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ELEGOO OwlBot Smart Robot Car Kit Installation Guide

Home » ELEGOO » ELEGOO OwlBot Smart Robot Car Kit Installation Guide

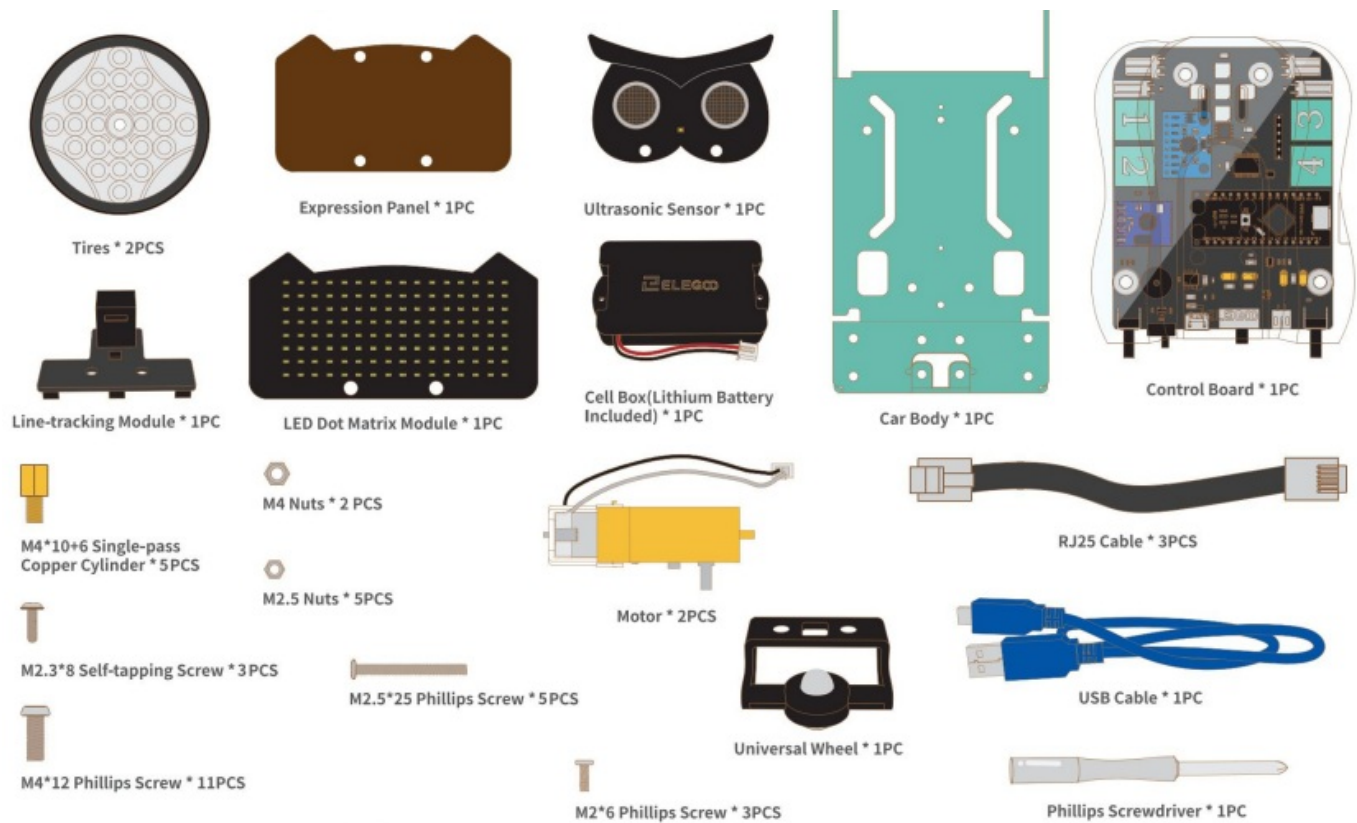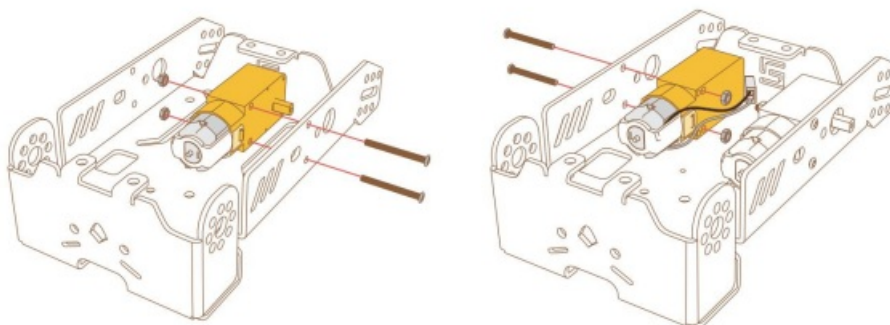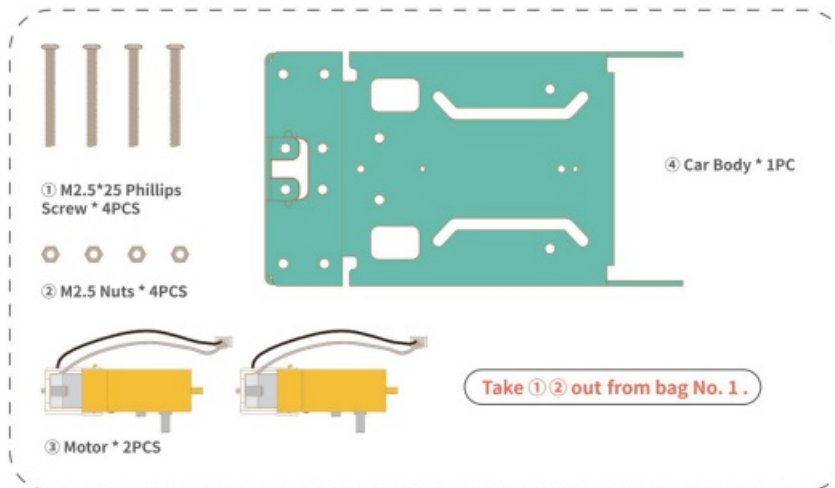**PANTONE 7626UP**

