

PROJECT NAME

NIMBUS



BASED ON

Maxon® OD-820 Overdrive Pro

BUILD DIFFICULTY

■■■■□ Intermediate

EFFECT TYPE

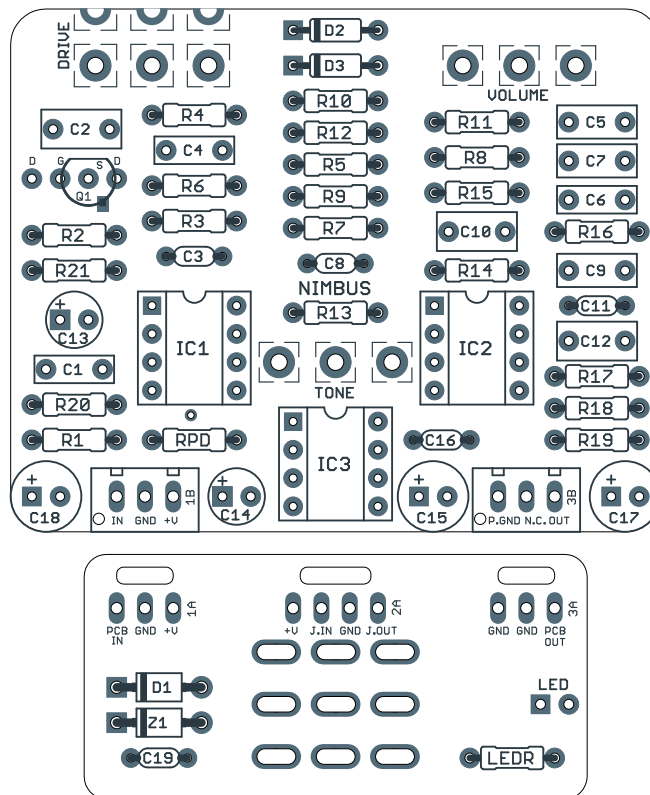
Overdrive

DOCUMENT VERSION

1.0.0 (2021-03-19)

PROJECT SUMMARY

A modern reimaging of the classic Tube Screamer circuit, featuring a dual drive/blend control adapted from the Klon Centaur.



Actual size is 2.3" x 1.86" (main board) and 1.78" x 0.86" (bypass board).

TABLE OF CONTENTS

1	Project Overview	7	Enclosure Layout
2	Introduction & Usage	8	Wiring Diagram
3-4	Parts List	9	Licensing
5	Schematic	9	Document Revisions
6	Drill Template		

INTRODUCTION

The Nimbus Dynamic Overdrive is an adaptation of the Maxon OD-820 Overdrive Pro, first released in 2004 as part of Maxon's Vintage Series alongside the AD-999 Analog Delay, DS-830 Distortion Master, PH-350 Rotary Phaser, and a few others.

Despite the name, the Vintage Series were not reissues of vintage circuits. The pedals in the series were released in the same big-box enclosure style they used in the 1970s, but featuring all-new designs, vintage-inspired with modern improvements.

With its bipolar +/-9V charge pump and dual-pot "gain/blend" control, the Maxon OD-820 Overdrive Pro actually shares a lot of concepts with the Klon Centaur. They are often compared with one another in sound, but it is by no means a clone. The OD-820 is actually a little closer to a Tube Screamer with regard to its clipping diodes and tone control. (Check out [this Legendary Tones article from 2004](#) comparing the OD-820 with the Klon Centaur.)

The OD-820 is the same circuit as the later VOP-9 Vintage Overdrive Pro. The OD-820 has a larger enclosure that matches the other Vintage Series effects while the VOP-9 is housed in the smaller standard Ibanez 9-series enclosure.

USAGE

The Nimbus has the same control layout as most overdrive or distortion effects:

- **Drive** is a dual-gang potentiometer that simultaneously controls the amount of gain in the op-amp feedback diode clipping stage and blends between clean and drive, similar to the Klon Centaur.
- **Tone** controls the treble response of the effect. The center point (12:00) is flat. When turned to the left, it cuts treble, and when turned to the right, it boosts treble.
- **Volume** controls 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 (most notably potentiometers) so the second tab lists all the non-Mouser parts as well as sources for each.

