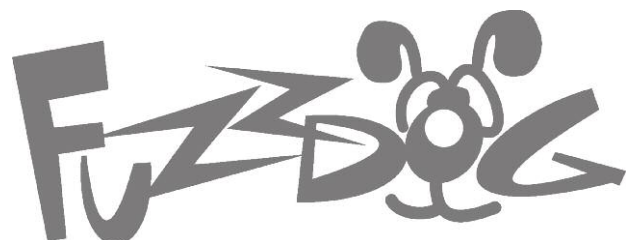
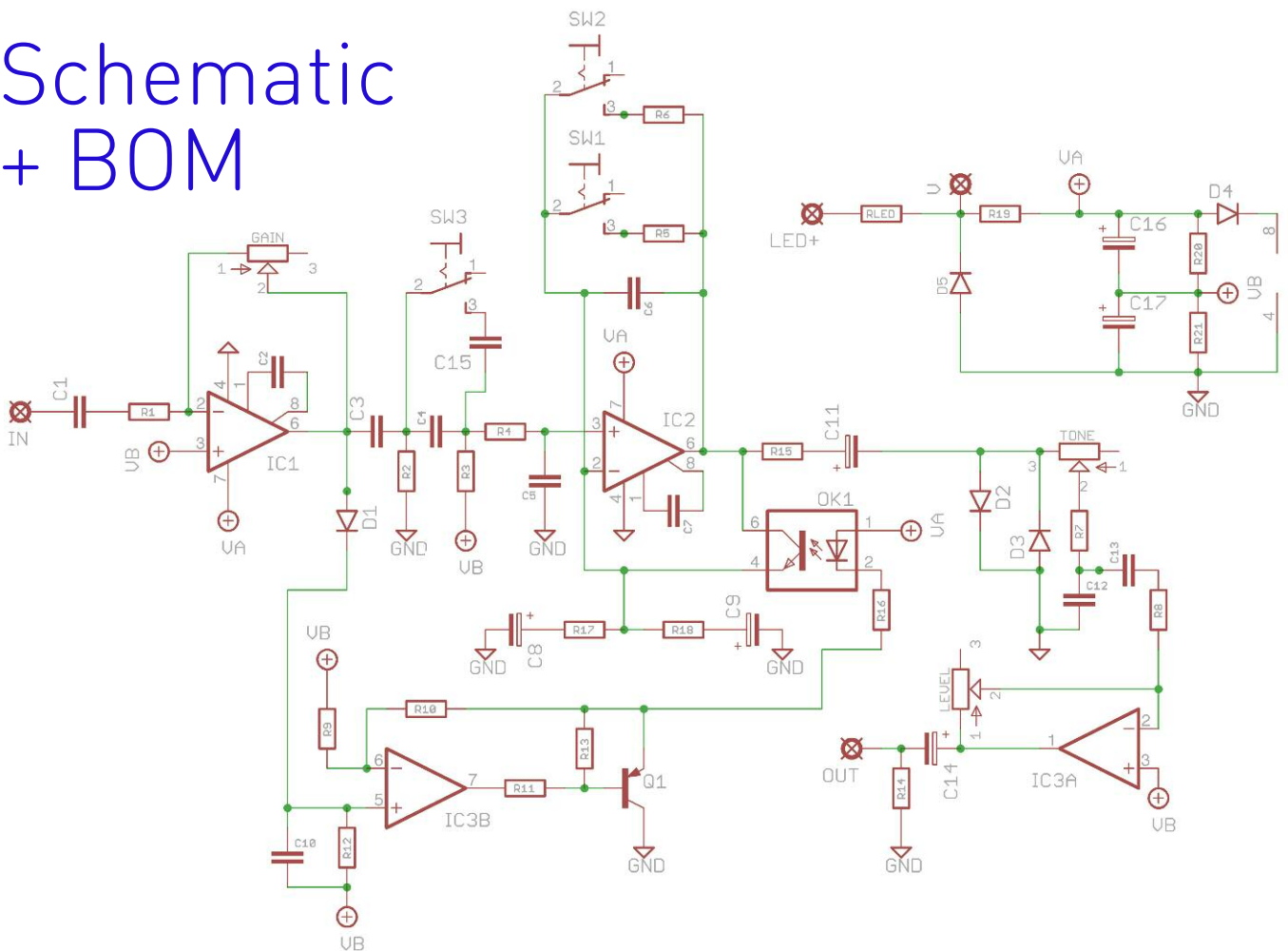


