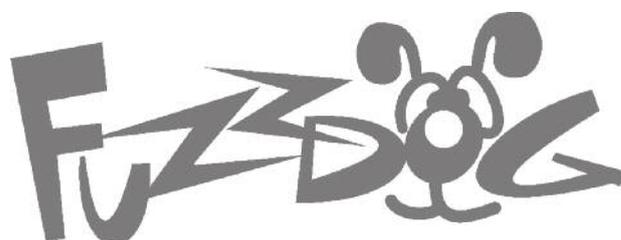


Little Screamer_{v2.0}

Stripped-back, bufferless
Tube Screamer

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Image shows "Boutique Forever" variation.



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:

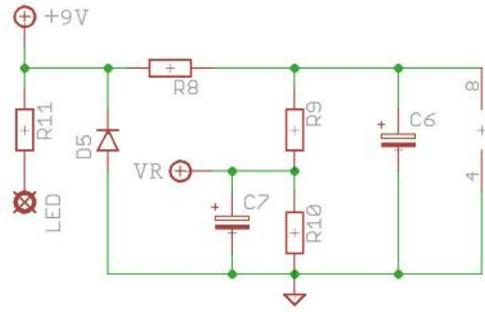
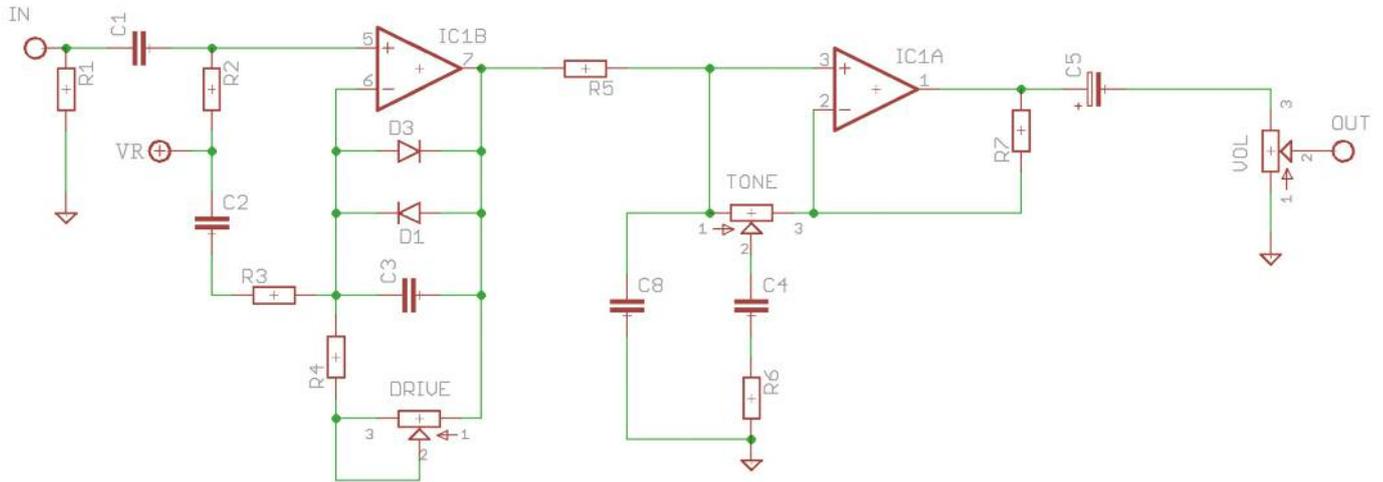
- Resistors should be 0.25W. You can use those with higher ratings but check the physical size of them.
- Electrolytics caps should be at least 25V for 9V circuits, 35V for 18V circuits. Again, check physical size if using higher ratings.

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



Schematic and BOM shown are for the stock version of Jack Orman's stripped back Tube Screamer circuit. Overleaf are BOMs and clipping variations used on a couple of boutique versions of the circuit.

