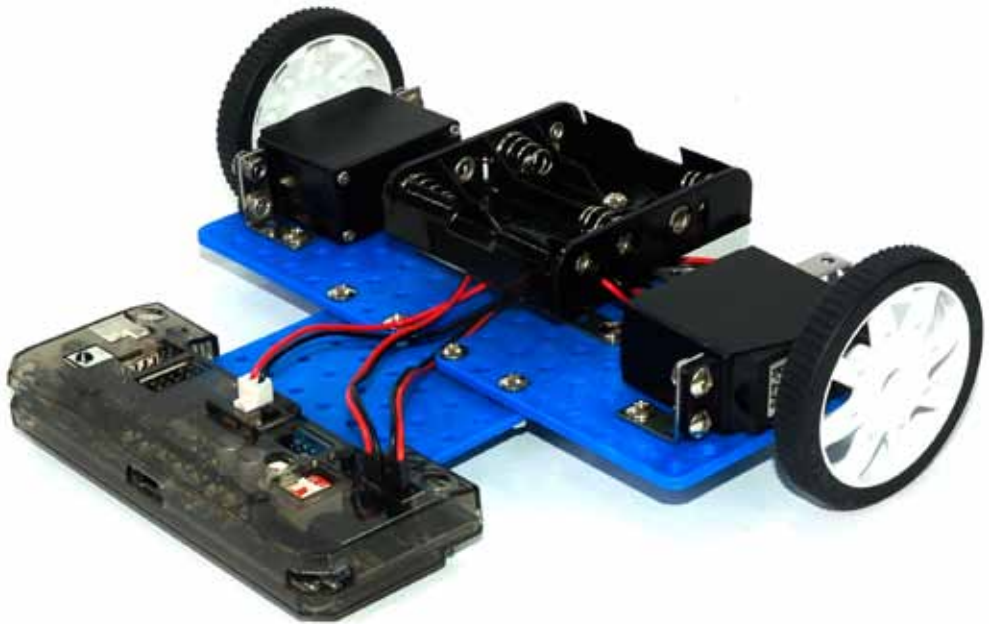


12. Line Follower Robot



Introduction and how it works



There are 7 infrared light sensors on the bottom side of the smart board. This robot detects a line 2cm in width continuously, and follows the line. Infrared sensors can detect the difference between black and white, so the line should be black with white background. If the robot moves away from the line, the robot's programming adjusts the motors' speed to get back on the line.

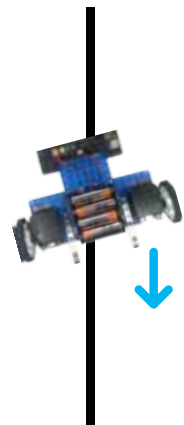
If the robot is on the line: let the motors maintain same speed.



If the robot is moving to the right: Decrease the speed of left motor.



If the robot is moving to the left: Decrease the speed of right motor.



