To assemble the robot, you will need:

1. Frames as following pictures shown: JQR011、JQR012、JQR014.
2. Screwdriver and screws
3. Servos, power and relevant parts
4. Soldering work (Not necessary)

Assembling the frames and holders

There are total four steps for assembling:

1 Assembling the frames.

2 Assembling the body and head.

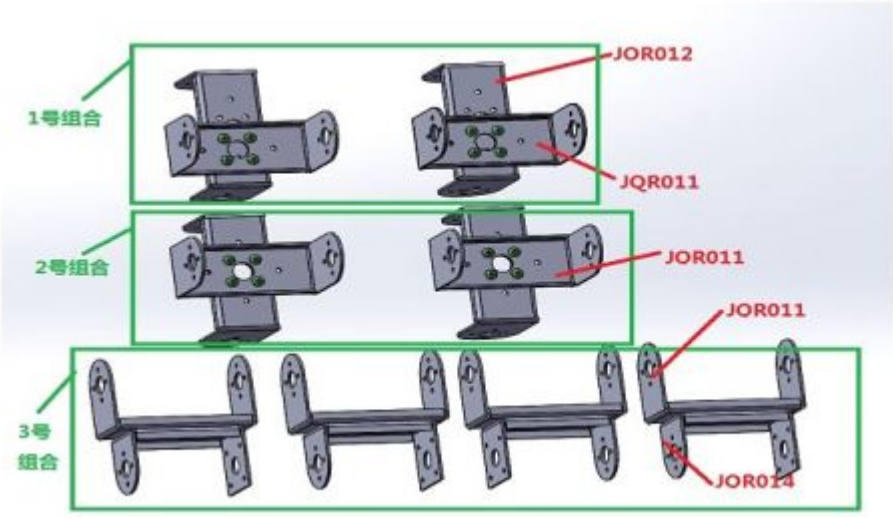
3 Assembling the legs

4 Assembling the arms

We got three type of frames: JQR011、JQR012、JQR014.

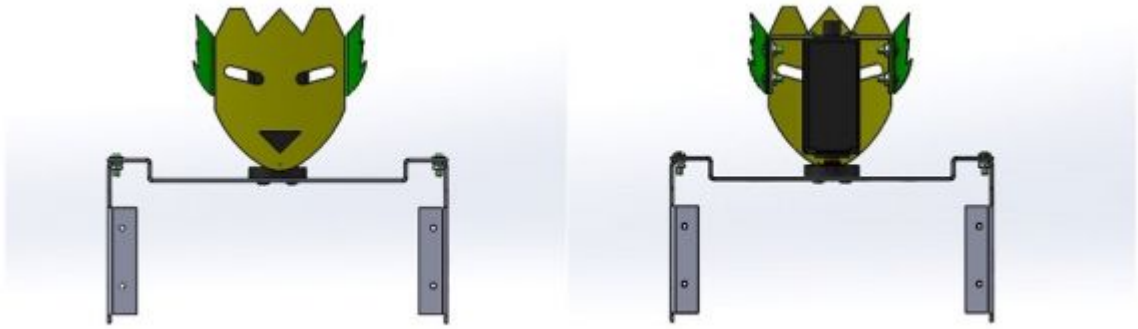
Now assemble them with M2x6 screws and M2 screw nuts in 3 combinations.

We named them as set 1, set 2, set 3.



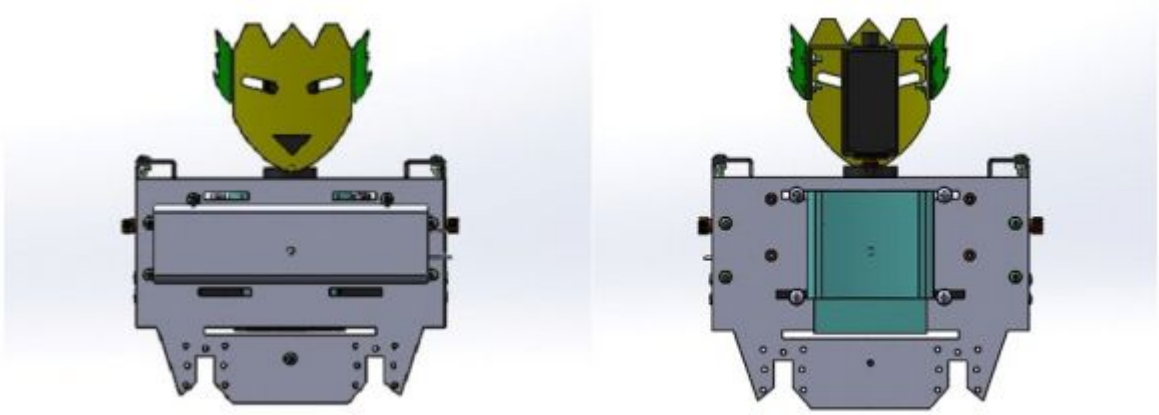
Assembling the body and head

Firstly, assemble these parts as picture shown:

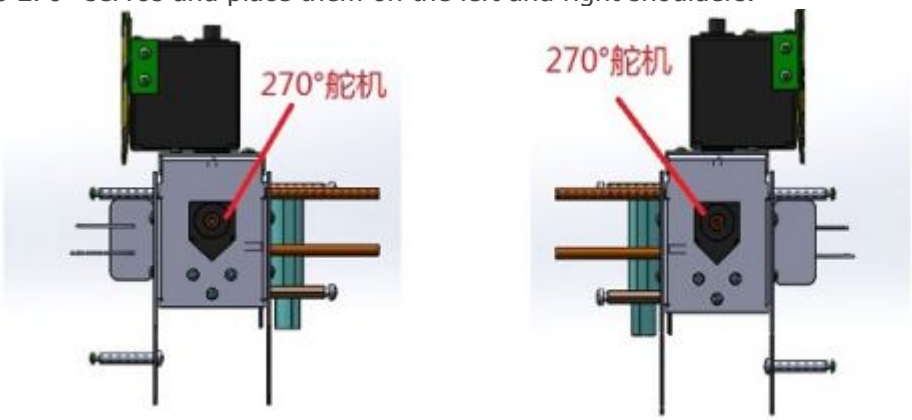


Note: The servos must be adjust to Position:P1500 through the software.

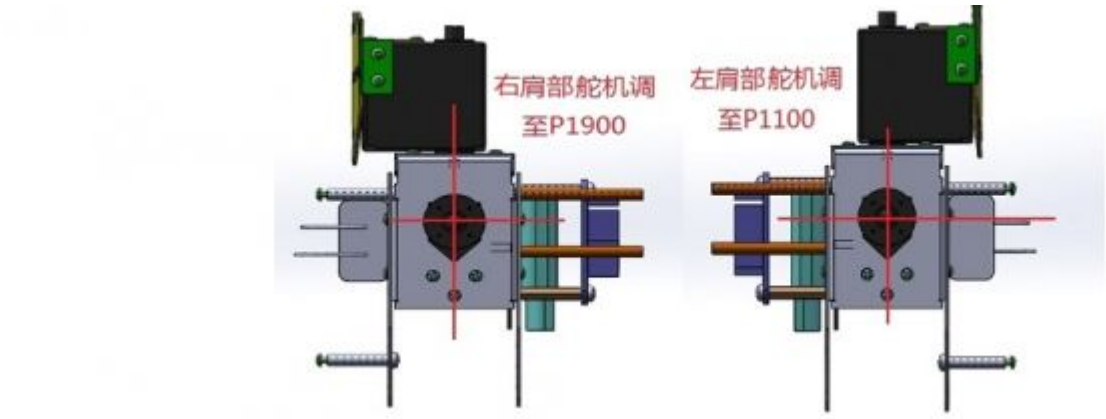
After placing its head and shoulders, connect its chest panels with screws.



Take two 270° servos and place them on the left and right shoulders.

