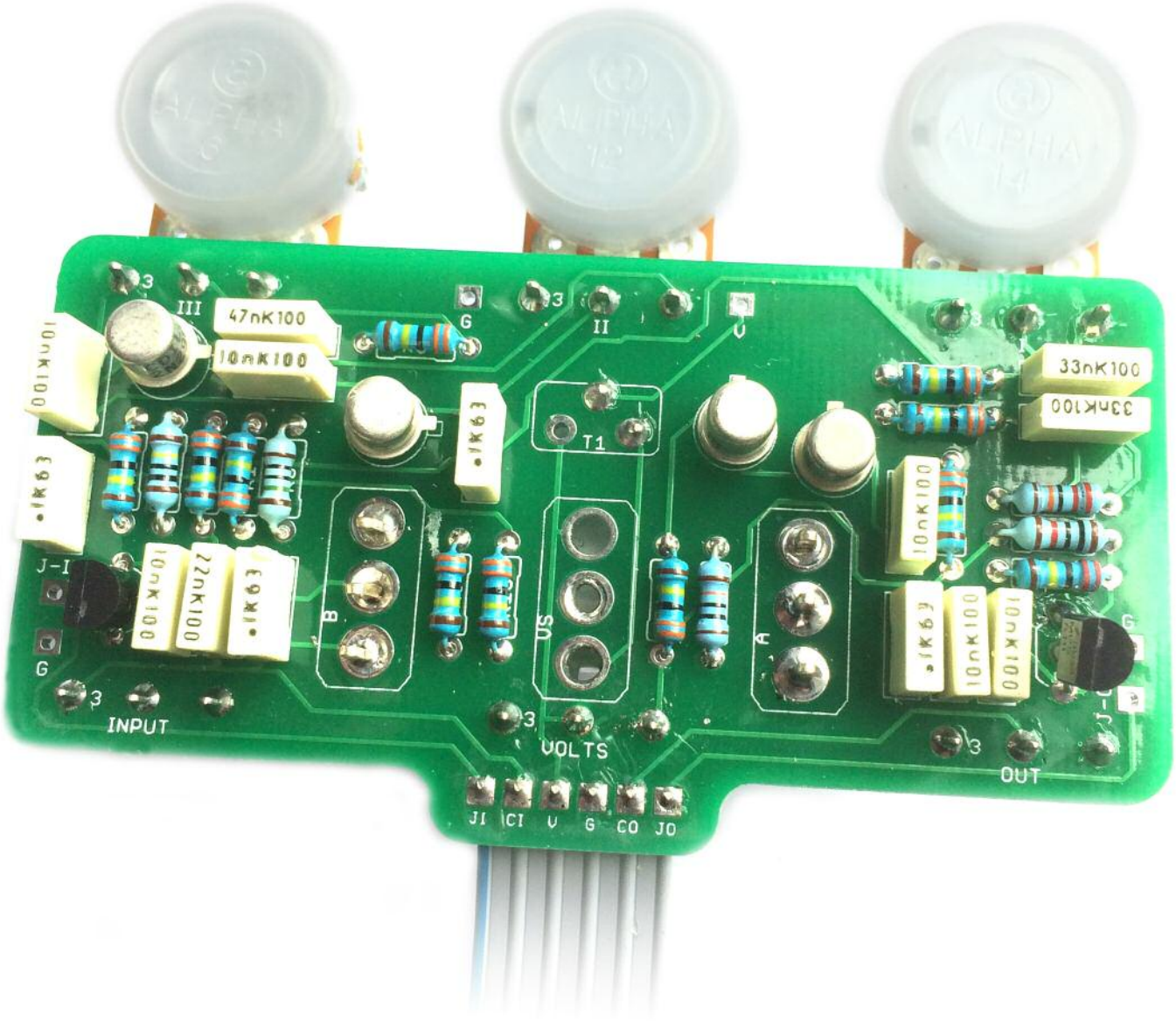
