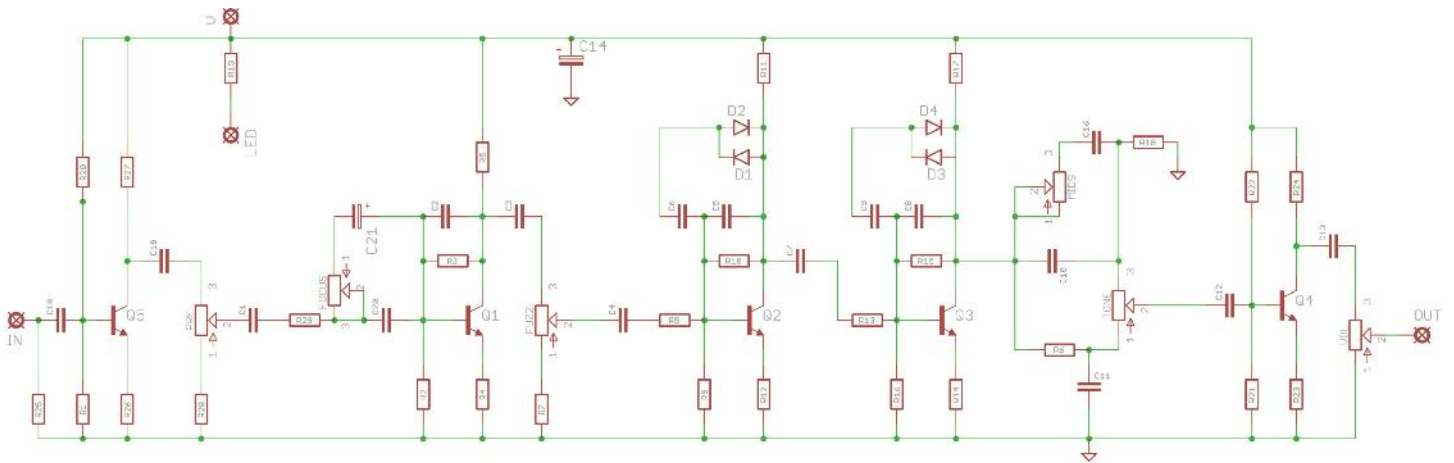


MUFF GUN

Six knobs of Muffy goodness



Schematic + BOM



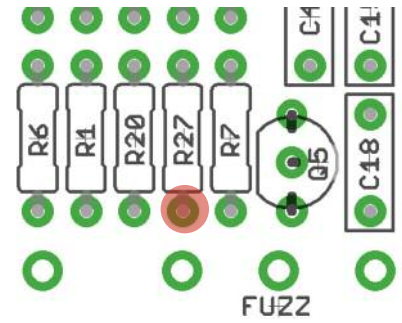
R1	47K	C1	100n	Q1-5	2N5089
R2	100K	C2	470p	D1-4	1N4148
R3	470K	C3	100n	PRE	100KA
R4	100R	C4	100n	FOCUS	250KB
R5	12K	C5	470p	FUZZ	100KA
R6	10K	C6	100n	MIDS	100KA
R7	1K	C7	100n	TONE	250KB
R8	10K	C8	470p	VOL	100KA
R9	100K	C9	100n		
R10	470K	C10	3n3		
R11	12K	C11	47n		
R12	390R	C12	100n		
R13	10K	C13	100n		
R14	390R	C14	100u elec		
R15	470K	C15	Empty*		
R16	100K	C16	47n		
R17	12K	C17	Empty*		
R18	56K	C18	100n		
R19	CLR (2K2)	C19	100n**		
R20	470K	C20	10n		
R21	100K	C21	1u elec		
R22	470K				
R23	2K7				
R24	10K				
R25	22K				
R26	390R				
R27	10K				
R28	10K				
R29	12K				

*C15 and C17 aren't part of the circuit. Leave these empty.

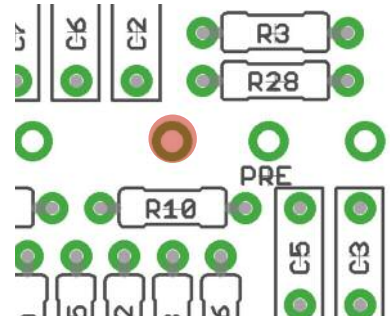
****C19 - This requires a hack.
Don't solder on the board - see overleaf.**

THAT PESKY MISPLACED C19!!

