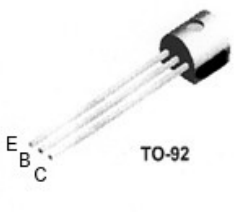
UK-electronic ©2015
Manual for AutoWah/ Filter

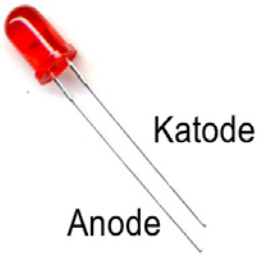
Some connection of important components

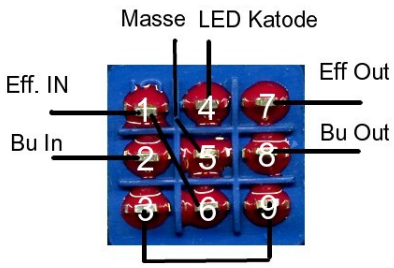
2N5457

BC 549

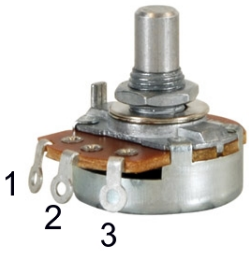


Leuchtdiode (LED)

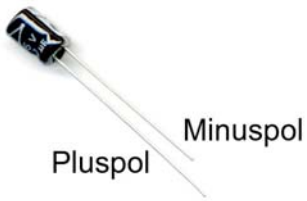




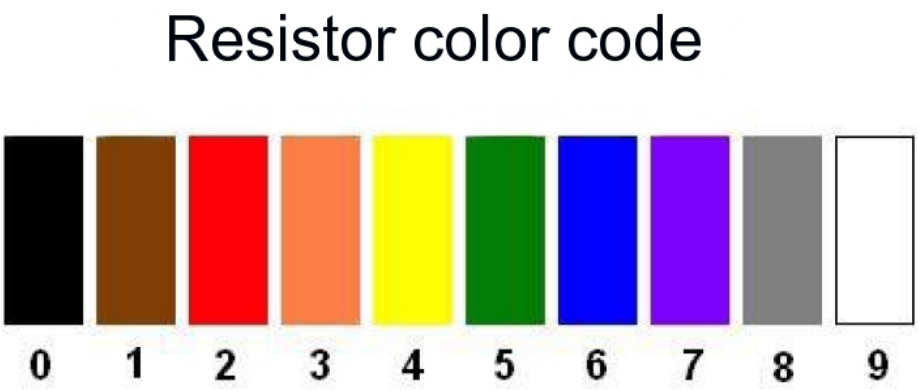
Standard Potentiometer

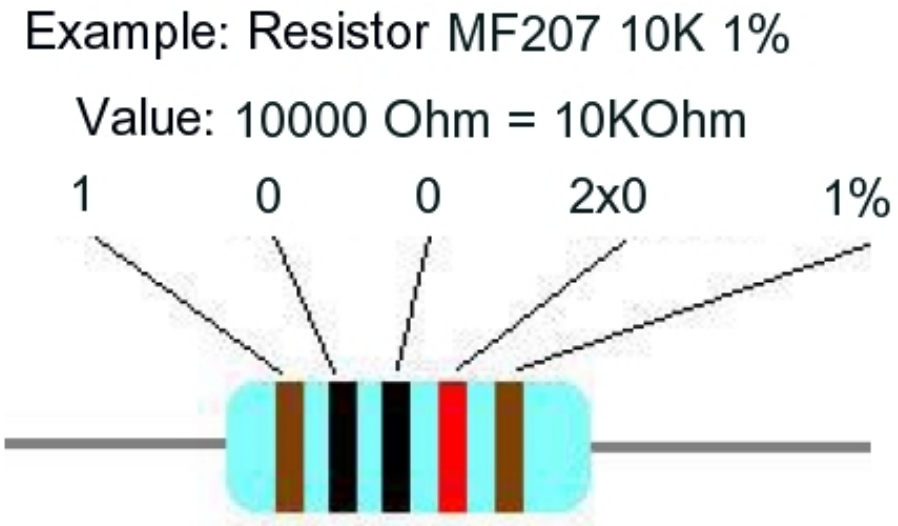


Elektrolytkondensator

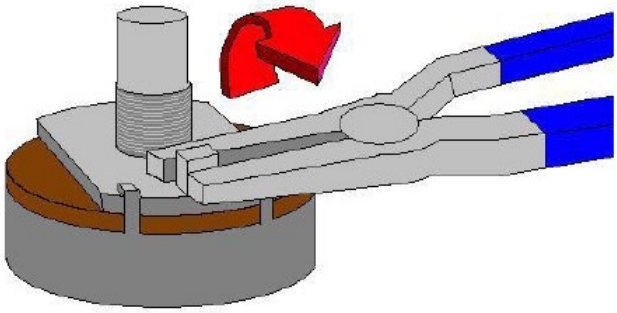


Color table for resistors MF207 FTE52 1% and a example





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

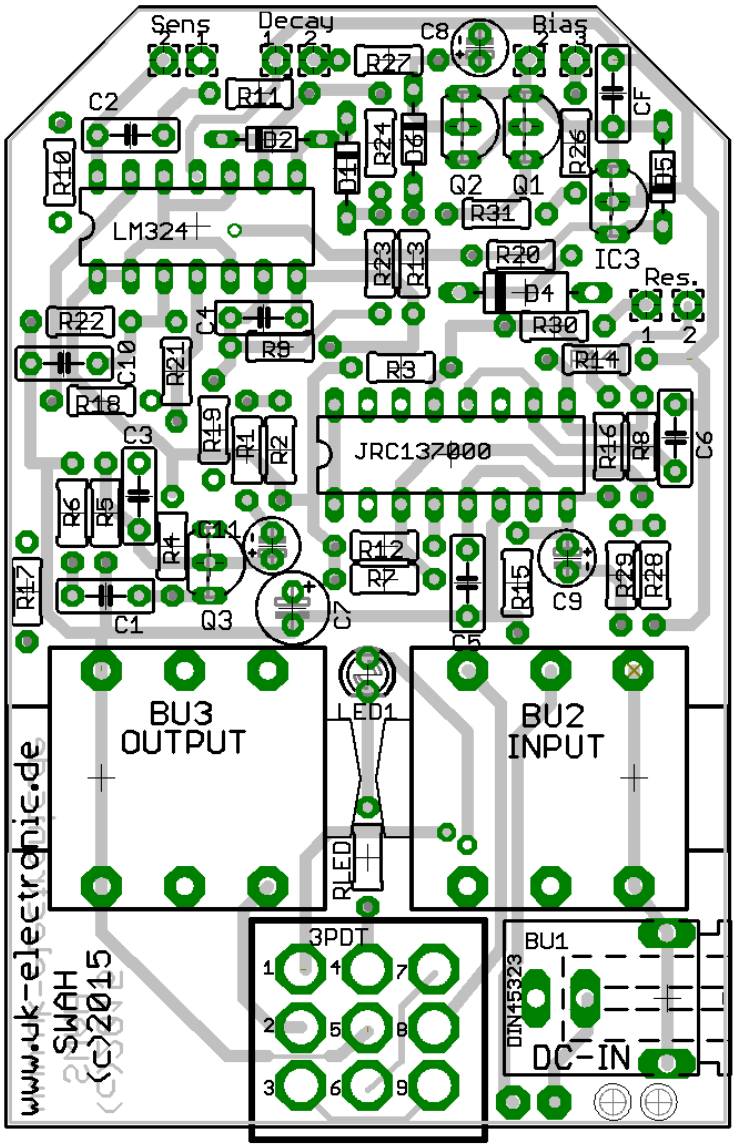


Bill of material

Quantity	Description
	Mechanic
1	PCB „AutoWah“
1	Audio jack mono Print
1	Audio jack stereo Print
1	3PDT Switch
2	Pot 50K-B (linear) – Bias, Resonanz
1	Pot 100K-B (linear) - Sensetivity
1	Pot 1M-C (Rev. logarithmc) - Decay