BOM

R1	1M	D1	1N4148/1N914
R2	470K	D2	Jumper*
R3	4K7	D3	1N34A
R4	47K	D4	Jumper*
R5	1K	D5	1N4001
R6	220R	IC	4558 or similar
R7	1K	DRIVE	500KB
R8	390R	TONE	25KB
R9	10K	VOL	100KB
R10	10K		
R11	2K2 (CLR)		
C1	47n (470n)		
C2	47n (220n)		
C3	47p		
C4	220n		
C5	1u elec		
C6	47u elec		
C7	47 u elec		
C8	220n		

C1-3 values shown in blue are mods to make the circuit more suitable for bass.

*D2 and D4 are there to accommodate alternative clipping options as shown on the boutique versions overleaf.

Boutique variations

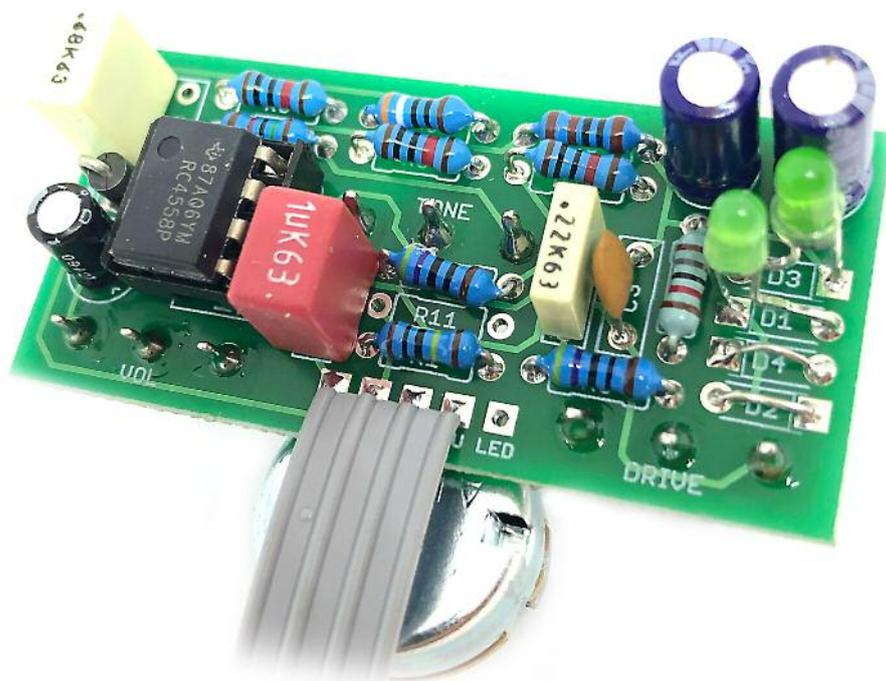
Boutique 'Inquisitor' - doomy drive action

