

# MOONBOT KIT

## Quick Start Guide



**⚠ WARNING: CHOKING HAZARD** -Small Parts. Not for children under 3 years old.

Please keep this product away from heat and water.

# READ BEFORE START

Dear parents, please read this guide carefully before assembling for the safety of your children while they are playing with the MoonBot Kit.

This product is designed for children aged 8 and older. Younger kids should play under the guidance of parents. Please assemble according to this manual step by step. Wrong assembly may cause broken parts or abnormal behaviors.

## WARNING:

1. Be cautious of sharp parts of metal pieces, that running parts may cause pinch.
2. Please assemble or disassemble them carefully.
3. Please keep this product away from heat or water.

## CAUTIOUS:

1. DO NOT twist the servos when Power is ON.
2. DO NOT throw or drop Robot or any parts.
3. DO NOT cover the camera, as covering the camera will affect the recognition result of your MoonBot.

## POWER MODULE(BATTERY)

1. Do not disassemble the lithium battery module to avoid dropping, impacting or squeezing the lithium battery. Avoid using it in humid, low temperature (below 0 degree) and high temperature (above 50 degree). Keep away from fire and do not soak. ;
2. The charging process is a non-linear process. The first 95% of the electricity will be charged quickly, and the last 5% of the electricity will be used for a long time, which is normal;
3. Please charge when the power is at a low level. If the

battery is charged when the battery is at LED4 (100%), LED4 (100%) may be flashing at all times. At this time, it is not necessary to continue charging, and it can be used directly;

4. Although the lithium battery has a perfect protection circuit inside, it is necessary to avoid the following situations during use, overcharging, overdischarging, electrode short circuit, current backflow, high current output;

5. When the lithium battery module is not used for a long time, please keep the lithium battery at 75% of the power for storage;

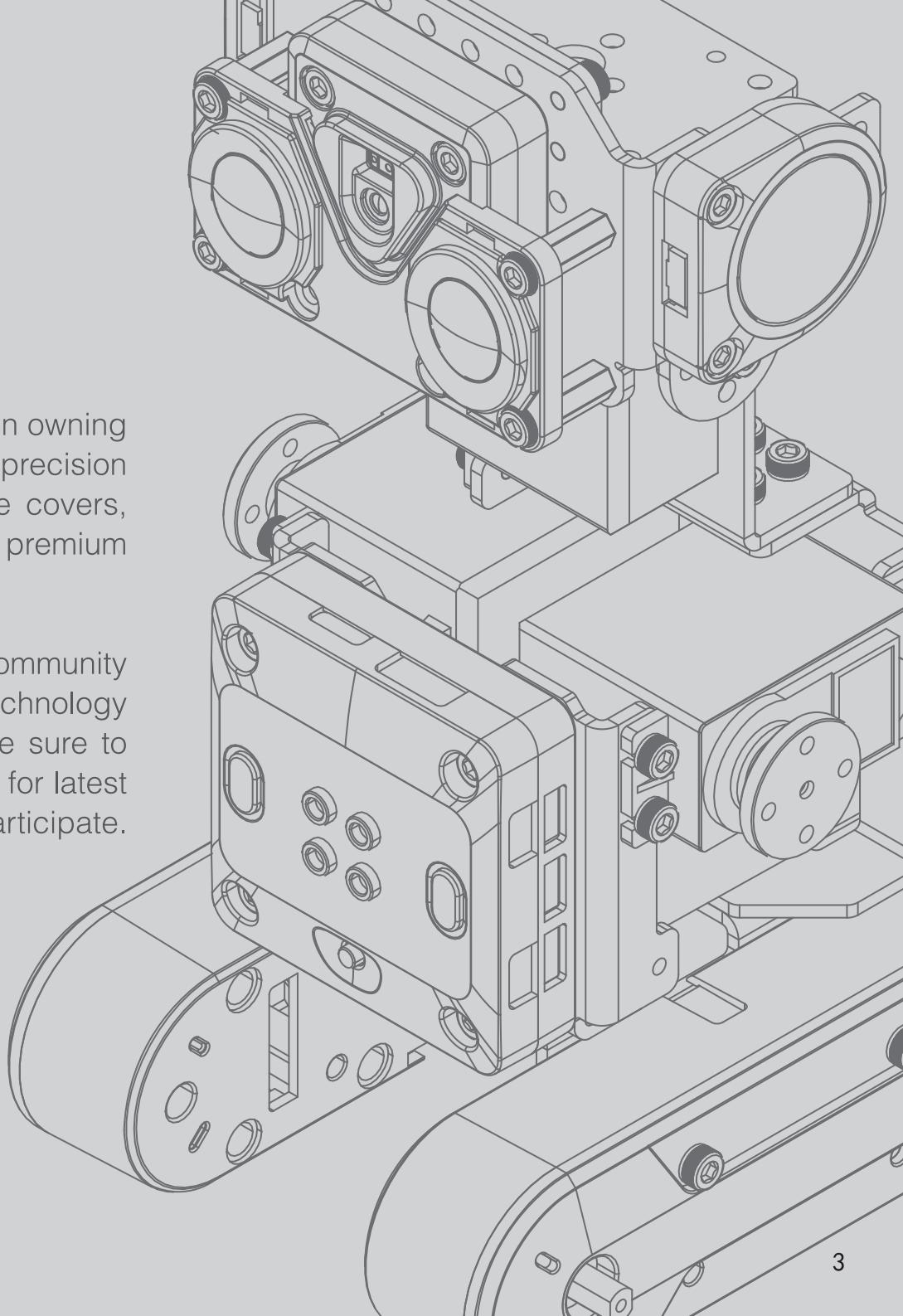
6. Lithium battery has a certain service life, and its battery capacity will be attenuated with the use time. When the battery life cannot meet the daily use requirements, it is recommended to replace the new lithium battery module;

7. The waste lithium battery module should be disposed of properly and should not be discarded at will.

# CONGRATULATIONS

on owning  
our award-winning MoonBot Kit. With its precision  
aluminum frame, the see-through hardware covers,  
and open-source ecosystem, MoonBot is a premium  
robot kit with incredible educational value.

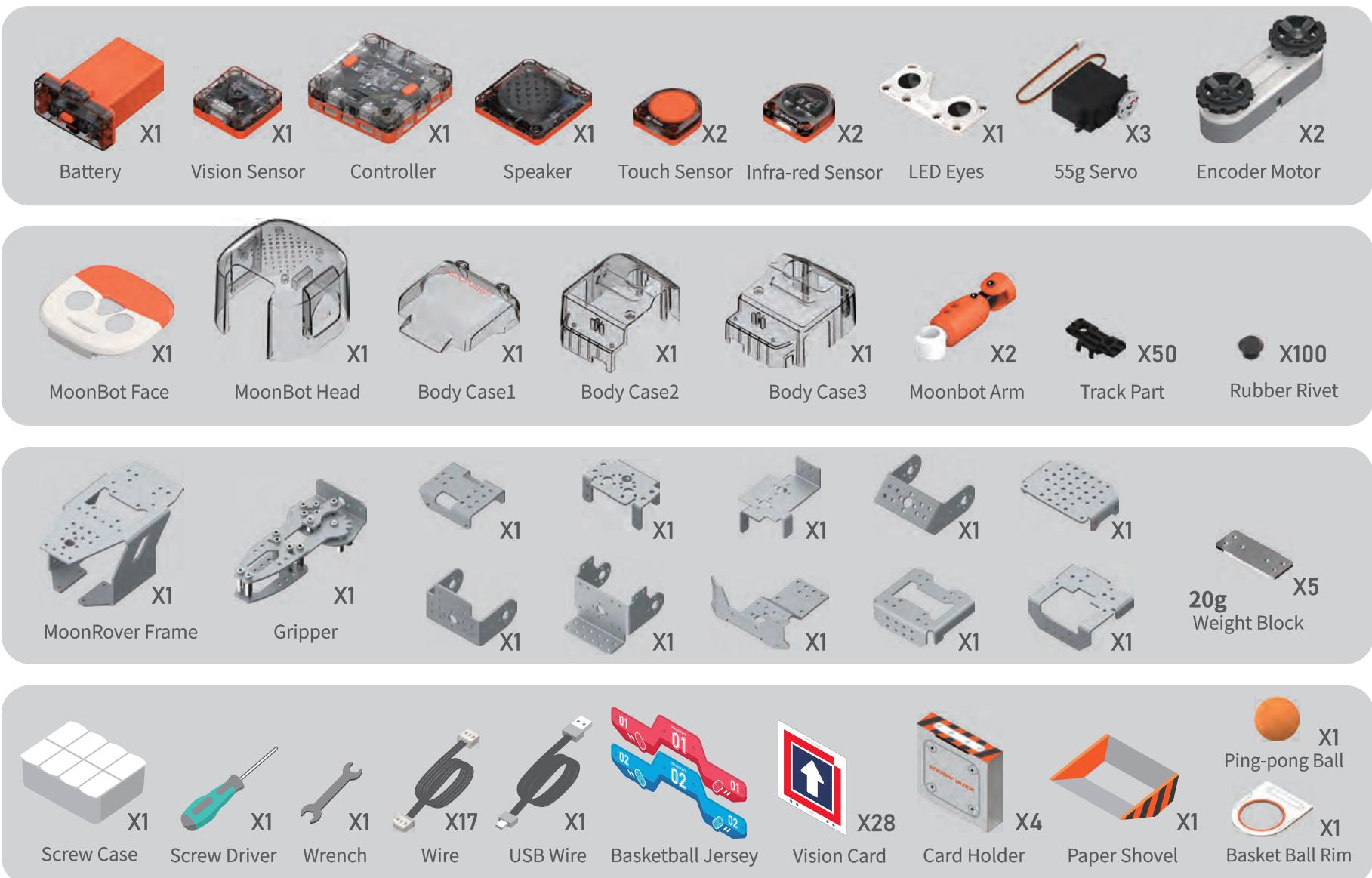
Together, we are hoping to build a robot community  
that helps you learn not only what today's technology  
can do, but also how the future will be. Be sure to  
follow us on Facebook ([fb.com/MoonBotKit](https://fb.com/MoonBotKit)) for latest  
news and online challenges you can participate.  
Have fun with your MoonBot!



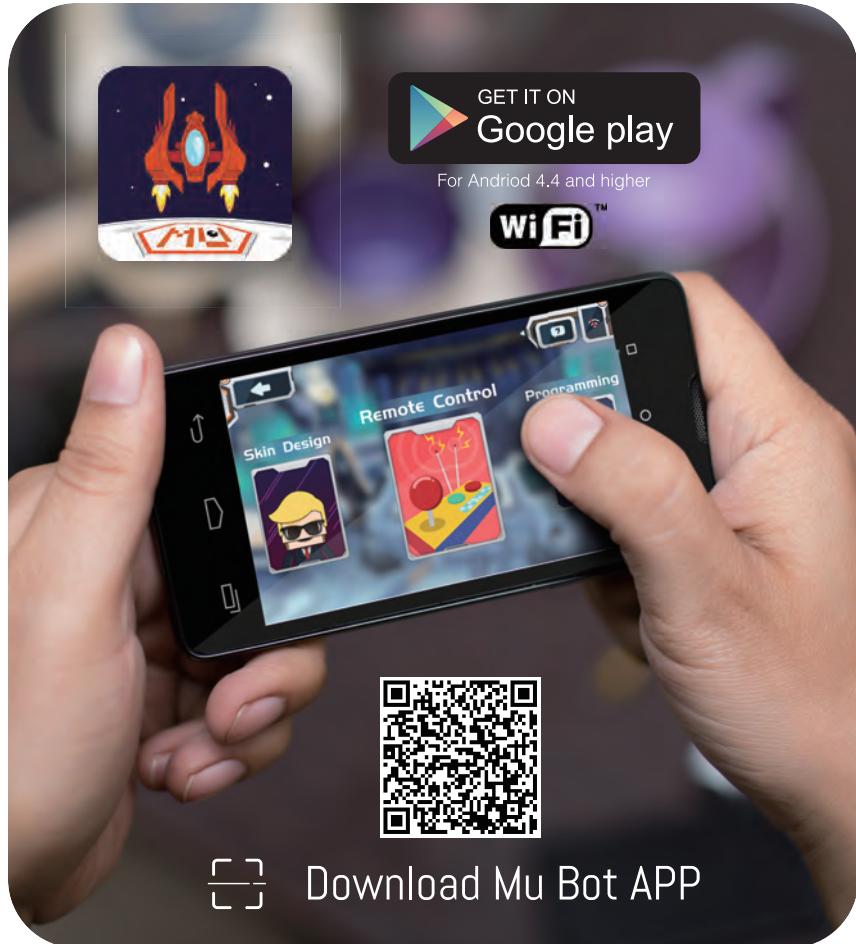
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# WHAT 'S INSIDE THE BOX



# PROGRAMMING



Download Mu Bot APP



1.APP: Search for "MU Bot" on GOOGLE PLAY or scan code with andriod device.  
(iOS:comming soon)

2.PC: Mixly/Arduino IDE

# DISCOVER MORE

[wiki.morpx.com](http://wiki.morpx.com)



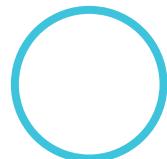
Follow us on facebook

[www.facebook.com/MoonBotKit/](https://www.facebook.com/MoonBotKit/)

# SYMBOLS & LEGEND



Flip perspective



Caution

## Screw Case




1:1



Please compare the length of the screw as shown in Figure 1:1.

# MODULES



CONTROLLER



2PIN



3PIN



4PIN



5PIN



POWER MODULE



5PIN



ELECTRONIC  
MODULE



X1



X1



X2



X2



4PIN



MOTOR MODULE



X2



4PIN



2PIN



SERVO MODULE



X3



3PIN

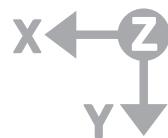
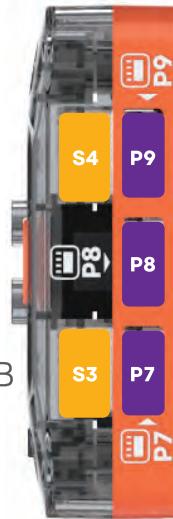
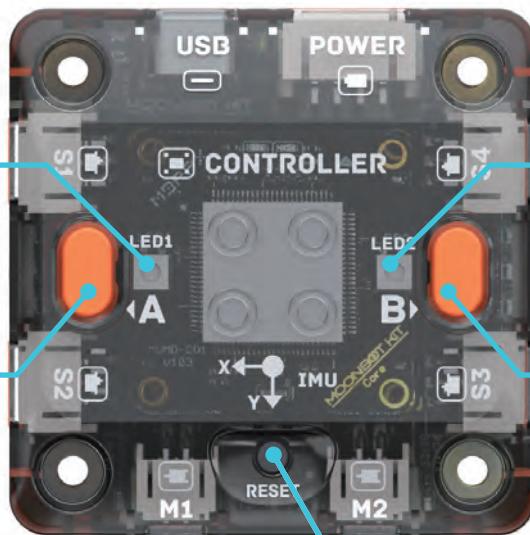


# CONTROLLER

The heart of MoonBot connecting all the sensors, motors, and servos.



Compass & Buzzer Inside



**USB-C X 1**



**POWER X 1**



**SENSOR  
P1 ~ P9**



**MOTOR  
M1 ~ M2**

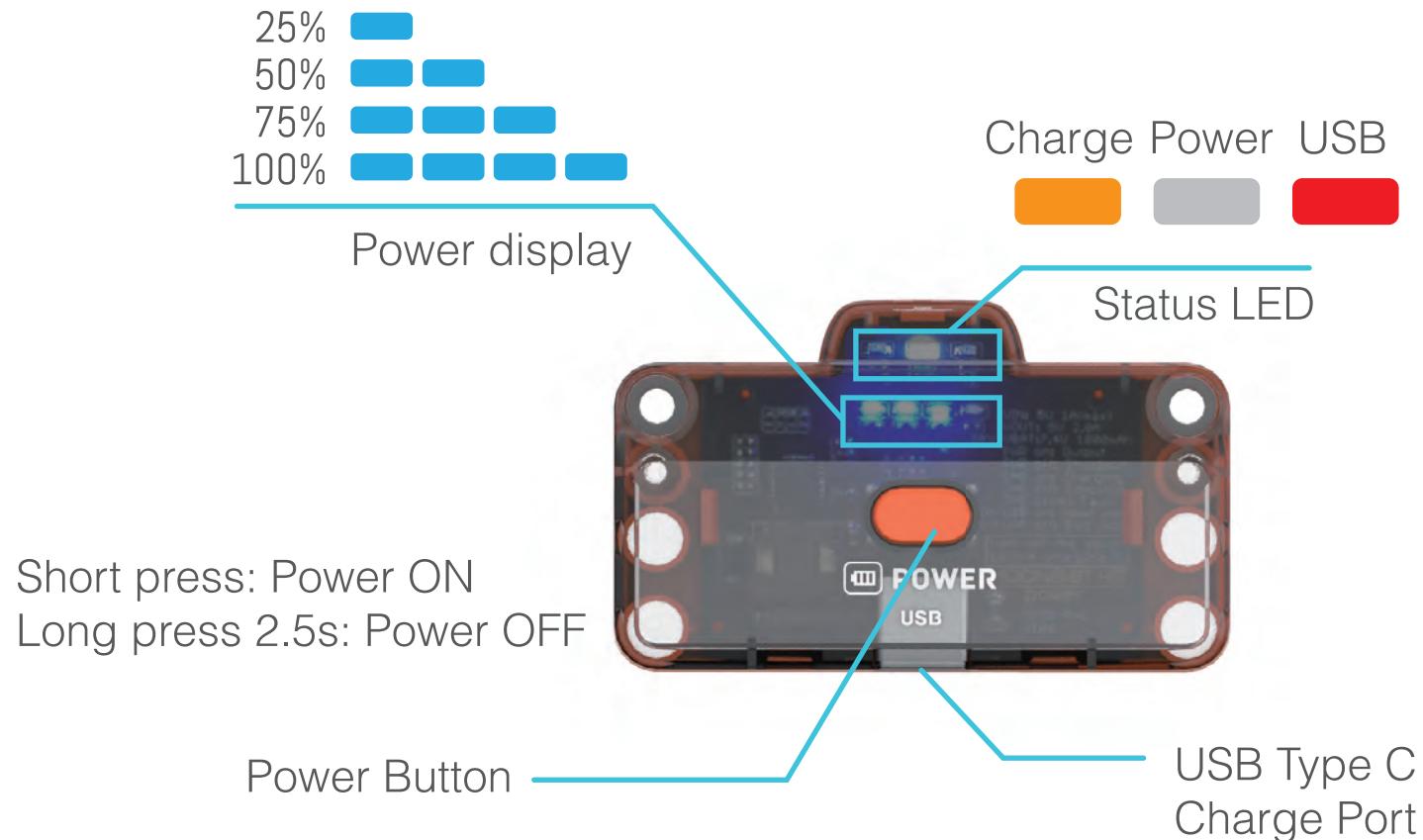


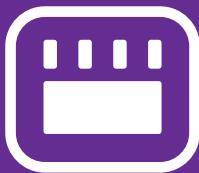
**SERVO  
S1 ~ S4**



# POWER MODULE

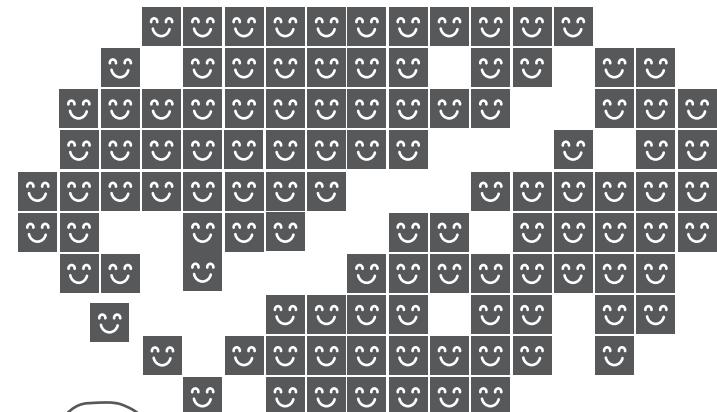
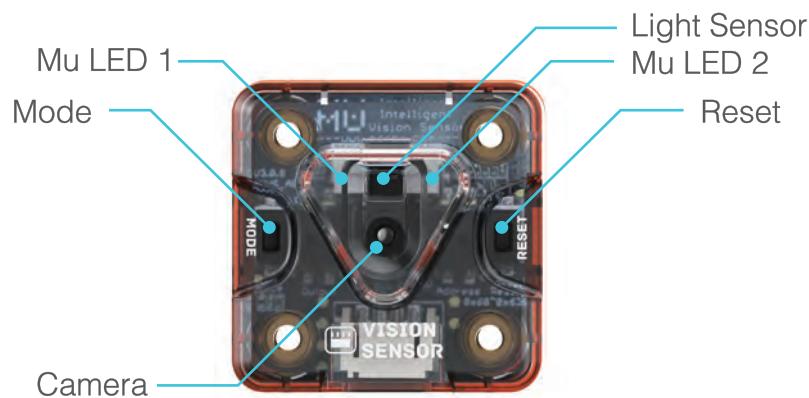
Where MoonBot energy source comes from