1	DC-jack isolated pcb 5,5/2,1mm
1	Battery connector
1	Some colored wire
1	LED spacer 17mm for 3mm LED
1	IC socket DIP16
1	IC sockect DIP14
	IC/Transistors/Diodes
1	Diode 1N4001 **– D4**
3	Si-Diode 1N4148 (line- cathode) **– D1, D2, D5**
1	Schottky Diode 1N60 (line- cathode) **–D6**
1	LED red 3mm Low Current (short leg cathode)
2	BC550C (NPN Transistor TO92) **–Q1, Q2**
1	J-FET 2N5457 **-Q3**
1	78L05 (5V voltage regulator 100mA TO92) **–IC3**
1	LM324 4-pole OPVPT2399
1	LM13700/ JRC13700 Dual OTA
	Resistors
1	Resistor 47R (yellow/violet/black/gold/brown) **–R20**
5	Resistor 330R (orange/orange/black/black/brown) **–R2, R3, R7, R12, R13**
1	Resistor 1K (brown/black/black/brown/brown) **– R29**
1	Resistor 2K2 (red/red/black/brown/brown) **– R LED**
3	Resistor 4K7 (yellow/violet/black/brown/brown) **– R14, R15, R27**
1	Resistor 5K1 (green/brown/black/brown/brown) **– R1**
4	Resistor 6K8 (blue/grey/black/brown/brown) **– R8, R16, R30, R31**
