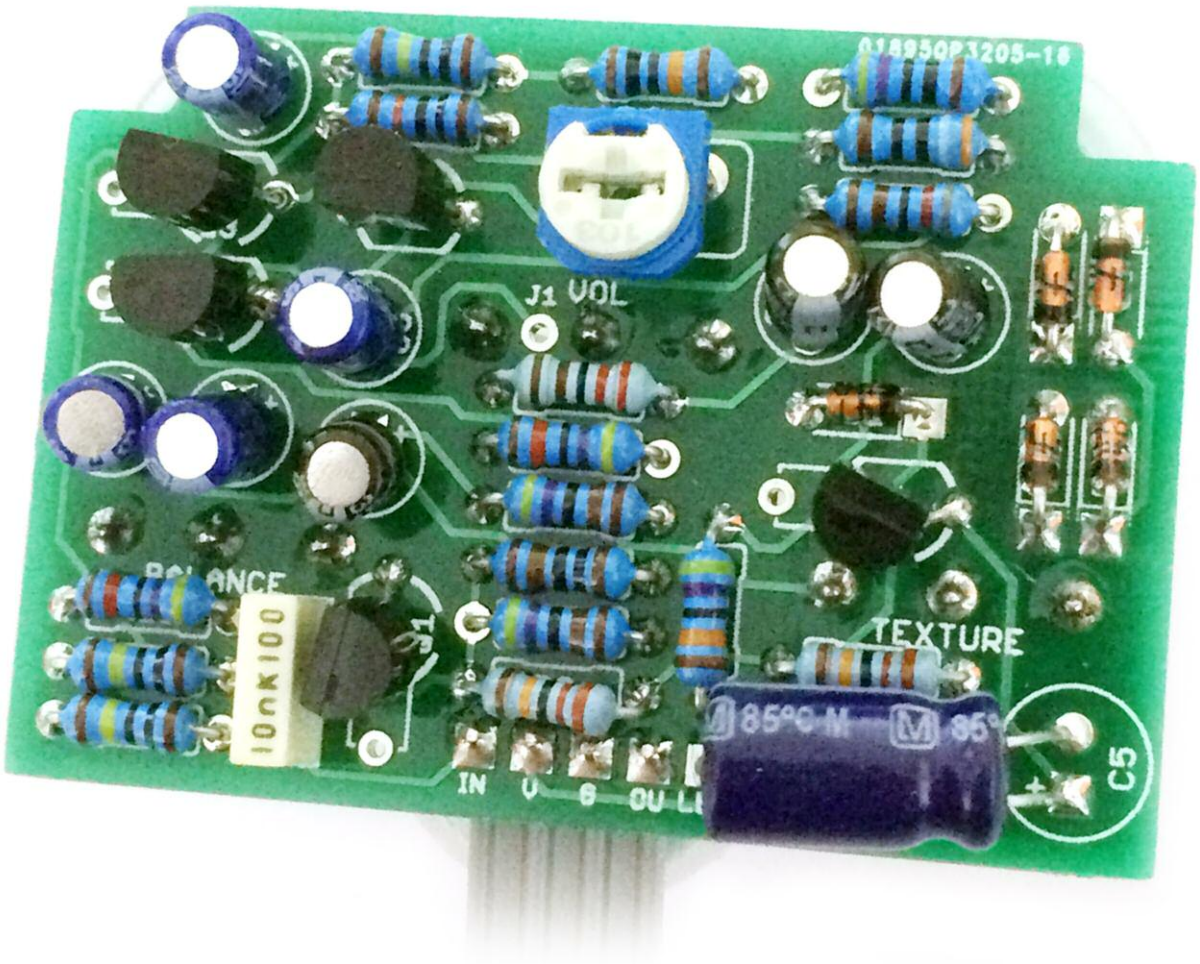
