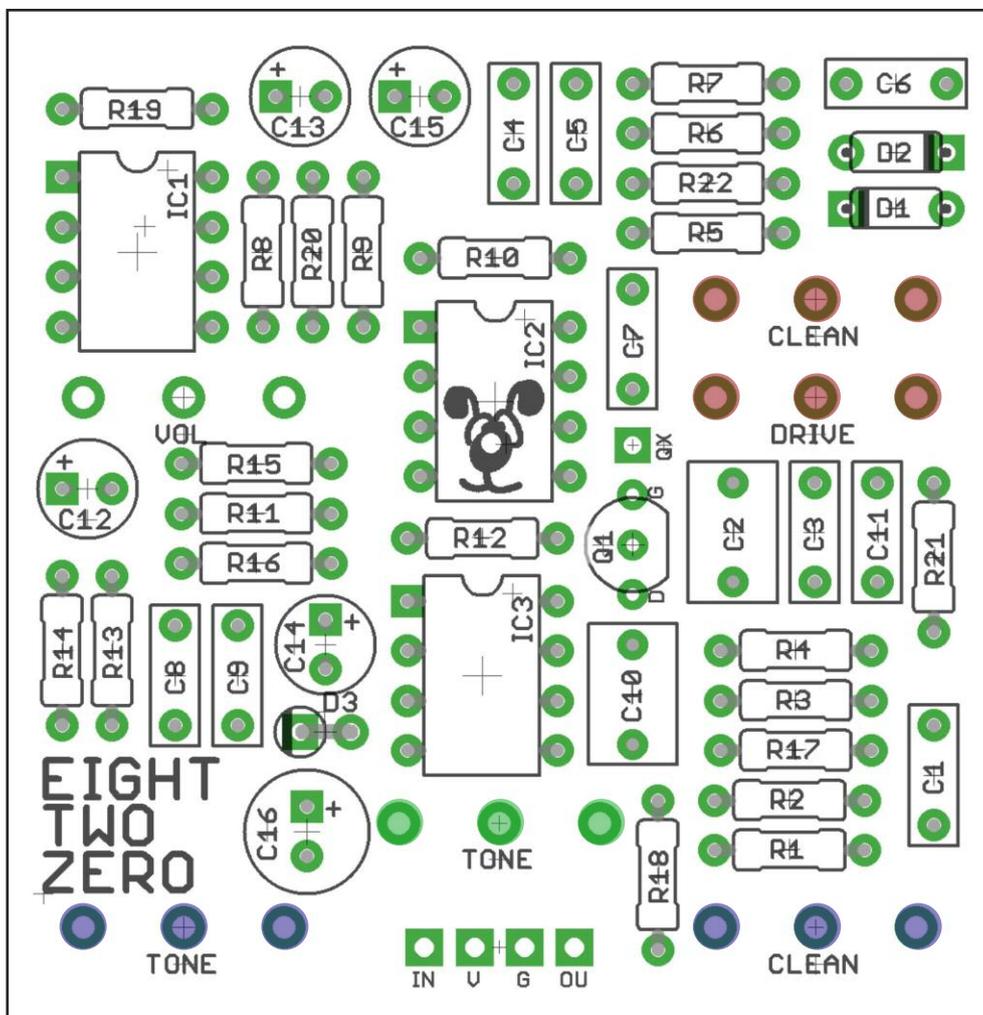
R1	2M2	C1	100n	IC1-2	4558
R2	10K	C2	1u	IC3	7660S*
R3	1M	C3	10n	Q1	2N5457**
R4	10K	C4	220n	D1-2	1N4148
R5	100K	C5	100n	D3	1N4001
R6	560R	C6	100p	VOL	100KA
R7	2K2	C7	10p	TONE	20KW‡
R8	62K	C8	220n	DRIVE	250KB‡‡
R9	1K	C9	22p	CLEAN	250KB‡‡
R10	56K	C10	1u		
R11	56K	C11	220n		
R12	1K	C12	10u elec		
R13	220R	C13	10u elec		
R14	1K	C14	10u elec		
R15	47K	C15	10u elec		
R16	100K	C16	100u elec		
R17	100K				
R18	1K				
R19	10K				
R20	10K				
R21	7K5				
R22	20K				

*Or TC1044S.

**2Nk246 in the original, which has a different pinout which we've accommodated on the PCB.

‡20KB won't be too far off if you can't get W taper.

