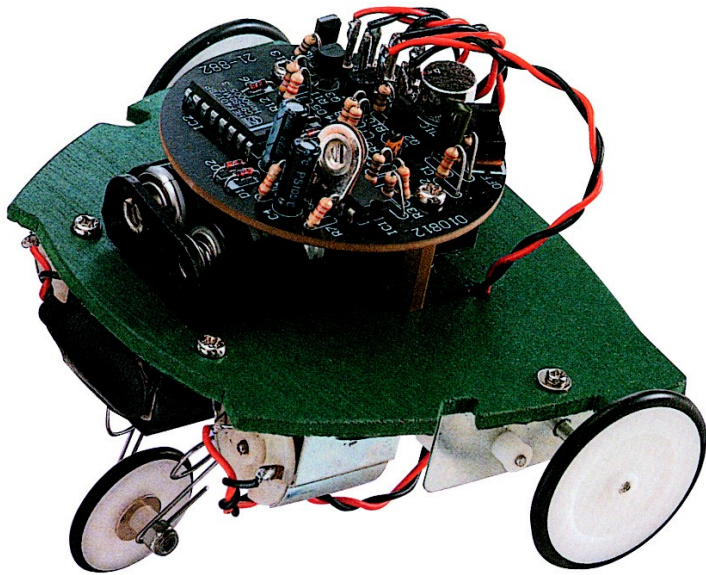
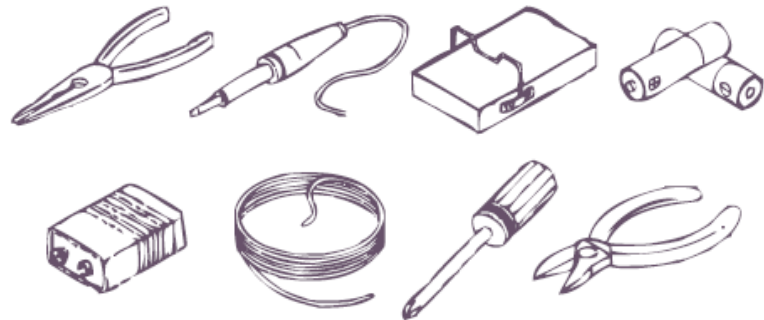


# cebekit



## TURNING FROG C-9803

Long pliers, soldering, soldering iron stand with sponge, 2 AA batteries, one 9V battery, Tin, diagonal cutting pliers



Turning Frog is a robot that uses a microphone as a detector. When microphone receives a signal (like a slap) will move and repeat the following process:

Movement a head Stop – Turn left – Stop Turn right -stop – Movement a head

You will see how much fun it is to learn electronics and mechanical rotary mounting this frog

Alimentation Required: 1 9 V battery (not included), for electronics. 2 x 1.5 V "AA" batteries (not included), for the engines

### LIST OF ELECTRONIC COMPONENTS

100 (brown black brown Gold) 2 pc.

4.7 K (yellow violet red gold) 2pc.

10K (brown black orange gold) 1pc

22K (red red orange gold) 1pcs.

33K (orange orange orange gold) 5pc.

2.7 M (green violet red gold) 2pc.



Resistors



IN4148: 6pcs



4017: 1pc

4069: 1pc



Transistor



Electrolytic Capacitor 1 uF : 2 pc



Ceramic Capacitor 47p: 1 pc



Mylar capacitor 103: 1 pc



Slide Switch : 1 pc



Battery Holder : 1 pc



Battery Clip : 1 pc



Microphone diat. 10 mm : 1 pc



Variable resistor 200K : 1 pc

Cable connector :

Yellow 1 pc

Blue 1 pc

Orange 1 pc

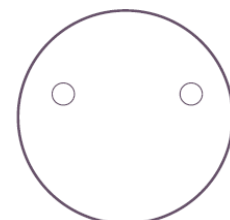
Green 1 pc



15 cm.

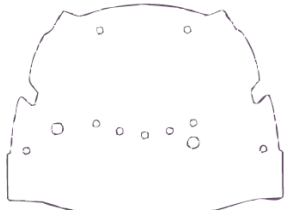


Pin de diat. 1.3 mm. : 8 pcs

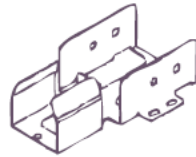


Printed circuit : 1pc

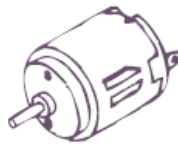
# MECHANICAL PARTS LIST



Wood Badge



P1 - Gearbox  
2 pc.



P2 - Engine 3V  
DC 2 pcs.



P3 - Metal rod diat.  
2X40 mm 2 pcs



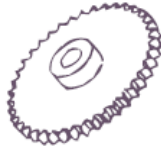
P4 - Metal rod diat.  
3x52 mm 2 pcs



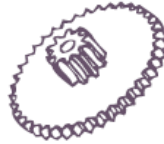
P5 - Pinion 10d  
white 2 pcs.



