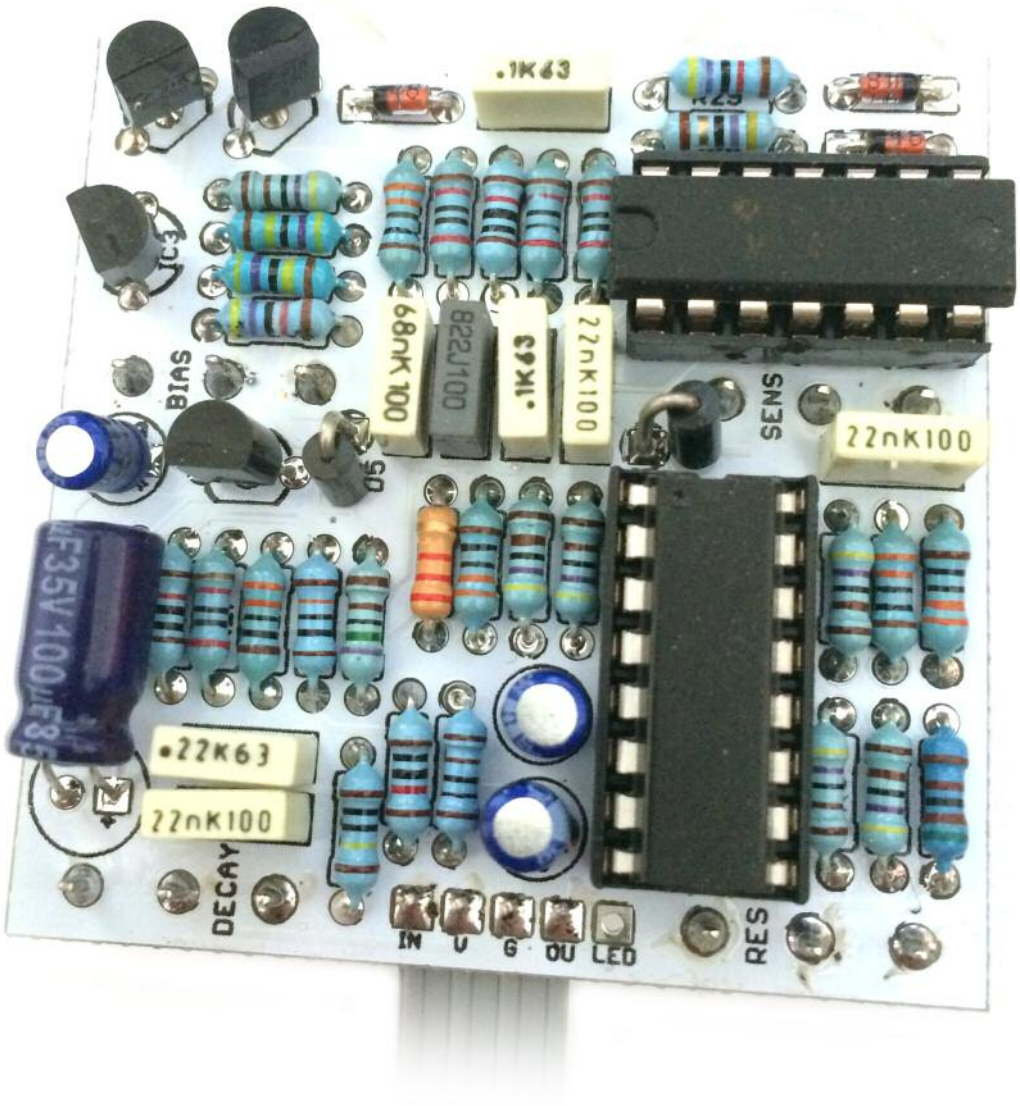
