

JunkTrunk24

FX Type: **BASS FILTER**

Build Level: Beginner

Based On: Chunk Systems® Agent 00Funk mkII™

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The 2024 version of the **JunkTrunk** has some circuit changes and minor layout tweaks.

Overview

The Agent 00Funk and BrownDog were produced by Australia's ChunkSystems and marketed to the bass playing community (Bootsy Collins was apparently a big fan) around the late 00's to early 2010's. I'm not sure if they went completely out of business but the pedals seemed to have been discontinued and only show up on the used market. That makes for ripe DIY projects!

The **JunkTrunk** is based on the 00Funk. It's an envelope filter with a number of familiar elements and some thoughtful design execution. Plus, it doesn't require any out of production parts so the overall build price is reasonable. It's very responsive to bass and lives up to its funk moniker. Combined with the GasTank project it will even deliver some bass synth type tones.

The LED bypass system used in the previous version has been removed to make the GasTank compatible with the SSBP and SSABP switching boards.

Controls

- **PITCH:** Sets the frequency of the swept filter from low to high.
- **SMOOTH:** Sets the length of the swept filter. CCW is short ("jerky") and CW is long ("smooth").
- **SQUELCH:** Adjusts the resonant peak of the swept filter. CCW is low resonance ("subtle") and CW is high ("mayhem").
- **SWEEP:** Determines the range of the swept filter. CCW is narrow, CW is wide.
- **D/U:** Determines the direction of the filter. Left is down, right is up.
- **ENV (optional):** This jack is used to connect to the Gas Tank (bass fuzz) to allow for more dynamic response in the filter when both pedals are used together. More details in the Notes section.

The potentiometer controls in this circuit have some dead spots at the extremes. They don't all "do something" at every setting and sounds need to be dialed in. Particularly, you'll find the Sweep control settings will have a certain range depending on where the Pitch control is set. The Pitch control doesn't really do anything when it's all the way up. Smooth and Squelch also share some interdependency with the other controls, too. IOW, when you encounter this your build is probably working correctly. It's the nature of the design and takes a little getting used to.

The JunkTrunk (and GasTank) are primarily bass effects. If you do build the JunkTrunk for guitar, I suggest trying smaller values for C2 and C3. This will adjust the center frequency of the filter. Suggested values are 1n through 6n8 (use the same value for both caps). Experiment and find what you like best. The GasTank doesn't sound that great as a guitar fuzz, you can get some neat synth-like settings when you combine it with the JunkTrunk.

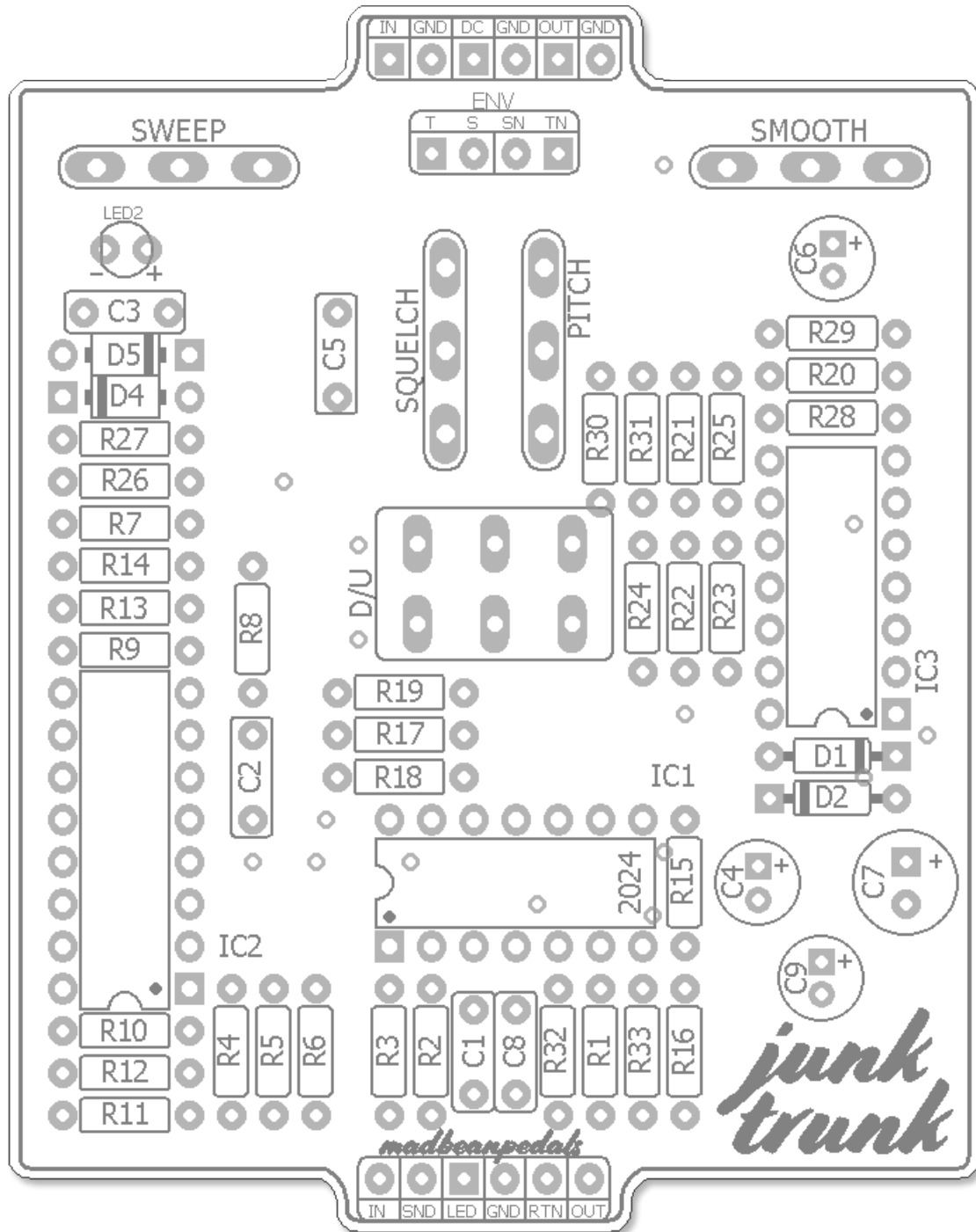
This demo will give you a really good idea of how the Agent 00Funk and BrownDog operate and sound: <https://www.youtube.com/watch?v=OEHMyviwZMA&t>