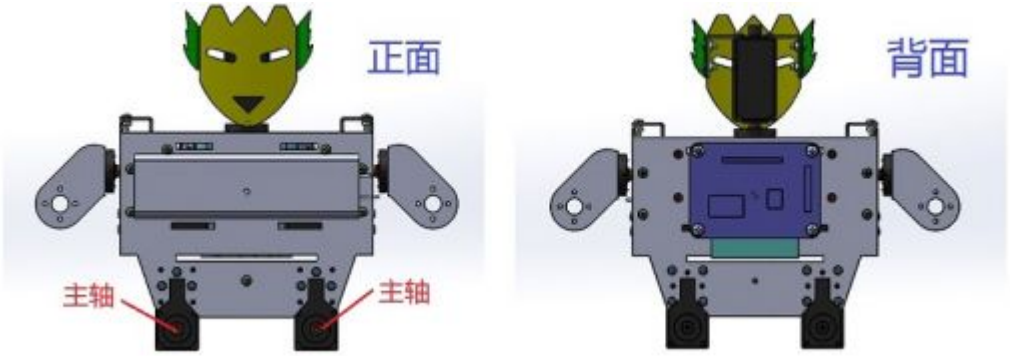


Adjust the left servo to P1100, right servo to P1900 through software.
After that, take two main pallets and mount on the servo, secure them with M3x6 screws.
Note: Keep these two lines perpendicular to each other.



Take two JQR008 and secure them on both shoulders with M2x6 self-tape screws.

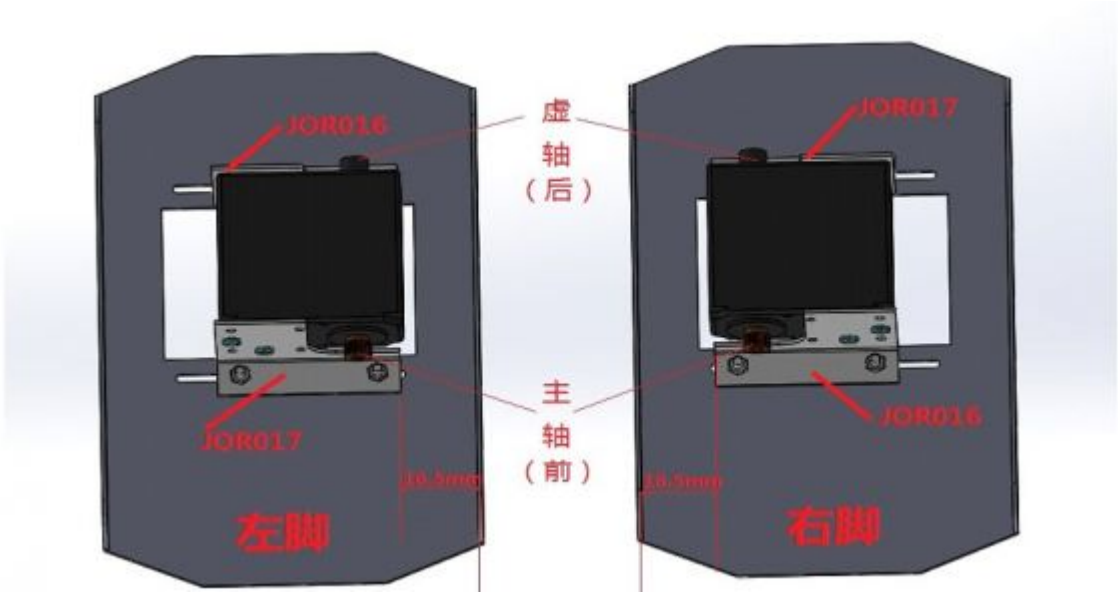
Place two servo in the position as fig “front” indicates.



Assembling legs

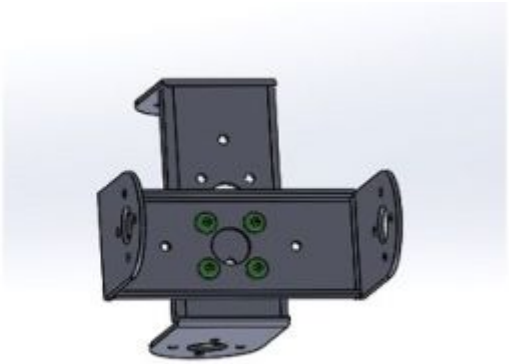
- We need 2 feet chassis, JQR016& JQR017 frames, two servos, M2x6 pan head screws, M2 nut and M2x6 self-tape screw to assemble legs.

Effect picture:



-

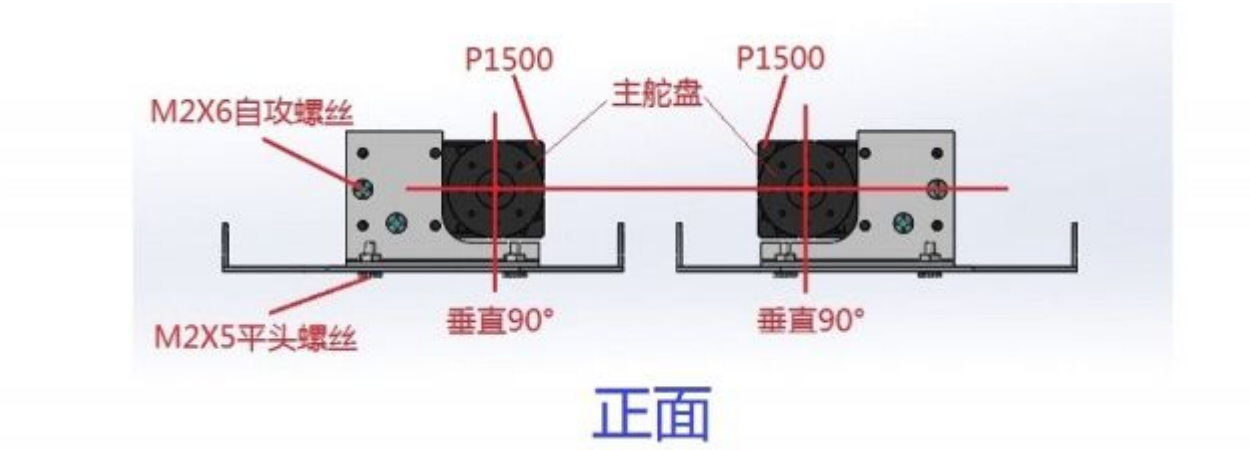
sub



Main

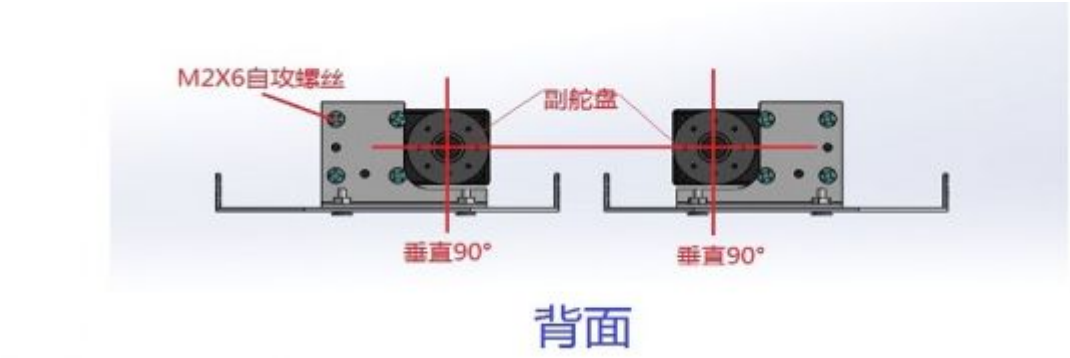
set 1

Adjust two servos on both legs to P1500 through software.

