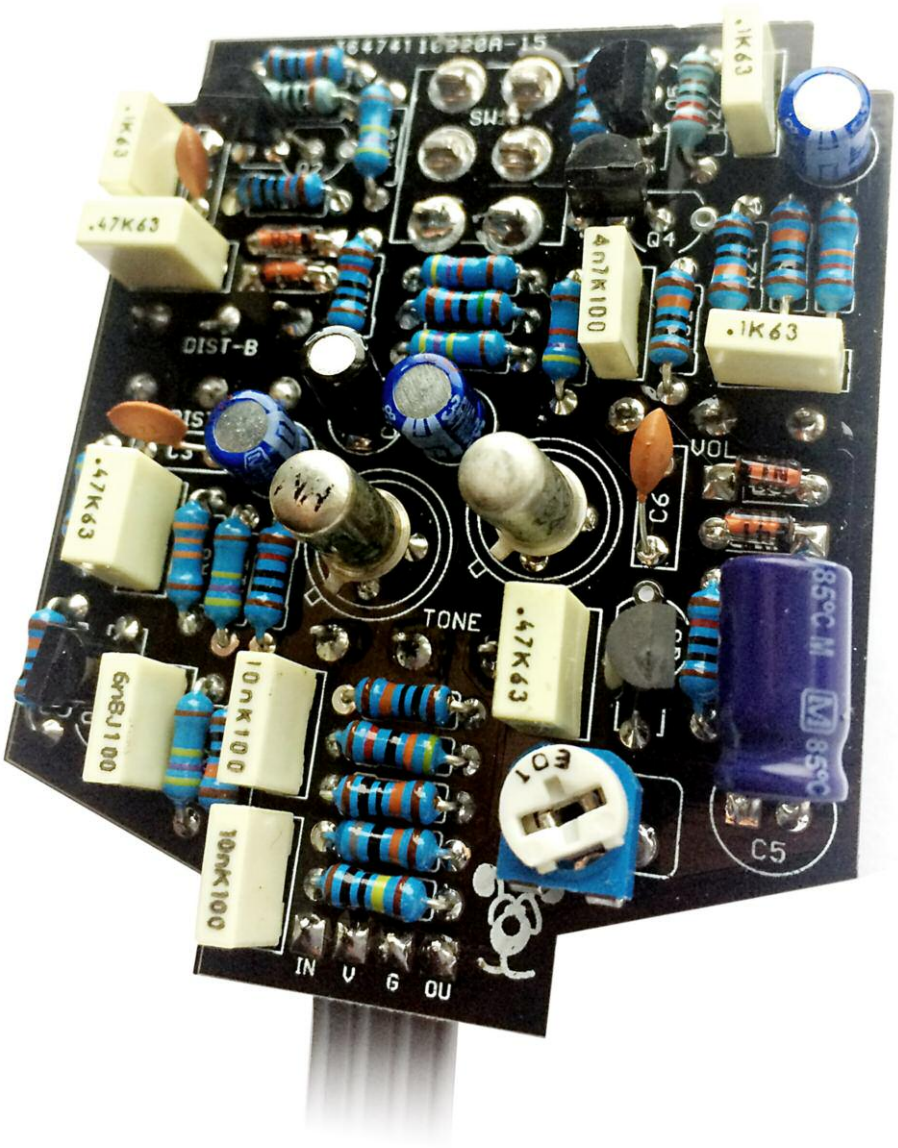
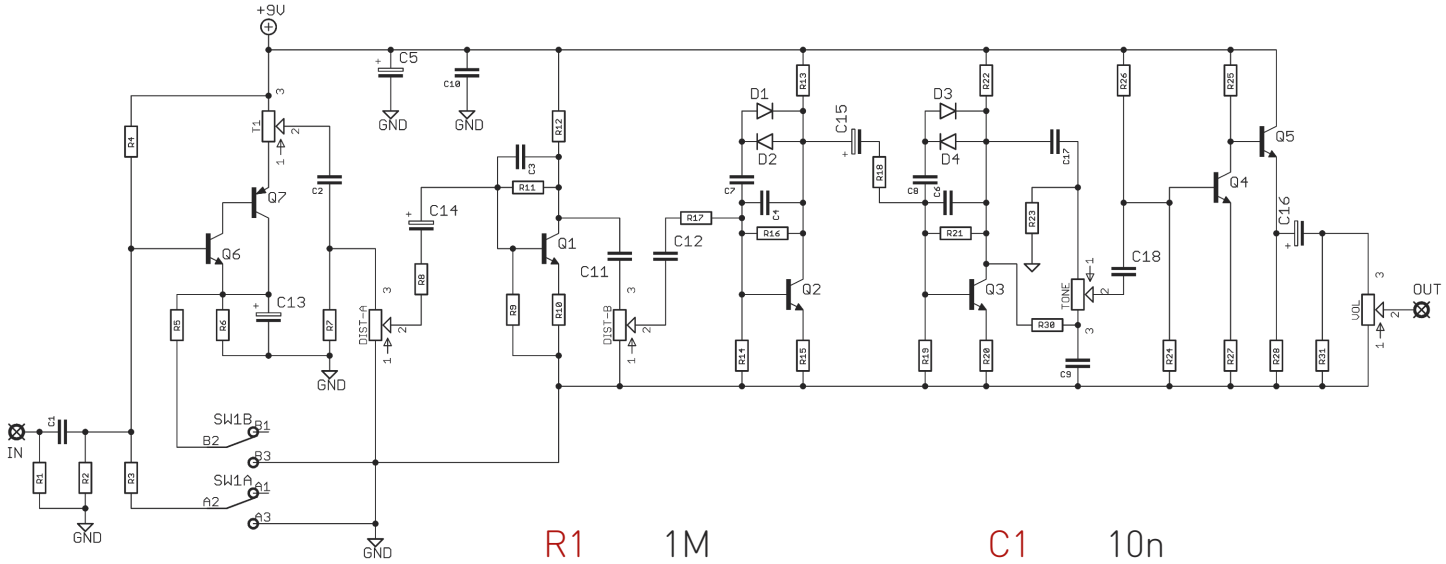