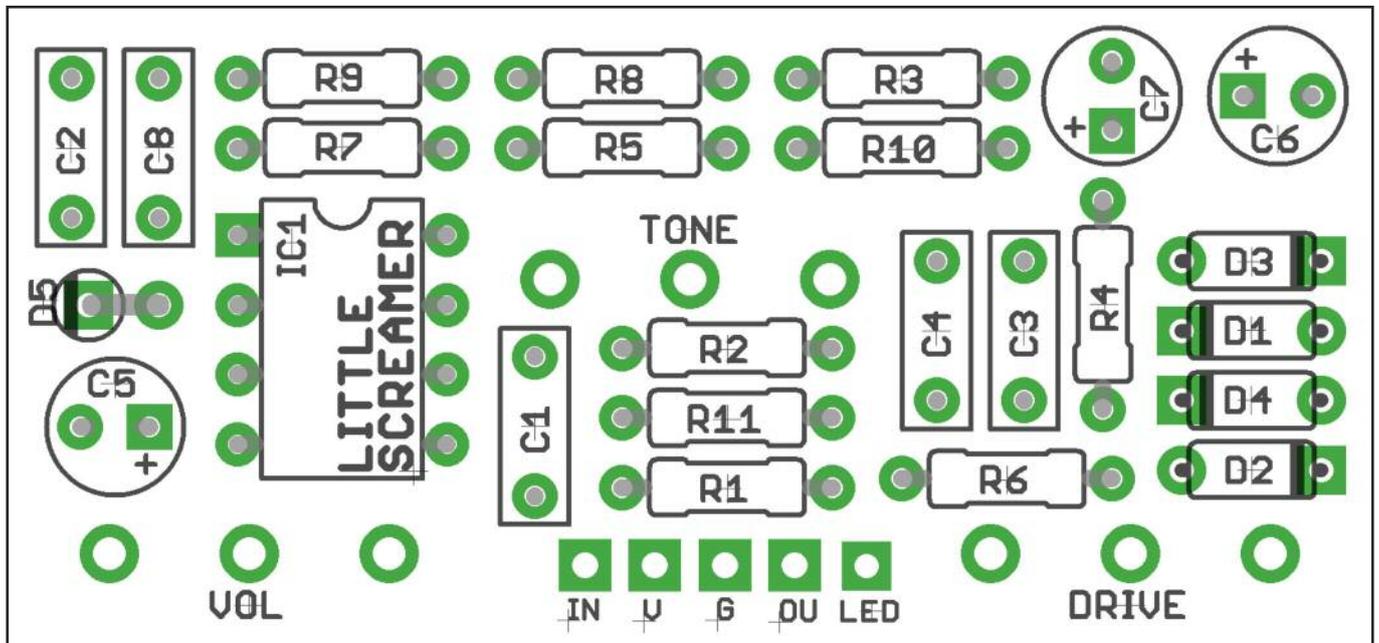
R1	1M	C1	1u***
R2	470K	C2	680n
R3	1K	C3	47p
R4	18K	C4	220n
R5	10K*	C5	1u elec
R6	470R	C6	47u elec
R7	15K	C7	100u elec
R8	390R	C8	220n
R9	10K	IC	4558
R10	10K		
R11	2K2 (CLR)	D1	3mm green LED
		D2	Jumper
DRIVE	500KA	D3	3mm green LED
TONE	20KW**	D4	Jumper
VOL	100KA	D5	1N4001

*11K in original if you want to be really precise.

**First quarter of the turn is really muffled and unusable, but it really is the best taper for the job.

***As you can see from the pic, you can squeeze in a film cap here. If yours aren't as narrow as this then a multi-layer ceramic (MLCC) will do the job.





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.

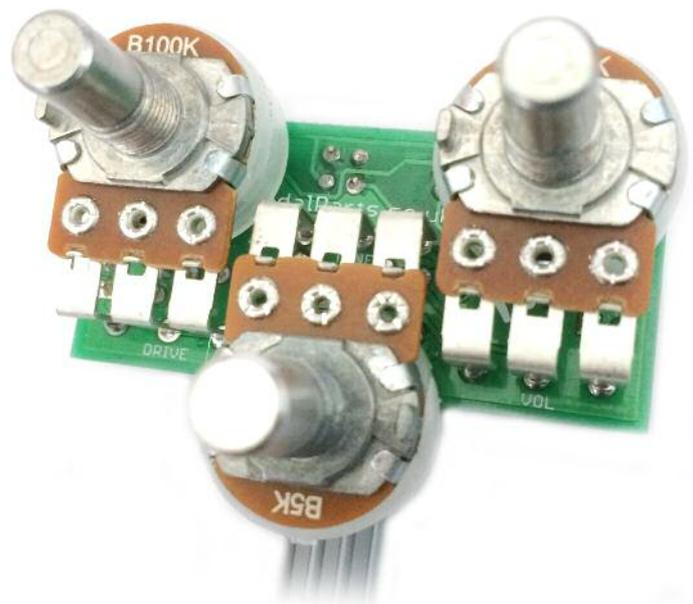
Be very careful when soldering the diodes. They're very sensitive to heat. You should use some kind of heat sink (crocodile clip or reverse action tweezers) on each leg as you solder them. Keep exposure to heat to a minimum (under 2 seconds). Use a socket for IC1, or be super careful. If you're building the stock circuit you'll have to have the 1N34A diode upright. Be careful when bending the legs - the glass case is very brittle and can easily break. You should hold the leg you're bending with some needle-nosed pliers right up against the glass body to take the strain, then bend the leg with your fingers.

