## After-sales services and technical support

If you encounter any product quality problems or find any parts missing or damaged when you open the package, or if you need any technical support, contact us for after-sales services through:
support@makeblock.com
Service Hours: 9:00-12:00 & 14:00-18:30 (Beijing Time), Monday to Friday, except for public holidays

www.makeblock.com
Manufactured by: Makeblock Co., Ltd.
Address: Floor 4, Building C3, Nanshan iPark, No. 1001 Xueyuan Avenue, Nanshan District, Shenzhen, Guangdong Province, 518000, China

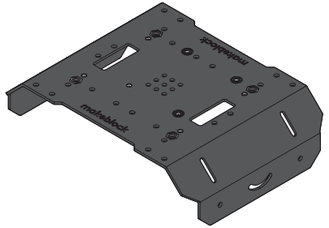
D1.2.6_KD010608000

makeblock

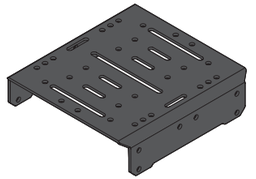
# mBot mega

Quick Start Guide

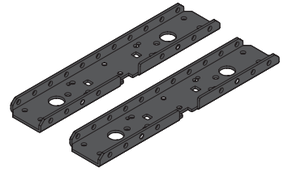
## Parts List



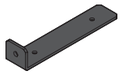
Body Shell x1



Upper Shell x1

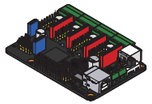


Motor Bracket x2



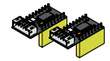
Battery Holder Bracket x1

Connector Bracket x1

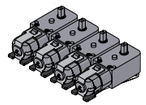


MegaPi x 1

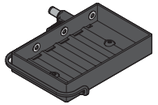
Bluetooth Module x1



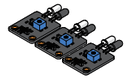
DC Motor Driver x2



DC Motor x4



6 AA Battery Holder x1



IR Proximity Sensor x3

Line Follower Sensor x2

Impact Switch x2

RGB LED x2

Jumper Wire (3-pin) x9

Nylon Standoff M4*30 x4

