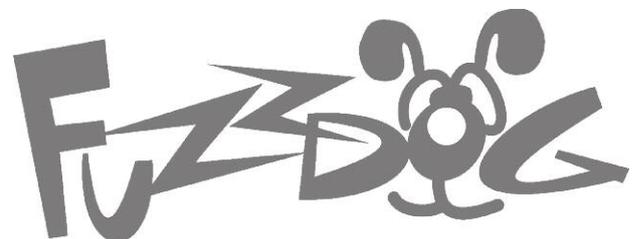
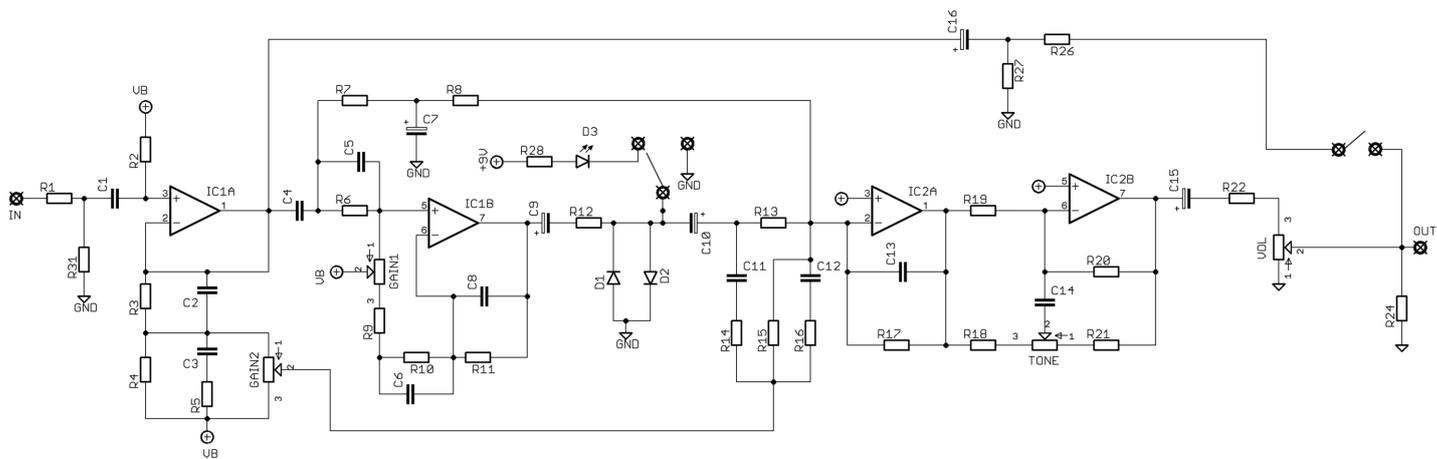


# Klone

Ultimate box of  
transparent overdrive



# Schematic



This document applies to version 3 of the PCB (Blue). If you have version 2 (Red) please refer to the relevant PDF.

BOM is for Silver version. Gold version values shown in blue. 1N60 was always a best-guess sub, but there's not a huge audible difference in the clipping..