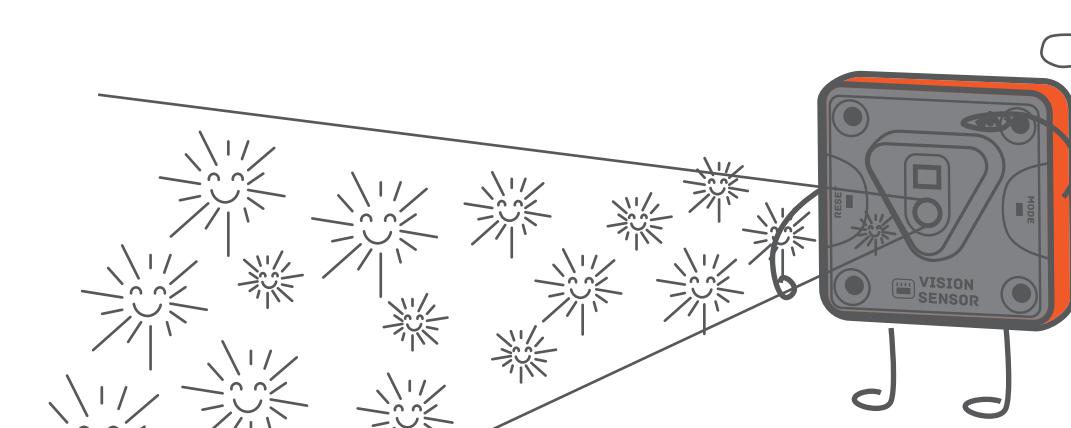


# VISION SENSOR MODULE

An advanced vision sensor that recognizes different types of patterns, faces, colors and traffic cards



Pixel



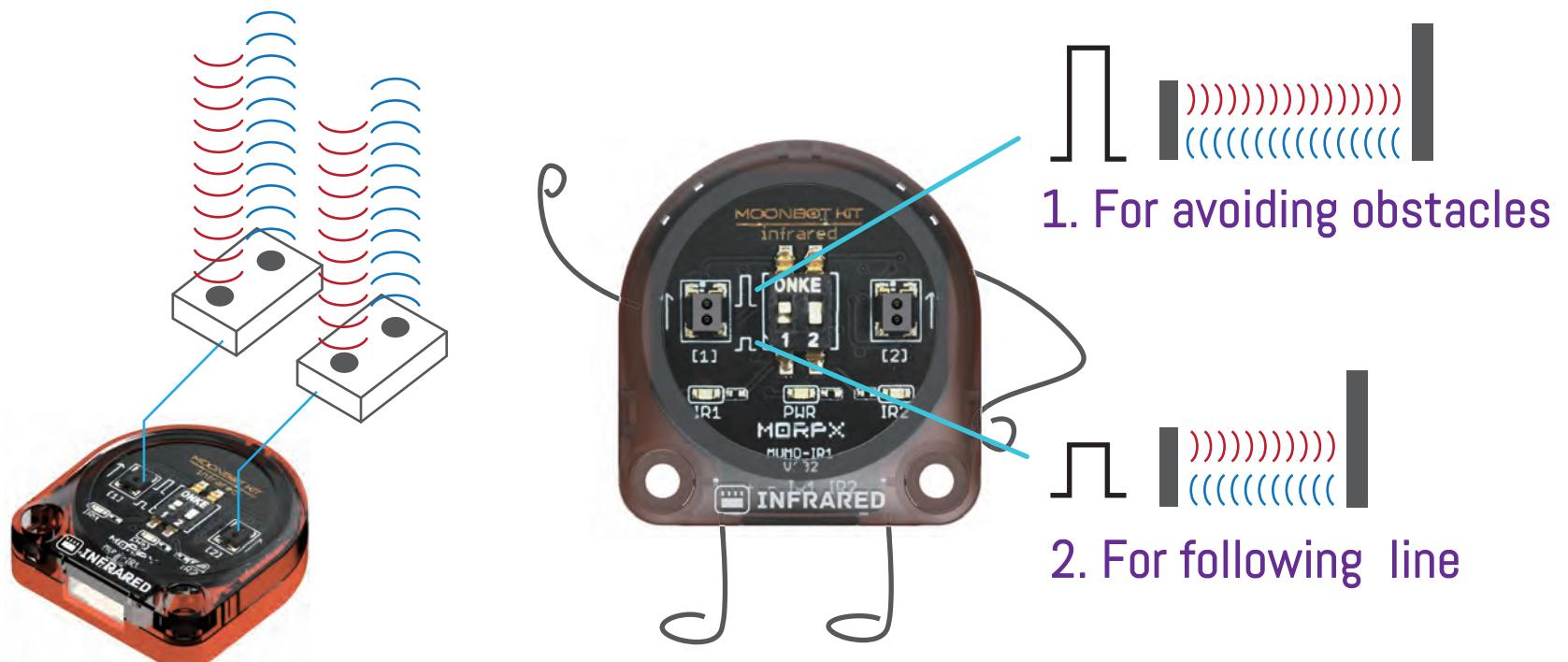
Light



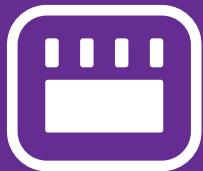


# INFRARED MODULE

Sensors that can detect obstacles



Measuring obstacle distance by infrared, Switch to the top for the long distance, dial to the bottom for the near distance.



# TOUCH SENSOR MODULE

A touch sensor works as a simple switch

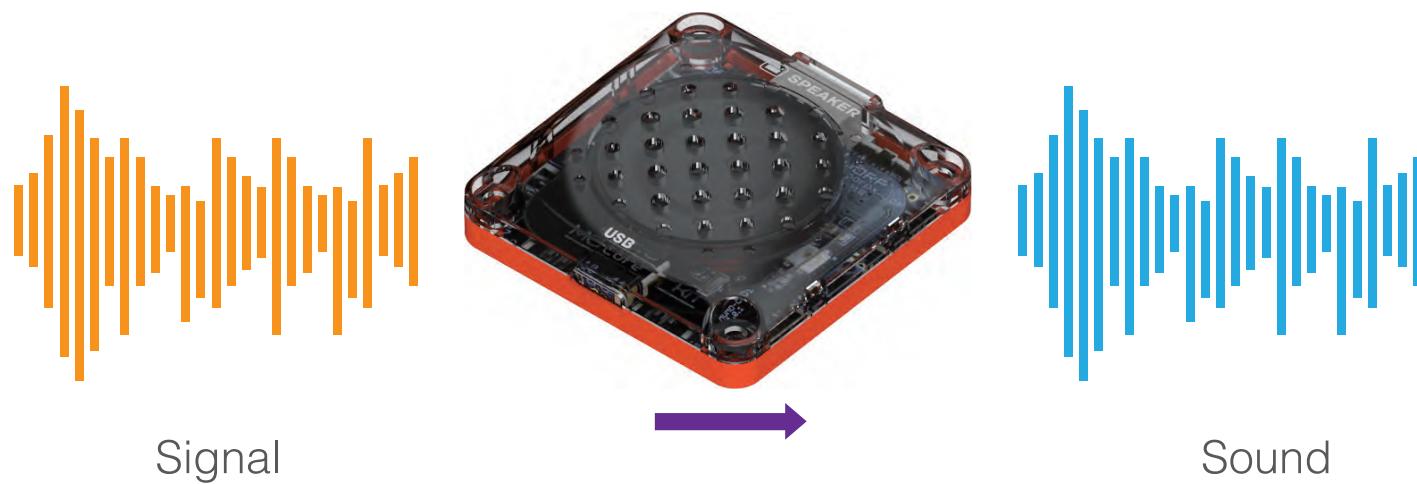
Touch it with your finger and the module will receive a signal.



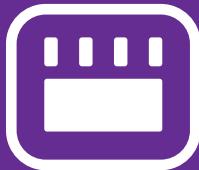


# SPEAKER MODULE

A MP3 player which let moonbot talk



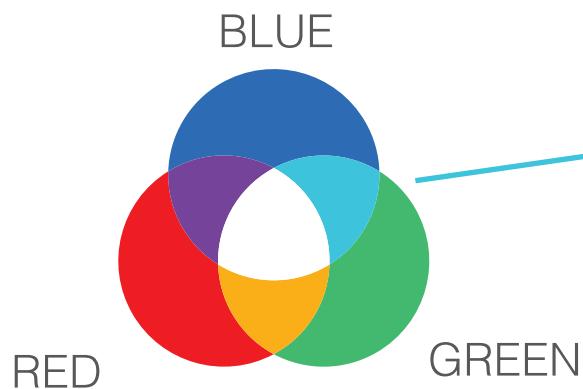
The speaker can convert the electrical signal into sound, so we can hear it.



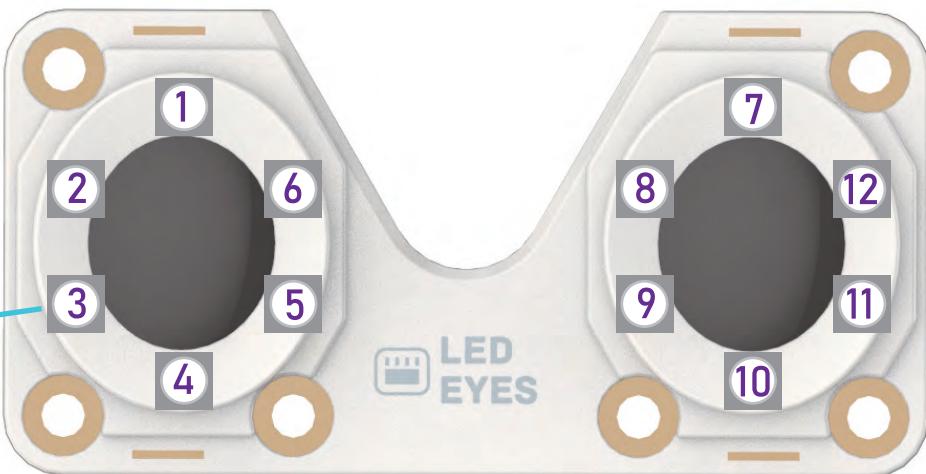
# LED EYES MODULE

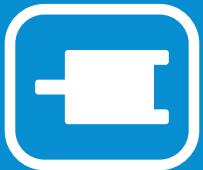
A shining neon display made by 12 led lights

\*Adjusting to the highest brightness may irritate your eyes.



LED EYE is consists of 12 RGB LEDs



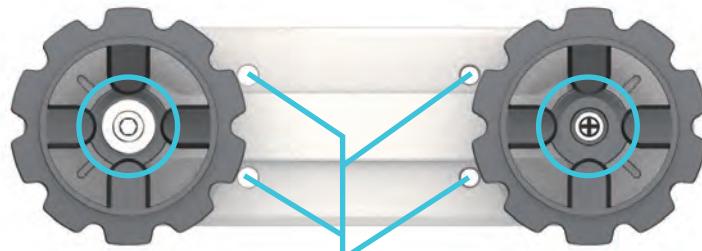


# MOTOR MODULE

That let MoonBot move with accurate steps

Distinguish the active and passive wheels according to the screws in the middle of the two wheels.

Passive wheel



Active wheel



Mounting Hole

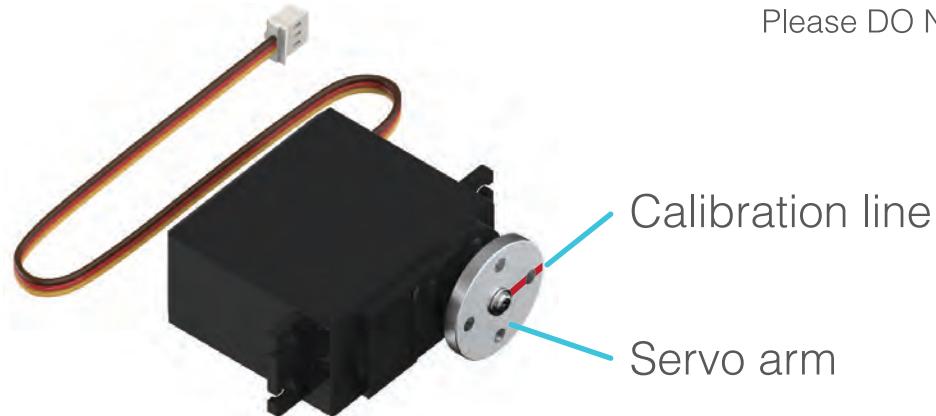
Passive wheel



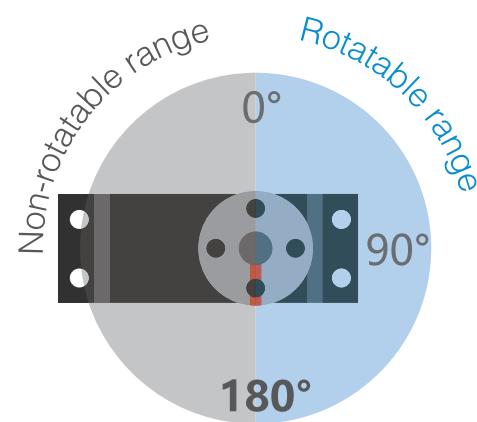
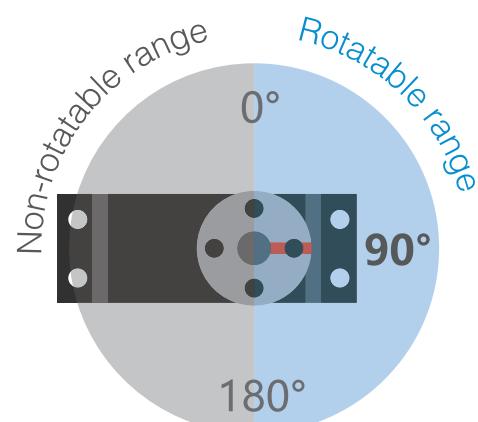
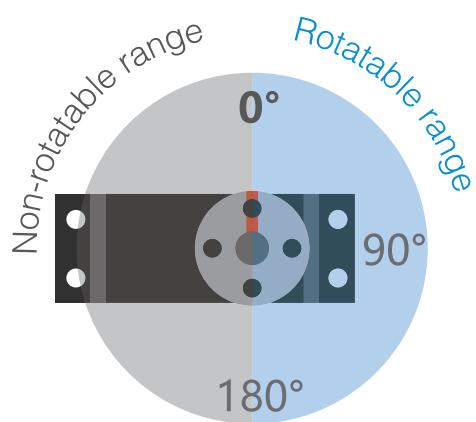


# SERVO MODULE

What MoonBot joints are made of



Please DO NOT twist the servos when Power is ON.



Default position: factory and power steering gear  
The disc will go to this location

# WIRES

You can use these wires to connect the modules, Please pay attention to the pin number and length of the wires.