Nylon Standoff M4*20 x4

60 mm Mecanum Wheel x4

Motor Coupling x4

Screw M2.6*28 x4

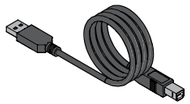
Screw M4*8 x12

Screw M3*25 x8

Screw M3*10 x9

M3 Hex Lock Nut x17

Plastic Spacer x10



USB Cable x1

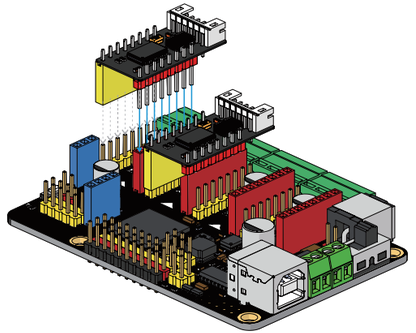
Screwdriver x1

Socket Wrench x1

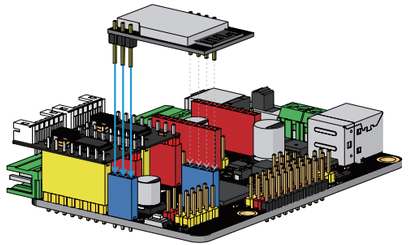
Line-Following Track Map x1



## Install MegaPi onboard electronic modules



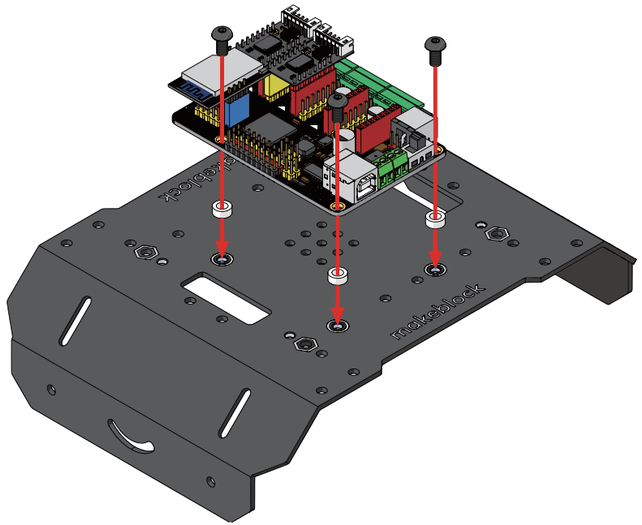
Install the motor driver modules

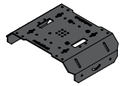


Install the Bluetooth module

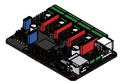
## Mount MegaPi to the body shell

⚠ If you don't use plastic spacers, the metal shell will short-circuit the electronic module.



Body Shell x1



MegaPi x1

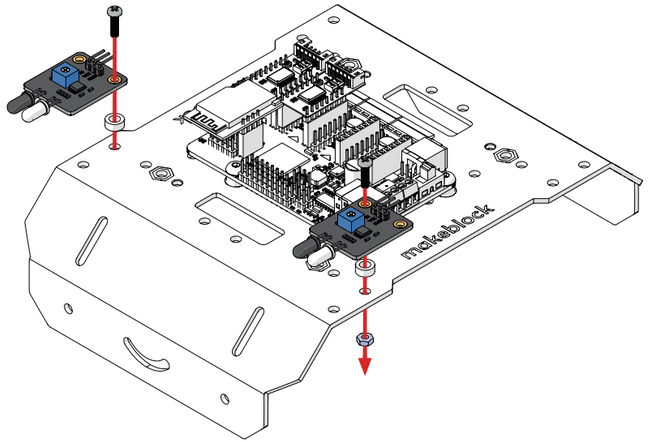
Plastic Spacer x3

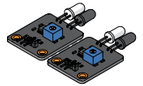
Screw M4*8 x3



## Mount the IR proximity sensors to the body shell

⚠If you don't use plastic spacers, the metal shell will short-circuit the electronic modules.



IR Proximity Sensor x2

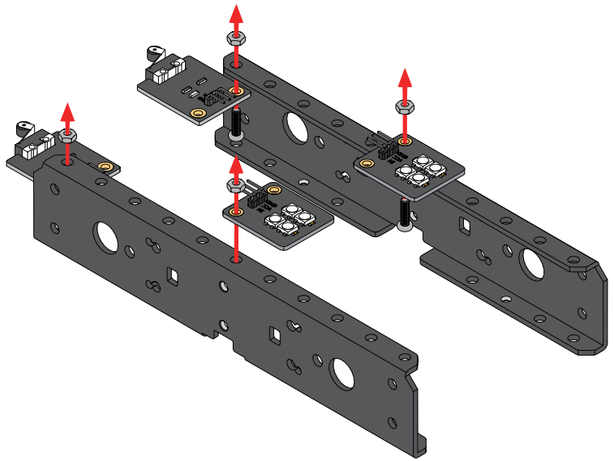
M3 Hex Lock Nut x2

Screw M3*10 x2

Plastic Spacer x2

## Mount the RGB LEDs and impact switches to the motor brackets

⚠Pay attention to the positions of the electronic modules and mounting holes.