Animatron

Muff-based bass fuzz with germanium growl

Schematic + BOM



*The original circuit uses C2240, but you could try other BJT. The circuit is basically a Big Muff Pi. C2240 have a non-standard pin-out so there are extra pads on the PCB to accomodate those and standard CBE cans. See later in this document for more info on that.

**NTE102/3 in the original, but you can try other germaniums. We supply AC128/AC176 which work well. You could replace these with silicon if you prefer.

***10K in original but we've made it bigger to accommodate a wider range of germaniums.

‡Yes, C18 is shown as 470n in the cover pic. We were all out of 1u when we built it.

R1	1M
R2	100K
R3	100K
R4	680K
R5	4K7
R6	4K7
R7	470K
R8	33K
R9	100K
R10	470R
R11	470K
R12	10K
R13	10K
R14	100K
R15	100R
R16	470K
R17	10K
R18	10K
R19	100K
R20	100R
R21	470K
R22	15K
R23	100K
R24	100K
R25	10K
R26	470K
R27	2K2
R28	12K
R30	39K
R31	100K

C1	10n
C2	6n8
C3	470p
C4	470p
C5	100u
C6	470p
C7	100n
C8	100n
C9	10n
C10	100n
C11	470n
C12	470n
C13	2u2
C14	10u
C15	10u
C16	10u
C17	4n7
C18	1u‡

D1-4	1N4148
Q1-5	C2240*
Q6	NPN Ge**
Q7	PNP Ge**

DIST	100KA Dual Gang
TONE	100KB
VOL	100KB
T1	22K trimmer***

SW1	DPDT ON-ON

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).

