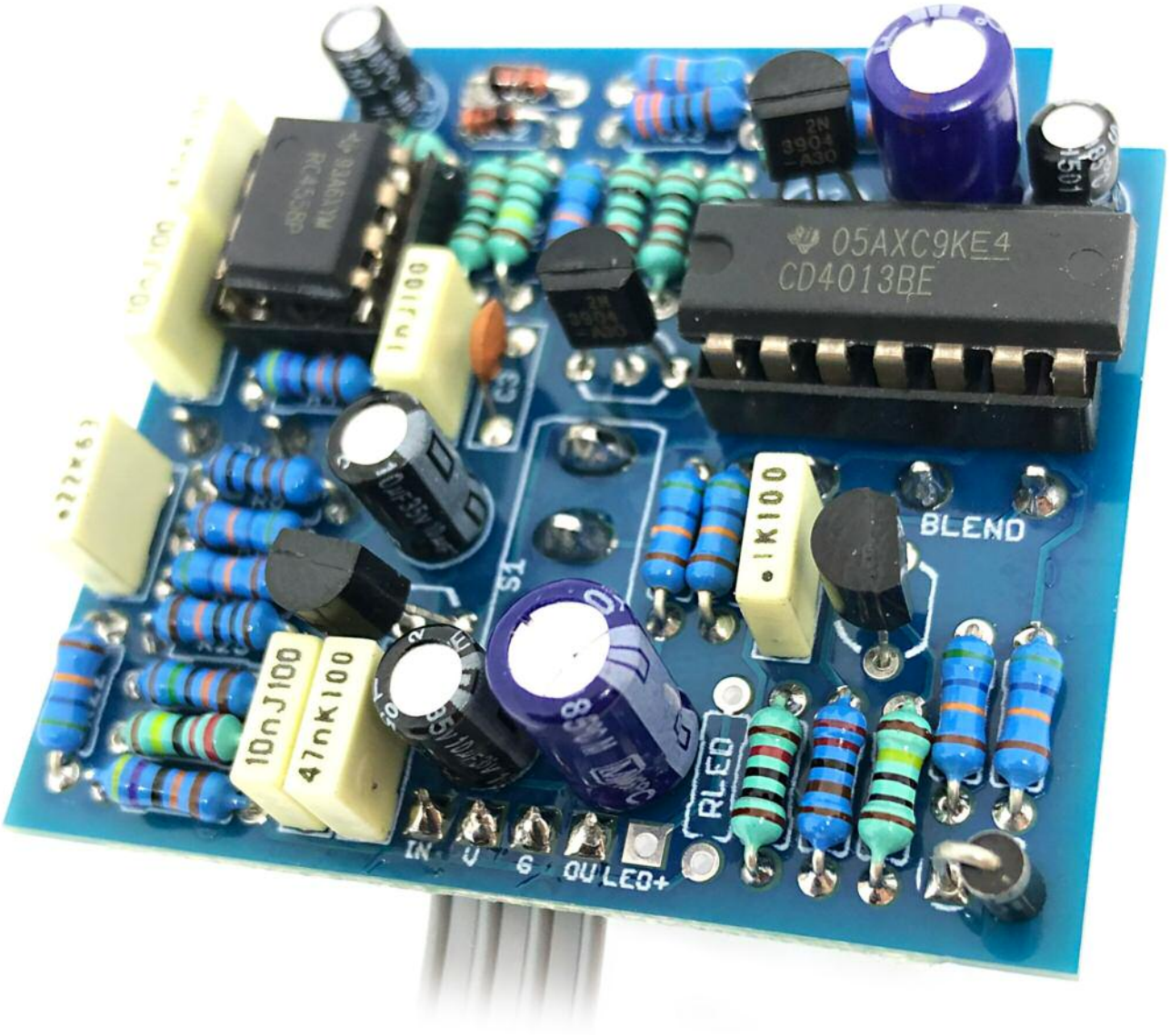


Blue Fool

Octave-down fuzz fun with a handy post-boost

Important notes

If you're using any of our footswitch daughterboards, DOWNLOAD THE DAUGHTERBOARD DOCUMENT

- Download and read the appropriate build document for the daughterboard as well as this one BEFORE you start.
- DO NOT solder the supplied Current Limiting Resistor (CLR) to the main circuit board even if there is a place for it. This should be soldered to the footswitch daughterboard.

