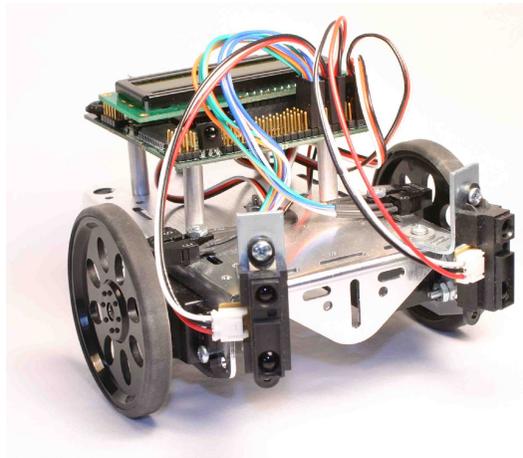




Range Sensor Kit

Assembly Guide



www.ridgesoft.com

Revision 1.0

Introduction

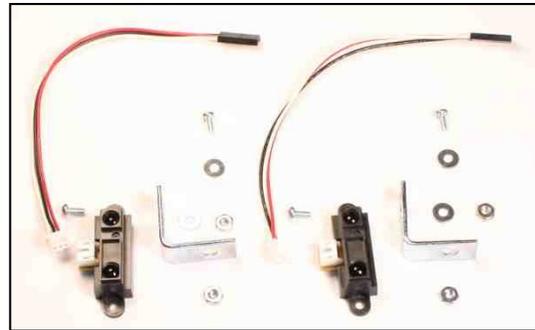
This guide provides step-by-step assembly instructions for the IntelliBrain™-Bot range sensor kit.

Range Sensor Kit Parts

The range sensor kit includes the parts shown and listed below.

Parts List:

- 2 Sharp GP2D12 range sensors
- 2 range sensor cables
- 2 mounting brackets
- 4 1/4" 4-40 round head screws
- 4 washers
- 4 4-40 nuts



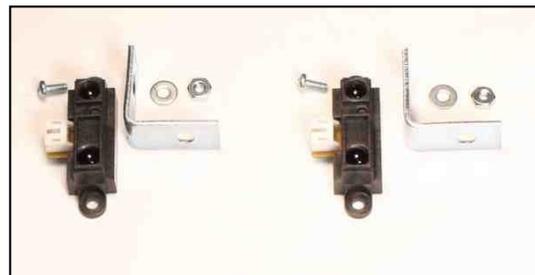
Assembly Tools

You will need a #1 tip Phillips screwdriver and needle nose pliers to assemble your range sensors and attach them to your IntelliBrain-Bot.

Attaching Sensors to Brackets

Parts:

- 2 sensors
- 2 screws
- 2 washers
- 2 nuts

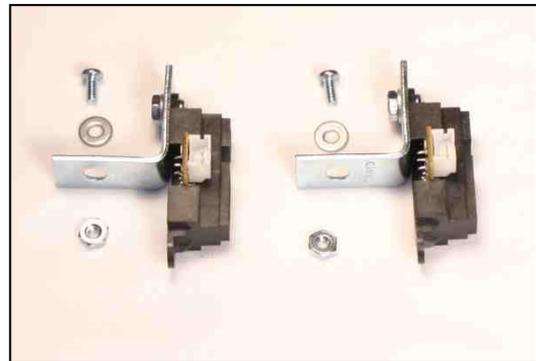


Instructions:

1. With the sensor facing you and the connector extending to your left, insert a screw through the top mounting hole in the sensor.
2. Insert the screw through a hole in a mounting bracket.
3. Place a washer and nut on the screw.
4. Tighten the nut.
5. Repeat the previous steps for the second set of parts.

**Attaching Sensor Assemblies to Your IntelliBrain-Bot****Parts:**

- 2 sensor assemblies
- 2 screws
- 2 washers
- 2 nuts

**Instructions:**

1. Place a washer on a screw.
2. Insert the screw through the empty hole in the mounting bracket from the interior side of the bracket.
3. Insert the screw through the right slot near the front edge of your IntelliBrain-Bot.
4. Place a nut on the screw.
5. Adjust the sensor so it is angled slightly to the side.
6. Tighten the screw.
7. Repeat the previous steps, attaching the second sensor to the left front of your IntelliBrain-Bot.



Attaching Cables to Sensors

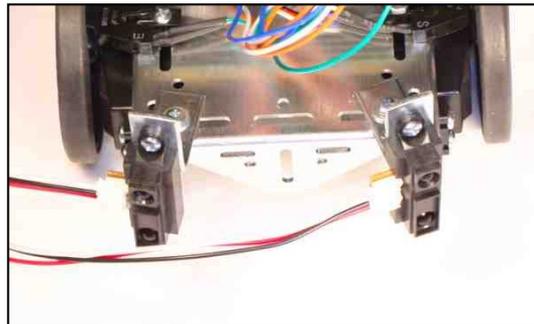
Parts:

- 2 sensor cables



Instructions:

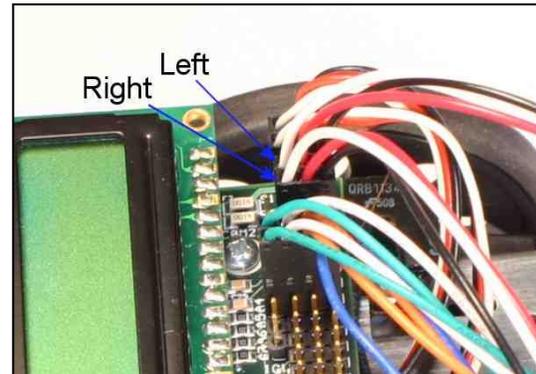
1. Insert the small connector on the cable into the connector on the sensor, aligning the tab on the cable connector with the slot on the sensor connector.
2. Repeat the previous step attaching the second cable to the other sensor.



Attaching the Sensor Cables to the IntelliBrain Robotics Controller

Instructions:

1. Connect the left sensor cable to the port marked "A1", positioning the black lead such that it is on the pin nearest the front edge of the IntelliBrain controller board.
2. Repeat the previous steps, this time attaching the right sensor to the port marked "A2", again positioning the black lead on the pin nearest the front edge of the board.



Testing

1. Using RoboJDE, load the "IntelliBrainBotAvoidObstacles" example program from the folder:
"Program Files\RoboJDE\Examples\IntelliBrainBot\AvoidObstacles".
2. Press the START button.
3. Verify both range sensor readings are less than 20 when there are no objects in front of the sensors.
4. Place your hand in front of each sensor. Each sensor reading should be approximately 500 when you hold your hand about 3 inches from the sensor.
5. Position your robot on the floor with a large object such as a box several feet ahead of it.
6. Press the START button a second time.
7. Your robot will drive forward, steering around the obstacle, to a point 100 inches straight-ahead from where it started then return to its approximate starting point, again avoiding the obstacle in its path.