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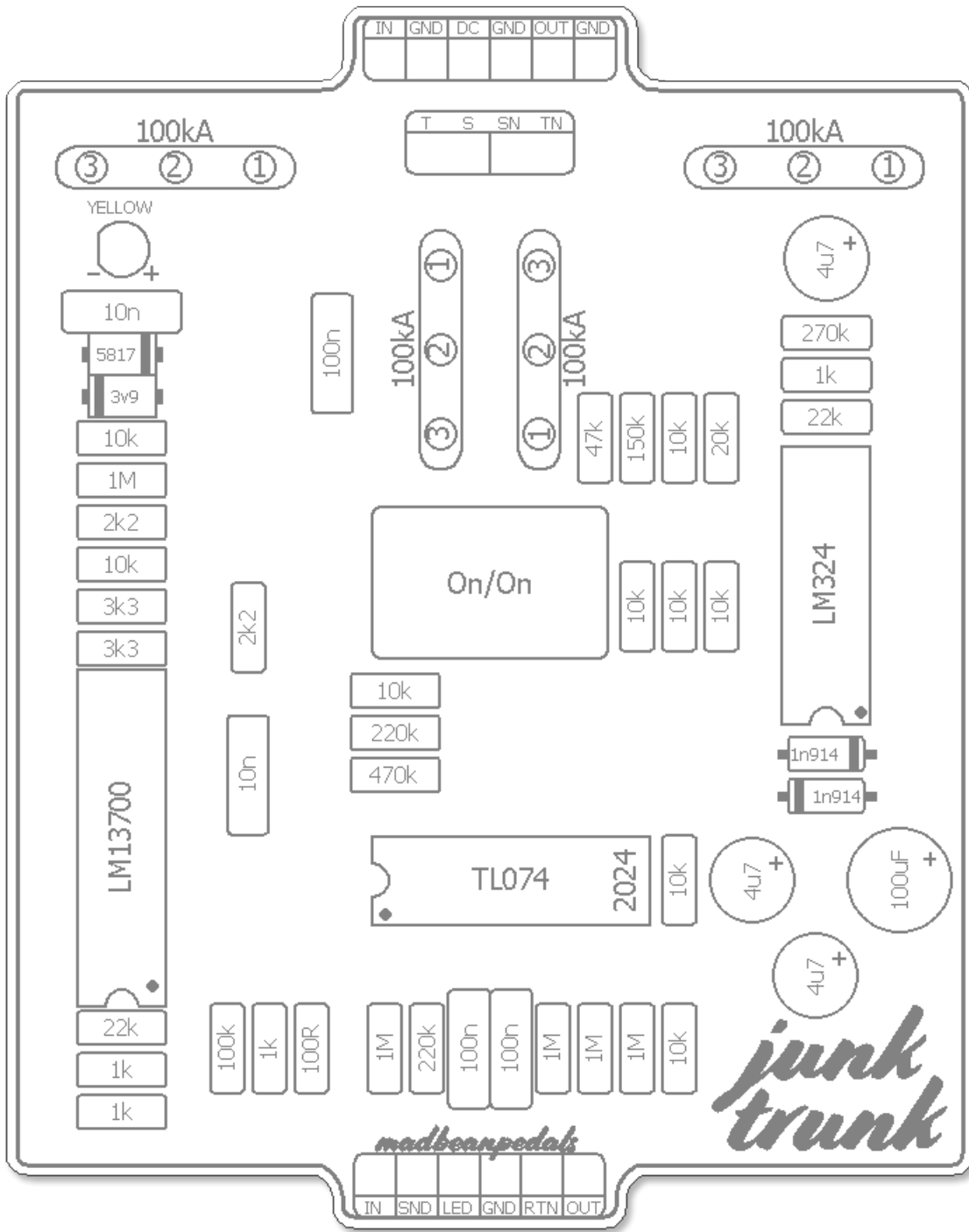
Technical assistance for is available via the [madbeanpedals forum](#). Please go there rather than emailing me for personal assistance. This is because (1) I'm not always available to respond via email in a timely and continuous manner, and (2) posting technical problems and solutions in the forum creates a record from which other members may benefit.

