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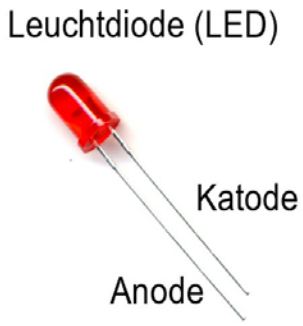
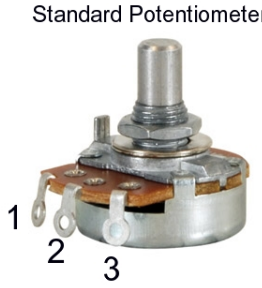
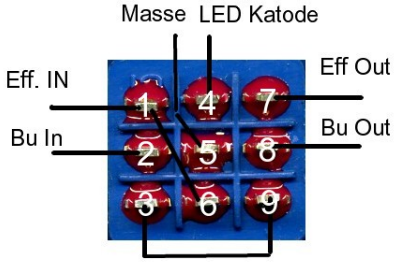
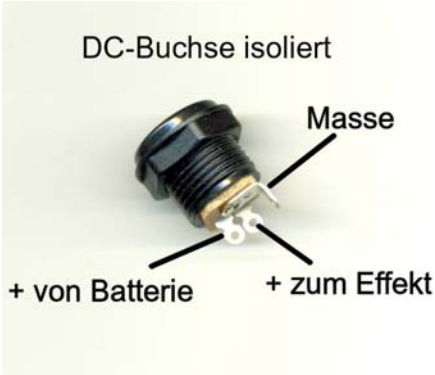
Manual ProCo© Rat Clone

