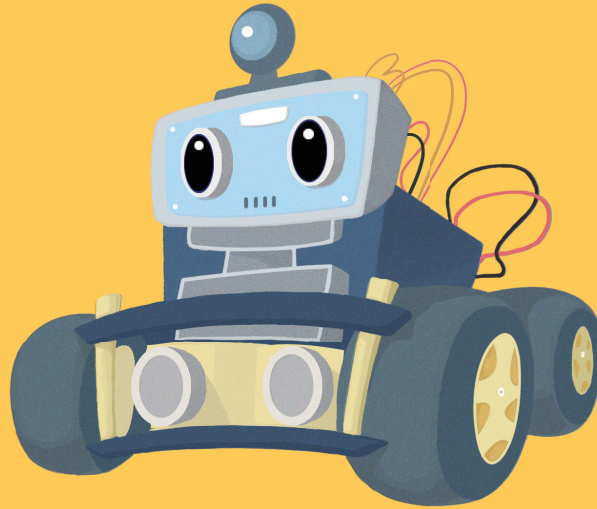
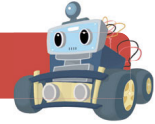




SMART ROBOT CAR V4.0 WITH CAMERA

Assembly Tutorial

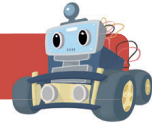
SMART ROBOT CAR V4.0 WITH CAMERA



**Thank you for your support and
purchasing ELEGOO products.**

If you have any questions regarding our products
please feel free to contact us at
service@elegoo.com(North America area) or
suservice@elegoo.com(Europe and Asia area)

MATERIAL LIST



M3*10 Hexagon Socket Screw*24PCS



M3*12 Hexagon Socket Screw*2PCS



M3*14 Hexagon Socket Screw*8PCS



M3*30 Hexagon Socket Screw*9PCS



M1.6*8 Cross Screw*3PCS



M1.6*16 Cross Screw*3PCS



M2*10 Cross Screw*3PCS



M2*25 Self-tapping Screw*5PCS



M1.6 Nut*6PCS



M2 Nut*3PCS



M3 Nut*21PCS



M2*6 Copper Pillar*5PCS



M3*11 Copper Pillar*1PC



M3*40 Double-pass Copper Cylinder*7 PCS



Phillips Screwdriver*3PCS



4P Cables*2PCS



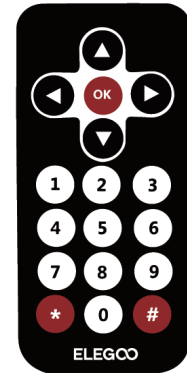
M3*5 Countersunk Screw*3PCS



M2*4 Phillips Screw*5PCS



Separation Pillar*8PCS



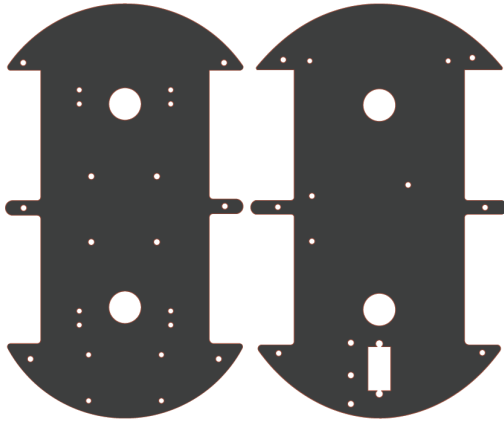
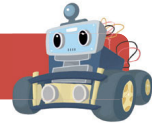
Remote Control*1PC



5P Cables*1PC

1

MATERIAL LIST

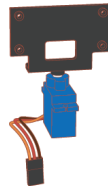


Bottom Plate*1PC

Top Plate*1PC



Cell Box(Lithium Battery inside)*1PC



Ultrasonic Sensor Module Holder and SG90*1PC



USB Cable - Type Micro *1PC



USB Cable - Type B *1PC



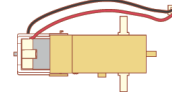
UNO*1PC



Dead Plate*1PC



GY-521 Module*1PC



Motor*4PCS



Camera Module*1PC



Camera Bracket*1PC



Insulated Rubber Tape*1PC



Line-tracking Module*1PC



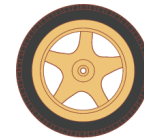
Ultrasonic Sensor Module*1PC



Aluminium Block*4PCS

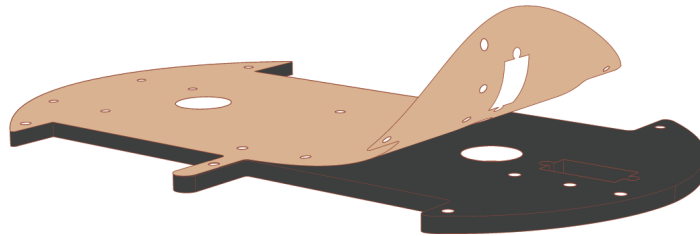
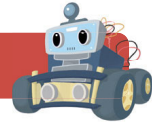


IO Expansion Board *1PC



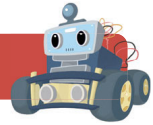
Tire*4PCS

SMART ROBOT CAR V4.0 WITH CAMERA

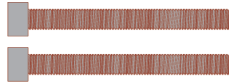


Attention: Remove the protective film before assembling

ASSEMBLE THE MOTOR



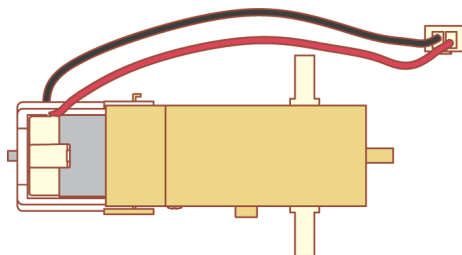
① M3 Nut*2PCS



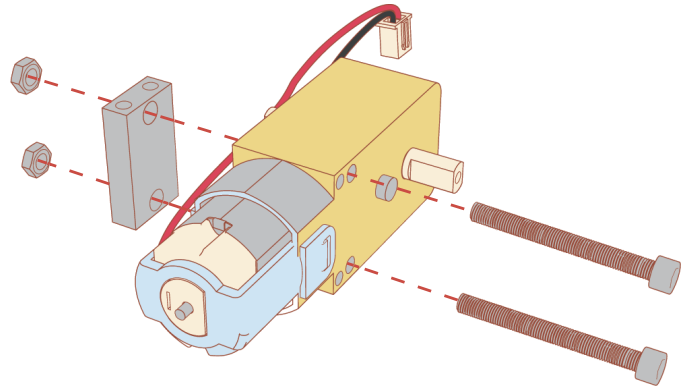
② M3*30 Hexagon Socket Screw*2PCS



③ Aluminium Block*1PC

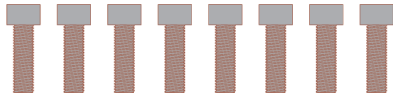
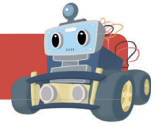


④ Motor*1PC

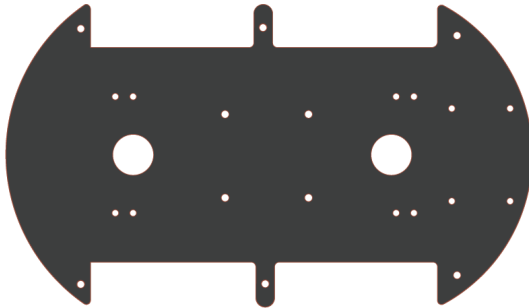


Take ①②③ out from the bag marked “FOR MOTOR”