Motor Bracket x2

RGB LED x2

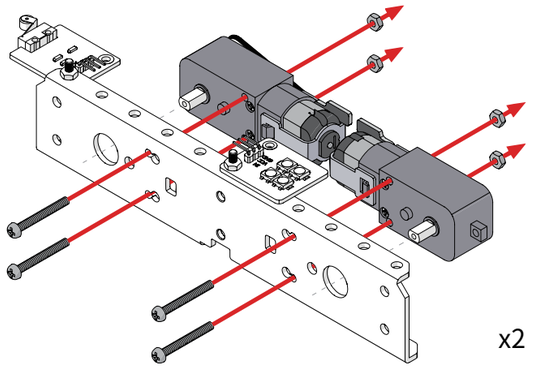
Impact Switch x2

M3 Hex Lock Nut x4

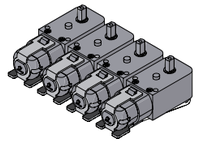
Screw M3*10 x4



## Mount the DC motors to the motor brackets



x2



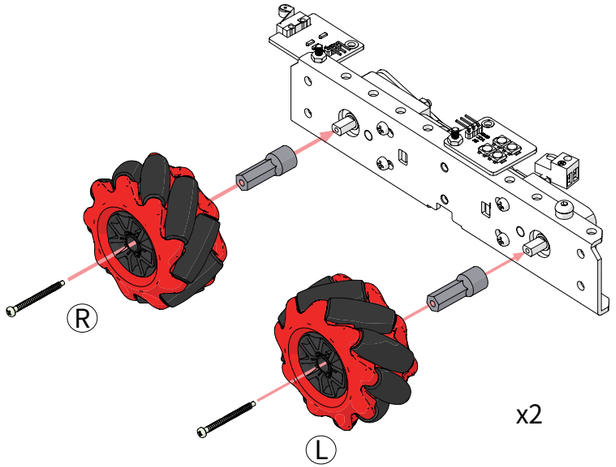
DC Motor x4

Screw M3*25 x8

M3 Hex Lock Nut x8

## Mount the Mecanum wheels to the motor brackets

⚠ There are L and R Mecanum wheels, which can be distinguished by the L and R labels on them. Install them as shown in the figure.



60 mm Mecanum Wheel x4

Motor Coupling x4

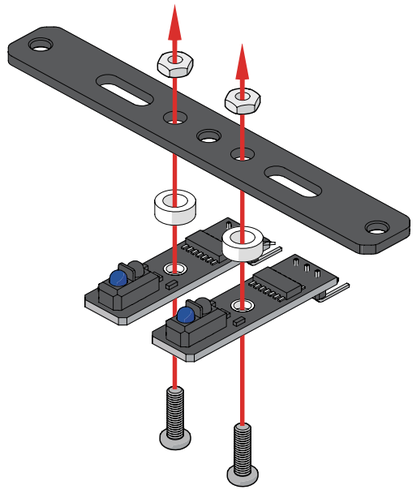
Screw M2.6*28 x4

If you need to remove and install these Mecanum wheels multiple times due to installation errors or other reasons, check whether the screws M2.6*28 are worn. If they are worn, replace them with new ones. Extra screws M2.6*28 are provided (8 in total).



## Mount the line follower sensors to the connector bracket

⚠If you don't use plastic spacers, the connector bracket will short-circuit the electronic modules.