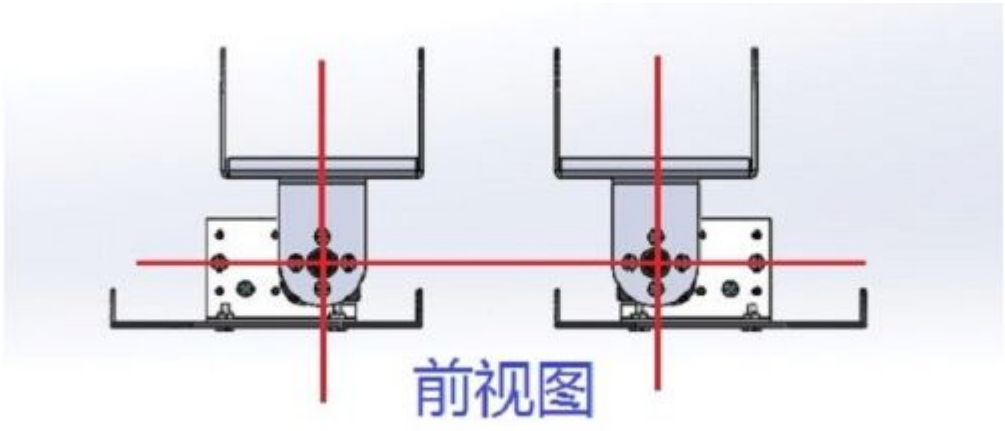


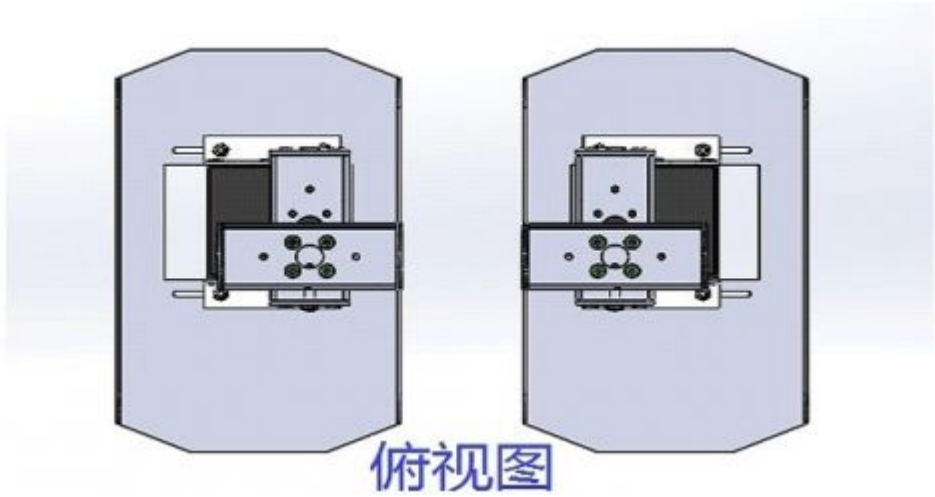
Then install main and sub panels on real and imaginary axis separately.
主舵盘——main panel
垂直 90° vertical

Make sure that the center of two servos are on the same level, both horizontal and vertical. We could adjust them by software to fix the deviation.



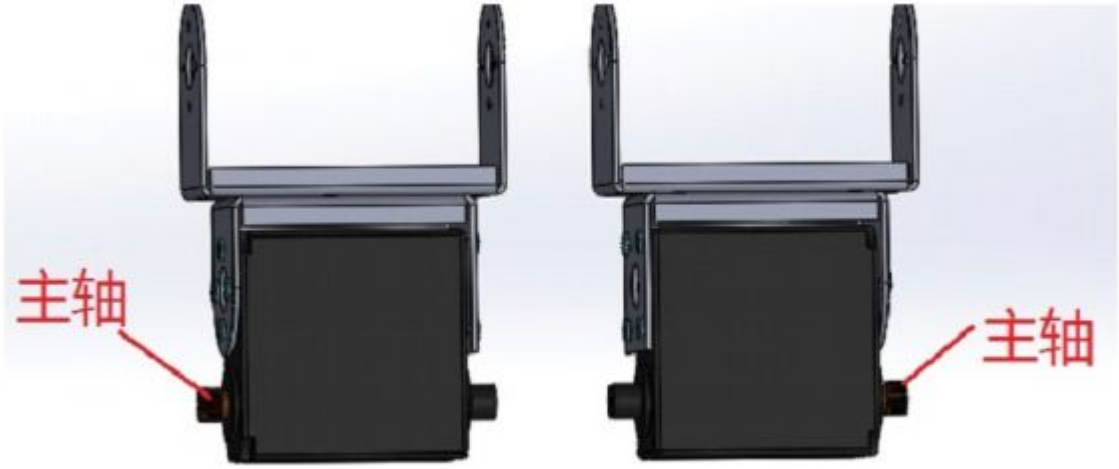
- Then install set 1 on the left and right foot as picture shows:





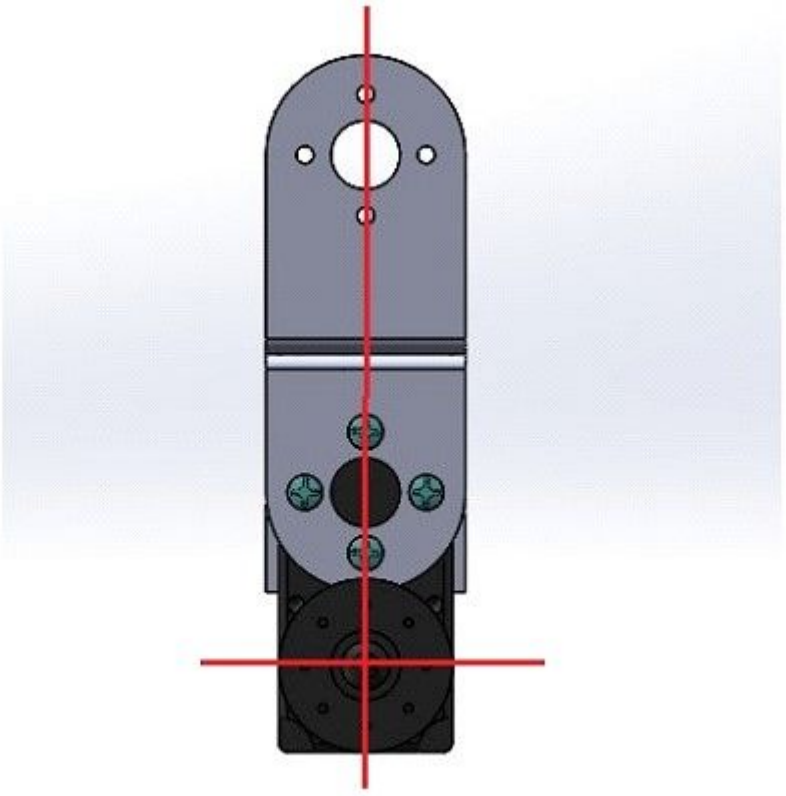
Note: First fixed virtual axis side, then lock the spindle side, are fixed with M2X6 self-tapping screws。

- Then install set 3 with two servos as picture shows:

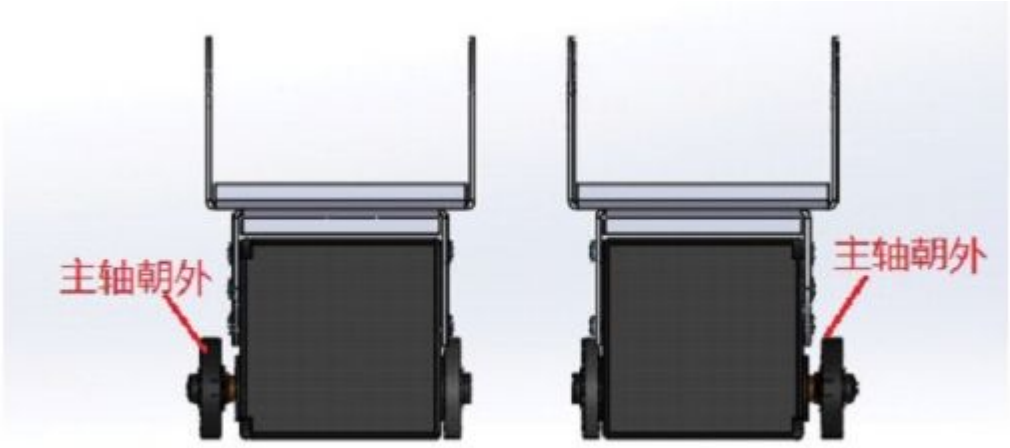


Note ： that the main shaft should be facing outward, and the M2x6 self-tapping screws are locked on both sides.

