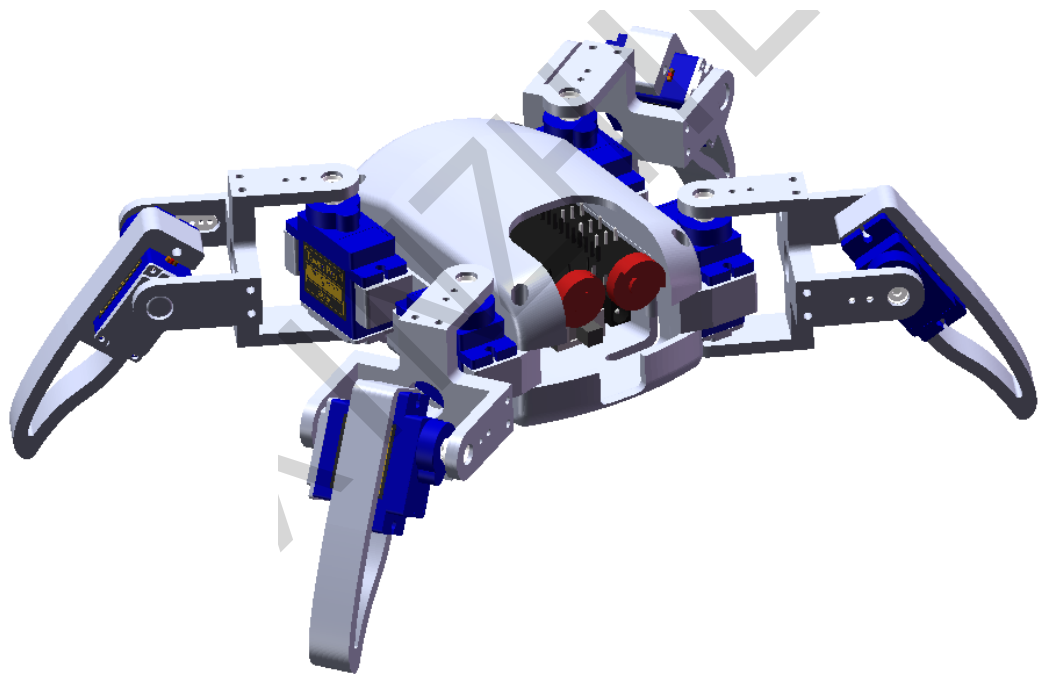


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0 Statement

0.1 Use statement:

0.1.1 Please read this manual before use;

0.1.2 The product appearance in the picture is for reference, please refer to the actual product;

0.1.3 The company reserves the right to interpret this manual. In case of product updates or upgrades, there without notification, please refer to the actual product you purchased。

0.2 Warranty statement:

0.2.1 Please check the quality of the product carefully after receiving the product. we will not provide warranty once used;

0.3 Material statement

0.3.1 The copyright of this product material belongs to our company. "XINZHILI" is the brand and trademark, we will be held legally responsibility If copy or disseminate the matirial without authorization。

1 Kit list

1.1. Accessories Collection

No	name	quantity
1	NodeMcu	1
2	Servo shield	1
3	SG90 servo	8
4	Lithium battery (752035)	1
5	MicroUSB cable	1
6	Screwdriver	1
7	M1.7*8 screw	48
8	M1.4*4 screw	8
9	3D printing structure	1
10	3M glue	1
11	Ligature	6
12	Charging cable	1
13	Hot melt adhesive	1

1.2 List of structural

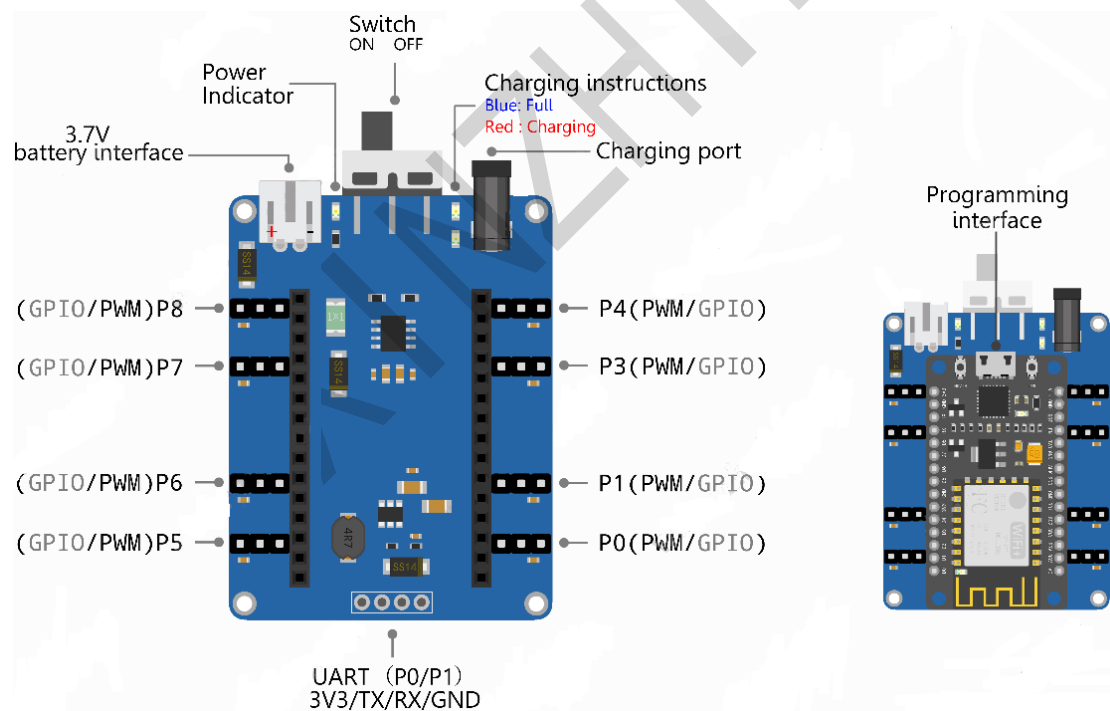
 <p>Body-Cover x 1</p>	 <p>Body-Bottom x 1</p>	
 <p>Body x 1</p>	 <p>leg4 x 4</p>	
 <p>leg1 x 8</p>	 <p>leg2 x 8</p>	
 <p>leg3 x 4</p>	 <p>eye</p>	 <p>servo-holder x 8</p>

1.3 Servo



SG90

1.3 Circuit description



The name of the servo motors extension board is “NodeMcu Servo Shield” .

When the battery is not connected and the switch is

turned to OFF, connect the USB charging cable and expansion board. Normally, the green LED on the expansion board is always on, the red LED is flashing, and the power indicator light is not on;

When the battery is not connected and the switch is turned to ON, connect the USB charging cable and expansion board. Normally, the green LED is always on, the red LED is flashing, and the power indicator light is always on;

When the battery is connected and the switch is turned to OFF, connect the USB charging cable and expansion board, keep charging status. normally you can see that the green LED is off and the red LED is always on. Note that the switch should be turned to OFF during charging.

