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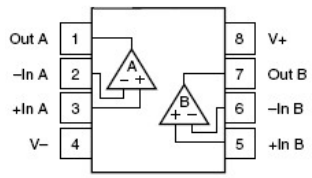
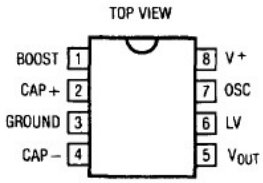
Manual for Wiesel V84 (Diezel VH4)

Some connection for important components

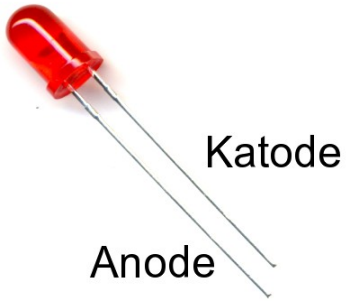


TL 072, OPA2134

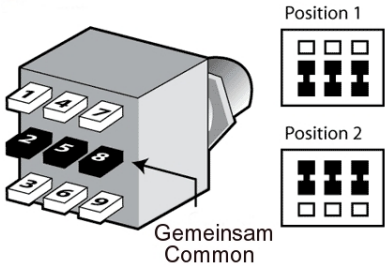
TC7660SCPA



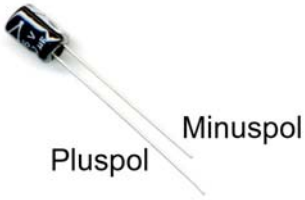
Leuchtdiode (LED)



