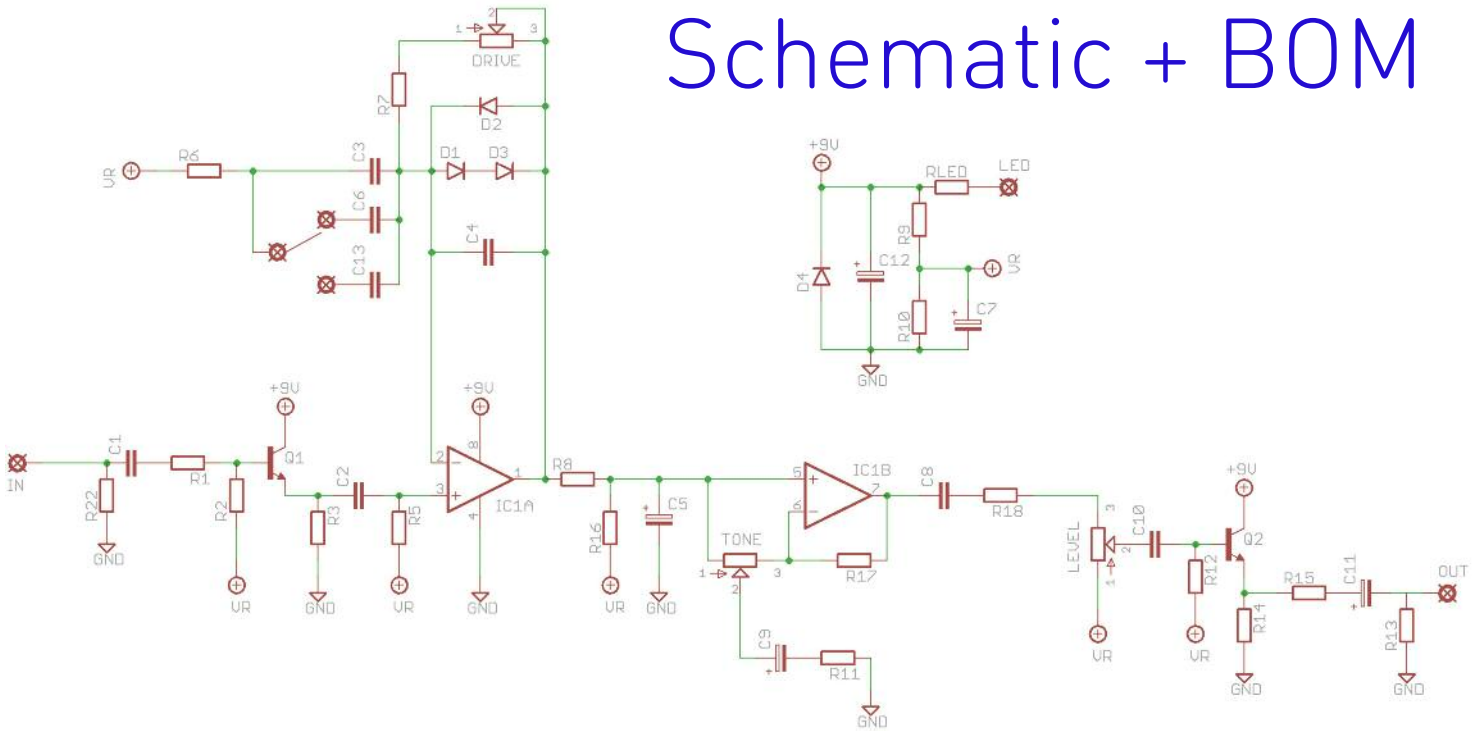


Tube Screamer v4.0

Tube Screamer
TS808 / TS9



Schematic + BOM



R1	1K	C1	22n	IC	4558
R2	510K	C2	1u	Q1,2	2N3904
R3	10K	C3	47n	D1,2	1N4148
R5	10K	C4	47p	D3	Jumper*
R6	4K7	C5	.22u tant	D4	1N4001
R7	51K	C6	See bass mod	TONE	20KW***
R8	1K	C7	47u (4.7u)	DRIVE	500KA
R9	10K	C8	1u	LEVEL	100KA
R10	10K	C9	.22u tant	S1	SPDT**
R11	220R	C10	100n		
R12	510K	C11	10u		
R13	10K (100K)	C12	100u		
R14	10K	C13	See bass mod		
R15	100R (470R)				
R16	10K				
R17	1K				
R18	1K				
R22	1M				
RLED	1K - 4K7				

Parts listed are for the TS808 version.

