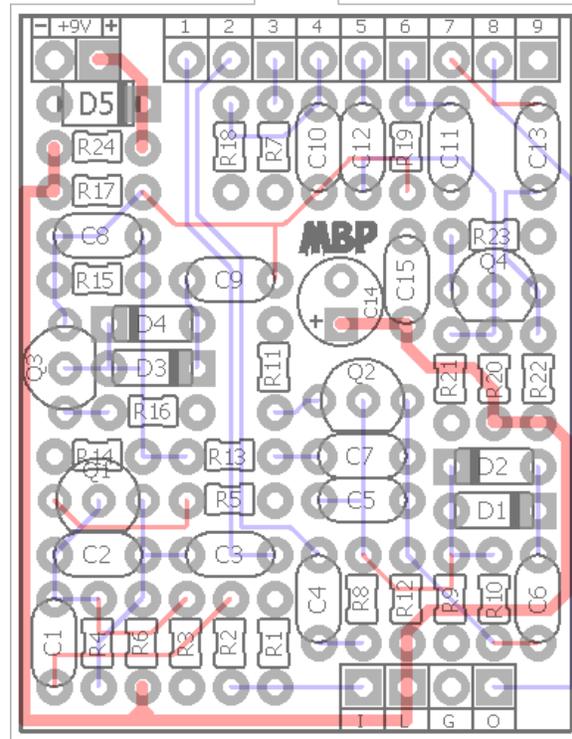
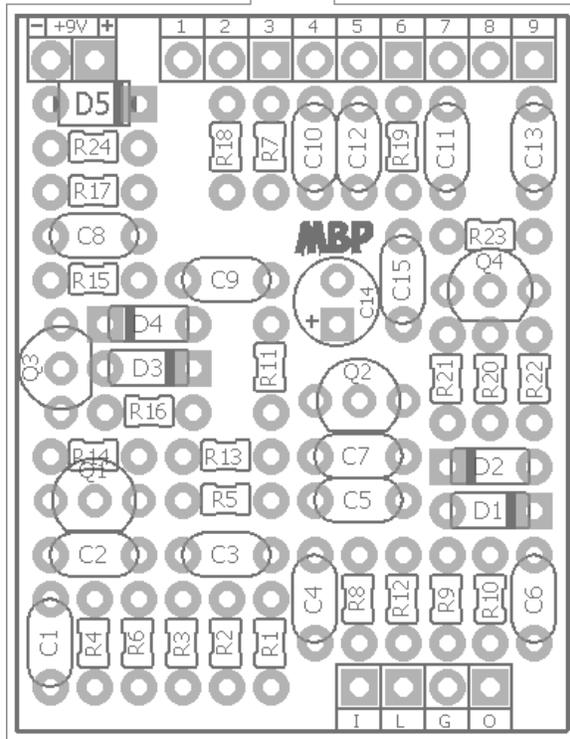
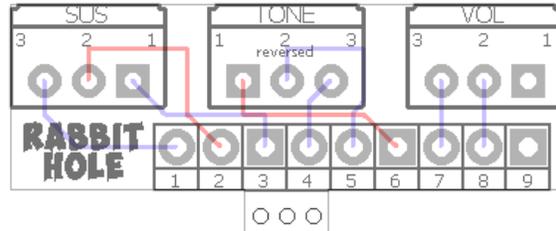
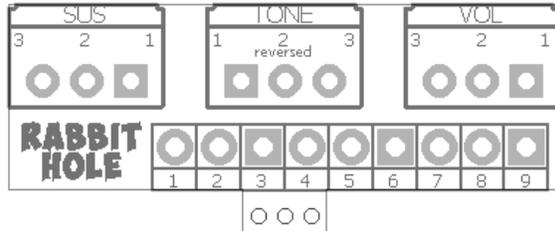


RABBIT HOLE

FX TYPE: Distortion
Based on the EHX® Big Muff™
© 2016 madbeanpedals

1.3" W x 2.2" H



Terms of Use: You are free to use purchased **Rabbit Hole** circuit boards for both DIY and small commercial operations. You may not offer **Rabbit Hole** PCBs for resale or as part of a "kit" in a commercial fashion. Peer to peer re-sale is, of course, okay.