2. Assembly steps

Step 1. Test the servo

Before testing the servo motors, you need to set up a development environment on the computer. Please open the tutorials provided by us and enter "[Lesson0 Setting Development Environment.pdf](#)" under "[03 Tutorial & Code → Arduino → Lesson 0 Setting Development Environment](#)". Follow

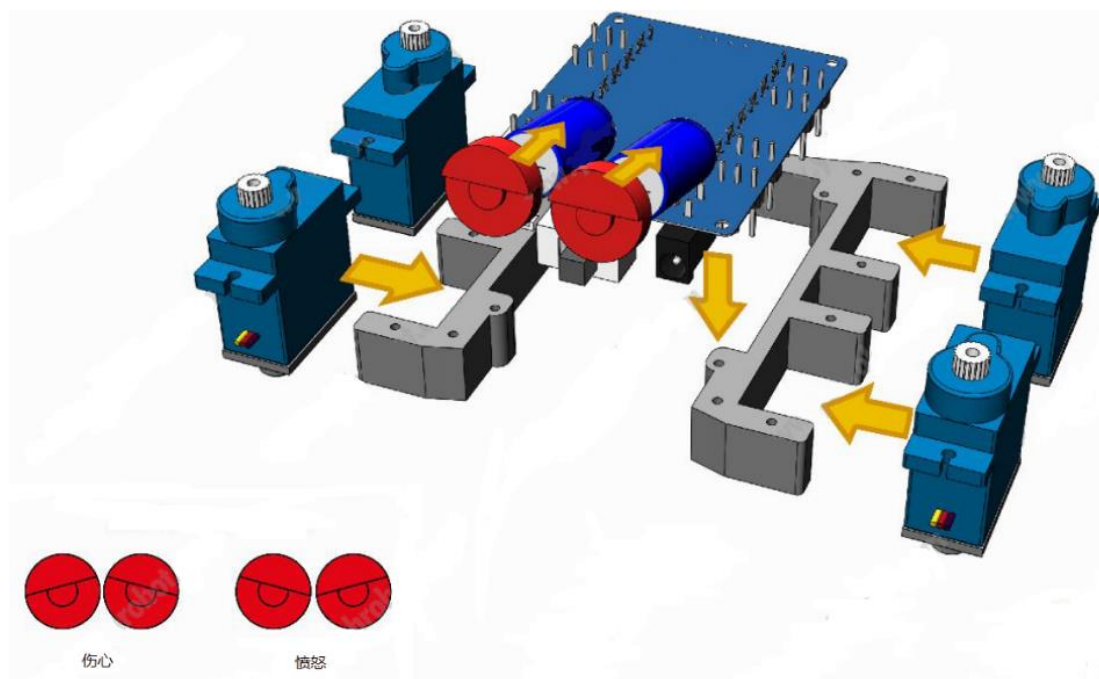
the instructions of the tutorial and complete the construction of the development environment.

After successfully completing the construction of the development environment, please open the tutorials and enter "Lesson1 Drives a Single Servo motors.pdf" under "03 Tutorial & Code → Arduino → Lesson1 Drives a Single Servo motors". Follow the instructions in the tutorial to complete the test of the servo motors.

After completing Lesson1, open the tutorials, enter "03 Tutorial & Code → Arduino → Lesson2 Wifi Control → Quadbot-E-V1.4", double-click to open QuadBot-E-V1.4.ino, and download the program into the singlechip as the same with previous two Lessons.

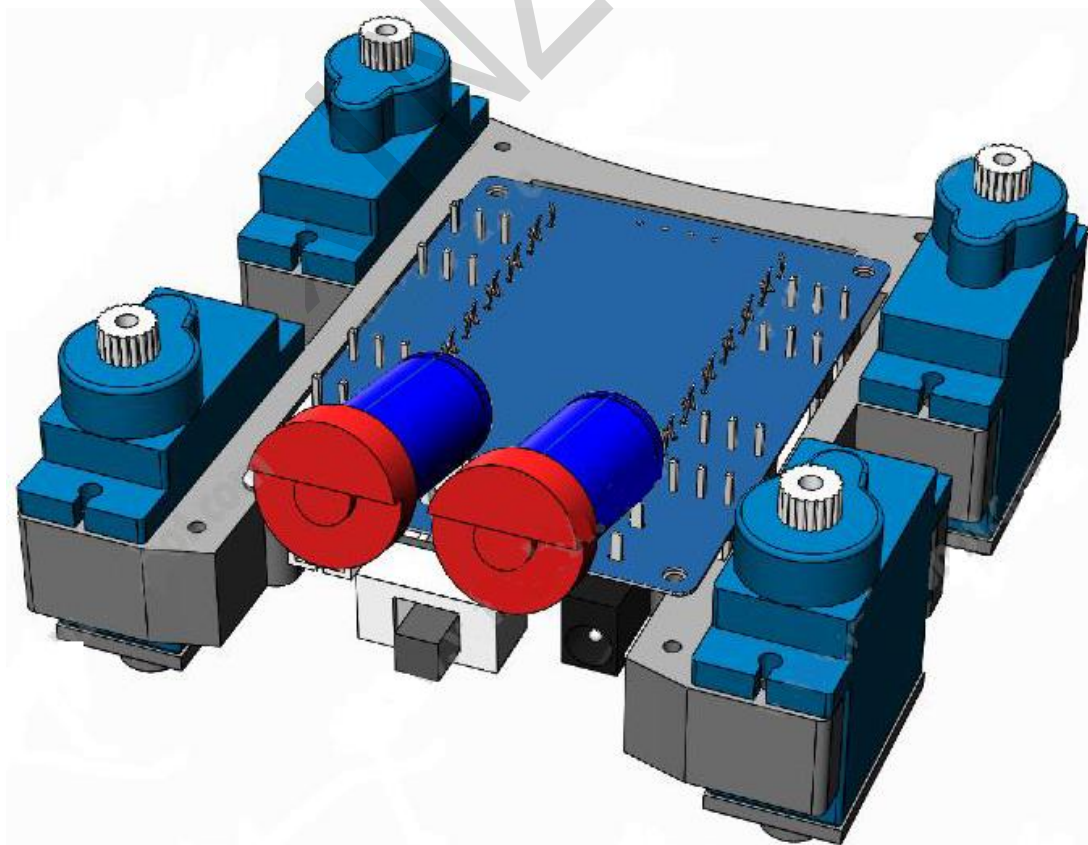
Step 2. Install the servo shield and servo