X2



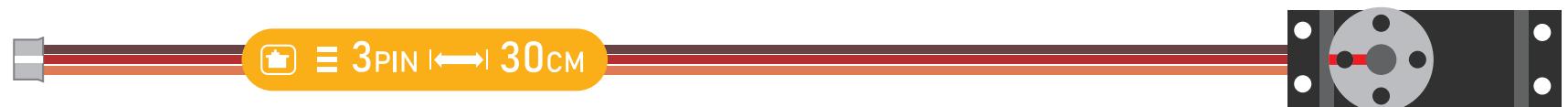
X1



X6



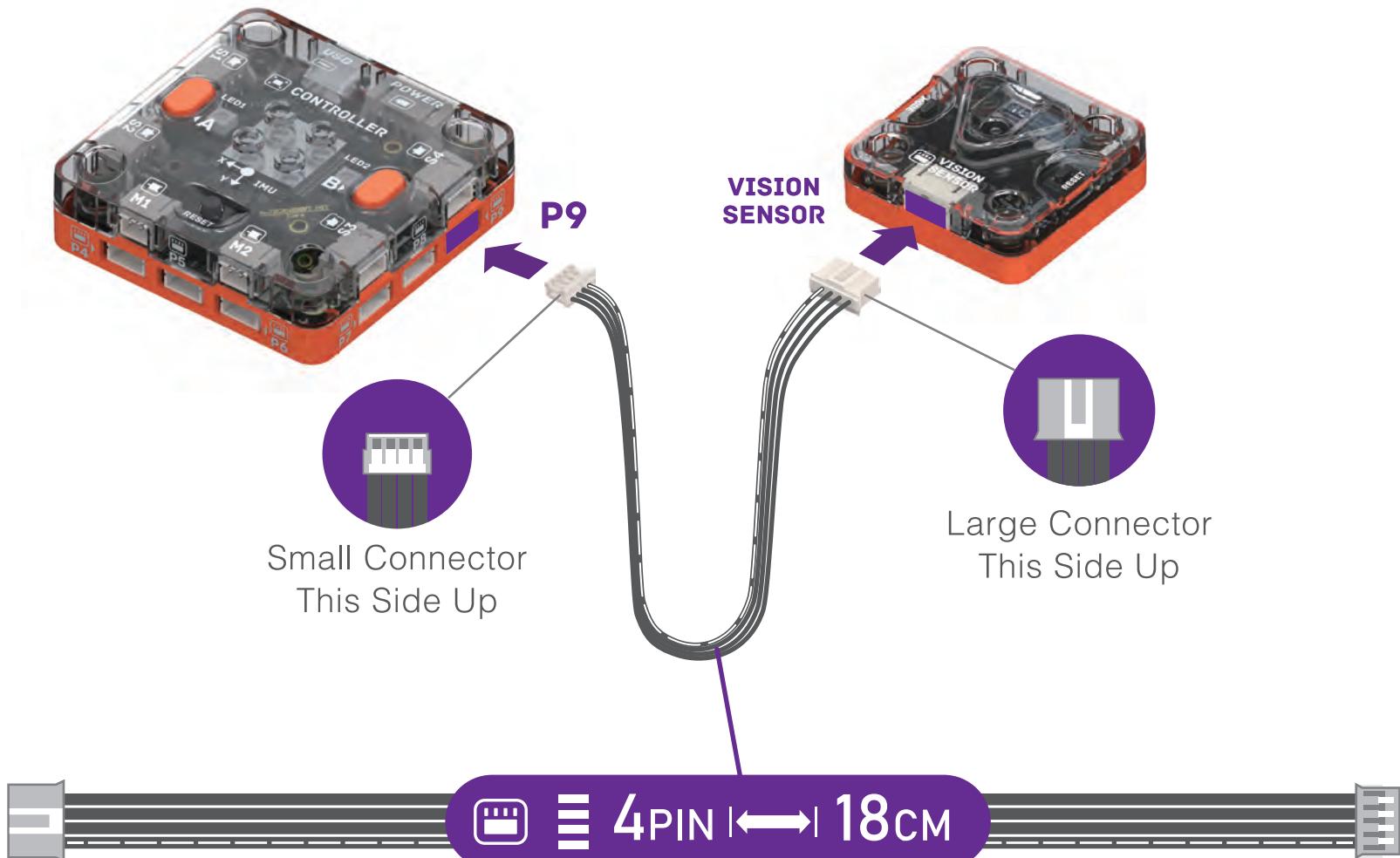
X8



# HOW TO CONNECT

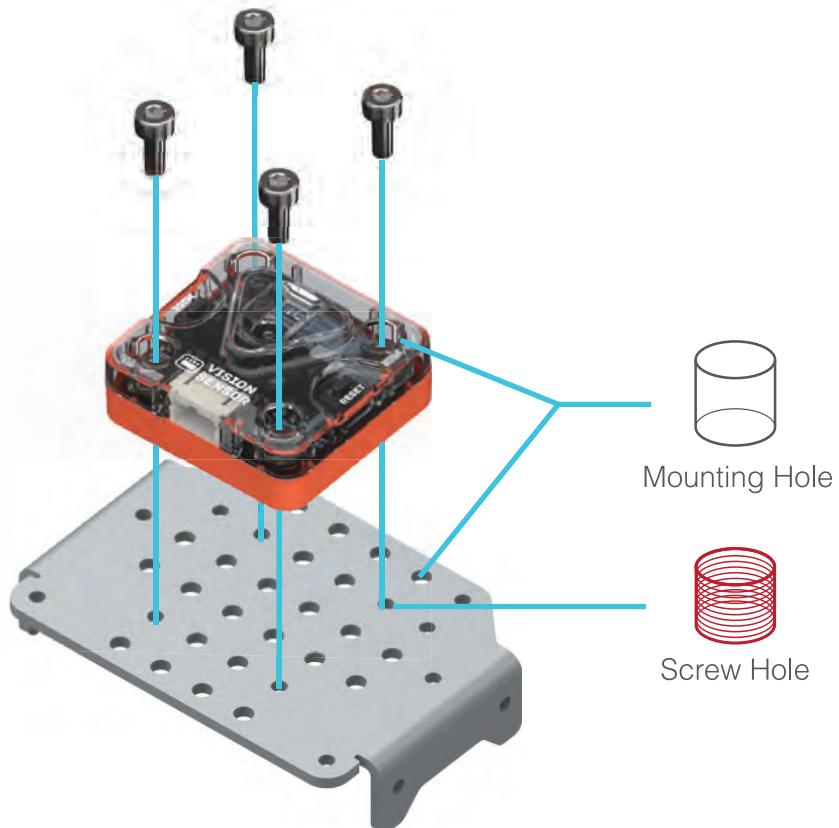
Pay attention to the front and back of the connector.

 VISION SENSOR ➞ P9

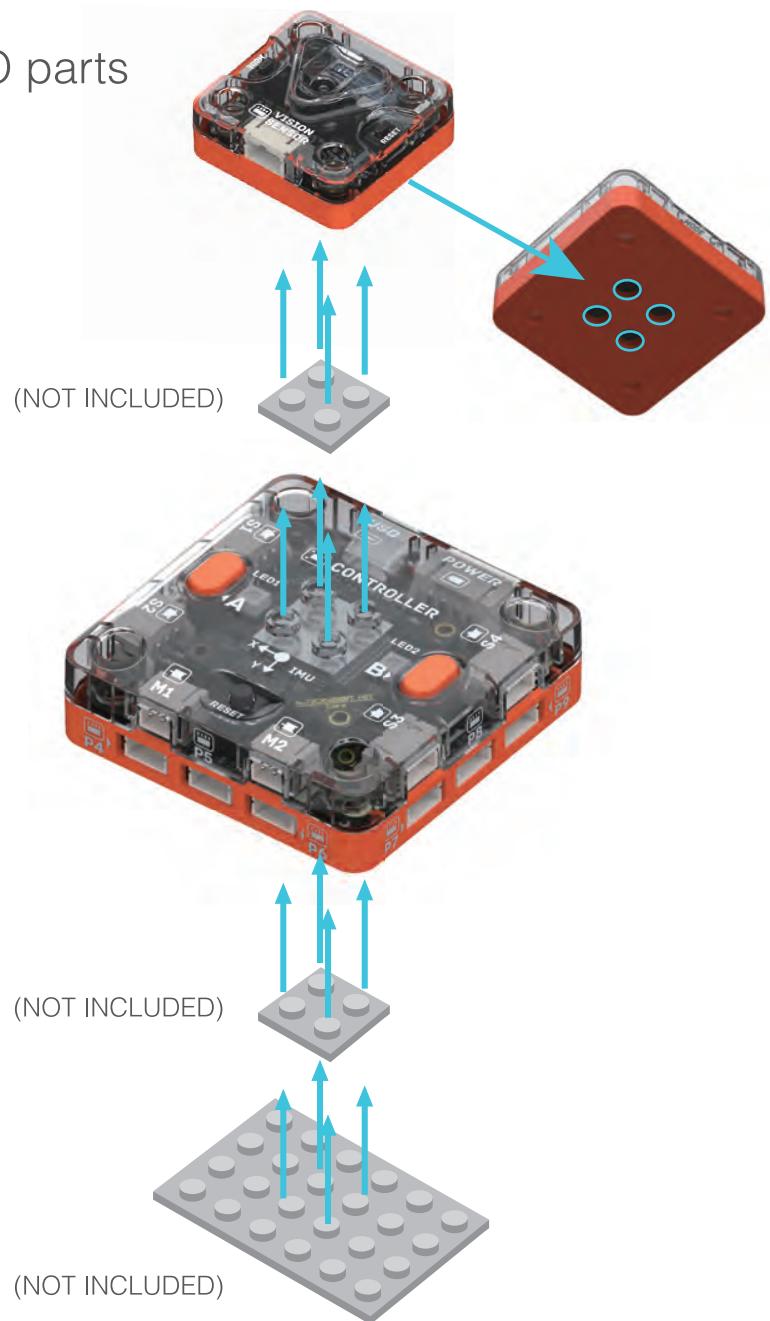


# HOW TO ASSEMBLE

## 1. Screw parts



## 2. LEGO parts



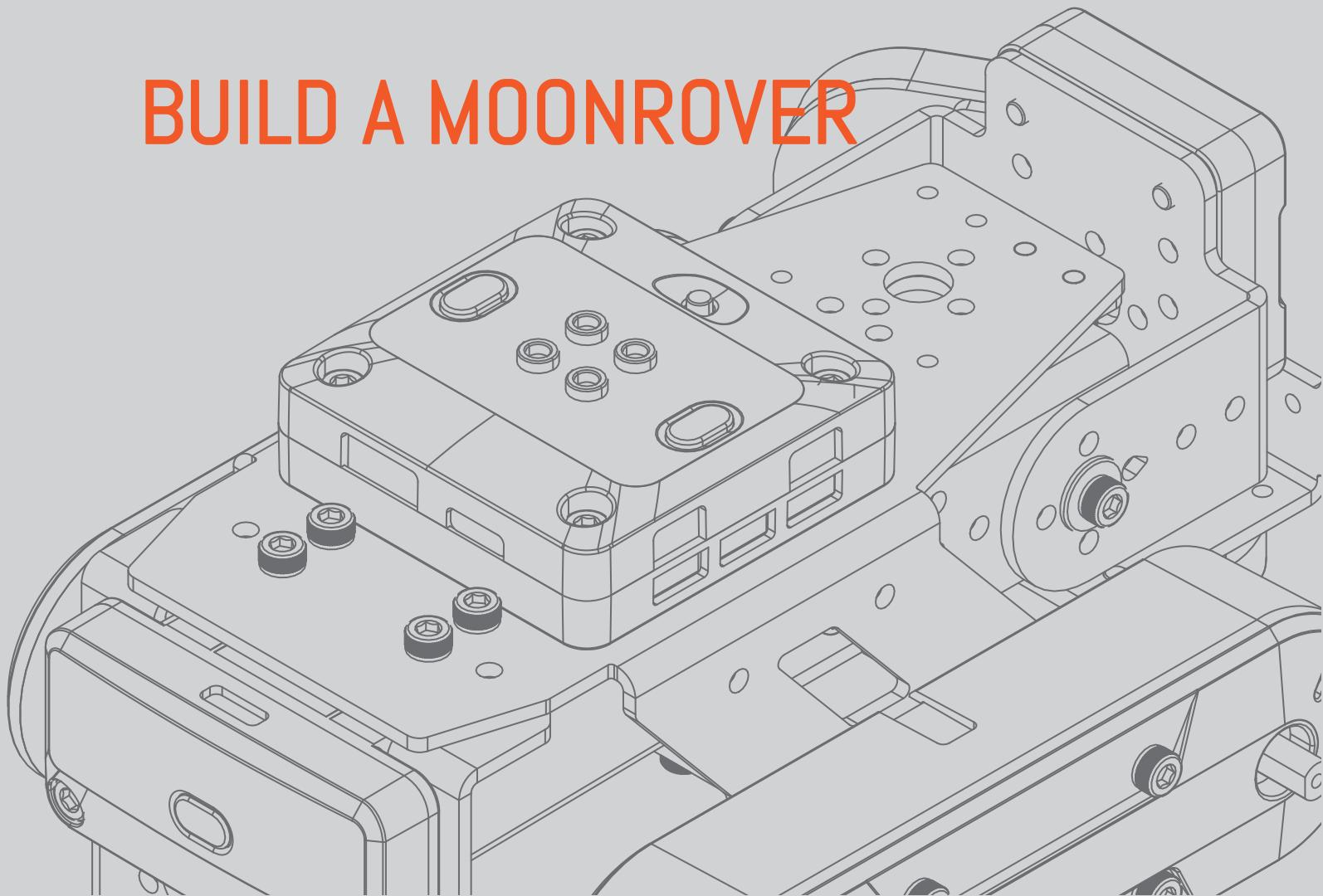
# BUILD A MOONROVER

**195**

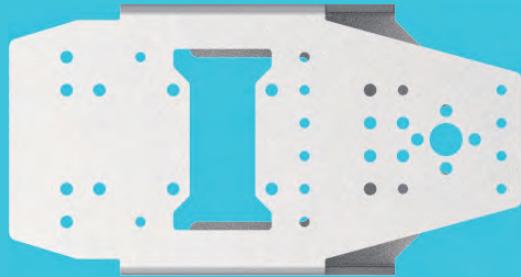
Pieces

**1h**

Estimated  
Build Time



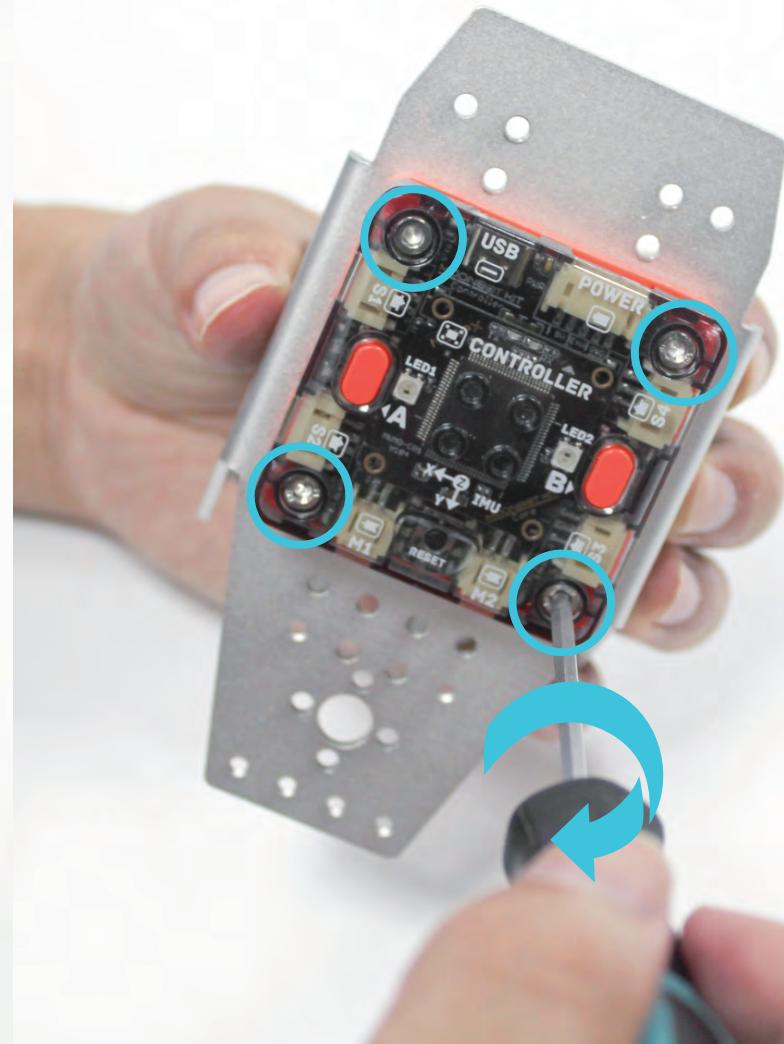
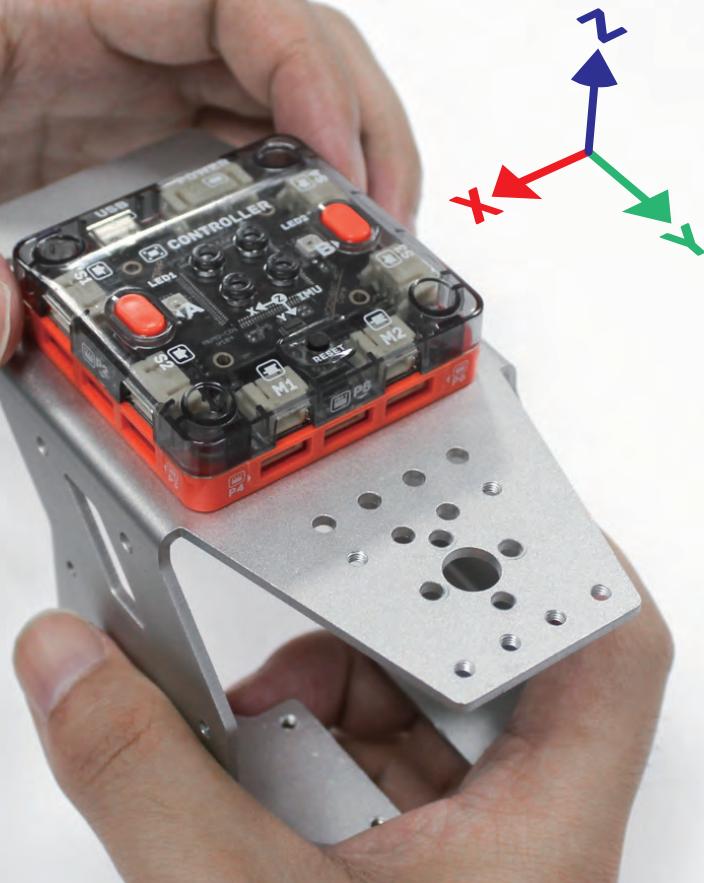
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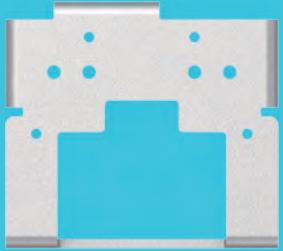
X4



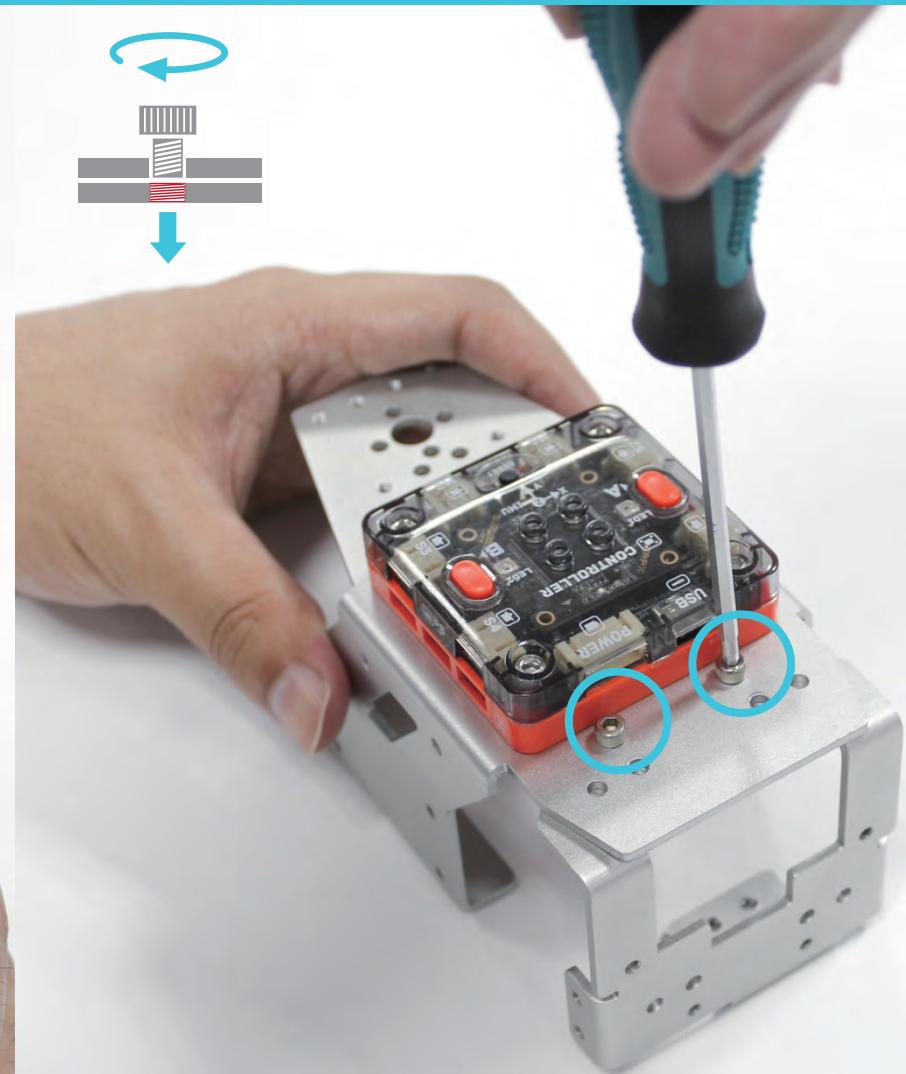
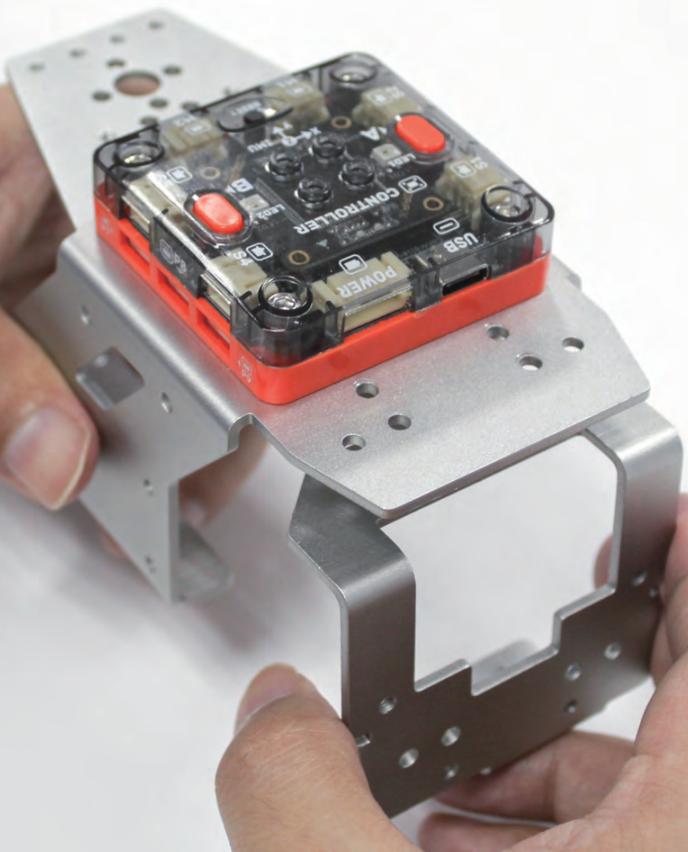
Pay attention to the direction  
of the controller.