POWER SUPPLY

Unless otherwise stated in this document this circuit is designed to be powered with 9V DC.

COMPONENT SPECS

Unless otherwise stated in this document:

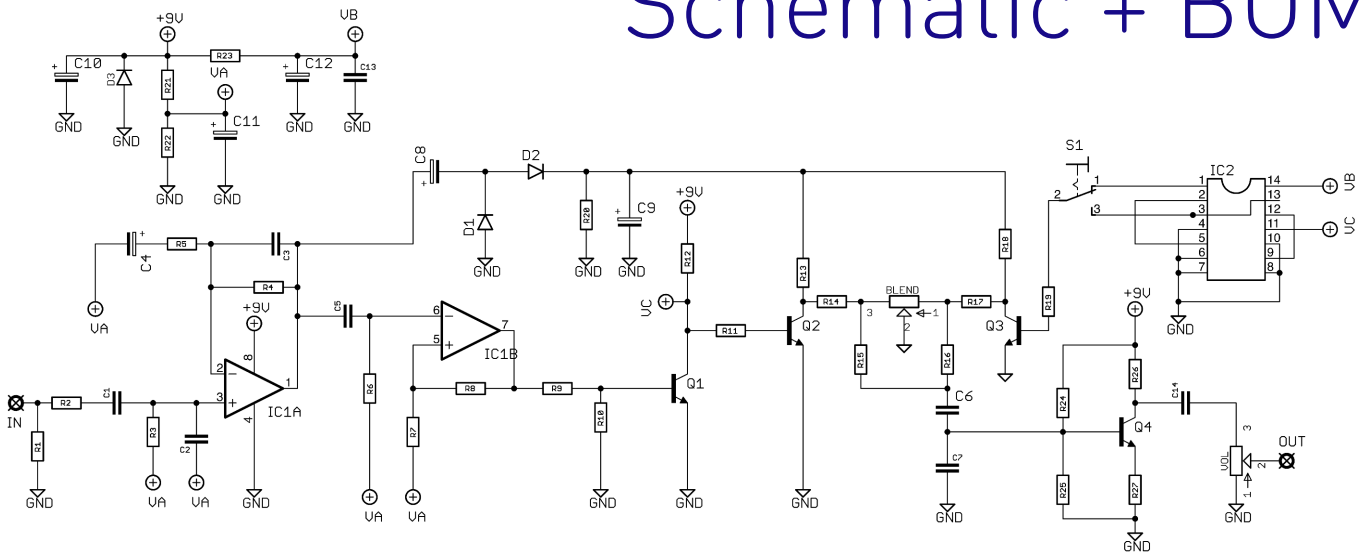
- Resistors should be 0.25W. You can use those with higher ratings but check the physical size of them.
- Electrolytics caps should be at least 25V for 9V circuits, 35V for 18V circuits. Again, check physical size if using higher ratings.

LAYOUT CONVENTIONS

Unless otherwise stated in this document, the following are used:

- **Electrolytic capacitors:**
  Long leg (anode) to square pad.
- **Diodes/LEDs:**
  Striped leg (cathode) to square pad. Short leg to square pad for LEDs.
- **ICs:**
  Square pad indicates pin 1.