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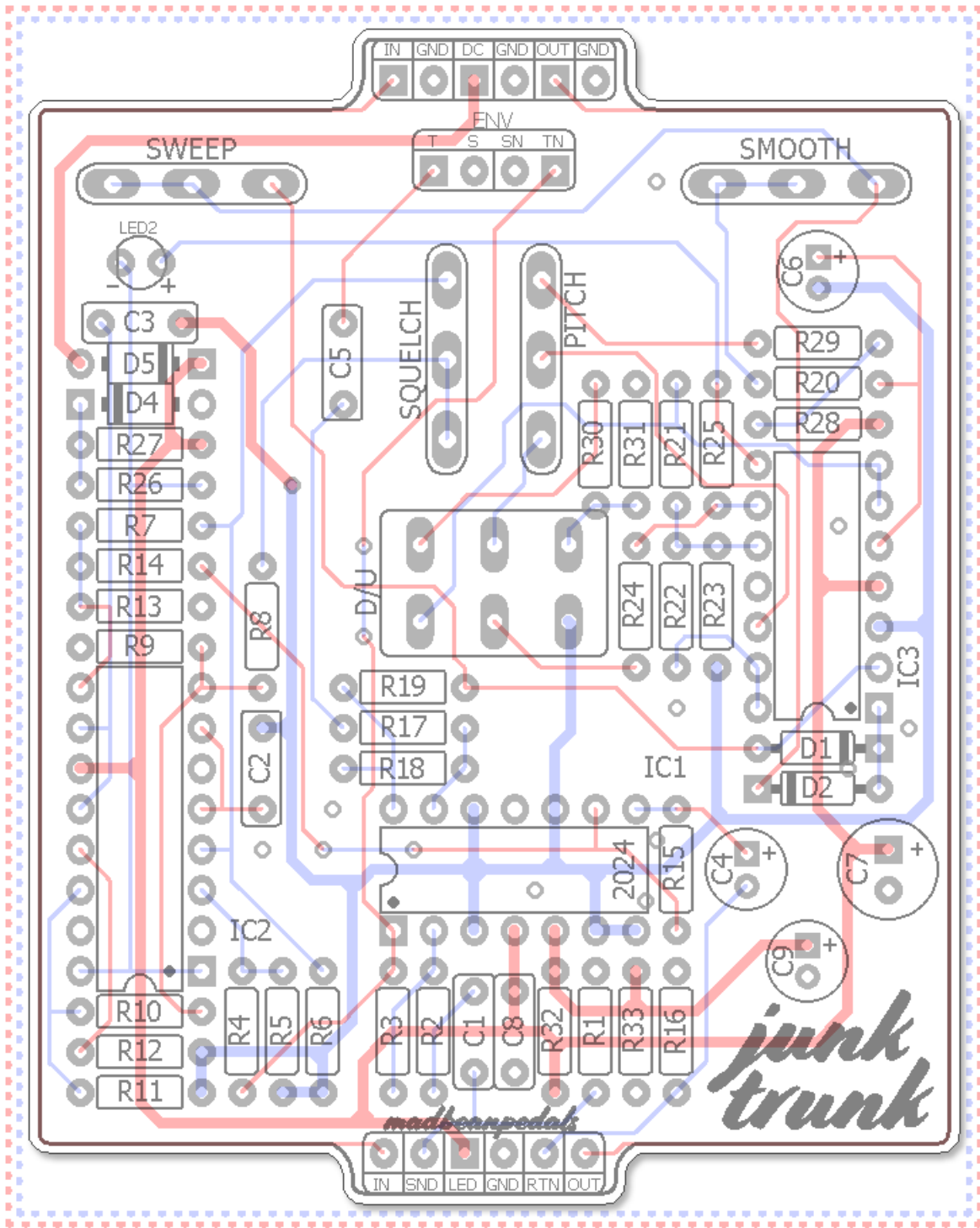
Parts Layout