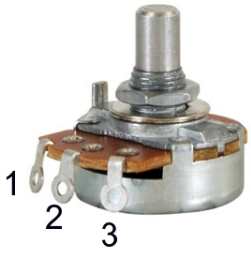
Lage der Pins 3PDT



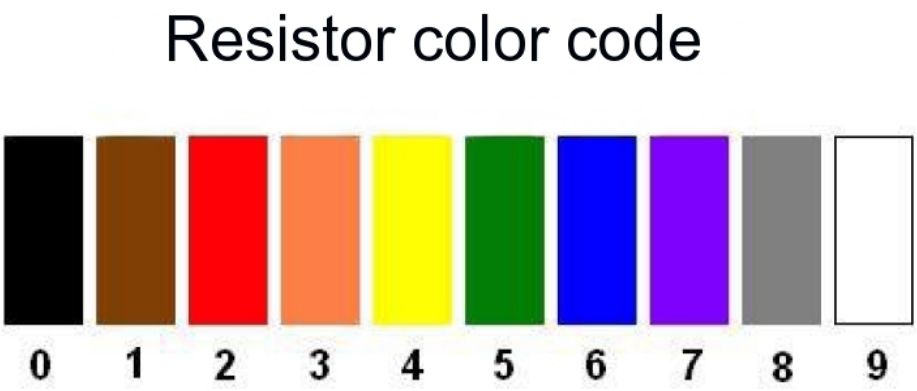
Elektrolytkondensator

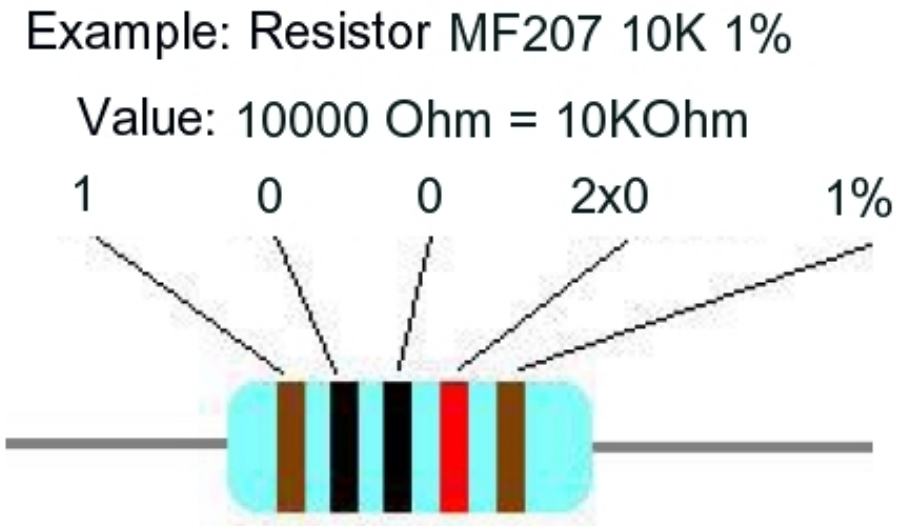


Standard Potentiometer

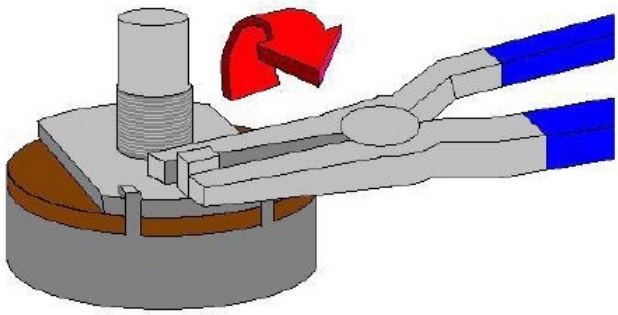


Color table for resistors MF207 FTE52 1% and a example





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



Bill of material

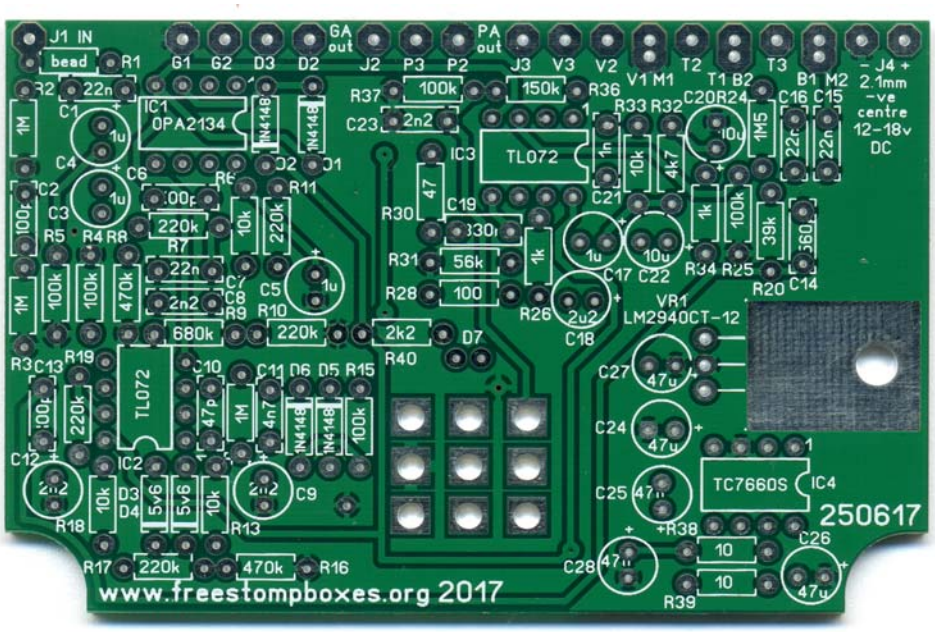
Quantity	Description
	Mechanic
1	PCB „Wiesel V84““
3	Mono jack closed 6,35mm (ACJM-MV2) or other
1	3PDT switch
2	Pot 25K-C (rev. log – Deep, Presence)
1	Pot 10K-A (log - Master)
1	Pot 250K-A (log - Gain)
1	Pot 1M-A (log - Bass)
1	Pot 25K-B (lin - Mid)
1	Pot 250K-B (lin – High)
1	DC-jack isolated 5,5/2,1mm TW1614
1	Some colored wire 0.25²
1	LED bezel crome 3mm LED
4	Socket 8-pole LC08
	Circuit/Transistors/Diodes
2	Z-Diode BZX83 5V6 (Line cathode) – D3,4
4	Si-Diode 1N4148 (line Cathode) – D1, 2, 5, 6
1	LED red 3mm Low Current (short leg cathose)
1	TC7660SCPA DC-DC Wandler – IC4
1	LM2940-CT12 voltage regulator 12V LowDrop TO220 –VR1
1	OPA2134PA Dual OPV – IC1
2	TL072CP Dual OPV – IC2, 3
	Resistores
2	Resistor 10R (brown/black/black/gold/brown) – R38, 39
1	Resistor 47R (yellow/violet/black/gold/brown) – R30
1	Resistor 100R (brown/black/black/black/brown) – R28
2	Resistor 1K (brown/black/black/brown/brown) – R26, R34
1	Resistor 2K2 (red/red/black/brown/brown) – R40
1	Resistor 4K7 (yellow/violet/black/brown/brown) – R32
4	Resistor 10K (brown/black/black/red/brown) – R6, 13, 18, 33
1	Resistor 39K (orange/white/black/red/brown) – R20
1	Resistor 56K (green/blue/black/red/brown) – R31
5	Resistor 100K (brown/black/black/orange/brown) – R4, 5, 15, 25, 37
1	Resistor 150K (brown/green/black/orange/brown) – R36
5	Resistor 220K (red/red/black/orange/brown) – R7, 10, 11, 17, 19
2	Resistor 470K (yellow/violet/black/orange/braun) – R8, 16
1	Resistor 680K (blue/grey/black/orange/brown) – R9
3	Resistor 1M (brown/black/black/yellow/brown) – R2, 3, 14
1	Resistor 1M5 (brown/green/black/yellow/brown) – R24