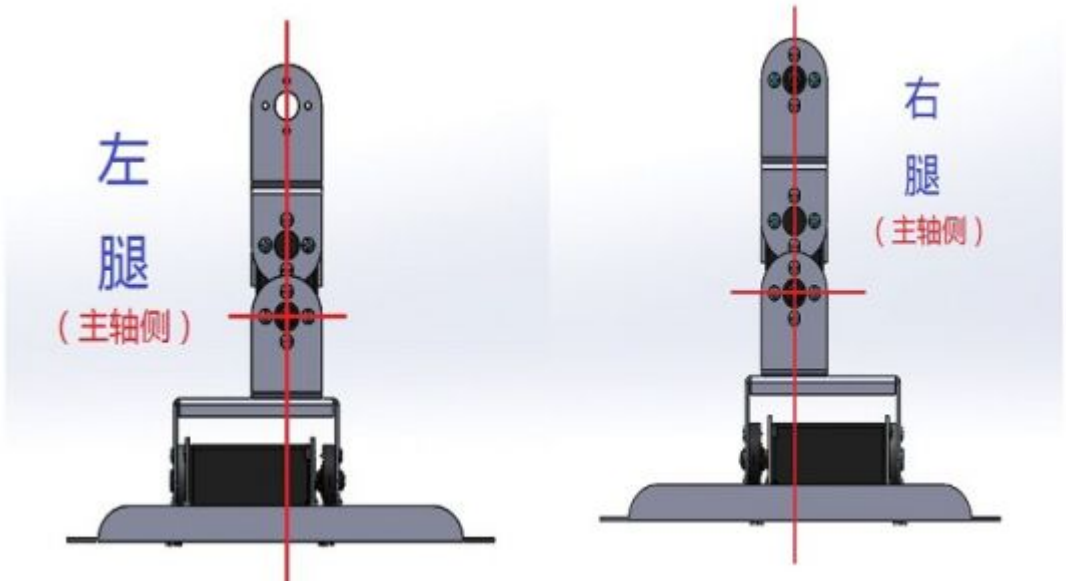
Through the PC software, respectively, the two steering gear transferred to P1500 position, and then install the main and auxiliary steering wheel. As far as possible from the side to keep the rudder disc has two holes in the horizontal position, there are two holes in the vertical position of the connection. Install a little deviation does not matter, and then through the host computer to adjust the deviation. as picture shows below:



The imaginary axis is the same.
After installing the rudder plate, left and right legs as shown below：

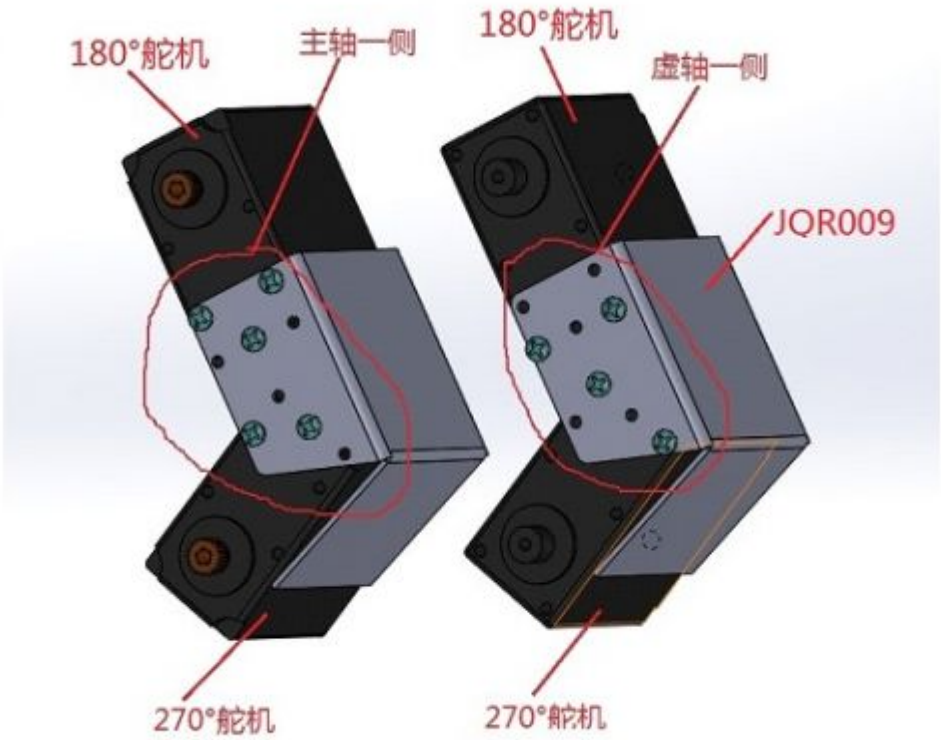


- We have already installed the upper part of the leg, and now we put this part of the footsteps together.



Pay attention to install the side of the virtual axis firstly, and then install the spindle side, as shown in Figure to maintain a vertical position. Both sides are fixed with M2x6 tapping screws.

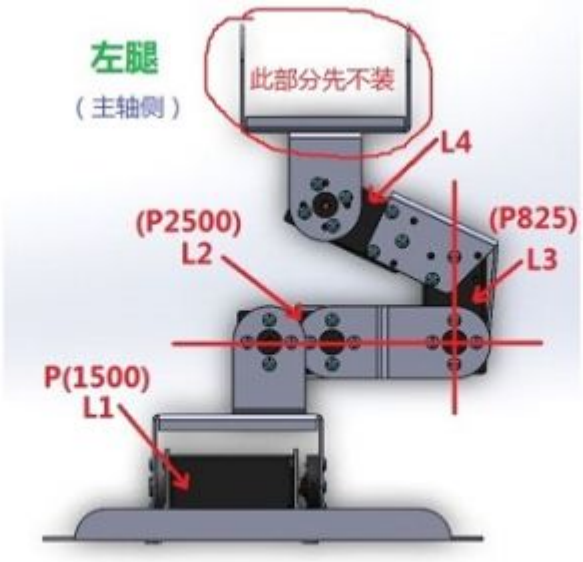
Then take out the number JQR009, two 180-degree steering gear, two 270-degree steering gear.



- Here turn to see how to connect other parts.

Take left leg for an example：

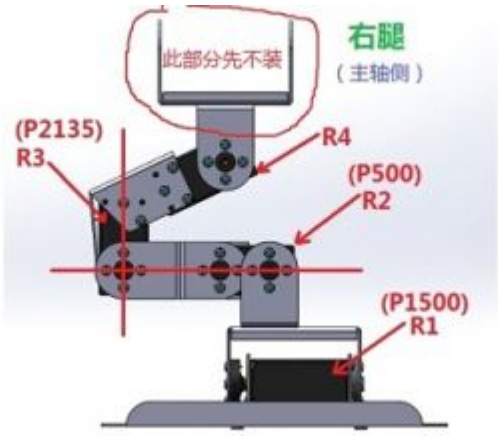
Through the host computer ,the left thigh of the two steering gear were transferred to their respective positions and mounted on the main and vice rudder（First install the rudder and then install the main rudder. As below：



As shown in the figure as far as possible to ensure that the two red lines with the vertical position of the level, a little bit of deviation can also be used later by the host machine deviation.

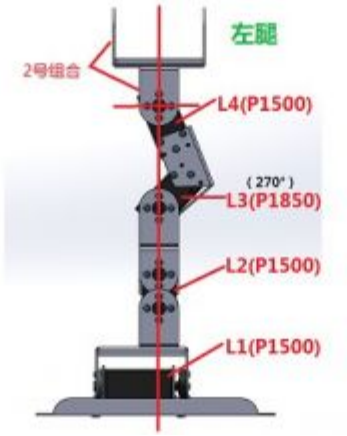
The right leg：

Through the host computer, the right thigh of the two steering gear were transferred to their respective positions, and install the main sub-rudder（First install the rudder and then install the main rudder）.As shown below：



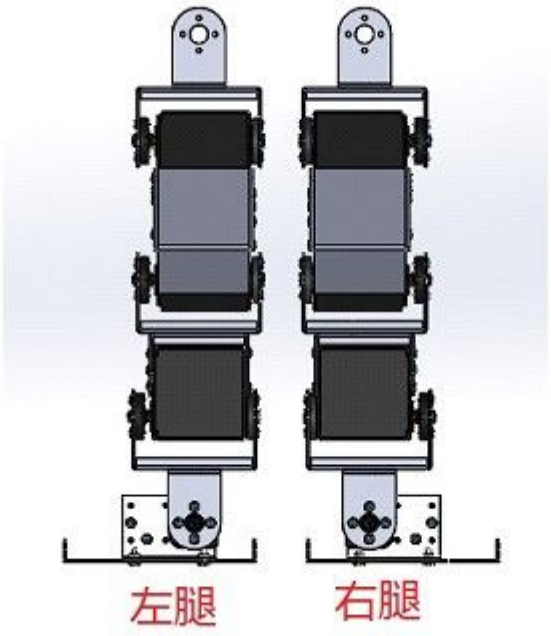
As shown in the figure as far as possible to ensure that the two red lines with the vertical position of the level, a little bit of deviation can also be used later by the host machine deviation.