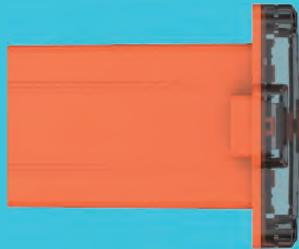
2



X2



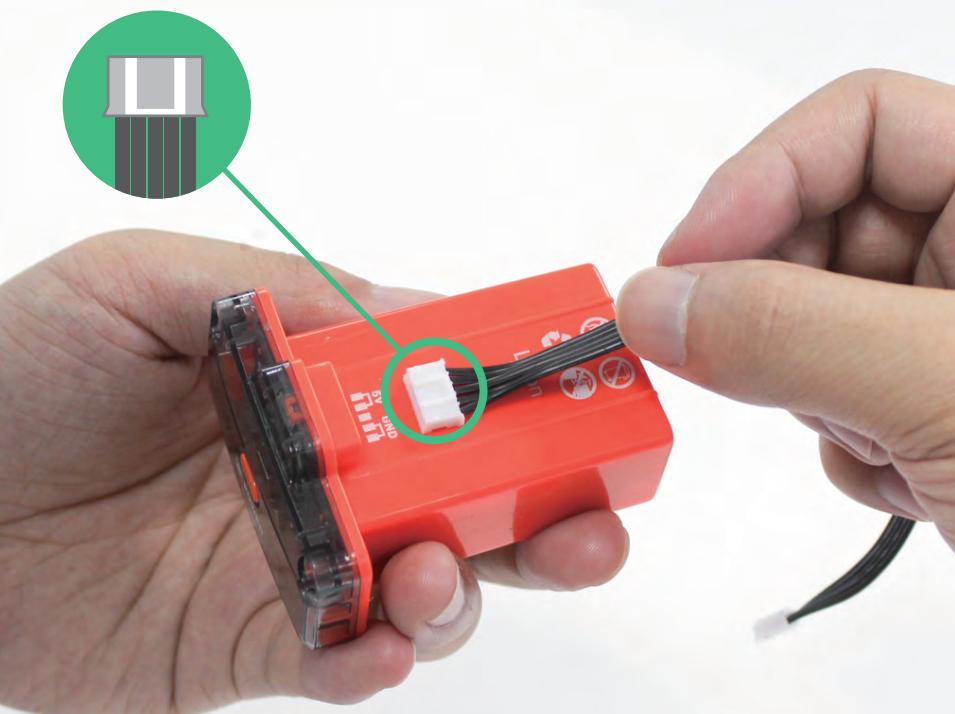
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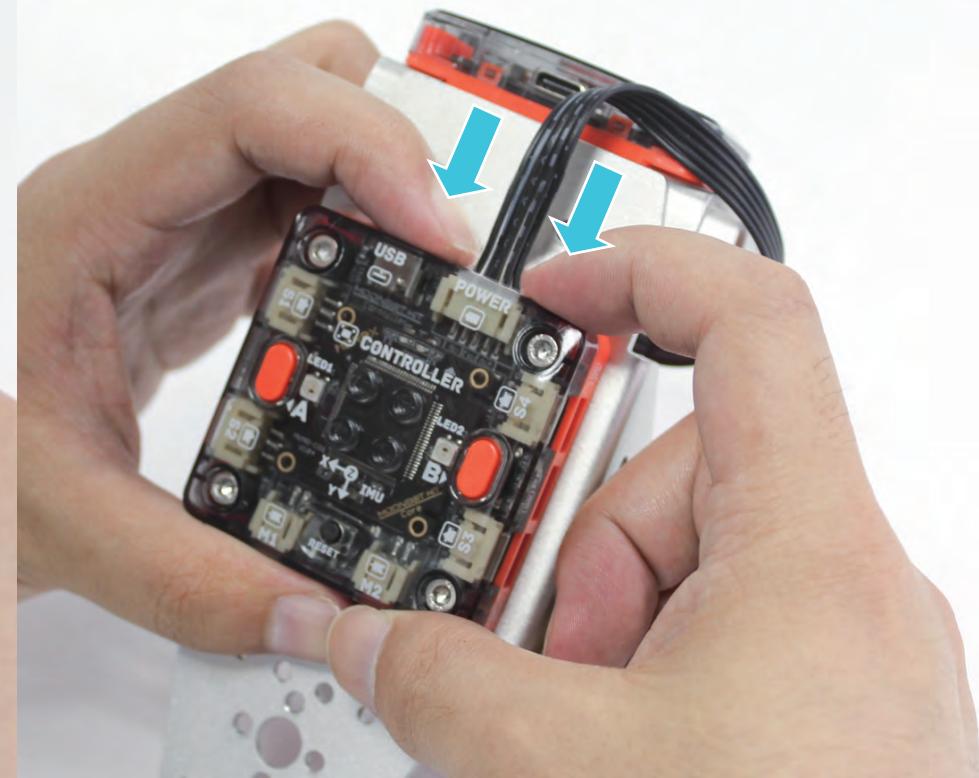
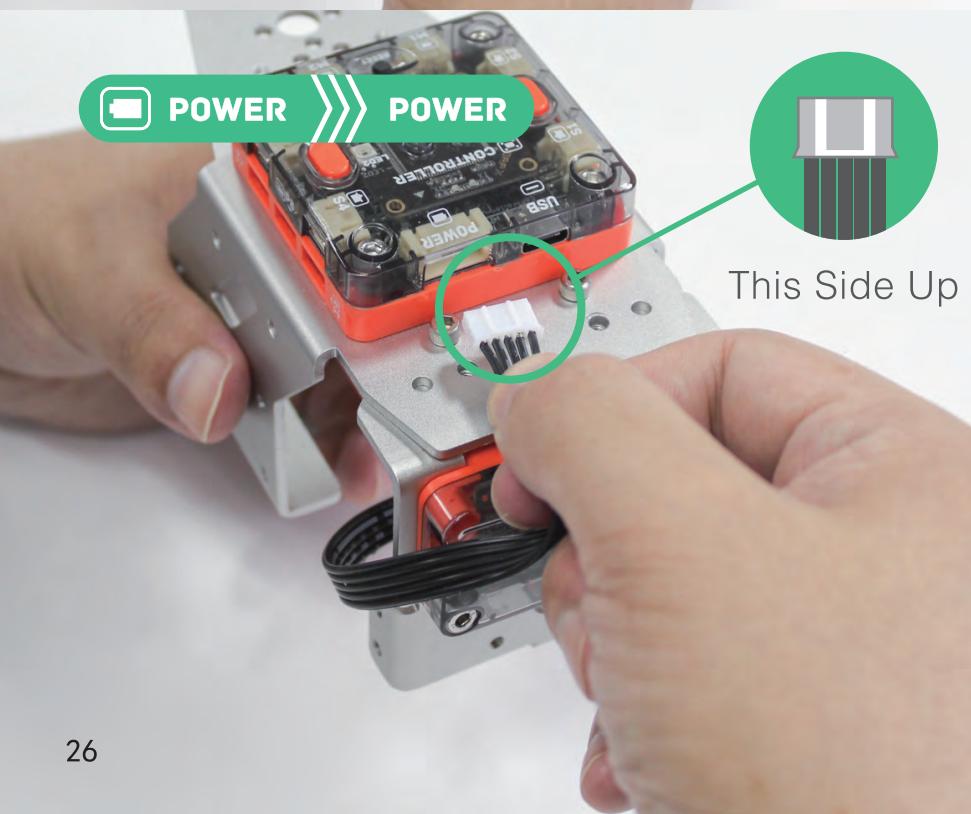
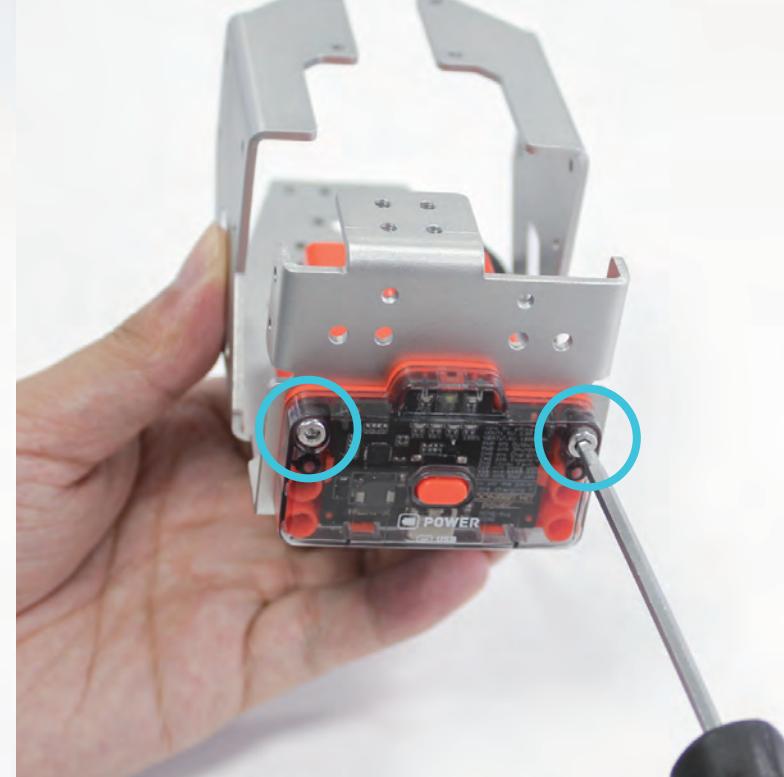
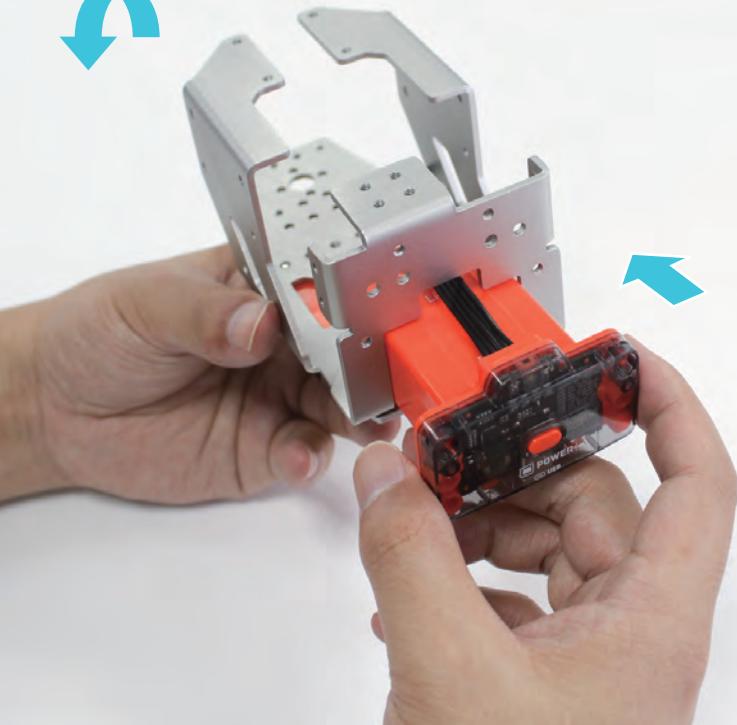


M3X8  
X2

5PIN ↔ 18CM

This Side Up

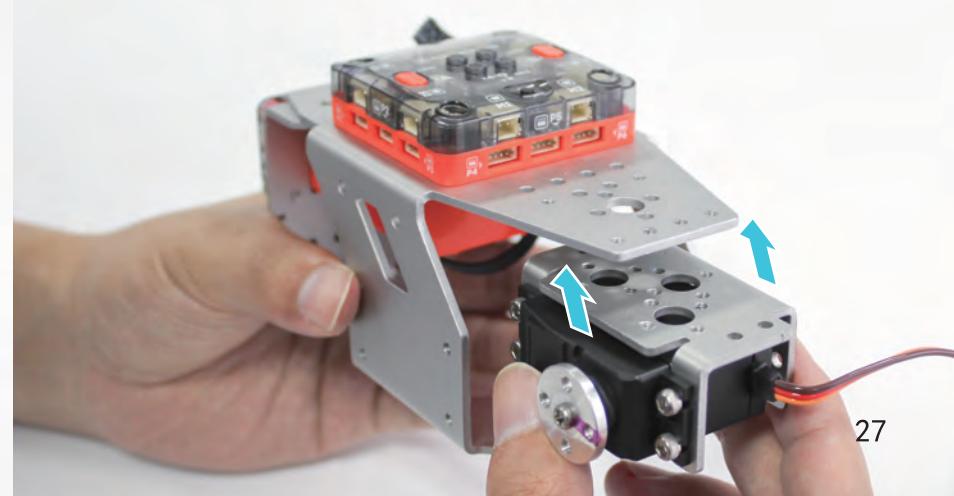
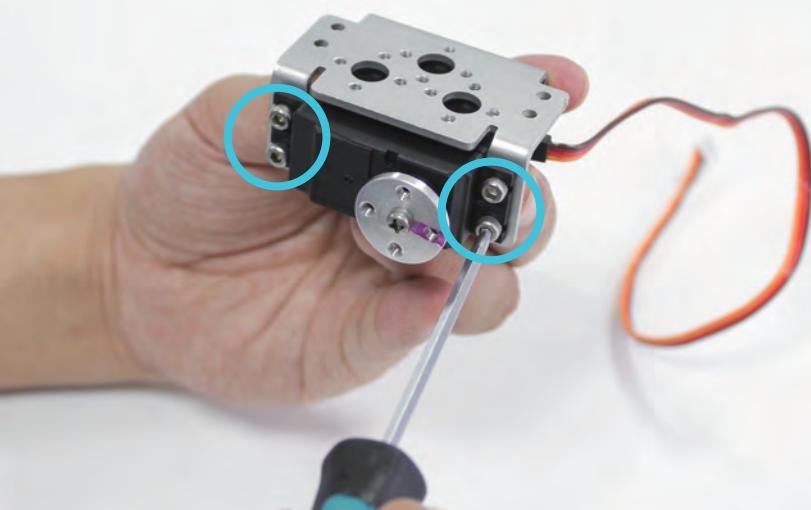
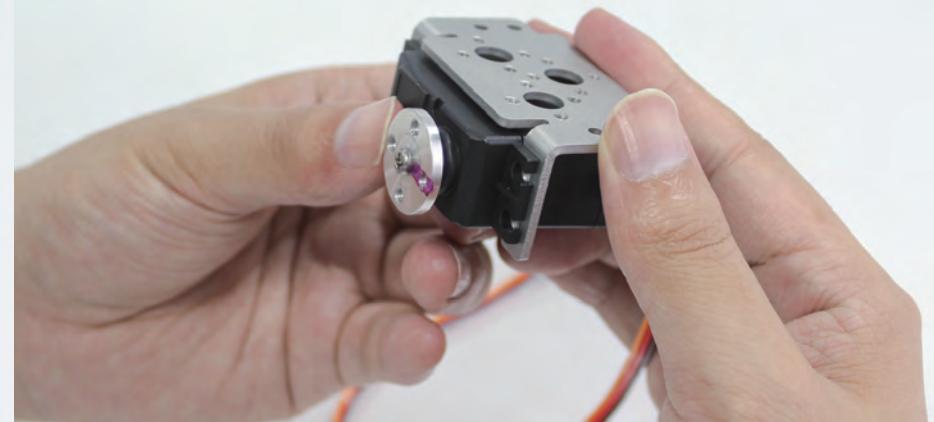


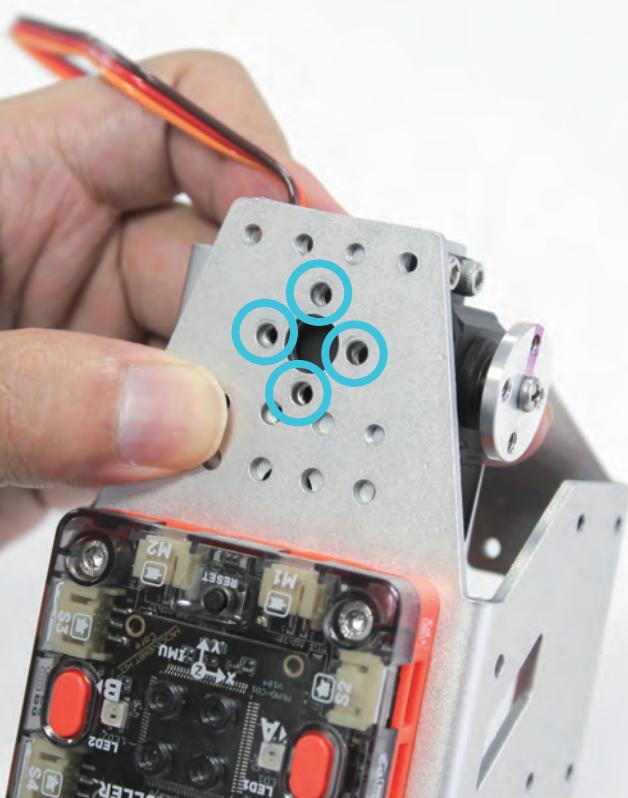


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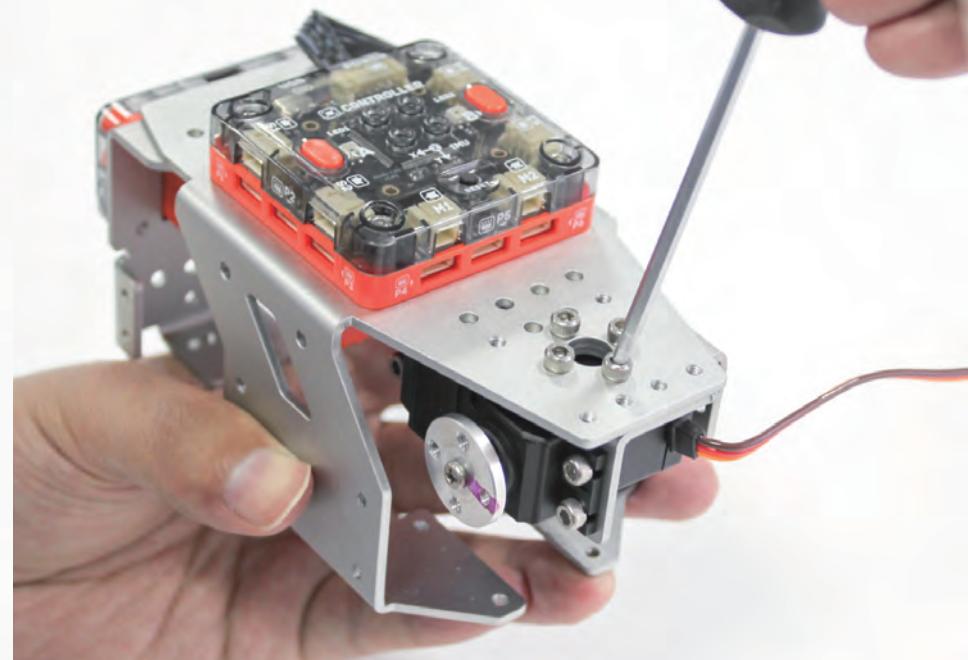


