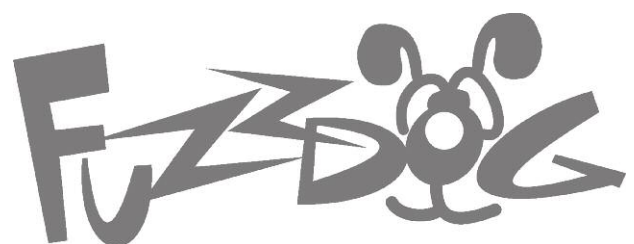
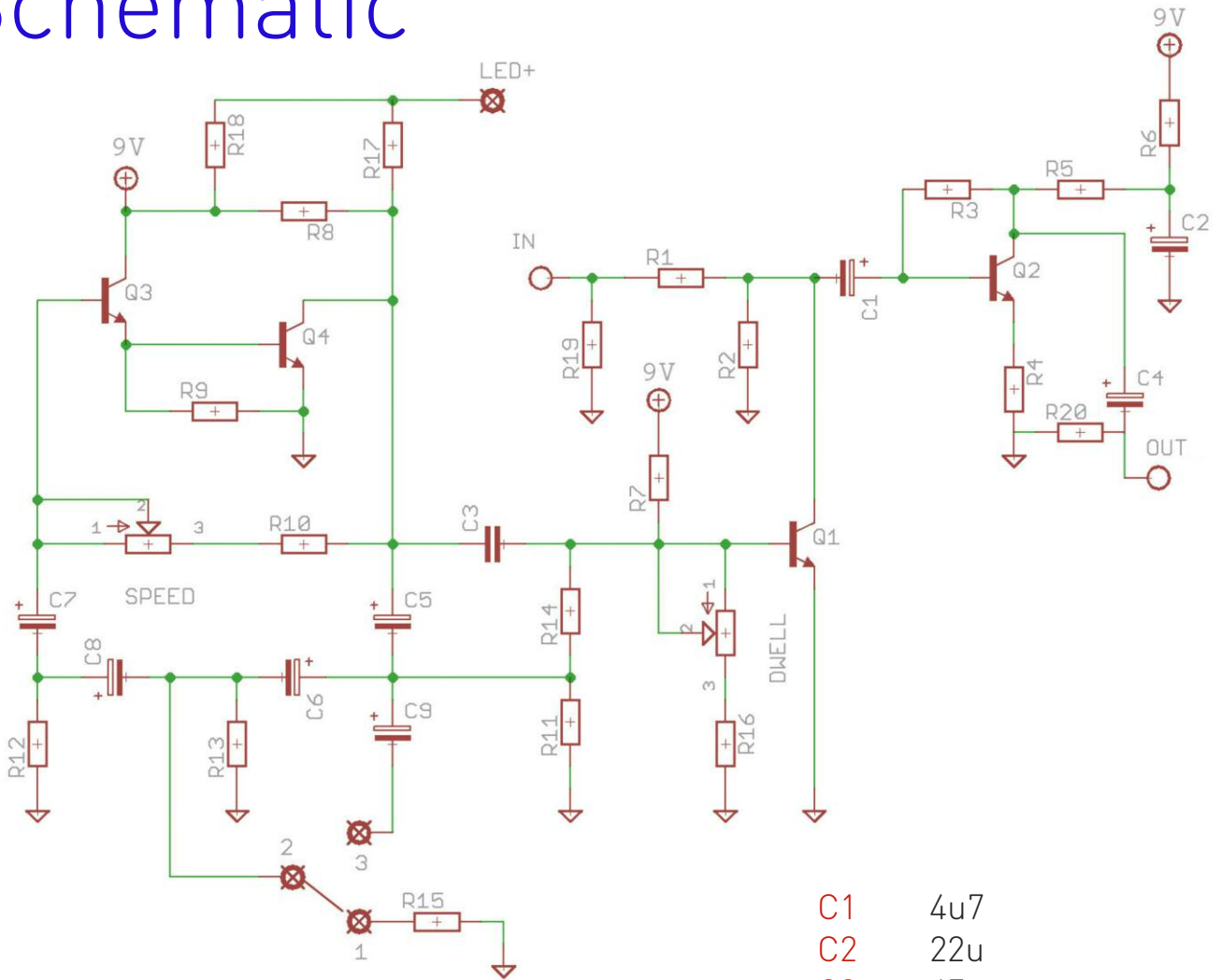