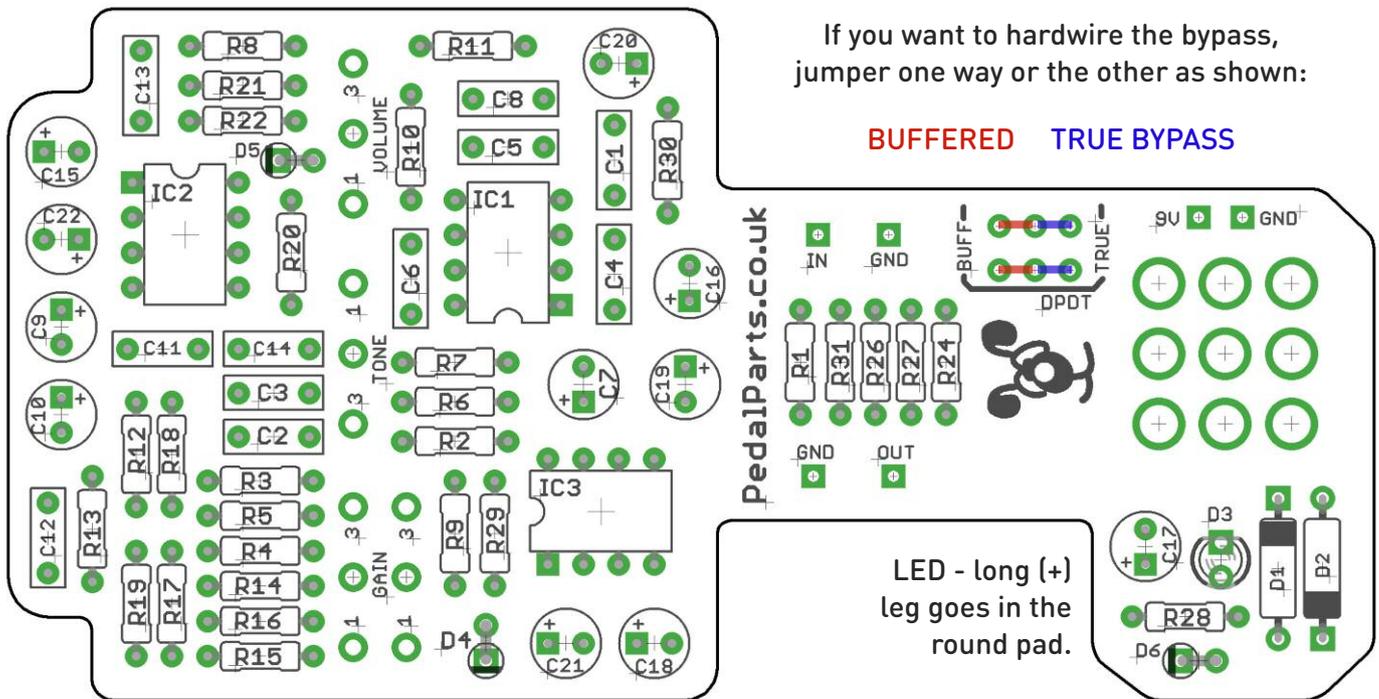
\*If using a 7660 it is best to get one that has an S suffix. This will ensure it operates at a frequency high enough to be inaudible in the circuit.

\*\*330n will be fine.

‡In stock configuration the circuit seems to cut some bass signal. Increase C6 for more bottom end. 150n works well.

## BOM

R1	10K	R22	560R	C1	100n
R2	2M	R24	100K	C2	68n
R3	5K1	R26	560R	C3	390n**
R4	1K5	R27	100K	C4	100n
R5	1K	R28	3K9	C5	68n
R6	10K	R29	27K	C6	82n‡
R7	1K5	R30	27K	C7	1u tant
R8	15K	R31	2M	C8	390p
R9	47R (2K)	D1-2	D9E (1N60)	C9	1u elec
R10	15K	D3	LED	C10	1u elec
R11	422K (420K IS FINE)	D4-5	1N4001	C11	2n2
R12	1K	D6	12V zener rated min 1W	C12	27n
R13	47K	IC1-2	TL072	C13	560p (820p)
R14	22K	IC3	7660S*	C14	3n9
R15	10K (27K)	VOL	10KA (10KB)	C15	4u7 elec
R16	4K7 (12K)	TONE	10KB	C16	4u7 elec
R17	392K (390K IS FINE)	GAIN	100KB	C17	47u elec
R18	4K7 (1K8)		DUAL GANG	C18	1u elec
R19	100K			C19	1u elec
R20	100K			C20	47u elec
R21	1K8 (4K7)			C21	1u elec
				C22	1u elec



The Buffered/True-Bypass selection is designed for a 2.54mm-pitch miniature slide switch. This can be soldered on the top or bottom of the board, depending on the depth of the switch. Those supplied with the kit are small enough for either.

If you prefer to hardwire one way or the other, see the note above.

You can use an external toggle switch if you prefer. Just solder the tags of the switch to the corresponding pads in the same configuration.

Anode (+) leg of electrolytic caps go into the square pad.  
Cathode (-) leg of diodes go into the square pad.

**IMPORTANT** - If sourcing your own parts, ensure they will comfortably fit below the pots when mounted in the enclosure. **C6, C9, C10, C12, C13, C15** and **C22** must have a height of less than 8mm to fit into a standard 1590B box.