Connector Bracket x1

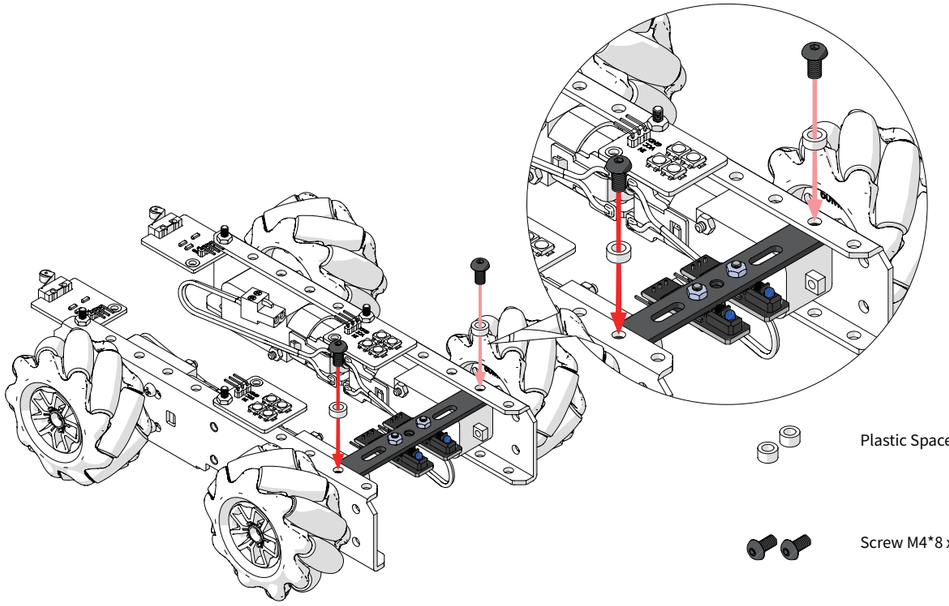
Line Follower Sensor x2

M3 Hex Lock Nut x2

Plastic Spacer x2

Screw M3*10 x2

## Mount the connector bracket to the motor brackets





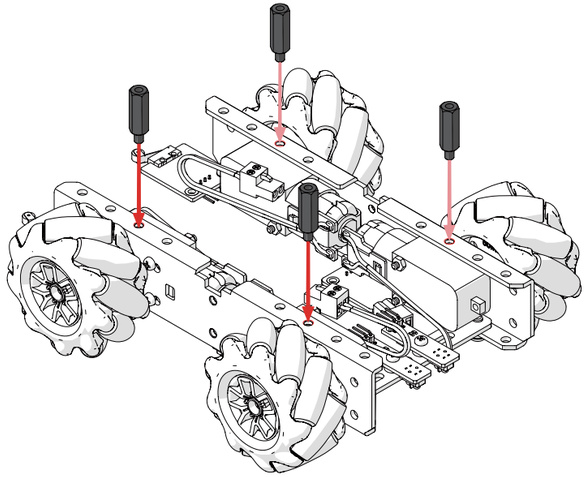
Plastic Spacer x2



Screw M4*8 x2

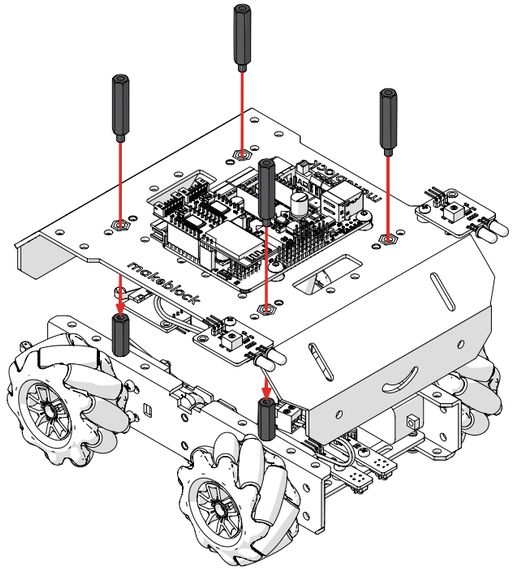


## Mount the nylon standoffs M4*20 to the motor brackets



Nylon Standoff M4*20 x4

## Install the body shell

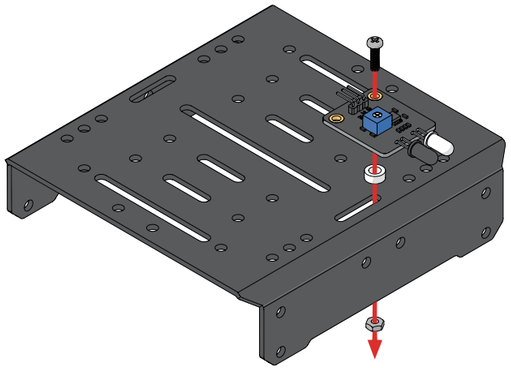


Nylon Standoff M4*30 x4



## Mount the IR proximity sensor to the upper shell

⚠If you don't use a plastic spacer, the upper shell will short-circuit the electronic module.