Throb v4

MarkM's improved
Schaller Tremolo



Schematic



BOM

R1	47K	R11	2K2	C1	4u7
R2	47K	R12	2K2	C2	22u
R3	470K	R13	2K2	C3	47n
R4	2K2	R14	47K	C4	4u7
R5	6K8	R15	220R	C5	10u
R6	2K2	R16	15K	C6	22u
R7	330K	R17	2K2 (CLR)*	C7	22u
R8	6K8	R18	2K2 (CLR)*	C8	10u
R9	6K8	R19	1M	C9	4u7
R10	27K	R20	470K**	Q1-4	2N5088
				DWELL	25KB
				SPEED	1MB
				SW1	SPDT ON-ON
				D1***	1N4001

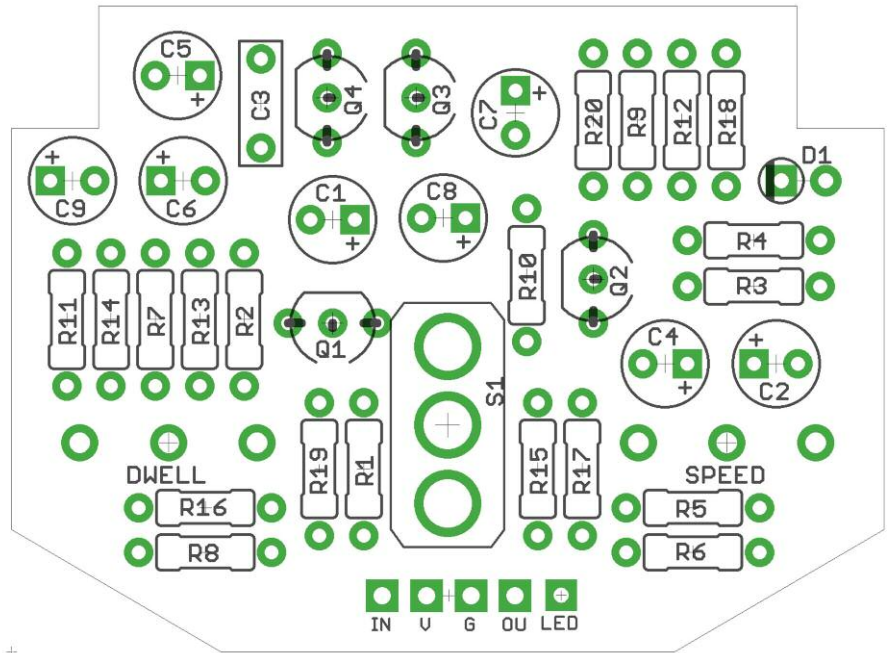
*Use either R17 or R18, not both. R18 for static LED, R17 for rate-indicator LED.

**R20 added on output to avoid popping when engaged.

**D1 not shown on schem, but connects between 9V and GND for polarity protection.

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 transistors and LED. 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).

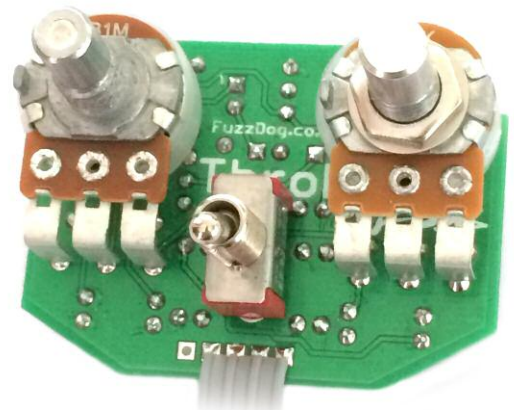


The long leg (anode) of the electrolytic capacitors go into the square pads.

Striped leg (cathode) of D1 goes into the square pad.