‡‡DRIVE and CLEAN are a dual gang pot. We've designed the board so you can have separate controls for both.



PCB layout ©2018 Pedal Parts Ltd.

The power and signal pads on the PCB conform to the FuzzDog Direct Connection format, so can be paired with the appropriate daughterboard for quick and easy offboard wiring. Check the separate daughterboard document for details.

Be very careful when soldering the diodes and transistors. They'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). Same goes for the ICs if you aren't using sockets.

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

Positive (anode) legs of the electrolytic caps go to the square pads.

Negative (cathode) legs of the diode goes to the square pad.

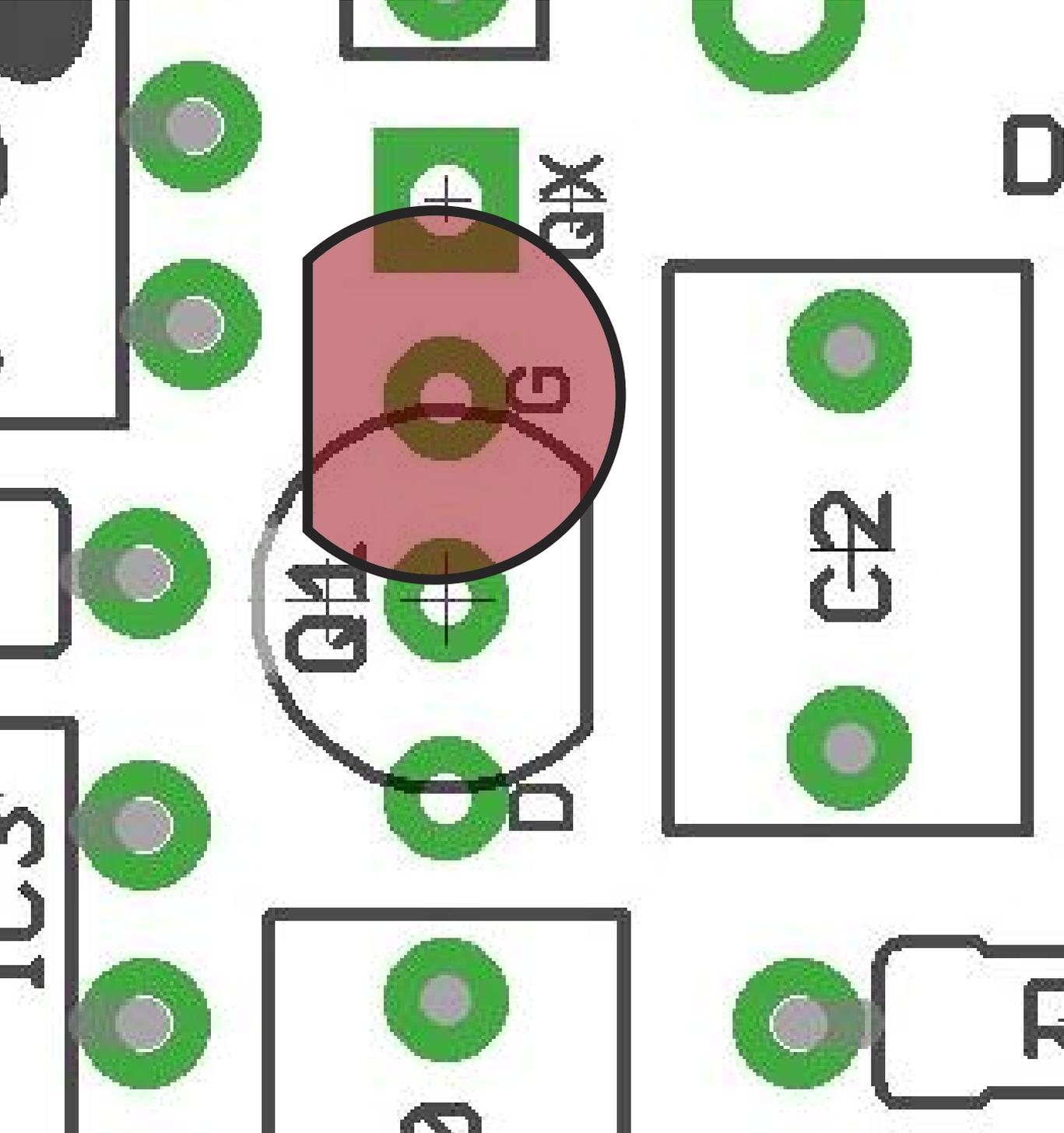
You should solder all other board-mounted components before you solder the pots. Once they're in place you'll have no access to much of the board. Make sure your pots all line up nicely. The best way to do that is to solder a single pin of each pot in place then melt and adjust if necessary before soldering in the other two pins. If your pots don't have protective plastic jackets ensure you leave a decent gap between the pot body and the PCB otherwise you risk shorting out the circuit.

