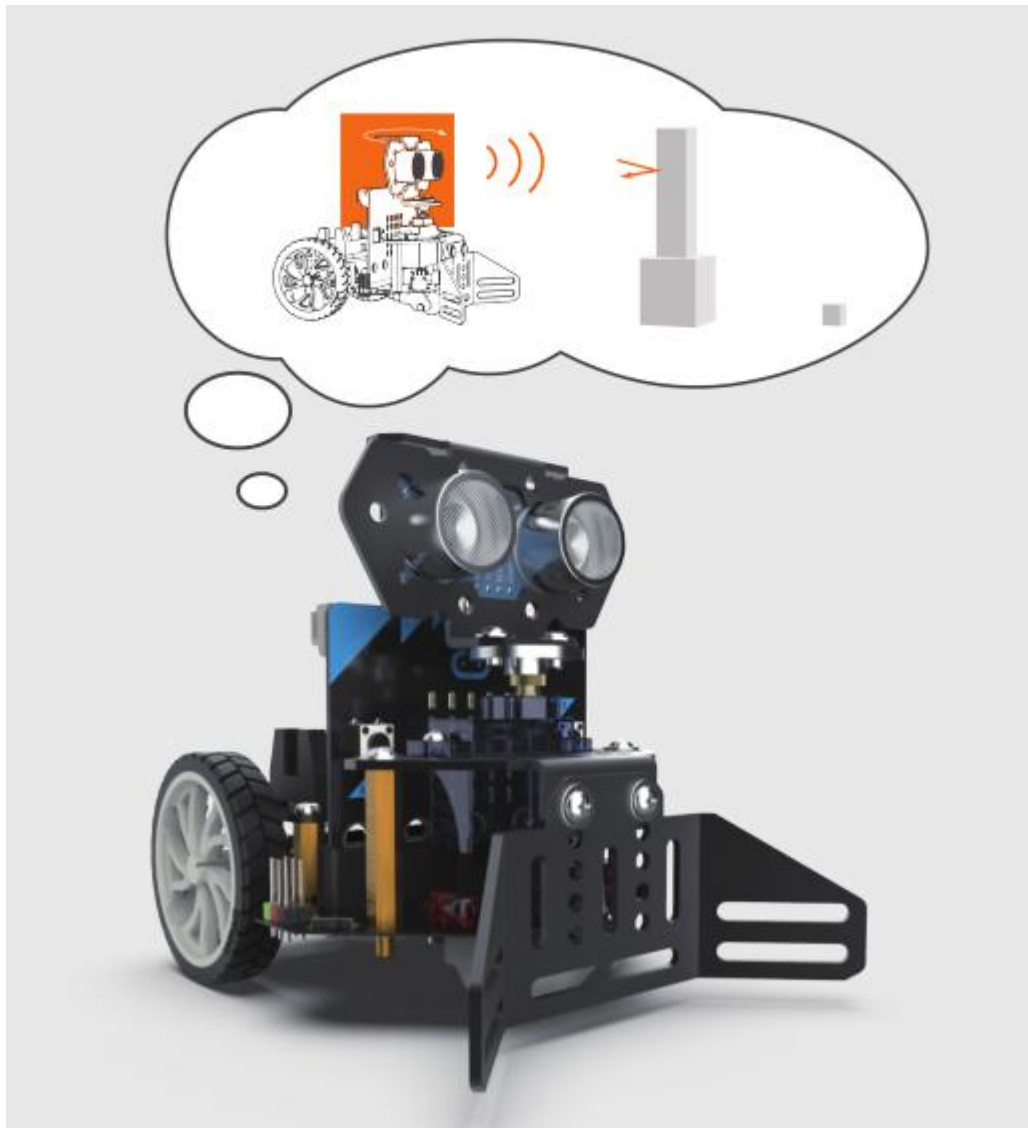


# Tutorial of Maqueen Mechanic-Push

[ROB0156-P]



