

PROJECT NAME

# ANDROMEDA DELUXE



BASED ON

Nordland ODR-C

BUILD DIFFICULTY

■■■■□ Intermediate

EFFECT TYPE

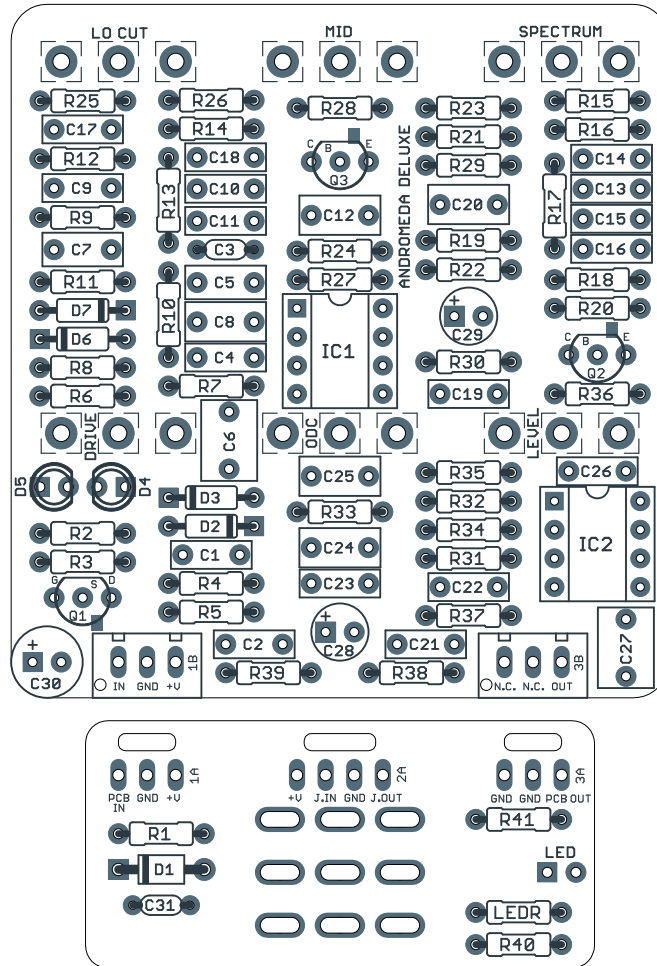
Overdrive

DOCUMENT VERSION

1.0.1 (2021-12-17)

## PROJECT SUMMARY

An updated version of the definitive Nashville overdrive, handmade by the original circuit designer, adding three new controls and a number of other small refinements.



Actual size is 2.3" x 2.42" (main board) and 1.78" x 0.86" (bypass board).

### IMPORTANT NOTE

This documentation is for the **Deluxe** version of the project. Please make sure your PCB matches the above image (a larger board with six knobs) before proceeding since the part numbering is different. The [original Andromeda](#) is available as a separate project.

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## INTRODUCTION

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The Andromeda Deluxe is an adaptation of the Nordland ODR-C, a boutique overdrive [first traced by Aion FX in 2021](#), based on the Nobels ODR-1.

The ODR-1 was originally released in 1992, designed by Kai Tachibana as an original circuit for Nobels. Intended as a budget alternative to the Tube Screamer, the build quality was less than stellar, but to those who played it, it was undeniable that the circuit itself was something special. It steadily increased in popularity over the following decades until the present when it's often seen in lists of the top 10 overdrives of all time.

In 2019, Kai decided to revisit the ODR-1 and update it with a few new features under his own Nordland brand name. The result is the ODR-C Custom Overdrive, a brilliantly-designed handmade pedal that occupies the opposite end of the spectrum from the ODR-1 in both build quality and price. It features three new controls: a low cut that fixes the bass-forward tone of the original, a midrange control that can boost or cut, and an "overdrive de-compress" (ODC) control that gradually adds higher-threshold clipping diodes in the soft-clipping stage. Each of the three knobs can be set to a position that emulates the original ODR-1, so the core circuit is the same change despite all the added features.

The Andromeda Deluxe is based on the audio path of the ODR-C, only cutting out the complex polarity protection and LED dimmer circuit. Side by side, they should sound the same. But we'll reiterate that the original ODR-C is fantastic piece of engineering and it's worth it if you can find one. Check out the tracing journal if you want to see what we're talking about.

