

Vintage POW!

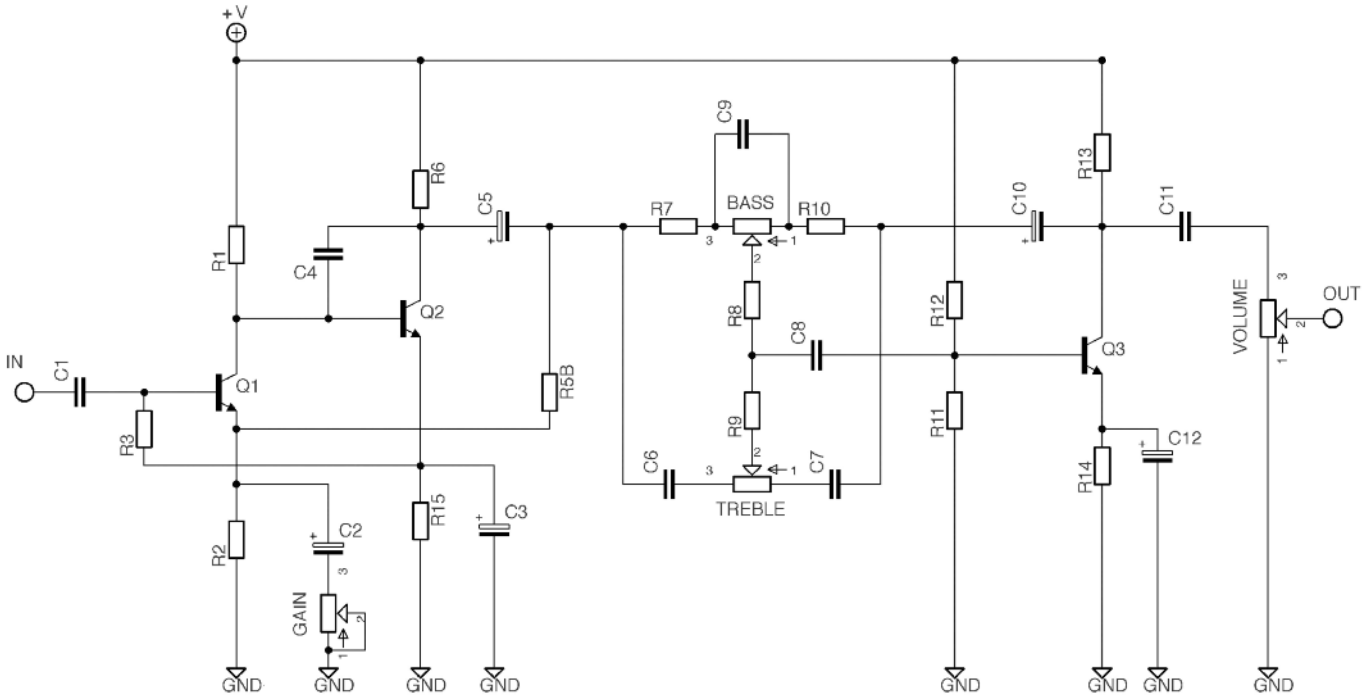
Clone of Colorsound's
Overdriver / Power Boost