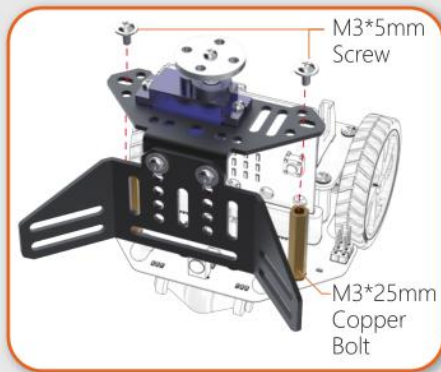
# Installation Diagram



● Step 1



● Step 2



● Step 3



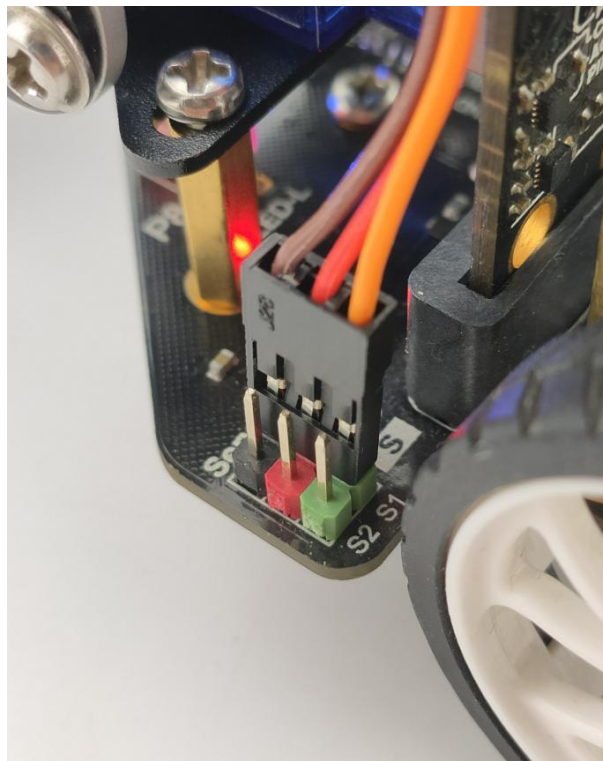
● Step 4

# Method to Control

## 1. wiring

Plug the 3pin servo wire into port S1 or S2 of Maqueen, shown as below:

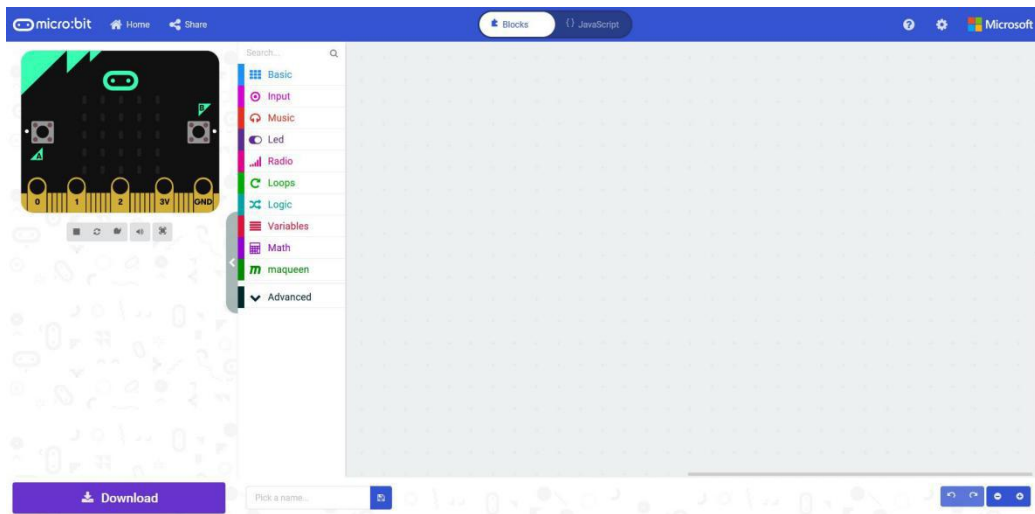
- Brown wire to Black pin
- Red wire to Red pin
- Orange wire to Green pin



## 2. Makecode Tutorial

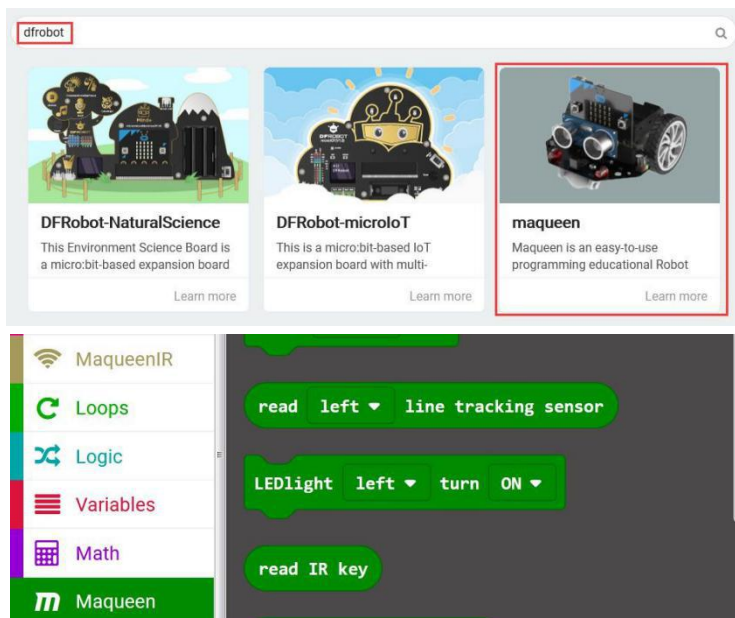
1. Click to open the Makecode programming web :