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

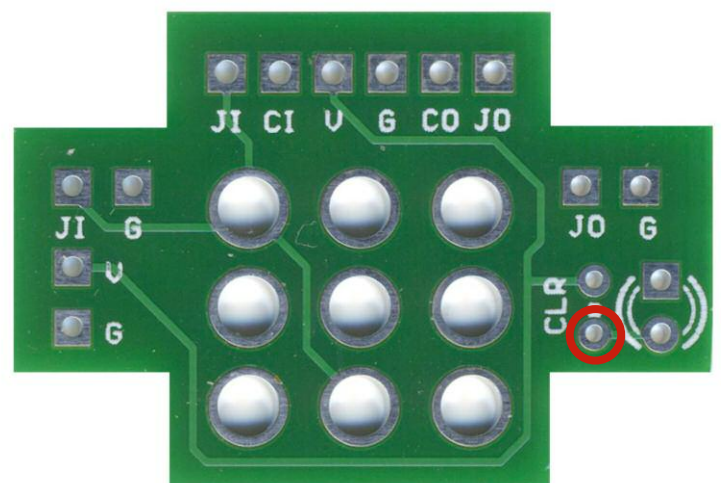
Pots mount on the back side of the board. You can use vertical-mount pots or just wire up 'normal' ones. It's a good idea to place the pots in their holes in the enclosure when you're soldering them in place on the PCB. That way you know they're going to line up ok. Best way to do it is to solder a single pin of each pot in place, then do a visual check to see that they're sitting at the same height. If not, melt the joints and readjust any that are off.



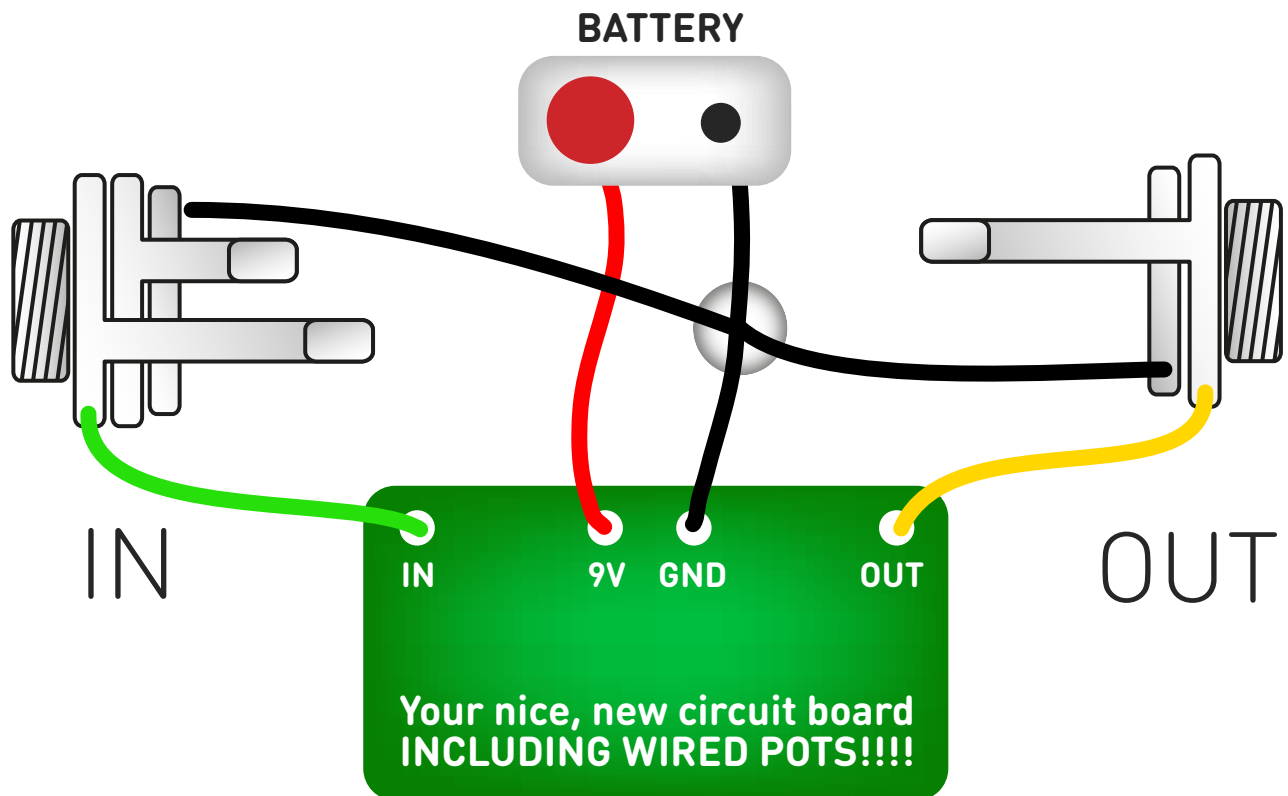
FLASHING LED

If you want to wire the Throb up with a 3PDT daughterboard but have flashing LED for your ON-OFF indicator, do not put the current limiting resistor on the daughterboard.

