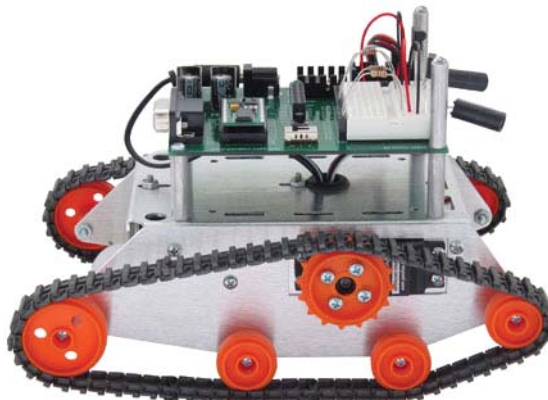


Boe-Bot Tank Treads (#28106)

Treaded Addition for the Boe-Bot[®] Robot



Introduction

Treads let the Boe-Bot access more varied terrain such as carpet, small rocks or imperfect surfaces. This kit involves the removal of the Boe-Bot wheels and addition of a treaded drive train.

Packing List

Part #	Description	Qty
700-00002	4-40 Machine Screw, 3/8"	6
700-00003	4-40 Nut – 700-00003	22
700-00007	4-40 Machine Screw, 7/8"	8
700-00028	4-40 Machine Screw, 1/4"	8
700-00059	#4 Lock Washer	8
710-00008	1.5" Screw	2
713-00003	1.25" Standoff	2
720-28106	Metal Sides	2
721-28106	Plastic Wheel and Rubber Tread set	1
725-00013	Servo Horns – may be standard or round disc	2

Tools Needed

You will need a #2 Philips screwdriver, wrench, and a 3/32" drill (or hobby knife like an X-acto[®] knife).

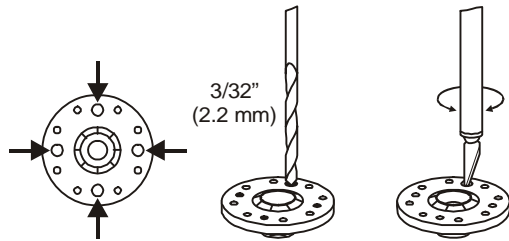
Assembly

Step 1: From the set of wheels, cut out the following and trim off any burrs:

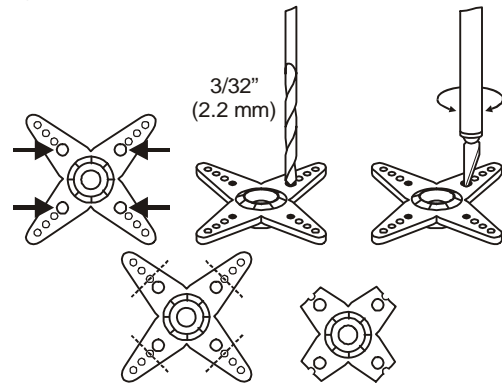
- (2) large wheels (with teeth)
- (2) large wheels (no teeth)
- (6) medium-sized wheels (no teeth)

The remaining wheels are not used for this application. However, the wheels with sprockets can be modified and used if there is a tread alignment problem; for details refer to the "Troubleshooting the Tread" section on page 4.

Step 2: The servo horn will need four of the holes enlarged for the 4-40 screws. The holes need to be smaller than the screw so that when the screws are inserted they will make their own threads. You can drill the holes using a 3/32" drill bit, or use an X-acto knife to enlarge the holes as shown below, depending on which servo horns were included in your kit. If you are using the knife, be sure not to over-enlarge the holes. By reaming with the knife a little from both the top and bottom, the hole will be more uniform in size.

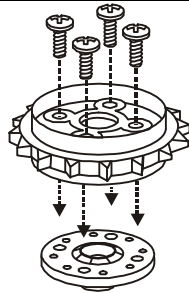


Enlarge the **Middle Holes**
if using **Disc Servo Horns**

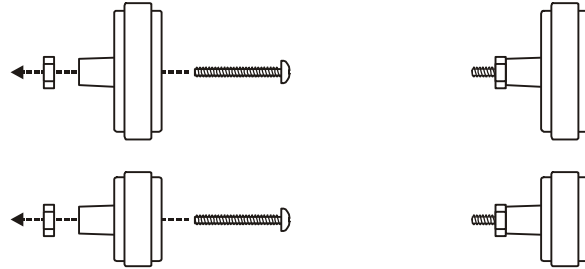


Enlarge **Inner Holes**
if using **Standard Servo Horns**

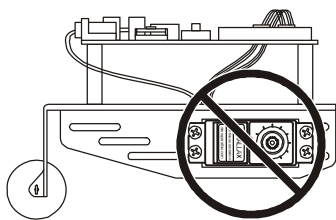
Step 3: Using the 1/4" length screws, attach the two large wheels (with teeth) to the servo horns.