Install the servo on the body, install the servo shield, and paste the eyes



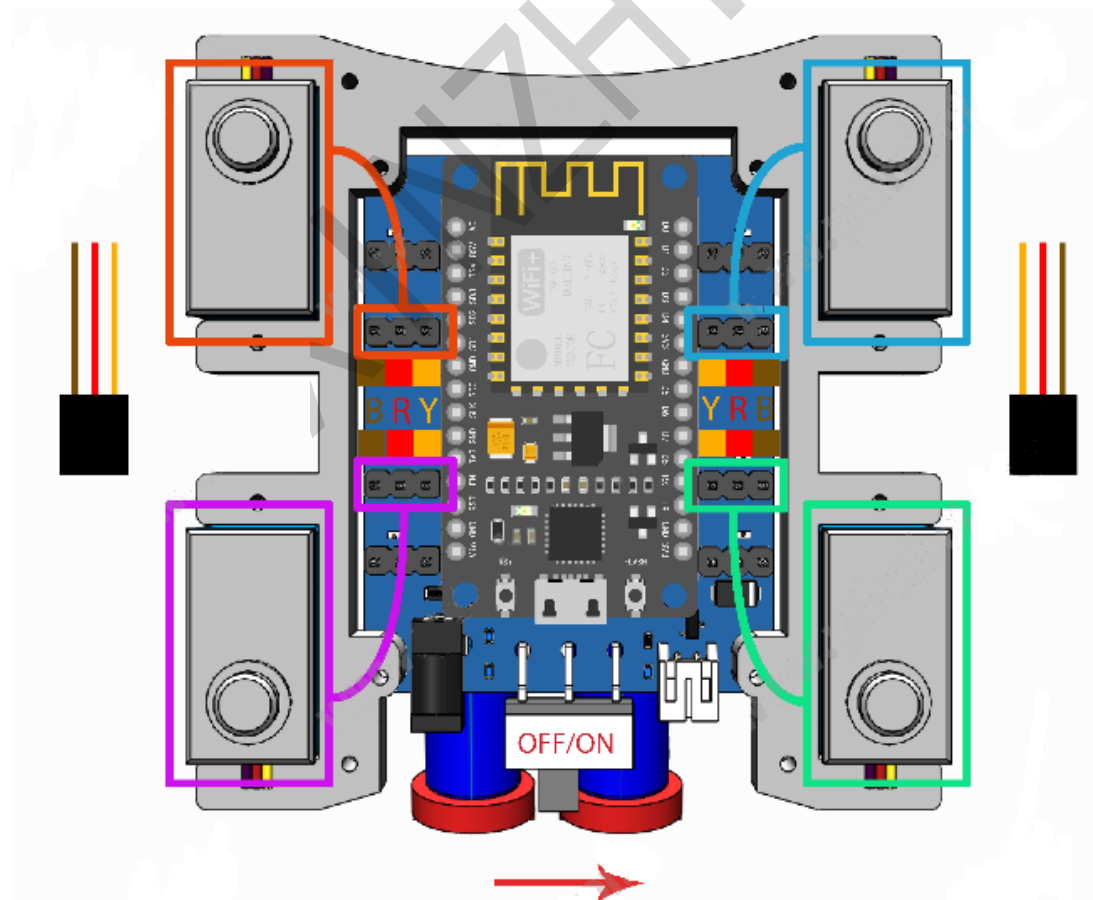
Step 3. Fixed servo and servo shield

Fix the servo with screws! Pay attention to the direction of the servo arm, which is exactly the same as the picture



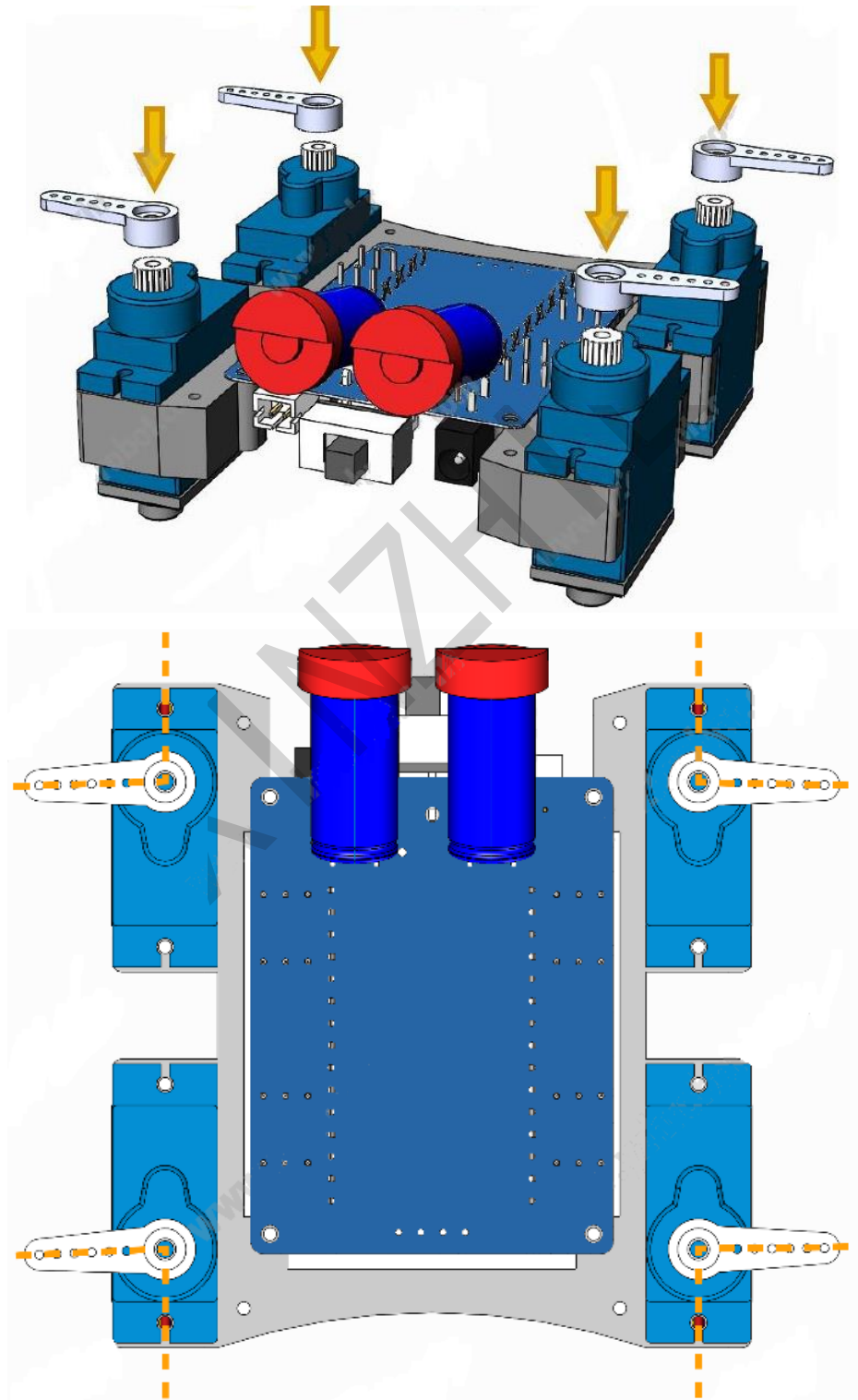
Step 4. Wiring servos and servo shield

Connect the battery, insert the servo cable into the servo shield, pay attention to the color! Then turn on the switch and turn it off after 10 seconds! The purpose is to reset the servo angle! If not, the posture will be wrong after installation! shown as below picture (please be sure that the steps of servo connecting cable in turn! on the basis of marked color the brown is GND, the red is VCC, and the yellow is the signal line.)



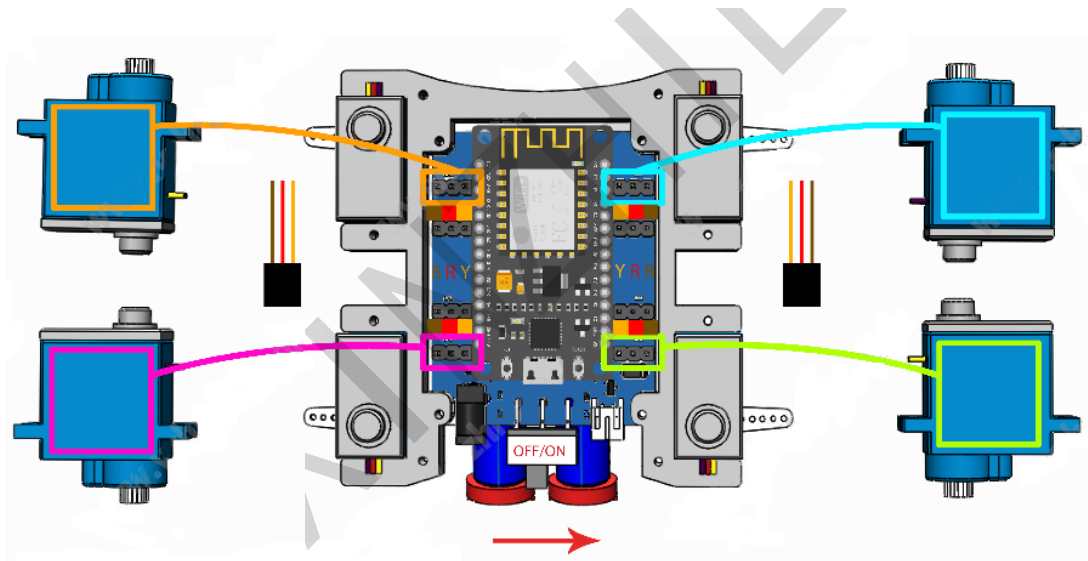
Step 5. Installing servo arm

Install the servo arm according to the angle on the picture. Servo perpendicular to servo arm.



