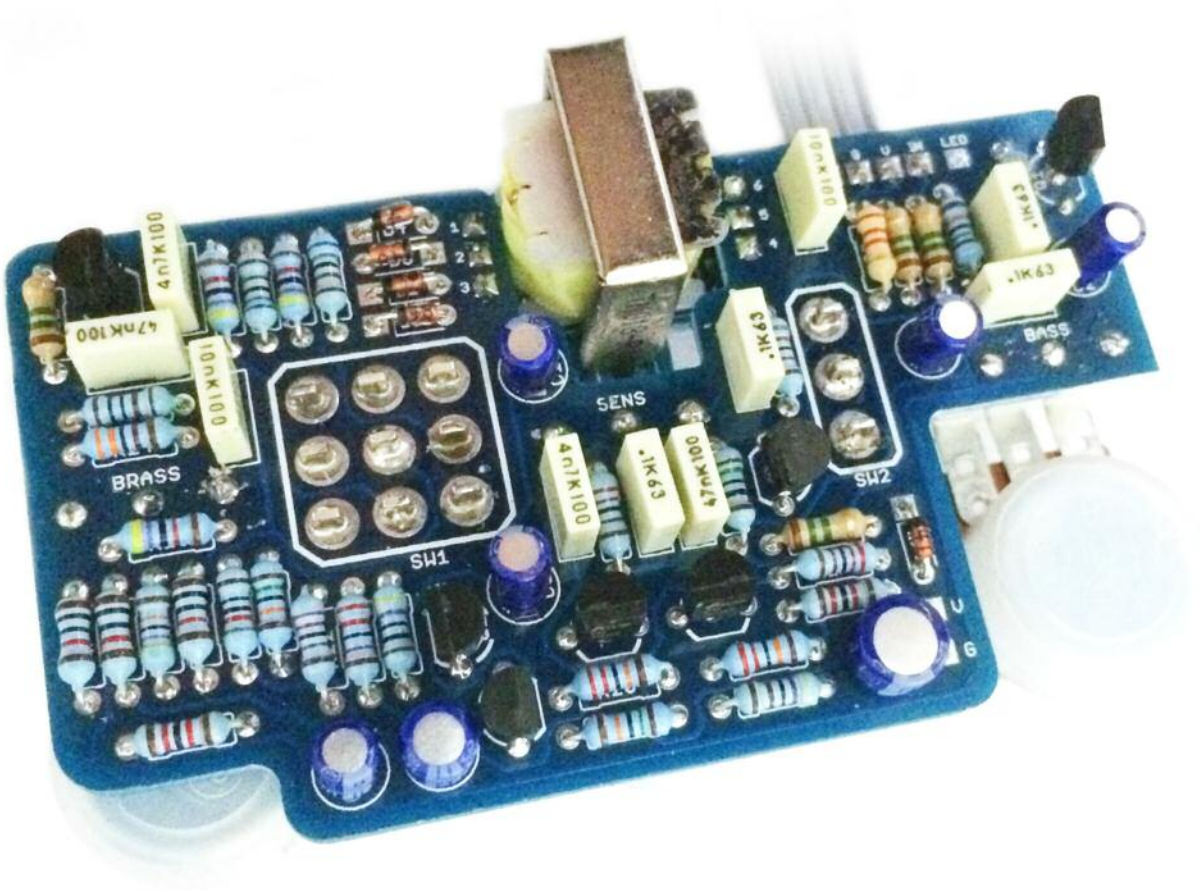
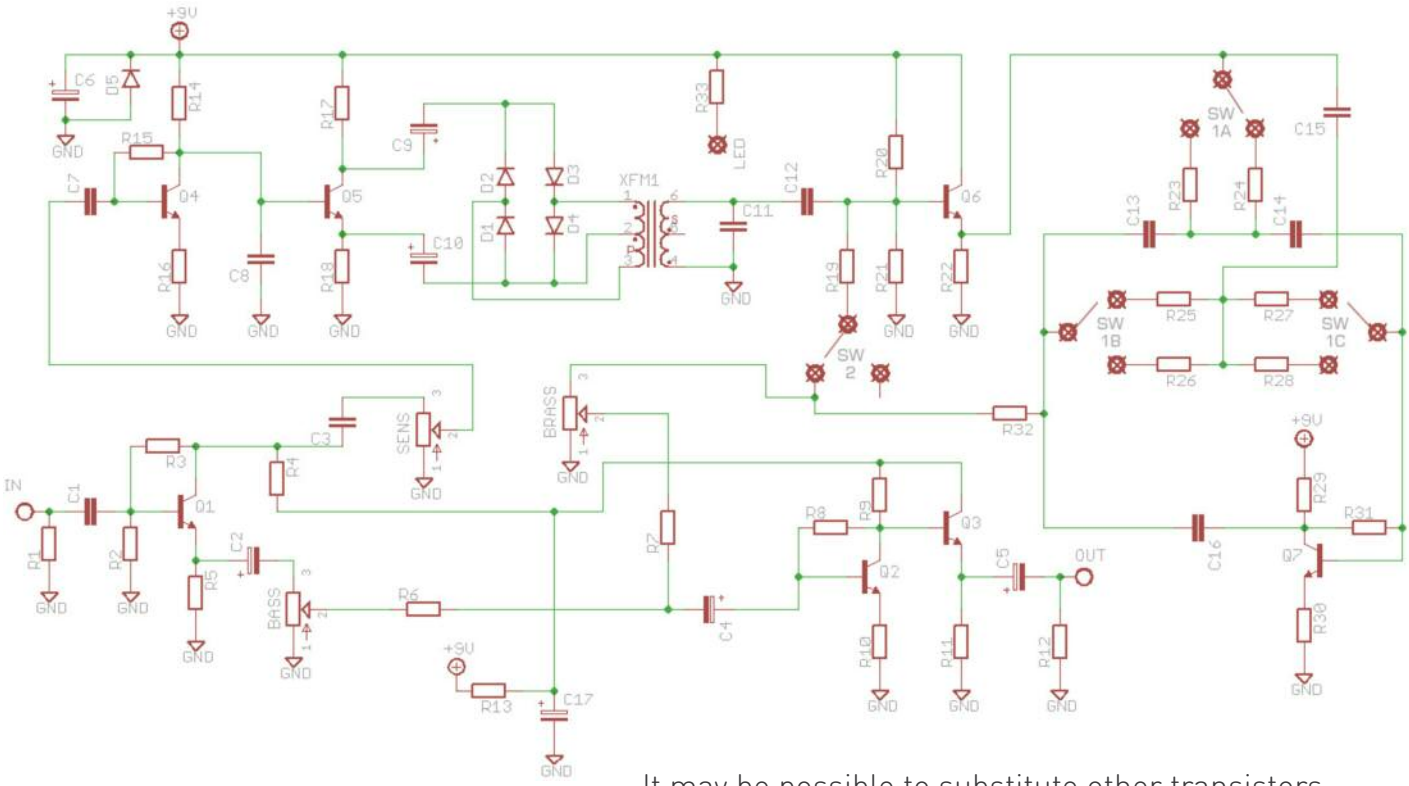