Some connection of important components

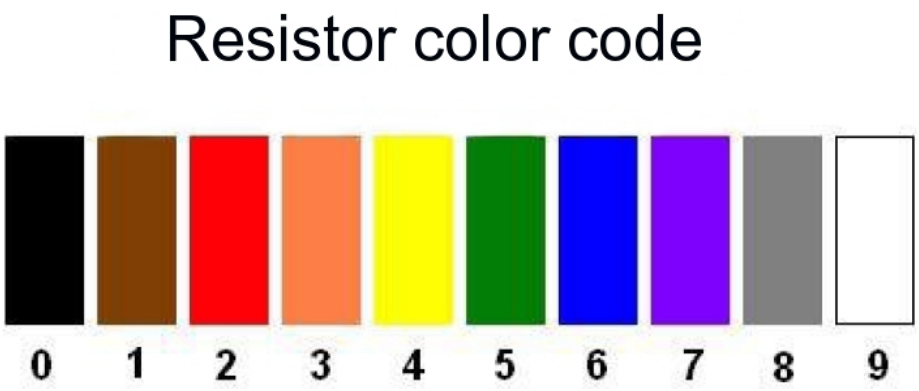


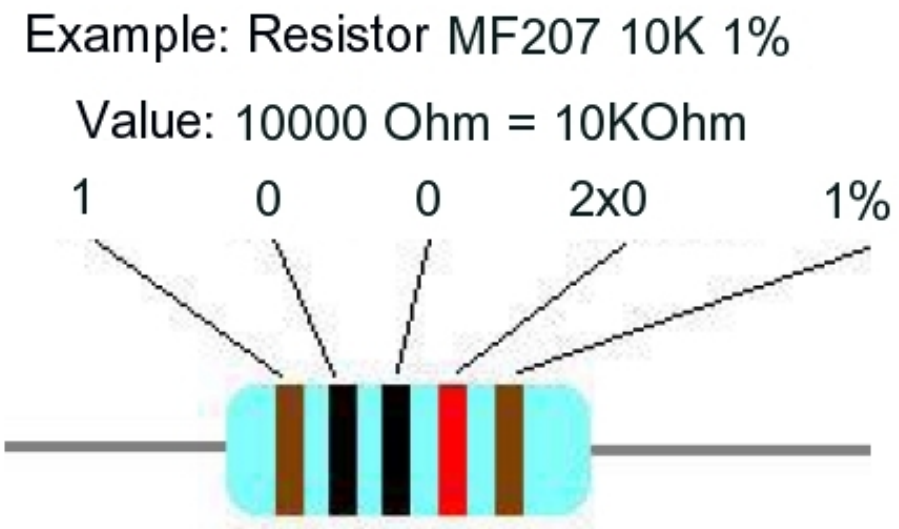




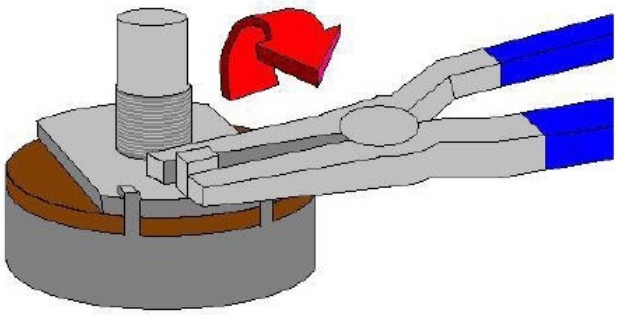


Color table for resistors MF207 FTE52 1% and a example





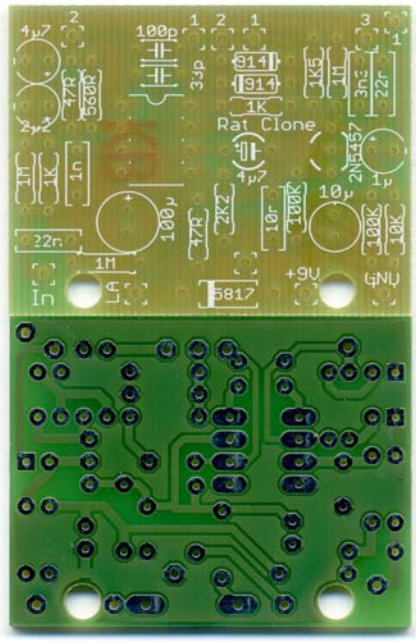
Breaking nose at the potentiometer
Nase am Poti mit einer Flachzange abbrechen



Bill of material

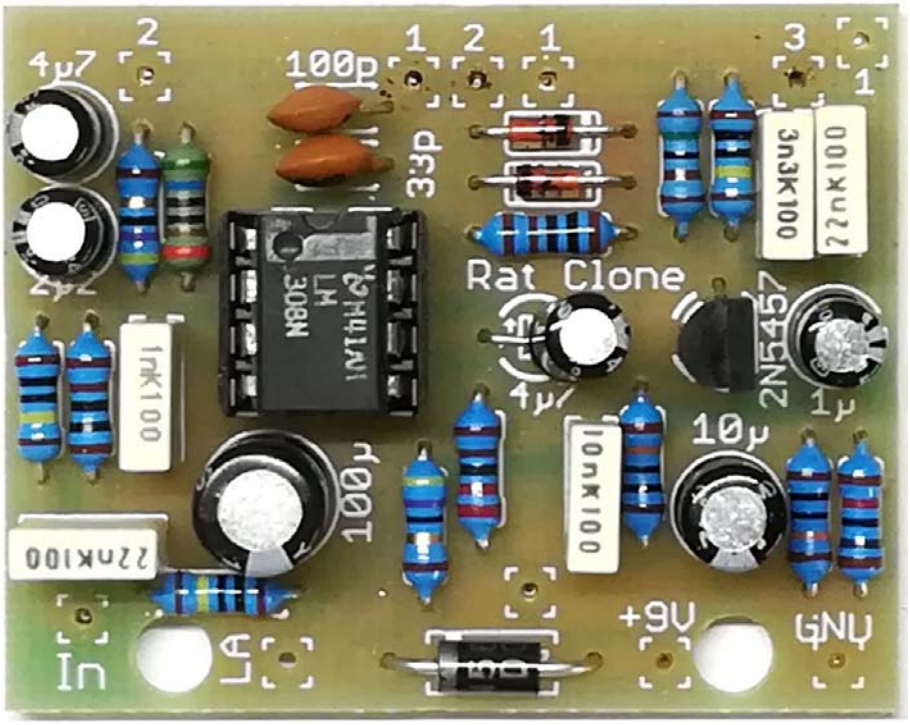
Quantity	Description
	Mechanic
1	PCB
1	Audio jack mono 6,35mm
1	Audio Jack stereo 6,35mm
1	3PDT Switch
3	Pot 100K-A (logarithmic)
1	DC-jack isolated 5,5/2,1mm
1	Battery connector
1	Some colored wire
2	Self adhesive spacer 12,7mm
1	IC-Fassung LC08
1	LED bezel 3mm crome
3	Lock washer 7.4mm
2	Lock washer 10.5mm
2	Cable fastener
	Circuit/ Transistors
1	LM308N
1	2N5457 N-channel FET
	Dioden
1	1N5817
2	1N914
1	LED red 3mm (Low Current) short leg cathode
	Resistors
2	Resistor 47R (yellow/violet/black/gold/brown)
1	Resistor 560R (green/blue/black/brown/brown)
2	Resistor 1K (brown/black/black/brown/brown)
1	Resistor 2K2 (red/red/black/brown/brown)
1	Resistor 1K5 (brown/green/black/brown/brown)
1	Resistor 10K (brown/black/black/red/brwn)
2	Resistor 100K (brown/black/black/orange/brown)
3	Resistor 1M (brown/black/black/yellow/brown)
	Kondensatoren
1	Ceramic Capacitor 33p (331)
1	Ceramic capacitor 100p (101)
1	Foil capacitor 1nF MKT (0.001µF=102)
1	Foil capacitor 3,3nF MKT (0.0033µF=332)
1	Foil capacitor 10nF MKT (0.01µF=103)
2	Foil capacitor 22nF MKT (0.022µF=223)
1	Electrolytic capacitor 1µF
1	Electrolytic capacitor 2,2µF
2	Electrolytic capacitor 4,7µF
1	Electrolytic capacitor 10µF
1	Electrolytic capacitor 100µF