Material List

Tires * 2PCS

Expression Panel * 1PC

Ultrasonic Sensor * 1PC

Control Board * 1PC

Line-tracking Module * 1PC

LED Dot Matrix Module * 1PC

Cell Box(Lithium Battery Included) * 1PC

Car Body * 1PC

M4*10+6 Single-pass Copper Cylinder * 5PCS

M4 Nuts * 2 PCS

RJ25 Cable * 3PCS

M2.5 Nuts * 5PCS

Motor * 2PCS

M2.3*8 Self-tapping Screw * 3PCS

M2.5*25 Phillips Screw * 5PCS

USB Cable * 1PC

Universal Wheel * 1PC

M4*12 Phillips Screw * 11PCS

M2*6 Phillips Screw * 3PCS

Phillips Screwdriver * 1PC

Install the Motor

① M2.5*25 Phillips Screw * 4PCS

② M2.5 Nuts * 4PCS

③ Motor * 2PCS

④ Car Body * 1PC

Take ① ② out from bag No. 1 .

Install the Battery Box

① M2*6 Phillips Screw * 2PCS

② Cell Box(Lithium Battery Included) * 1PC

Take ① out from bag No. 1 .
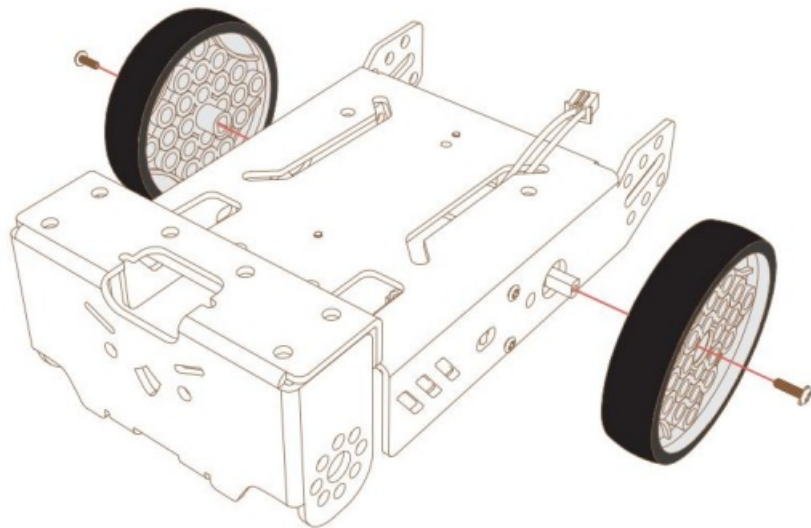
Pass the wire of the battery box through the corresponding hole first, and then install the battery box.

Install Tires

① M2.3*8 Self-tapping Screw * 2PCS

② Tires * 2PCS
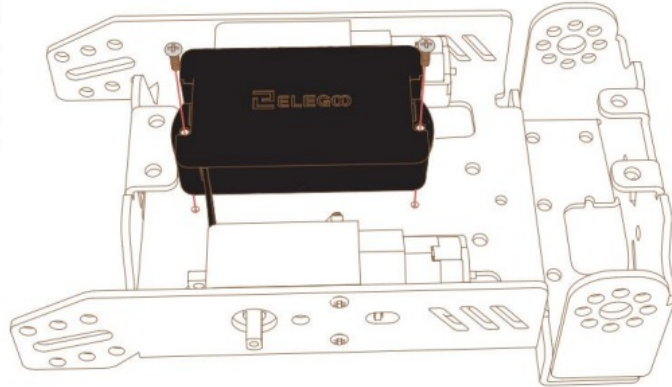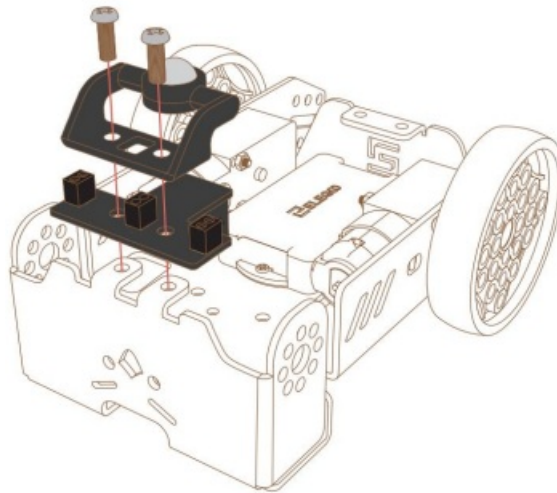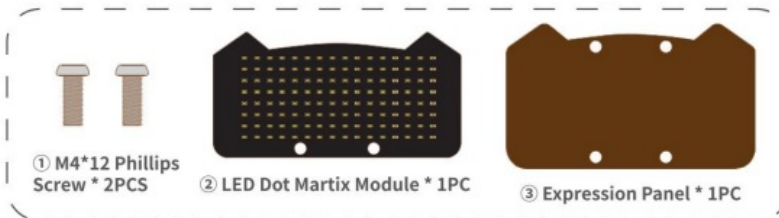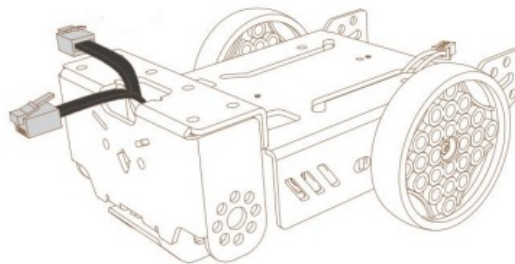
Take ① out from bag No. 1 .