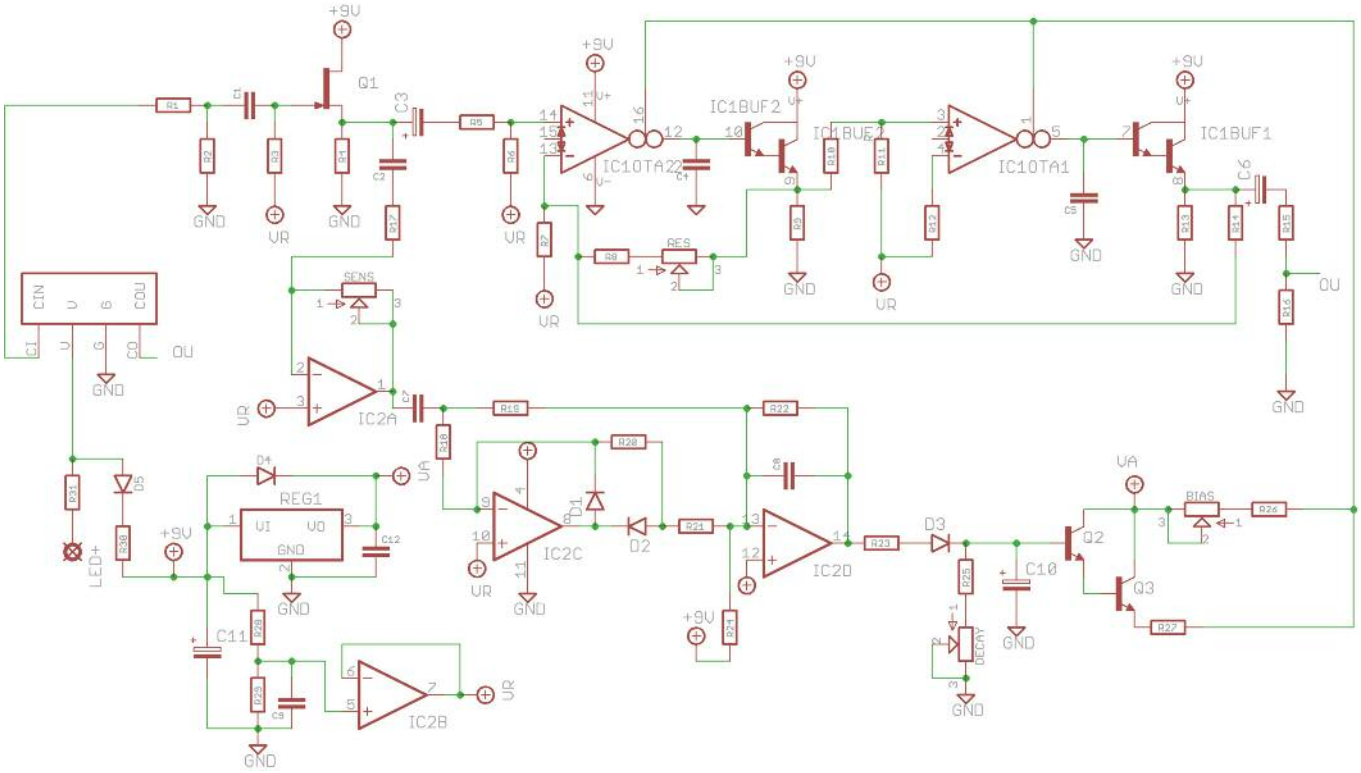