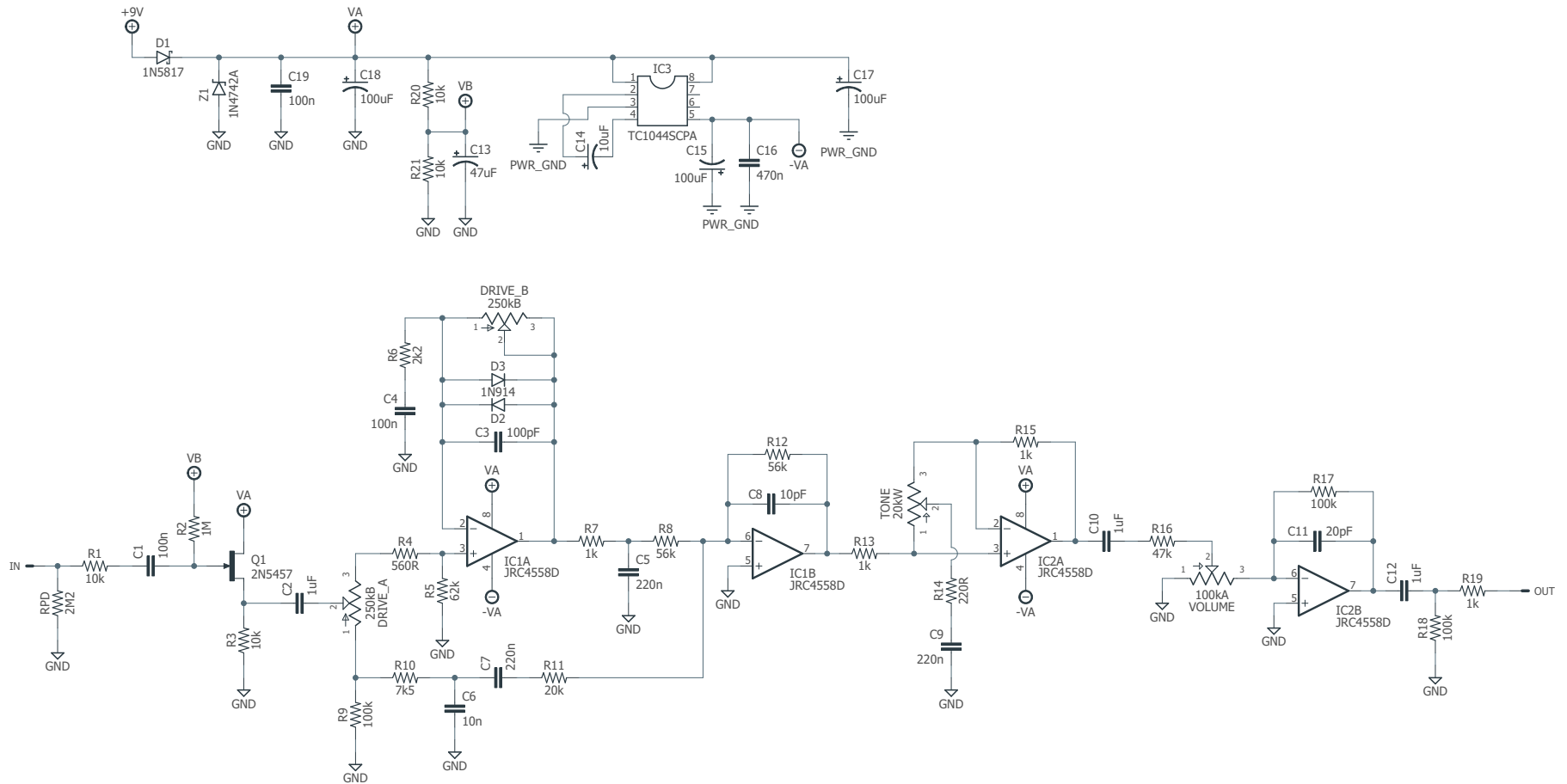
[View parts list spreadsheet](#) →

PART	VALUE	TYPE	NOTES
R1	10k	Metal film resistor, 1/4W	
R2	1M	Metal film resistor, 1/4W	
R3	10k	Metal film resistor, 1/4W	
R4	560R	Metal film resistor, 1/4W	
R5	62k	Metal film resistor, 1/4W	
R6	2k2	Metal film resistor, 1/4W	
R7	1k	Metal film resistor, 1/4W	
R8	56k	Metal film resistor, 1/4W	
R9	100k	Metal film resistor, 1/4W	
R10	7k5	Metal film resistor, 1/4W	
R11	20k	Metal film resistor, 1/4W	
R12	56k	Metal film resistor, 1/4W	
R13	1k	Metal film resistor, 1/4W	
R14	220R	Metal film resistor, 1/4W	
R15	1k	Metal film resistor, 1/4W	
R16	47k	Metal film resistor, 1/4W	
R17	100k	Metal film resistor, 1/4W	
R18	100k	Metal film resistor, 1/4W	
R19	1k	Metal film resistor, 1/4W	
R20	10k	Metal film resistor, 1/4W	
R21	10k	Metal film resistor, 1/4W	
RPD	2M2	Metal film resistor, 1/4W	Input pulldown resistor.
LEDR	4k7	Metal film resistor, 1/4W	LED current-limiting resistor. Adjust value to change LED brightness.
C1	100n	Film capacitor, 7.2 x 2.5mm	
C2	1uF	Film capacitor, 7.2 x 3.5mm	
C3	100pF	MLCC capacitor, NP0/C0G	
C4	100n	Film capacitor, 7.2 x 2.5mm	
C5	220n	Film capacitor, 7.2 x 2.5mm	
C6	10n	Film capacitor, 7.2 x 2.5mm	
C7	220n	Film capacitor, 7.2 x 2.5mm	

PARTS LIST, CONT.

PART	VALUE	TYPE	NOTES
C8	10pF	MLCC capacitor, NP0/C0G	
C9	220n	Film capacitor, 7.2 x 2.5mm	
C10	1uF	Film capacitor, 7.2 x 3.5mm	
