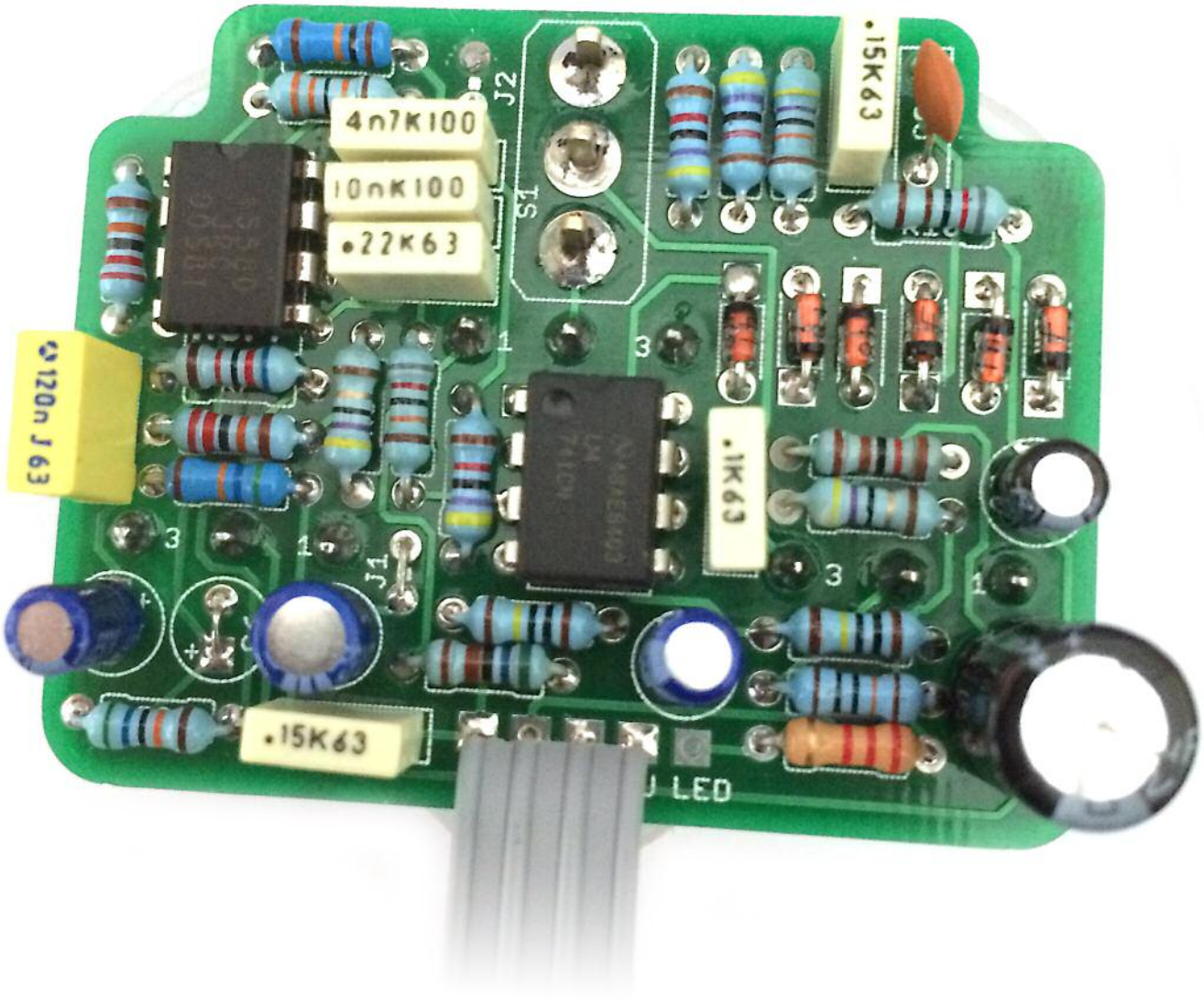
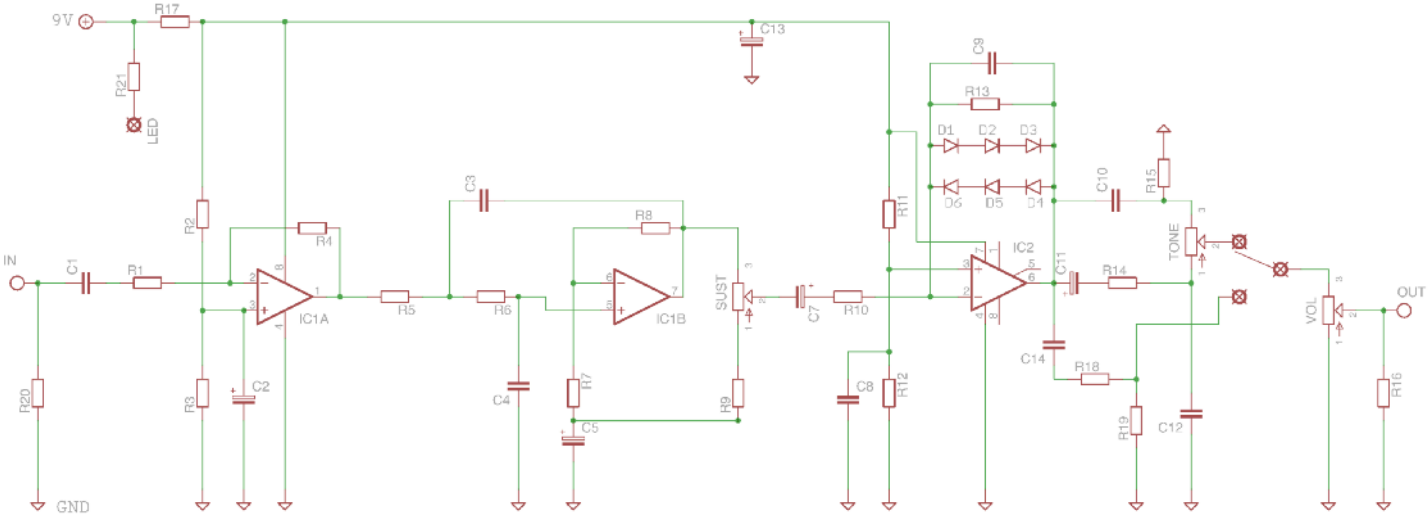
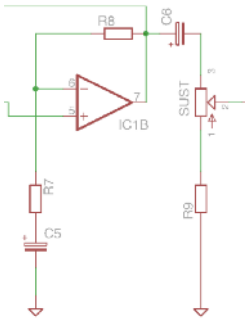


