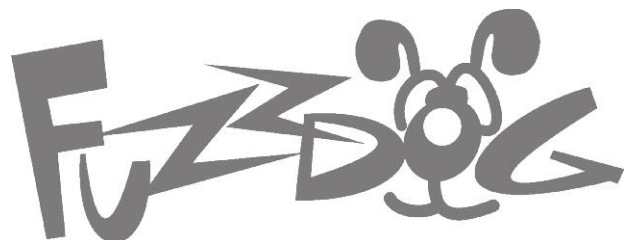


Big Fluff Pie

Everyone loves a
big chunk of fluff



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:

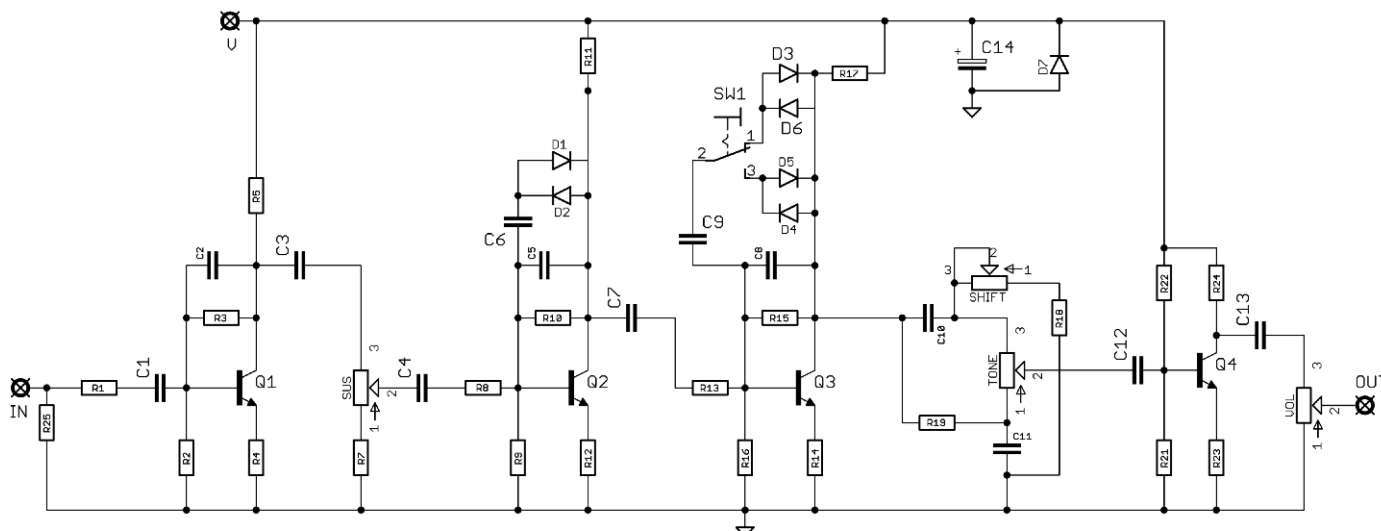
- Resistors should be 0.25W. You can use those with higher ratings but check the physical size of them.
- Electrolytics caps should be at least 25V for 9V circuits, 35V for 18V circuits. Again, check physical size if using higher ratings.

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.