Leiterplatte Top/ Bottom



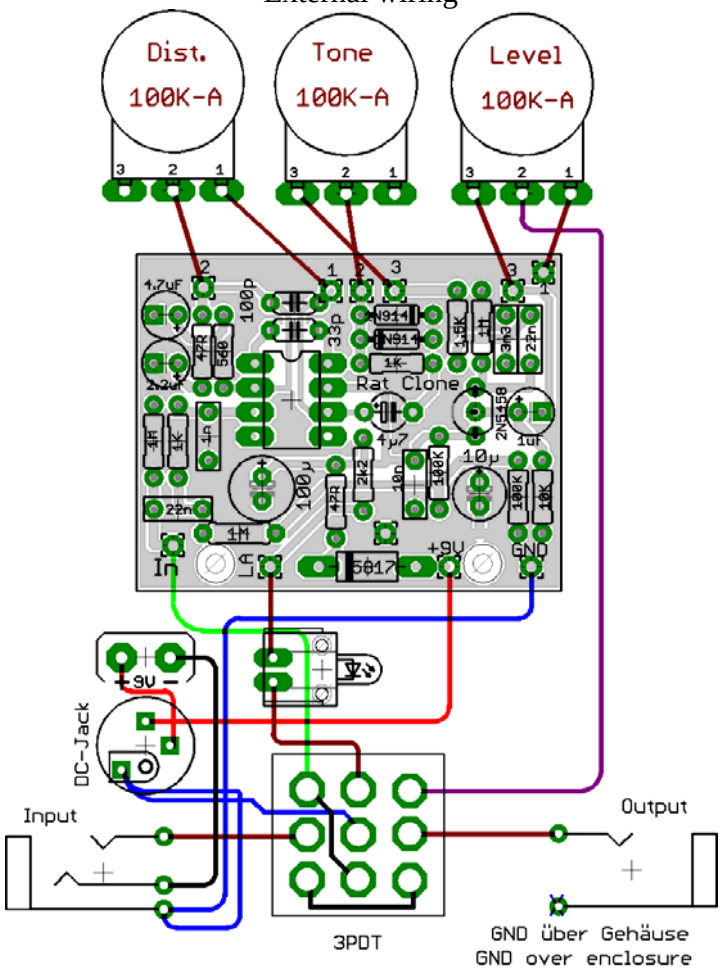
Soldering the PCB

First, the circuit board is soldering with the printed mounting plan. For this purpose one should start with the lowest components, that is, first the resistors, the diodes, the capacitors and finally the socket with the IC. Finally solder approx. 5cm long strands into the holes of the potentiometers. The middle hole of the level potentiometer (Lug 2) can be left free, as the wire is passed directly from there to the switch. Working cleanly, especially the design of the soldering joints, should be a top priority in order to rule out placement and soldering errors from the outset.