- Install combination 2. Similarly, we take the left leg as an example, the L1 steering gear to P1500 position, L2 steering gear transferred to P1500 position, L3 steering gear (270 steering gear) transferred to P1850 position, L4 transferred to P1500 position。And then the main and auxiliary rudder mounted on the L4 steering gear, pay attention to the location of the main rudder, as in front of speaking as much as possible to ensure that two holes are horizontal position, the other two holes are vertical position and with the a few bottom hole in Vertical line。Installed the rudder plate and then take out a combination of No. 2 according to the location shown installed（Fix the auxiliary steering wheel first and then the main steering wheel）。The overall figure below：



Similarly, we look at the right leg: the R1 steering gear to P1500 position, R2 steering gear transferred to P1500 position, R3 steering gear (270 steering gear) to P1150 position, R4 transferred to P1500 position. And then the main and auxiliary rudder mounted on the R4 rudder, pay attention to the location of the main rudder, as in front of the same as possible to ensure that there are two holes in the horizontal position, the other two holes are vertical position and with the bottom hole in a few Vertical line. After installing the rudder plate and then take out the combination of No. 2 according to the location shown installed (first fixed deputy steering wheel, and then fixed the main steering wheel). The overall figure below:

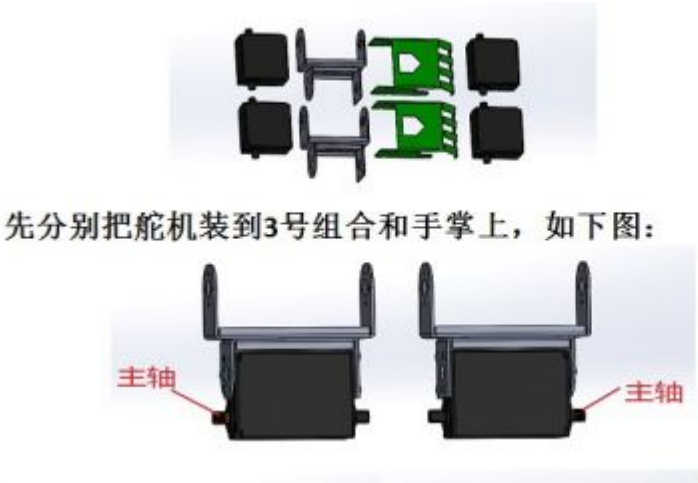
Since then the two legs on the installed, look at the overall effect of plans



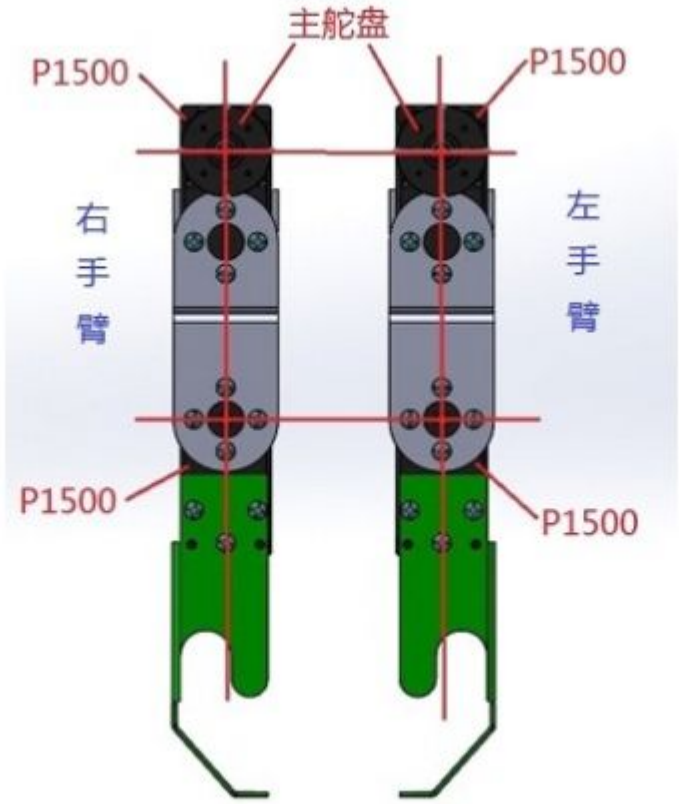
Since the robot's legs to complete the installation, the following we look at the next two arm installation.

Arm mounting

• Take the two No. 3 combination bracket, two palm (Figure JQR010), four 180-degree steering gear and a number of M2x6 self-tapping screws. As shown below:



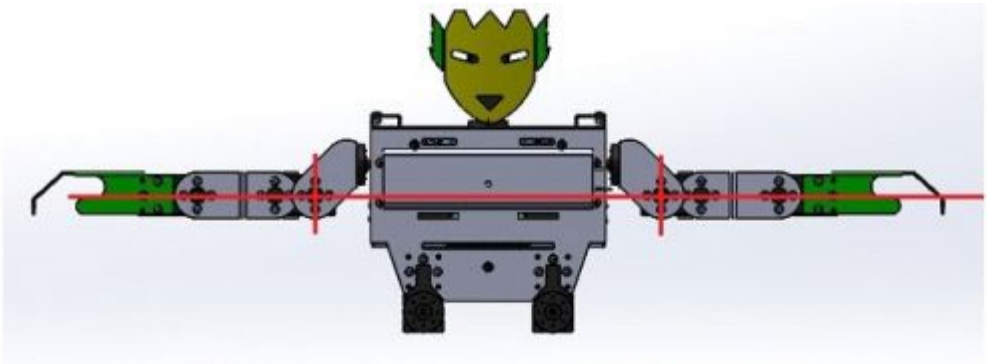
• After the figure is installed, take out the main and vice rudder, respectively, installed in the spindle with the imaginary axis, note that before the adoption of the host computer must be transferred to P1500 position, With the M2X6 self-tapping screws and bracket fixed, pay attention to lock the rudder to lock the main rudder. As shown below:



Since then the arm part has been installed. Below we assembled each part together.

The overall combination of installation

•Look at the left and right arm installation, as shown below：

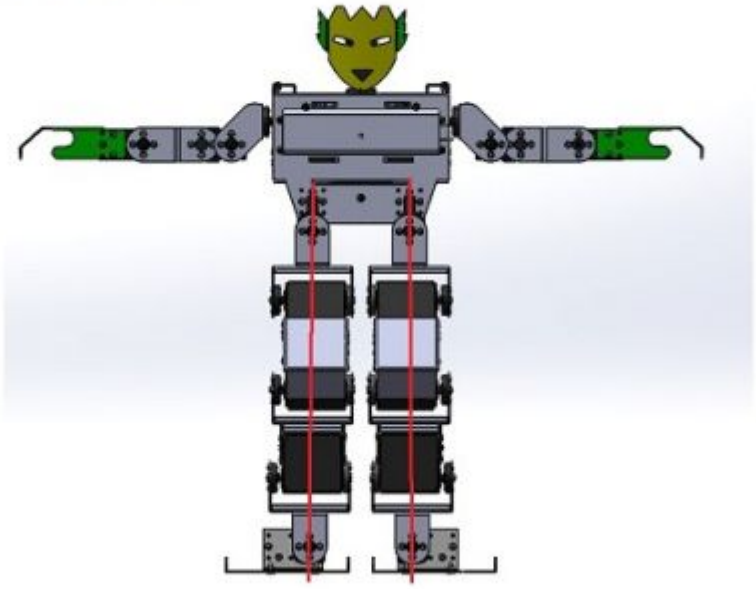


As shown in the front of the arm because the position of the servo has been adjusted, where the installation should be installed horizontally as far as possible to ensure that the red line in the horizontal horizontal position, swing. CAUTION Lock the rudder to lock the main rudder. The following look under the left and right leg installation.