Expandotron-ZZ

Pretty much unique box of
Crunch / Drive / Distortion



Schematic + BOM



R1	100K
R2	2M2
R3	2M2
R4	43K
R5	1K1
R6	560R
R7	1K5
R8	1M
R9	51K
R10	820K
R11	4K7
R12	100K
R13	47K
R14	1K1
R15	1K1
R16	4K7
R17	560R
R18	47R
R19	47R
R20	10K
R21	10K
RLED	2K2 (CLR)

C1	1u
C2	33p
C3	1u
C4	22n
C5	1n
C6	100p
C7	33p
C8	4u7 elec
C9	2u2 elec
C10	100n
C11	4u7 elec
C12	3n3
C13	100n*
C14	1u elec
C15	470n**
C16	100u elec
C17	100u elec

D1-4	1N4148
D5	1N4001
IC1-2	LM388
IC3	4558
OK1	H11F3
Q1	2N5087
GAIN	1MB
TONE	100KC
LEVEL	1MB
SW1-2	SPDT ON-ON
SW3**	SPDT ON-ON

*C13 can be replaced with bigger value if you're going for the extra bass response mod, otherwise your low frequencies will be choked at this point.

**C15 and SW3 only used if you're doing the bass response mod.

General Notes

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 LED, diodes, transistor 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). You should use sockets for the ICs and optocoupler, or be super careful not to overheat. Take your time.

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

Positive (anode) leg of the electrolytic capacitors go into the square pads. Negative leg (cathode) of the diodes go into the square pads.

C16 and C17 can be laid flat across the top of the adjacent resistors to ensure plenty of clearance when mounting in the enclosure. See front cover image.

Pots and toggle switches mount on the back side of the board. You can use vertical-mount pots or just wire up 'normal' ones. It's a good idea to place the pots in their holes in the enclosure when you're soldering them in place on the PCB. That way you know they're going to line up ok. Best way to do it is to solder a single pin of each pot and switch in place, then do a visual check to see that they're all sitting at the same height. If not, melt the joints and readjust any that are off.

If your pots don't have protective plastic covers you should place a strip of thick card between them and the board when soldering to keep them a good distance from the pcb to avoid shorting other components.

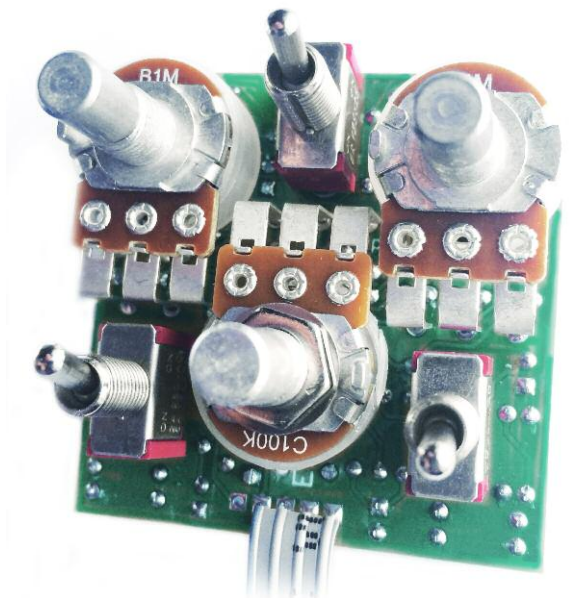
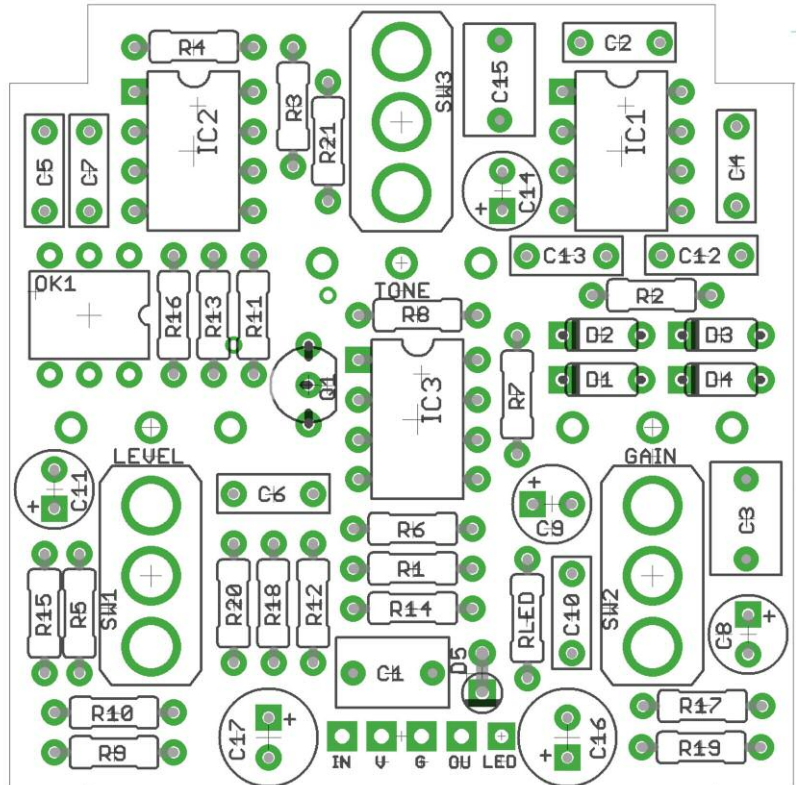
You should solder all other board-mounted components before you solder the pots. Once they're in place you'll have no access to much of the underside of the board.

