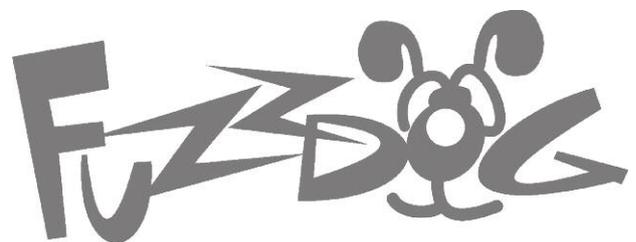
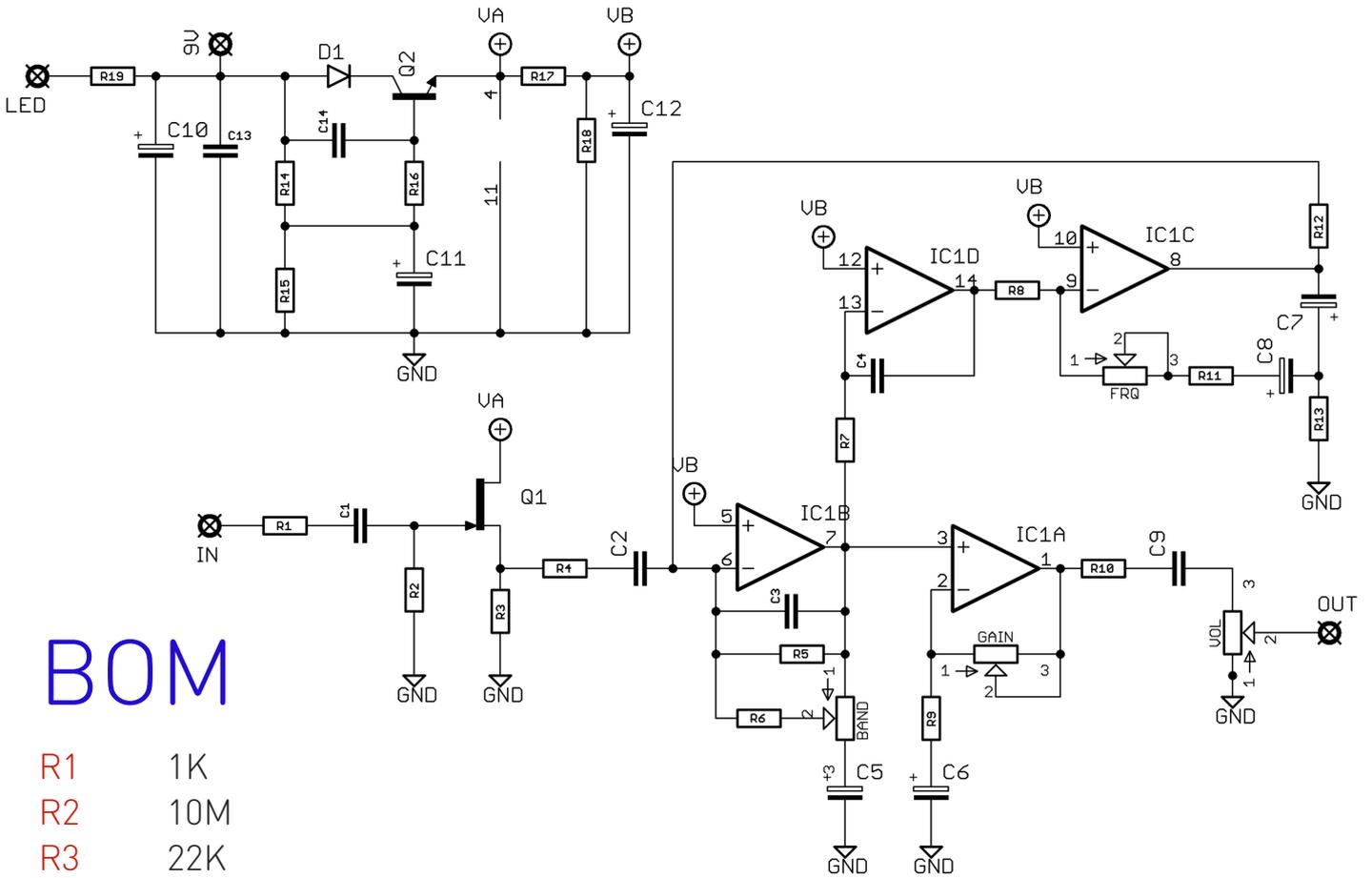