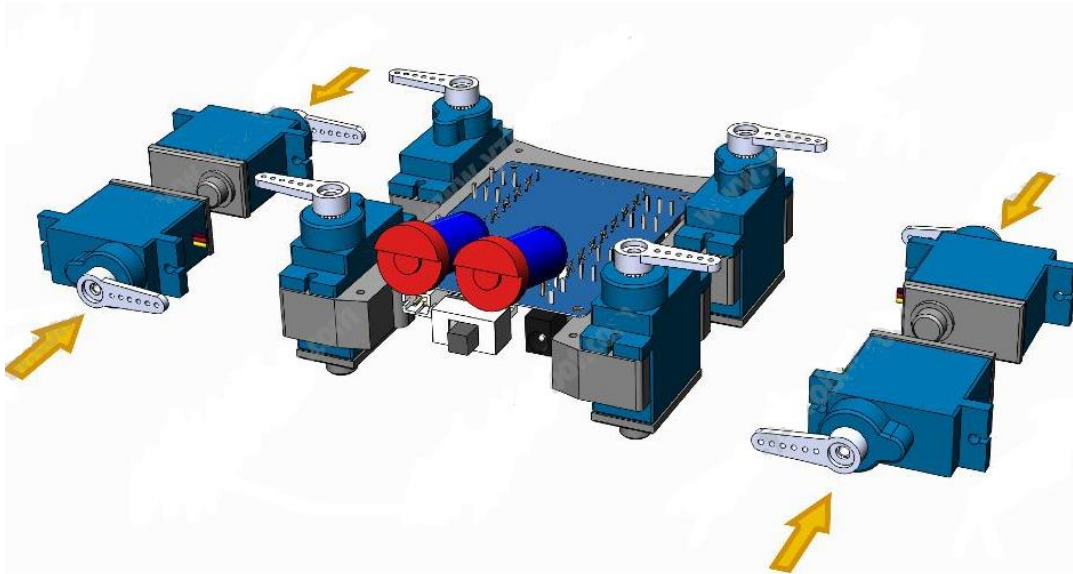
Step 6. Wiring servos and servo shield

Insert the servo cable into the servo shield, pay attention to the color! Then turn on the switch and turn it off after 10 seconds! The purpose is to reset the servo angle! If not, the posture will be wrong after installation! shown as below picture(please be sure that the steps of servo connecting cable in turn! on the basis of marked color the brown is GND, the red is VCC, and the yellow is the signal line.)

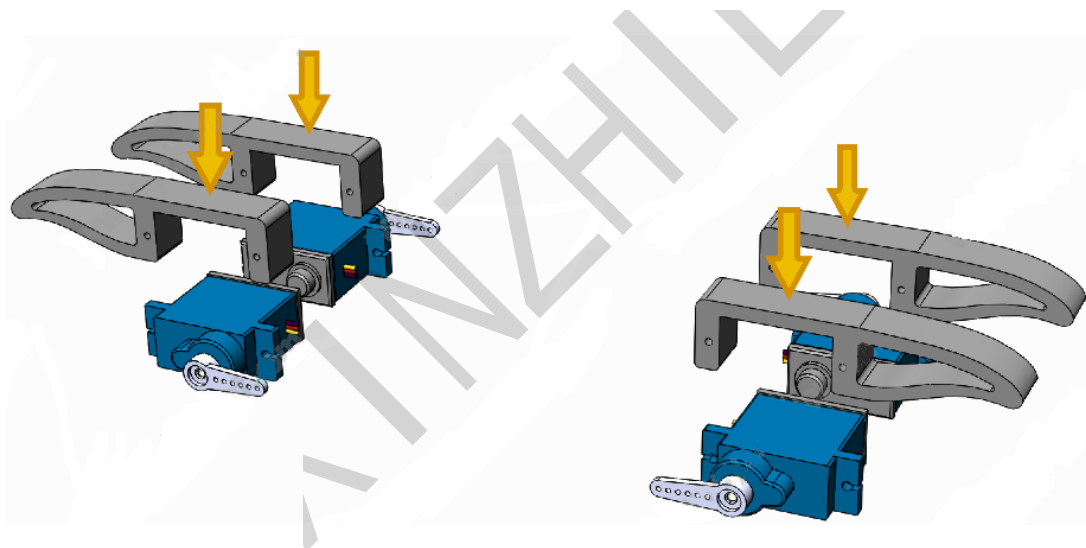


Step 7. Installing servo arm

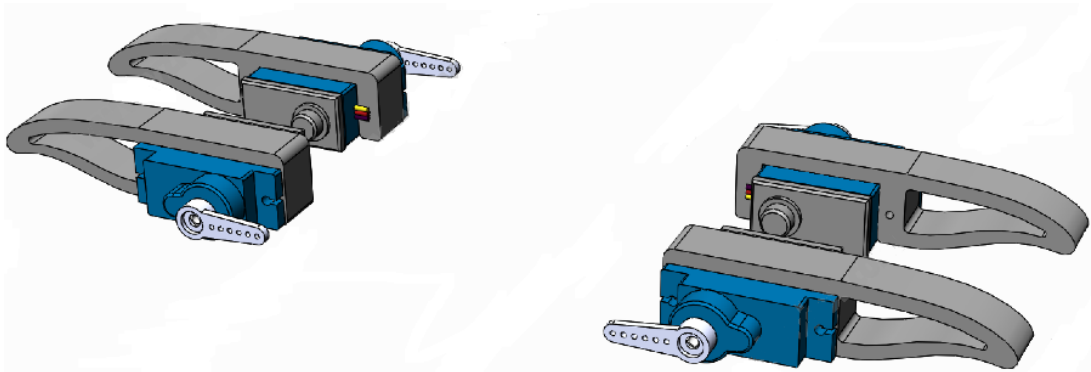
Install the servo arm according to the angle on the picture.



Step 8.Installing leg4



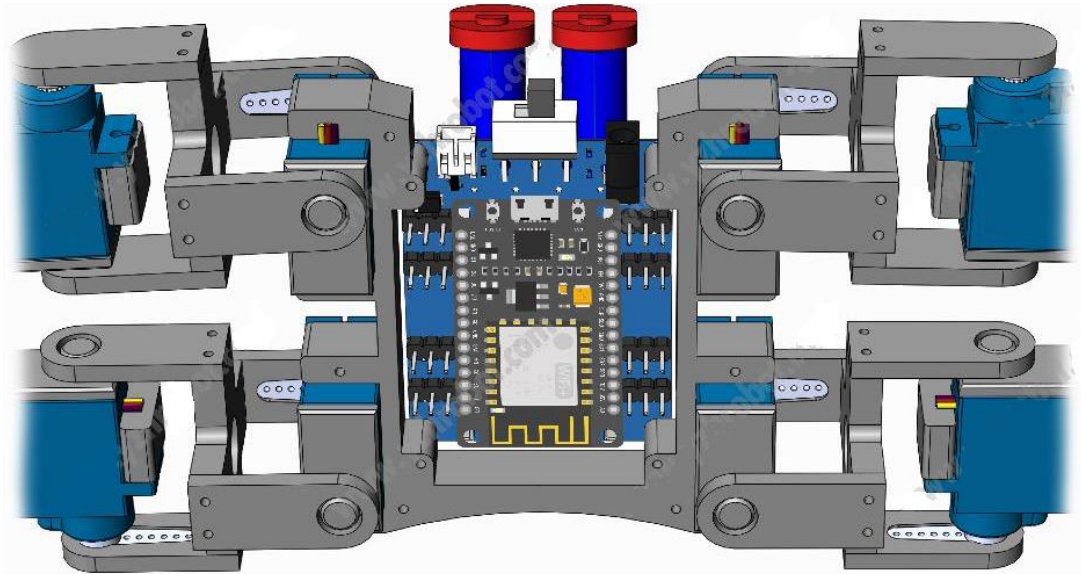
Step 9. Fix the servo on leg4 with screws