BrassMaster v2

Stupidly good bass octave fuzz

Schematic + BOM

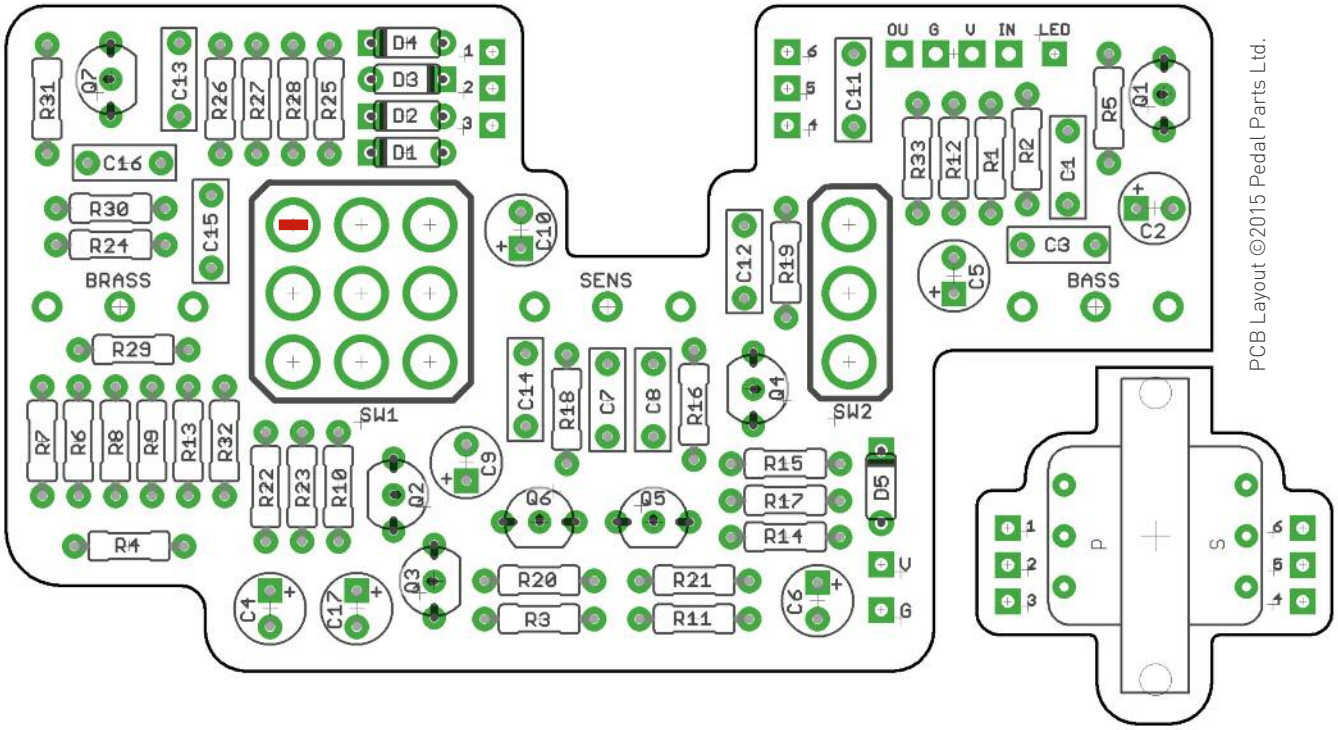


It may be possible to substitute other transistors or transformer. Please don't ask for advice on this as we haven't tested any others, though 2N3391 will work fine for Q1-6.

BOM

R1	1M5	R18	2K2	C1	100n	D1-5	1N4148
R2	150K	R19	82K	C2	1u elec		
R3	150K	R20	220K	C3	100n	Q1-6	2N3392
R4	12K	R21	220K	C4	1u elec	Q7	2N5308
R5	390R	R22	2K2	C5	1u elec		
R6	10K	R23	22K	C6	22u elec	POTS	10KB
R7	10K	R24	3K3	C7	100n		
R8	470K	R25	6K8	C8	47n	SW1	3PDT
R9	10K	R26	47K	C9	1u elec	SW2	SPDT
R10	470R	R27	6K8	C10	1u elec		