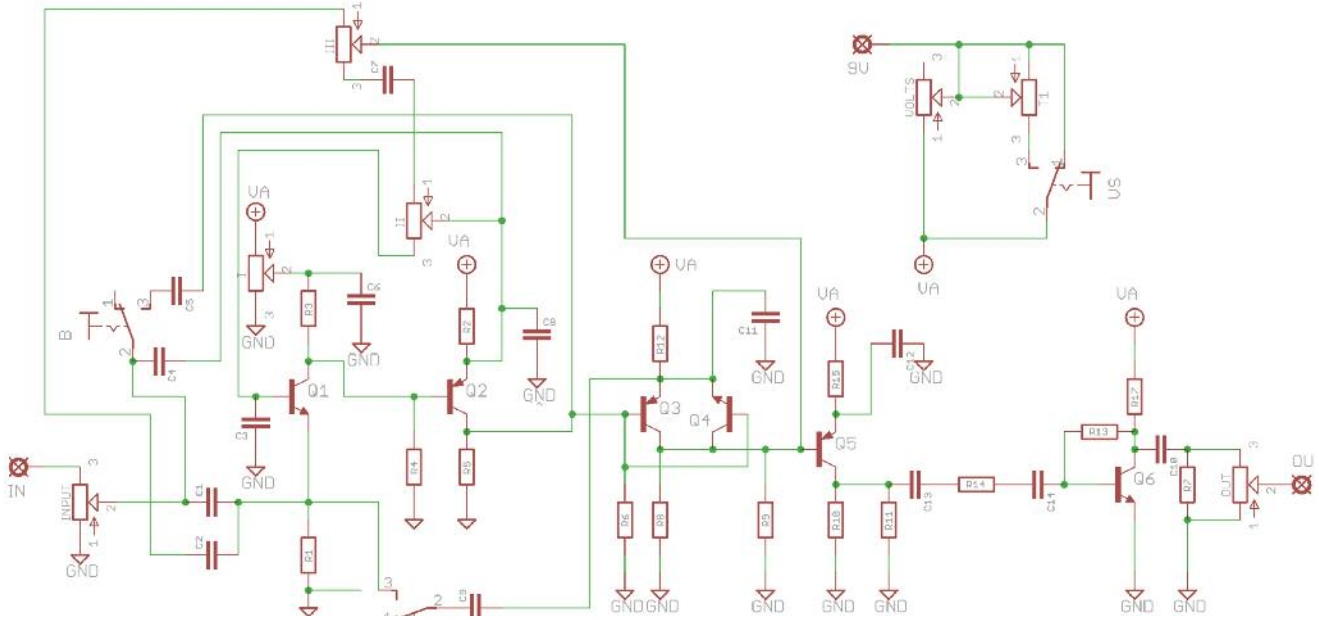