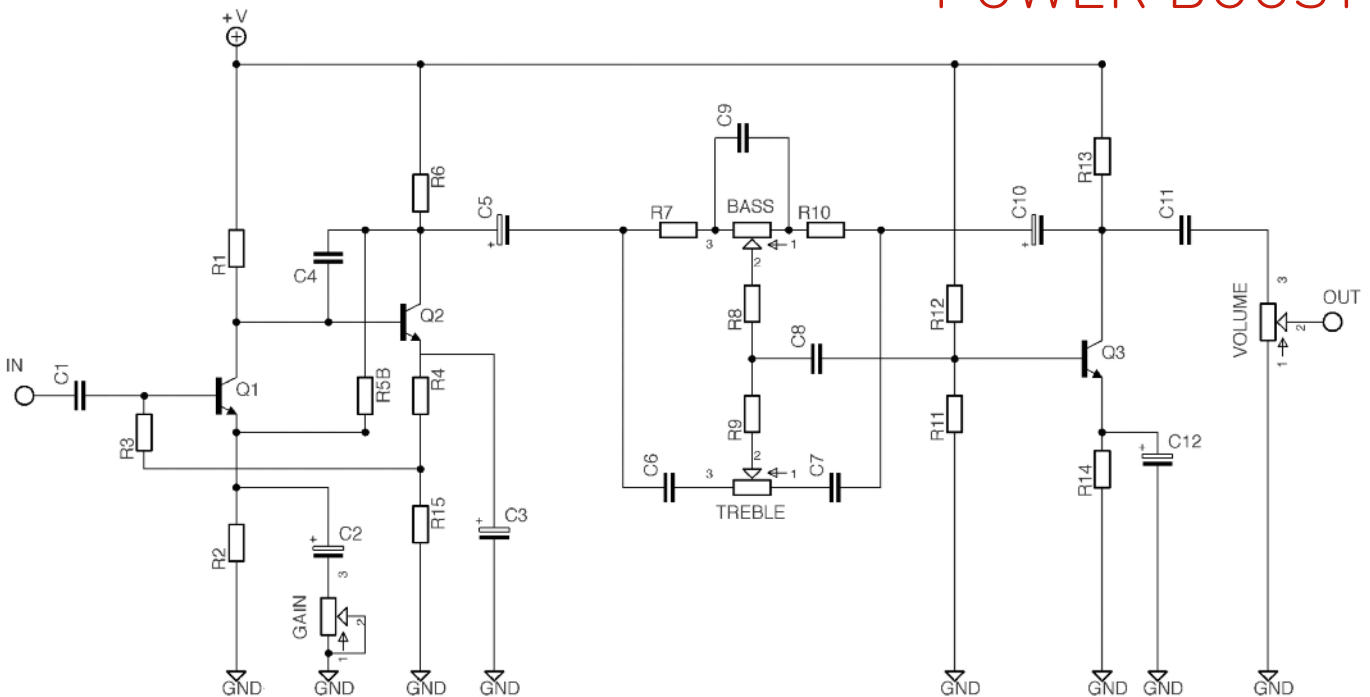
Schematics

Power filtering and charge pump not shown - more later

OVERDRIVER



POWER BOOST



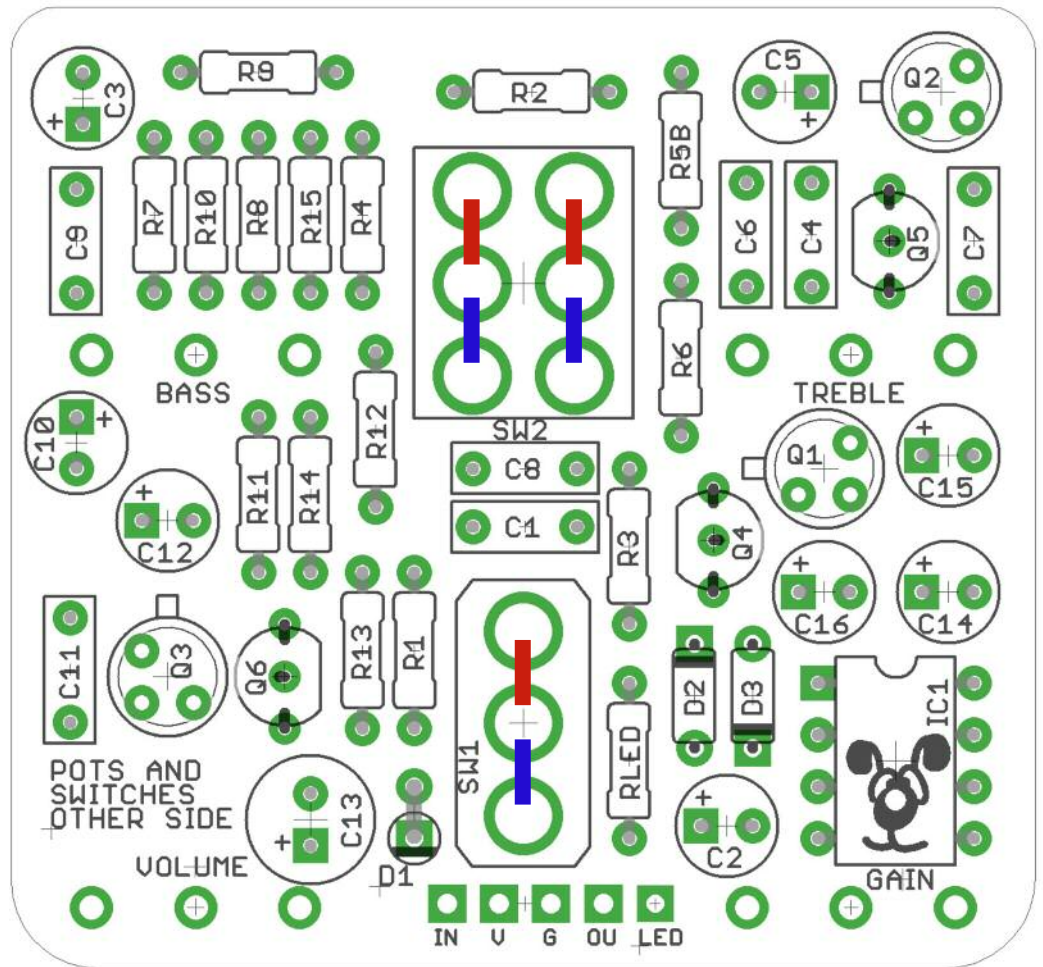
IMPORTANT JUMPERS

OVERDRIVER

Make the connections shown in red.

POWER BOOST

Make the connections shown in blue. If you're not using the charge pump make the red connection on SW1 rather than blue.



PCB Layout ©2015 Pedal Parts Ltd.

*Original Drive pot was 10KB but all the control is bunched in the last couple of degrees of turn. 5KC works much better.

BOM

If you aren't using the charge pump just leave those spots empty.

	OD	PB		OD	PB		Q1-3	BC109
R1	120K	120K	C1	220n	220n		or	
R2	6K8	4K7	C2	22u elec	22u elec		Q4-6	BC169C
R3	150K	150K	C3	22u elec	22u elec		D1	1N4001
R4	empty	470R	C4	220p	220p		DRIVE	5KC*
R5B	12K	12K	C5	10u elec	10u elec		TREB	100KB
R6	1K8	1K8	C6	10n	10n		BASS	100KB
R7	4K7	4K7	C7	10n	10n		VOL	100KA
R8	39K	39K	C8	100n	100n		CHARGE PUMP	
R9	5K6	5K6	C9	100n	100n		D2-3	1n4148
R10	4K7	4K7	C10	10u elec	22u elec		C14-16	10u elec
R11	33K	33K	C11	220n	220n		IC1	TC7660S‡
R12	150K	180K	C12	22u elec	10u elec			
R13	1K8	3K9	C13	100u elec	100u elec			
R14	470R	1K						
R15	470R	1K2						
RLED	2K2	4K7						

‡make sure your 7660 has an S suffix to ensure you don't get any high frequency interference into your signal.

The PCB has been designed to easily take either BC109 or BC169C without any fiddly leg twisting. Only use one or the other sets of spots - Q1-3 or Q4-6.

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 diodes, LED 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). Ideally you should use a socket for the IC.

The striped leg (cathode) of the diodes go into the square pads.

The long leg (anode) of the electrolytic capacitors go into the square pads. C13 should lay flat to the PCB as shown on the main image to allow plenty of clearance when mounting in the enclosure.

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.

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

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.

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 all sitting at the same height. If not, melt the joints and readjust any that are off.