## USAGE

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The Andromeda Deluxe has six controls:

- **Gain** controls the amount of gain from the op-amp that is fed through the feedback clipping diodes.
- **ODC** (Overdrive De-Compress) blends in higher-threshold LEDs in the feedback clipping section.
- **Spectrum** pans between a 700 Hz lowpass filter and a 5 KHz high-pass filter, which is mixed with a fixed 2.1 KHz frequency boost (upper mids).
- **Low Cut** blends between two different bass filters to reduce the low-end that is characteristic of the original ODR-1.
- **Mid Boost** boosts or cuts frequencies at around 1kHz, with a flat response in the 12:00 position.
- **Level** sets the overall output of the effect.

## PARTS LIST

This parts list is also available in a spreadsheet format which can be imported directly into Mouser for easy parts ordering. Mouser doesn't carry all the parts—notably potentiometers—so the second tab lists all the non-Mouser parts as well as sources for each.

[View parts list spreadsheet](#) →

PART	VALUE	TYPE	NOTES
R1	33k	Metal film resistor, 1/4W	
R2	1M	Metal film resistor, 1/4W	
R3	3k3	Metal film resistor, 1/4W	
R4	2k7	Metal film resistor, 1/4W	
R5	10k	Metal film resistor, 1/4W	
R6	1k2	Metal film resistor, 1/4W	
R7	820R	Metal film resistor, 1/4W	
R8	1k5	Metal film resistor, 1/4W	
R9	2k2	Metal film resistor, 1/4W	
R10	12k	Metal film resistor, 1/4W	
R11	10R	Metal film resistor, 1/4W	
R12	39k	Metal film resistor, 1/4W	
R13	12k	Metal film resistor, 1/4W	
R14	10k	Metal film resistor, 1/4W	
R15	5k1	Metal film resistor, 1/4W	
R16	10R	Metal film resistor, 1/4W	
R17	10R	Metal film resistor, 1/4W	
R18	2k2	Metal film resistor, 1/4W	
R19	150k	Metal film resistor, 1/4W	
R20	3k3	Metal film resistor, 1/4W	
R21	1k2	Metal film resistor, 1/4W	
R22	43k	Metal film resistor, 1/4W	
R23	3k3	Metal film resistor, 1/4W	
R24	100R	Metal film resistor, 1/4W	
R25	100R	Metal film resistor, 1/4W	
R26	1k2	Metal film resistor, 1/4W	
R27	100k	Metal film resistor, 1/4W	
R28	10k	Metal film resistor, 1/4W	
R29	10k	Metal film resistor, 1/4W	
R30	22k	Metal film resistor, 1/4W	
R31	4k7	Metal film resistor, 1/4W	
R32	22k	Metal film resistor, 1/4W	

## PARTS LIST, CONT.

PART	VALUE	TYPE	NOTES
R33	5k1	Metal film resistor, 1/4W	
R34	1k	Metal film resistor, 1/4W	
R35	1k2	Metal film resistor, 1/4W	
R36	150k	Metal film resistor, 1/4W	
R37	150k	Metal film resistor, 1/4W	
R38	10k	Metal film resistor, 1/4W	
R39	13k	Metal film resistor, 1/4W	
R40	150k	Metal film resistor, 1/4W	
R41	470R	Metal film resistor, 1/4W	
LEDR	4k7	Metal film resistor, 1/4W	LED current-limiting resistor. Adjust value to change LED brightness.
C1	68n	Film capacitor, 7.2 x 2.5mm	
C2	22n	Film capacitor, 7.2 x 2.5mm	
C3	150pF	MLCC capacitor, NP0/COG	
C4	82n	Film capacitor, 7.2 x 2.5mm	
C5	220n	MLCC capacitor, X7R	
C6	2.2uF	Film capacitor, 7.2 x 5mm	
C7	220n	Film capacitor, 7.2 x 2.5mm	
C8	1uF	Film capacitor, 7.2 x 3.5mm	
C9	2n7	Film capacitor, 7.2 x 2.5mm	
C10	82n	Film capacitor, 7.2 x 2.5mm	
C11	1n	Film capacitor, 7.2 x 2.5mm	
C12	1uF	Film capacitor, 7.2 x 3.5mm	
C13	22n	Film capacitor, 7.2 x 2.5mm	
C14	27n	Film capacitor, 7.2 x 2.5mm	
C15	100n	Film capacitor, 7.2 x 2.5mm	
C16	8n2	Film capacitor, 7.2 x 2.5mm	
C17	68n	Film capacitor, 7.2 x 2.5mm	
C18	2n7	Film capacitor, 7.2 x 2.5mm	
C19	1n	Film capacitor, 7.2 x 2.5mm	
C20	1uF	Film capacitor, 7.2 x 3.5mm	
C21	8n2	Film capacitor, 7.2 x 2.5mm	
C22	4n7	Film capacitor, 7.2 x 2.5mm	
C23	82n	Film capacitor, 7.2 x 2.5mm	
C24	1uF	Film capacitor, 7.2 x 3.5mm	
C25	1uF	Film capacitor, 7.2 x 3.5mm	
C26	100n	Film capacitor, 7.2 x 2.5mm	