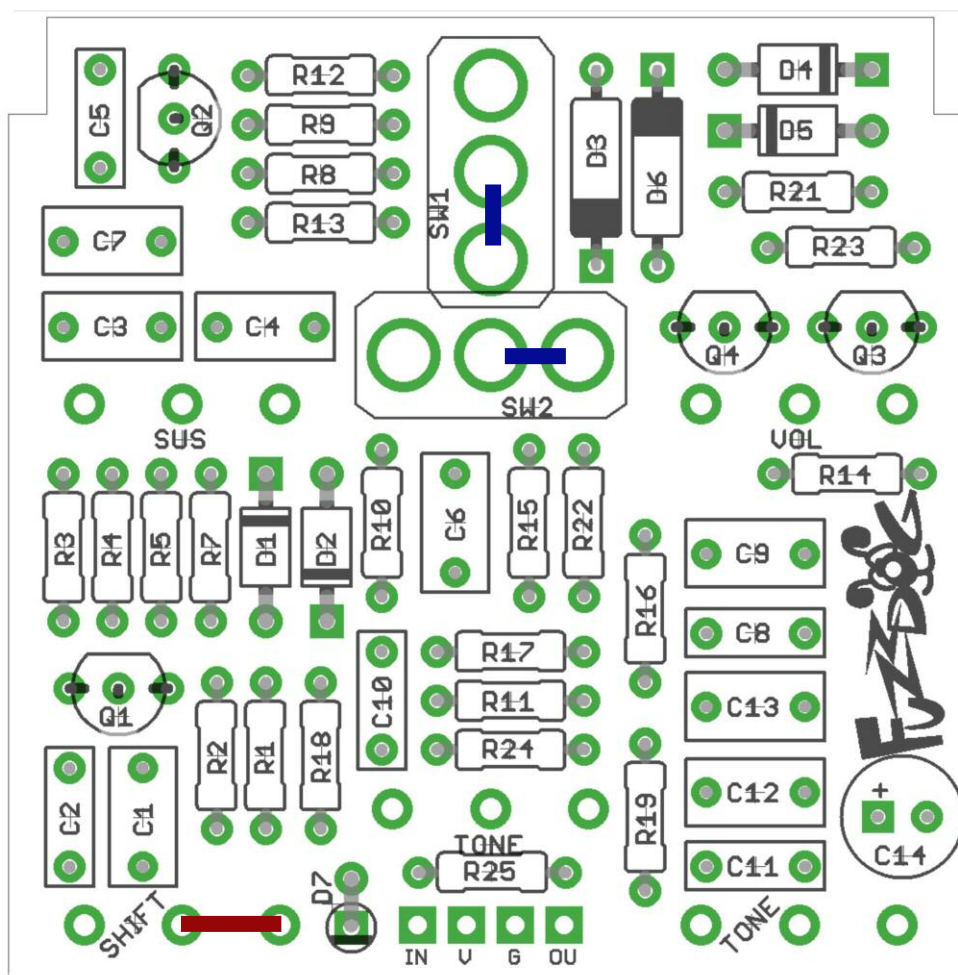
Schematic



Some of the components shown are not in standard Big Fluff builds.

SW1, **D3** and **D6** are only used if you want alternative clipping selection. If you aren't including this place a jumper in either spot shown in **BLUE** below.

SHIFT is only included if you're using an alternative tone stack with mid shift. If you're going for a standard 3-pot version include the jumper shown in **RED**.



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. Check the separate daughterboard document for details.

Be very careful when soldering the diodes 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).

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

Positive (anode) legs of the electrolytic cap goes to the square pad.

C14 can be laid flat to the PCB as shown on the cover image. This will give more clearance in your enclosure.

Negative (cathode) legs of the diodes go to the square pads.

D7 is an optional polarity protection diode. If you want to include one, use a 1N4001 or any other 400X variant.

TWO SETS OF TONE PADS?

Yes. Use the centralised pads above R25 for a 3-pot build, and the ones off to the right of the PCB for a 4-pot build. There's no need for any jumpers in either situation. Both sets of pads are directly linked to each other.

THAT SCOOPED MID-RANGE - NO THANKS!

The Big Fluff Pie has a distinctive scooped mid-range. In most cases this can be flattened out if desired. For the versions listed in the first BOM page, this can be achieved by changing R18 and R19 to 39K, and C10 to 10n.

MOJO?

Many different transistors have been used across the history of the BFP, some of which are long gone. All of the 'stock' Fluffs listed on the first BOM page are supplied with 2N5088.

While these may not always be the vintage-correct parts, they have been found to be the best commonly-available all-rounder in a BFP.

There are additional notes regarding individual circuits later in the document. Please check them before starting your build.

Not sure what to make?
Check out **Kit Rae's** page.
Astounding work.

Notes

CLIPPING SELECTION SWITCH

There are two sets of pads to select extra clipping diodes if you want some variation in your pedal. **SW1** (vertical) is placed to sit neatly in the middle of your knobs on a 3-pot build. **SW2** (horizontal) works for a 4-pot version. The jumpers shown on the previous page will bring diodes D4-5 into the mix. If you prefer to use the larger spaces (D3-D6) for a single clipping configuration you can jumper the opposite pads.

