

# Engel Pre-amp

**Based on:**  
Engl 530 Preamp  
**Effect type:**  
High gain preamp  
**Build difficult:**  
Average

**Amount of parts:**  
High, total 71 components  
**Technology:**  
Opamp  
**Power consumption:**  
9V

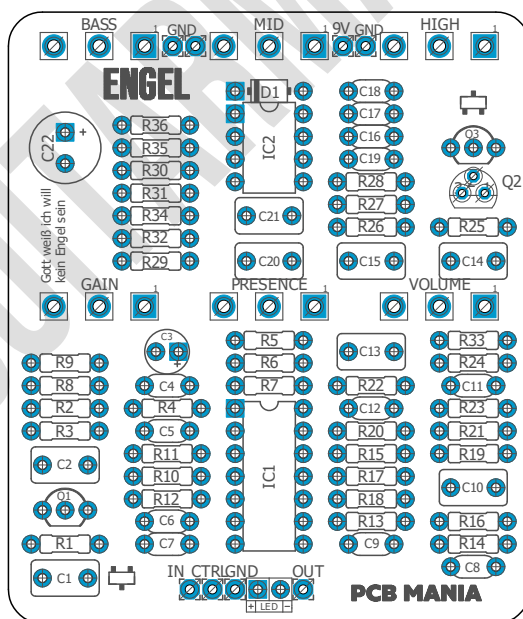
**Enclosure type:**  
125b  
**Get your board at:**  
[Engel Preamp](#)  
**Get your kit at:**  
[Das Musikding \(Europe\)](#)

## Project overview:

Engl is certainly a synonym of an era of German metal tones. Here we bring it that to you on a shape of a pedal!

An original design by Bajaman based on the frequency response and phase characteristics of the ENGL 530 preamp high gain channel. Including Tone stack and presence control.

We have included an **extra gain mod** if you want to take more juice out of this machine!



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## Introduction

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Engl is a German company mostly famous for their high gain amps that you can definitely hear on many German metal bands. They designed the e530 tube preamp as compact rack suitable for both studio and touring, including a bunch of really interesting features, such as built in cab simulator, midi controls, and more.

This model besides being labeled as 'modern rock', it's clearly a preamp designed for metal, and for sure can deliver plenty of gain! This unit is designed to make the rhythms pop out with definition - but if you want to get some real squeeze for soloing I recommend sticking a pedal like the Collision drive in front. In fact, that's what seemed to work best for leads - once the unit's been set up for rhythm, stomp on the overdrive and let rip.

After testing this pedal for a while we can conclude that even if it could work fine as preamp on itself it works the best as a standard Engl flavored pedal. Making it much friendly for your pedal board, allowing to place it on different places of the chain.

One important note about this circuit is that the Presence knob could get a bit noisy and fizzy outside the enclosure. However the problem seems to be solved once is boxed.

## Controls

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- Volume
- Gain
- Bass
- Treble
- Mids
- Presence

# Bill of materials

Resistors	
Part	Value
R1	1M5
R2	1M
R3	10K
R4	1M
R5	820r
R6	1K5
R7	8K2*
R8	22K
R9	10K
R10	560r
R11	47K
R12	2K7*
R13	10K
R14	22K
R15	22K
R16	47K
R17	560r
R18	2K7
R19	10K
R20	15K
R21	47K
R22	2K7
R23	560r
R24	2K2
R25	1M
R26	10K
R27	100K
R28	100K
R29	1M

R30	1K
R31	4K7
R32	1M
R33	1K
R34	4K7
R35	10K
R36	10K

Capacitors	
Part	Value
C1	1u
C2	1u
C4	15n
C5	120p
C6	3n3*
C7	15n
C8	470p
C9	22n
C10	1u
C11	390p
C12	10n
C13	1u
C14	1u
C15	1u
C16	470p
C17	22n
C18	22n
C19	1n
C20	1u
C21	1u

Electrolytics Capacitors	
Part	Value
C3	22u
C22	220u

Potentiometers	
Part	Value
BASS	A1M
GAIN	B100K
HIGH	B250K
MID	B20K
PRESENCE	A1M
VOLUME	B100K

IC	
Part	Value
IC1	TL064
IC2	TL061

Transistors	
Part	Value
Q1	J201
Q2	BC547B
Q3	J201

Diodes	
Part	Value
D1	1N5817
LED	3mm LED

# Shopping list

Resistors		
Qty	Value	Parts
2	100K	R27, R28
7	10K	R3, R9, R13, R19, R26, R35, R36
1	15K	R20
2	1K	R30, R33
1	1K5	R6
5	1M	R2, R4, R25, R29, R32
1	1M5	R1
3	22K	R8, R14, R15
1	2K2	R24
3	2K7	R12, R18, R22
3	47K	R11, R16, R21
2	4K7	R31, R34
3	560r	R10, R17, R23
1	820r	R5
1	8K2	R7