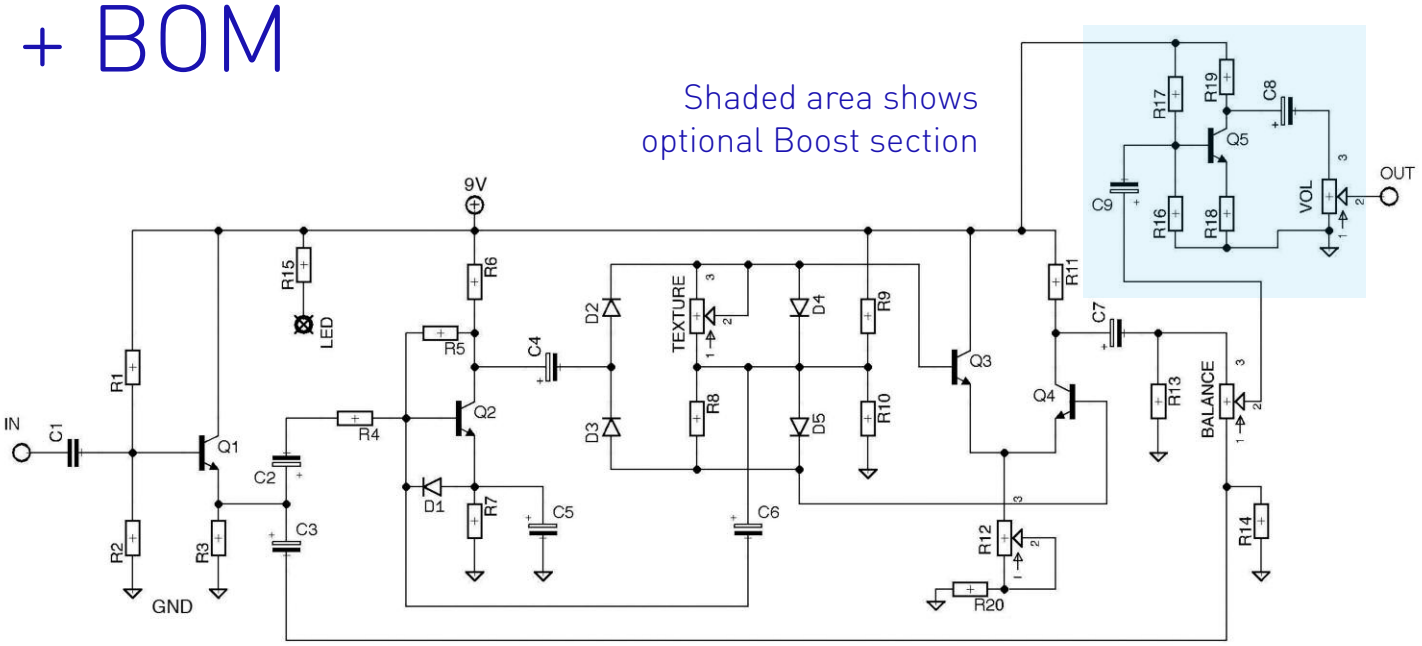