Impossible Drive

How many inexplicable sounds have you created today?

Schematic!!!!??!?!!>>>>@%$



BOM

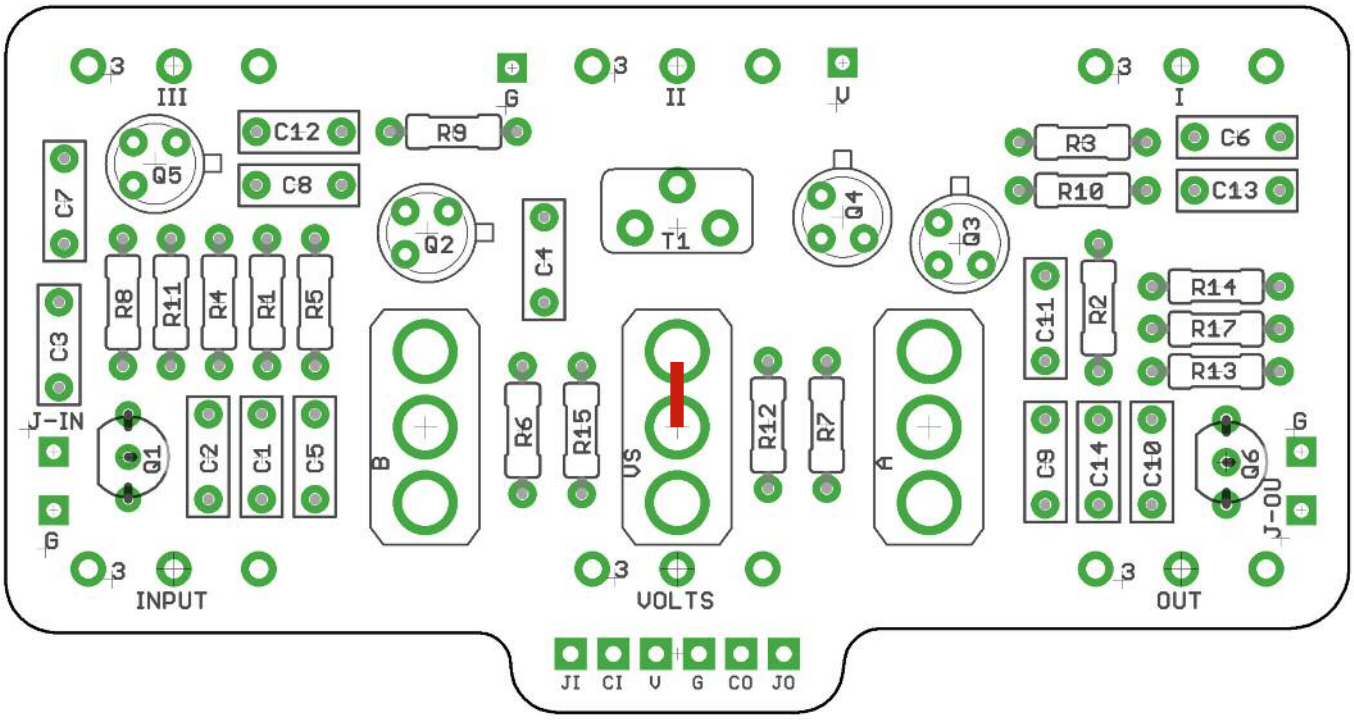
R1	3M3
R2	3M3
R3	3M3
R4	3M3
R5	10M
R6	3M3
R7	100K
R8	3M3
R9	3M3
R10	3M3
R11	1M
R12	3M3
R13	2M2
R14	220K
R15	3M3
R17	10K

C1	22n
C2	10n
C3	100n
C4	100n
C5	100n
C6	33n
C7	10n
C8	10n
C9	100n
C10	10n
C11	10n
C12	47n
C13	33n
C14	10n

Q1	2N3391A
Q2	2N2907A
Q3	2N2907A
Q4	2N2222
Q5	2N2907A
Q6	MPSA18

I	100KB
II	1MB
III	500KB
III	500KB
INPUT	500KB
OUT	100KA
VOLTS*	50KB
T1*	47K Trim
SWITCHES	SPDT ON-ON

*VOLTS control is entirely optional. This is a FuzzDog addition to the circuit giving a wider range of sounds. Use EITHER the VOLTS pot, or trimmer T1 in conjunction with a toggle switch in the VS postition. You can leave it out altogether. See notes further into the document.



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. If you use a 6-way connection cable you can choose to take your jack connections from the main PCB or the daughterboard. It's up to you. If you're not using a daughterboard ignore the J-IN and J-OUT connectors - they won't attach to anything without the daughterboard.

Be very careful when soldering the 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).

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

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 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 a bit like this, depending on your VOLTS options.

Danger, Danger.... Low Voltage!

The optional VOLTS control is a voltage starve. This can do crazy things to a circuit, and is a lot of fun to play with. If you're into wild sounds, go for it.

You have three choices:

- External pot - full control of the voltage sag with a knob. Just fit the pot and you're good.
- Internal trimmer / external toggle - preset your sag amount and engage with switch. For this just add T1 and the VS toggle switch. Adjust T1 until you get the effect you're after.
- None. Simply put a jumper between the top and middle pads of the VS switch as shown on the previous page.

What does all that stuff do?