Install Line-Tracking Module

① M4*12 Phillips Screw * 2PCS

② Line-tracking Module * 1PC

③ Universal Wheel * 1PC
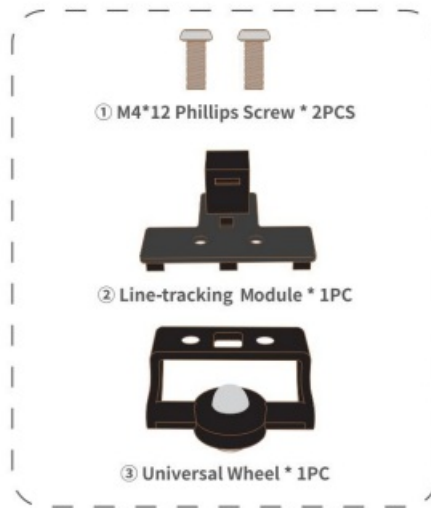
Take ① out from bag No. 2 .

Install LED Dot Matrix Module

RJ25 Cable * 2PCS

① M4*12 Phillips Screw * 2PCS

② LED Dot Martix Module * 1PC

③ Expression Panel * 1PC
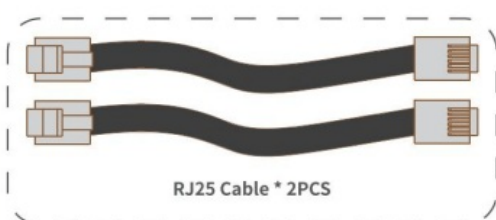
Take ① out from bag No. 2 .

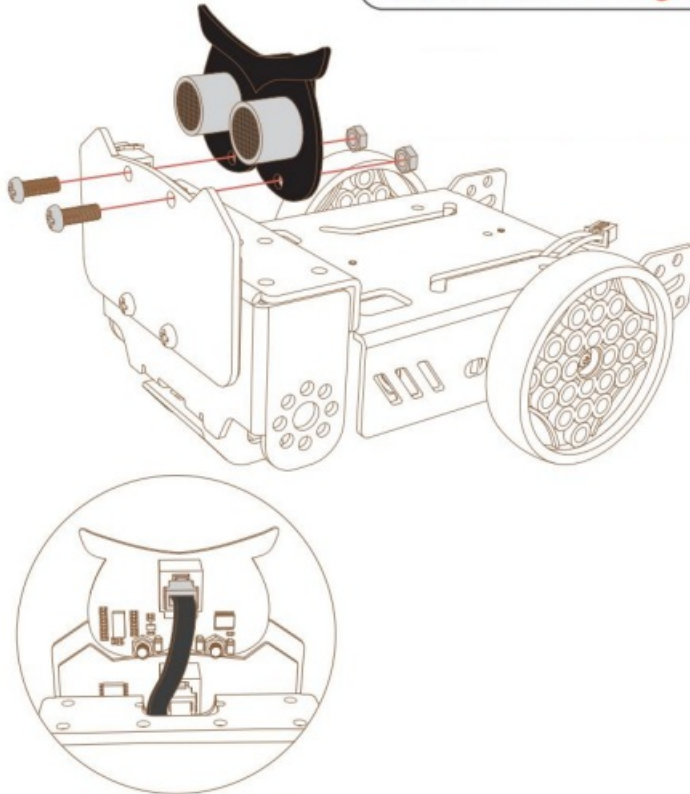Notice: Pass the two RJ25 cables through the hole on the car head first, and then install the LED dot matrix module.
Connect one of the RJ25 cables to the LED dot matrix module.

Install Ultrasonic Sensor

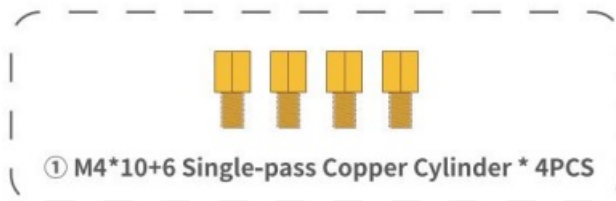① M4*12 Phillips Screw * 2PCS   ② M4 Nuts * 2 PCS   ③ Ultrasonic Sensor * 1PC