Triangle					
Resistors		Caps		Diodes	
R1	1M	C1	100n	D1 - D4	1n914
R2	3K3	C2	omit	D5	1N4001
R3	82K	C3	100n	Transistors	
R4	390K	C4	100n	Q1 - Q4	2n5088
R5	820R	C5	560p	Pots	
R6	22K	C6	50n	SUS	100kB
R7	1K	C7	100n	TONE	100kB
R8	8K2	C8	560p	VOL	100kA
R9	omit	C9	50n		
R10	390K	C10	4n		
R11	150R	C11	10n		
R12	12K	C12	100n		
R13	8K2	C13	100n		
R14	82K	C14	47uF		
R15	390K	C15	100n		
R16	820R				
R17	22K				
R18	39K				
R19	39K				
R20	390K				
R21	100K				
R22	12K				
R23	2K7				
R24	100R				

Violet Ram's Head					
Resistors		Caps		Diodes	
R1	1M	C1	100n	D1 - D4	1n914
R2	39K	C2	470p	D5	1N4001
R3	100K	C3	100n	Transistors	
R4	470K	C4	100n	Q1 - Q4	2n5088
R5	100R	C5	470p	Pots	
R6	15K	C6	100n	SUS	100kB
R7	1K	C7	100n	TONE	100kB
R8	8K2	C8	470p	VOL	100kA
R9	100K	C9	100n		
R10	470K	C10	4n		
R11	100R	C11	10n		
R12	10K	C12	100n		
R13	8K2	C13	100n		
R14	100K	C14	47uF		
R15	470K	C15	100n		
R16	100R				
R17	15K				
R18	39K				
R19	39K				
R20	390K				
R21	100K				
R22	10K				
R23	2K7				
R24	100R				

Green Russian					
Resistors		Caps		Diodes	
R1	1M	C1	100n	D1 - D4	1n914
R2	39K	C2	470p	D5	1N4001
R3	100K	C3	100n	Transistors	
R4	470K	C4	100n	Q1 - Q4	2n5088
R5	390R	C5	470p	Pots	
R6	12K	C6	47n	SUS	100kB
R7	1K	C7	100n	TONE	100kB
R8	10K	C8	470p	VOL	100kA
R9	100K	C9	47n		
R10	470K	C10	3n9		
R11	390R	C11	10n		
R12	12K	C12	100n		
R13	10K	C13	100n		
R14	100K	C14	47uF		
R15	470K	C15	100n		
R16	390R				
R17	12K				
R18	22K				
R19	20K				
R20	470K				
R21	100K				
R22	10K				
R23	2K				
R24	100R				

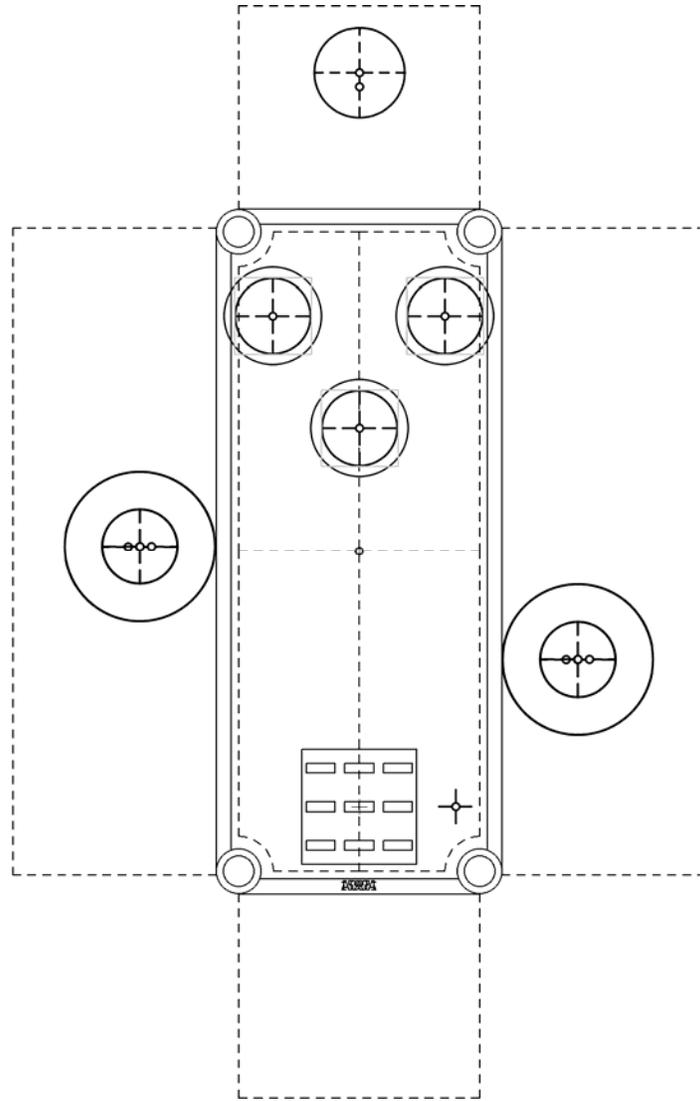
Civil War					
Resistors		Caps		Diodes	
R1	1M	C1	100n	D1 - D4	1n914
R2	39K	C2	430p	D5	1N4001
R3	100K	C3	100n	Transistors	
R4	470K	C4	100n	Q1 - Q4	2n5088
R5	390R	C5	430p	Pots	
R6	12K	C6	47n	SUS	100kB
R7	1K	C7	100n	TONE	100kB
R8	10K	C8	430p	VOL	100kA
R9	100K	C9	47n		
R10	470K	C10	3n9		
R11	390R	C11	10n		
R12	12K	C12	100n		
R13	10K	C13	100n		
R14	100K	C14	47uF		
R15	470K	C15	100n		
R16	390R				
R17	12K				
R18	22K				
R19	20K				
R20	470K				
R21	100K				
R22	10K				
R23	2K7				
R24	100R				