7 of Dwarves Auto Wah

Four knobs of funkin' sweet auto filtering

Schematic + BOM



R1	10K
R2	1M
R3	1M
R4	10K
R5	5K1
R6	330R
R7	330R
R8	4K7
R9	4K7
R10	4K7
R11	330R
R12	330R
R13	4K7
R14	4K7
R15	1K
R16	100K
R17	20K (47K)
R18	20K
R19	20K
R20	10K
R21	10K
R22	4M7

R23	330R
R24	4M7
R25	47R
R26	7K9
R27	4K7
R28	47K
R29	47K
R30	47R
R31	2K2 (CLR)

C1	22n
C2	220n
C3	1u elec
C4	22n
C5	22n
C6	1u elec
C7	68n
C8	8n2
C9	100n
C10	2u2 elec (1u)
C11	100u elec
C12	100n

Values in blue are improvements on the original and are supplied with the kit.

D1-3	1N4148
D4-5	1N4001

IC1	LM13700
IC2	LM324
IC3	78L05

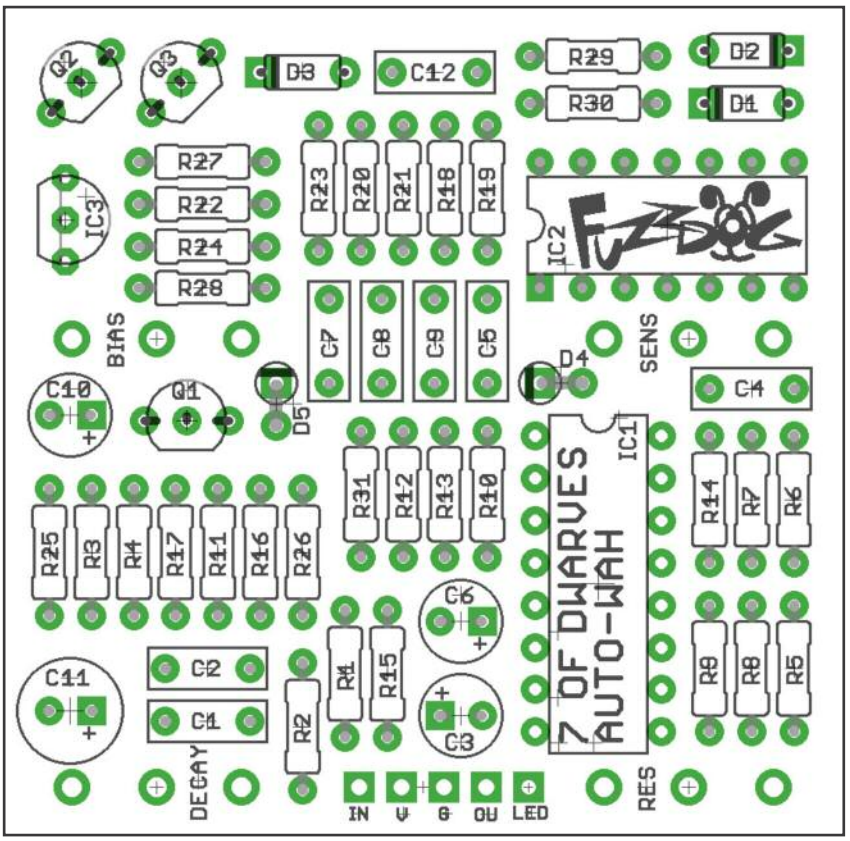
Q1	2N5457
Q2-3	BC550

DECAY	1MC
RES	50KB
SENS	100KB
BIAS	50KB

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, transistors and voltage regulator (IC3). 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 IC1+2, or be super careful not to overheat. Take your time.



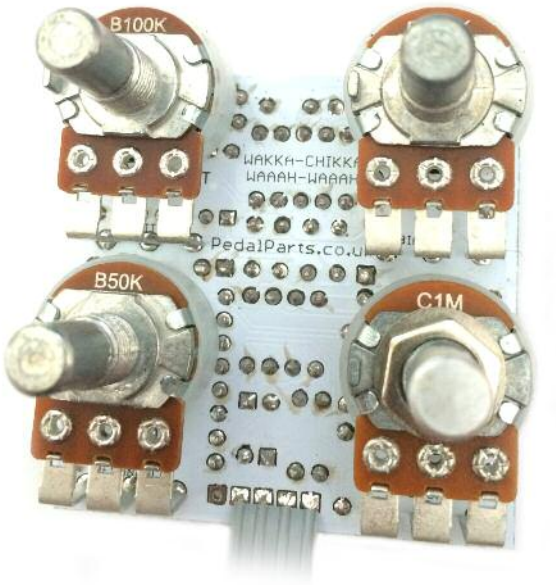
Snap the small metal tag off the pots so they can be mounted flush in the box.

