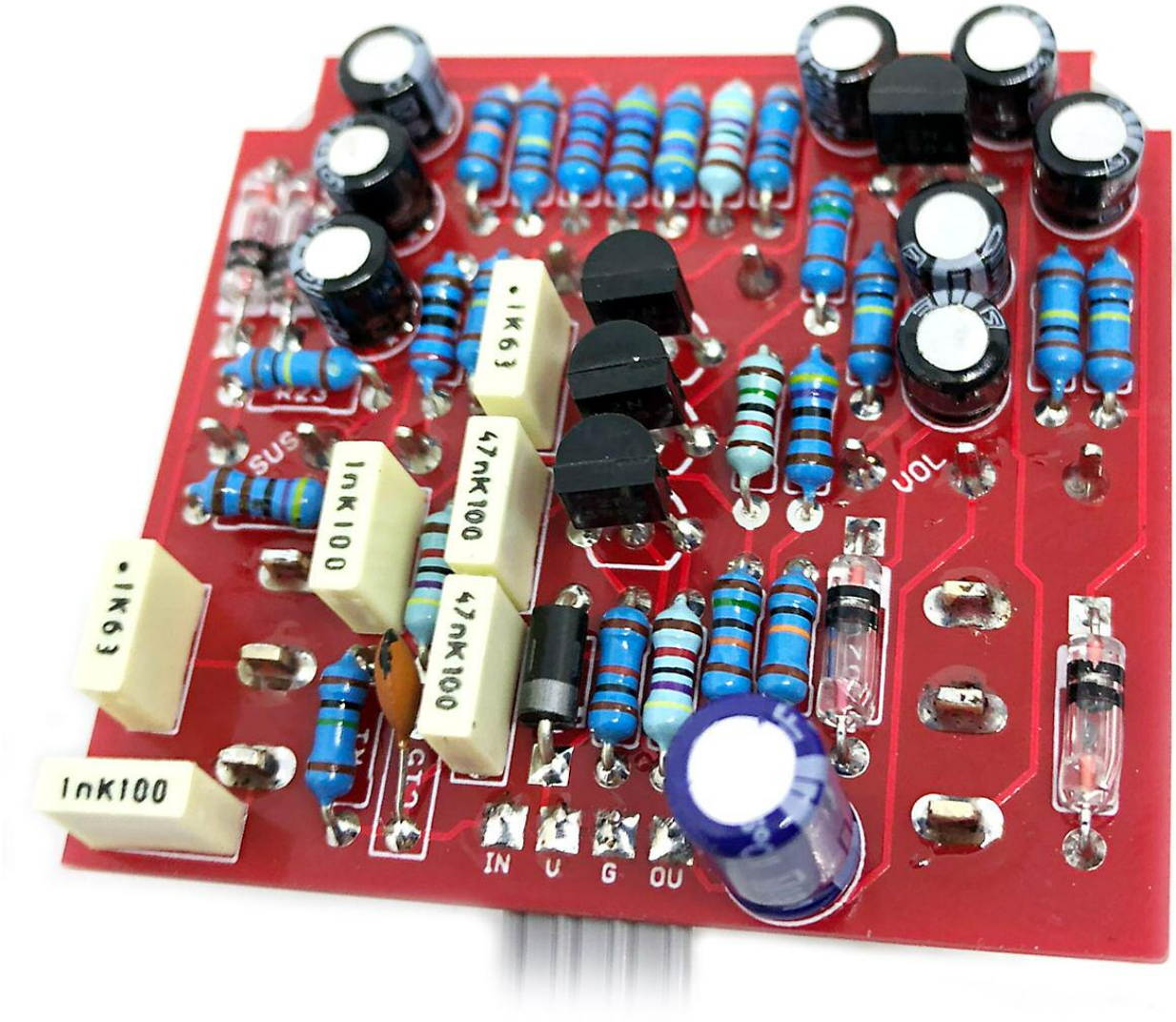


FoxxTave V2

Clone of the Foxx Tone Machine with 'Ultimate' options

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.

POWER SUPPLY

Unless otherwise stated in this document this circuit is designed to be powered with 9V DC.

