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eGizmo Mechatronix

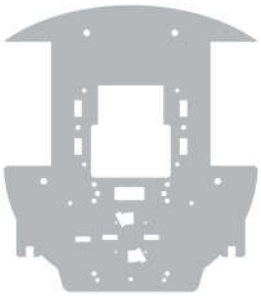
PBOT JUNIOR:
Assembly Manual

An Entry Level Mobile Robot

Proudly Made in the Philippines

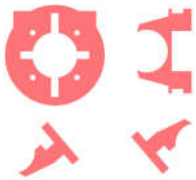
MATERIALS:

[Body]



[Front Deck]

[Roller Holder]



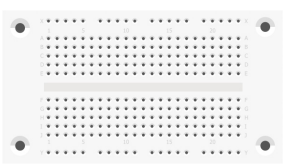
[Battery holder]

[Spoiler]

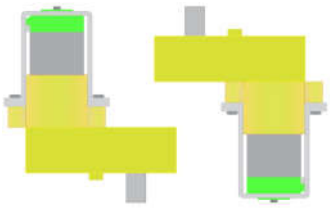
[Board Chassis]

[Motor Holder]

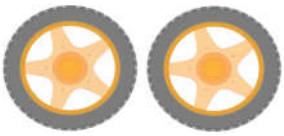
[SYB-46 Breadboard]



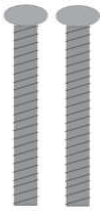
6VDC Motors [2pcs]



Wheels[2pcs]



4pins wires

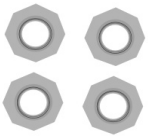


3x20mm[2]

2x25mm [4]

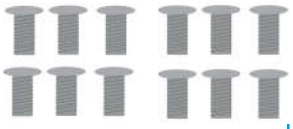
2.5mm[4]

3x16mm[4]

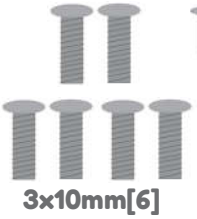


3mm[4]

Spacers[5]



3x6mm[12]



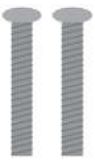
3x10mm[6]

1x6mm screws[4]

3x14mm

Roller Ball

3x10mm [4] Brass studs

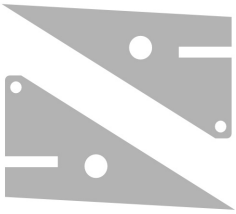


3x12mm[2]

MATERIALS:

3x8mm Screws[4]

Bumper[2]



Servo holder

US-100 holder

3x20 brass studs[2]

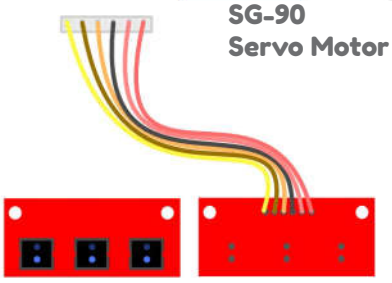
2x9mm Screws[2]

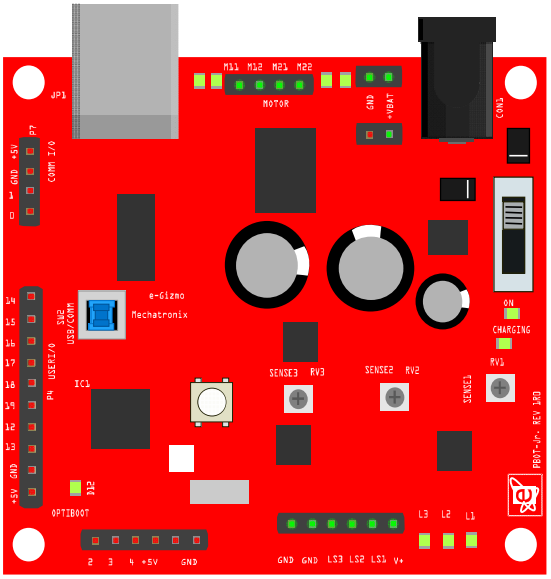
2x5mm Screw

2x7mm Screws[2]

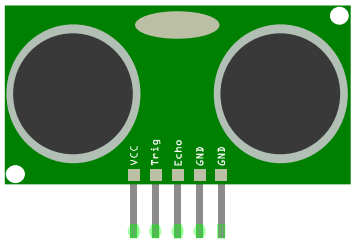
SG-90 Servo Motor

Line Sensor

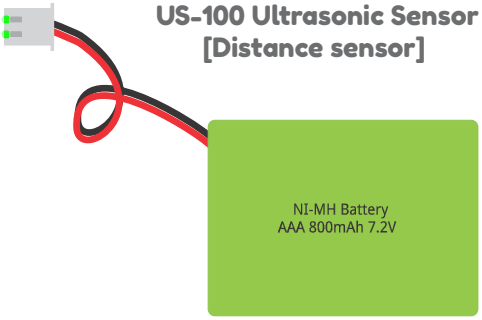




PBOT Junior Circuit Board



US-100 Ultrasonic Sensor [Distance sensor]



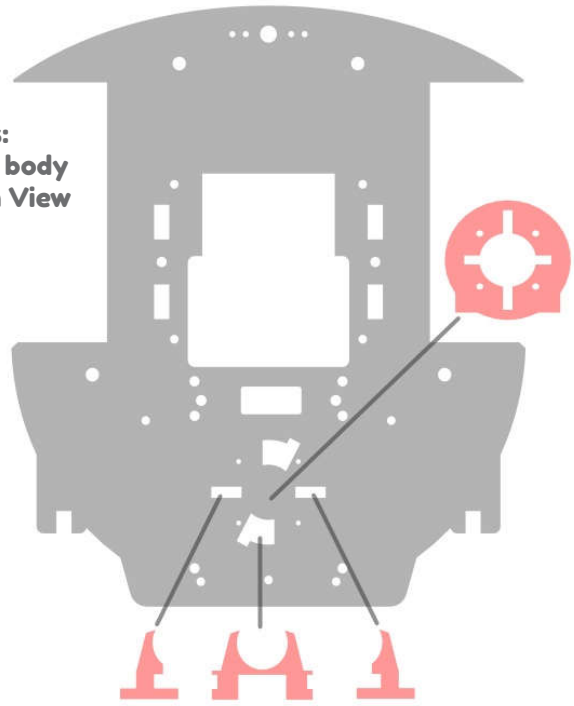
7.2V Rechargeable Battery Ni-MH AAA 800mAh

