

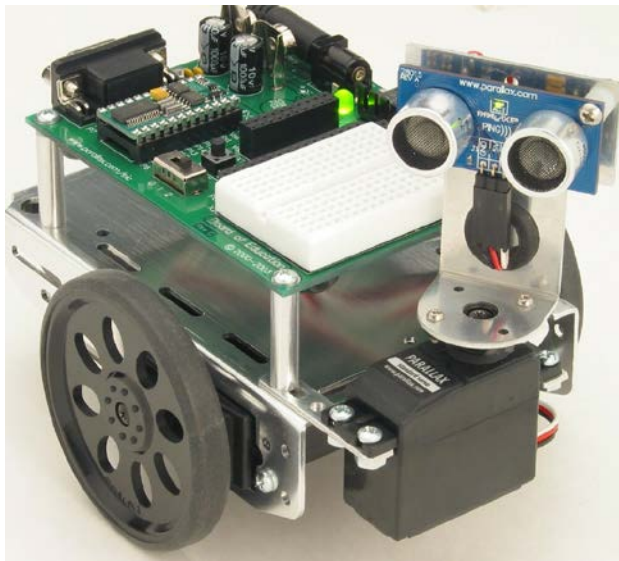
PING))) Bracket Kit

(#570-28015)

The PING))) Bracket Kit includes a standard servo and all mounting hardware required to attach the PING))) Ultrasonic Distance Sensor to the front of Parallax's Small Robot Chassis based robots:

- BASIC Stamp Boe-Bot Robot (#28132 or #28832)
- Propeller ActivityBot (#32500)
- Shield-Bot (for Arduino, #130-35000)

Or, use it with any custom-made robot chassis that has a flat mounting spot on the front.



Features

- Parallax Standard Servo provides 180 degrees of ultrasonic scanning ability
- Clean and sturdy connection provides reliable use on mobile robots
- Instructions included for mounting the PING))) sensor to any of Parallax's Small Robot Chassis based robots

Bill of Materials

Part#	Qty	Description
700-00003	7	4/40 nut, zinc plated
700-00015	3	Nylon washer (size 4)
700-00025	1	Rubber grommet – 13/32" size
700-00028	5	4/40 1/4" pan-head Phillips screw
700-00062	2	2/56 1/4" pan-head Phillips screw
710-00050	2	4/40 1/2" pan-head Phillips screw, Nylon
711-00001	2	2/56 nut
713-00005	2	Nylon spacer 1/4" long (size 4)
720-00012	2	Straight bracket
720-28015	1	PING))) mounting bracket
805-00001	1	Servo extension cable 10"
900-00005	1	Parallax Standard Servo

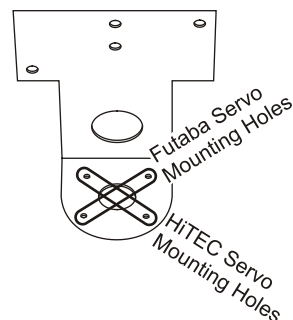
Items Required, Not Included

- A 3/32" drill bit or sharp craft knife (such as X-Acto®)
- A small Philips screwdriver (included with many Parallax robotics kits)
- PING))) Ultrasonic Distance Sensor (#28015)
- Small Robot Chassis based Parallax robot
- Fresh batteries

Assembly Instructions

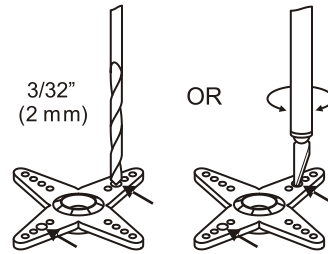
Step 1

The mounting holes on the PING))) mounting bracket accommodate different brands of servos, including Futaba and Hitec. Identify the proper holes for your servo.



