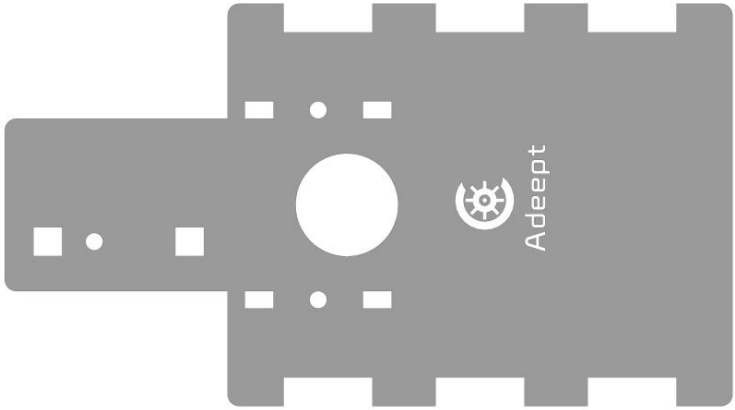
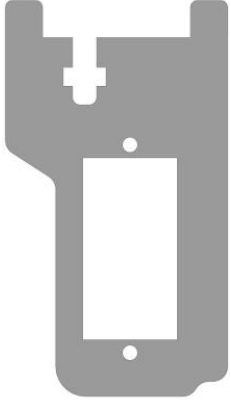


## Assembly Tutorial

Both sides of the acrylic plates have protective film to prevent scratches during production and transportation. Please remove the protective film before assembly.

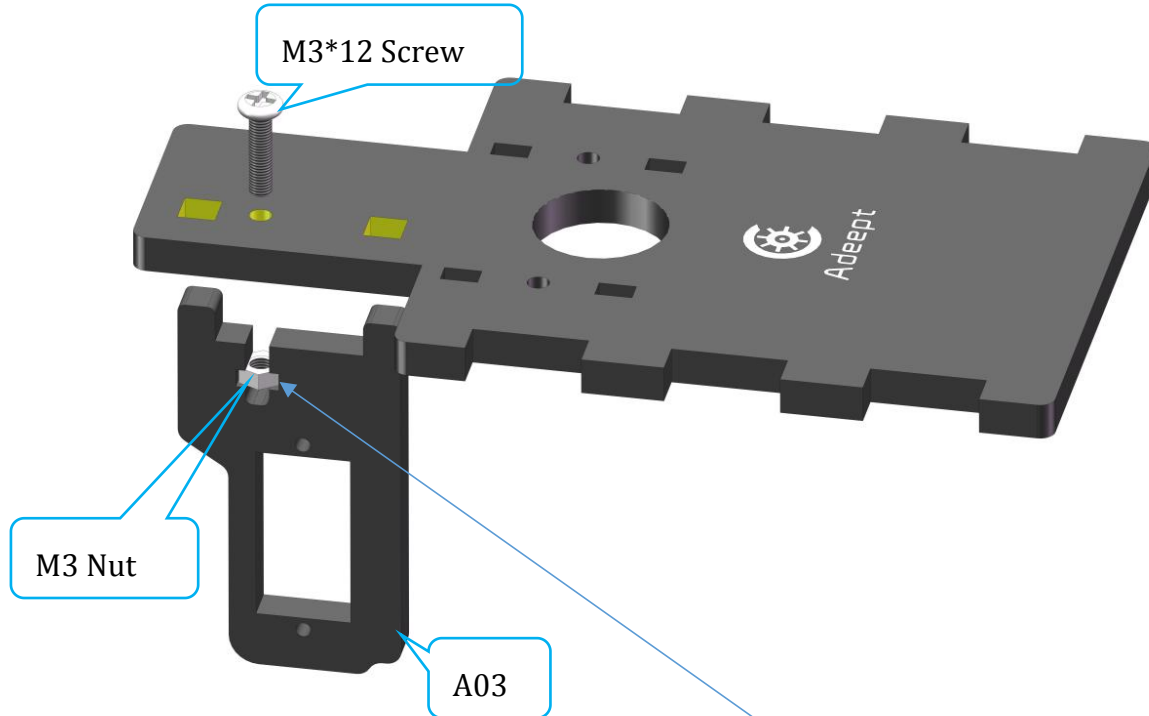
### Assemble the Robotic Arm

1. Assemble acrylic accessories **A13** and **A03** together using **M3\*12 screw** and **M3 nut** (The “Adeept” logo engraved on **A13** must face upwards)

A13	
A03	

Assemble the following components:

Put the M3 nut into the slot of A03.

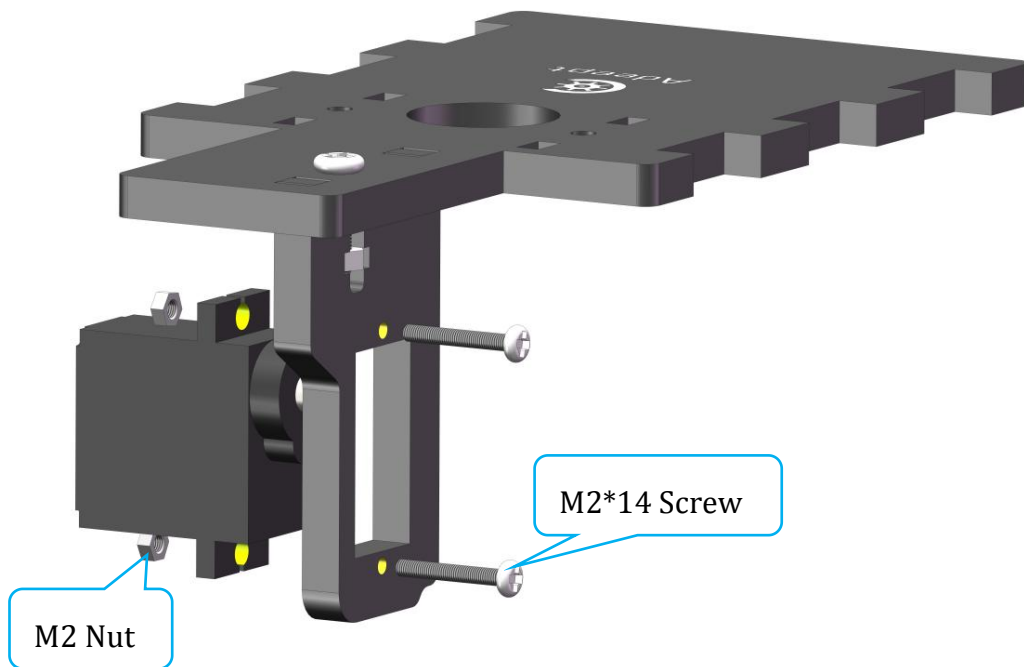


Note: The nut has a long side and a short side, with the short side being able to pass through the hole in the acrylic part.

The effect after assembly:



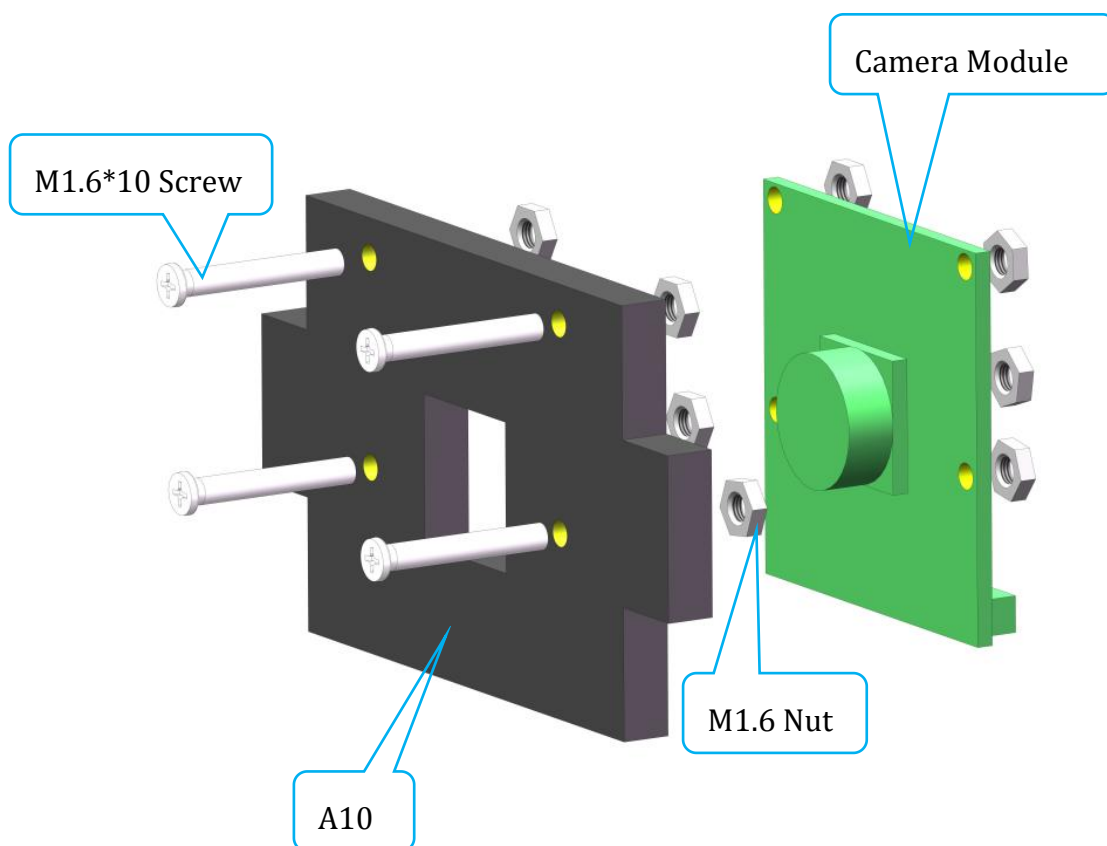
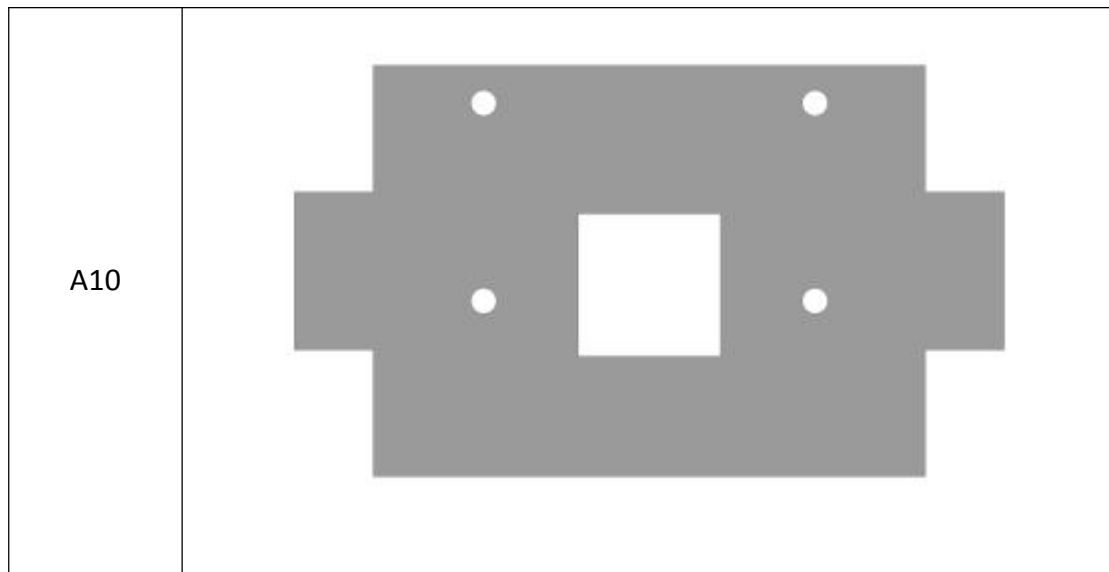
2. Install **AD002 Servo Motor** with two **M2\*14 screws** and two **M2 nuts**



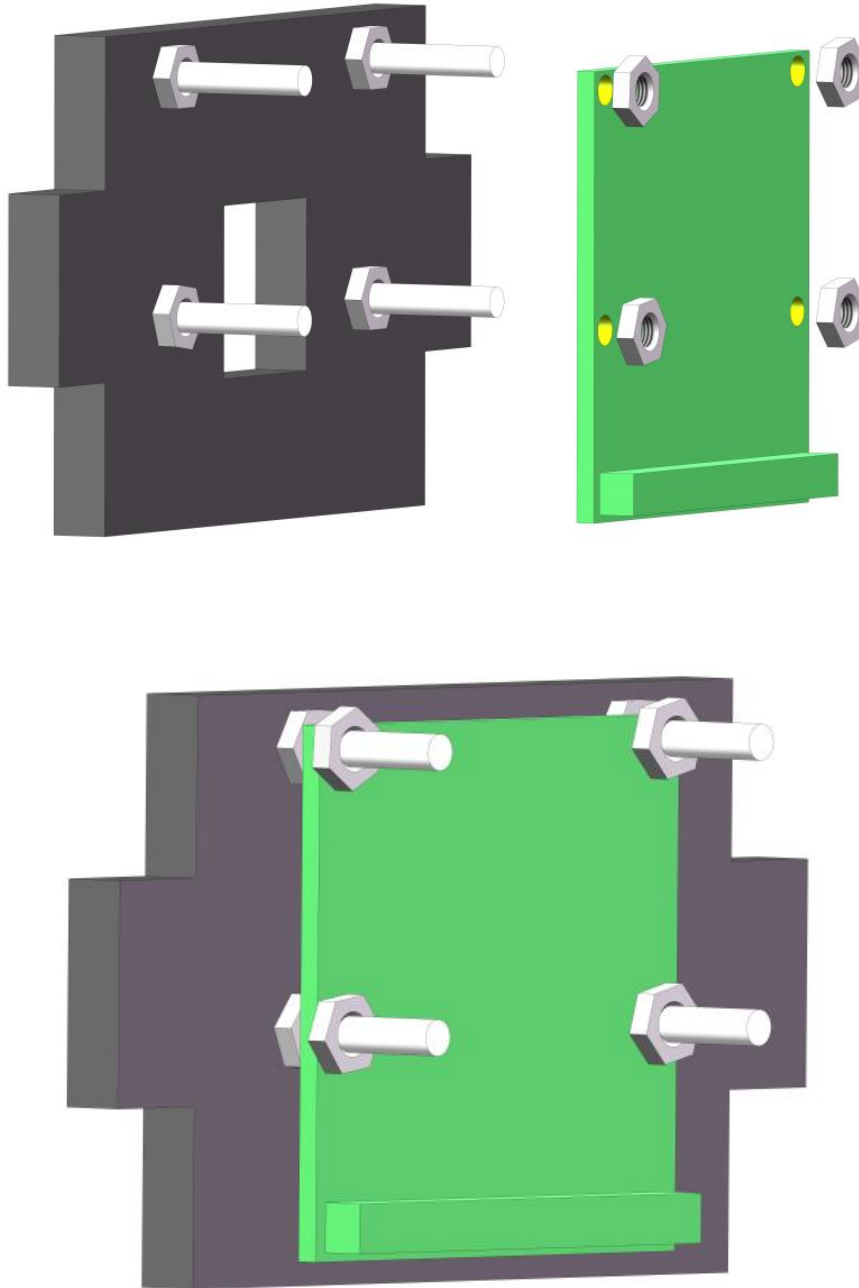
The effect after assembly:



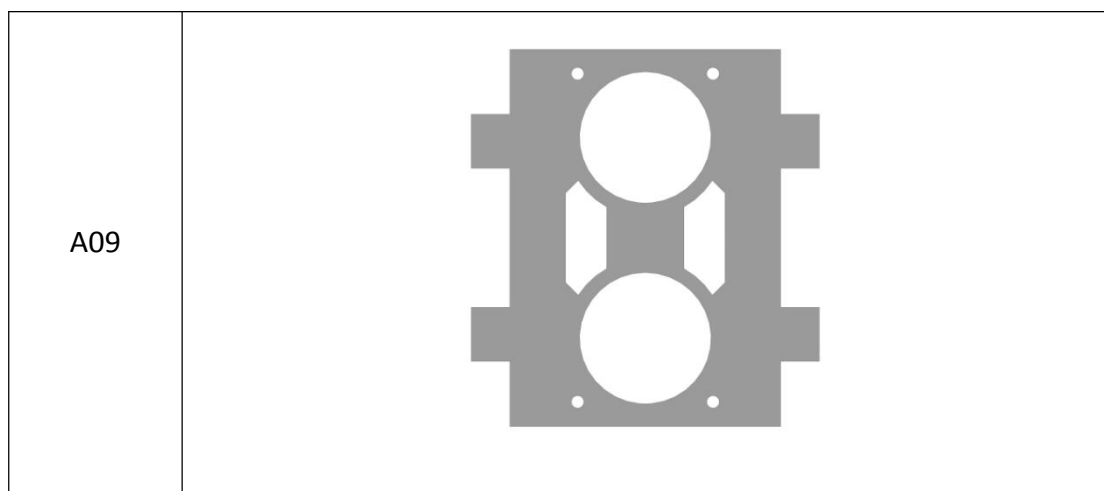
3. Install the **Camera Module** on **A10** with four **M1.6\*10 screws** and eight **M1.6 nuts**.

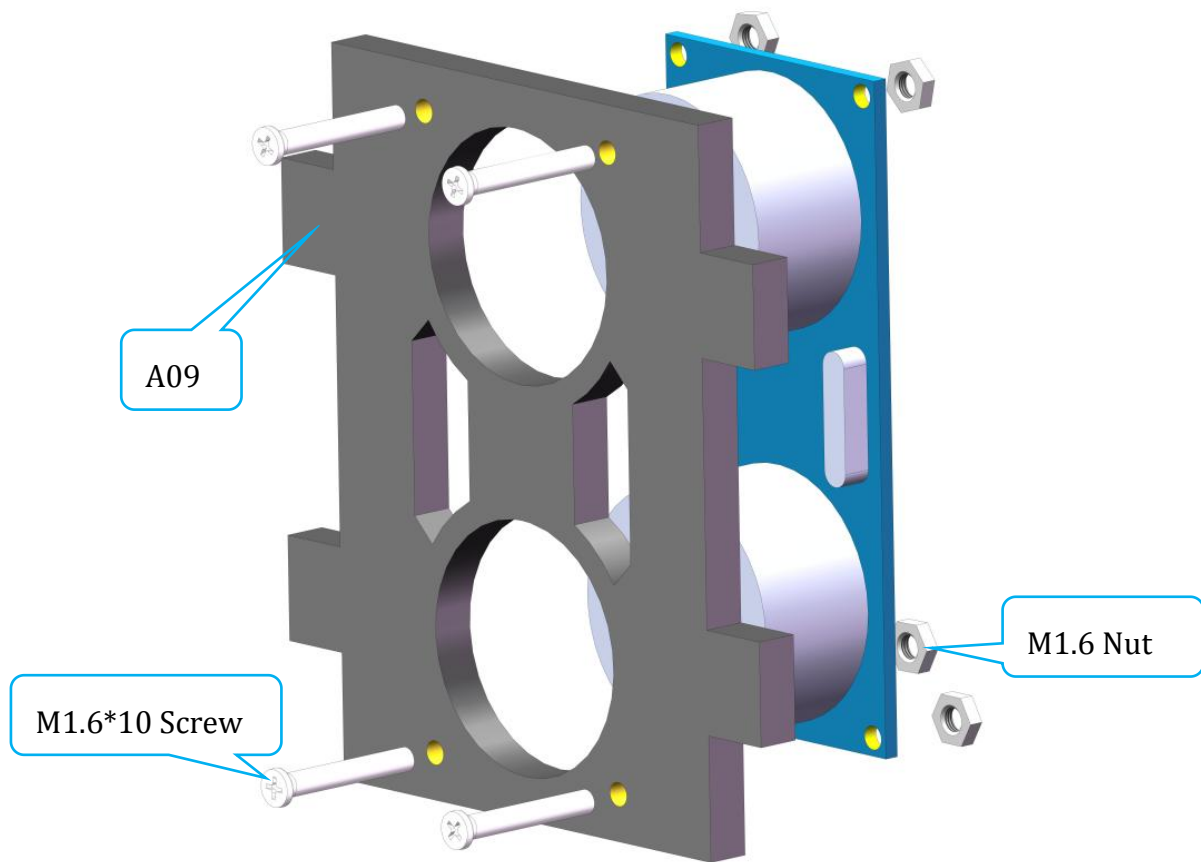


The effect after assembly:

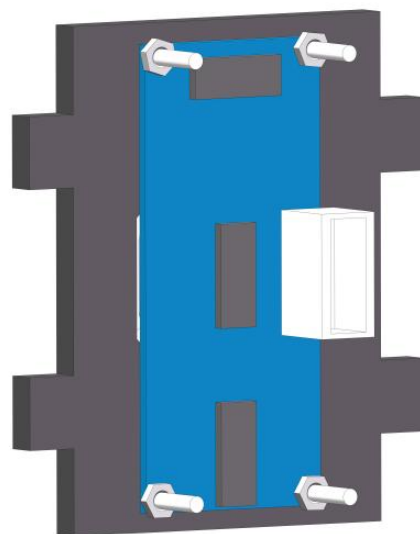
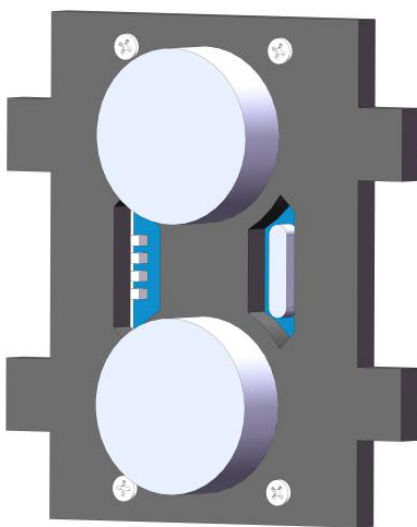


4. Install the **Ultrasonic Module** on the **A09** with four **M1.6\*10 screws** and four **M1.6 nuts**.

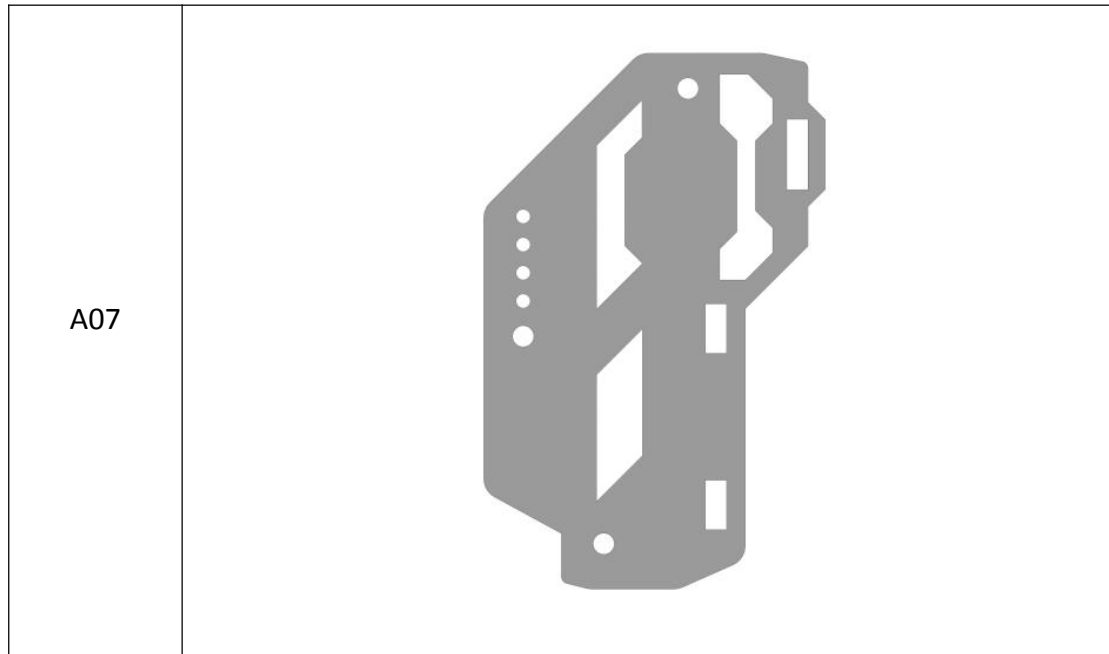




The effect after assembly:

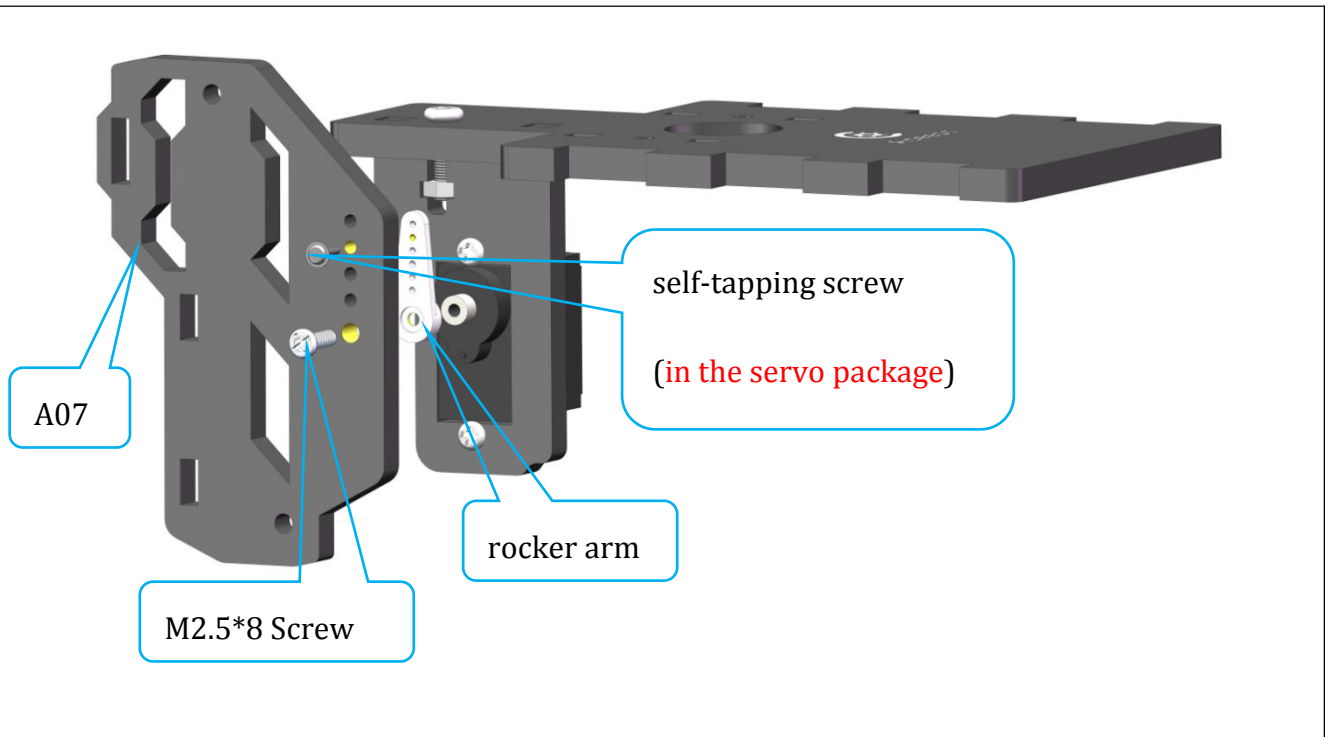


5. Install the **rocker arm** of the AD002 servo on **A07** with a **self-tapping screw**(in the servo accessory package), then use one **M2.5\*8 screw** to fix the **servo**.