P6 - Front Gear 36d/14d  
white 2 pcs.



P7 - gear 36d/0d  
white 2pcs.



P8 - gear 36d/14d  
Red 2pcs.



P9 - gear 36d/14d  
Green 2pcs.



P10 - Nylon bearing  
5,6x4,8x1,95 4 pcs.



P11 - Rear wheel diat.  
32X3,5 mm. 2pcs



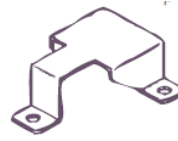
P12 - Rubber gasket  
diat. 30X3 mm. 2pcs.



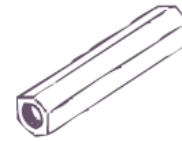
P13 - Front Wheel  
diat. 20 mm. 1 pc



P14 - Rubber gasket  
diat. 15x2,5mm. 1pcs.



F15 - 9 V battery  
compartment 1 pc



P16 - Hex Spacer  
M3x25 mm. 2pcs.



P17 - Right front  
wheel brake 1pc



P18 - Left front  
wheel brake 1 pc



P19 - Nylon Spacer  
diat. 3X3 mm. 1pc



P20 - nylon nut  
1pc



P21 - nut M3  
2 pcs.



P22 - nut  
M2 5 pcs.



P23 - Washer 3,2x10x0,5  
mm. 2pcs.



P24 - Self-tapping  
screws 2x4 mm. 1pc



P25 - screws M  
3x8 mm. 6 pcs.



P26 - screws M  
3x16 mm. 1 pc.



P27 - screws M  
2x10 mm. 5 pcs.

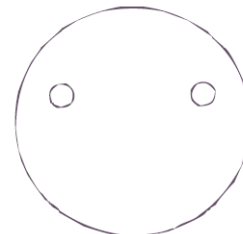
## PRINTED CIRCUIT ASSEMBLY

### Main board assembly

The numbering of the pieces (ID) is silkscreened on the PCB. This is the side of the plate where you have to insert the components

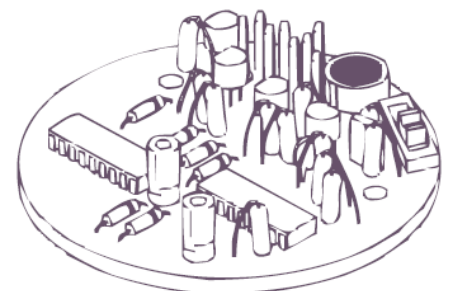
**Step 1:** We suggest you start with the minor components height and resistance

| ID          | Description | Color Code                  | Units |
|-------------|-------------|-----------------------------|-------|
| R10/13      | 100         | (brown black )              | 2 pc. |
| R8/11       | 4.7 K       | (yellow violet red gold)    | 2pc.  |
| R1          | 10K         | (brown black orange gold)   | 1pc   |
| R7          | 22K         | (red red orange gold)       | 1pcs. |
| R2/4/6/9/12 | 33K         | (orange orange orange gold) | 5pc.  |
| R3/5        | 2.7 M       | (green violet red gold)     | 2pc.  |



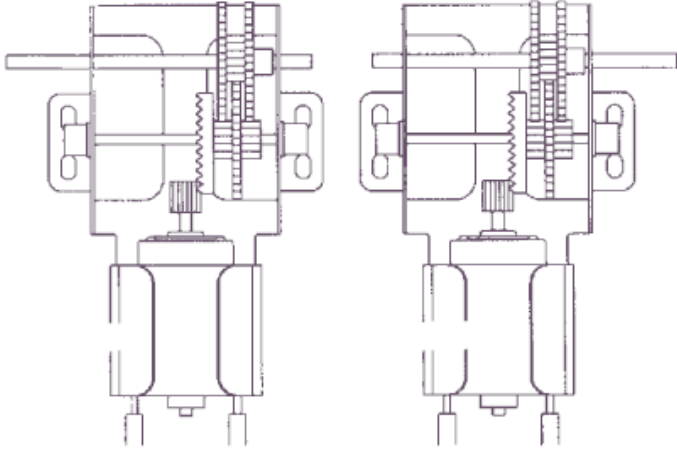
**Step 2:** Assemble the following components.

| ID           | Description             | Units | ID     | Description   | Units |
|--------------|-------------------------|-------|--------|---------------|-------|
| D1/2/3/4/5/6 | IN4148                  | 6     | ML + - | Pin diat. 1,3 | 2     |
| C2           | Capacitor 47P           | 1     | MR + - | Pin diat. 1,3 | 2     |
| C1           | Capacitor 103           | 1     | 3V + - | Pin diat. 1,3 | 1     |
| C3/4         | Electrolytic code       | 2     | 9V +   | Pin diat. 1,3 | 1     |
| Q2/4         | Transistor 8050         | 2     | G      | Pin diat. 1,3 | 2     |
| Q1/3         | Transistor C945 o 1815  | 2     |        |               |       |
| VR           | Resistance setting 200K | 1     |        |               |       |
| MIC          | Microphone              | 1     |        |               |       |
| ICI          | 4069                    | 1     |        |               |       |
| ICI          | 4017                    | 1     |        |               |       |
| SW           | Switch                  | 1     |        |               |       |