To incorporate an alternative clipping section on the Q3 gain stage, select some suitable diodes for D3-D6. There are no rules. Google is your friend. Socket and experiment.

Add a SPDT ON-ON toggle switch in SW1 or SW2 to select between the two sets of clipping (D4-D5 / D3-D6).

If you want to get really freaky you can use a SPDT ON-OFF-ON switch which will remove the clipping from that gain stage altogether. There'll be a big volume jump with the switch in the middle position though, so use caution.

ALTERNATIVE TONE SECTION

We've incorporated parts so you can easily modify the tone stack and add a mids control. We've stuck to the simple elegance of the AMZ Presence Control.

You can experiment with your own values, but these two set-ups offer some great tonal variation. For more info take a look at this very informative page:

<http://www.muzique.com/lab/tone3.htm>

AMZ Control #1

R18	3K3
R19	39K
C10	12n (10n will be fine)
C11	10n
SHIFT	25KB
TONE	100KB

AMZ Control #2

R18	3K3
R19	470K
C10	15n
C11	1n5
SHIFT	25KB
TONE	250KA

BOM

[illegible]

SHIFT -----Place jumper as shown on page 2-----

V3 79#2 - J Mascis

Based on what is supposedly one of J Mascis' favourite Fluffs.
The original has true tone bypass, but why would you want that?

C1	1u	Q1	MPSA18	R1	39k
C2	470p	Q2	MPSA18	R2	100K
C3	1u	Q3	MPSA18	R3	470K
C4	1u	Q4	MPSA18	R4	100R
C5	470p			R5	15K
C6	1u	D1	1N4148	R7	1K
C7	100n	D2	1N4148	R8	8K2
C8	470p	D3	jumper	R9	100K
C9	1u	D4	1N4148	R10	470K
C10	3n9	D5	1N4148	R11	15K
C11	10n	D6	empty	R12	100R
C12	100n			R13	8K2
C13	1u	SUSTAIN	100kA	R14	100R
C14	100u	TONE	100kB	R15	470K
		VOLUME	100kA	R16	100K
		MIDS	Jumper	R17	15K
				R18	22K
				R19	39K
				R21	100K
				R22	390K
				R23	2K2
				R24	10K
				R25	1M

Tall Font Green Russian

Bass players' favourite. The feedback caps in the original
are two 1nf in series, but that's the same as 500pf.

C1	100n			R1	39k
C2	500p			R2	100K
C3	100n			R3	470K
C4	100n			R4	390R
C5	500p			R5	12K
C6	47n			R7	1K
C7	100n			R8	10K
C8	500p	D1	1N4148	R9	100K
C9	47n	D2	1N4148	R10	470K
C10	3n9	D3	empty	R11	12K
C11	10n	D4	1N4148	R12	390R
C12	100n	D5	1N4148	R13	10K
C13	100n	D6	empty	R14	390R
C14	100u			R15	470K
Q1	2N5089	SUSTAIN	100kA	R16	100K
Q2	2N5089	TONE	100kB	R17	12K
Q3	2N5089	VOLUME	100kA	R18	22K
Q4	2N5089	MIDS	Jumper	R19	20K
				R21	100K
				R22	470K
				R23	2K7
				R24	10K
				R25	1M

Csnd Supa Tonebender

'73 UK interpretation. The first clipping stage is removed which changes the sound to a mix of Tonebender-meets-Fluff. Heavy! Transistor pinout is reversed so flip them. There was an extra cap between the third gain stage and the tone section, but it'll sound just the same without it. If you want a 100% clone look elsewhere.

C1	100n	Q1	BC184	R1	33k
C2	470p	Q2	BC184	R2	100K
C3	100n	Q3	BC184	R3	470K
C4	100n	Q4	BC184	R4	100R
C5	470p	D1	empty	R5	15K
C6	empty	D2	empty	R7	820R
C7	100n	D3	empty	R8	8K2
C8	470p	D4	1N4148	R9	100K
C9	47n	D5	1N4148	R10	470K
C10	4n7	D6	empty	R11	10K
C11	10n	SUSTAIN	100kA	R12	100R
C12	100n	TONE	100kA	R13	8K2
C13	100n	VOLUME	100kA	R14	100R
C14	100u	MIDS	Jumper	R15	470K
				R16	100K
				R17	15K
				R18	33K
				R19	33K
				R21	100K
				R22	390K
				R23	2K7
				R24	10K
				R25	1M