C11	22pF	MLCC capacitor, NP0/C0G	
C12	1uF	Film capacitor, 7.2 x 3.5mm	
C13	47uF	Electrolytic capacitor, 5mm	Reference voltage filter capacitor.
C14	10uF	Electrolytic capacitor, 5mm	Charge pump capacitor.
C15	100uF	Electrolytic capacitor, 6.3mm	Inverted supply filter capacitor.
C16	470n	MLCC capacitor, X7R	Inverted supply filter capacitor.
C17	100uF	Electrolytic capacitor, 6.3mm	Power supply filter capacitor.
C18	100uF	Electrolytic capacitor, 6.3mm	Power supply filter capacitor.
C19	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	
Z1	1N4742A	Zener diode, 12V, DO-41	
Q1	2N5457	JFET, N-channel, TO-92	Original uses 2SK246. Can substitute any general-purpose audio JFET.
IC1	JRC4558D	Operational amplifier, DIP-8	
IC1-S	DIP-8 socket	IC socket, DIP-8	
IC2	JRC4558D	Operational amplifier, DIP-8	
IC2-S	DIP-8 socket	IC socket, DIP-8	
IC3	TC1044SCPA	Charge pump, DIP-8	
IC3-S	DIP-8 socket	IC socket, DIP-8	
DRIVE	250kΩ dual	16mm dual pot, right angle	
TONE	20kΩ	16mm right-angle PCB mount pot	
VOL.	100kΩ	16mm right-angle PCB mount pot	
LED	5mm	LED, 5mm, red diffused	
IN	1/4" stereo	1/4" phone jack, closed frame	Switchcraft 112BX 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.
BATT	Battery snap	9V battery snap	Optional. Use the soft plastic type—the hard-shell type will not fit.
FSW	3PDT	Stomp switch, 3PDT	
ENC	125B	Enclosure, die-cast aluminum	Can also use a Hammond 1590N1.