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

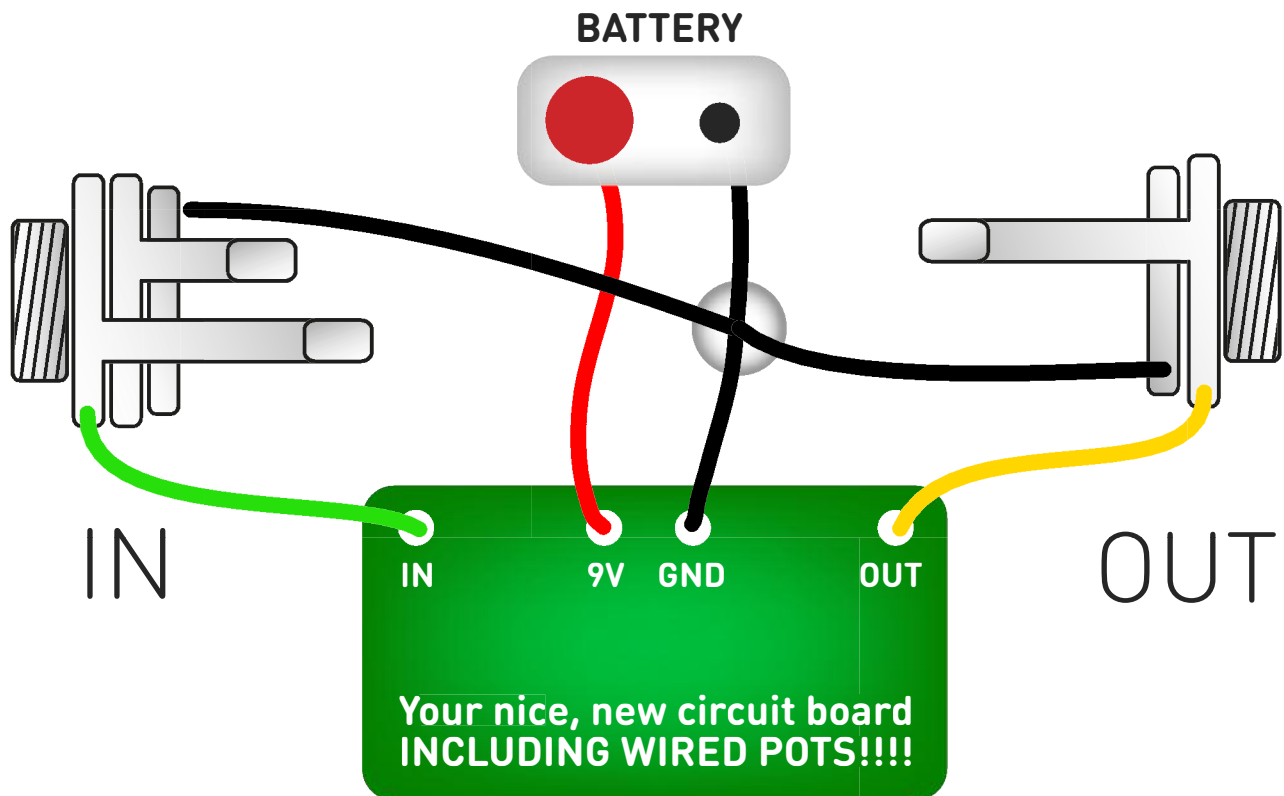
WHY ARE THERE HOLES FOR SWITCHES?

The top switch can change the connections of two sets of components to make them either Power Boost or Overdriver configuration. However, there are so many component value changes between the two circuits that it really doesn't give even a close approximation merely changing those two parts.

The bottom switch selects between 9V and 18V power if you're using the charge pump. Frankly, the Overdriver sounds best at 9V, the Power Boost at 18V, so its highly recommended you just hard wire for the appropriate voltage. If you really want to switch between the two, use the charge pump and put a SPDT ON-ON toggle in that space instead of the jumper wire.



Test the board!



