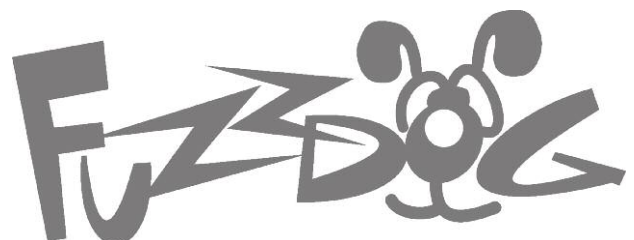
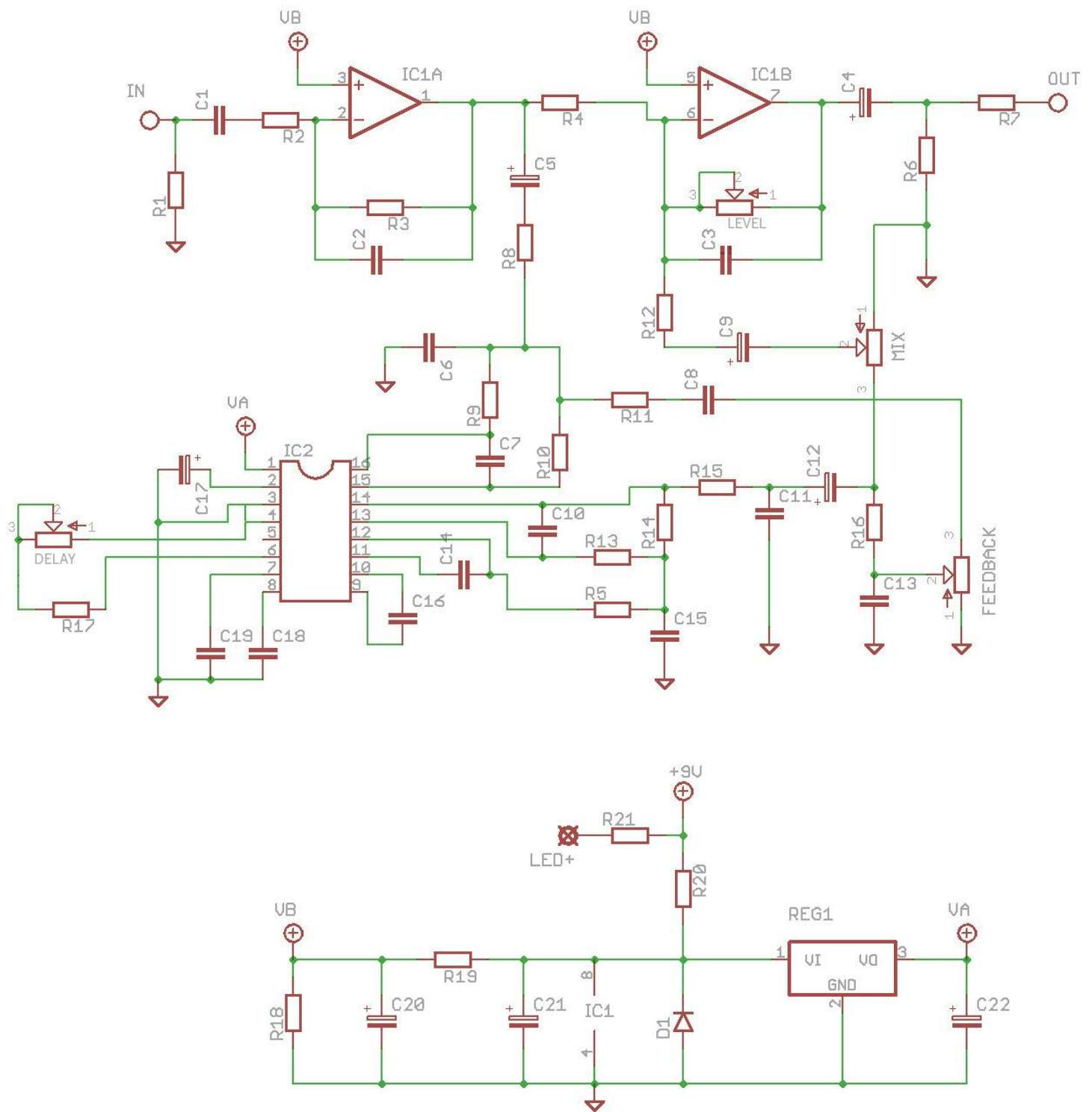


