

REX8



GitHub
rbt.ist/rexgithub

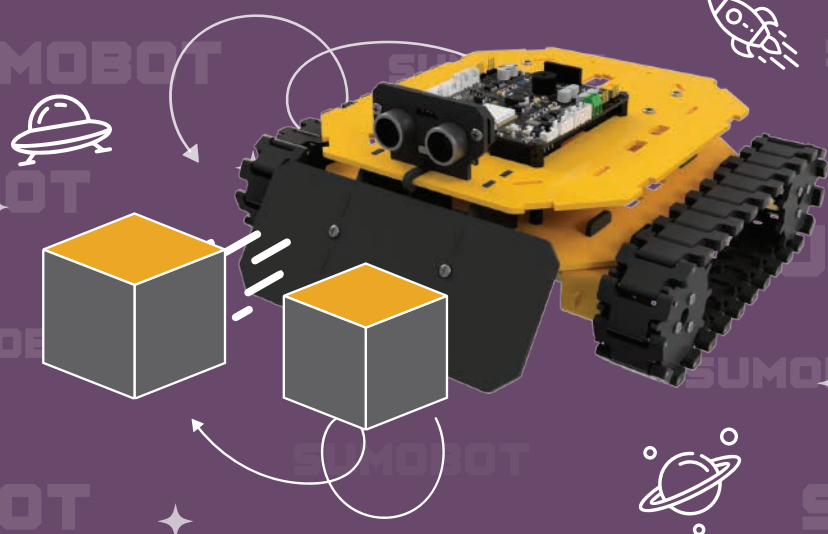


REX DOCS
rbt.ist/rexrdt



Buy REX
rbt.ist/rexrdt

SUMOBOT SETUP GUIDE



SumoBot

SumoBot is a REX robot that aims to remove objects from the track by using its ramp, distance sensor, and line follower sensor.

How Does SumoBot Work?

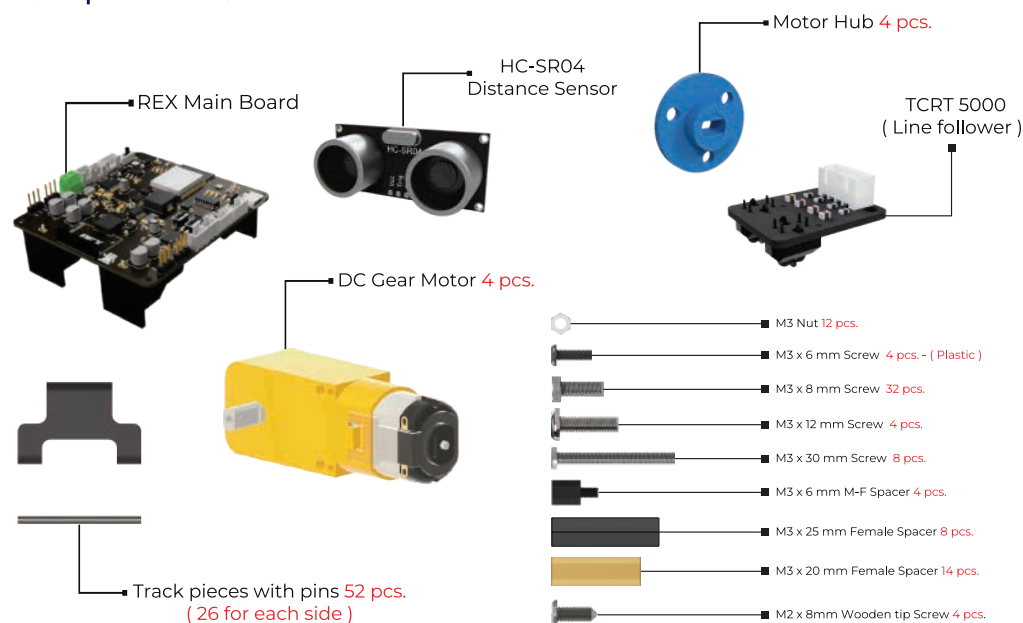
Thanks to the distance sensor in front of SumoBot, it detects the objects/robots around. By moving in the direction where the objects are, it pushes the objects/robots off the track by using the ramp in front of it.