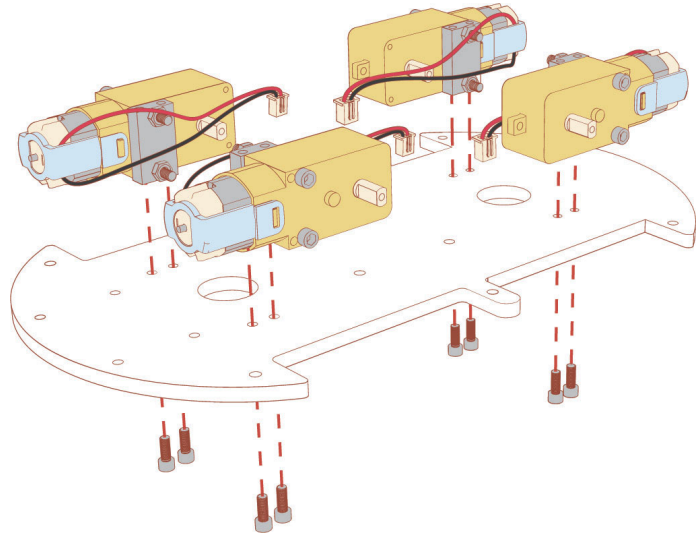
ASSEMBLE THE MOTOR



①M3*10 Hexagon Socket Screw*8PCS



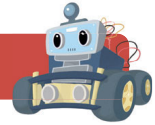
②Bottom Plate*1PC



5

Take ① out from the bag marked “FOR MOTOR”

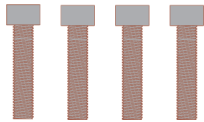
ASSEMBLE THE LINE-TRACKING MODULE



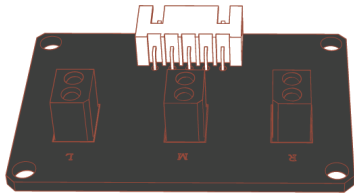
① M3 Nut*4PCS



② Separation Pillar*4PCS

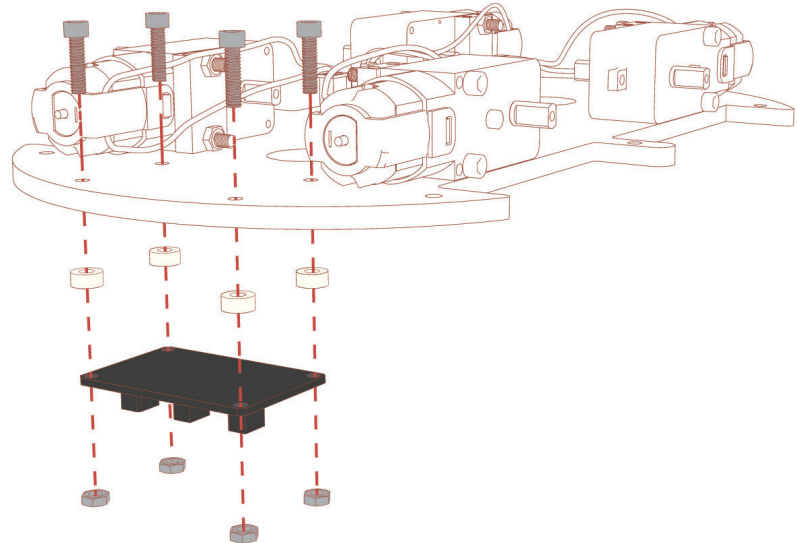


③ M3*14 Hexagon Socket Screw*4PCS

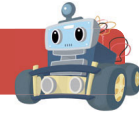


④ Line-tracking Module*1PC

Take ①②③ out from
the bag marked “FOR
UNO, LINE TRACKING”



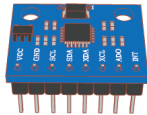
ASSEMBLE THE EXPANSION BOARD AND UNO



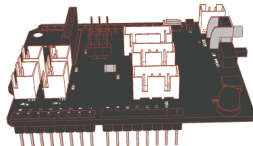
① M3*5 Countersunk Screw*2PCS



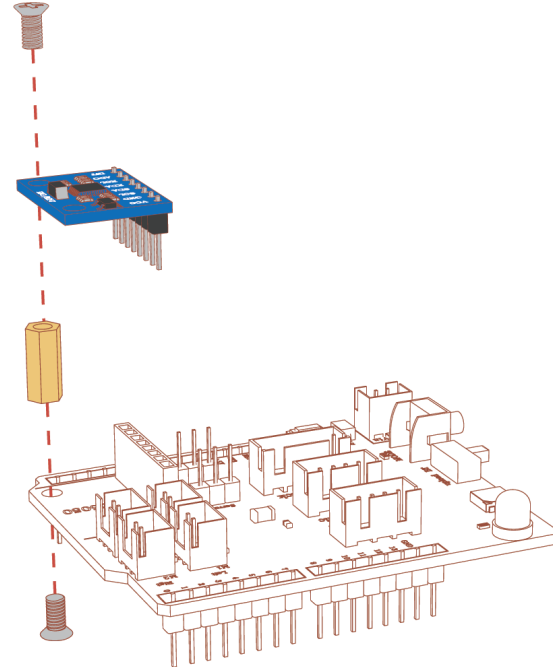
② M3*11 Copper Pillar*1PC



③ GY-521 Module*1PC



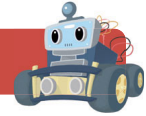
④ IO Expansion Board *1PC



7

Take ①② out from the bag marked “FOR CELL BOX, TIRES, GY-521”