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

C11 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 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.

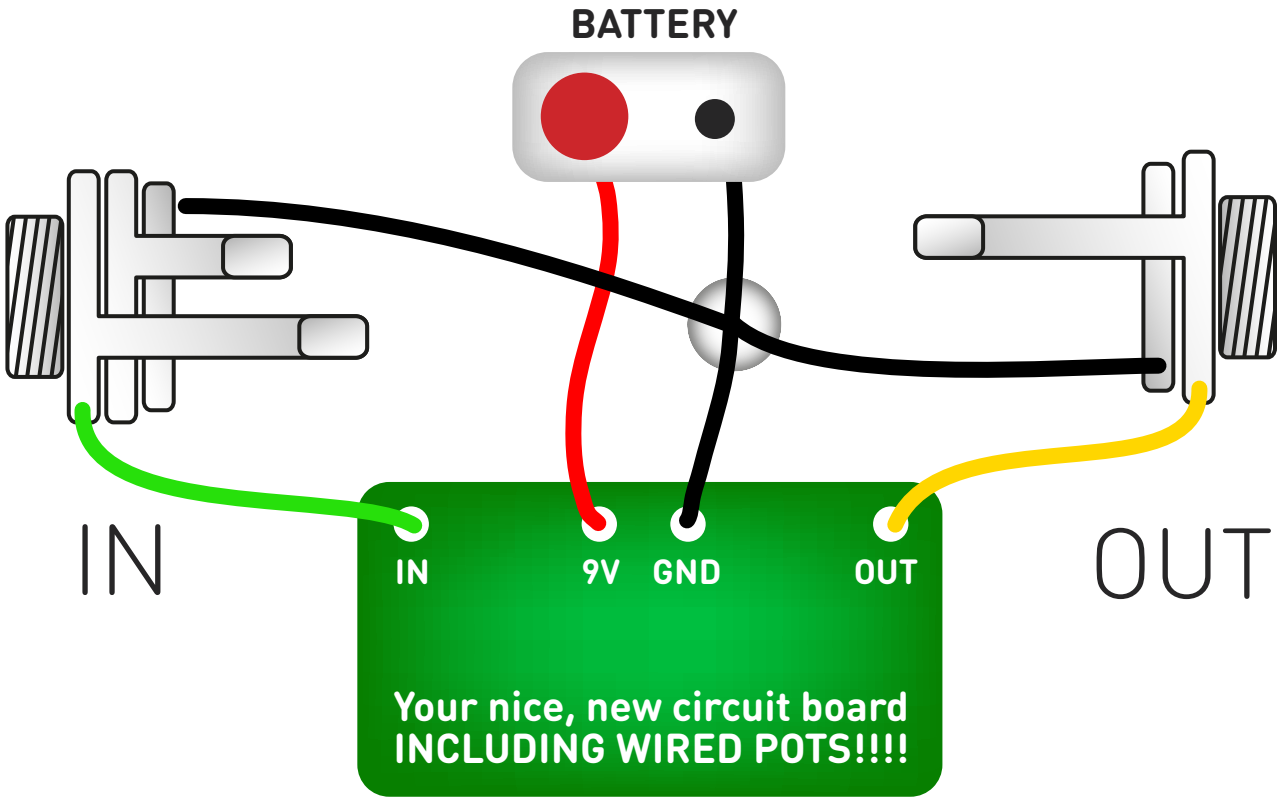


You should solder all other board-mounted components before you solder the pots. Once they're in place you'll have no access to much of the underside of the board.