# Scrambler v3

## Ampeg Scrambler with optional Post-Boost (v2.0)

# Schematic + BOM

Shaded area shows optional Boost section




| | |
|---|---|
| R1 | 1M |
| R2 | 1M |
| R3 | 4K7 |
| R4 | 2K2 |
| R5 | 470K |
| R6 | 4K7 |
| R7 | 220R |
| R8 | 8K2 |
| R9 | 220K |
| R10 | 220K |
| R11 | 1K |
| R12 | * |
| R13 | 47K |
| R14 | 47K |
| R15 | 2K2 (CLR) |
| R16 | 100K |
| R17 | 1M |
| R18 | 390R |
| R19 | 10K |
| R20 | 4K7 |

| | |
|---|---|
| C1 | 10n |
| C2 | 4u7 elec |
| C3 | 1u elec |
| C4 | 4u7 elec |
| C5 | 100u elec |
| C6 | 4u7 elec |
| C7 | 1u elec |
| C8 | 1u elec |
| C9 | 1u elec |

| | |
|---|---|
| D1-5 | 1N4148 |

| | |
|---|---|
| Q1,3,4 | MPSA13** |
| Q2 | 2N3904*** |
| Q5 | 2N5088 |

| | |
|---|---|
| BAL | 50KB |
| TEXT | 10KB |
| VOL | 100KA |

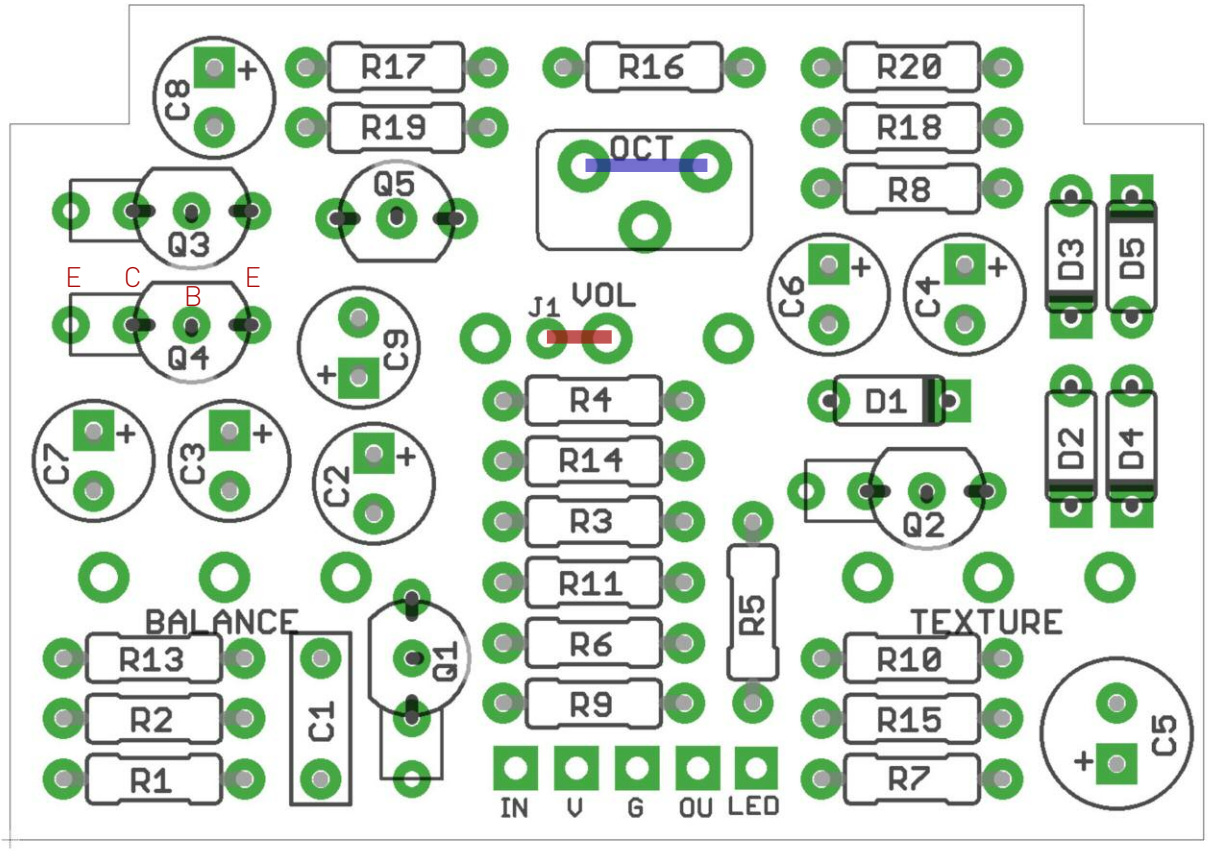
R16-19, C8-9, Q5 and VOL are the optional post-boost section. More info later.

*Jumper is required in place of the R12 trimmer. See next page.

**High-gain NPN darlington transistors are required. Original used 2N5306.

***Original used BC169B.

**Please see later notes regarding transistor pin-outs.**






**Place a jumper wire across the OCT trimmer pads as shown in blue above.**

**If you're building the circuit without the optional post-boost, leave out R16-19, C8-9, Q5 and VOL. Place a jumper as shown in red above. This connects pin 3 of BALANCE straight to the OUT pad.**

Extra pads have been added for Q1-4 to allow non-standard pinout transistors to be used. The three standard pins are configured for EBC pinouts, so transistors such as 2N3904 and MPSA13 should be placed to follow the part on the silkscreen. These are also used in the build in the front cover image. The extra Emitter pad has been added so you can use non-standard BCE pinouts, as per the original circuit (2N5306, BC169B).