Assemble the following components:



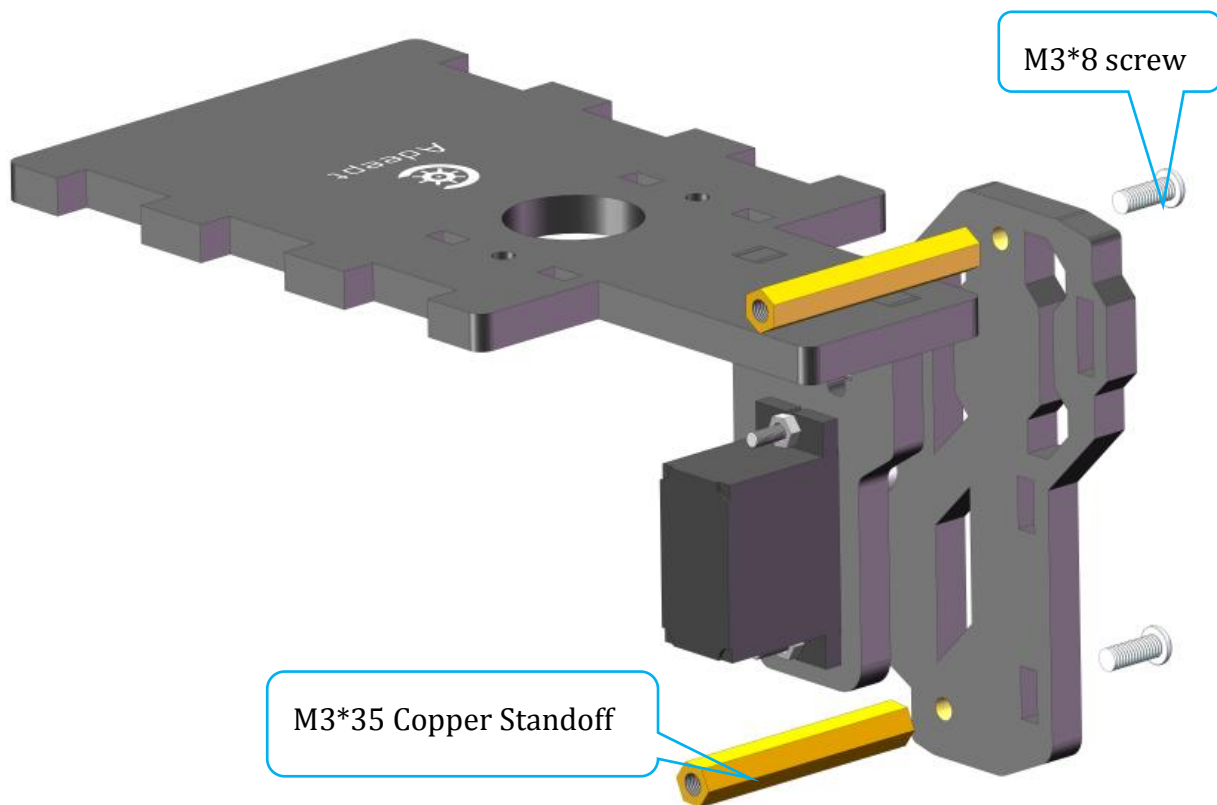


The effect after assembly:

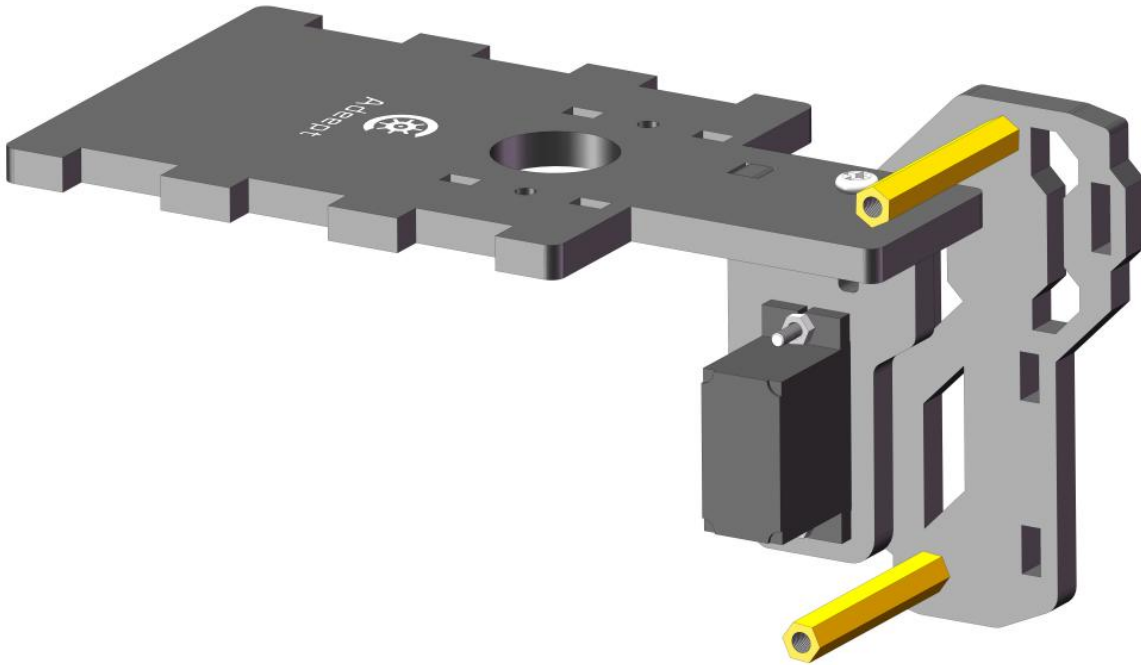




6. Use two **M3\*8 Screws** to install two **M3\*35 Copper Standoffs** on A07.

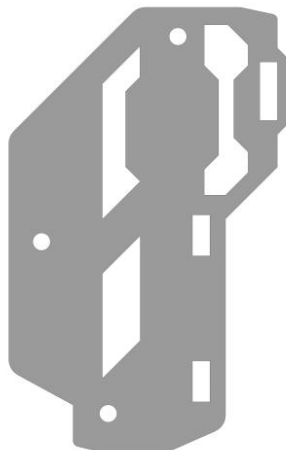


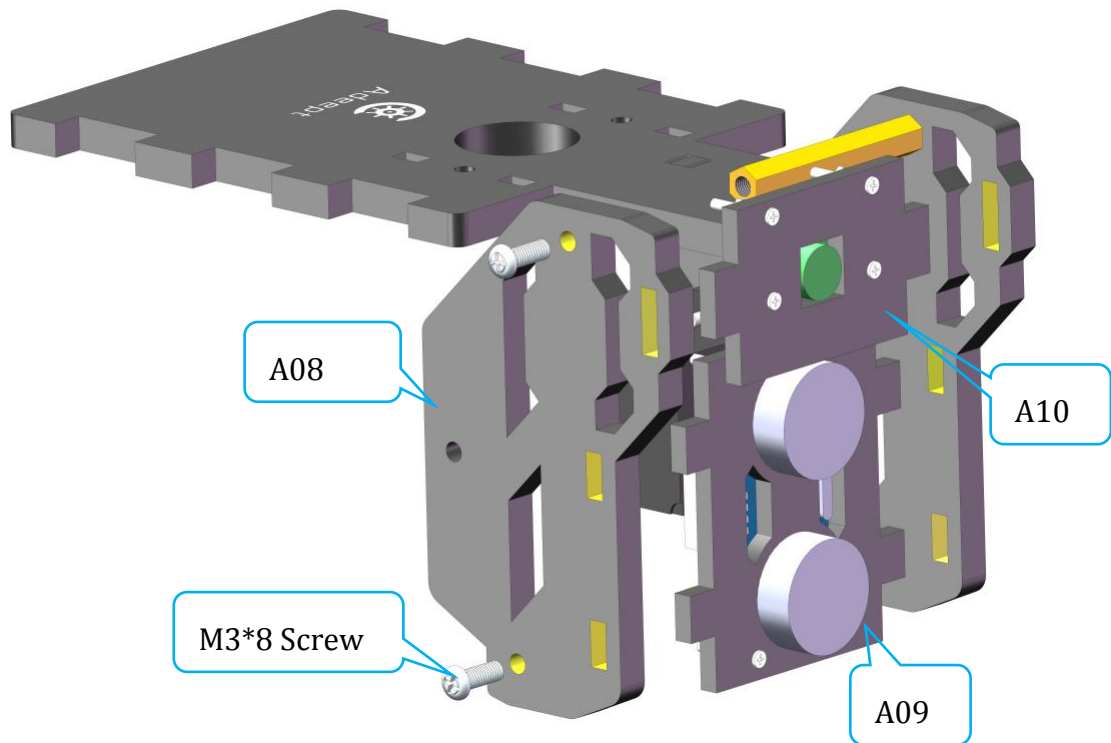
The effect after assembly:



7. Clamp **A09** and **A10** between **A08** and **A07**, and secure them with two **M3\*8** screws.

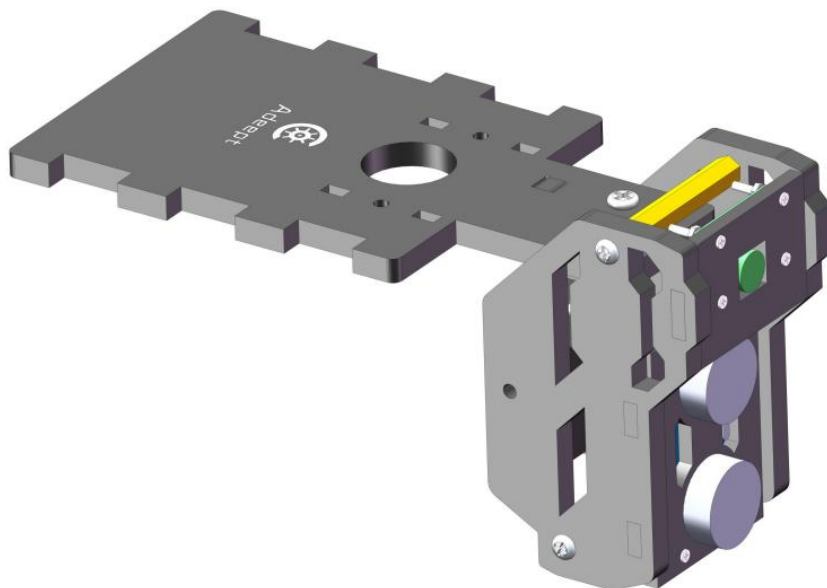
A08



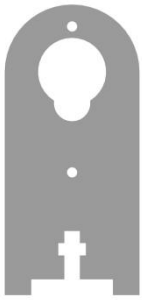
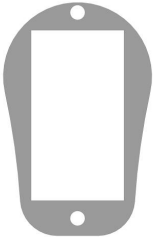


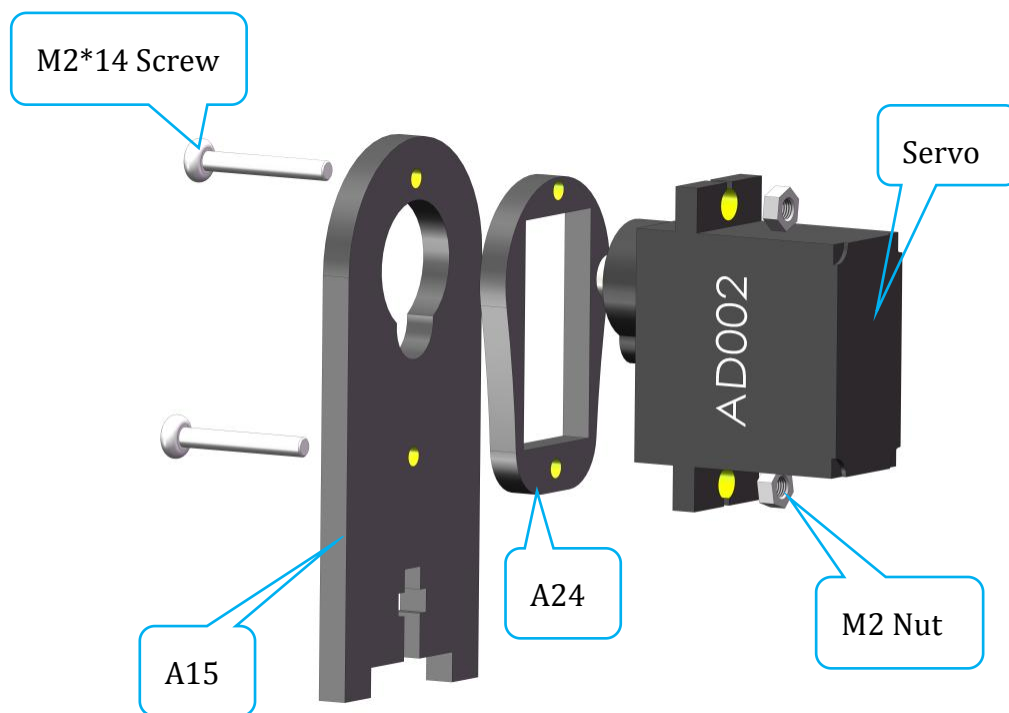
**NOTE:** Please plug in the cable of the camera module and the cable of the ultrasonic module before assembly.

The effect after assembly:



8. Assemble **A15**, **A24**, and **AD002 Servo Motor** together with two **M2\*14 Screws** and two **M2 Nuts**.

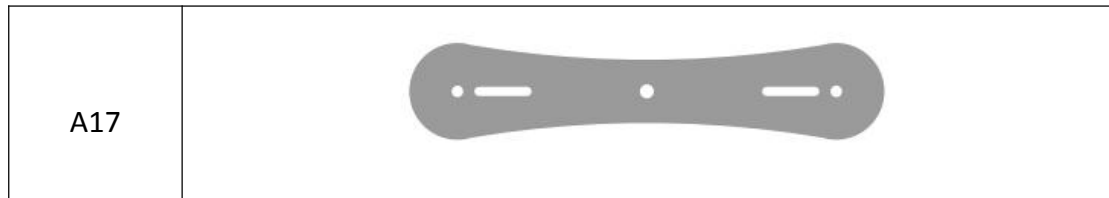
A15	
A24	



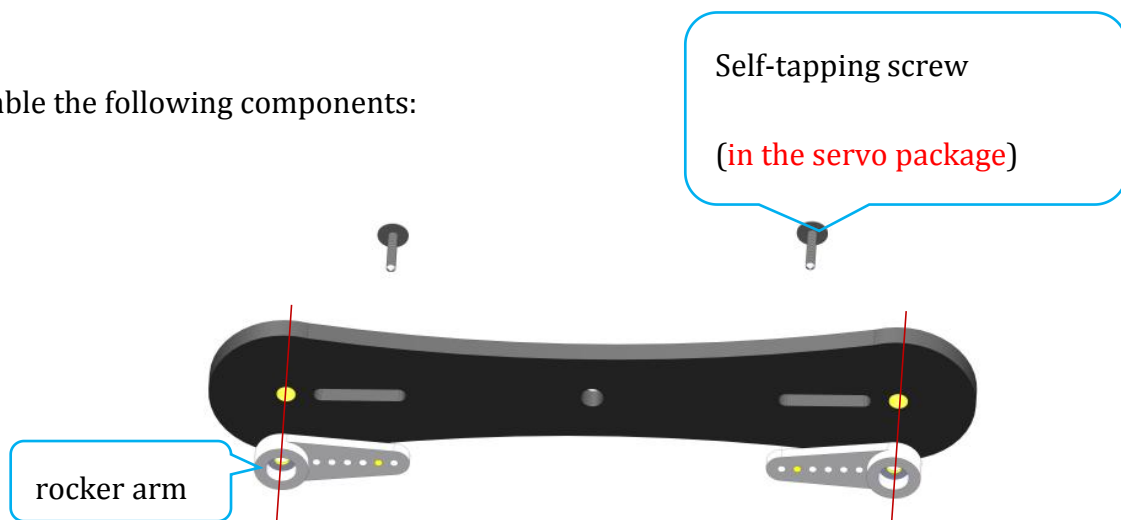
The effect after assembly:



9. Install two **Rocker Arms** onto **A17** using two **Self-tapping screws** (included in the servo package).



Assemble the following components:

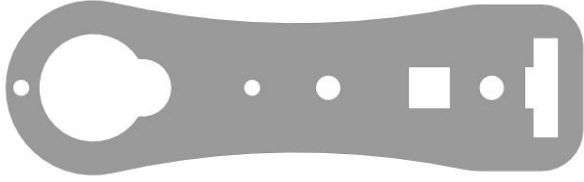
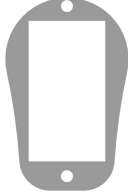


Note: The two holes in the red line should correspond. The self-tapping screw is installed in the second-to-last hole of the rocker arm.

The effect after assembly:

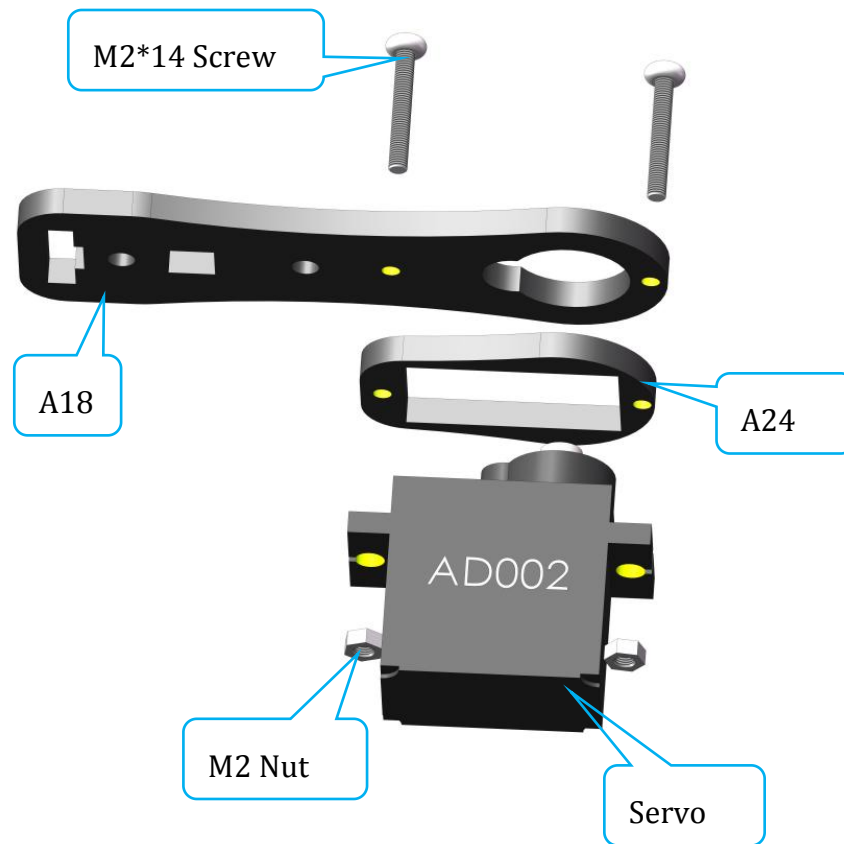


10. Assemble the **Servo Motor** with **A18** and **A24** using two **M2\*14 Screws** and two **M2 Nuts**.

A18	
A24	

Assemble the following components:



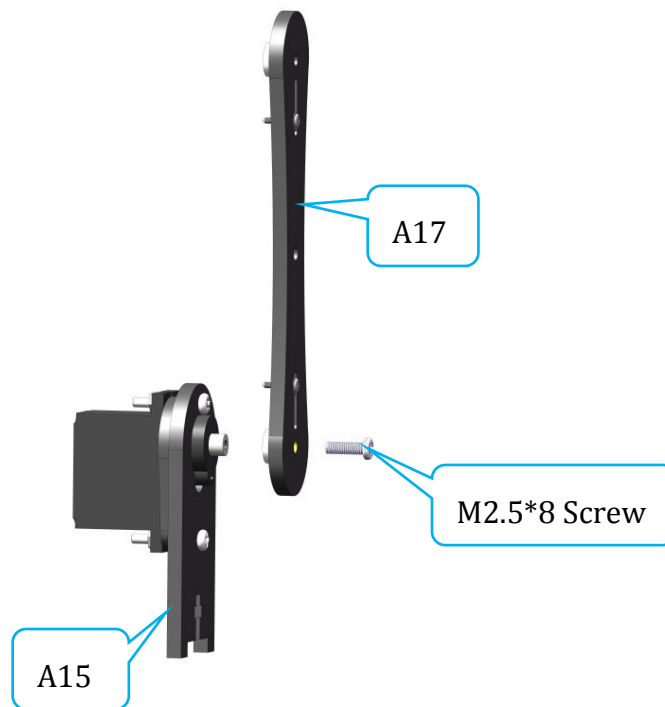


The effect after assembly:



11. Use an **M2.5\*8 Screw** to connect the previously **assembled A15** and **A17** together.  
(Before assembly, the rotation angle of the shaft of the servo motor should be adjusted to the middle position<90 degrees>)

Assemble the following components:

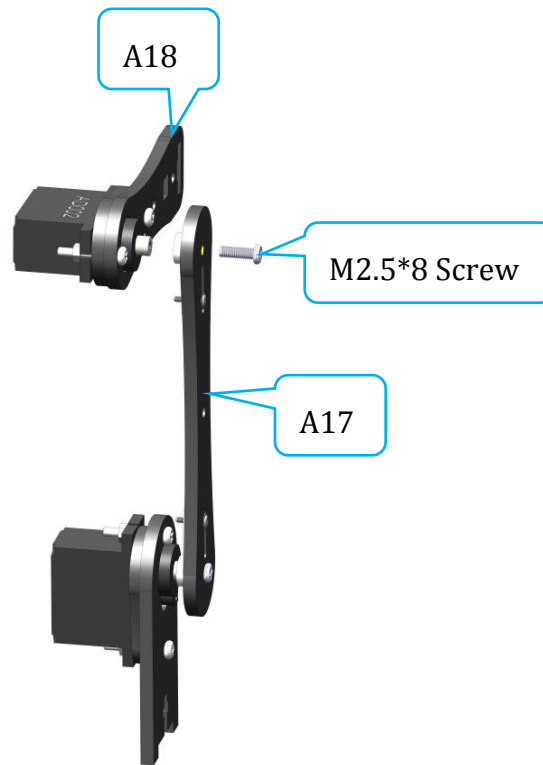


The effect after assembly:



12. Use an **M2.5\*8 Screw** to connect the previously **assembled A18** and **A17** together.  
(Before assembly, the rotation angle of the shaft of the servo motor should be adjusted to the middle position<90 degrees>).




Assemble the following components:



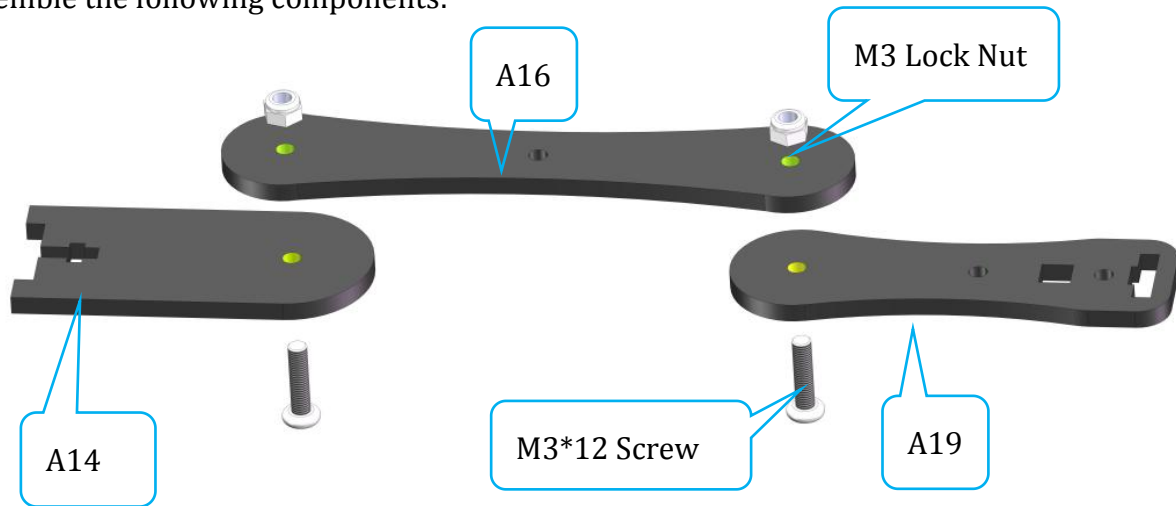
The effect after assembly:



13. Connect **A14**, **A16**, and **A19** together using two **M3\*12 Screws** and two **M3 Lock Nuts** (Please do not tighten these two lock nuts too tightly).

