PIGBUTT2019

FX TYPE: Overdrive
Based on the Electro-Harmonix® Op-Amp Muff™
Enclosure Size: 1590B, 1590B2, 125B
"Softie" compatibility: Softie1&2
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Overview

The PigButt is a modded Op-Amp Muff™. It's a nasty little beast, full of saturated distortion; not too edgy nor too smooth. It provides a wonderful "wall of fuzz" like the Big Muff but with a different feel and texture. The PigButt also features a tone bypass switch which gives a nice mid-range alternative to the traditional Big Muff style tone control.
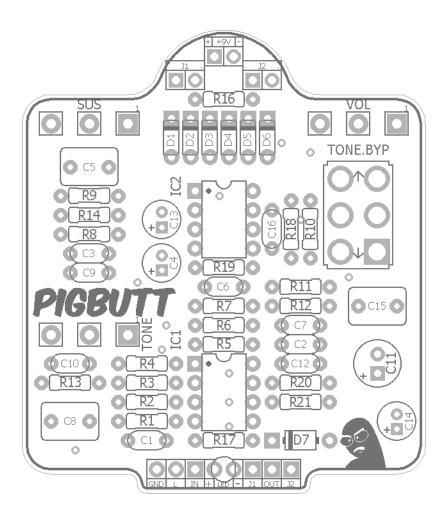
Controls

- **VOL:** The output volume.
- **TONE:** The familiar Big Muff™ tone stack, but with different values.
- **SUS:** Total amount of distortion.
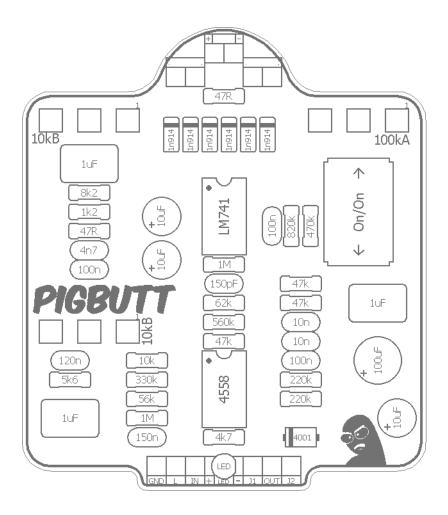- **TONE.BYP:** The tone control is bypassed when the switch is in the UP position.

Technical assistance for your build(s) is available via the madbeanpedals forum. Please go there rather than emailing me for assistance on builds. 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.

10kB

1n914 1n914 1n914 1n914 1n914 1n914

47R

100kA

1uF

8k2

1k2

47R

4n7

100n

10uF

10uF

LM741

100n 820k 470k

On/On

PIGBUTT

1M

150pF

62k

560k

47k

10kB

47k

47k

10n

10n

100n

220k

220k

1uF

100uF

120n

5k6

10k

330k

56k

1M

150n

1uF

4558

4k7

4001

10uF

LED

GND | L | IN | + | LED | − | J1 | OUT | J2

Resistors		Caps		Diodes	
R1	1M	C1	150n	D1 - D6	1n914
R2	56k	C2	10n	D7	4001
R3	330k	C3	4n7	**IC**	
R4	10k	C4	10uF	IC1	4558
R5	47k	C5	1uF	IC2	LM741
R6	560k	C6	150pF	**Switch**	
R7	62k	C7	10n	TONE.BYP	On/On
R8	47R	C8	1uF	**Pots**	
R9	8k2	C9	100n	SUS	10kB
R10	470k	C10	120n	TONE	10kB
R11	47k	C11	100uF	VOL	100kA
R12	47k	C12	100n		
R13	5k6	C13	10uF		
R14	1k2	C14	10uF		
R16	47R	C15	1uF		
R17	4k7	C16	100n		
R18	820k				
R19	1M				
R20	220k				
R21	220k				

Value	QTY	Type	Rating
47R	2	Metal / Carbon Film	1/4W
1k2	1	Metal / Carbon Film	1/4W
4k7	1	Metal / Carbon Film	1/4W
5k6	1	Metal / Carbon Film	1/4W
8k2	1	Metal / Carbon Film	1/4W
10k	1	Metal / Carbon Film	1/4W
47k	3	Metal / Carbon Film	1/4W
56k	1	Metal / Carbon Film	1/4W
62k	1	Metal / Carbon Film	1/4W
220k	2	Metal / Carbon Film	1/4W
330k	1	Metal / Carbon Film	1/4W
470k	1	Metal / Carbon Film	1/4W
560k	1	Metal / Carbon Film	1/4W
820k	1	Metal / Carbon Film	1/4W
1M	2	Metal / Carbon Film	1/4W
150pF	1	Ceramic / MLCC	16v min.
4n7	1	Film	16v min.
10n	2	Film	16v min.
100n	3	Film	16v min.
120n	1	Film	16v min.
150n	1	Film	16v min.
1uF	3	Film	16v min.
10uF	3	Electroltyic	16v min.
100uF	1	Electroltyic	16v min.
1n914	6		
4001	1		
4558	1		
LM741	1		
On/On	1	Solder Lug	
10kB	2	PCB Right Angle	16mm
100kA	1	PCB Right Angle	16mm