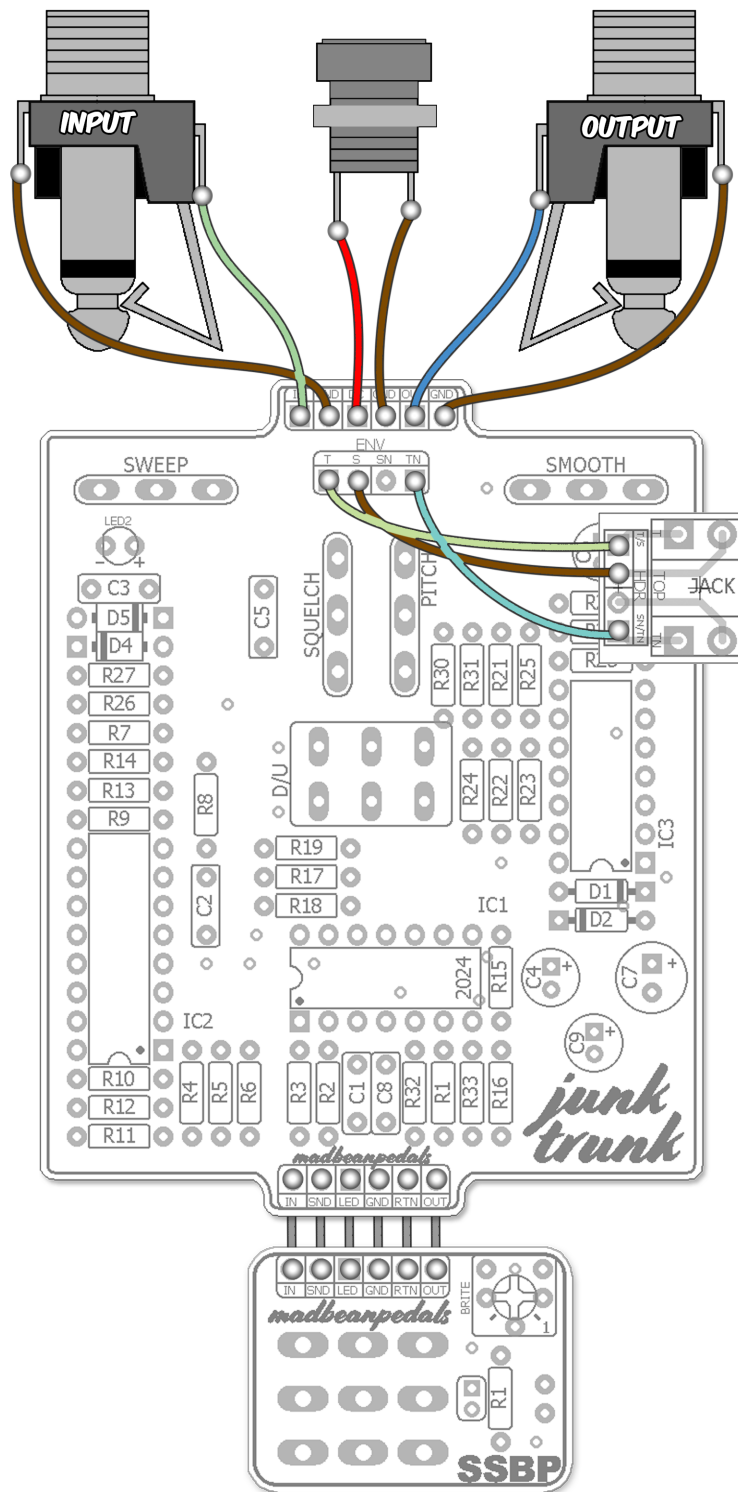
Component Values



Trace Layout



Wiring



The JunkTrunk24 is compatible with both the **SSBP** and **SSABP** bypass boards available at madbeanpedals. The wiring is the same for both.