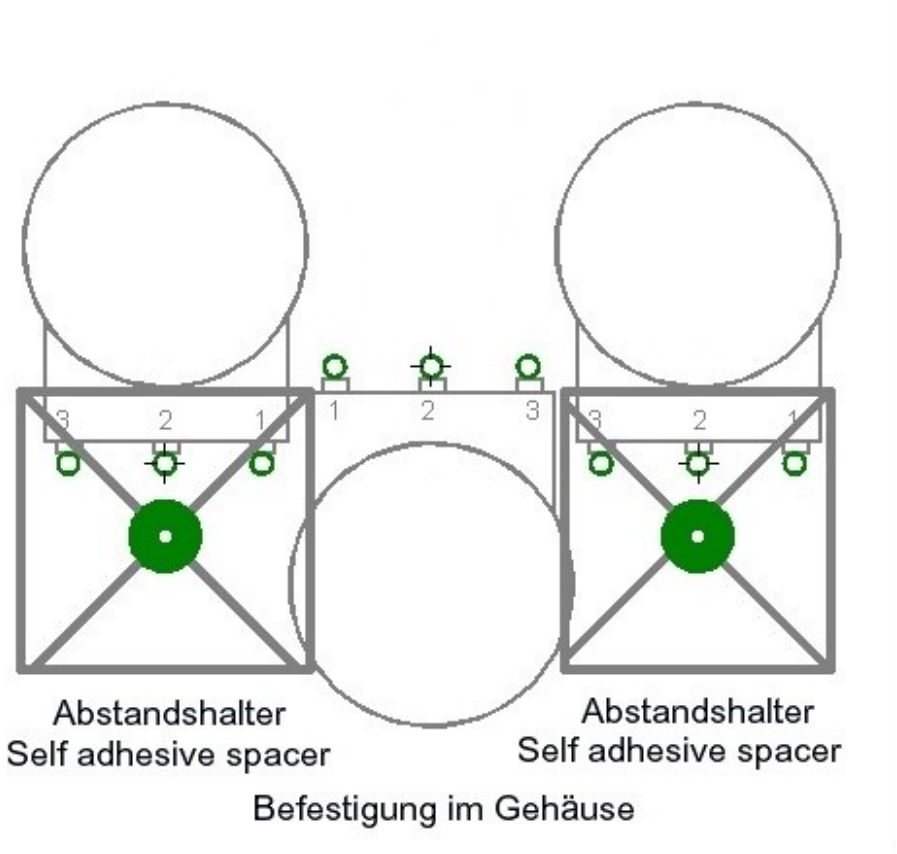


When the circuit board is fully assembled, the assembly of the mechanical components in the enclosure and the external wiring are done. Provided that enclosure is already prepared with all holes. The cathode from the LED (short leg) is extended slightly and connected directly to the switch. From the anode (long leg) a wire passes after the soldering point on the circuit board (LA).
The 3PDT switch comes into the enclosure so that the groove in the thread of the switch points either upwards or downwards.
The input jack should be wired before. black wire from the battery clip and a wire from tip, which then goes to the switch. → (2 wires to ground (sleeve), ring
The wires of the battery clip can be shortened and can then take the black equally for tip. The connection switch → output jack is most easily made with a piece of cut-off wire.
The violet wire leads from the switch directly to Lug 2 from the level potentiometer..

External wiring



Once all this has been done, only the prepared circuit board needs to be connected to the potentiometers and the external wires from the switch and the power supply to the circuit board. These are conveniently soldered from below to the corresponding points. The circuit board is fixed in the housing by the two spacers supplied, which are placed in front of the two external potentiometers.