**DIODES** - cathode (striped) leg goes into the square pad. On the D9E the blue stripe is cathode, red is anode.

Snap the little metal tag off the pots to mount them flush in the box.

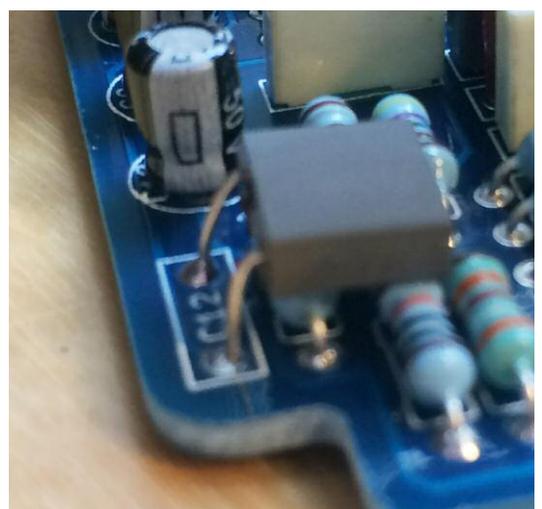
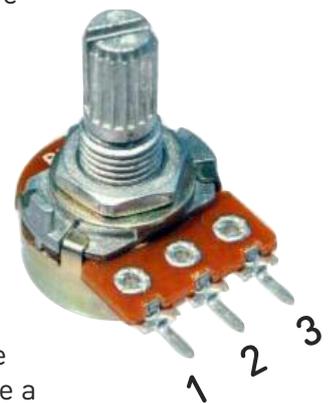
You should use some kind of heat sink on the legs of the diodes when soldering. They aren't keen on heat. Any more than 3-4 seconds of iron and they're toast.

Be VERY careful when bending the legs of the germanium diodes. The glass case is very fragile and likely to break. Best to hold the leg with some needle-nosed pliers against the case, and bend the leg with your finger so the pliers are taking any strain away from the diode.

**DUAL-GANG POT** - looking at the above PCB layout, solder the bottom pins of the pot to the left-hand pads, the top pins to the right-hand ones.