HCSR04 Distance Sensor

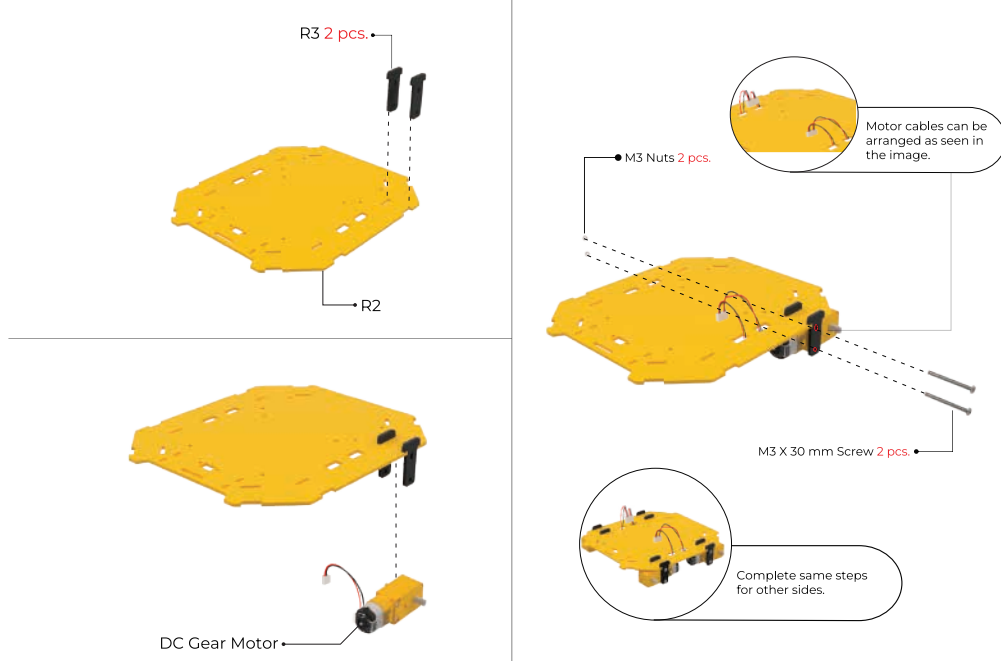
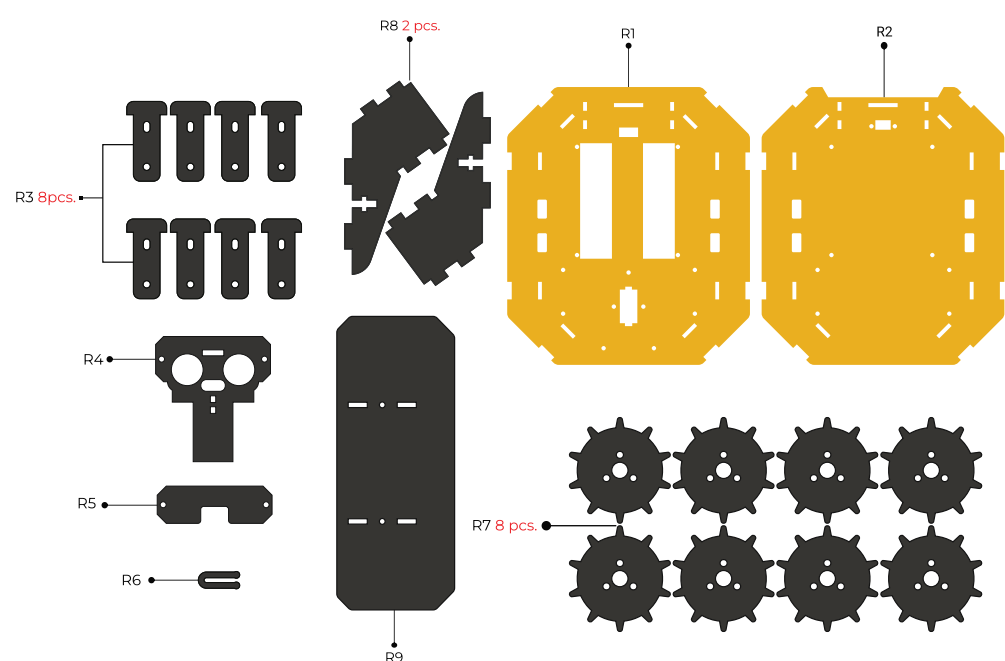
Line Tracker Sensor

SumoBot detects whether it is on the track or not, thanks to the line follower sensor under it. The line tracker sensor has two IR transceivers. The rays emitted from these IR transceiver sensors give different values on a different colored ground. These value differences provide SumoBot to detect whether it is inside the track or not.