1	Resistor 7K5 (violet/green/black/brown/brown) **–R26**
3	Resistor 10K (brown/black/black/red/brown) **–R5, R17, R23**
3	Resistor 20K (red/black/black/red/brown) **–R10, R11, R24**
3	Resistor 47K (yellow/violet/black/red/brown) **–R18, R21, R22**
1	Resistor 100K (brown/black/black/orange/brown) **– R28**
2	Resistor 1M (brown/black/black/yellow/brown) **–R4, R6**
2	Resistor 4M7 (yellow/violet/black/yellow/brown) **–R9, R19**
	Capacitors
1	Capacitor 8,2nF = 0.0082µF MKT (822) **– C4**
3	Capacitor Kondensator 22nF = 0.022µF MKT (223) **–C1, C5, C6**
1	Capacitor Kondensator 68nF = 0.068µf MKT (683) **– C2**
1	Capacitor Kondensator 100nF= 0.1µF MKT (104) **– C10**
1	Capacitor Kondensator 100nF = 0.1µF multilayer (104) **–CF**
1	Capacitor Kondensator 220nF = 0.22µF MKT (224) **–C3**
3	Electrolytic capacitor radial 1µF/ 50V **–C8, C9, C11**
1	Electrolytic capacitor radial 100µF/ 16V **–C7**