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

The circuit is very sensitive to input. You'll have to tweak the bias and sensitivity pots to get it set just right for each individual guitar. It's the nature of the beast.

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.

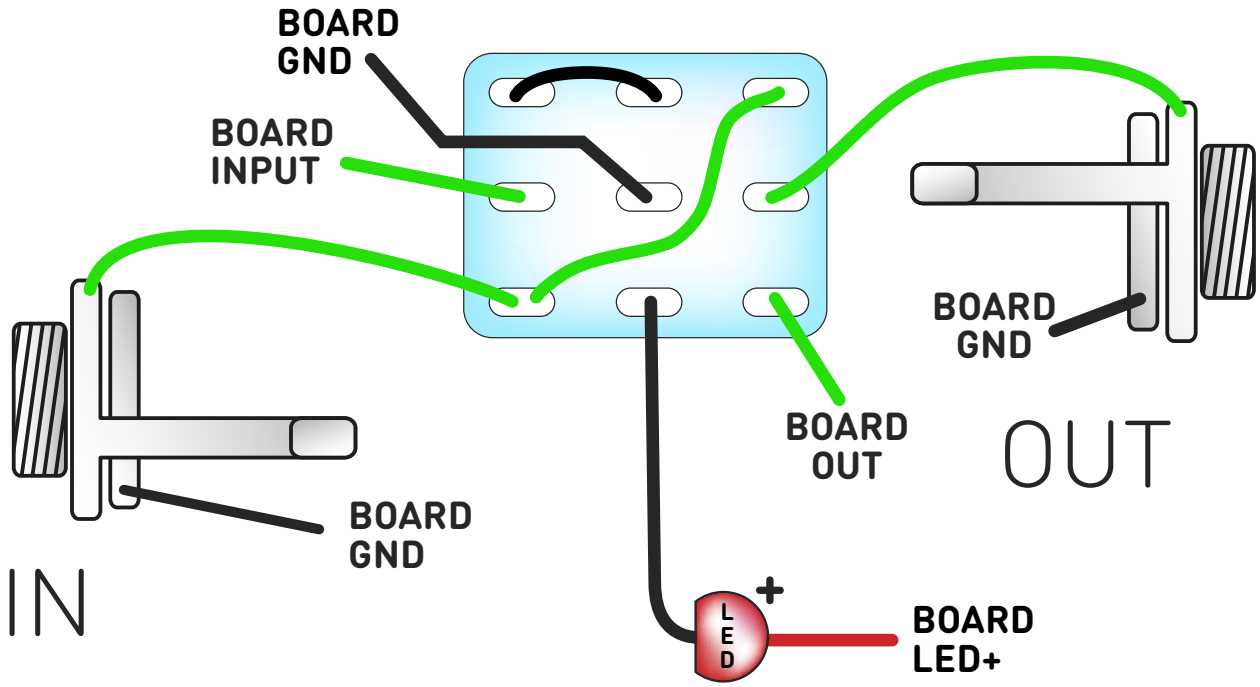
Once you've finished the circuit it makes sense to test is before starting on the switch and LED wiring. It'll cut down troubleshooting time in the long run. If the circuit works at this stage, but it doesn't once you wire up the switch - guess what? You've probably made a mistake with the switch.

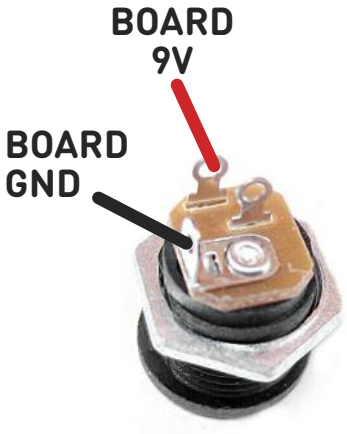
Solder some nice, long lengths of wire to the board connections for 9V, GND, IN and OUT. Connect IN and OUT to the jacks as shown. Connect all the GNDs together (twist them up and add a small amount of solder to tack it). Connect the battery + lead to the 9V wire, same method. Plug in. Go!