We all make mistakes... Sometimes they aren't bad enough to scrap a batch of PCBs and start over. This is one of those cases. C19 needs to be hacked into place as it was accidentally connected to the V supply rather than the collector of Q5. Here's how to get it in place (see cover image too).



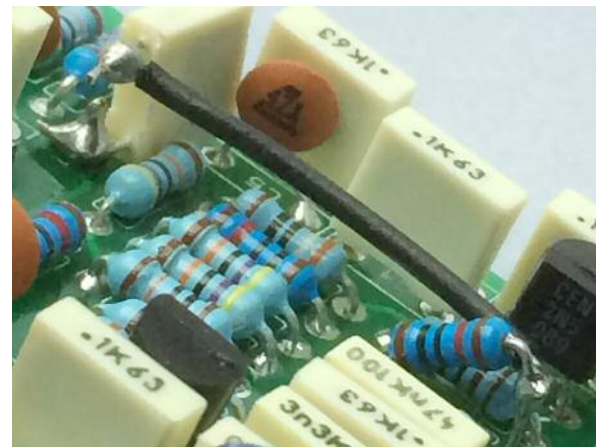
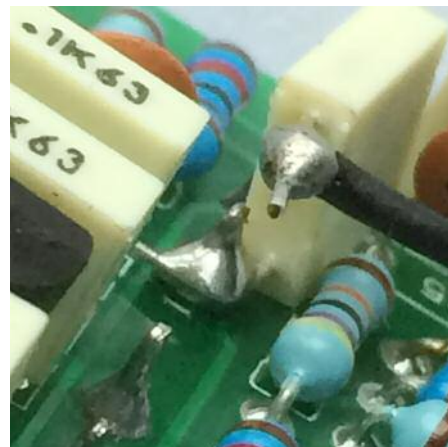
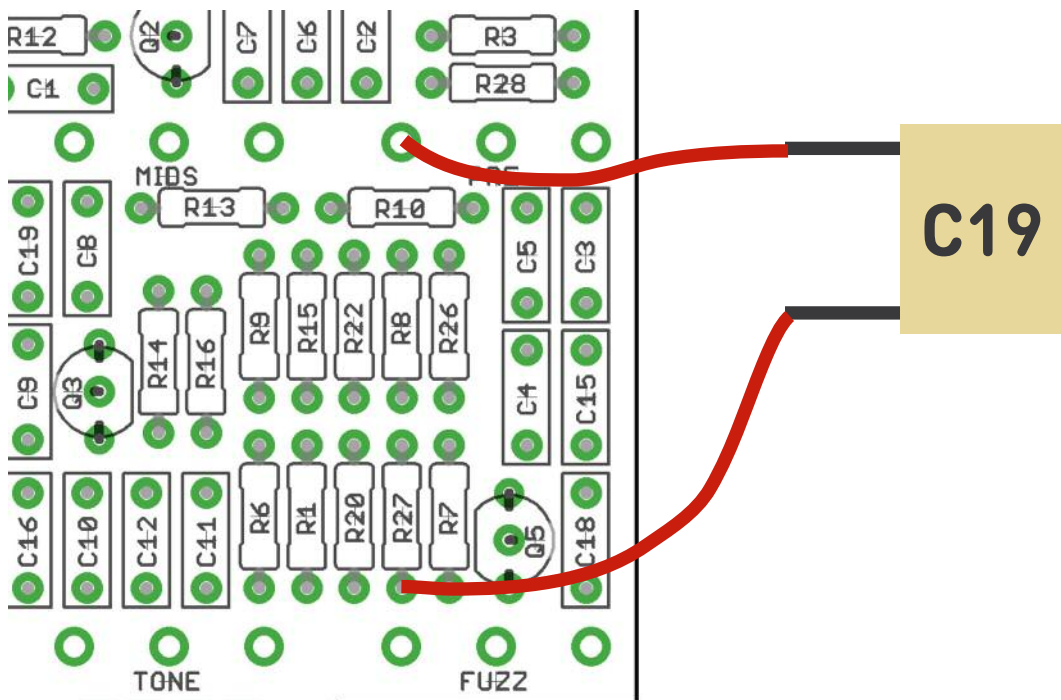
When placing **R27** leave the bottom leg proud from the board, giving yourself enough bare metal to attach a wire.



Now you need to solder one leg of **C19** to **pin 3** of the **PRE** pot. This is the sturdiest place it can attach to.

Now solder a wire to the free leg of **C19**, and attach the other end to the proud leg of **R27**.

So what you're actually doing is this...



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.