For TS9 substitute parts in blue.

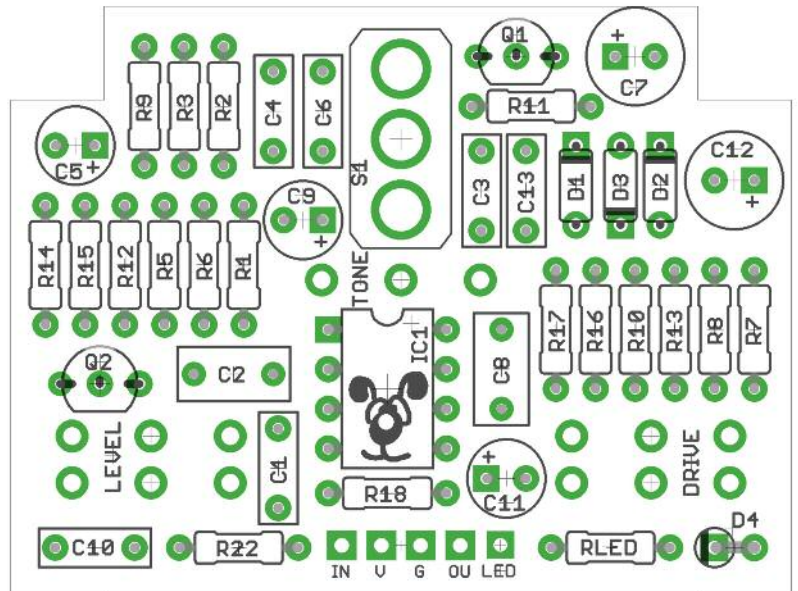
*Optional extra diode spot for asymmetrical clipping. See overleaf.

**Optional switch for More Bass mods - see overleaf.

***The Tone pot on the original is a special W-taper. 20KB will work fine.

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 transistors and 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). Use a socket for IC1, or be super careful.



PCB Layout ©2016 Pedal Parts Ltd.

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

Positive (anode) legs of the electrolytic caps go to the square pads. C7 and C12 can be laid flat as shown in the cover image to give you extra clearance in the enclosure.

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

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. The best way to do that is to solder a single pin of each pot in place then melt and adjust if necessary before soldering in the other two pins. If your pots don't have protective plastic jackets ensure you leave a decent gap between the pot body and the PCB otherwise you risk shorting out the circuit.

If you aren't using the optional More Bass switch there's no need to do anything with the pads for S1. Ignore them.

There are two sets of pads for LEVEL and DRIVE. This gives you the option to place these controls further down the enclosure if you're using the More Bass switch. If not, use the top ones to get the best control spacing.

More Bass mods

C6 and C13 are extra caps for the More Bass mod. Use one cap spot along with a SPDT ON-ON switch for a single extra bass setting. If you use C6, the extra bass will be engaged when the switch is up. Use C13 for extra bass in the down position.

For two extra settings use both cap spots and a SPDT ON-OFF-ON switch.

