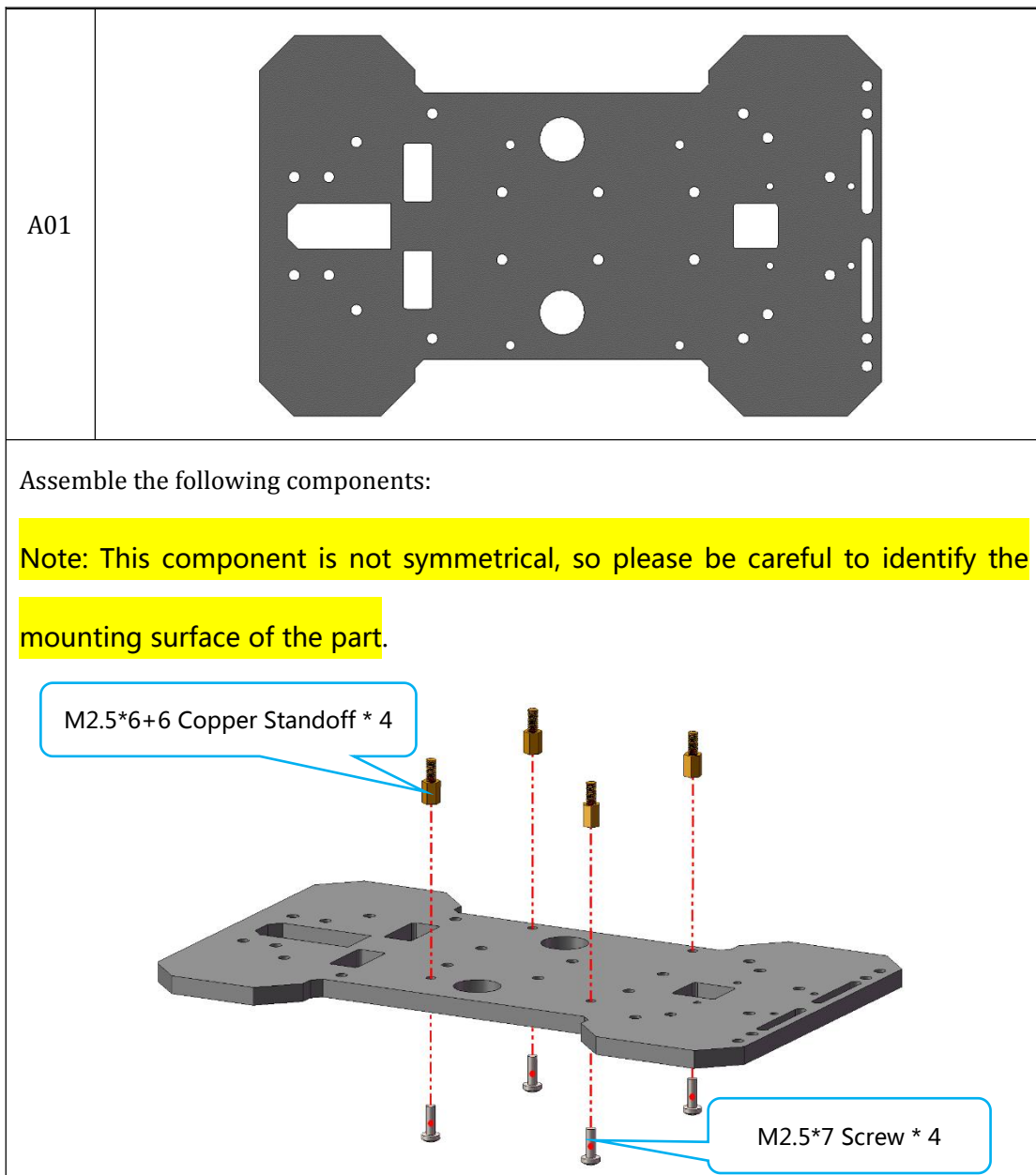
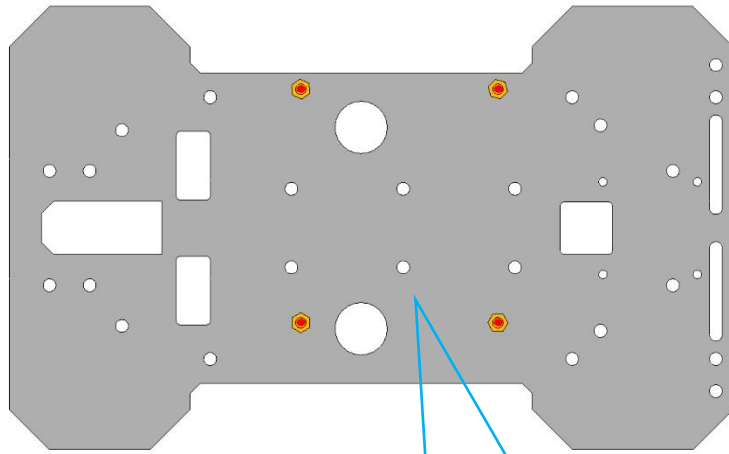


Lesson 6 Assembly of 4WD Smart Car with Mecanum Wheels

6.1 Assemble the Robot's Body

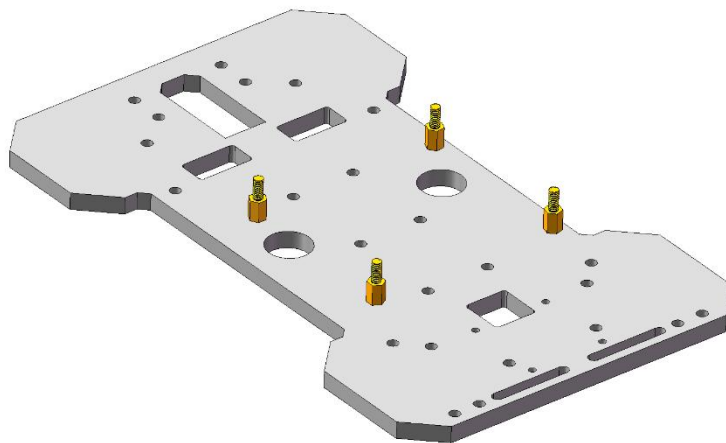
1. Place four **M2.5*6+6 Copper Standoffs** on the holes of part **A01**, and then fix them with four **M2.5*7 Screws**.





Note: The side faces up.

After Assembly:

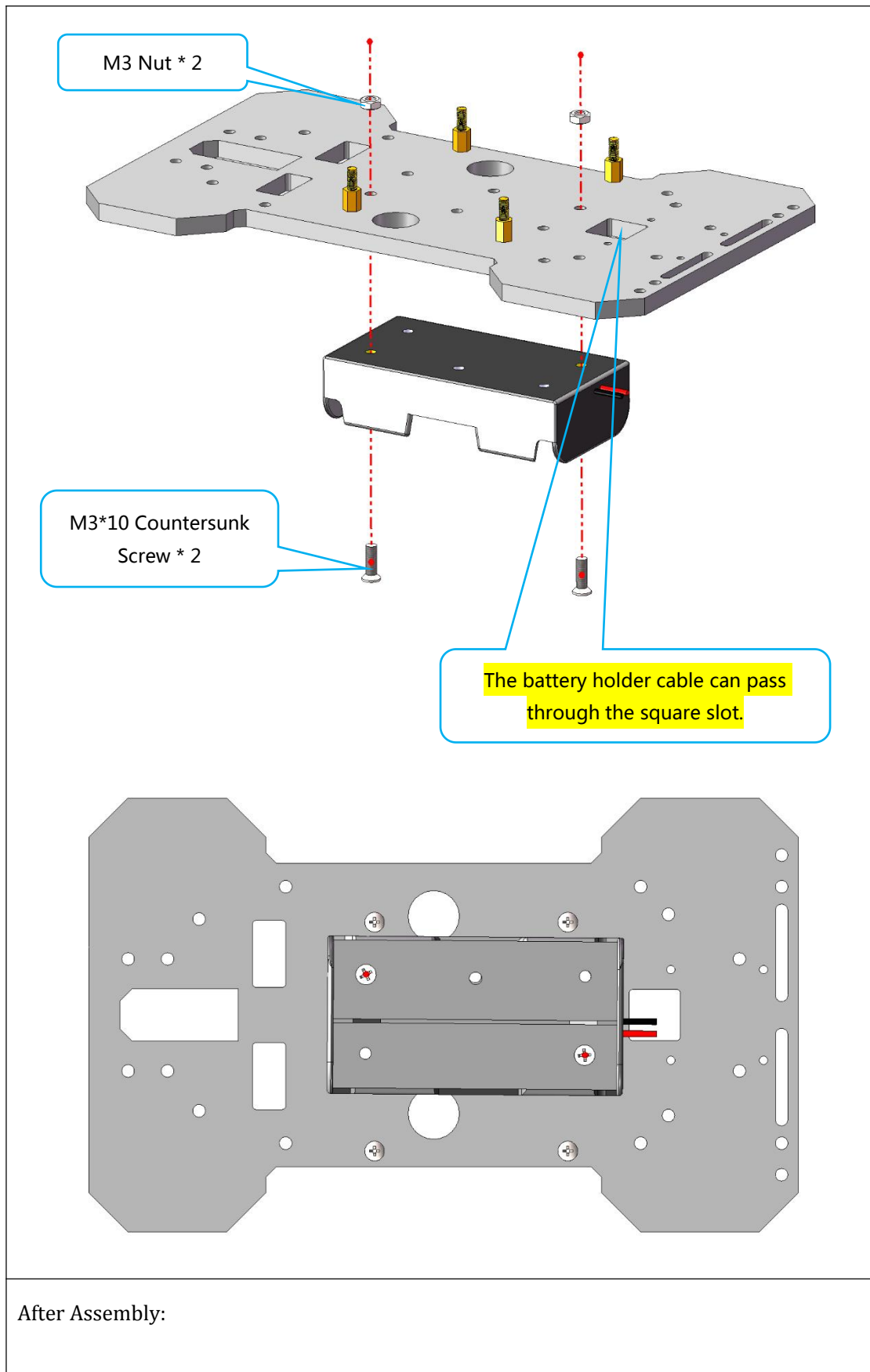


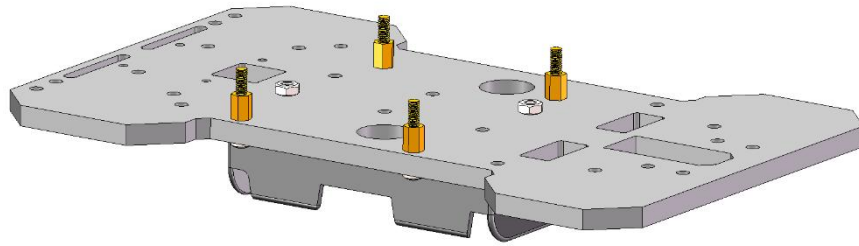
2. Fix the **18650 Battery Holder** to part **A01** with two **M3*10 Countersunk Screws** and two **M3 Nuts**.

18650 Battery Holder



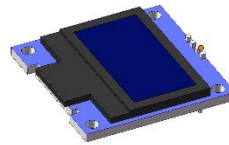
Assemble the following components:





3. Fix the **OLED Screen** with four **M2*8 Screws** and eight **M2*11 Copper Standoffs**.

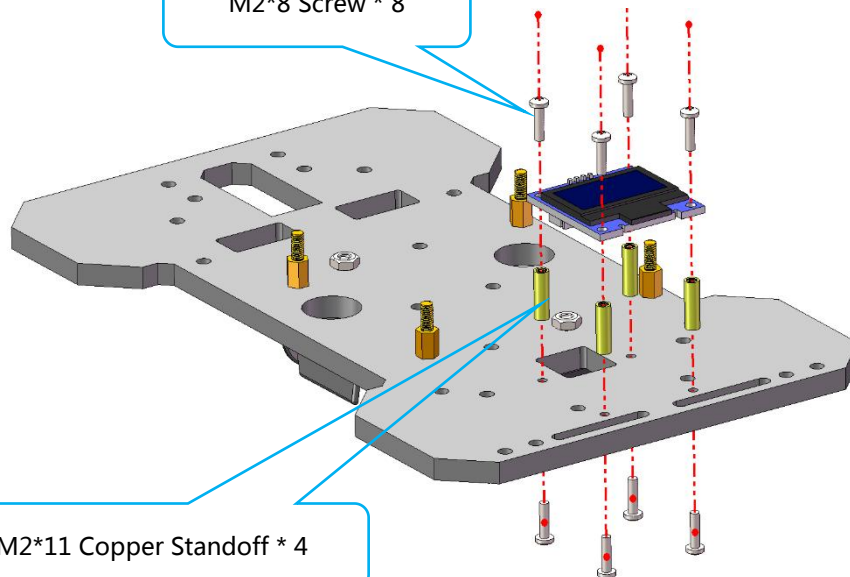
OLED Screen

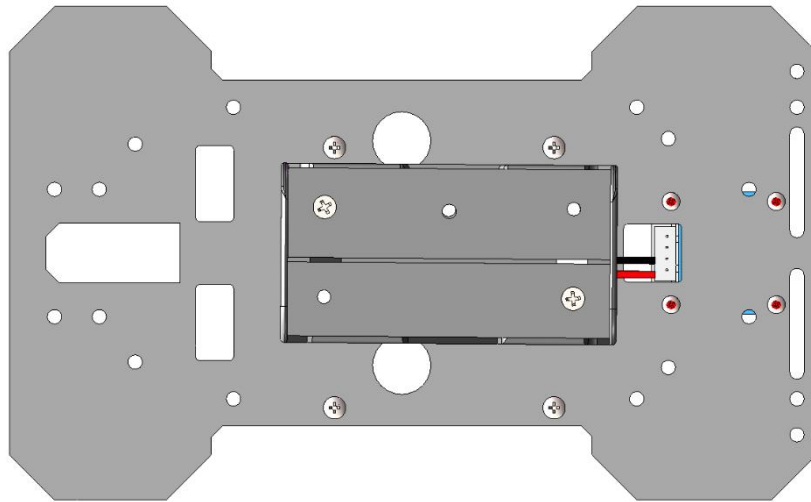


Assemble the following components:

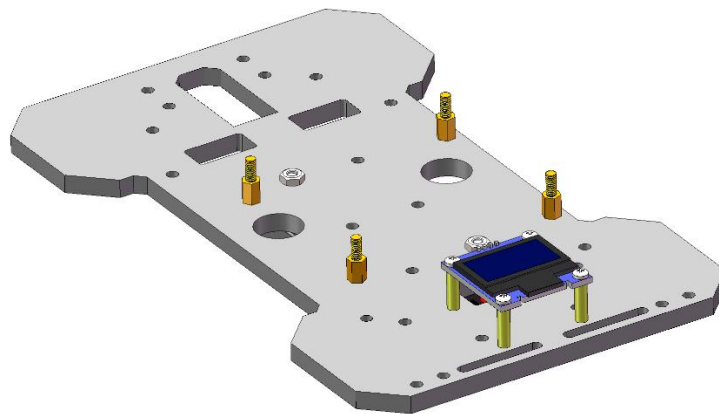
M2*8 Screw * 8

M2*11 Copper Standoff * 4



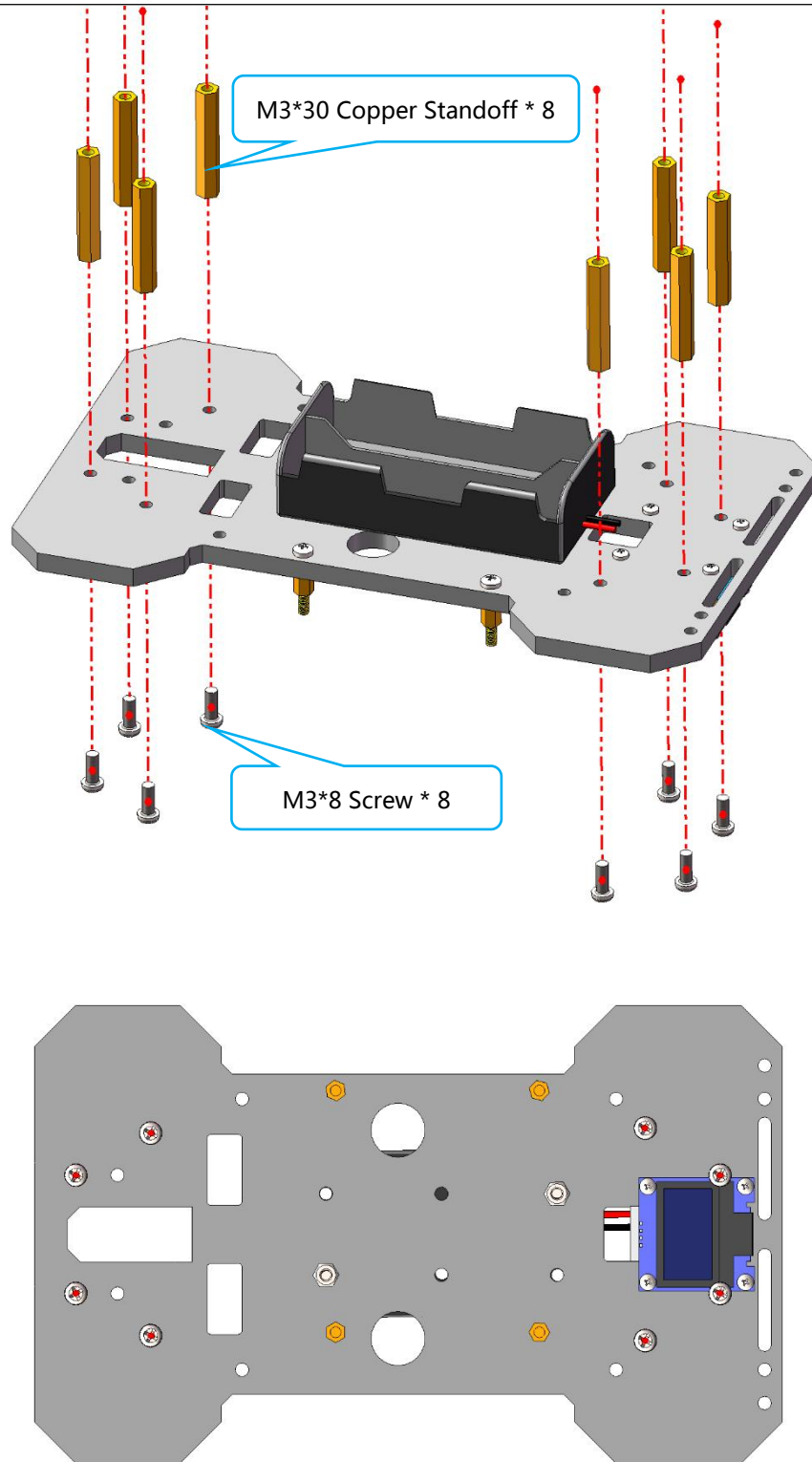


After Assembly:

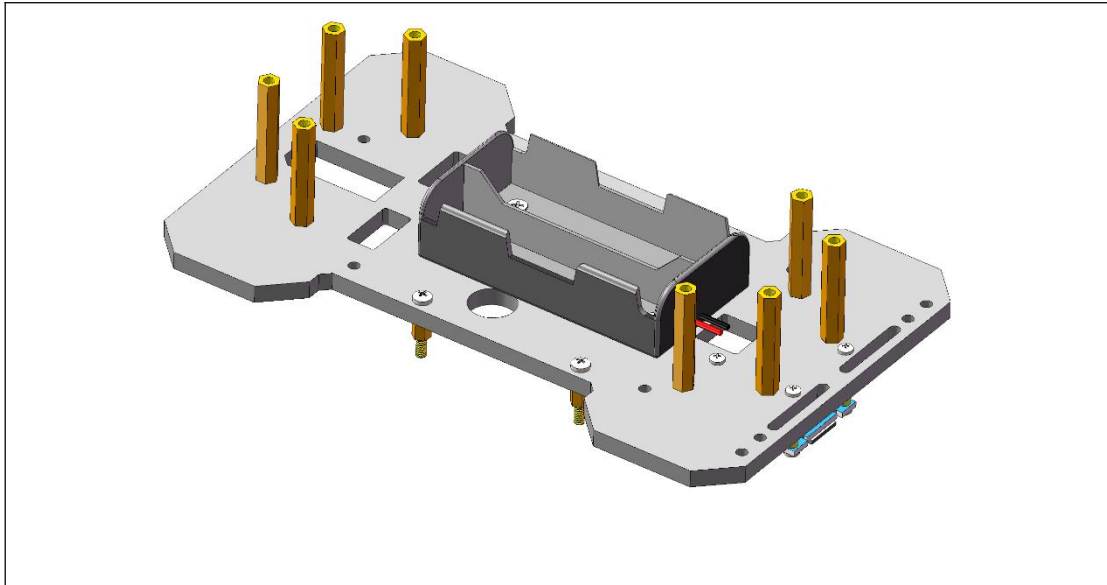


4. Use eight **M3*8 Screws** to fix eight **M3*30 Copper Standoffs** to part **A01**.

Assemble the following components:

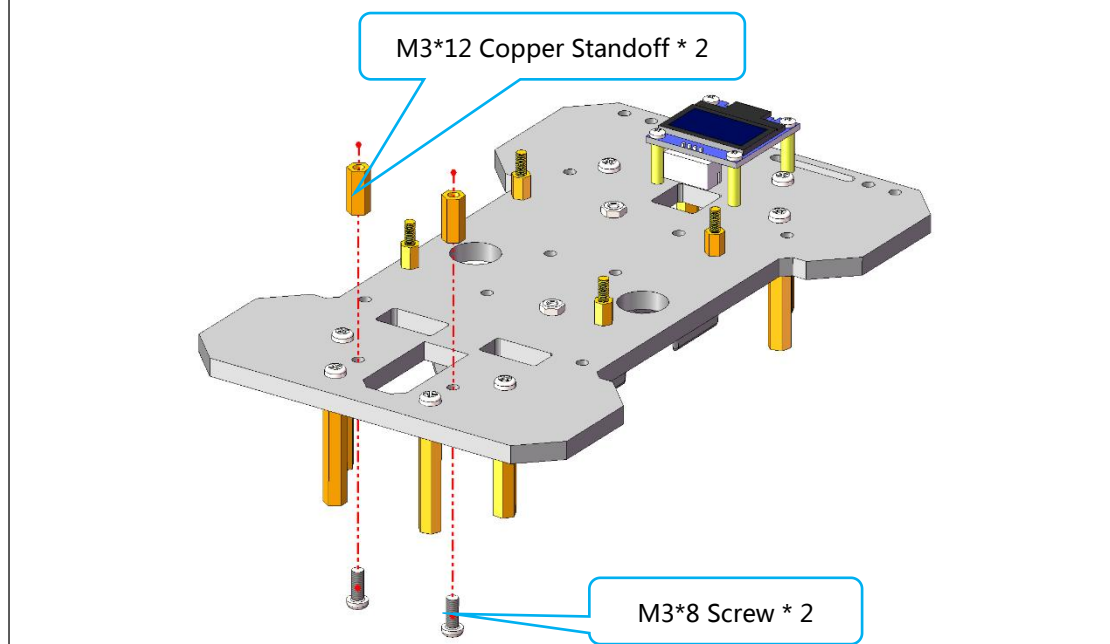


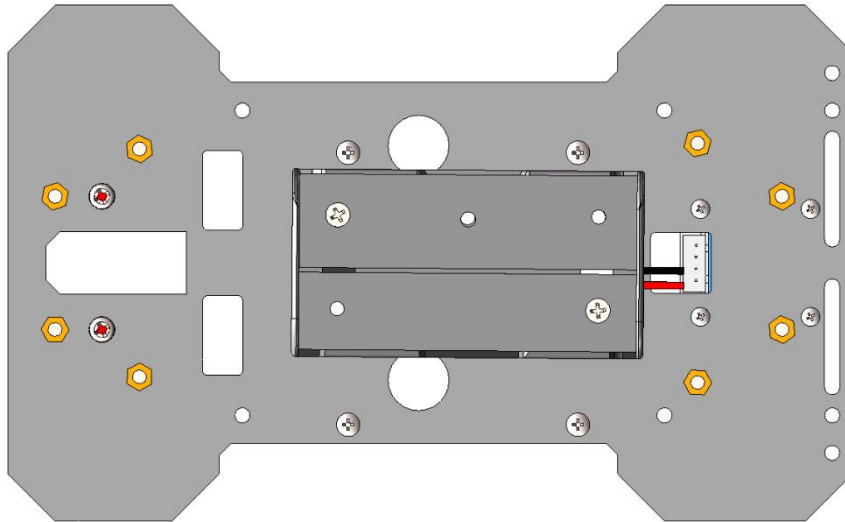
After Assembly:



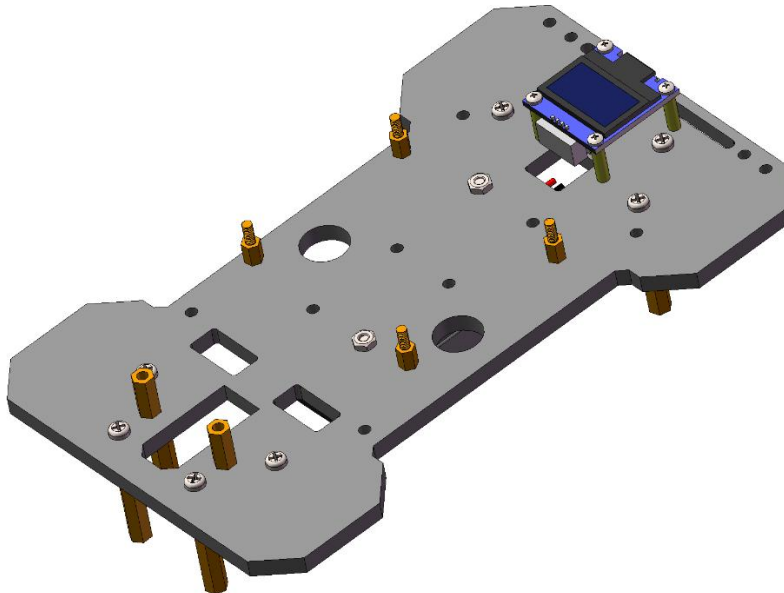
5. Use two **M3*8 Screws** to fix two **M3*12 Copper Standoffs** to part **A01**

Assemble the following components:



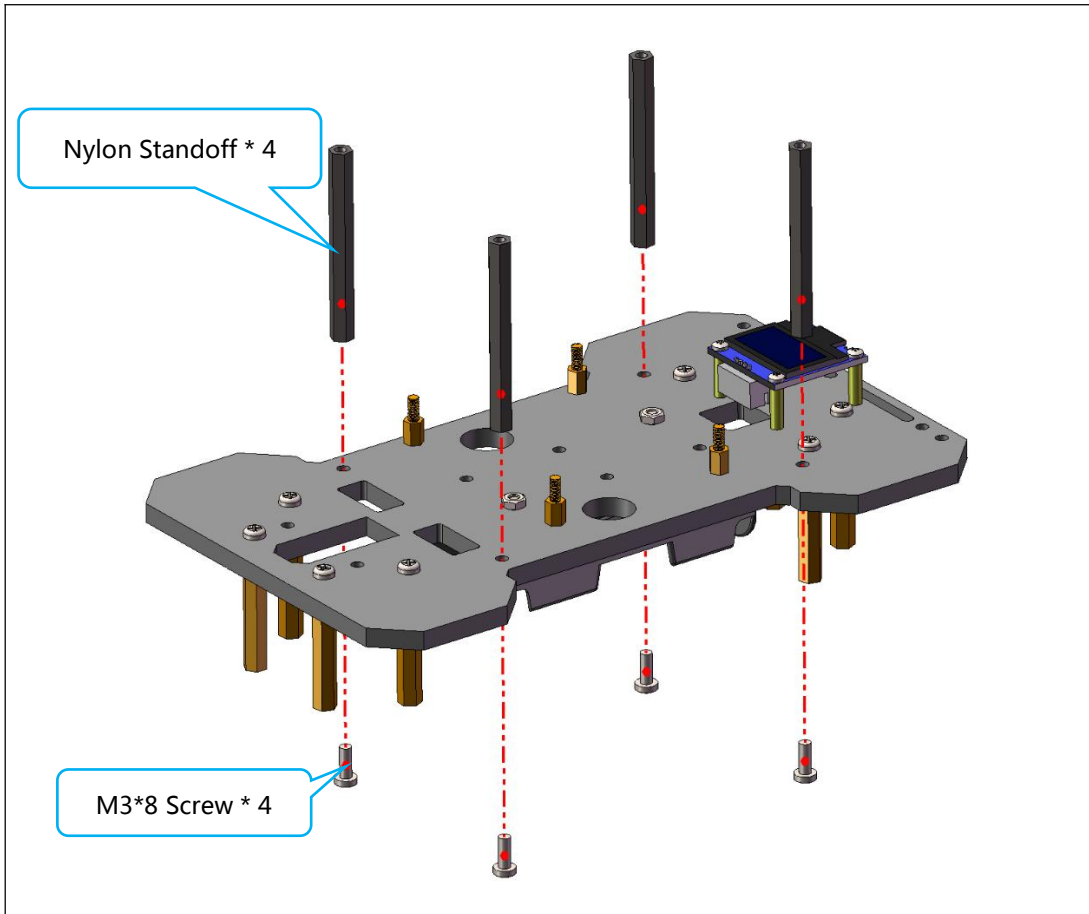


After Assembly:

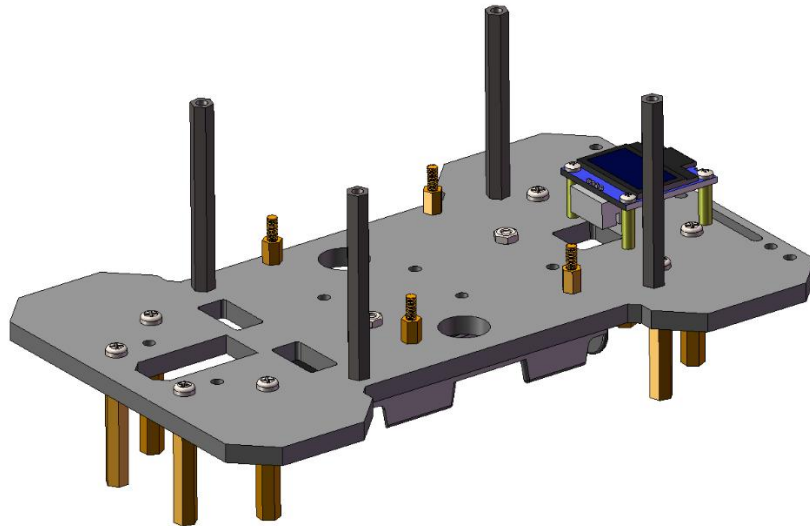


6. Fix four **Nylon Standoffs** to part **A01** with four **M3*8 Screws**.

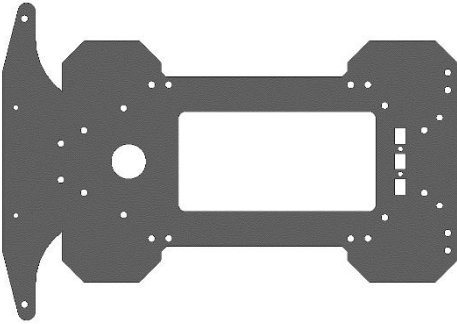
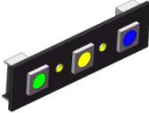
Assemble the following components:



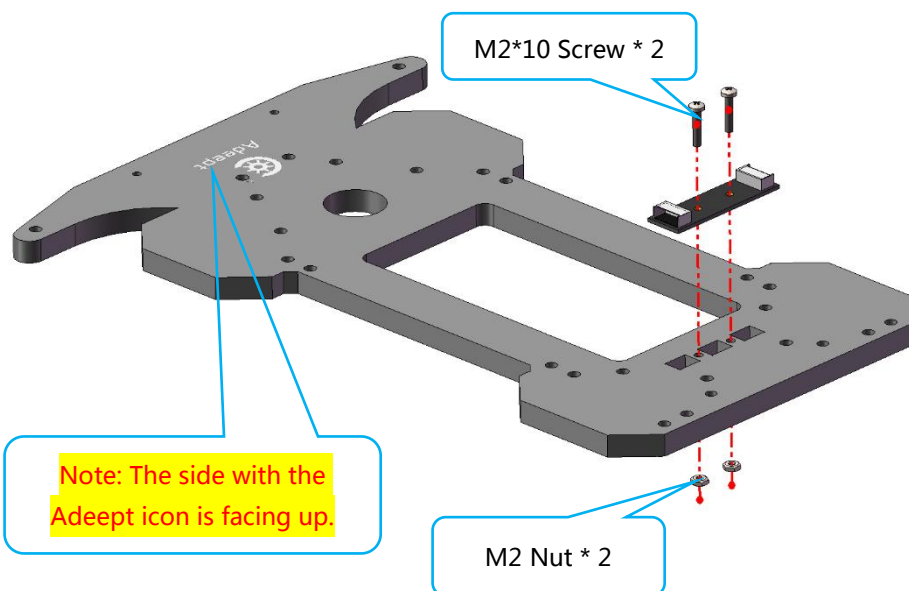
After Assembly:



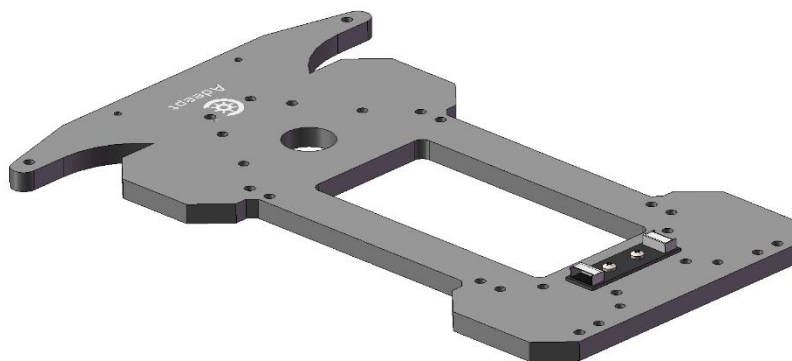
7. Fix the **WS2812 RGB LED** to part **A02** with two **M2*10 Screws** and two **M2 Nuts**.

| | |
|-------------------|--|
| A02 |  |
| WS2812 RGB LED |  |

Assemble the following components:



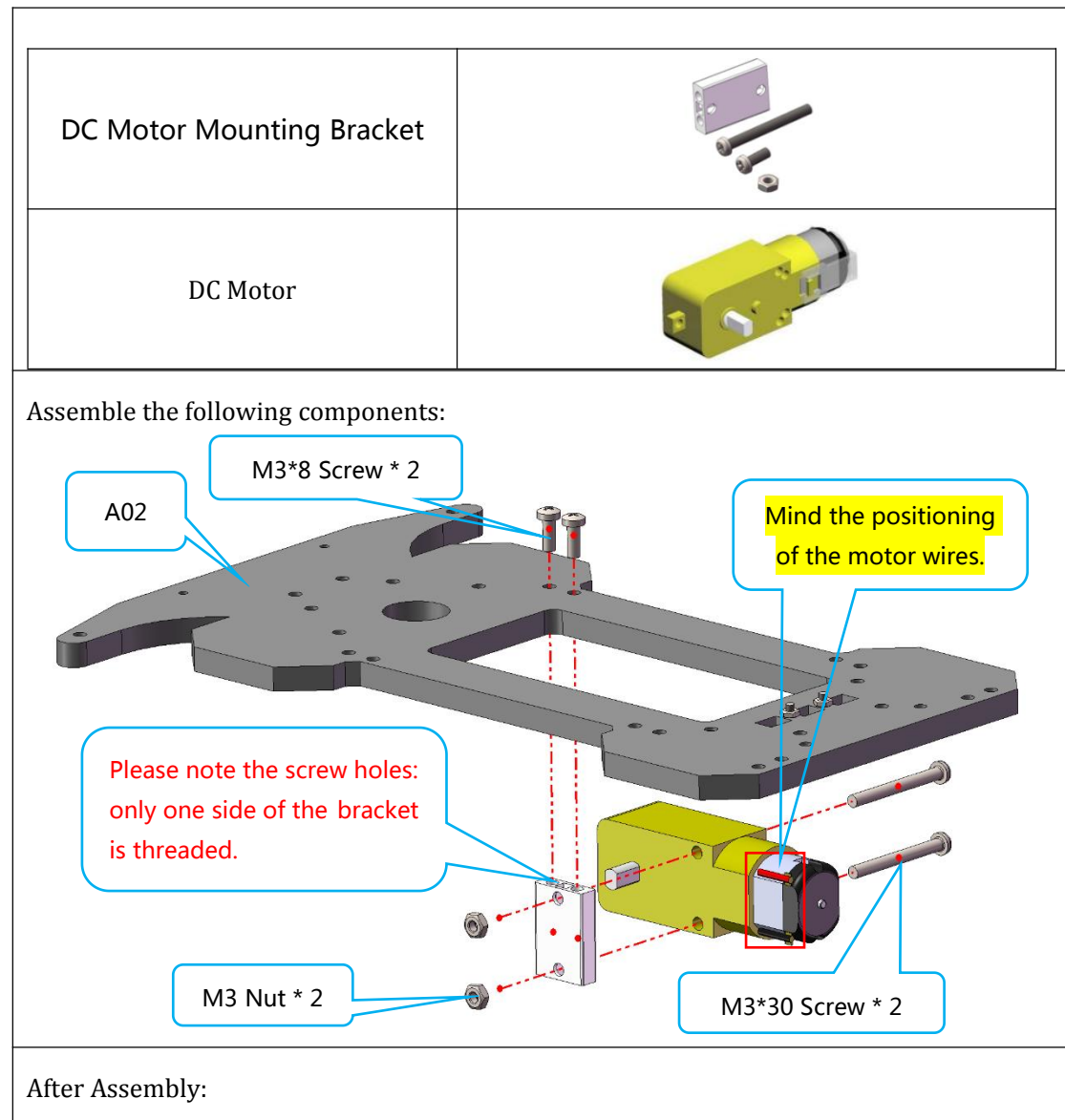
After Assembly:

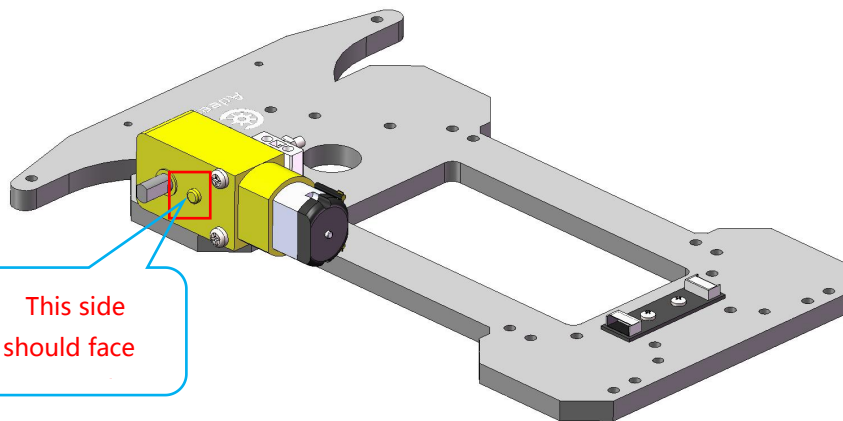
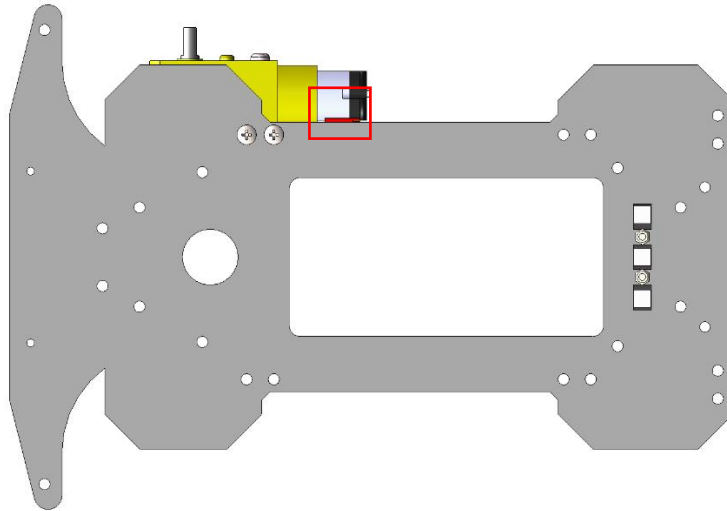


8. Fix the assembled **DC Motor** onto part **A02** with **DC Motor Mounting Bracket**

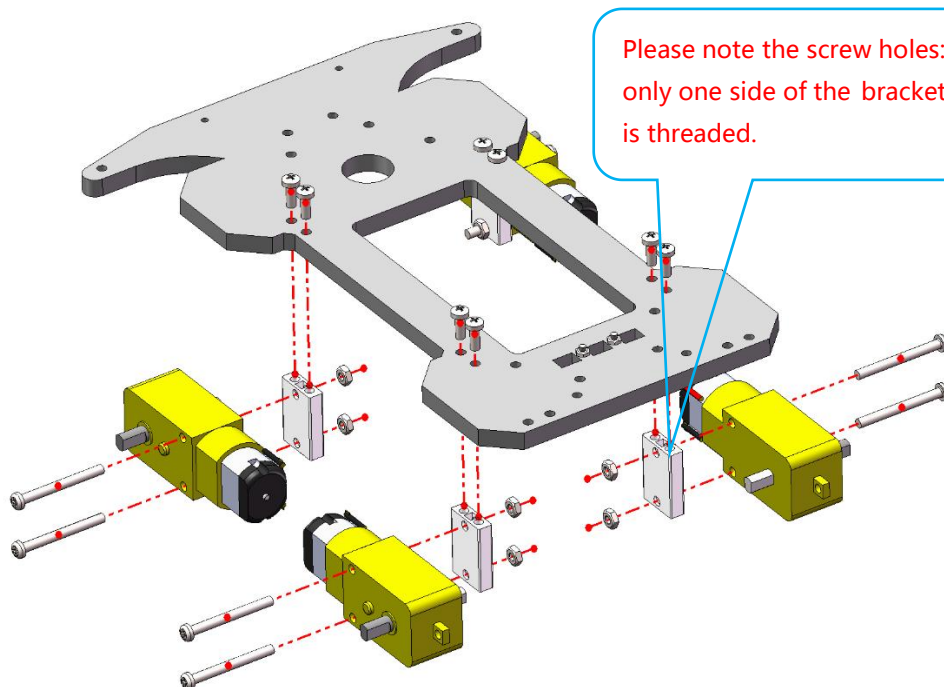
(The bracket kit contains matching M3*8 Screw, M3*30 Screw and M3 Nut).

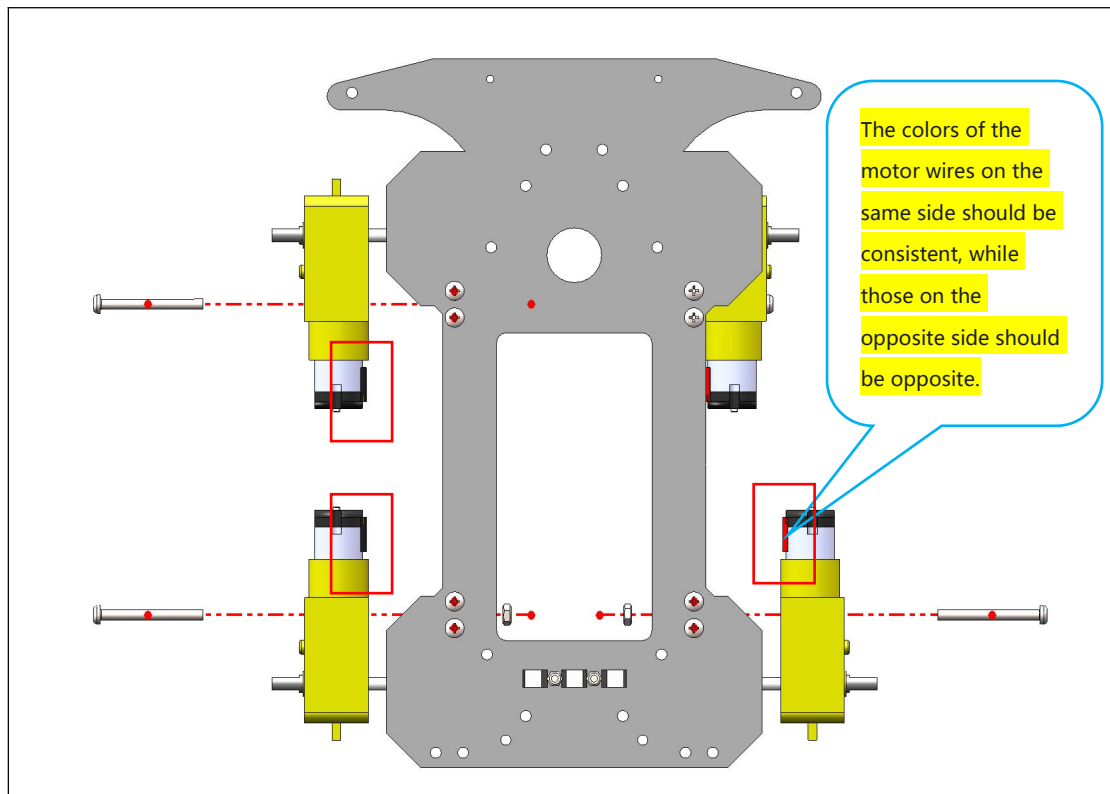
NOTE: Due to the opposite polarity of the left and right motors, during installation, it is necessary to ensure that the colors of the motor wires on the same side are consistent, while those on the opposite side are opposite, ensuring that the mounting positions of all parts are correct.