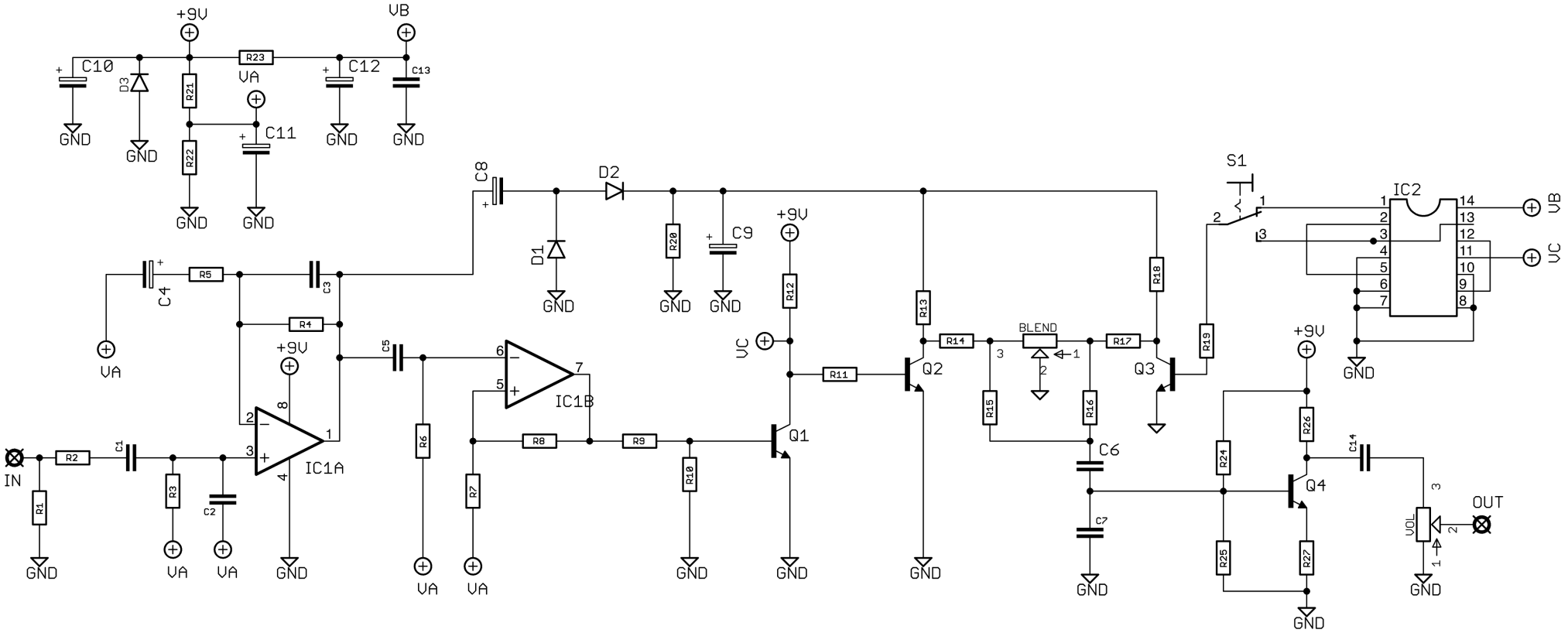
Schematic + BOM

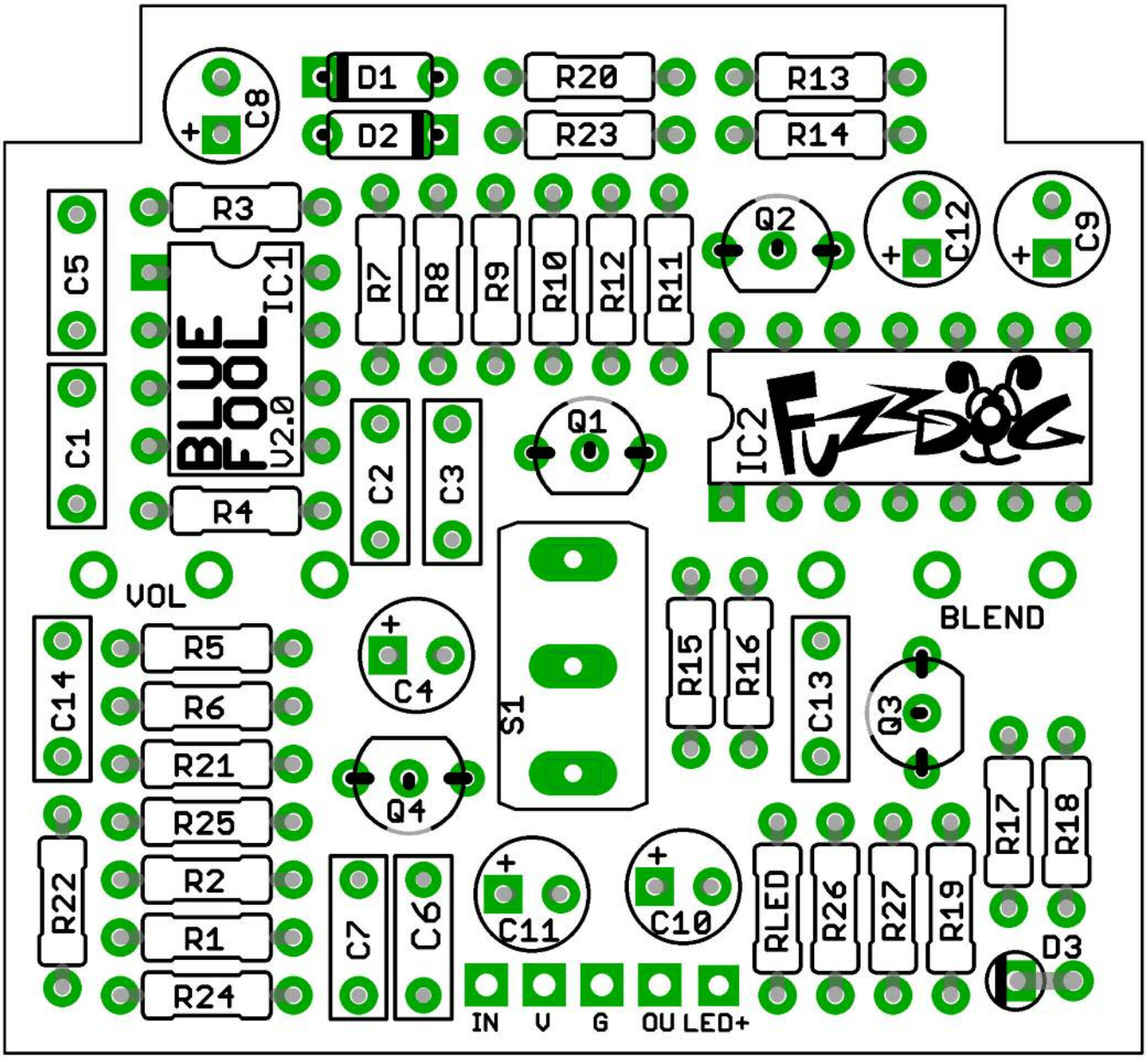


R1	2M2	C1	10n	D1-2	1N4148
R2	150K	C2	1n	D3	1N4001
R3	1M	C3	330p		
R4	470K	C4	10u elec	IC1	4558
R5	1K	C5	47n	IC2	CD4013
R6	56K	C6	47n		
R7	10K	C7	10n	Q1-3	2N3904
R8	1M	C8	1u elec	Q4	2N5088
R9	56K	C9	1u elec		
R10	10K	C10	100u elec	BLEND	50KA
R11	1M	C11	10u elec	VOL	100KA
R12	10K	C12	100u elec		
R13	56K	C13	100n	SW1	SPDT (ON-ON)
R14	56K	C14	220n		
R15	56K				
R16	56K				
R17	56K				
R18	56K				
R19	1M				
R20	56K				
R21	56K				
R22	56K				
R23	330R				
R24	1M (470K)				
R25	100K				
R26	10K				
R27	390R (2K2)				
RLED	Empty				

Q4, R24-27 and C14 are the gain-recovery/post-boost circuit we've added to increase the output level, which is below unity on the original circuit.

Use the values in black for an LPB boost, which is pretty loud, or those in green for a more respectable gain recovery which is plenty loud.


+9V
VB
C10
R23
C12
C13
D3
R21
VA
C11
R22
GND
C8
D2
D1
R20
C9
R12
R13
S1
IC2
VB
VC
C4
R5
C3
R4
VA
+9V
C5
IC1B
VC
R11
Q2
R14
BLEND
R17
R18
Q3
R19
R6
R8
R9
Q1
R10
R7
C6
C7
R15
R16
R24
R26
Q4
C14
IN
R1
R2
C1
R3
C2
IC1A
OUT
VOL
R25
R27



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. Check the separate daughterboard document for details.

Be very careful when soldering the diodes, 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 same goes for the IC if you aren't using a socket.

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

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 board. Make sure your pots all line up nicely.

Test the board!

Check the relevant daughterboard document for more info before you undertake this stage.