Mayo					
Resistors		Caps		Diodes	
R1	1M	C1	100n	D1 - D4	1n914
R2	33k	C2	500pF	D5	1N4001
R3	100k	C3	100n	Transistors	
R4	470k	C4	100n	Q1 - Q4	BC550
R5	100R	C5	500pF	Pots	
R6	18k	C6	100n	SUS	100kB
R7	820R	C7	100n	TONE	100kB
R8	8k2	C8	500pF	VOL	100kA
R9	100k	C9	100n		
R10	470k	C10	4n		
R11	100R	C11	10n		
R12	10k	C12	100n		
R13	8k2	C13	100n		
R14	100k	C14	47uF		
R15	470k	C15	100n		
R16	100R				
R17	18k				
R18	33k				
R19	33k				
R20	390k				
R21	100k				
R22	10k				
R23	2k7				
R24	100R				

Creamy Dreamer					
Resistors		Caps		Diodes	
R1	1M	C1	100n	D1 - D4	1n914
R2	33k	C2	560pF	D5	1N4001
R3	82k	C3	100n	Transistors	
R4	470k	C4	100n	Q1 - Q4	2n5088
R5	jumper	C5	560pF	Pots	
R6	22k	C6	50n	SUS	100kB
R7	1k	C7	100n	TONE	100kB
R8	15k	C8	560pF	VOL	100kA
R9	82k	C9	50n		
R10	470k	C10	4n		
R11	jumper	C11	10n		
R12	22k	C12	100n		
R13	15k	C13	100n		
R14	82k	C14	47uF		
R15	470k	C15	100n		
R16	jumper				
R17	22k				
R18	39k				
R19	39k				
R20	470k				
R21	100k				
R22	22k				
R23	2k2				
R24	100R				

1590A Drill Guide

3.64"W x 5.63"H



Overview

The **Rabbit Hole** is an open-ended project in which you can create numerous versions of the hugely popular Electro-Harmonix® Big Muff™. The Big Muff™ is a staple of modern rock and has been used and popularized by innumerable players in the last three decades. A components list has been included covering some of the many variations of this effect. The Rabbit Hole is the same project as the Mudbunny but is designed to fit in the 1590A enclosure.