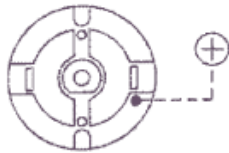
# MECHANICAL ASSEMBLY

## Housing Assembly Gear

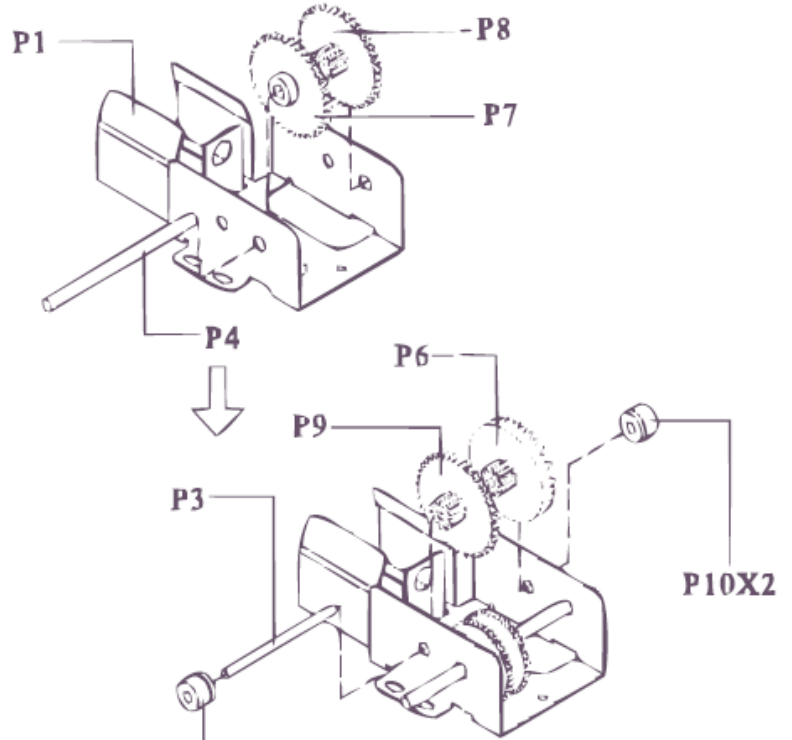


Gearbox  
the left side  
and assembled

Gearbox  
the right side  
already assembled

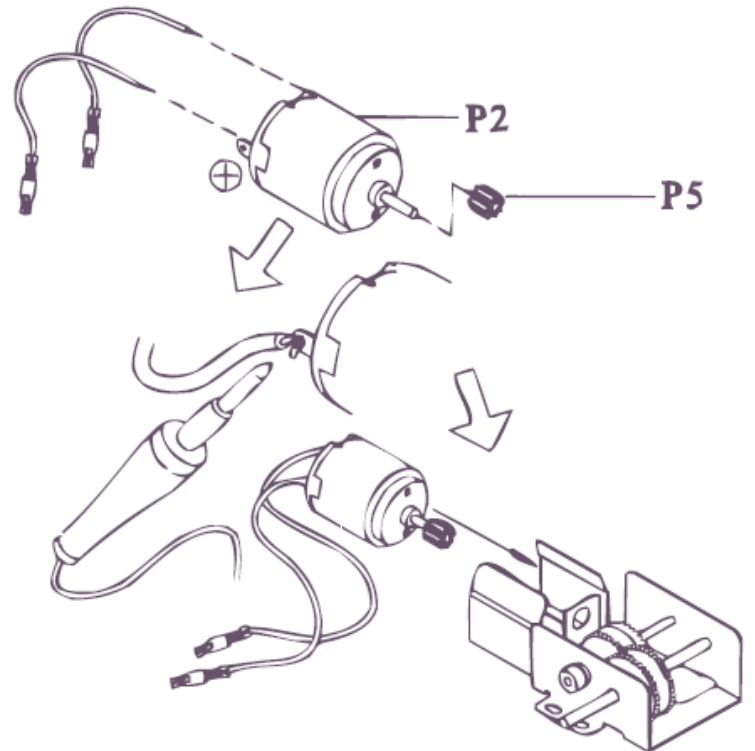






The terminal positivo (+)