X8



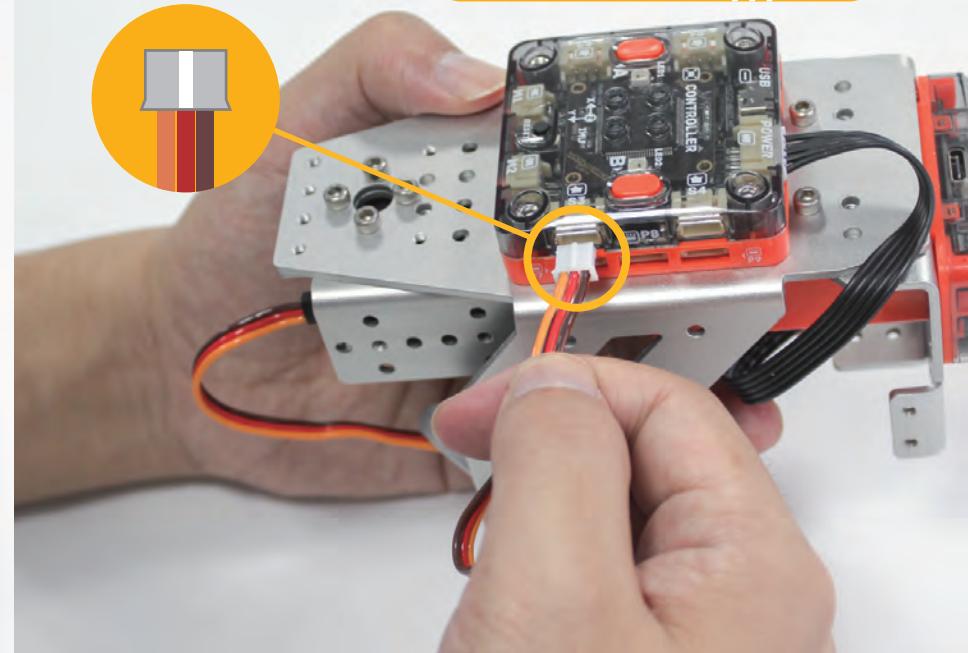


Arrange the line and pass through the opening.



This Side Up

👉 NECK SERVO » S3



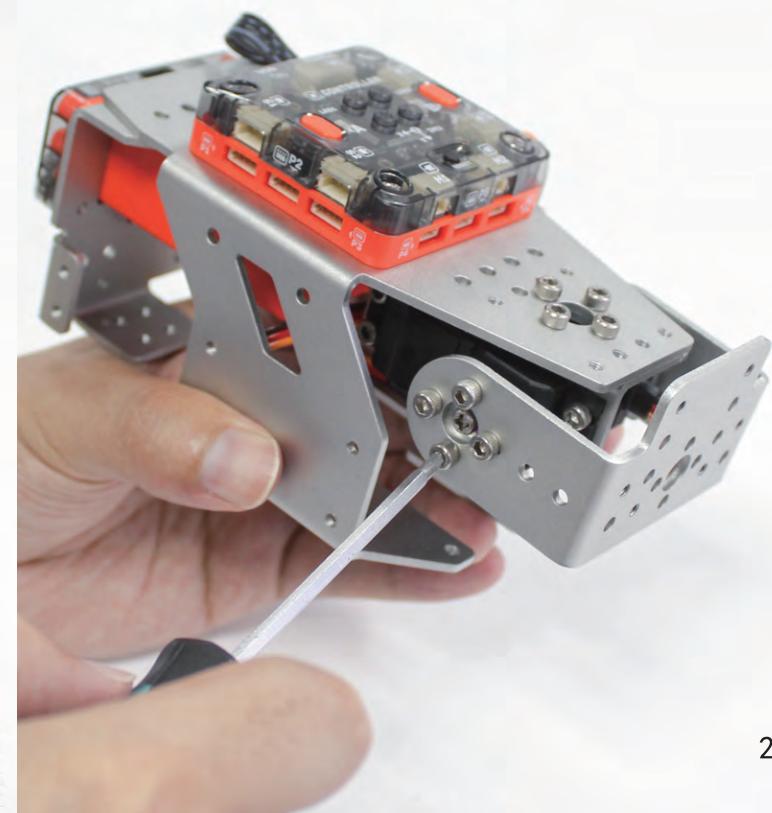
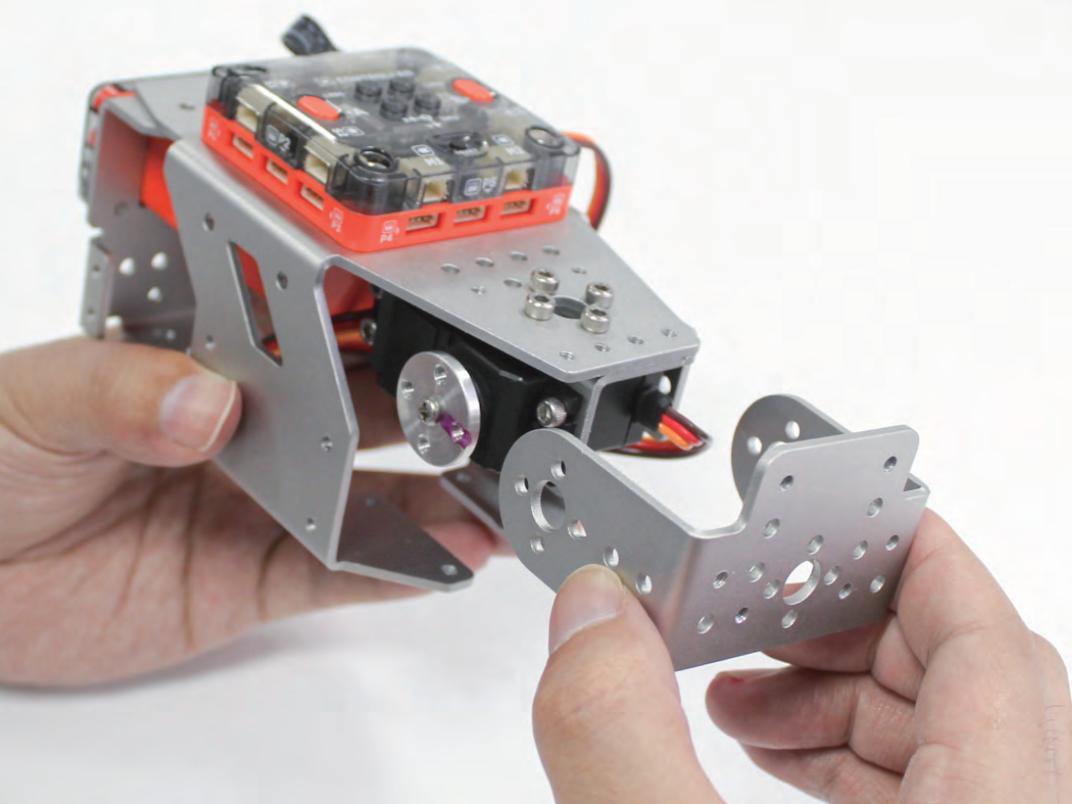
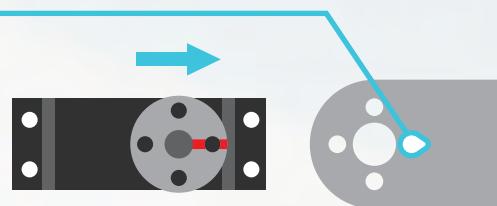
# 5



X4



Please keep this icon indicating the direction is consistent with the servo wheel



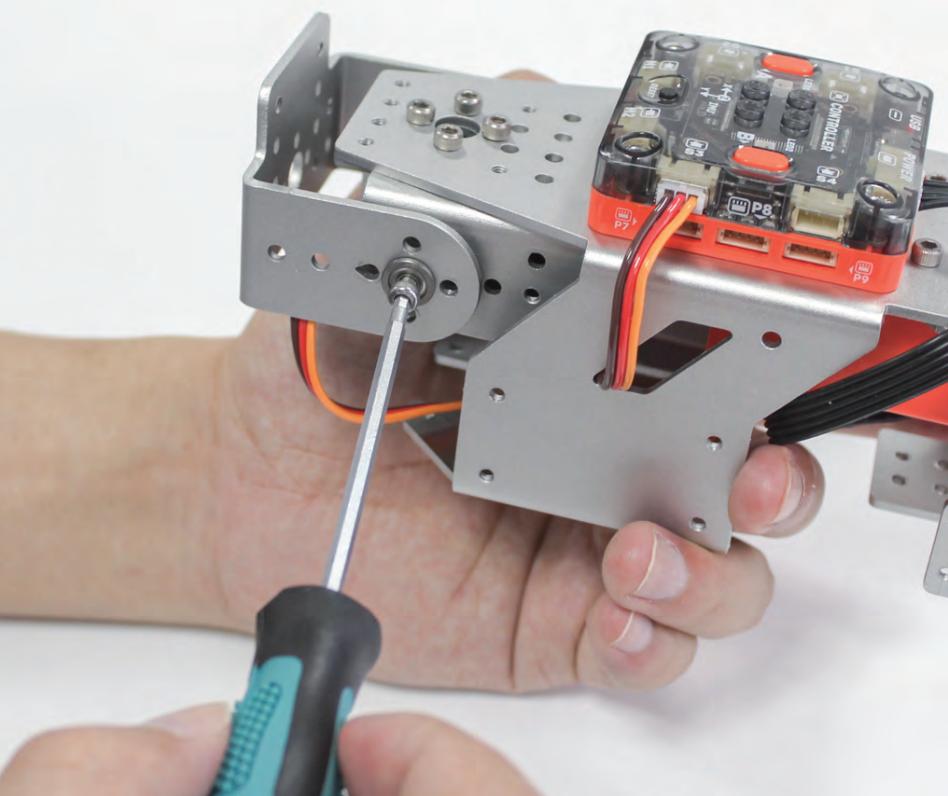
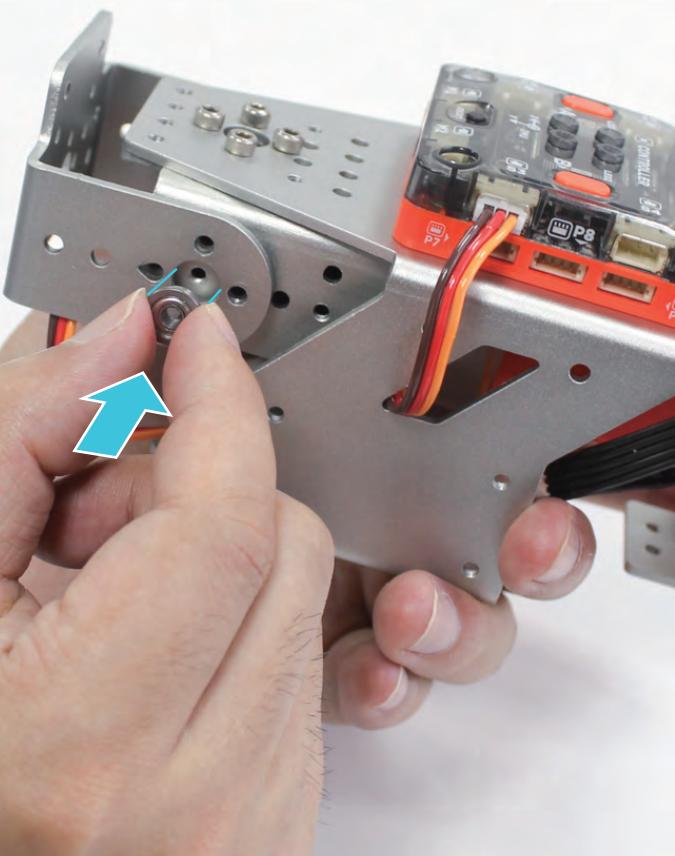
6



BEARING



M3X8

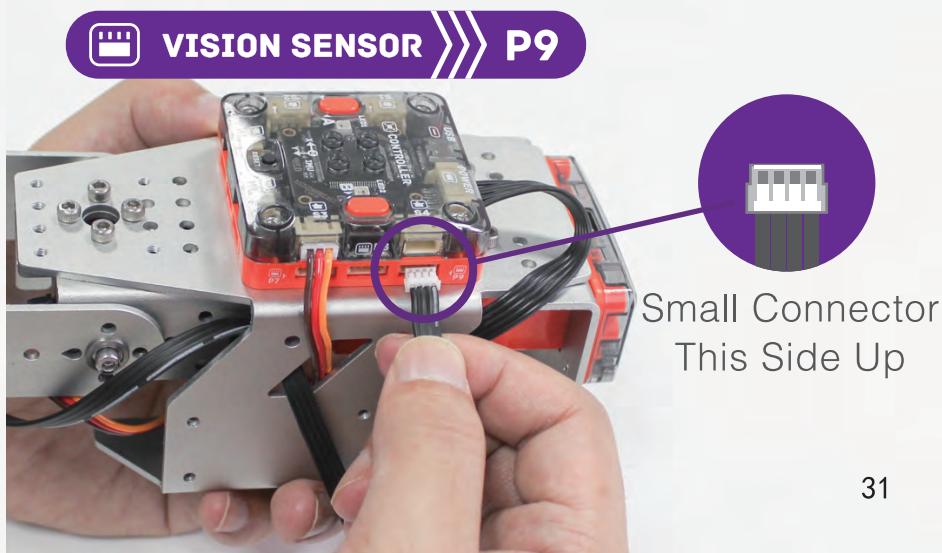
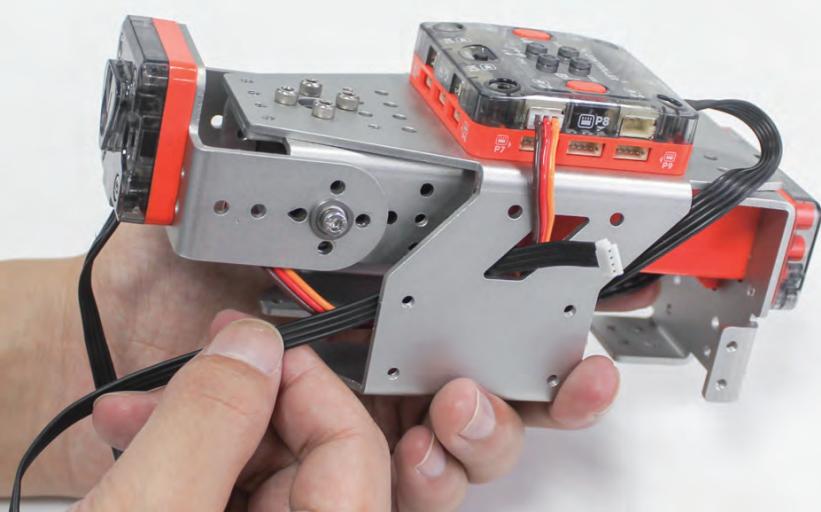
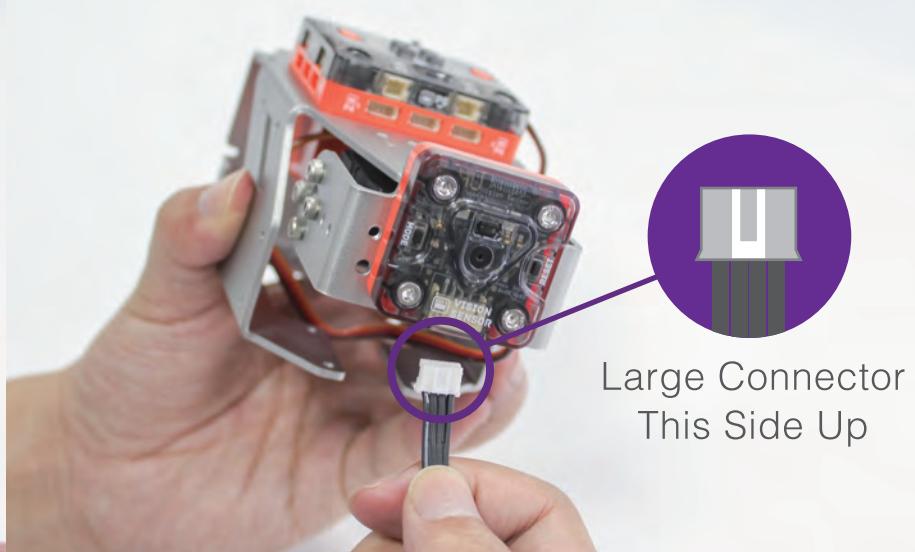
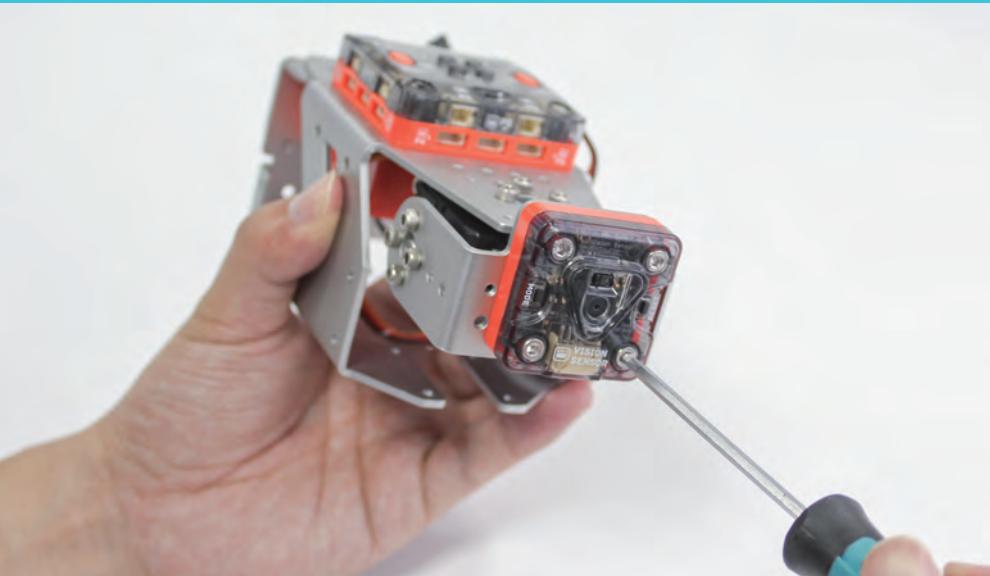