R11	4K7	R28	47K	C11	10n	XFM1	42TM018
R12	1M5	R29	47K	C12	100n		
R13	820R	R30	1K	C13	4n7		
R14	12K	R31	1M5	C14	4n7		
R15	1M5	R32	150K	C15	10n		
R16	150R	R33	2K2 (CLR)	C16	47n		
R17	2K2			C17	10u elec		

Note:
all the transistors have non-standard pinouts.



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).

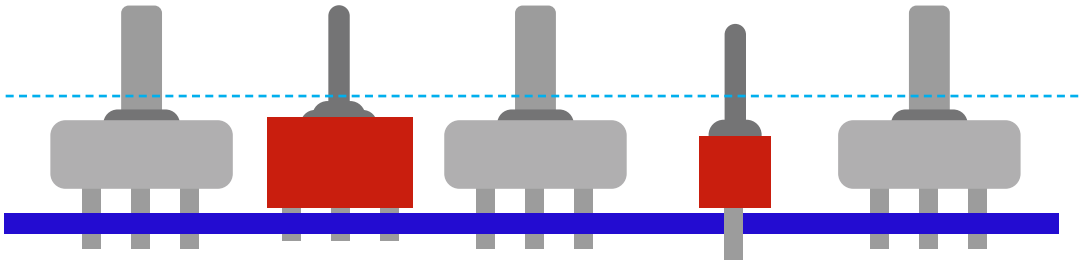
The long leg (anode) of the electrolytic capacitors go into the square pads. The striped leg (cathode) of the diodes goes into the square pads.

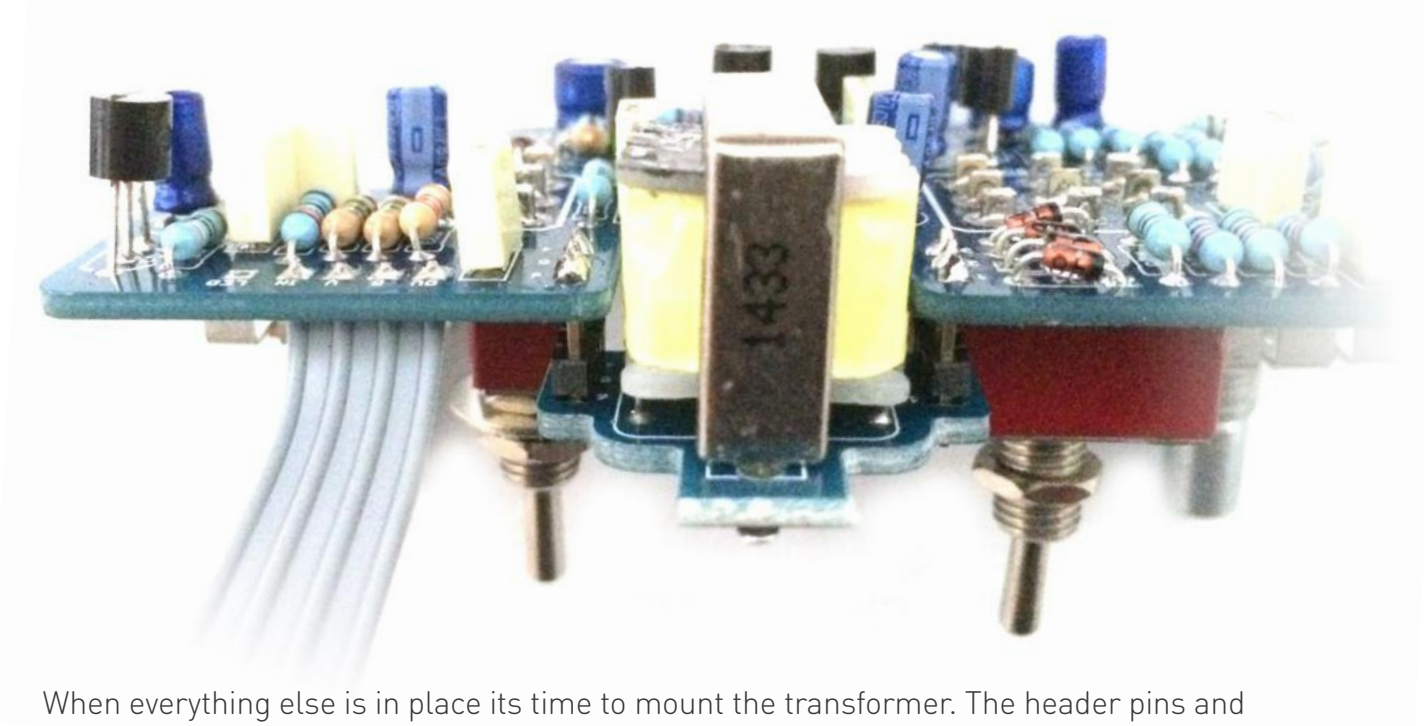
Snap the small metal tag off the pots so they can be mounted flush in the box.