Be very careful when soldering the transistors and diodes. 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).

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

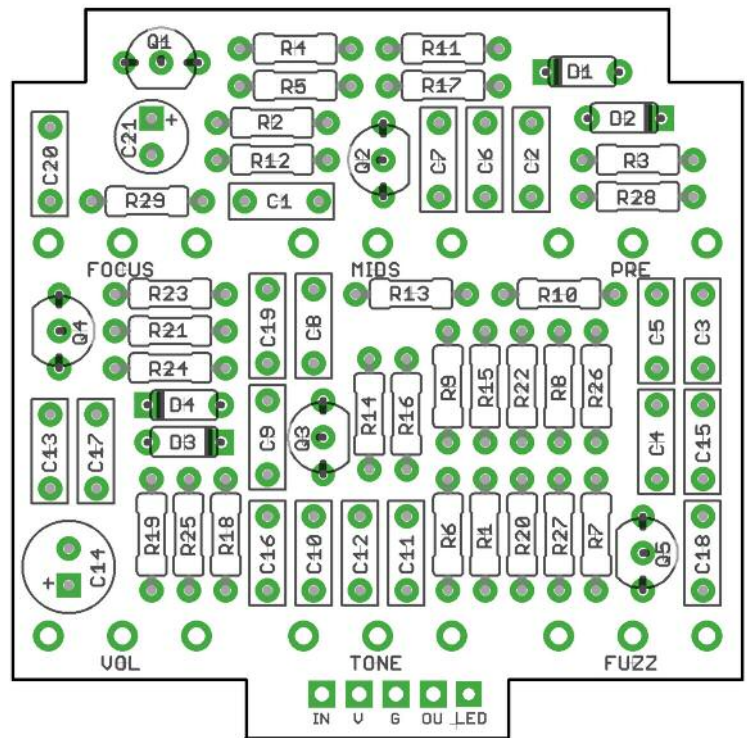
The cathode (striped end) of the diodes go into the square pads. The anode (long leg) of electrolytic capacitors go into the square pads. C14 can be placed flat across the top of the adjacent resistors as shown in the cover image to ensure plenty of clearance in the enclosure.

Pots mounts on the back side of the board. You can use vertical-mount pots or just wire up 'normal' ones.

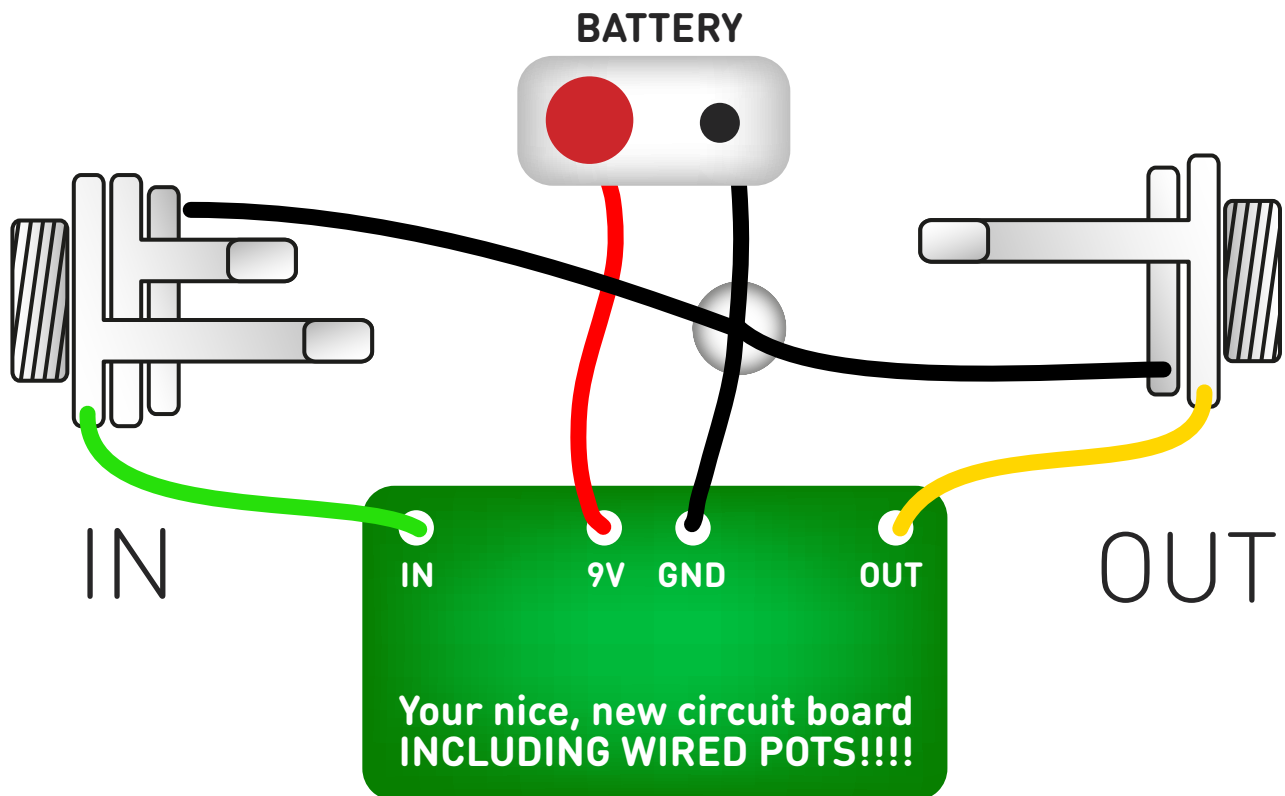
You should solder all components (other than C19) before you solder the pots. Once they're in place you'll have no access to much of the underside of the board.