The bottom of your board should look like this >>>>>>

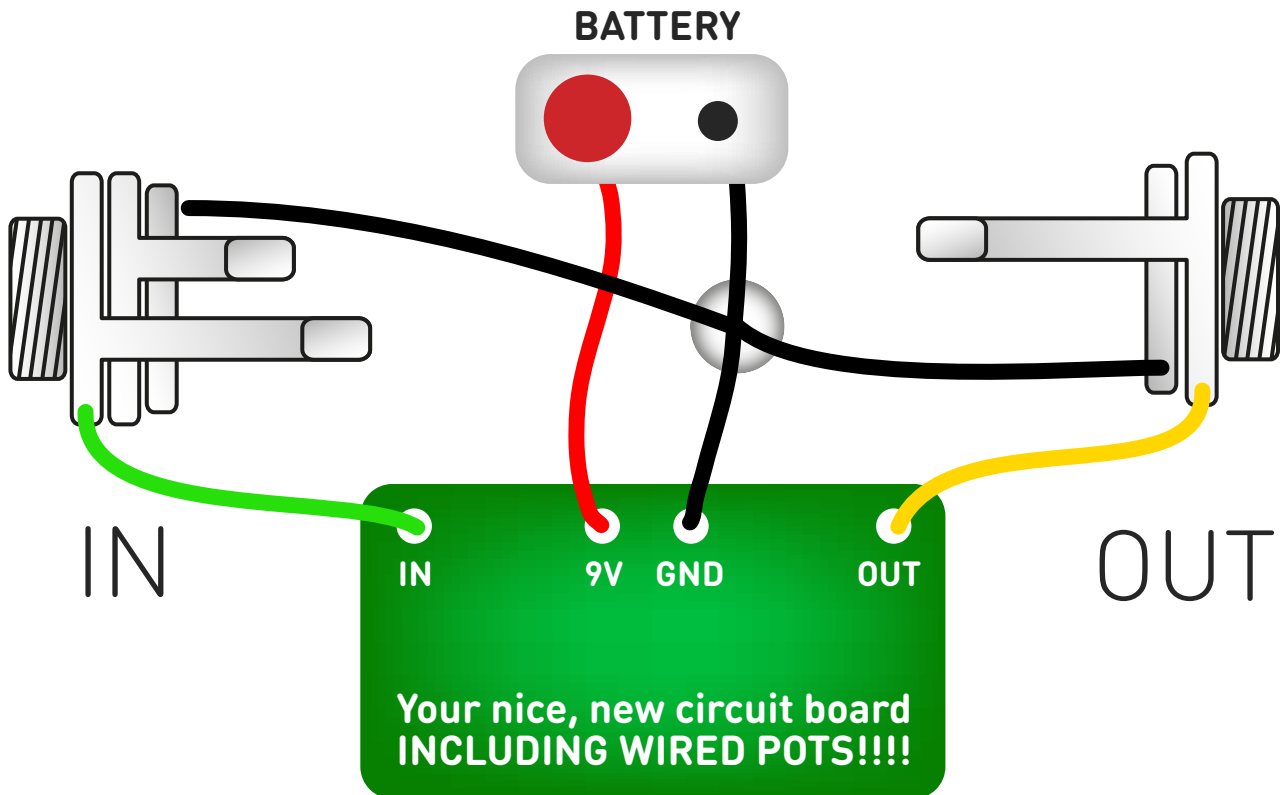
SW1 and SW2 give you different drive settings. These are:

- CRUNCH BOTH DOWN
- OVERDRIVE SW1 UP
- DISTORTION SW2 UP
- FORBIDDEN BOTH UP

Bass response switch - UP is normal, DOWN is extra bass.



Test the board!



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

Battery clip is supplied to test the circuit. Power supply is recommended when using the finished delay as it will EAT batteries.

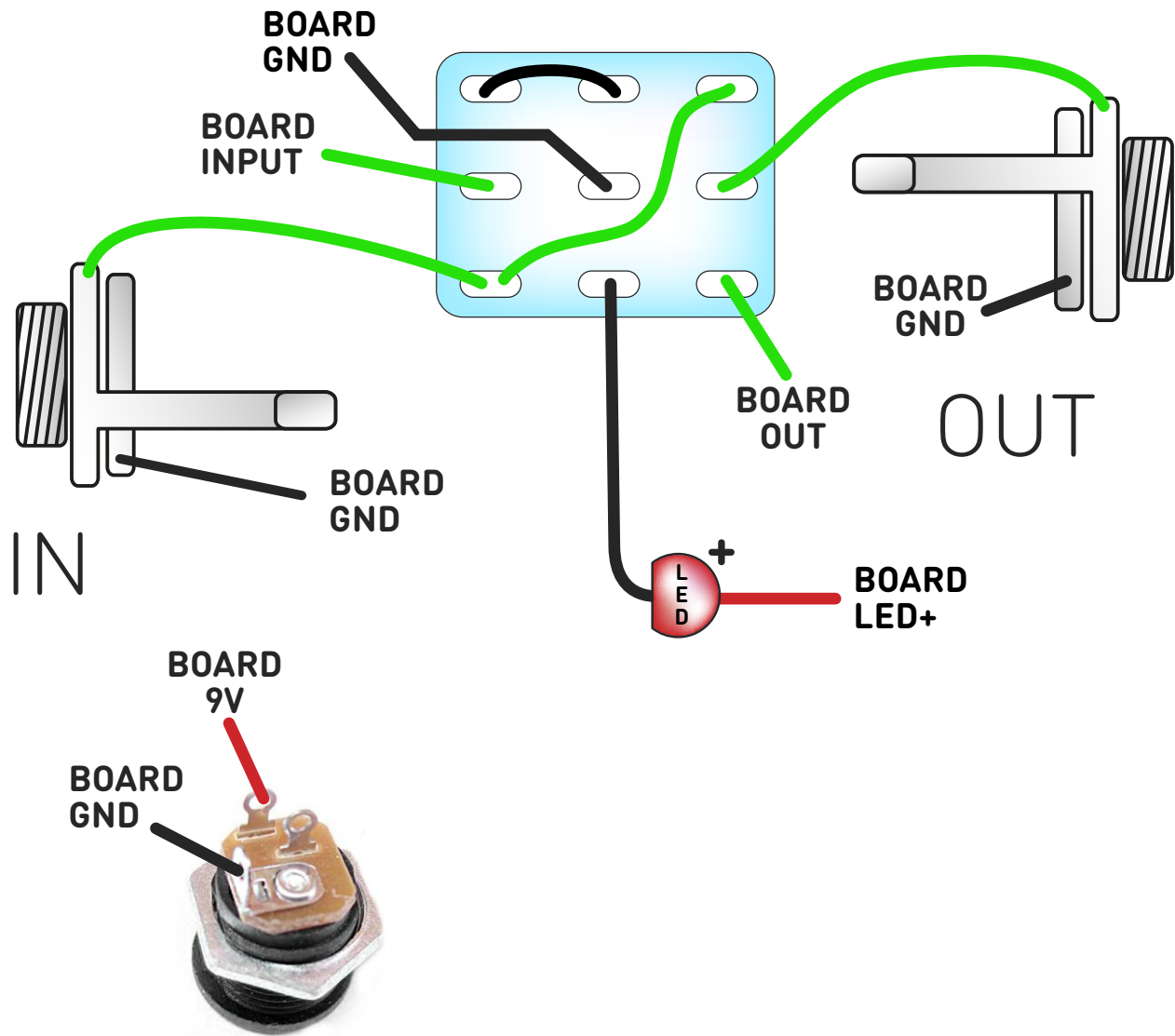
Once you've finished the circuit it makes sense to test is before starting on the switch and LED wiring. It'll cut down troubleshooting time in the long run. If the circuit works at this stage, but it doesn't once you wire up the switch - guess what? You've probably made a mistake with the switch.