COMPONENT SPECS

Unless otherwise stated in this document:

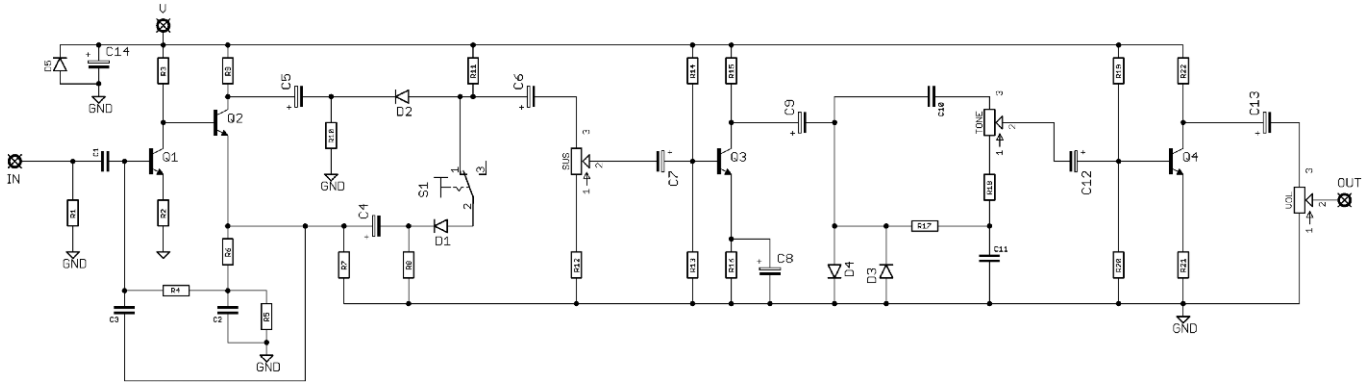
- Resistors should be 0.25W. You can use those with higher ratings but check the physical size of them.
- Electrolytics caps should be at least 25V for 9V circuits, 35V for 18V circuits. Again, check physical size if using higher ratings.

LAYOUT CONVENTIONS

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

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

Schematic + BOM - Foxx Tone Machine

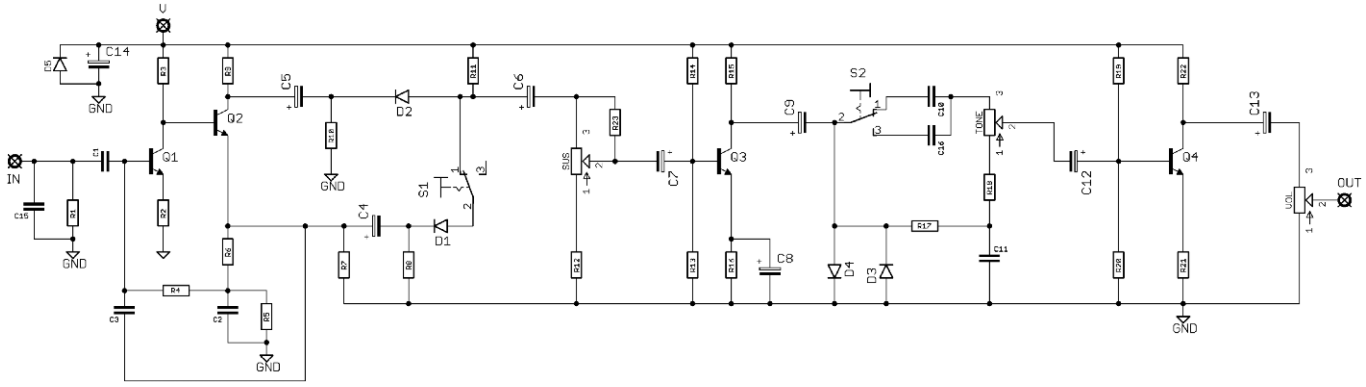


R1	1M	R19	470K	C1	100n
R2	1K	R20	47K	C2	100n
R3	47K	R21	1K5	C3	1n
R4	47K	R22	10K	C4	10u elec
R5	100k	R23	empty	C5	10u elec
R6	100K			C6	10u elec
R7	4K7	D1-4	1N34A	C7	10u elec
R8	100K	D5	1N4001	C8	10u elec
R9	4K7			C9	10u elec
R10	100K	Q1-4	2N3904*	C10	3n3
R11	100K			C11	47n
R12	220R	SUS	50KB	C12	10u elec
R13	15K	TONE	50KB	C13	10u elec
R14	150K	VOL	50KB	C14	100u elec
R15	10K			C15	empty
R16	1K	S1	SPDT**	C16	empty
R17	22K				
R18	4K7				