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.

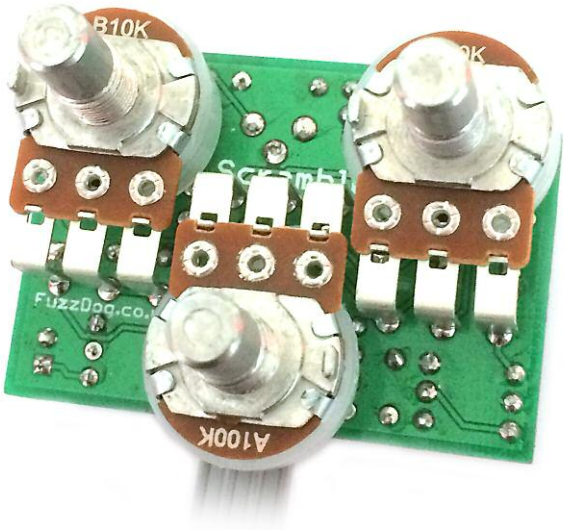
Be very careful when soldering the LED, transistors and diodes. They're very sensitive to heat. You should use some kind of heat sink (crocodile clip or reverse action tweezers) on each leg as you solder them. Keep exposure to heat to a minimum (under 2 seconds).

The cathode (striped end) of the diodes go into the square pad. The anode (long leg) of electrolytic capacitors go into the square pad. C5 can be bent over the adjacent resistors to save on height, giving more clearance when mounting in the enclosure.

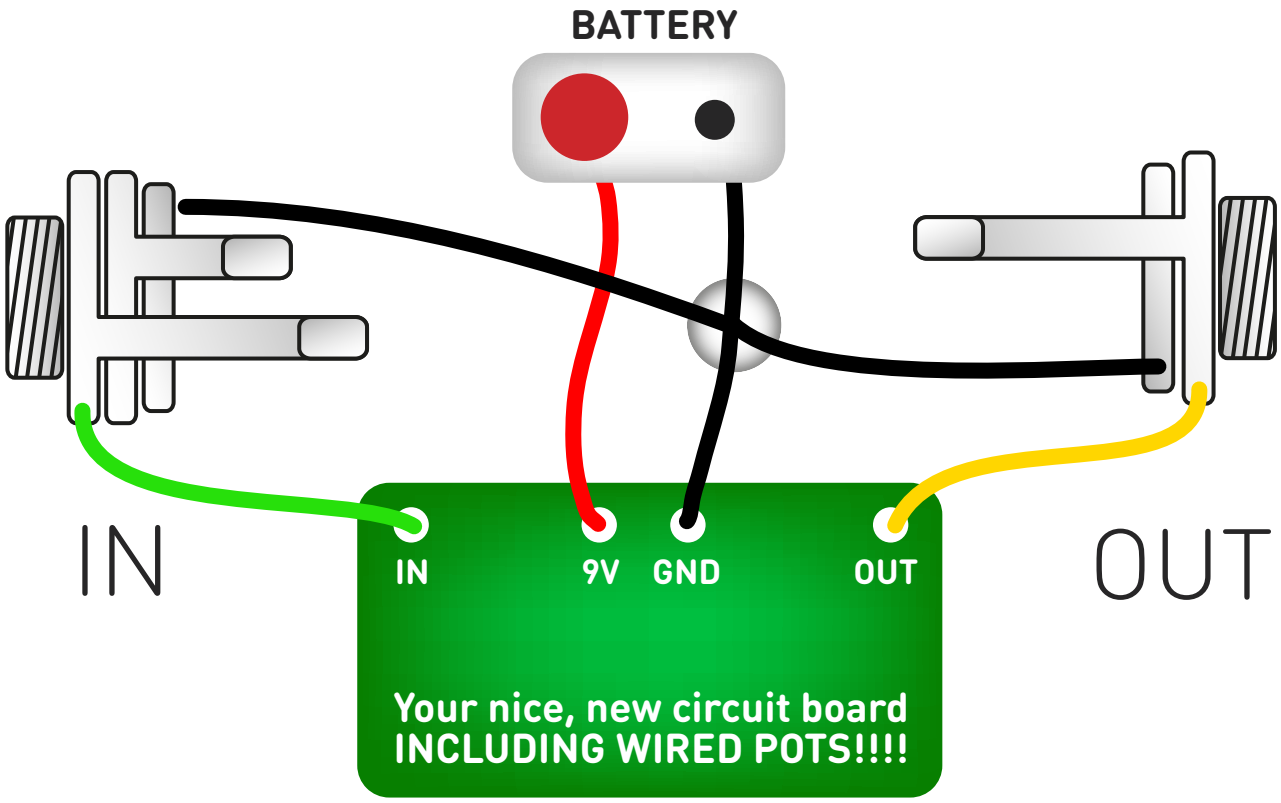
Snap the small metal tag off the pots so they can be mounted flush in the enclosure.