B.O.M.

Resistors		Caps		Diodes	
R1	1M	C1	100n	D1	1n914
R2	220k	C2	10n	D2	1n914
R3	1M	C3	10n	D4	3v9 Zener
R4	100k	C4	4u7	D5	1n5817
R5	1k	C5	100n	LED2	YELLOW
R6	100R	C6	4u7	ICs	
R7	2k2	C7	100uF	IC1	TL074
R8	2k2	C8	100n	IC2	LM13700
R9	3k3	C9	4u7	IC3	LM324
R10	22k	Switches			
R11	1k			D/U	DPDT
R12	1k	Jacks			
R13	3k3			ENV	Mono Jack
R14	10k	Pots			
R15	10k			SMOOTH	100kA
R16	10k			SQUELCH	100kA
R17	220k			SWEEP	100kA
R18	470k			PITCH	100kA
R19	10k				
R20	1k				
R21	10k				
R22	10k				
R23	10k				
R24	10k				
R25	20k				
R26	1M				
R27	10k				
R28	22k				
R29	270k				
R30	47k				
R31	150k				
R32	1M				
R33	1M				

Shopping List

Value	QTY	Type	Rating
100R	1	Metal / Carbon Film	1/4W
1k	4	Metal / Carbon Film	1/4W
2k2	2	Metal / Carbon Film	1/4W
3k3	2	Metal / Carbon Film	1/4W
10k	9	Metal / Carbon Film	1/4W
20k	1	Metal / Carbon Film	1/4W
22k	2	Metal / Carbon Film	1/4W
47k	1	Metal / Carbon Film	1/4W
100k	1	Metal / Carbon Film	1/4W
150k	1	Metal / Carbon Film	1/4W
220k	2	Metal / Carbon Film	1/4W
270k	1	Metal / Carbon Film	1/4W
470k	1	Metal / Carbon Film	1/4W
1M	5	Metal / Carbon Film	1/4W
10n	2	Film	16v min.
100n	3	Film	16v min.
4u7	3	Electrolytic	16v min.
100uF	2	Electrolytic	16v min.
1n914	2		
3v9	1	Zener	1W
1N5817	1		
LED	1	Yellow, Diffused	5mm
TL074	1		
LM13700	1		
LM324	1		
DPDT	1	On/On, Solder Lug	
Mono Jack	1	1/8" (optional)	
100kA	4	PCB Right Angle	16mm

Additional Hardware

- (1) 125B enclosure
- (2) 1/4" mono jacks
- (1) Slim 2.1mm DC jack
- (1) Standard 3PDT footswitch
- (1) 5mm LED

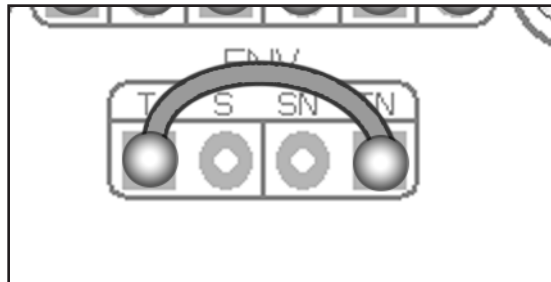
Build Notes

The ENV jack allows you to alter how the envelope follower operates in the JunkTrunk. As a standalone effect, the envelope follower is keyed off the buffered input of the JunkTrunk. With a clean signal going in the envelope tracks very well to player dynamics. But let's say you are using the companion Gas Tank (bass fuzz) project in front of the JunkTrunk. Now you have a massive squared up fuzz feeding the input of the JunkTrunk and its envelope follower will be less responsive to those same playing dynamics due to the compressed nature of the fuzz.

The ENV jack let's you fix that by taking the same type of buffered input from the GasTank and feeding it directly to the envelope follower of the JunkTrunk. So, you still have the fuzz going into the JunkTrunk, but the envelope reacts as if it's being fed a clean signal. Neat, huh?

The ENV jack is optional. It's only used if you are planning on building both the Gas Tank *and* JunkTrunk. If you are not building the GasTank do not install the jack. Or, you can choose to build both projects without the envelope jack. They will work together without it. I think it's well worth the few added dollars to include it since it adds another dimension to the fuzz/envelope combo.

The miniJack "Breadbuddy" PCB is included with both the JunkTrunk and GasTank. This makes the wiring easier.



If you are not using the miniJack, solder a jumper between the two outside pads on the JunkTrunk (T and TN).

