

## GOD CITY INSTRUMENTS – Decker V1.0 Build guide

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The God City Instruments (GCI) Decker is a simple FMV (Fender Marshall Vox) EQ circuit similar to the tone stack found in many classic amps. A volume trim control is also available on the front panel to compensate for any loss or boost in volume caused by equalization. The op amp stages of this circuit can easily be tuned to provide a healthy amount of boost and/or overdrive if so desired. It can be built as a stand-alone pedal or as an add-on to a gain circuit in need of amp-like EQ. By adjusting values, a wide range of tonal options are available. Duncan Amps has a Windows application that can be used to quickly tune this circuit to the desired frequency response.

<http://www.duncanamps.com/tsc/>

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/>

For your convenience, complete parts kits including everything you need except the PCB can be purchased through Small Bear Electronics. Be wary that they may need to make substitutions for work-alike components which may or may not influence the tone of the pedal. Be aware that transistors may have been substituted for work-alikes with different pinouts.

<http://smallbear-electronics.mybigcommerce.com/kit-decker-pcb-not-included/>

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!

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	0.47u	Film cap		See Duncan TSC
C2	47n	Film cap	10n-0.1u	Input cap. Forms HPF with R9.
C3	100u	Electrolytic cap		
C4	0.1u	Film cap		
C5	100u	Electrolytic cap		
C6	1u	Film cap		
C7	4.7n	Film cap		See Duncan TSC
C8	0.33u	Film cap		See Duncan TSC
C9	2.2n	Film cap	1n-4.7n	Forms input LPF with R10.
C10	0.1u MLCC	MLCC		
C11	100p	MLCC	220p-1n	Raise if using smaller R4 values.
C12	1u	Film cap		
LED	L1	LED		
D1	1n5818	Schottky diode	1n5817, 1n4001, bat41	Any suitable protection diode for 9v.
IC	LM833	Dual Op Amp	TL072, OPA2134, etc	Any pin compatible dual op amp
CLR	4.7k	1/4 watt resistor	1k-10k	Current limiting resistor for LED
R1	1M	1/4 watt resistor	2.2M	Pull down resistor
R2	10k	1/4 watt resistor		
R3	10k	1/4 watt resistor		
R4	10k	1/4 watt resistor	1k-47k	Lower for more output gain and op amp clipping.
R5	10k	1/4 watt resistor	1k-47k	Lower for more input gain and op amp clipping.
R6	100k	1/4 watt resistor		
R7	1k	1/4 watt resistor		
R8	10k	1/4 watt resistor		
R9	1M	1/4 watt resistor		
R10	10k	1/4 watt resistor		
R11	100k	1/4 watt resistor		
TREBLE	B25k	Potentiometers		See Duncan TSC
BASS	A100k	Potentiometers		See Duncan TSC
MID	B5k	Potentiometers		See Duncan TSC
SLOPE	A10k	Potentiometers		See Duncan TSC
TRIM	A100k	Potentiometers		
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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