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

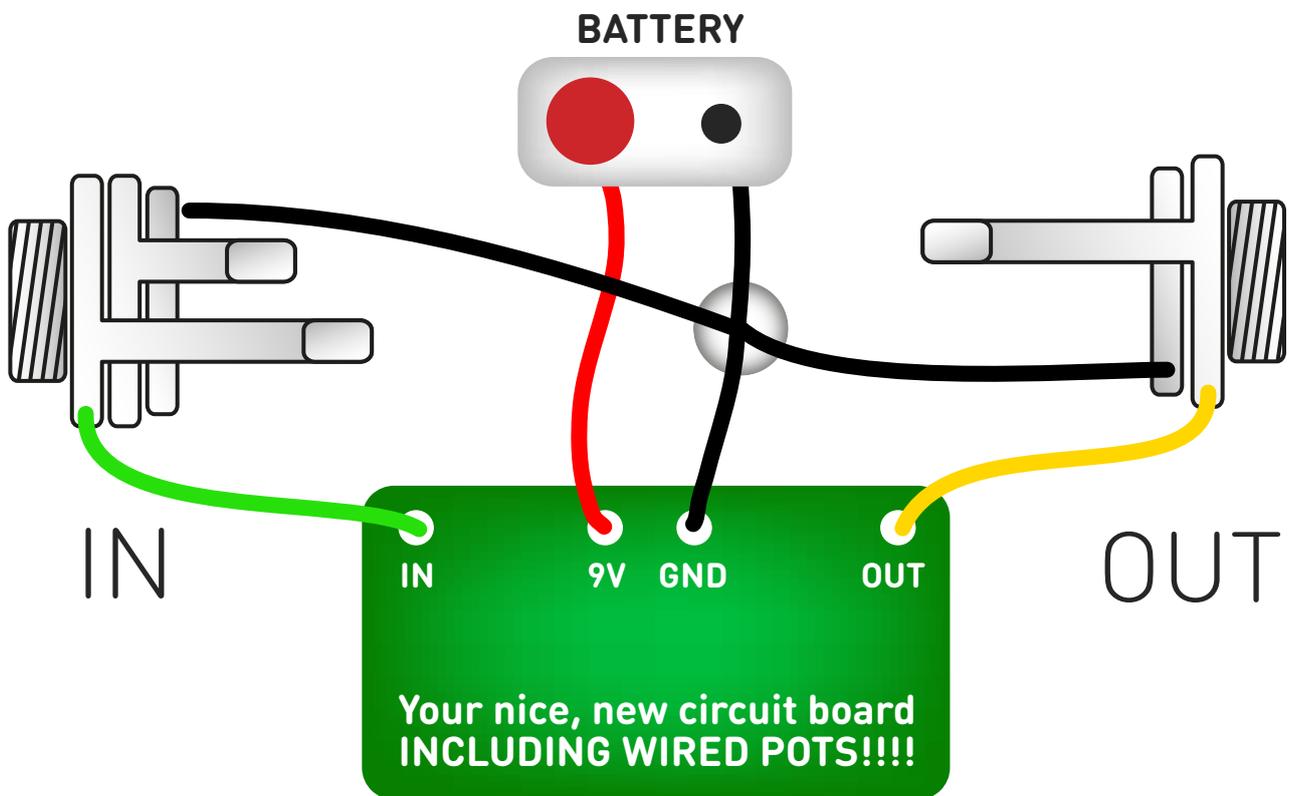
Positive (anode) legs of the electrolytic caps go to the square pads. C6 and C7 can be laid flat as shown in the cover image to give you extra clearance in the enclosure.