Pots and switches mount on the back side of the board. Red line in the image above shows the direction of the switch tags. If you're using board-mounted pots you'll have to place these last as they'll restrict your access to the pads for the other components.

Ensure your switches and pots (if using board-mount) all line up before fully committing to soldering them. The best way to do this is solder in the 3PDT switch first, as this is the deepest component. Now place your SPDT switch and raise it slightly from the board until it aligns with the first switch. Now do the same with the pots. The pins will only just poke out of the top of the board when they're high enough to line up with the switch. Only solder one pin of each pot for now, until you ensure they're all lined up. It's easy enough to melt a single solder joint and reposition them. When everything lines up, solder the other two pins of each pot.

A good way to go about lining them all up is to place the switches and pots into the PCB without soldering, then place the enclosure on top, but upside down, i.e. the whole thing is sitting on the top face of the box. The hole pattern is symetrical so it should still line up. That should make it much easier to line things up.





When everything else is in place its time to mount the transformer. The header pins and transformer mount it on the same side of the board as the screenprint showing the transformer and the numbers 1-6.

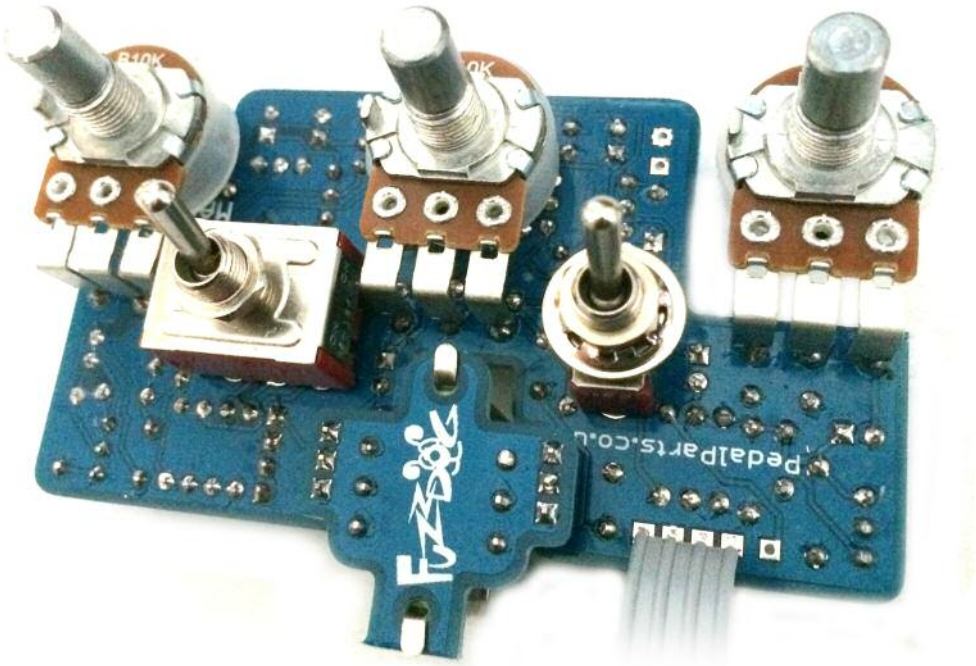
First place your header pins in the two rows of numbered pads. Make sure they're perfectly vertical. You can place them into place on the main board while you're soldering to ensure they remain straight.

One side of the transformer will be marked with a P (primary). Ensure you get that right when mounting it into the daughterboard. Drop it into place, bend the support lugs out to hold it firmly on the board, then solder the six pins into place.