A14	
A16	
A19	

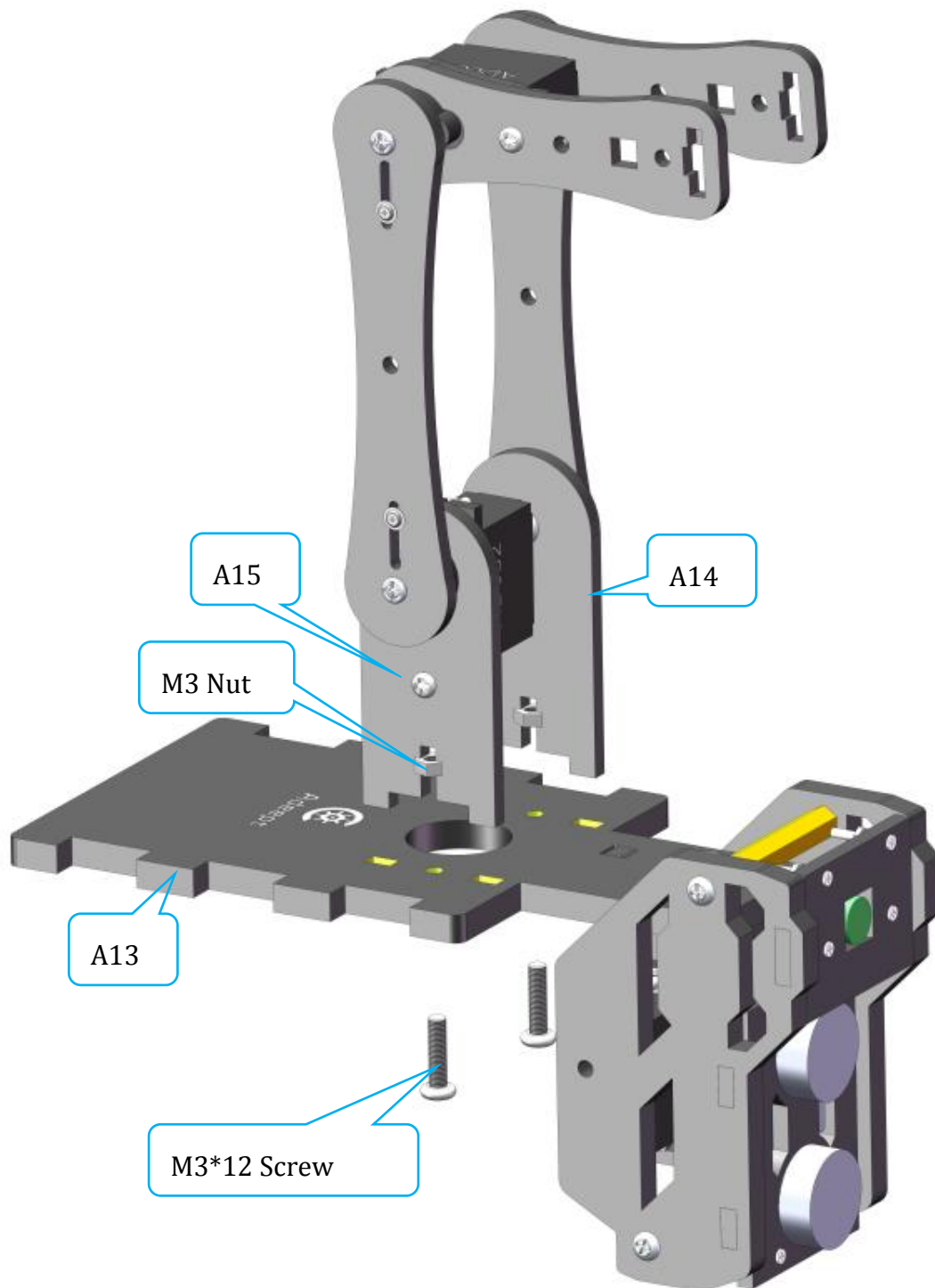
Assemble the following components:



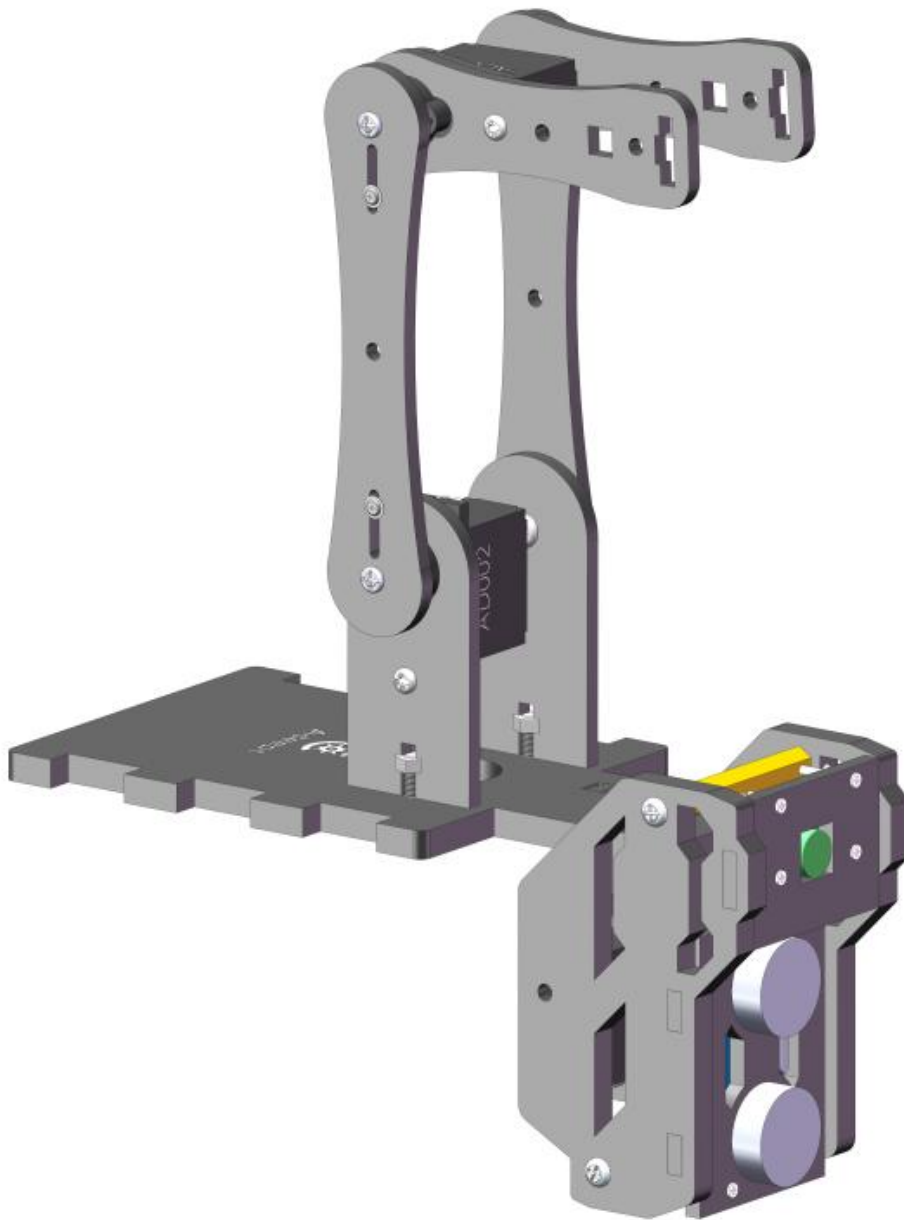
The effect after assembly:



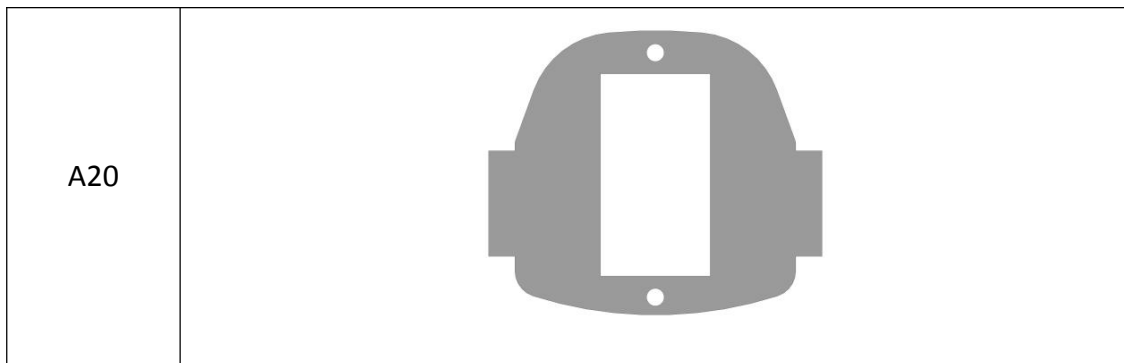
14. Fix the previously **assembled A14** and **A15** onto **A13** using two **M3\*12 Screws** and two **M3 Nuts**.



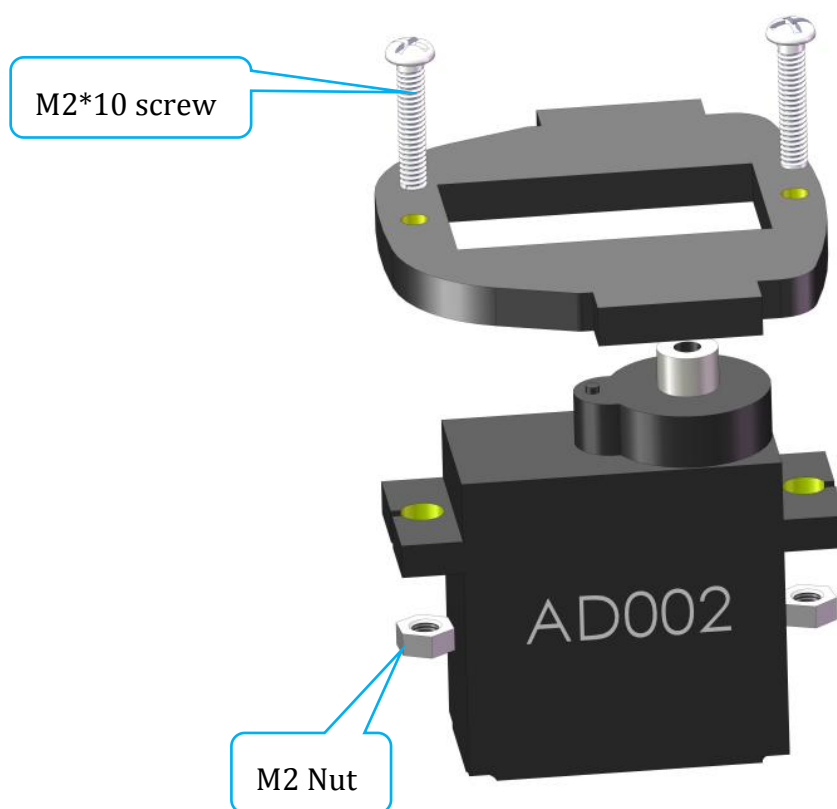
The effect after assembly:



15. Assemble the **Servo Motor** and **A20** together using two **M2\*10 Screws** and two **M2 Nuts**.

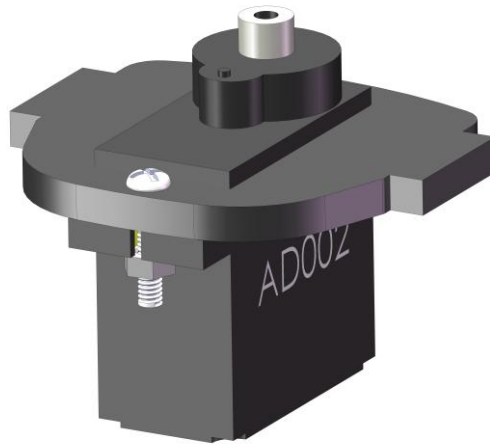


Assemble the following components:

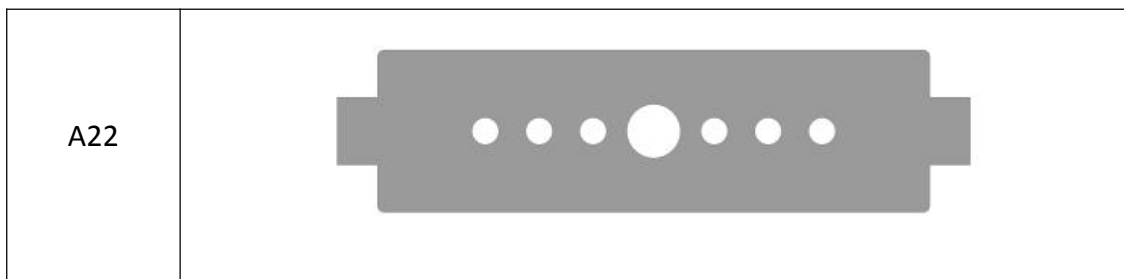




The effect after assembly:

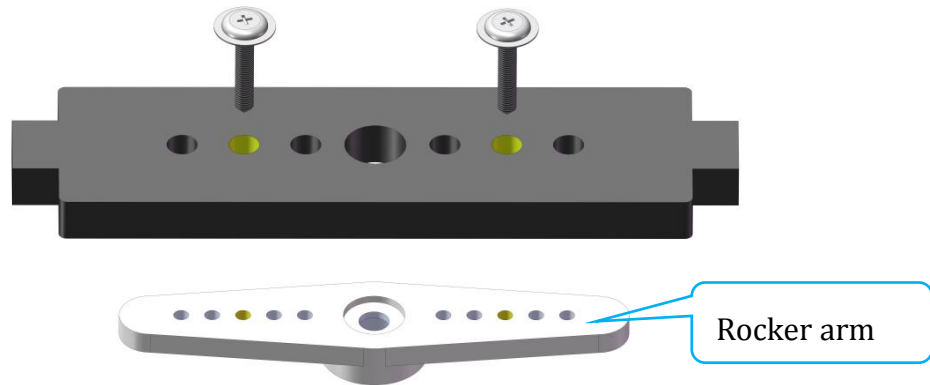


16. Use two **Self-tapping Screws** (included in the servo package) to secure the rocker arm of the servo to **A22**.



Assemble the following components:

Self-tapping screw (in  
the servo package)

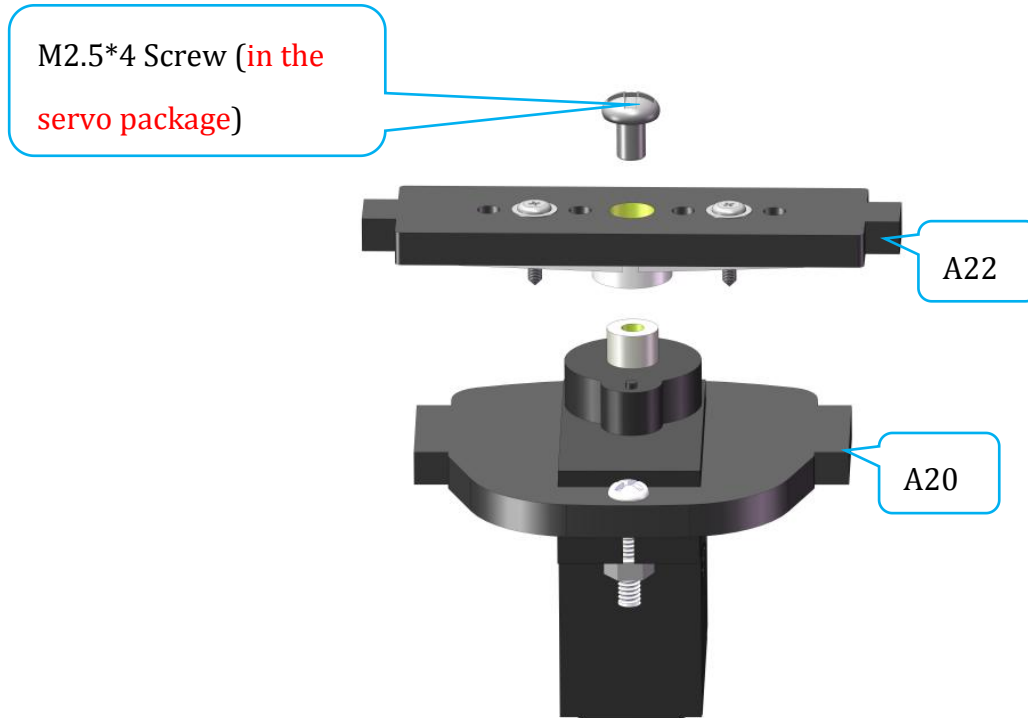


The effect after assembly:



17. Use an **M2.5\*4 Screw**(in the servo package) to connect the **assembled A22** to the **assembled A20**.



Assemble the following components:



The effect after assembly:

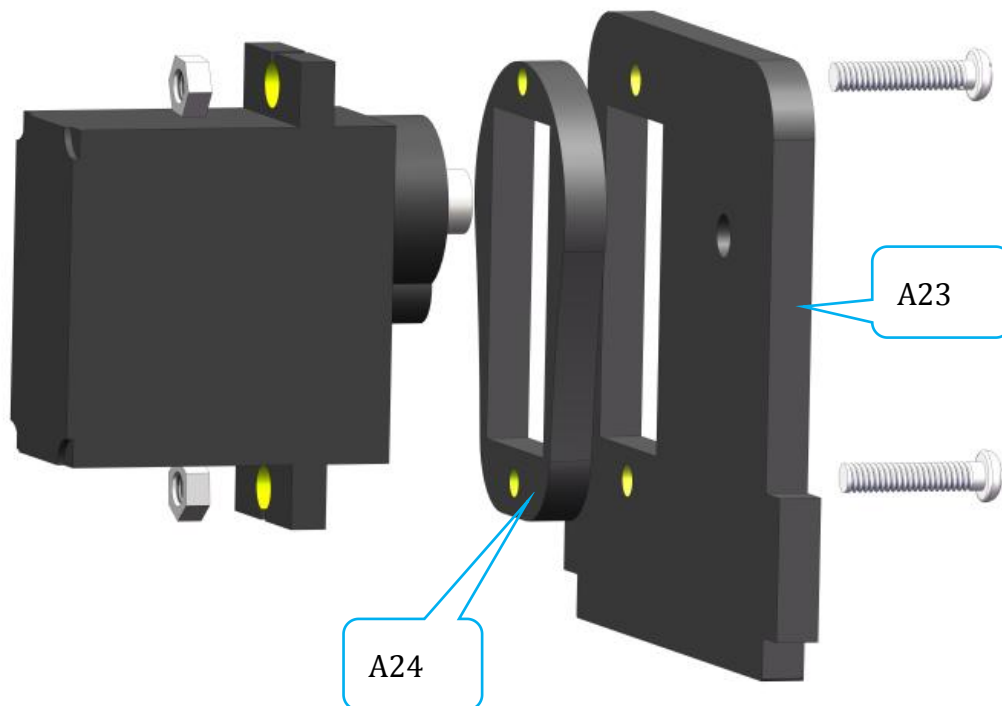


18. Assemble **A23**, **A24**, and **Servo Motor** with two **M2\*10 Screws** and two **M2 Nuts**.

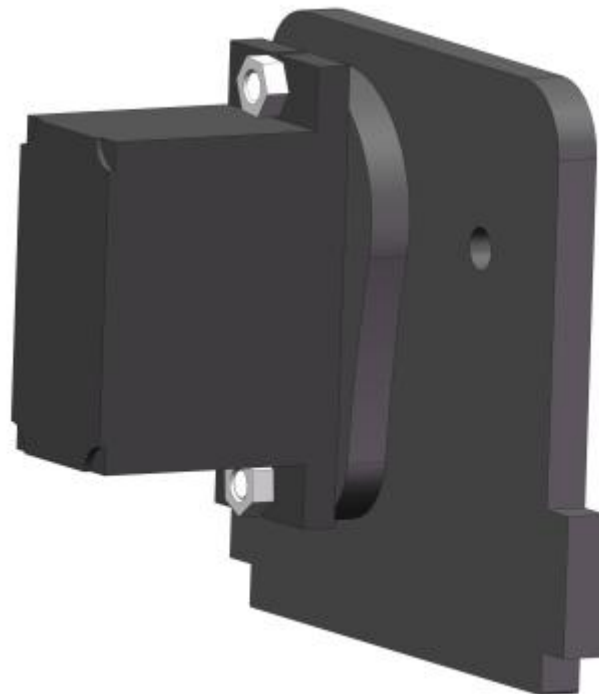
A23	
A24	

M2 Nut

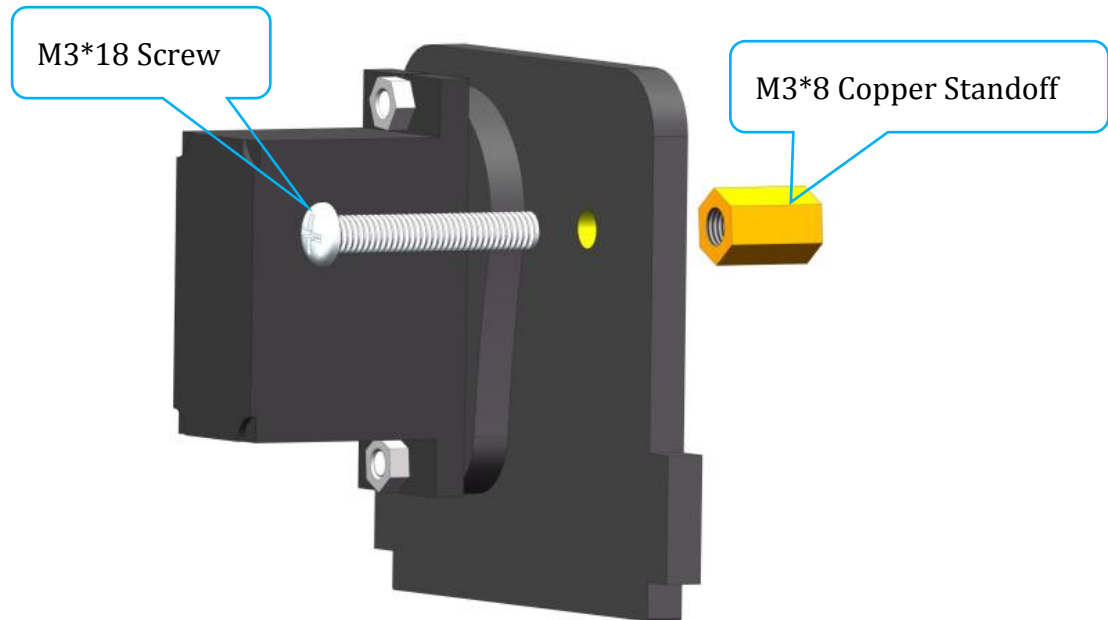
M2\*10 Screw



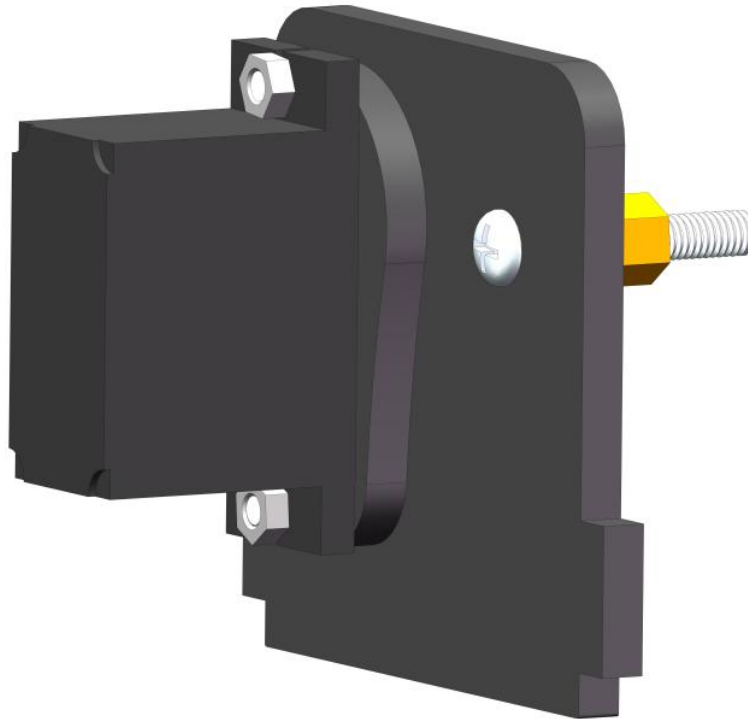
The effect after assembly:



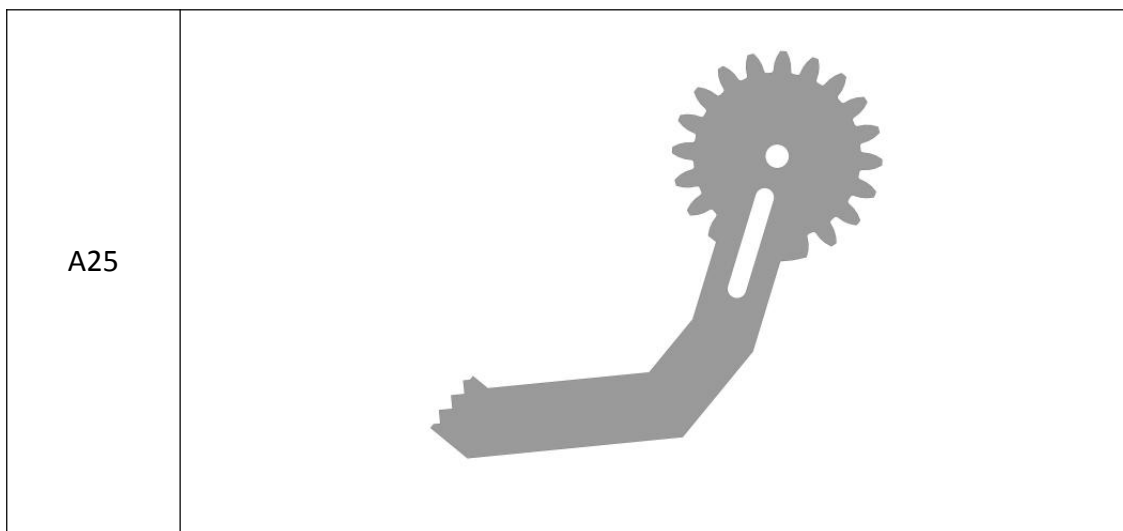
19. Install an **M3\*8 Copper Standoff** onto the **assembled A23** using an **M3\*18 Screw**.