*Many different medium-gain NPN transistors can be used, i.e. 2N5088, 2N2222

**S1 turns the Octave-up signal on and off

Schematic + BOM - Ultimate Version



R1	1M	R19	470K	C1	47n
R2	1K	R20	47K	C2	47n
R3	47K	R21	1K5	C3	1n
R4	47K	R22	10K	C4	10u elec
R5	100k	R23	100K	C5	10u elec
R6	100K			C6	10u elec
R7	4K7	D1-4	1N34A	C7	10u elec
R8	100K	D5	1N4001	C8	10u elec
R9	4K7			C9	10u elec
R10	100K	Q1-4	2N3904*	C10	15n
R11	100K			C11	100n
R12	220R	SUS	100KB	C12	10u elec
R13	15K	TONE	100KB	C13	10u elec
R14	150K	VOL	100KB	C14	100u elec
R15	10K			C15	10p
R16	1K	S1	SPDT**	C16	1n
R17	22K	S2	SPDT***		
R18	4K7				

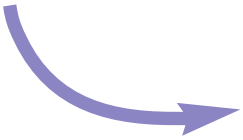
A few component value changes, and a few extra bits and BOOM! Vintage pedal appropriated for boutique mojo vibes. C15 added at input, R23 on SUS pot, extra switch before tone and C16 for FAT/BRIGHT.

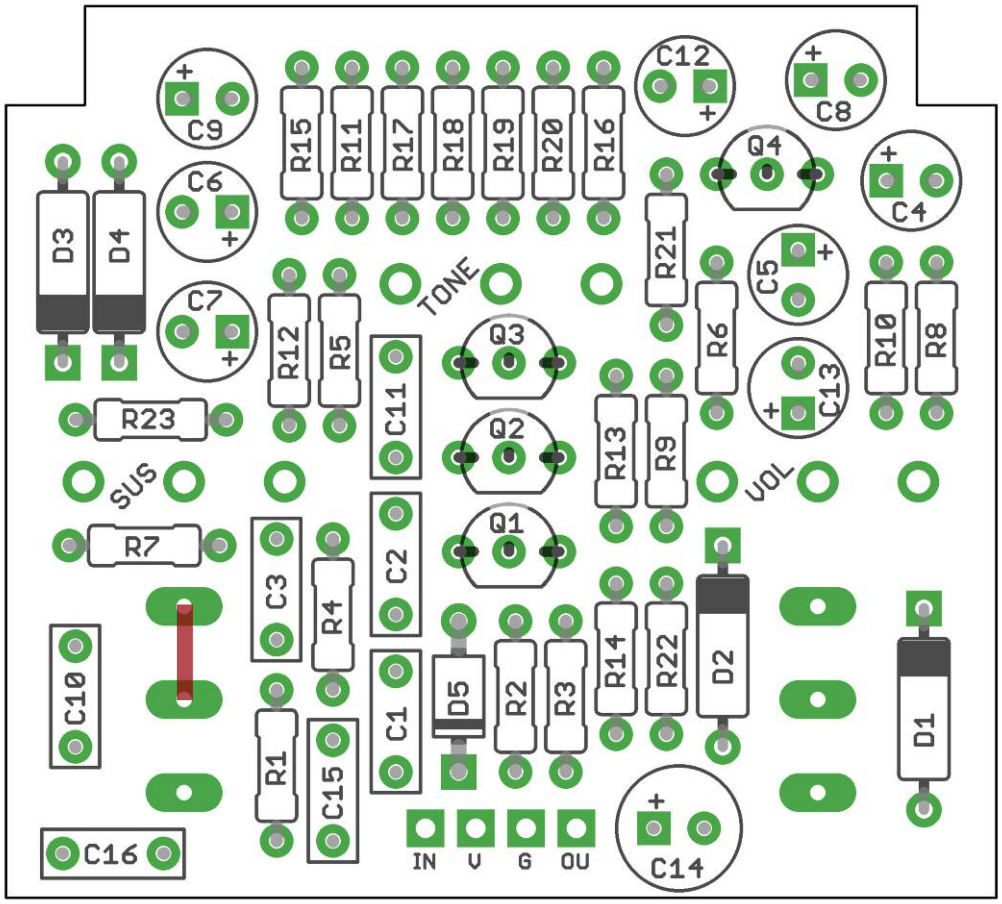
*Many different medium-gain NPN transistors can be used, i.e. 2N5088, 2N2222.