Put your current limiting resistor in R17 and run a wire from the LED pad on the Throb PCB to the pad circled on the daughterboard >>>>



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.

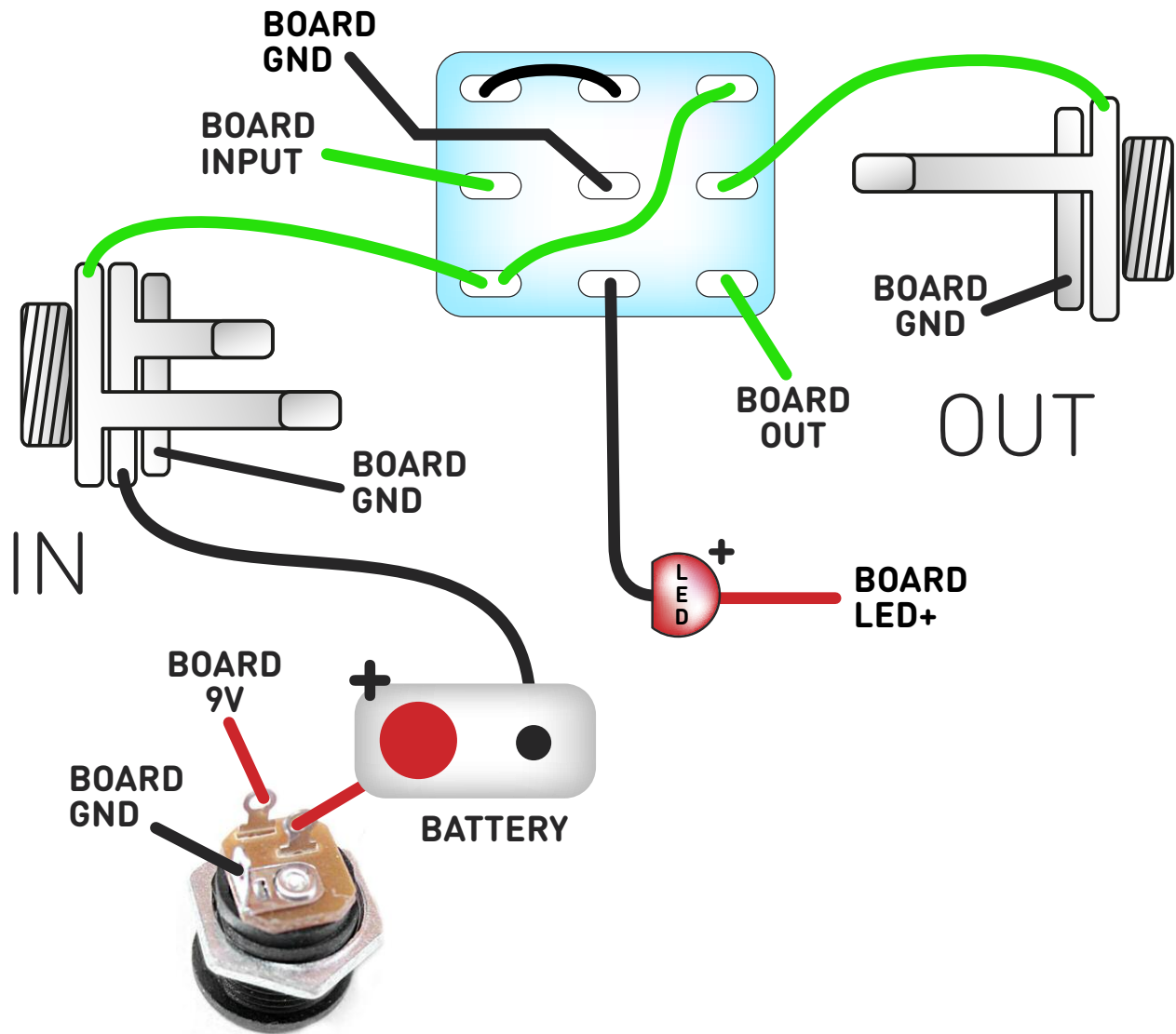
Solder some nice, long lengths of wire to the board connections for 9V, GND, IN and OUT. Connect IN and OUT to the jacks as shown. Connect all the GNDs together (twist them up and add a small amount of solder to tack it). Connect the battery + lead to the 9V wire, same method. Plug in. Go!

