

# La Rata.

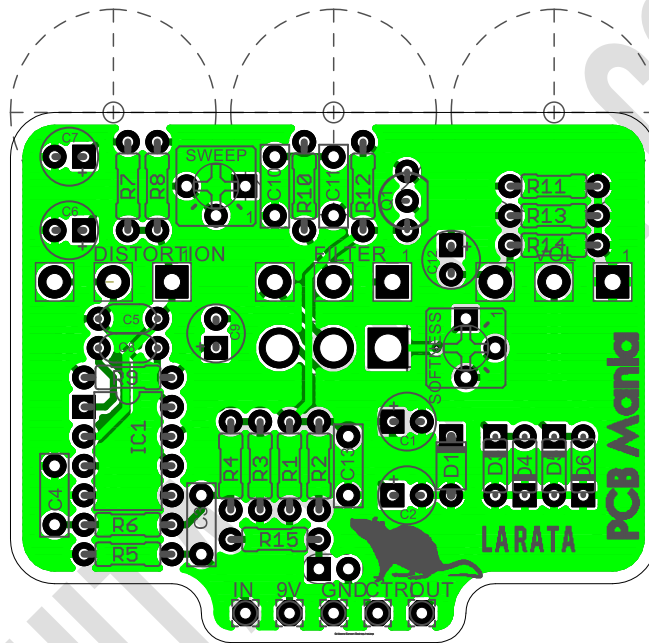
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*Based Pro co's Rat.*

*Distortion*

*By PCB Guitar mania Mania*

[Project link](#)



La Rata takes the maximum advantage of one of the most iconic drives, the Pro co's Rat. This board allows you to build many different versions of this classic drive, from the 1978 original with the LM308 to the ones in current production. We also added the most popular mods on it, such as diode selector, Sweep control (the famous ruetz mode) and Softness control for the clipping section.

- Ready to be wired as True Bypass.
- Tight design to fit in a 125B Enclosure with pots on board.
- Versatile to build many different versions of this classic drive
- Sweep and Softness mods available.
- Diode toggle selector on board.

## BOM

### Resistors

	Rat	Rat II	Turbo Rat	You Dirty Rat
R1	47r	47r	47r	47r
R2	100k	100k	100k	100k
R3	100k	100k	100k	100k
R4	1M	2M2	2M2	2M2
R5	1M	2M2	2M2	1M
R6	1K	1K	1K	1K
R7	560R	560R	560R	560R
R8	47R	47R	47R	47R
R9	1K	1K	1K	1K
R10	1K5	1K5	1K5	1K5
R11	1M	1M	1M	1M
R12	Omit	Omit	Omit	Omit
R13	10K	10K	10K	10K
R14	Omit	10K	10K	Omit
R15	2k2-4k7	2k2-4k8	2k2-4k9	2k2-4k10

### Capacitors

	Rat	Rat II	Turbo Rat	You Dirty Rat
C1	100uf	100uf	100uf	100uf
C2	1uf	1uf	1uf	1uf
C3	22n	22n	22n	22n
C4	1nf	1nf	1nf	1nf
C5	100pf	100pf	100pf	100pf
C6	2.2uf	2.2uf	2.2uf	2.2uf
C7	4.7uf	4.7uf	4.7uf	4.7uf
C8	30pf	30pf	30pf	30pf
C9	4.7uf	4.7uf	4.7uf	4.7uf
C10	3n3	3n3	3n3	3n3
C11	22n	22n	22n	22n
C12	1uf	10uf	10uf	10uf
C13	10nf	10nf	10nf	10nf

### Semi-conductors

	Rat	Rat II	Turbo Rat	You Dirty Rat
IC1	LM308N	LM308N	OP07	OP07
Q1	2N5457	2N5457	2N5457	2N5457

## Diodes

	Rat	Rat II	Turbo Rat	You Dirty Rat
D1	1n4001	1n4001	1n4001	1n4001
D3	1n914	1n4148	5mm red led	1n34A
D4	1n914	1n4148	5mm red led	1n34A
D5	Your choice	Your choice	Your choice	Your choice
D6	Your choice	Your choice	Your choice	Your choice

## Potentiometers and switch

SOFTNESS	10k B	Trimpots
SWEEP	1K	Trimpots
VOL	100k A	
DISTORTION	100k A	
FILTER	100k A	
Clipping	SPDT	On-off-on

## Modifications

The **Clipping** switch allows you to choose in between the stock diodes settings and an extra pair. The second pair is the only one that will be affected by the Softness trimmer.