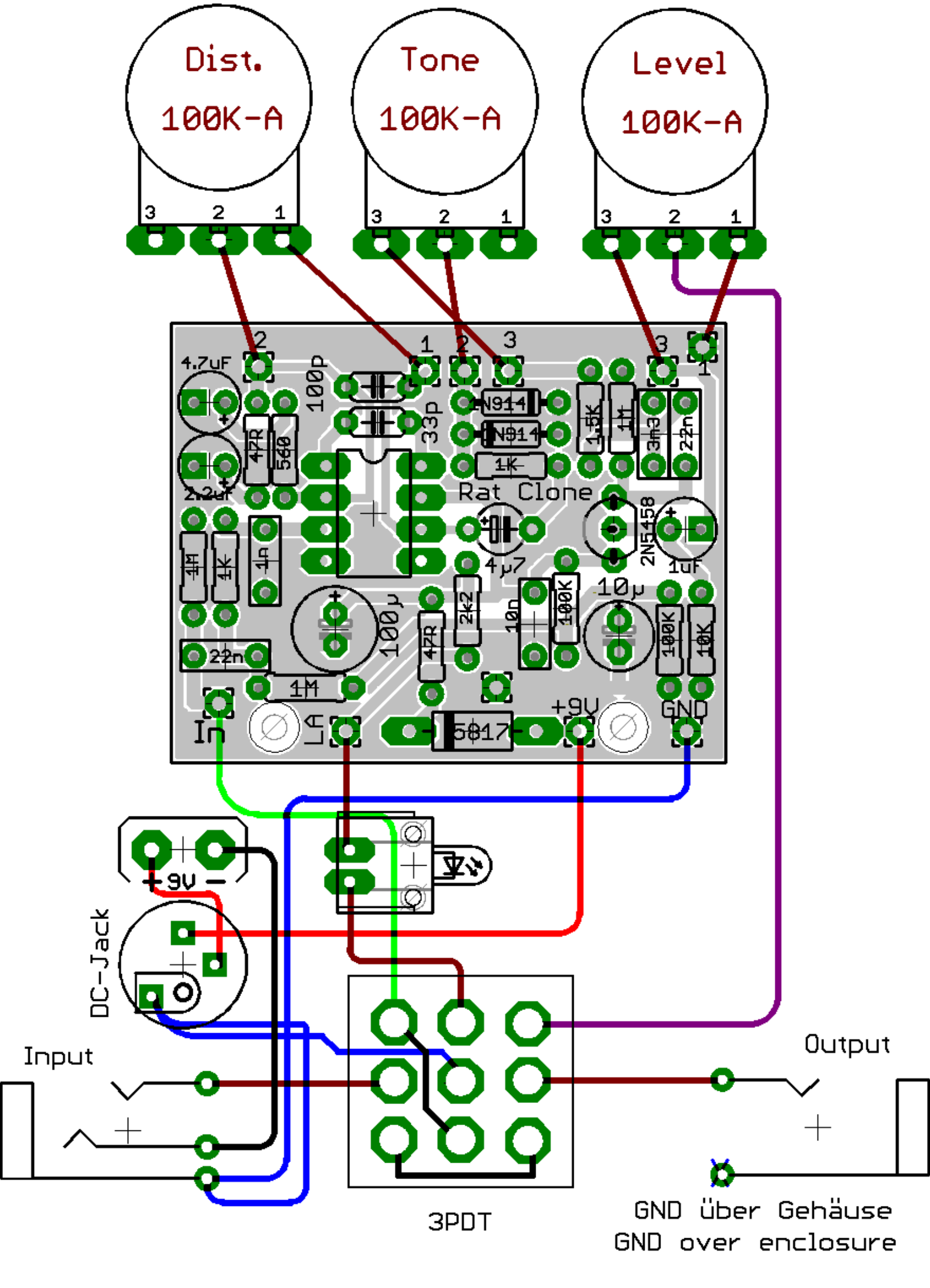


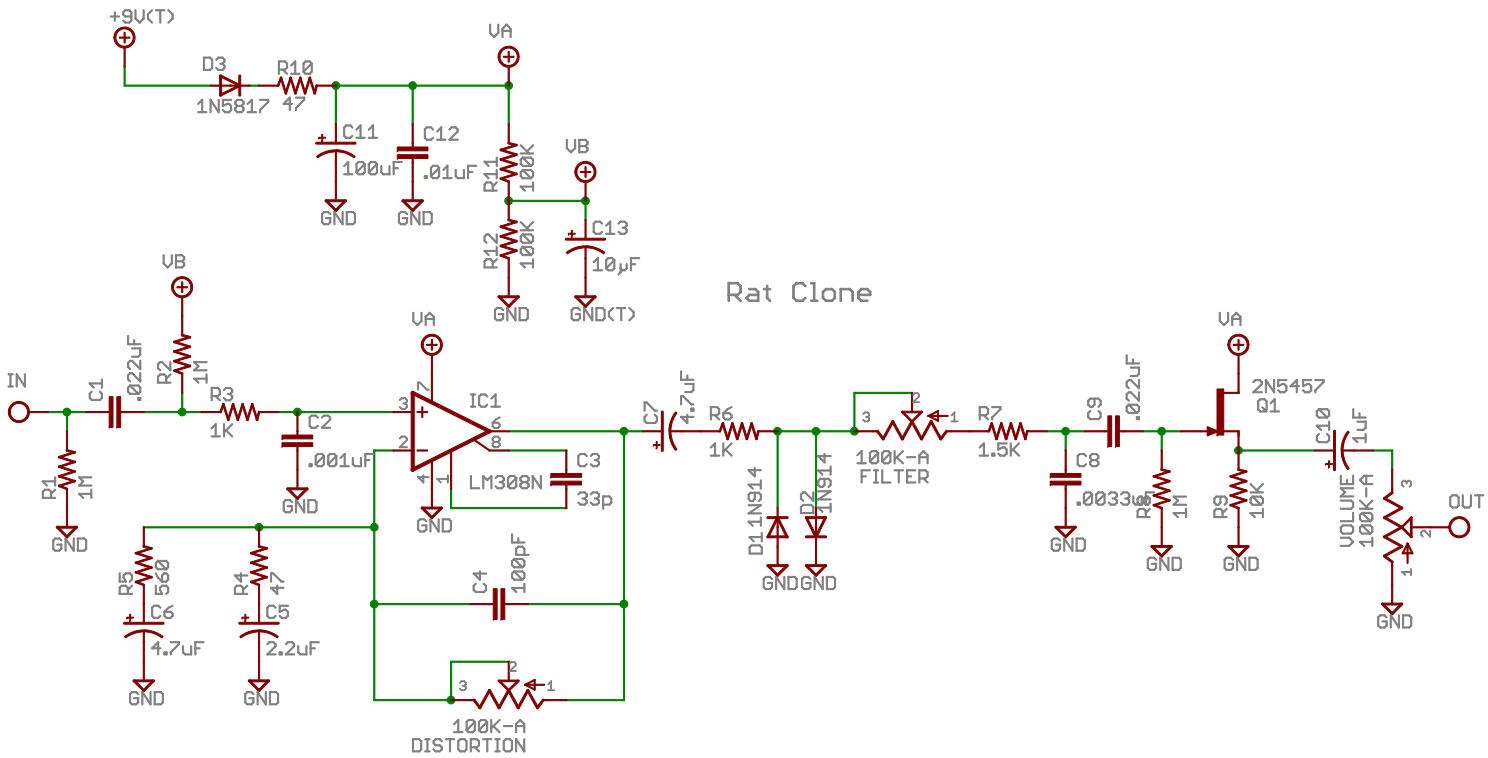
Hinweise zum mechanischen Aufbau:

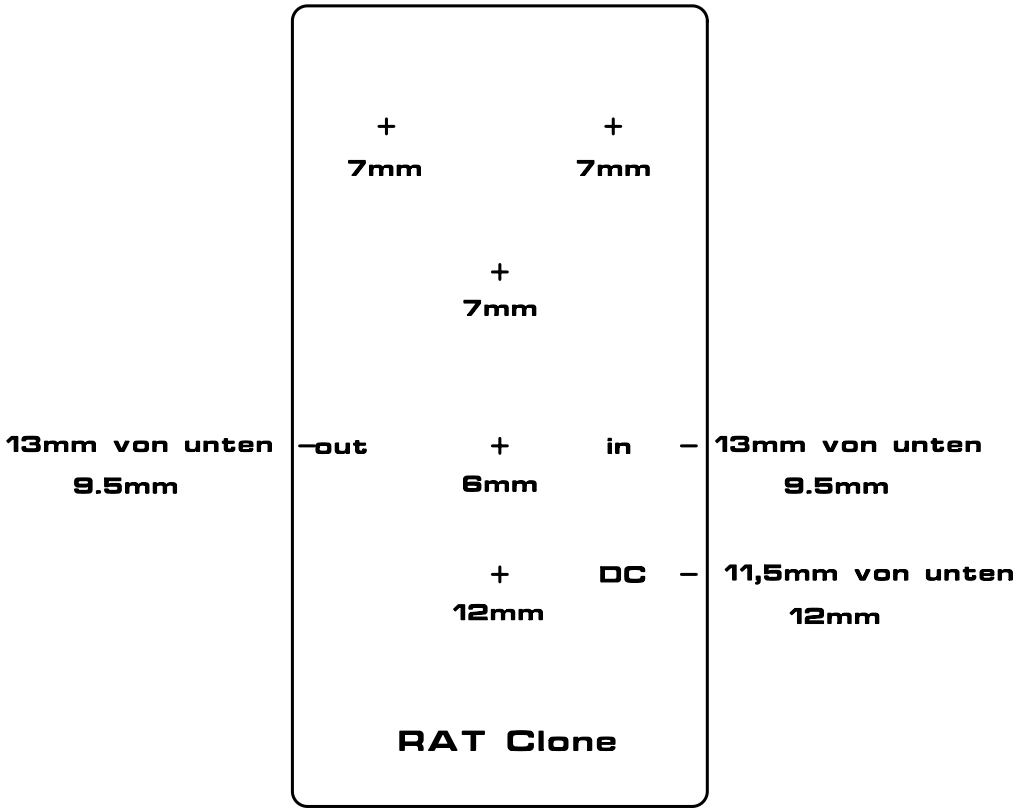
The small noses on the potentiometers are simply broken off with a pair of pliers (see fig .: page 2). The 7.4mm toothed discs are for the potentiometers to underlie. The buttons should be used with a maximum of 20mm if a construction as shown in the sample is used. The holes of the jack sockets sit 13mm from the bottom of the housing, the DC socket 11.5mm from the bottom.

Drilling diameters:
Potentiometer : 7mm
Audi jacks : 9,5mm
3PDT-switch: 12mm
DC-jack: 12mm
LED bezel : 6mm

Reserve technical changes!


Dist.
100K-A
Tone
100K-A
Level
100K-A
3
2
1
Rat Clone
4.7uF
2.2uF
100p
33p
47R
560
1N914
1K
1.5K
1M
3n3
22n
4µ7
2N5458
1uF
4M
1K
1n
22n
1M
100µ
47R
2k2
10n
100K
10µ
100K
10K
In
LA
5817
+9V
GND
+9V
DC-Jack
Input
Output
3PDT
GND über Gehäuse
GND over enclosure


Rat Clone
+9V(T)
D3
1N5817
R10
47
C11
100uF
C12
.01uF
VA
R11
100K
R12
100K
VB
C13
10µF
GND
GND(T)
VB
IN
C1
.022uF
R2
1M
R3
1K
C2
.001uF
R1
1M
VA
IC1
LM308N
C3
33p
C4
100pF
R5
560
C6
4.7uF
R4
47
C5
2.2uF
100K-A
DISTORTION
C7
4.7uF
R6
1K
D1 1N914
D2 1N914
100K-A
FILTER
R7
1.5K
C8
.0033uF
C9
.022uF
R8
1M
VA
2N5457
Q1
R9
10K
C10
1uF
VOLUME
100K-A
OUT


7mm
7mm
7mm
13mm von unten
9.5mm
out
6mm
in
13mm von unten
9.5mm
DC
12mm
11,5mm von unten
12mm
RAT Clone