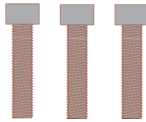
ASSEMBLE THE EXPANSION BOARD AND UNO



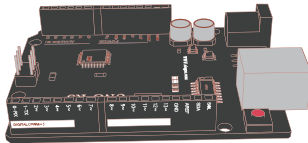
①M3 Nut*3PCS



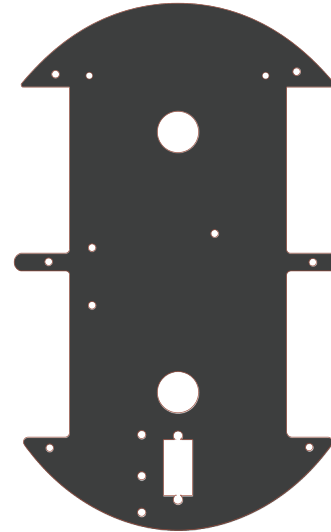
②Separation Pillar*3PCS



③M3*14 Hexagon Socket Screw*3PCS



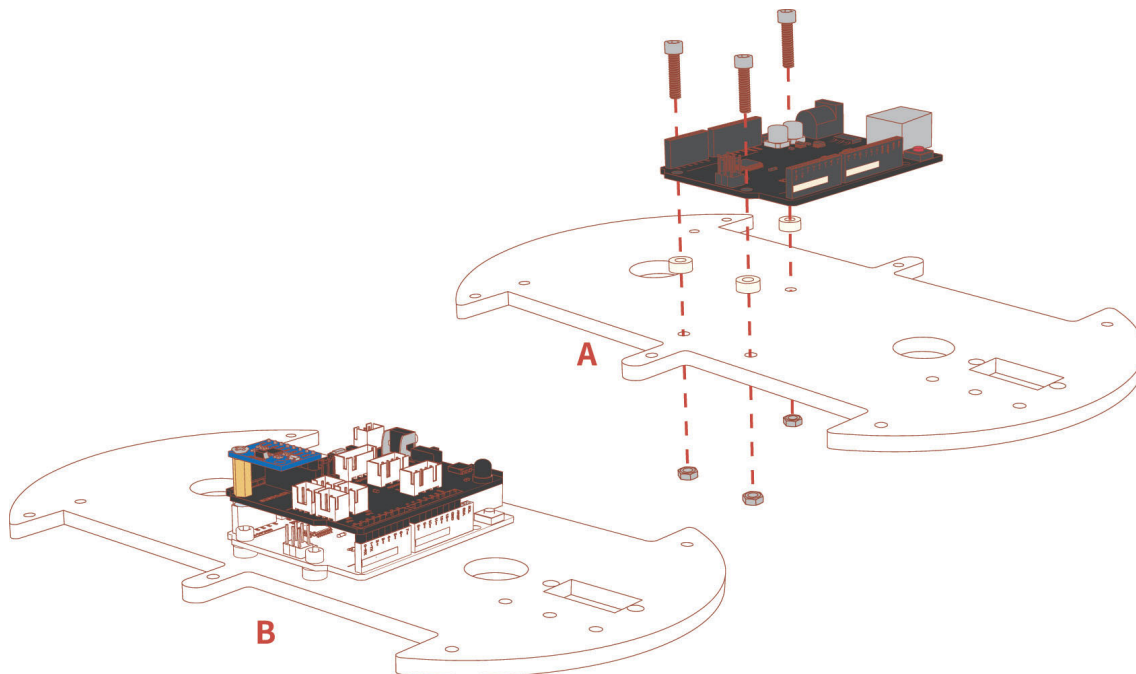
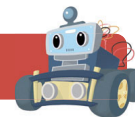
④UNO*1PC



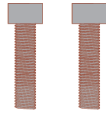
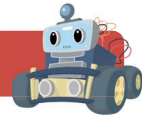
⑤Top Plate*1PC

Take ①②③ out from the bag marked “FOR UNO, LINE TRACKING”

ASSEMBLE THE EXPANSION BOARD AND UNO



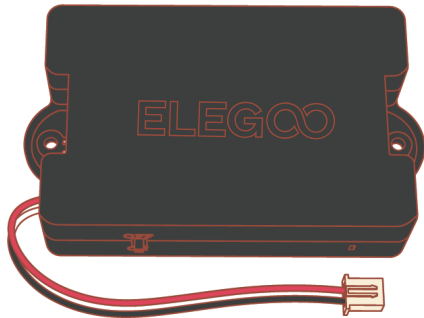
ASSEMBLE THE BATTERY BOX



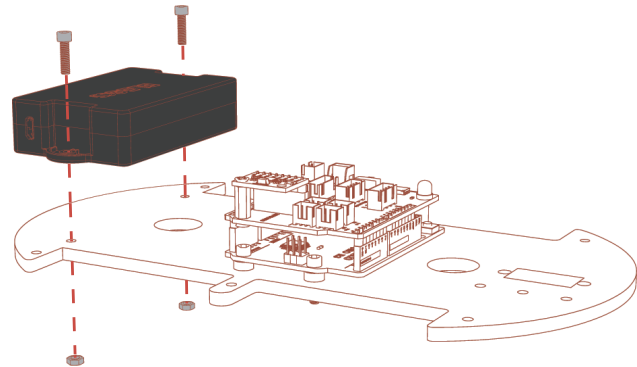
①M3*12 Hexagon Socket Screw*2PCS



②M3 Nut*2PCS

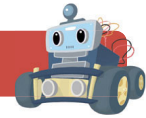


③Cell Box(Lithium Battery inside)*1PC



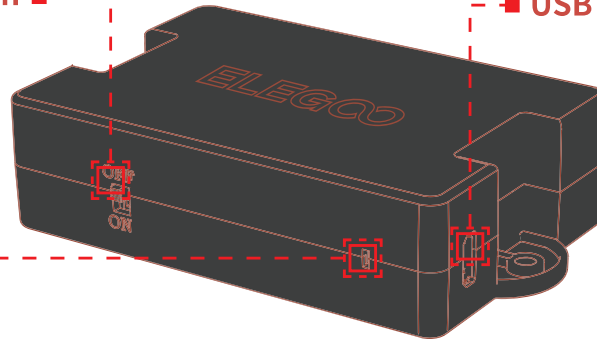
Take ①② out from the bag marked “FOR CELL BOX,TIRES”

ASSEMBLE THE BATTERY BOX



Power Switch ■ - -

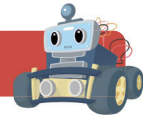
- ■ USB Charging Port



■ Status Indicator Light (The light is green when charging and will be turned off once fully charged.)

■ Please fully charge the battery before using it.

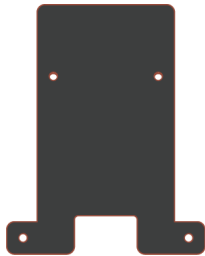
ASSEMBLE THE CAMERA MODULE



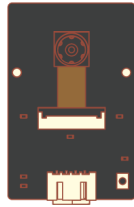
①M2*4 Phillips Screw*4PCS



②M2*6 Copper Pillar*2PCS



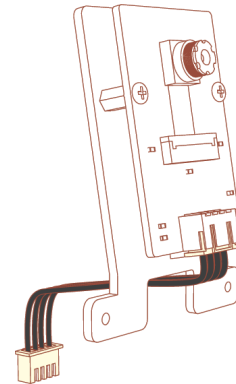
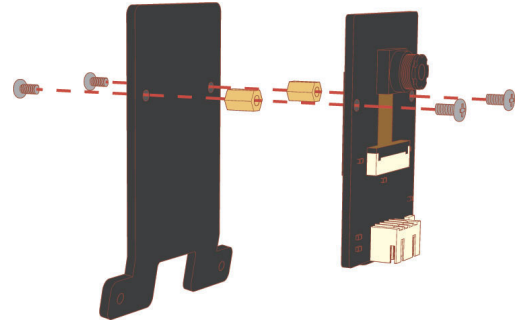
③Camera Bracket*1PC



④Camera Module*1PC

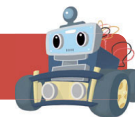


⑤4P Cables*1PC



Take ①② out from the bag marked “FOR CAMERA”

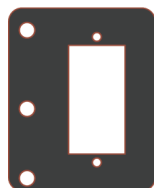
ASSEMBLE THE ULTRASONIC SENSOR MODULE



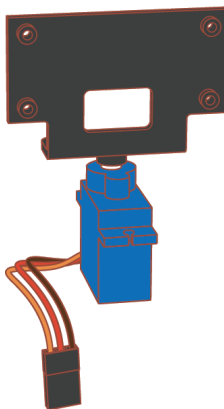
①M2 Nut*2PCS



②M2*10 Cross Screw*2PCS

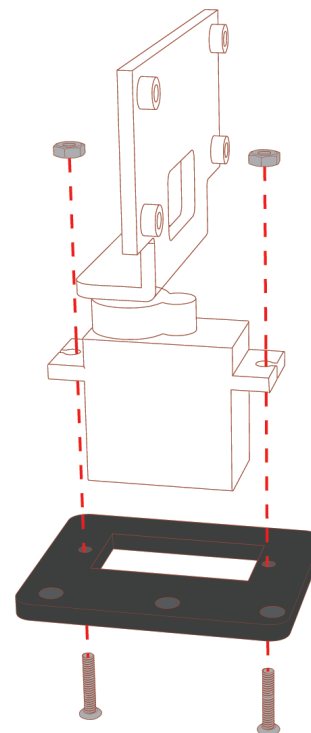


③Dead Plate*1PC



④Ultrasonic Sensor Module Holder and SG90*1PC

Take ①② out from the bag marked
“FOR ULTRASONIC”