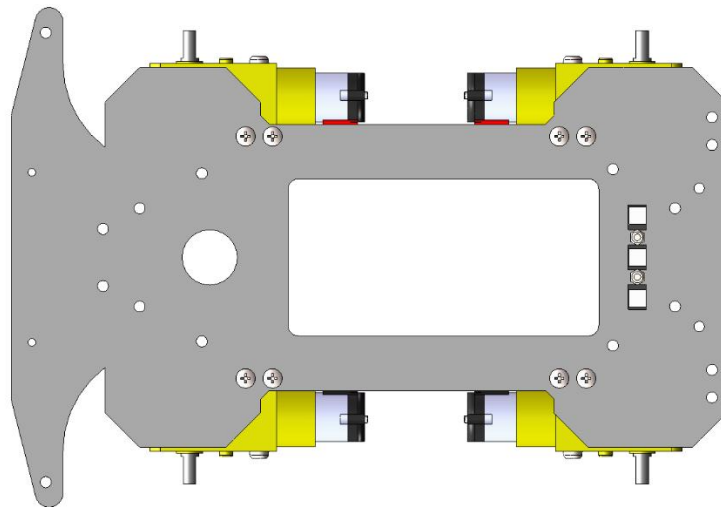


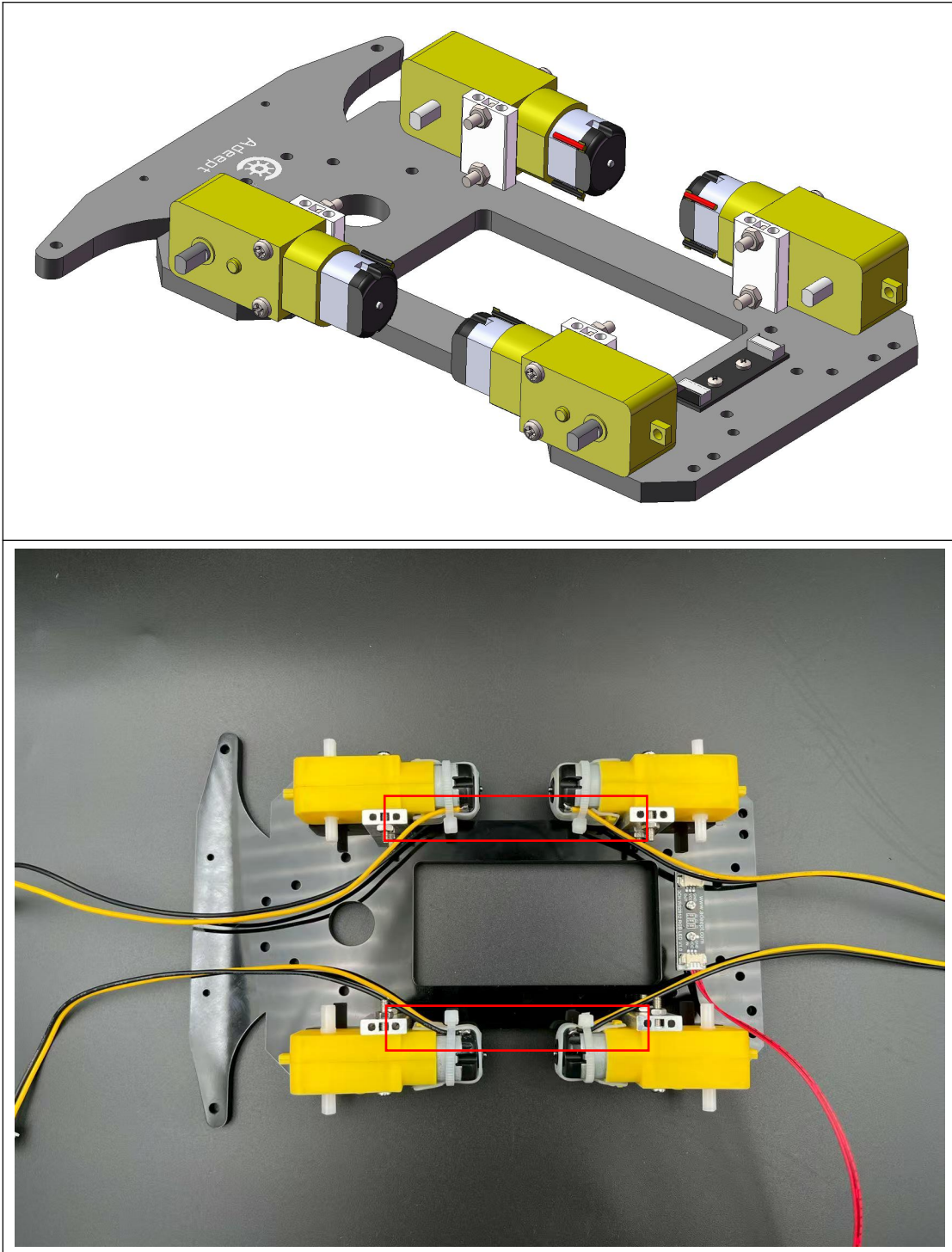
Assemble the following components:





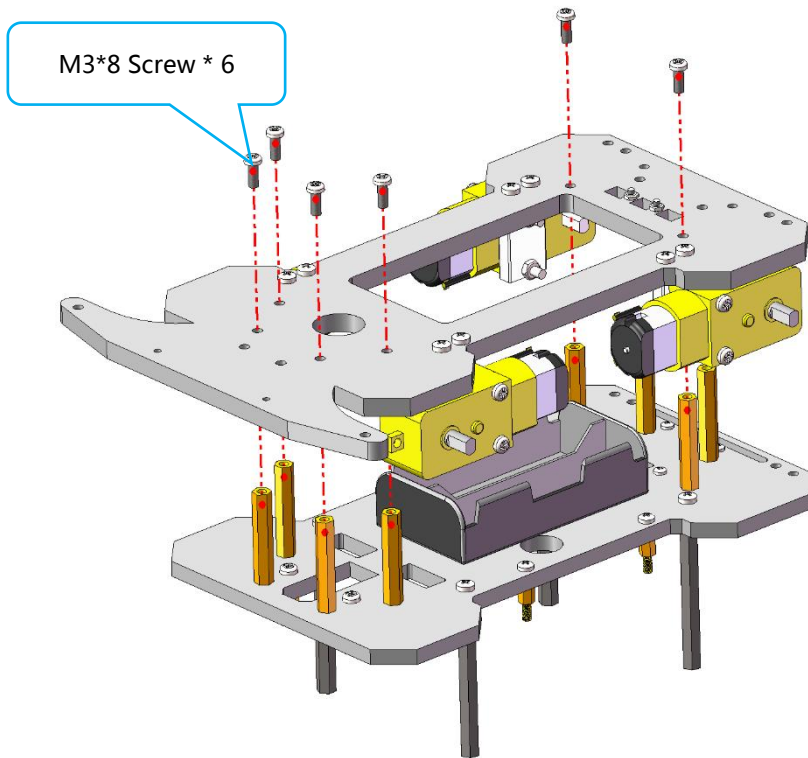
After Assembly:



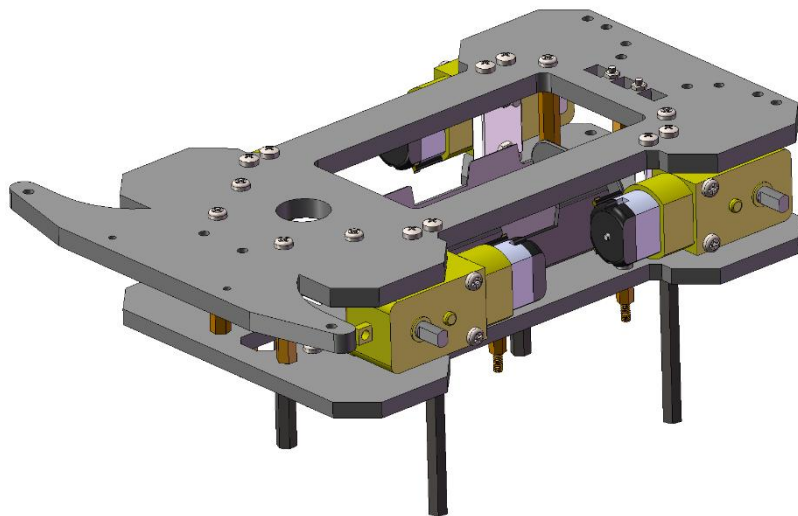


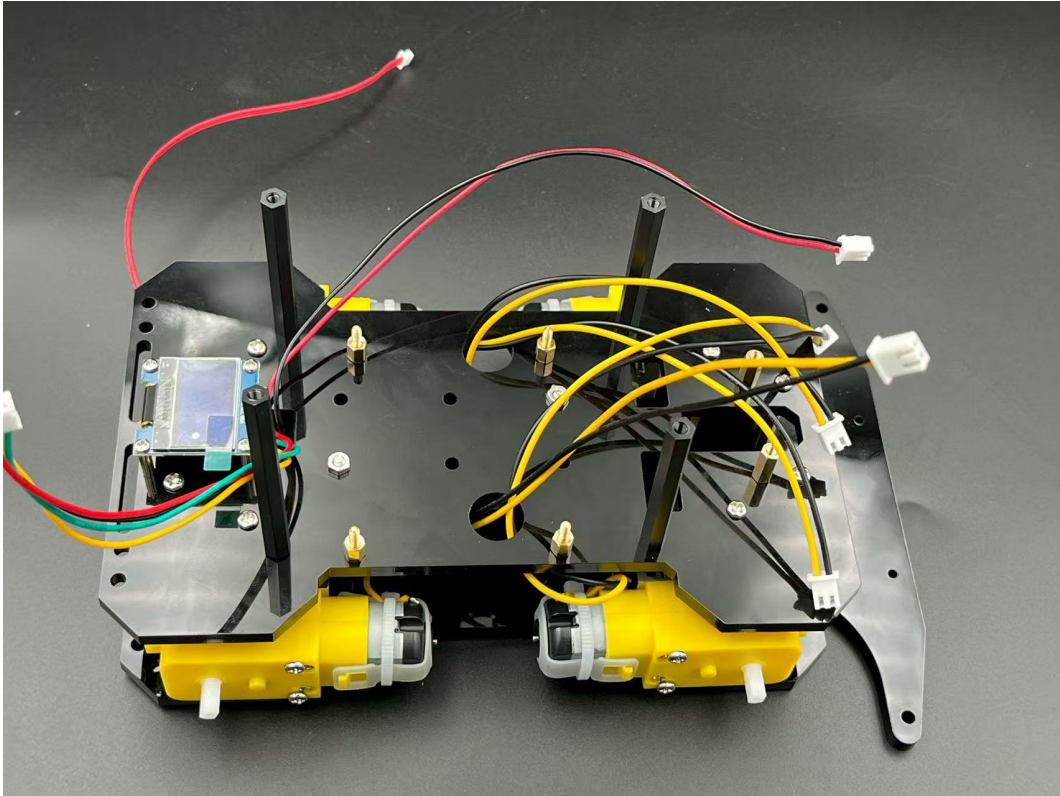
9. Use six **M3*8 Screws** to fix part **A02** to part **A01**.

Assemble the following components:





After Assembly:



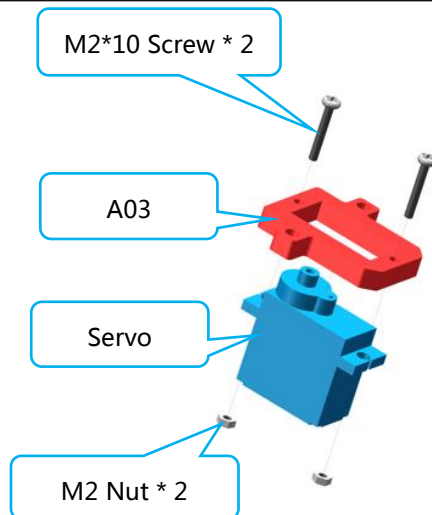


6.2 Assemble the Robot's Head

1. Use two **M2*10 Screws** and two **M2 Nuts** to fix the **Servo** to part **A03**.

| | |
|-------|--|
| A03 |  |
| Servo |  |

Assemble the following components:

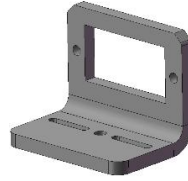


After Assembly:



2. Connect part **A03** and part **A04** together using two **M2.2*6 Tapping Screws**, a **2-Foot Rocker Arm** and an **M2.5*7 Screw**.

A04

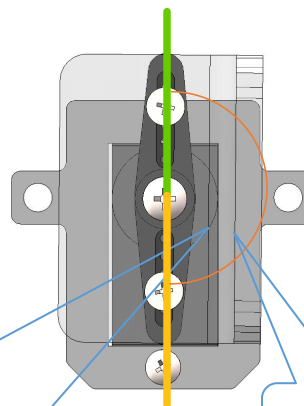
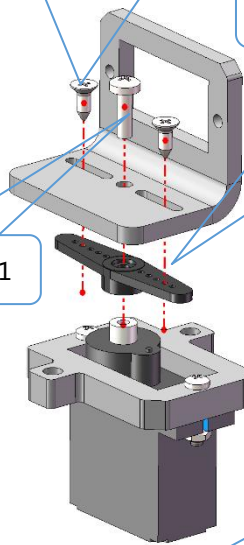


Assemble the following components:

M2.2*6 Tapping Screw * 2 (It is included in the servo kit.)

2-Foot Rocker Arm (It is included in the servo kit.)

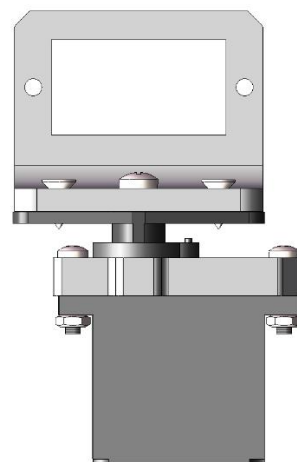
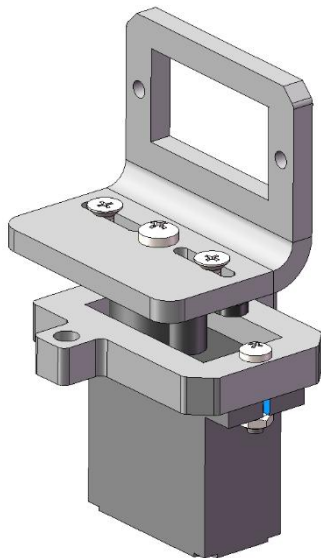
M2.5*7 Screw * 1



Assembling it as close to a 180 - degree angle as possible.