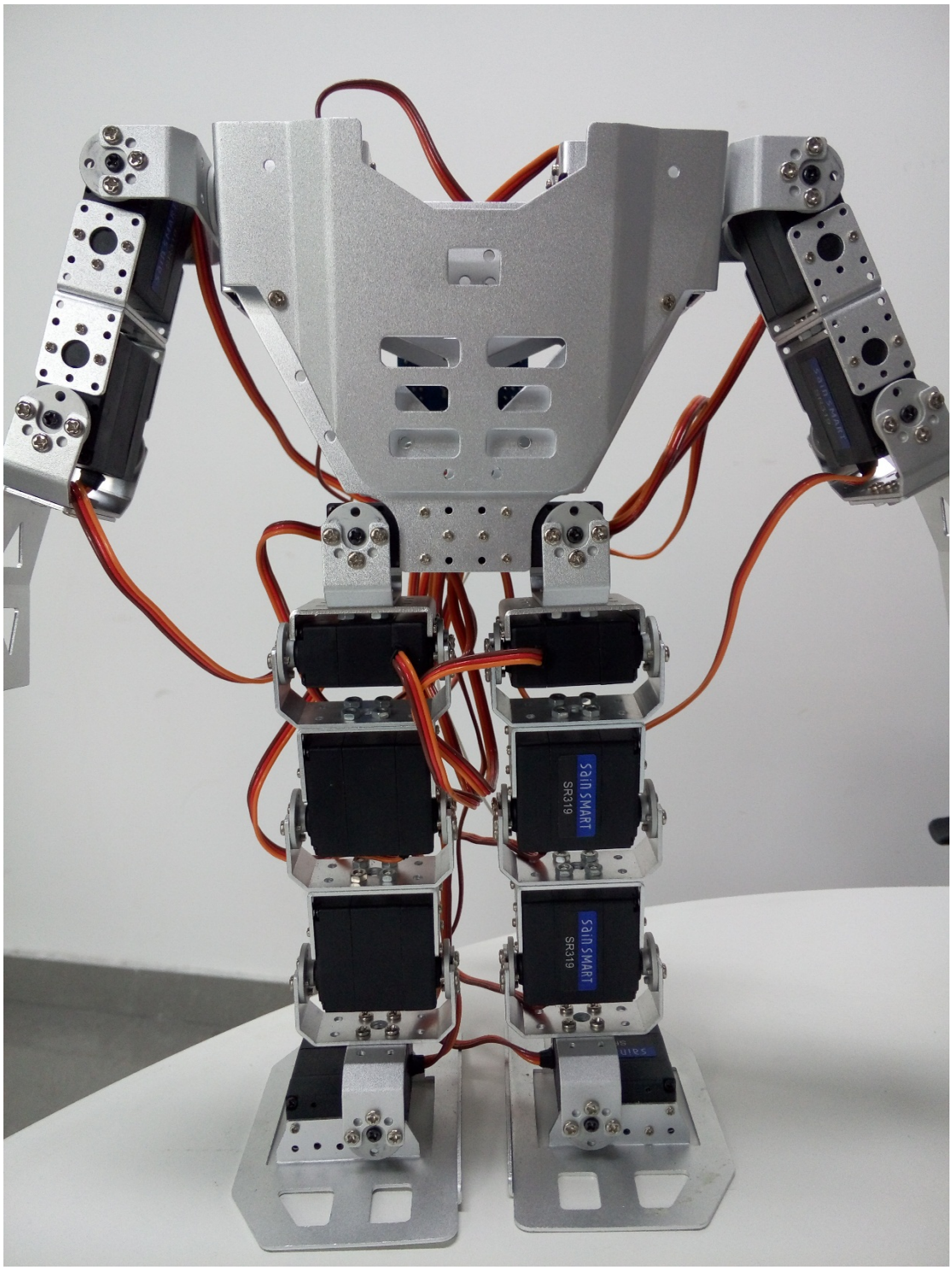
- Take out the left and right legs and two front and rear rudders. First, the left and right

steering through the host to the P1500 position. And then install the main rudder, respectively, to ensure that the rudder plate has two holes in the horizontal line. After the rudder plate is assembled, take out M3x6 screws. As shown below

现在可以装左右腿了如图：



Some Pitures of SainSmart 17DOF Biped Robotics Humanoid Robot can make reference：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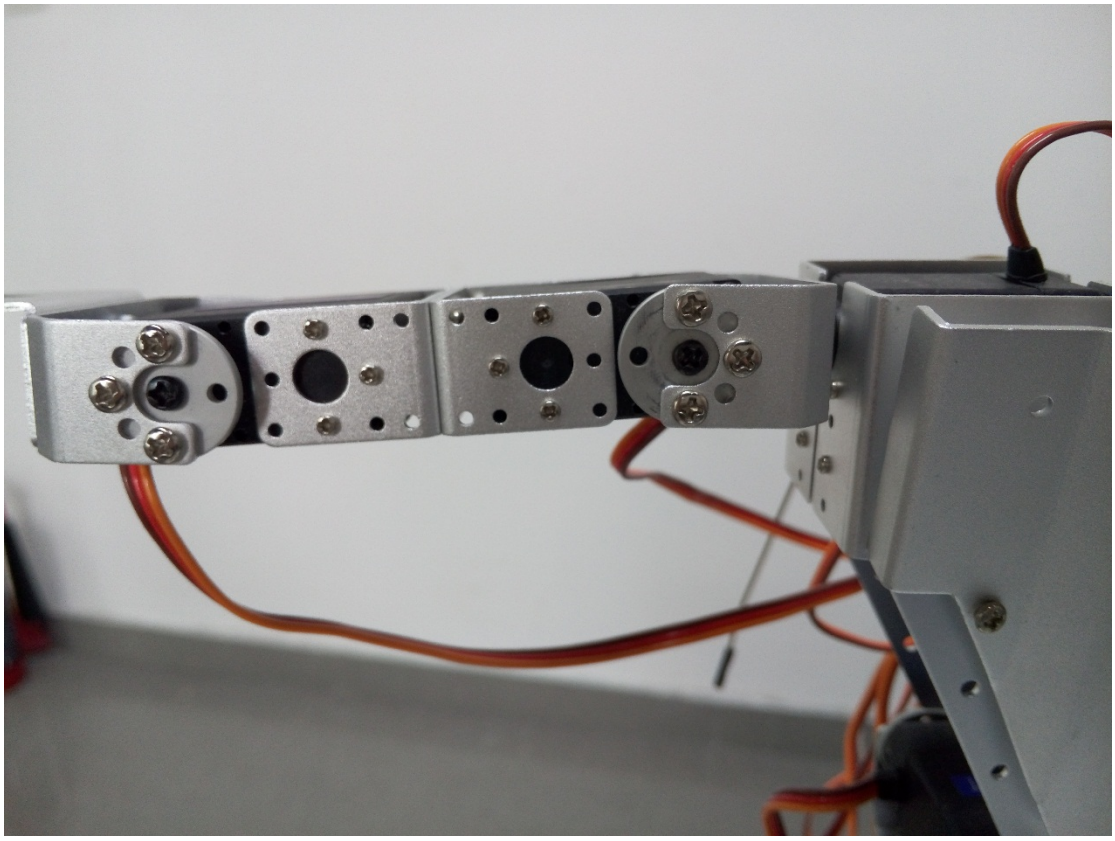