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

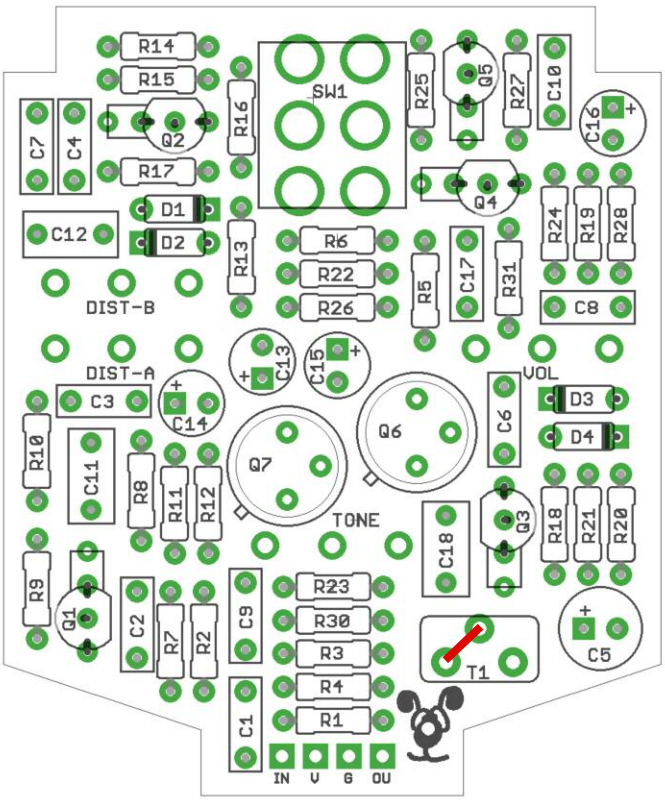
Positive (anode) legs of the electrolytic caps go to the square pads. C5 can be bent back over the adjacent resistors to save on height - see the cover image.

Negative (cathode) legs of the diodes go to the square pads.

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.

Same goes for the toggle switch. Use your enclosure as a guide for positioning them to ensure they line up properly. Solder one lug, then melt it and adjust to get it straight before soldering any others.

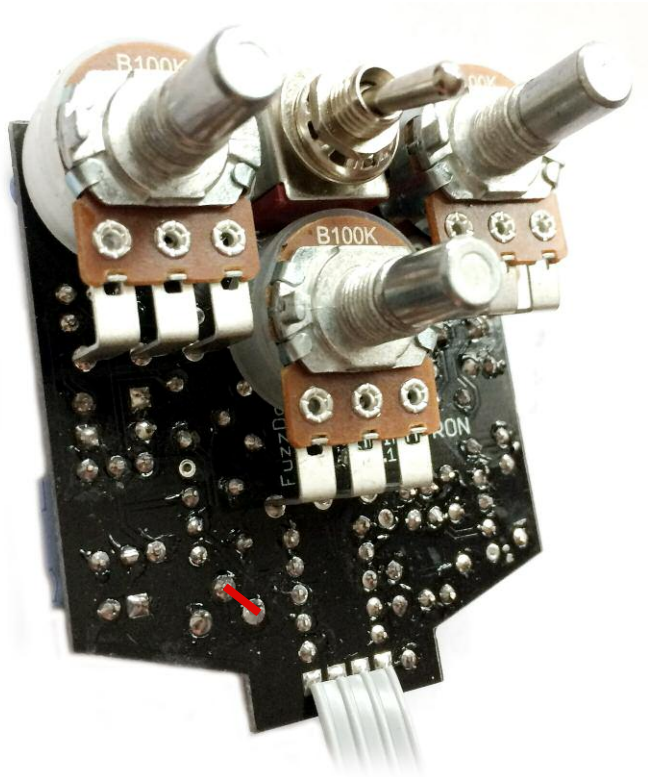
Trimmer T1 is used to bias Q6-7. There's no 'right' setting, just do it by ear until it sounds sweet



PCB layout ©2017 Pedal Parts Ltd.