# Harmonic Energiser

Shut up and play your guitar  
(though some cool filtering)



# Schematic



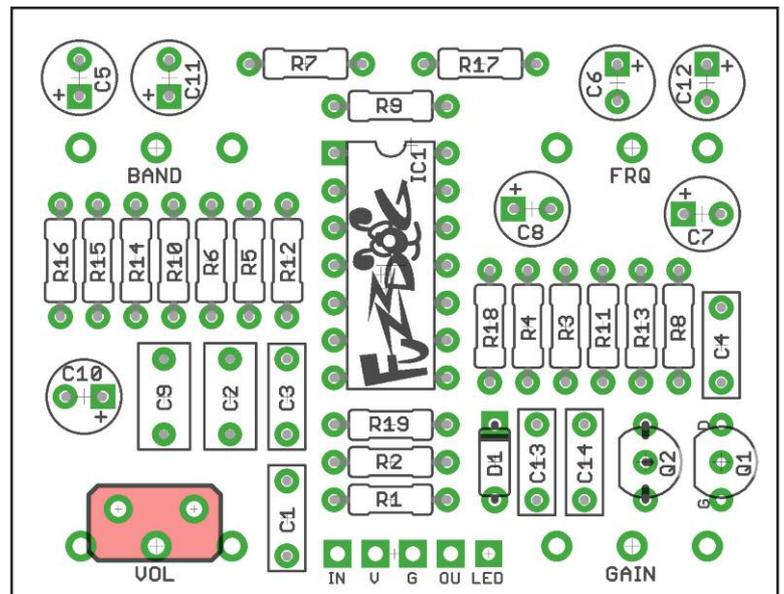
## BOM

R1	1K		
R2	10M		
R3	22K		
R4	22K		
R5	27K		
R6	5K1	C1	2n2
R7	10K	C2	1u
R8	20K	C3	47n
R9	1K	C4	47n
R10	1K	C5	10u elec
R11	560R	C6	10u elec
R12	2K2	C7	10u elec
R13	100K	C8	10u elec
R14	22K	C9	1u
R15	240K	C10	100u elec
R16	1K	C11	10u elec
R17	10K	C12	10u elec
R18	10K	C13	100n
R19	2K2 (CLR)	C14	10n
		D1	1N4148
		Q1	2N5458
		Q2	2N5088
		IC1	TL074
		FREQ	50KA
		GAIN	50KA
		BAND	5KB
		VOL	100KA*

\*VOLUME pot is optional, and can be replaced with 100K internal trimmer. Pot is recommended though, as the perceived output level can change drastically with filtering.

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, transistors and diode. 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 the IC, or be ultra mega careful.



The cathode (striped end) of the diode goes into the square pad. The anode (long leg) of electrolytic capacitors goes into the square pad. C10 can be bent over the adjacent resistors to save on height, giving more clearance when mounting in the enclosure.

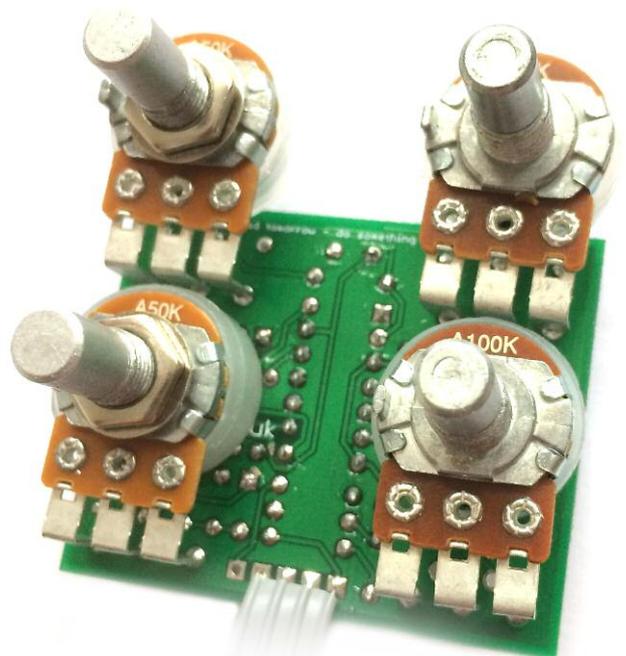
Snap the small metal tag off the pots so they can be mounted flush in the enclosure.