Csnd Jumbo Tonebender

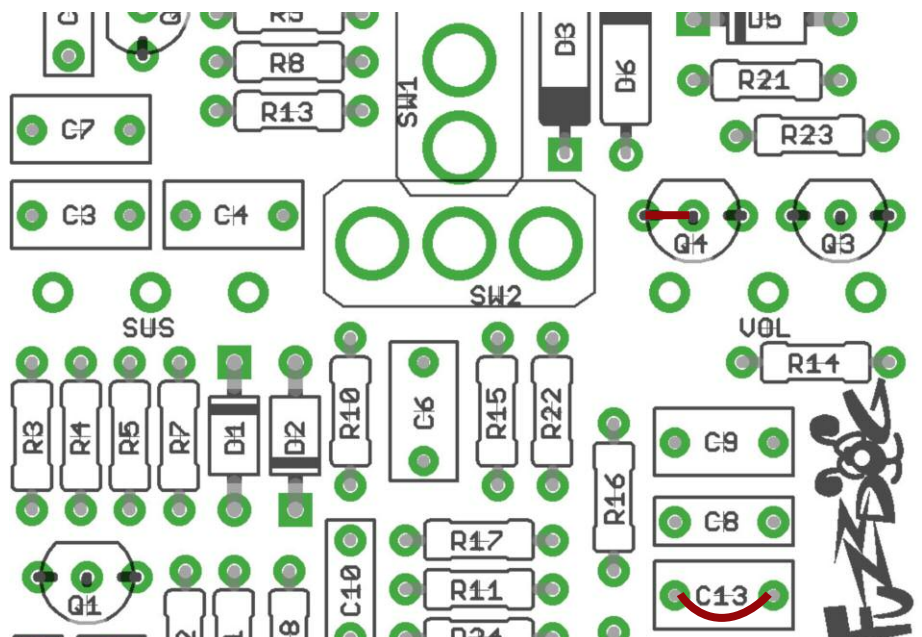
Based on the Supa, but the final gain recovery stage was removed giving this much less gain and output level than its older brother. It has heavy hints of BFP but has its own character. Great on bass. BOM as above but changes as shown below.

C10	4n7
C11	10n
C12	100n
C13	jumper

TONE 100kB

R7	1K
R18	39K
R19	39K
R21-24	empty

Q4 No transistor - jumper the base and collector pads as shown



Hooowwf

Nice example of slight modifications to a BFP making a BIG difference to the tone. The germanium cans and LED clipping make this a crunchier, grittier experience - worth checking out even if you already have a BFP. Experiment with NPN Ge cans in Q3-4. Original used 2N1308 - try AC176, AC127.

C1	100n	Q1	2N3904	R1	39K
C2	470p	Q2	NPN Ge	R2	100K
C3	100n	Q3	NPN Ge	R3	470K
C4	100n	Q4	2N3904	R4	100R
C5	470p	D1	5mm red led	R5	15K
C6	100n	D2	5mm red led	R7	2K2
C7	100n	D3	empty	R8	8K2
C8	470p	D4	5mm red led	R9	100K
C9	100n	D5	5mm red led	R10	470K
C10	6n8	D6	empty	R11	15K
C11	6n8	SUSTAIN	50KA	R12	100R
C12	100n	TONE	100KB	R13	8K2
C13	100n	VOLUME	1MA	R14	100R
C14	100u	MIDS	20KB	R15	470K
				R16	100K
				R17	15K
				R18	2K2
				R19	39K
				R21	100K
				R22	390K
				R23	2K2
				R24	10K
				R25	1M

Creamy Dreamer

C1	1u	Q1	2N5089	R1	39k
C2	470p	Q2	2N5089	R2	100K
C3	47n	Q3	2N5089	R3	470K
C4	1u	Q4	2N5089	R4	Jumper
C5	470p	D1	1N4148	R5	15K
C6	1u	D2	1N4148	R7	1K
C7	1u	D3	empty	R8	8K2
C8	470p	D4	1N4148	R9	100K
C9	1u	D5	1N4148	R10	470K
C10	4n7	D6	empty	R11	15K
C11	10n	SUSTAIN	100kB	R12	Jumper
C12	100n	TONE	100kA	R13	8K2
C13	100n	VOLUME	100kA	R14	Jumper
C14	100u	MIDS	Jumper	R15	470K
				R16	100K
				R17	15K
				R18	47K
				R19	47K
				R21	100K
				R22	390K
				R23	2K2
				R24	10K

B&M Champion Fuzz Unit

Another vintage British interpretation, pretty much identical to the Jumbo Tonebender. BC184C may be hard to come by, so try others. Looking for around 600hFE in Q1 and Q2, 150hFE in Q3.