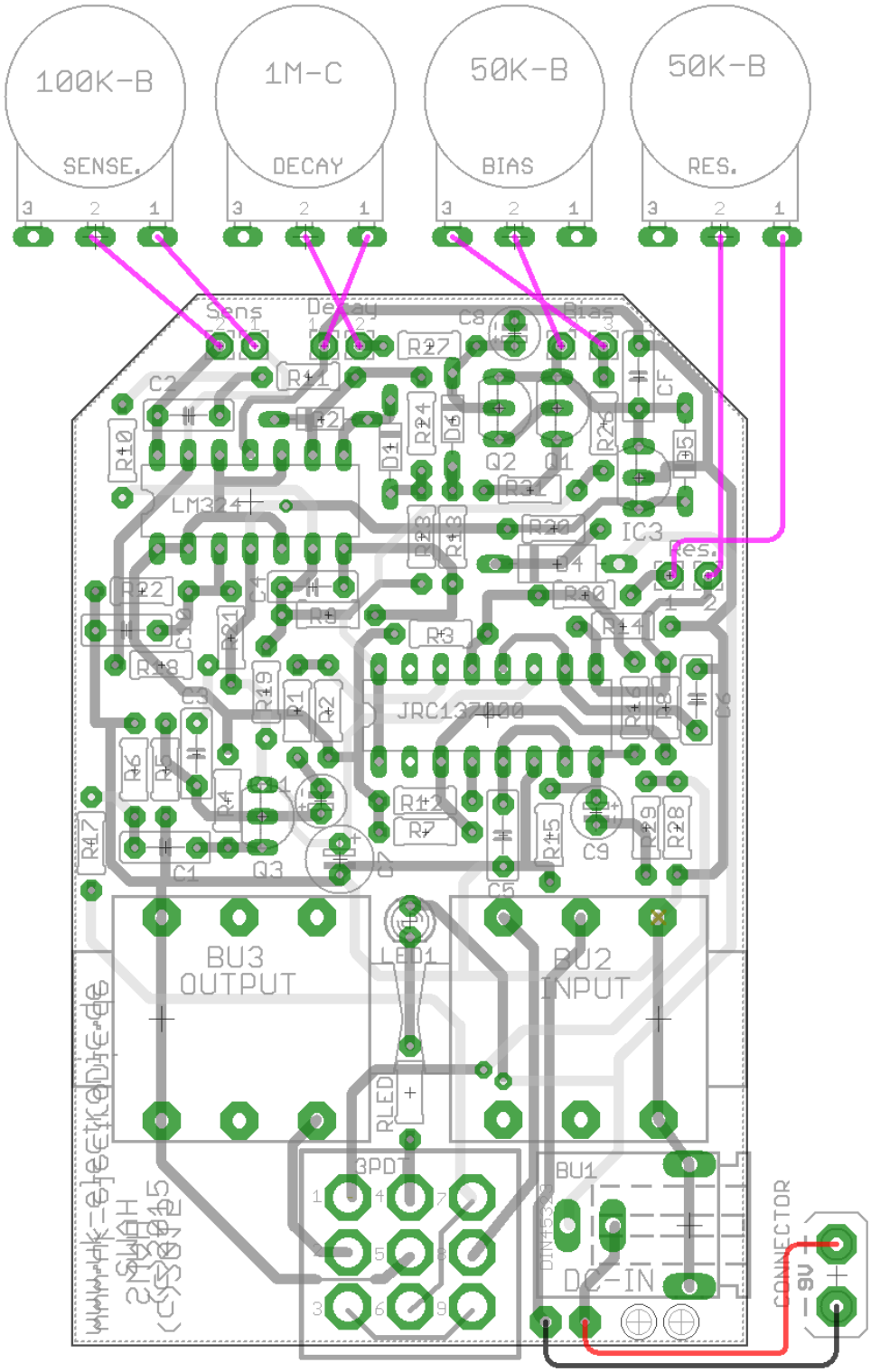
Soldering the PCB

First, the printed circuit board is equipped with the assembly diagram below. One begins with the lowest components to equip, i.e. first, the resistors, the diode, the sockets, the capacitors and finally the voltage regulator and the transistor. Clean work, in particular the execution of the solder joints should have the highest priority, to rule out from the outset general assembly and soldering errors.
Finally, braze approx. 4-5 cm long wires into the holes for the potentiometers



External wiring

The wiring is relatively simple and is limited only to the connections to the potentiometers and the connection of the battery clip, if battery operation is provided.