When using the miniJack option, you will need a 1/8" plug to connect the JunkTrunk and GasTank. You can actually use a standard TRS headphone type cable for this. Even though it is stereo, it will connect to the linked jacks as if it were mono.

Something like this will work:

https://www.amazon.com/gp/product/B00NO73IN2/ref=ox_sc_act_title_1?smid=ATVPDKIKX0DER&psc=1

You can also construct your own 1/8" plugs with a couple of these:

<http://smallbear-electronics.mybigcommerce.com/1-8-mono-straight/>

Circuit Voltages

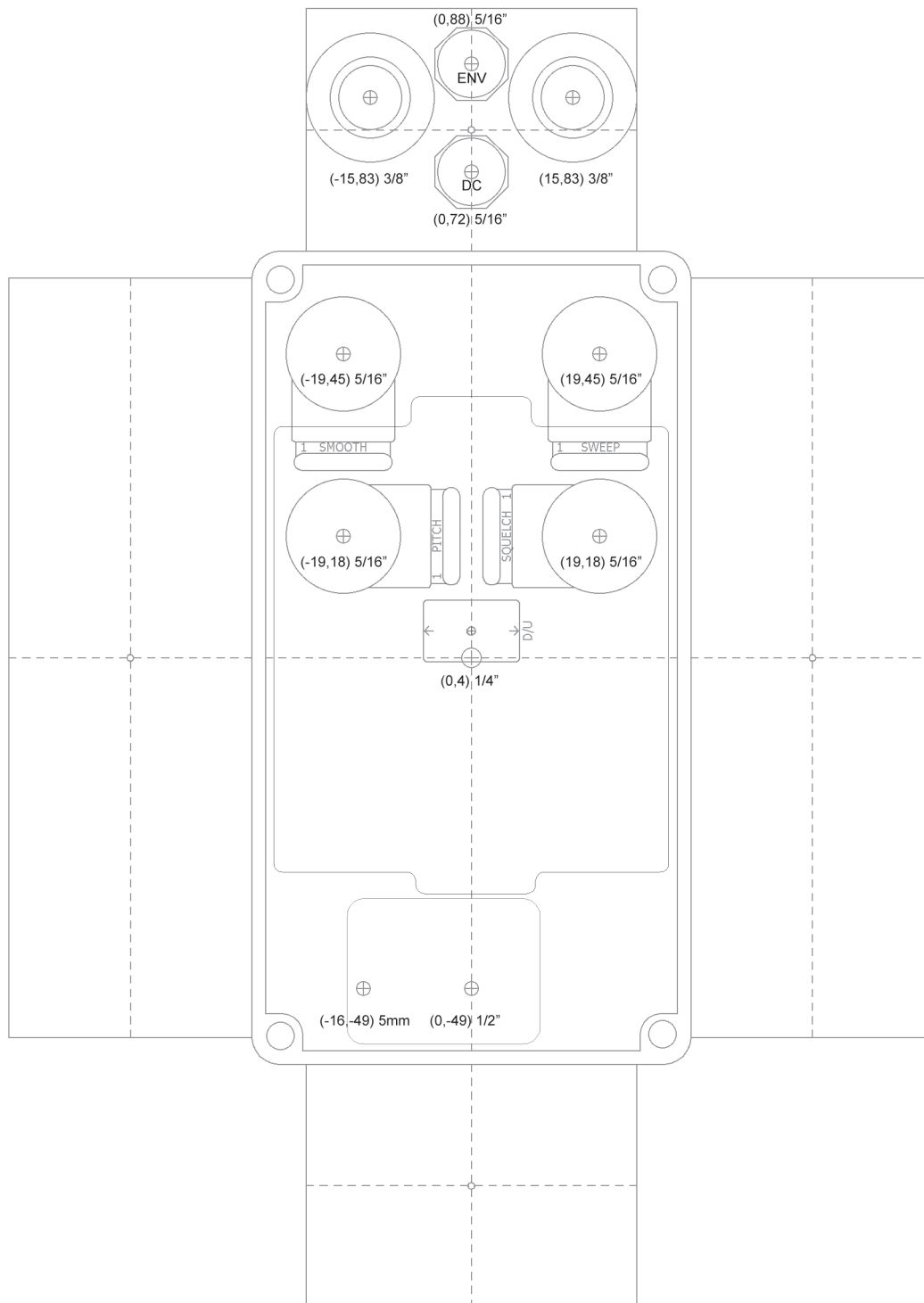
IC1	TL074	IC2	LM13700	IC3	LM324
1	4.55	1	1.3	1	4.65
2	4.58	2	ignore	2	4.55
3	4.55	3	4.56	3	4.56
4	9.14	4	4.56	4	9.14
5	4.35	5	5.76	5	4.76
6	4.55	6	0	6	4.76
7	4.56	7	5.76	7	4.76
8	4.6	8	4.57	8	3.09
9	4.56	9	4.54	9	4.2
10	4.56	10	5.74	10	4.2
11	0	11	9.14	11	0
12	4.56	12	5.74	12	3.24
13	4.61	13	4.56	13	3.3
14	4.56	14	4.56	14	3.3
		15	ignore		
		16	1.26		

