

GOD CITY INSTRUMENTS – Unofuzz V1.0 Build guide

The God City Instruments (GCI) Unofuzz is... you guessed it... a one knob fuzz! It's a mix of op amp and transistor muff style circuits but with a fixed tone stack. By referencing the Duncan TSC (tone stack calculator) and adjusting values, a wide range of tones can be found. R10 and R11 could even be replaced with a pot. TSC can be found here:

<https://www.guitarscience.net/tsc/bigmuff.htm>

This pedal is an easy build, but this guide is intended for people who have some experience building pedals. Component sourcing, component identification, assembly techniques, wiring stomp switches, etc. is not covered. The GCI Brutalist Jr. assembly guide has helpful information for less experienced builders. That guide can be found here:

<http://www.kurtballou.com/brutalistjr/>

A complete parts kit is not available at this time, but check this Google sheet for ordering information from many parts used in this PCB. It lists one possible brand and supplier for all parts commonly used by GCI, but many other brands and suppliers will work just as well.

docs.google.com/spreadsheets/d/1gRTF1VFbeBc9FX1ohjrtKPWfhw_TVHnxki03l3m7lcU/edit?pli=1#gid=27209130

Available separately is the GCI 3PDT utility PCB for PCB pin 3PDT footswitches. This PCB makes footswitch wiring quick and easy. Not compatible with solder lug style switches.

Don't forget to connect the ground pad of the PCB to the ground lug of the input, output, and DC power jacks! And the long leg of the status LED should go through the square pad.

Due to the scope of this project, technical support is not available. However, consider joining the GCI DIY PCB Builders group on Facebook to get advice from and share your work with other builders. We require that all group members agree to the rules before being accepted into the group.

<https://www.facebook.com/groups/2454786551255317/>

Component values for the PCB as well as some alternate values are listed below. This is a BOM for the PCB only. Resistors and diodes are 6.3mm leg spacing, film and ceramic capacitors are 5.08mm leg spacing, and electrolytic capacitors are 2.54mm leg spacing. I/O jacks, DC jack, switch, enclosure, and knobs are not listed. The schematic and a drill template for a 125B (1590N1) sized enclosure are also attached.

Part	Value	Description	Substitute	Substitution Notes
C1	100u	6MM Electrolytic cap	47u-220u	Power filtering.
C2	100u	6MM Electrolytic cap	47u-220u	Power filtering.
C3	47n	Film cap	10n-100n	Forms input HPF with R3.
C4	2.2n	Film cap	1n-4.7n	Forms input LPF with R5.
C5	3.3n	Film cap	470p-10n	Forms output LPF with R7.
C6	33n	Film cap	10n-47n	Affects frequency response. See Duncan TSC.
C7	4.7n	Film cap	2.2n-10n	Affects frequency response. See Duncan TSC.
C8	330p	MLCC		
C9	0.22u	Film cap	0.1u-0.47u	Forms HPF with R13 in op amp stage.
C10	1u	Film cap		
C11	100p	MLCC		
C12	0.1u	Film cap		
C13	0.1u	Film cap		
C14	0.47u	Film cap		
C15	2.2n	Film cap	1n-4.7n	Bypass cap. Brighter tone at low gain.
C16	560p	MLCC	220p-680p	Smooths transistor gain.
C17	47n	Film cap		
IC1	741	single op amp	OP07, LF351, LM308	
Q1	BC550	TO-92 transistor	BC338, 2n5088	NPN transistor. CHECK PINOUTS!!!
Q2	BC550	TO-92 transistor	BC338, 2n5089	NPN transistor. CHECK PINOUTS!!!
D1	1n914	Si diode	1n34a, bat41, 1n456a	Op amp stage soft clipping diode.
D2	1n914	Si diode	1n34a, bat41, 1n456a	Op amp stage soft clipping diode.
D3	1n914	Si diode	1n34a, bat41, 1n456a	Op amp stage soft clipping diode.
D4	1n270	Ge diode	1n34a, bat41, 1n914	Transistor stage soft clipping diode.
D5	1n270	Ge diode	1n34a, bat41, 1n915	Transistor stage soft clipping diode.
D6	1n270	Ge diode	1n34a, bat41, 1n916	Transistor stage soft clipping diode.
D7	1n5818	Schottky diode	1n5817, 1n4001	Any suitable polarity protection diode.
LED	L1	3mm LED		
CLR	4.7k	1/4 watt resistor	1k-10k	Current limiting resistor for LED.
R1	10k	1/4 watt resistor		
R2	10k	1/4 watt resistor		
R3	1M	1/4 watt resistor		
R4	1M	1/4 watt resistor		
R5	10k	1/4 watt resistor	1k-22k	Forms input LPF with C4.
R6	100k	1/4 watt resistor		
R7	1k	1/4 watt resistor		Forms output LPF with C5.
R8	33k	1/4 watt resistor	10k-47k	Affects frequency response. See Duncan TSC.
R9	6.8k	1/4 watt resistor	4.7k-27k	Affects mid-range. Smaller = more mid.
R10	33k	1/4 watt resistor	0-100k	Affects bass/treble balance. R10 + R11 = 100k
R11	68k	1/4 watt resistor	0-100k	Affects bass/treble balance. R10 + R11 = 100k
R12	270k	1/4 watt resistor		
R13	1.8k	1/4 watt resistor	1.2k-3.3k	Forms HPF with C9. Smaller = brighter and more gain.
R14	470k	1/4 watt resistor		
R15	10k	1/4 watt resistor		
R16	10k	1/4 watt resistor		
R17	22k	1/4 watt resistor		
R18	470k	1/4 watt resistor		
R19	220k	1/4 watt resistor		
R20	220R	1/4 watt resistor		
R21	10k	1/4 watt resistor		
R22	220R	1/4 watt resistor		
R23	220k	1/4 watt resistor		
R24	10k	1/4 watt resistor		
FUZZ	A100K	16mm pot		
S	PAD	send to PCB		
L+	PAD	LED+		

L-	PAD	LED-		
R	PAD	return from PCB		
V	PAD	9V input		
G	PAD	ground		

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KURT BALLOU 2020