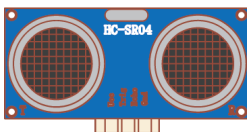
ASSEMBLE THE ULTRASONIC SENSOR MODULE



①M1.6 Nut*2PCS

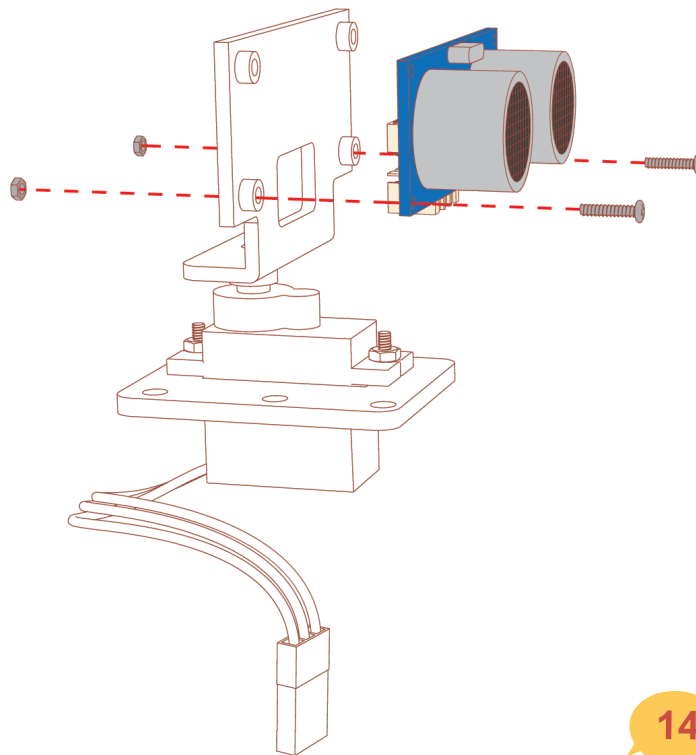


②M1.6*8 Cross Screw*2PCS

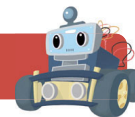


③Ultrasonic Sensor Module*1PC

Take ①② out form the bag
marked “FOR ULTRASONIC”

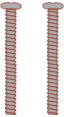


ASSEMBLE THE ULTRASONIC SENSOR MODULE

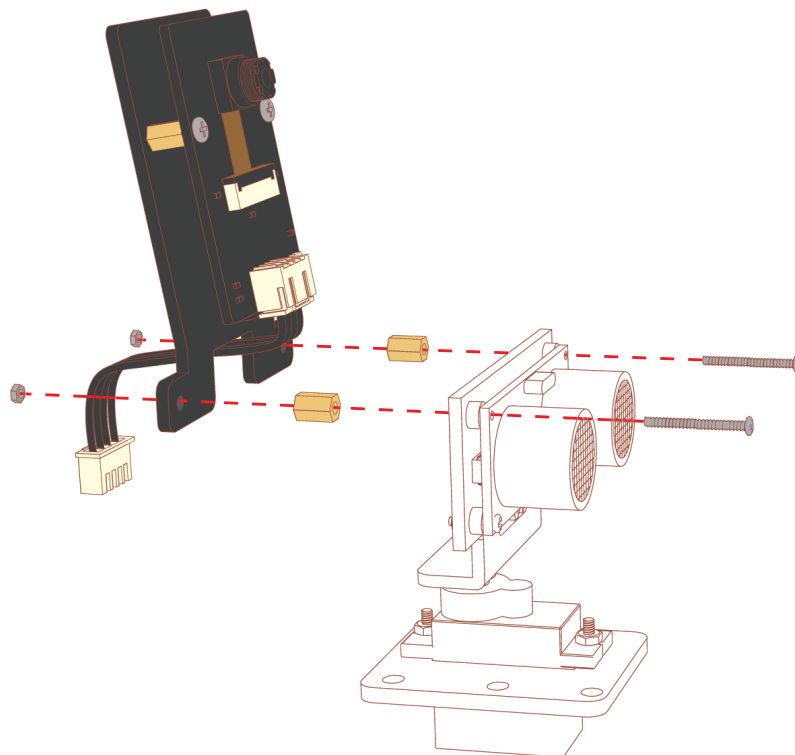



①M1.6 Nut*2PCS


②M2*6 Copper Pillar*2PCS


③M1.6*16 Cross Screw*2PCS

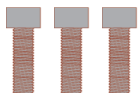
Take ①②③ out from
the bag marked “FOR
CAMERA”