It's useful to place the pots in the holes in the enclosure when soldering to make sure you get them all the right height and position. Solder one leg of each pot first, then check them for position. Melt and adjust if necessary. Get them all even before soldering the other two pins of each.

If your pots have plastic covers you'll have to take them off as the pot spacing is too tight for them. Be careful to keep the bases away from the PCB pads. Slip some thick card between the pots and the PCB while you solder them in to space them nicely.



Test the board!



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

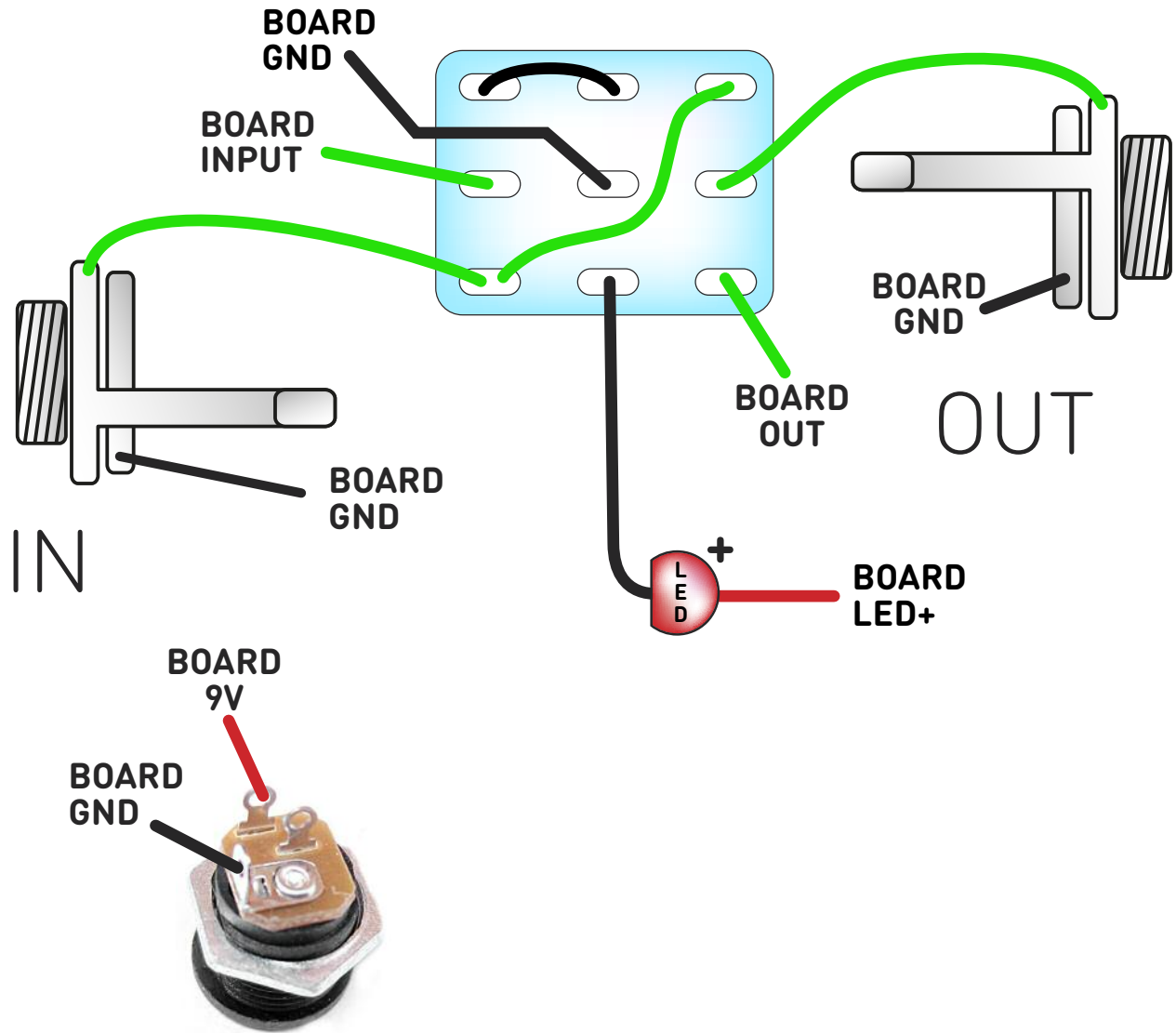
Once you've finished the circuit it makes sense to test it before starting on the switch and LED wiring. It'll cut down troubleshooting time in the long run. If the circuit works at this stage, but it doesn't once you wire up the switch - guess what? You've probably made a mistake with the switch.