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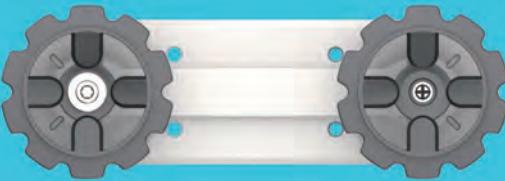
M3X12  
X4

4PIN ↗ 30CM

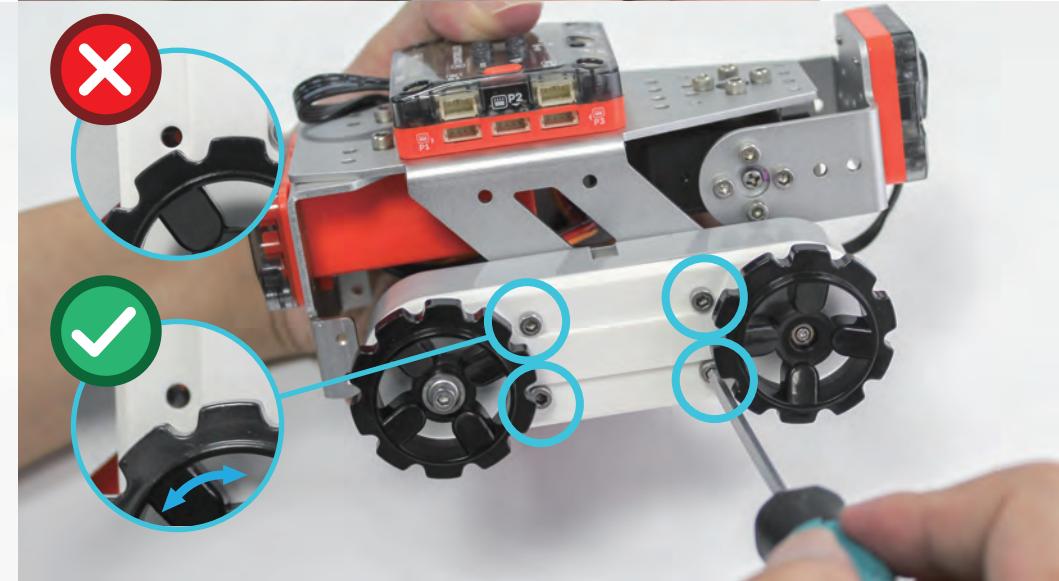
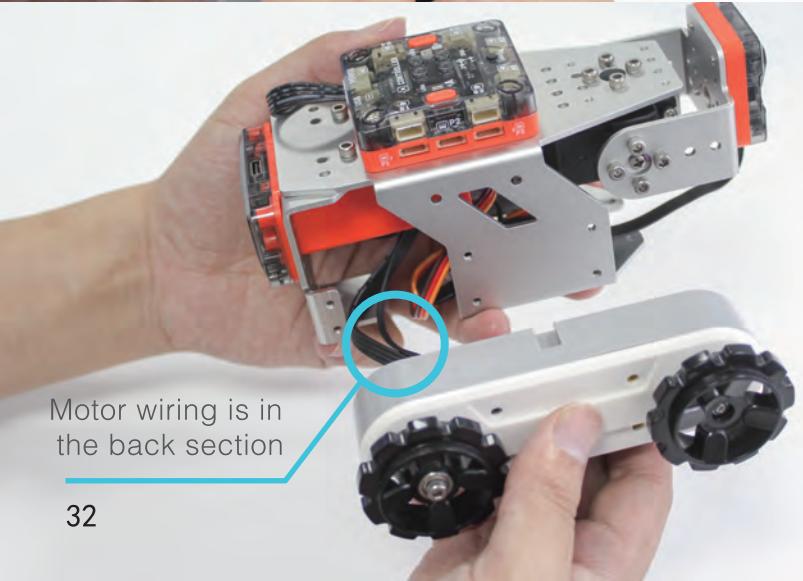
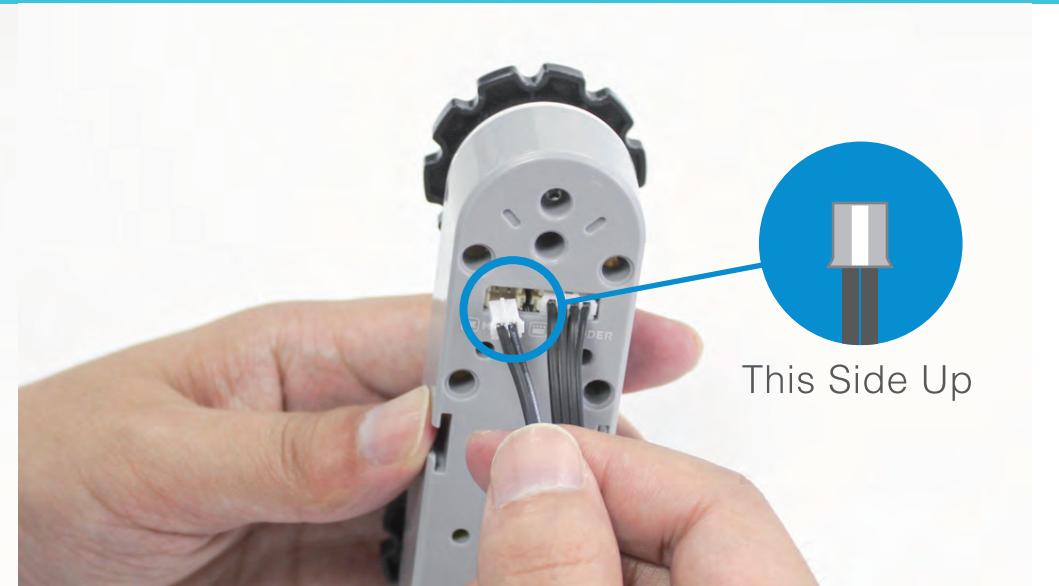


VISION SENSOR ➞ P9

8

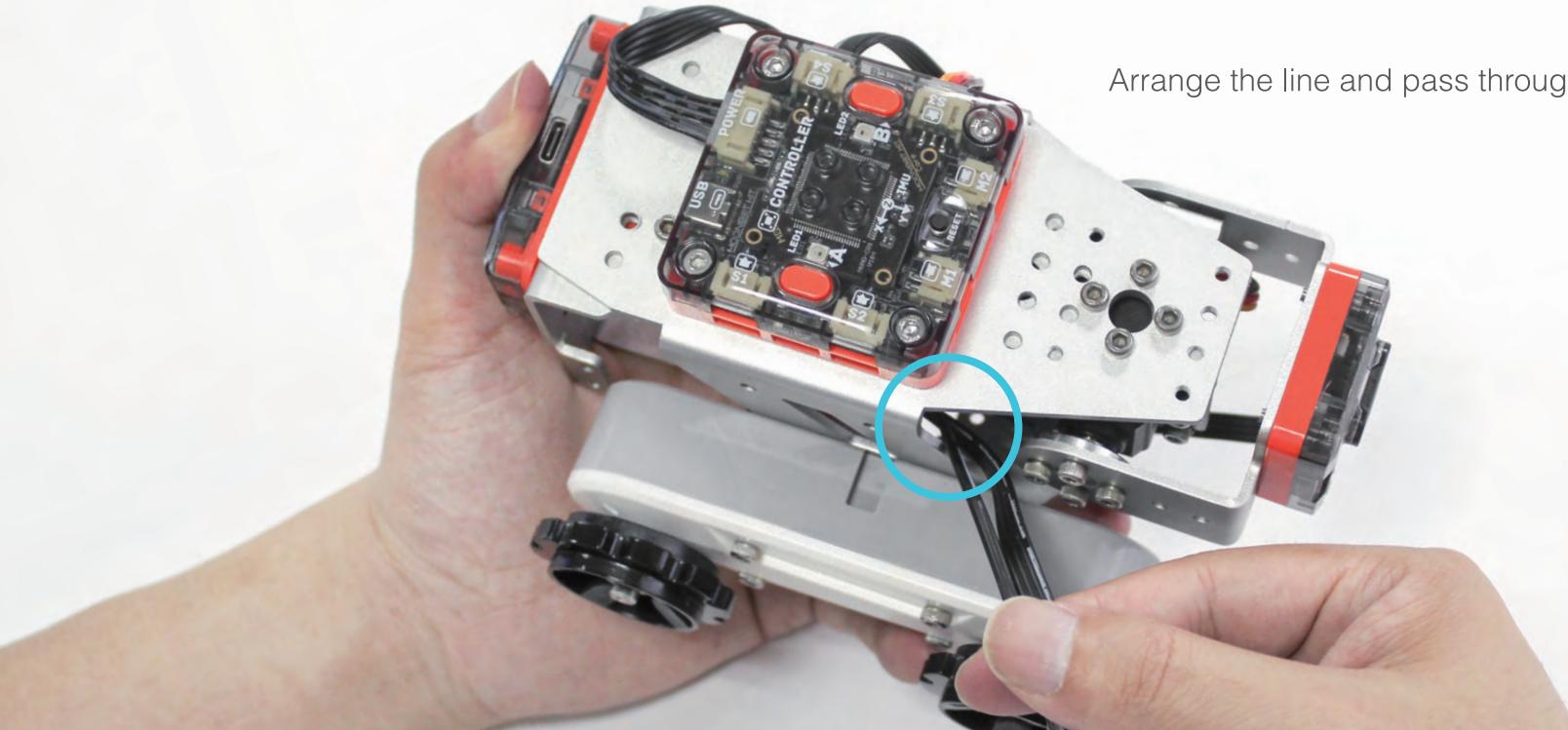


X4



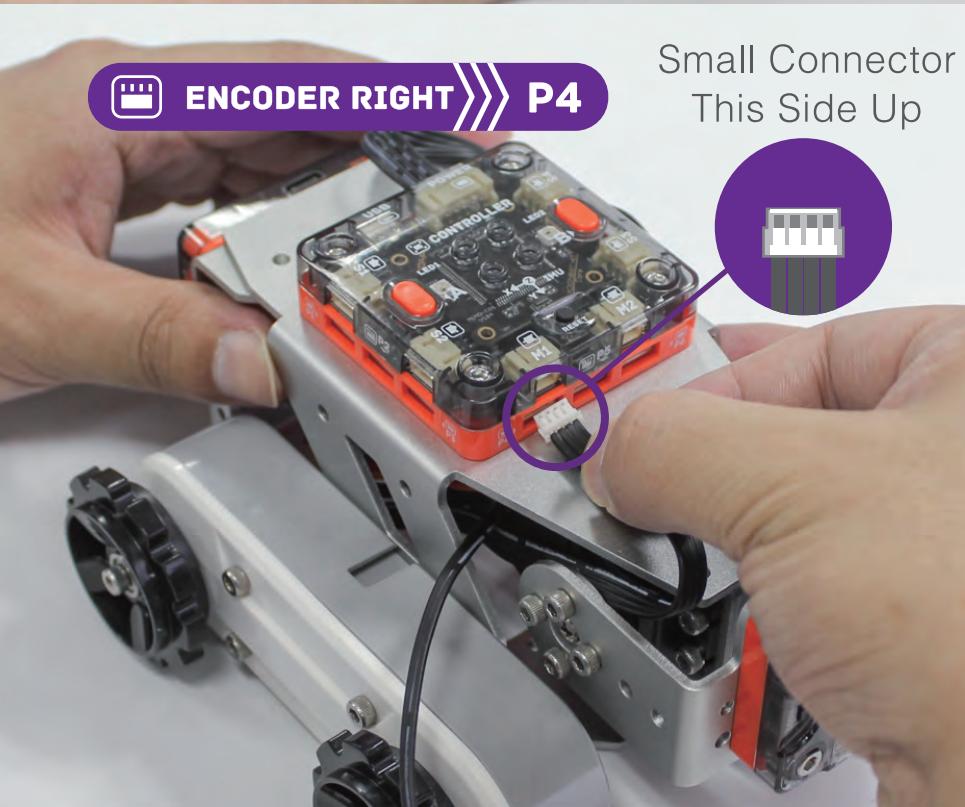
Motor wiring is in  
the back section

Arrange the line and pass through the opening.



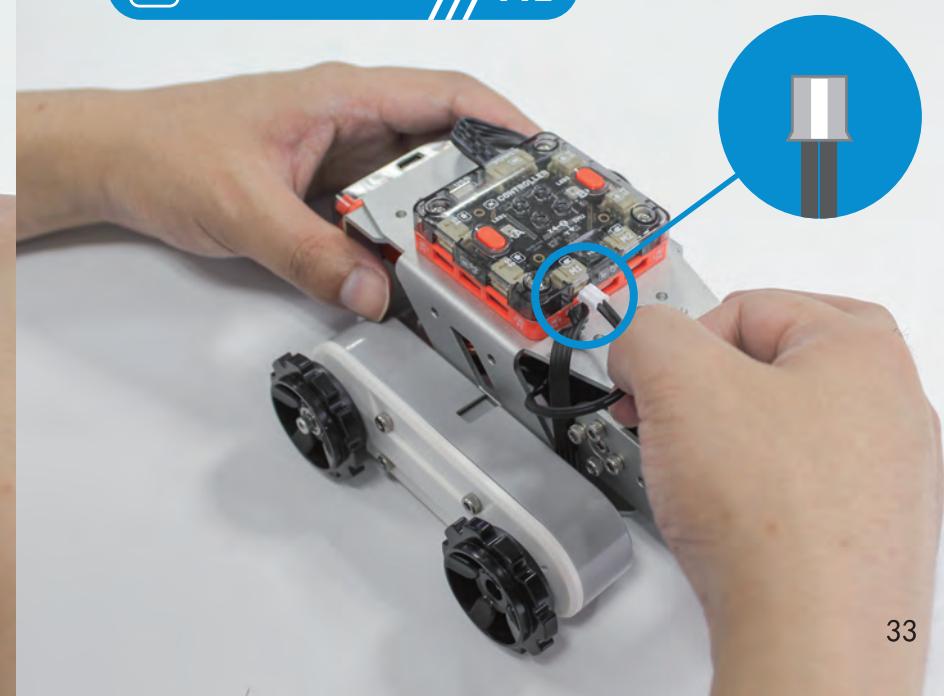
ENCODER RIGHT »» P4

Small Connector  
This Side Up

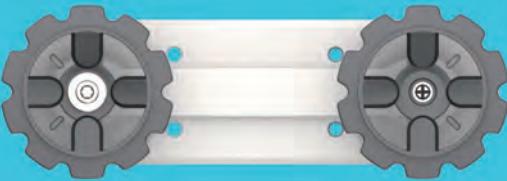


MOTOR RIGHT »» M1

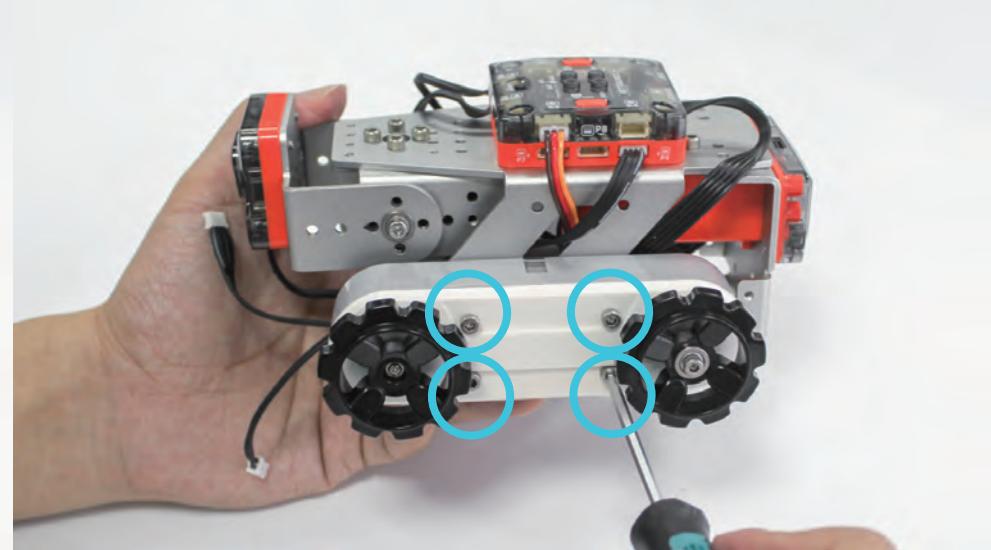
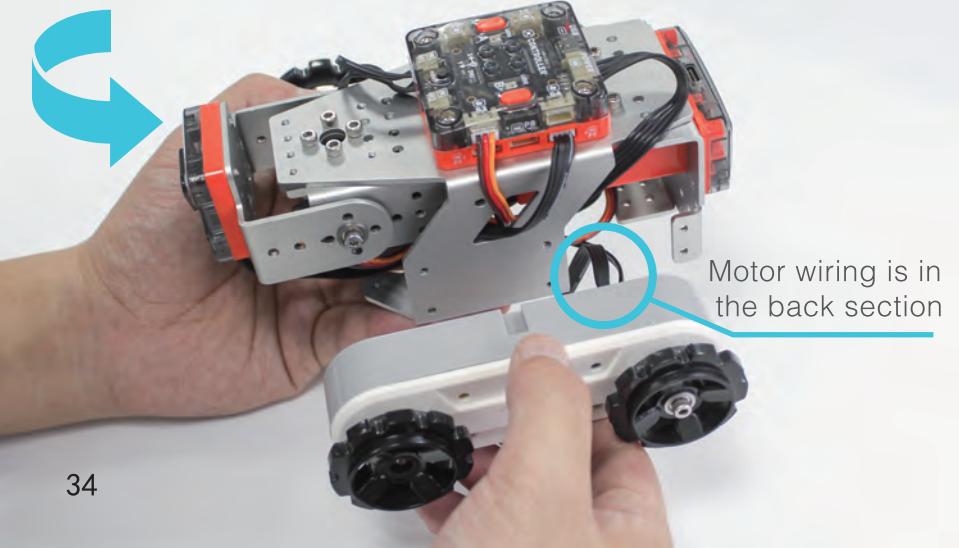
This Side Up