ASSEMBLE THE ULTRASONIC SENSOR MODULE

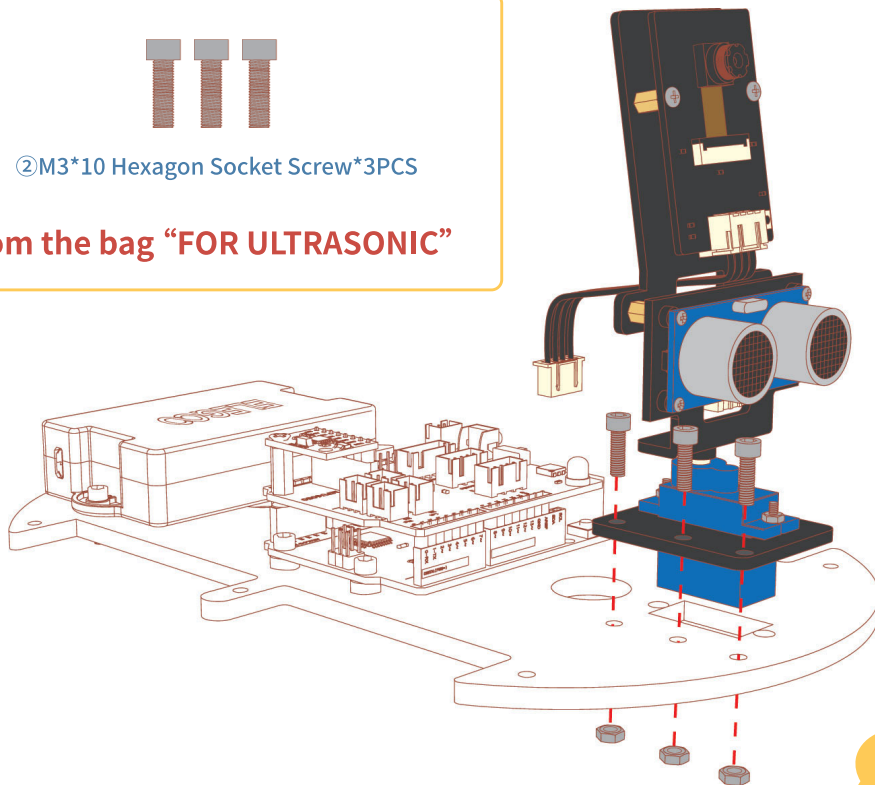


① M3 Nut*3PCS

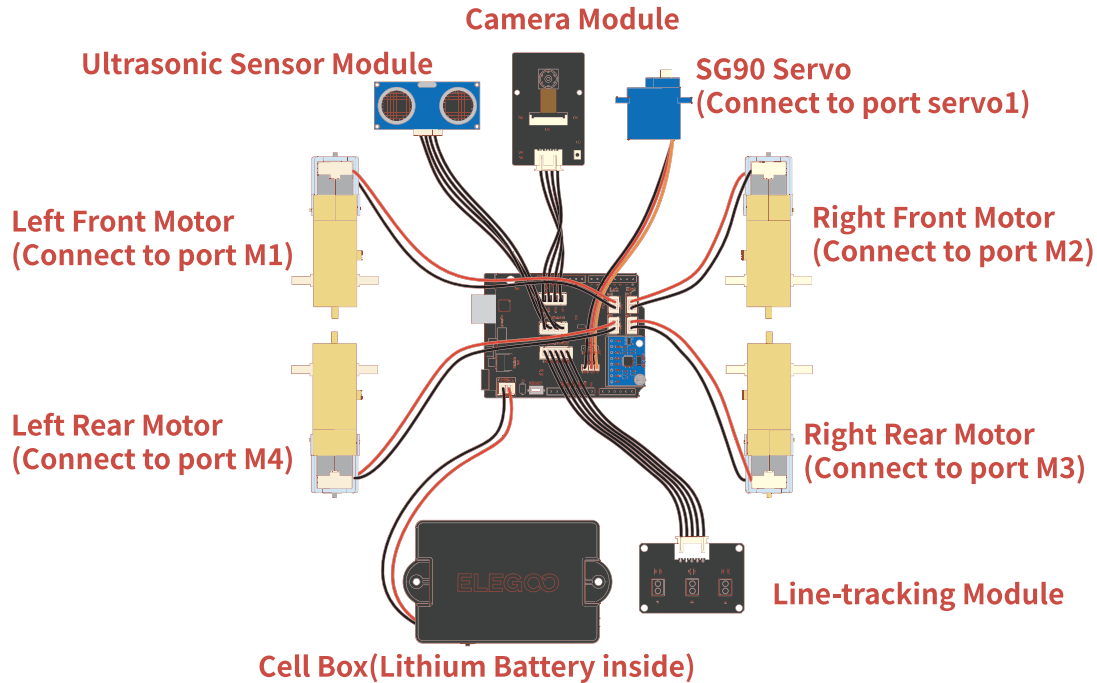
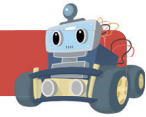


② M3*10 Hexagon Socket Screw*3PCS

Take ①② out from the bag “FOR ULTRASONIC”

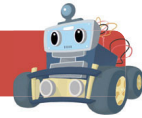


WIRING DIAGRAM



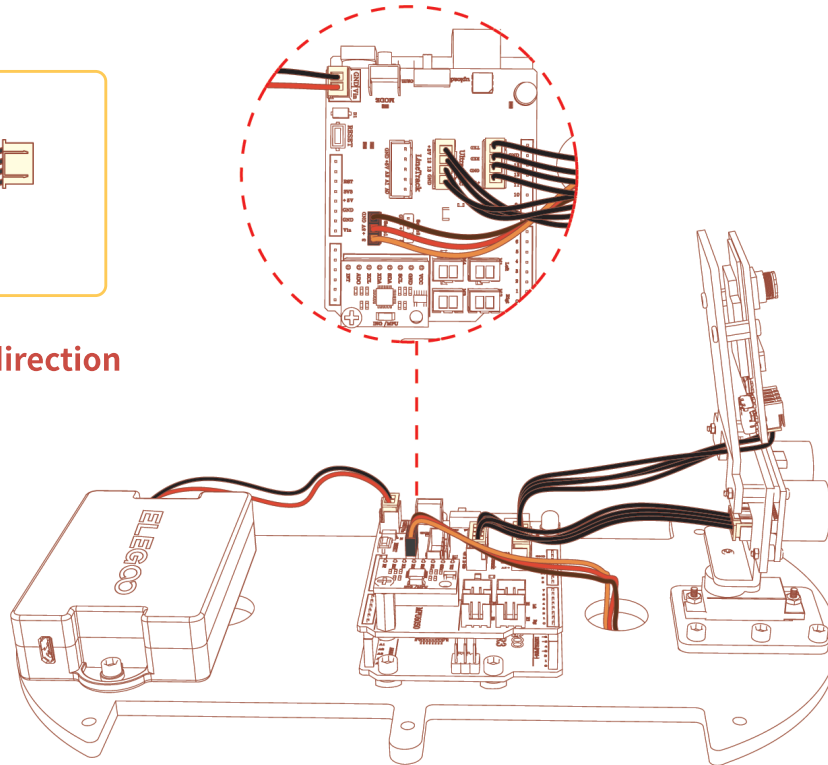
■ This illustration is to give you an idea of the parts corresponding to each port on the control board for later installation. You are not required to plug all the parts to the corresponding port as shown in the picture at present.

WIRING

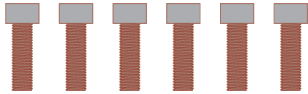
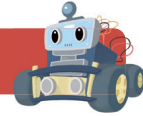


4P Cables*1PC

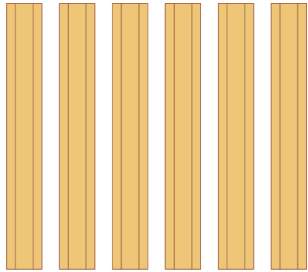
Pay attention to the direction
of the servo wiring



WIRING

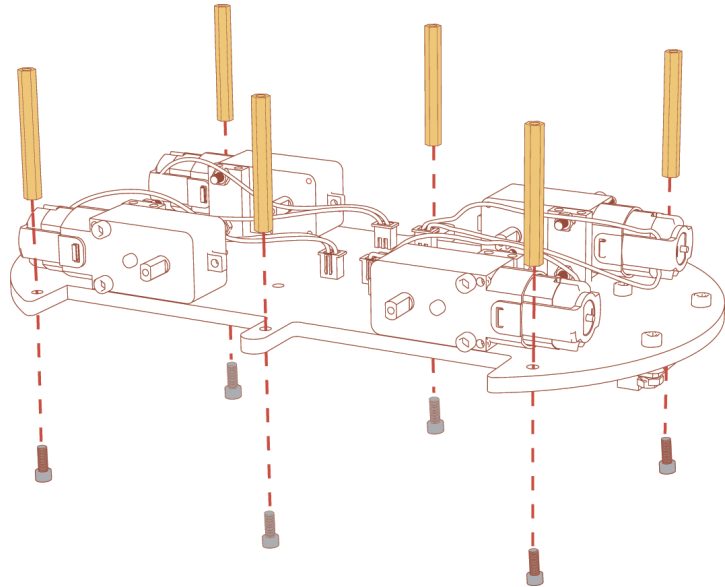


①M3*10 Hexagon Socket Screw*6PCS

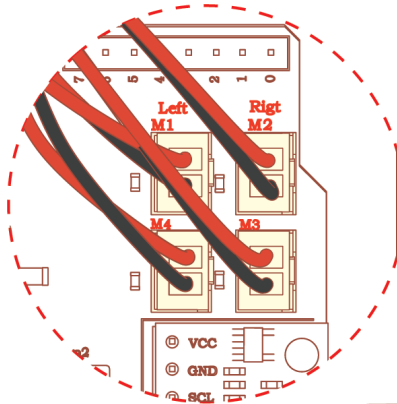
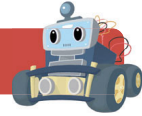


