

HS-B09 Fist guessing robot Learning kit assembly manual



This product must be equipped with a U+ program card.(U+ PROGRAM CARD) Use U+ PROGRAM CARD SUPPORT Arduino IDE、Mixly、Ardublock、Scratch etc. Programming software



Warning: Persons under the age of 14 must use it under the guidance of a professional teacher or an adult with relevant knowledge!
The assembly and debugging of this product require the use of relevant tools. Please take safety precautions when assembling to avoid injury!

Product introduction

The guessing robot is an intelligent kit composed of 9g steering gear, ultrasonic module and other accessories. This kit can realize a fun boxing game. If you make any gestures above the ultrasonic module, the boxing robot will randomly select stones, scissors, and cloth. You can also modify the sample program through programming software such as Arduino IDE and Mixly, or write a new program yourself to control the boxing robot.

Preparation tools and assembly precautions

Bring your own assembly tools: 3mm diameter cross screwdriver, scissors.
Bring your own debugging tools: 1 computer with Windows 7, 8, 10, and 11 operating systems, 1 U+ program card, 1 data cable, and 1 pair of 18650 lithium batteries.
If you want to easily assemble the kit, you need to read the assembly instructions carefully and assemble it step by step.

Security warning

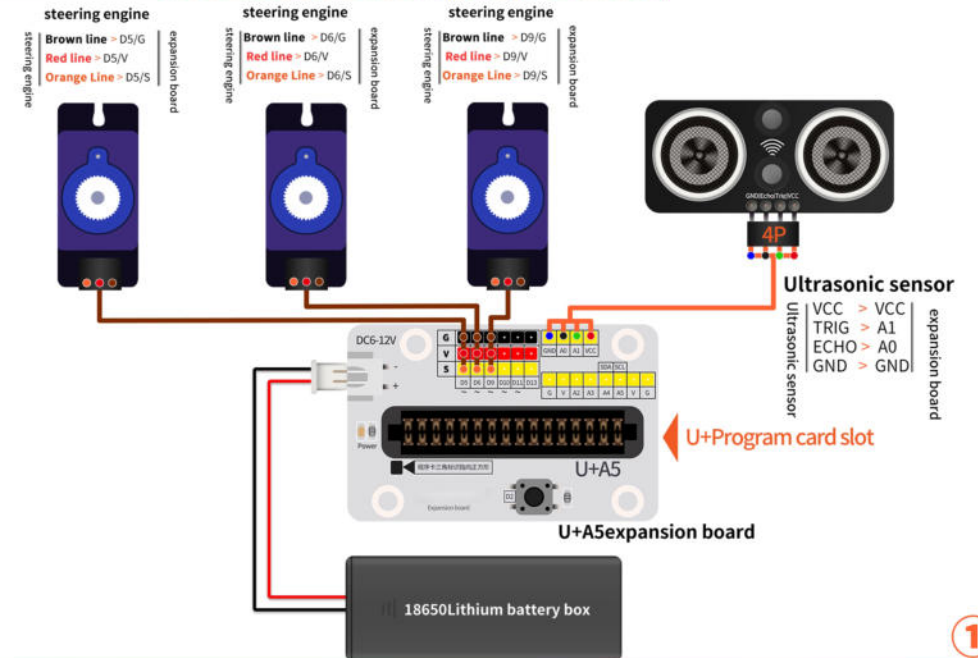
1. This product is a teaching experimental product. Please do not use its function as a regular daily product, there will be instability.
2. When you are not using this product, please turn off the power switch on the battery case and remove the battery, and keep the battery properly.



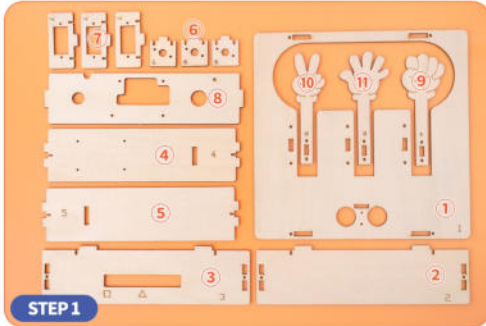
List of experimental materials 【 Self-provided materials are not in this product kit and need to be equipped by yourself 】

	name	Image		name	Image		name	Image
1	micro usb data cable (Owned)		2	U+Program card (Owned)		3	18650 pointed lithium battery (Owned)	
4	18650 Lithium battery box		5	press cap		6	U+A5 expansion board	
7	Servo disk		8	Ultrasonic module		9	9g steering engine	
10	4mm Coarse grain screw + 7mm Coarse grain screw		11	subject Structural plate		12	4PDuPont Line (20cm) + Cable Tie	

circuit wiring diagram 【 The color of the DuPont line is randomly distributed. For line connection, please refer to the identification information corresponding to the entrance! 】