9V Adaptor 1A Charger

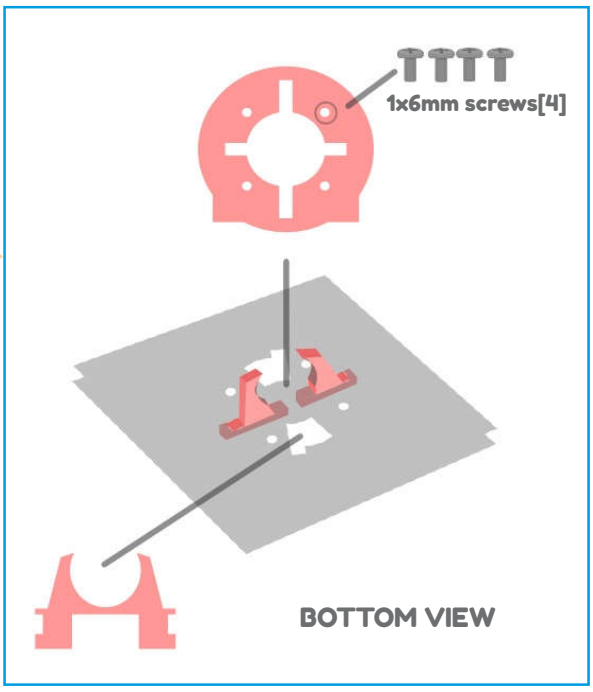
FIRST STEP: The Roller Holder

1

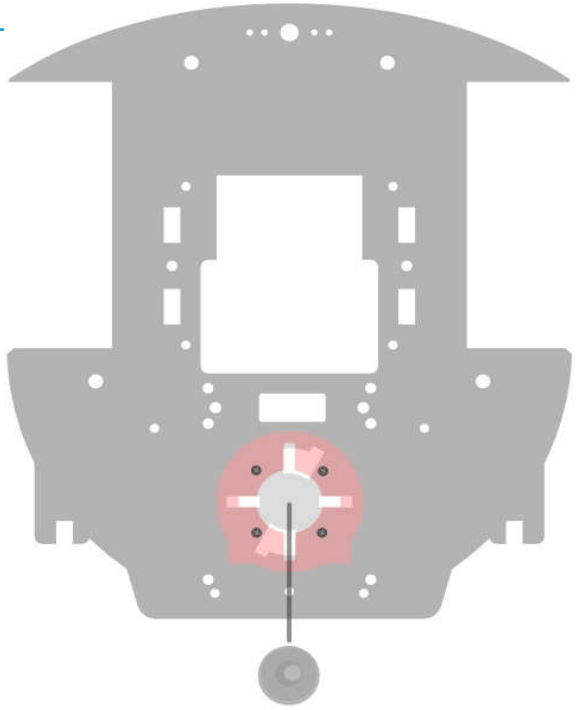
Chassis:
Acrylic body
Bottom View



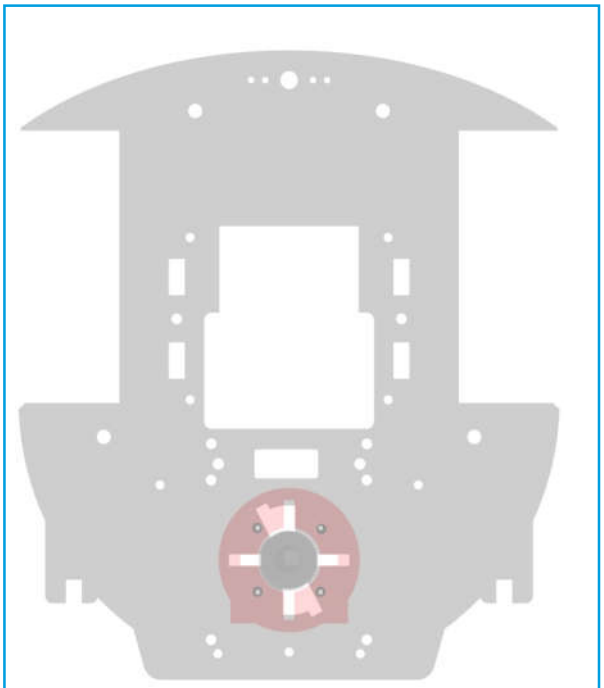
Roller Holder accessories



2



Place the Roller Ball inside of it.

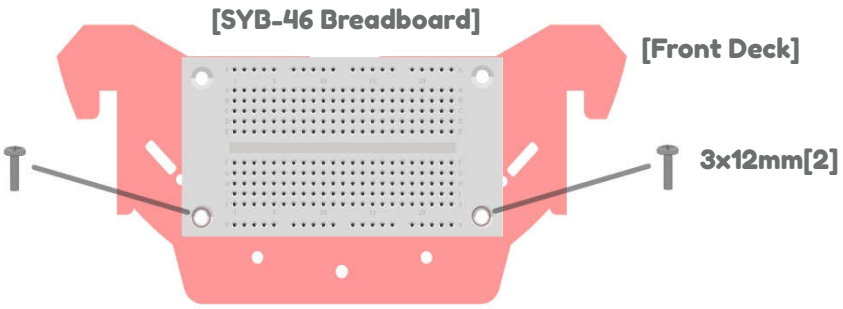


The Roller ball should look like this.

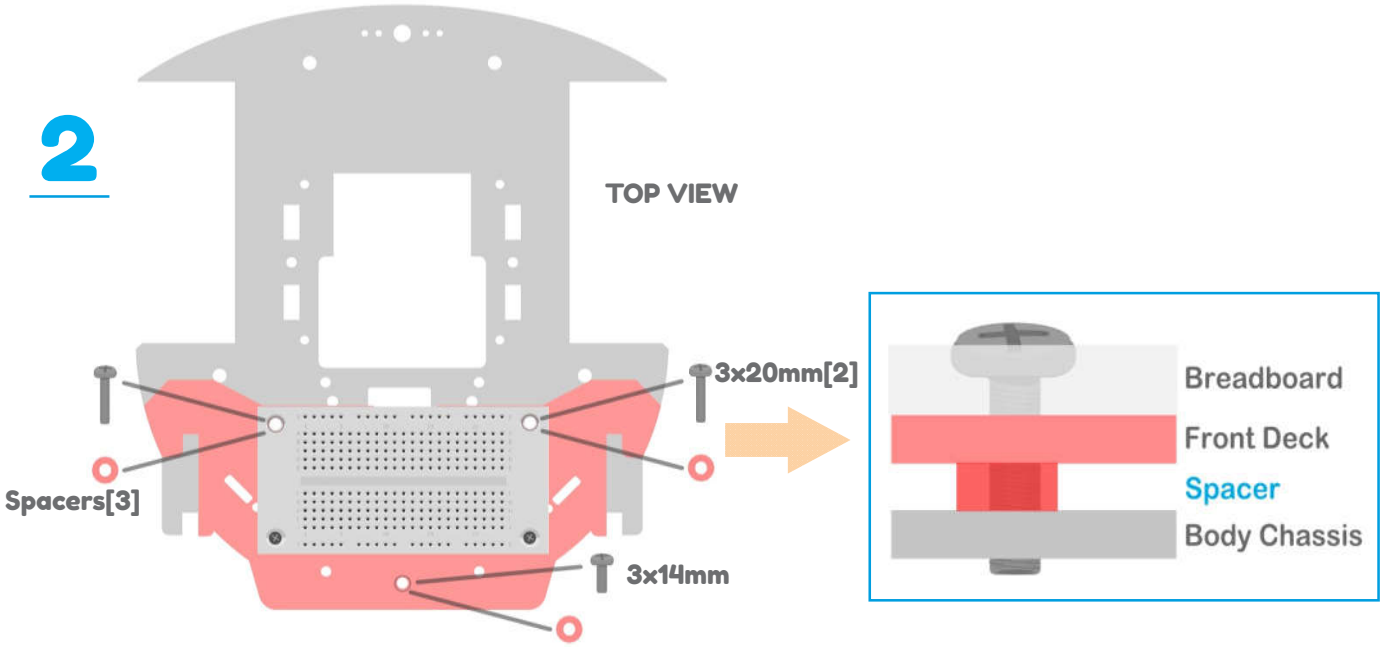
(Go to Page 12 for placing the Line sensor)

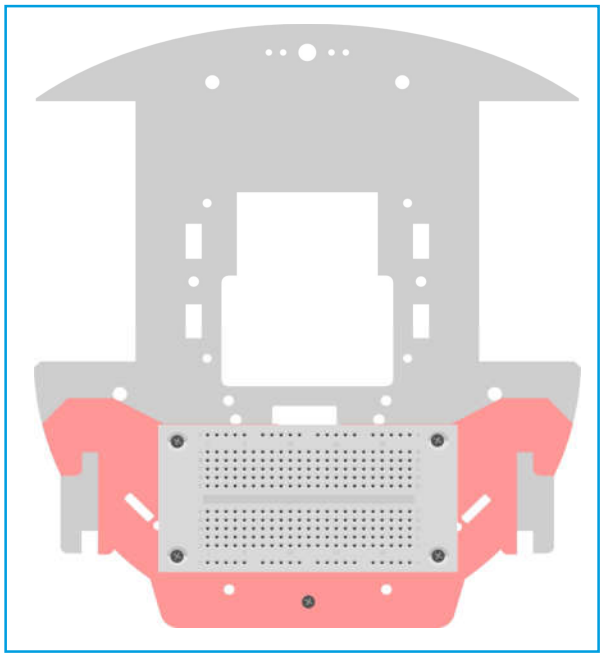
SECOND STEP: Placing the breadboard

1



2

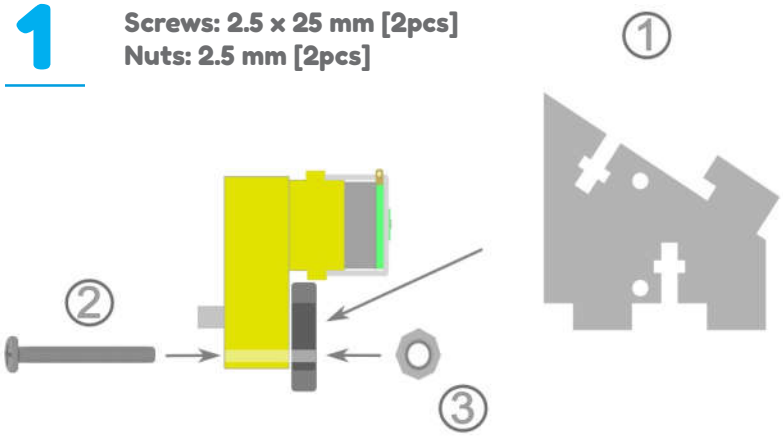


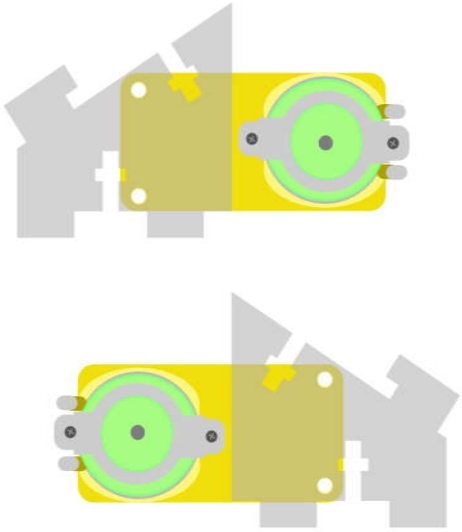


THIRD STEP: Constructing the Motors

1

Screws: 2.5 x 25 mm [2pcs]
Nuts: 2.5 mm [2pcs]

