

# Expandotron v2

The original 'boutique' box of  
crunch/drive/distortion



# 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:

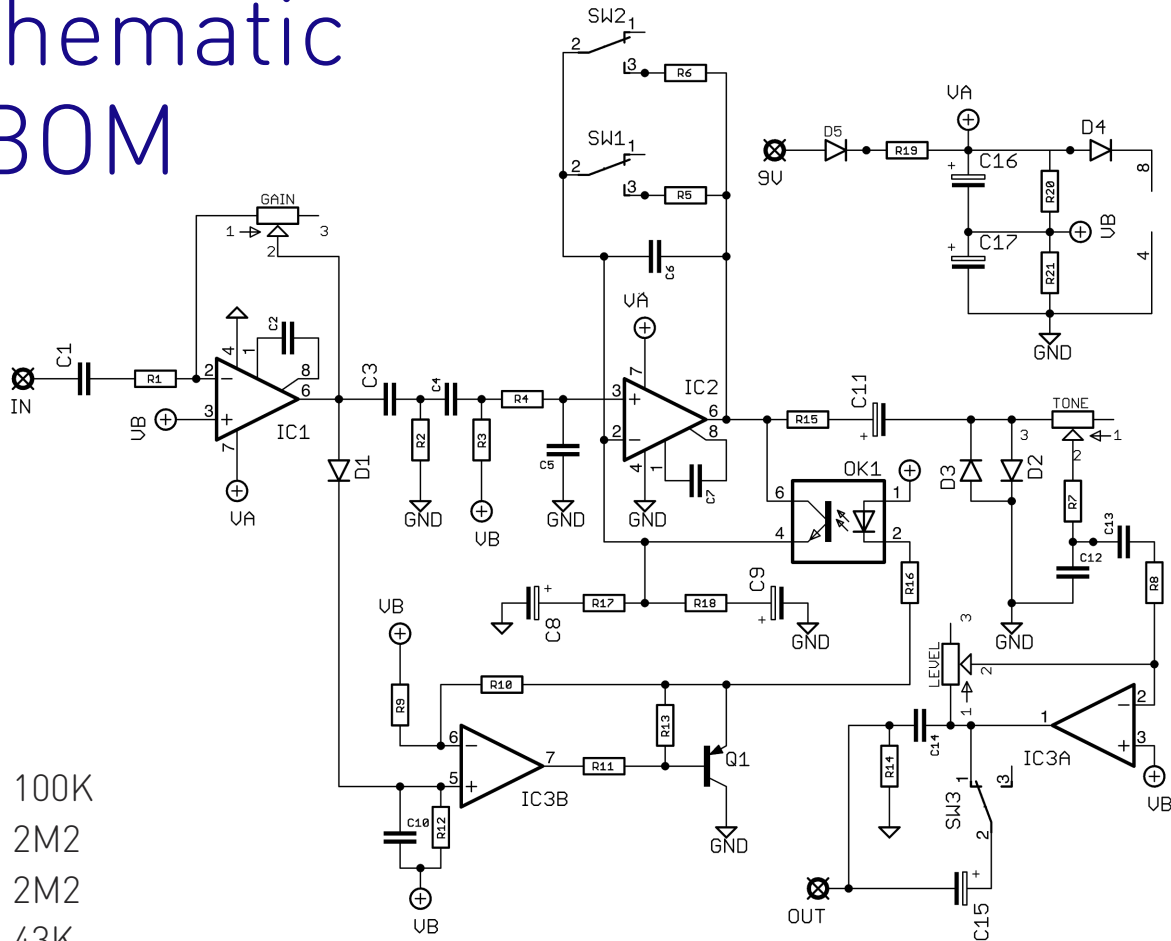
- Resistors should be 0.25W. You can use those with higher ratings but check the physical size of them.
- Electrolytics caps should be at least 25V for 9V circuits, 35V for 18V circuits. Again, check physical size if using higher ratings.

