





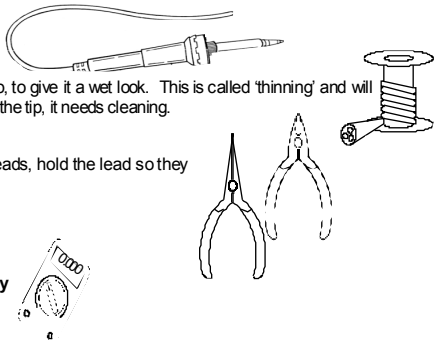
**VELLEMAN NV**  
**Legen Heirweg 33**  
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**Belgium Europe**  
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## 1. Assembly (Skipping this can lead to troubles !)

Ok, so we have your attention. These hints will help you to make this project successful. Read them carefully.

### 1.1 Make sure you have the right tools:

- A good quality soldering iron (25-40W) with a small tip.
- Wipe it often on a wet sponge or cloth, to keep it clean; then apply solder to the tip, to give it a wet look. This is called 'thinning' and will protect the tip, and enables you to make good connections. When solder rolls off the tip, it needs cleaning.
- Thin raisin-core solder. Do not use any flux or grease.
- A diagonal cutter to trim excess wires. To avoid injury when cutting excess leads, hold the lead so they cannot fly towards the eyes.
- Needle nose pliers, for bending leads, or to hold components in place.
- Small blade and Phillips screwdrivers. A basic range is fine.



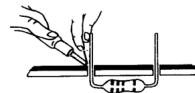
**For some projects, a basic multi-meter is required, or might be handy**

### 1.2 Assembly Hints :

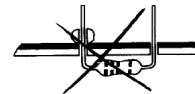
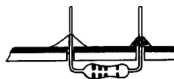
- ⇒ Make sure the skill level matches your experience, to avoid disappointments.
  - ⇒ Follow the instructions carefully. Read and understand the entire step before you perform each operation.
  - ⇒ Perform the assembly in the correct order as stated in this manual
  - ⇒ Position all parts on the PCB (Printed Circuit Board) as shown on the drawings.
  - ⇒ Values on the circuit diagram are subject to changes.
  - ⇒ Values in this assembly guide are correct\*
  - ⇒ Use the check-boxes to mark your progress.
  - ⇒ Please read the included information on safety and customer service
- \* Typographical inaccuracies excluded. Always look for possible last minute manual updates, indicated as 'NOTE' on a separate leaflet.

### 1.3 Soldering Hints :

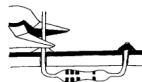
1- Mount the component against the PCB surface and carefully solder the leads



2- Make sure the solder joints are cone-shaped and shiny

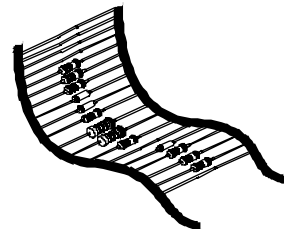


3- Trim excess leads as close as possible to the solder joint



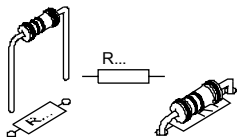
REMOVE THEM FROM THE TAPE ONE AT A TIME !

**DO NOT BLINDLY FOLLOW THE ORDER OF THE COMPONENTS ON THE TAPE. ALWAYS CHECK THEIR VALUE ON THE PARTS LIST!**



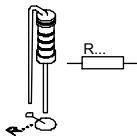
 You will find the colour code for the resistances on our website: [www.velleman.be](http://www.velleman.be)

### 1. Resistors



- R1 : 100K (1-0-4-B)
- R2 : 100K (1-0-4-B)
- R3 : 100K (1-0-4-B)
- R4 : 100K (1-0-4-B)

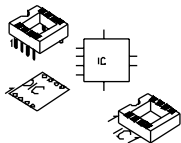
### 3. Vertical resistors



- R5 : 100K (1-0-4-B)
- R6 : 100K (1-0-4-B)
- R7 : 2K2 (2-2-2-B)

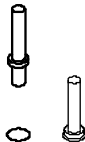
### 2. IC socket, Watch the position of the notch!