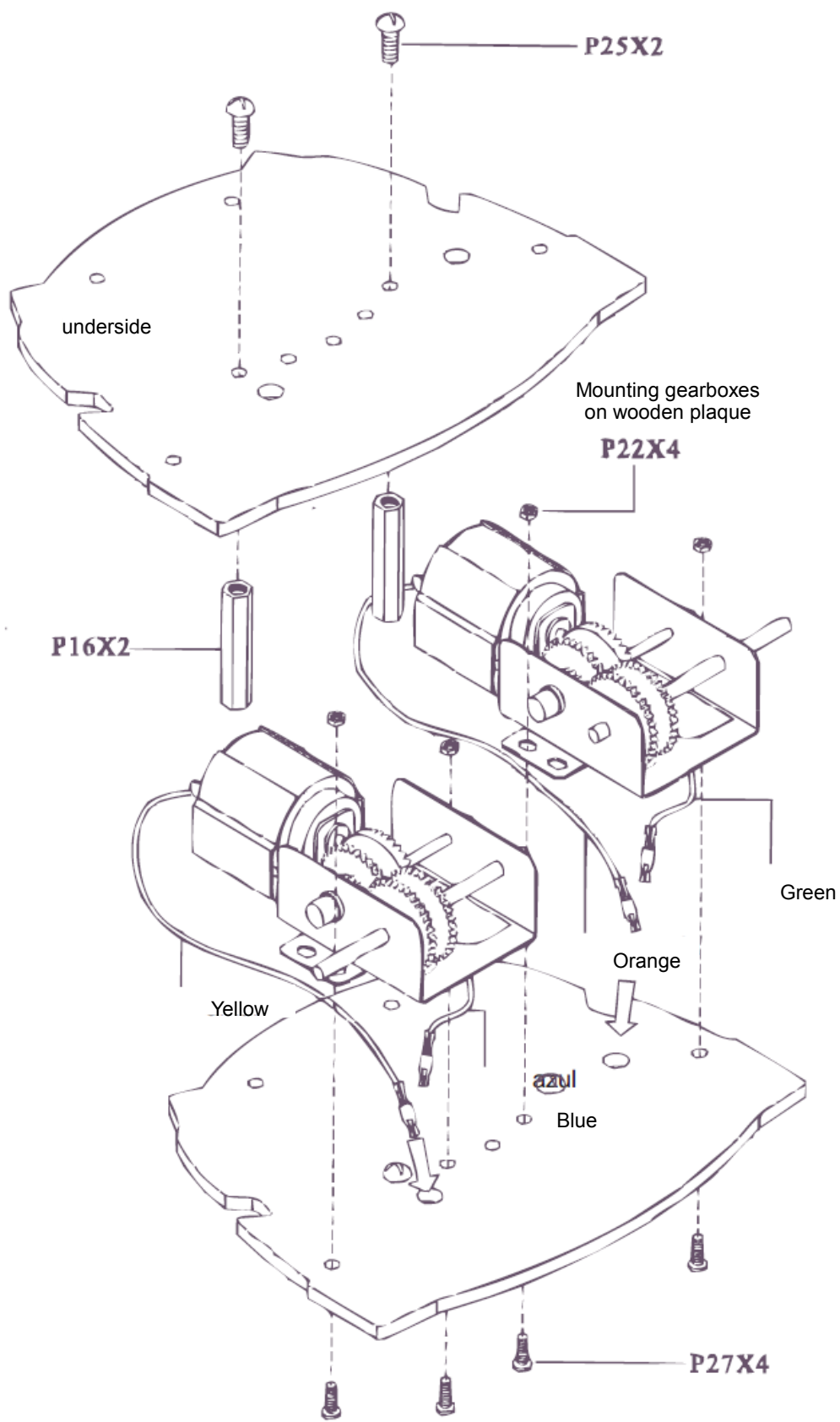
**NOTE**

The borde point shaoud be toward the box

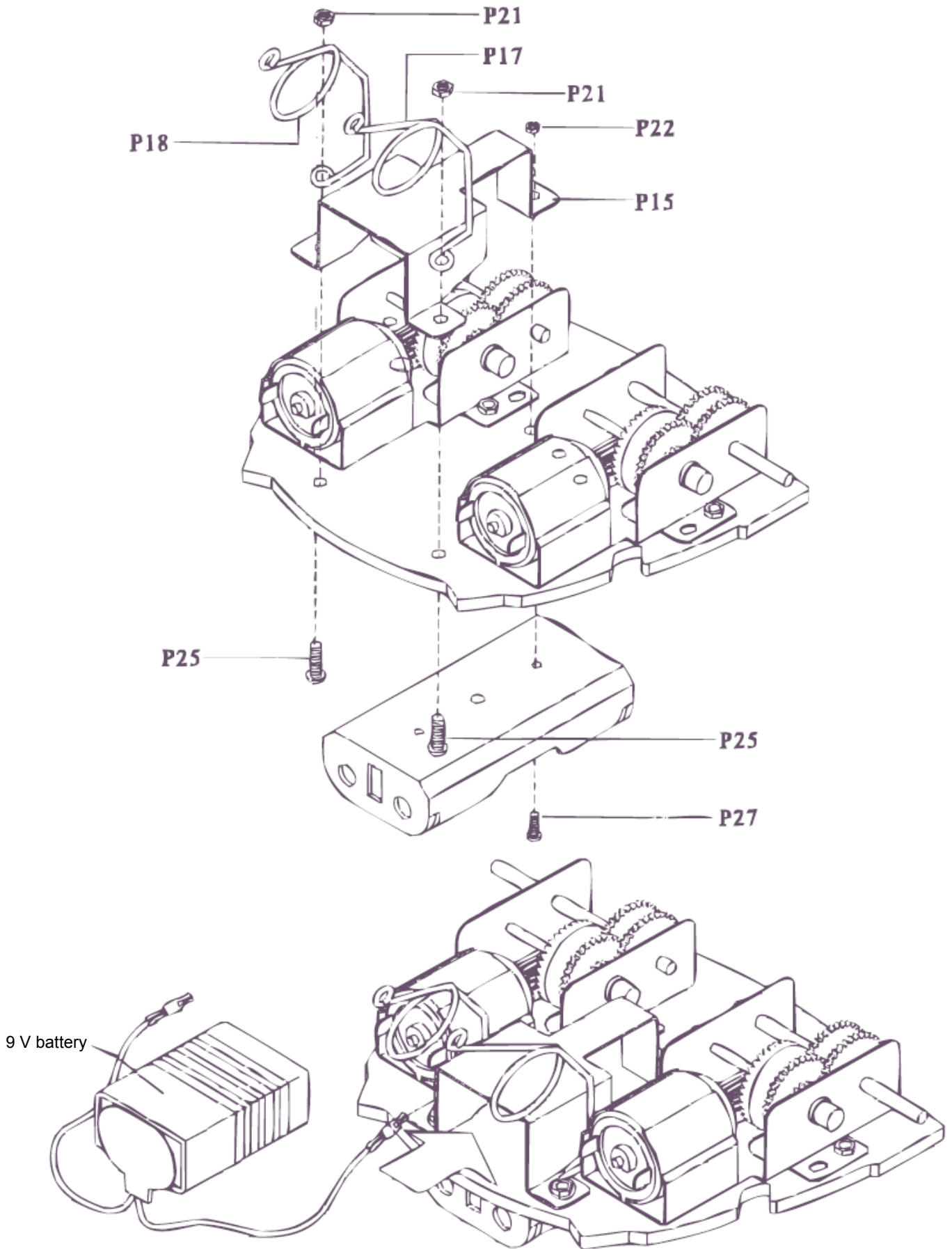


|             | (+) Positive motor   | (-) negative motor  |
|-------------|--|---|
| motor right | Yellow wire<br> | Blue wire<br>  |
| motor left  | Orange wire<br> | Green wire<br> |