# EchoBlue Delay

PT2399 Delayayayayayayay  
v3.0



# Schematic



## NOTE:

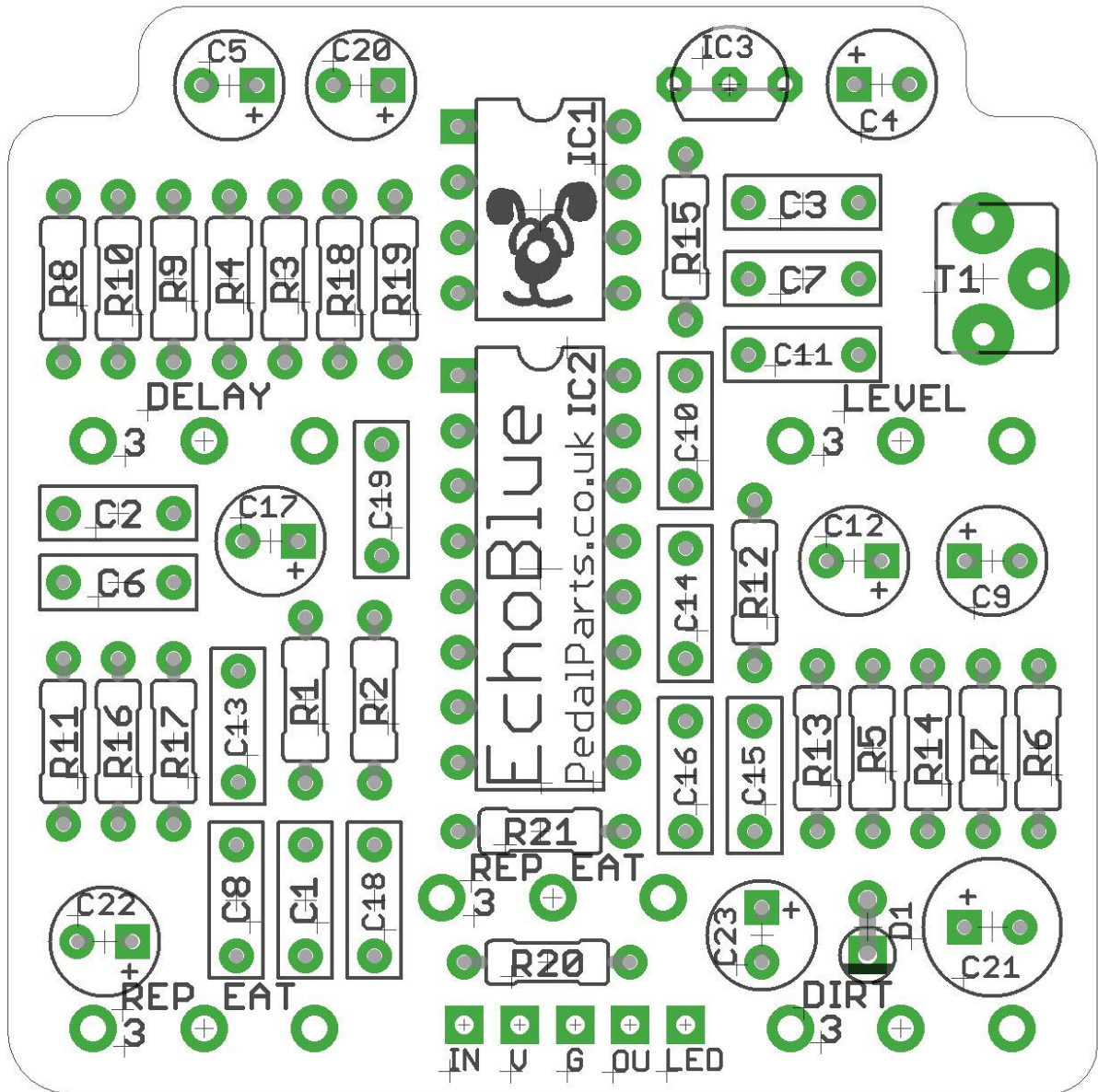
The PT2399 chip is not a super-hi-fi device. The repeats on this delay will gradually degrade. It gives it character and warmth. Embrace it or go buy a Boss unit.