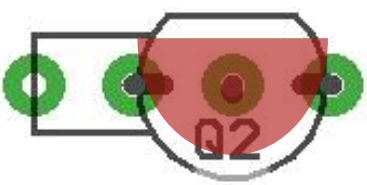
SMALL HACK-ETTE

You need to jumper two of the trimmer pads together. The original schematic shows T1 as a voltage divider which is unlikely to work except for a very small selection of Q6-7 pairings. Jumpering pins 1+2 changes the configuration so thta C2 is coming straight from the emitter of Q7 which makes much more sense. Jumper shown in red above and below.



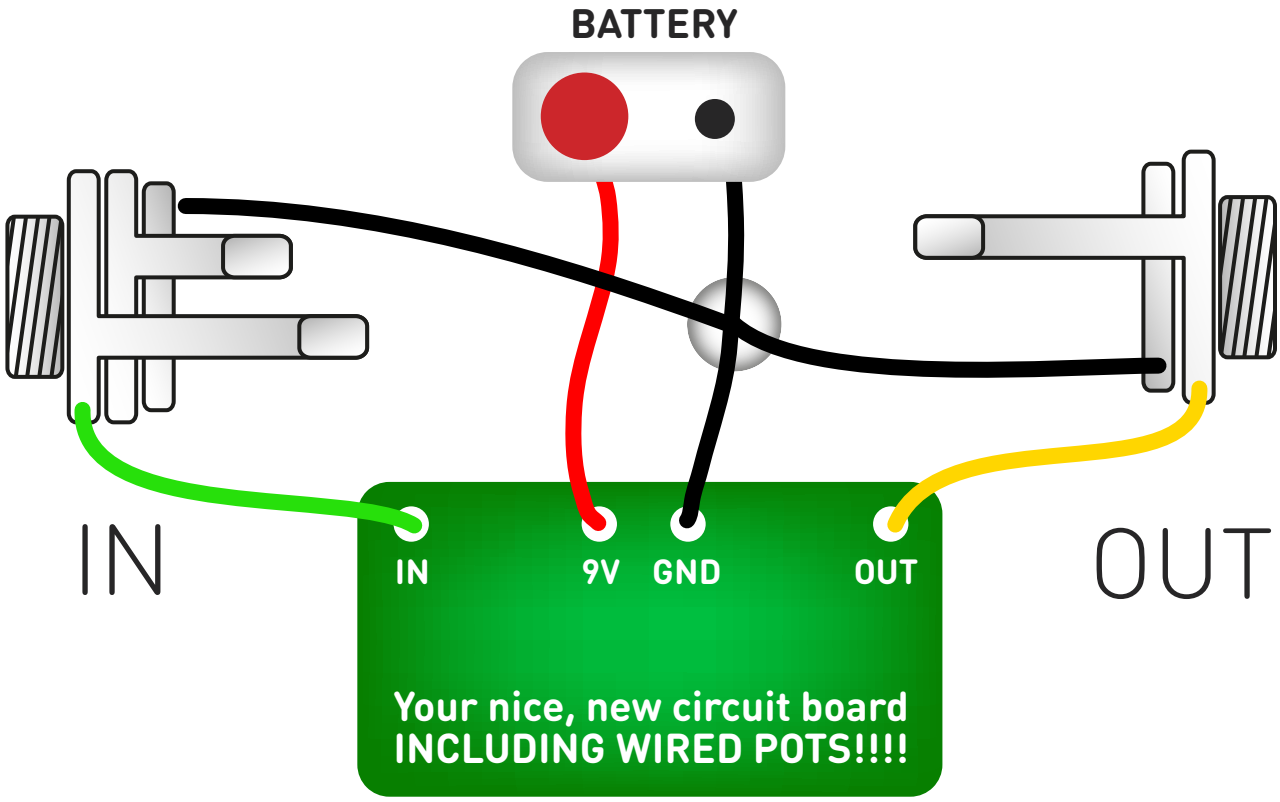
TRANSISTOR ORIENTATION

Standard EBC transistors such as 2N5088 orientate like this:



C2240 are ECB, so should be placed like this:

Test the board!