Notes on the mechanical structure

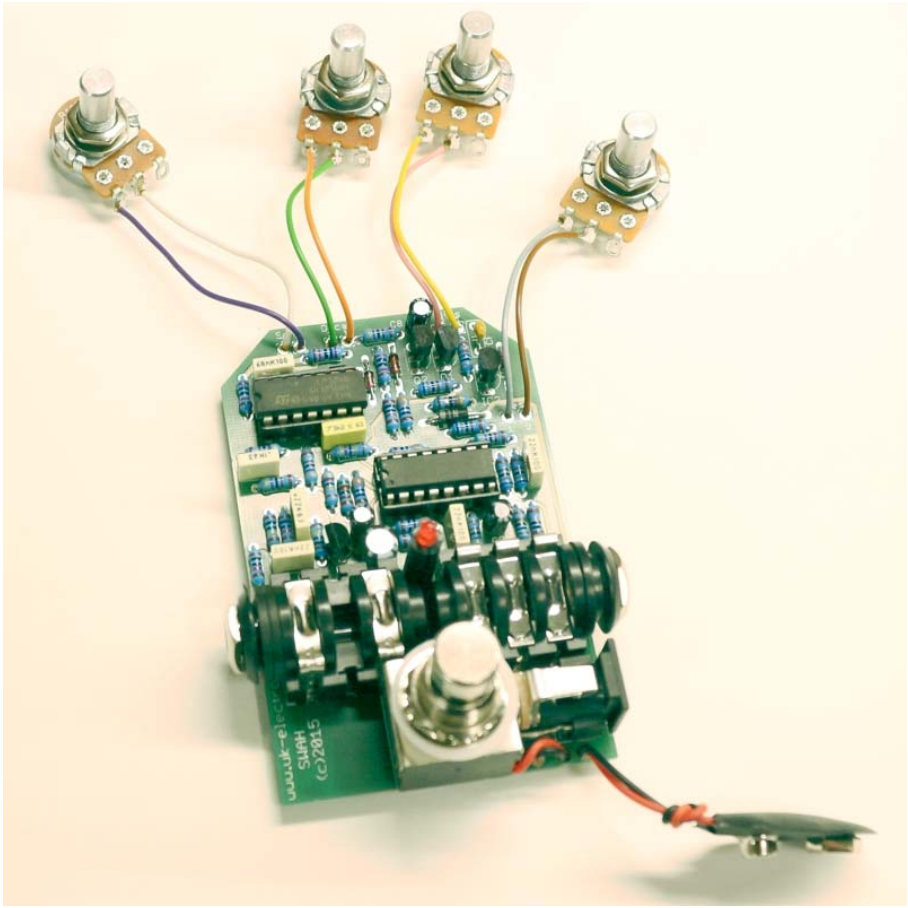
The small noses on the potentiometers are simply broken off with pliers (see illustration on page 2). As knobs you should use which with a max. diameter of 20mm.
The holes of the jack sockets sit about 13mm and the DC socket 12mm from the bottom of the enclosure.