Upper Shell x1

IR Proximity Sensor x1



M3 Hex Lock Nut x1

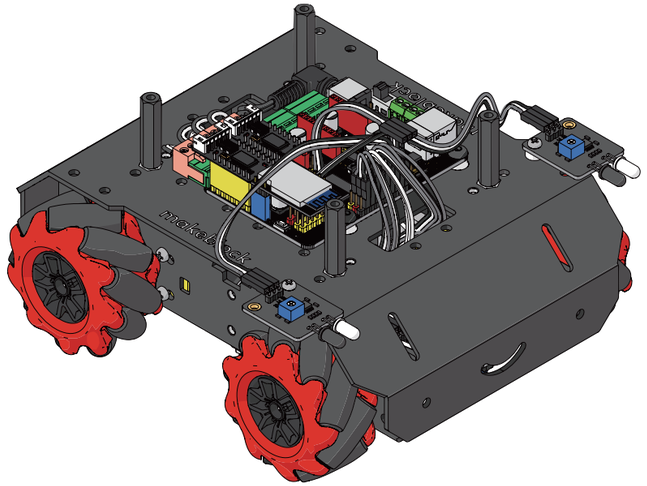


Plastic Spacer x1

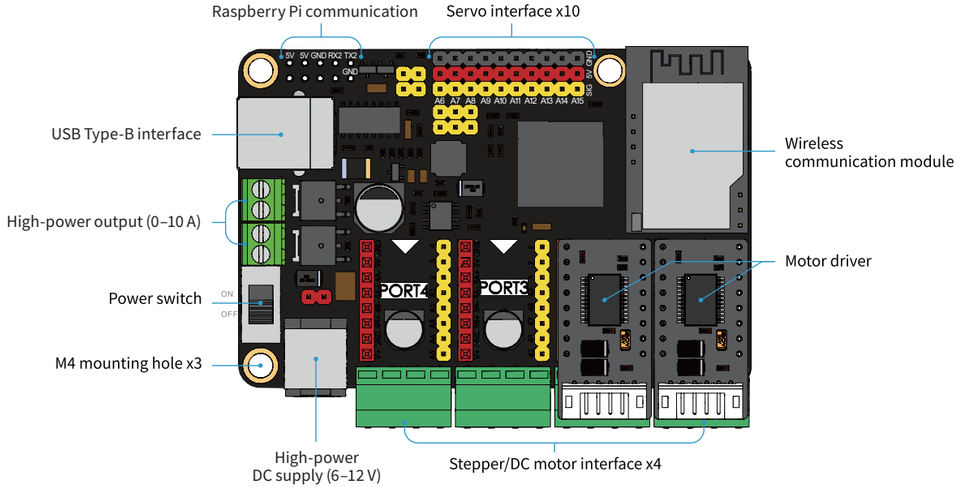
Screw M3*10 x1

## Connect all the electronic modules to MegaPi

For details about the connection, see the following pages.

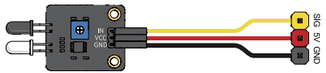


## About MegaPi

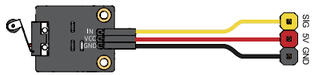


## Refer to the following figure to connect the electronic modules

⚠ If the pins are not connected in the right order, the electronic modules may be damaged after being powered on. For easier wiring, connect the pins in the order from A6 to A14.