## PARTS LIST, CONT.

PART	VALUE	TYPE	NOTES
C27	2.2uF	Film capacitor, 7.2 x 5mm	
C28	47uF	Electrolytic capacitor, 5mm	Reference voltage filter capacitor.
C29	47uF	Electrolytic capacitor, 5mm	Reference voltage filter capacitor.
C30	100uF	Electrolytic capacitor, 6.3mm	Power supply filter capacitor.
C31	100n	MLCC capacitor, X7R	Power supply filter capacitor.
D1	1N5817	Schottky diode, DO-41	
D2	1N914	Fast-switching diode, DO-35	
D3	1N914	Fast-switching diode, DO-35	
D4	3mm green	LED, 3mm, green diffused	
D5	3mm green	LED, 3mm, green diffused	
D6	1N914	Fast-switching diode, DO-35	
D7	1N914	Fast-switching diode, DO-35	
Q1	2N5457	JFET, N-channel, TO-92	Substitute. Original uses 2N5486.
Q2	2N5088	BJT transistor, NPN, TO-92	Substitute. Original uses BC549C.
Q3	2N5088	BJT transistor, NPN, TO-92	Substitute. Original uses BC549C.
IC1	RC4558P	Operational amplifier, DIP8	
IC1-S	DIP-8 socket	IC socket, DIP-8	
IC2	RC4558P	Operational amplifier, DIP8	
IC2-S	DIP-8 socket	IC socket, DIP-8	
DRIVE	250kA		
SPECT	50kB		Original uses center detent, but this is not required.
LO CUT	25kB		
MID	50kB		Original uses center detent, but this is not required.
ODC	25kB		
LEVEL	50kA		
LED	5mm	LED, 5mm, red diffused	
IN	1/4" mono	1/4" phone jack, closed frame	Switchcraft 111X or equivalent.
OUT	1/4" mono	1/4" phone jack, closed frame	Switchcraft 111X or equivalent.
DC	2.1mm	DC jack, 2.1mm panel mount	Mouser 163-4302-E or equivalent.
FSW	3PDT	Stomp switch, 3PDT	
ENC	125B	Enclosure, die-cast aluminum	Can also use a Hammond 1590N1.

## BUILD NOTES

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### JFET selection

The original ODR-C uses the 2N5486 (MMBF5486) JFET for Q1, which is no longer in active production. This is very similar to the 2N5457, which is available from Aion FX in SMD format pre-soldered to through-hole adapter boards and will perform identically in this circuit.

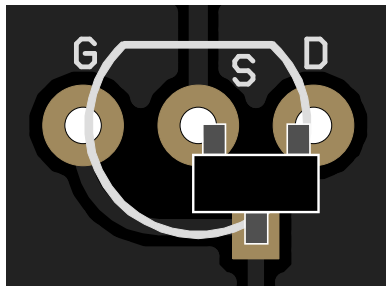
### Transistor selection

The original ODR-C uses European-convention BC549C transistors for Q2 and Q3. These are still readily available, but the Andromeda Deluxe uses the footprint for the USA equivalent 2N5088. If you want to use the BC549C, rotate them 180 degrees from the PCB footprint since their pinout is reversed. Both types will perform identically in this circuit.

### Using SMD JFETs

Most general-purpose JFETs are no longer available in through-hole format. This PCB uses a hybrid through-hole/SMD outline for each JFET. An extra “G” (gate) pad is included to accommodate surface-mount devices without the need for adapters.