- 9.42vDC One Spot
- Current Draw ~ 20mA

Drill Template

Coordinates are denoted in **(X,Y)**, **drill size** format starting from the center (0,0) location of the enclosure.

Tayda drill template: https://drill.taydakits.com/box-designs/new?public_key=UVA5NXFJb2RCN28wc2U4QXdMajd6Zz09Cg==

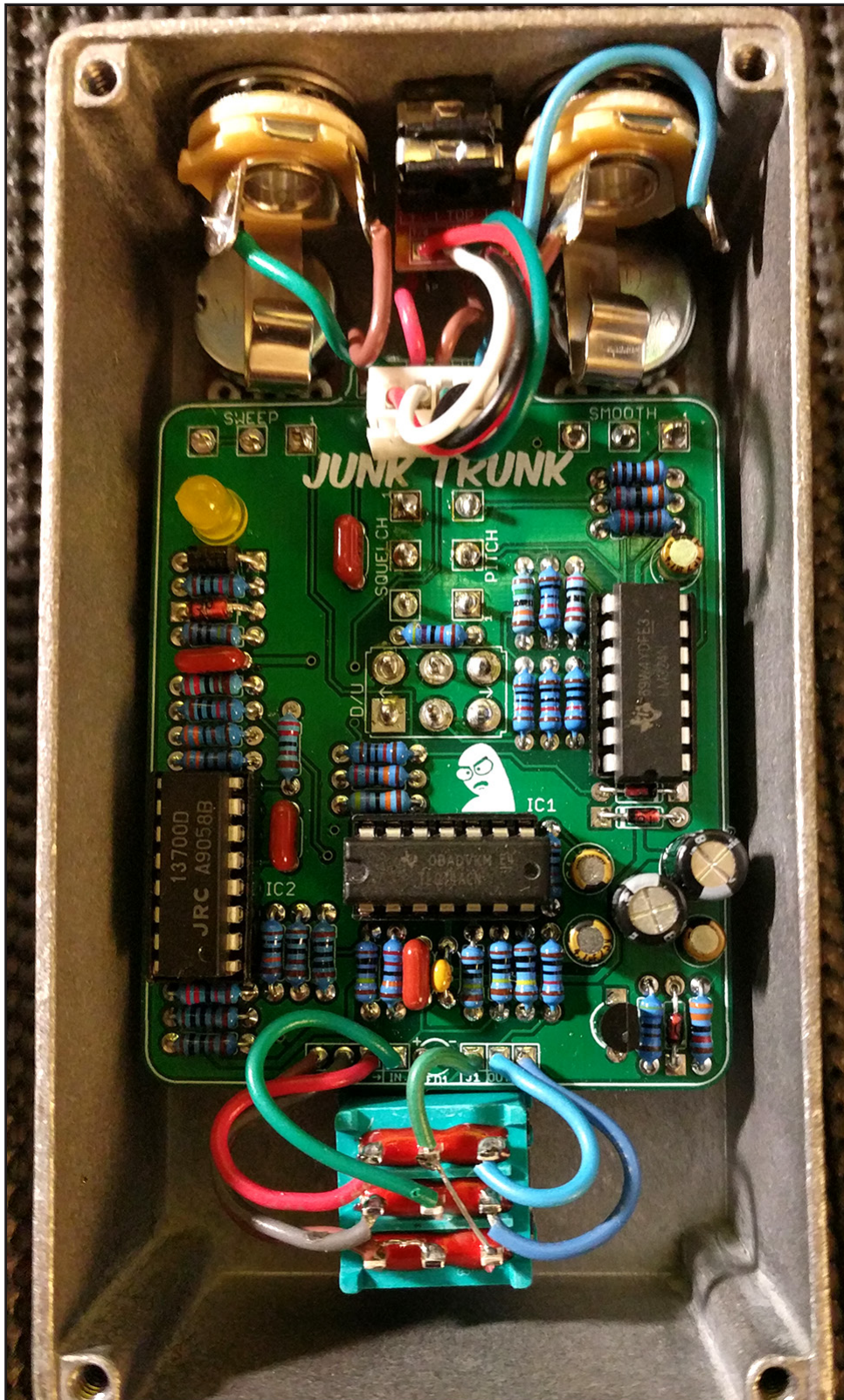


Hardware

125B enclosure