The effect after assembly:

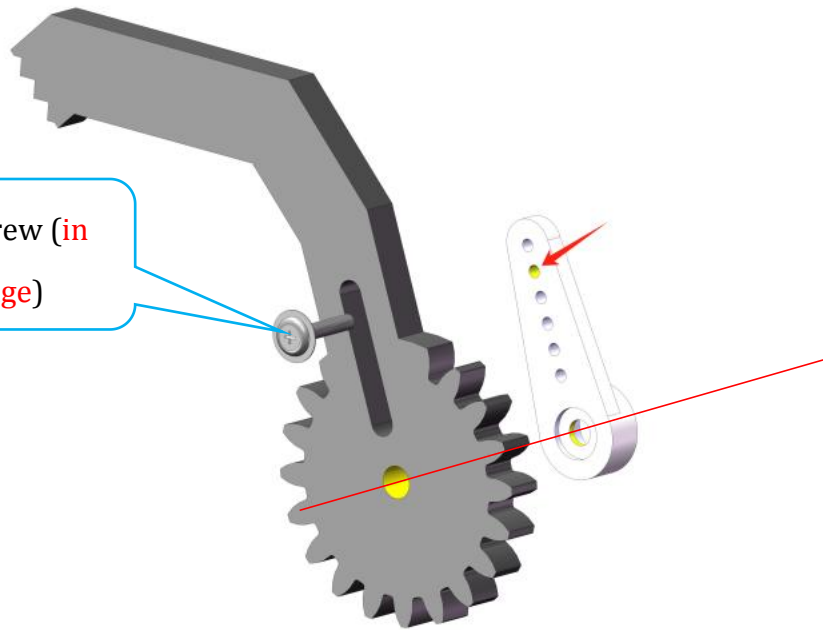


20. Use a **Self-tapping Screw**(in the servo package) to secure the rocker arm of the servo to **A25**.



**Note:** Install in the penultimate hole of rocker arm.

Self-tapping Screw (in  
the servo package)



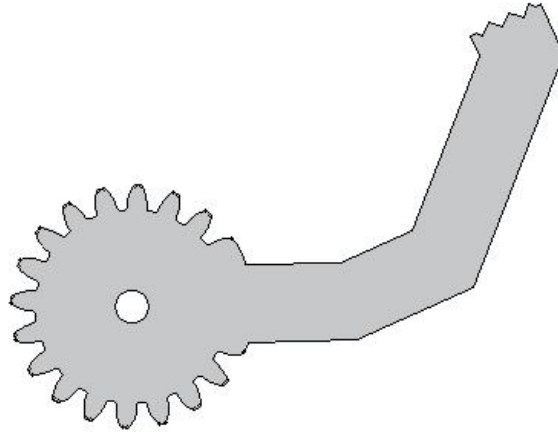
The effect after assembly:

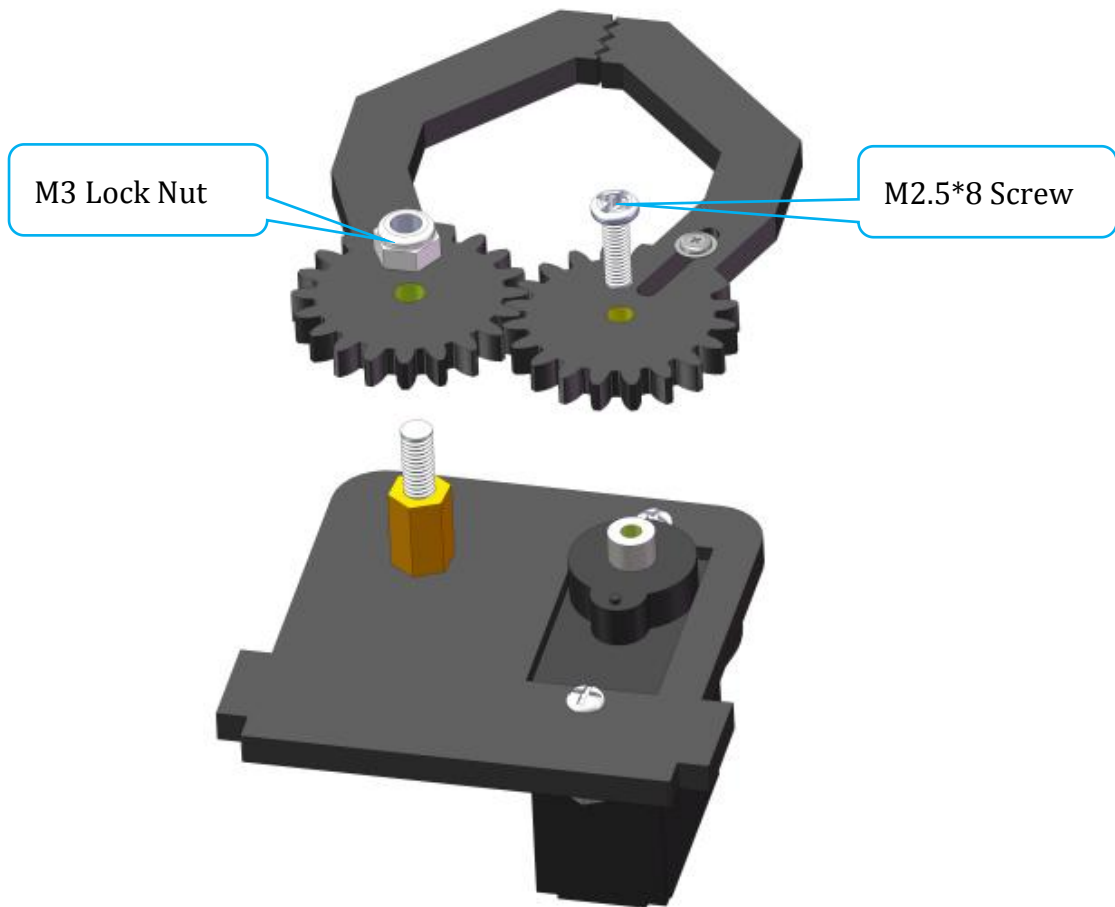




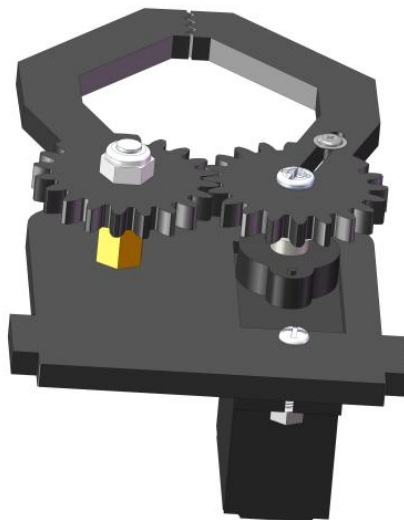
21. Install **A26** and **assembled A25** onto the **assembled A23** using an **M2.5\*8 Screw** and an **M3 Lock Nut**.

A26

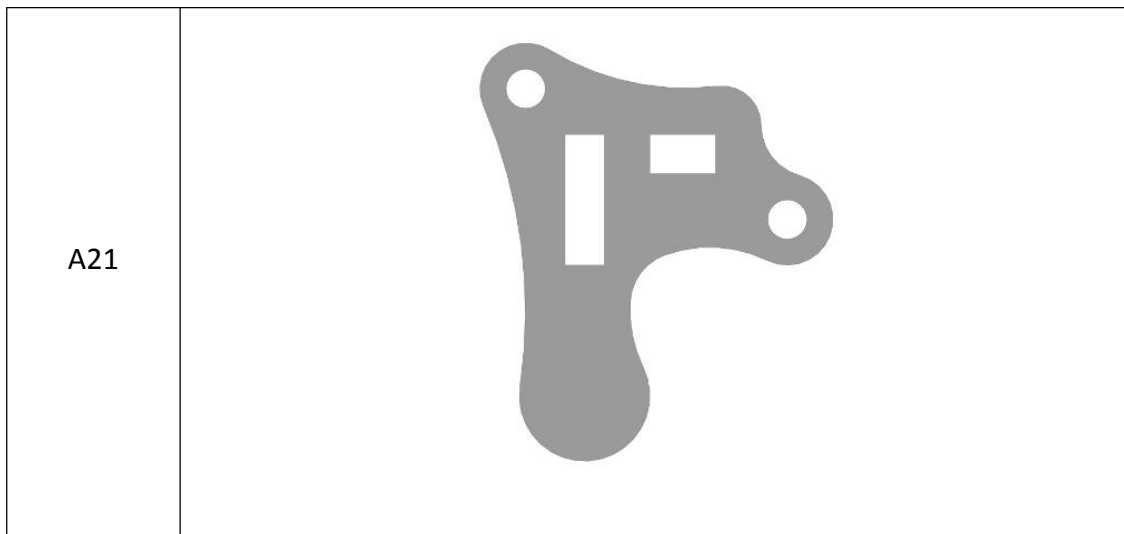




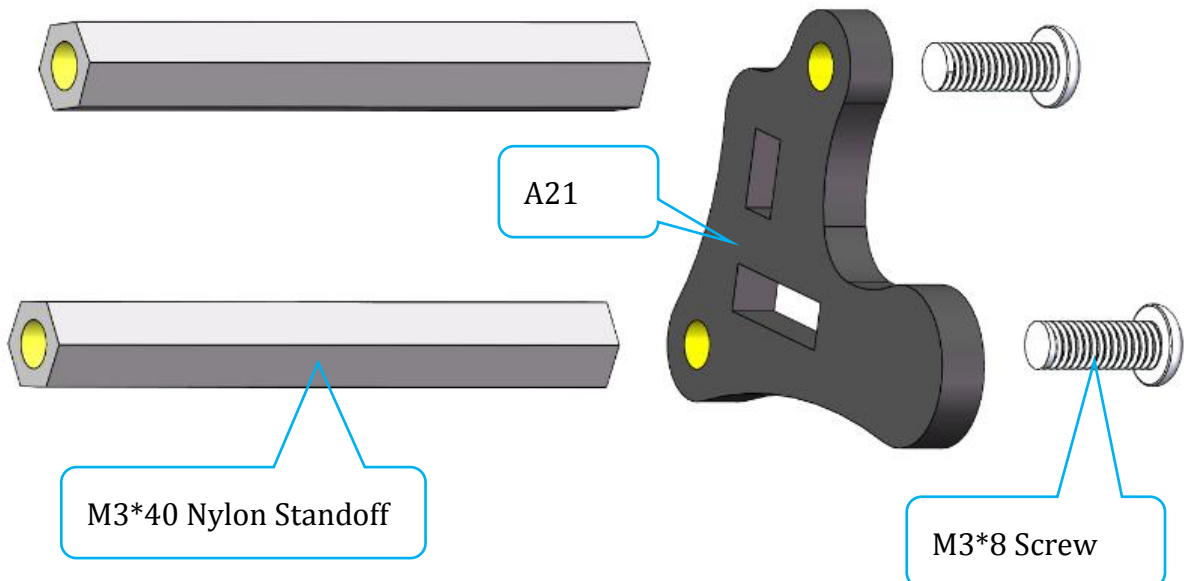
The effect after assembly:



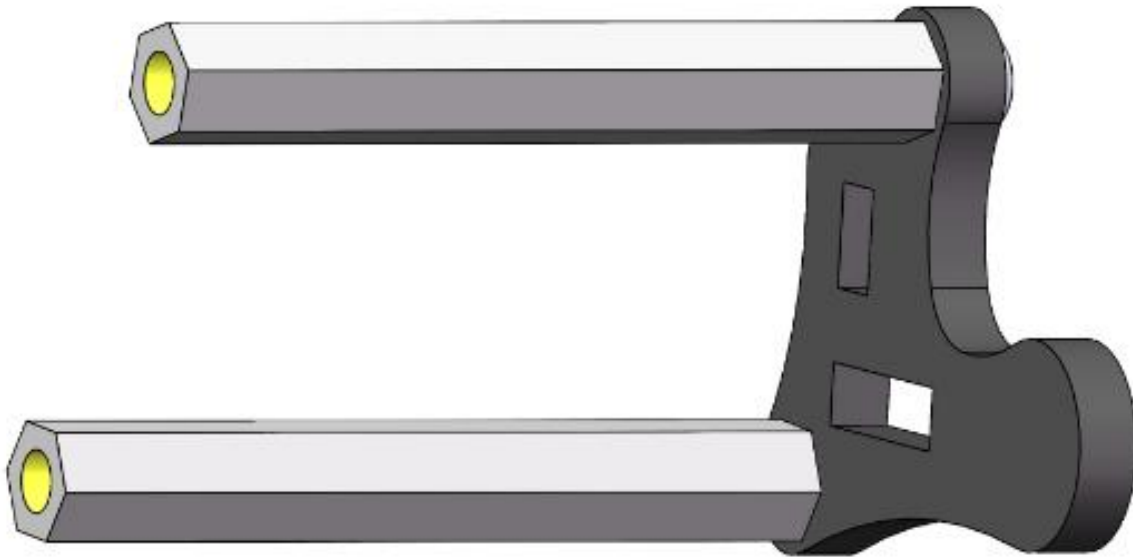
22. Install two **M3\*40 Nylon Standoffs** on **A21** using two **M3\*8 Screws**.



Assemble the following components:

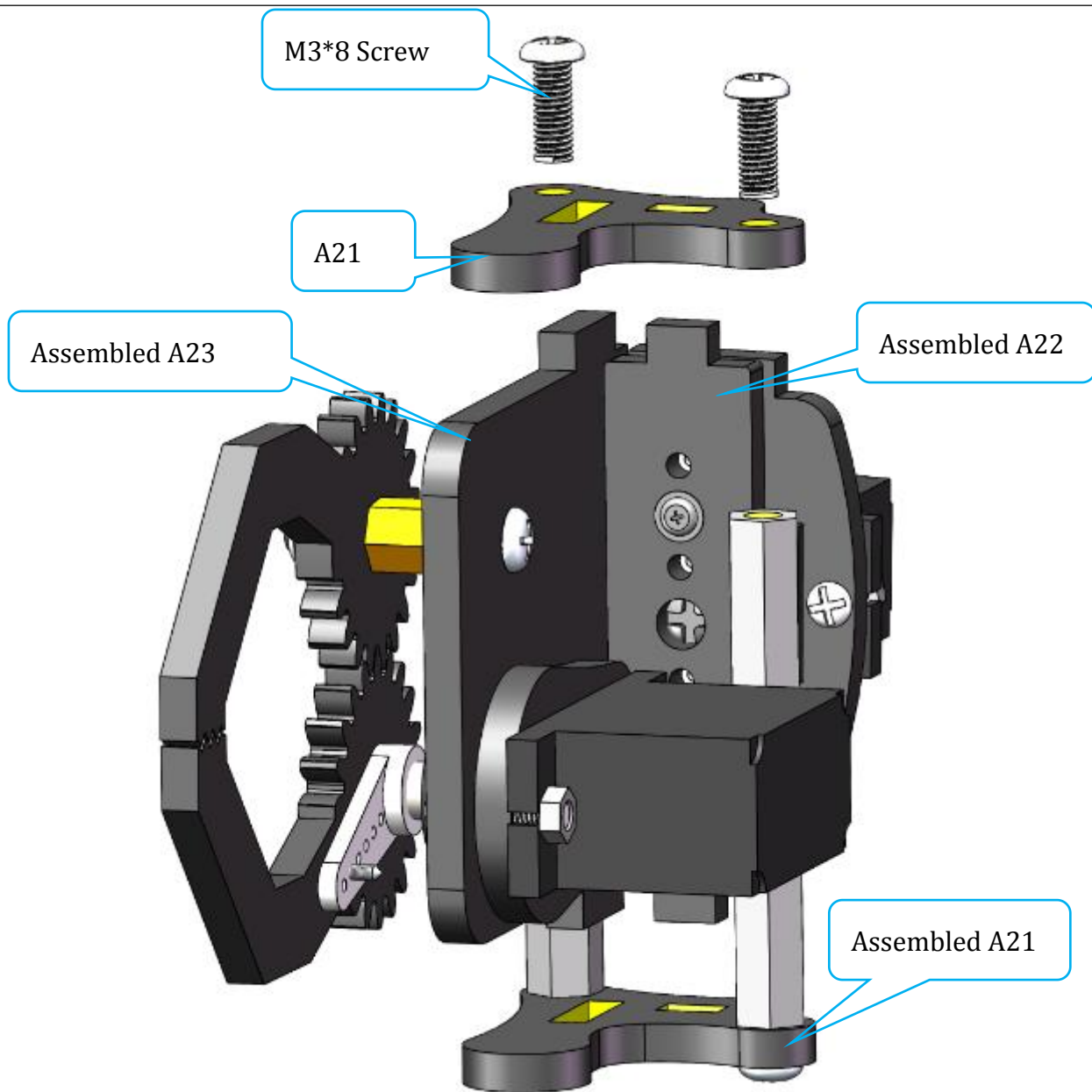


The effect after assembly:

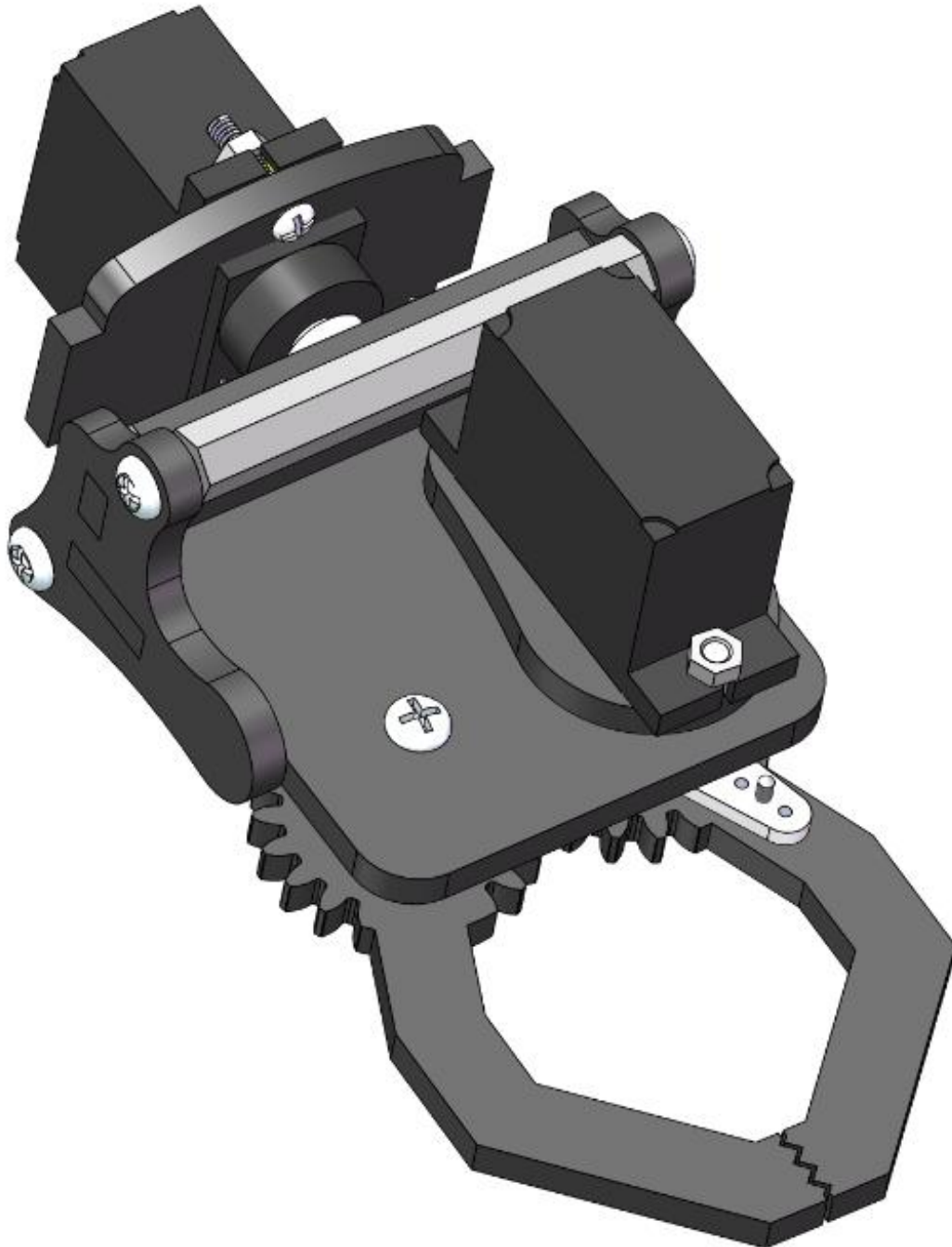


23. Combine the **assembled A21, A22, A23**, and another **A21** into a whole using two **M3\*8 Screws**.

Assemble the following components:

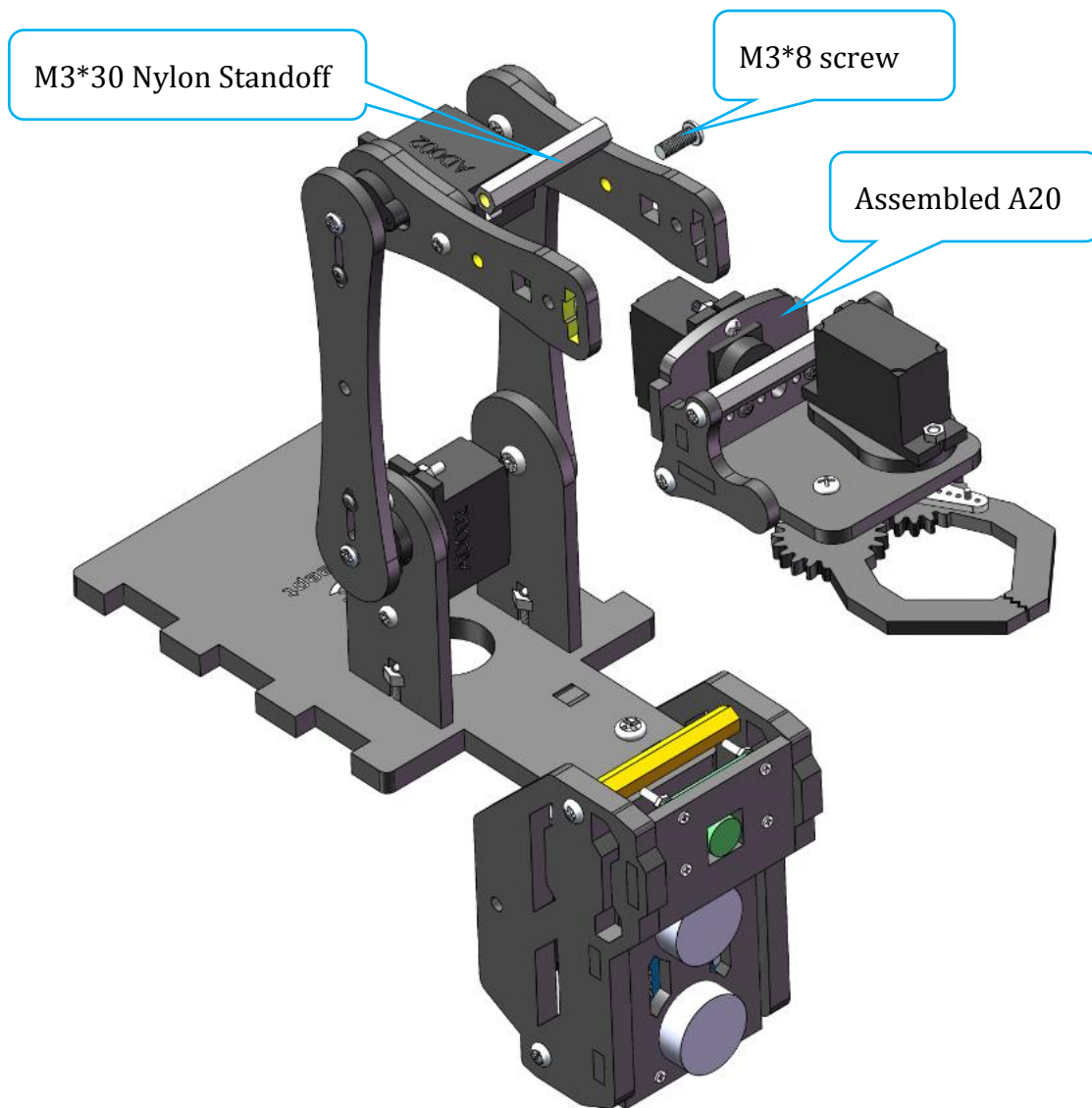


The effect after assembly:

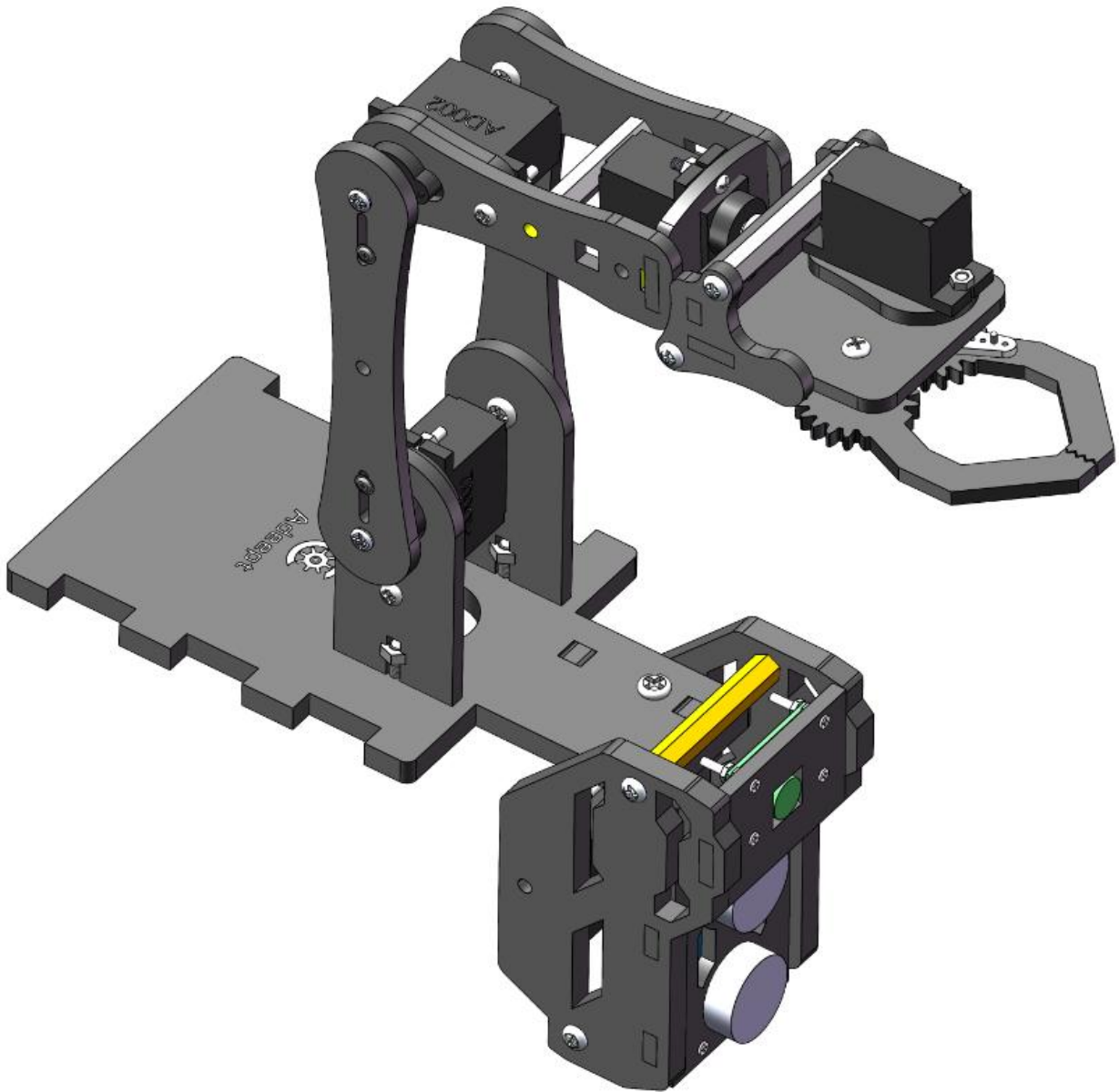


24. Combine the **assembled A20**, **A18**, and **A19** into a whole using one **M3\*8 Screw** and one **M3\*30 Nylon Standoff**.