DPDT: http://smallbear-electronics.mybigcommerce.com/dpdt-short-lever-on-on/

10kB, 100kA: http://smallbear-electronics.mybigcommerce.com/alpha-single-gang-16mm-right-angle-pc-mount/

Thinline DC Jack:
http://smallbear-electronics.mybigcommerce.com/dc-power-jack-all-plastic-unswitched-2-1-mm/

Enclosed Mono:
http://smallbear-electronics.mybigcommerce.com/1-4-in-mono-enclosed-jack/
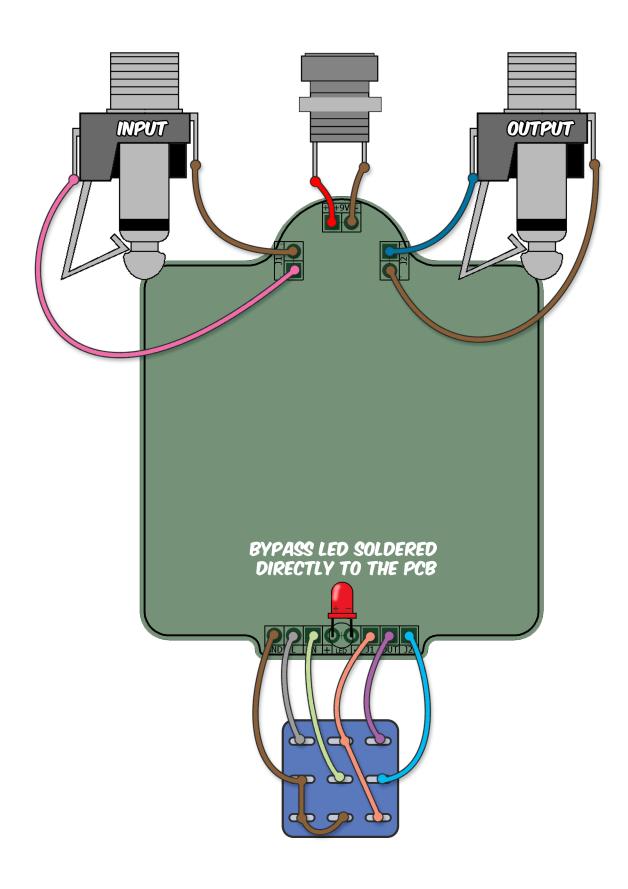http://smallbear-electronics.mybigcommerce.com/1-4-in-mono-enclosed-switchcraft-111x/

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

- C15 is not stock and was included in the original 2015 version. I added this 1uF cap as a matter of personal preference: I like having a single coupling cap as close to the effect output as possible. But, if you want to save yourself a part you can simply jumper it. There's no difference in end-tone as far as I can tell (by design!)
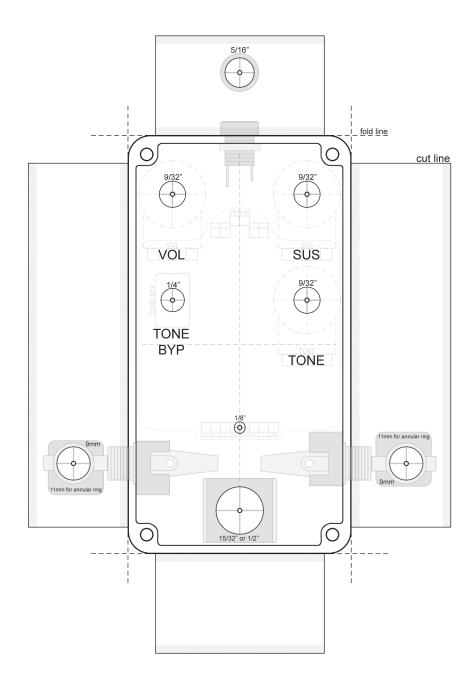
- Changing C7 will noticeably alter the mid-range of the tone bypass. I actually prefer a 4n7 there but I figured it might be too extreme for some people. You can socket that cap and try for yourself. A 22n also works well but is a bit darker and less "middy".