That schematic is a crazy mess, right? To be honest, most of the controls are so interactive with each other that its hard to say. If you look at the schem you'll see they're altering bias voltages, sending feedback and altering signal frequencies. The only really predictable controls are:

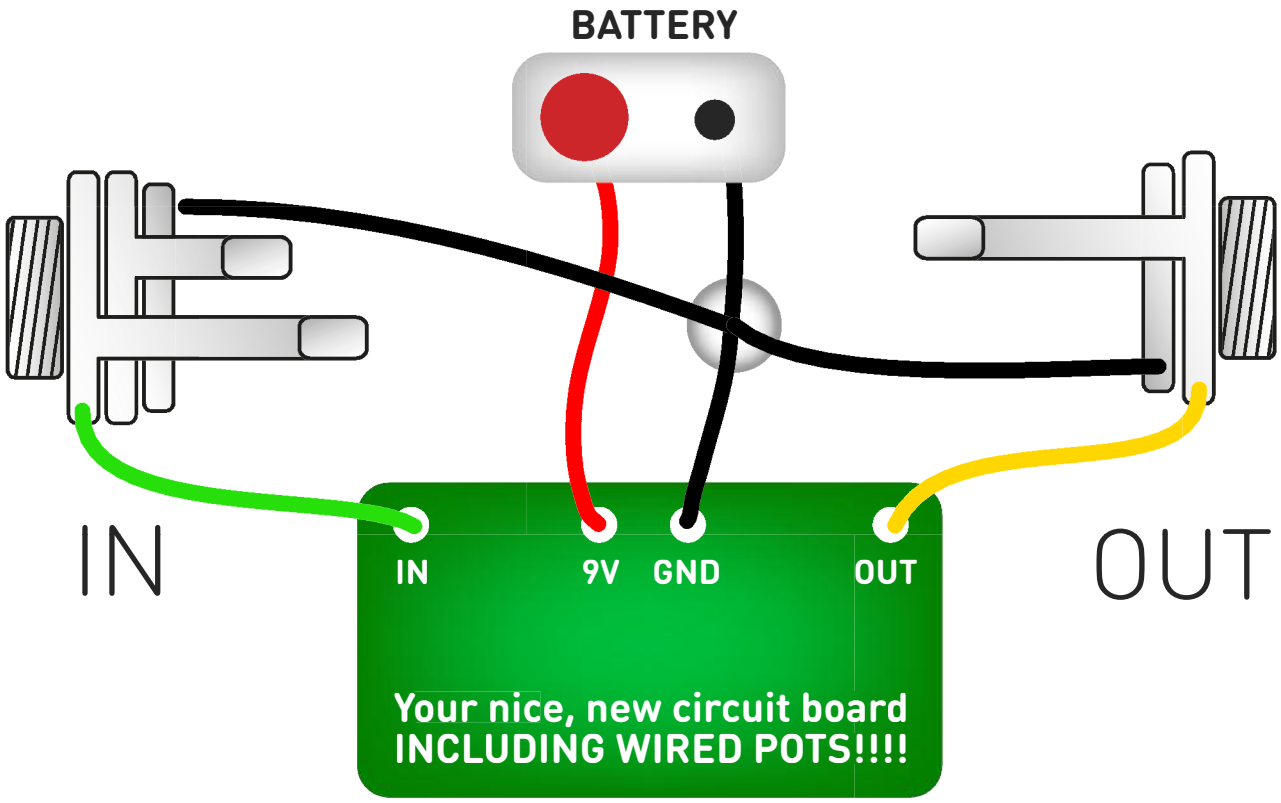
- INPUT - just like your guitar volume.
- OUT - output volume.
- VOLTS - we know it's a voltage starve, but like the other controls it'll do completely different things depending on how everything else is set.

Embrace the chaos or don't bother building this.

I got the power....

The V pad at the top of the PCB is directly connected to the one at the bottom, and all the GND pads are connected. If using a daughterboard its easiest to connect your DC socket with the pads at the top. There's no need to also connect the daughterboard V and G pads to power.

Test the board!