Now line up the header pins with the corresponding pads on the main PCB, and solder in place. Keep it fairly close to the main board level so the solder pads have no chance of touching the enclosure when its eventually mounted in the box. It only needs to sit around 3-4 mm lower than the main board.

POWER

There are two sets of V and G pads. Both connect directly together so you can use either. the ones closest to C6 are placed for the shortest possible connection in the pre-drilled enclosure with top-mounted DC.



RED PCB HACK

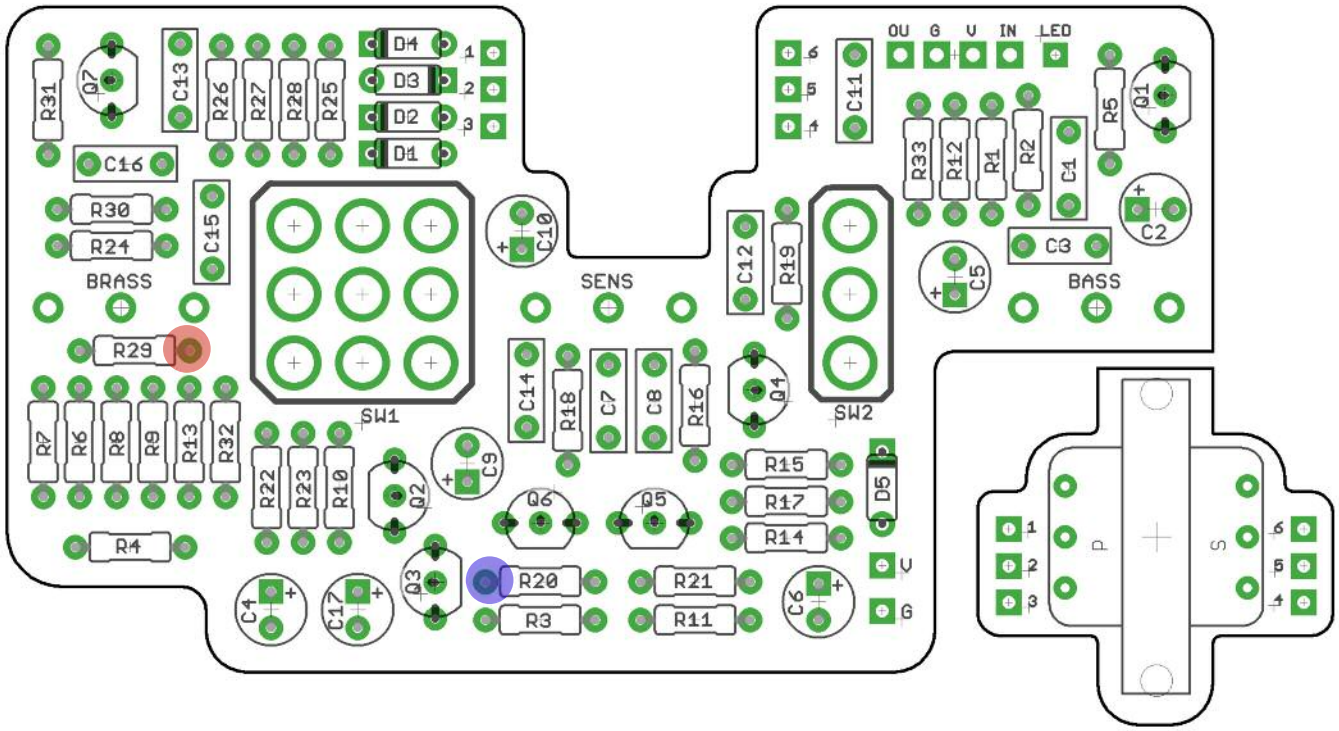
If you've bought the B-Stock Red PCB you need to run a wire to a resistor to make it work.

The leg of R29 marked in red below needs to be connected to 9V. There are several ways to do this.