Take ① ② out from bag No. 2 .
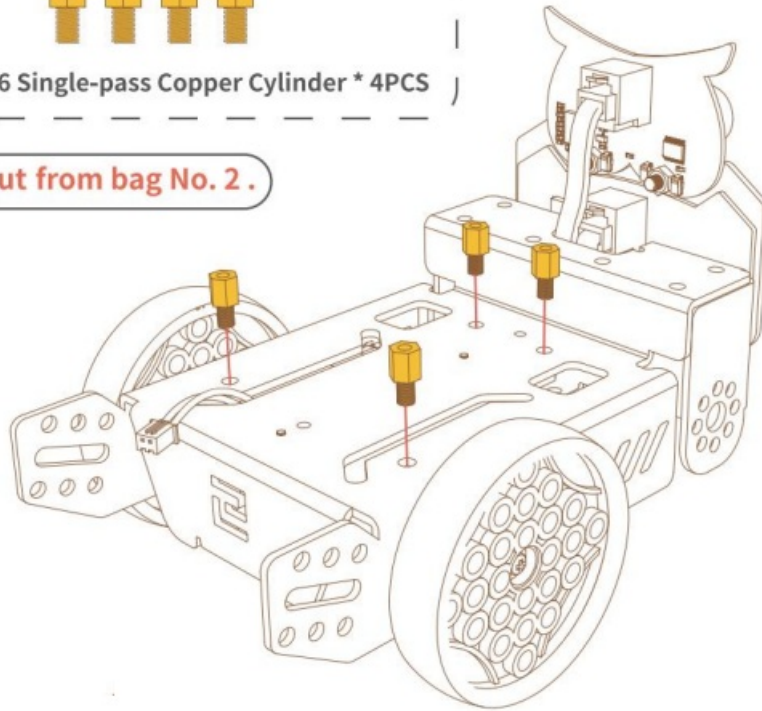
Notice: The ultrasonic sensor is installed behind the expression panel.
Connect the other RJ25 cable to the ultrasonic sensor.

Install Copper Cylinder

① M4*10+6 Single-pass Copper Cylinder * 4PCS
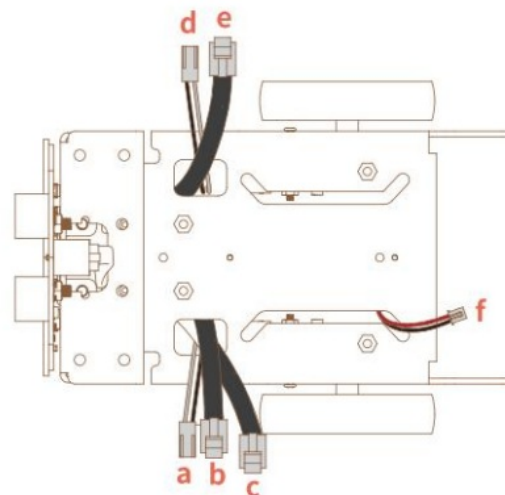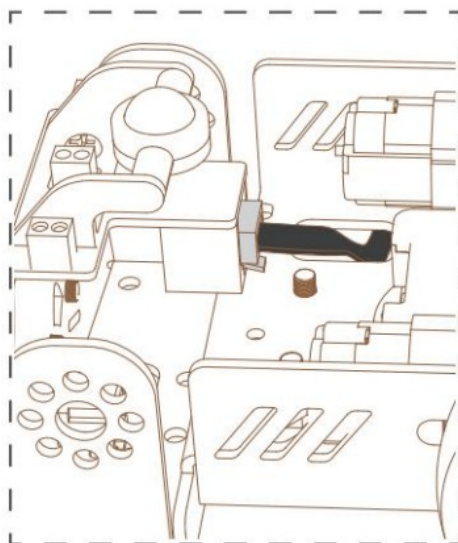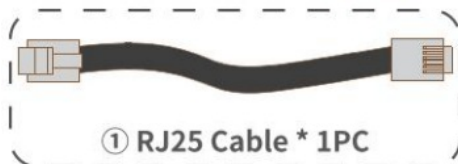
Take ① out from bag No. 2 .

Warning

a. Left Motor Line
b. Tracking Module Line
c. Ultrasonic Sensor Line
d. Right Motor Line
e. LED Dot Matrix Module Line
f. Battery Box Line

① RJ25 Cable * 1PC

Pass all the wires through the corresponding hole as shown in the picture.