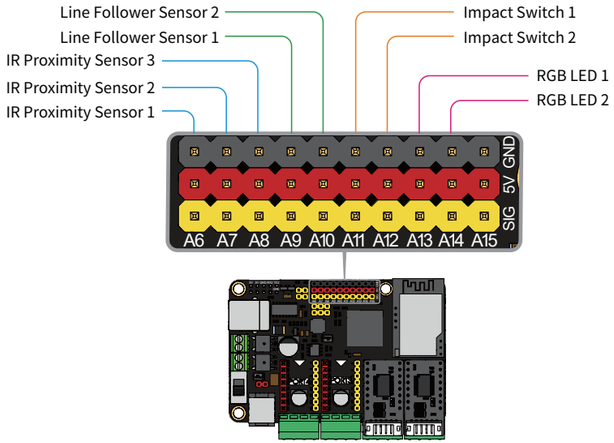

IR Proximity Sensor



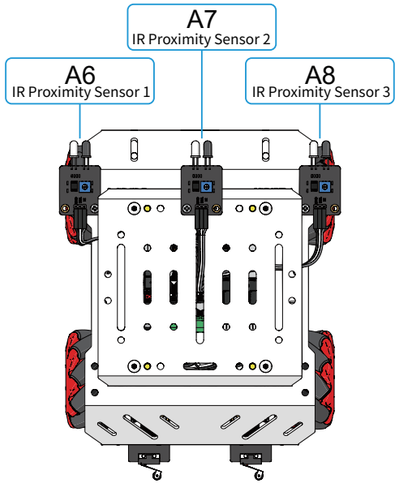

Impact Switch

RGB LED

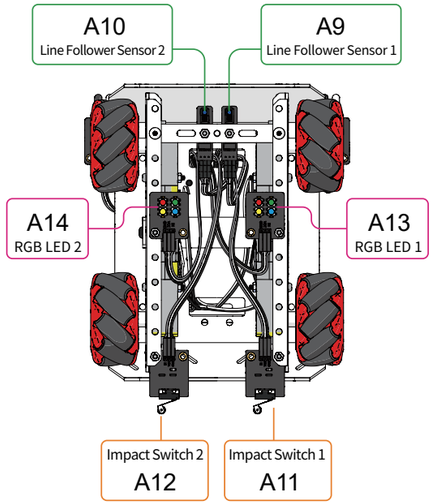
Line Follower Sensor




## Module location



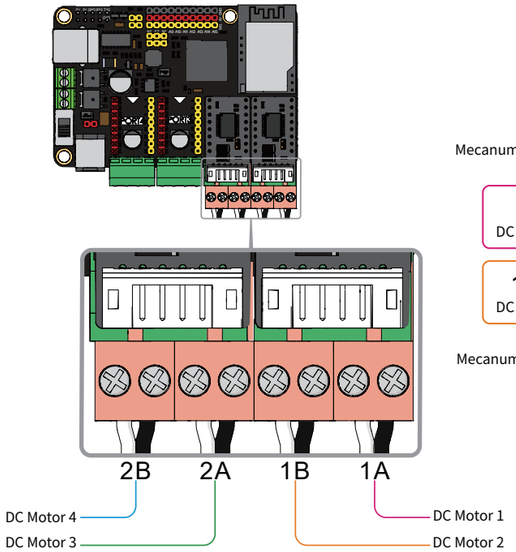

Top view

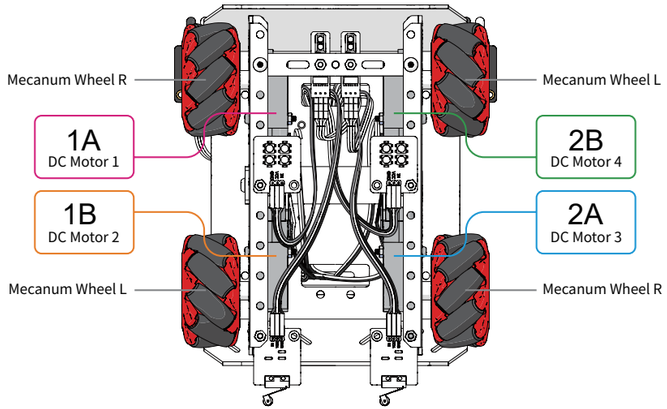



Bottom view

## Connect the DC motors to MegaPi

⚠ If the DC motors are not connected in the positions shown in the figure, mBot Mega will not move as expected. If you find that mBot Mega still doesn't move as expected after you connect the DC motors as instructed, check whether the left and right Mecanum wheels are installed in the positions shown in the figure.