## LAYOUT CONVENTIONS

Unless otherwise stated in this document, the following are used:

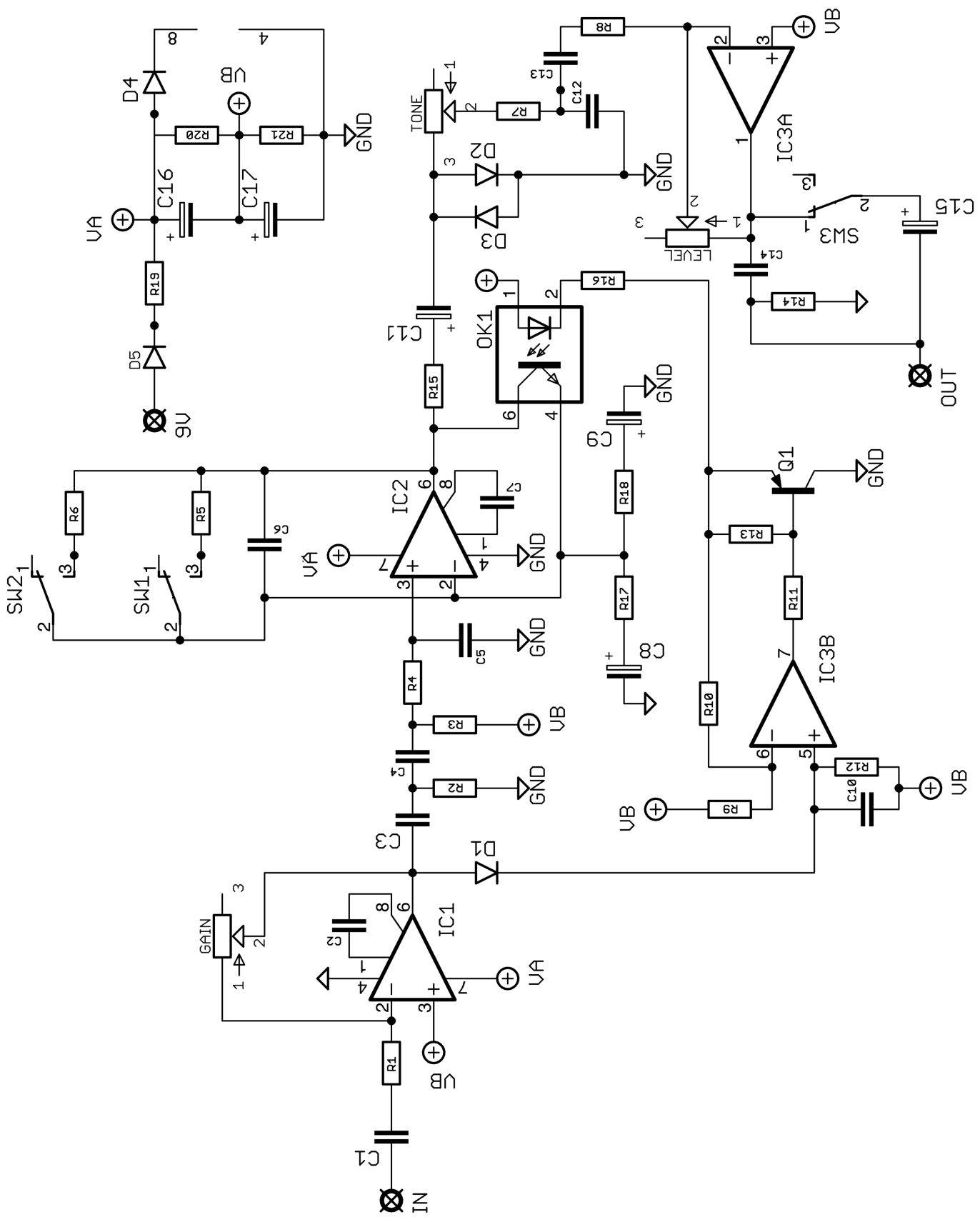
- **Electrolytic capacitors:**  
Long leg (anode) to square pad.
- **Diodes/LEDs:**  
Striped leg (cathode) to square pad. Short leg to square pad for LEDs.
- **ICs:**  
Square pad indicates pin 1.

