

# Wolfgang-5051

**Based on:**  
Peavey EVH 5150™  
**Effect type:**  
High Gain Preamp  
**Build difficult:**  
Average/Advanced

**Amount of parts:**  
High, total 89 components  
**Technology:**  
Dual OpAmp tube emulation.  
**Power consumption:**  
9V(22mA)

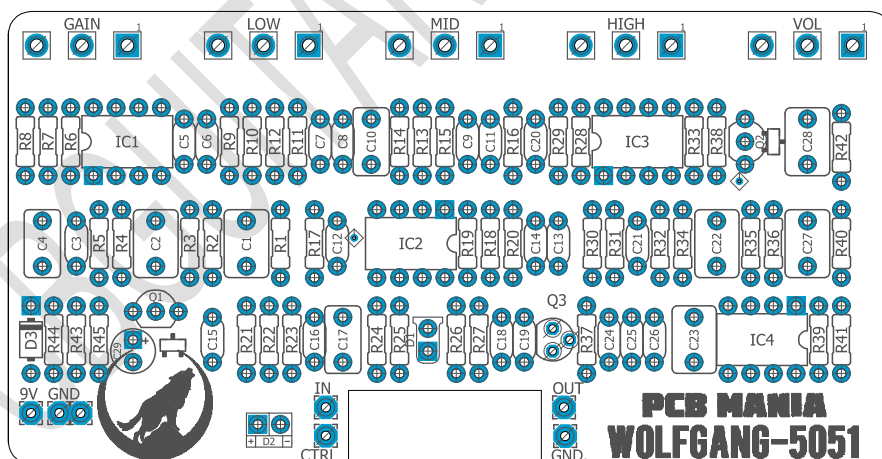
**Enclosure type:**  
1590bb  
**Get your board at:**  
[Clockwork Orange](#)  
**Get your kit at:**  
[Das Musikding \(Europe\)](#)

## Project overview:

Six gain stages preamp with a lot of attenuation and select filtering between each stage to get the desired frequency and phase response characteristics of the original Peavey EVH 5150 head preamp section.

Features a 3 band tone stack with an additional gain recovery stage.

Even if this PCB is pedal friendly, due the immense amount of output, this beast shines the best as a Preamp on the FX loop.



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## Introduction

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Wolfgang is based on the signature Amp one of the most influencing guitar players of all time and most likely the reason for many of you to start playing guitar! I mean, you read the name and have the riffs in your head, aren't you? But some of you maybe still not 100% sure who we are talking about? Okay, I stop to rave about this guitar genius with the black and white strips running all over his red axes and come back to the topic.

For this pedal we went back to the roots and stick with the original Schematic of the Tube preamp, modeling it to make a useful Distortion for the old fans, the modern players and most important for the DIY builders.

The board allows to use either T0-92 or SMD Footprint. We also added a 3-Band EQ like the newer versions have it to tame this angry beast for your needs and pressed all this insane amount of Gain and Volume this build offers in a 1590BB enclosure. This is not a beginner project but a rewarding one.

This beast has an insanely loud output, so remember, you can achieve great results with this pedal in your board, but is on the FX loops where this beasts shines.

## Controls

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- Gain
- Volume
- Bass
- Treble
- Mids

# Bill of materials

Resistors	
Part	Value
R1	1m
R2	1m
R3	10k
R4	1m
R5	68k
R6	8k2
R7	1k
R8	1k8
R9	47k
R10	100k
R11	47k
R12	100k
R13	2k7
R14	1k5
R15	2k2
R16	47k
R17	100k
R18	2k7
R19	2k7
R20	33k
R21	22k
R22	2k7
R23	1k8
R24	1k
R25	2k2
R26	100k
R27	10k
R28	18k
R29	1k5
R30	2k2
R31	100k
R32	100k
R33	2k7

R34	2k7
R35	1m
R36	10k
R37	47k
R38	47k
R39	1m
R40	4k7
R41	1k
R42	1M
R43	10k
R44	10k
R45	2k7-4k7

Capacitors	
Part	Value
C1	1u
C2	1u
C3	150pf
C4	680n
C5	220n
C6	22n
C7	10n
C8	220pf
C9	18n
C10	680n
C11	220n
C12	47pf
C13	220n
C14	10n
C15	5n6
C16	5n6
C17	680n
C18	220n
C19	1n

C20	180pf
C21	220n
C22	1u
C23	1u
C24	560pf
C25	22n
C26	22n
C27	1u
C28	1u
C29	220uf electrolytic

Semiconductors	
Part	Value
Q1	J201
Q2	J201
Q3	BC557
D1	3mm red LED
D2	5mm red LED
D3	1N5817
IC1	TL062
IC2	TL062
IC3	TL062
IC4	TL062

Potentiometers	
Part	Value
HIGH	250k B
VOL	100k A
LOW	1M A
MID	50k B
GAIN	100K B

# Shopping list

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Resistors		
Qty	Value	Parts
6	1m	R1, R2, R4, R35, R39, R42
6	100k	R10, R12, R17, R26, R31, R32
6	2k7	R13, R18, R19, R22, R33, R34
2	1k5	R14, R29
3	2k2	R15, R25, R30
1	33k	R20
1	22k	R21
1	18k	R28
5	10k	R3, R27, R36, R43, R44
1	4k7	R40
1	2k7-4k7	R45
1	68k	R5
1	8k2	R6
3	1k	R7, R24, R41
2	1k8	R8, R23
5	47k	R9, R11, R16, R37, R38