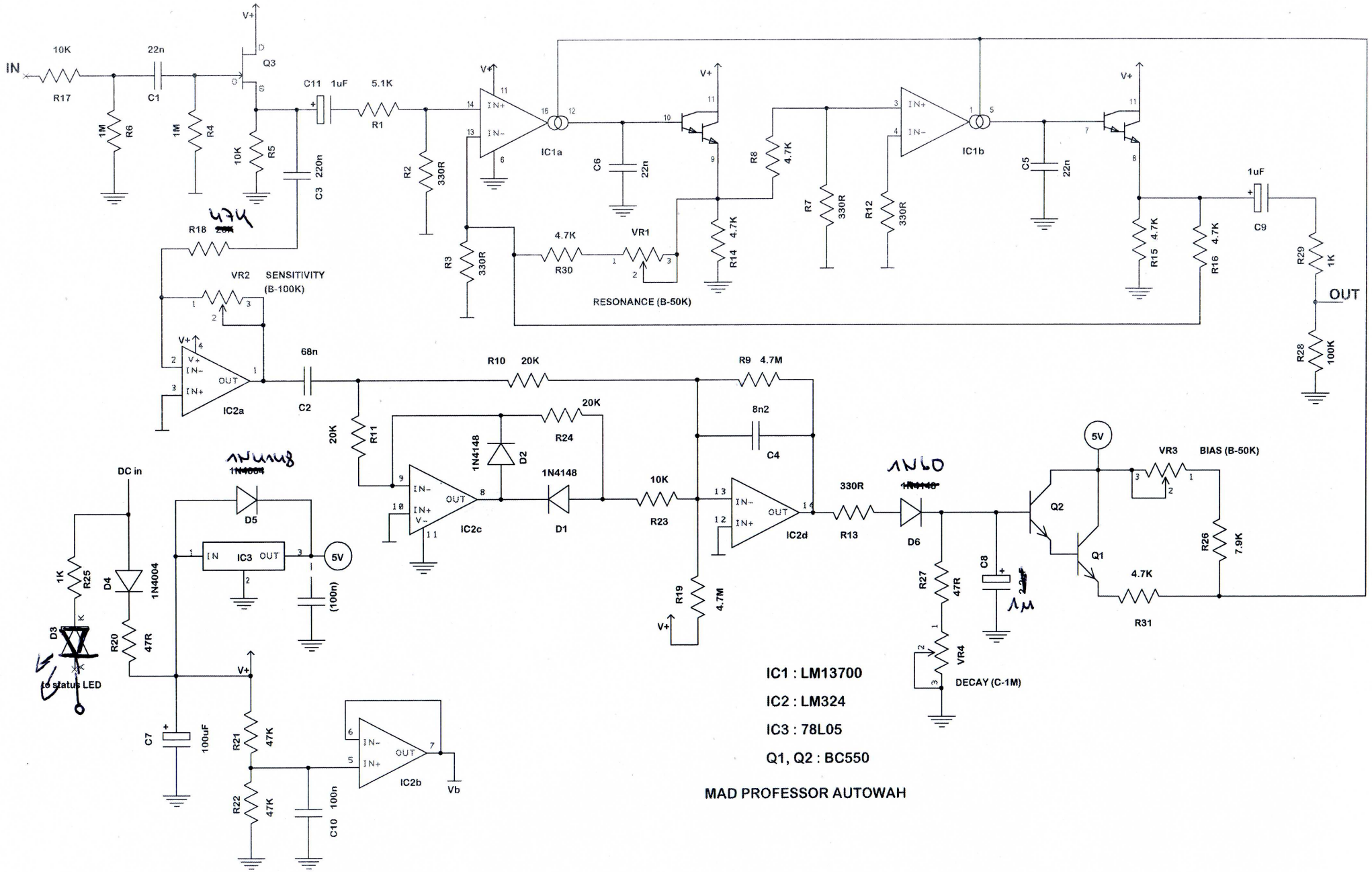
Drill diameter for the enclosure:
Potentiometer : 7mm
Audio jacks : 10mm
3PDT-switch: 13mm – for better passing the pcb at the enclosure
DC-jack: 10mm
LED : 3mm

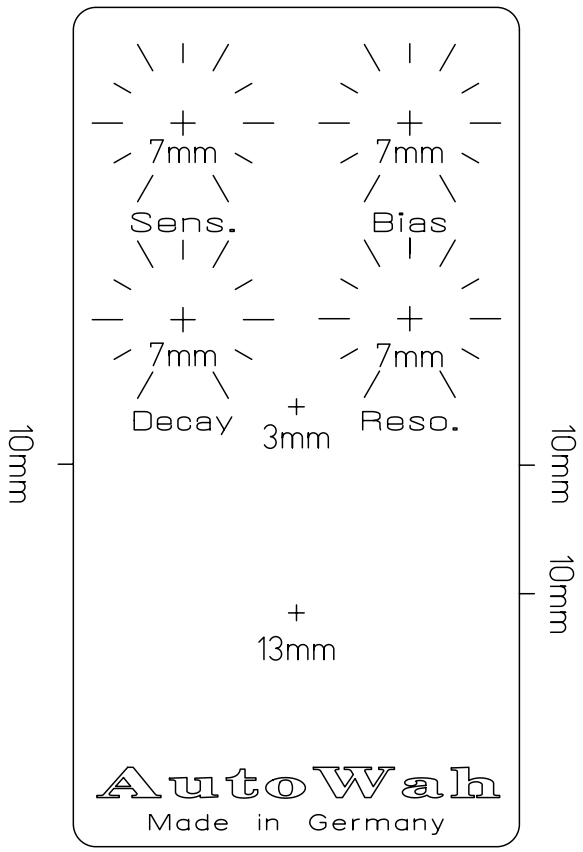
As enclosure choose a 1590B, 27134 or greater.