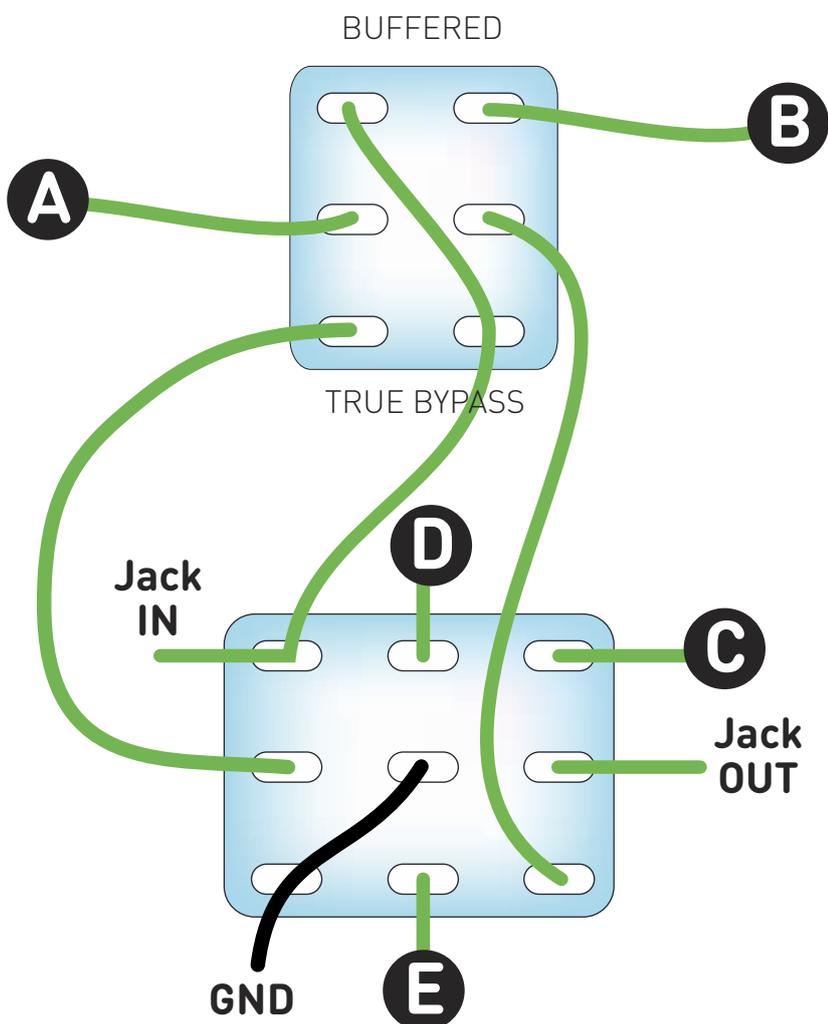
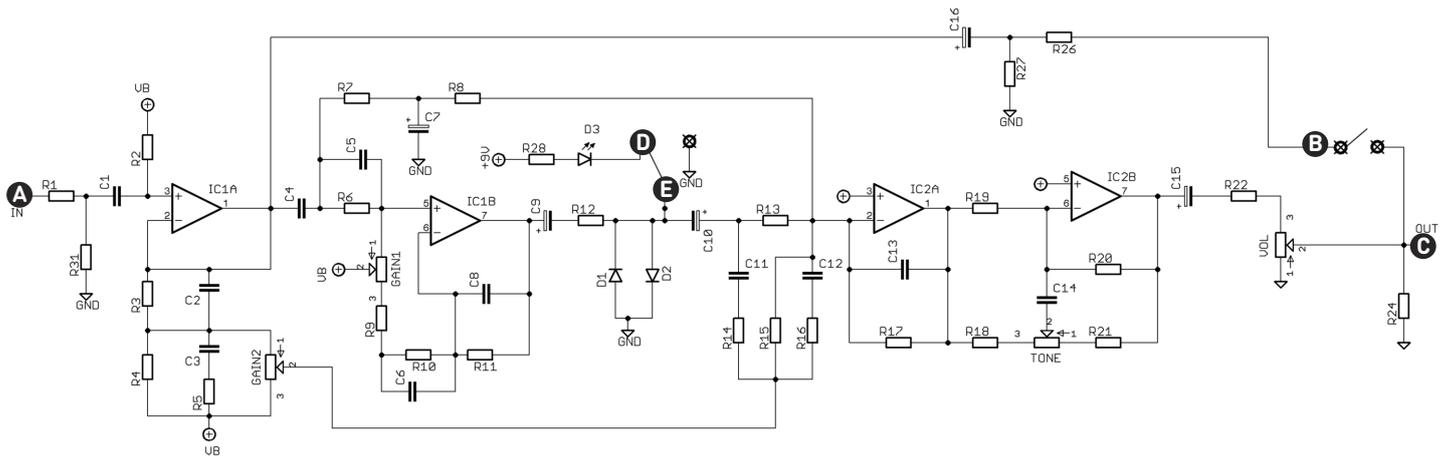
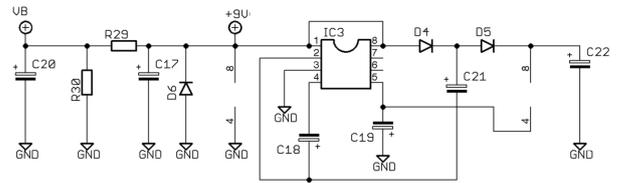
Try to keep your pot wiring fairly short. You want to avoid spaghetti in there, but you also need a bit of wiggle room so you can hold the pots while tightening the nuts before lowering the switch end of the board into place. Strike a balance. Around 3.5-4cm is good.