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 - with battery

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

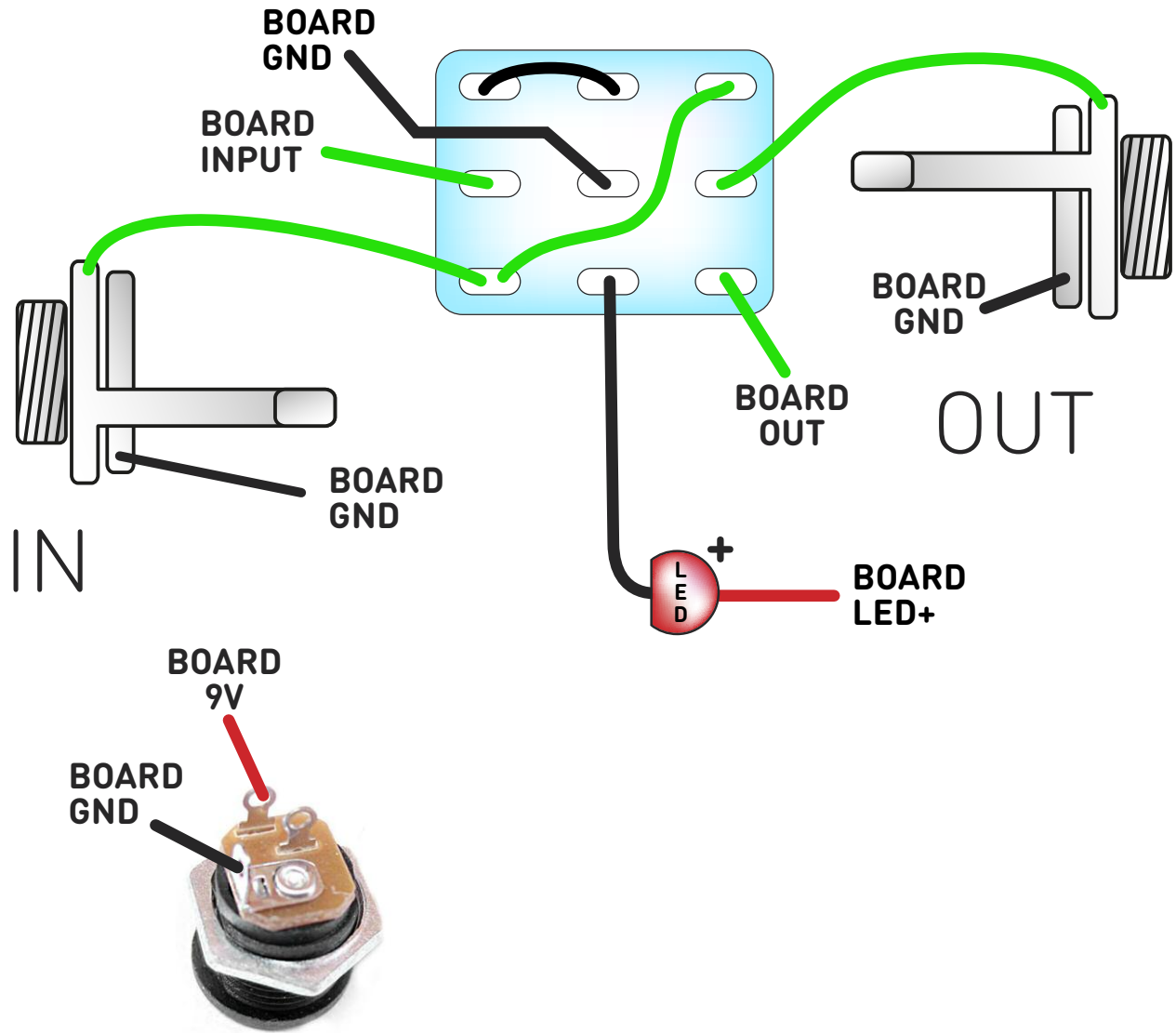


This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

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.