# BOM

R1	1M	C1	22n
R2	180K	C2	47p
R3	360K	C3	100p
R4	22K	C4	1u electrolytic
R5	10K	C5	1u electrolytic
R6	100K	C6	4n7
R7	1K	C7	2n2
R8	10K	C8	22n
R9	10K	C9	1u electrolytic
R10	10K	C10	2n2
R11	5K1	C11	10n
R12	20K	C12	1u electrolytic
R13	10K	C13	47n
R14	20K	C14	100n
R15	1K	C15	15n
R16	2K	C16	100n
R17	2K7	C17	47u electrolytic
R18	10K	C18	100n
R19	10K	C19	100n
R20	33R	C20	47u electrolytic
R21	CLR (2K2)	C21	100u electrolytic
		C22	47u electrolytic
D1	1N4001	C23	4u7 electrolytic**
IC1	TL072	DELAY	50KB
IC2	PT2399	FEEDBACK	50KB
		MIX	50KB
IC3	78L05*	DIRT	50KB**
		T1	22KTRIM

\*note: pinout is correct for this model regulator. If using a different one check your pinout. IC3 is shown as REG1 on the schematic.

\*\*optional parts for an audio feedback path to create dirt and oscillation.



### LEVEL TRIMMER:

Set this so your effect signal level is the same as your bypassed level.

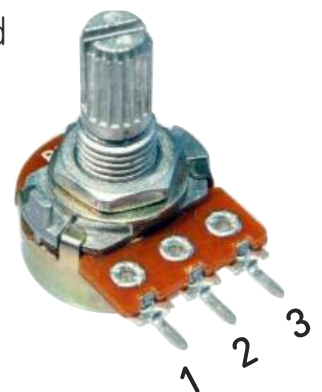
Use a heat sink when soldering the voltage regulator and the diode. Use sockets for the ICs unless you're a soldering ninja.

Snap the metal tags off the pots to mount them flush.

Striped end of the diode goes into the square pad.

There are two sets of pads for the REPEAT control. Use only one. The centered one is in the right position if making a three-knob version. The bottom left one is there so you can make a four-knob version with the dirt control.

The power and signal pads line up with the 3PDT Direct Connect Daughterboard, should you want to make a super-neat job of your wiring.