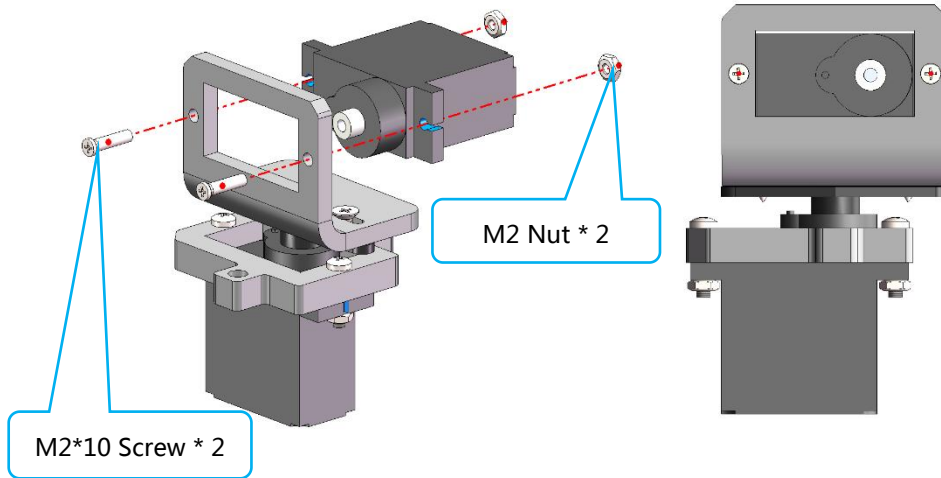
180 °

After Assembly:

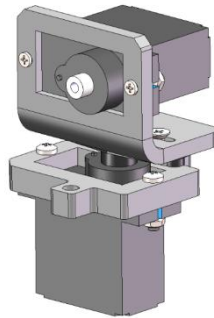


3. Use two **M2*10 Screws** and two **M2 Nuts** to assemble the **Servo** to part **A04**.


Assemble the following components:



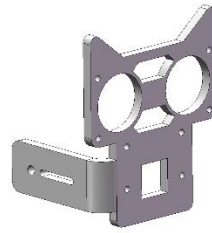
After Assembly:



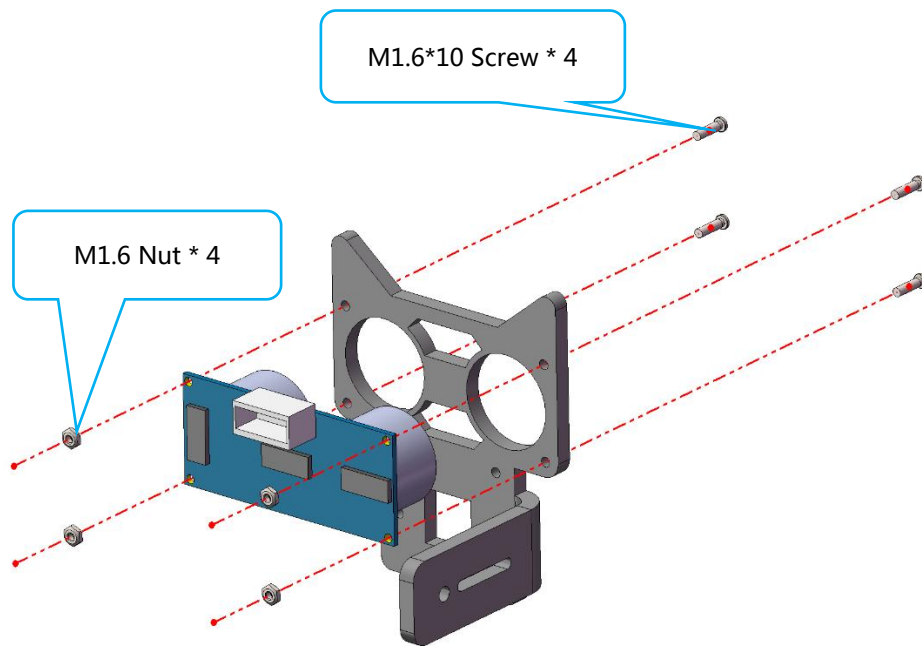
4. Use four **M1.6*10 Screws** and four **M1.6 Nuts** to fix the **Ultrasonic Module** to part **A05**.

| | |
|-------------------|--|
| Ultrasonic Module |  |
|-------------------|--|

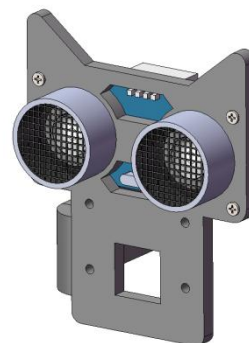
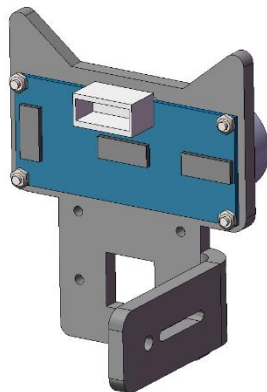
A05




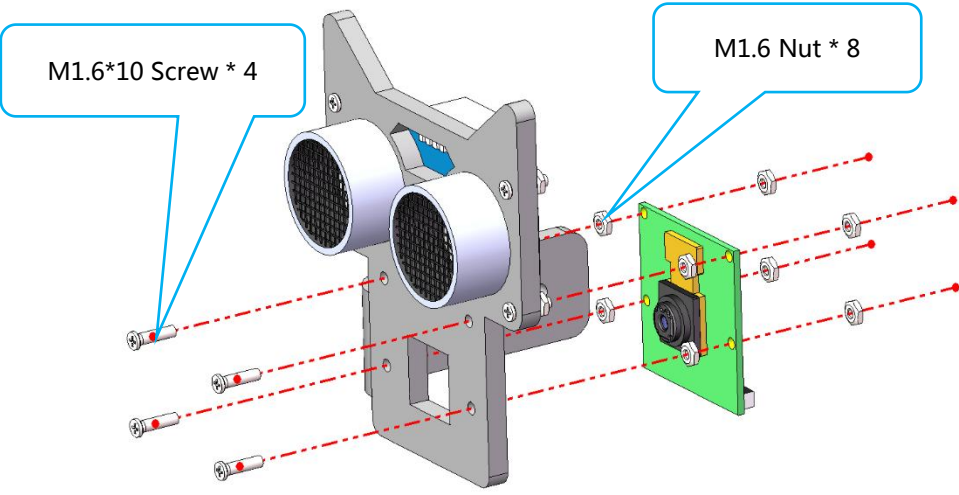

Assemble the following components:



After Assembly:

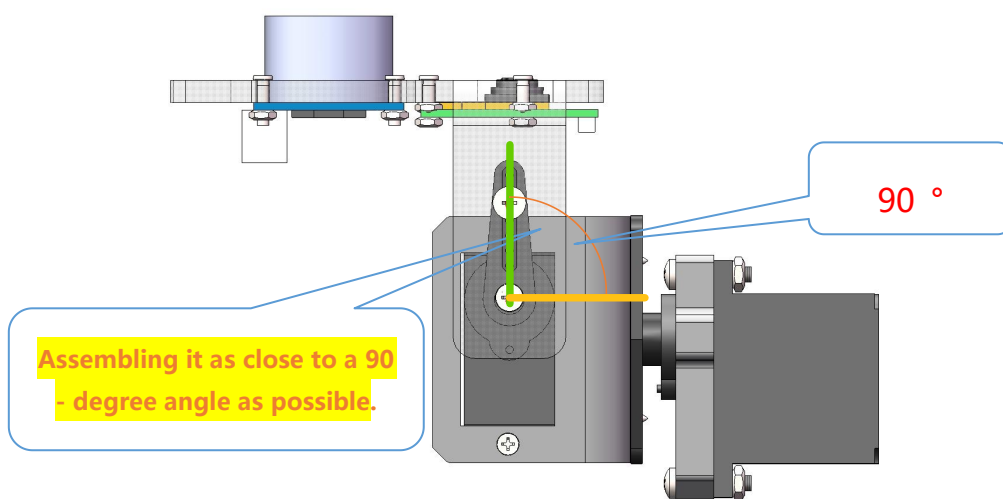
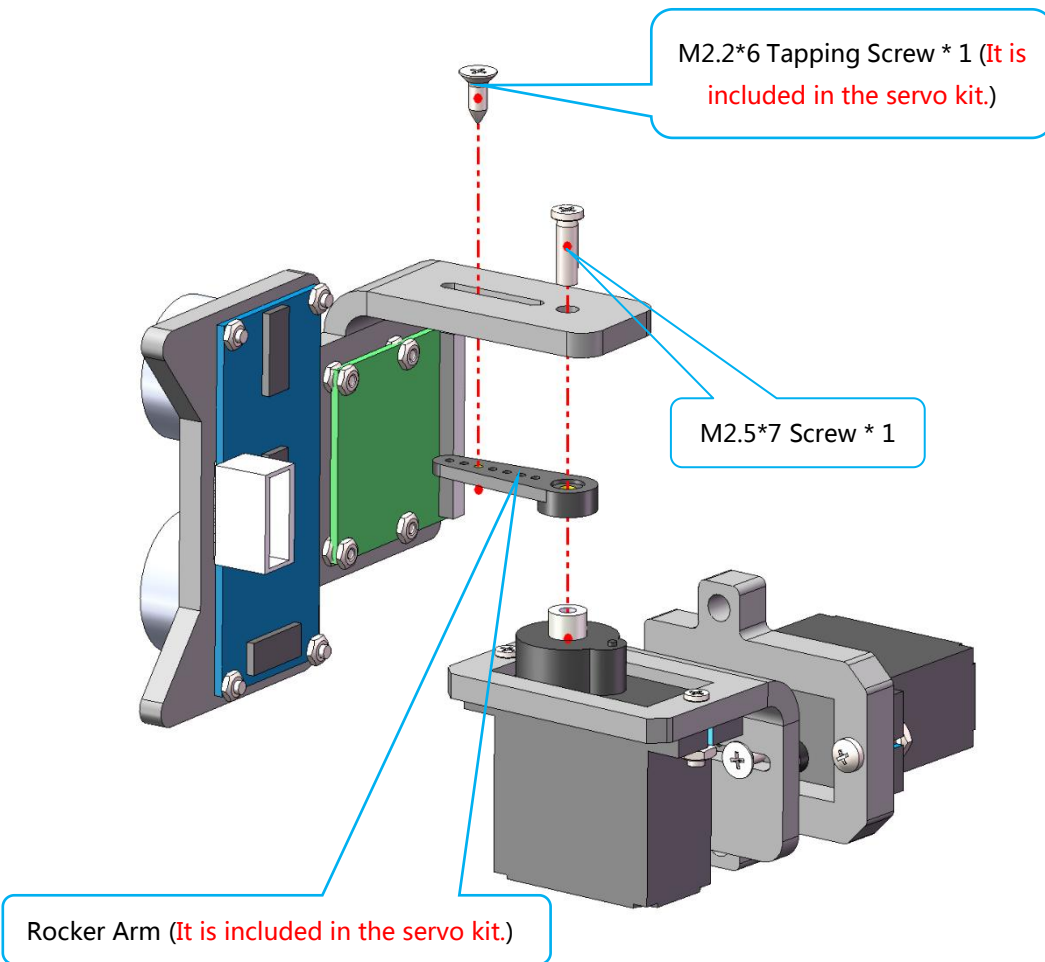


4. Use four **M1.6*10 Screws** and eight **M1.6 Nuts** to fix the **Camera Module** to part **A05**.

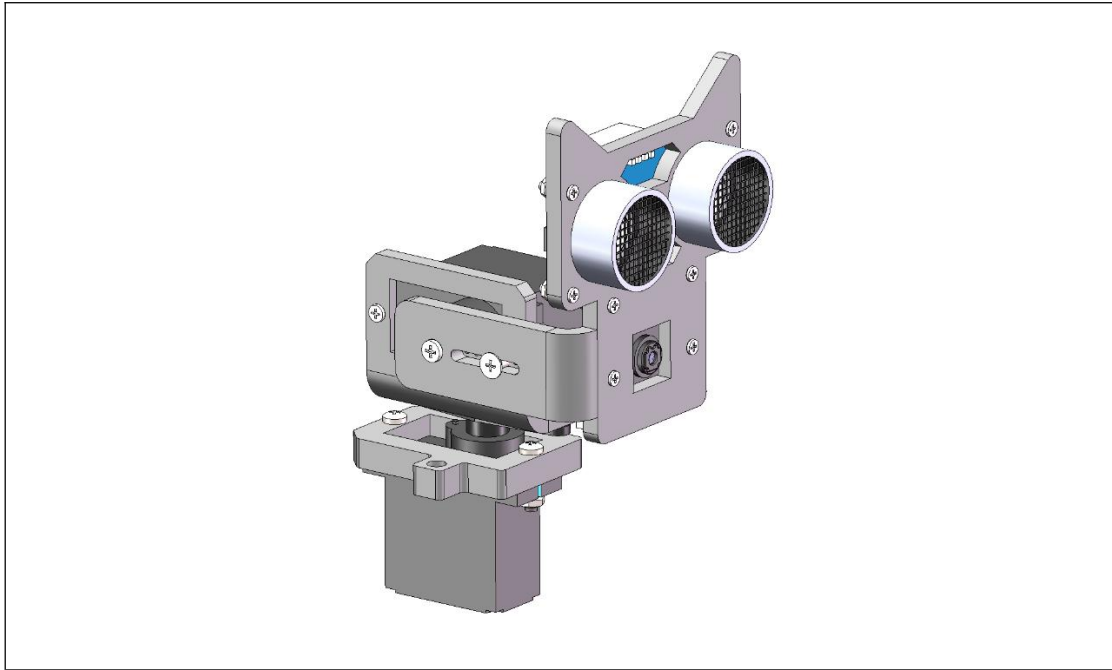
| | |
|--|--|
| Camera Module |  |
| <p>Assemble the following components:</p>  <p>M1.6*10 Screw * 4</p> <p>M1.6 Nut * 8</p> | |
| <p>After Assembly:</p>  | |

5. Connect assembled part **A04** and assembled part **A05** together using an **M2.2*6 Tapping Screw**, a **Rocker Arm**, and an **M2.5*7 Screw**.