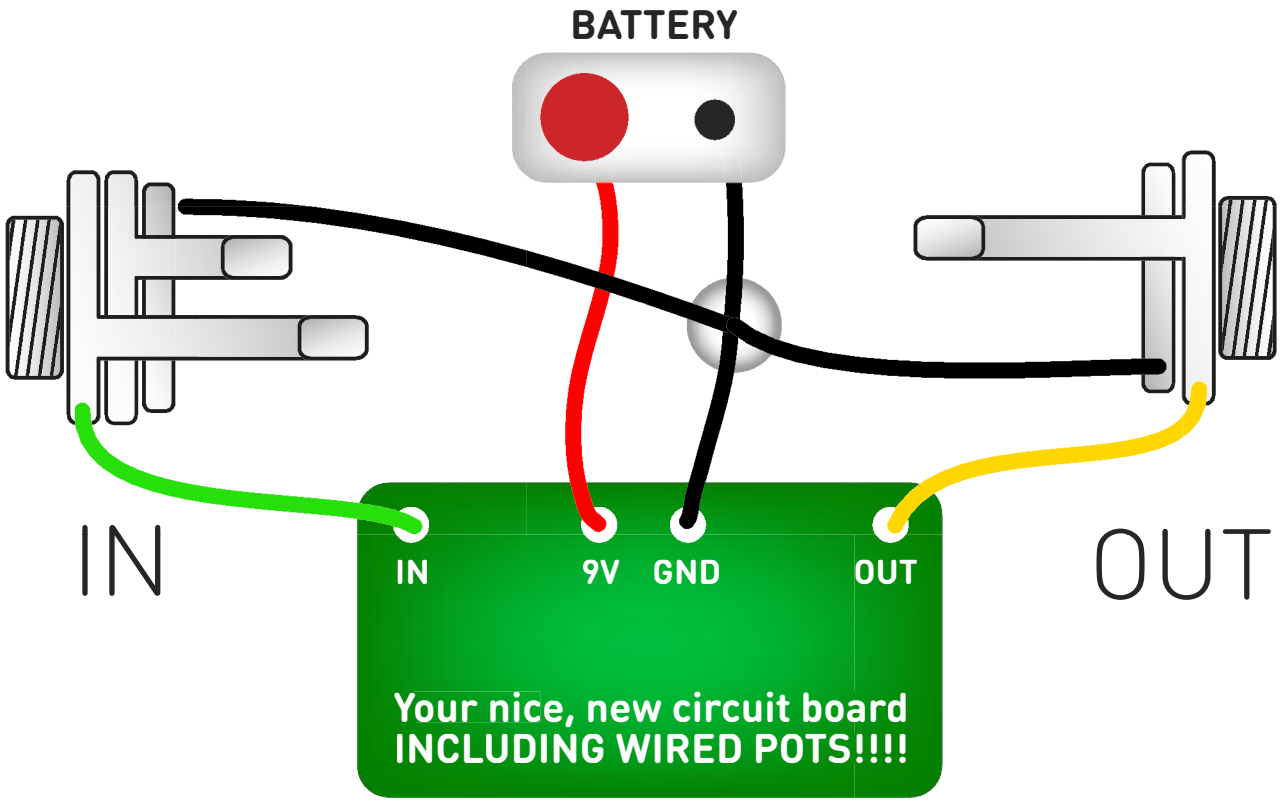
The neatest way is to leave a little of the leg remaining when you solder in R29 and R20 (marked in blue). Then connect those two points with a wire on the back side of the PCB. The hack won't be visible when the circuit is boxed.

Alternatively you can leave these two resistors slightly proud when mounting them and connect with a wire on the top side of the board.

Or you can simply run a wire from the 9V connection on your DC socket to the leg of R29, but that's quite a messy solution.