②M3*40 Double-pass Copper Cylinder*6 PCS

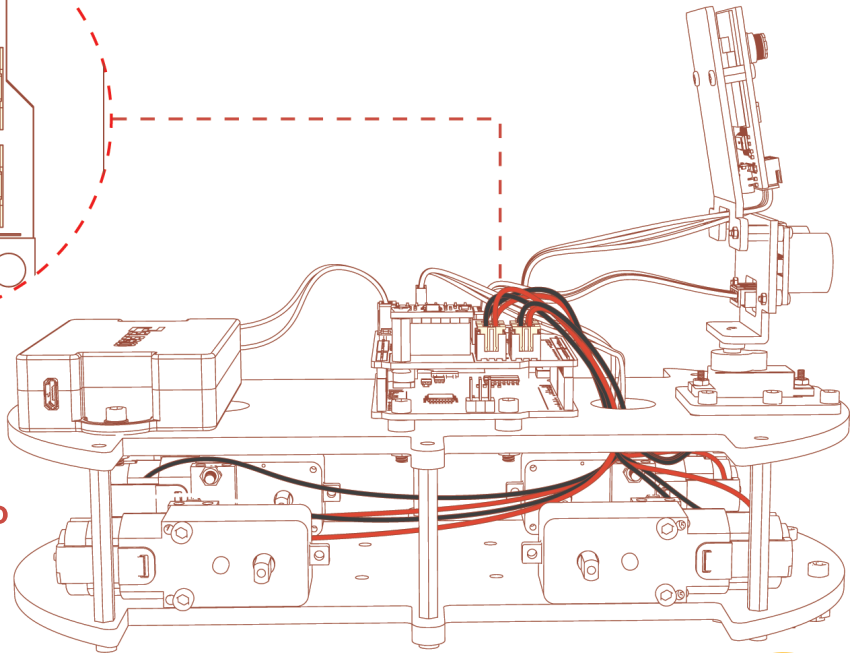
Take ①② out from the bag
marked “FOR ACRYLIC BASEPLATE”



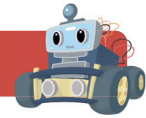
WIRING



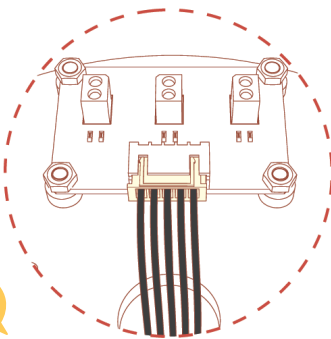
Please pay attention to the corresponding wiring ports of each of the four motors and do not plug in the wrong one.



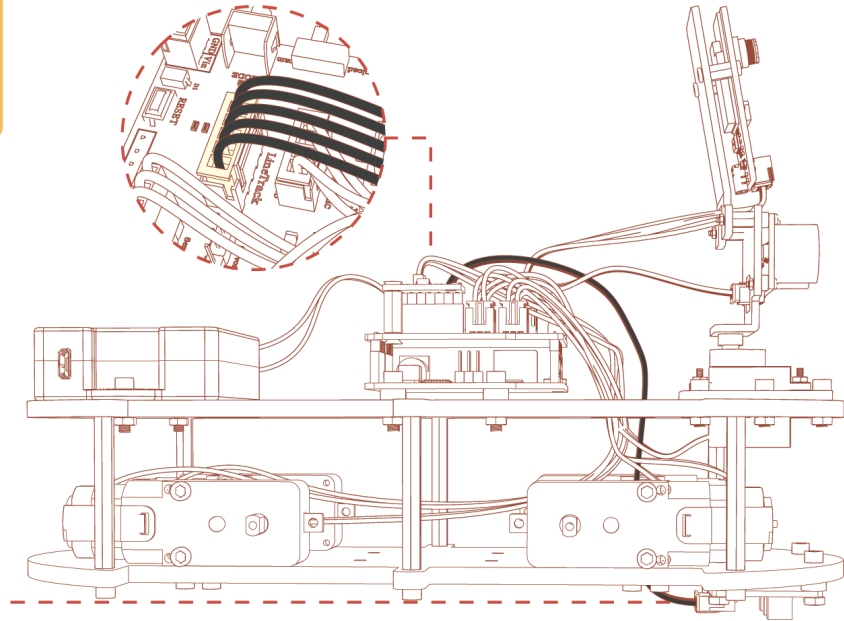
WIRING



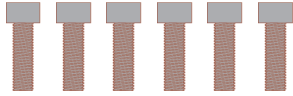
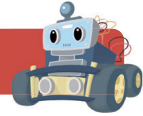
5P Cables*1PC



21

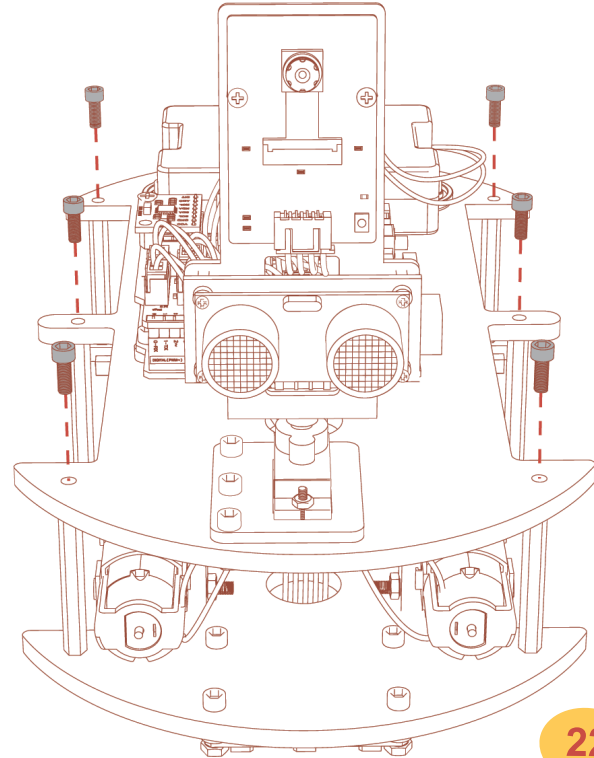


WIRING

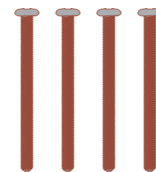
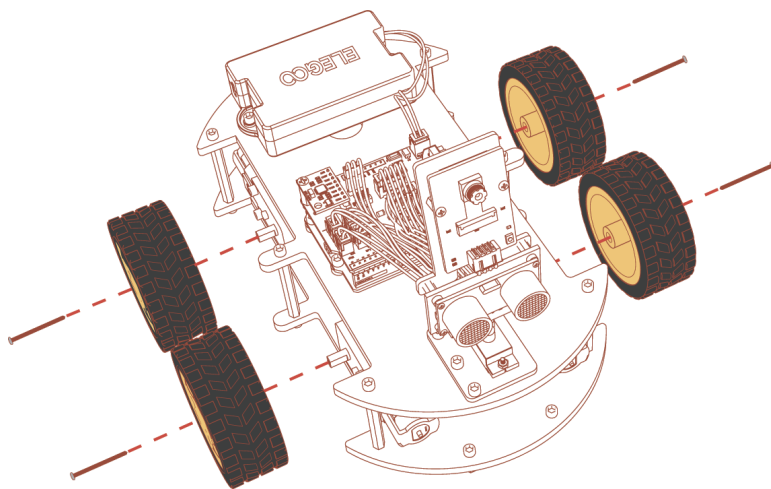
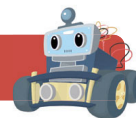