SMD JFETs should be oriented as follows:



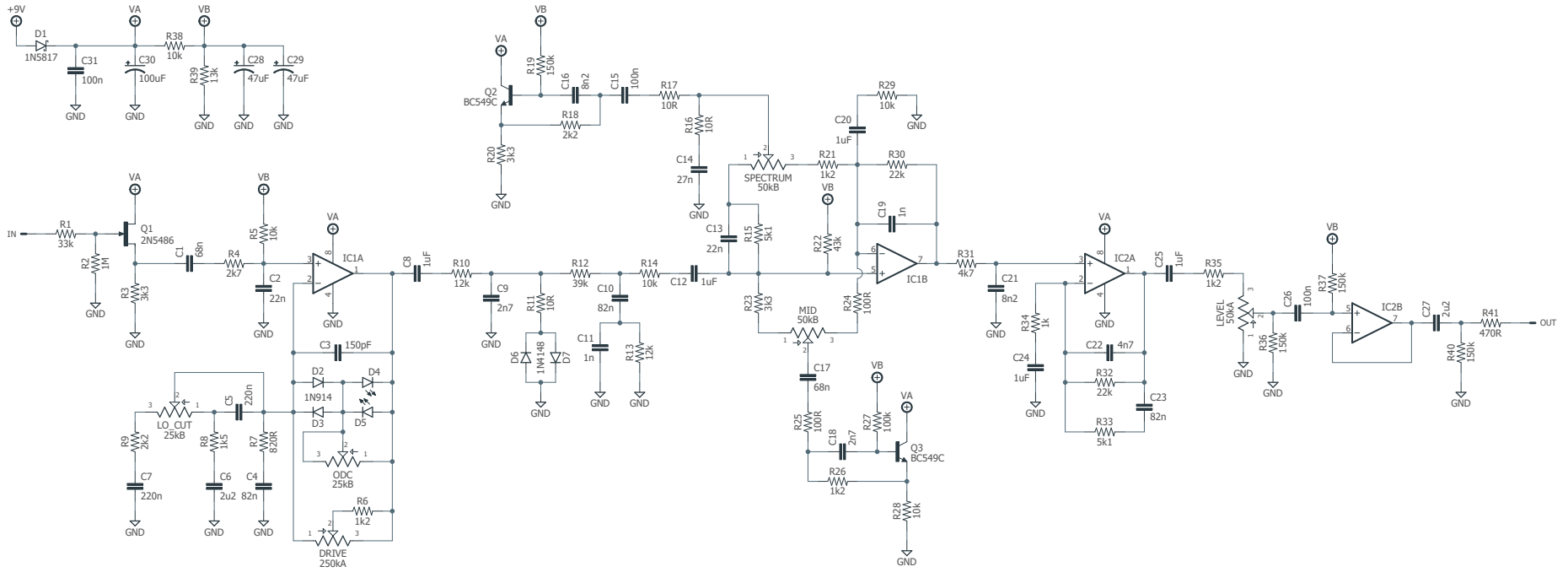
All surface-mount JFETs use the same pinout, so this configuration will fit any type that we’re aware of. However, always check the datasheet if you’re uncertain—they’re difficult to desolder.

The BJT transistors (Q2/Q3) also have an extra SMD pad for the collector, so SMD transistors can be used in the same way, although BJT transistors are still very easy to find in through-hole format.

### Capacitor substitution

Due to parts availability, some of the larger film capacitors may be unavailable, particularly the two 2.2uF capacitors (C6 and C27). The original ODR-1 used electrolytic capacitors in these positions and you can use them here too if you want. In both positions, the positive leg should go in the top pad and the negative in the bottom.