If you're using a footswitch daugherboard don't bother soldering R15. You'll use that on the daughterboard instead.

Pots mount on the back side of the board. You can use vertical-mount pots or just wire up 'normal' ones. It's a good idea to place the pots in their holes in the enclosure when you're soldering them in place on the PCB. That way you know they're going to line up ok. Best way to do it is to solder a single pin of each pot in place, then do a visual check to see that they're sitting at the same height. If not, melt the joints and readjust any that are off.



# Test the board!




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

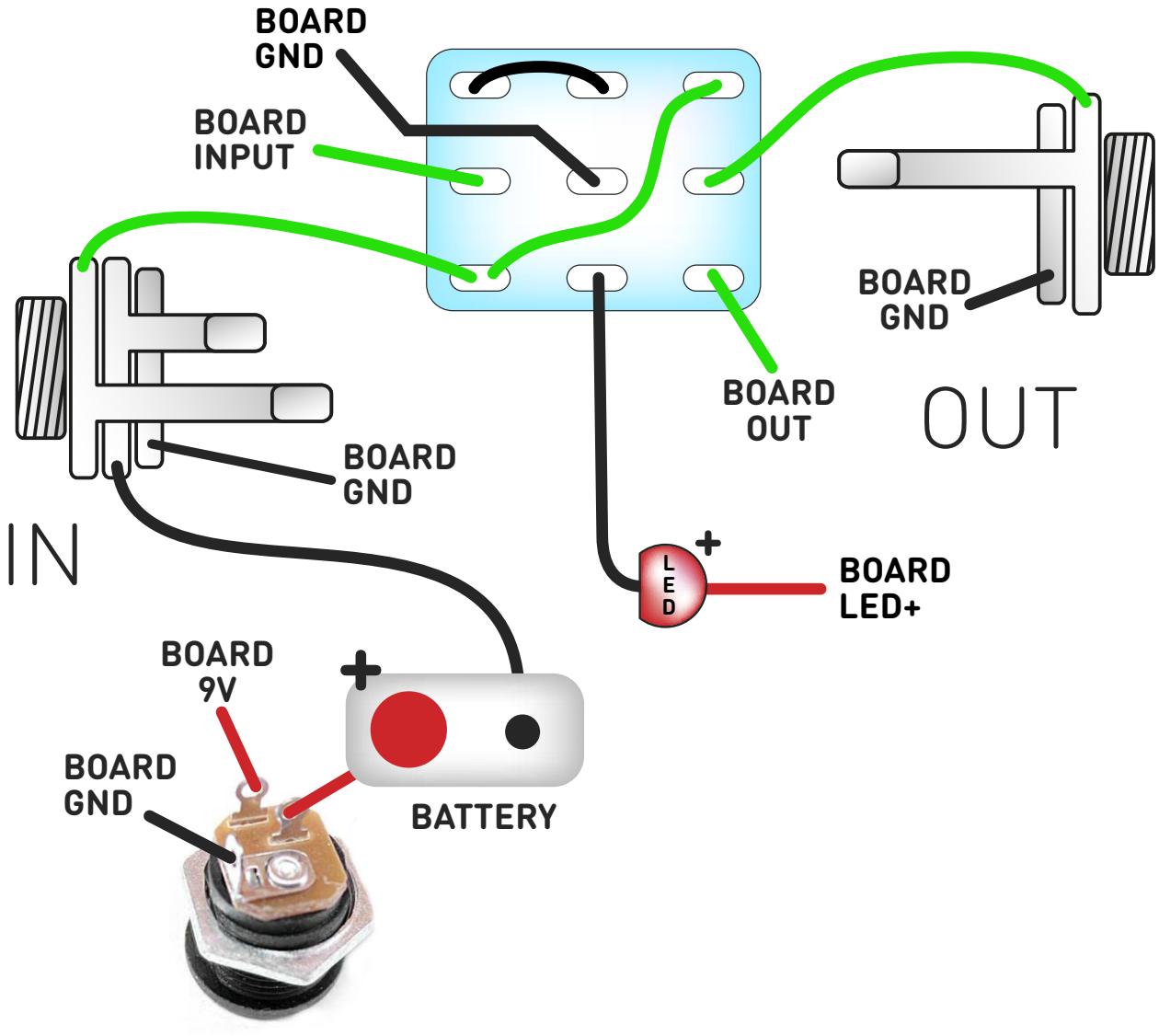
Once you've finished the circuit it makes sense to test is before starting on the switch and LED wiring. It'll cut down troubleshooting time in the long run. If the circuit works at this stage, but it doesn't once you wire up the switch - guess what? You've probably made a mistake with the switch.