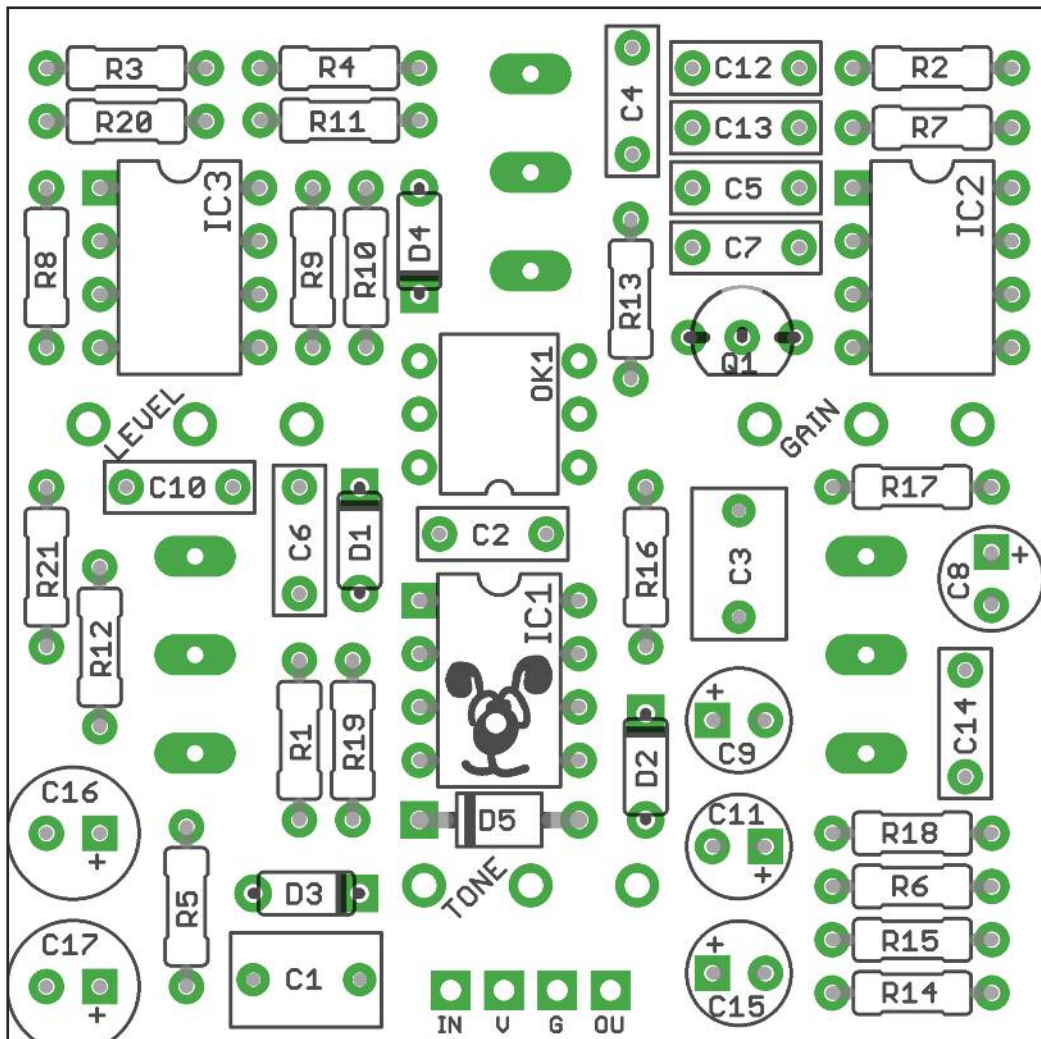
# Schematic + BOM



R1	100K	C1	1u	D1-4	1N4148
R2	2M2	C2	33p	D5	1N5817
R3	2M2	C3	1u	IC1-2	LM308/OP07
R4	43K	C4	22n	IC3	4558
R5	1K1	C5	1n	OK1	H11F3
R6	560R	C6	100p	Q1	2N5087
R7	1K5	C7	33p	GAIN	1MB
R8	1M	C8	4u7 elec	TONE	100KC
R9	51K	C9	2u2 elec	LEVEL	1MB
R10	820K	C10	100n	SW1-2	SPDT ON-ON
R11	4K7	C11	4u7 elec	SW3	SPDT ON-ON
R12	100K	C12	3n3		
R13	47K	C13	100n		
R14	11K*	C14	100n*		
R15	1K1	C15	10u*		
R16	4K7	C16	100u elec		
R17	560R	C17	100u elec		
R18	47R				
R19	47R				
R20	10K				
R21	10K				

\*Original values are R14 - 1K1, C14 - 1u, C15 - empty. The new R14/C14 values give the same cut off frequency. You'll not break the universe by using 10K for R14. Leave C15 out if you're not including the optional bass switch SW3.





PCB layout ©2023 Pedal Parts Ltd.

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.