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

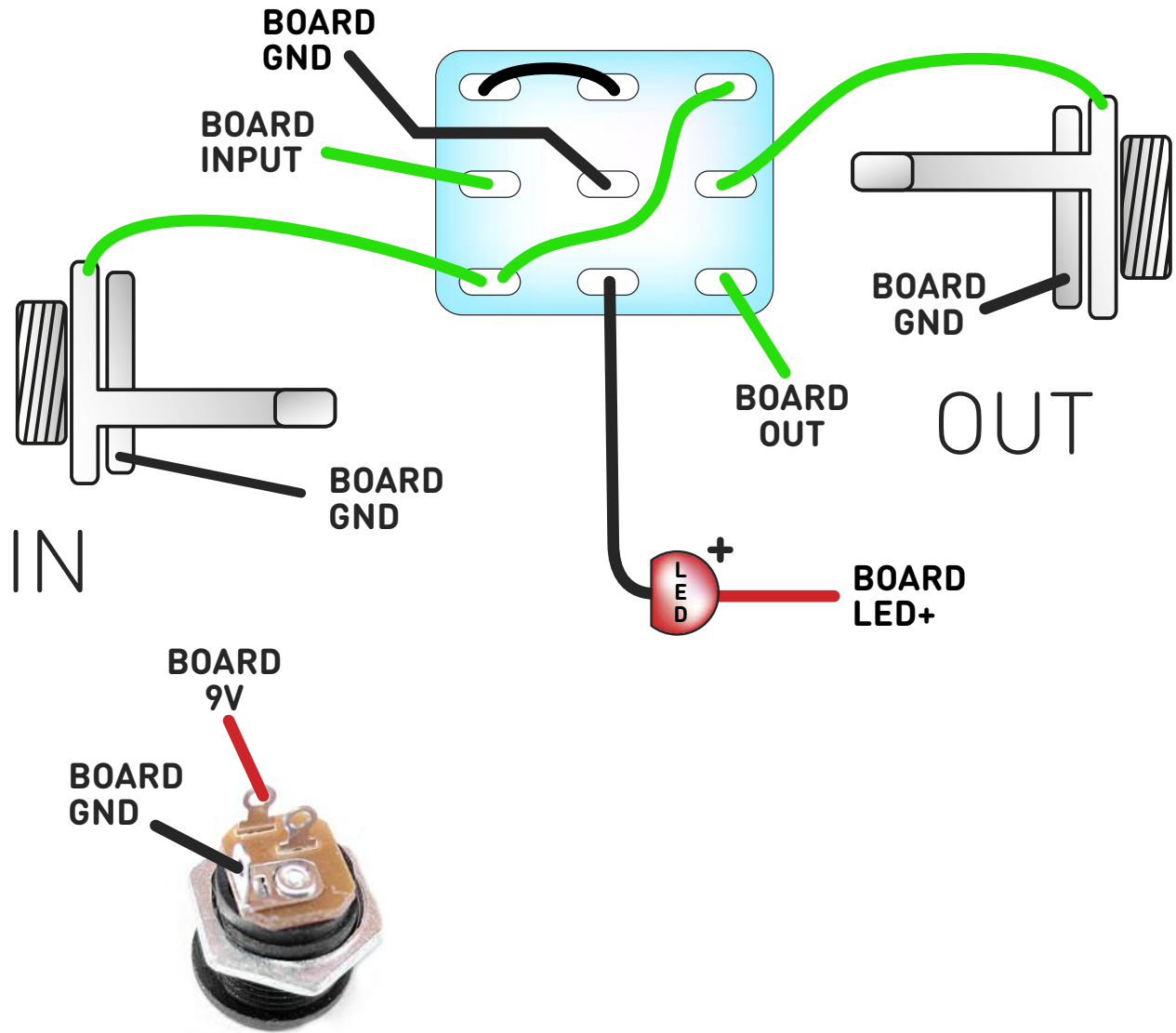
Once you've finished the circuit it makes sense to test it before starting on the switch and LED wiring. It'll cut down troubleshooting time in the long run. If the circuit works at this stage, but it doesn't once you wire up the switch - guess what? You've probably made a mistake with the switch.