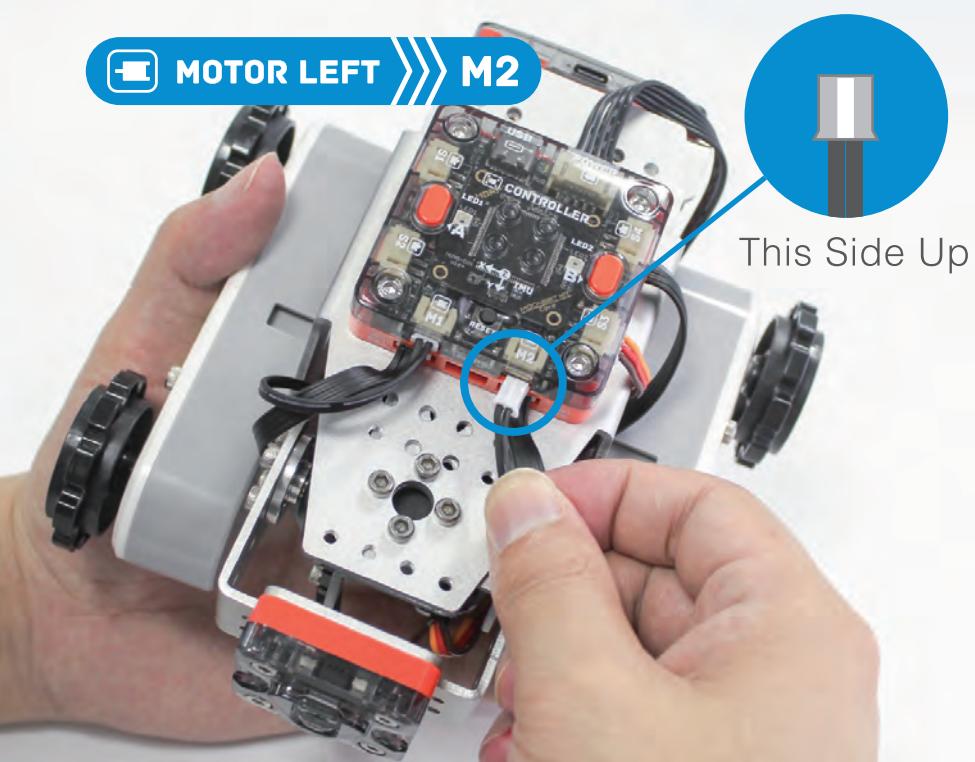
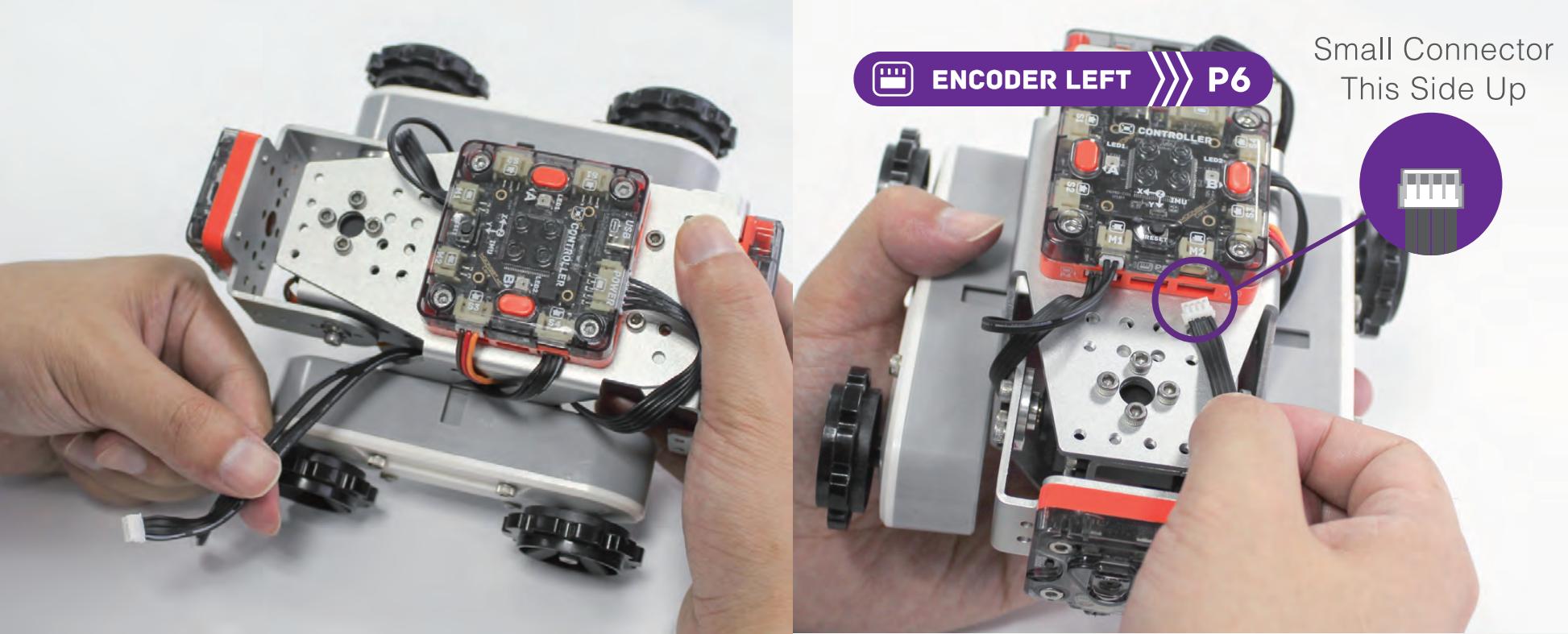


9

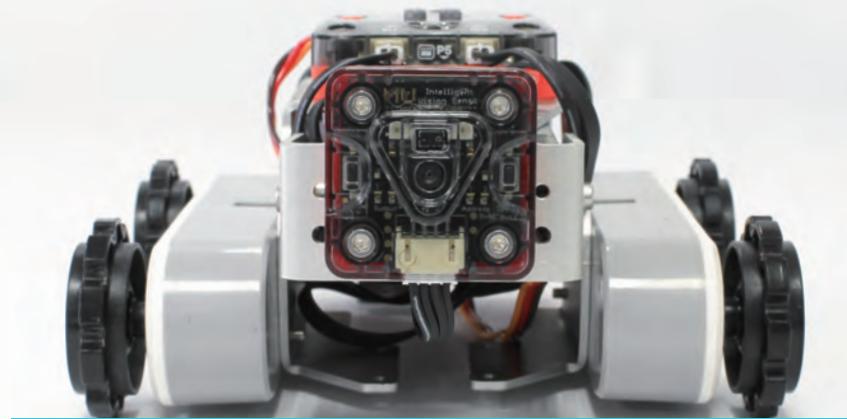


M3X28  
X4





Lay flat on the table, unscrew and adjust the long screws to make sure all four wheels touch the ground



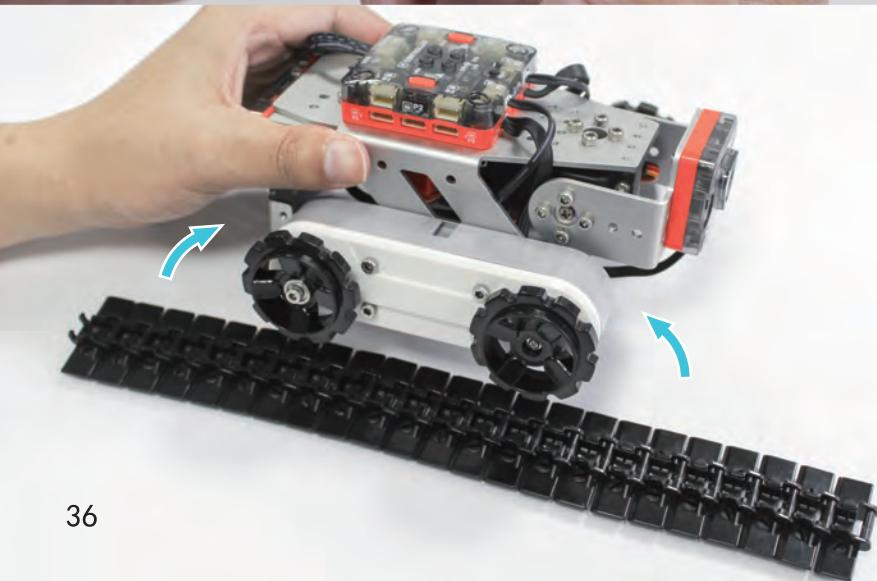
10



X23



X46



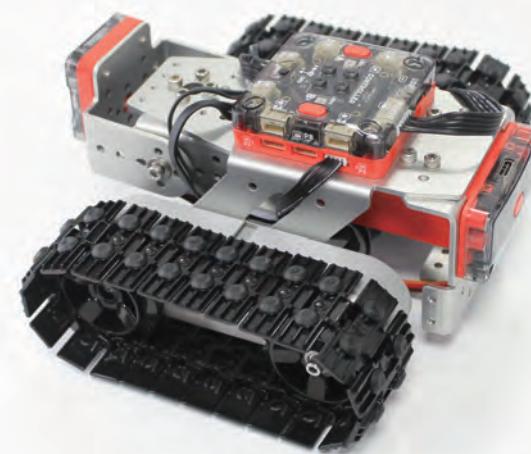
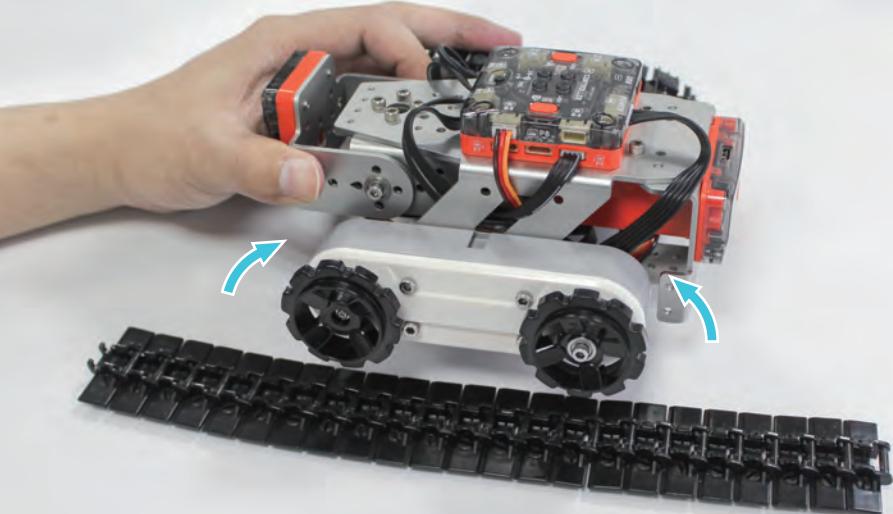
11



X23



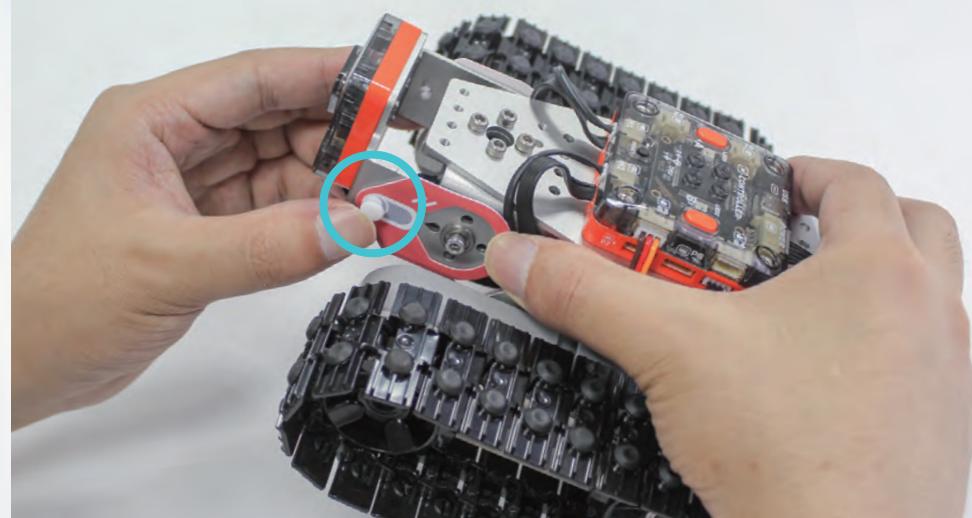
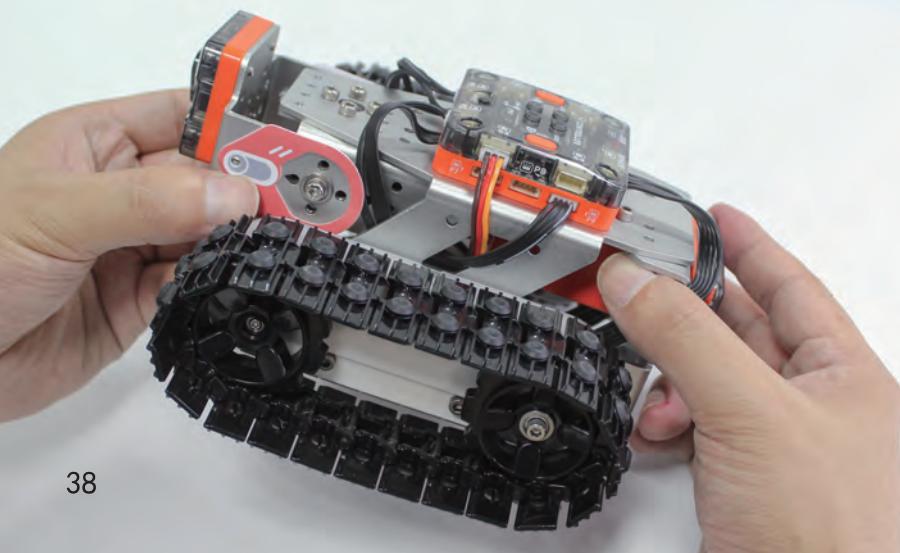
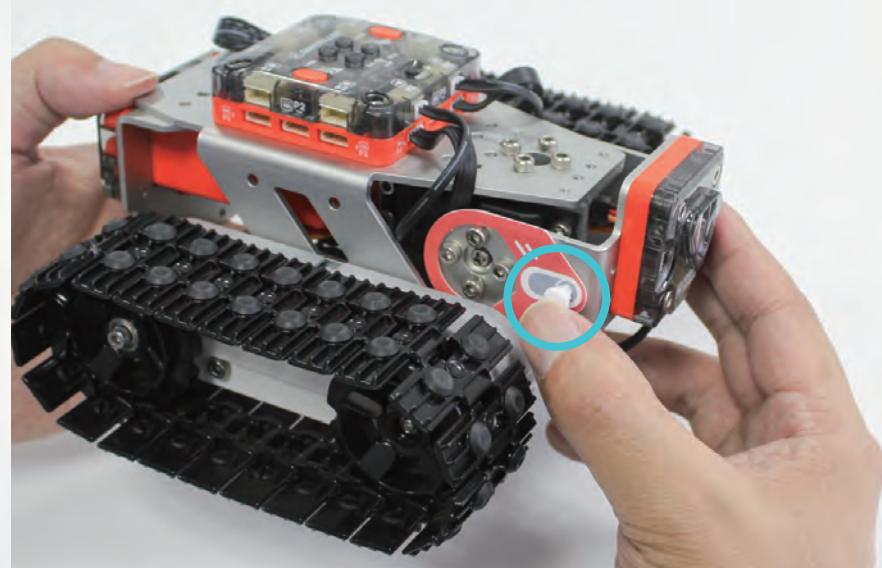
X46



12



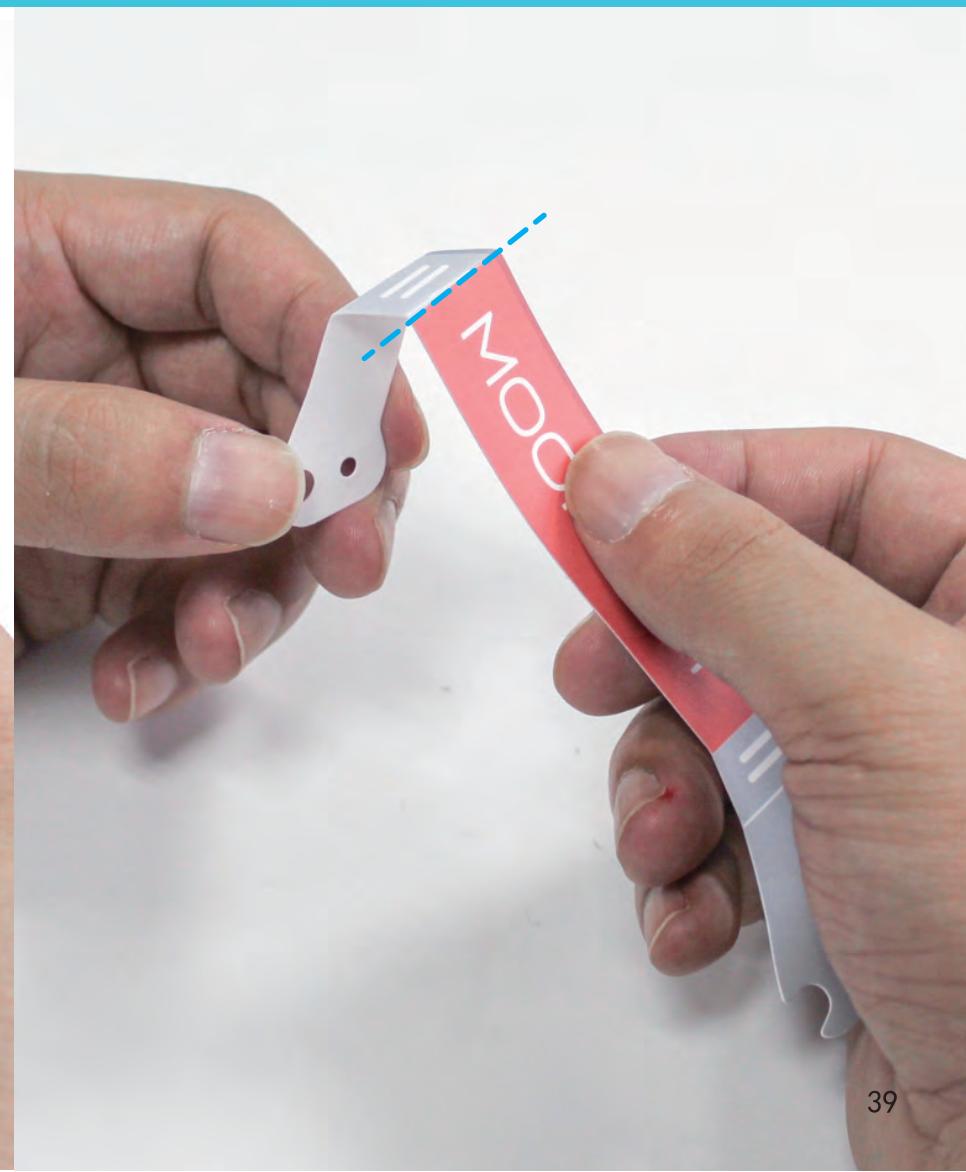
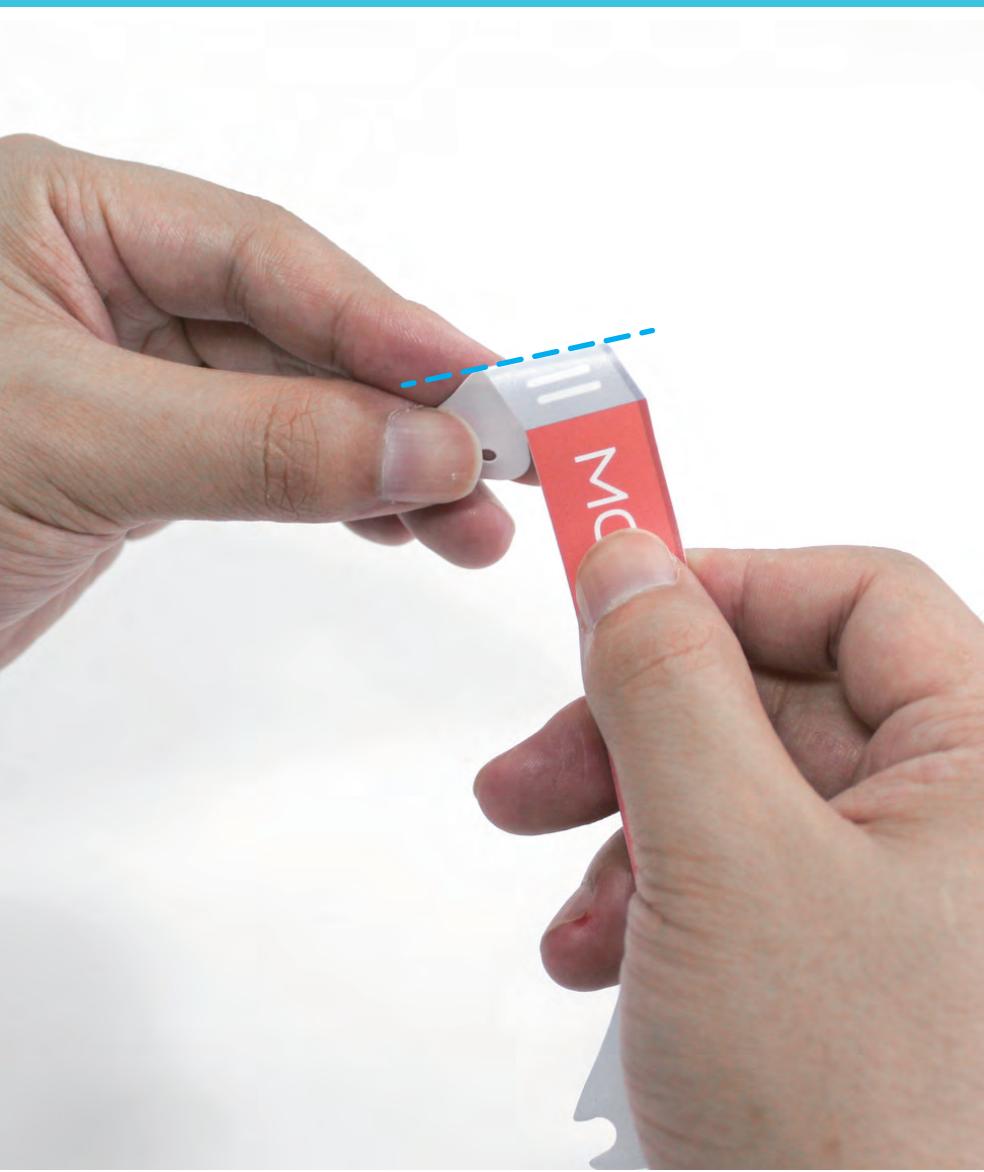
X2