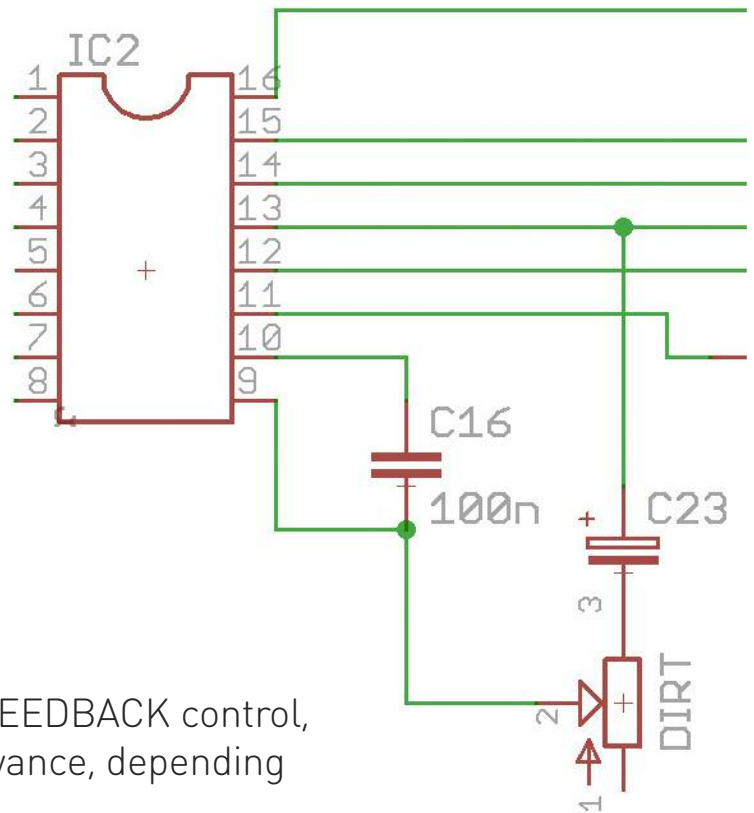
# DIRT MOD

This adds an adjustable audio feedback path as shown right.

With the pot full counter-clockwise you'll have the normal circuit. Turning it clockwise introduces feedback which will cause noise at first, gradually moving into oscillation and runaway repeats as you increase the turn.

This is highly interactive with the FEEDBACK control, and can yield hours of fun or annoyance, depending on your outlook.

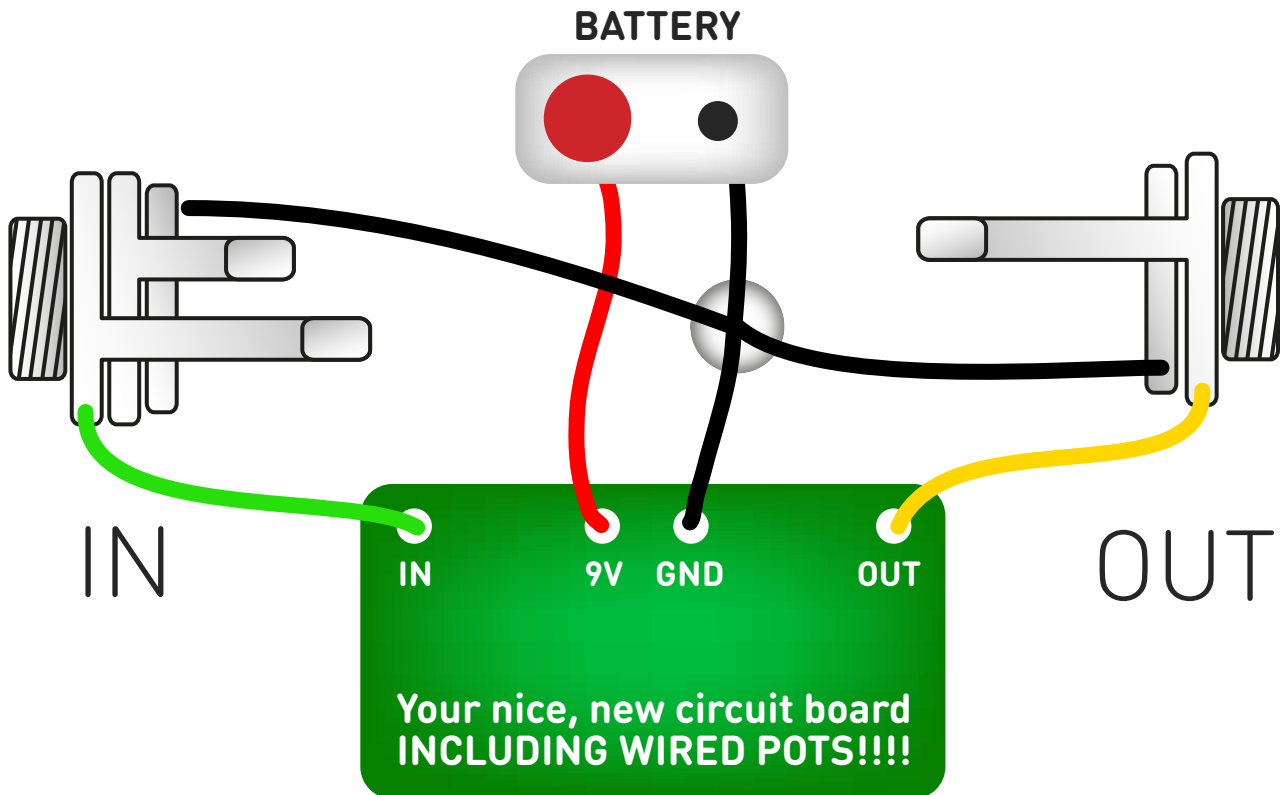
The dirt mod is based on the audio feedback control on the Casper Electronics Echo Bender v2.