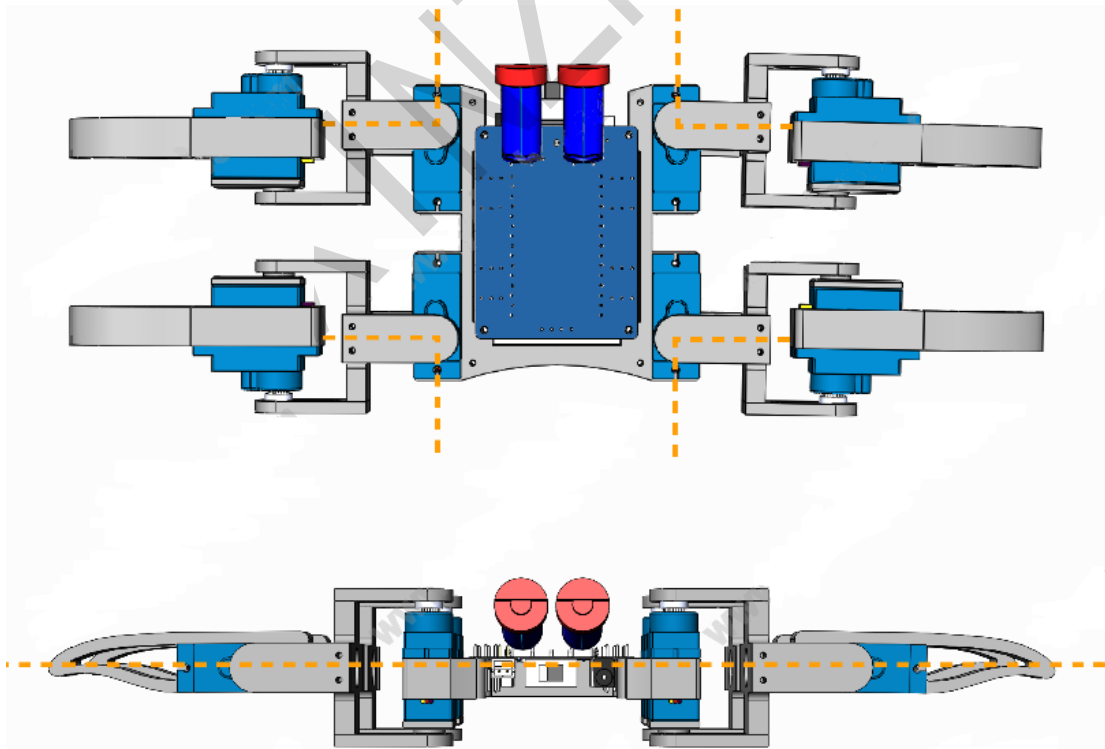
Step 10. Install the four brackets



Step 11. Install the four thighs

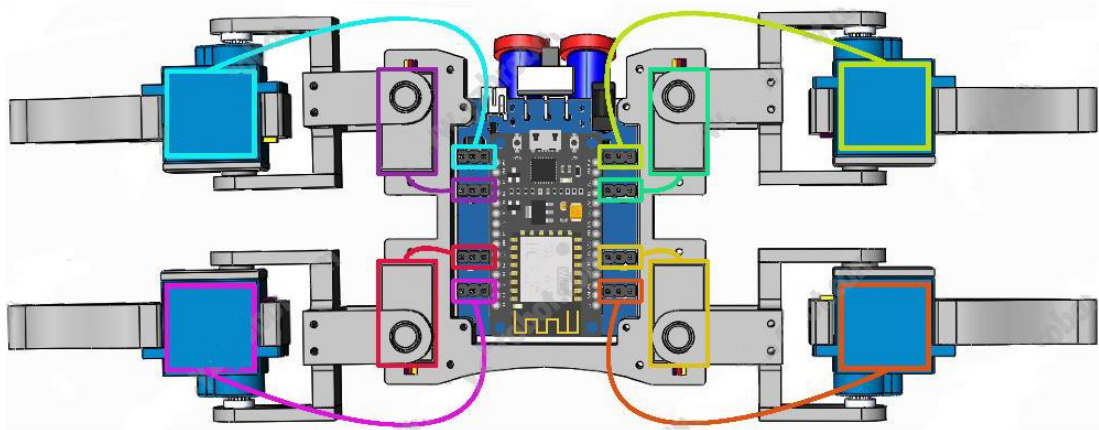


After the installation is completed according to the correct steps, it should be as shown in the figure! Note the angle of each joint