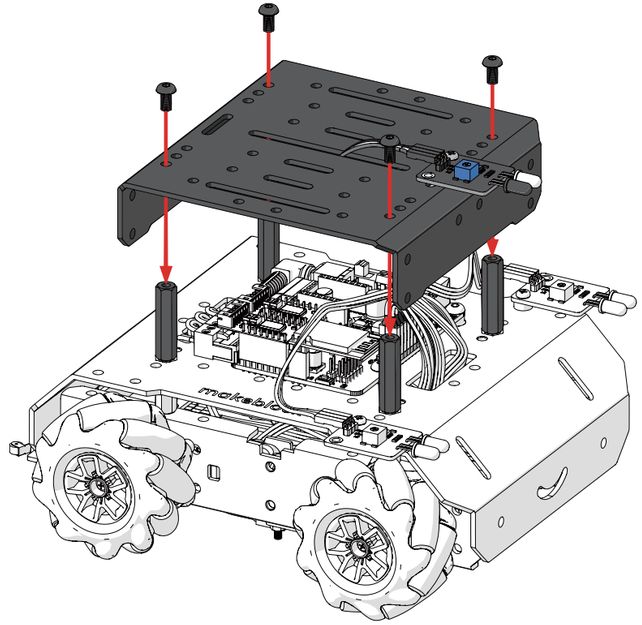


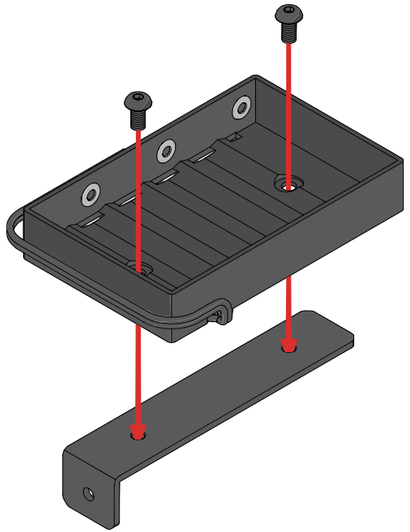



## Install the upper shell

Screw M4*8 x4



## Install the battery holder on the bracket



6 AA Battery Holder x1

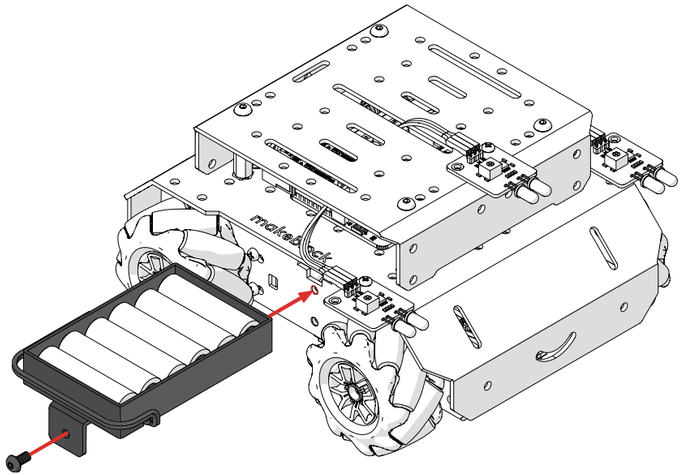
Battery Holder Bracket x1

Screw M4*8 x2



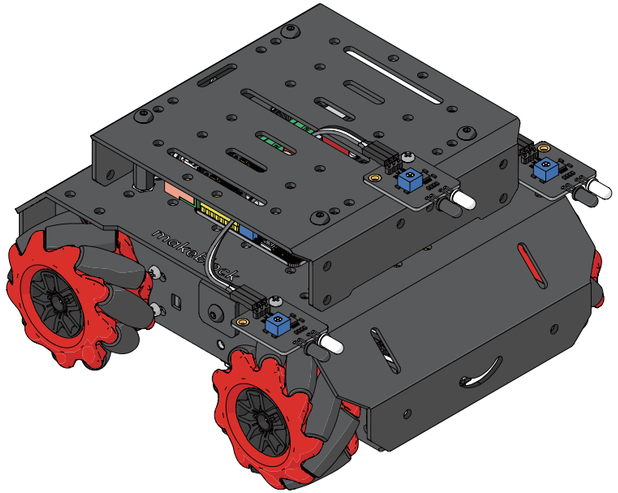
## Install the battery holder

When the batteries are low, mBot Mega can't work properly, and you need to remove the battery holder as described in the following and replace the batteries in a timely manner. For detailed operation videos, visit support.makeblock.com.



Screw M4*8 x1

## Congratulations! The assembly is complete!



**Default gameplay**

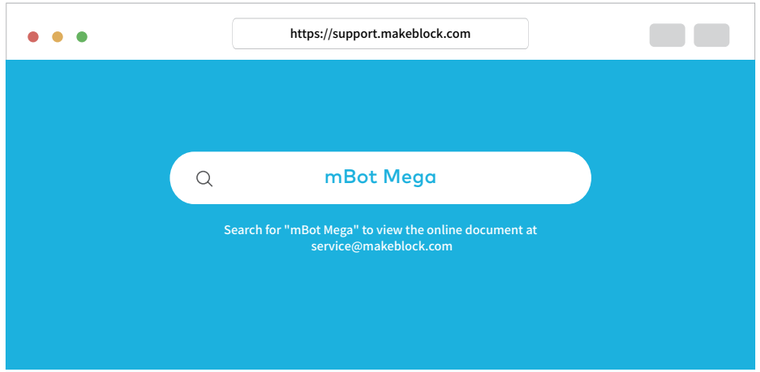
Function switching:
Press the impact switch until the color of the RGB LEDs changes.
- Green: gesture recognition
- Blue: line following
- Yellow: automatic obstacle avoidance

Gesture recognition:
- When you swing left and right in front of mBot Mega, it moves left or right.
- When you block the left and right IR proximity sensors at the same time, mBot Mega moves backwards.

Line following:
Place the line follower sensor on a black line wider than 18 mm.
Automatic obstacle avoidance:
mBot Mega starts to avoid obstacles automatically.



For more details about the product, projects, troubleshooting, FAQs, and main control board circuits, visit **support.makeblock.com**.



**"Makeblock" & "mBlock" app**

App Store Google Play

Search for "Makeblock" & "mBlock" in App Store or Google Play to download it.

A smart device like iPhone or iPad is required but not included.

Before connecting mBot Mega to the app, make sure that the GPS and Bluetooth are turned on and the access is allowed for the app.

When the batteries are low, Bluetooth connection may be disconnected when you use the high-speed mode.

## Caution:

· Recommended for children of ages 12+.
· Not suitable for children under ages 3.
· Children need to be accompanied by adults when using the product.
· To avoid damage as a result of falling down, please don't put the product on the edges of high places.
· To avoid the product damage, please don't disassemble, repair or modify this product yourself.
· To avoid the product damage or safety incidents, please don't place this product in water, fire, environments of humidity or high temperature.
· Please don't use this product or charge for this product in any environment with temperature above the operating temperature range of this product.
· Please fully charge the product for storage and recharge it every 3 months when the product is left unused.
· Please use the recommended adapter (5V / 2A adapter) to charge the product.
· The adapter used to charge the product (not included in the package) can not be used as a toy.
· Please make sure the product is powered off and disconnected from any external power supply when liquid is used to clean the product.
· The product should be connected to the power supply in strict accordance with the limit on the number of power supplies.
· Please check the wires, plugs, housings or other parts periodically and stop using them if any damage has been found until they are well repaired.