Test the board!



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

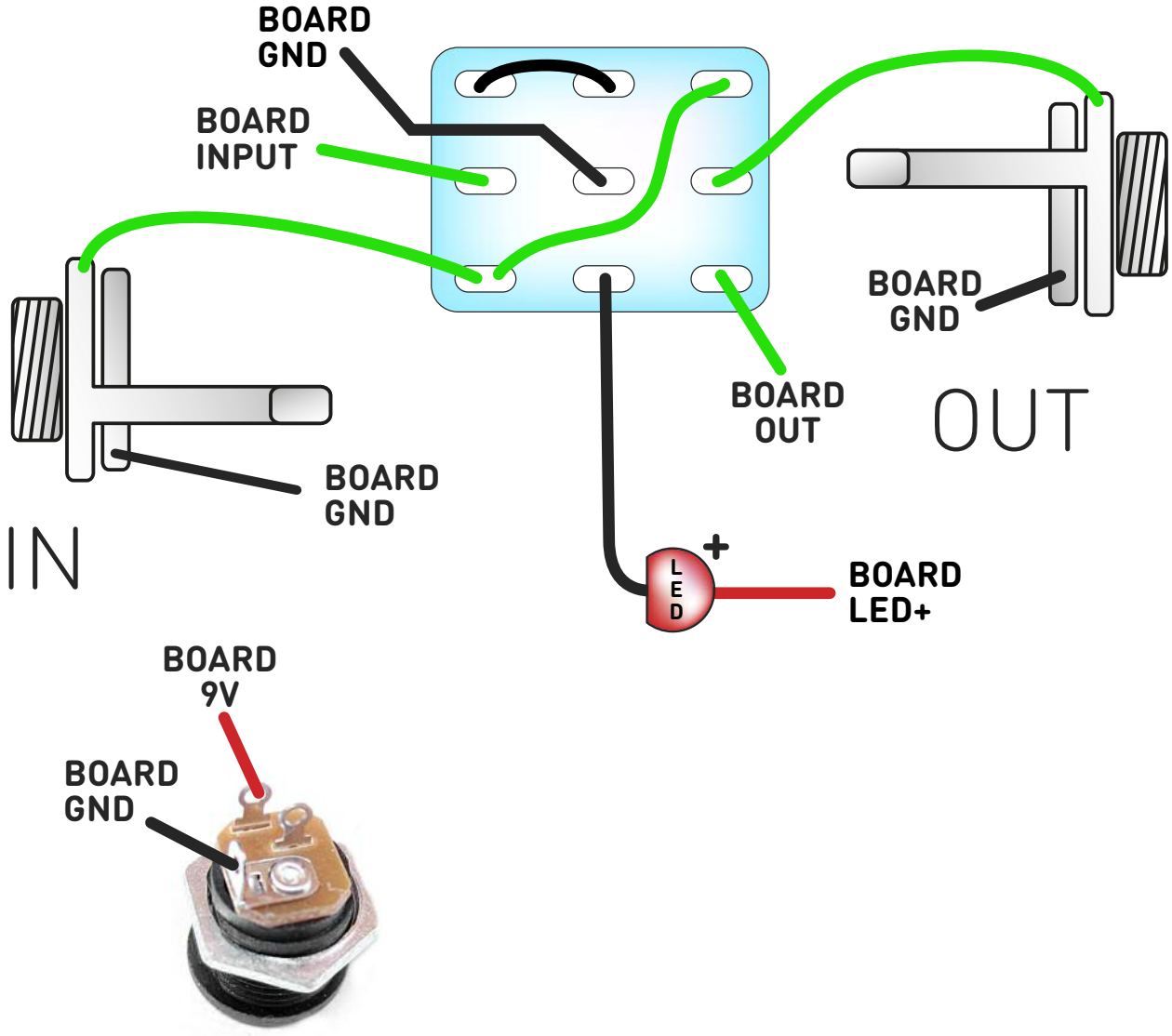
Once you've finished the circuit it makes sense to test is before starting on the switch and LED wiring. It'll cut down troubleshooting time in the long run. If the circuit works at this stage, but it doesn't once you wire up the switch - guess what? You've probably made a mistake with the switch.