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)



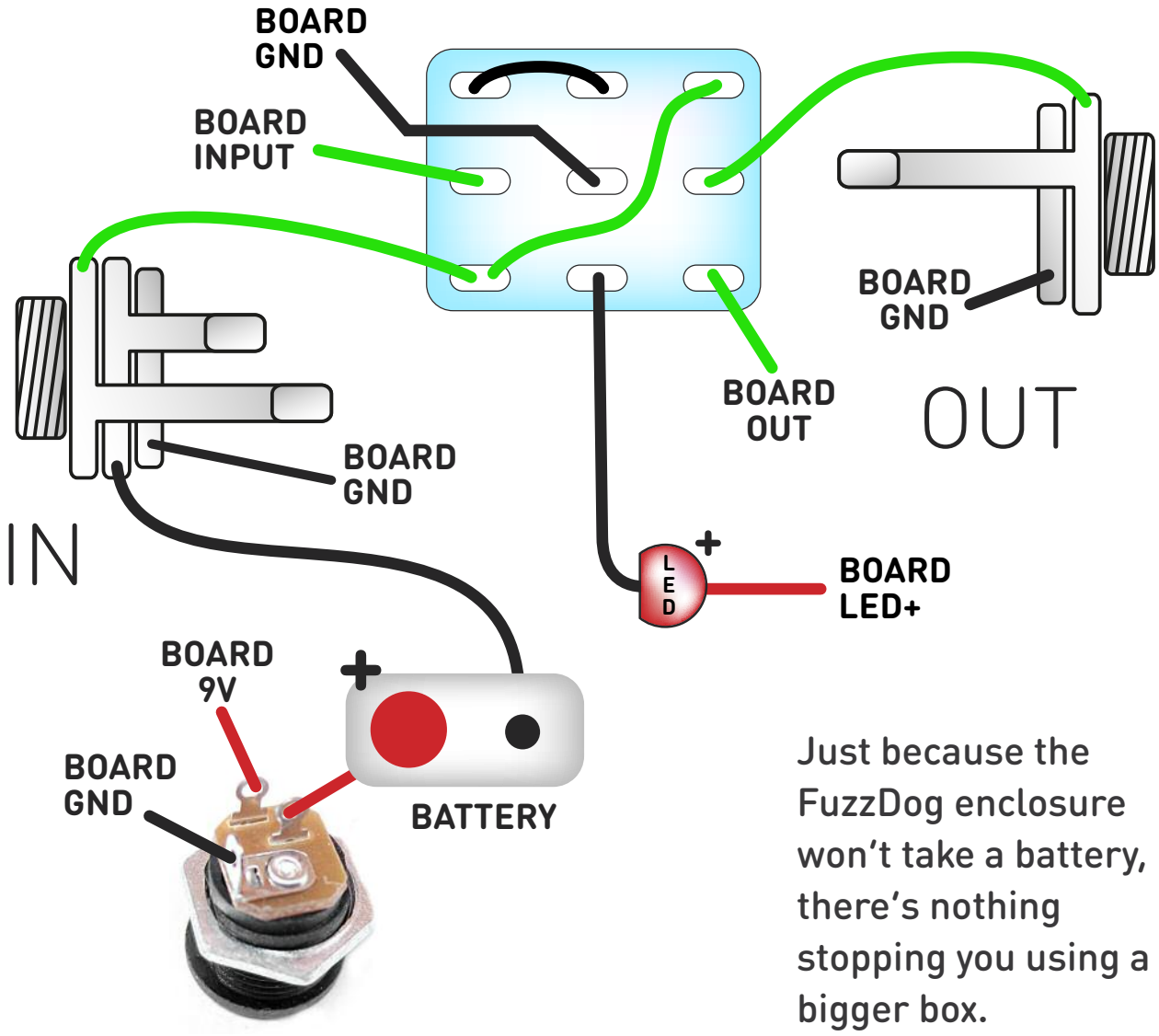


This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

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)