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 - DC only version

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

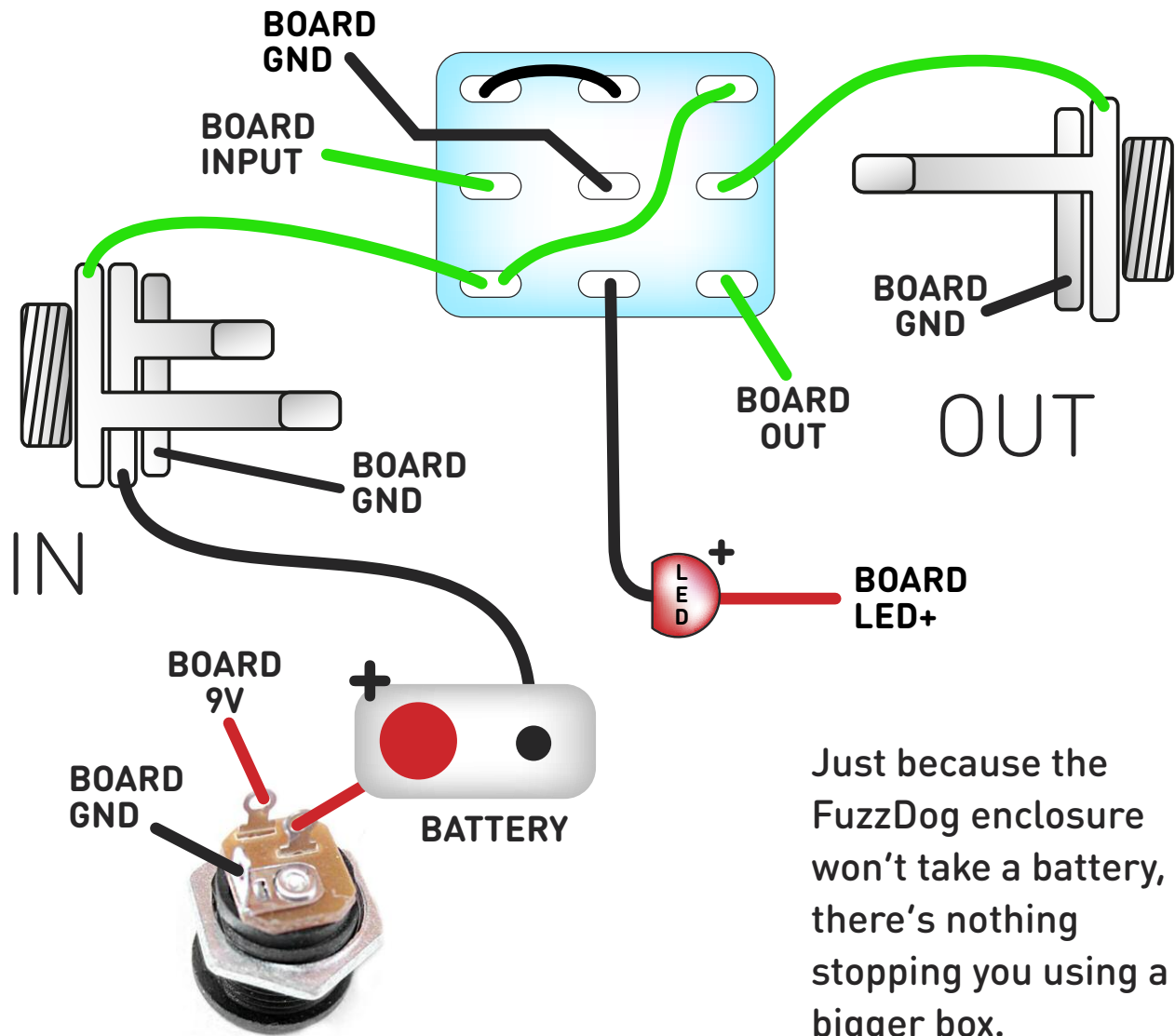


This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

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)



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.