1

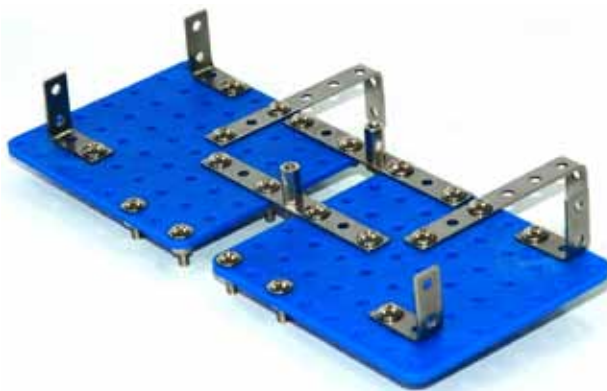


X 12



X 13

2



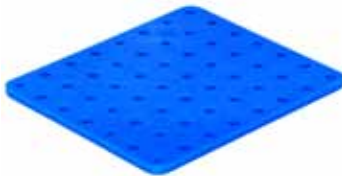
X 8



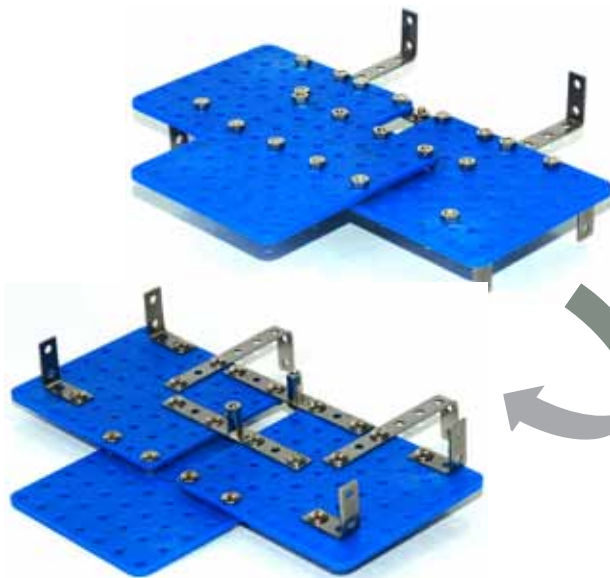
X 9



3



X 8



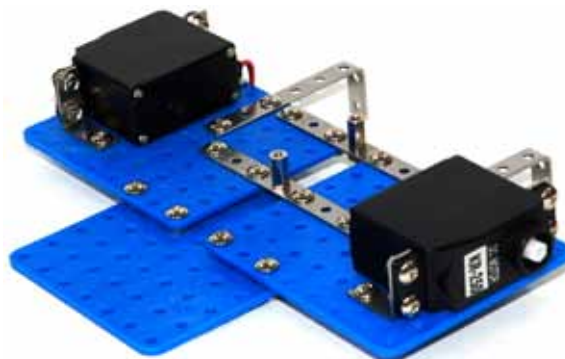
4



X 8



X 8