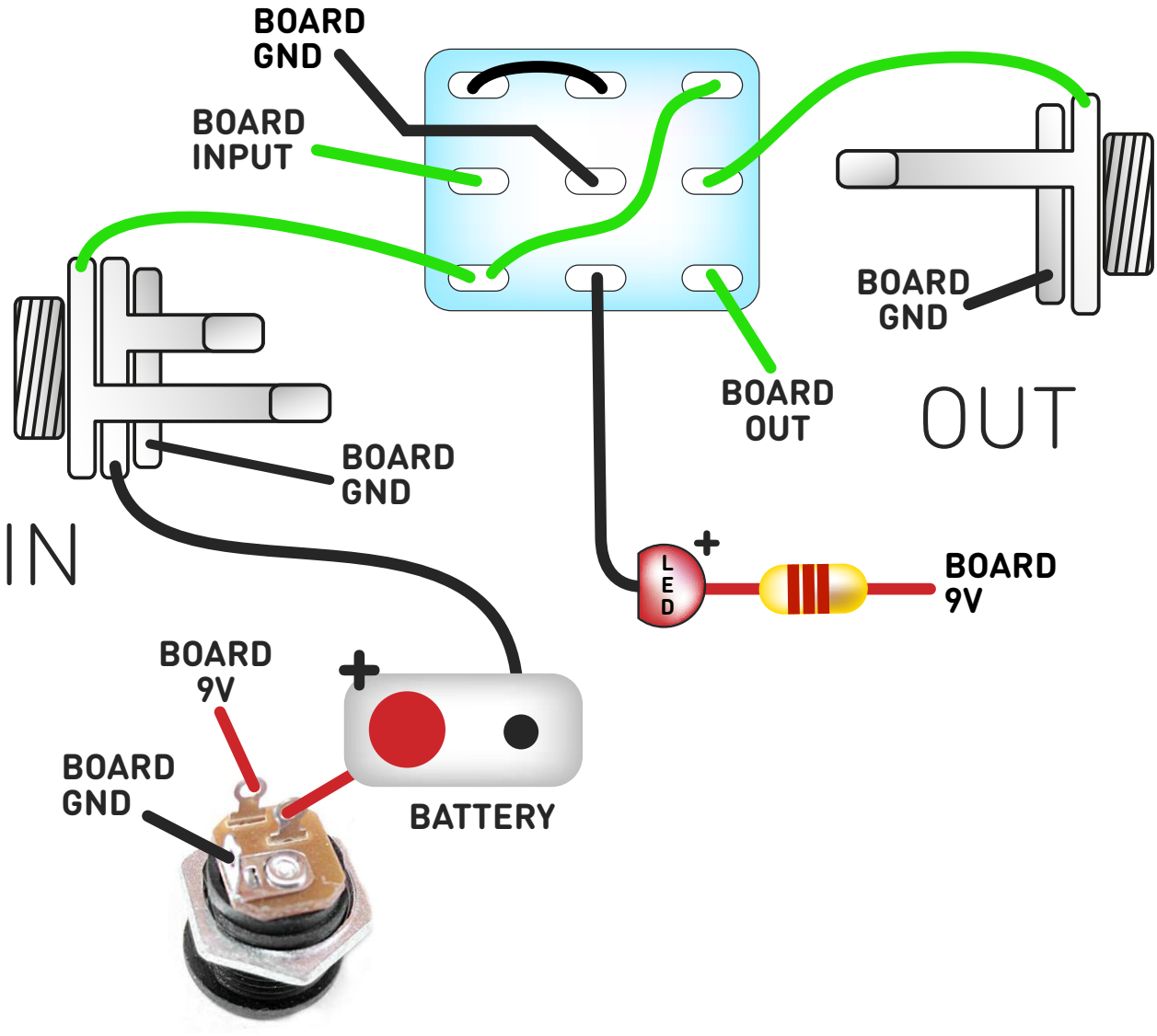
UNDER NO CIRCUMSTANCES will troubleshooting help be offered if you have skipped this stage. No exceptions.