Assemble the following components:



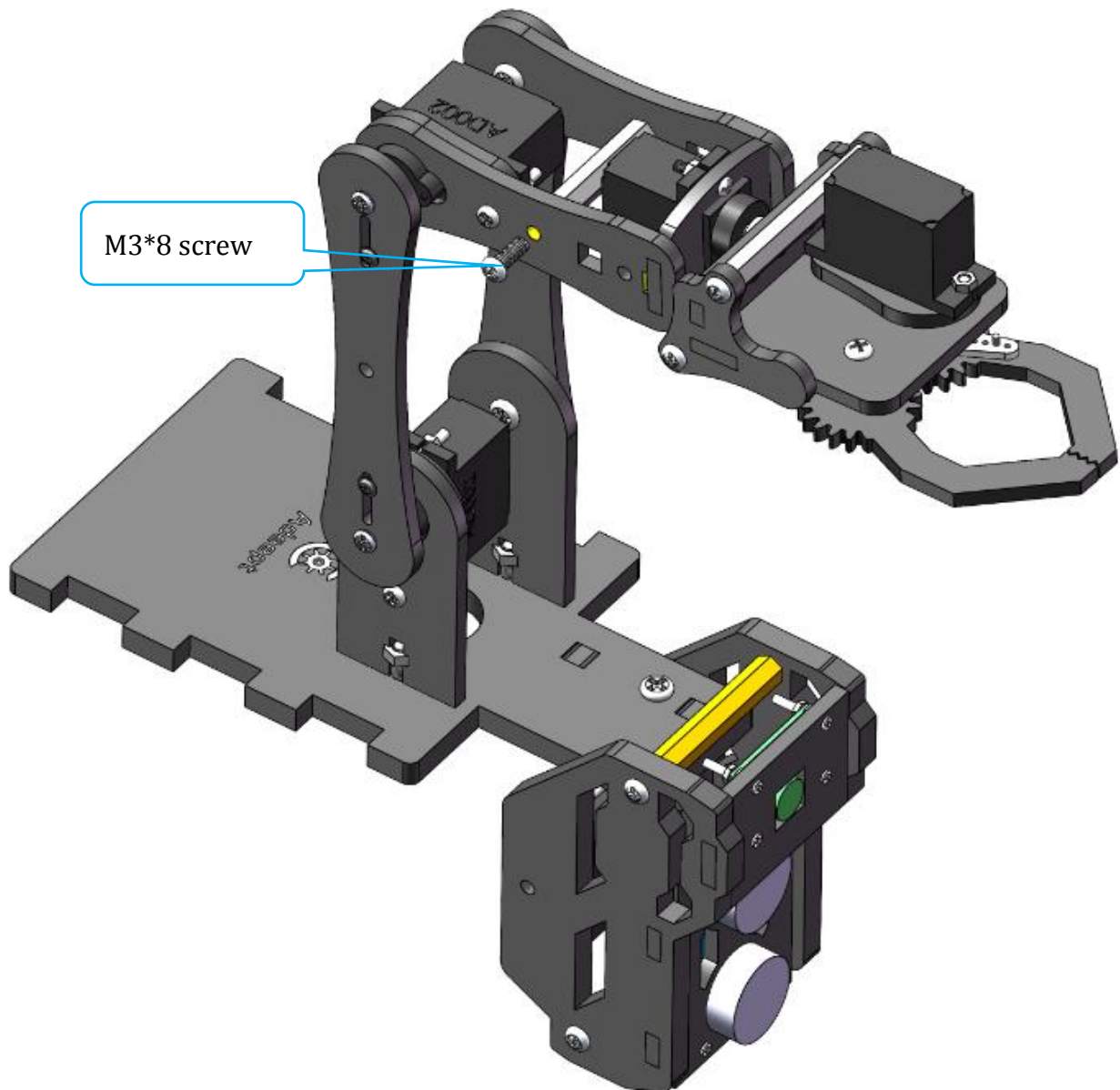
The effect after assembly:



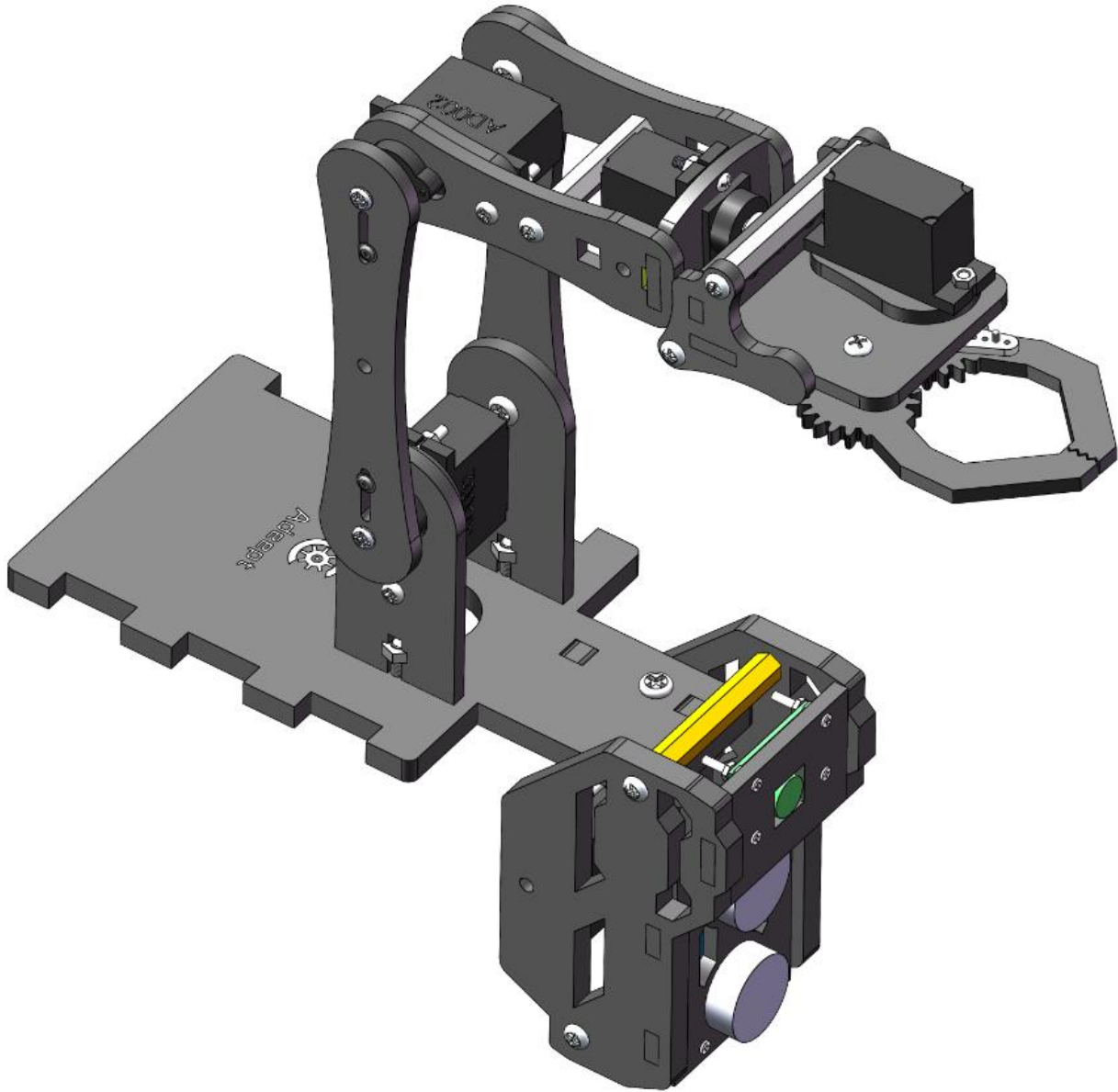


Then use one **M3\*8 Screw** to fix.

Assemble the following components:



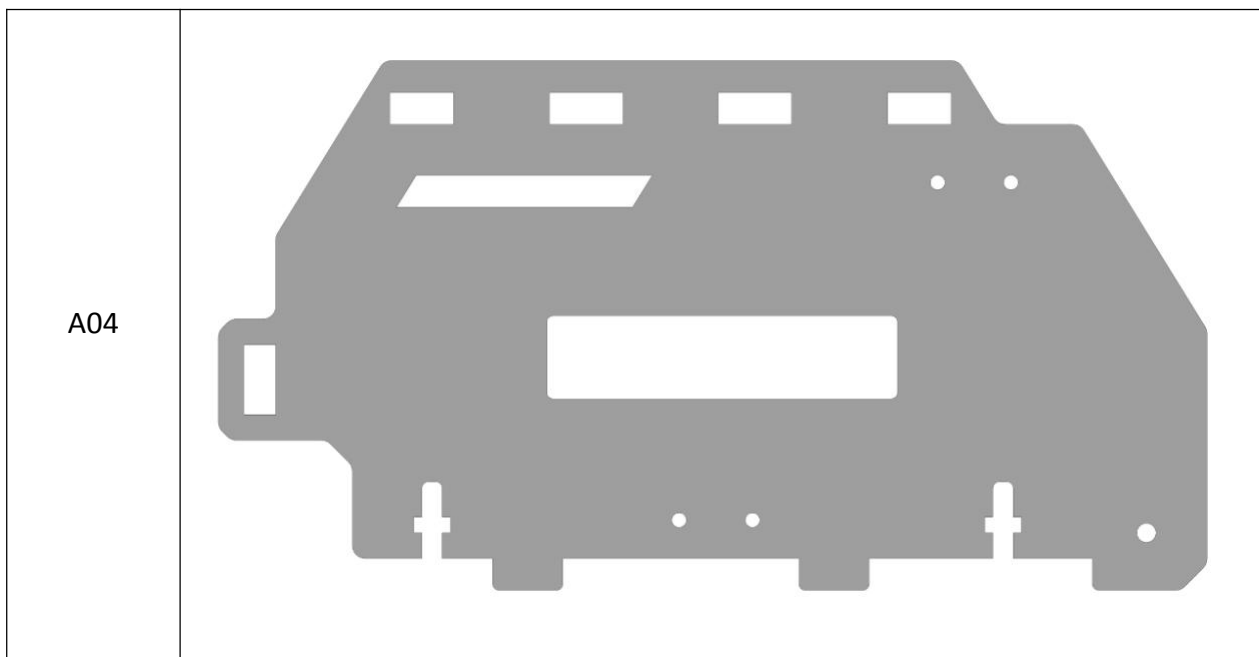
The effect after assembly:



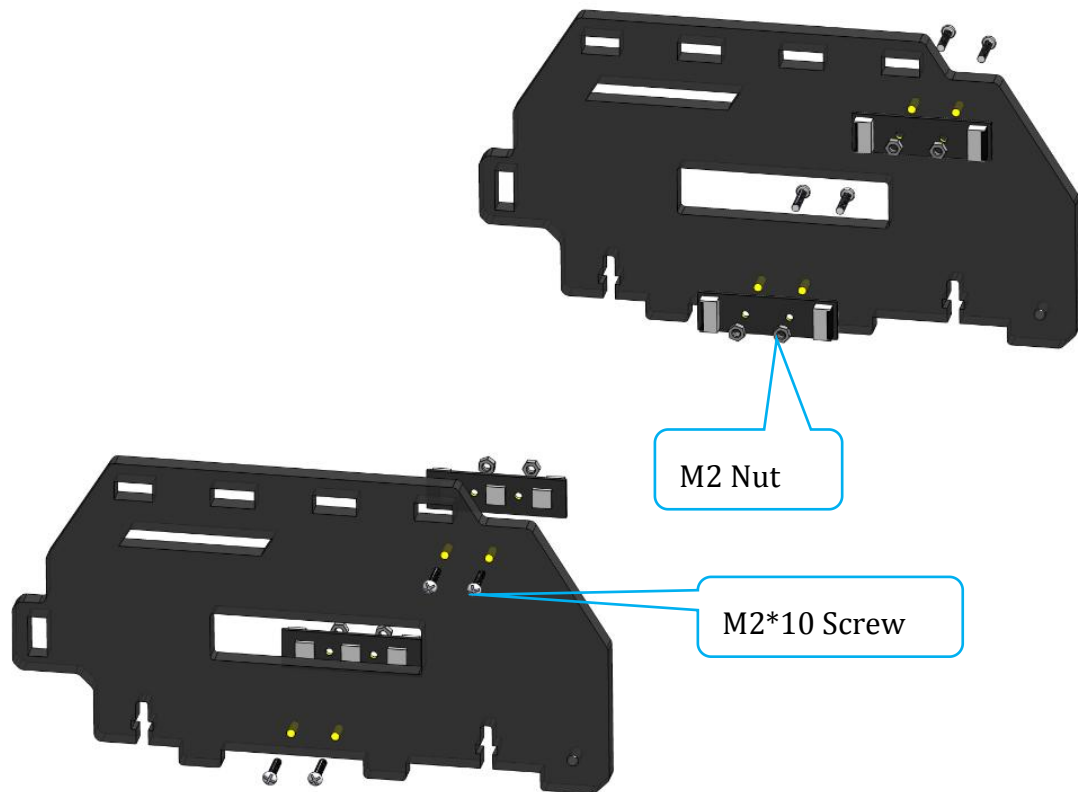
## Assemble the chassis

1. Fix 4pcs **WS2812 RGB LED light strips** on **A04** with 8pcs **M2\*10 Screws** and 8pcs **M2 Nuts**.

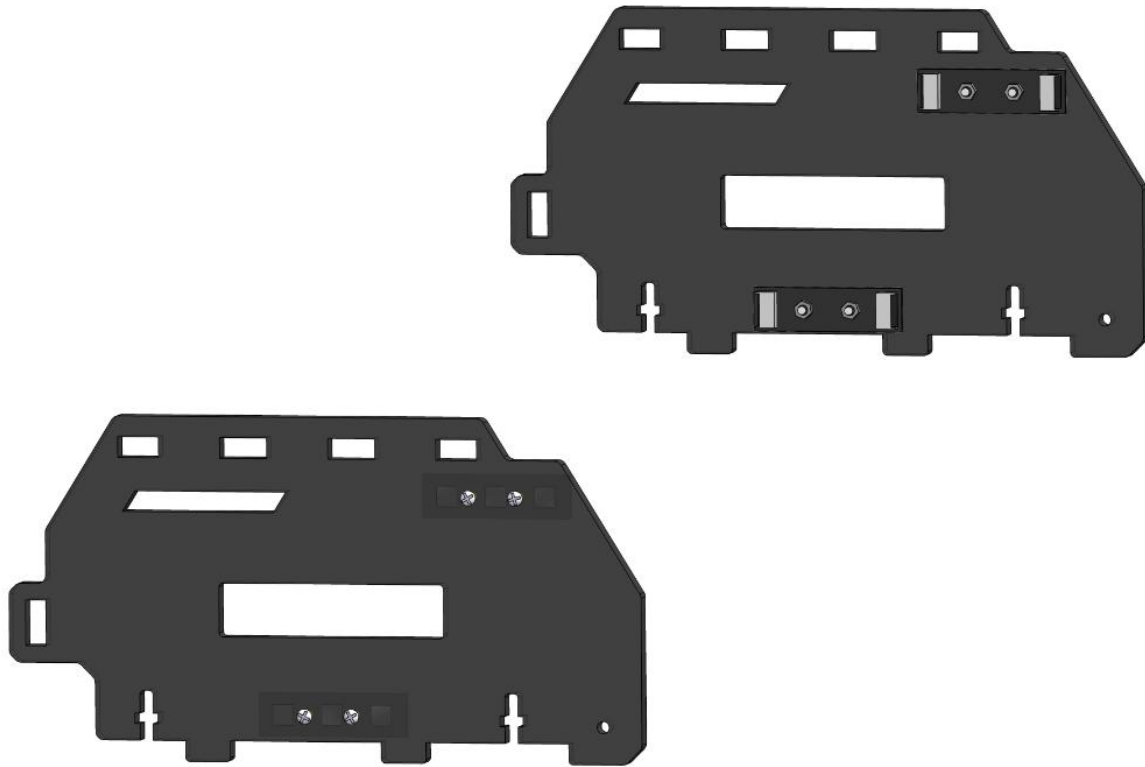
**NOTE:** Please ensure that the cables of the WS2812 light strips are connected properly.



Assemble the following components:

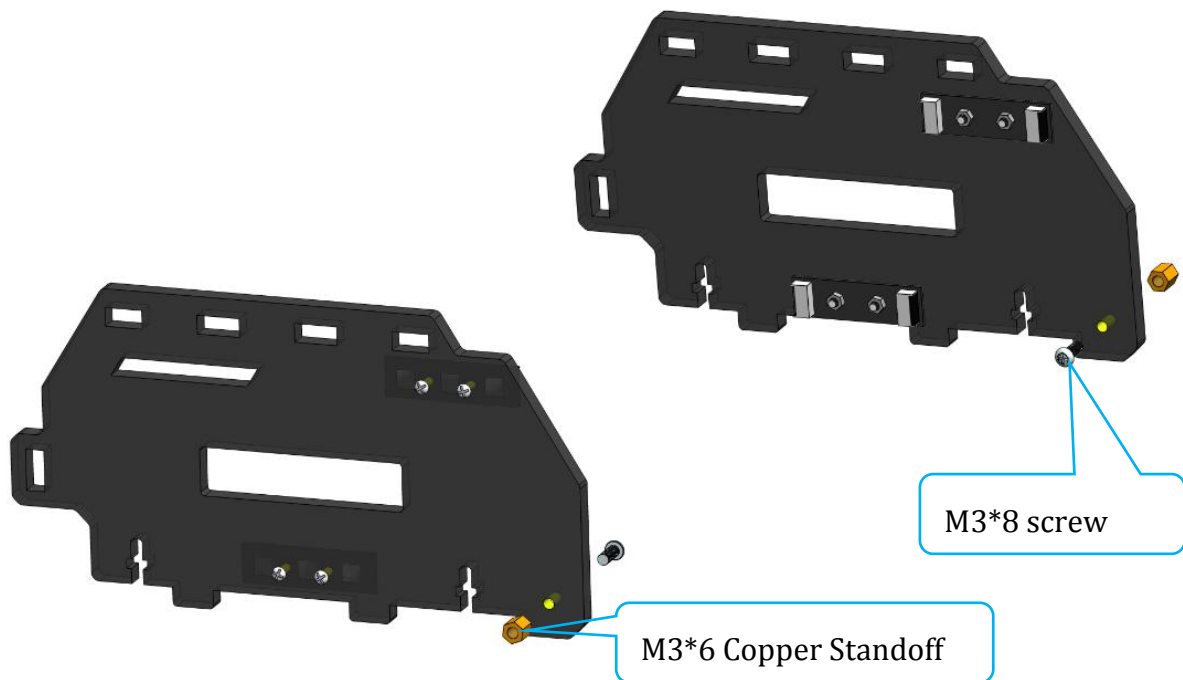


The effect after assembly:

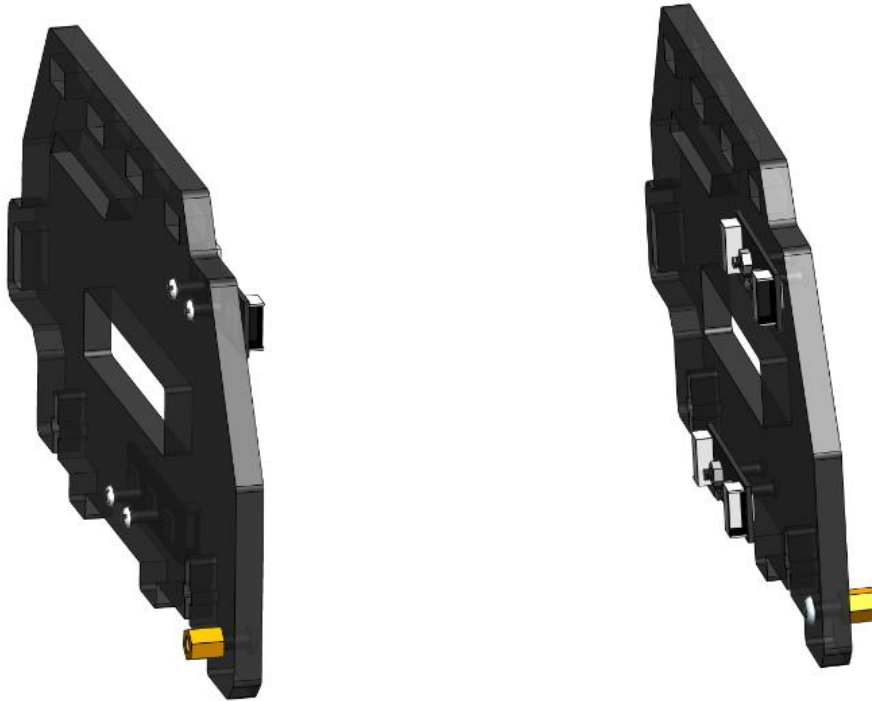


2. Use two **M3\*8 Screws** to fix two **M3\*6 Copper Standoffs** on two **A04** respectively.

**NOTE:** **Copper Standoffs** and **WS2812 RGB LED strips** are installed on **different sides** of **A04**.

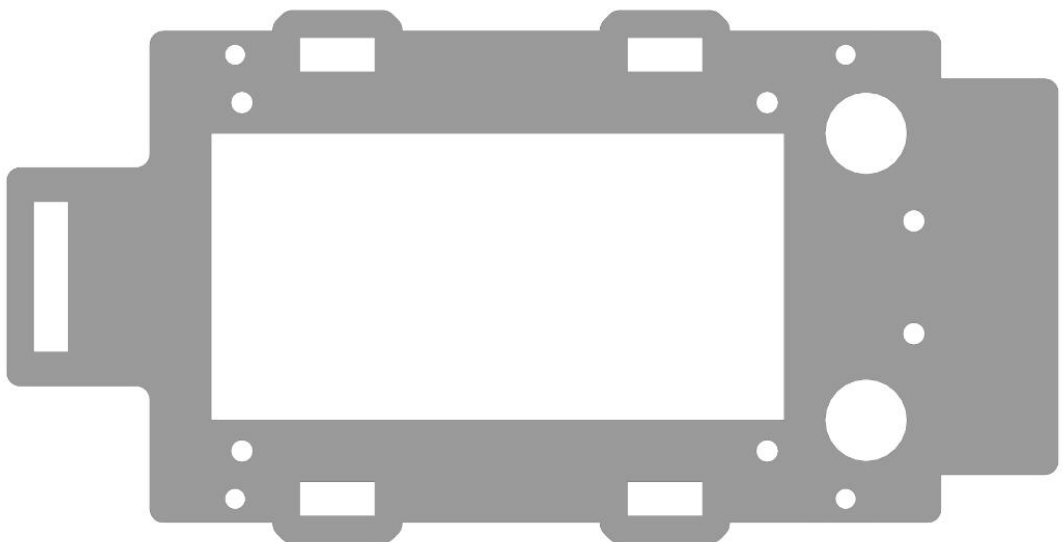


The effect after assembly:

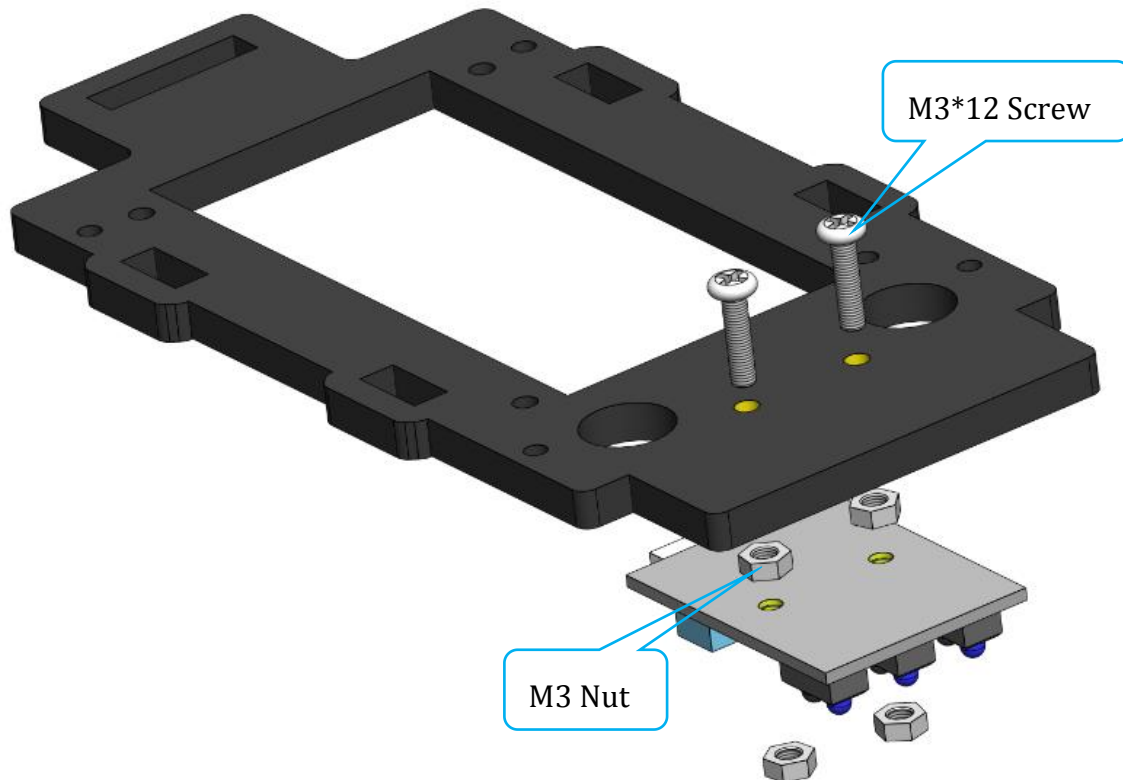


3. Secure the **3-CH Line Tracking Module** to **A01** with two **M3\*12 Screws** and four **M3 Nuts**.

A01



Assemble the following components:

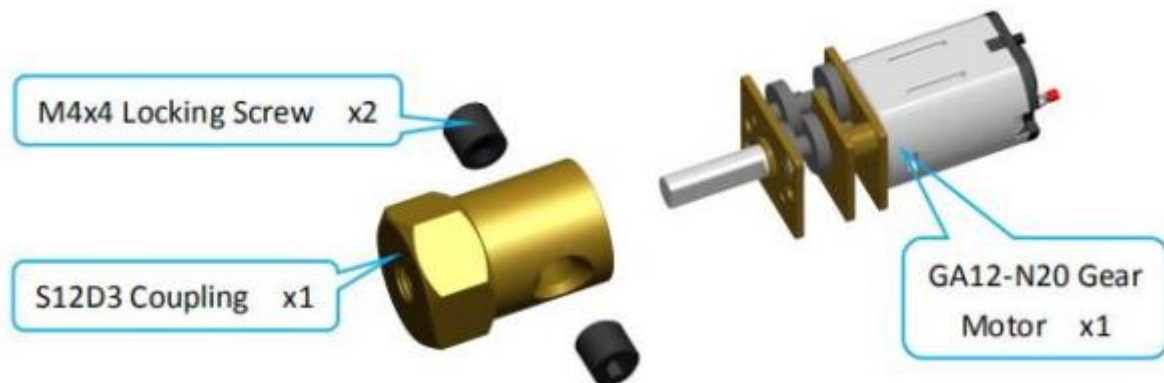


The effect after assembly:

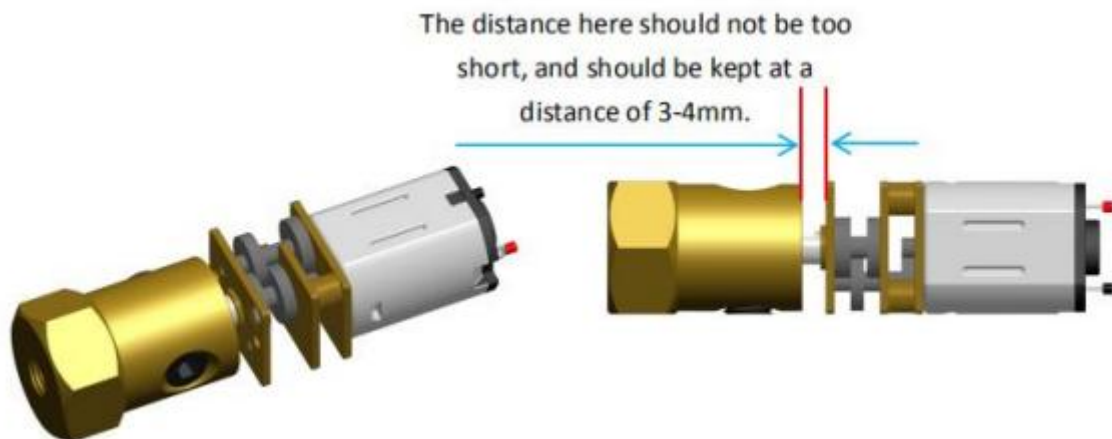


4. Fix the **S12D3 Coupling** onto the shaft of the GA12-N20 Gear Motor with two **M4\*4 locking Screws**(These screws are package together with the couplings. Please use an L-shaped wrench to tighten the screw). (Assemble 2 sets)

Assemble the following components:



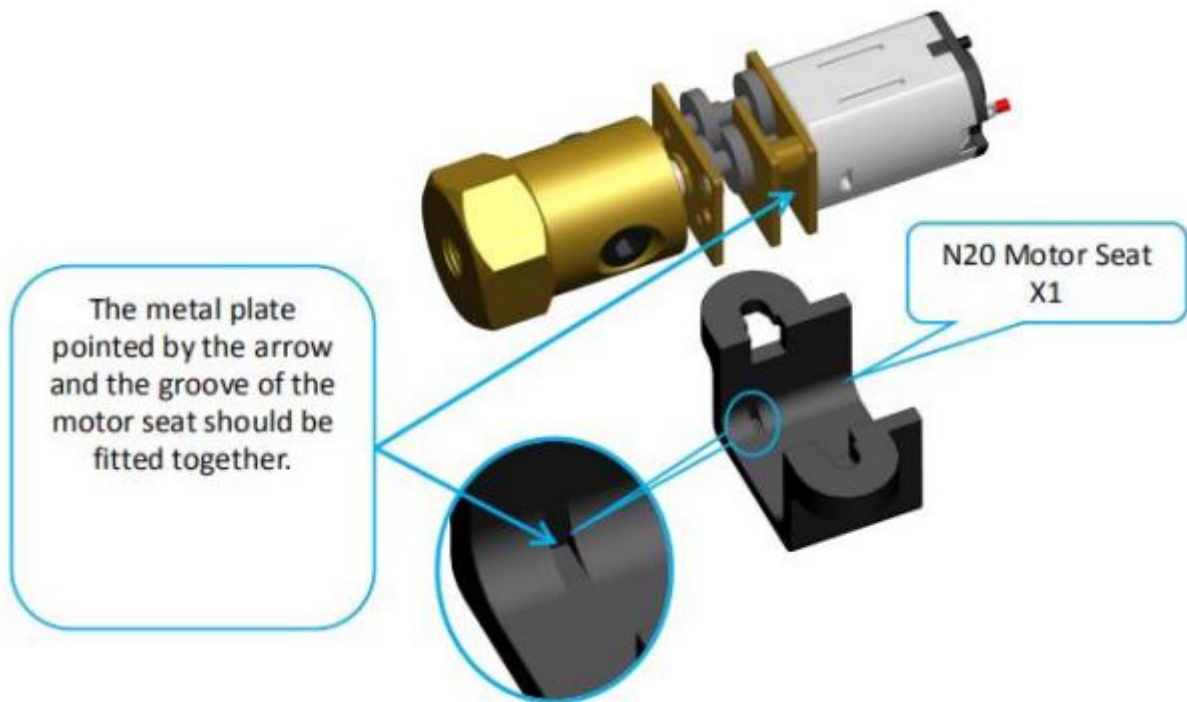
The effect after assembly:





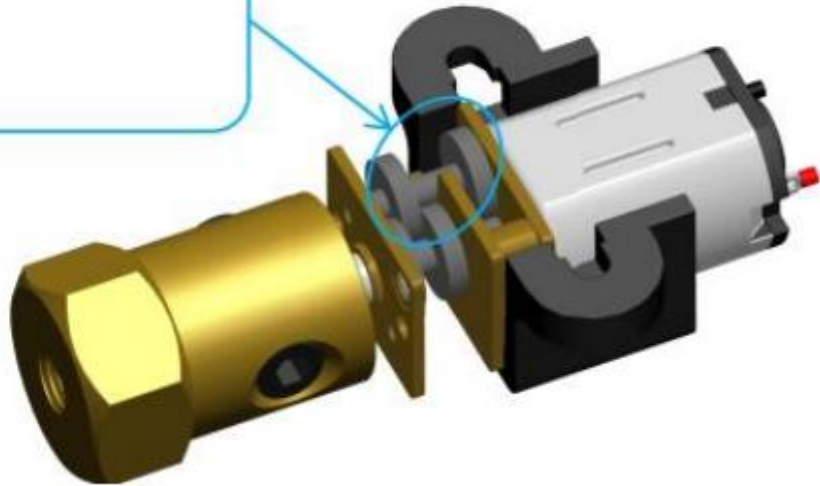
5. Install the N20 Gear Motor into the **Motor Seat/Holder**. (Assemble 2 sets)

Note: Please keep the motor installation position consistent with the picture, which will affect the smoothness of the tracked vehicle's rotation.



The effect after assembly:

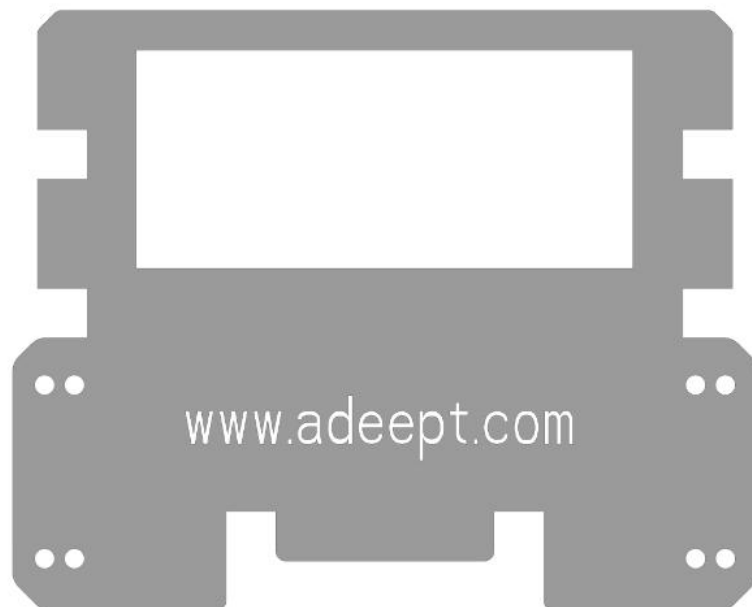
Here the metal plate with a notch is on the outside.



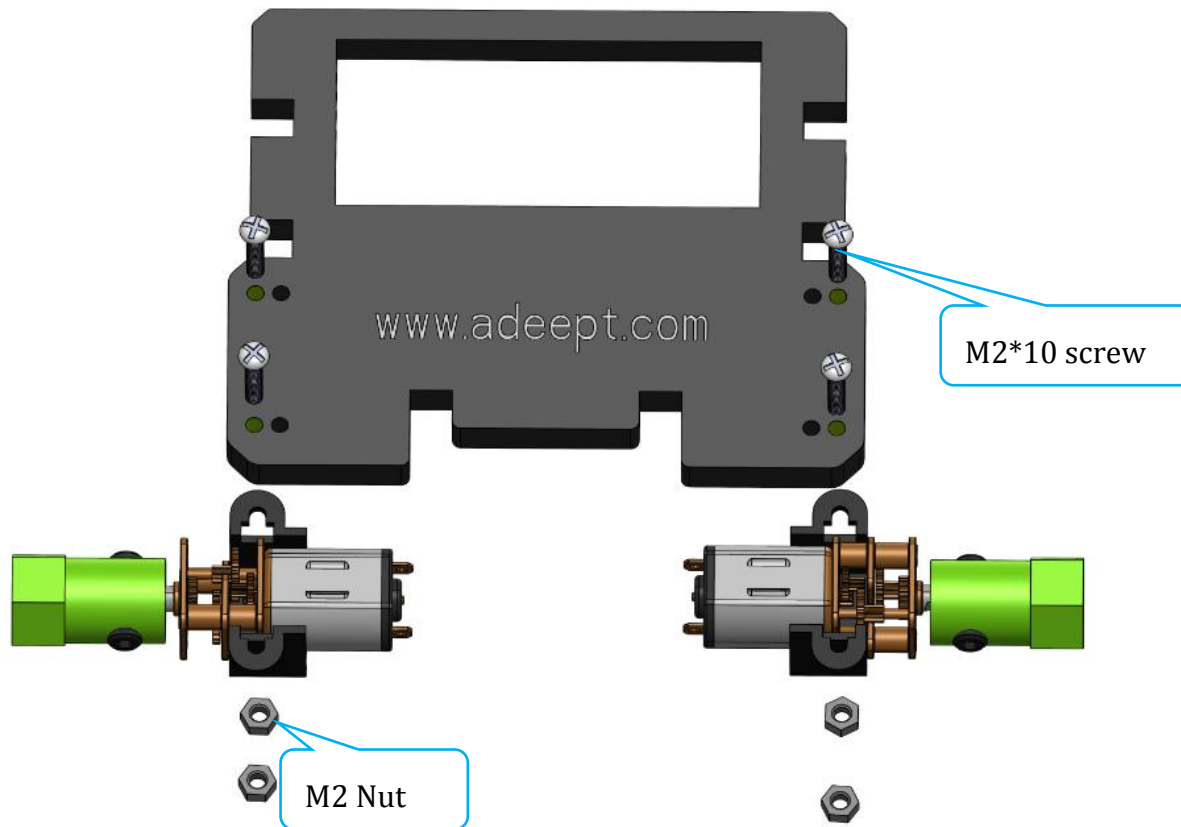
6. Fix the **Motor Seat** on **A05** with 4pcs **M2\*10 Screws** and 4pcs **M2 Nuts**.

**Note:** Screws, nuts, and N20 Motor Seats are packed in the same transparent bag.

A05



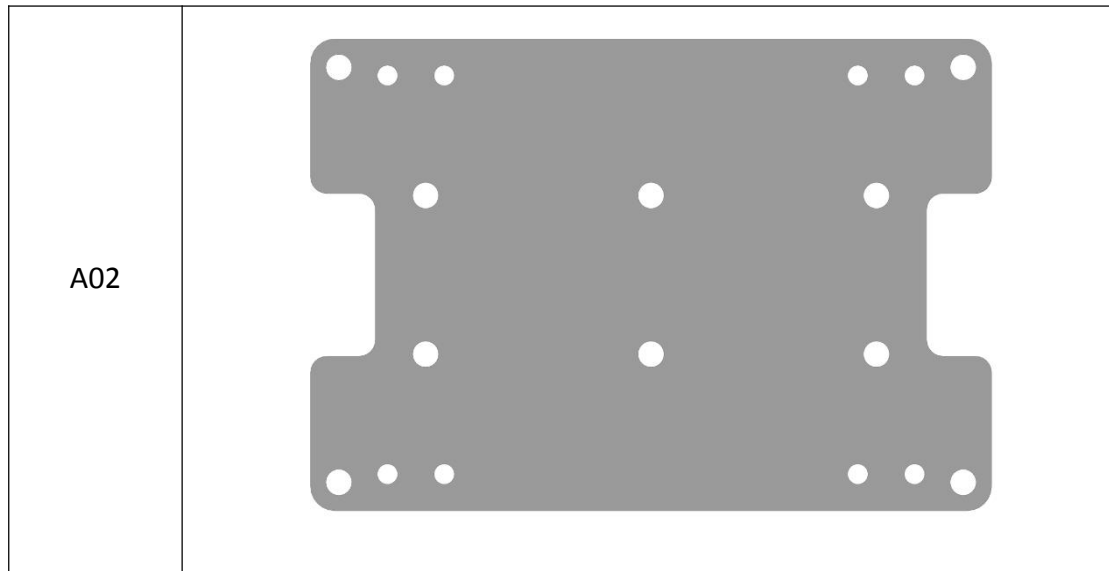
Assemble the following components:



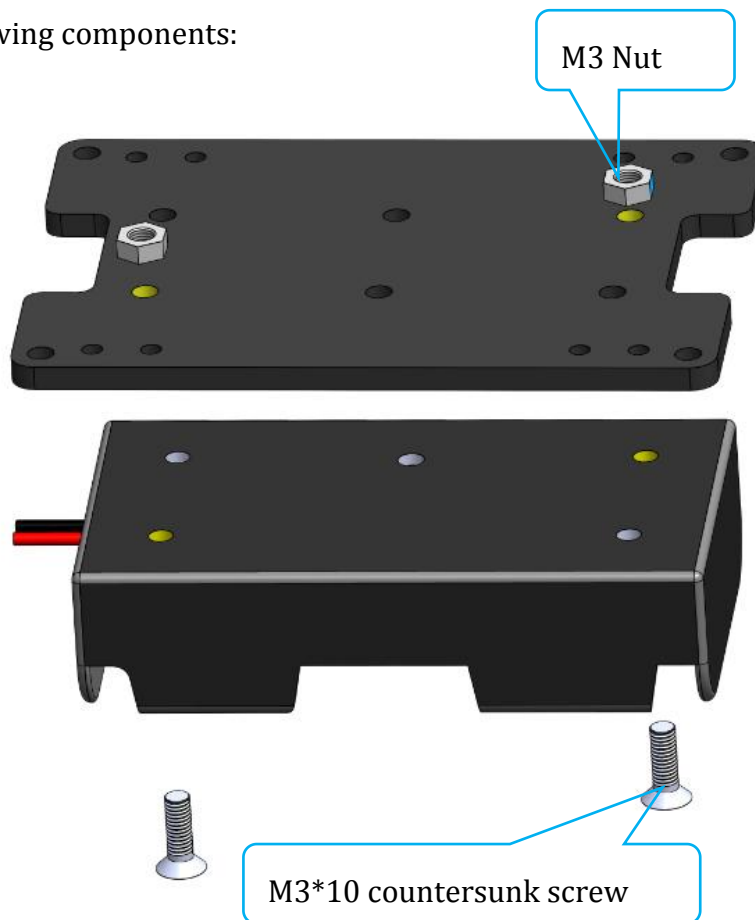
The effect after assembly:



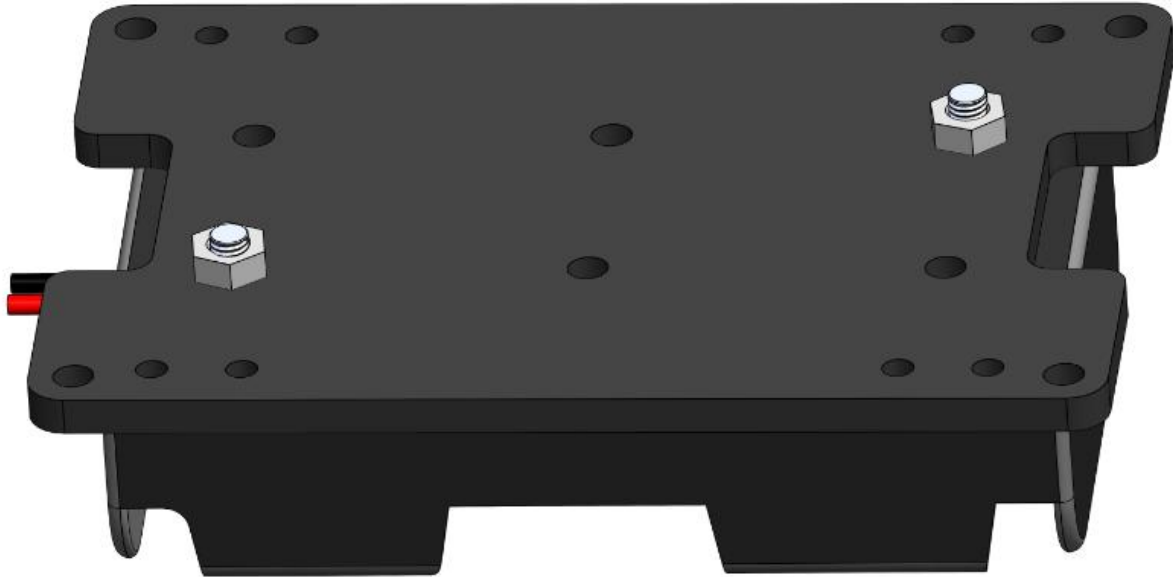
7. Secure the **Battery Holder** to **A02** with two **M3\*10 Countersunk Screws** and two **M3 Nuts**.



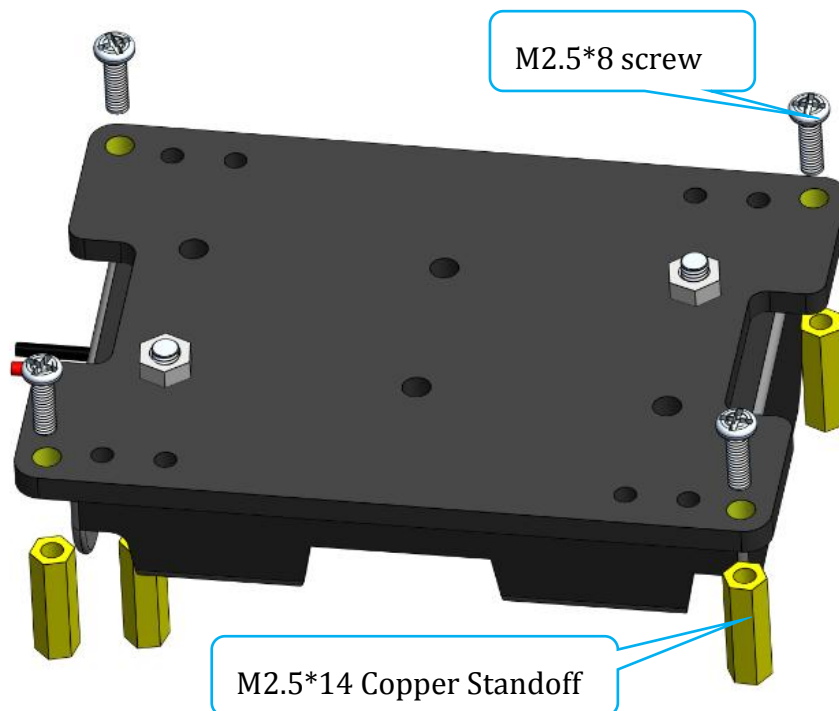
Assemble the following components:



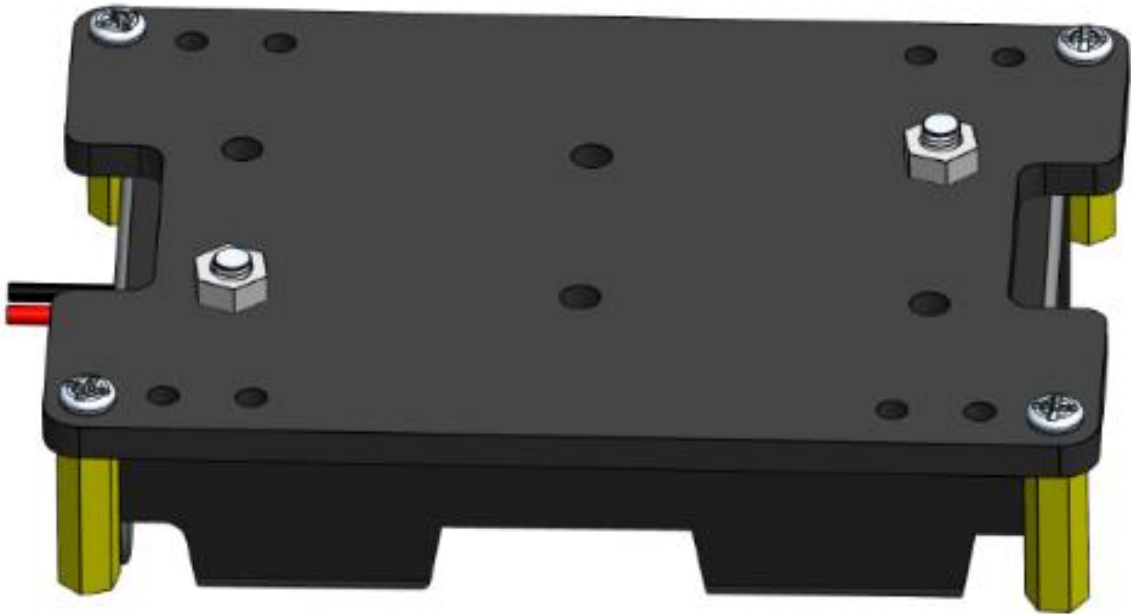
The effect after assembly:



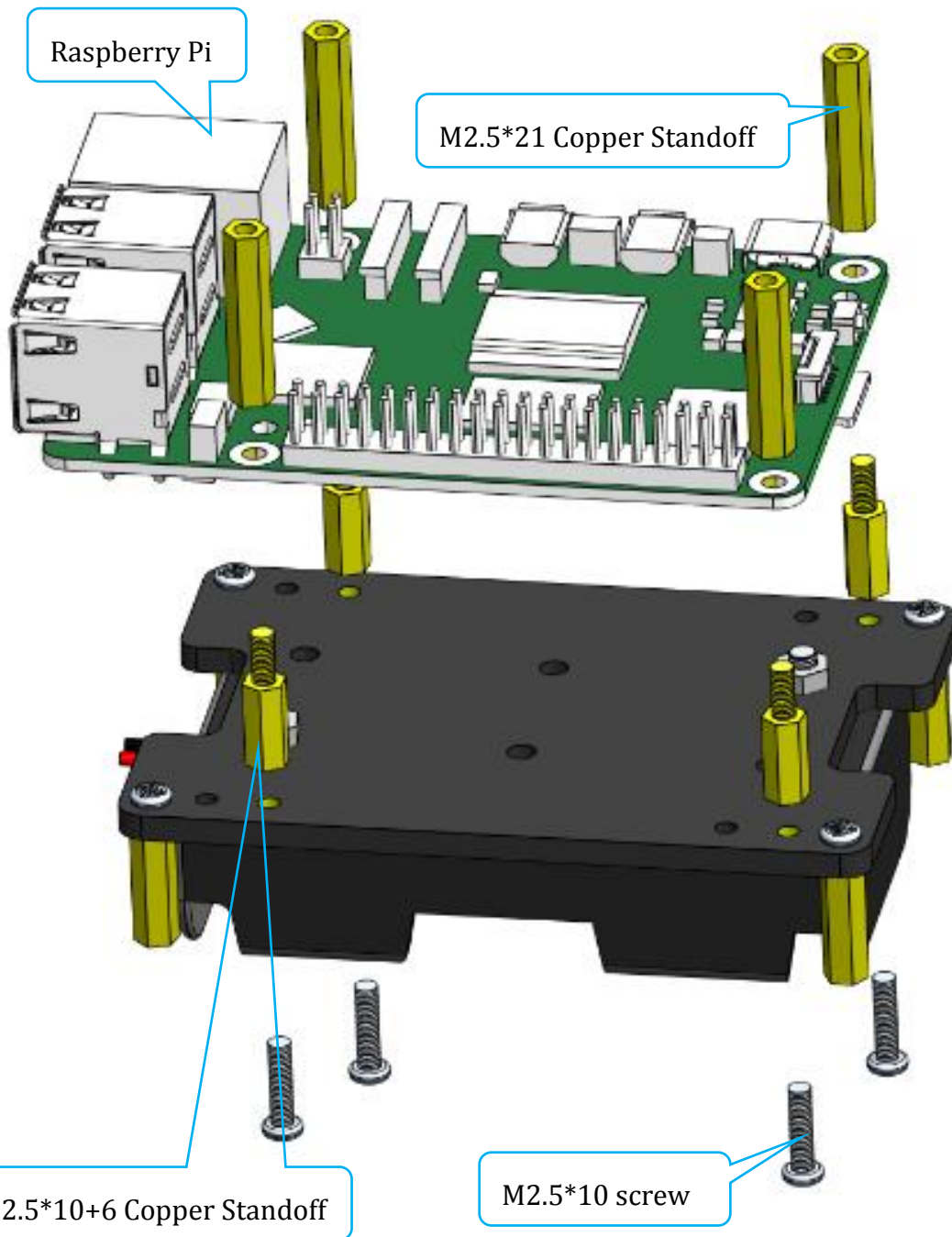
8. Fix four **M2.5\*14 Copper Standoffs** onto A02 with four **M2.5\*8 Screws**.