# Mounting tabs on the hexagonal wooden plaque

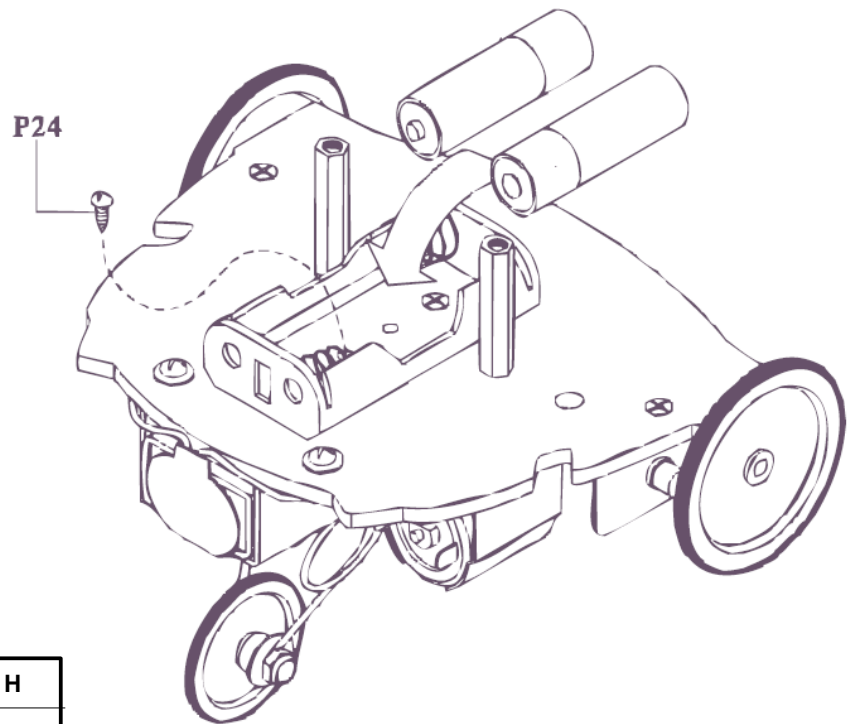
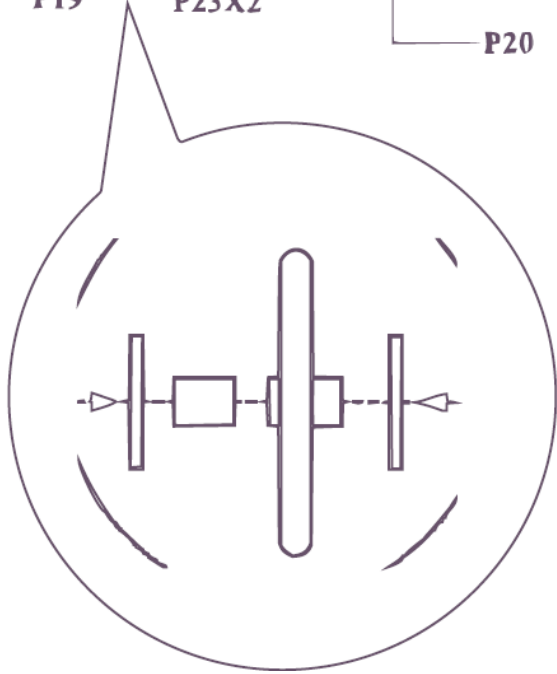
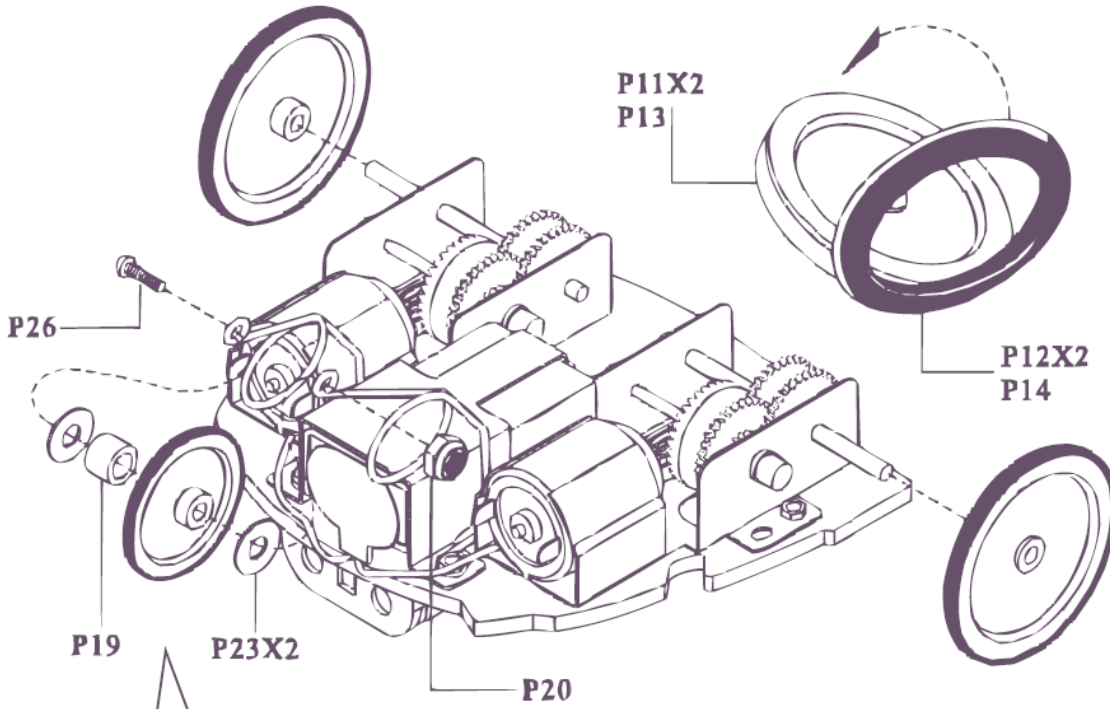