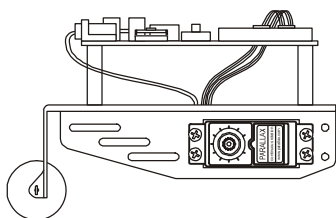
Step 4: Attach the 7/8" length screws and nuts to the remaining wheels (2 large and 6 medium in size) as shown below, and set aside.



Step 5: Remove the wheels from your Boe-Bot. The servos should be mounted with the head toward the rear ball wheel as in Figure 5. The servo mounting tabs need to be on the outside of the Boe-Bot chassis. Confirm that the servos are mounted correctly. If your servos are mounted the opposite way, or are mounted from inside the chassis, remove them and remount as shown.

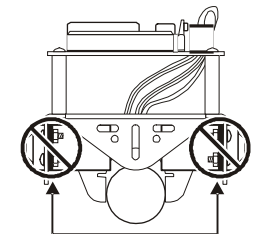


← **Wrong Way** →



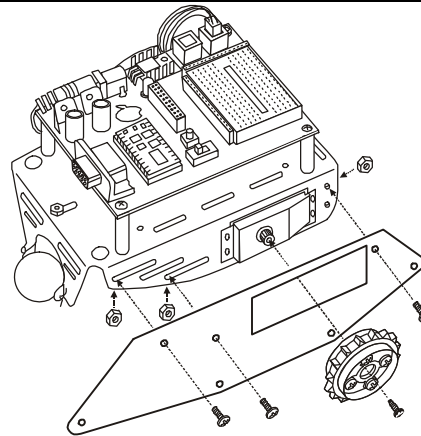
← **Right Way** →

Servo head is mounted
toward tail wheel

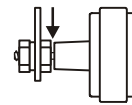


Servo mounting tabs are
outside of chassis

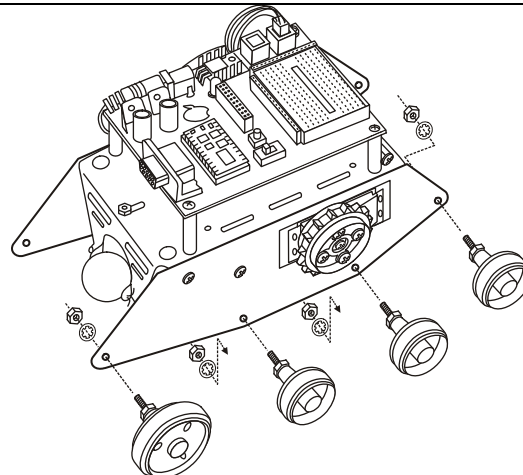
Step 6: Attach the sides first, using 3/8" length screws and nuts as shown. Then attach the servo horn (with wheel) using the screw that came with the servo.



Step 7: Attach the remaining wheels by first tightening the nut on the wheel then loosening it 1/4 to 1/3 of a turn. Attach the wheel assembly to the frame with a nut and a lock washer on the inside of the frame. When the two nuts on each wheel are tightened, check to see that there is a very small gap between the wheel and outside nut to allow for easy rolling, as shown.



Step 8: Mount the remaining wheel assemblies with lock washers and nuts. When tightening, leave a very small gap on the wheel side so the wheel can turn freely, as shown.



Step 9: Separate all the rubber tread pieces and connect together as shown below. Each loop contains 1 long, 2 medium and 2 short treads. Please do not pull the treads to disconnect from one another; please use scissors or an X-acto® knife. Pulling on the treads will stretch them beyond use. Check each wheel to make sure it rolls without binding. If any wheels bind, loosen the nut and remount to maintain a very small gap between the wheel and nut. Carefully stretch the tread over the wheels.