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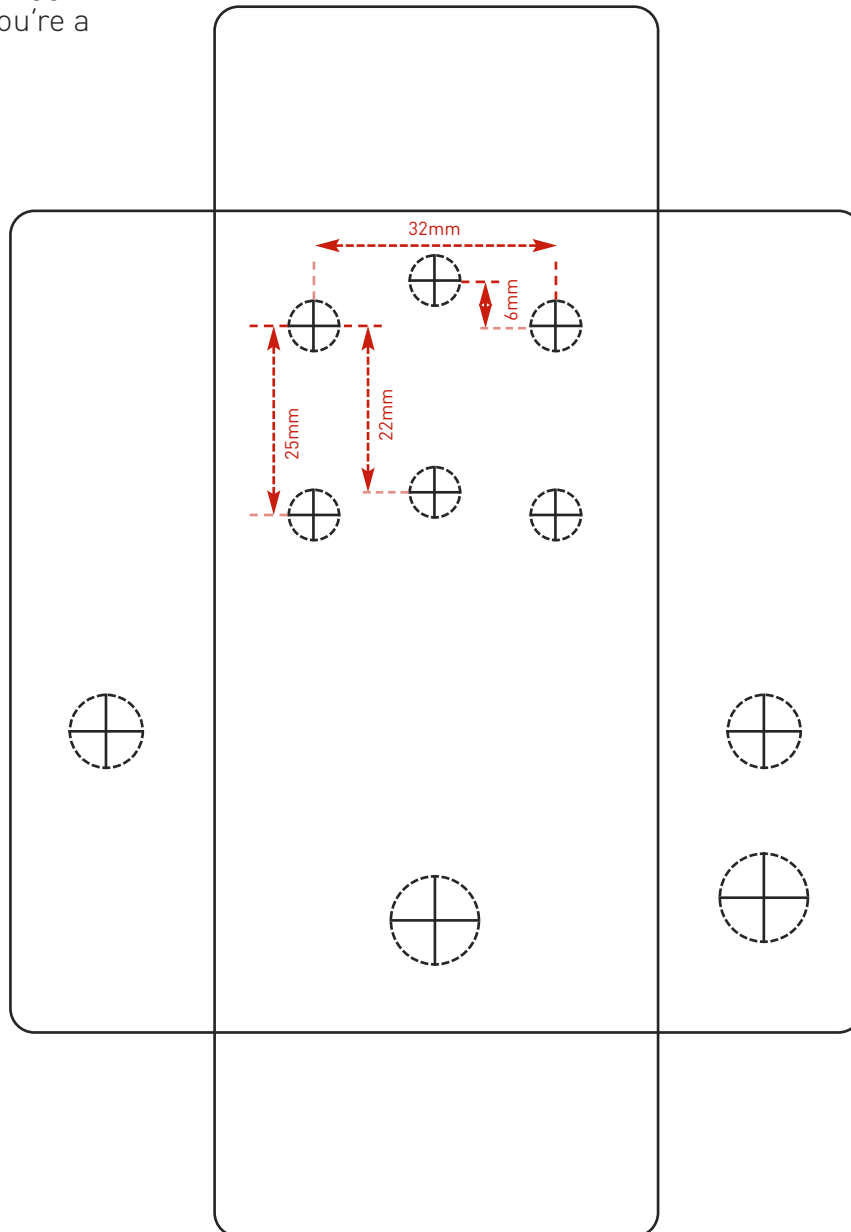
Drilling template

Hammond 1590B
60 x 111 x 31mm

Recommended drill sizes:

Pots	7mm
Jacks	10mm
Footswitch	12mm
DC Socket	12mm
Switches	6mm

It's a good idea to drill the holes for the pots 1mm bigger 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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