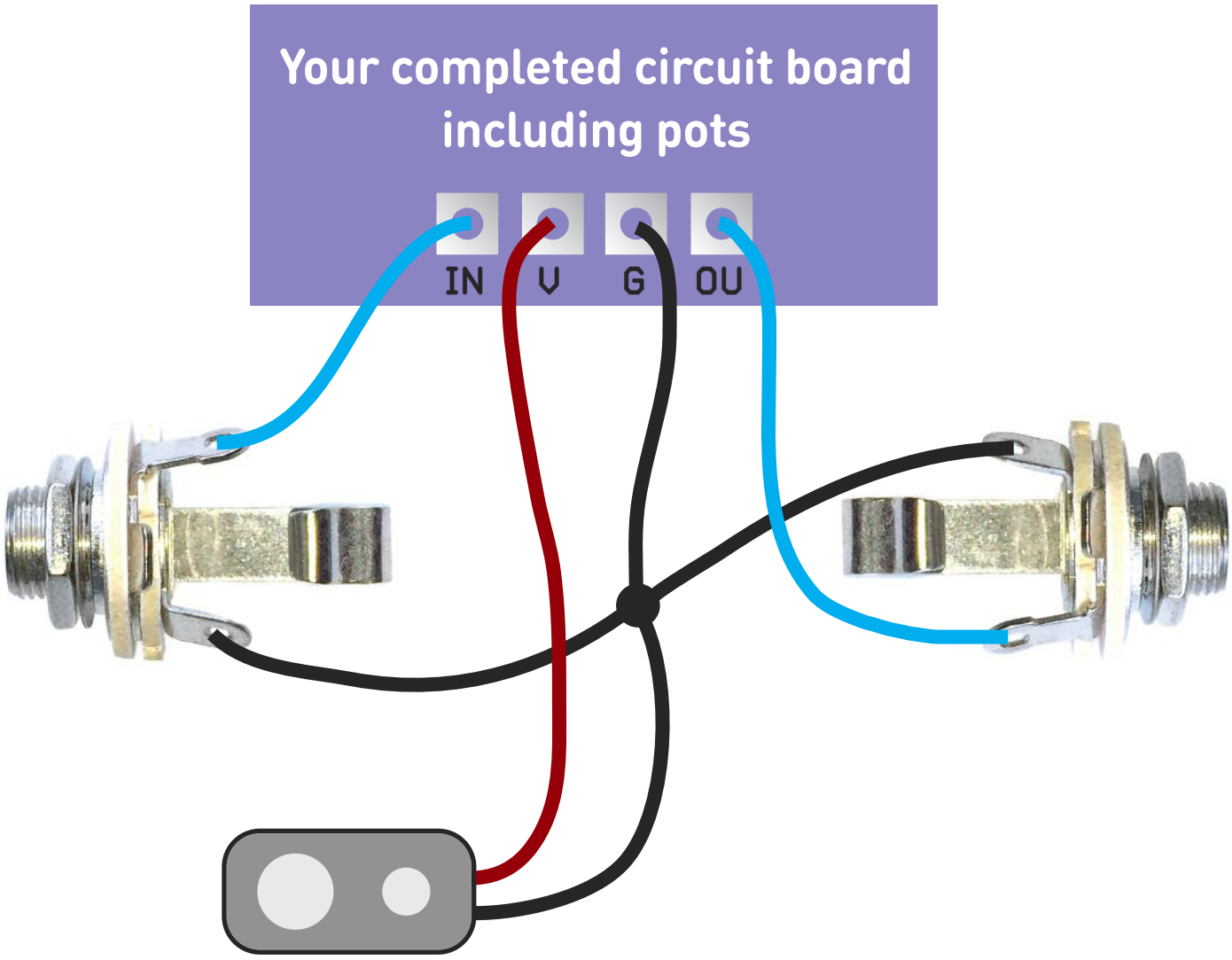
UNDER NO CIRCUMSTANCES will troubleshooting help be offered if you have skipped this stage. No exceptions.

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.

