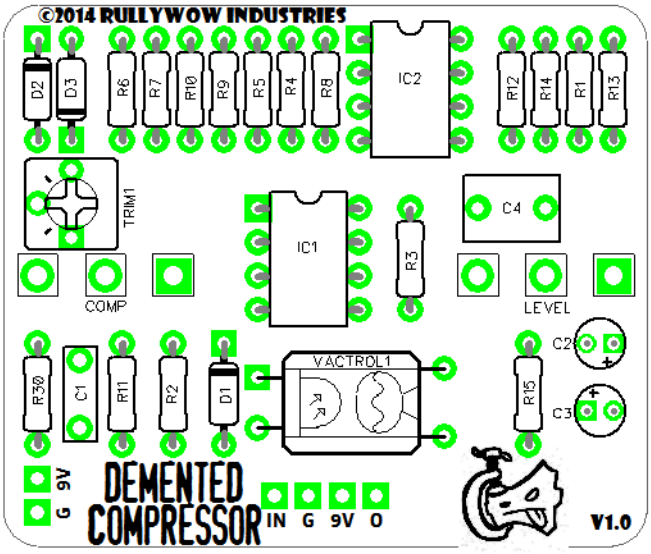
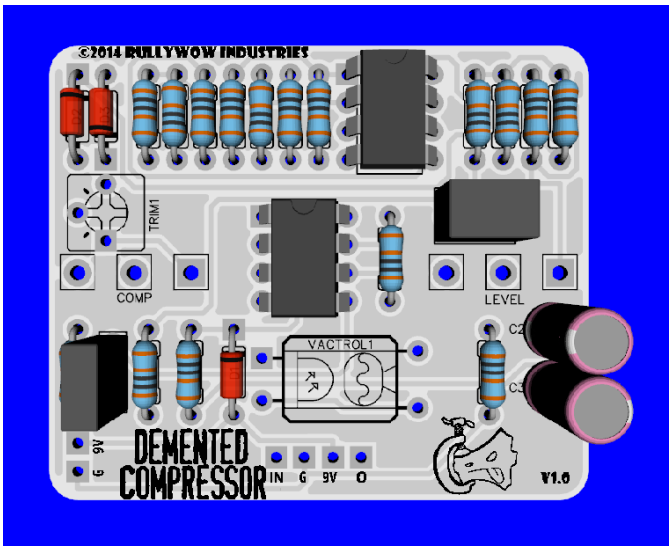




Description:

The Demented Compressor project is based on the Demeter Compulator™. It is a versatile and good sounding optical compressor circuit which utilizes the Vactrol VTL5C10 Optocoupler.

Much effort has been taken to make the PCB true to the original circuit while making it fun and easy to build.

Effect Control (to Major Tom)

The PCB is very simple to use, with only two external knobs and one internal trimmer.

- **LEVEL** sets the overall volume (duh!)
- **COMP** which sets the amount of compression
- An **internal trimmer** should be set to 1k1 as a reference point but you can adjust this to suit different instruments.

The knobs are interactive, so as you increase the COMP, you will want to increase the LEVEL in order to make up for the lost volume as your signal is squished. Yay!

Bill of Materials:

Resistors	
R1	47k
R2	47k
R3	10k
R4	10k
R5	1k
R6	10k
R7	470R
R8	1k
R9	1k
R10	619R
R11	619R
R12	10k
R13	10k
R14	1k5
R15	4k7
R30	1M

Capacitors	
C1	10n box
C2	4u7 electro
C3	4u7 electro
C4	1uF film

Diodes	
D1-D3	1n4148

IC	
IC1	LF353
IC2	LF353
VACTROL	VTL5C10*

Pots	
COMP	20kA
LEVEL	20kA
TRIM	10k*

*set at 1k1 between pins 2&3

Component Types

Resistors: standard 1/4w carbon film or metal film, axial leads.

Film capacitors : are either box type or Panasonic ECQ series. 5mm lead spacing.