C1	100n	Q1	BC184C	R1	39k
C2	470p	Q2	BC184C	R2	100K
C3	100n	Q3	BC184C	R3	470K
C4	100n	Q4	No transistor - jumper Base & Coll.	R4	100R
C5	470p			R5	10K
C6	empty	D1	empty	R7	1K
C7	100n	D2	empty	R8	10K
C8	470p	D3	empty	R9	100K
C9	100n	D4	1N4148	R10	470K
C10	3n3	D5	1N4148	R11	10K
C11	10n	D6	empty	R12	100R
C12	100n	SUSTAIN	100kB	R13	10K
C13	jumper	TONE	100kA	R14	100R
C14	100u	VOLUME	100kA	R15	470K
		MIDS	Jumper	R16	100K
				R17	15K
				R18	39K
				R19	39K
				R21-24	empty

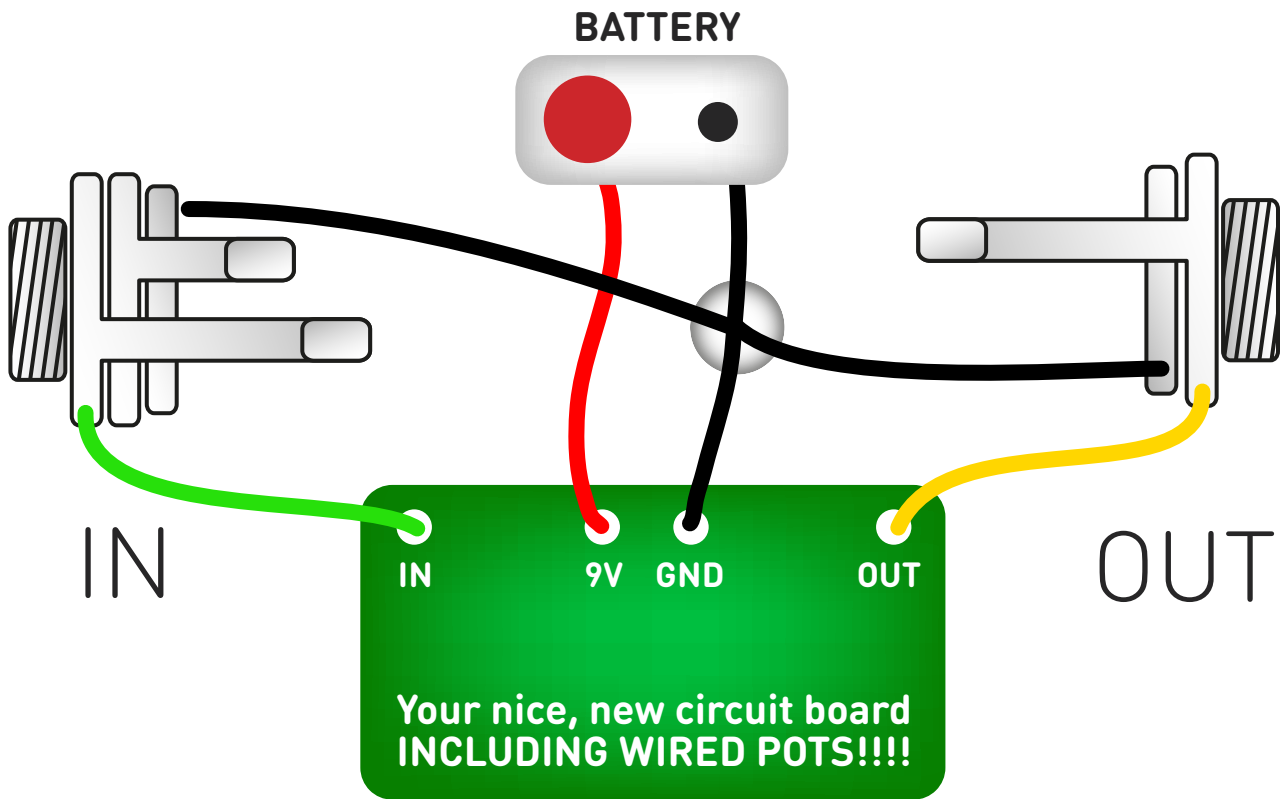
Stoned Cleric

Stoner heaven, based closely around a Ram's Head 74#1 but with different cans and a different emitter resistor in the first gain stage. Awesome stuff.