# SCHEMATIC



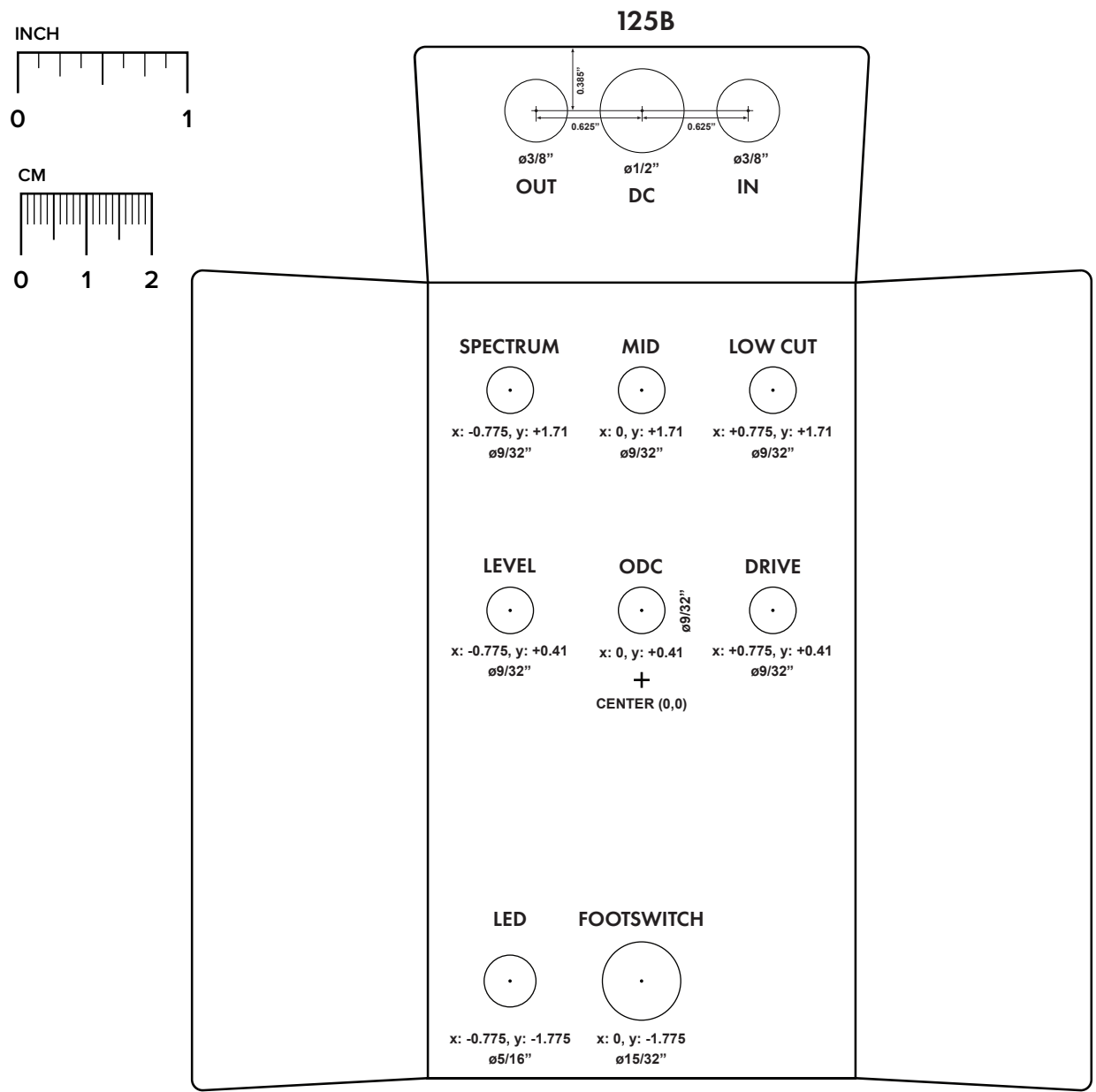
# DRILL TEMPLATE

Cut out this drill template, fold the edges and tape it to the enclosure. Before drilling, it's recommended to first use a center punch for each of the holes to help guide the drill bit.

Ensure that this template is printed at 100% or "Actual Size". You can double-check this by measuring the scale on the printed page.

**Top jack layout** assumes the use of closed-frame jacks like the [Switchcraft 111X](#). If you'd rather use open-frame jacks, please refer to the Open-Frame Jack Drill Template for the top side.

**LED hole drill size** assumes the use of a [5mm LED bezel](#), available from several parts suppliers. Adjust size accordingly if using something different, such as a 3mm bezel, a plastic bezel, or just a plain LED.