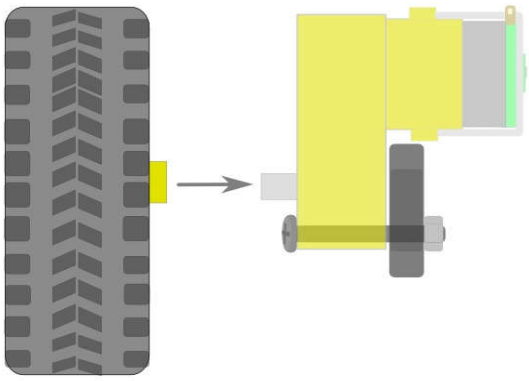




Orentation of two motor holder.

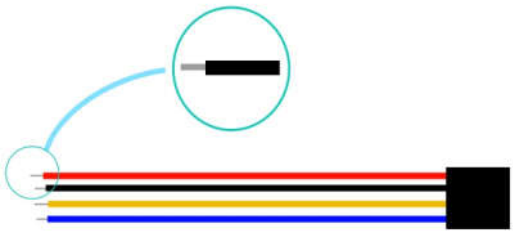
2

Connect the Wheel.



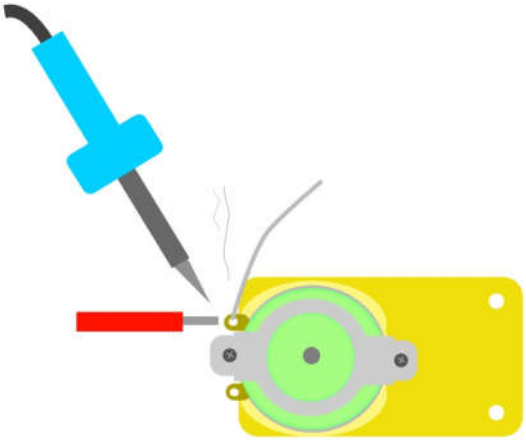
3

Strips the wires



4

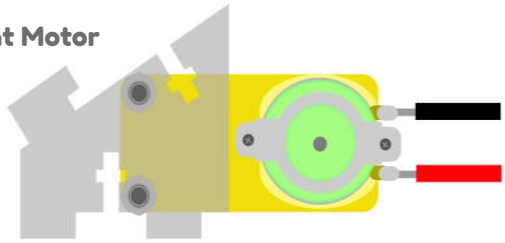
Solder the wires to the motor pins



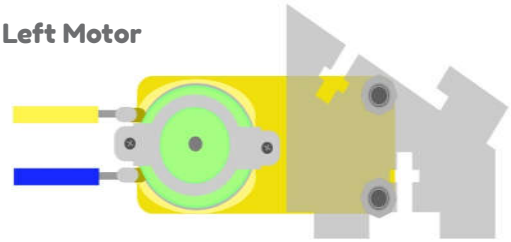
FOURTH STEP: Placing the Motors

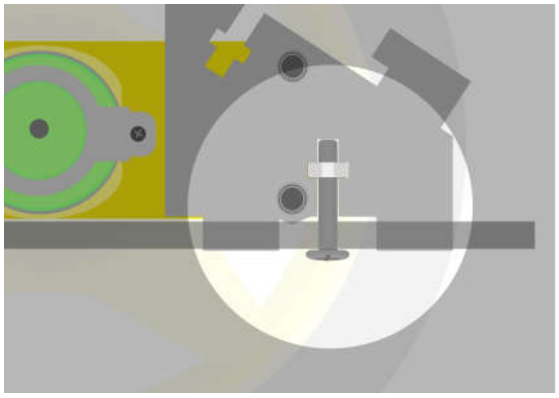
Wiring Connnections for Motors

Right Motor

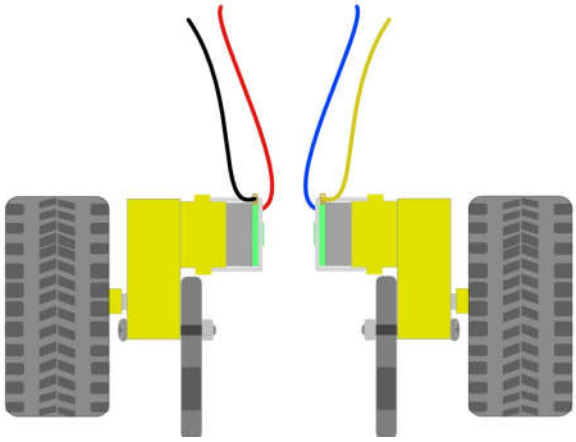


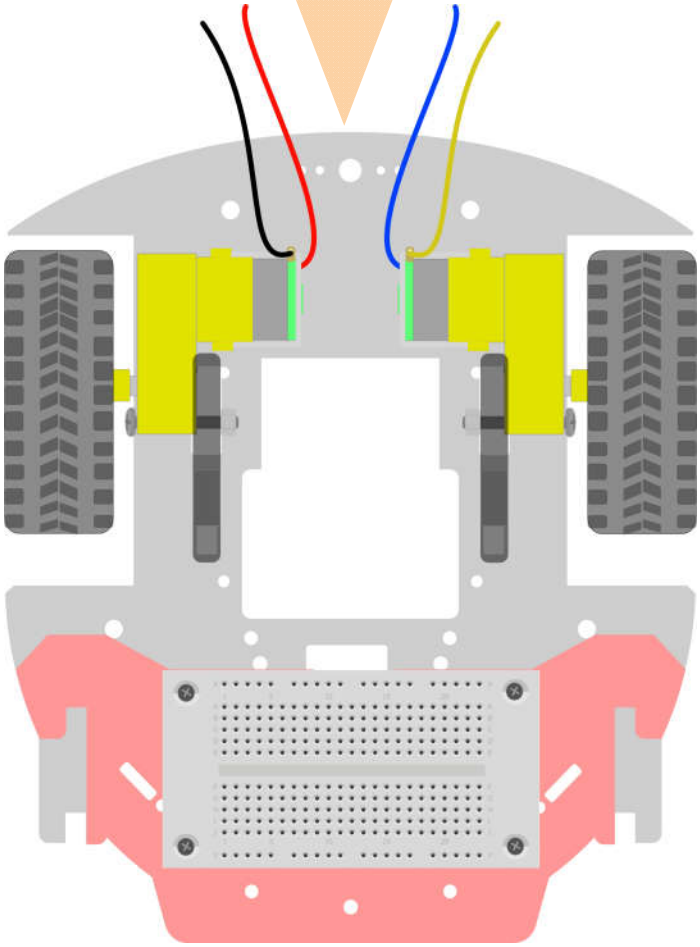
Left Motor



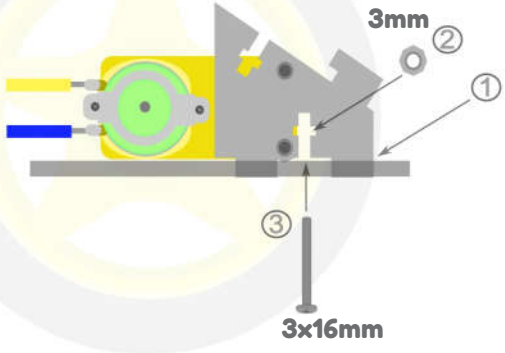


Place the two motor like this.