### Mounting the 9V battery compartment and the front wheel brakes



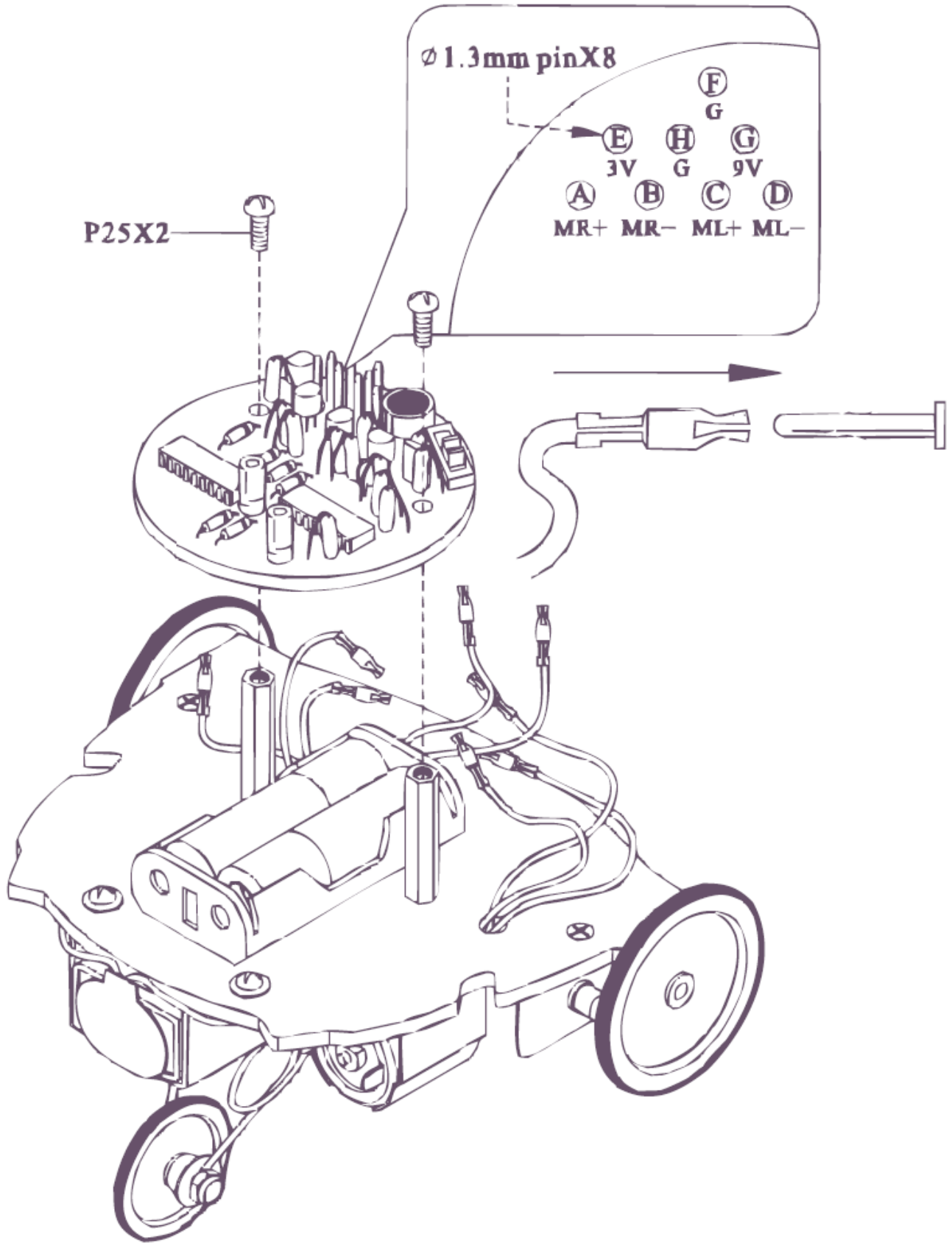


Mounting the front wheel and rear

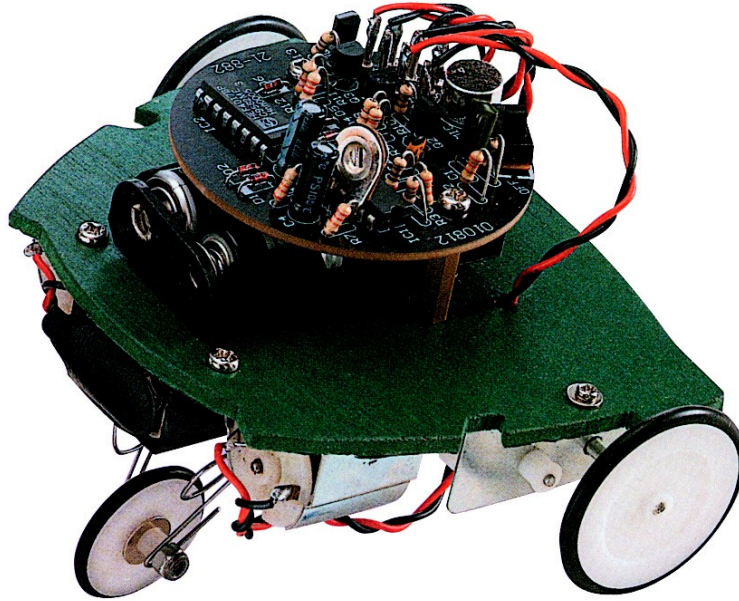


|  | A      | B    | C     | D      | E   | F     | G   | H     |
|--|--------|------|-------|--------|-----|-------|-----|-------|
|  | MR+    | MR-  | ML+   | ML-    | 3V  | G     | 9V  | G     |
|  | Yellow | Blue | Green | Orange | +   | -     | +   | -     |
|  |        |      |       |        | Red | Black | Red | Black |
|  |        |      |       |        | 3V  | 3V    | 9V  | 9V    |