The CLEAN and DRIVE controls are a dual-gang pot in the original. This mounts in the pads marked in red above, with the TONE pot in the pads marked green. If you want to get extra tweaky you can use separate pots for these. Put your signal gang DRIVE pot in the red DRIVE pads, with your CLEAN and TONE pots in the blue pads. No jumpers are necessary for any configuration, simply leave the unused pads empty.

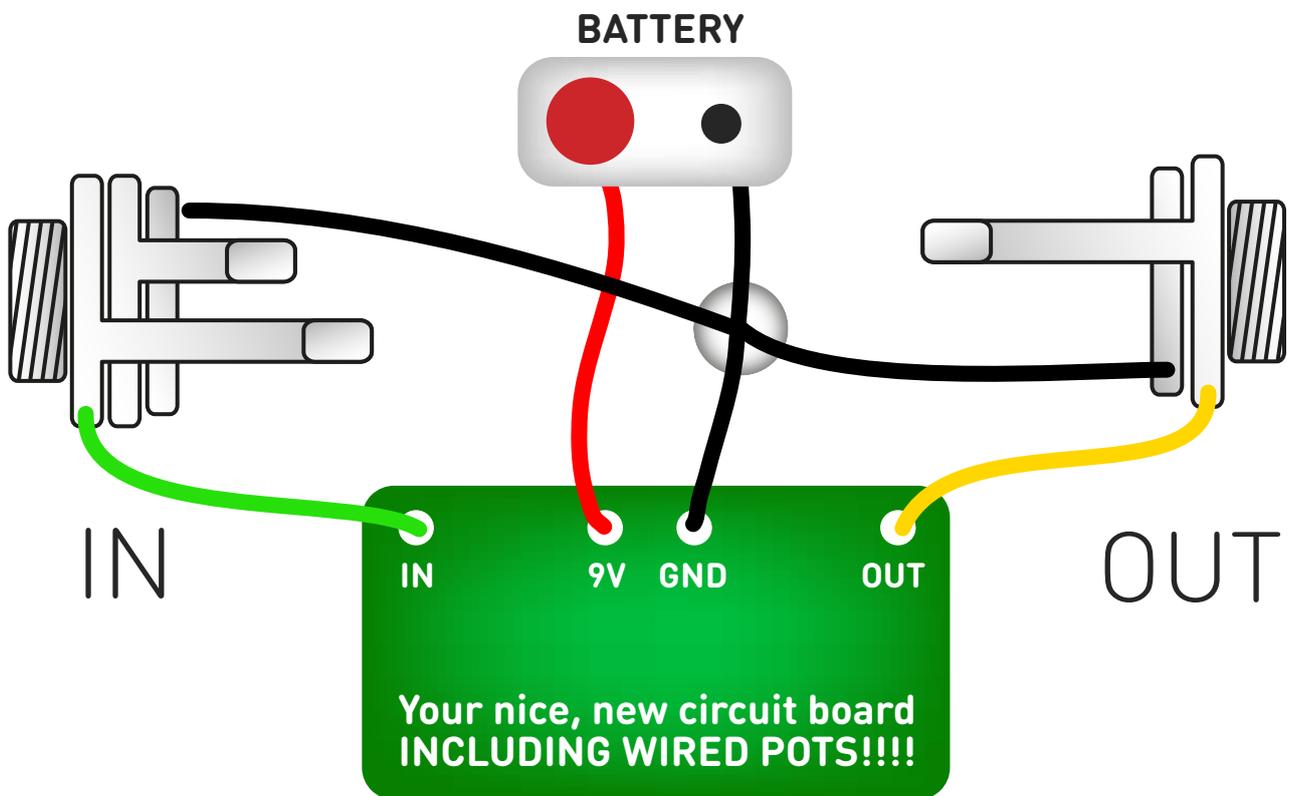
Be aware that there's a fine balance between the to sections. If you start blending higher levels of both you'll be increasing the overall signal so will have to turn down. That's what tweaking is...

