

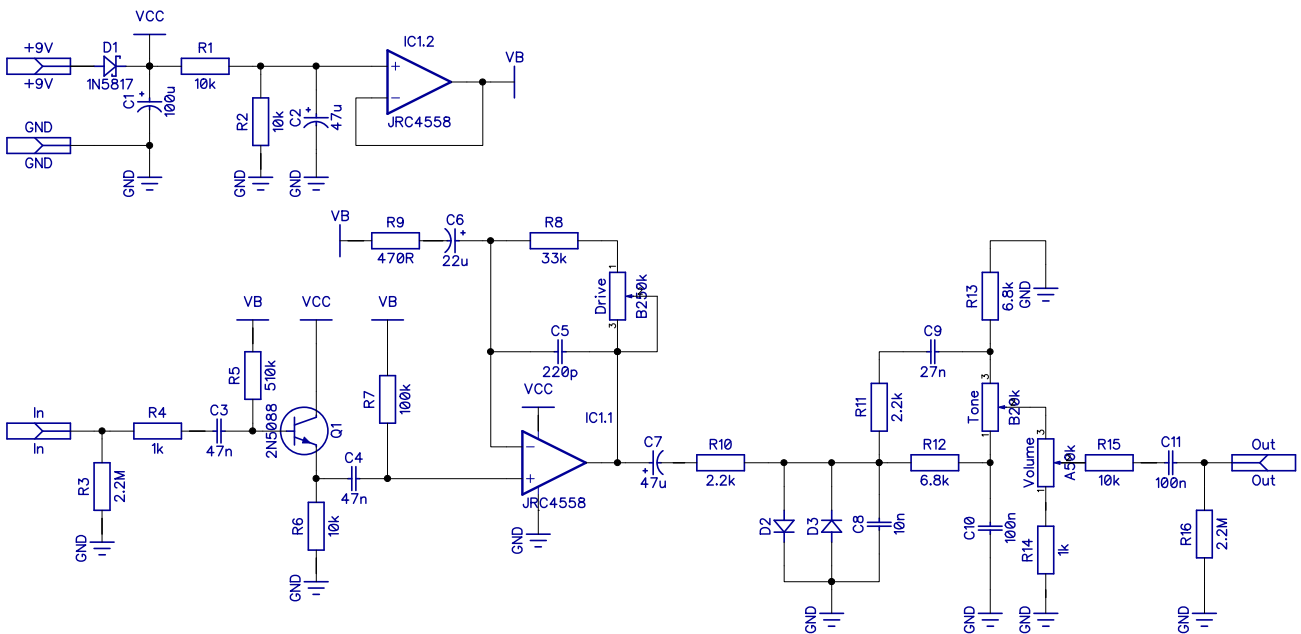


# The Hedgehog

Based on Maxon SD9 Sonic Distortion  
PCB artwork ©2015 drdFX  
Release date: 2015.11.03.

The Hedgehog is a clone of the Maxon SD9 Sonic Distortion pedal. The main characteristic of the sound is the relatively high amount of lows and a nice crunchy distortion.

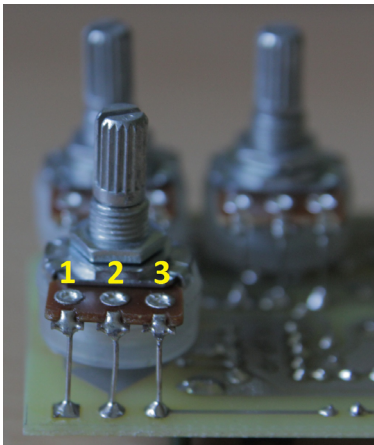
## SCHEMATIC



BOM							
Resistors		Capacitors		Semiconductors		Others	
R1	10k	C1	100u	D1	1N5817	Drive	B250k
R2	10k	C2	47u	D2	*	Tone	B20k
R3	2.2M	C3	47u	D3	*	Volume	A50k
R4	1k	C4	47u	Q1	2N5088		
R5	510k	C5	220p	IC1	JRC4558		
R6	10k	C6	22u				
R7	100k	C7	47u				
R8	33k	C8	10n				
R9	470R	C9	27n				
R10	2.2k	C10	100n				
R11	2.2k	C11	100n				
R12	6.8k						
R13	6.8k						
R14	1k						
R15	10k						
R16	2.2M						

\* See the Notes section for clipping diode options

## NOTES



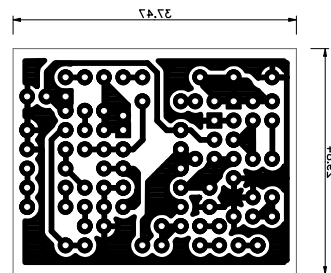
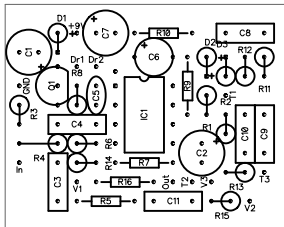
The pots are board mounted to the bottom of the board. The square pads mark the lug 1, for the numbering of the lugs see the picture. Since the part number is quite low it is possible to build the effect into a 1590A box too. That version however has simple pads for connecting the pots with wires. The numbering is the same as on the picture. The clipping diodes D2 and D3 are 1N4148/1N914 in the original in a symmetrical arrangement. I have found an asymmetrical arrangement with one Si diode (e.g. 1N4148) and one 3mm red LED better.