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, crack 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 - DC only version

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

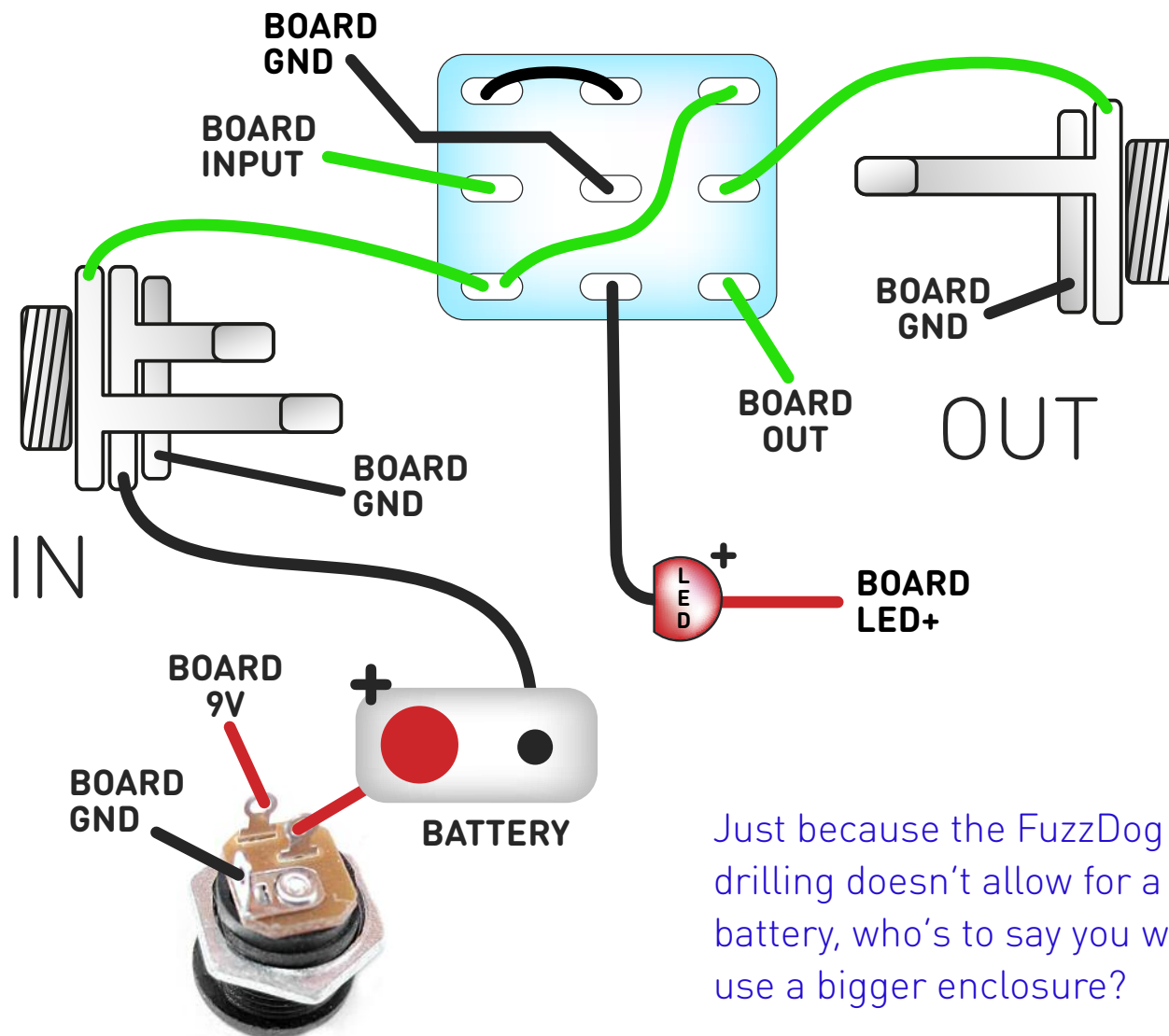


This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

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.

Wire it up - with battery

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