If you're using a footswitch daughterboard don't bother soldering R19. You'll use that on the daughterboard instead.

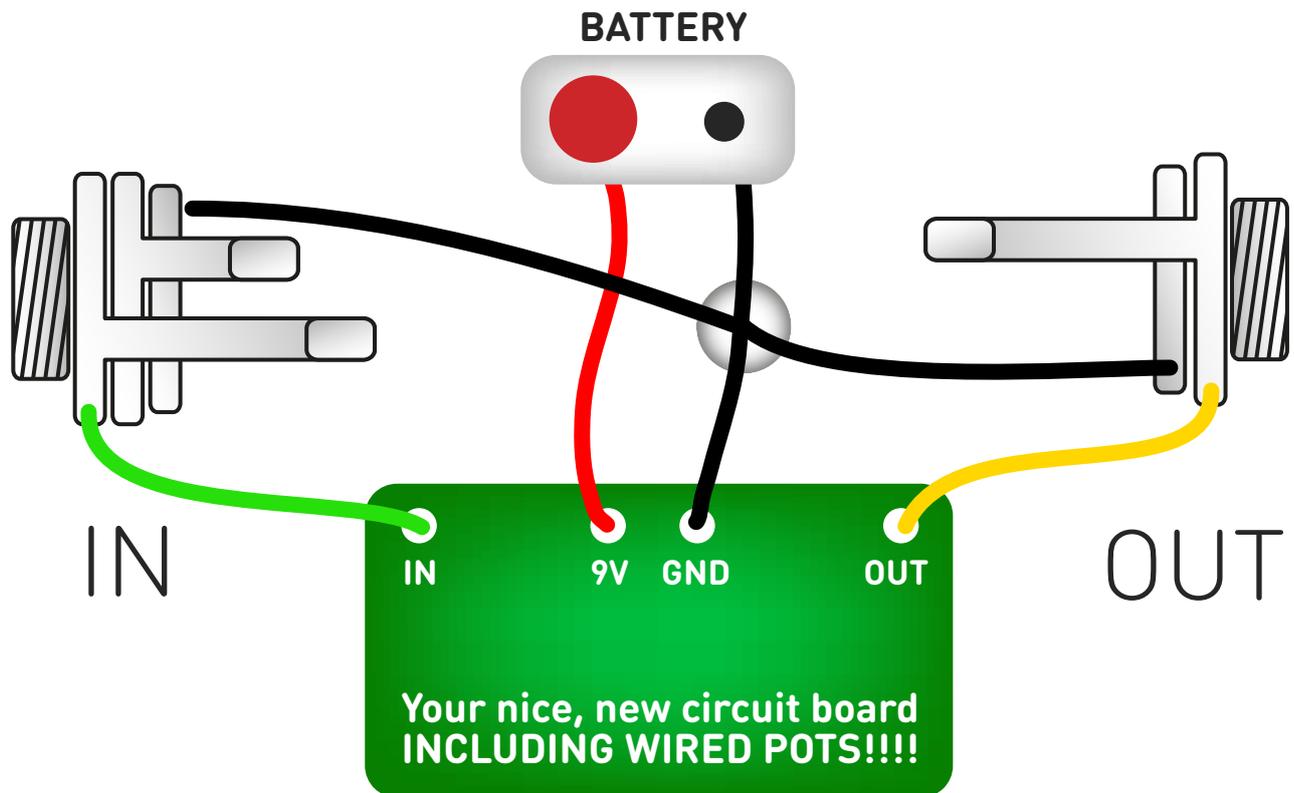
Pots mount on the back side of the board. You can use vertical-mount pots or just wire up 'normal' ones. It's a good idea to place the pots in their holes in the enclosure when you're soldering them in place on the PCB. That way you know they're going to line up ok. Best way to do it is to solder a single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

## VOLUME TRIMMER

If you're not using a pot the trimmer should mount on the component side of the PCB in the space shown in red above.