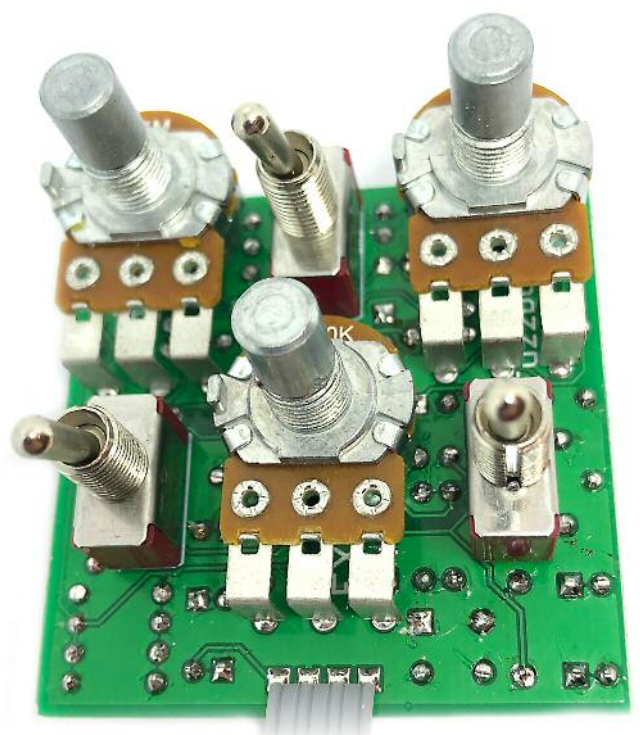
Be very careful when soldering the diodes and transistors. They're very sensitive to heat. You should use some kind of heat sink (crocodile clip or reverse action tweezers) on each leg as you solder them. Keep exposure to heat to a minimum (under 2 seconds).

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

You should solder all other board-mounted components before you solder the pots and switches. 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.

**There's no need to jumper anything if you aren't including the bass toggle SW3. Simply leave out C15 and SW3.**



# Test the board!

**Check the relevant daughterboard document for more info before you undertake this stage.**

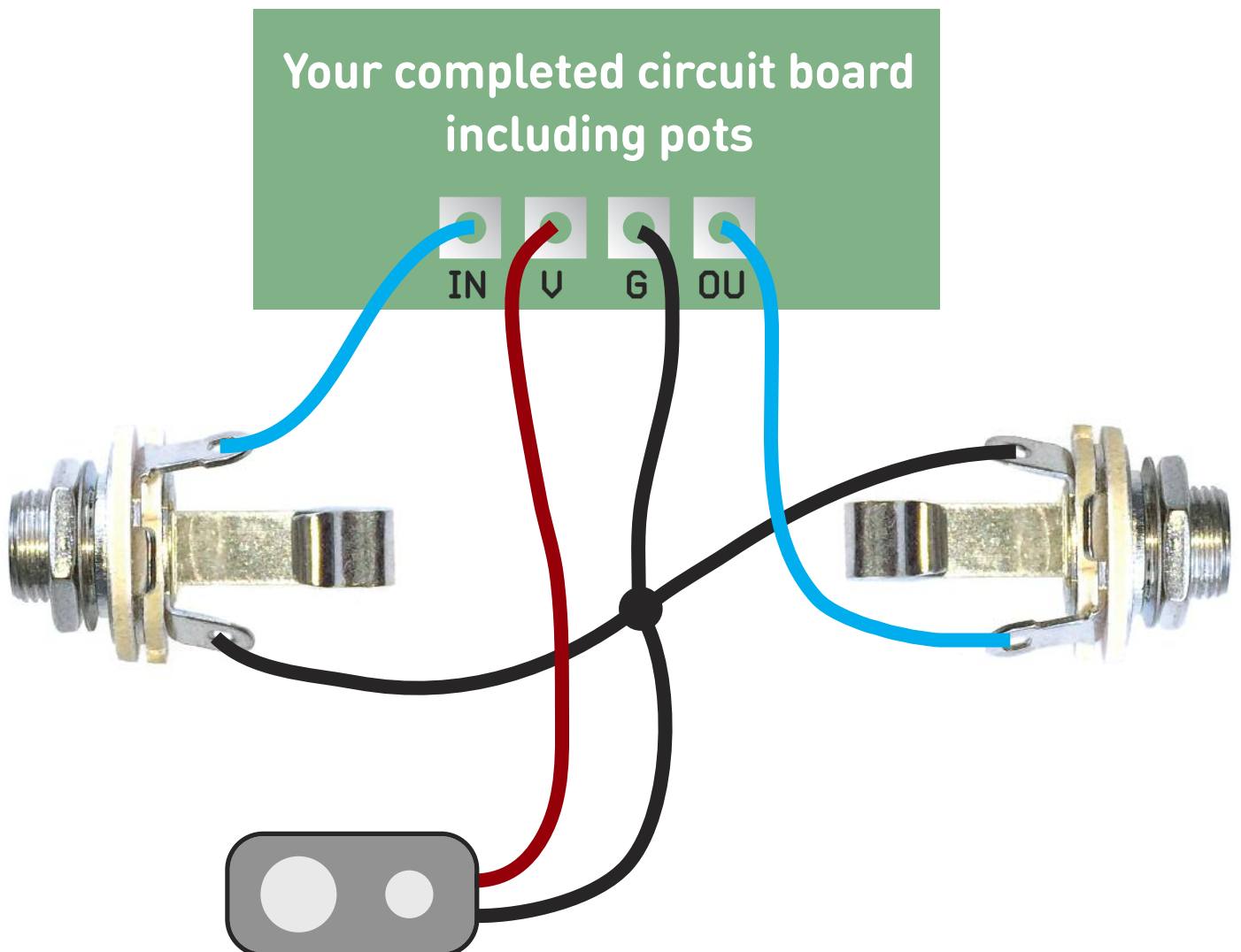
**UNDER NO CIRCUMSTANCES will troubleshooting help be offered if you have skipped this stage. No exceptions.**