Step 2

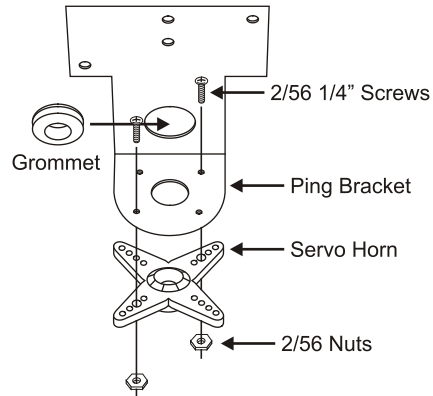
Enlarge two holes on the standard servo horn with a 3/32" (2.0 mm) drill bit or the tip of a craft knife blade. Use caution in this step since the servo horn plastic is quite brittle and can crack if it is enlarged with a screw.



Step 3

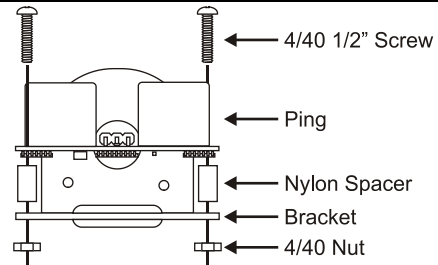
Attach the mounting bracket to the servo horn using (2) 2/56 1/4" long screws and nuts.

Put the rubber grommet in the bracket's larger hole.



Step 4

As viewed from the top, attach the PING))) sensor to the mounting bracket using (2) 4/40 1/2" nylon screws, (2) 1/4" nylon spacers and (2) 4/40 nuts.



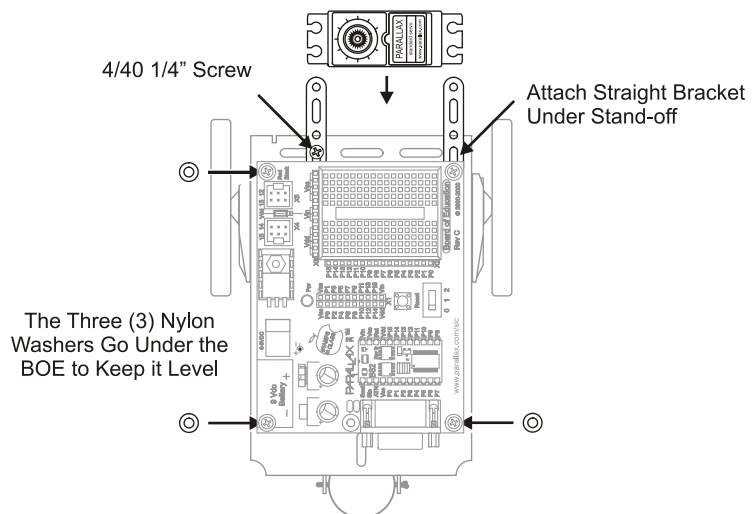
Step 5

Disconnect power from your robot's development board. Then, remove the board and front right standoff from the small robot chassis.

Attach one straight bracket between the chassis and the front right standoff.

Attach the other straight bracket to the left-most slot in the top front of the chassis, using a 4/40 1/4" screw and nut.

Place a Nylon washer on top of the other three standoffs, and replace the development board on the chassis. The standoffs let the board remain level with the addition of the straight bracket under the fourth standoff.

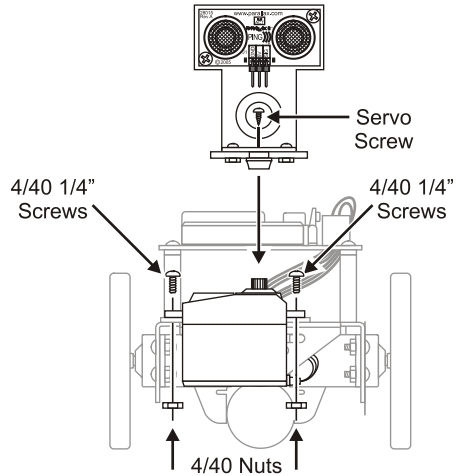


Step 6

Rest the servo mounting tabs on top of the straight brackets, and attach using (4) 4/40 screws and (4) 4/40 nuts.