# Test the board!



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

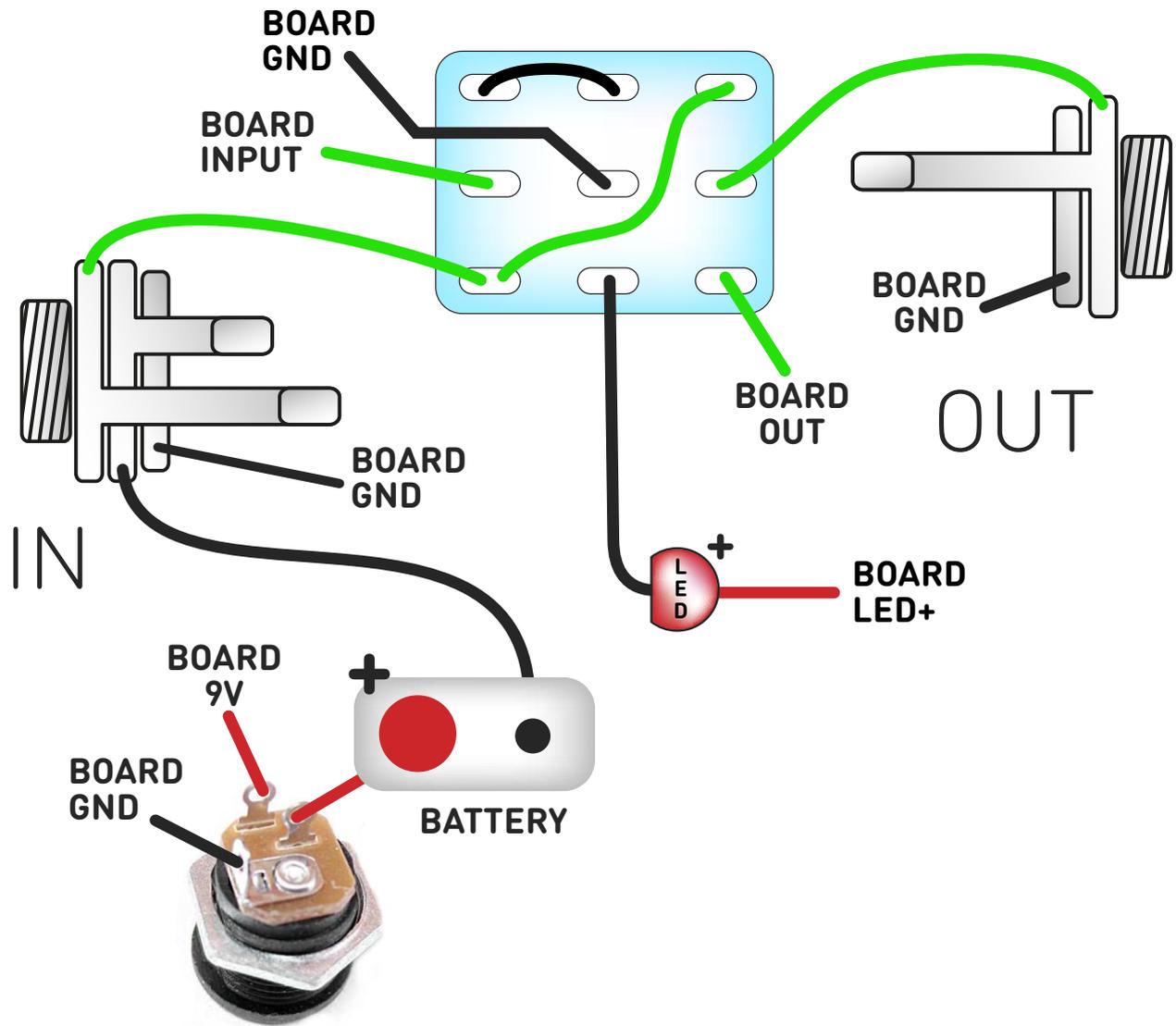
Once you've finished the circuit it makes sense to test it before starting on the switch and LED wiring. It'll cut down troubleshooting time in the long run. If the circuit works at this stage, but it doesn't once you wire up the switch - guess what? You've probably made a mistake with the switch.