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.



Test the board!



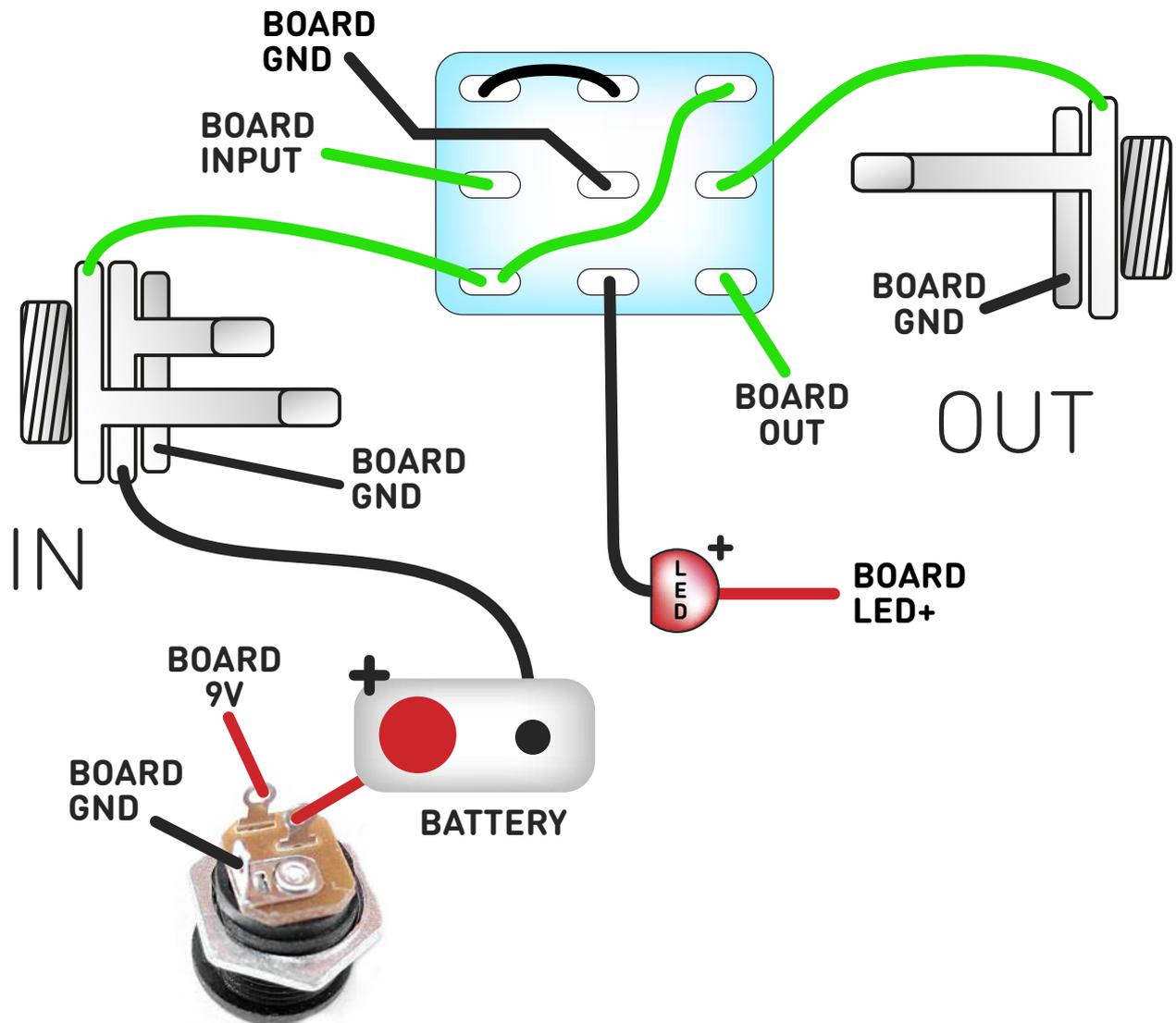
UNDER NO CIRCUMSTANCES will troubleshooting help be offered if you have skipped this stage. No exceptions.