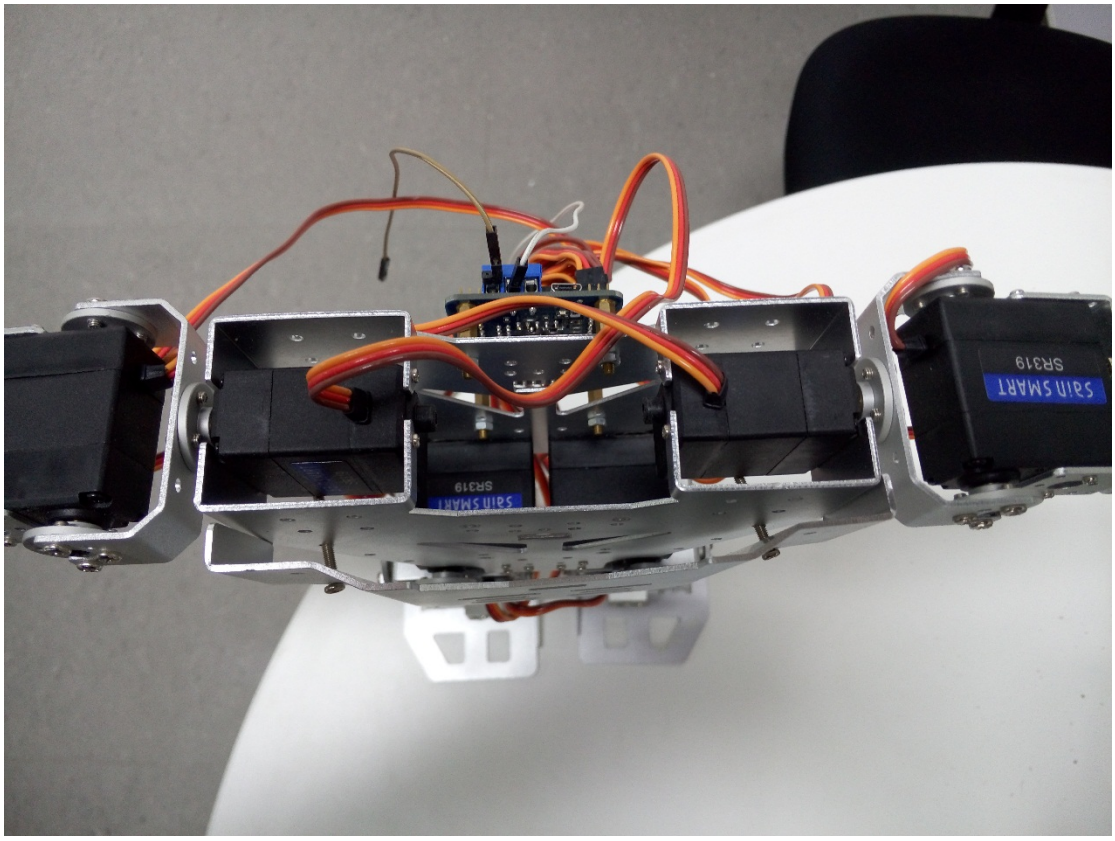
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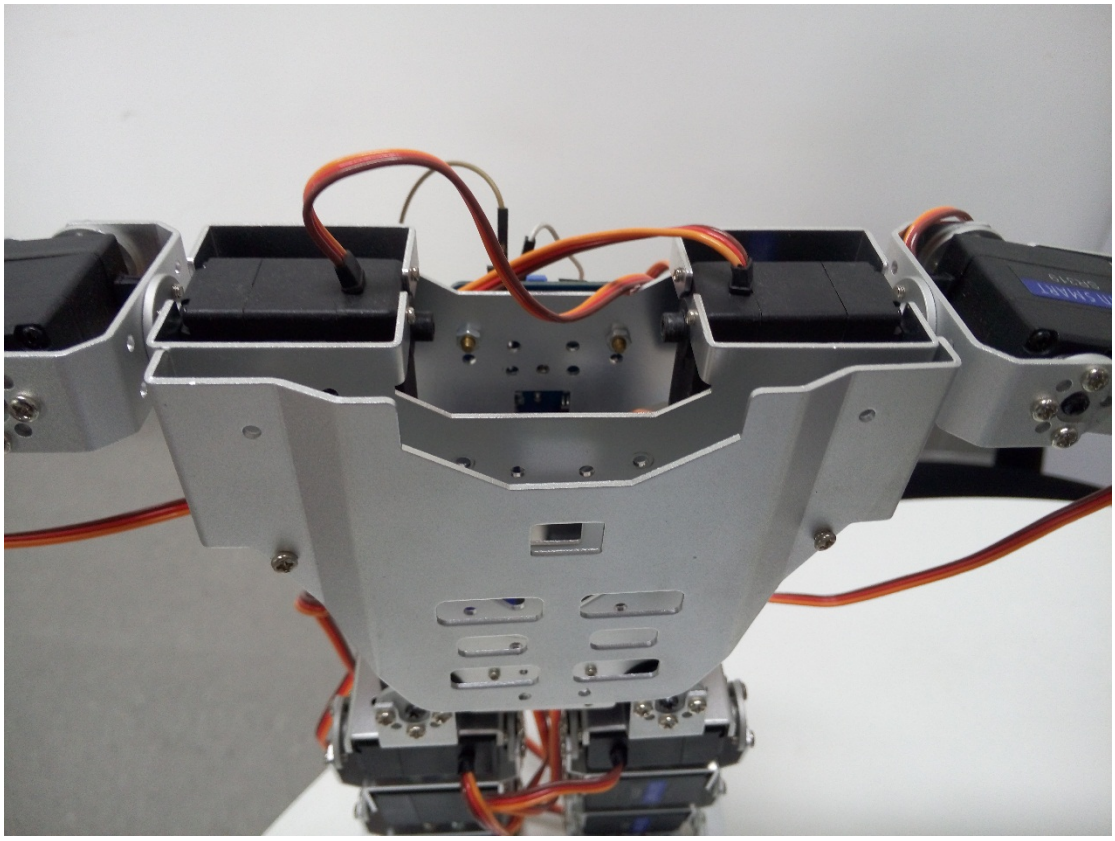