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 you're using a ribbon cable you can tack the wires to the ends of that. It's a lot easier to take them off there than it is to desolder wires from the PCB pads.

If it works, carry 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.



Now's the time  
to refer to the  
daughterboard  
document for  
your chosen  
bypass method.

Enjoy your pedal!

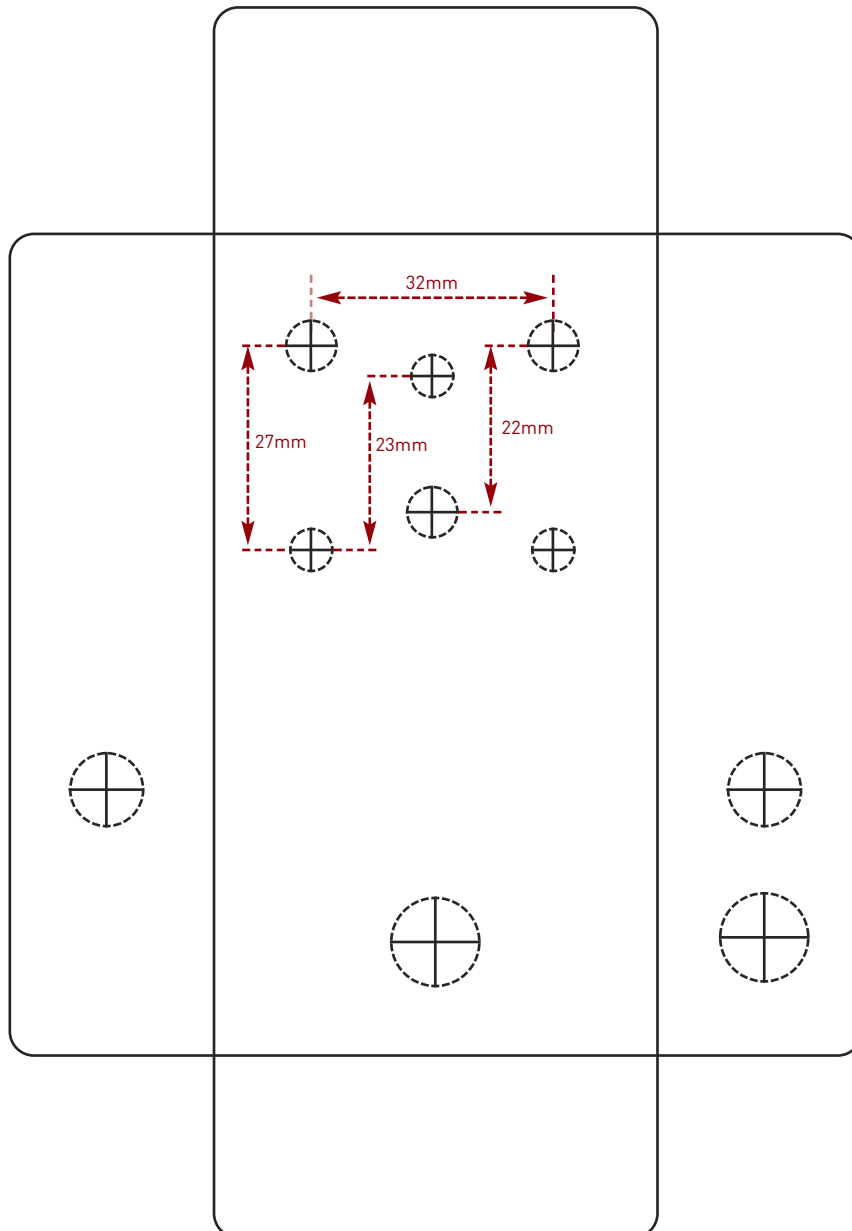
# Drilling template without battery - side DC

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 switches	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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