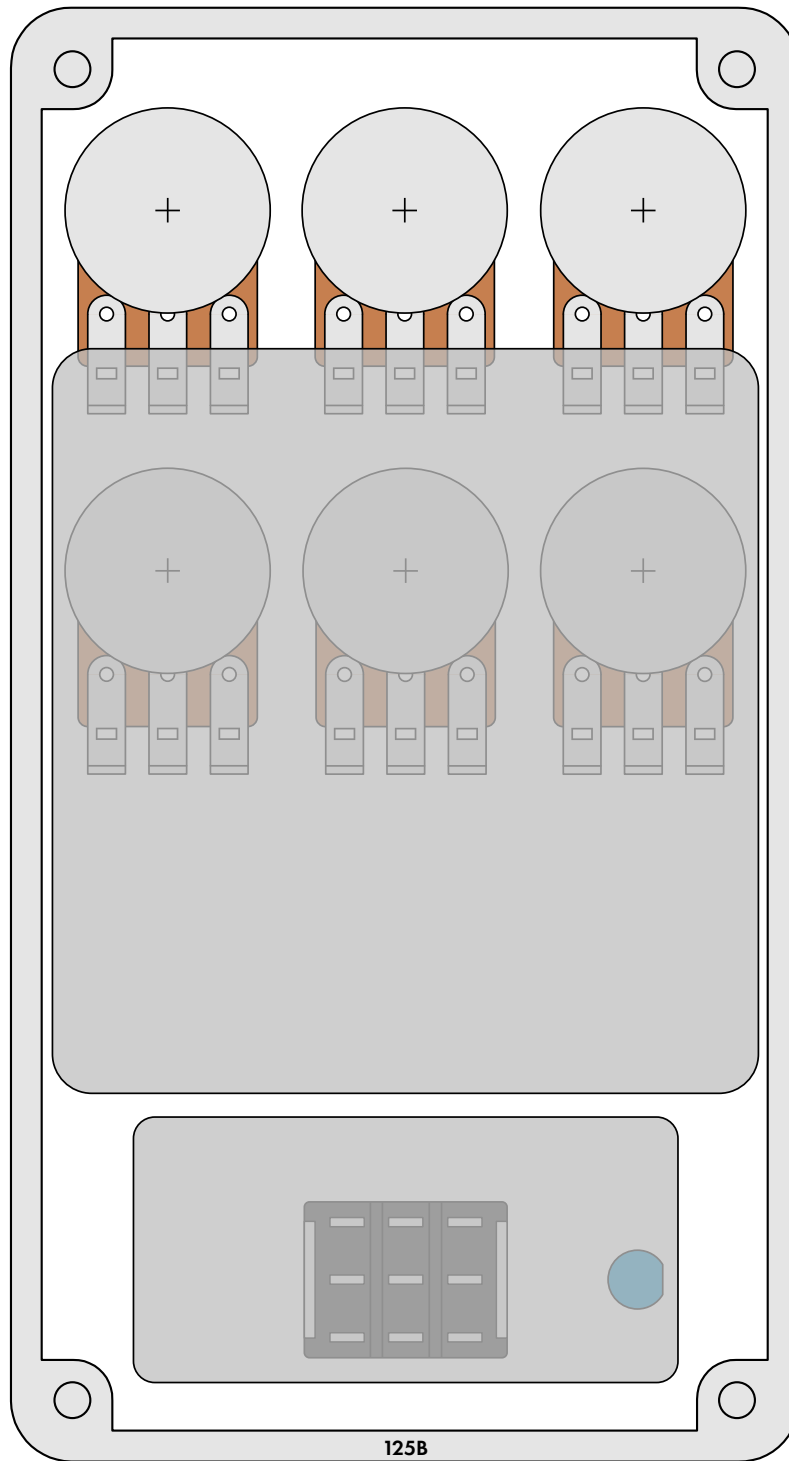




# ENCLOSURE LAYOUT

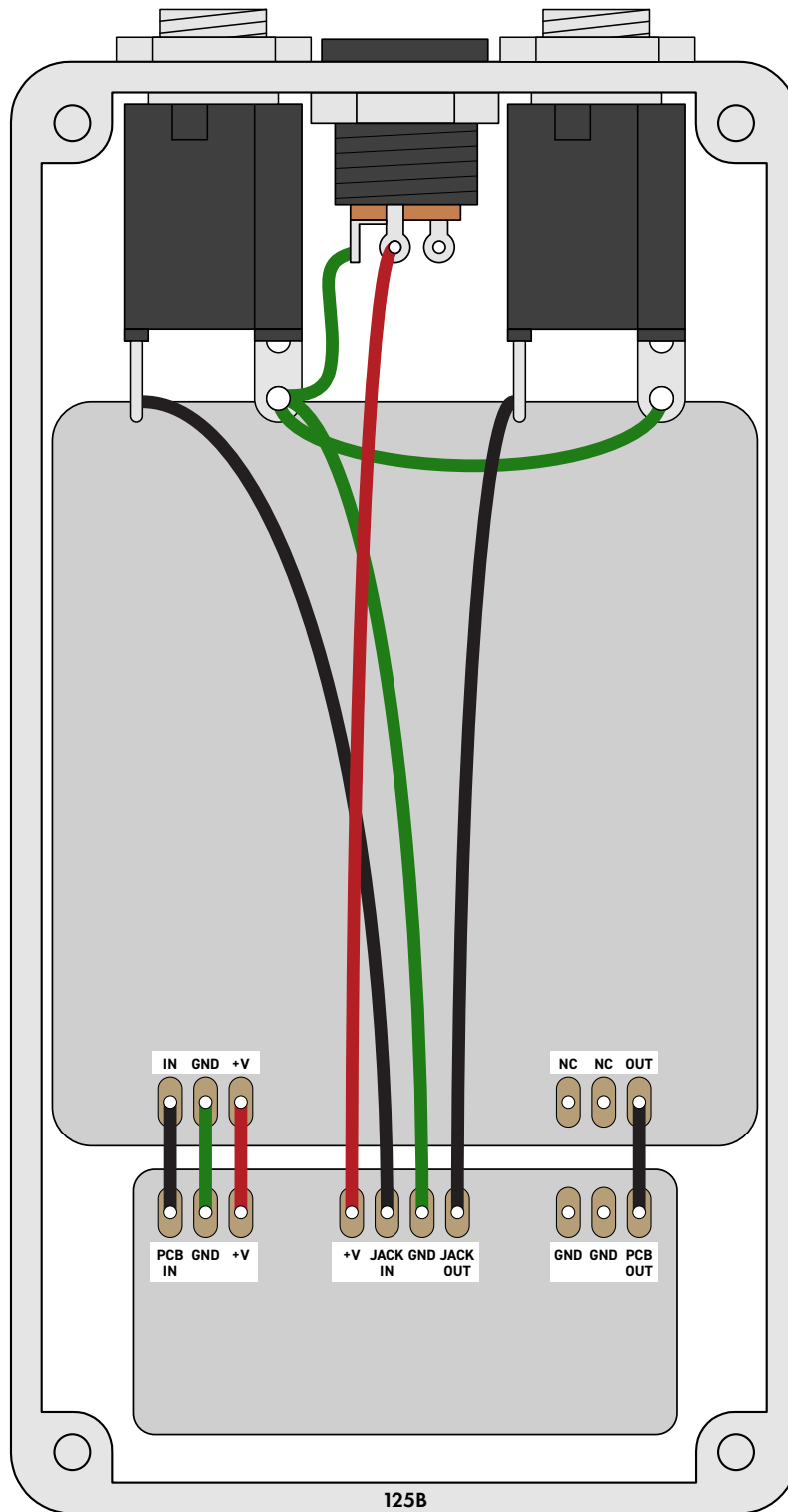
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Enclosure is shown without jacks. See next page for jack layout and wiring.



# WIRING DIAGRAM

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## LICENSE & USAGE

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**No direct support is offered for these projects beyond the provided documentation.** It's assumed that you have at least some experience building pedals before starting one of these. Replacements and refunds cannot be offered unless it can be shown that the circuit or documentation are in error.

**All of these circuits have been tested in good faith in their base configurations.** However, not all the modifications or variations have necessarily been tested. These are offered only as suggestions based on the experience and opinions of others.

**Projects may be used for commercial endeavors in any quantity** unless specifically noted. No attribution is necessary, though a link back is always greatly appreciated. The only usage restrictions are that **(1) you cannot resell the PCB as part of a kit without prior arrangement, and (2) you cannot "goop" the circuit, scratch off the screenprint, or otherwise obfuscate the circuit to disguise its source.** (In other words: you don't have to go out of your way to advertise the fact that you use these PCBs, but please don't go out of your way to hide it. The guitar effects industry needs more transparency, not less!)

## DOCUMENT REVISIONS

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### 1.0.1 (2021-12-17)

Corrected the drill template. The bottom row of pots needed to be moved down by 0.125".

### 1.0.0 (2021-10-22)

Initial release.