*BC549C pinout is the opposite to that shown on the PCB, so flip them.

C1	100n		R1	33K
C2	560p		R2	100K
C3	100n		R3	470K
C4	100n		R4	470R
C5	560p		R5	10K
C6	1u	Q1-4	R7	1K
C7	100n		R8	10K
C8	560p	D1-2	R9	100K
C9	1u	D3	R10	470K
C10	4n7	D4-5	R11	10K
C11	10n	D6	R12	150R
C12	100n		R13	10K
C13	100n	SUSTAIN	R14	150R
C14	100u	TONE	R15	470K
C15	empty	VOLUME	R16	100K
C16	jumper	MIDS	R17	10K
			R18	33K
			R19	33K
			R21	100K
			R22	470K
			R23	2K7
			R24	10K
			R25	1M

Test the board!



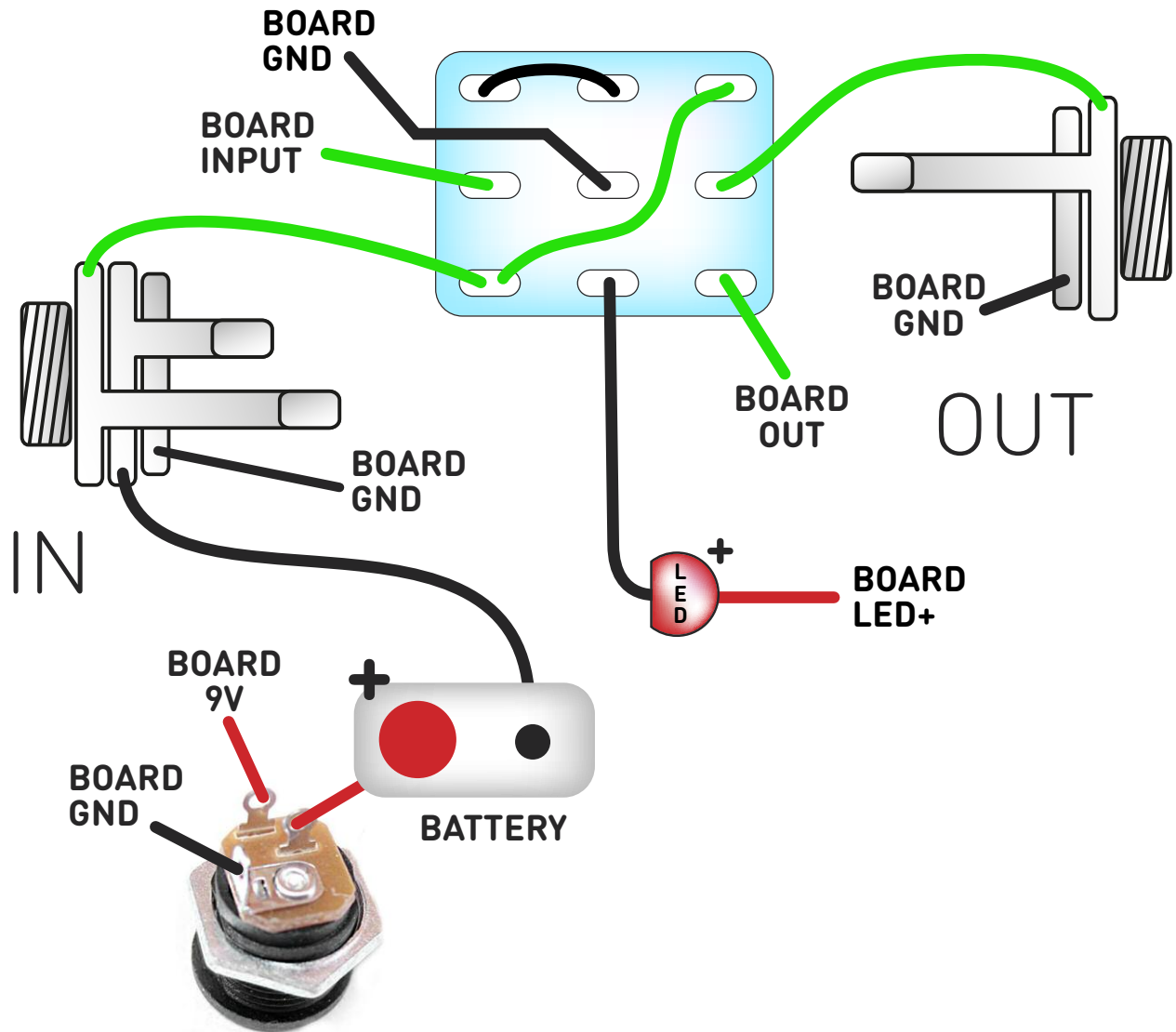
UNDER NO CIRCUMSTANCES will troubleshooting help be offered if you have skipped this stage. No exceptions.