IC Big Muff '78

Chip-based Big Muff Pi. Smoooooooth!

Schematic





Original schematic above gives nice, smooth sustained fuzz tones. AnalogGuru's suggested changes to the negative feedback section shown left give a slight crunch to the sound. More on that on page 4.

BOM

R1	56K
R2	220K
R3	220K
R4	330K
R5	10K
R6	47K
R7	62K
R8	560K
R9	47R
R10	8K2
R11	820K
R12	1M
R13	470K
R14	5K6
R15	1K2
R16	100K
R17	47R
R18	47K
R19	47K
R20	1M
R21	2K2 (CLR)

C1	150n
C2	1u
C3	4n7
C4	10n
C5	10u elec
C6	10u elec*
C7	4u7 elec
C8	220n
C9	330p
C10	100n
C11	1u
C12	120n**
C13	100u
C14	150n

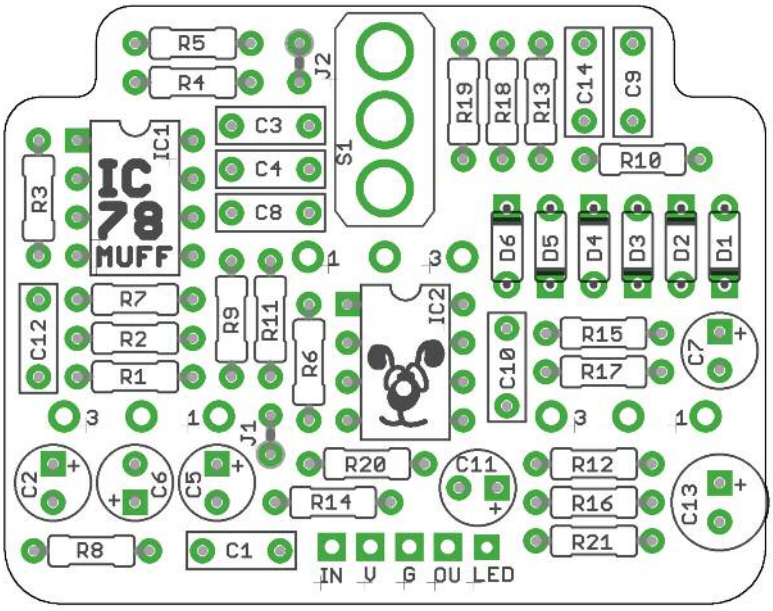
*omit C6 if making the original circuit. Replace with a jumper wire.