Wiring Diagram

① Left Motor
② Right Motor
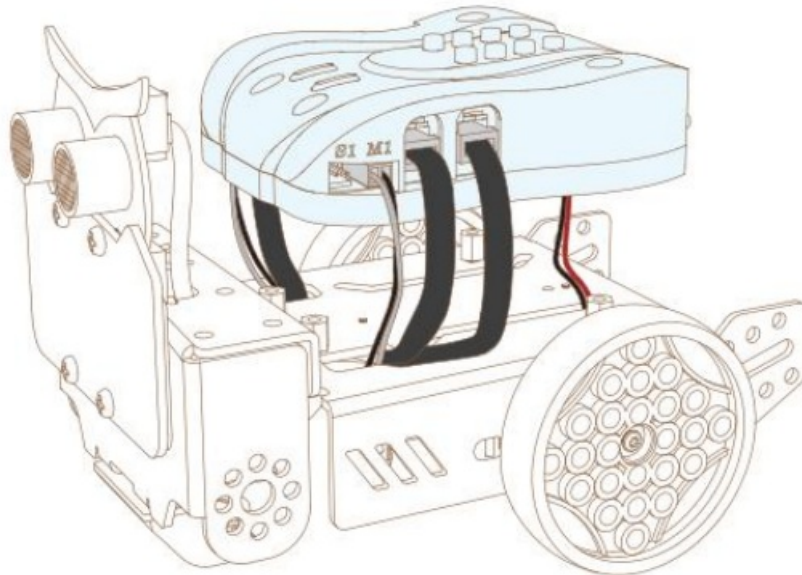③ Tracking Module
④ Ultrasonic Sensor
⑤ LED Dot Matrix Module
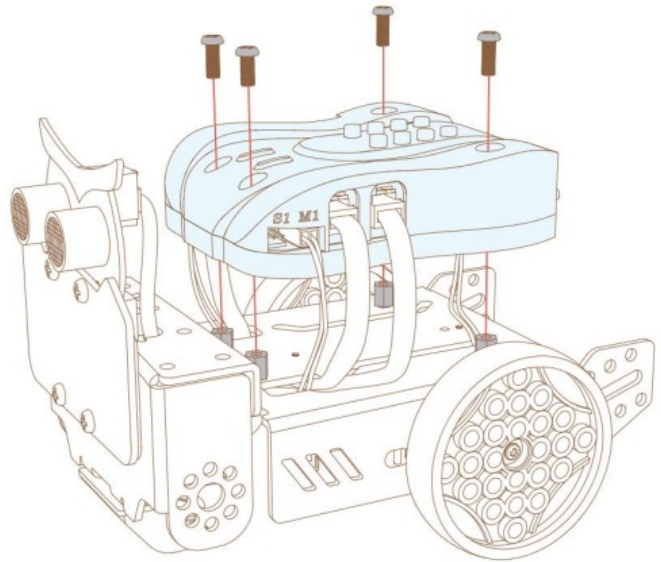⑥ Battery Box
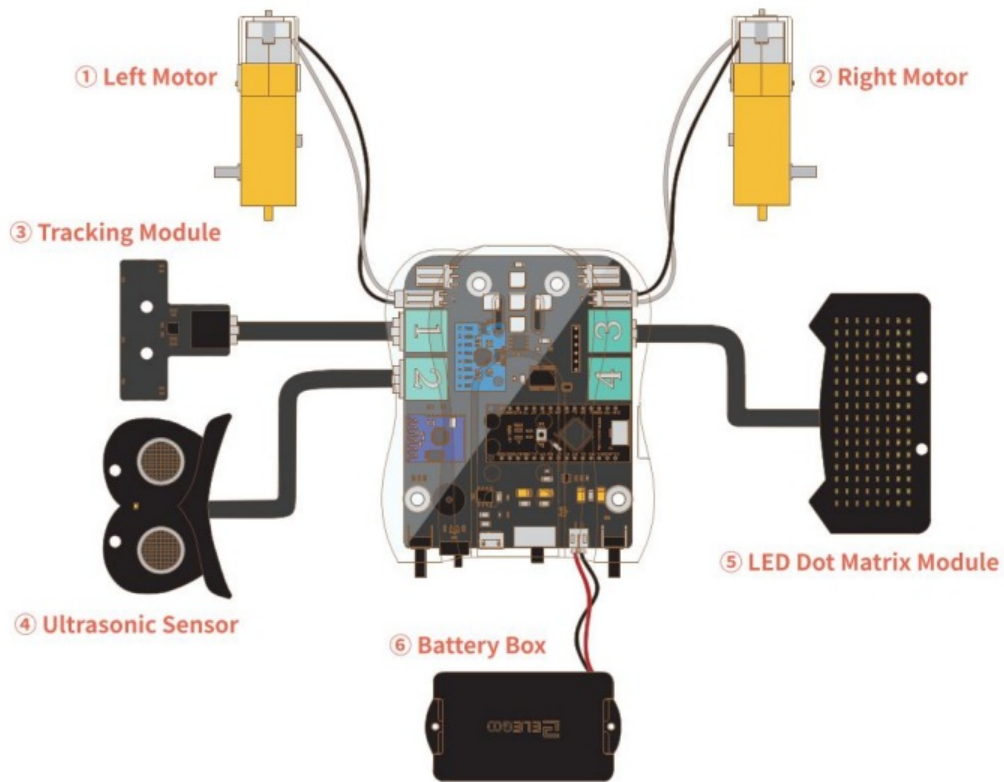
Connect Tracking Module to Interface

1. Connect LED Dot Matrix Module to Interface
2. Ultrasonic Module can be connected to any one of the Interfaces 1- 4.

Then connect the wire of each module to the control board.
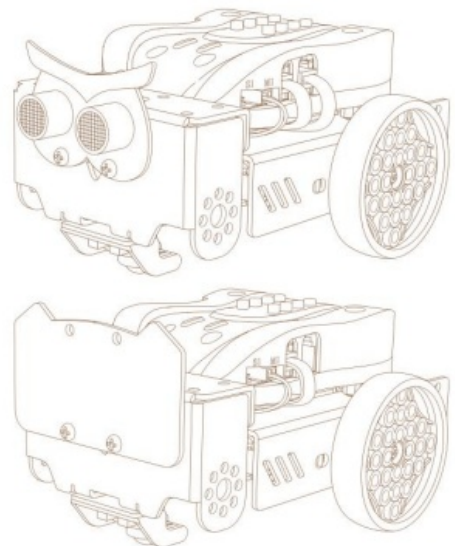

Install the Main Control Board

The Final Image

The image on the right shows the other two assembly methods that you can have a try.
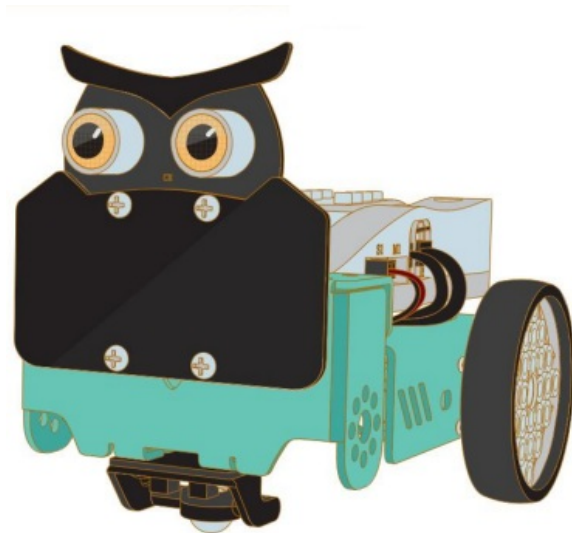
Using Tutorial

Reset: Reset Button

H: Bluetooth and Upload Programs Switch Button ("B" means Bluetooth and "U" means uploading program. When connecting to Bluetooth, dial the button to "B"; when uploading the program, dial to " U").