**S1 turns the Octave-up signal on and off.

**S2 is the Fat/Bright switch.

If you're making the Foxx without the Fat/Bright switch you need to add a jumper as shown on the unused switch pads.





PCB layout ©2019 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 transistors and diodes. They're very sensitive to heat. Keep exposure to heat to a minimum (under 2 seconds) and leave a few seconds between soldering each leg.

The glass case of the diodes is very delicate. Never bend the legs without taking precautions. Hold the leg with some needle-nosed pliers right up against the case, then bend the leg with your finger, using the pliers to take the stress away from the case.

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

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.

To get the pots and switches level it's best to use the enclosure as a guide.

Test the board!

Check the relevant daughterboard document for more info before you undertake this stage.

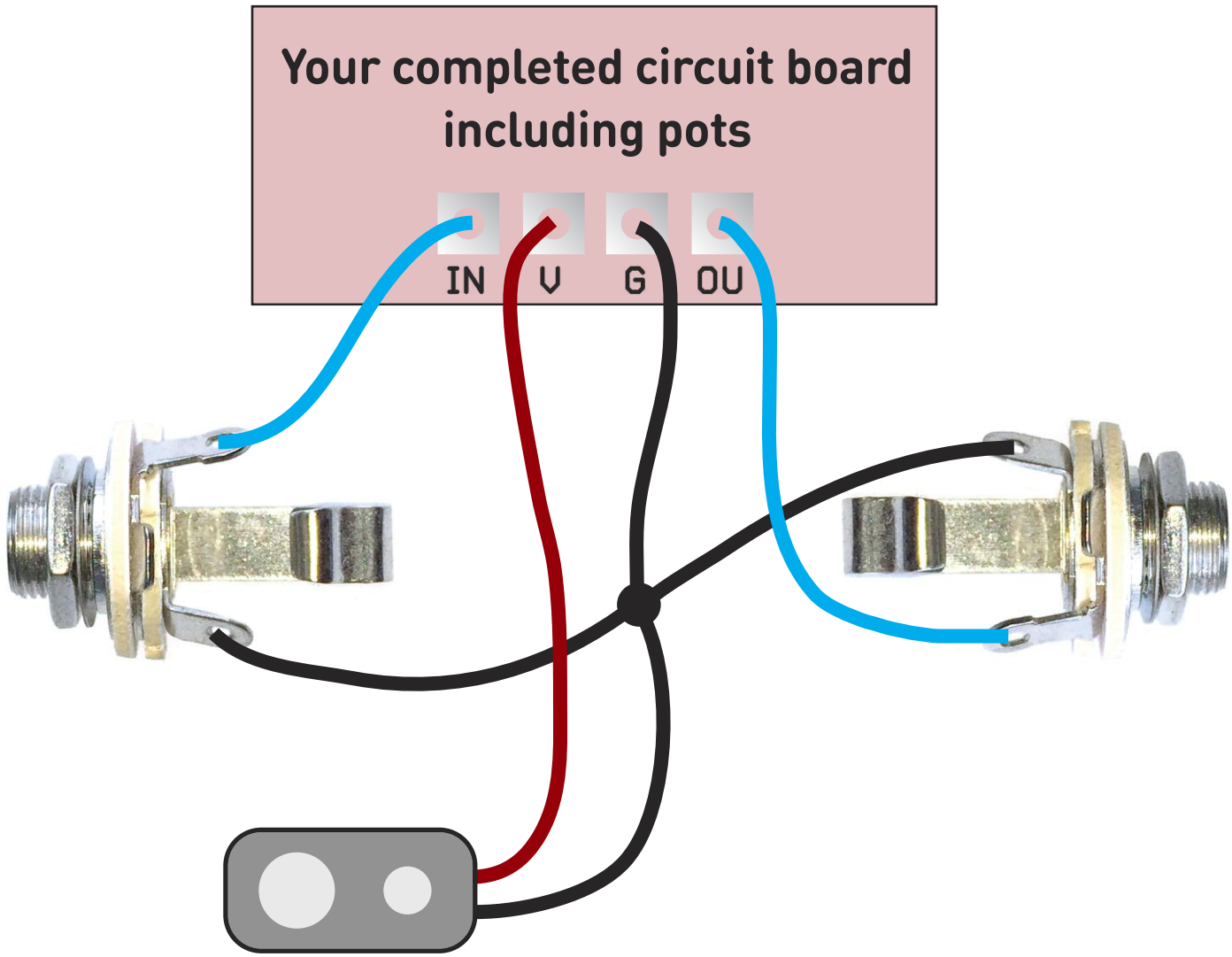
UNDER NO CIRCUMSTANCES will troubleshooting help be offered if you have skipped this stage. No exceptions.