D1-6	1N4148
IC1	4558
IC2	741
SUST	10KB
TONE	10KB
VOL	100KA
SW1	SPDT (ON-ON)

**original has 120n. You could use 100n without making too much impact on the tone range.

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 diodes. 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). Best to use sockets for the ICs.



The striped leg (cathode) of the diodes goes into the square pad.

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

There's room to lay C13 flat across the top of R12, 16 and 21, otherwise it may stand too high to fit in the enclosure.

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

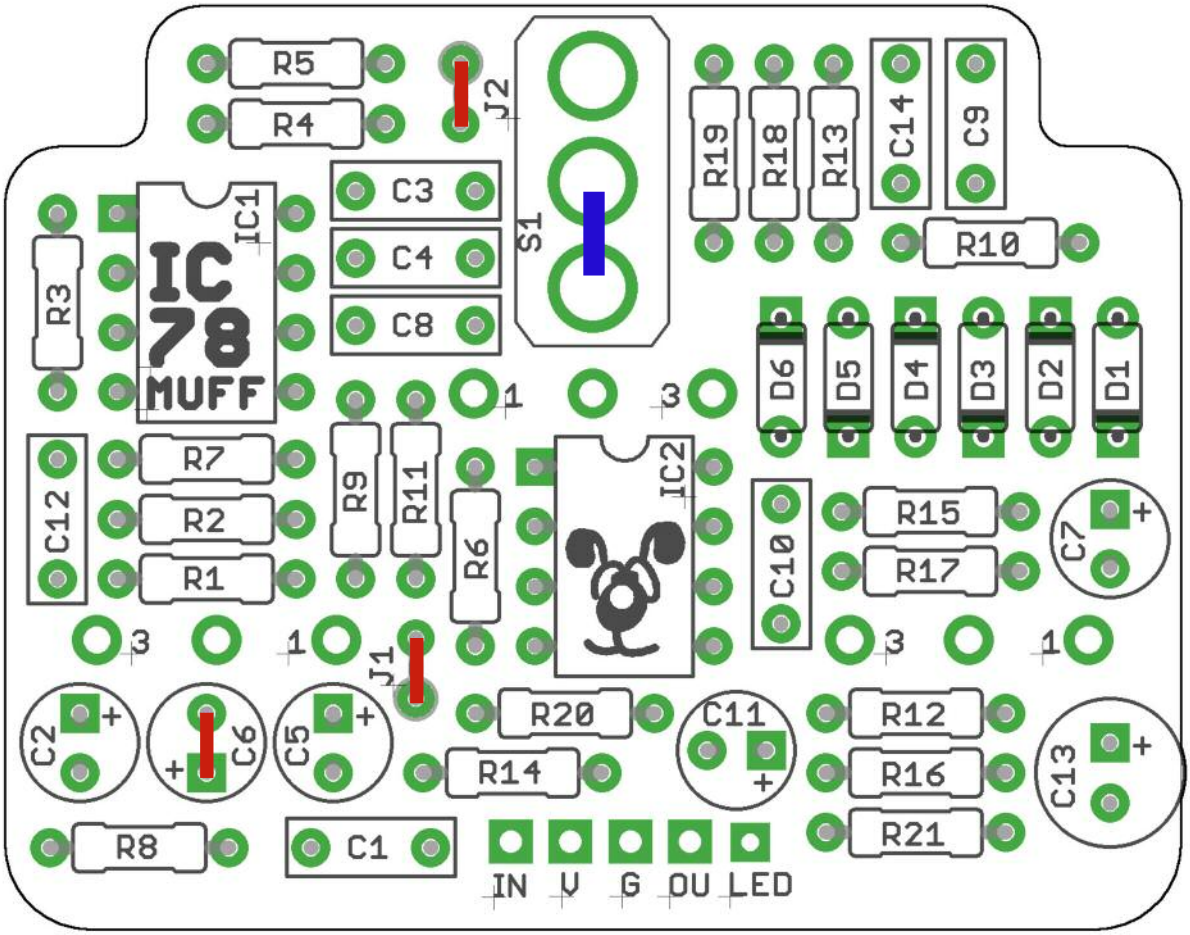
Pots mount on the back side of the board. You can use vertical-mount pots or just wire up 'normal' ones. Ensure you get them all at the same height, and if there are no plastic covers on them make sure you have plenty of clearance between the pot body and the solder side of the PCB, otherwise you'll short out components. Best way to do this is get some thick cardboard and put it between the pots and the board when soldering. Remove it once they're in place.