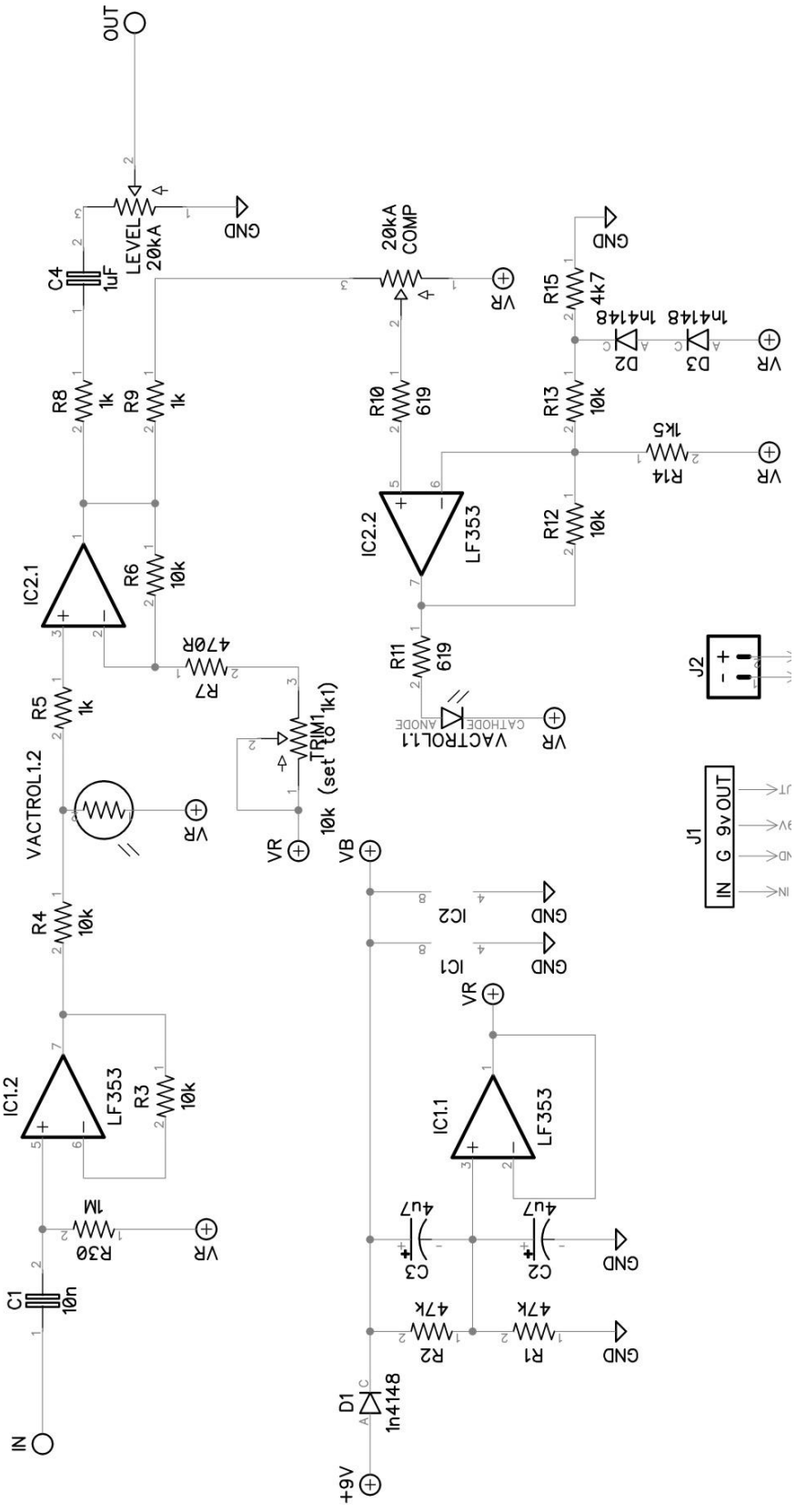
Electrolytic capacitors: 5mm diameter, height as short as possible (5mm or 7mm preferred). 16v or 25v recommended here.