Mono jacks
Slim 2.1mm DC jack
Standard 3PDT footswitch
5mm LED

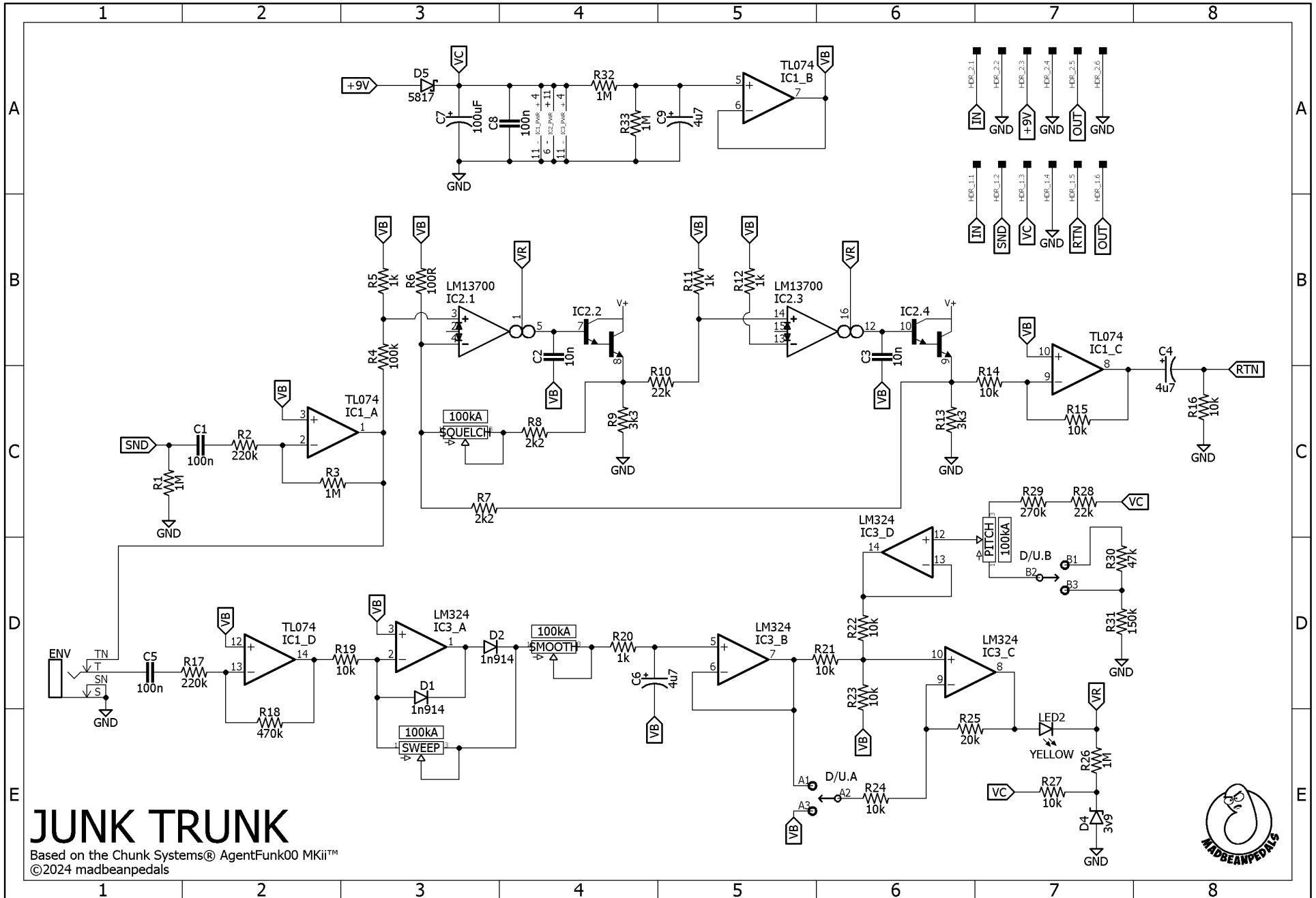
NOTE: Different 1/4" and DC jack styles may require different sized drill holes.

Build Pic



Previous version build.

Schematic



JUNK TRUNK
 Based on the Chunk Systems® AgentFunk00 MKii™
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