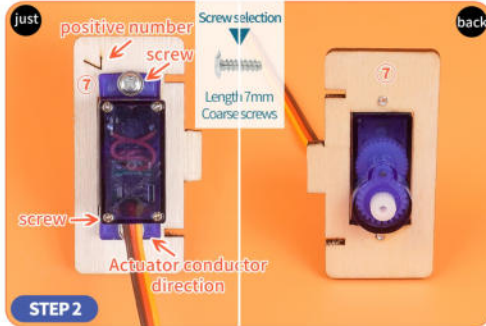


Start assembly



STEP 1

- Prepare all accessories and board materials, please check the number on the material carefully when assembling the board materials. (The wooden board has numbers for the front, no numbers for the back)



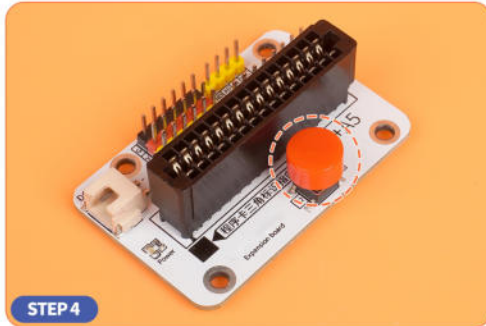
STEP 2

- Install the steering gear on the plate with 7mm coarse grain screws. **Note: The front and back of the number plate and the orientation of the steering gear.**



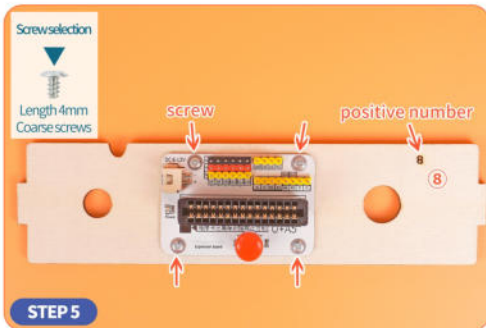
STEP 3

- Refer to the installation method of STEP2, install the other two servos on the 0006 plate with 7mm coarse-grained screws.



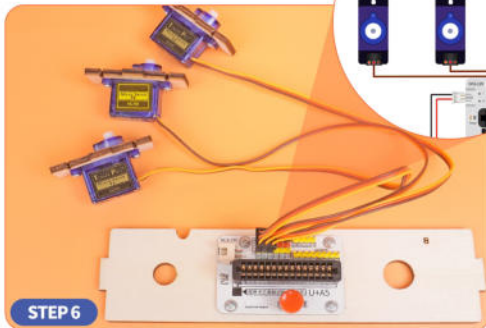
STEP 4

- Install the red button cap on the U + A5 expansion board.



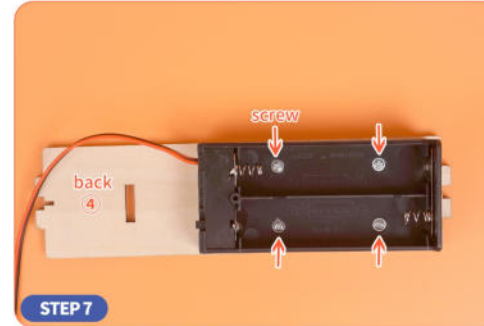
STEP 5

- Install the U + A5 expansion board on the front of the No. 8 board with 4mm rough-grain screws. **Note: The front and back of the No. 8 board, the installation orientation of the U + A5 expansion board.**



STEP 6

- Refer to [Circuit Wiring Diagram] to plug the steering gear wire terminals into the D5, D6, and D9 interfaces on the U + A5 expansion board. (Please check the terminal wiring sequence and then insert it. The wrong wiring sequence may burn out the circuit board)



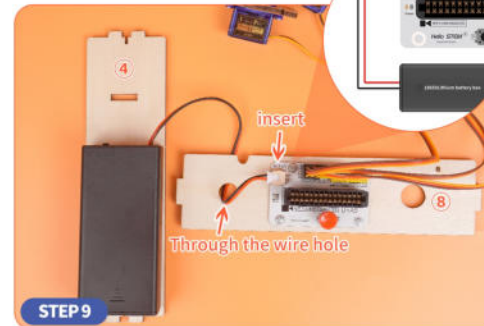
STEP 7

- Install the battery box on the back of the ④ plate with 4mm rough-grain screws.



STEP 8

- First put the 18650 lithium battery into the battery case, and then close the lid of the battery case.