FET placement

2N5457 should be placed as per the PCB silkscreen for Q1. 2SK246 have a SGD pinout, so should be placed as shown in red below, utilising pad QX, which connects to DRAIN of Q1.



Test the board!



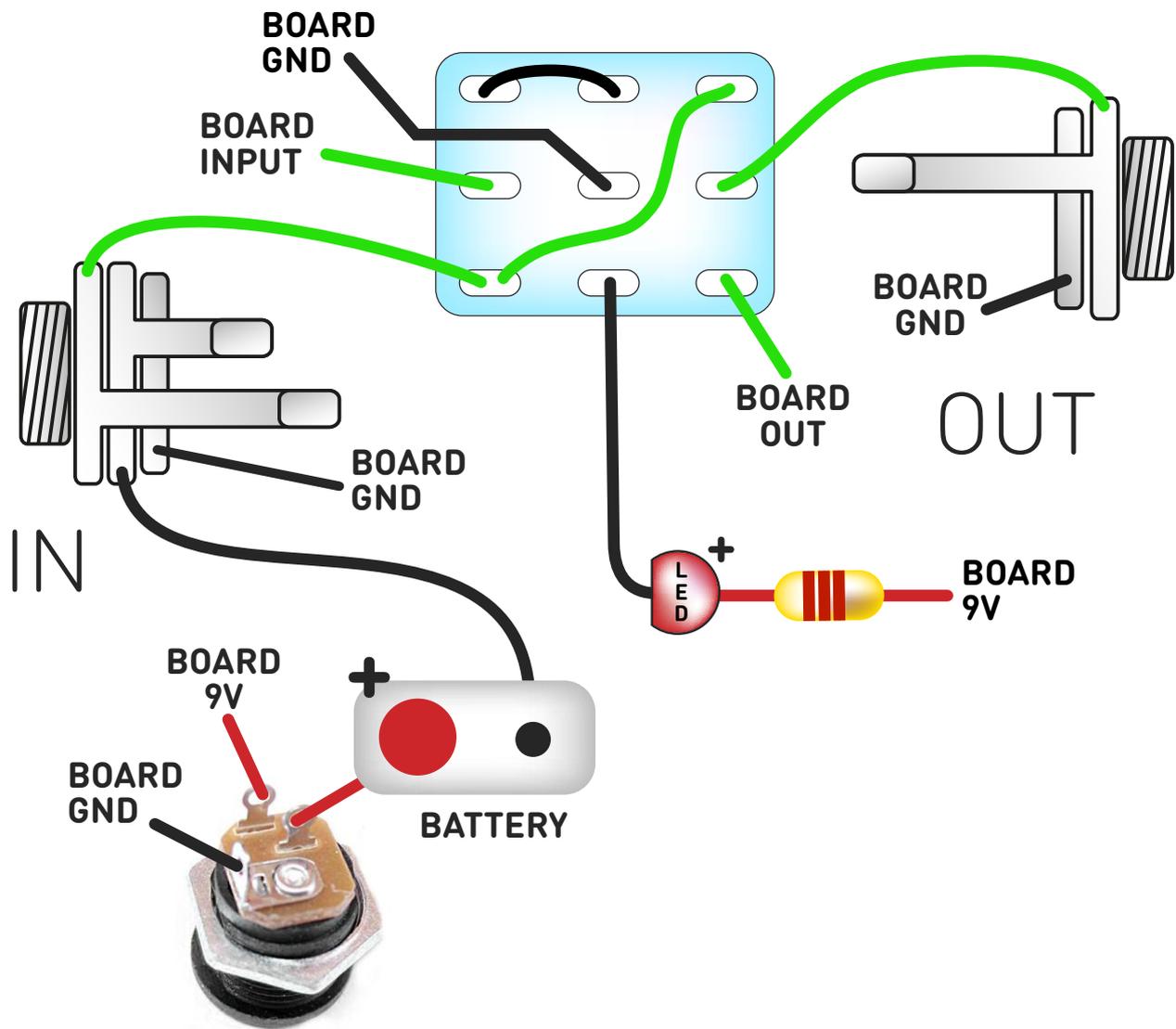
UNDER NO CIRCUMSTANCES will troubleshooting help be offered if you have skipped this stage. No exceptions.