# WHY ARE YOUR CAPS BENT OVER?

The PCB has been designed so that taller electrolytic capacitors can be placed on their sides over the top of flatter components to save on height, giving more clearance in the enclosure. This isn't essential if you're using caps which aren't particularly tall, but it certainly doesn't harm.

# 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.

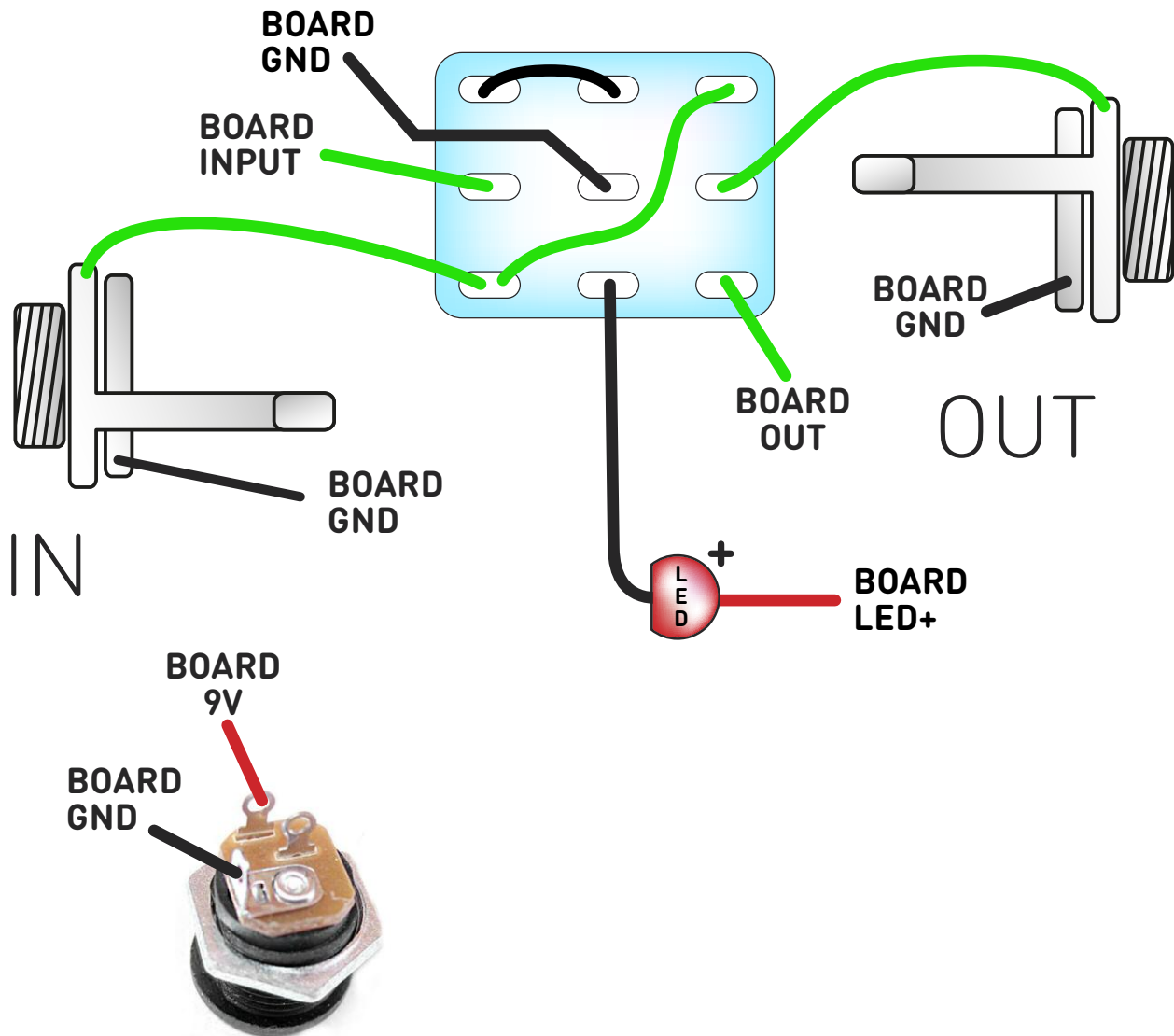
Once you've finished the circuit it makes sense to test it before starting on the switch and LED wiring. It'll cut down troubleshooting time in the long run. If the circuit works at this stage, but it doesn't once you wire up the switch - guess what? You've probably made a mistake with the switch.