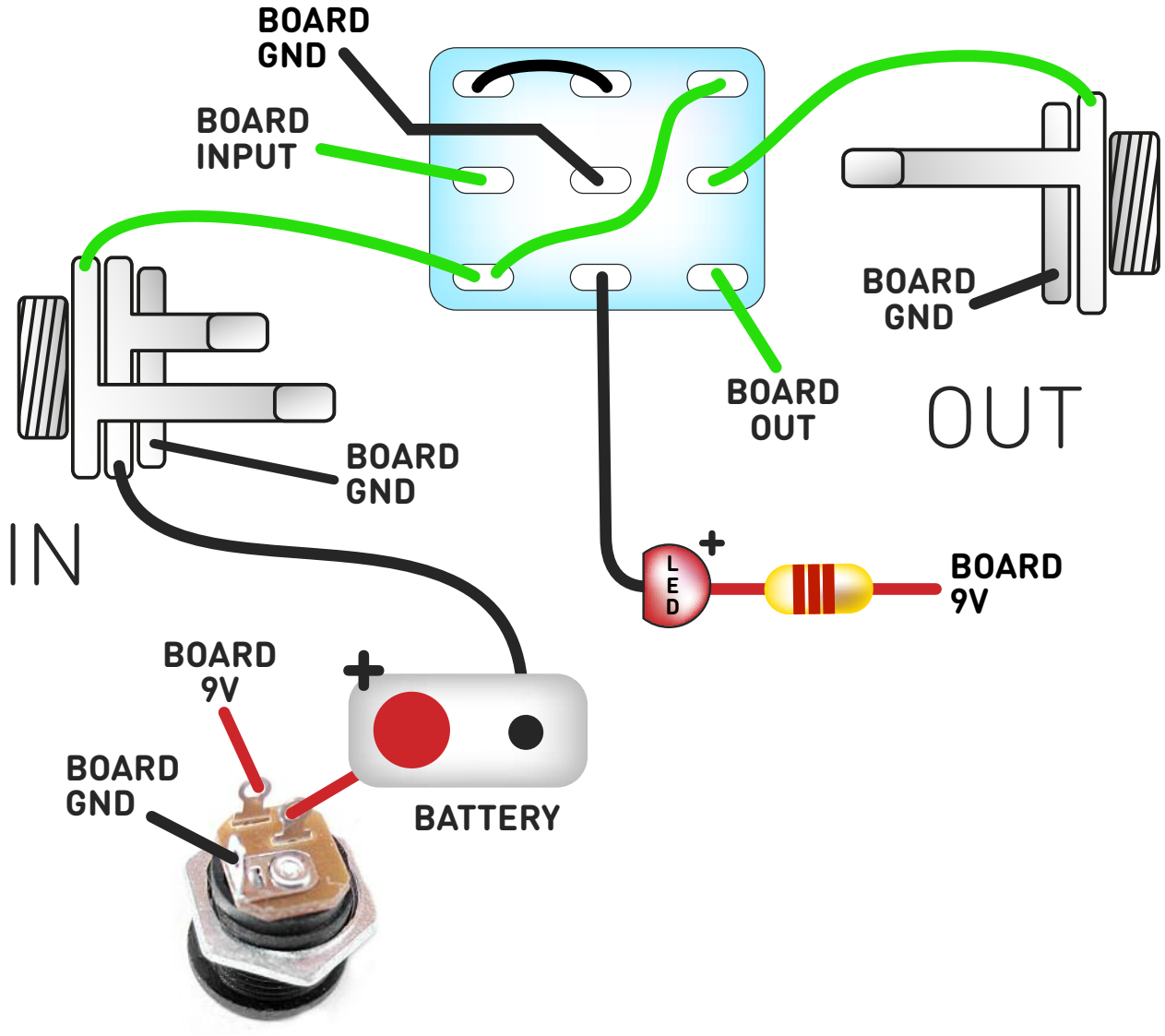
Solder some nice, long lengths of wire to the board connections for 9V, GND, IN and OUT. Connect IN and OUT to the jacks as shown. Connect all the GNDs together (twist them up and add a small amount of solder to tack it). Connect the battery + lead to the 9V wire, same method. Plug in. Go!

If you're using a ribbon cable you can tack the wires to the ends of that. It's a lot easier to take them off there than it is do desolder wires from the PCB pads.