To get them all the same height its best to solder a single pin of each so you have all three pots in place. See if they all line up ok. If not, simply melt the connection of any that aren't right and adjust. Much easier than trying to do it if all three pints are soldered. Once they're aligned, solder the other two pins of each pot.

Favourite technique at FDHQ is to put the pots into the holes on the top side of the enclosure to get everything lined up nicely while soldering.

Sames goes for the toggle switch. Solder in one tag first, then melt and reseat to get it flat and straight. Then solder the other two.

Circuit version



ORIGINAL VERSION

Solder a jumper wire across J1 and across the pads of C6. You can include C6 if you like - it just adds more DC blocking and won't affect the tone. Ignore J2.

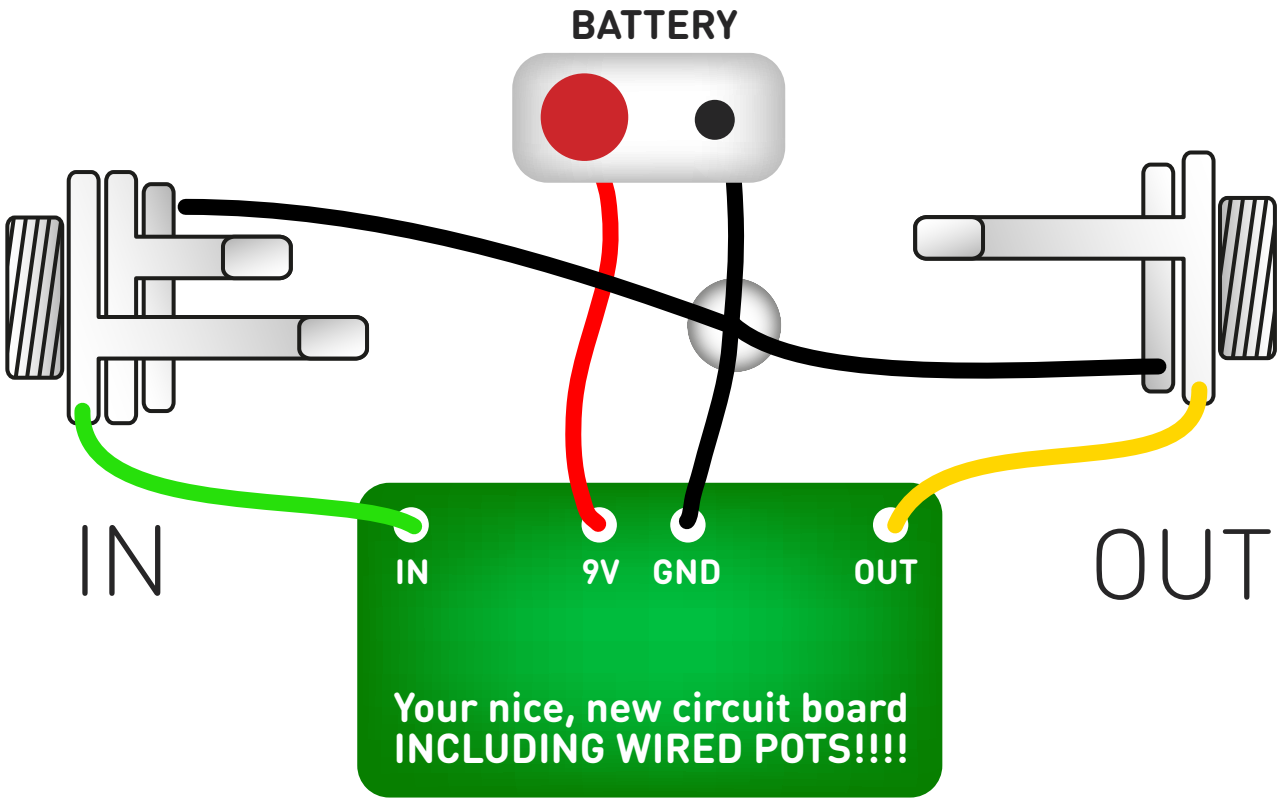
ANALOG GURU'S MODS

To make the crunchier version with AnalogGuru's suggested mods, solder a jumper wire across J2 and include C6. Ignore J1.

TONE BYPASS

If you want to leave out the Tone Bypass switch, place a jumper wire as shown in blue above.-

Test the board!



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

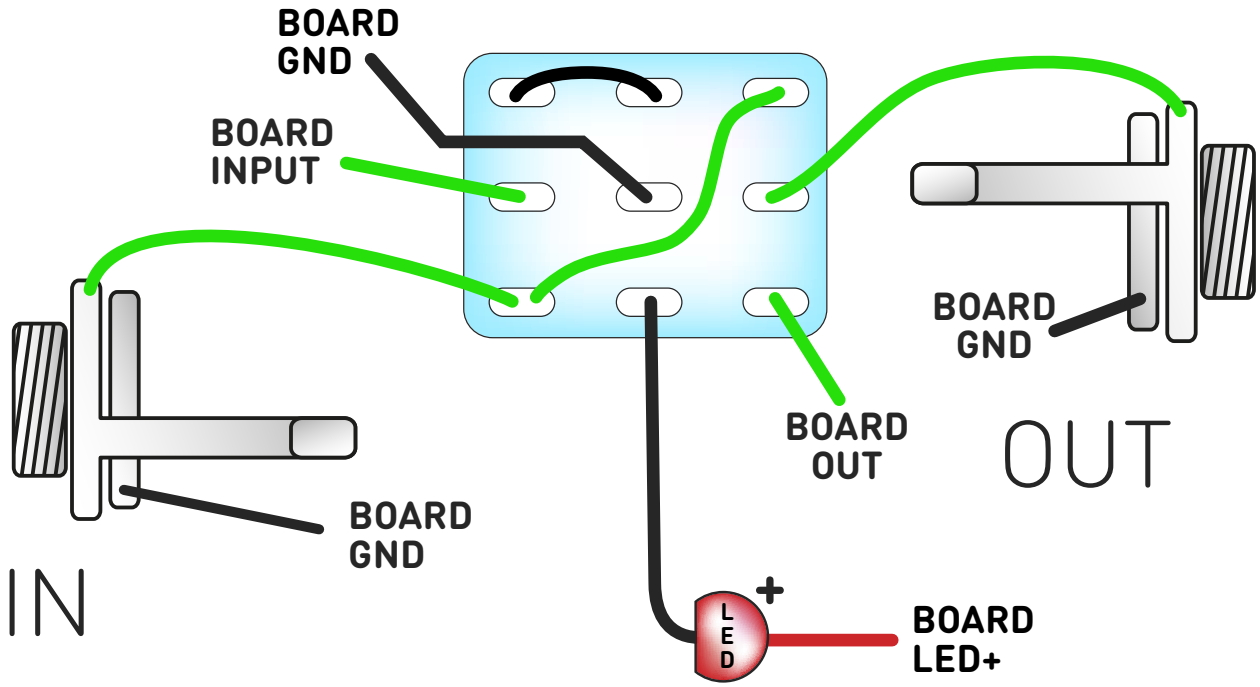
Once you've finished the circuit it makes sense to test is before starting on the switch and LED wiring. It'll cut down troubleshooting time in the long run. If the circuit works at this stage, but it doesn't once you wire up the switch - guess what? You've probably made a mistake with the switch.