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

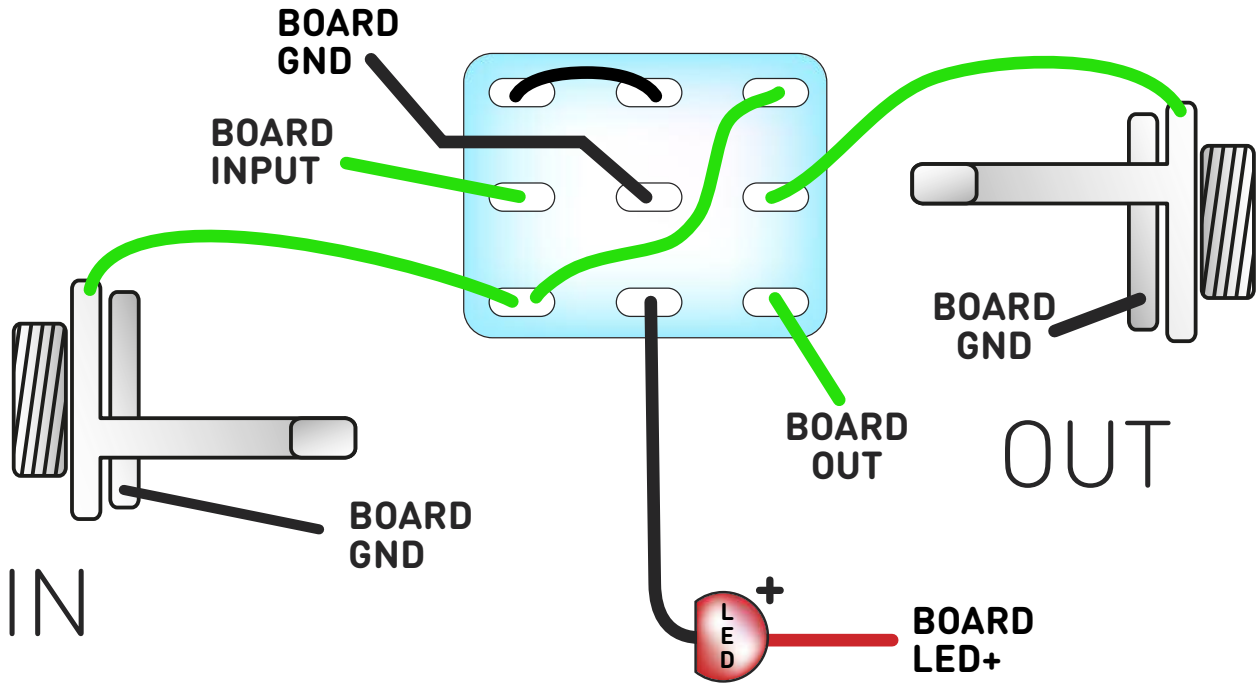
Once you've finished the circuit it makes sense to test is before starting on the switch and LED wiring. It'll cut down troubleshooting time in the long run. If the circuit works at this stage, but it doesn't once you wire up the switch - guess what? You've probably made a mistake with the switch.

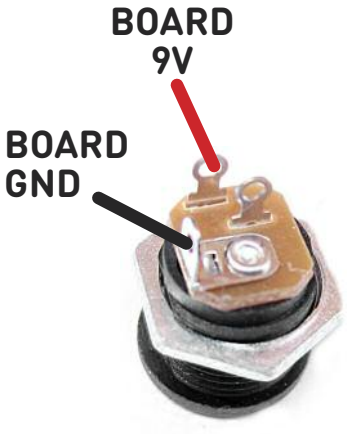
Solder some nice, long lengths of wire to the board connections for 9V, GND, IN and OUT. Connect IN and OUT to the jacks as shown. Connect all the GNDs together (twist them up and add a small amount of solder to tack it). Connect the battery + lead to the 9V wire, same method. Plug in. Go!