If it works, carry 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 (if using a daughterboard please refer to the relevant document)



Wiring shown above will disconnect the battery when you remove the jack plug from the input, and also when a DC plug is inserted.

The Board GND connections don't all have to directly attach to the board. You can run a couple of wires from the DC connector, one to the board, another to the IN jack, then daisy chain that over to the OUT jack.

It doesn't matter how they all connect, as long as they do.

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.

Drilling template

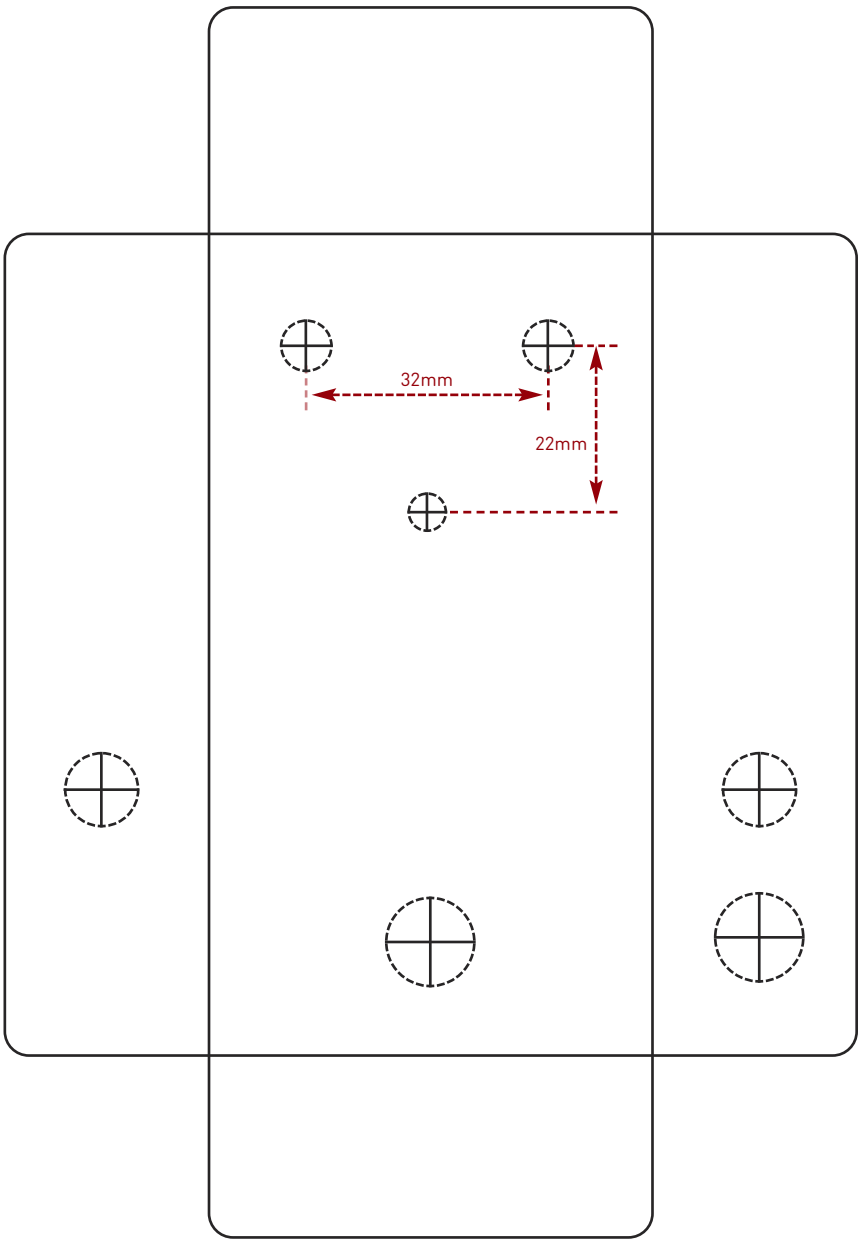
Hammond 1590B

60 x 111 x 31mm

It's a good idea to drill the pot and toggle switch holes 1mm bigger if you're board-mounting them.
Wiggle room = good!

Recommended drill sizes:

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



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.

FuzzDog.co.uk