⚡ : USB Charging Interface (When charging, the LED next to it is yellow, when fully charged, the LED turns green.)

OFF ON: Power Switch
Battery: Battery Interface
Mode: Mode Switching Button

M1 Interface: Connect to the left motor
S1 Interface: Connect to the servo (Not equipped with servo)
Interface 1: Connect to the tracking module
Interface 2: Connect to the ultrasonic sensor
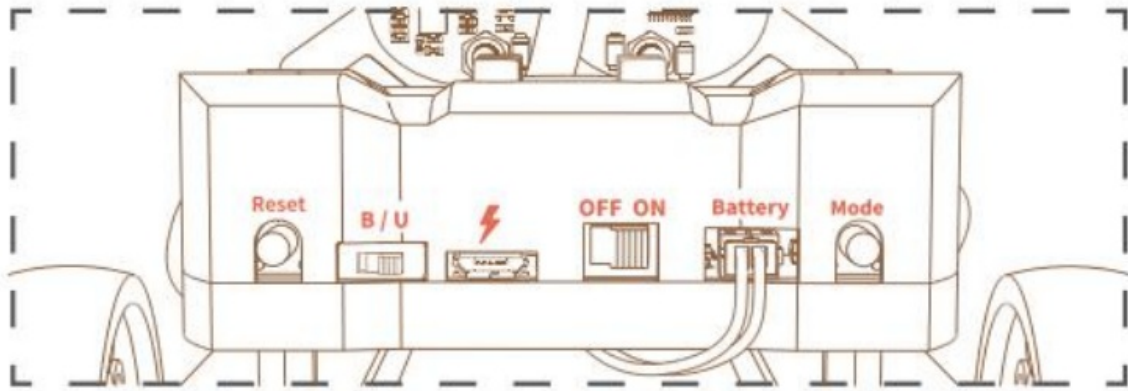Building block point: Building blocks can be built here to expand a variety of shapes. (Not equipped with building blocks)
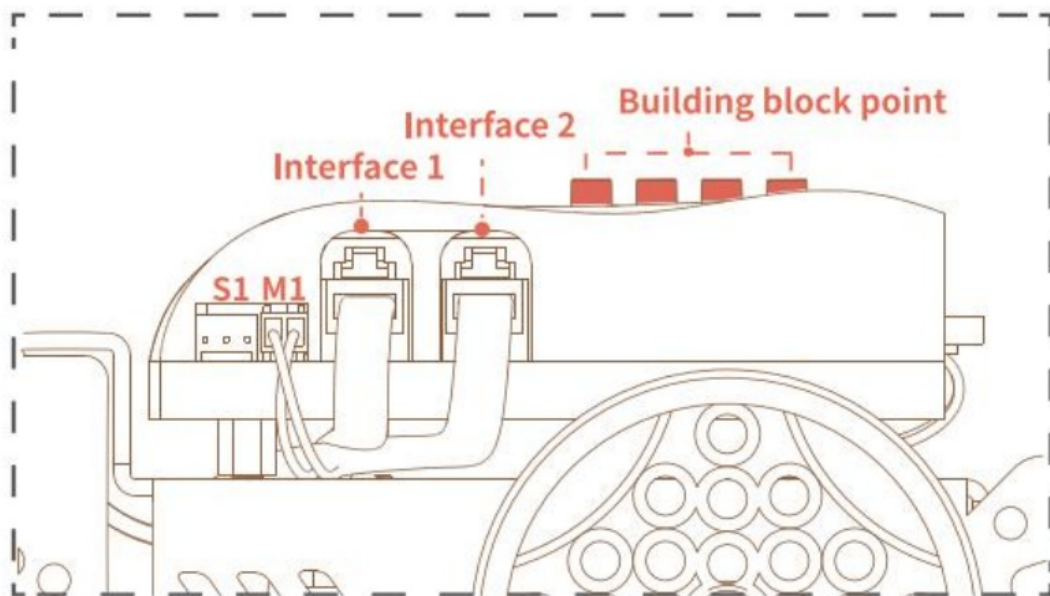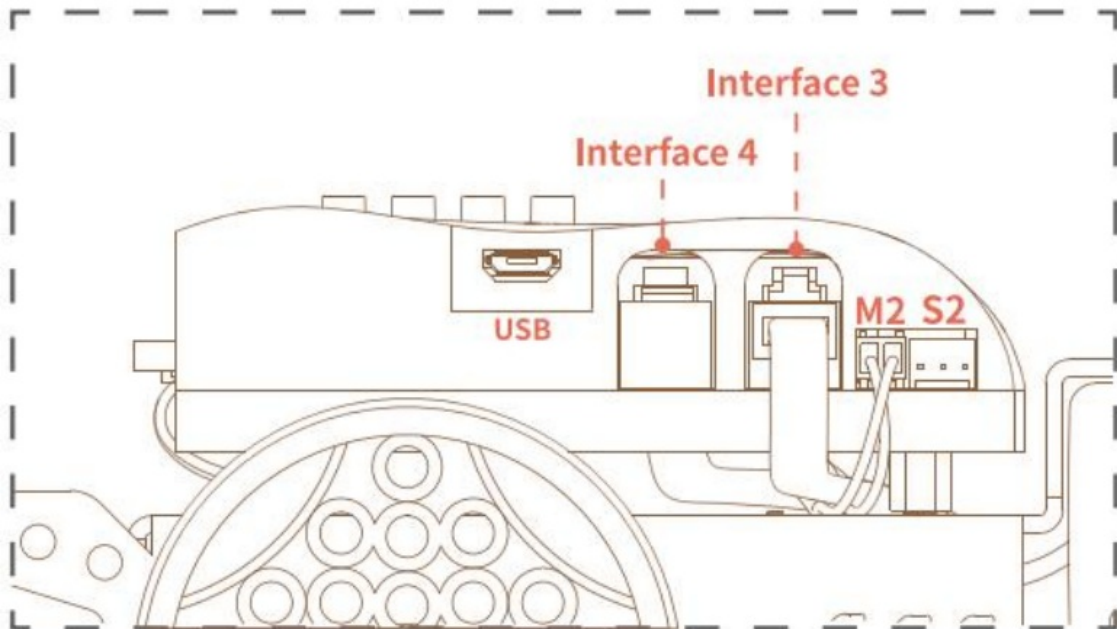