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)

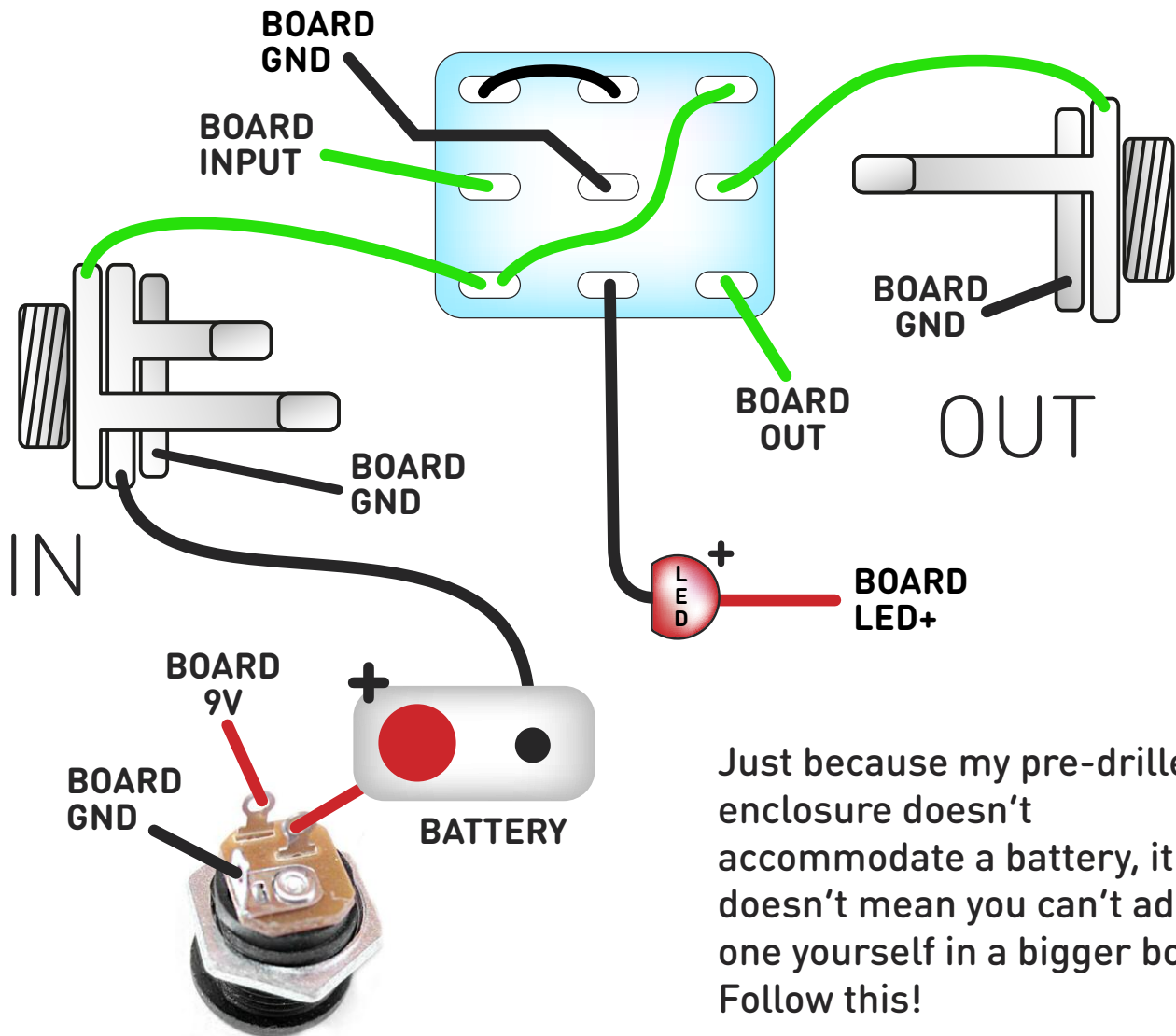


This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

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)



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.