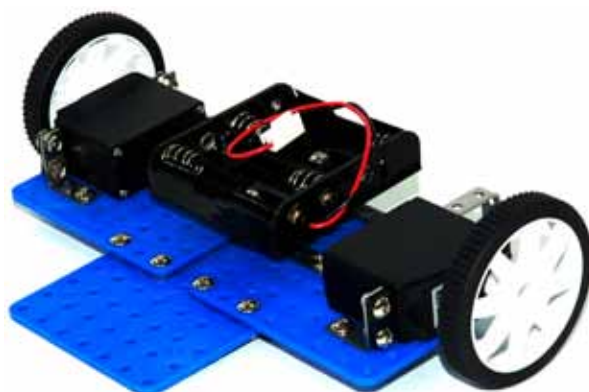
5



X 2



6



X 2

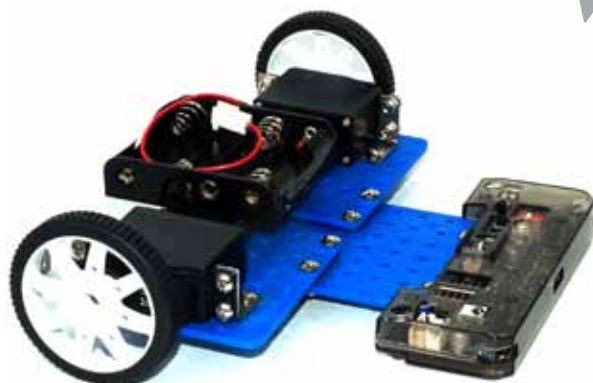
7

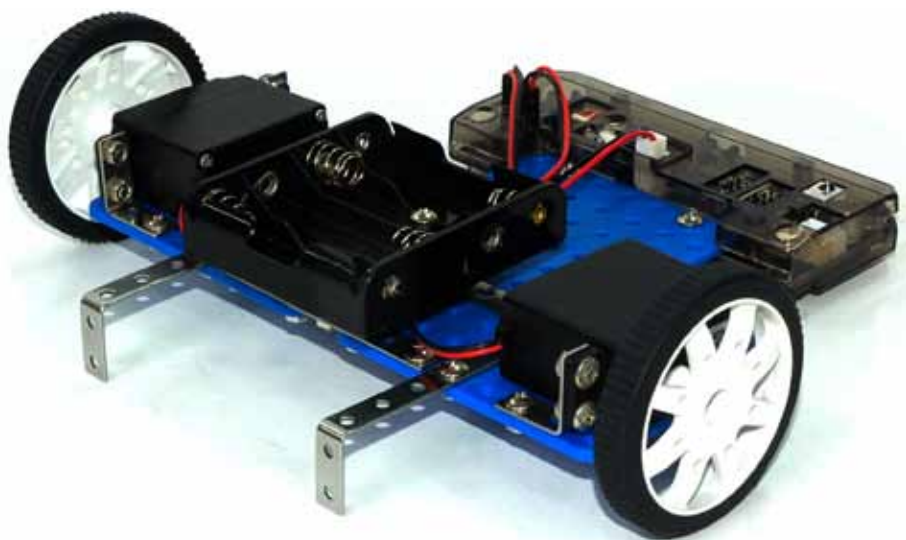
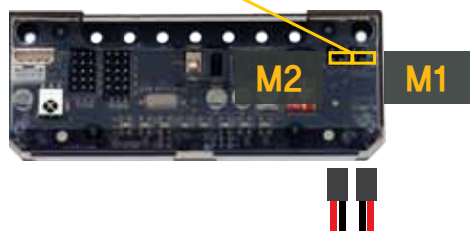
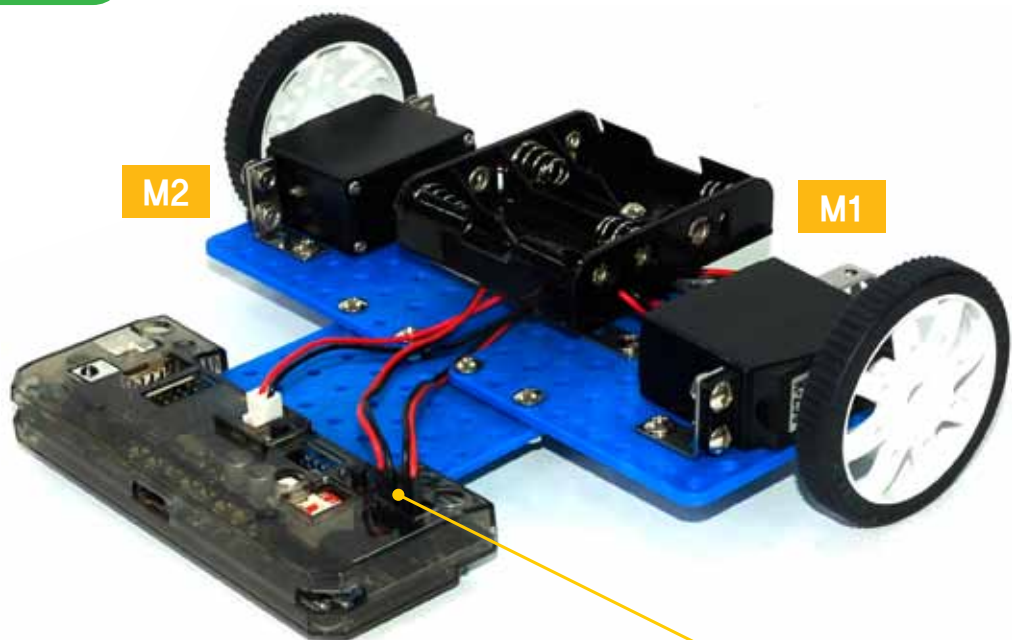