Once you've finished the circuit it makes sense to test it 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.

Solder some nice, long lengths of wire to the board connections for 9V, GND, IN and OUT. Connect IN and OUT to the jacks as shown. Connect all the GNDs together (twist them up and add a small amount of solder to tack it). Connect the battery + lead to the 9V wire, same method. Plug in. Go!

If it works, carry on and do your switch wiring. If not... aw man. At least you know the problem is with the circuit. Find out why, get it working, THEN worry about the switch etc.

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



Wiring shown above will disconnect the battery when you remove the jack plug from the input, and also when a DC plug is inserted.

The Board GND connections don't all have to directly attach to the board. You can run a couple of wires from the DC connector, one to the board, another to the IN jack, then daisy chain that over to the OUT jack.

It doesn't matter how they all connect, as long as they do.

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.

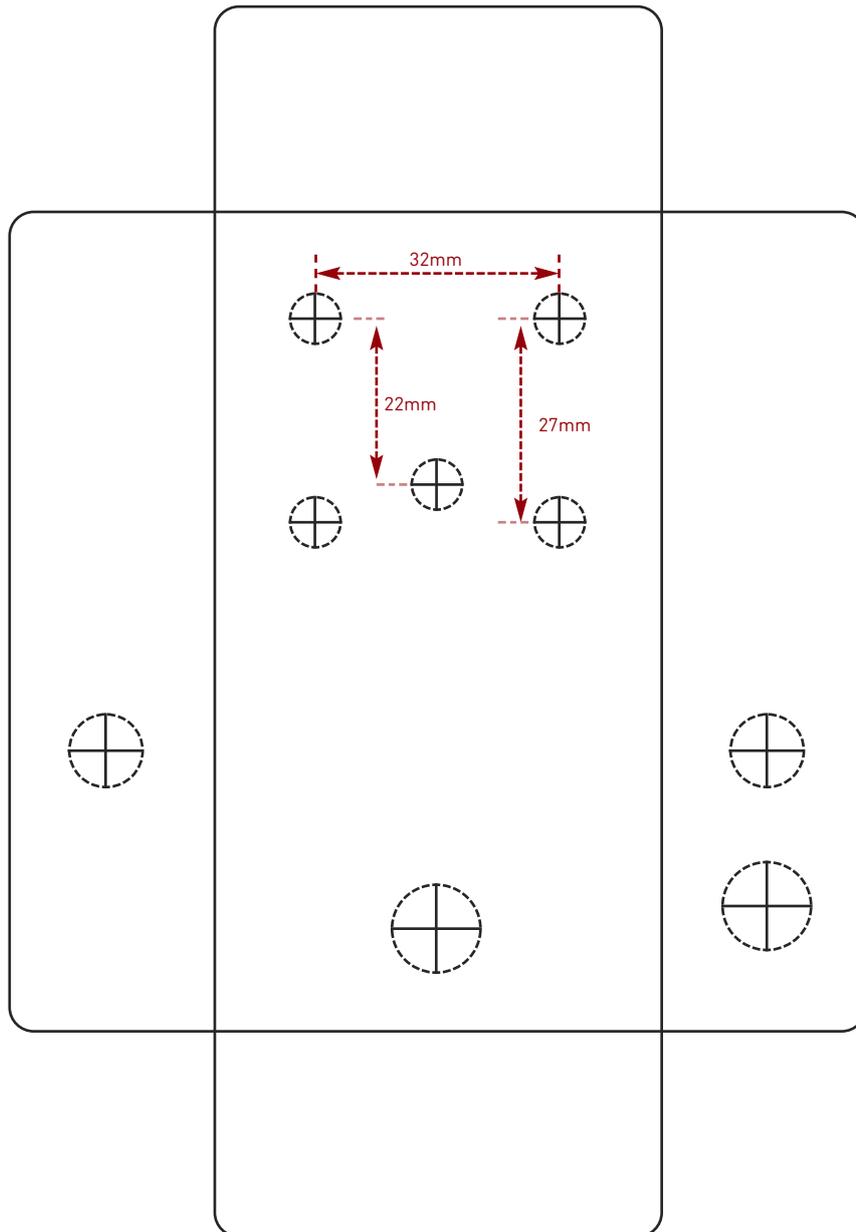
Drilling template

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 pot and toggle switch holes 1mm bigger if you're board-mounting them.
Wiggle room = good!



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.

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