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 - with battery

(if using a daughterboard please refer to the relevant document)

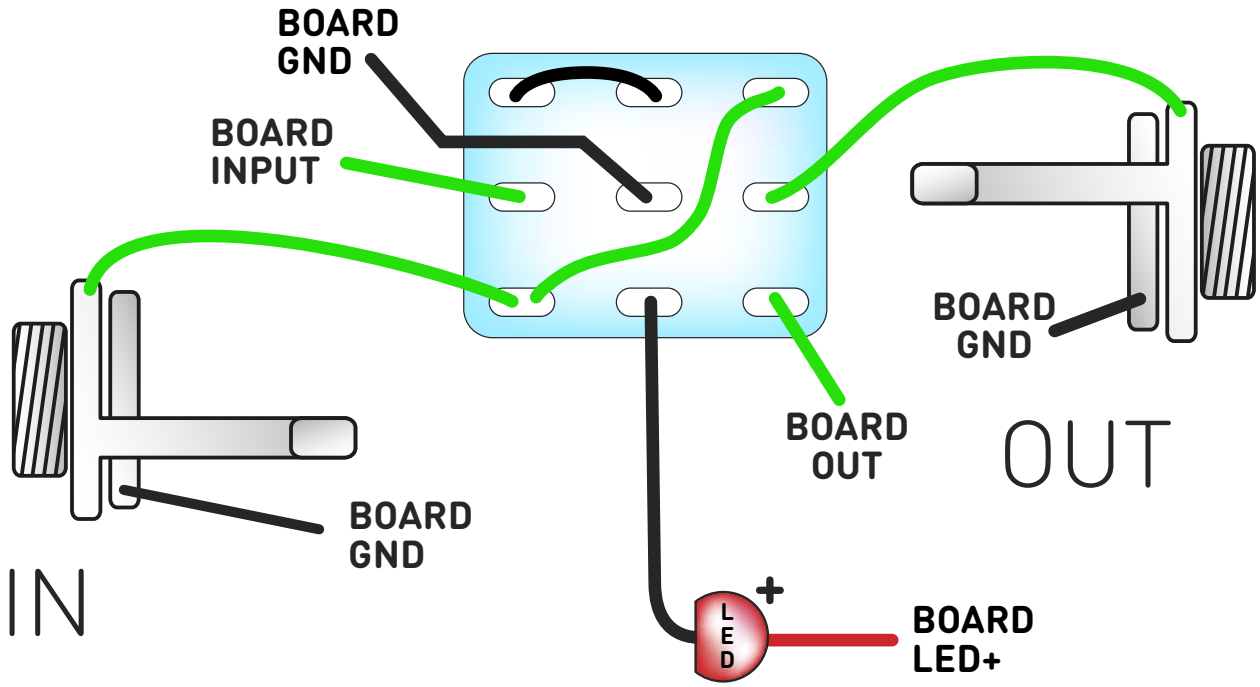


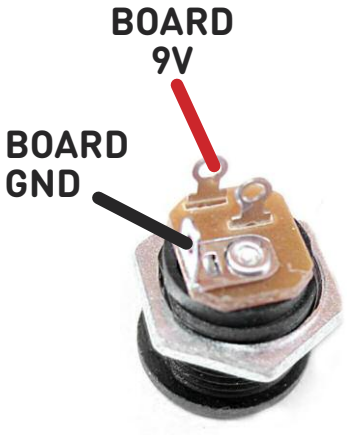

This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

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 - 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.