X 2

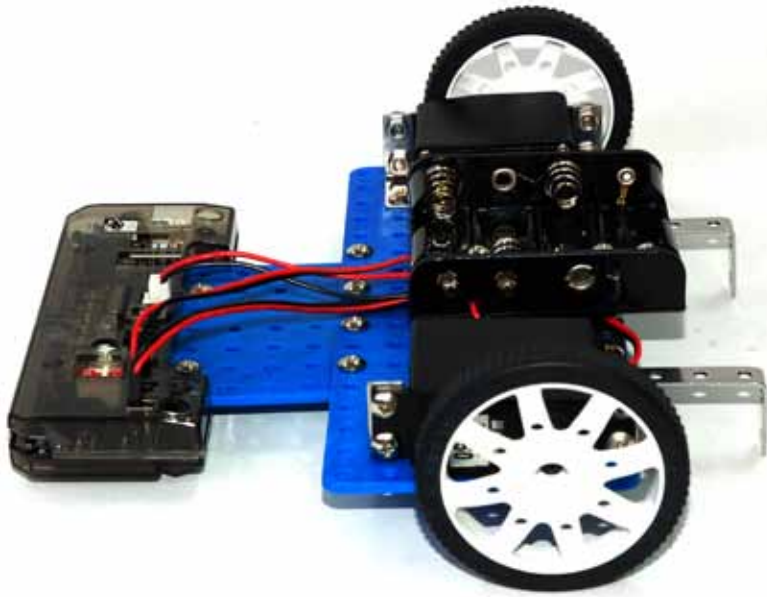


X 2

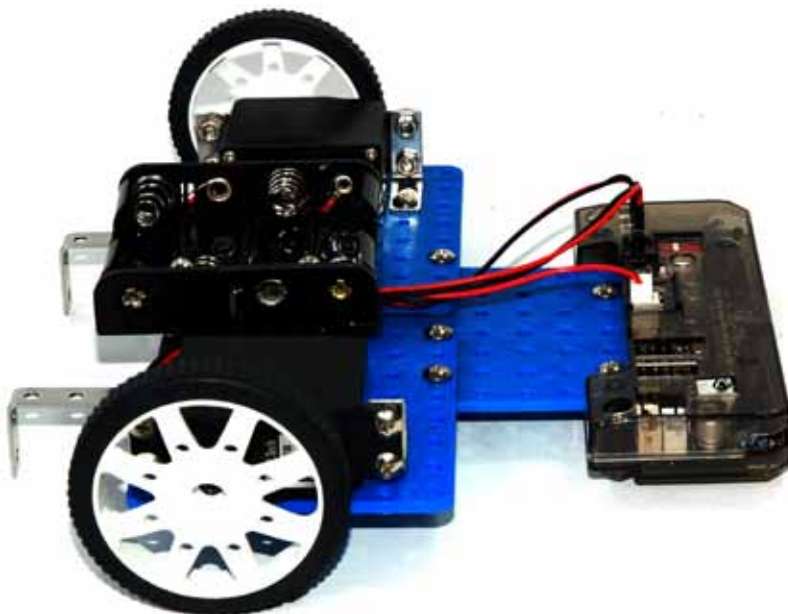




Left view



Right view



How to set up the Line Follower Robot

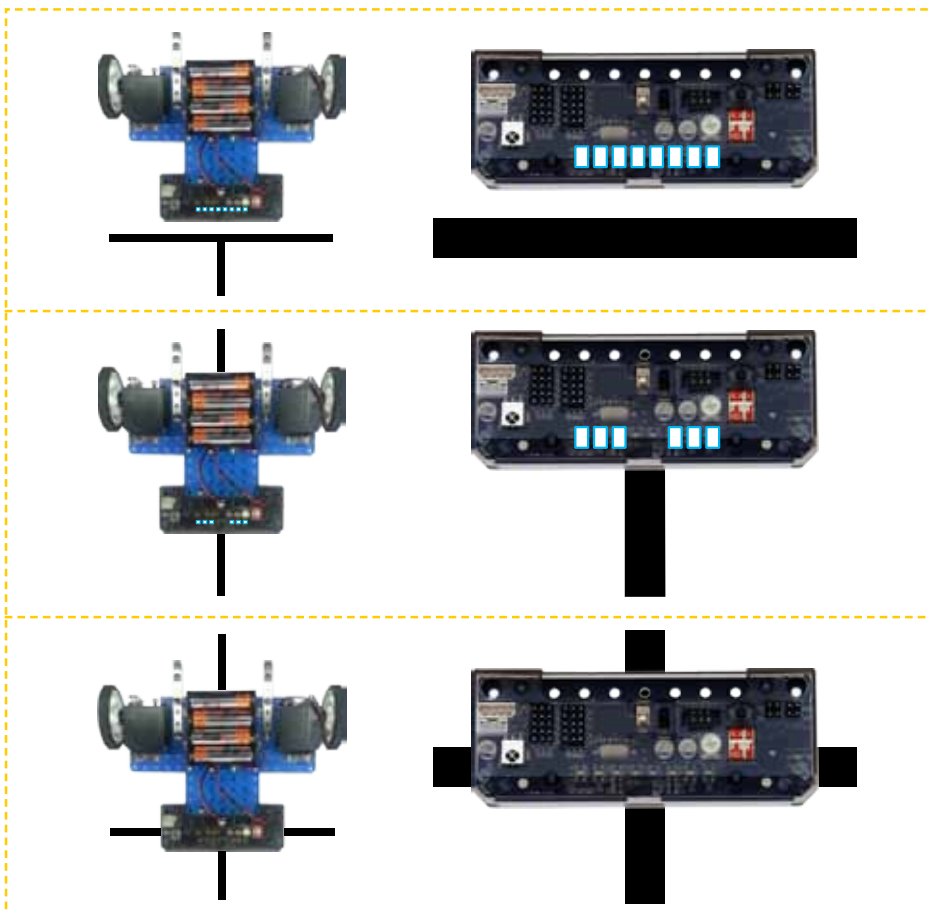
– 1. Adjustment of Sensitivity



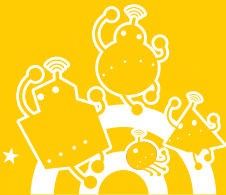
Line Follower Robot uses program mode 12 to operate.

1. Adjustment of Sensitivity

When the Line Follower Robot is enabled to move, it is started with **sensitivity check mode**. In this mode, when you place the Line Follower Robot on a black line, the LED light on a black line becomes turned off. If all the LED lights become turned off, you have a problem with the sensitivity. **You need to adjust the sensitivity of the Line Follower Robot by adjusting variable resistances.** After adjusting sensitivity, try out the sensor in the middle.

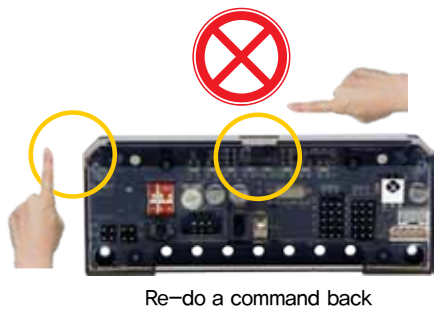
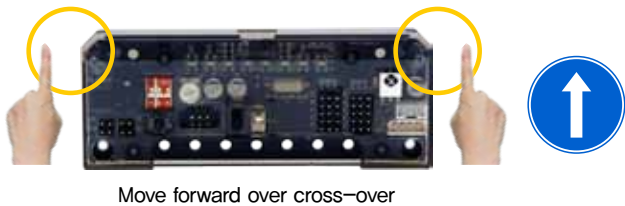