Cpacitors

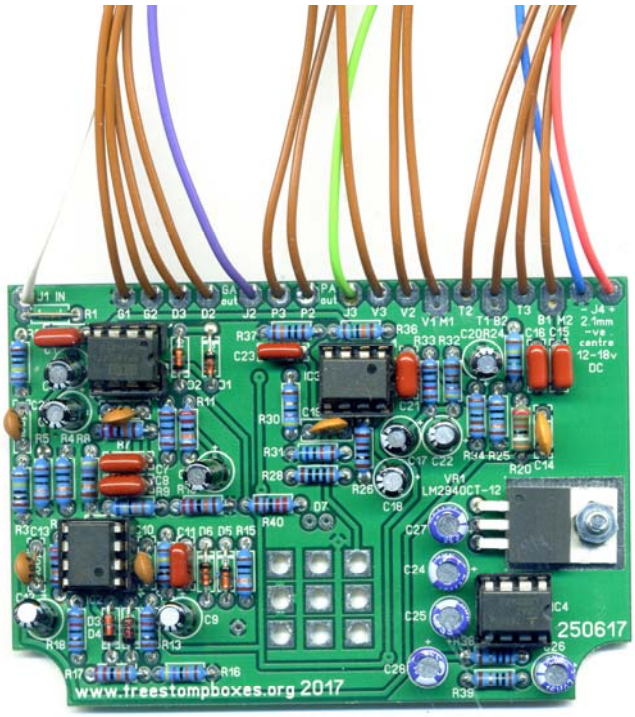
1	Ceramic cap 47pF (47) – C10
3	Ceramic cap 100pF (101) – C2, 6, 13
1	Ceramic cap 560pF (561) – C14
1	Foil cap 1nF/100V (102)– C21
2	Foil cap 2,2nF/100V (202)– C8, 23
1	Foil cap 4,7nF/100V 472)– C11
4	Foil cap 22nF/100V (223)– C1, 7, 15, 16
1	Foil cap 330nF (334) -C19
4	Elektrolytic cap radial 1µF – C3, 4, 5, 17
3	Elektrolytic cap radial 2,2µF – C9, 12, 18
2	Elektrolytic cap radial 10µF – C20, 22
5	Elektrolytic cap radial 47µF – C24, 25, 26, 27, 28

Soldering the PCB

First, you should put the 3PDT switch in the board. A bit of pressure, as the holes are a bit too small. If that fits so far, he can get out again and you start to equiped the board according to the printed values.
One begins with the lowest components to equip, i.e. first the resistors, the diodes, sockets, regulators and finally the capacitors. **The switch and the LED are not yet populated!**
Then you should definitely make another visual inspection and investigate the conductor side (bottom) on any tin bridges.



Then you cut about 8cm long ends for the wiring of the potentiometers and jacks. In points V1 M1 there is one wire each, in the other 2 double ones, the bridges are set at the potentiometers. (T1-B2), (B1-M2)



That's how it should look like. In the picture, however, the second wire is missing on V1 M1. The was subsequently soldered in the final assembly of the bottom side.
Contrary to the design of Bajaman on www.freestompboxes.org I decided to use the board upside down. So there is no problem with the height of the electrolytic capacitors to the lid. Due to the double layer board it is not a problem for the purpose of the 3PDT switch and the light emitting diode. In the picture below, 1µ multilayer caps were used instead of the 1µF electrolytic capacitors.