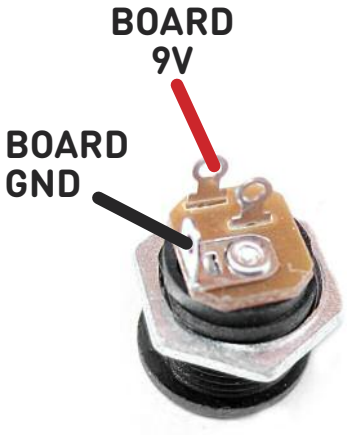
Solder some nice, long lengths of wire to the board connections for 9V, GND, IN and OUT. Connect IN and OUT to the jacks as shown. Connect all the GNDs together (twist them up and add a small amount of solder to tack it). Connect the battery + lead to the 9V wire, same method. Plug in. Go!

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)



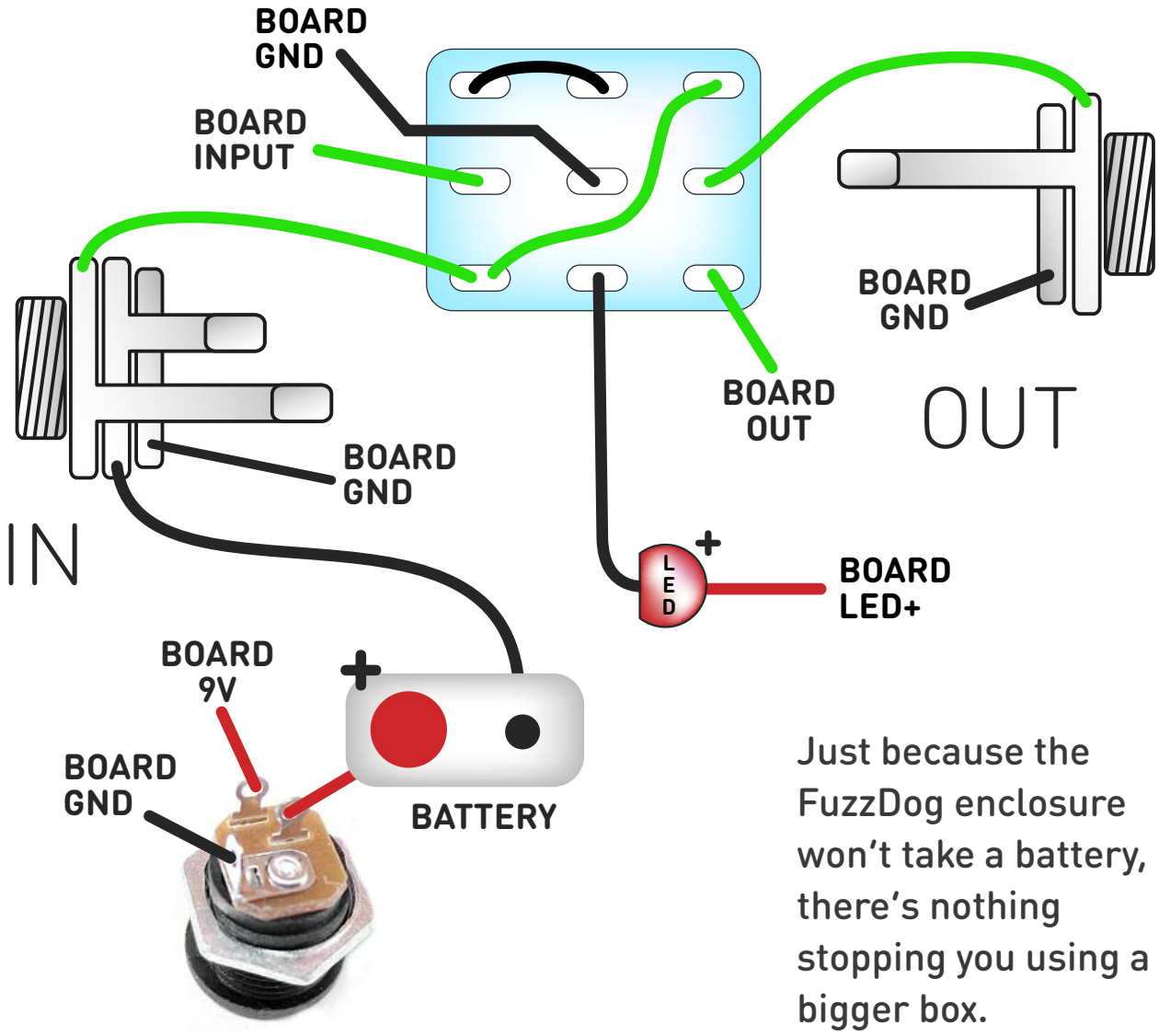


This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

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)



Just because the FuzzDog enclosure won't take a battery, there's nothing stopping you using a bigger box.