M2 Interface: Connect to the right motor
S2 Interface: Connect to the servo (Not equipped with servo)
Interface 3: Connect to LED dot matrix module
Interface 4: For reserved expansion
USB Interface: For uploading the program

Using Tutorial

Notice: We have uploaded some necessary programs before, thus you can skip uploading the programs. However, if you change the codes, you will need to reupload them.

First of all, please go to our website below to download the OwlBot tutorials: **http://www.elegoo.com/download/**

The factory program is located at "Lesson 8 OwlBot /OwlBot_Driver".

And then select the correct tutorial files based on the computer system you use.

For the Windows system, please refer to " For Windows Lesson 0 Setting up development environment.pdf ".

For OS system, please refer to " For Mac Lesson 0 Setting up development environment.pdf ".

Function Introduction

*When the power switch is turned on, OwlBot must be placed steadily, so as to avoid the inaccurate initial check value of the gy-521 module, resulting in the poor straight-line performance of the OwlBot.

Mode Switch Button After the power switch is turned on, 5 RGB flashes out the effect of the running light and rings out start-up music.

Line-tracking Mode

The first time you press the mode switch button, the RGB green light is always on, and the expression panel shows an expression indicating that it has entered the tracking mode and OwlBot will follow along the black track. When the sensor on the tracking module senses the black line, the expression panel displays another expression. When OwlBot is picked up under tracking mode, the wheel stops turning.

Obstacle-avoidance Mode

The second time the mode switch button is pressed, the RGB yellow light is normally on, the expression panel displays an expression, and the OwlBot goes straight. And when there are obstacles within 25cm, the expression panel will display the other expression, and the OwlBot automatically avoids obstacles ahead and looks for an obstacle-free route to continue moving forward.

Standby Mode

Press the mode switch button for the third time to switch to the standby mode and the 8 default expressions are automatically switched.

Mobile Control

STEP1: Install the application.

You can download the latest version of the "ELEGOO Owl Robot" app on the App Store as well as Google Play.

STEP2: Application Settings. First of all, switch the "B ΙΙ" button on the OwlBot to "B".

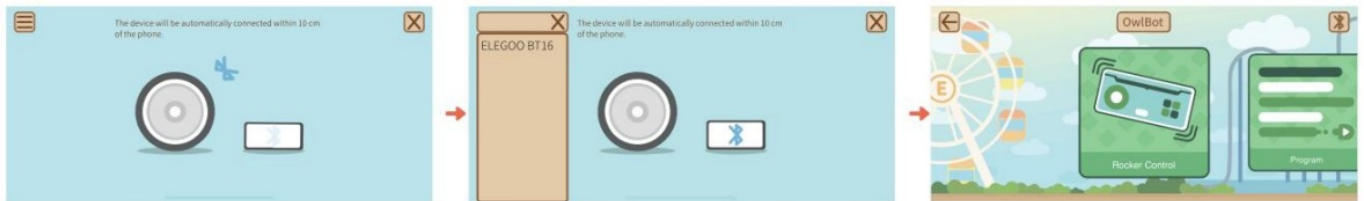Open the "ELEGOO Owl Robot" App. (Please turn on the mobile GPS when using the app).

Click on ” OwlBot “. Tap the ” ✳ ” icon to enter the Bluetooth searching interface.

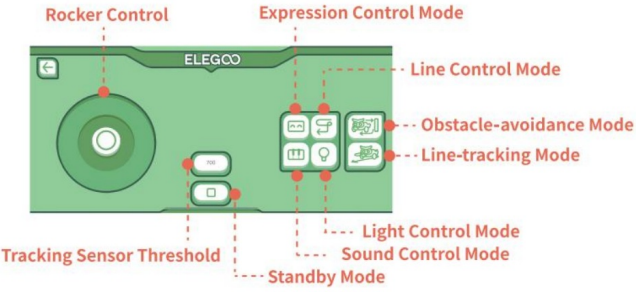Put your phone near to the OwlBot (within 10cm), the app will connect to the OwlBot automatically.