- IC1 : 8p



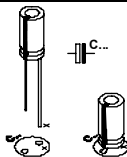
### 4. PCB pins

- AF IN (2x)
- AF OUT (2x)
- Power (+)
- Power (-)



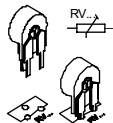
### 5. Electrolytic capacitors. Watch the polarity !

- C1 : 10µF
- C2 : 10µF
- C3 : 10µF
- C4 : 10µF
- C5 : 10µF



### 6. Trim potentiometer

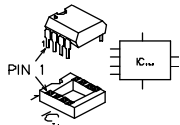
- RV1 : 220K (250K)



### 7. IC mounting

- IC1 : LM358

☞ Pay attention to the position of the notch!

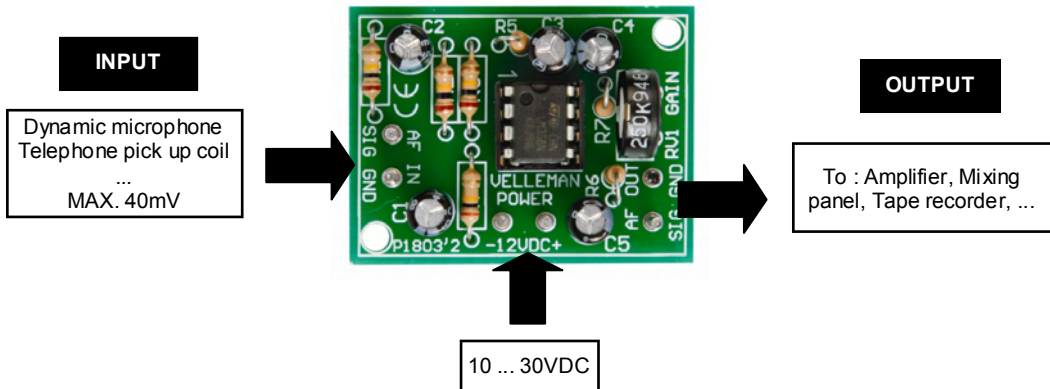


## 8. Connection

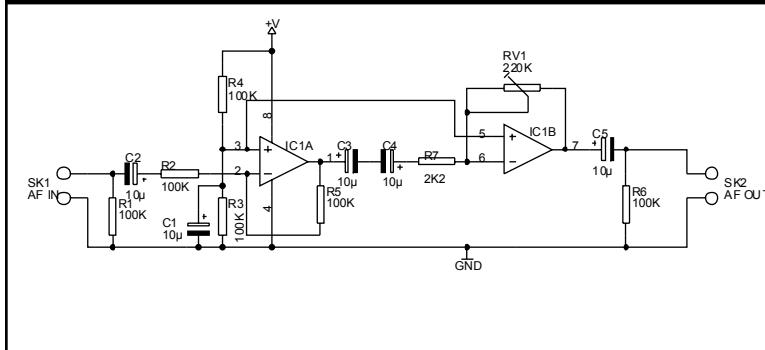
- Connect a stabilized supply between 10 and 30V with the points “+” and “-” on the print.
- The input is connected on the points “AF IN”.
- The output is taken on the connection “AF OUT” and the ground “-”.

☞ **To connect your in- and output you'd better use a screened wire, this to avoid interferences and rumble**

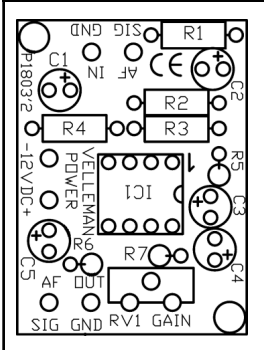
- With the trimmer RV1 you can control the output signal between 0 and max.



### 9. Schematic diagram.



### 10. PCB



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