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 - DC only version

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

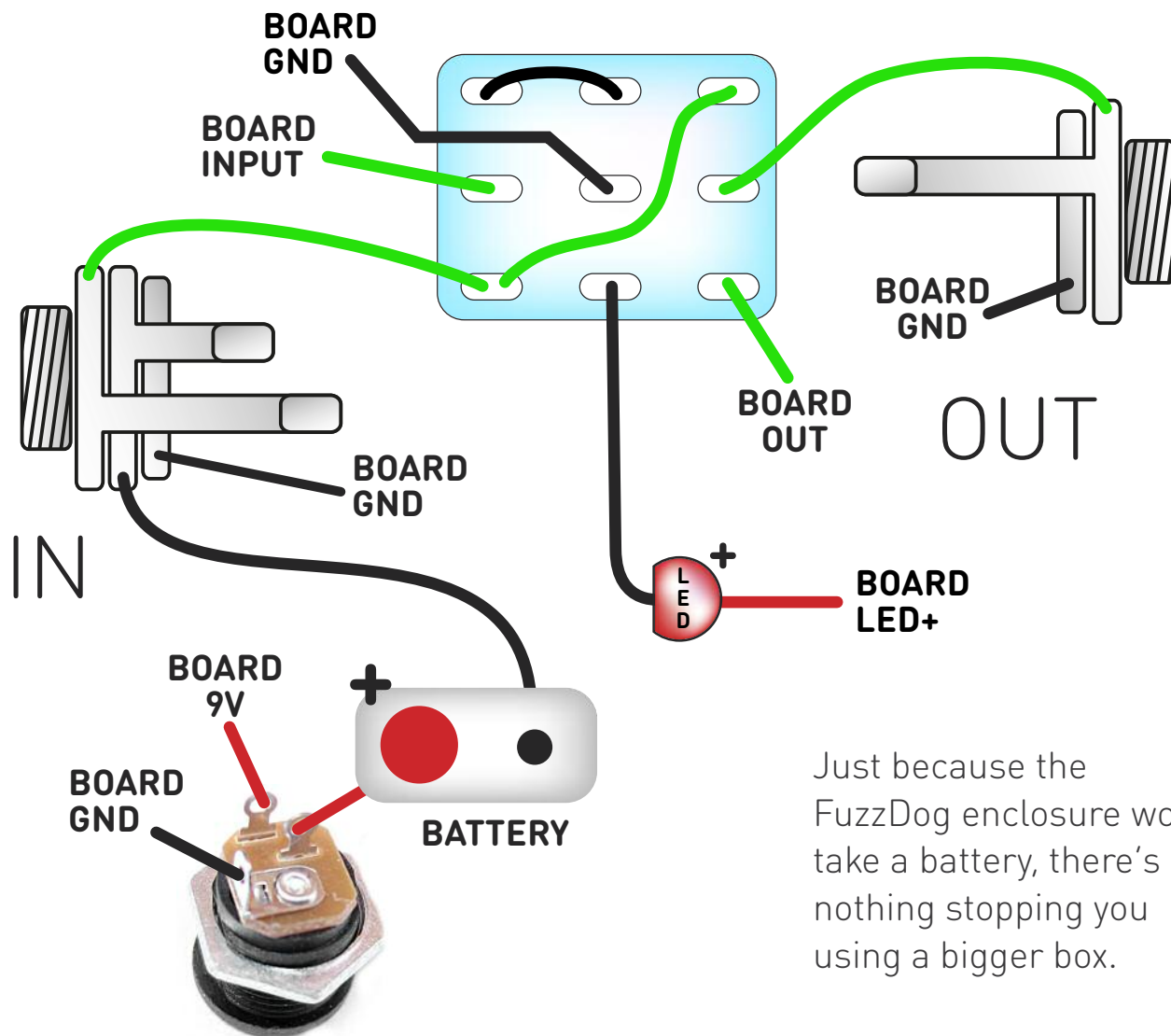


This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

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)



Just because the FuzzDog enclosure won't take a battery, there's nothing stopping you using a bigger box.