Once you've finished the circuit it makes sense to test 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 (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.

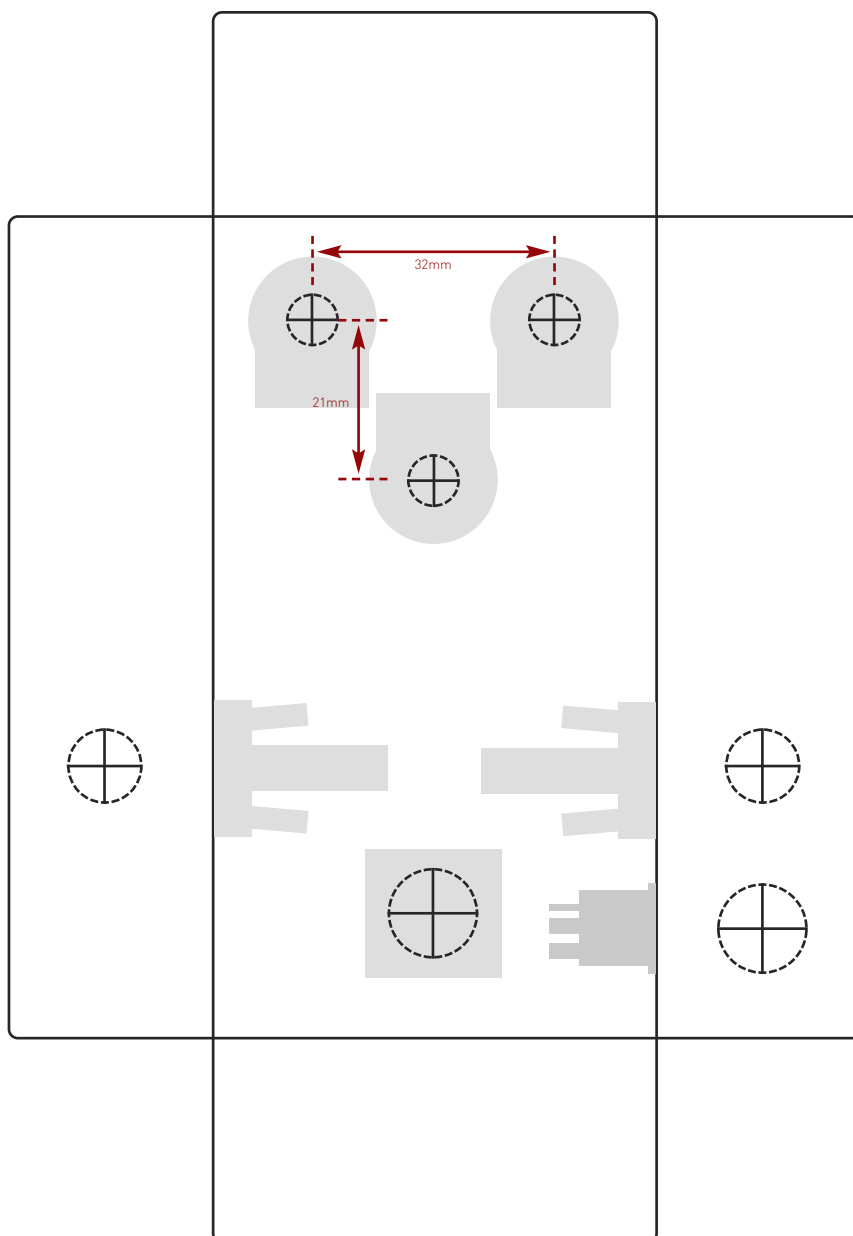