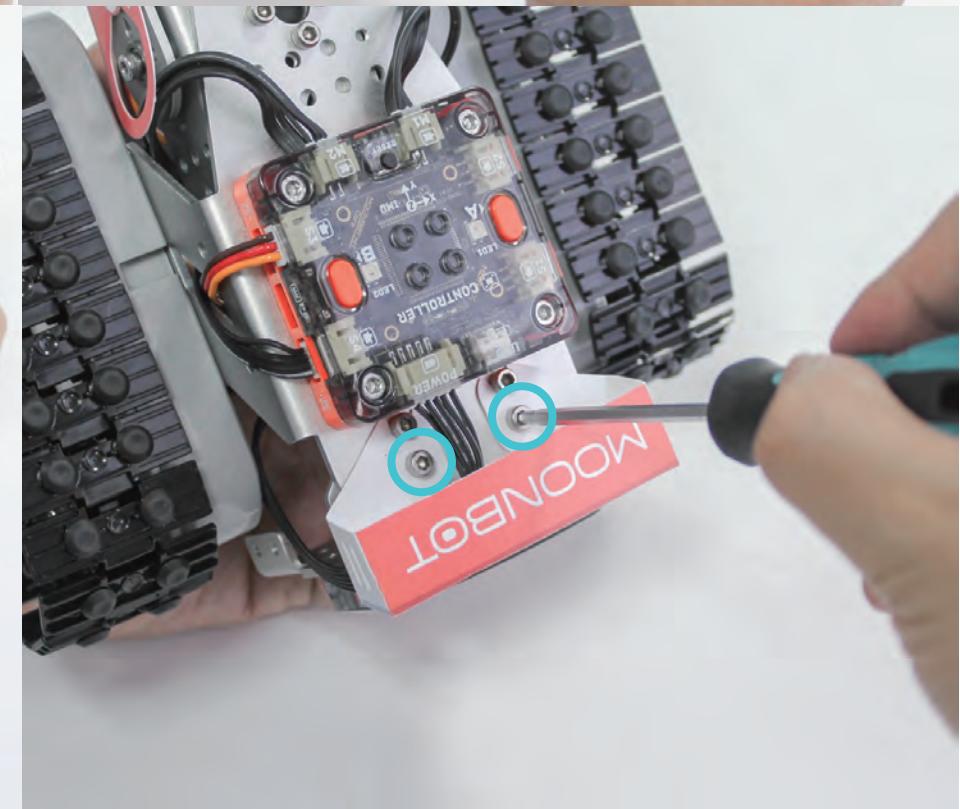


13



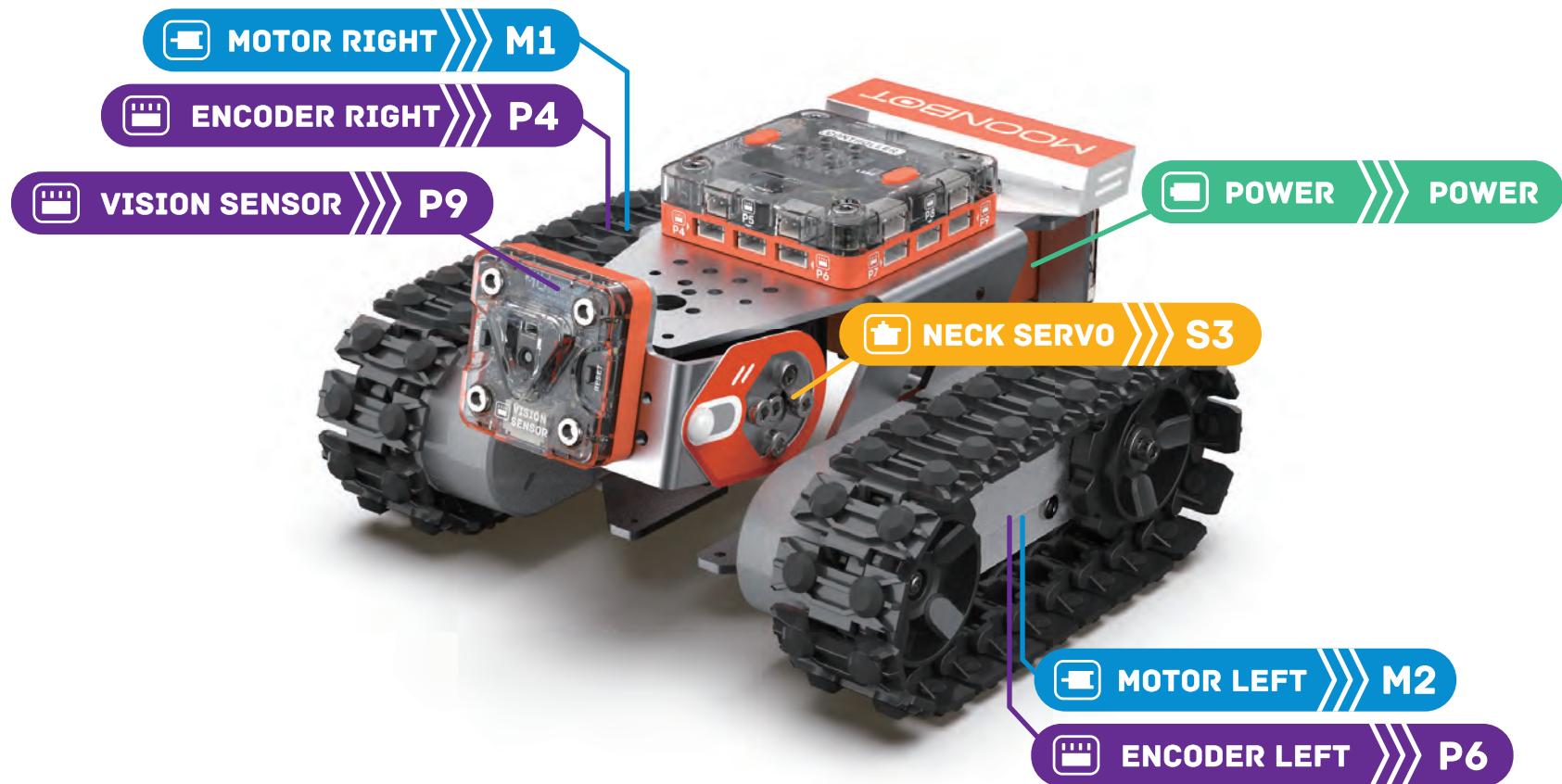
X2





# CHECK CONNECTIONS

Reconfirm the wiring of each module as in the figure, otherwise MoonRover will not work properly.



# QUICK PLAY

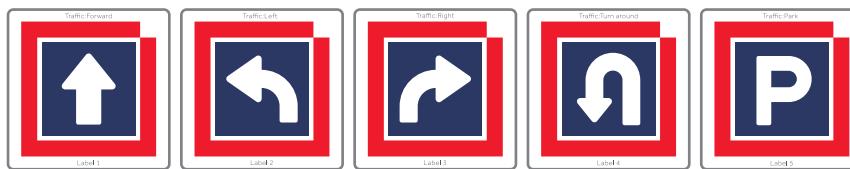
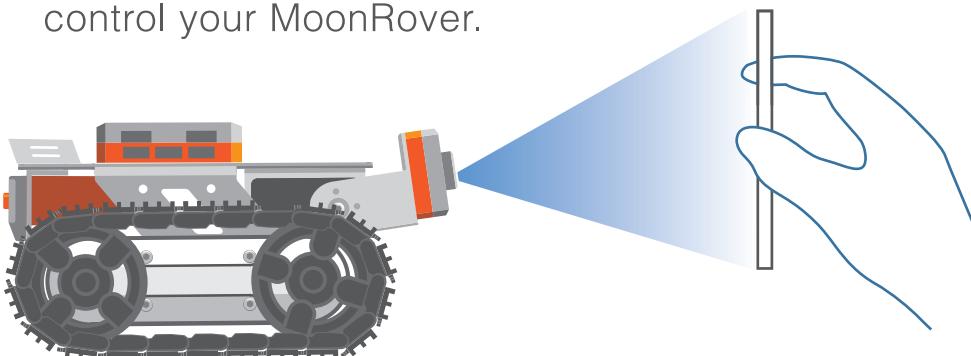
- ① Press power button



- ② Press Controller button A, LED light is bright blue



- ③ Use these vision cards to control your MoonRover.

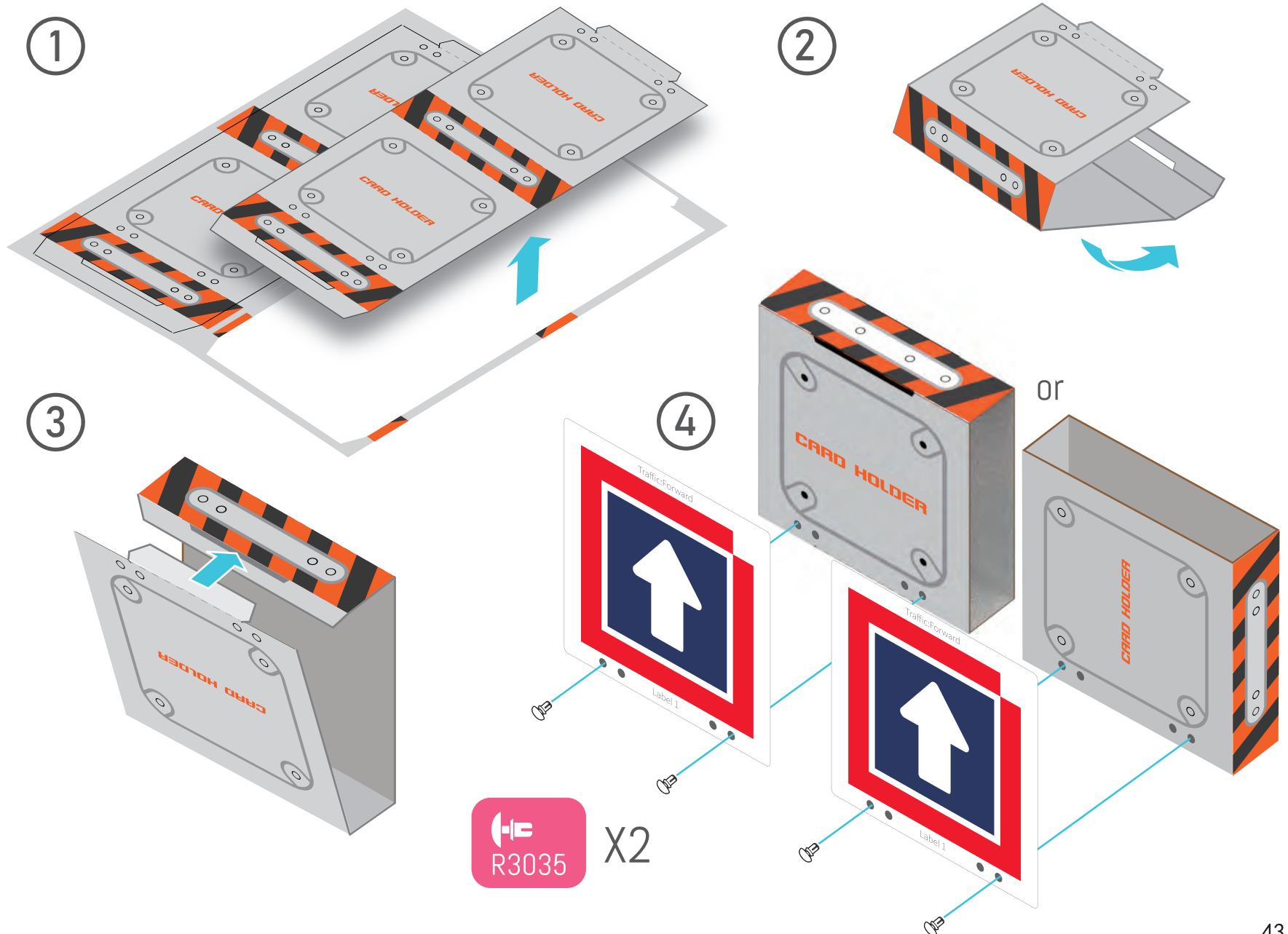


Flashing blue light  
Target detected



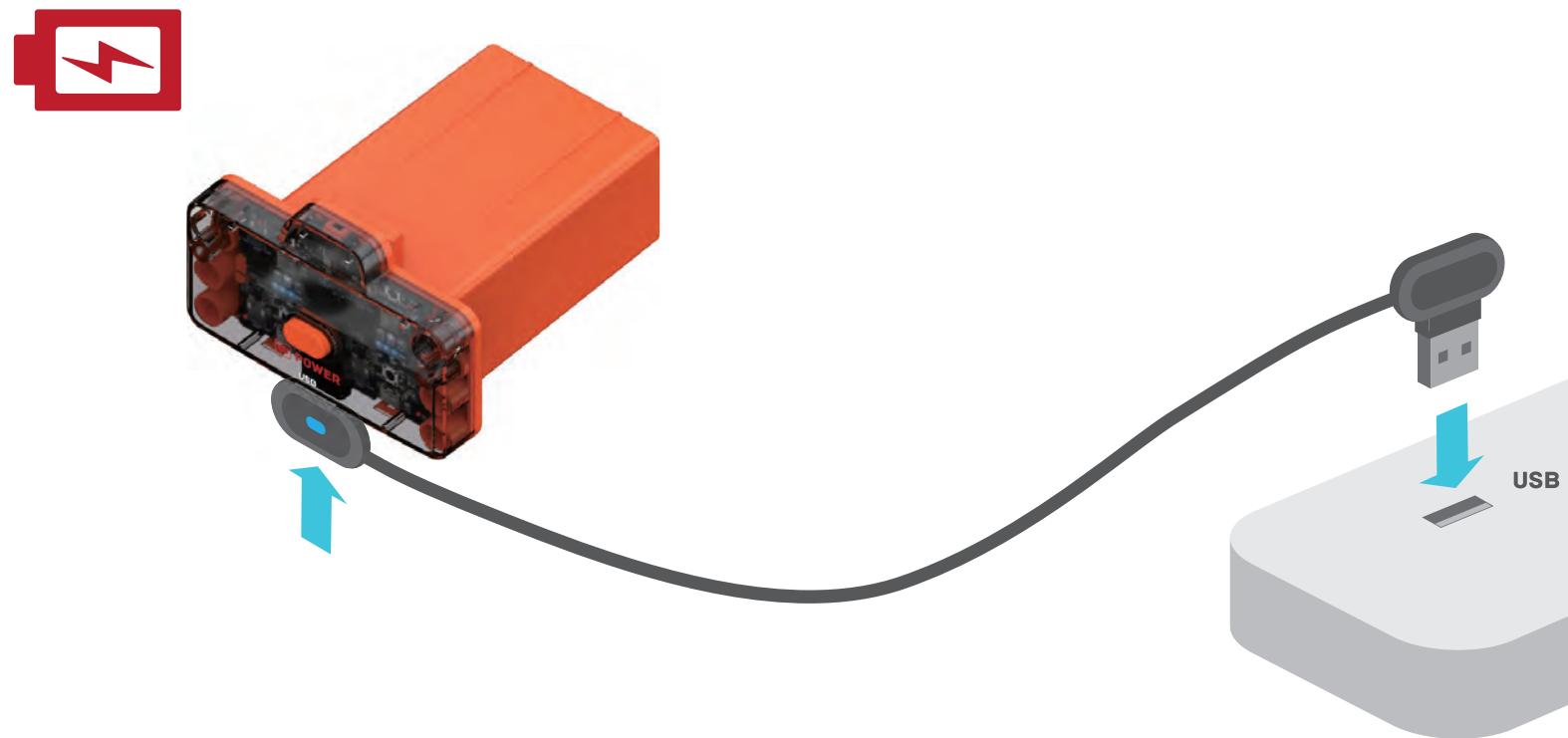
Flashing red light  
No target detected

# BUILD CARD HOLDER



# HOW TO CHARGE

The battery can be charged with various USB 5V charging ports, and the full charge time is about 3.5h.



Please use a safe and reliable USB power supply for charging. Before charging, please turn off the power output of the lithium battery module. When charging, do not plug in the USB frequently.

# Q&A

Q1. What is the age range for Moonbot Kit?

A. Children over 8 years old can complete the construction and start programming quickly. Advanced users can customize the module combination and use advanced languages (C,python) to program.

Q2. Can Moonbot talk with people?

A: MoonBot supports playing sounds through its programmable speaker module. Voice recognition module will be added in a later upgrade package.

Q3. How can I program the robot?

A: MUBOT APP can be downloaded from the Google Play or App Store for Scratch programming. On PC, you can program MoonBot using Mixly(Scratch compatible) or C language.

Q4. What can I do with the camera on the MoonBot?

A: As the eyes of the robot, the visual recognition module can recognize many kinds of objects and cards to complete a mission or play games with you. We will add image transmission functionality in subsequent firmware updates.

Q5. How long does it take to build the MoonBot Kit?

A: It depends on the different forms. The MoonRover takes about half an hour to build, while the MoonBot takes about 2 hours to build.

6. Can you build all three robots at the same time with the parts in the MoonBot Kit?

A: Not at the same time. Some of the parts are shared among the three official forms. You can build all three robots with one MoonBot Kit, but you will need to disassemble one before you can start another.

If you have any questions, please email us to [support@morp.com](mailto:support@morp.com)





**US Office:**

Morpx Inc.  
1669 Hollenbeck Ave #2-112  
Sunnyvale, CA 94087 USA

**China office Address:**

Rm 1103, Haiyue Bldg., 788 Danfeng Rd.  
Binjiang Dist, Hangzhou  
Zhejiang, P.R.China, 310051

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