Capacitors		
Qty	Value	Parts
1	10n	C12
1	120p	C5
2	15n	C4, C7
1	1n	C19
8	1u	C1, C2, C10, C13, C14, C15, C20, C21
3	22n	C9, C17, C18
1	390p	C11
1	3n3	C6
2	470p	C8, C16

Electrolytics Capacitors		
Qty	Value	Parts
1	22u	C3
	220u	C22

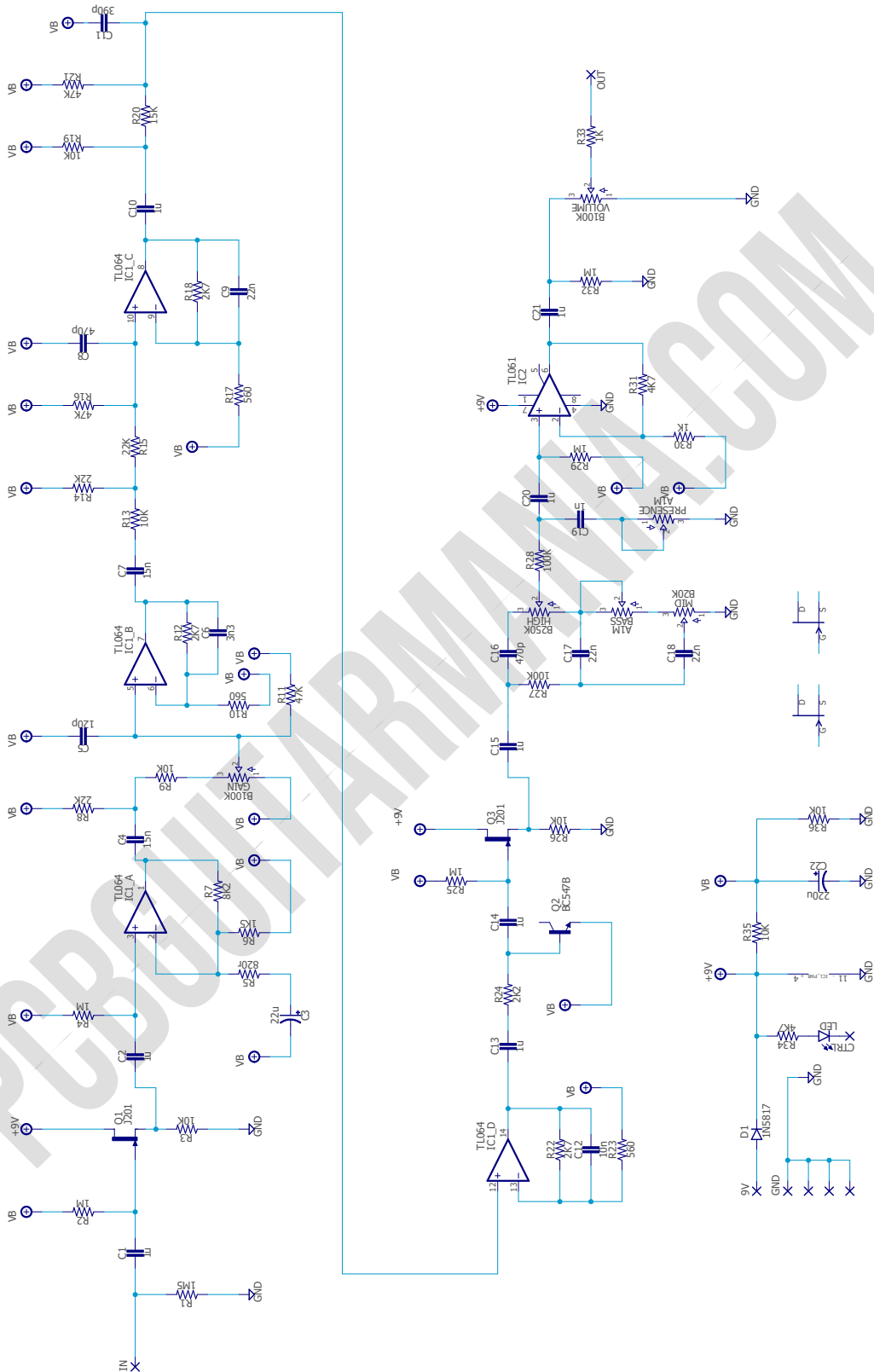
Potentiometers		
Qty	Value	Parts
2	A1M	BASS, PRESENCE
2	B100K	GAIN, VOLUME
1	B20K	MID
1	B250K	HIGH

IC		
Qty	Value	Parts
1	TL061	IC2
1	TL064	IC1

Transistors		
Qty	Value	Parts
1	BC547B	Q2
2	J201	Q1, Q3

Diodes		
Qty	Value	Parts
1	1N5817	D1
1	3mm LED	LED

# Schematic



# 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.

## High gain Mod\*

Use the following values on this places to get more gain out of this unit

Part	Value
R7	15k
R12	6k8
C6	1n5

## 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

# 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](#). **The booster goes after the main drive!**

# Drill Template

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This Project has been planned to fit into a 125b 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!