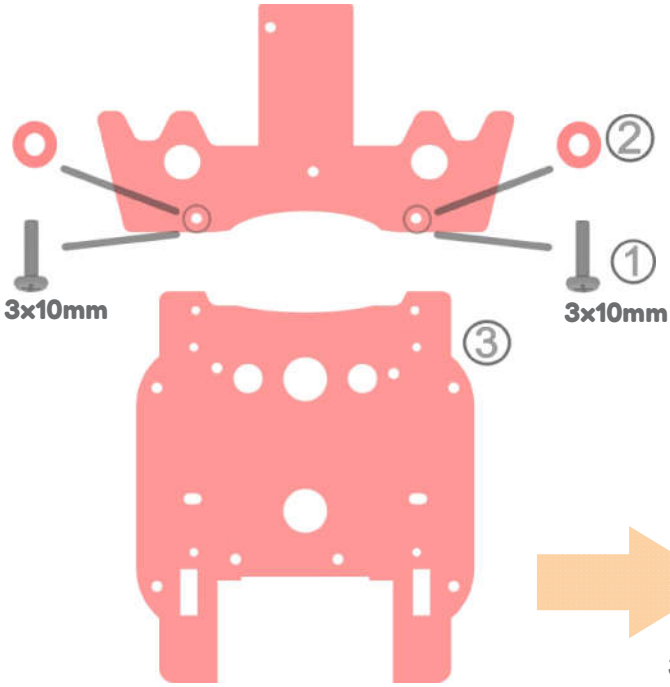


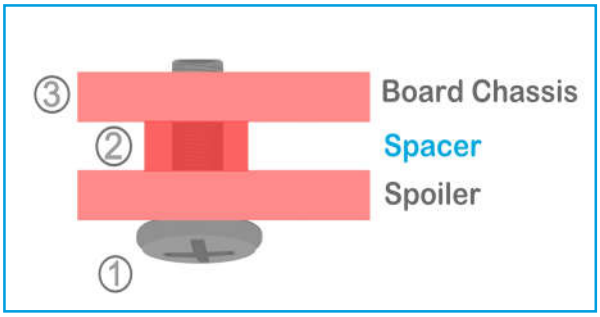


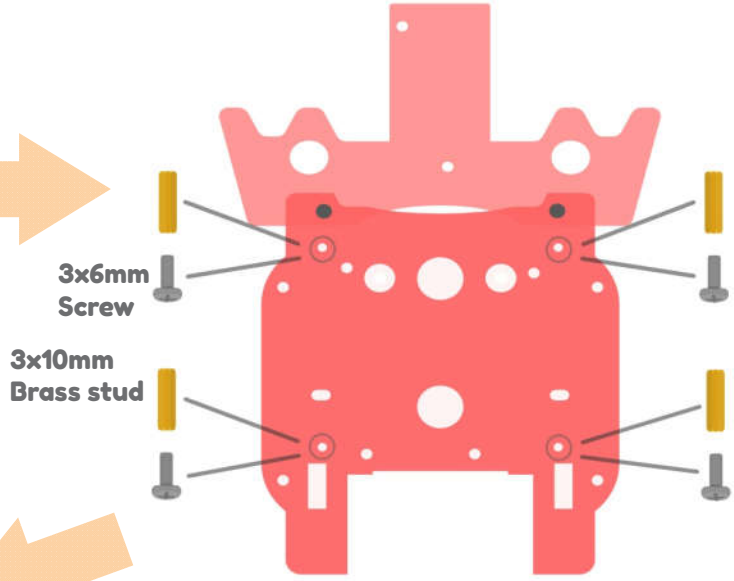
Apply the screws and nuts to support the motor holder.

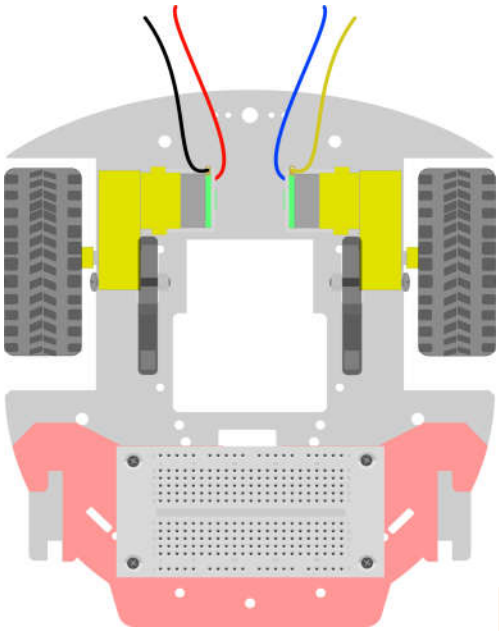


FIFTH STEP: The Board Chassis



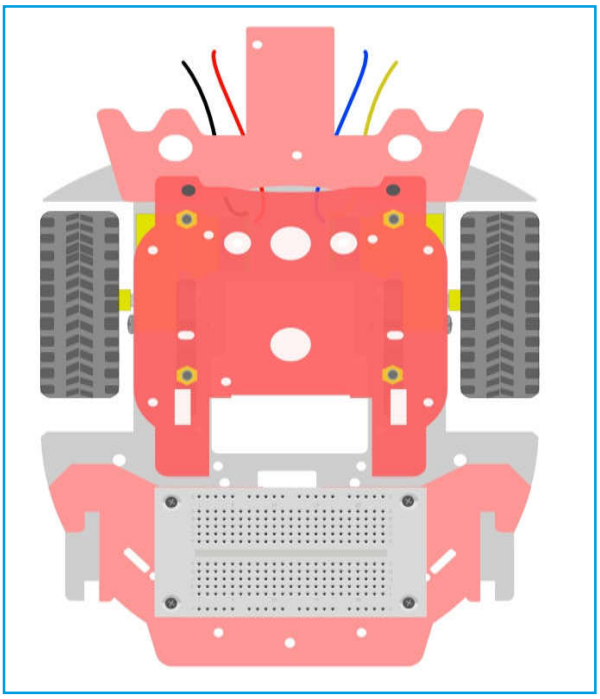


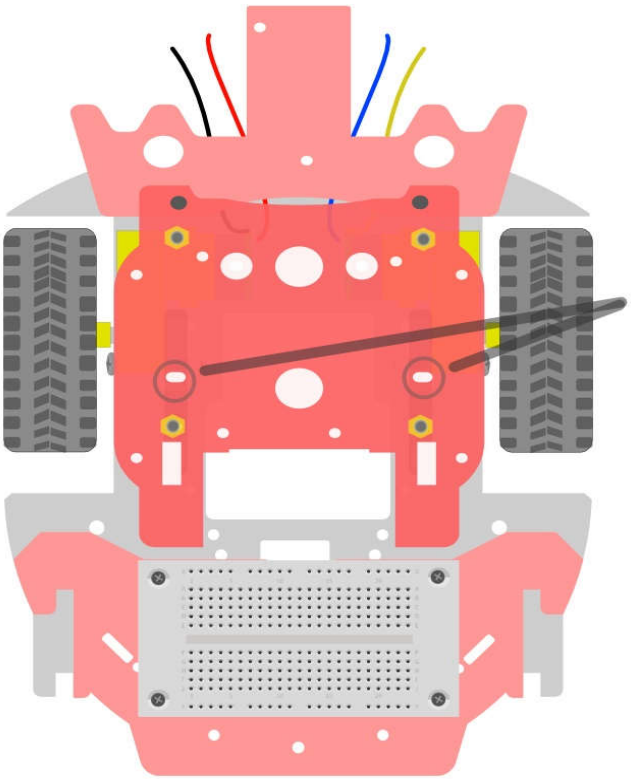


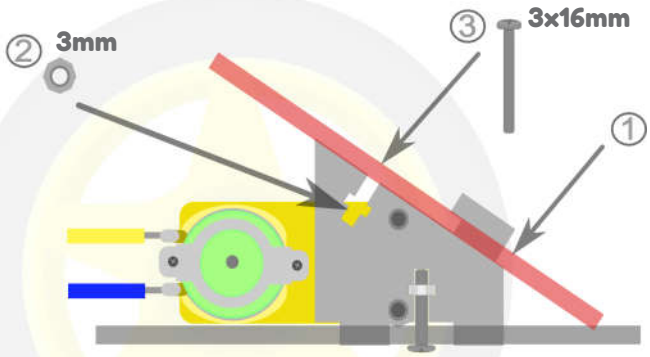


Place it on the top.