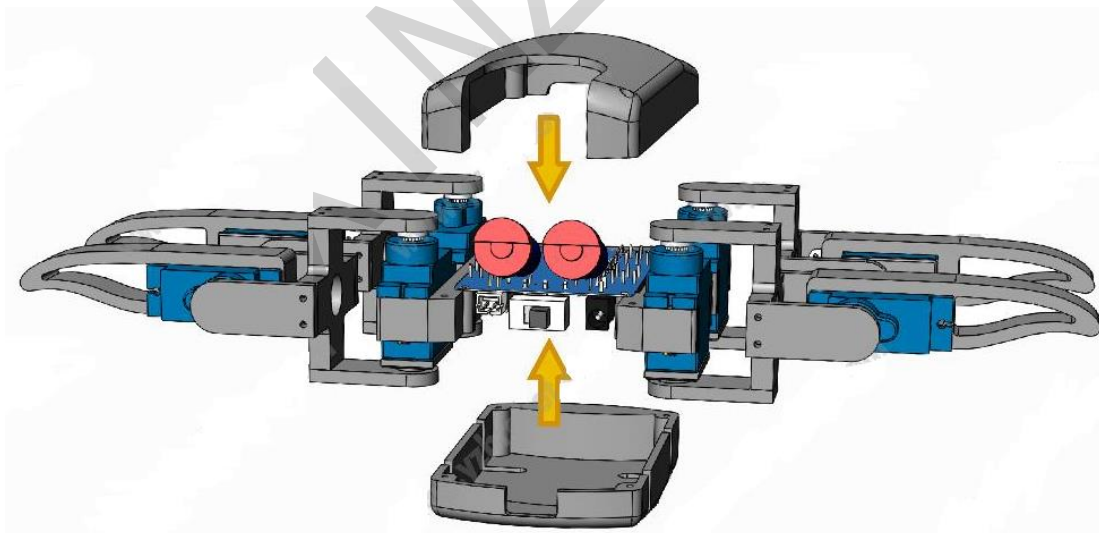


Step 12. Arrange the cable

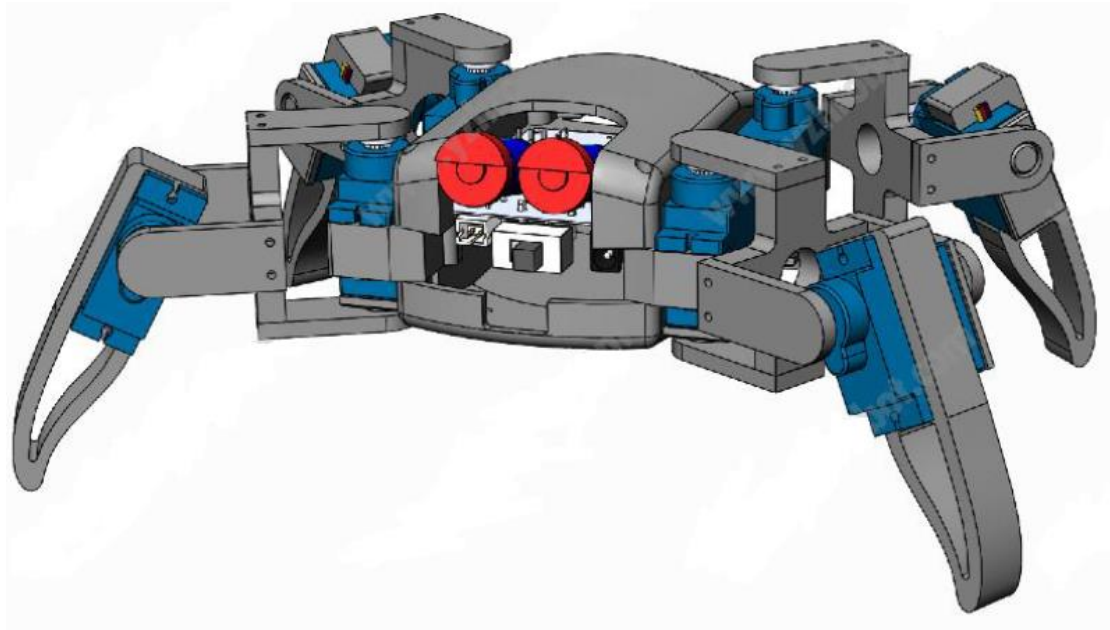
Organize cable and ports! And recheck



Step 13. Install body-cover and body-bottom



Assembly complete! After connecting to the robot's WIFI network, we can control the robot through Android, Apple, Windows and Linux web browsers! See the next chapter for specific operations



3 Control experience

Fully charge the battery. Turn on the switch. If you use the iPhone to control, it is only supported use the web app to control temporarily, we will update the ios app as soon as possible; If you use an Android phone, you can use both web page and APP to control.

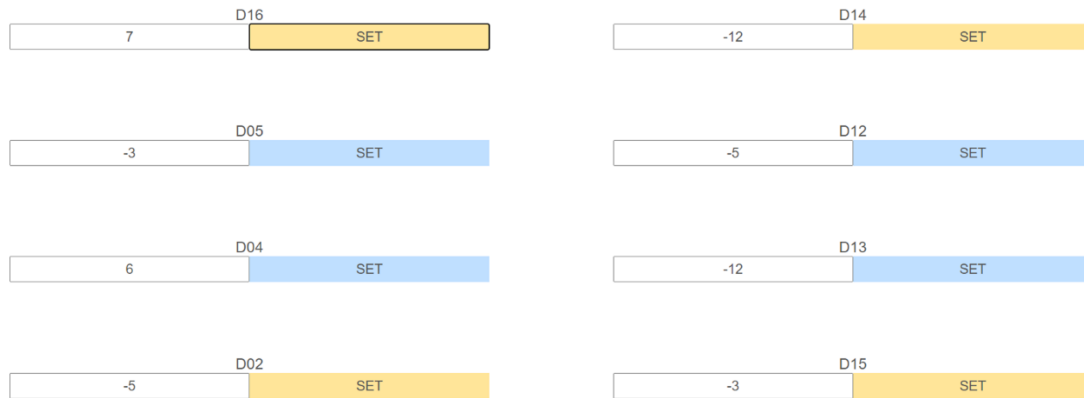
3.1 Use web page control

Use the mobile phone or computer scans WIFI (turn off shared networks such as GPRS and make sure that WIFI is the only network used), connects the wifi hotspot named “Robot XXX”, the password is 12345678, shown as below picture

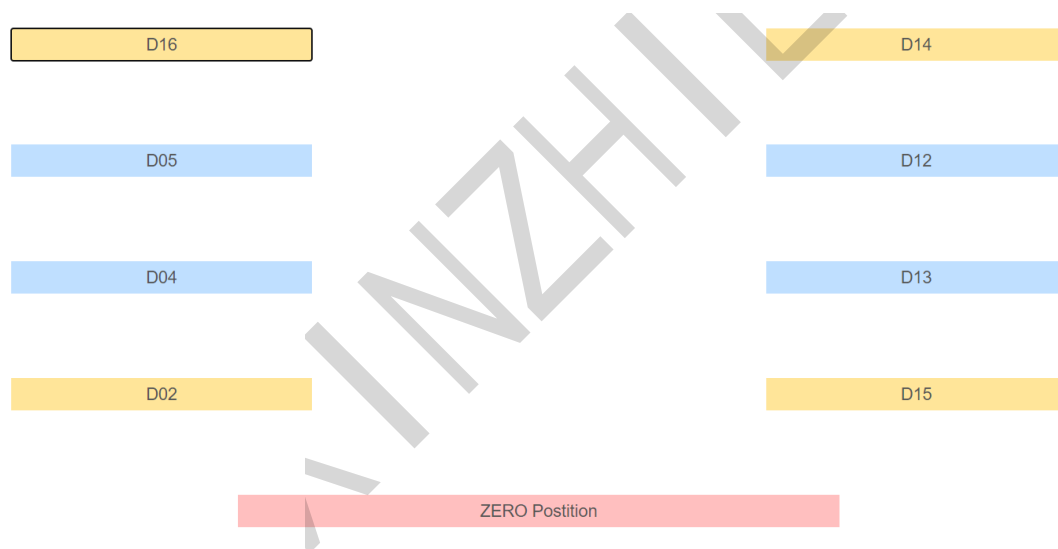


3.1.1 Calibration

After connecting successfully, open the mobile phone or computer's web browser (finishing this step by computer is recommended), and enter the website <http://192.168.4.1/setting> ,And the interface as shown in below picture



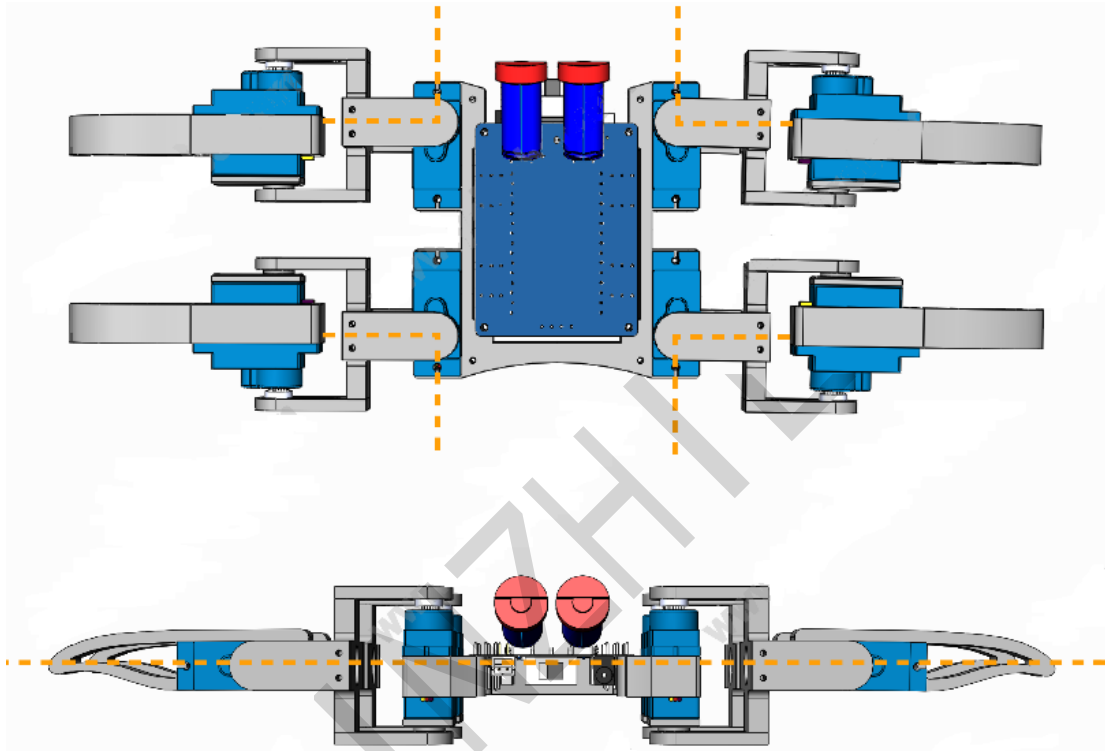
Open another page at the same time and enter the website address <http://192.168.4.1/zero> , the interface as shown in below picture