**C12** may stop you getting the dual-gang pot to sit right. It's best to lay this flat against the resistors in front of it as shown here >>>



# What's going on with those switches?

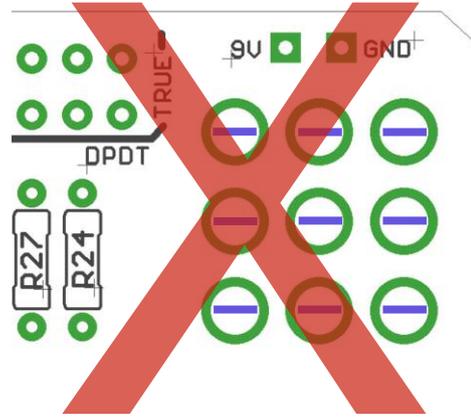
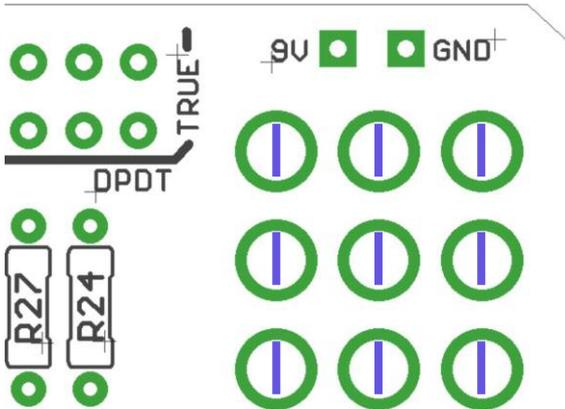
Here's what's connected to what, should you wish to know...



# Footswitch

Tags should orientate as shown on the left.

Get plenty of solder in there!



## Test the board!

Well, there isn't really any way of doing that without wiring everything up, which is essentially the finished circuit.

Get everything in place, maybe with the exception of the LED as that needs careful positioning. Plug it in and try it.

You'll likely hear very little or no difference between the buffered and true-bypass settings.

This isn't a massive-gain circuit - don't expect metal!

The kit enclosure is supplied with a 3mm hole for the LED. This requires no bezel, as the LED sits tightly in the hole and is held in position by the PCB.

To fit the LED, once everything else is finished and working:

- pull the legs through the PCB. Shorter leg (negative) in the square pad.
- Fit the circuit into the box, attaching the pots and footswitch in position.
- Push the LED down into its hole
- Solder!

# Wire it up

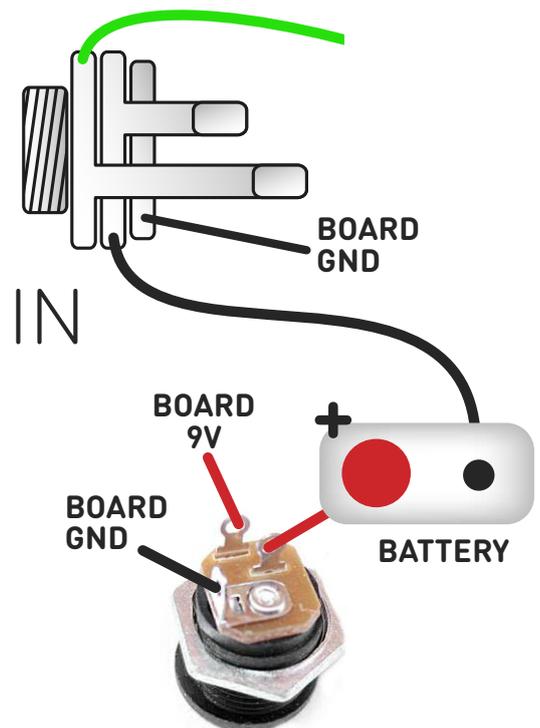
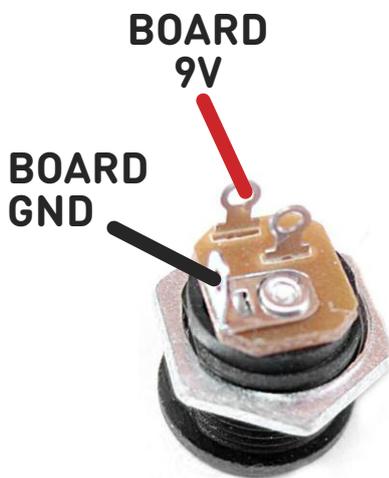
Hang on - there's very little to do!

Wire the jacks as shown -  
GND connection to the inner tag,  
signal (IN or OUT) to the outer tag.

SIGNAL  
(i.e. IN or OUT)



DC Socket connections:



If you're using a bigger enclosure and want to add a battery, use a stereo jack for the input and wire it like this:

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.

# PedalParts.co.uk