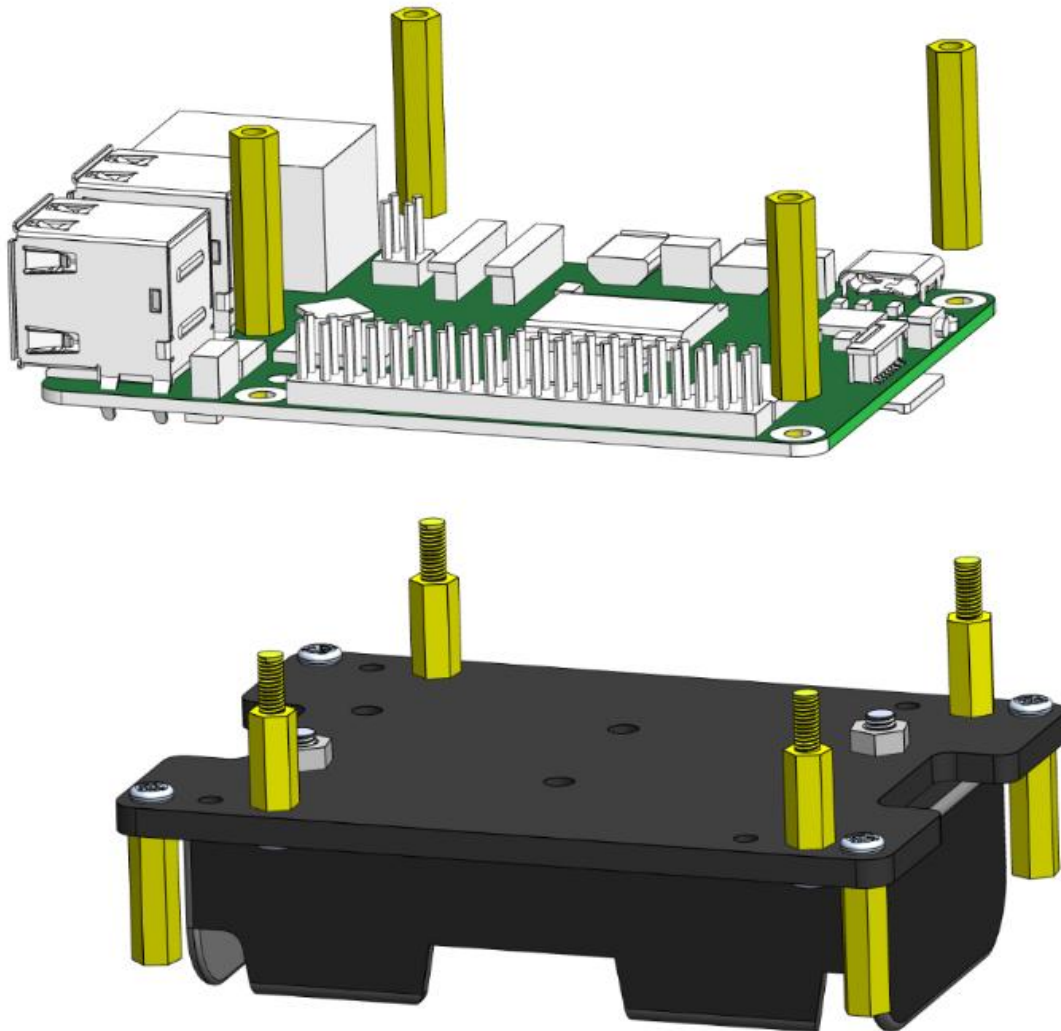
The effect after assembly:



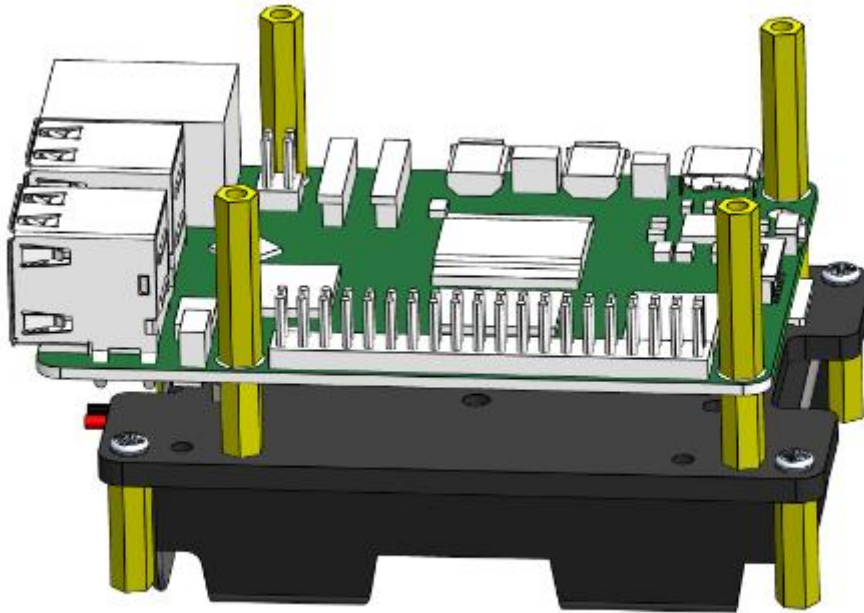
9. Secure the **Raspberry Pi board**(**Not included in this kit, you need to purchase**) to A02 with four **M2.5\*10+6 Copper Standoffs**, four **M2.5\*21 Copper Standoffs**, and four **M2.5\*10 Screws**.



The effect after assembly:



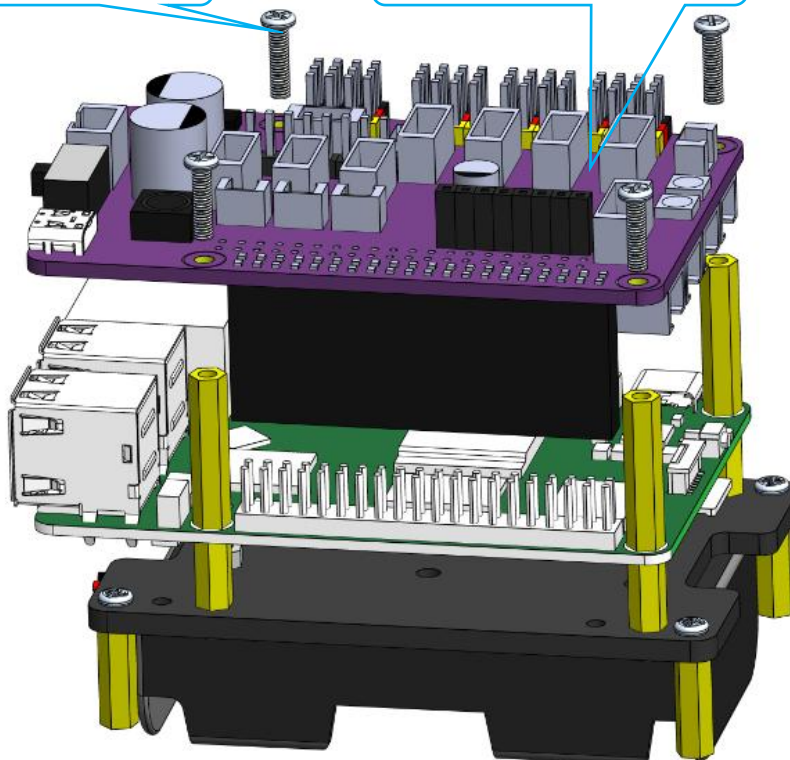




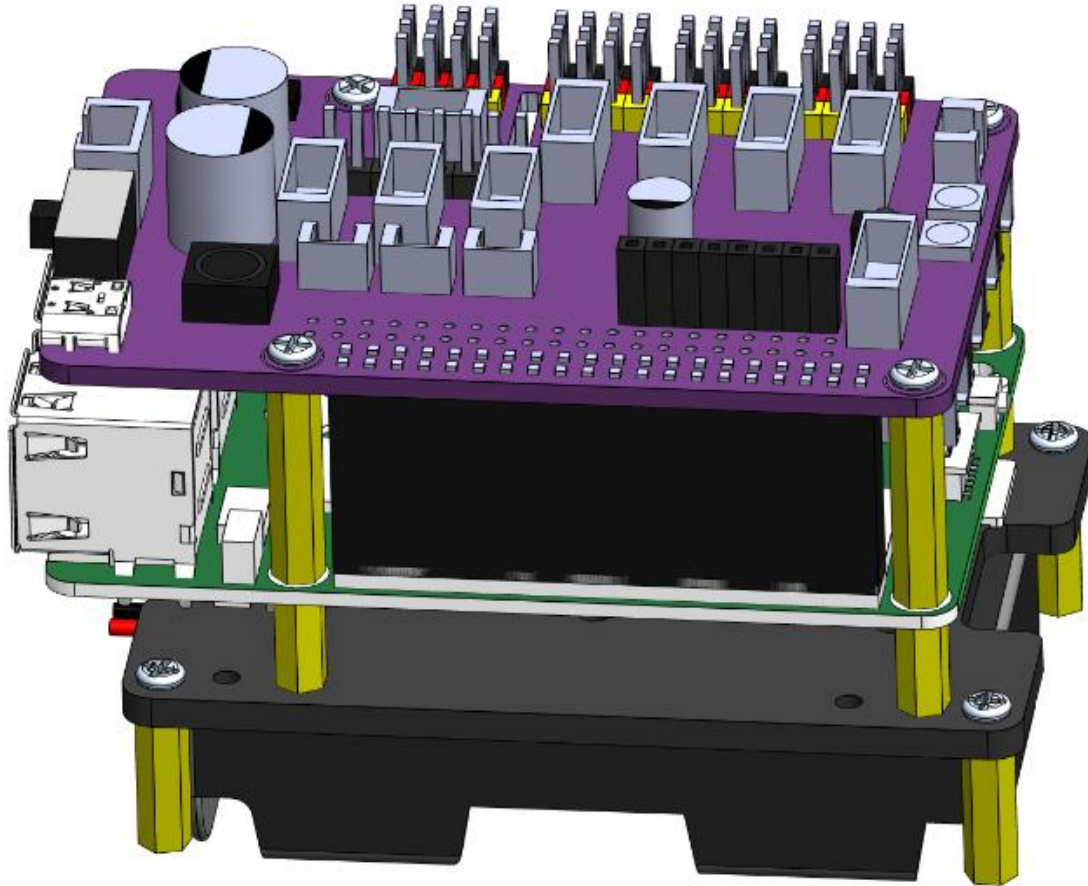
10. Secure **Adeept Robot HAT V3.1** to Raspberry Pi with 4pcs **M2.5\*8 Screws**.

M2.5\*8 Screw

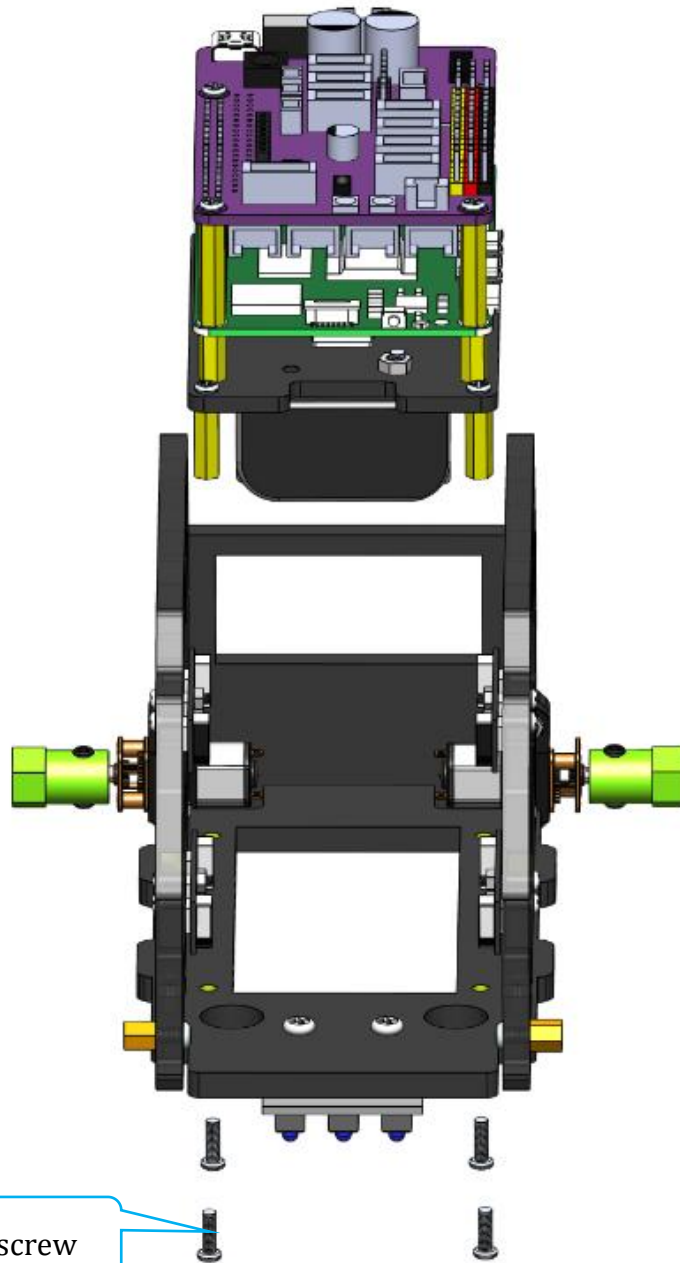
Adeept Robot HAT V3.1



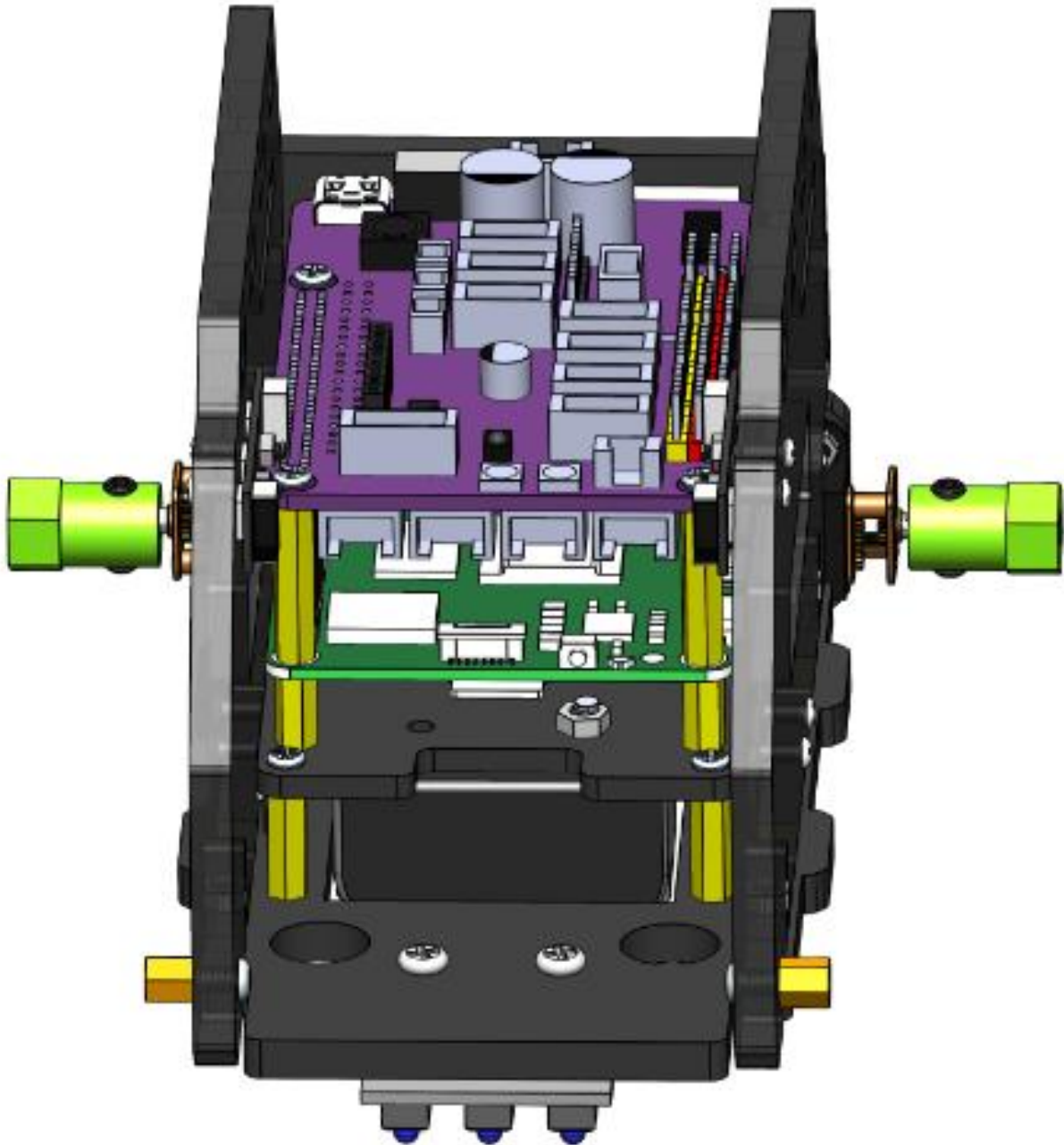
The effect after assembly:



11. Fix the **assembled A02** onto **A01** with 4pcs **M2.5\*10 Screws**.

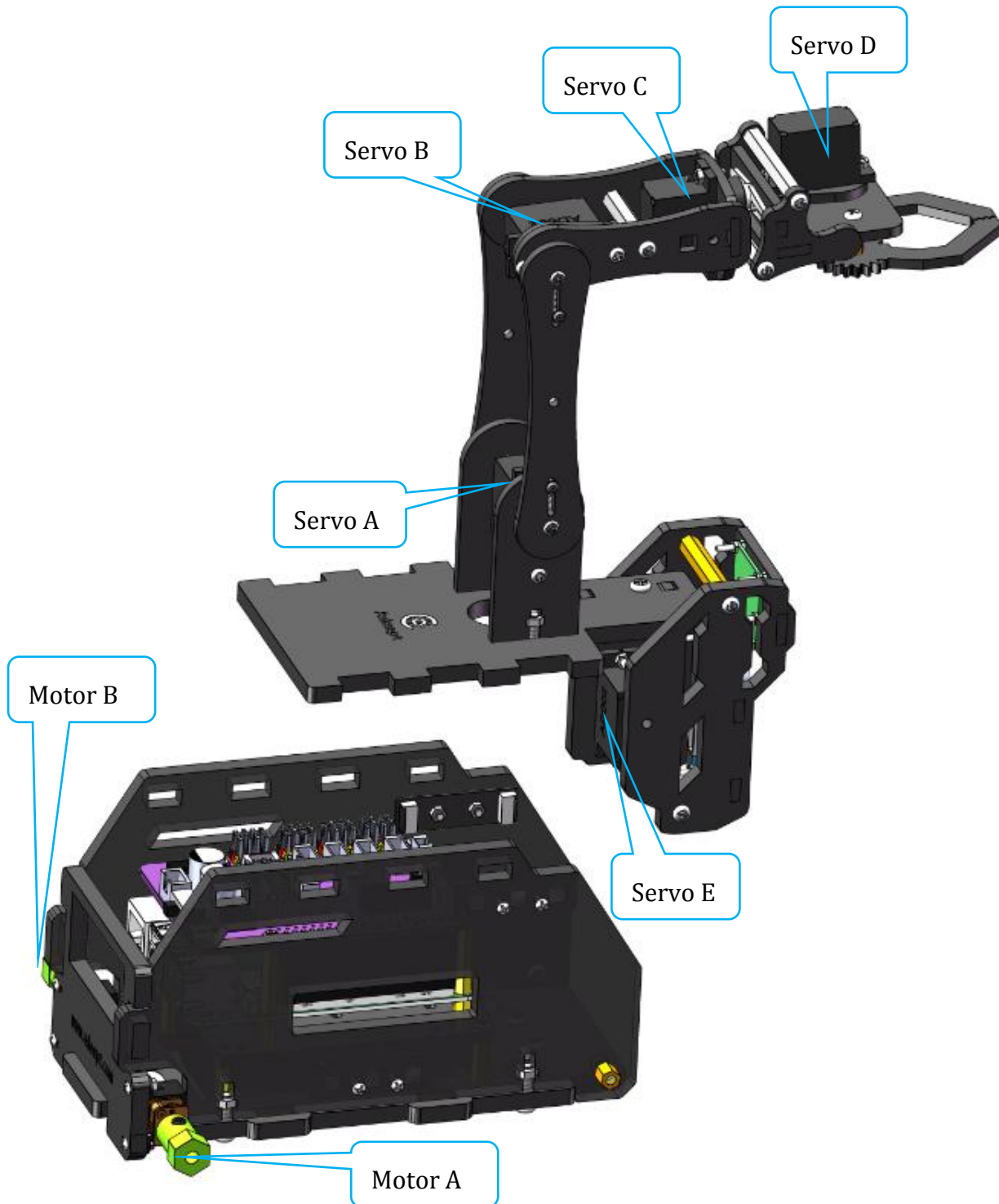


The effect after assembly:

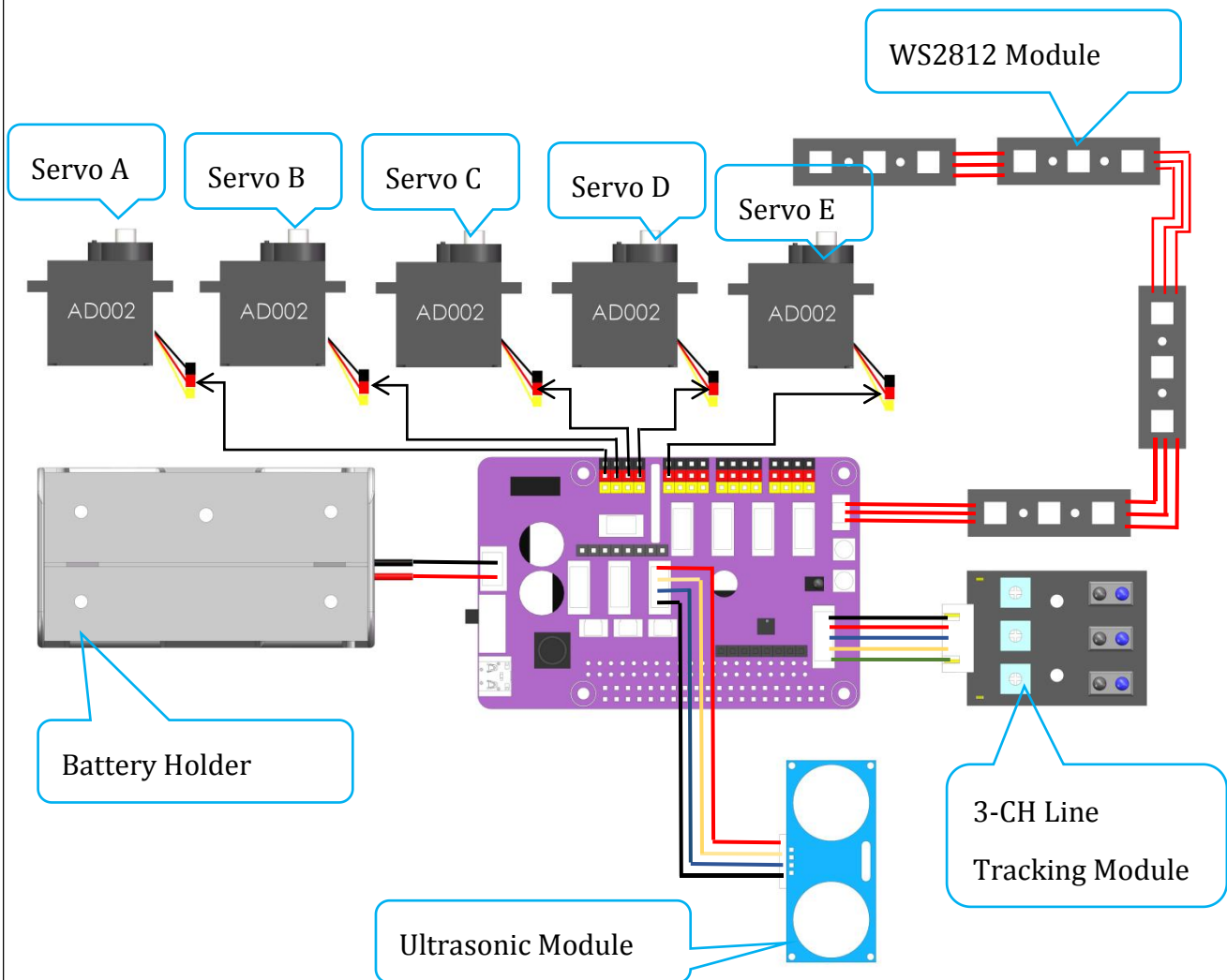


## Cables Connection

There are 5 servo motors, and the **Servo D** needs to be connected to Robot HAT through an **extension cable**(included in this kit) because it is too far away from Robot HAT.