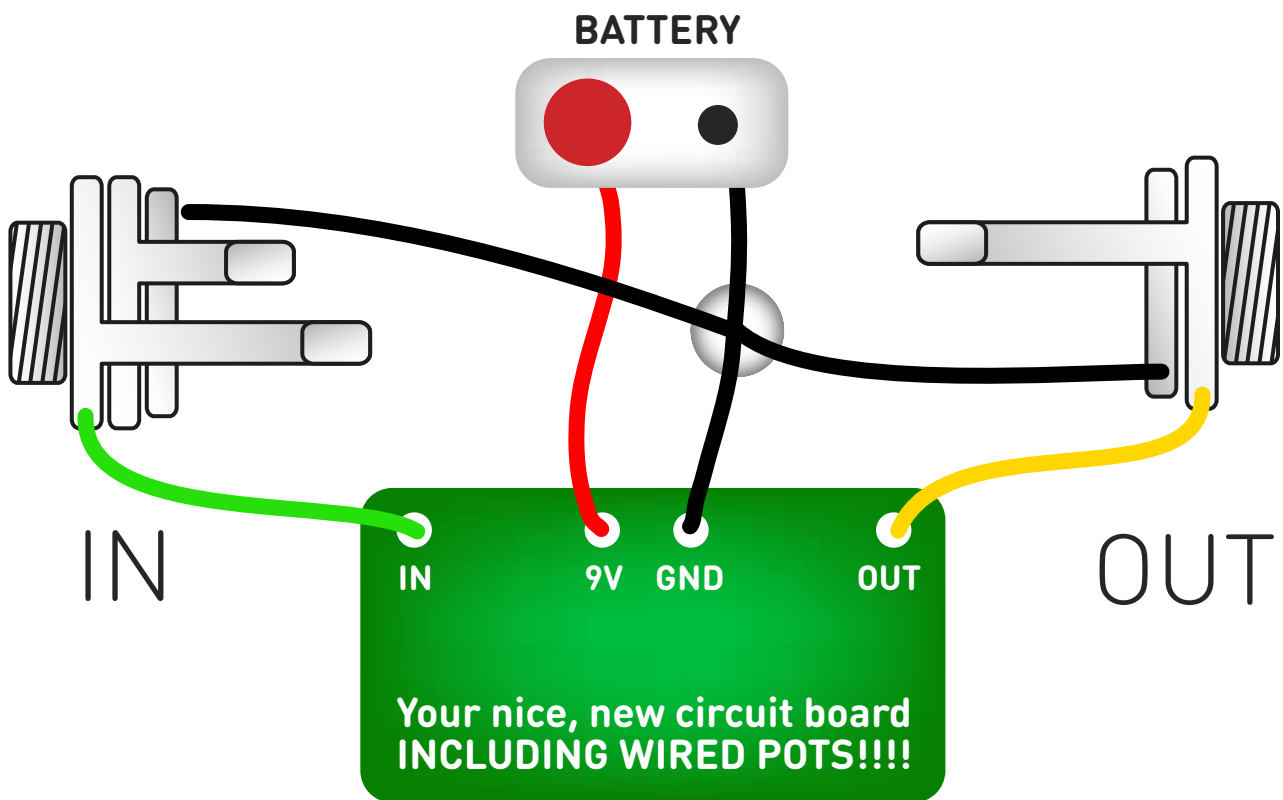
Recommended values are 47n for much more bass, 22n for a little more bass, or use both if you're going for two settings.

Clipping

D3 is included so you can easily add asymmetrical clipping which changes the nature of the tone. If you want this, just put a 1N4148 in D3 instead of a jumper.



Test the board!



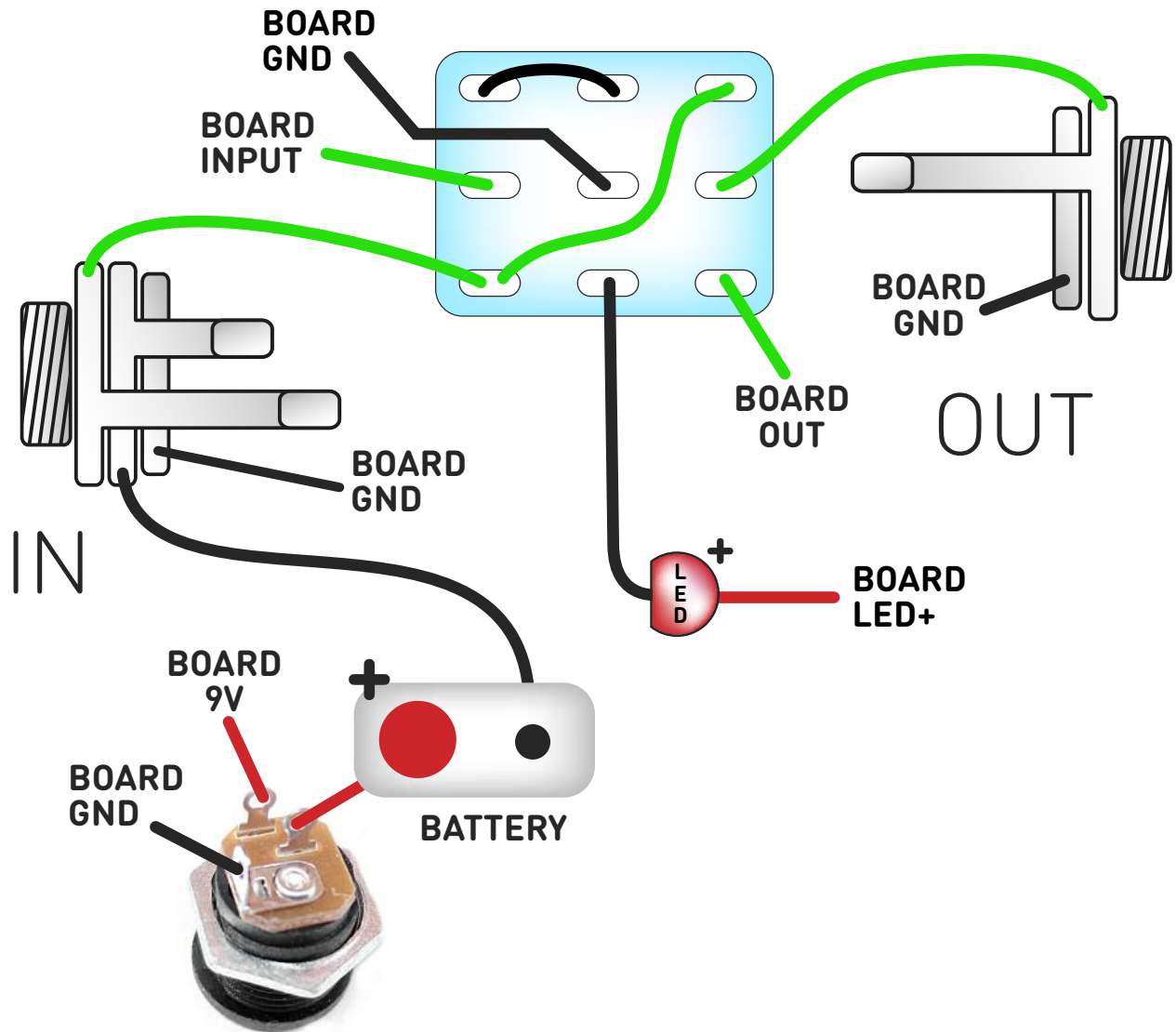
UNDER NO CIRCUMSTANCES will troubleshooting help be offered if you have skipped this stage. No exceptions.