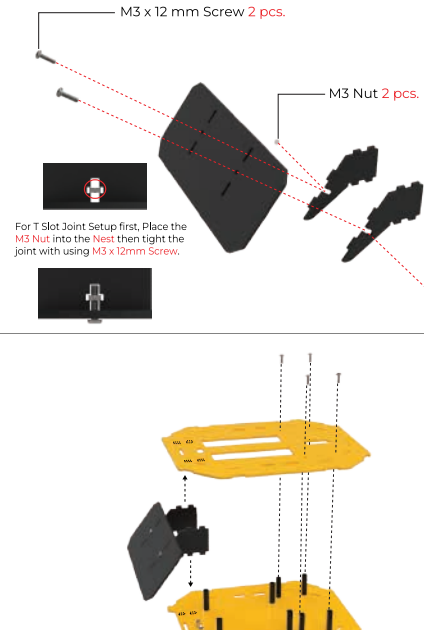
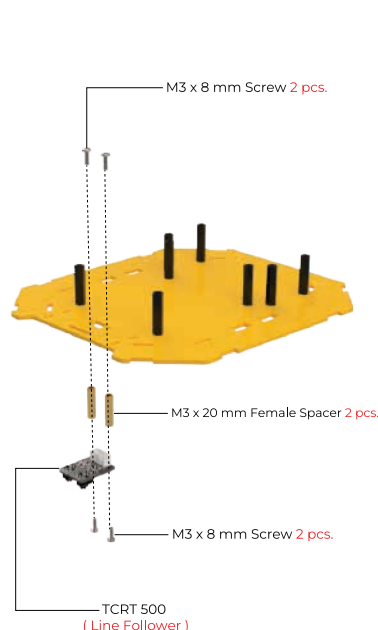
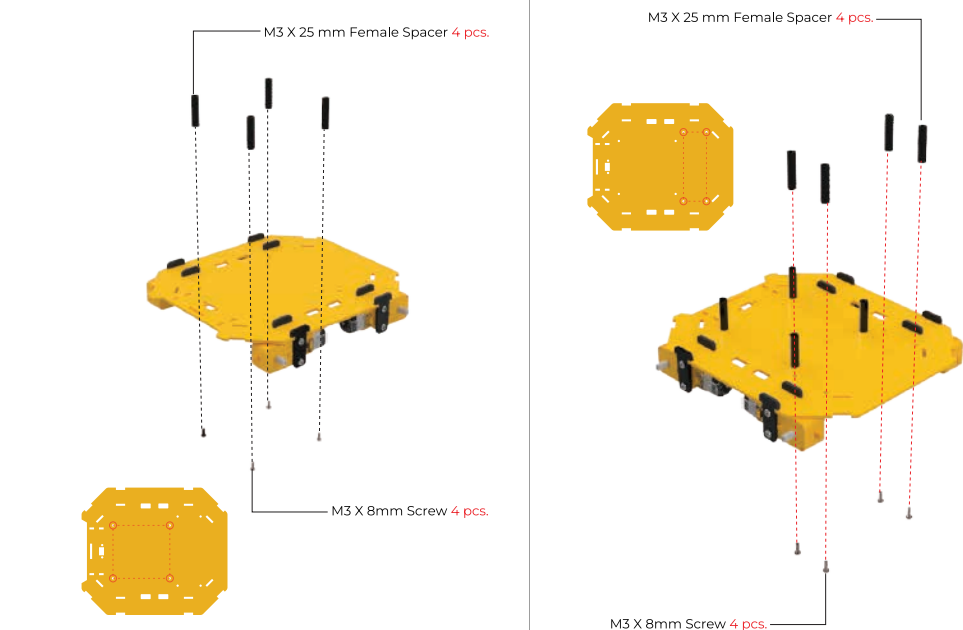
Components of SumoBot



03



05



07

M3 x 8 mm Screw 3 pcs.

Motor Hub

M3 x 20 mm Female Spacer 3 pcs.

R7

M2 x 8 mm Wooden Screw

M3 x 8 mm Screw 3 pcs.

1

2

3

If the gears are not aligned as seen in the image, (1) please revert the part (2) and then insert it. (3) This will prevent issues related to movement instability and tracks being dismantled while in motion.

1

2

x26

Mount the tracks for both sides

M3 x 6 mm Screw 4 pcs. (Plastic)

1

In order to prevent any short circuit related issues, please use plastic screws and spacers for electronic cards.

REX 8in1 Main Board

M3 x 6 mm F - M Spacer 4 pcs.

M3 x 15 mm Screw 2 pcs.

M3 Nut 2 pcs.

R4

HC - SR04

R5

R6

Assembly is finished and you can move on with coding steps

MOTOR 4

MOTOR 3

MOTOR 2

MOTOR 1

The Circuit Diagram

After assembling the acrylic pieces, you can proceed with circuit installation as shown in the diagram below.

Arduino Code

```
SumBot.ino
1 // Define SensorS1 34 // 18 pins
2 // Define SensorS2 35 // 18 pins
3 int trigPin = 4; // Trigger
4 int echoPin = 5; // Echo
5 long duration, cm;
6
7
8 // Define MotorA1 15
9 // Define MotorA2 20
10
11 // Define MotorB1 32
12 // Define MotorB2 32
13
14 // Define MotorC1 17
15 // Define MotorC2 18
16
17 // Define MotorD1 27
18 // Define MotorD2 14
19
20 // Define mid 155
21 // Define slow 0
22 // Define THRESHOLD 600
23
24 void setup() {
25
26   Serial.begin(115200);
27   pinMode(trigPin, OUTPUT);
28   pinMode(echoPin, INPUT);
29
30   pinMode(MotorS1, INPUT);
31   pinMode(SensorS2, INPUT);
32
33   pinMode(MotorA1, OUTPUT);
34   pinMode(MotorA2, OUTPUT);
35
36   pinMode(MotorB1, OUTPUT);
37   pinMode(MotorB2, OUTPUT);
38
39   pinMode(MotorC1, OUTPUT);
40   pinMode(MotorC2, OUTPUT);
41
42   pinMode(MotorD1, OUTPUT);
43   pinMode(MotorD2, OUTPUT);
44 }
```

V4

rbt.is/sumobotcode

V5

rbt.is/sumobotV5

Scan the QR code to go to the whole code and the necessary libraries.