Demo Bajaman – New Zealand

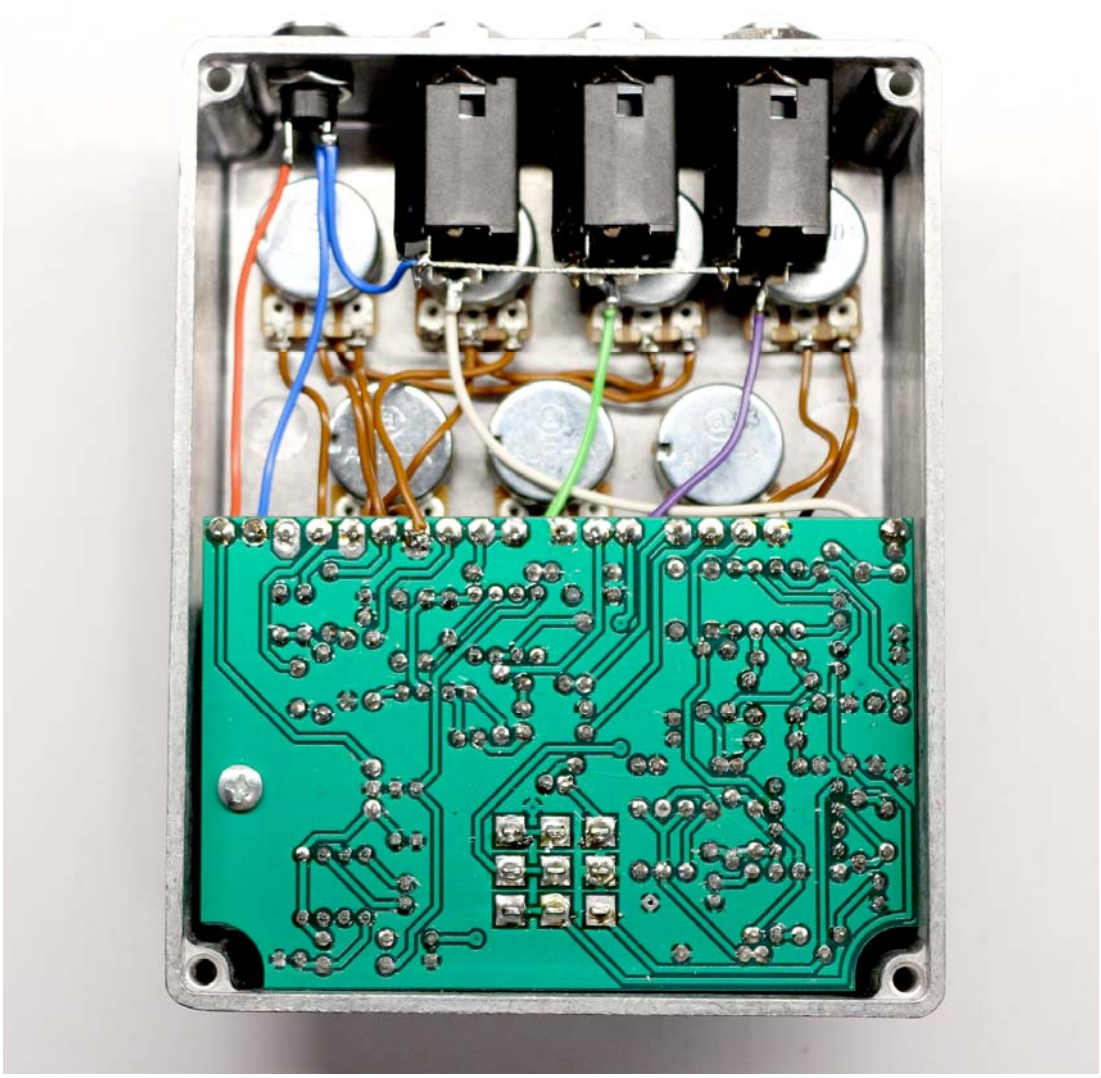
Next, the mechanical components are brought into the enclosure, as far as one has decided for a predrilled. Otherwise drilling is announced according to the drill template available in the appendix.
The LED socket is mounted in the case without the white plug !!! Mount all potentiometers and jacks.
Then put the switch on the board - From the component side !! And do not solder.
Then align the whole in the enclosure, and tighten the nut from the switch. Then remove the board.