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)



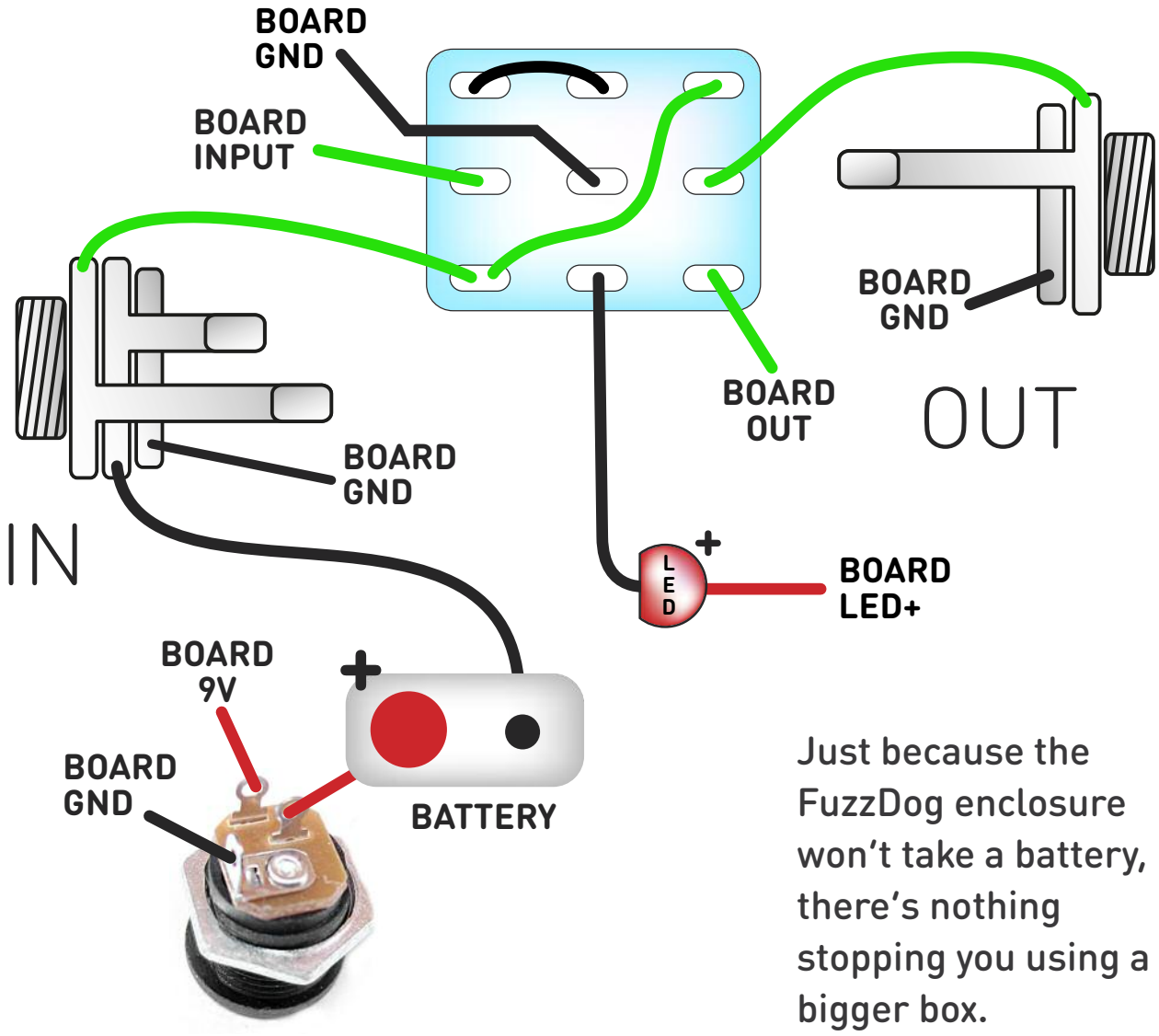


This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

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)