# Drilling template

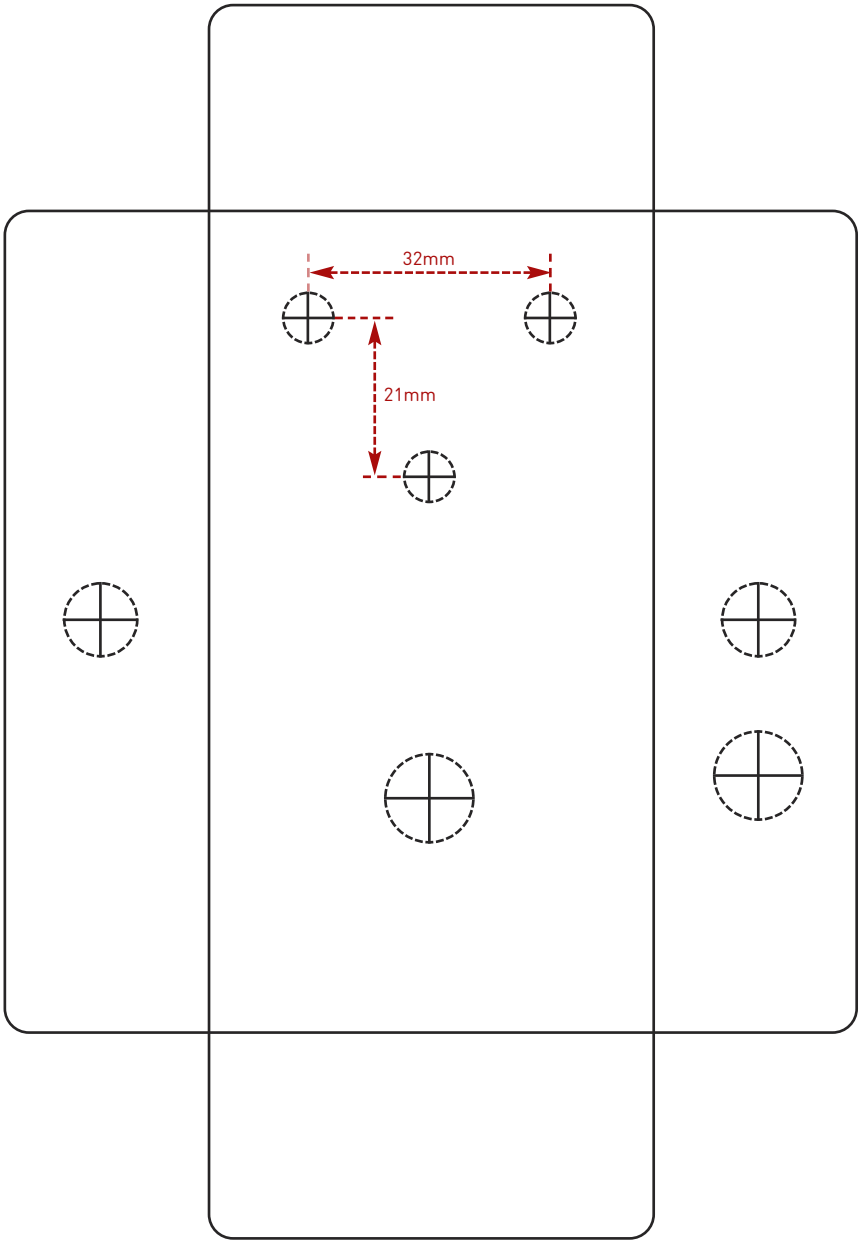
Hammond 1590B

60 x 111 x 31mm

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

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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