Connect the components as shown in the figure. The cables must be matched with the ports.



Servo A: Port 0

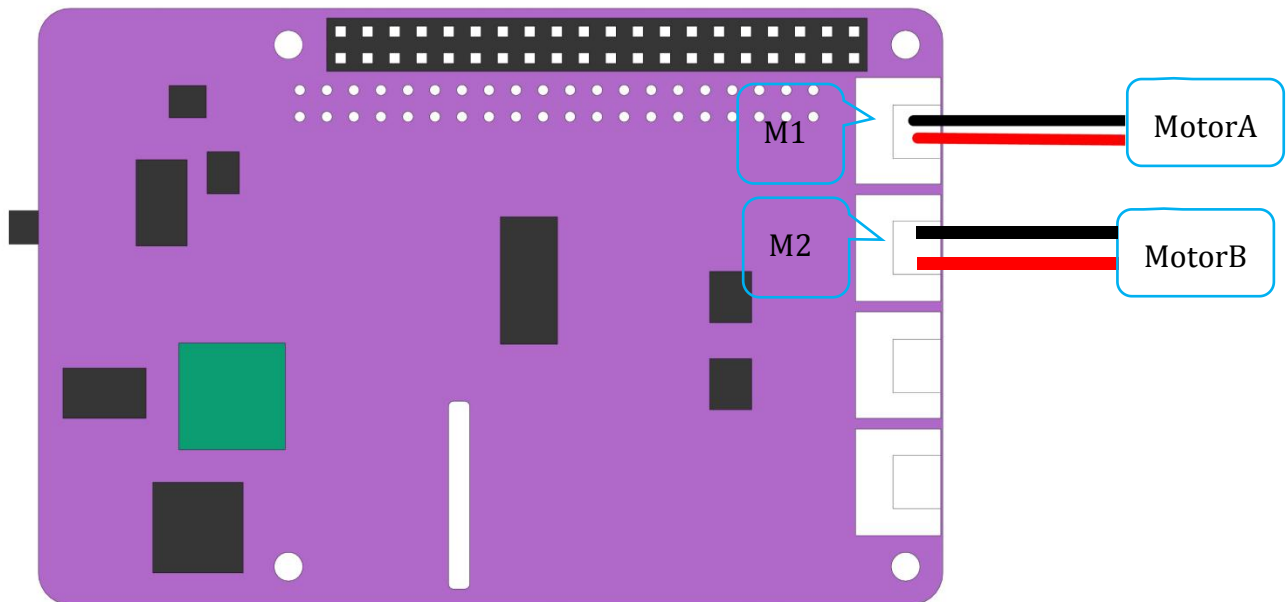
Servo B: Port 1

Servo C: Port 2

Servo D: Port 3

Servo E: Port 4

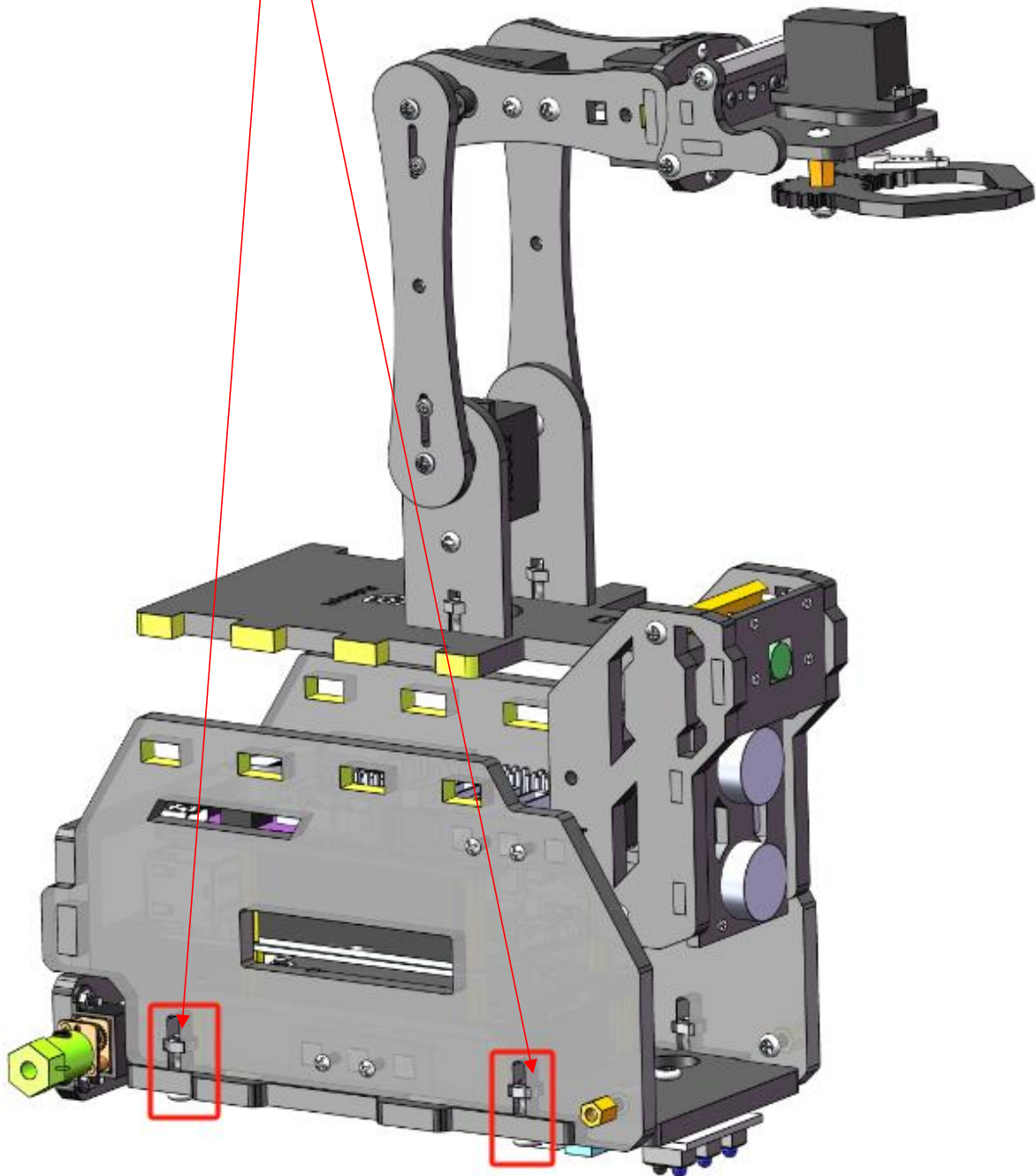


**NOTE:**

Don't forget to plug the camera cable into the corresponding slot on the Raspberry Pi board !!!

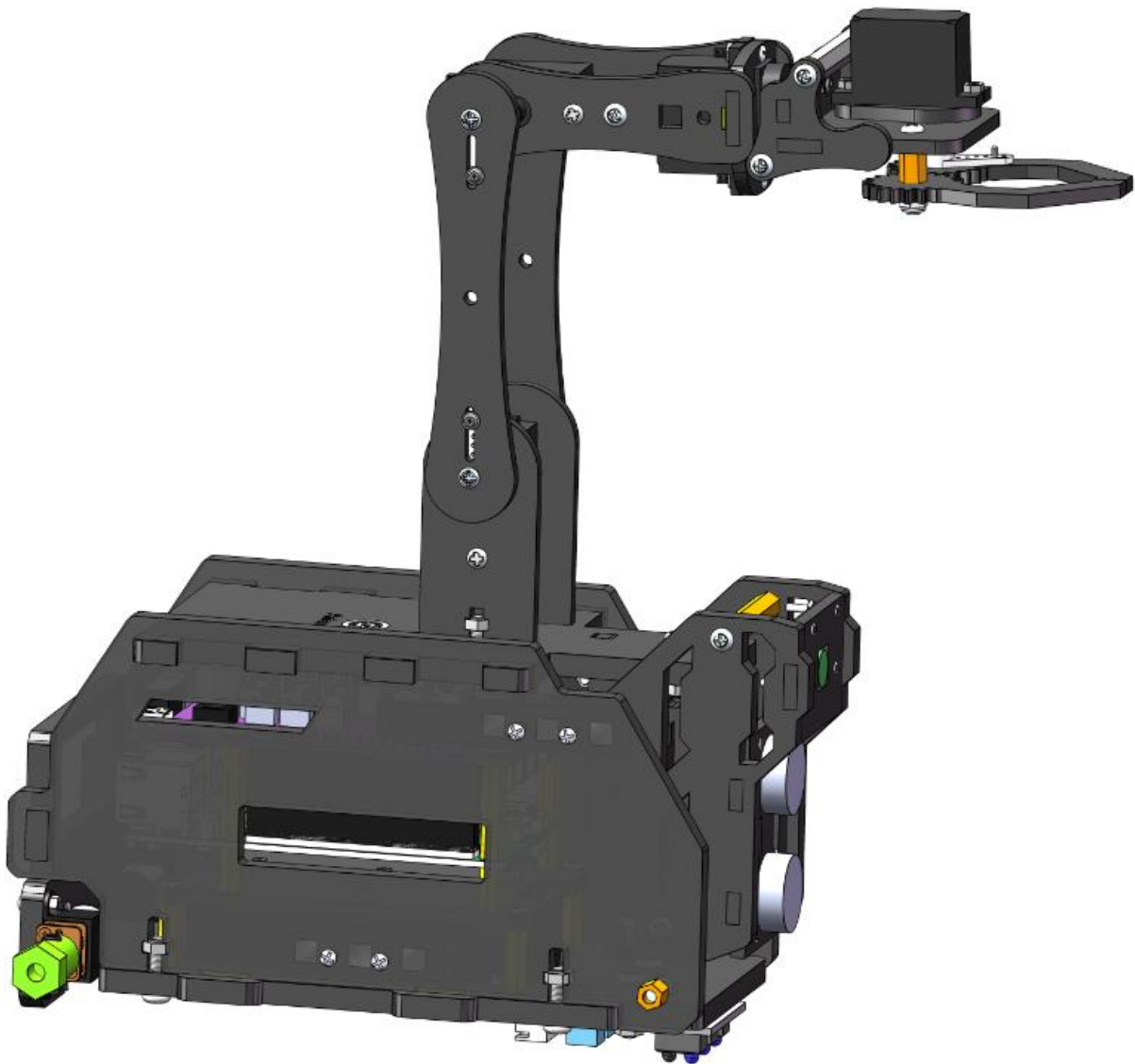
12. Install the robotic arm onto the chassis.

Note: First you need to **loosen** these **two M3\*12 screws** a little bit. Then insert **A13** between the **two A04**. After insertion, tighten the two loose M3\*12 screws.



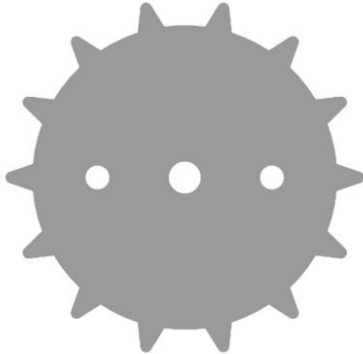
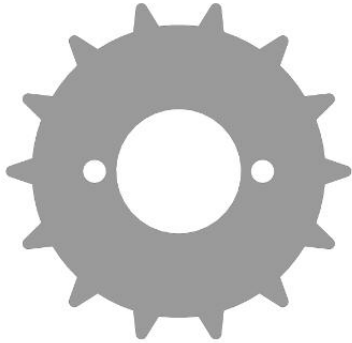



The effect after assembly:

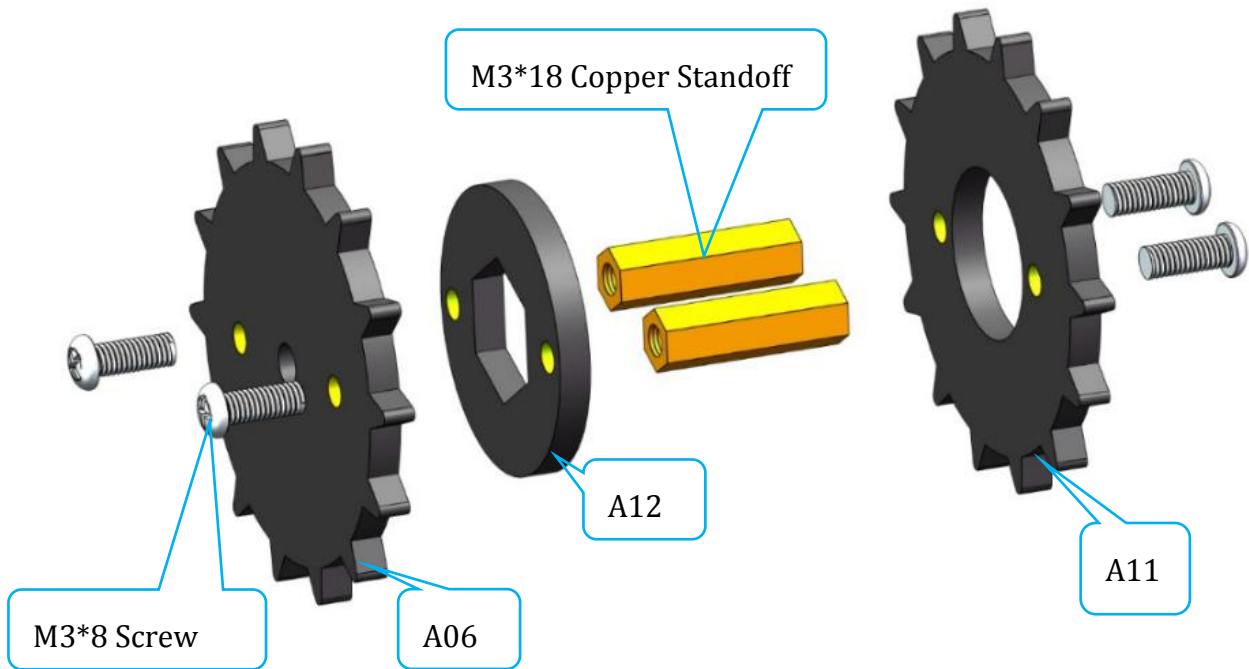


## Assemble Wheels

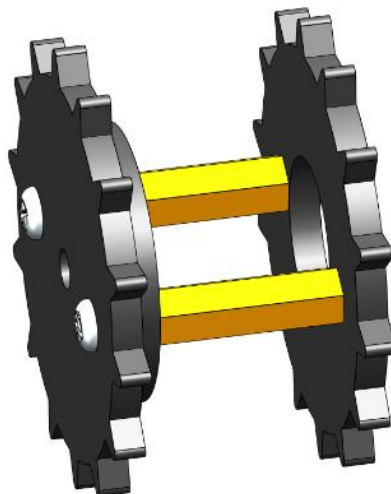
1. Assemble **A06**, **A11**, and **A12** as a whole with four **M3\*8 Screws** and two **M3\*18 Copper Standoffs**. (Assemble 2 sets)

A06	
A11	
A12	

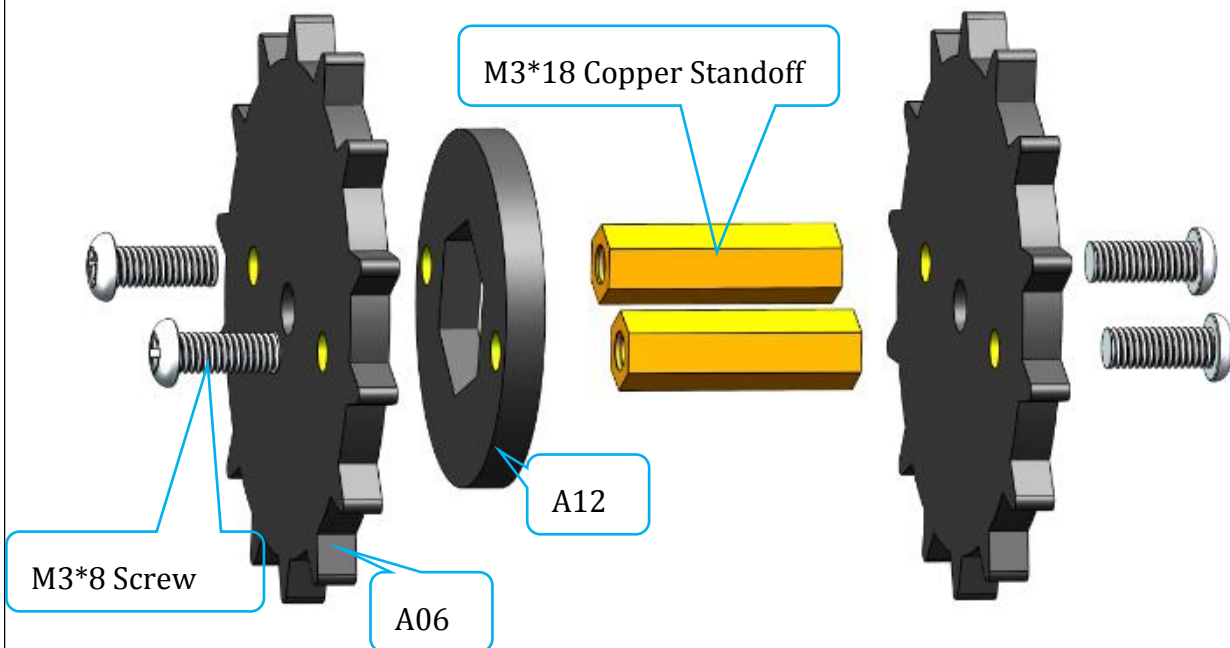
Assemble the following components:



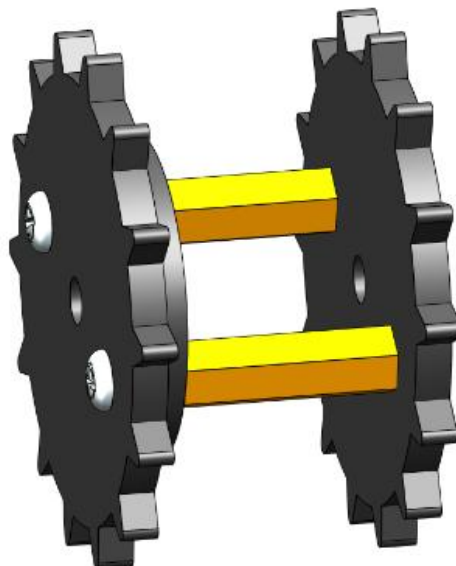
The effect after assembly:



2. Assemble **two A06** and **one A12** as a whole with four **M3\*8 Screws** and two **M3\*18 Copper Standoffs**. (Assemble 2 sets)



The effect after assembly:



3. Fix the **previously assembled drive wheel** onto the **S12D3 coupling** with an **M4\*6 Screw**. (Assemble 2 sets)





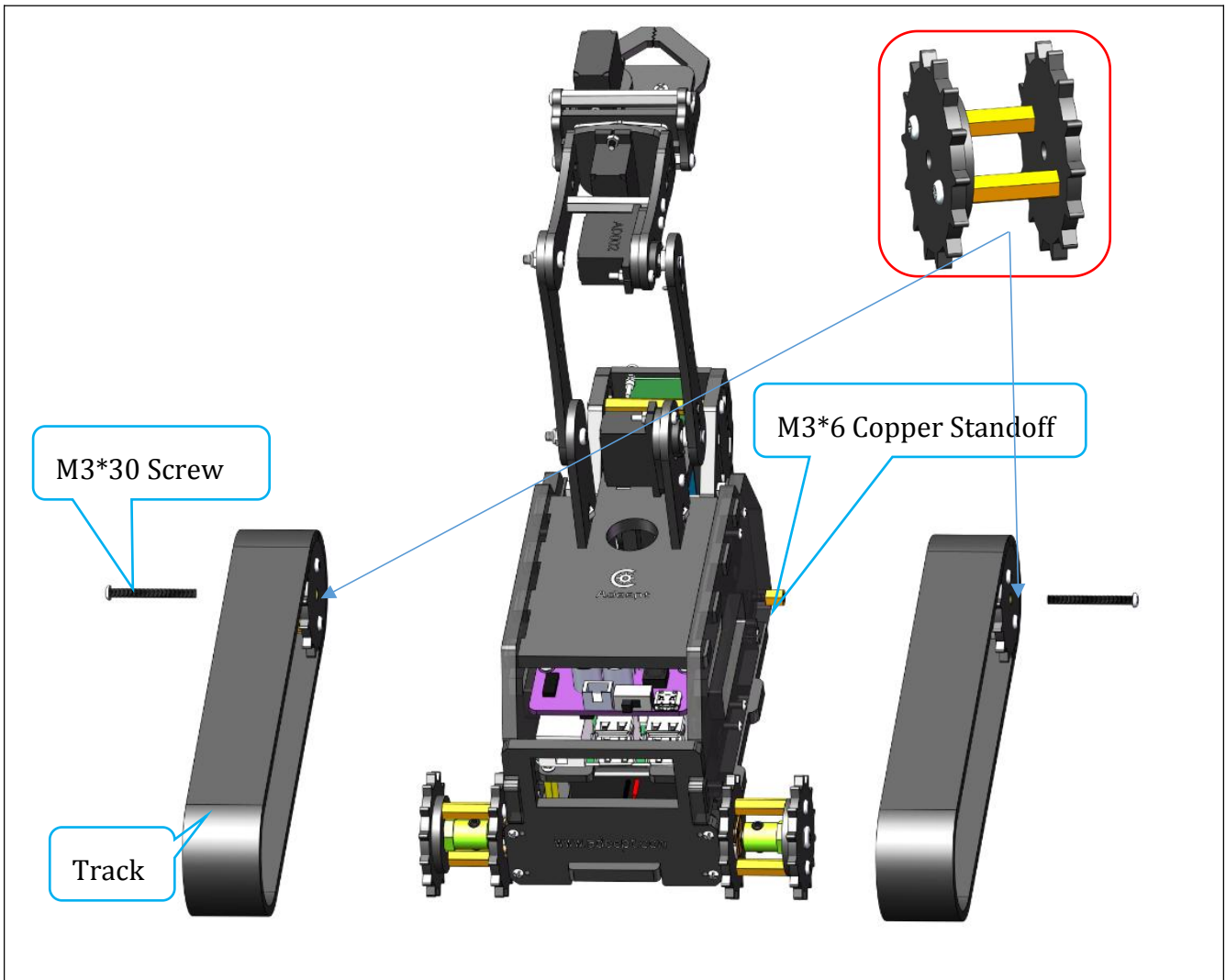
4. Assemble the driven wheel and track. (Assemble 2 sets)

Before installing the driven wheel, you need to fix the track on the two wheels first, otherwise the track will not be installed. After fixing the driven wheel, try to rotate the crawler to see if it can rotate smoothly. If it cannot rotate smoothly, this is caused by the fact that the two wheels are not in the same horizontal plane. You need to adjust the driving wheel/driven wheel to make the track rotate smoothly.

*Assemble the following components:*

First put the track on the driving wheel and the driven wheel, then pass the **M3\*30 Screw** through the driven wheel and fix it with the **M3\*6 Copper Standoff**.

Assembled A06



The effect after assembly:





## How to Install and Remove Batteries?

- Due to logistics limitations, the RaspTank you received may not come with batteries.
- Pls choose 18650 batteries that supports a maximum output current of at least 4A or choose 18650 batteries with "high rate discharge".
- If you have any questions about purchasing batteries, please feel free to email us at [support@adeept.com](mailto:support@adeept.com)

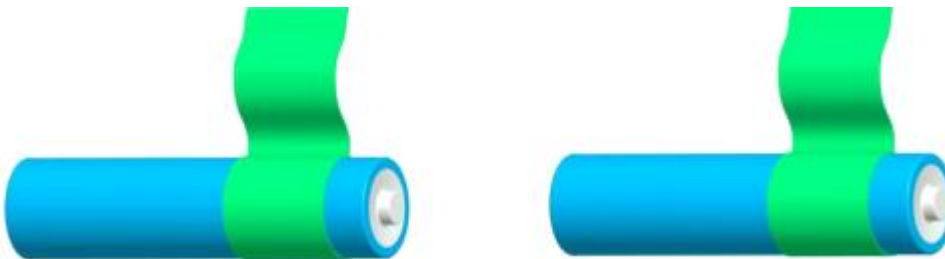
Take out 2 ribbons and 2 batteries.



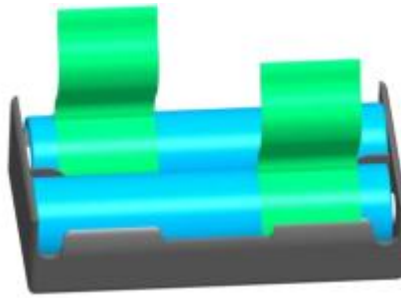
Roll one end of the ribbon to let through a battery and fix.



Insert the batteries into the rings-ribbon closer to the anode.



Install the batteries into the holder based on the pole.



To remove the batteries, just pull the ribbon and take them out.