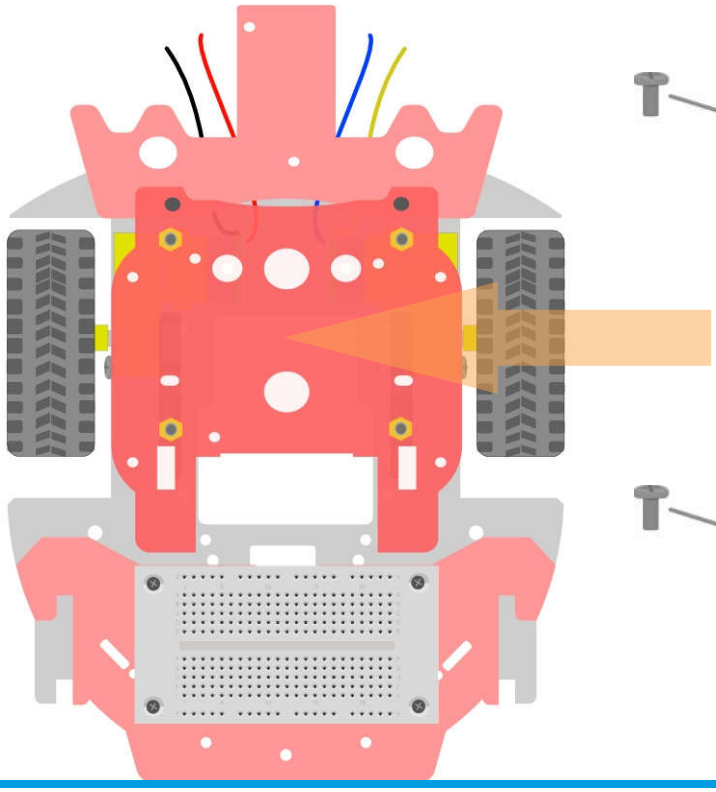
It should be like this.