SCHEMATIC



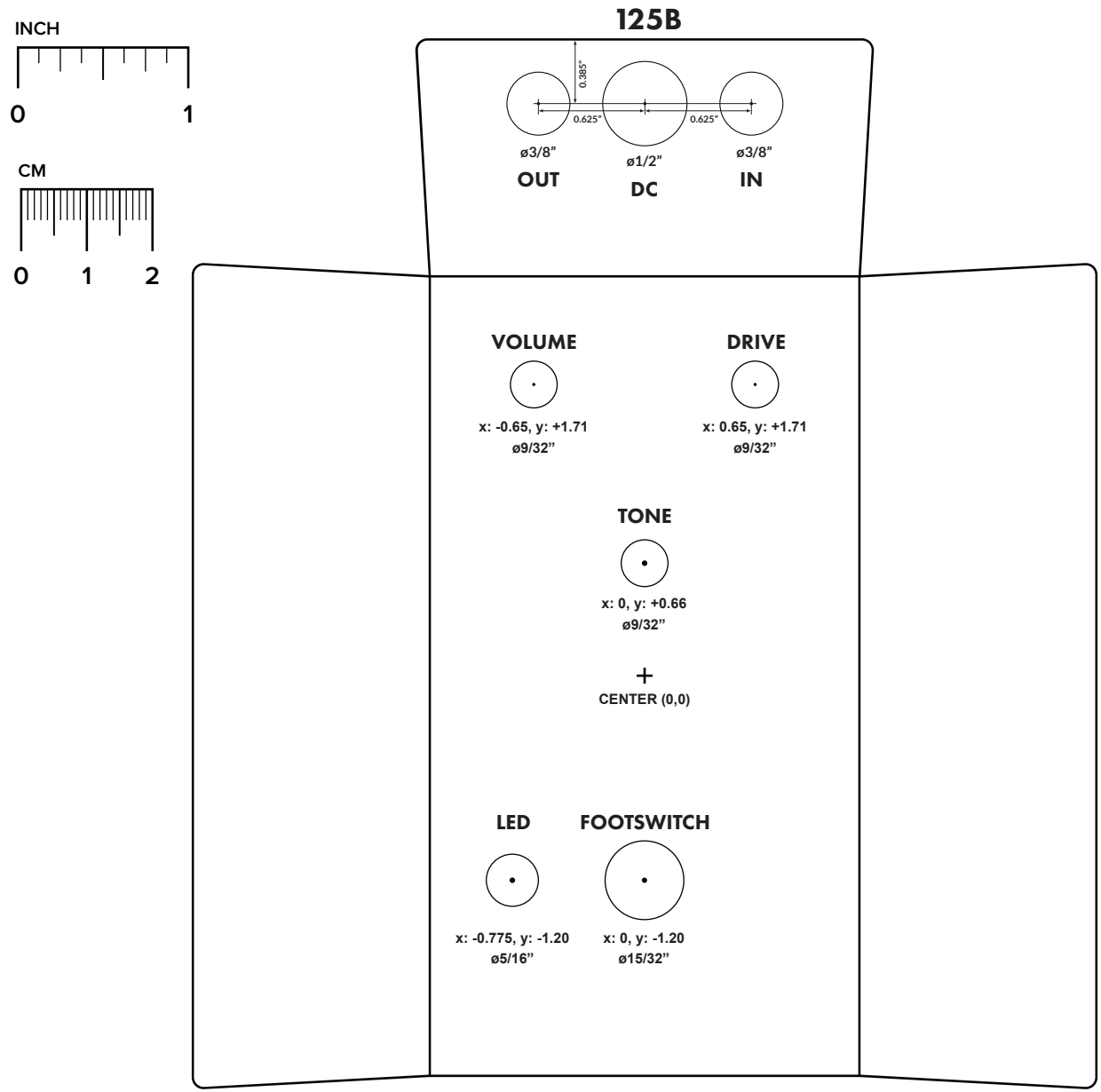
DRILL TEMPLATE

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.