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 - with battery

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

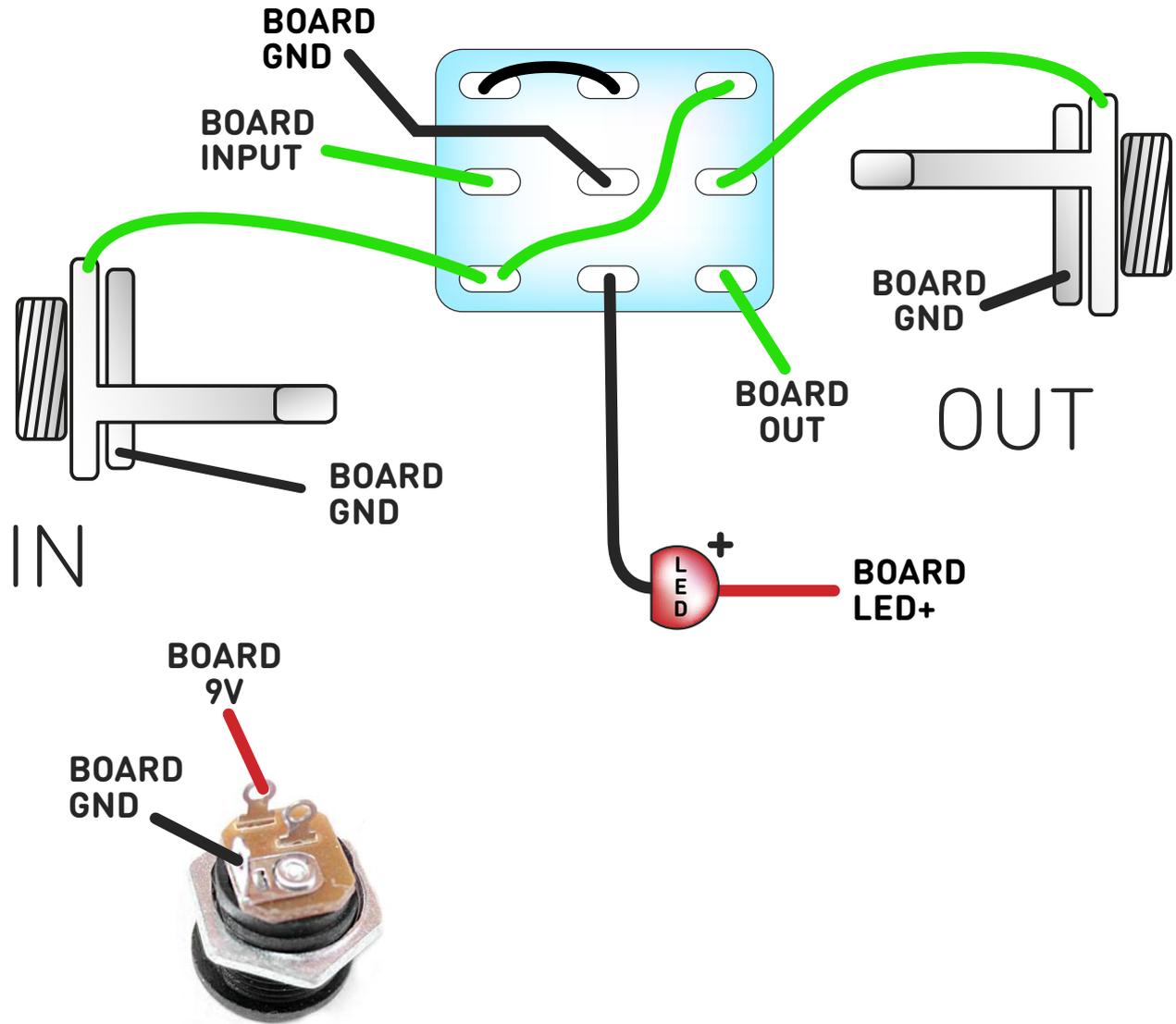


This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

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.