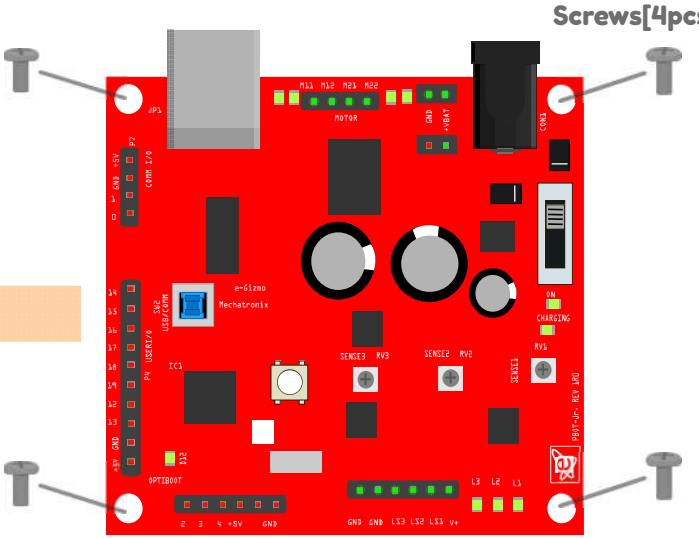


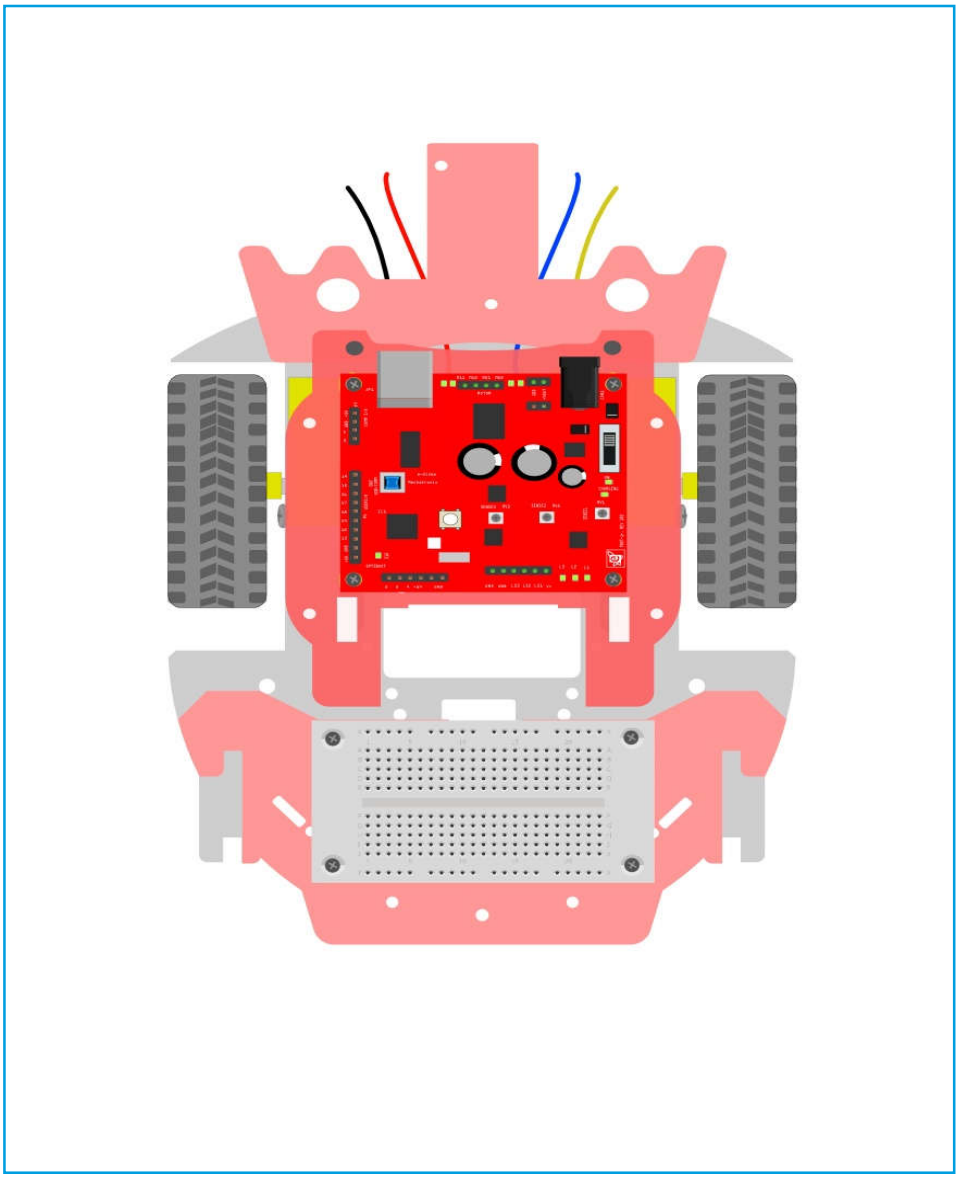


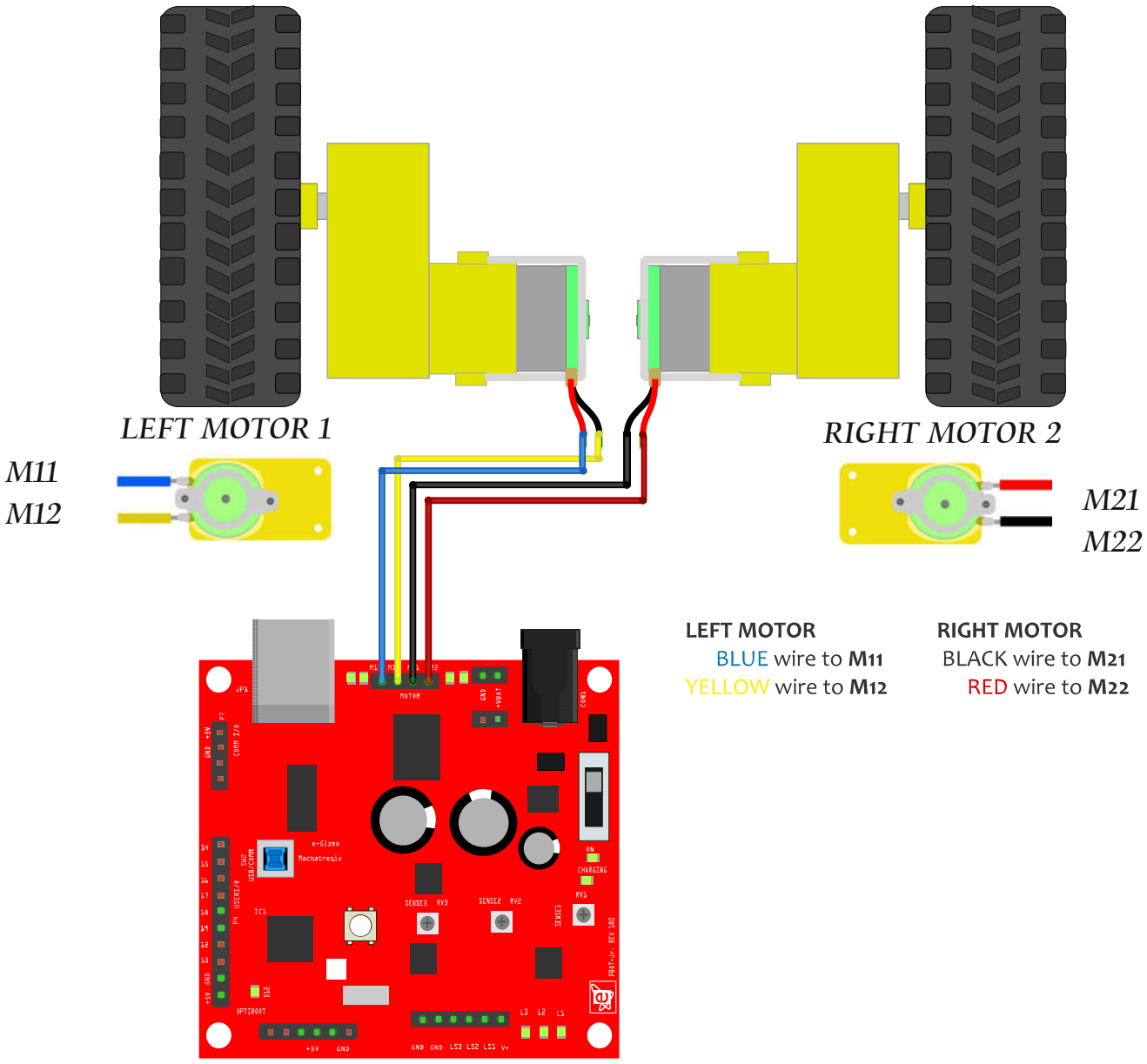


Place the upper board chassis, then add the screws and nuts to tighten it.

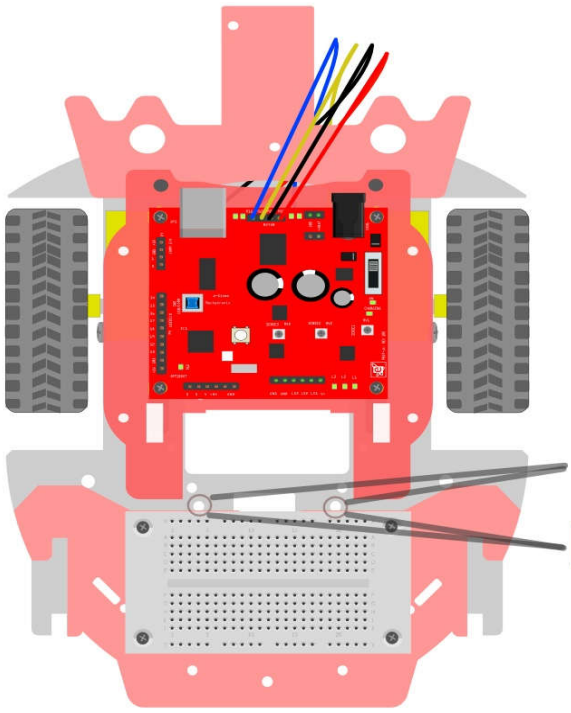




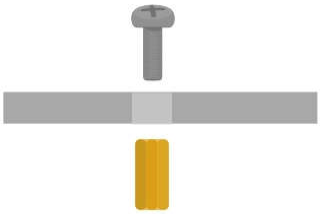



LEFT MOTOR 1
RIGHT MOTOR 2
M11
M12
M21
M22
LEFT MOTOR
BLUE wire to M11
YELLOW wire to M12
RIGHT MOTOR
BLACK wire to M21
RED wire to M22

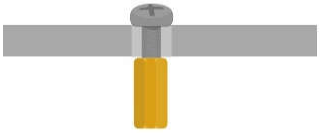
SEVENTH STEP: Placing line sensors

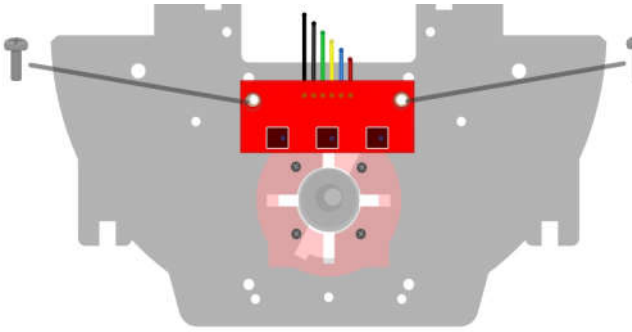


3x6mm
Screws[2pcs]



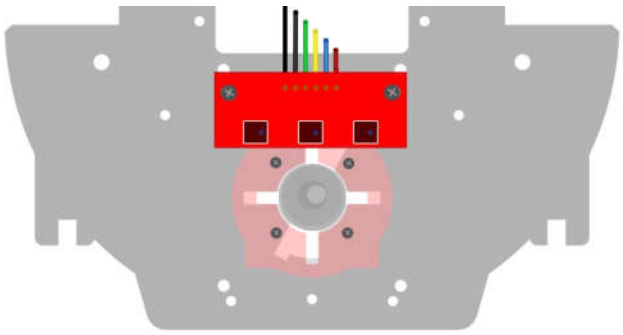
3x6mm
Brass studs[2pcs]



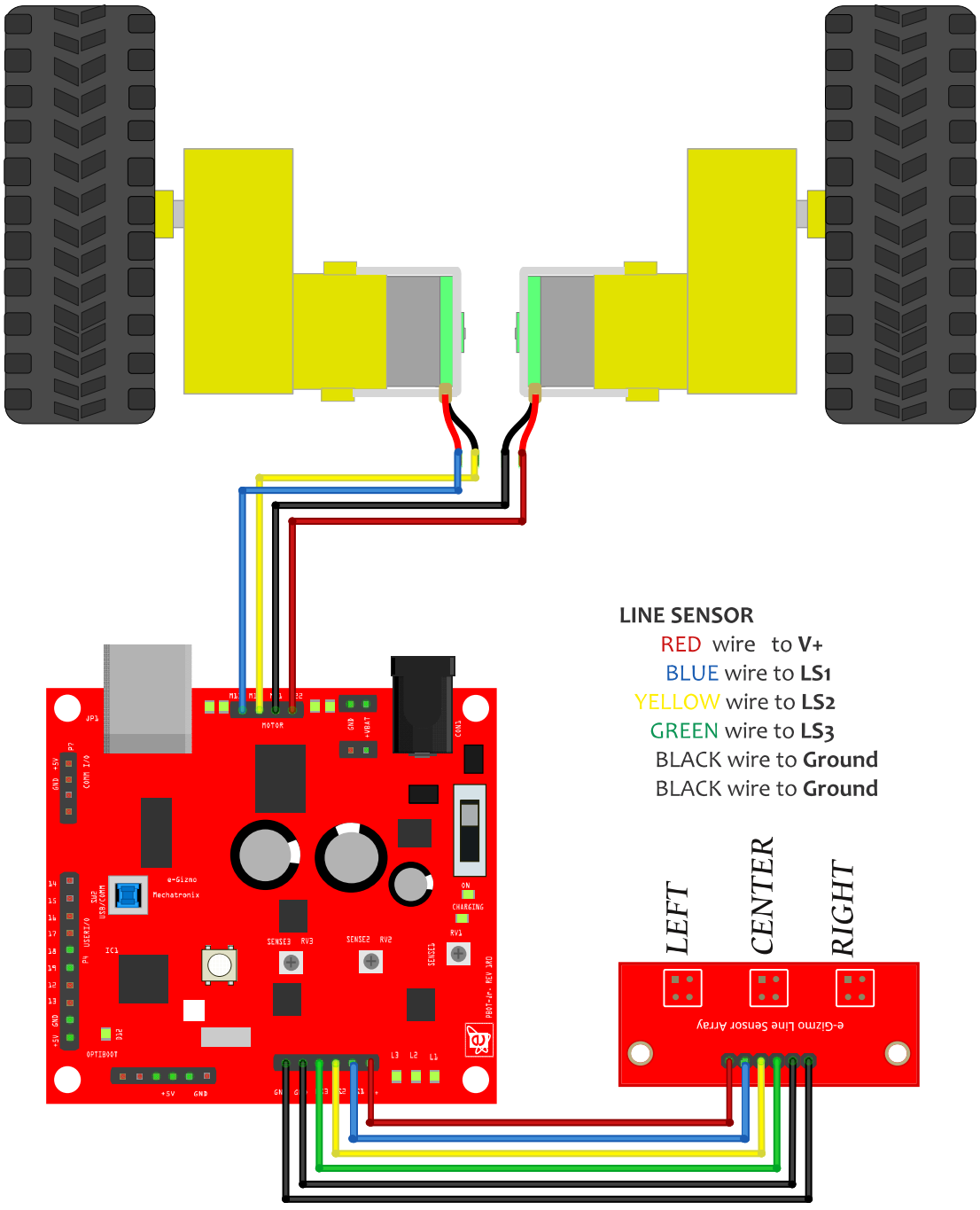


3x6mm
Screws[2pcs]