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

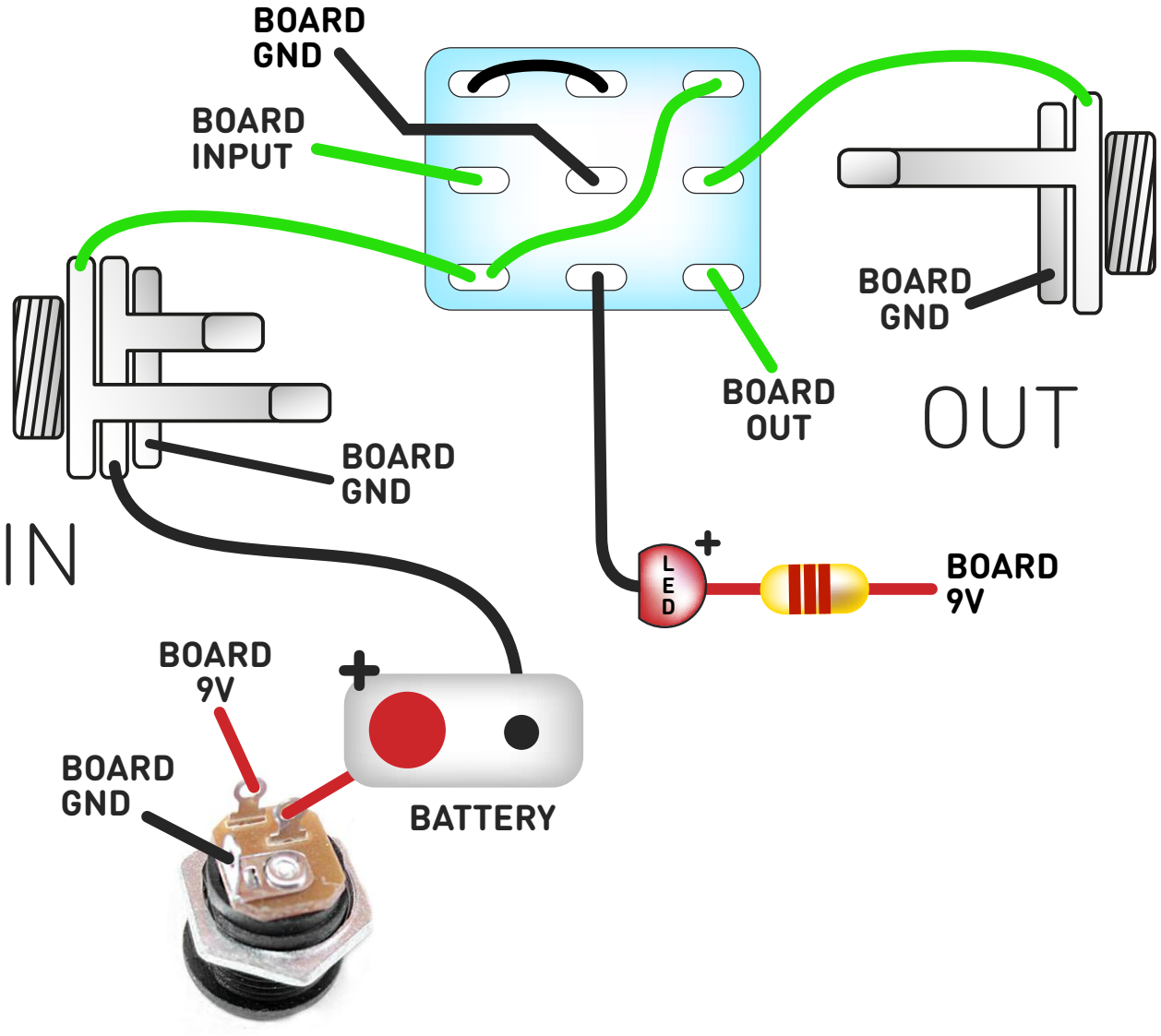
Solder some nice, long lengths of wire to the board connections for 9V, GND, IN and OUT. Connect IN and OUT to the jacks as shown. Connect all the GNDs together (twist them up and add a small amount of solder to tack it). Connect the battery + lead to the 9V wire, same method. Plug in. Go!