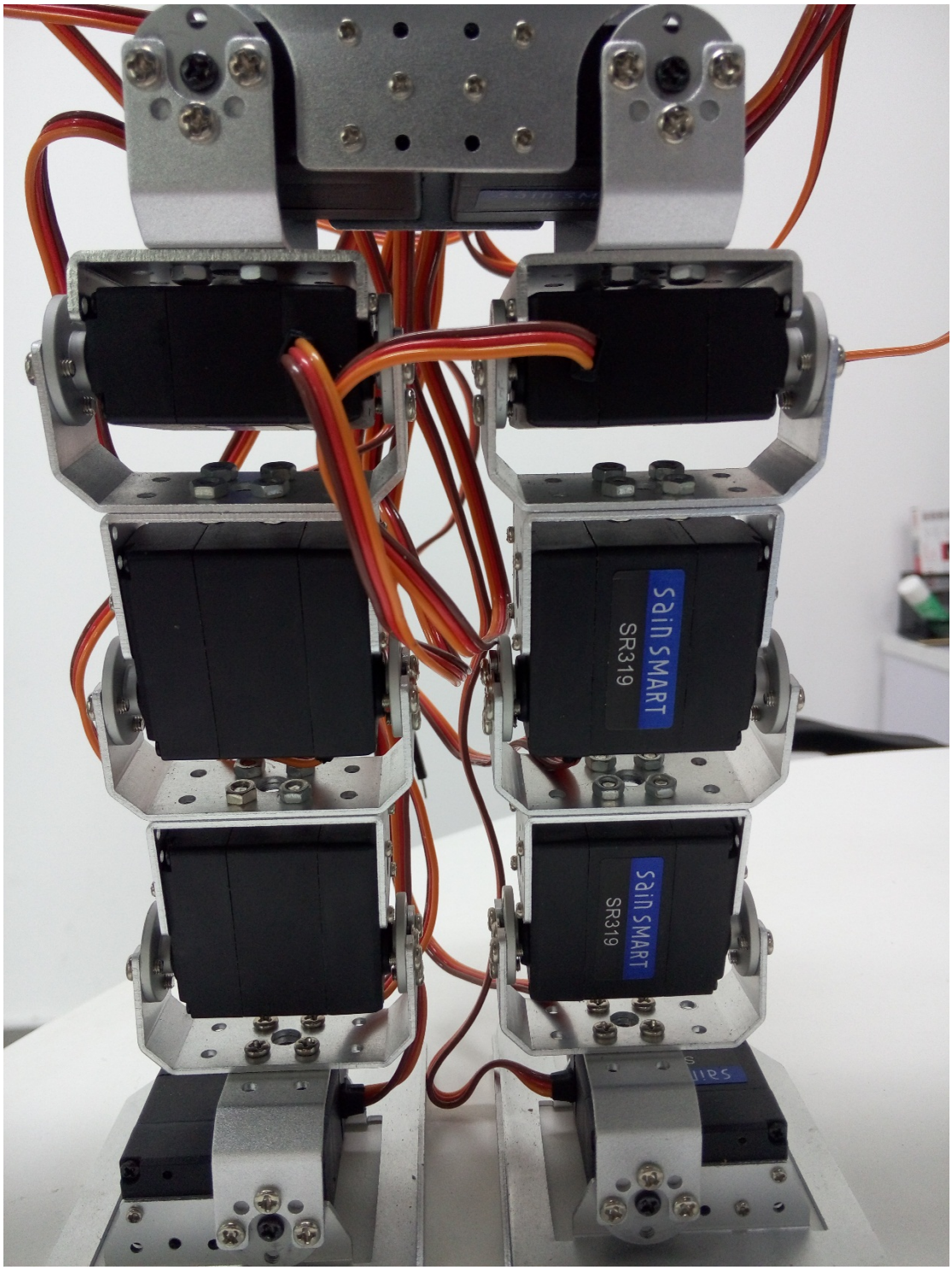
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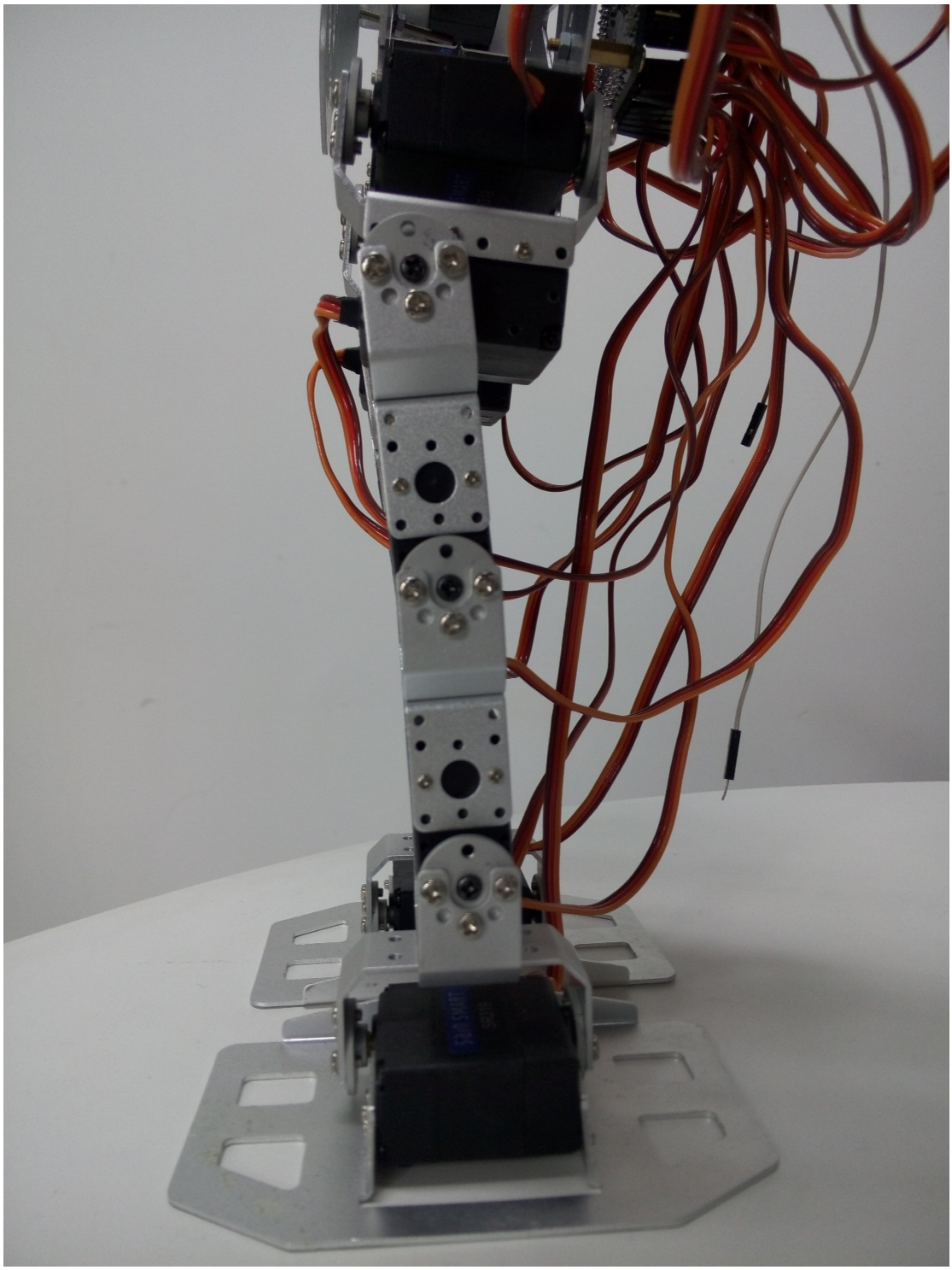

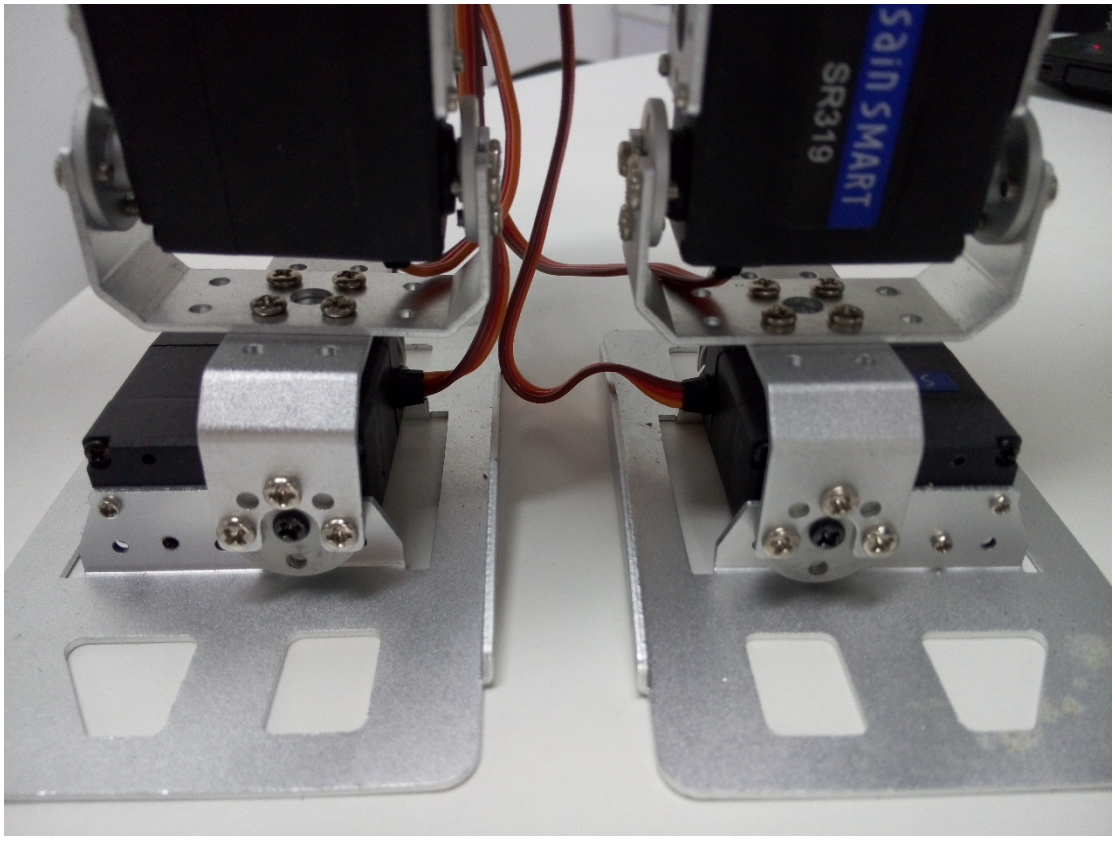
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