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

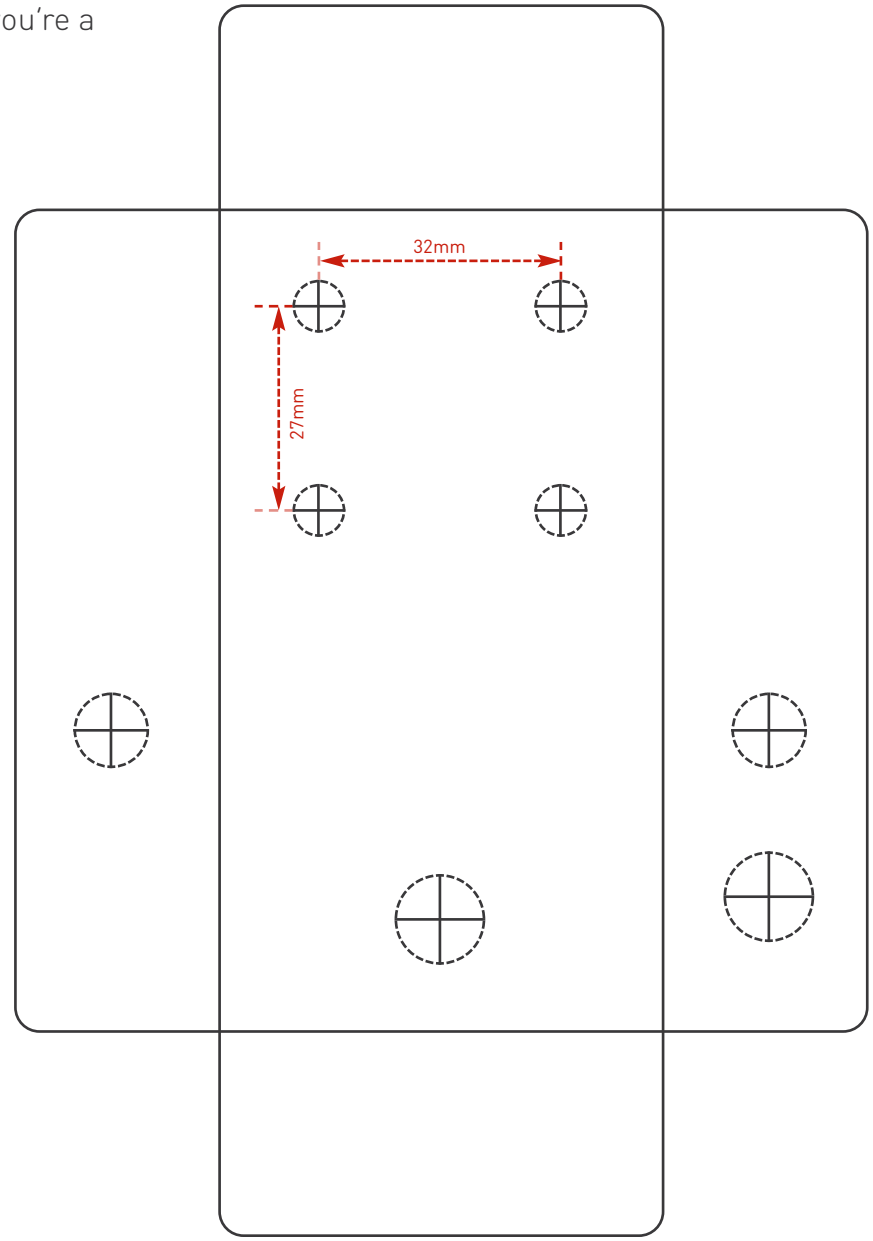
Hammond 1590B

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 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.

PedalParts.co.uk