Assemble the following components:

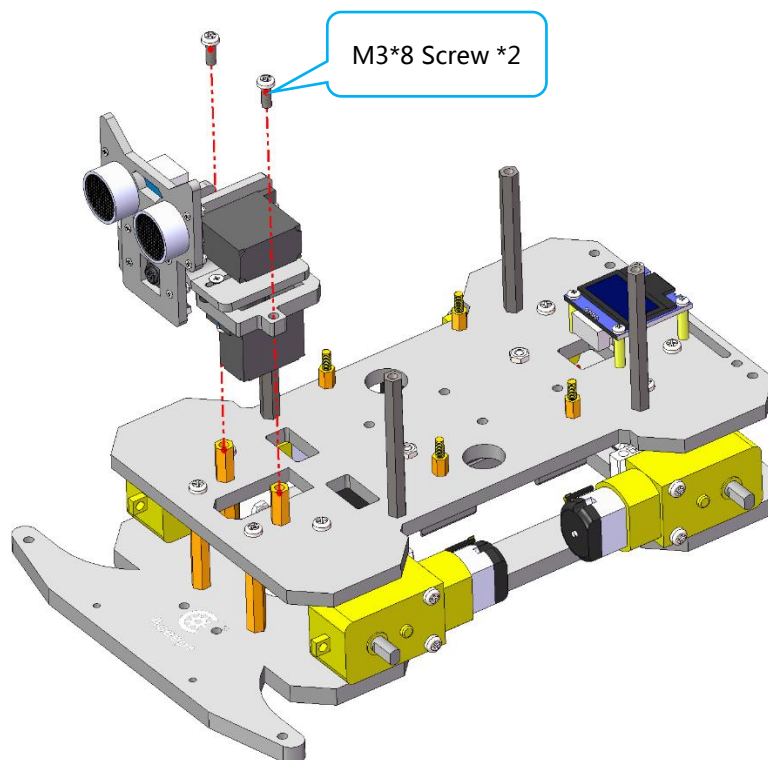


After Assembly:

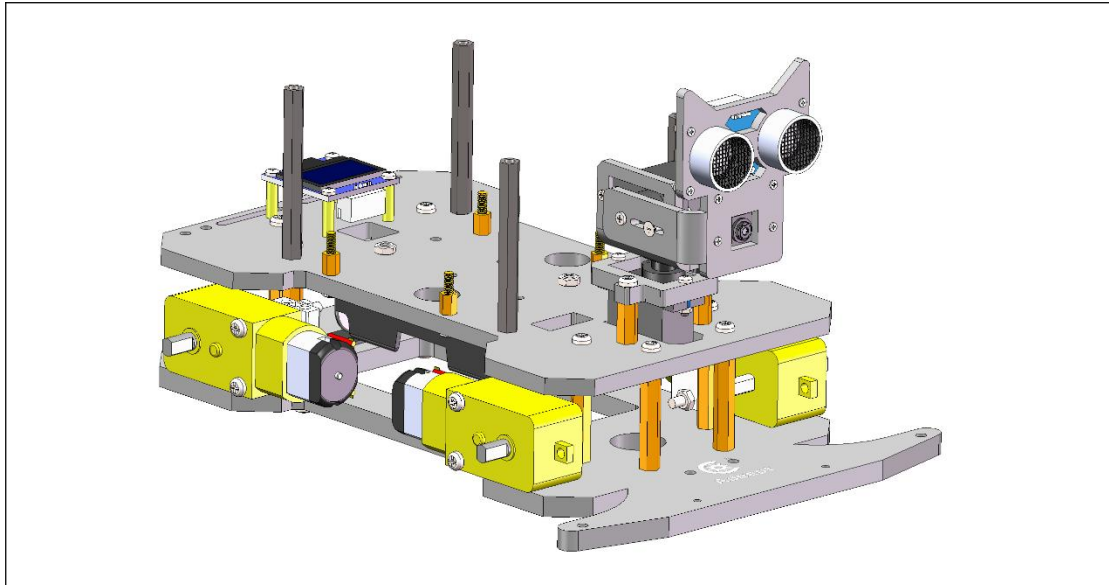


6. Use two **M3*8 Screws** to fix the **Servo**.

Assemble the following components:

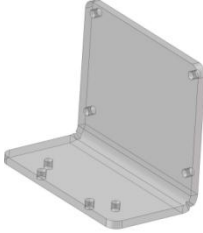



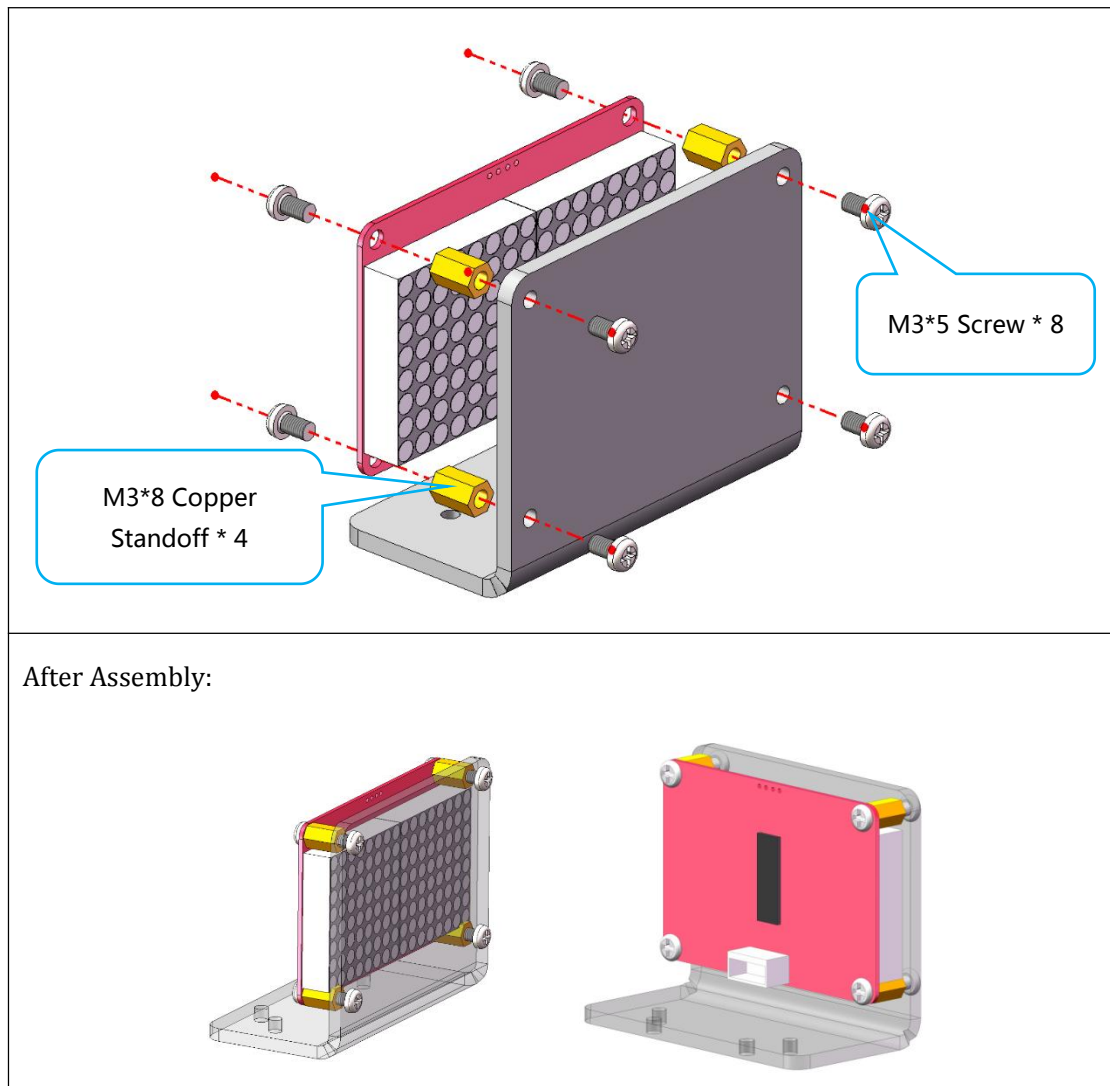
After Assembly:



6.3 Assemble the Robot's Modules

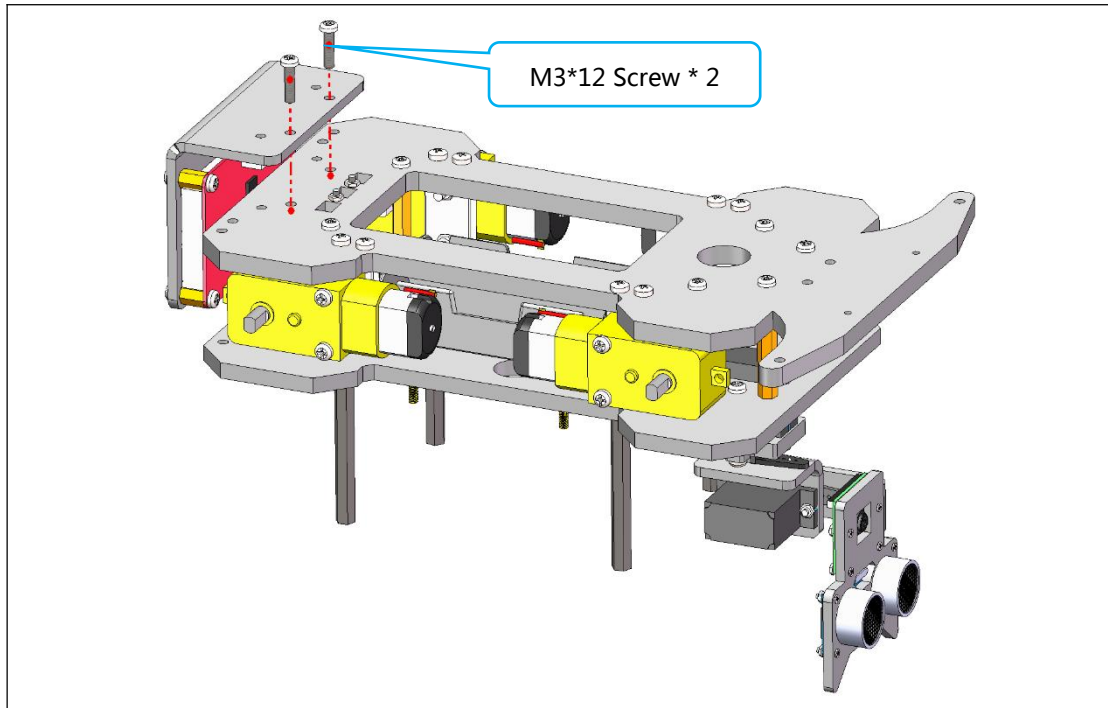
1. Use eight **M3*5 Screws** and four **M3*8 Copper Standoffs** to fix the **I2C Matrix Display Module** to part **A06**.

| | |
|------------------------------------|--|
| A06 |  |
| I2C Matrix Display Module |  |
| Assemble the following components: | |

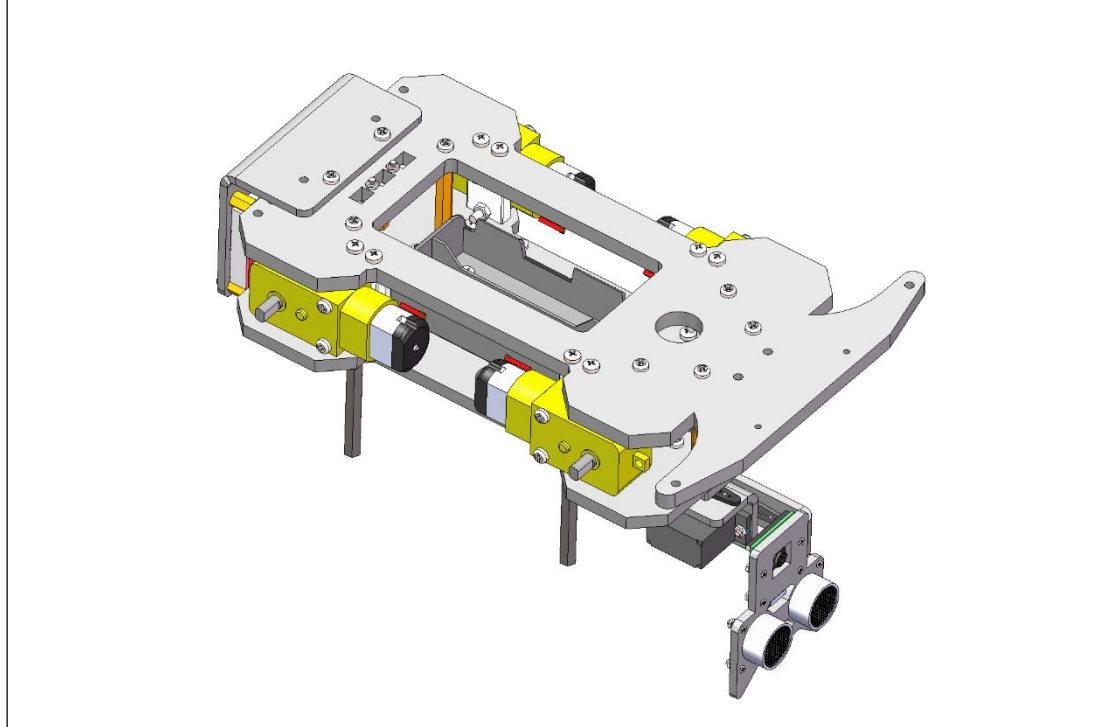


2. Use two **M3*12 Screws** to fix part **A06** to part **A02**.

Assemble the following components:

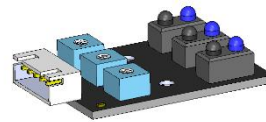


After Assembly:

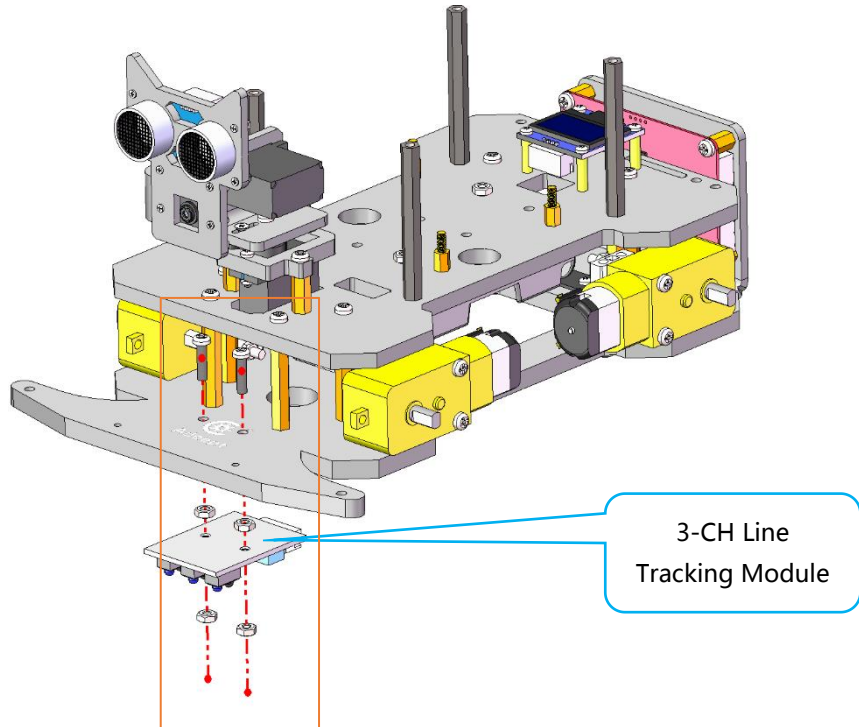


3. Use two **M3*12 Screws** and four **M3 Nuts** to fix the **3-CH Line Tracking Module** to part **A02**.

3-CH Line Tracking Module



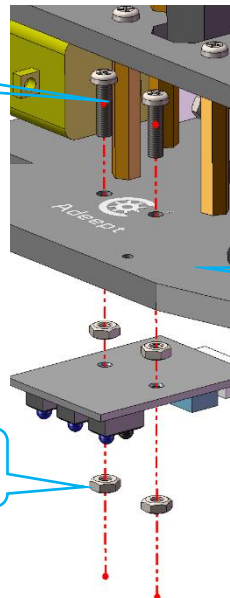
Assemble the following components:



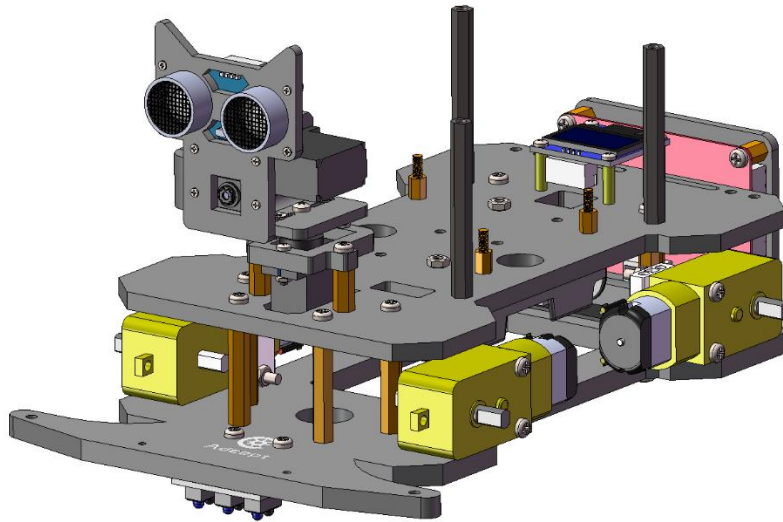
M3*12 Screw * 2

A02

M3 Nut * 4

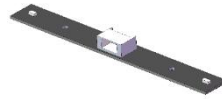


After Assembly:



4. Use two **M2*10 Screws** and two **M2 Nuts** to fix the **Light Tracking Module** to part **A02**.

Light Tracking Module

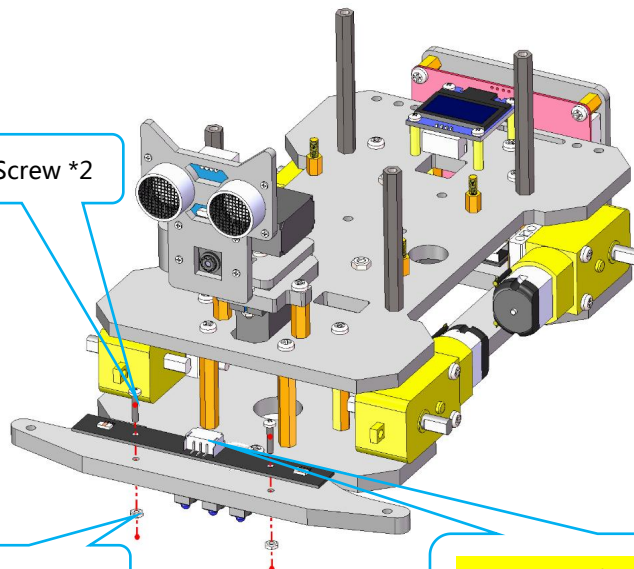


Assemble the following components:

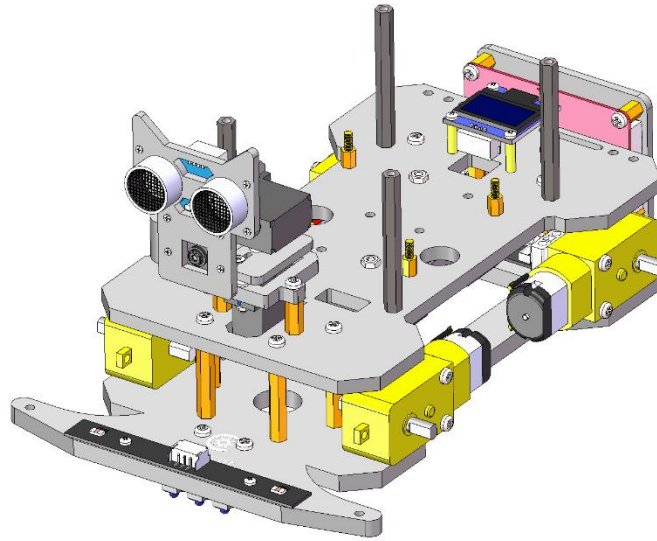
M2*10 Screw *2

M2 Nut * 2

The wire port faces the direction of the vehicle body.

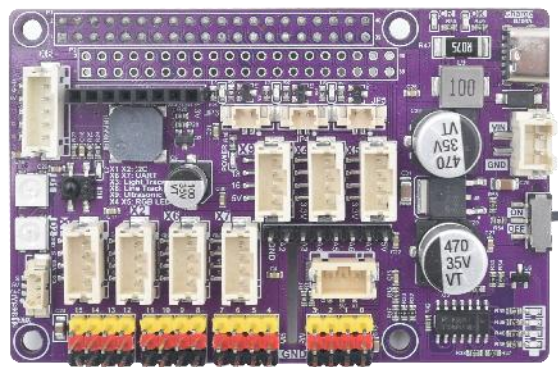


After Assembly:

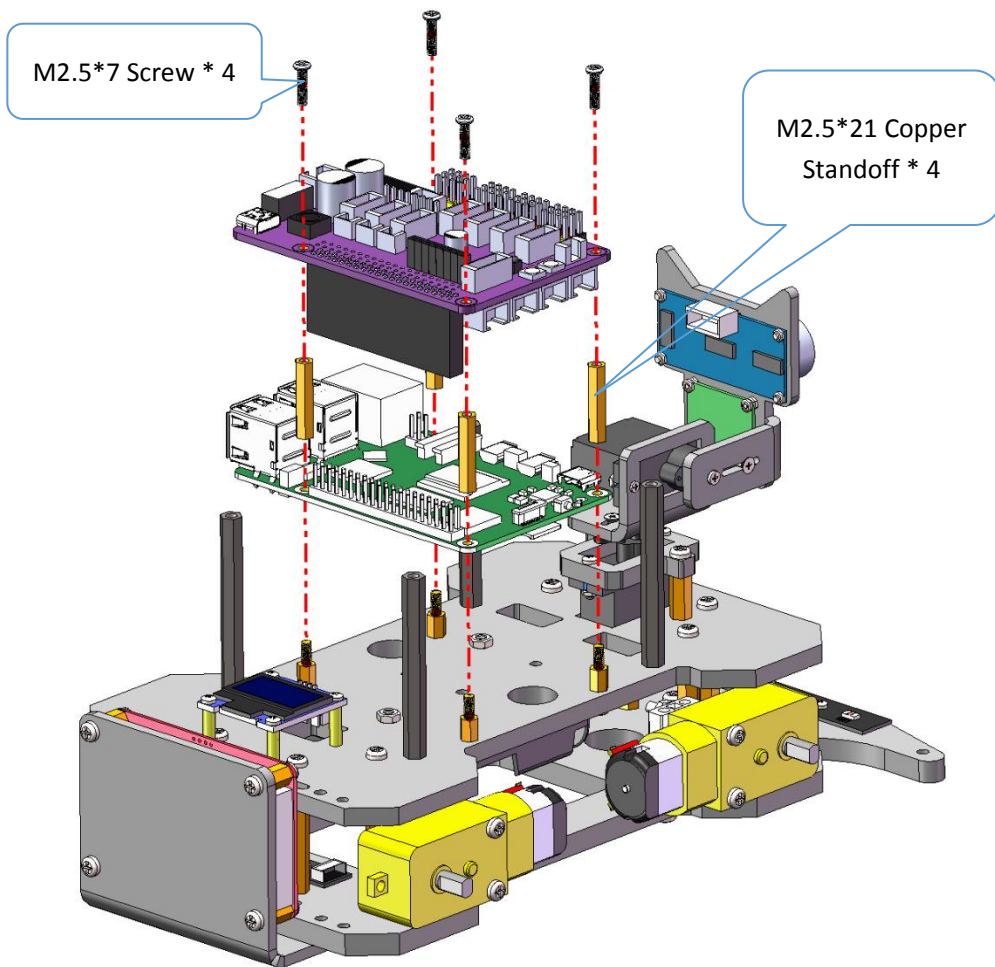


5. Fix the **Adeept Robot HAT V3.2** to the **Raspberry Pi Board** (which is not included in this kit; you need to purchase it separately) using four **M2.5*21 Copper Standoffs** and four **M2.5*7 Screws**. (NOTE: Don't forget to plug the camera cable into the corresponding slot on the Raspberry Pi board!!!)

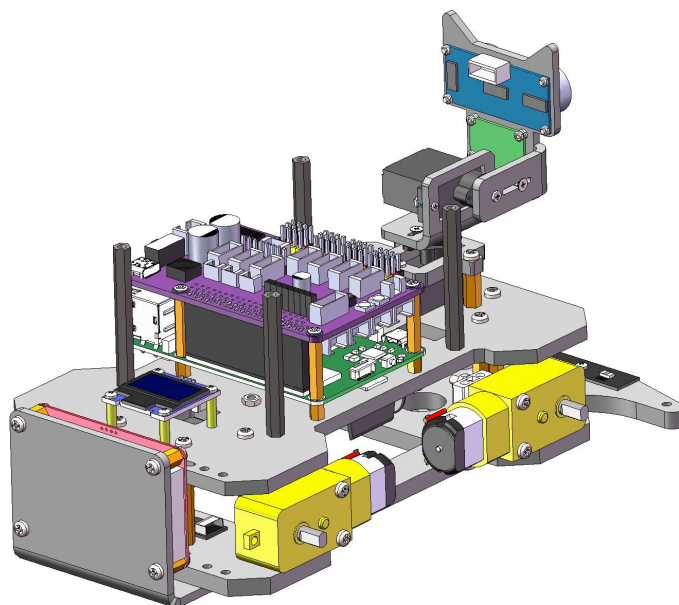
Adeept Robot HAT V3.2



Assemble the following components:

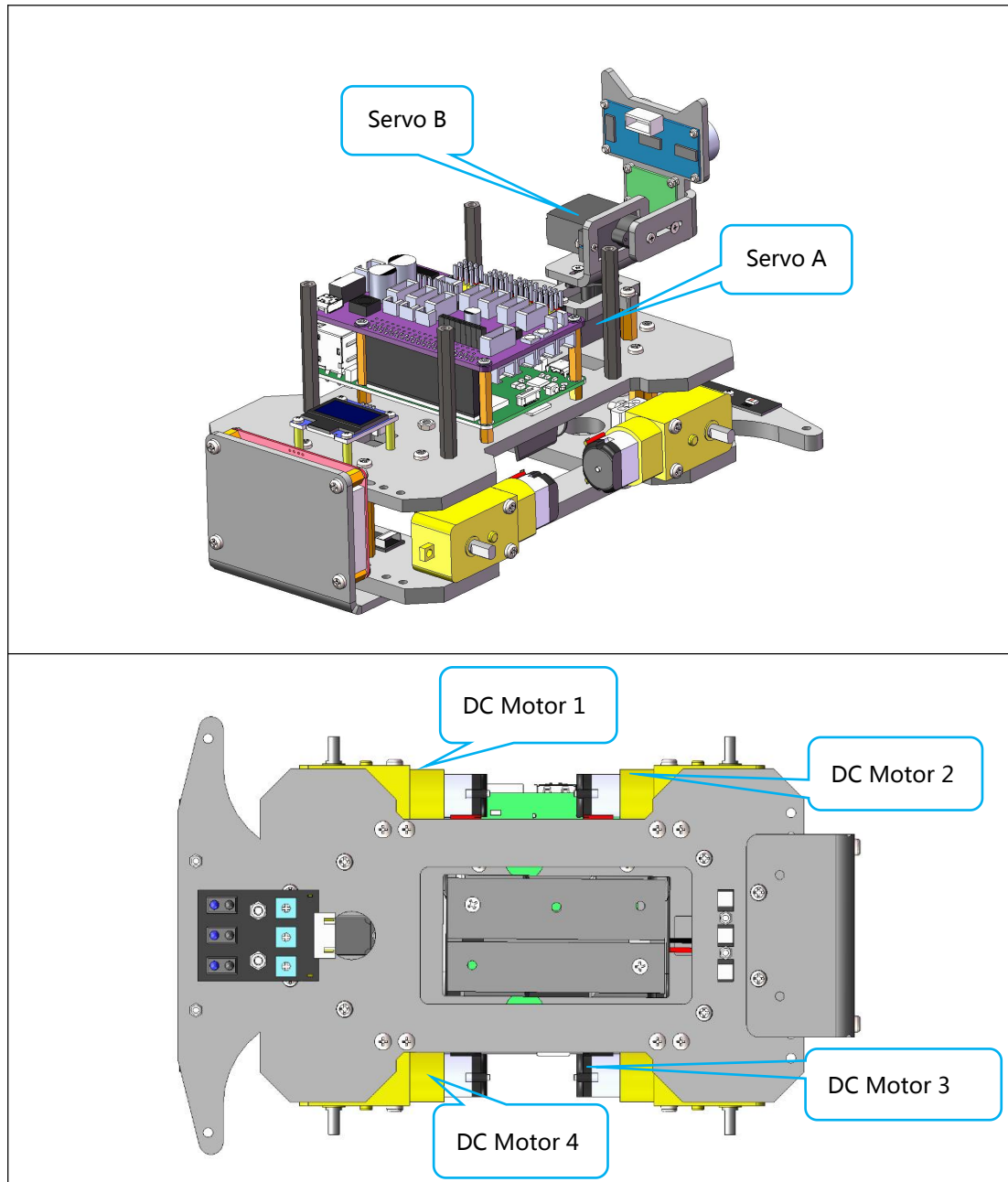


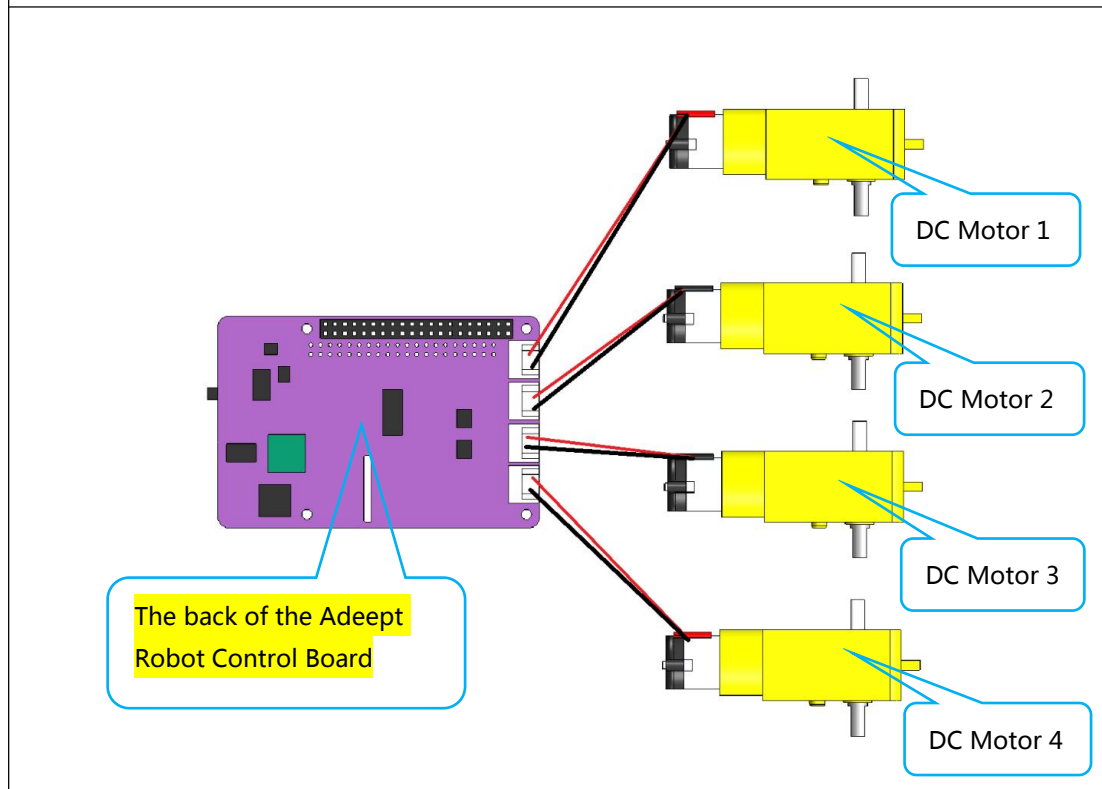
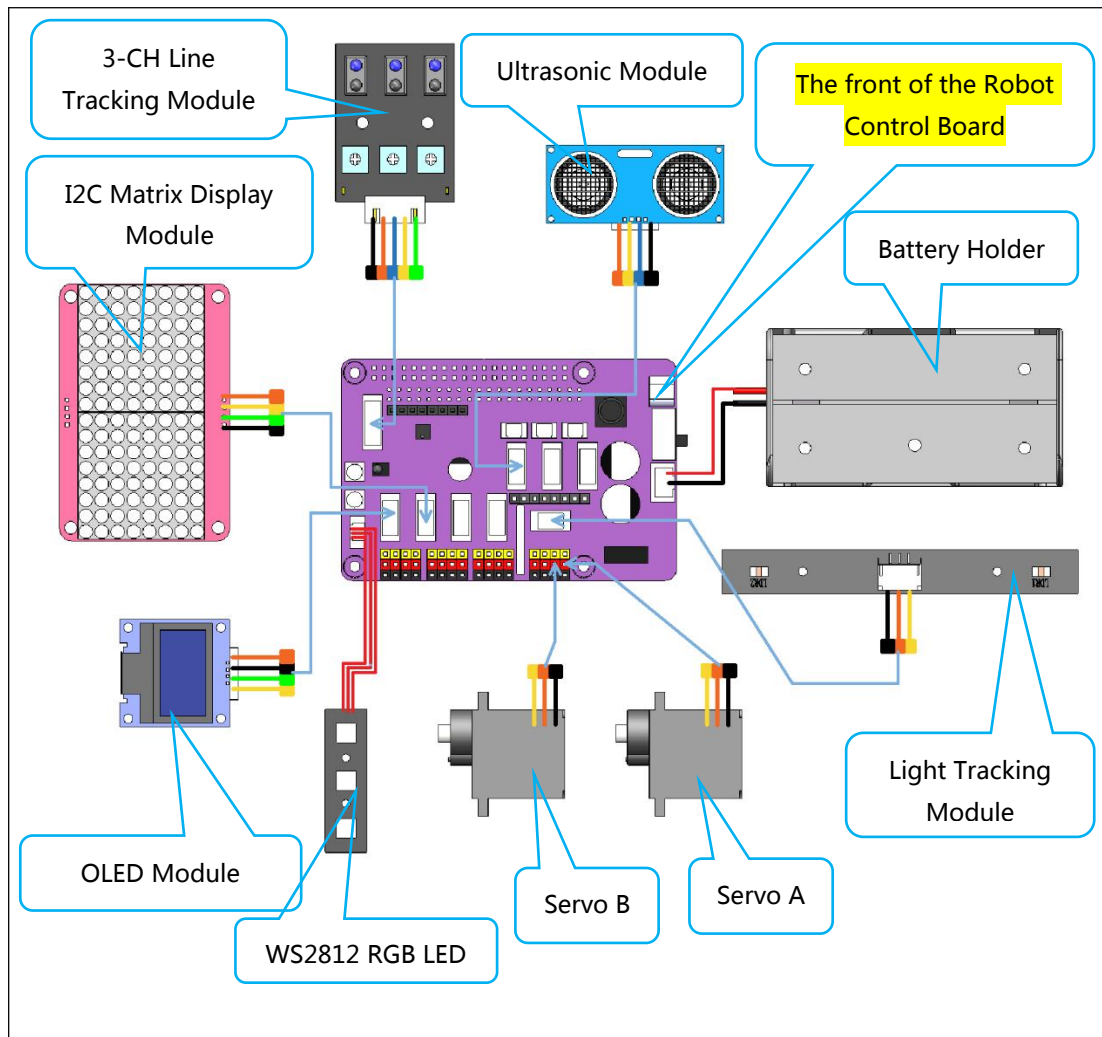
After Assembly:



6.4 Wiring of the Adept Robot Control Board

1. Please connect the circuit correctly as shown in the following picture.

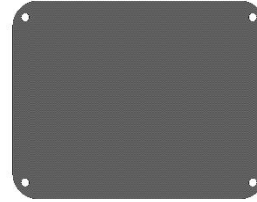




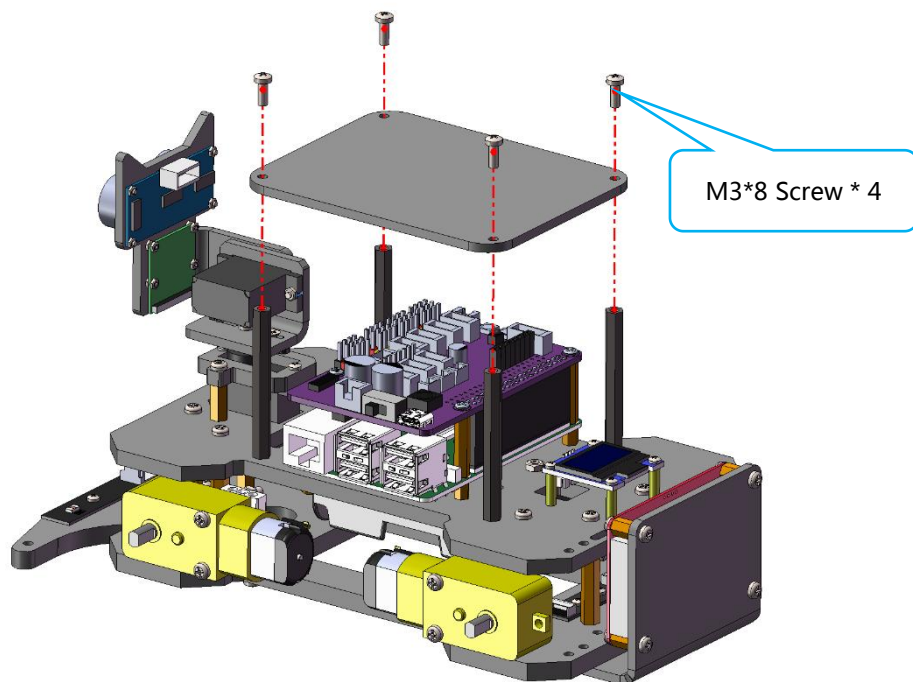
6.5 Final assembly

1. Fix the part **A07** to part **A01** with four **M3*8 Screws**.

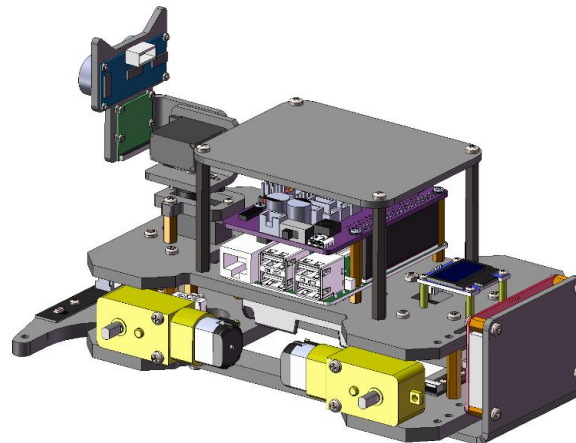
A07

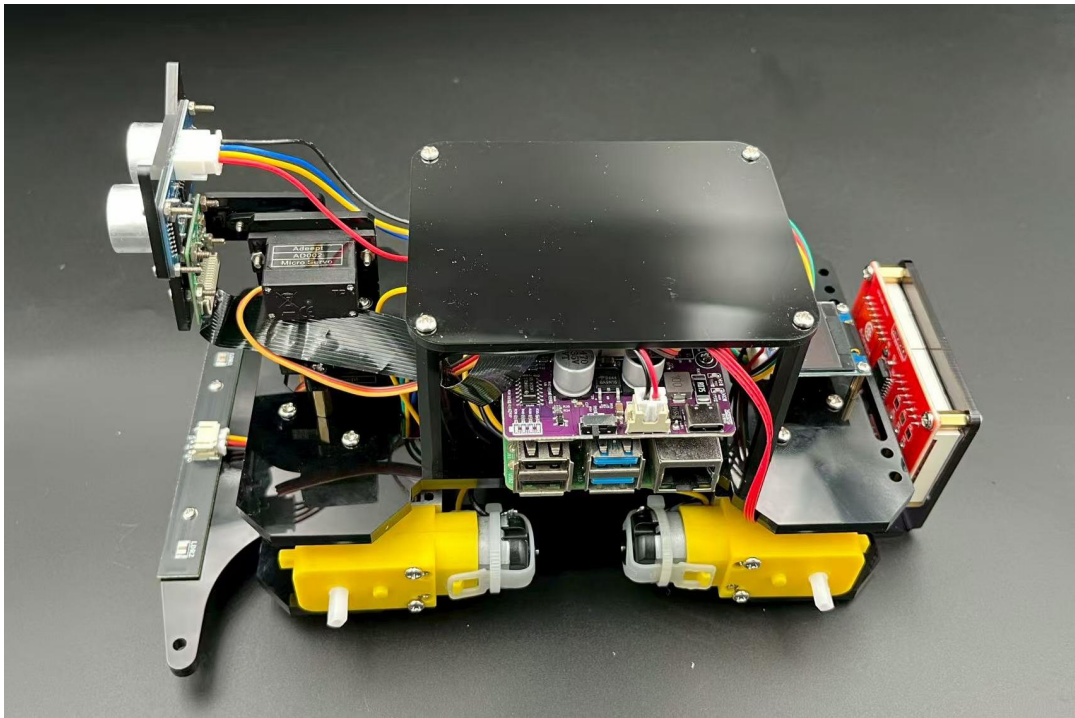


Assemble the following components:



After Assembly:





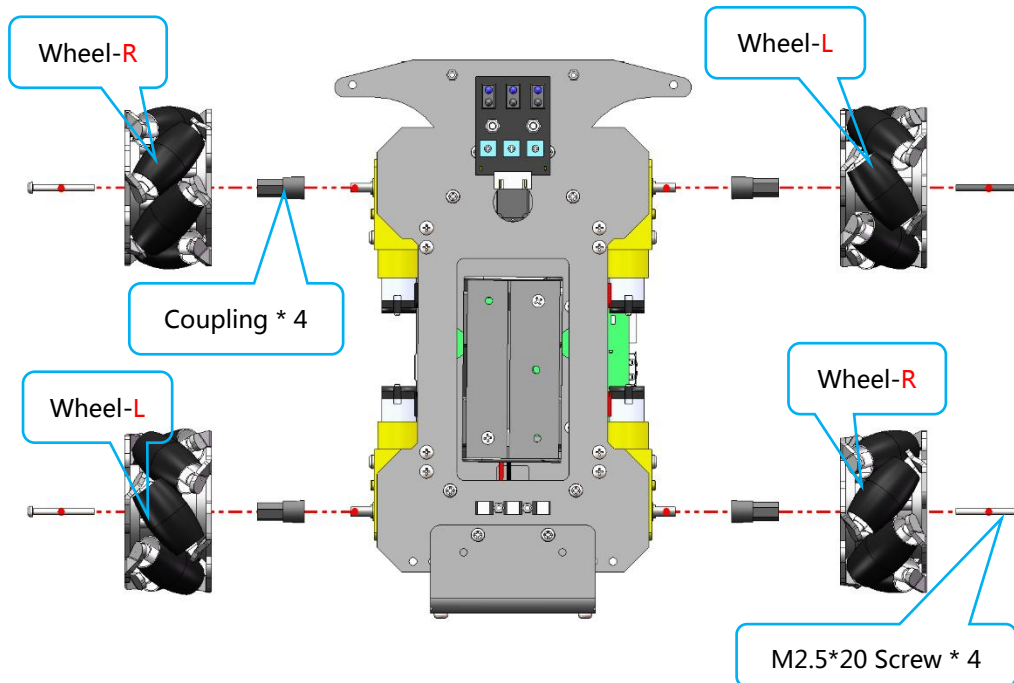
3. Install four **Mecanum Wheels** onto the motor shaft with four **Couplings** and four **M2.5*20 Screws**.

| | |
|-----------------|--|
| Mecanum Wheel-L |  |
| Mecanum Wheel-R |  |

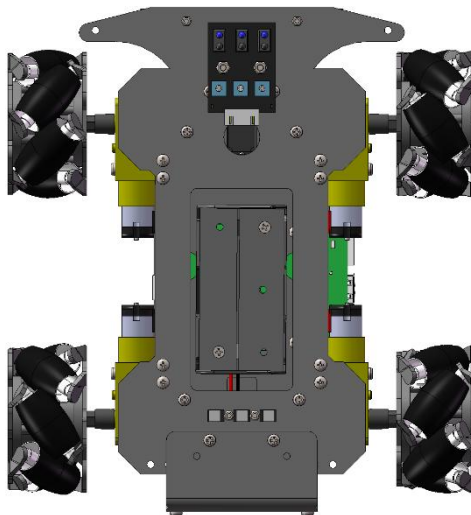
Coupling

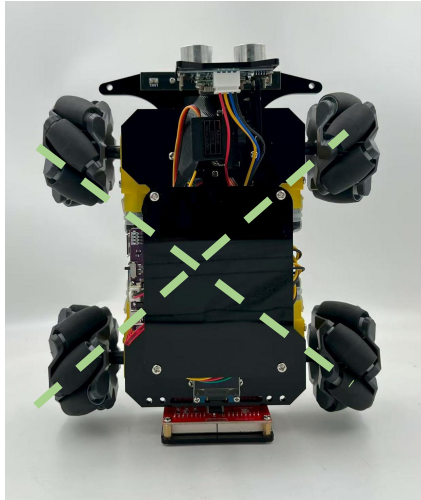
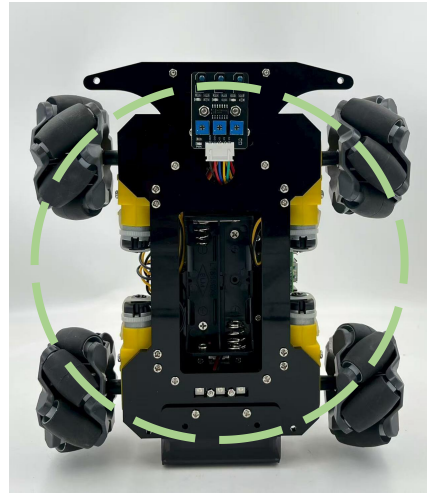


Assemble the following components:



After Assembly:



**X****O**

Note: The Mecanum wheel car adopts the O-rectangle assembly method. The actual wheel is "X" when viewed from above, and is "O" when it is actually in contact with the ground. (looking up from below the Mecanum wheel car)