① M3*10 Hexagon Socket Screw*6PCS

Take ① out from the bag marked
“FOR ACRYLIC BASEPLATE”



ASSEMBLE THE TIRES



①M2*25 Self-tapping Screw*4PCS

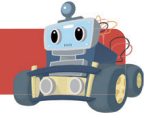


②Tire*4PCS

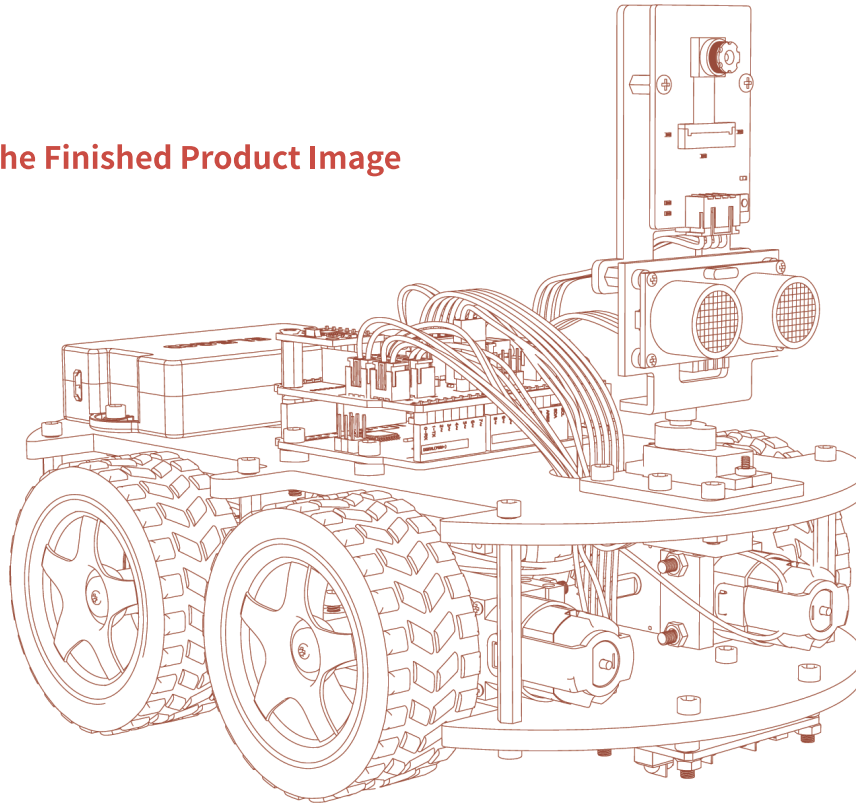
23

Take ① out from the bag marked “FOR CELL BOX,TIRES,GY-521”

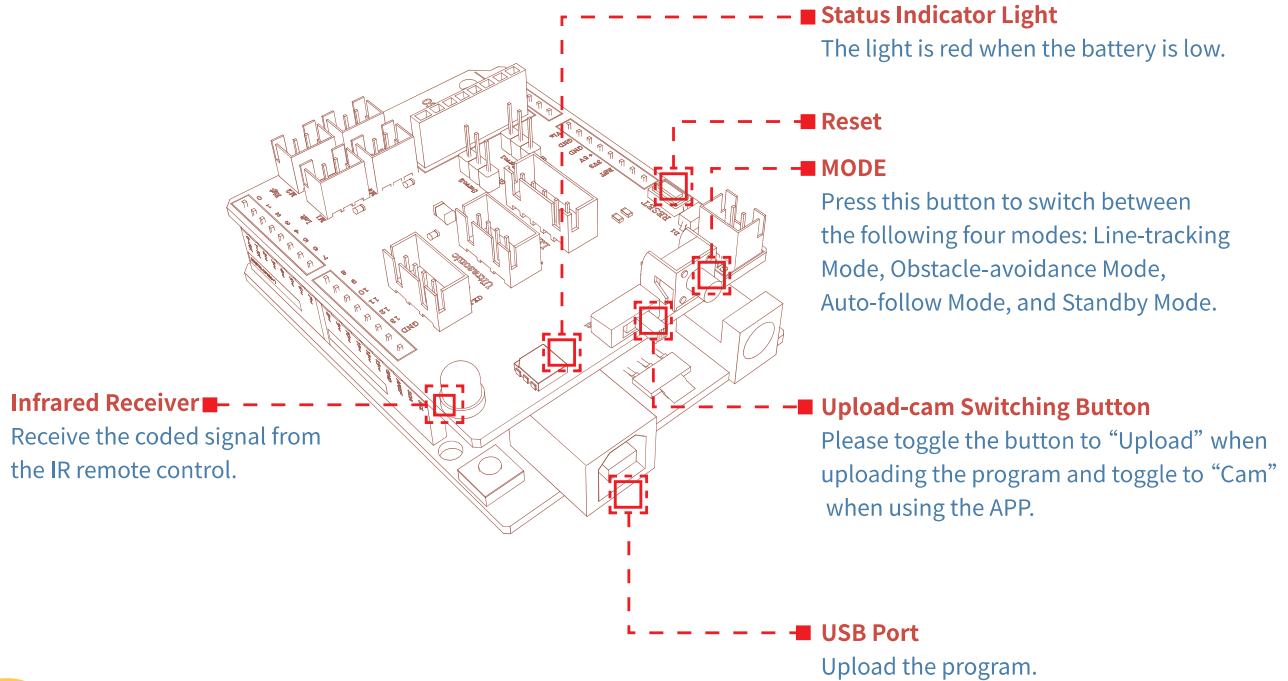
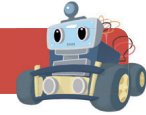
SMART ROBOT CAR V4.0 WITH CAMERA



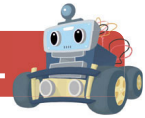
The Finished Product Image



DEFINITION OF BUTTON



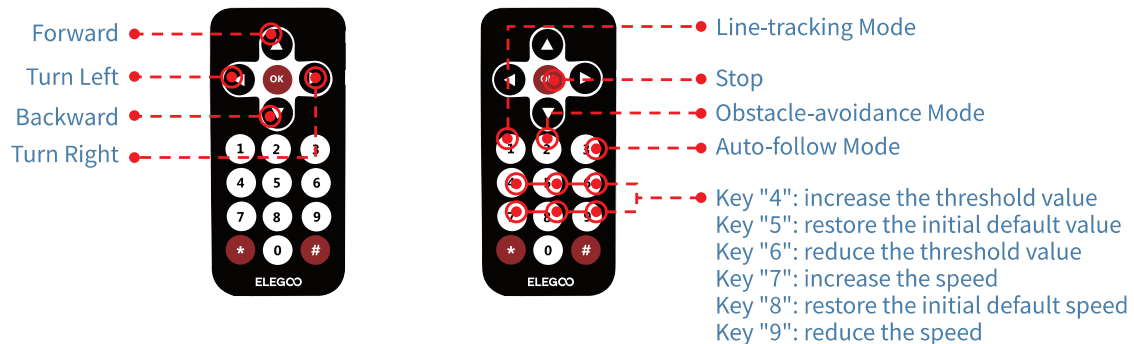
CONTROL THE SMART ROBOT CAR USING THE IR REMOTE CONTROL



Upload program

Since the program has been uploaded to the Smart Robot Car before the factory, you can just skip this step and no need to upload it repeatedly. If you have modified the codes of Smart Robot Car, you will need to upload the program again. Please refer to the tutorial from <http://www.elegoo.com/download/>.