The wires for the lower potentiometers (Master, Deep and Presence) are shortened to approx. 3..4cm and soldered to the corresponding points (Lugs).

Next, the LED gets over both legs in each case a piece of the supplied fabric hose. (about 1cm as insulation to the metal frame). Then insert the LED from the component side into the two holes D7. The cathode (short leg) must point to the left. On the bottom you can also see that the pin goes to the switch.
Turn the board over, hold the LED legs from the side of the ladder and, with a little patience, move the whole thing into the socket and attach the board to the switch. If the LED is correct in the socket, you simply push it down until it stops and looks out of frame. Then you can solder them and then the switch. At the switch should always be soldered (diagonal), so that the solder lugs do not heat up too much and the switch is not unusable.

If the board is in the enclosure, the remaining wires are connected to the potentiometers or the sockets. That's it. Now nothing should stand in the way of a first test.

Those who only have 9V available and want to operate the device in this way can either not load the LM2940-CT12, then bridge pins 1 and 3 of the controller, or populate and subsequently make the bridge in. If you take more tension, the bridge only has to be removed. If the board is in the enclosure, the remaining wires are connected to the potentiometers or the jacks. That's it. Now nothing should stand in the way of a first test.



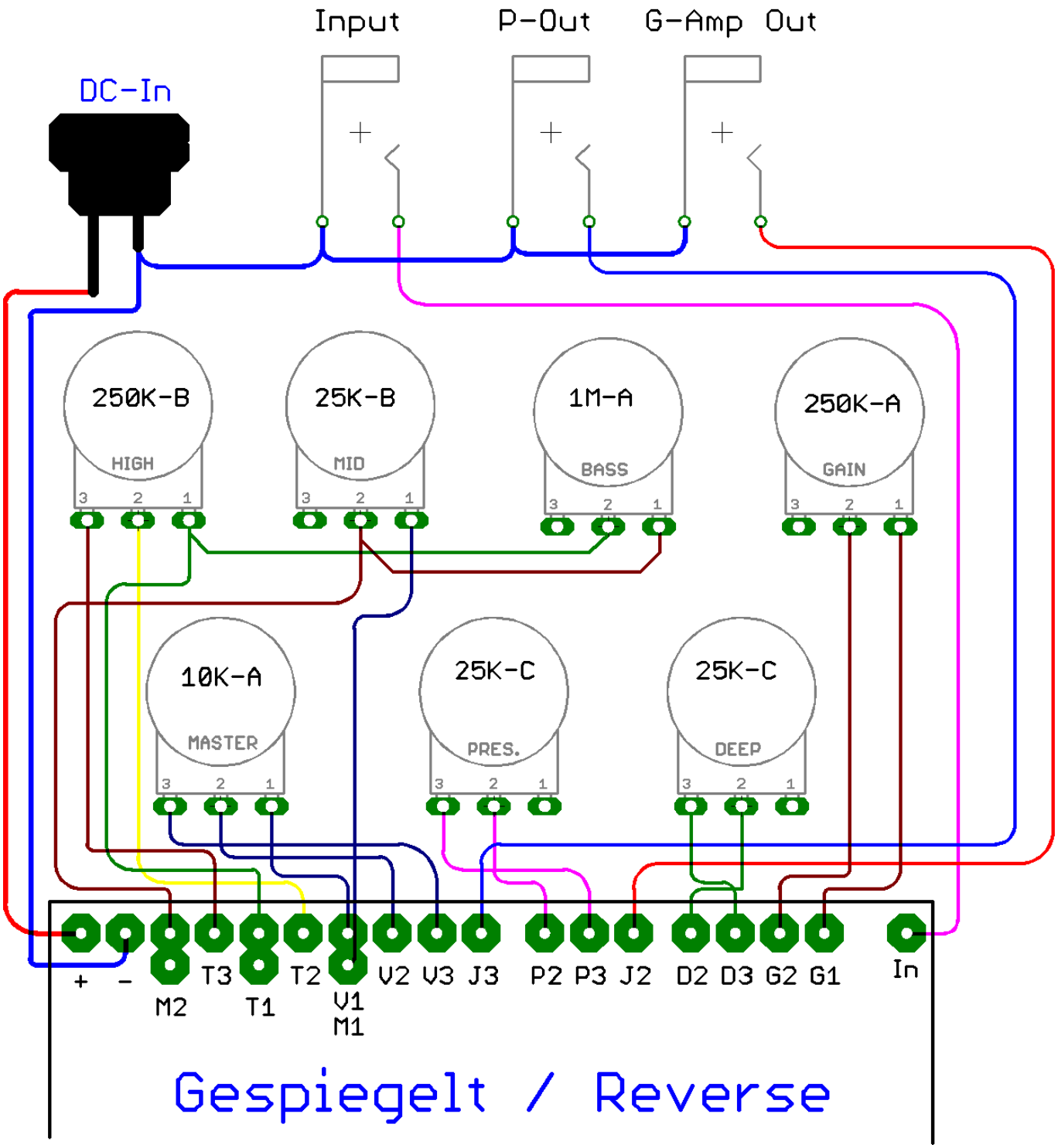
Notes on the mechanical structure

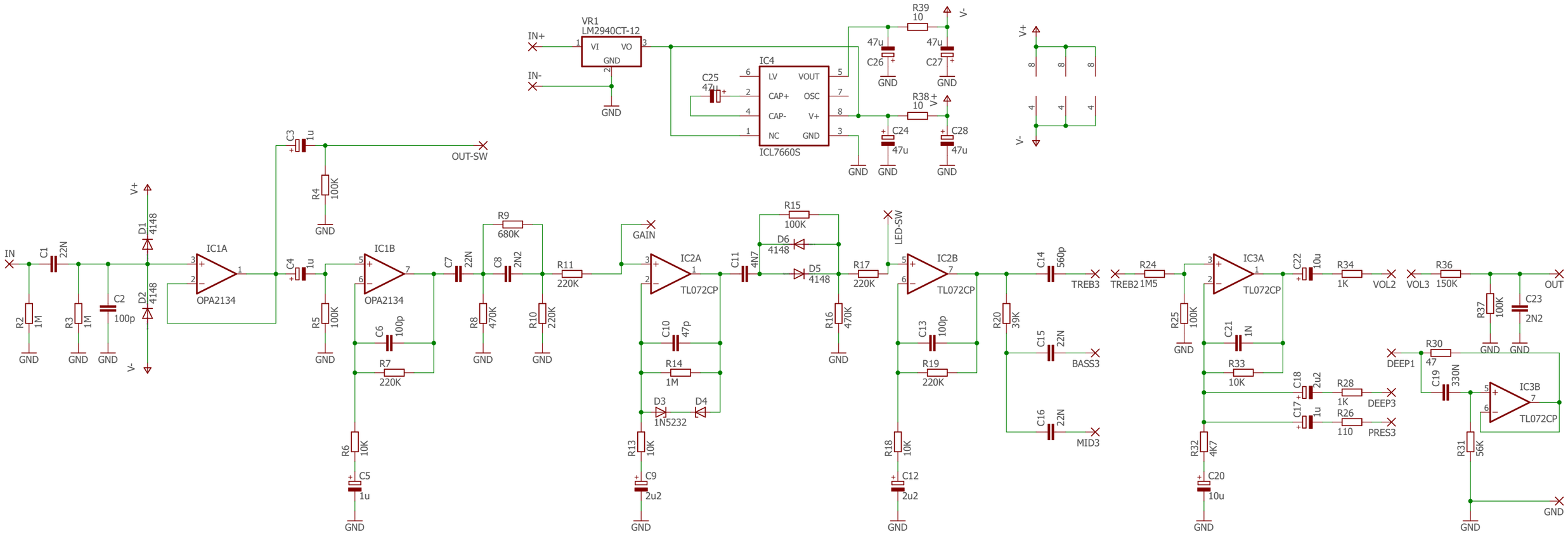
The small noses on the potentiometers are simply broken off with pliers (see illustration on page 2). As knobs you use which with a max. diameter of 16mm for shaft 6.35mm.
The holes for the jacks are 10mm , for the DC-jack 12.5mm from the bottom of the chassis.