Forward the robot head, for example with the servo motors calibration in the upper left, the other servo motorss are the same.

Enter a number in the D16 input box, (it can support both positive and negative, they are represent turn around to positive or negative). Then click the "Setting" button, and

switch web to `http://192.168.4.1/zero`, click D16 and you can see the vision adjusted . By analogy, calibrate the other 7 servo motors, the final calibration is shown as below picture



3.1.2 Key remote control

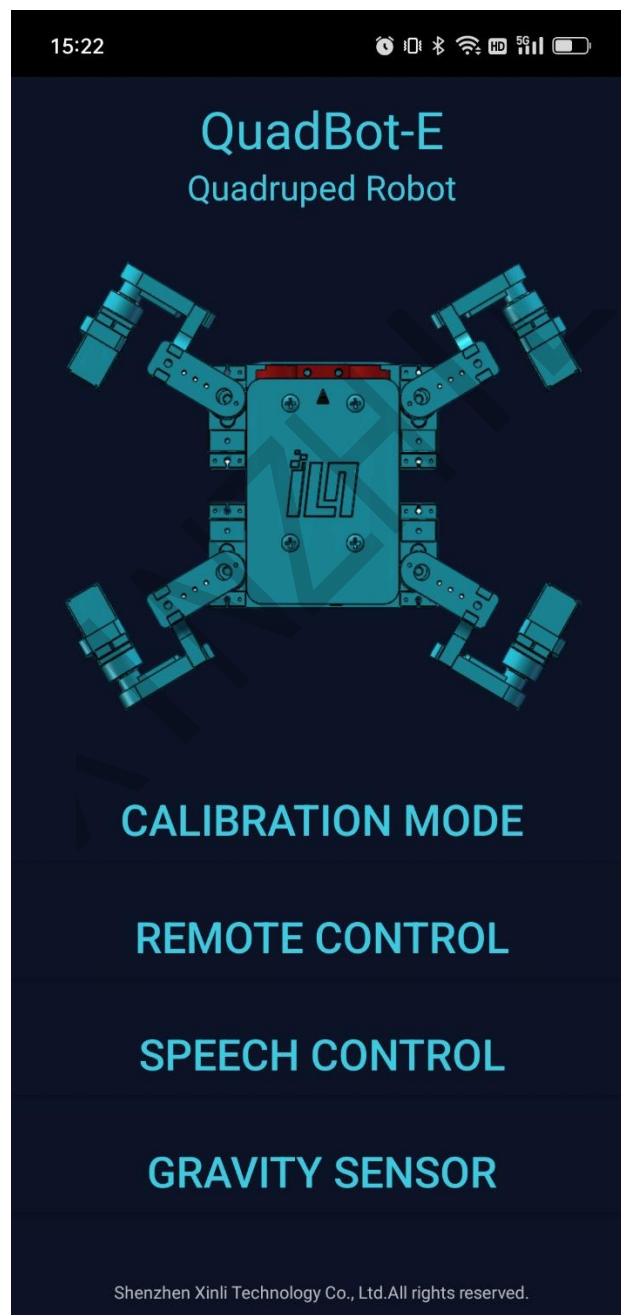
Enter the control page address:192.168.4.1in the mobile phone or computer web browser, and the following interface will appear if it is correct



At this time, you can control the robot according to the text prompts on the page.

3.2 Control with Android APP

Locate the "04_APP" directory in the package provided by us and install QuadBot-En-V2.0.apk. The following interface is obtained

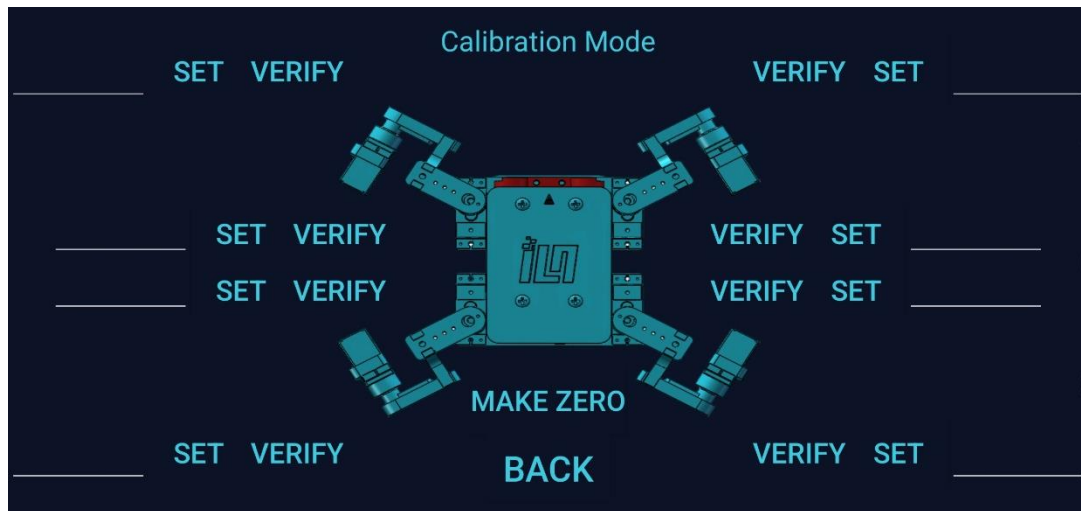


The mobile phone or computer wireless network scans WIFI (turn off shared networks such as GPRS and make sure that WIFI is the only network used), connects the wifi hotspot named “Robot-XXX”, and the password is 12345678, shown as below picture