Notes

- There are many transistors you can use in the Rabbit Hole. Alternatives to the 2n5088 include BC549C, BC550, BC182L, 2n5089, and MPSA18, as well as many more. Using different transistors will create unique variations in tone. Be careful to use the correct pin-outs, however. Some transistors, such as the BC549C will need to be rotated 180° from the silk screen drawing on the PCB due to its reversed pin-out. Always check the appropriate datasheet for your transistor BEFORE soldering.
- You can also create unique tones by using different diodes in place of the 1n914 (or the equivalent 1n4148). Different diodes such as germanium, LED, and mosfets (wired as diodes) offer the opportunity to customize the Rabbit Hole to your personal taste. Typical alternatives include 1n34a, 1n270, BAT41, red or green diffused 3mm or 5mm LEDs, and 2n7000 mosfets.
- Using germanium diodes in the D3/D4 position will sometimes create a very light octave effect. If you use them for both D1/D2 and D3/D4 you may get a slight “bloom” in the note decay (a VERY COOL effect). If using a mosfet for clipping, simply solder the gate and drain pins together on each mosfet and use the two leads (source and gate/drain) as the diode in a back to back configuration on the D1/D2 and/or D3/D4 positions. Keep in mind space is very limited on this PCB so it may be difficult to fit some diode types.

Resistors

Use 1/8W, if possible. 1/4W will also work but you will need to stand them up and bend the leads over (see my build pic at the end of this doc).

Caps

Film: 16v box-type film or similar. MLCC (multi-layer ceramic capacitors) will also work well.

Use low-profile 47uF electrolytic for C14:

<http://www.mouser.com/ProductDetail/Lelon/SS470M1EBK-0605P/?qs=%2fha2pyFaduiyAAvSifMpbODw%252bnxU4%2fmF%2f7sbuj8QXWHZy94xWJbRVg%3d%3d>

Pots

Alpha 9mm PCB Mount: <http://smallbear-electronics.mybigcommerce.com/alpha-single-gang-9mm-pc-mount/>

Jacks

I use these for 1590A builds

<http://www.mouser.com/Search/ProductDetail.aspx?R=NRJ4HFvirtualkey56810000virtualkey550-10284>

Which require these nuts: <http://www.mouser.com/ProductDetail/Neutrik/NRJ-NUT-B/?qs=S12Y1JoqO2B/J8w/0QDEXxm4CRfxKYczbewAXgkjeBc=>

Both of these types should also work but may require adjusting the provided drilling template somewhat

<http://smallbear-electronics.mybigcommerce.com/lumberg-1-4-compact-shrouded-mono-jack/>

<http://smallbear-electronics.mybigcommerce.com/1-4-in-mono-enclosed-111/>

DC

Any of these will be fine

<http://smallbear-electronics.mybigcommerce.com/dc-power-jack-all-plastic-unswitched/>

<http://smallbear-electronics.mybigcommerce.com/2-1-mm-plastic-round-external-nut/>

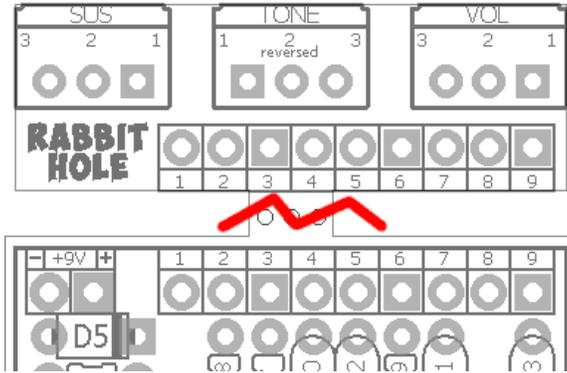
<http://smallbear-electronics.mybigcommerce.com/2-1-mm-all-plastic-round/>

Knobs

Use ½” diameter knobs!

Build Guide

The **Rabbit Hole** is comprised of two PCBs – the main board and the pots board. Before you start populating, gently break the two boards apart at their bridge point.



Use your wire cutter to clean up edges/leftover PCB material so they are flush. These two PCBs will be wired together later on.

Populate the main board and solder all your parts in. You should avoid the use of sockets as they will make components too tall to fit in the 1590A enclosure; solder all components directly to the PCB.

The pots are directly soldered to the second board. The SUS and VOL pots are soldered to the top and the Tone pot is soldered to the bottom to form the typical triangle knob arrangement. Finally, solder wires to connect the two boards together (wires 1-9). These wires should be about 1 – 1.5" long each to allow the pot board to bend at a 90° angle to the main board. When assembling the final pedal, the main board will rest on top of the input and output jacks while the pots board will bend over and attached with nuts to the enclosure.

Wiring Guide