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Drilling template

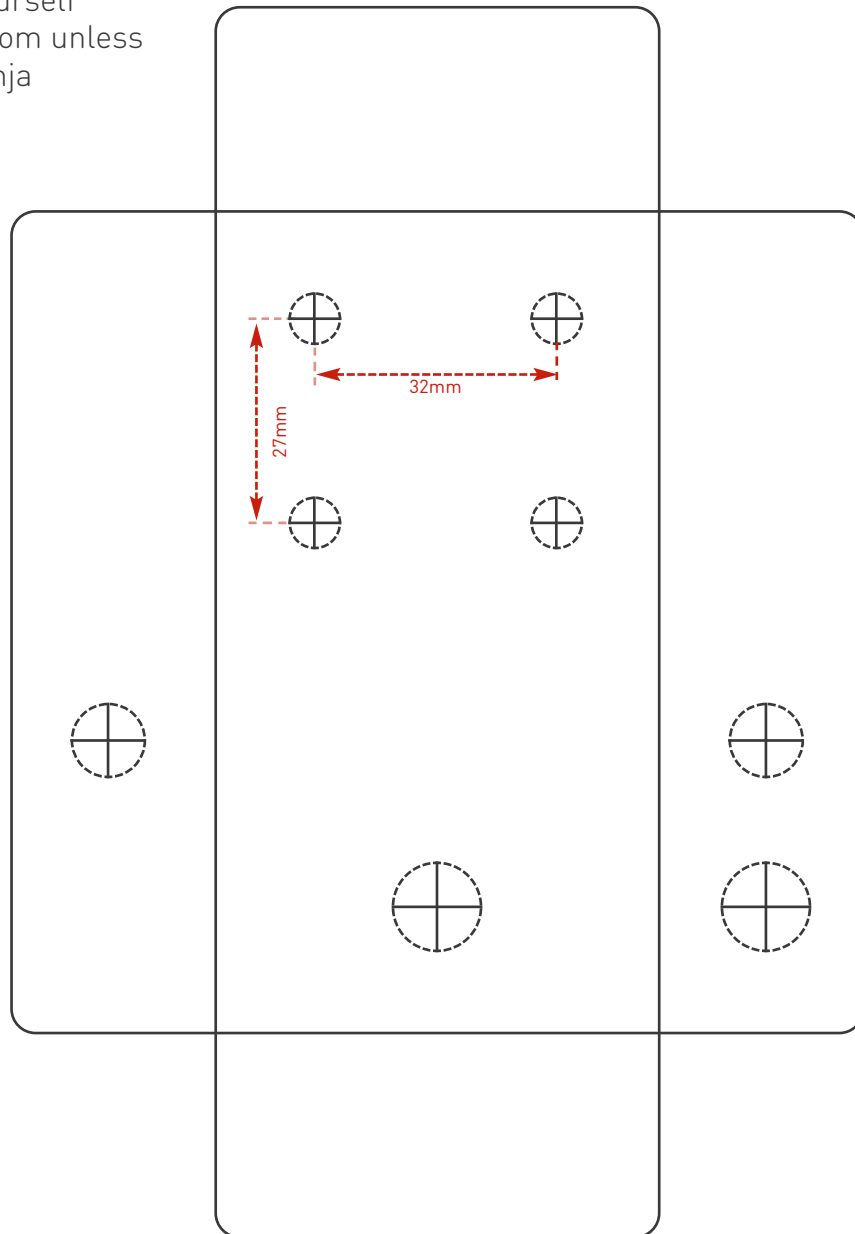
Recommended drill sizes:

Pots	7mm
Jacks	10mm
Footswitch	12mm
DC Socket	12mm
Rotary Switch	9mm

Hammond 1590B

60 x 111 x 31mm

It's a good idea to drill the holes for the pots 8mm 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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