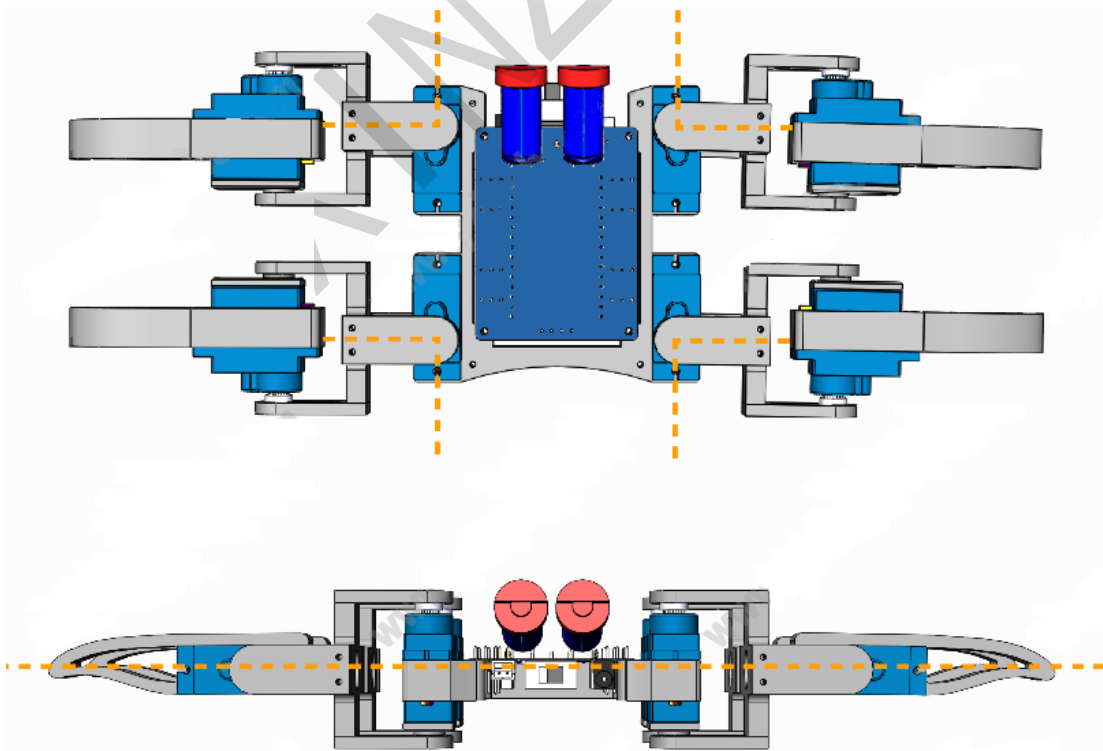


3.2.1 Calibration mode

Click the "Calibration Mode" button on the APP home page to enter the calibration page,



As shown in the figure, enter the calibration value in the horizontal box in front of the setting, which is generally within plus or minus 15. The symbol represents the direction. Then click Set, and then click Verify to see that the corresponding servo will be adjusted. The same action operates each servo until the robot's attitude is as shown below.



Then the calibration is completed.

3.2.2 Key control mode

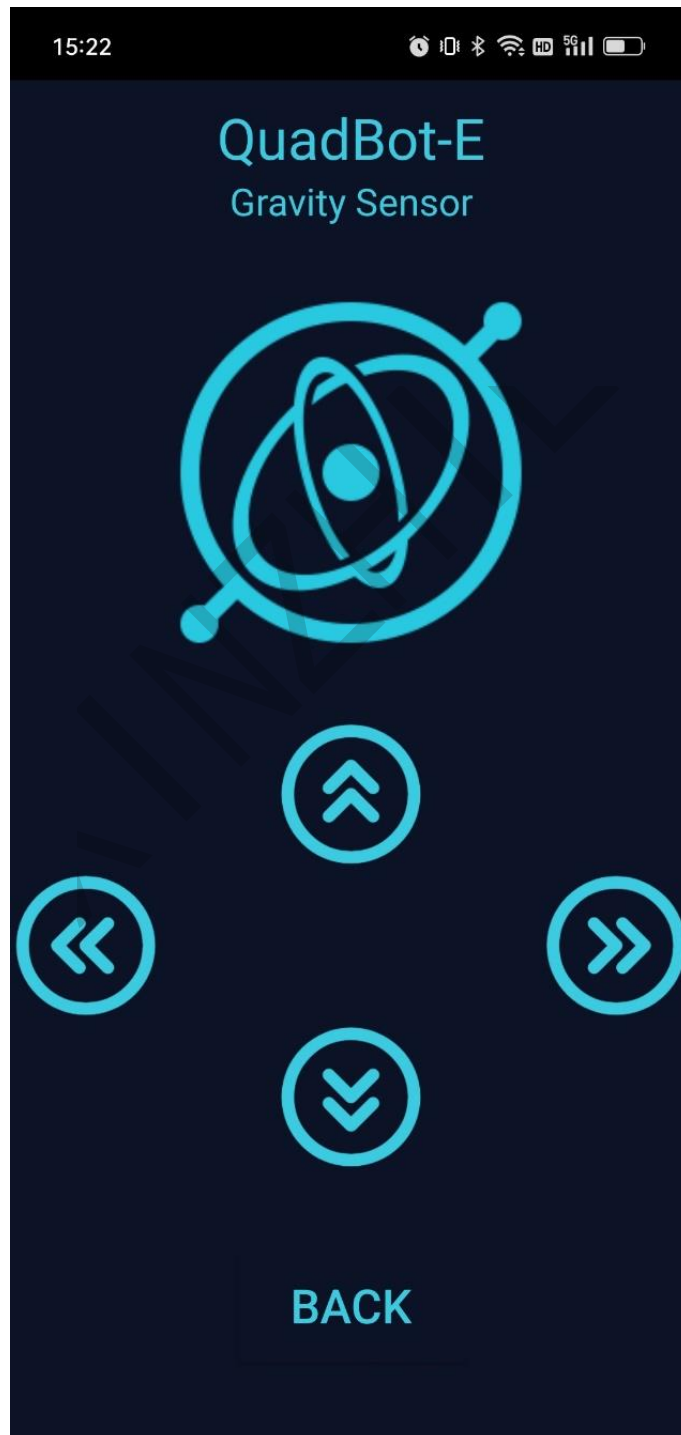
Click the "REMOTE CONTROL" button to enter the key control mode and get the following interface



Then you can control the robot according to the key prompts.

3.2.3 Gyro mode

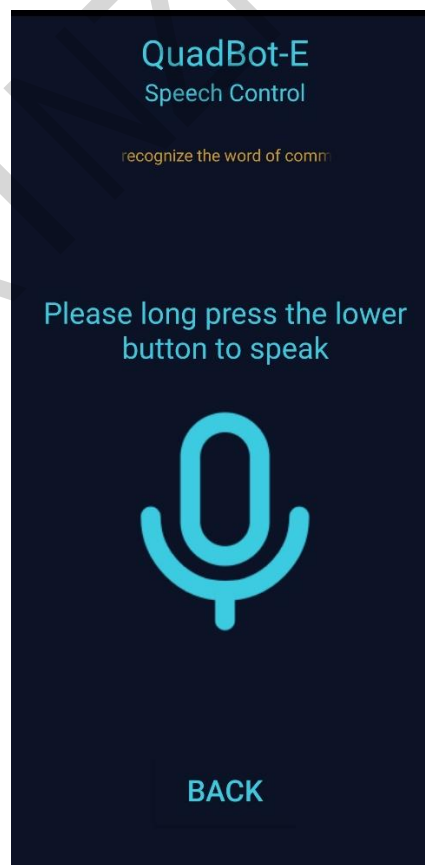
Enter the homepage, click the "GRAVITY SENSOR" button to enter the Gyro mode, and get the following interface



Rotate the mobile phone forward substantially, the robot moves forward; Rotating backward, and the robot backward; The mobile phone rotates to the left and the robot moves to the left; The mobile phone rotates to the right and the robot moves to the right; Make the mobile phone Lay flat and rotate clockwise, the robot turn right, make the mobile phone Lay flat and rotate anti-clockwise, the robot turn left.

3.2.4 Voice control mode

Press to enter voice control mode. The following interface is obtained



Press and hold the microphone icon, face the phone, and say the control command according to the prompts on the APP. After releasing the button, the robot will execute the action according to the command.

4 Graphic courses

The graphical course need using Mixly graphical programming. For details, please refer the tutorials "[Mixly Playing QuadBot-E Quadruped Spider Robot.pdf](#)" in the "Course" and "Graphical Programming"