Drilling template

Hammond 1590B

60 x 111 x 31mm

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.

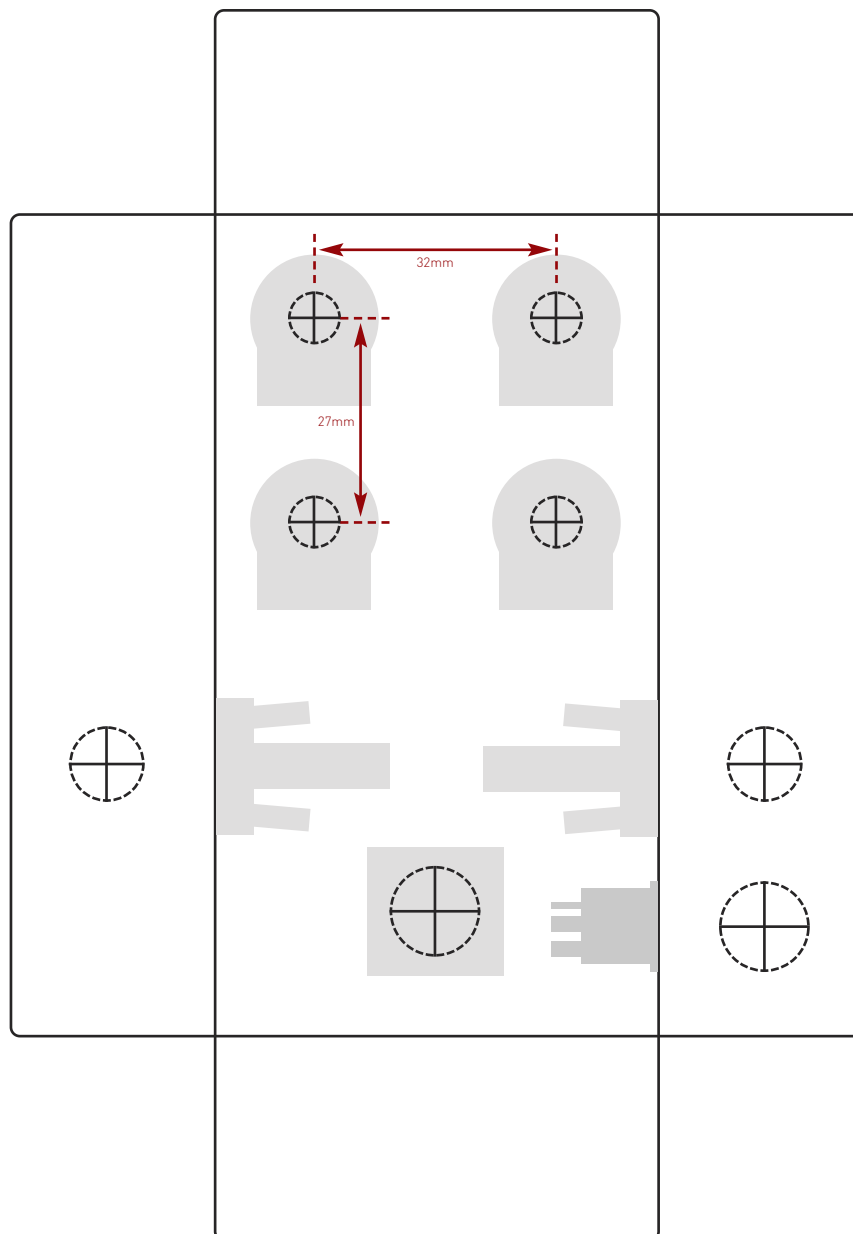
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