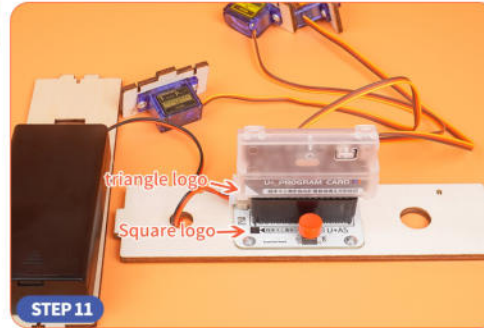
STEP 9

- Refer to [Circuit Wiring Diagram] First pass the battery box wire through the wire hole of the No. 8 board, and then plug it into the power interface on the U + A5 expansion board.



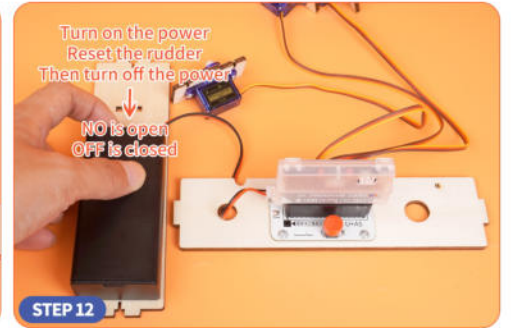
STEP 10

- Use Mixly software to upload the first example program of the kit to the U + program card.



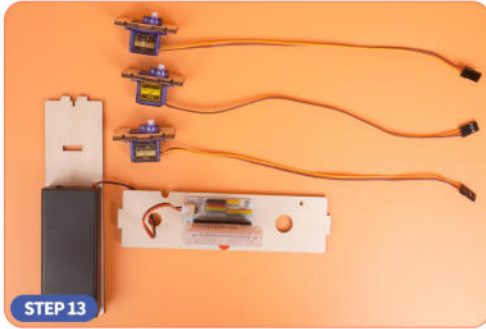
STEP 11

- Insert the program card into the slot of the U + A5 expansion board. **Note: In the insertion direction of the program card, the triangular logo points to the square logo of the**



STEP 12

- Turn on the power switch first, reset the rudder to initialization, and then turn off the power.



● Remove the steering gear wire terminals.



● Install the three steering gear discs on the back of the three No. 6.



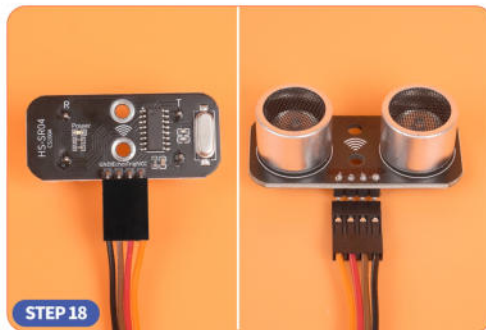
● Use 7mm coarse-grained screws to install the three 6 plates on the back of the 9, 9 and 9 plates.



● Install the servo horn on the servo motor of board 6 using a 7mm coarse-threaded screw. **Note: Hold the servo motor steady with your hand while installing and ensure it does not rotate.**



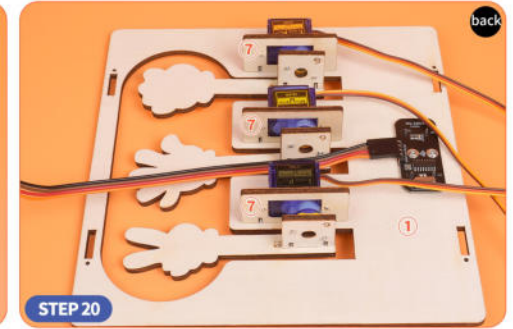
● Refer to the installation method shown in STEP 16 to install the remaining two servo horns from board 6 onto the servo motors.



● Insert the 4-pin DuPont wire connectors into the GND, Ech, Trig, and VCC interfaces of the ultrasonic module.



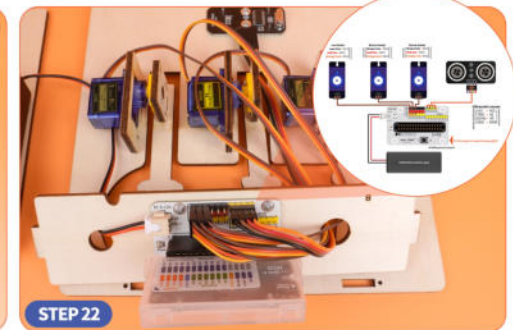
● Install the ultrasonic module on the back of board 1 using a 4mm coarse-thread screw.