You could mix with the diodes of different versions to have a much more tonal richness. Many people prefer the mix of stock diodes and Red leds.

The **Softness** trimmer controls the clipping Threshold, an interesting modification that worth trying. If you are looking to have a more traditional version, you could just turn it to zero, or just bypass it with jumpers in between the pads 1 and 3.

The **Sweep** Control changes the distortion frequency and the overall character of the effect. As with the softness control, you could just bypass it with a jumper in between the pads 1 and 3.

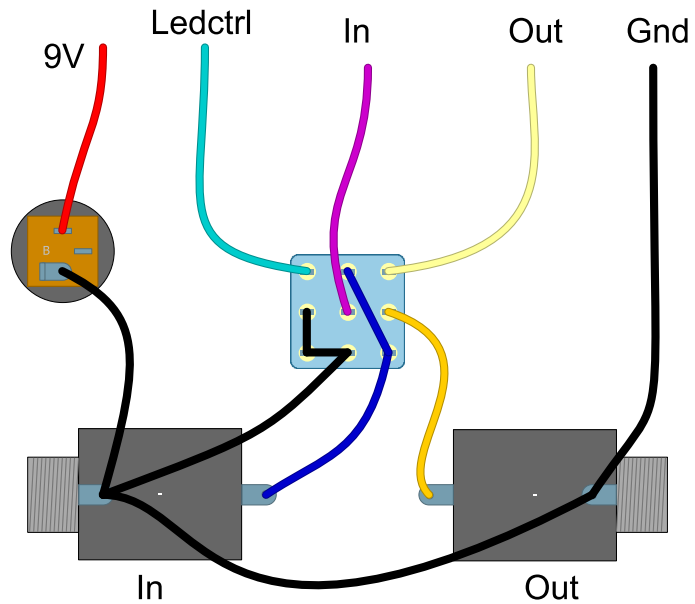
## General Building notes

To populate the PCB it's recommended to follow this order.

1. Resistors & diodes
2. IC Sockets (set up the proper IC at last)
3. Capacitors, starting with the smaller ones and the ceramic ones.
4. Electrolytic capacitors (always check the polarity)
5. Transistors

6. Wires
7. Potentiometers
8. Off board wiring

## Off Board Wiring

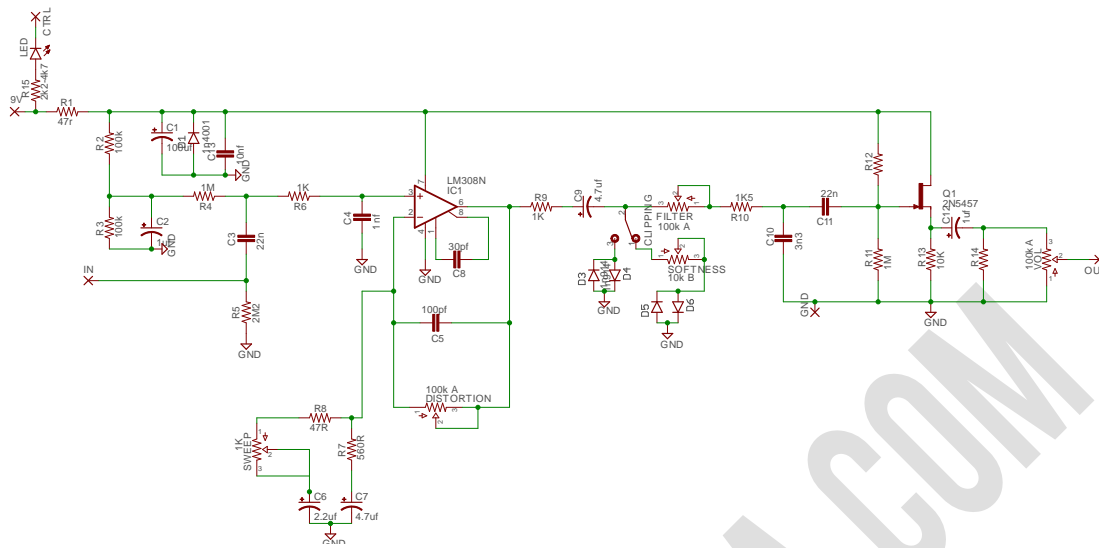


## Drilling the enclosure

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

Check the Attached "Drilling templates" to drill the box properly. The files are on Scale 1:1, ready to print in a A4 page.

# Schematic



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