Capacitors		
Qty	Value	Parts
6	1u	C1, C2, C22, C23, C27, C28
1	47pf	C12
2	5n6	C15, C16
1	1n	C19
1	180pf	C20
1	560pf	C24
1	220uf	C29
1	150pf	C3
3	680n	C4, C10, C17
5	220n	C5, C11, C13, C18, C21
3	22n	C6, C25, C26
2	10n	C7, C14
1	220pf	C8
1	18n	C9

Pots		
Qty	Value	Parts
1	100k A	VOL
1	100k B	GAIN
1	250k B	HIGH
1	1M A	LOW
1	50k B	MID

Semiconductors		
Qty	Value	Parts
4	TL062	IC1, IC2, IC3, IC4
2	J201	Q1, Q2
1	BC557	Q3
1	3mm RED LED	D1
1	5mm LED	D2

# Components Recommendations

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As many people like to experiment some pedals with higher voltage, always ensure the max tolerance of your **electrolytic capacitors** is over 25v.

This board has been tested using Film box capacitors for most of the values over 1nf, and ceramics discs for the ones under 1nf. However, high quality components such as Wima's Capacitors and Panasonic's electrolytics can deliver a better performance.

All the resistors used for testing this project are 1/4W Metal Film.

The BOM and Shopping list are exclusively regarding this project. It doesn't include all the hardware like the 3PDT bypass switch, audio/dc jacks, enclosure, etc.

**The Transistors JFET J201 are the heart of this build. Make sure to get high quality ones from trusted vendors and not cheap Asian counterfeits! I strongly recommend the use of SMD transistors as they are much more reliable quality wise.**

## Build Notes

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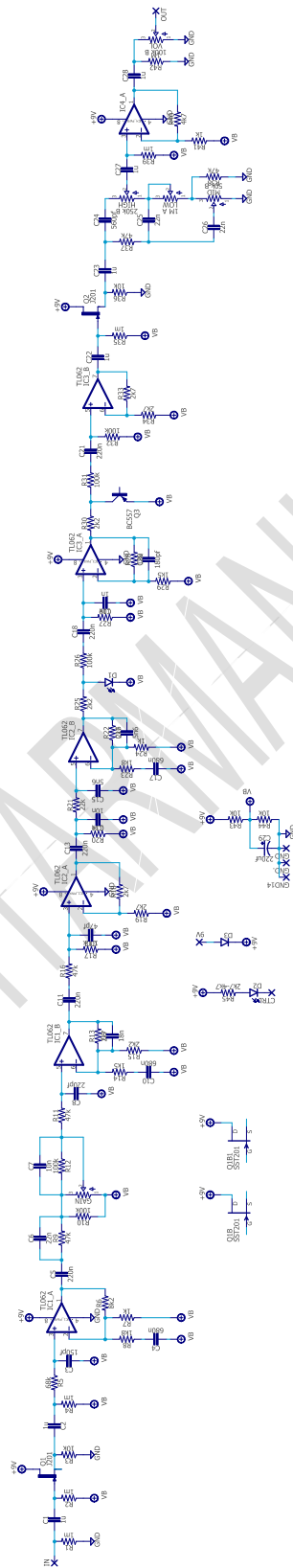
If this is one of your first projects I recommend you to take a look on our [Pedal Building Guide](#)

For a successful and tidy build it's recommended the following order:

1. Resistors & diodes
2. Capacitors, starting with the smaller ones and the ceramic ones.
3. Electrolytic capacitors (always check the polarity)
4. Transistors
5. Wires
6. Potentiometers and switches
7. Off board wiring

# Schematic

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# Wiring Diagram

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All our projects include a free 3PDT Board to make the wiring easier and tidier. Also all of our PCBs feature the status LED on board.

The pad named “Ctrl” or “LED” is the one that controls the status of the led, wire it to the “LED” pad on the 3PDT board, or in control slug of your 3PDT.

This board has been designed to match our EZ 3PDT PCB check it [here](#) to access to our [Pedal Wiring Guide](#)

# Drill Template

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This Project has been planned to fit into a 1590bb enclosure type.

Check the Attached “Drilling templates” to drill the box properly. The files are on Scale 1:1, ready to print in an A4 page.

# Licensing and Usage

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We really appreciate your trust and support buying this PCB, as well as your will to dive into the DIY electronics world. That’s why for us is really important that you can make this project work properly and to enjoy not only the building process, but also to experiment and play with it on your rig.

We try to reply to every question we receive on our email or in our social media, but we try to encourage all our customers to join our [PCB Guitar Mania – Builders Group](#) on Facebook, in order to post all your doubts, issues, suggestions or request, as well to share your builds and have some feedback from us and other fellow builders!

All of our projects have been tested following this same guide on their standard configurations. Although, not all of the variations and mods have necessarily been tested. These are suggestions based on the schematic analysis, and on the experiences and opinions of others. Feel free to share with us your opinions and suggestions regarding the mods your own personal experimentation.

These boards may be used for commercial endeavors in any quantity unless specifically noted. No attribution is necessary, though accreditation or a link back is always greatly appreciated.

If you are a builder planning to make your own run of pedals we also offer the service of custom made boards with your brand and logo, design according your specifications.

The only usage restrictions are that, first, you cannot resell the PCB as part of a kit without prior arrangement with us, and second, you cannot scratch off the silk screen, or other way of trying to hide our logos and the source of the PCBs. Like it’s written above, if you want to have your own designs, with your brand and logo we could certainly reach an agreement.

Follow us on [Instagram](#) and [Facebook](#) to stay in tune with the latest projects!

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