IC (opamps): suggested you use LF353 (as per the original). The LF353 is a JFET opamp although you may try to substitute an OP275, NE5534, TL072 which may work (or not). It is recommended to socket the ICs for experimentation and to facilitate replacement.

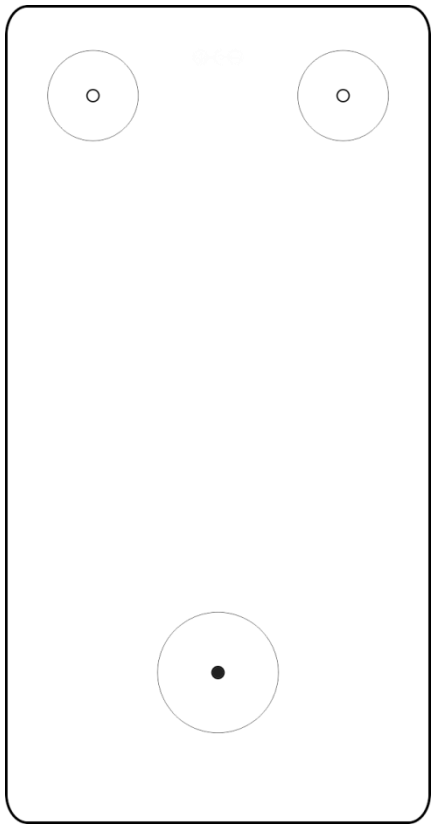
*** Vactrol** is the VTL5C10. It is **IMPORTANT** to understand that the circuit revolves around the particular characteristics of this very optocoupler. Using other LED/LDR combos will probably not work as intended. For best results use only the VTL5C10 (other LDR/LED combos and Vactrols will probably not work as intended).

Diodes are "vanilla" 1n4148. Mmm...vanilla.

Schematic


OUT
LEVEL 20kA
GND
C4 1uF
20kA COMP
VR
R15 4k7
GND
R8 1k
R9 1k
R10 619
R13 10k
1n4148
D2
D3
R14 1K5
IC2.2
LF353
R12 10k
IC2.1
R6 10k
R11 619
VACTROL1.1
J2
R7 470R
TRIM1 10k (set to 1k1)
R5 1k
VACTROL1.2
VB
J1
IN G 9v OUT
R4 10k
IC2
IC1
IC1.2
LF353
R3 10k
IC1.1
LF353
1M
R30
C3 4u7
C2 4u7
C1 10n
R2 47k
R1 47k
D1 1n4148
IN
+9V

Drill Template (1590B/1590NS)



Please note that this drill template is approximate. Please check all measurements before you commit to drill. Spacing of the two pots is 1.3" center to center.

Tips for a Successful Build:

- Take your time and ensure each component is the right value before soldering!
- The trimmer internally is reported to be set to 1k1 resistance (between pins 2&3). Depending on the instrument, you may want to tweak this for best sounding results. It would be a good idea to write the 1k1 starting position on the trim pot with a marker, and then tweak from there.
- It is recommended to populate starting with the shortest components to the tallest. In this order it would be diodes, resistors, film caps, electro caps, and Vactrol
- PCB mounted pots are 16mm Alpha type. It is suggested to put them in the enclosure first before soldering to the PCB to avoid stress on the PCB
- The IN/GND/9V/OUT pads on the PCB are a perfect match for the 3PDT boards available at www.rullywow.com
- Always "rock it before you box it"...meaning make sure the circuit works before putting it into an enclosure. If it doesn't work "outside the box," it won't work inside...I promise!
- For wiring the 3PDT footswitch and all jacks, it is highly suggested to use the great "Madbean Standard Wiring Diagram" available at www.madbeanpedals.com This site (and forum) is a wealth of great information and they have excellent PCB projects as well.

Terms of Use:

- PCBs from www.rullywow.com are intended for DIY use and are not allowed for commercial resale. It is OK to build a few pedals for your friends, bandmates, yourself (that is what the DIY guitar pedal community is all about!). It is not OK to start your own boutique "pedal company" using this PCB or any other Rullywow Industries PCB.