Just because the FuzzDog drilling doesn't allow for a battery, who's to say you won't use a bigger enclosure?

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.

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Drilling template

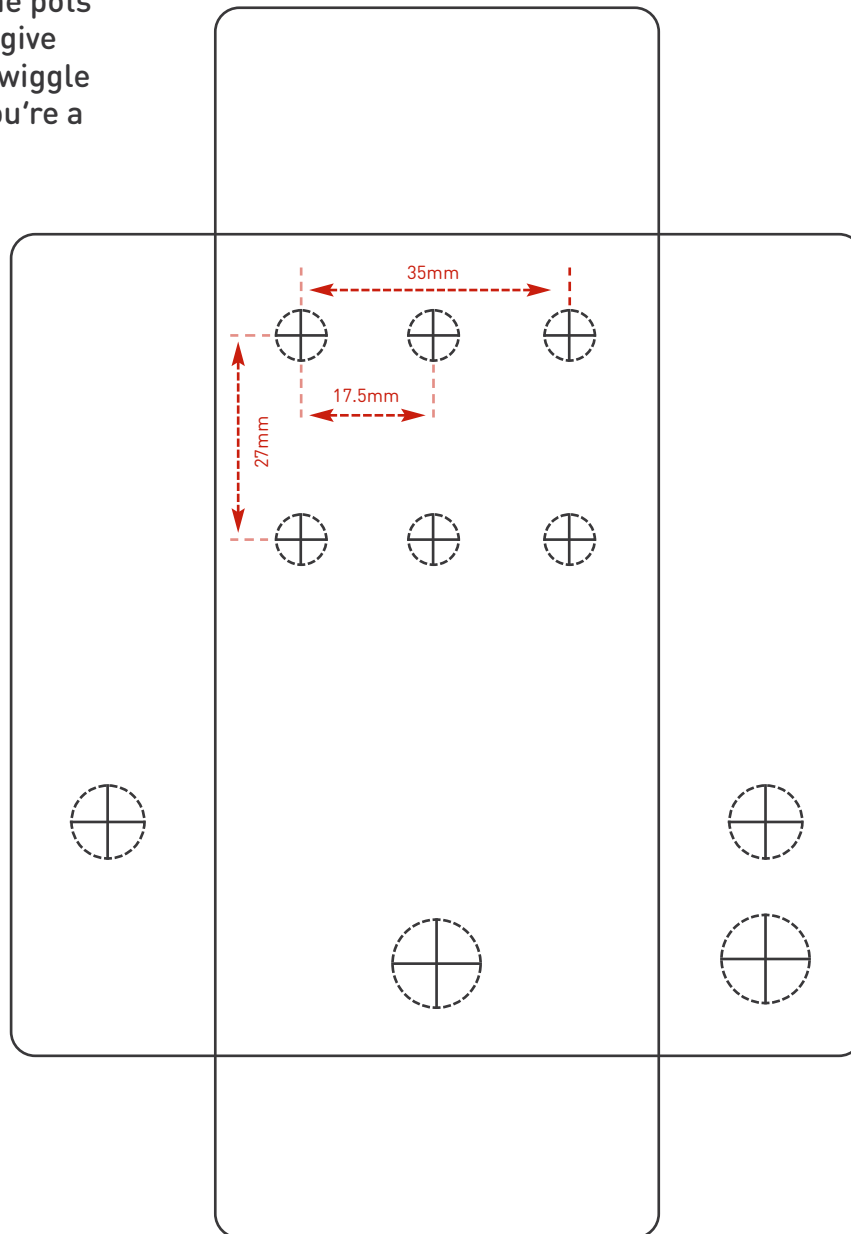
Hammond 1590B

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 larger 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.

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