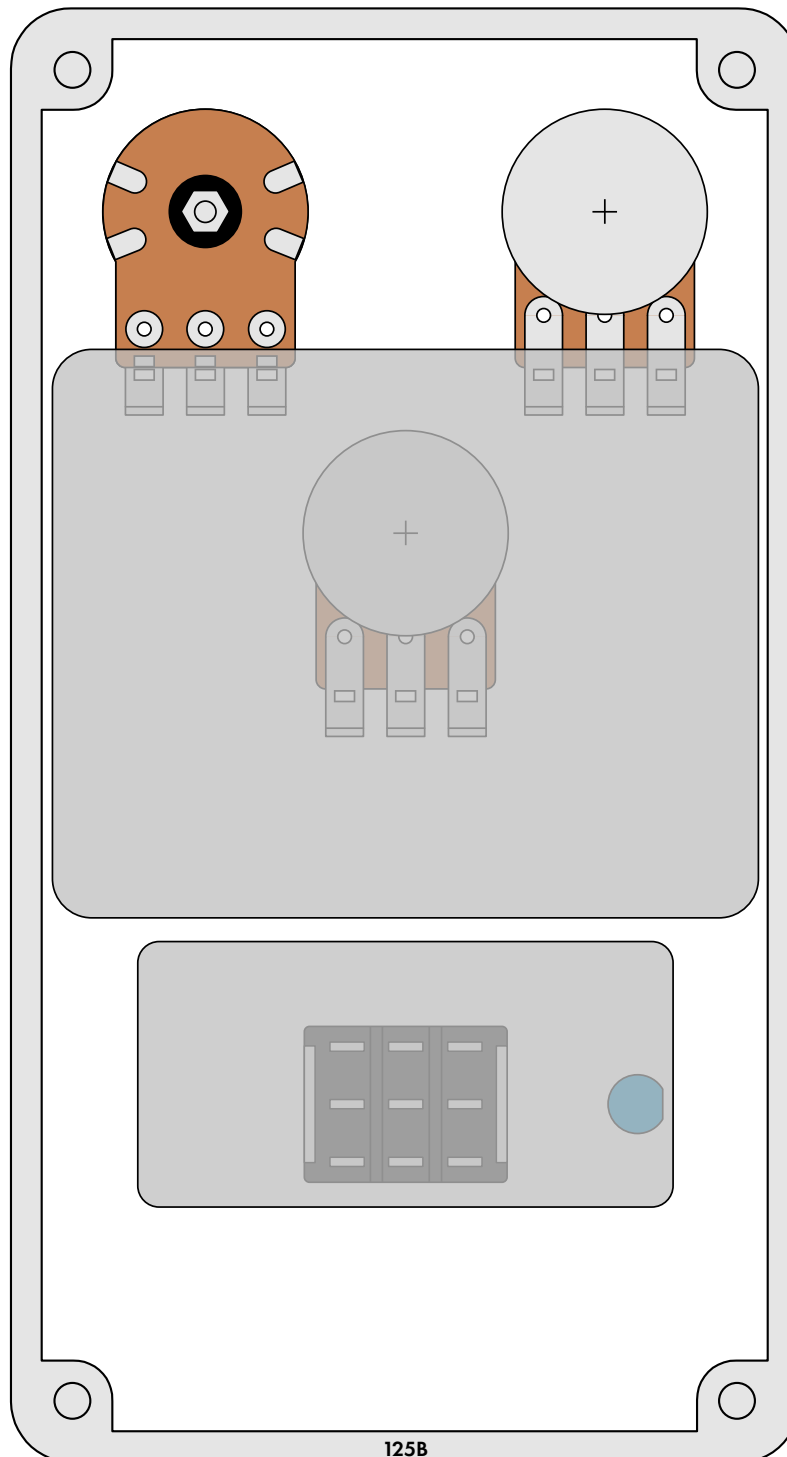


ENCLOSURE LAYOUT

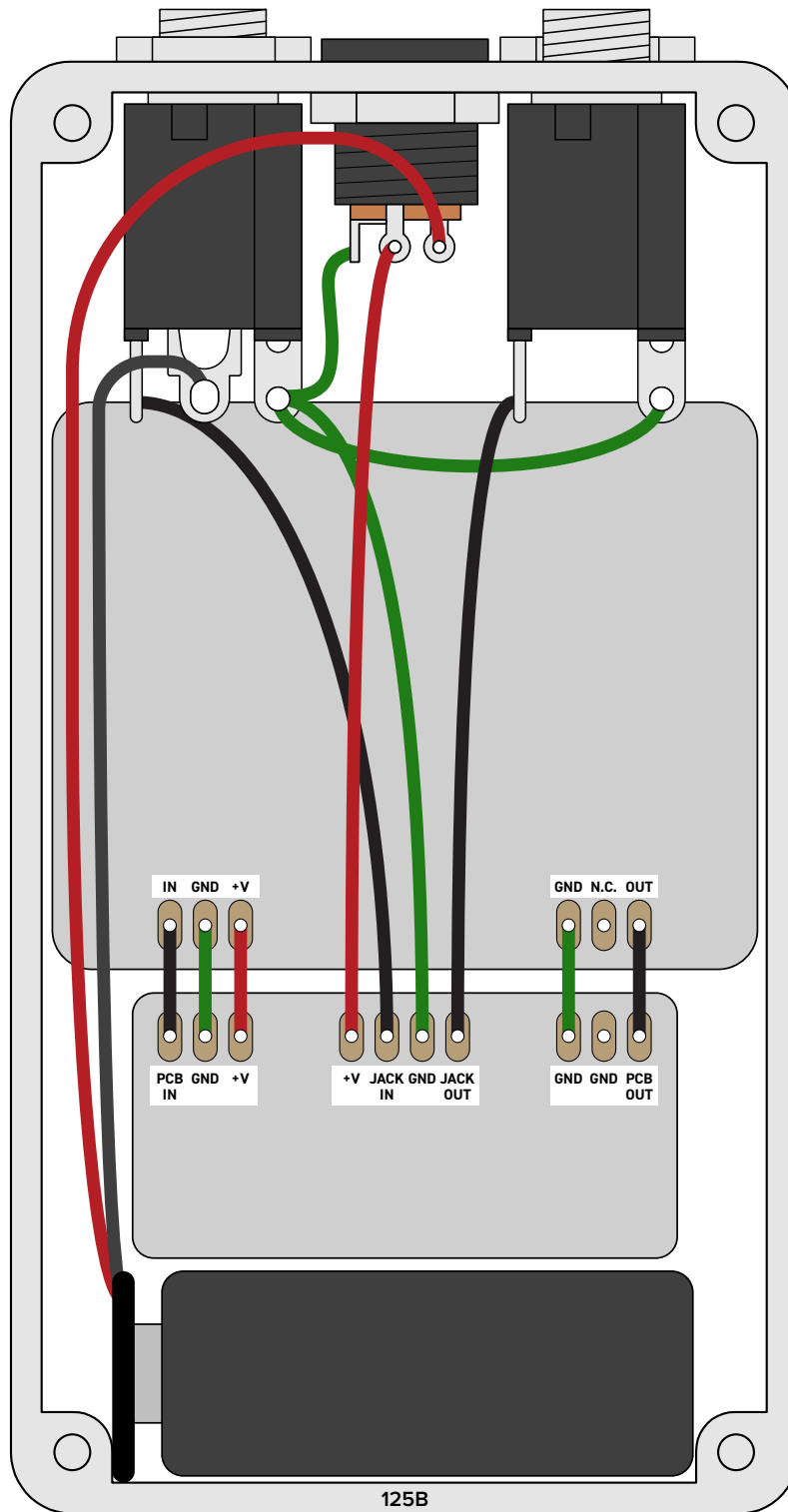
Enclosure is shown without jacks. See next page for jack layout and wiring.

Note: The upper pads for the dual-gang gain potentiometer appear to be cut in half. **This is intentional!** It's called a *plated half-hole* or *castellated hole*, and it's used so that the PCB can lay flat across the pots instead of angling upward to make room for the dual pot.

Solder it like you would if they were normal pads, but bend the small set of pins forward slightly so they make contact with the edge of the pads. The solder will flow easily into the half-holes.



WIRING DIAGRAM



*Shown with optional 9V battery. If battery is omitted, both jacks can be mono rather than one being stereo.
Leave the far-right lug of the DC jack unconnected.*

LICENSE & USAGE

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

1.0.0 (2021-03-19)

Initial release.