You can also open the Bluetooth device list by tapping the menu icon ” ☰ ” in the upper left corner and selecting “ELEGOO BT16” to connect the OwlBot manually.
After the OwlBot is successfully connected, the Bluetooth status icon changes from red to brown.
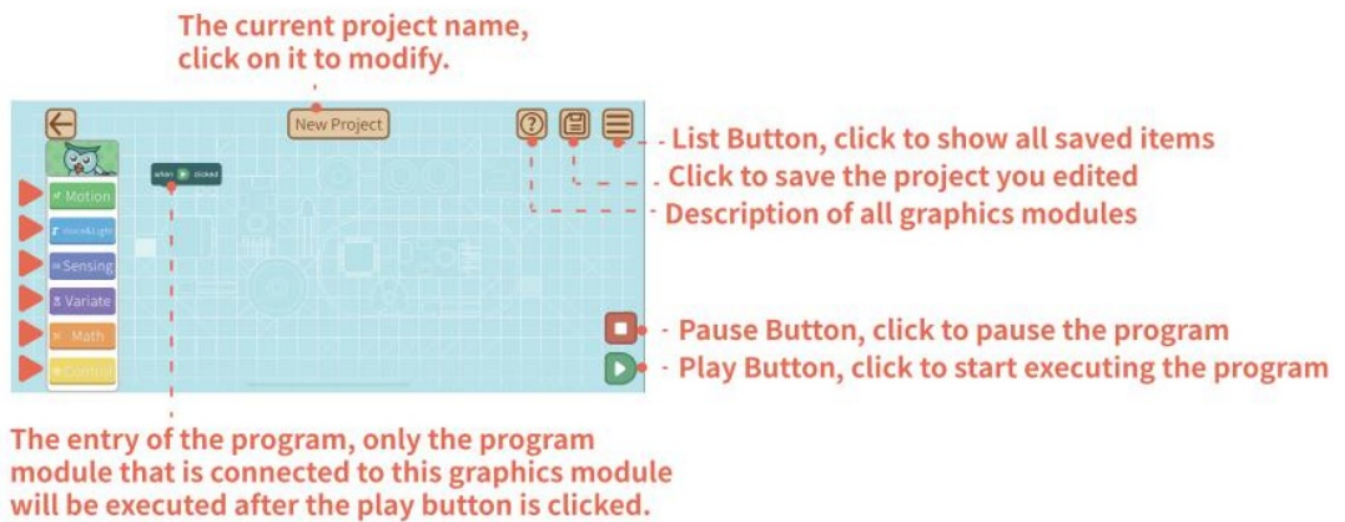

Click on “Rocket Control” to enter the control interface.

Rocker Control

Control OwlBot forward and backward, turn left and turn right. Please refer to the previous "Function Introduction" for the specific performance of the obstacle avoidance mode, the tracking mode, and the standby mode.

Line control mode

First, click the start icon" ▶ ", then click a point on the screen and click another point to make them connected into a line, then the car will follow the direction of the line. When you operate this function, Turn the OwlBot's head to the right, keeping it parallel to your phone.

Expression control mode

The left side is the default expression that has been set, or the various patterns that can be DIY. Click OK to display the corresponding pattern on the expression panel.

Light control mode

Select a color in the color ring, both the upper-left corner of the pop-up window and the RGB on the OwlBot can display the currently selected color, "-" and adjust the brightness of the light.

Tracking sensor threshold

Because the sensor is greatly affected by the environment, when using the line-tracking mode, you should slightly adjust the threshold of the sensor to make it perform correctly if the OwlBot runs out of the runway or perform incorrectly. (The default factory threshold is 700.)

Sound control mode

You can make the car sound of basic syllables just like playing the piano.

Graphical programming

The current project name, click on it to modify.

- List Button, click to show all saved items
- Click to save the project you edited
- Description of all graphics modules

- Pause Button, click to pause the program
- Play Button, click to start executing the program

The entry of the program, only the program module that is connected to this graphics module will be executed after the play button is clicked.

- **Motion:** Graphic modules for controlling the movement of the car.
- **Voice & Light:** Graphic modules for controlling the sound and light.
- **Sensing:** Graphic modules for sensor-type electronic components.
- **Variable:** Graphic modules for variable operation.
- **Math:** Graphic modules for Mathematical operations.
- **Control:** Graphic modules for controlling program flow.

Precautions

- The battery should be fully charged before use. The 5 RGBs will flash red when the battery is low. You can charge the battery through the USB cable.
- OwlBot cannot be used in areas where sunlight or light is strong. Infrared rays will have an effect on the sensors on the tracking module.
- Under OwlBot obstacle avoidance mode, the lighter the color of obstacles, the better the effect of obstacle avoidance.

If you find it is difficult to assemble the OwlBot, please check the assembling tutorial video from **https://www.elegoo.com/download/** or **https://www.youtube.com/eteg000fficial/**.
If you have any questions during assembling or testing, please feel free to contact us at **service@elegoo.com** (North American customers) or **euservice@elegoo.com** (European and Asian customers).
ELEGOO Team

Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

The device has been evaluated to meet general RF exposure requirements the device can be used in portable exposure conditions without restriction

Documents / Resources

	ELEGOO OwlBot Smart Robot Car Kit [pdf] Installation Guide OBK1, 2A5HX-OBK1, 2A5HXOBK1, OwlBot Smart Robot Car Kit, Smart Robot Car Kit