Line sensor

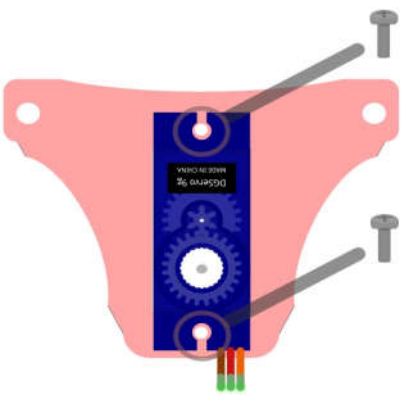


Wiring Diagram of Line sensor

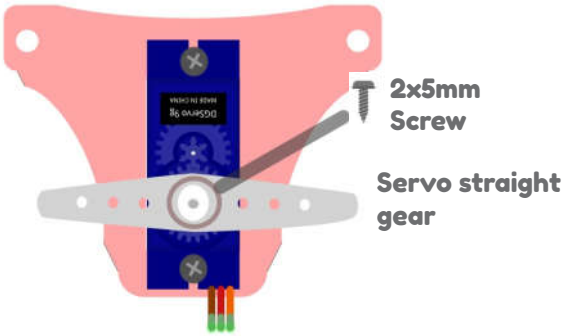


EIGHTH STEPS: Constructing the Servo with US-100

1



2



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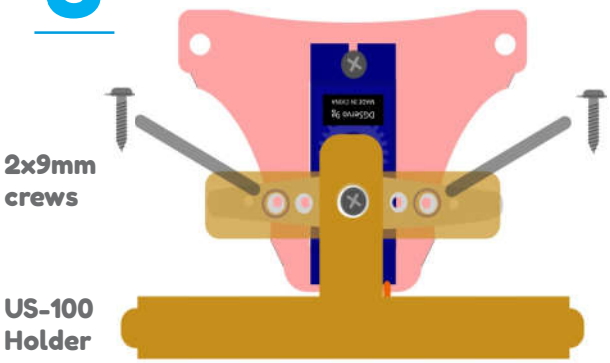
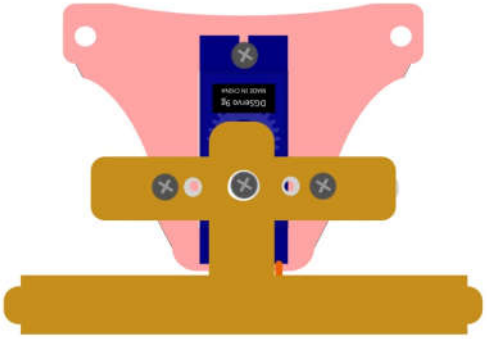
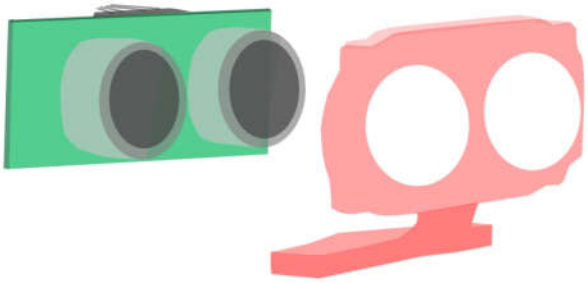


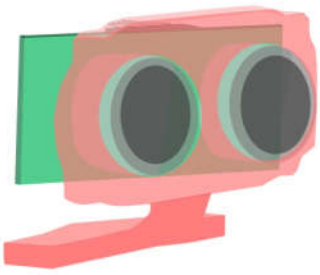
4



5

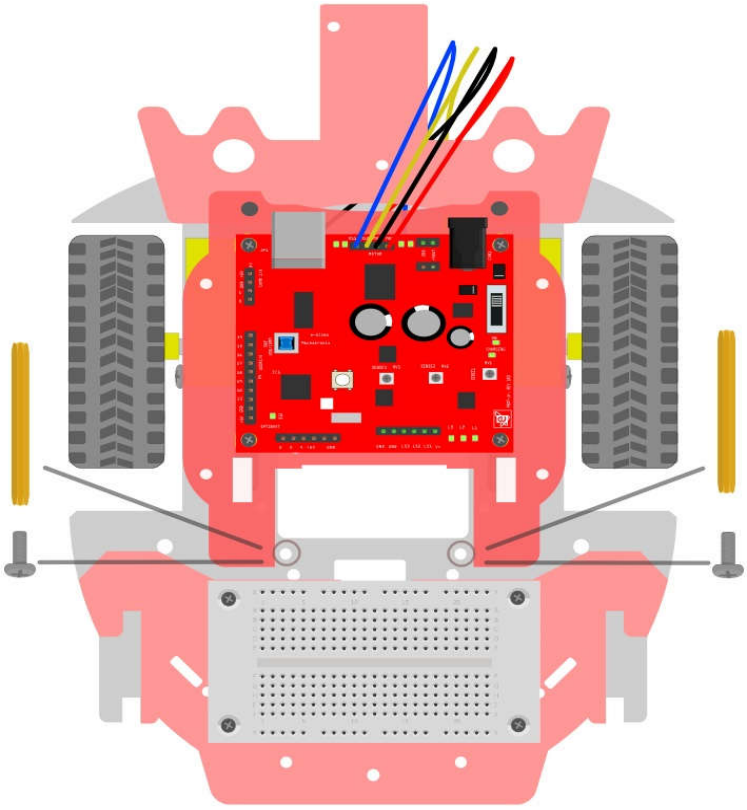


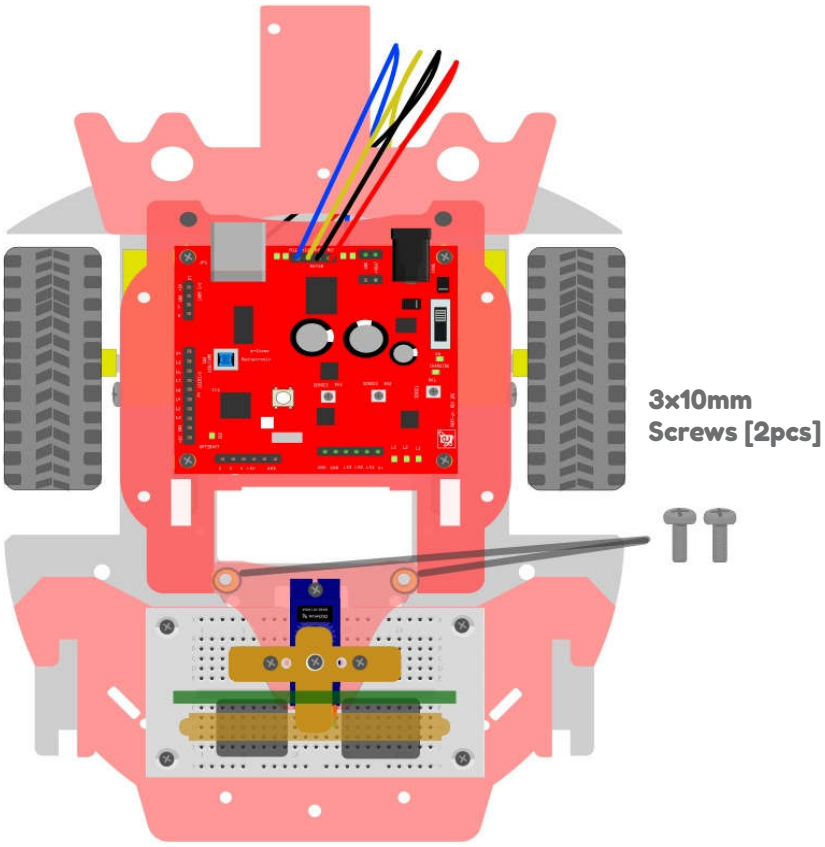
Fit the US-100 into Distance sensor holder.