Description of the points at the PCB – example:
G1 (Gain Lug1)
G2 (Gain Lug2)
D = Deep , J2 Guitaramp, J3 Poweramp, P= Presence, V = Master, M = Mid, T= High, B= Bass, J1 = In

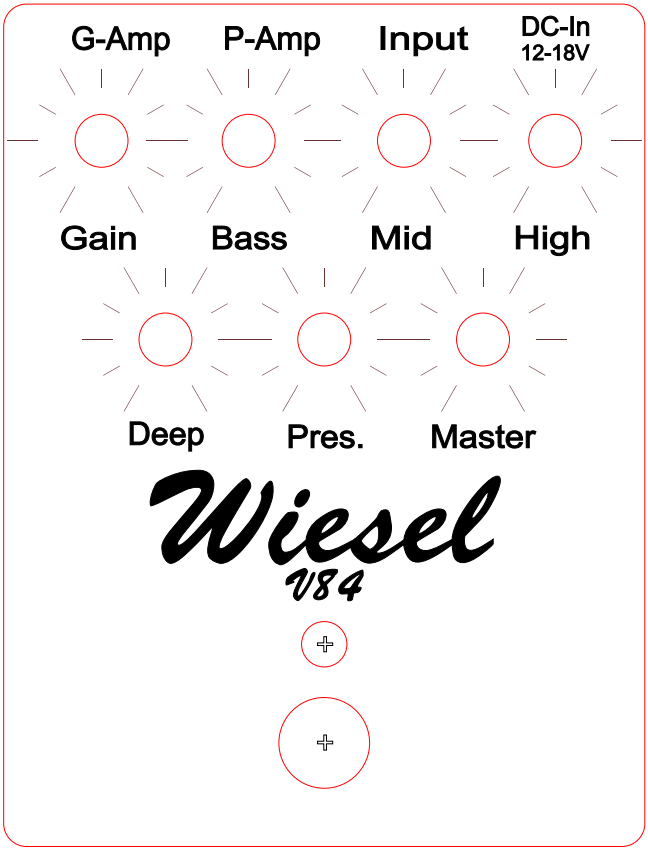
The following drill diameters should be used:
Potentiometer : 7mm (7.5mm with Faceplate)
Audio jacks : 9,5mm
3PDT- switch: 12mm (13mm with Faceplate)
DC-jack: 8mm
LED bezel: 6mm (6.5mm with Faceplate

As enclosure use a GEH90 or a Hammond 1590BB.


Input
P-Out
G-Amp Out
DC-In
250K-B
HIGH
25K-B
MID
1M-A
BASS
250K-A
GAIN
10K-A
MASTER
25K-C
PRES.
25K-C
DEEP
3 2 1
+ - M2 T3 T1 T2 V1 M1 V2 V3 J3 P2 P3 J2 D2 D3 G2 G1 In
Gespiegelt / Reverse


VR1
LM2940CT-12
VI
VO
GND
IN+
IN-
IC4
ICL7660S
LV
VOUT
CAP+
OSC
CAP-
V+
NC
GND
C25
47u
R39
10
R38
10
C26
47u
C27
47u
C24
47u
C28
47u
V+
V-
OUT-SW
C3
1u
R4
100K
IN
C1
22N
R2
1M
R3
1M
C2
100p
D1
4148
D2
4148
IC1A
OPA2134
C4
1u
R5
100K
IC1B
OPA2134
C6
100p
R7
220K
R6
10K
C5
1u
R9
680K
C7
22N
C8
2N2
R8
470K
R10
220K
R11
220K
GAIN
IC2A
TL072CP
C10
47p
R14
1M
D3
1N5232
D4
R13
10K
C9
2u2
C11
4N7
R15
100K
D6
4148
D5
4148
R16
470K
R17
220K
LED-SW
IC2B
TL072CP
C13
100p
R19
220K
R18
10K
C12
2u2
C14
560p
R20
39K
C15
22N
C16
22N
TREB3
BASS3
MID3
R24
1M5
TREB2
IC3A
TL072CP
R25
100K
C21
1N
R33
10K
R32
4K7
C20
10u
C22
10u
R34
1K
VOL2
C18
2u2
C17
1u
R28
1K
DEEP3
R26
110
PRES3
R36
150K
VOL3
OUT
R37
100K
C23
2N2
R30
47
DEEP1
C19
330N
IC3B
TL072CP
R31
56K


G-Amp
P-Amp
Input
DC-In
12-18V
Gain
Bass
Mid
High
Deep
Pres.
Master
Wiesel
V84


G-Amp
P-Amp
Input
DC-In
12-18V
Gain
Bass
Mid
High
Deep
Pres.
Master
Wiesel
V84