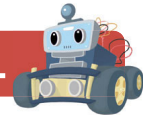
Control the Smart Robot Car using the IR remote control.



Please remove transparent plastic insulation from the rear of the remote control before using it.

Since the sensors on the line-tracking module are greatly affected by the environment, if the car does not work well under the line-tracking module, you can use the IR remote control to adjust the sensor thresholds so that it can enable the car to operate at its optimum level.

CONTROL THE SMART ROBOT CAR USING THE IR REMOTE CONTROL



Line-tracking Mode

Affix the tape on the ground to make a line track and then put the car on the track.

When pressing key 1 of the remote control, the car will enter the line-tracking mode and the status indicator light will always on green. The car will move along the runway under this mode.

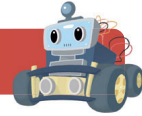
Obstacle-avoidance Mode

The car will enter the obstacle-avoidance mode and the status indicator light is always on yellow when pressing key 2 of the remote control. The car will move forward automatically until encountering obstacles. And it will automatically turn to the direction without obstacles to continue moving forwards.

Auto-follow Mode

The car will enter the auto-follow mode and the status indicator is always on blue when pressing key 3 of the remote control. If there are obstacles in the 20 CM ahead of the Ultrasonic Sensor Module, the car will automatically move following the obstacle.

CONTROL THE CAR WITH APP



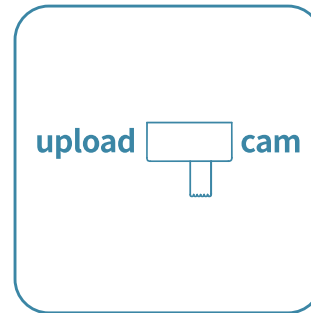
Control the car with APP

STEP1: Application Installation

You can download the latest version of the " ElegooKit " app on App Store and Google Play.



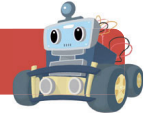
ElegooKit



STEP2: Application Settings

Firstly, please toggle the upload-cam switching button of the IO Expansion Board to “cam”.

CONTROL THE CAR WITH APP



Turn on the WIFI in the phone settings and connect to “ELEGOO-123”. (The number "123" is the physical address of the camera module, and the physical address of each camera module is different.)

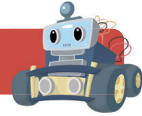
After the WIFI connection is successful, open the "ElegooKit" APP and click device “Smart Robot Car Kit V4.0”.



Go to the project selection page and click on the WIFI disconnected icon “” on the top right corner, and it will display “Device connected successfully!”.

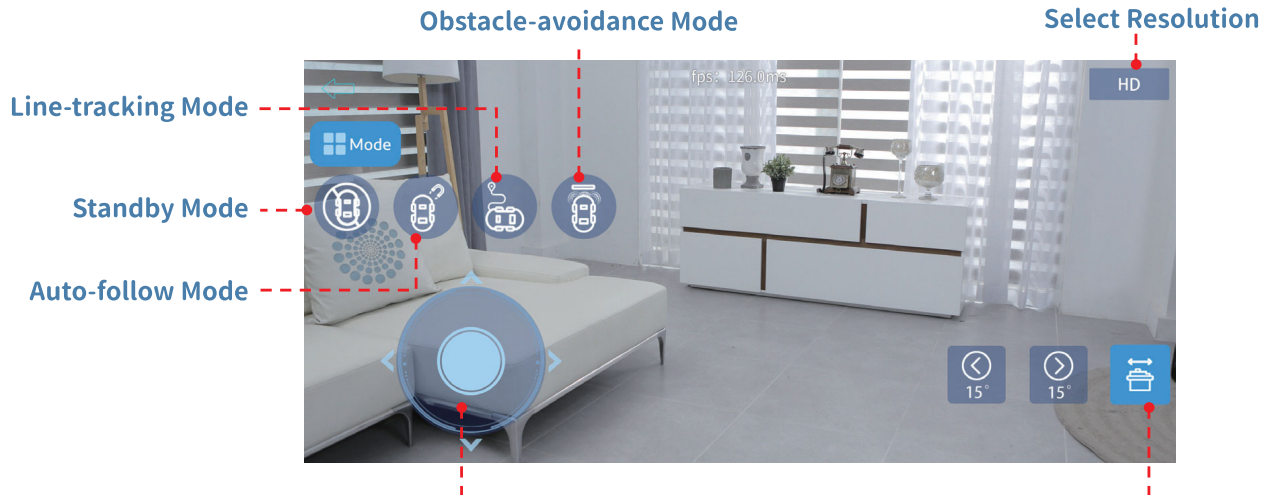
Choose the language by clicking the setting icon “” on the top right corner.

CONTROL THE CAR WITH APP



Click “Remote control” to enter the control page.

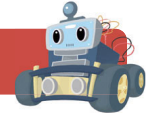
Click on this icon “  ” can hide or display the icons of those four modes.



Rocker Control: Click on the left blank area can enable the rocker control panel, it can control the movement of the Smart Robot Car and there is 8 direction in total.

Control camera rotation :
Horizontal control range,
0-180°.

CONTROL THE CAR WITH APP



Programming

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.

The current project name

Click to save the project you edited.

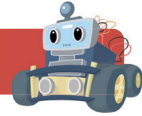
List Button, click to show all saved items.

Play Button, click to start executing the program.

Pause Button, click to pause the program.

- **Motion:** Graphic modules for controlling the movement of the car.
- **Show:** Graphic modules for controlling the sound and light.
- **Controls:** Graphic modules for controlling program flow.
- **Sensing:** Graphic modules for sensor type electronic components.
- **Math:** Graphic modules for mathematical operations.
- **Variables:** Graphic modules for variable operation.

CONTROL THE CAR WITH APP

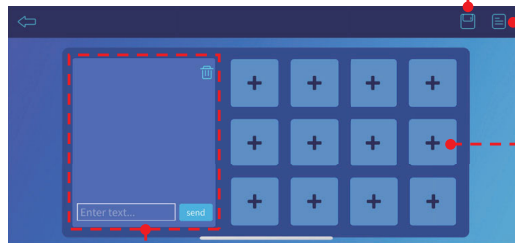


DIY control

When you want to freely write the car's function program to debug, you can use the DIY function custom command to debug and control it.

Click "DIY" to enter the DIY control page.

Click to save the project you edited.

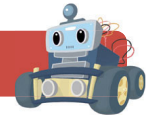


List Button, click to show all saved items.

Custom button: Long press this button will pop up the button editor, you can fill in the button name and message you want to send.

Command debugging window: Display the sent commands and received commands, the input field can freely input commands and send tests.

CONTROL THE CAR WITH APP



Other project selections

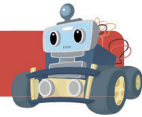


Build: view the assembly steps

Manual: view the digital user manual

Video: view the assembly and usage video tutorial

PRECAUTIONS



Precautions:

- When the power switch is turned on, the Smart Robot Car must be placed steadily, so as to avoid the inaccurate initial calibration value of GY-521 module, resulting in poor straight-line performance of the Smart Robot Car.
- The battery should be fully charged before using. The status indicator light will flash red when the battery is low. You can charge the battery through the USB cable.
- Do not forcibly rotate the servo by external force to prevent damage to the servo when the power is on.
- When the battery is too low or the phone is more than 10 meters away from the car, the WIFI may be automatically disconnected, or the display may freeze.
- The physical address of each camera module is different.
- If the WIFI is disconnected, please try to restart the car power and APP.

FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.