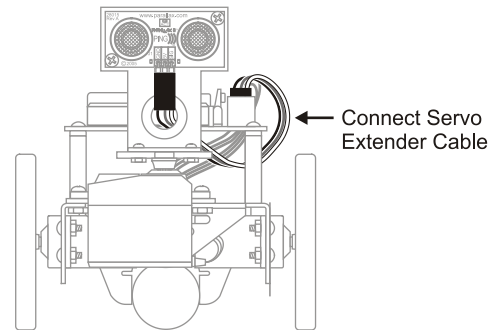
Important: Before using the servo screw, adjust the PING))) bracket to rotate 90° left and right.

Replace the servo's shaft screw once the PING))) Mounting Bracket is installed.



Step 7

Connect the servo extension cable to the PING))) sensor: Black to GND, Red to 5 V, and White to SIG.



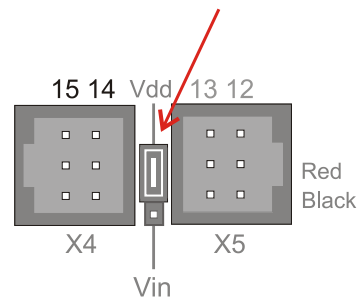
Step 8

Search 570-28015 at www.parallax.com to find example code or links to projects for this kit and your development board.

If you are using a development board with 3-pin servo ports, set the Servo Port Jumper to Vdd for the port you choose, then plug in the Standard Servo. Be sure to match Black to GND, Red to 5 V, and White to SIG.

Note: If your board has just one jumper, keep in mind this sets the servo voltage to 5 VDC. This is adequate for original Parallax Continuous Rotation Servos. It is not sufficient for High Speed Continuous Rotation servos.

If your board has no servo ports, or no servo port jumper, or if you want to keep the servos connected to Vin instead of Vdd/5V, follow the Breadboard Connection section on page 4.



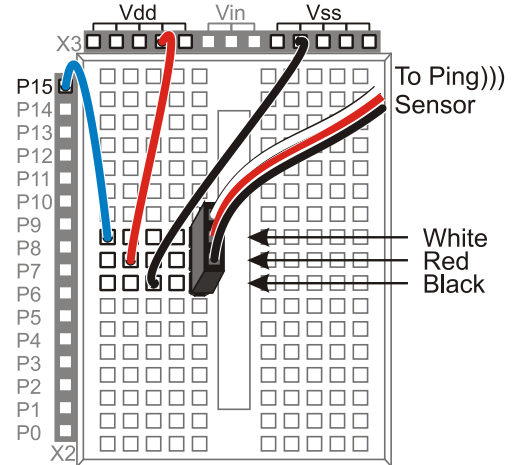
Breadboard Connection

A breadboard connection will be necessary if:

- You are using a board without a 3-pin Signal-5V-Ground connection.
- Your board has a servo port with a 3-pin Signal-Power-Ground pin and Vin/5V power jumper, but the jumper would affect servos you wish to keep connected to Vin.

The PING))) sensor requires a 5 VDC power supply. To make the connections directly from the breadboard:

1. Connect the servo extension cable to the PING))) sensor: Black to GND, Red to 5 V, and White to SIG.
2. Place a 3-pin male/male header in the other end of the cable, and plug it into the breadboard. Be sure to position the cable where it won't interfere with the sensor when the bracket rotates.
3. Using jumper wires, connect the Black lead to Vss, the Red lead to Vdd (5V), and the White lead to the I/O pin used by your microcontroller program to send pulses to the Standard Servo (P15, in the example shown).



Product Change Notice

Kits manufactured after October 2013 include ½" nylon screws instead of ½" steel screws.

Revision History

Revision 2.1: Product change notice added. Assembly instructions updated to support other Parallax robots that use the aluminum Small Robot Chassis in addition to the original BASIC Stamp based Boe-Bot robot. Removed reference to discontinued Hitachi HM55B Compass Module.