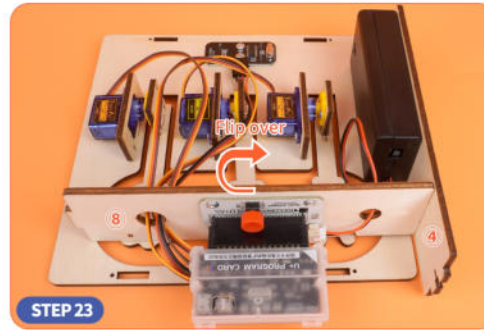
● Install three 7 boards on the back of board 1 using 7mm coarse-thread screws.



● Front view of board 7 installation.



● Pass the servo motor wires and ultrasonic module jumper wires through the wire holes of board 8. Then, referring to the [Circuit Wiring Diagram], plug the servo motor wires into the D5, D6, and D9 interfaces of the U+A5 expansion board, and connect the ultrasonic module terminals to the GND | A0 | A1 | VCC interfaces.



● Flip boards 8 and 4 to the right side. Then, install board 4 onto board 8.



● Install board 5 onto board 8.



STEP 25

- Install board ③ onto boards ④ and ⑤ using 7mm coarse-thread screws.



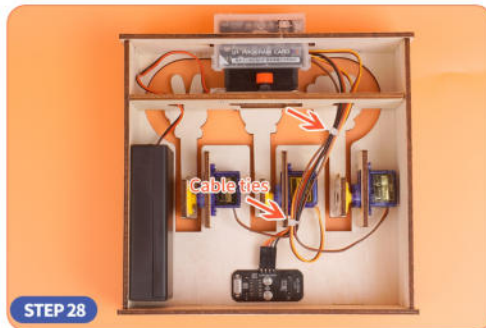
STEP 26

- Install board ② onto boards ④ and ⑤ using 7mm coarse-thread screws.



STEP 27

- Install board ① onto boards ② and ③ using 7mm coarse-thread screws.



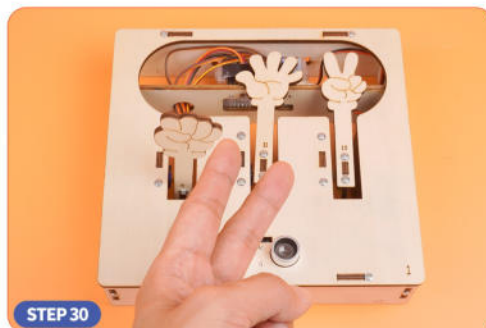
STEP 28

- Secure the servo motor wires and ultrasonic DuPont wires together using two cable ties. Trim off any excess wires with scissors. **Be careful when using scissors to avoid injury!**



STEP 29

- The rock-paper-scissors robot assembly is complete. When you turn on the power, it will start running automatically.



STEP 30

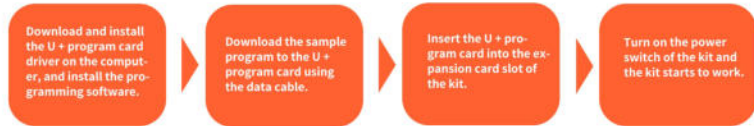
- Place any hand gesture above the ultrasonic module, and the rock-paper-scissors robot will randomly choose between rock, paper, or scissors.

After assembly, it is important to double-check if everything is installed correctly to avoid any potential hazards during debugging.



1. Carefully inspect the entire kit to ensure that no components are installed incorrectly. If any components are misaligned, it may prevent the entire kit from functioning properly.
2. Thoroughly refer to the circuit wiring diagram and verify if the wire connections are correct. Incorrect wire connections can result in circuit short-circuiting, damaging electronic components, and, in severe cases, causing fire or explosion hazards.
3. Carefully inspect whether the pins on the bottom of the circuit board are in contact with any other metal. If there is contact, check if any components are missing, which could result in insufficient isolation between the circuit board and other metals.
4. Please verify the power supply type and the battery model used for this kit. Incorrect use of power supply or batteries can lead to fire, explosion, and other hazardous situations.
5. If you encounter any unfamiliar issues, please contact the online customer service of the official service website or consult relevant professionals during the working hours from Monday to Saturday, 9:00-18:00. Avoid blind operation as it may lead to potential dangers.

Refer to the process below to debug and experiment with the kit



During debugging, you may encounter the following problems. Please refer to the following prompts to see if you can troubleshoot!



The fist guessing robot cannot work normally after installation, and the following problems may occur.

1. Check whether the wiring is loose or wrong. For details, please refer to [Circuit Wiring Diagram].
2. Check whether the battery has insufficient power, and it is recommended to replace it with a new battery.
3. Check whether the DuPont cable of the sensor and the expansion board is connected correctly, please refer to the [Circuit Wiring Diagram].
4. Check whether the U + PROGRAM CARD program card has downloaded the program.
5. Check whether the U + PROGRAM CARD program card is inserted upside down. Inserting upside down will cause a short circuit. Please refer to the card insertion method of [STEP 11] to insert the card.