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 (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.

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Drilling template

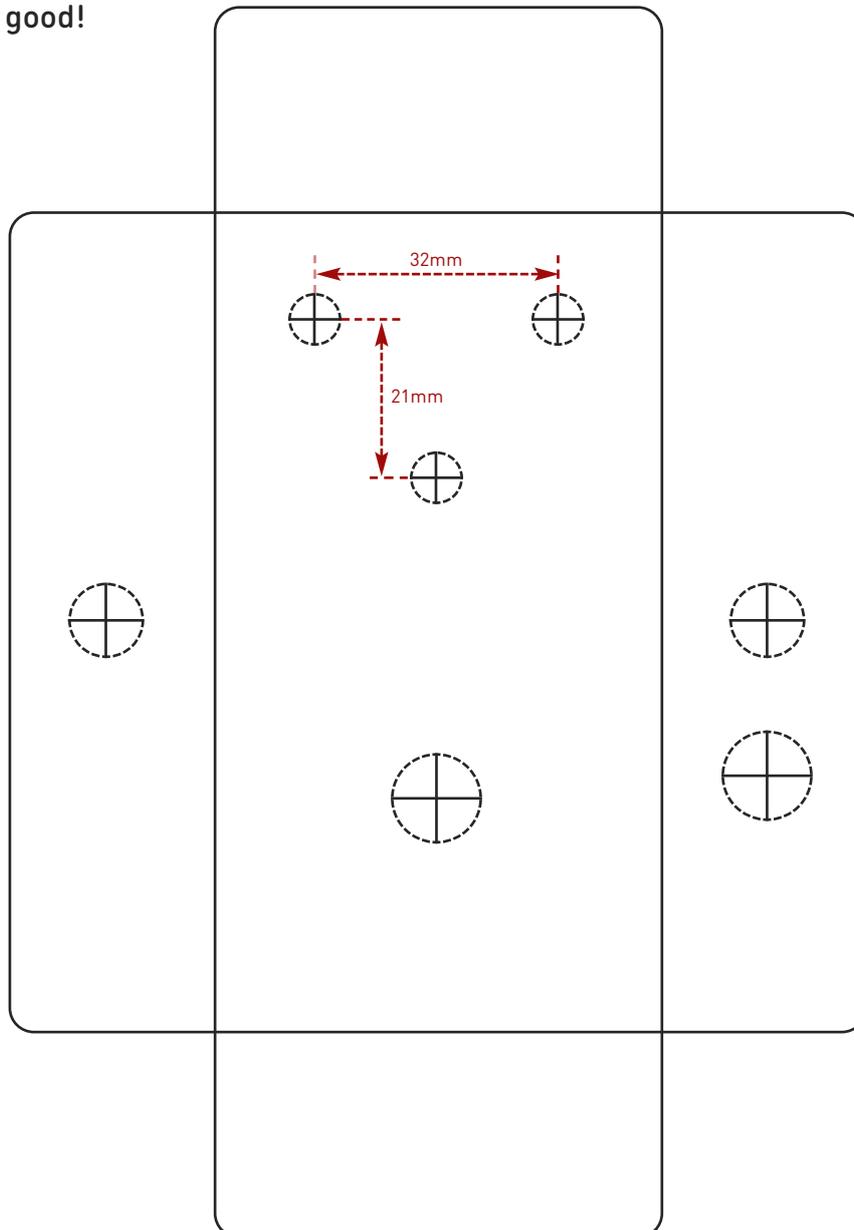
Hammond 1590B

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 pot 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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