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



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.

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Drilling template

No Switch

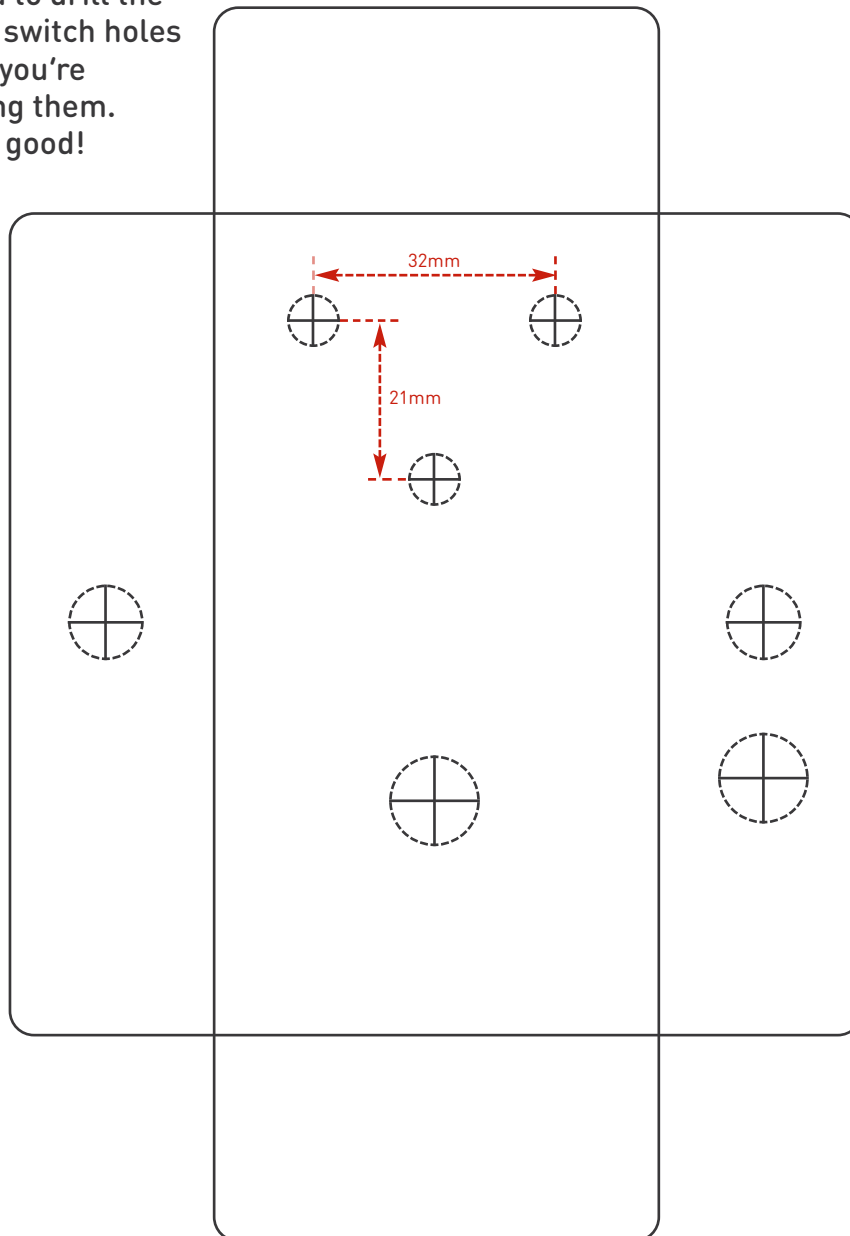
Recommended drill sizes:

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

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!



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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Drilling template with Switch

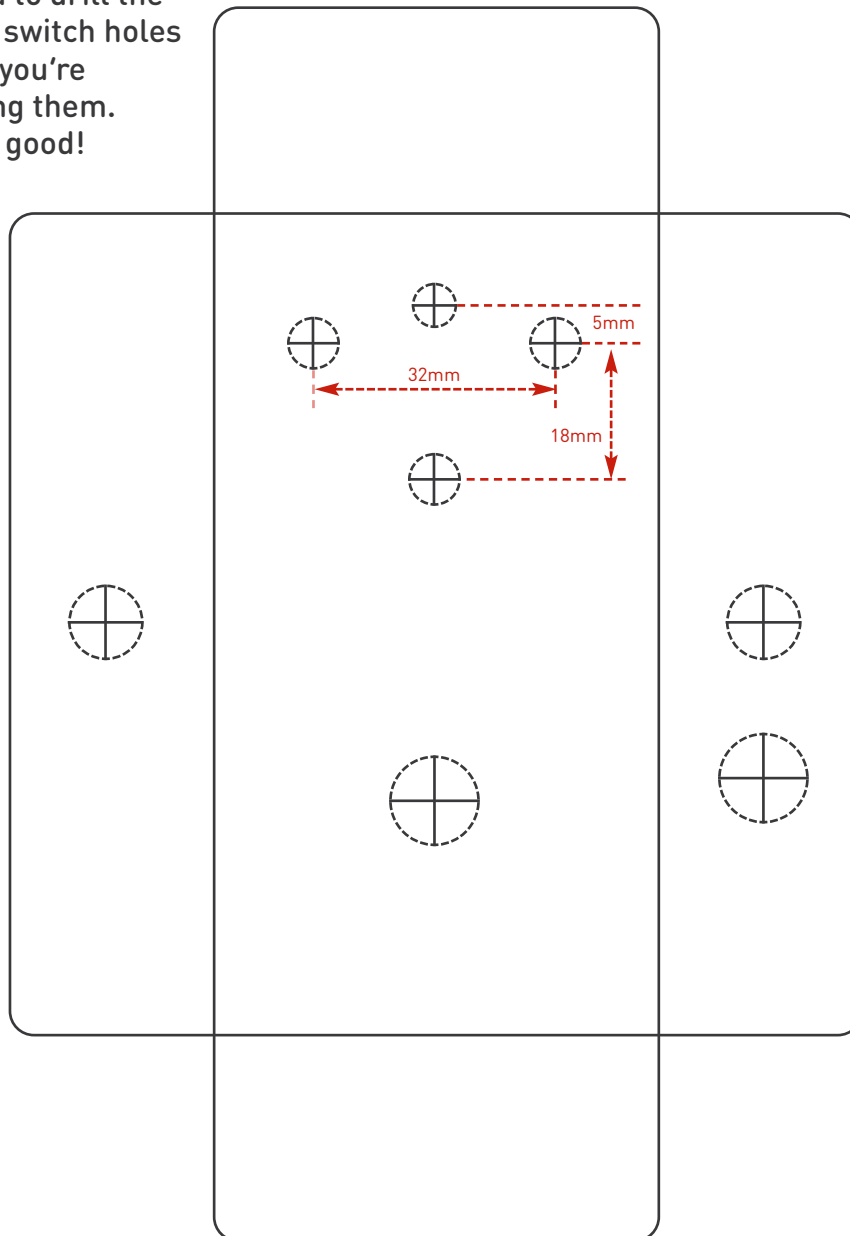
Hammond 1590B

60 x 111 x 31mm

Recommended drill sizes:

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

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



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