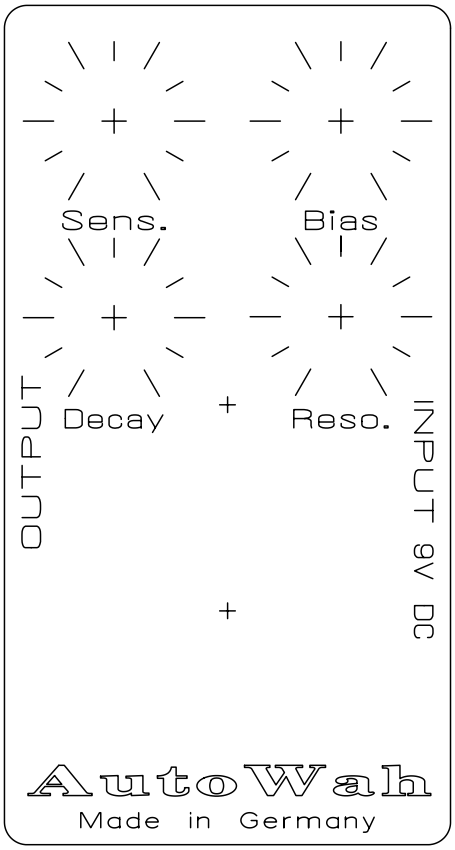
With clean construction and proper wiring, the effects unit should work immediately. Of course we are always available for any questions.

Notes:
Contrary to the original circuit diagram, some modifications have already been added. This concerns D6, R18 and C8.




IN
10K
R17
22n
C1
1M
R6
1M
R4
10K
R5
V+
Q3
C11 1uF
5.1K
R1
C3 220n
R2 330R
R3 330R
IC1a
C6 22n
R8 4.7K
R7 330R
R12 330R
IC1b
C5 22n
R15 4.7K
R16 4.7K
1uF
C9
R29 1K
OUT
R28 100K
R18
VR2 SENSITIVITY (B-100K)
4.7K
R30
VR1
RESONANCE (B-50K)
R14 4.7K
IC2a
68n
C2
R10 20K
R9 4.7M
8n2
C4
20K
R11
20K
R24
1N4148
D2
1N4148
D1
IC2c
IC2d
10K
R23
330R
R13
D6
R19 4.7M
R27 47R
VR4
DECAY (C-1M)
C8
Q2
Q1
5V
VR3 BIAS (B-50K)
R26 7.9K
4.7K
R31
DC in
D5
IC3
5V
(100n)
1K
R25
D4 1N4004
D3
R20 47R
to status LED
C7 100uF
R21 47K
R22 47K
C10 100n
IC2b
Vb
IC1 : LM13700
IC2 : LM324
IC3 : 78L05
Q1, Q2 : BC550
MAD PROFESSOR AUTOWAH


7mm
7mm
Sens.
Bias
7mm
7mm
Decay
Reso.
3mm
13mm
10mm
10mm
10mm
AutoWah
Made in Germany


Sens.
Bias
Decay
Reso.
OUTPUT
INPUT 9V DC
AutoWah
Made in Germany