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

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

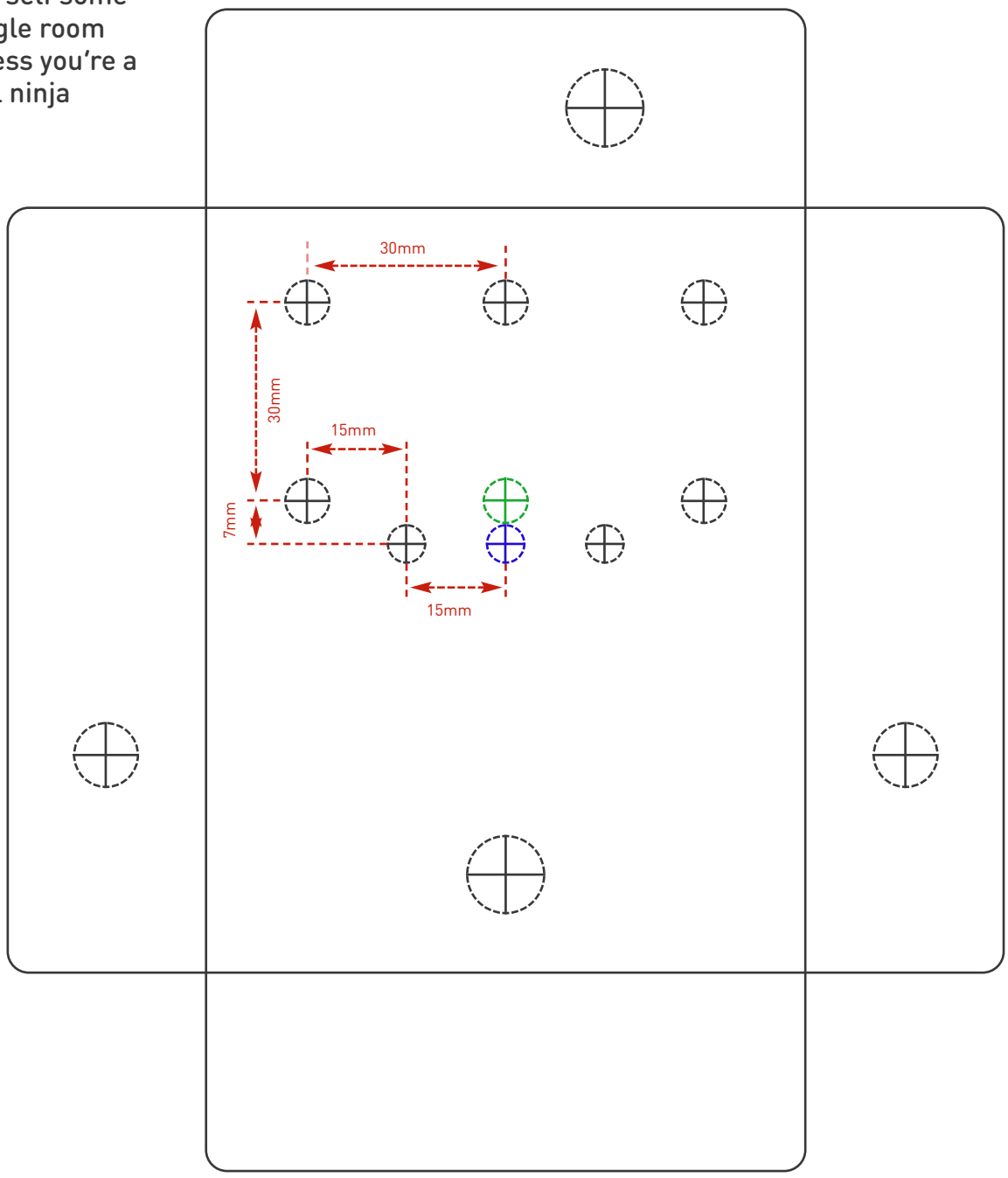
Hammond 1590BB

91 x 116 x 30mm
(top face dimensions, not including lid)

Recommended drill sizes:

Pots	7mm
Jacks	10mm
Footswitch	12mm
DC Socket	12mm
Toggle Switch	6mm

It's a good idea to drill the holes for the pots and toggles 1mm larger 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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