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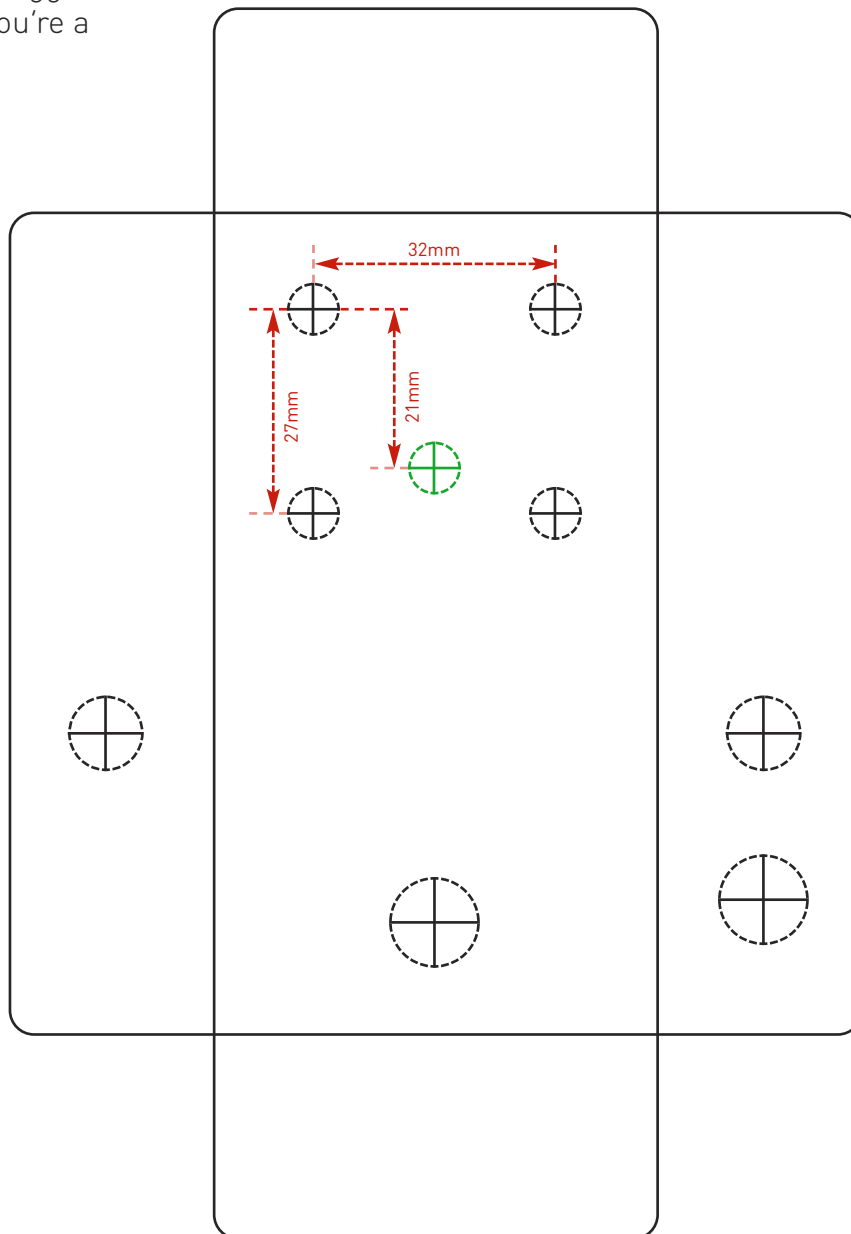
# Drilling template

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.

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