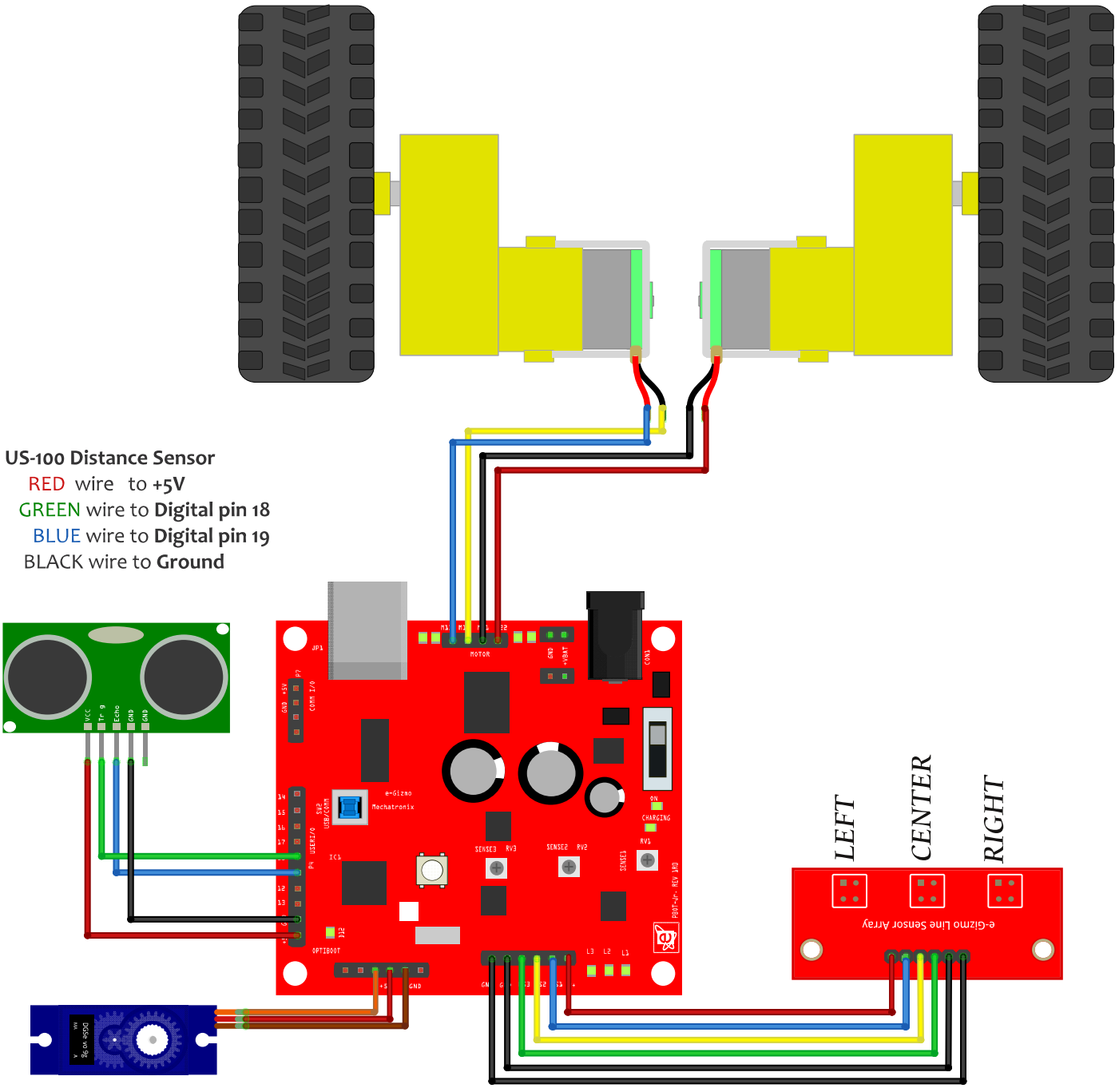
It should be like this.

Placing the Servo nd Distance sensor





Wiring Diagram of US-100 and Servo motor



US-100 Distance Sensor

RED wire to **+5V**

GREEN wire to **Digital pin 18**

BLUE wire to **Digital pin 19**

BLACK wire to **Ground**

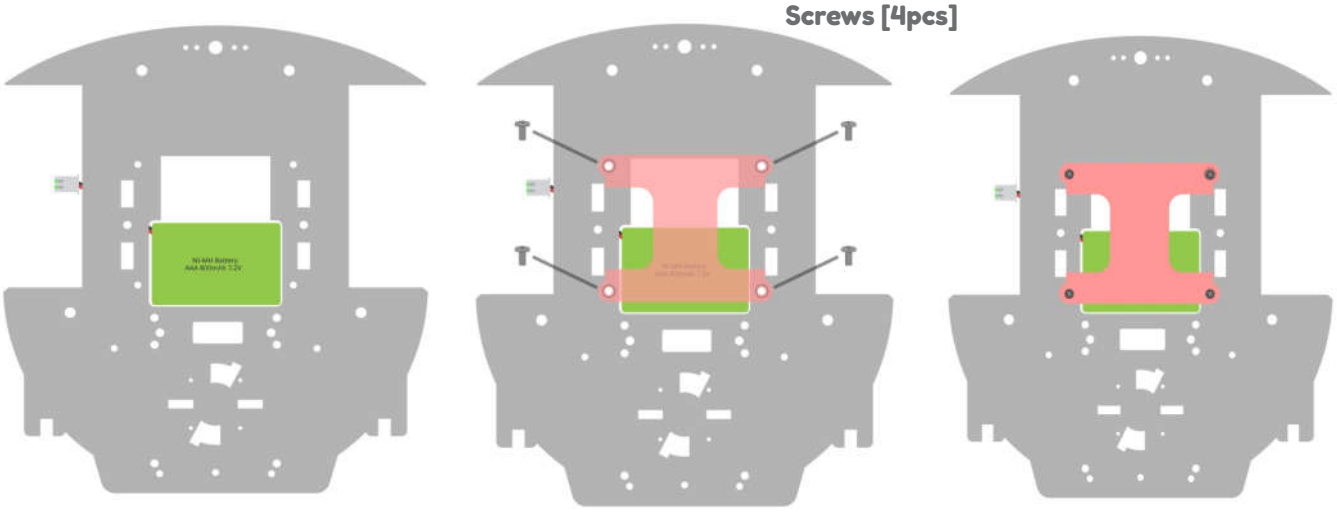
SERVO MOTOR SG-90

BROWN wire to **Ground**

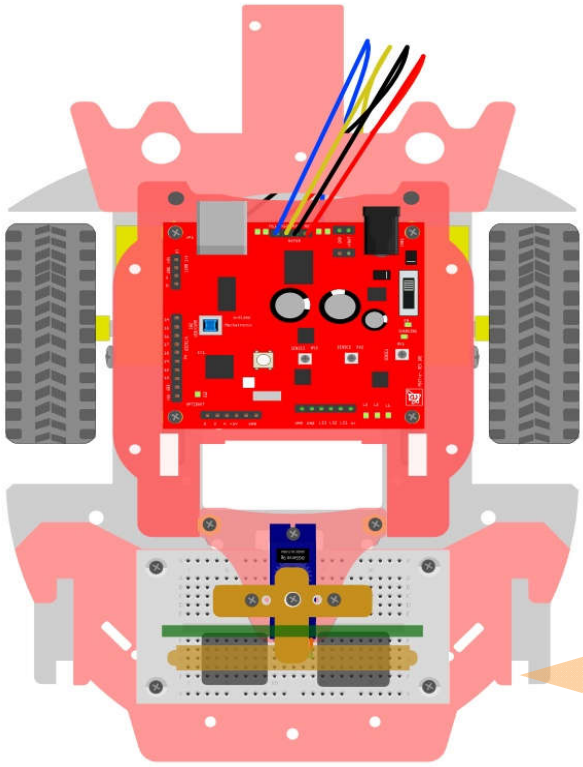
RED wire to **+5V**

ORANGE wire to **Digital pin 4,PWM**

NINETH STEP: Placing Battery and Bumper



Placing the Battery Holder.



Placing the Bumper.