INPUT

OUTPUT

+9V

J1

J2

BYPASS LED SOLDERED
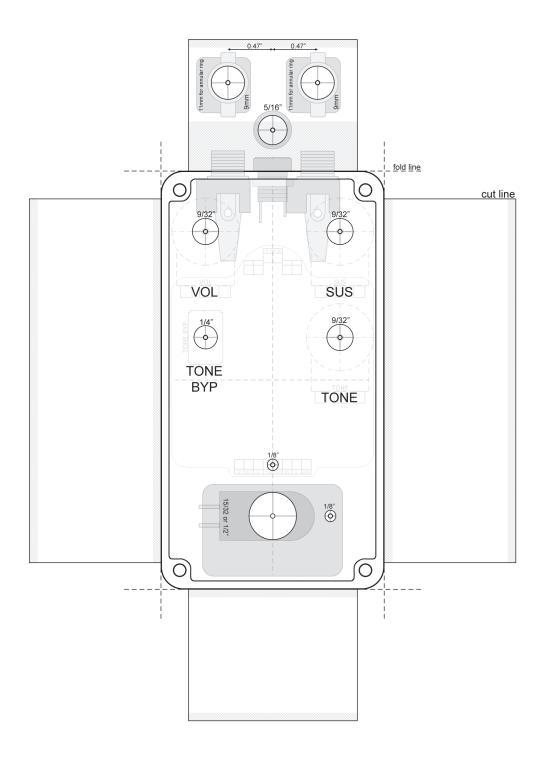DIRECTLY TO THE PCB

GND L IN + LED - J1 OUT J2

Note: *Drill Guides are approximate and may require tweaking depending on the types of jacks, switches and pots you use.*

- This is a tight fit, but should work if you use the Lumberg style 1/4" jacks. You may need rotate the input jack a bit since it is quite close to the PCB and 3pdt. Open frame jacks might fit, too.
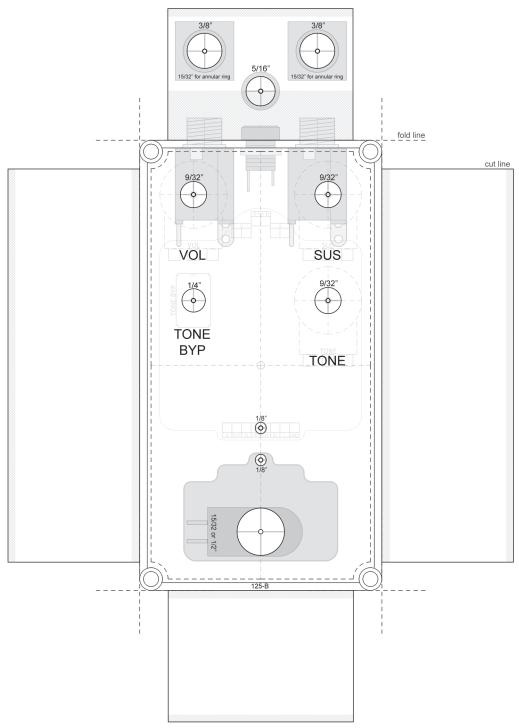- I don't recommend using any of the mbp 3pdt boards for this enclosure.

Note: *Drill Guides are approximate and may require tweaking depending on the types of jacks, switches and pots you use.*

- Shown with Softie 2 relay bypass. If you are using one of the mbp 3pdt bypass boards, or just a 3pdt switch on its own, move the drill spot for the switch a bit lower so you can fit everything properly. Drill only one LED spot!
- Lumberg style jacks are used here but other styles may fit using the same drill locations.

- Shown with Softie 1 relay bypass. Use the same drill spot for 3PDT switch or move to your desired location. Drill only one LED spot!
- Enclosed top jacks are used here, but you should also be able to fit open-frame metal jacks or the Lumberg style.
- You could also use side jacks but you'll need to move the Softie1 drill spot down. If you use side jacks with a regular 3pdt instead of the Softie simply pick your drill spots for the jacks.

IC1	DC
1	4.6
2	4.59
3	4.57
4	0
5	4.56
6	4.59
7	4.59
8	9.24

IC2	DC
1	ignore
2	4.92
3	~4.9
4	0
5	ignore
6	4.98
7	9.25
8	ignore

- 9.42vDC One Spot
- Current Draw ~ 3mA

PIG BUTT

based on the EHX IC Big Muff (tm)
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VC

VB

VR

J1
BYP_J1
GND

J2
BYP_J2
GND

+9V
R16 47R
R17 4K7
D7 4001
BYP_LED
BYP_⊥
GND
BYP_GND

C11 100uF
C12 100n
C16 100n
IC1_PWR

R20 220k
R21 220k
C14 10uF

R18 820k
R19 1M
GND
C13 10uF
GND

BYP_IN
IN
C1 150n
R2 56k
R1 1M
GND

VB
3 + IC1_A 4558 1
2 −
R3 330k

C3 4n7

R4 10k
R5 47k
C2 10n
GND
5 + IC1_B 4558 7
6 −
R6 560k
R7 62k
R8 47R
C4 10uF
GND

10kB SUS
C5 1uF
R9 8k2

VR VC
3 + LM741 IC2
2 −
4 8
GND
7 1
5 6
A2
A1 TONE.BYP.A
A3

R10 470k
C6 150pF

D1 1n914 D2 1n914 D3 1n914
D6 1n914 D5 1n914 D4 1n914

C7 10n
R11 47k
R12 47k
GND

C9 100n
C8 1uF
10kB TONE
R13 5k6
C10 120n
R14 1k2
GND GND

TONE.BYP.B
B1
B3
B2
C15 1uF
BYP_OUT
100kA VOL
OUT
GND

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