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

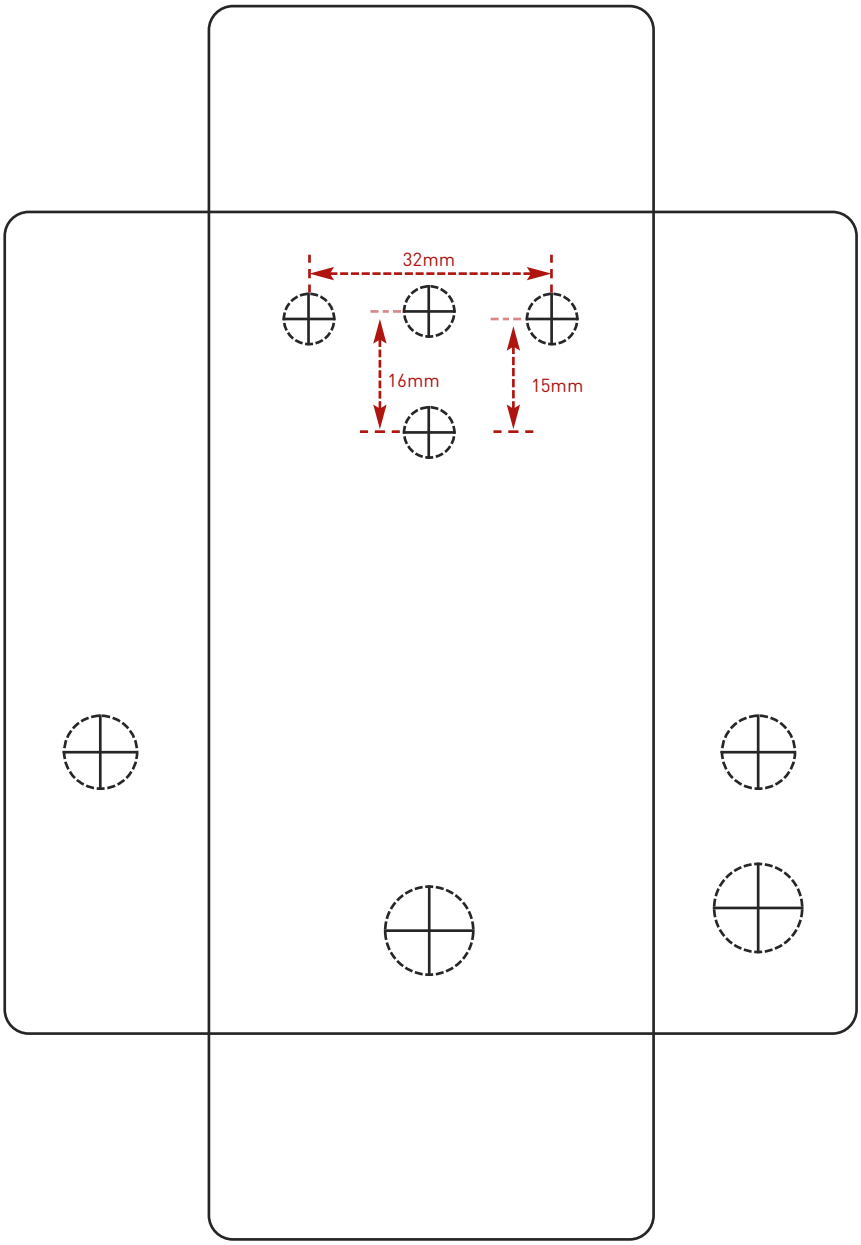
Hammond 1590B

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 switch	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.

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