PCB mounting and wiring of the robot

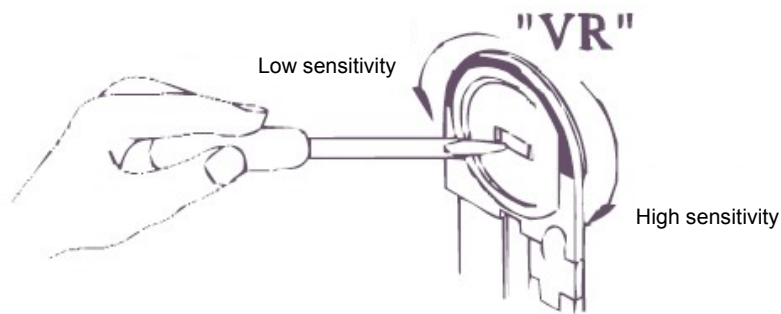


## Installation completed



## OPERATION

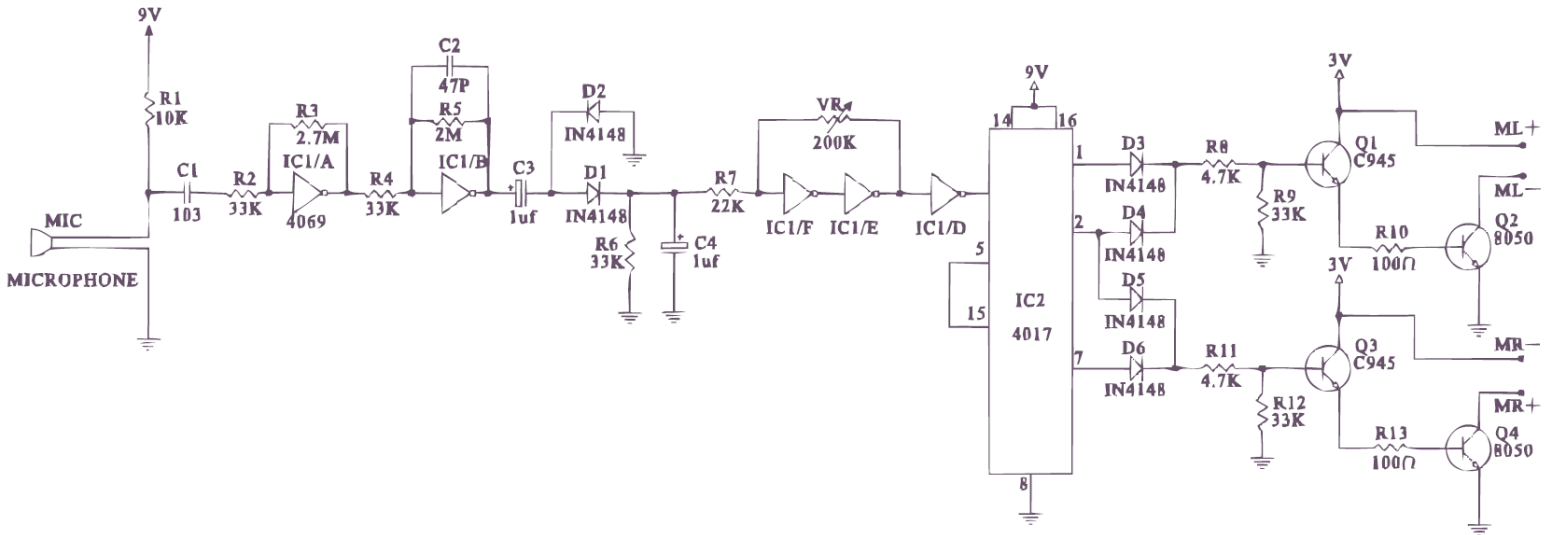
- 1.- Place the switch to "ON".
- 2.- Place the robot and slap. See if it moves according to the steps described in the introduction.
- 3.- Set the variable resistor "VR" to change the sensitivity of microphone



## Possible problems

- 1.- Make sure all components are correctly located in the printed circuit board and in particular that the polarity of the microphone, transistors, diodes, capacitors and integrated circuits is correct.
- 2.- Make sure and Lcable is the same as indicated in the wiring diagram.
- 3.- Set the variable resistor "VR" for a less sensitive, if the noise from the gearbox is too strong.
- 4.- The noise coming from the gears can interfere with the signal received by the microphone. Putting fat between the front gear (P6) and the 2mm rod (P3), will reduce the noise.
- 5.- **Note:** DO NOT put any grease from the rod of 3 mm (P4) and gears (P7y P8).





**NOTE.** This kit is recommended for children aged 14 years, always escorted by an adult



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