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.

PedalParts.co.uk

Drilling template

IC78 MUFF

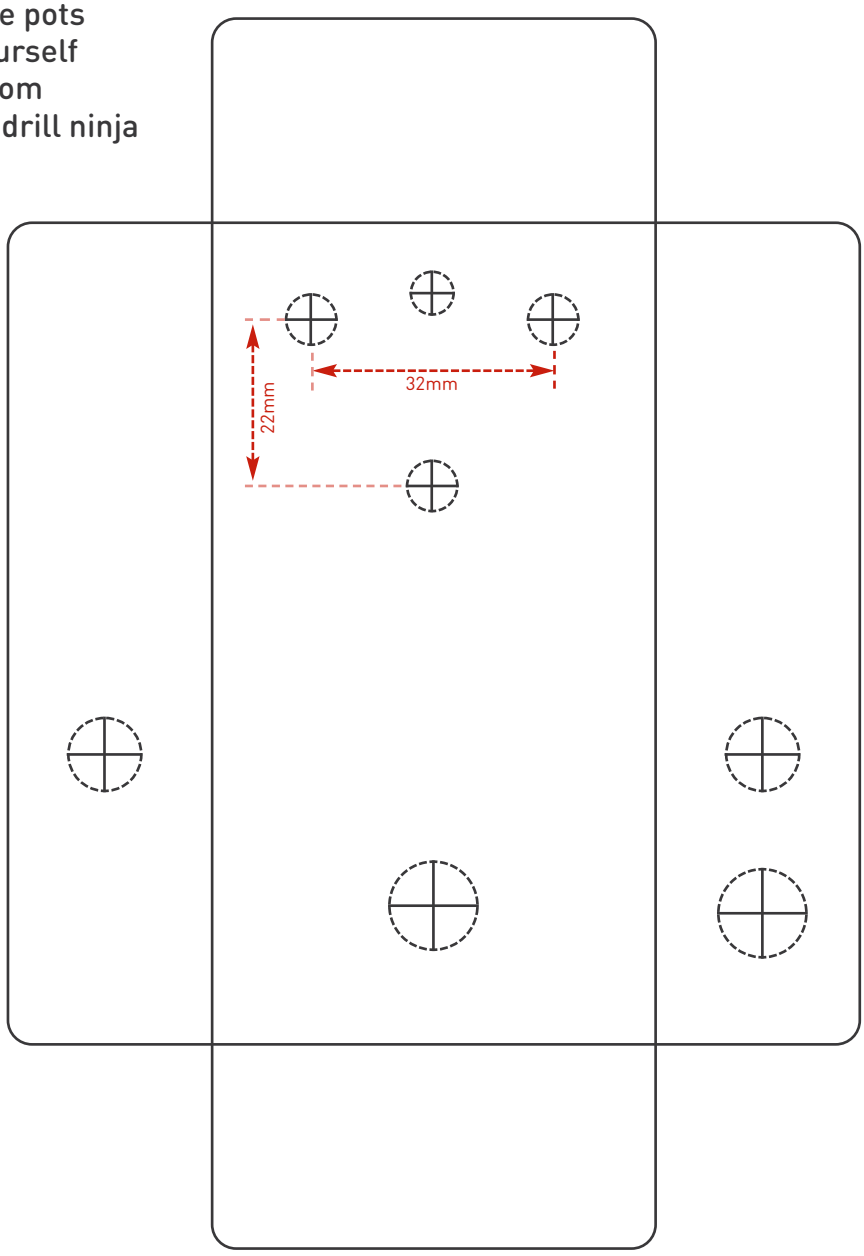
Recommended drill sizes:

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

Hammond 1590B

60 x 111 x 31mm

It's a good idea to drill the holes for the pots 8mm 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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