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)

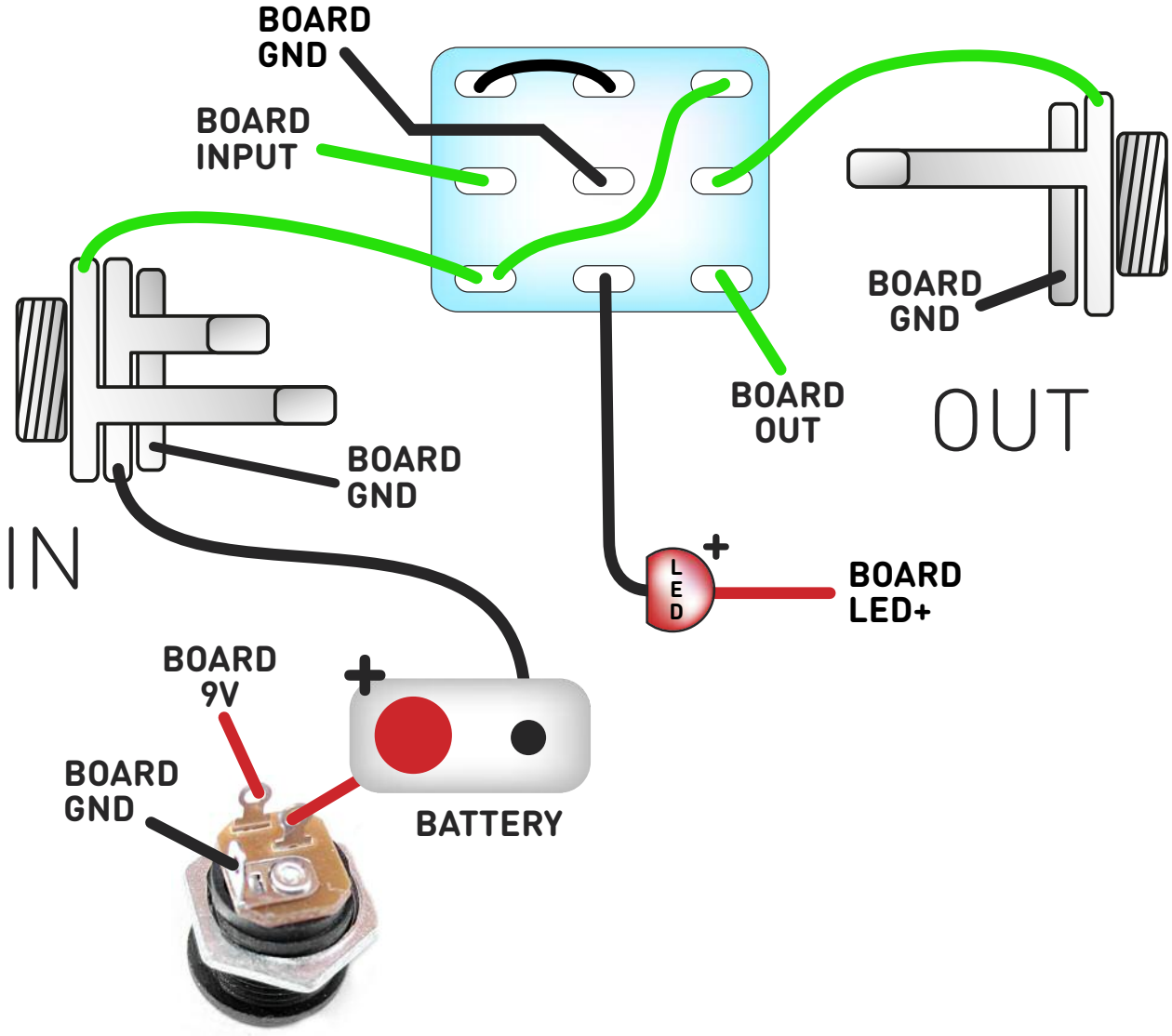


This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

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)



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Drilling template

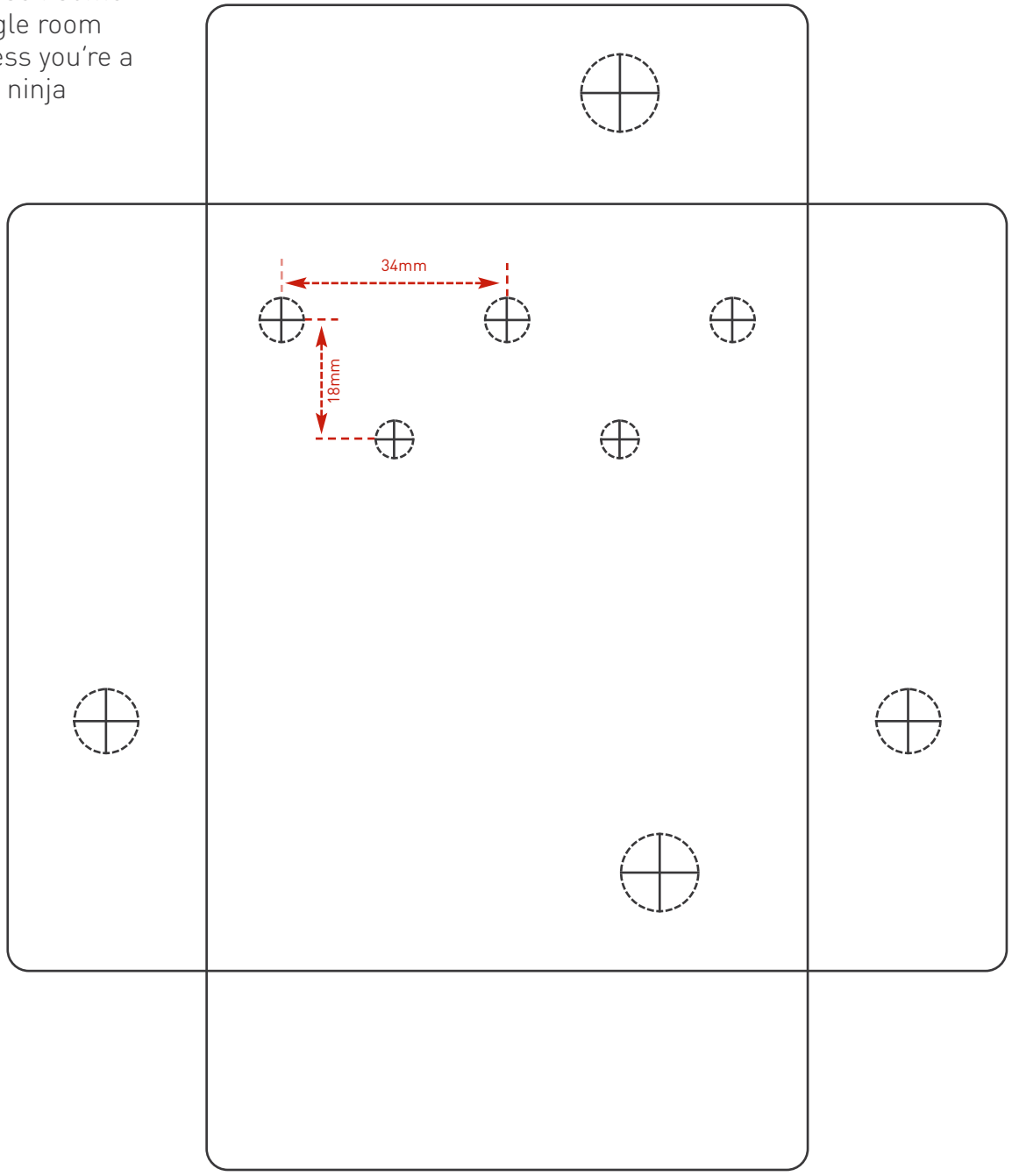
Hammond 1590BB

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.

PedalParts.co.uk