# 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.

## PedalParts.co.uk

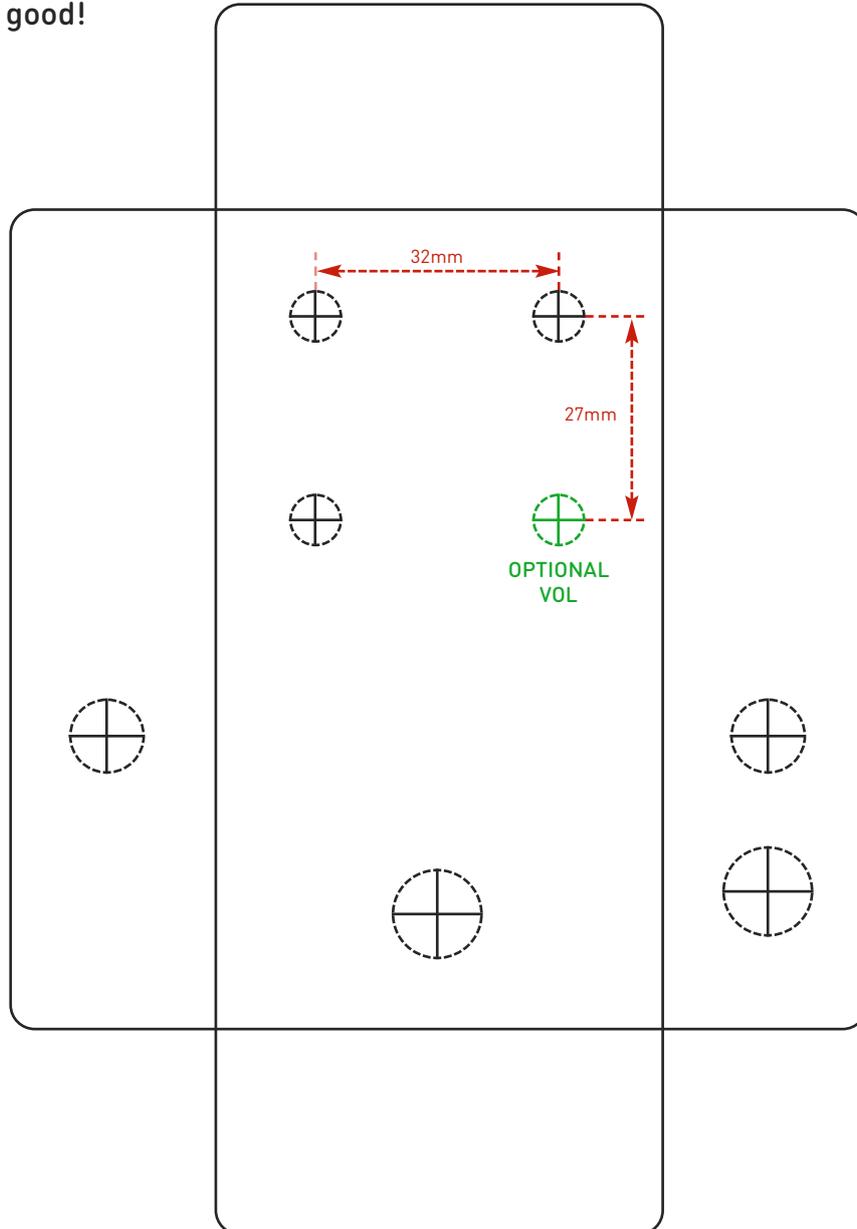
# Drilling template

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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