<https://makecode.microbit.org/#editor>



## 2. Import Extensions for Maqueen:

- 1) Click **More**
- 2) Click **Extensions**
- 3) Search **dfrobot**
- 4) Click to select **Maqueen**



## 3. Examples

## 1. GamePad Remote Control Bulldozer

This program uses GamePad to remote control the Maqueen Mechanic-Push by wireless communication of two micro:bit boards. Through remote control, controlled-type Maqueen competition can be organized. In this sample, the joystick is set as an analog quantity while controlling the car's speed and direction simultaneously. The more the joystick moves, the faster it goes. The left and right buttons control the lights on and off



GamePad End Program: [https://makecode.microbit.org/\\_Wmxd6k2Era7z](https://makecode.microbit.org/_Wmxd6k2Era7z)

```
on start
  radio set group 1
  set pull pin P13 to none
  set pull pin P15 to none
  set pull pin P14 to none
  set pull pin P16 to none

forever
  if digital read pin P15 = 0 then
    radio send string "Open"
  else if digital read pin P13 = 0 then
    radio send string "Close"
  else if digital read pin P16 = 0 then
    radio send string "LEDL"
  else if digital read pin P14 = 0 then
    radio send string "LEDR"
  else
    if analog read pin P2 > 550 and analog read pin P1 > 400 and analog read pin P1 < 600 then
      radio send value "F" = analog read pin P2
    else if analog read pin P2 < 450 and analog read pin P1 > 400 and analog read pin P1 < 600 then
      radio send value "B" = analog read pin P2
    else if analog read pin P1 < 450 and analog read pin P2 > 400 and analog read pin P2 < 600 then
      radio send value "L" = analog read pin P1
    else if analog read pin P1 > 550 and analog read pin P2 > 400 and analog read pin P2 < 600 then
      radio send value "R" = analog read pin P1
    else
      radio send string "S"
```

Maqueen End Program: [https://makecode.microbit.org/\\_3fiYv2b8zc2y](https://makecode.microbit.org/_3fiYv2b8zc2y)

```

on start
  radio set group 1

on radio received receivedString
  if receivedString = "LEDL" then
    LEDlight left turn ON
  if receivedString = "LEDR" then
    LEDlight right turn ON
  motor all stop
  LEDlight left turn OFF
  LEDlight right turn OFF

on radio received name value
  if name = "F" then
    motor all move Forward at speed map value from low 550 high 1023 to low 10 high 255
  if name = "B" then
    motor all move Backward at speed map value from low 1 high 450 to low 255 high 10
  if name = "L" then
    motor right move Forward at speed map value from low 1 high 450 to low 255 high 10
    motor left move Forward at speed 20
  if name = "R" then
    motor left move Forward at speed map value from low 550 high 1024 to low 40 high 255
    motor right move Forward at speed 20

```

## 2. Ultrasonic Obstacle Avoidance Vehicle

In this sample program, the front ultrasonic sensors on Maqueen car will detect the distance between itself and obstacle ahead. If the distance is less than 30cm, the robot car will turn left or right randomly to avoid the obstacle.

**Program Link:** [https://makecode.microbit.org/\\_FxFPvxDzVR8P](https://makecode.microbit.org/_FxFPvxDzVR8P)

### Program Screenshot:

```

forever
  if read ultrasonic sensor cm < 30 and read ultrasonic sensor cm ≠ 0 then
    set strip to pick random true or false
    if strip = true then
      motor left move Forward at speed 255
      motor right move Forward at speed 0
      pause (ms) 800
    if strip = false then
      motor left move Forward at speed 0
      motor right move Forward at speed 255
      pause (ms) 800
    else
      motor all move Forward at speed 255

```