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.

Drilling template

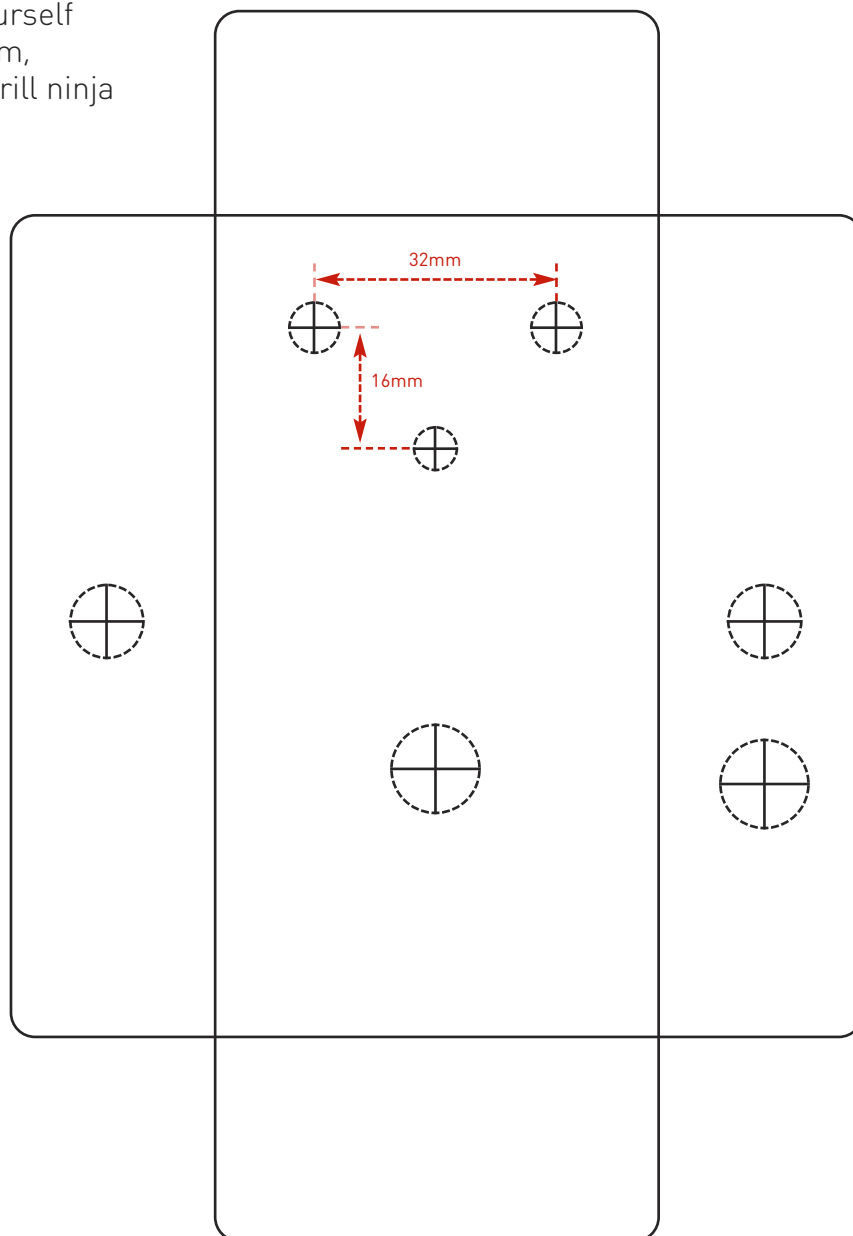
Hammond 1590B

60 x 111 x 31mm

It's a good idea to drill the holes for the board-mounted parts 1mm bigger to give yourself some wiggle room, unless you're a drill ninja

Recommended drill sizes:

Pots	7mm
Jacks	10mm
Footswitch	12mm
DC Socket	12mm



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