A slightly fuzzier sound can be achieved by using one Si diode and one Ge diode. Alternatively you can try a Schottky diode instead the Ge diode. On the larger layout the places for D2 and D3 are planned so that you have enough space to use LEDs or any kind of diodes. On the smaller layout this might be a bit problematic, but you might be able to squeeze in one 3mm LED. The original used the common JRC4558 dual opamp chip, feel free to experiment with other types as well. Also the input buffer's transistor can be changed to almost any NPN type transistor, try whatever you have at hand, just take care of the pinout.

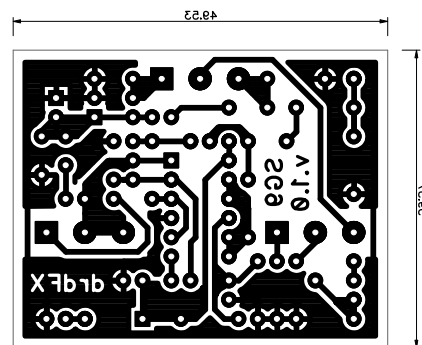
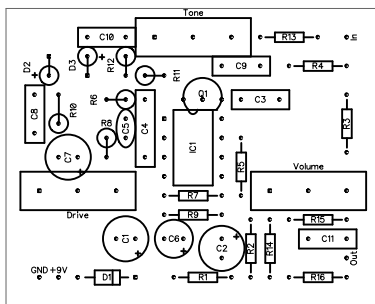
# LAYOUT

Print out the PCB design without any resizing options and make sure you switch off the "fit to page" option. The design is free for personal/home use and you also may build one or two for your friends, but the PCB layout is my artwork, therefore protected by copyright and is not permitted to be used for commercial purposes.

1590A

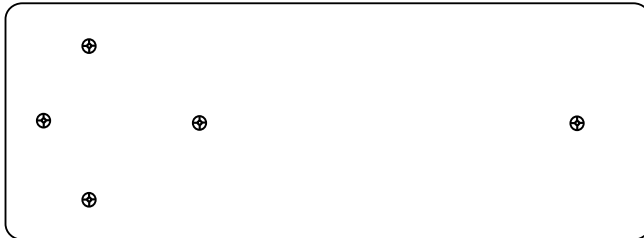


1590B

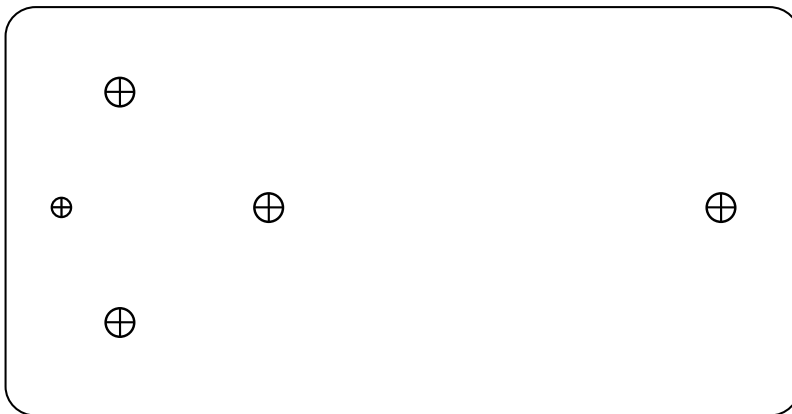


## DRILLING TEMPLATES

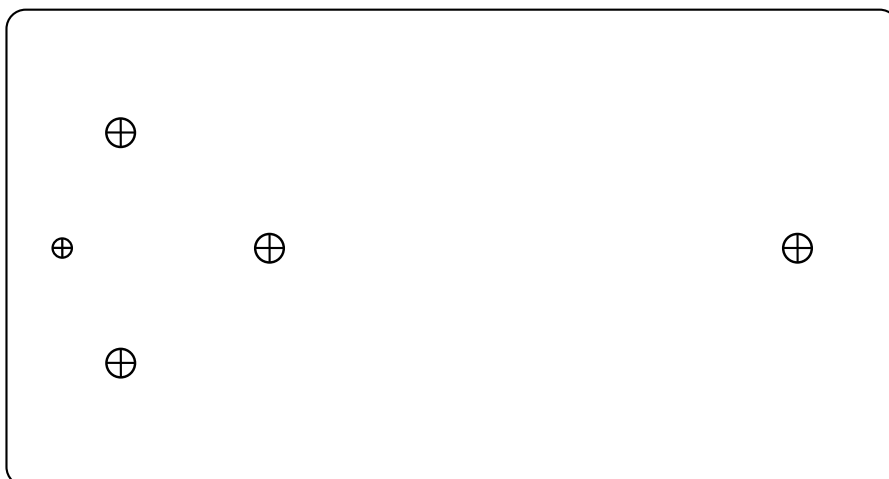
Here are three templates for the top of the box for the various box sizes. The 5-pot version fits only in a 125B box, the sixth hole marked is for the LED. The 4-pot version fits in a 1590A box. Alternatively you can build the 4-pot version in a 1590B box too of course if you prefer that size.



1590A



1590B



125B