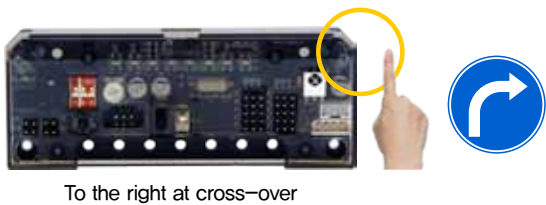











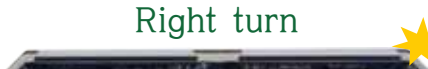



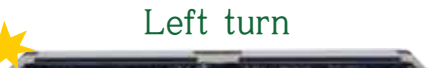



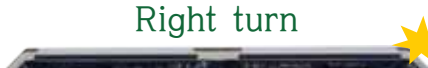


The LED light in a black line is supposed to be turned off.



2. Programming of Line Follower Robot

After sensitivity adjustment is finished, it moves to programming mode. Let's do a program firsthand in order for the robot to follow a line, using the below picture as a reference.

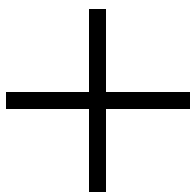


 	Forward	→		
 	Left turn	→		
 	Right turn	→		
 	Left turn	→		
 	Right turn	→		

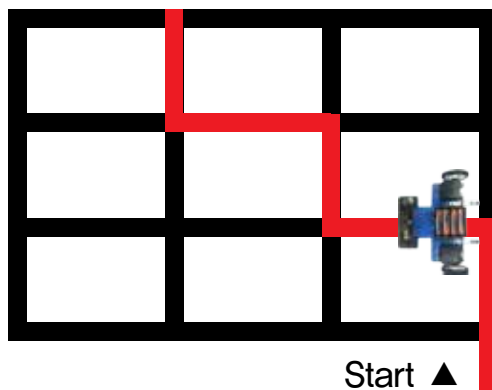


Run the program

- Input the program and start driving by allowing the sensors in the middle to detect.



At a cross-over, Line Follower Robot moves by inputed program. It moves forward, left, and right.



Forward  Left  Right  Left  Right