If you're using a ribbon cable you can tack the wires to the ends of that. It's a lot easier to take them off there than it is do desolder wires from the PCB pads.

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

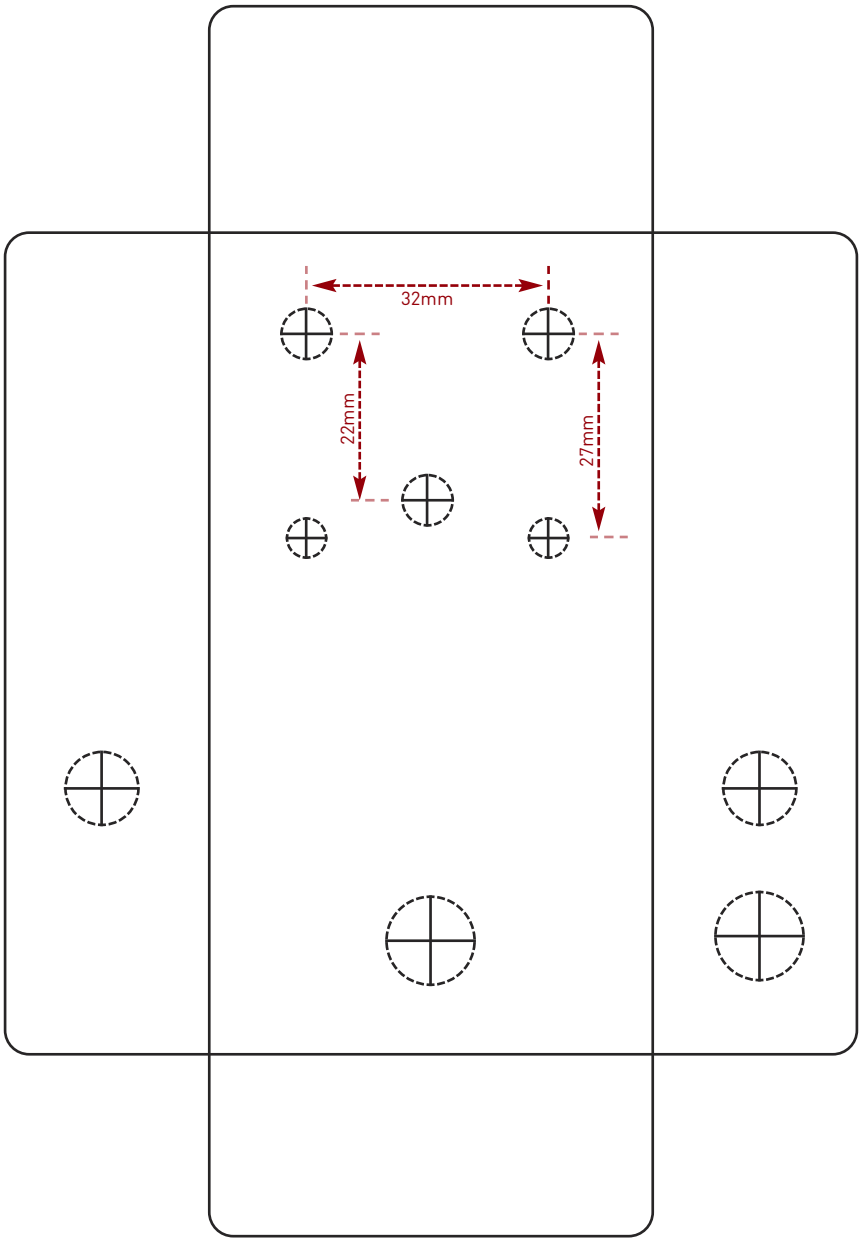
Hammond 1590B

60 x 111 x 31mm

It's a good idea to drill the pot and toggle switch holes 1mm bigger if you're board-mounting them.
Wiggle room = good!

Recommended drill sizes:

Pots	7mm
Jacks	10mm
Footswitch	12mm
DC Socket	12mm
Toggle switches	6mm



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.

FuzzDog.co.uk