

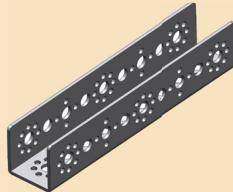
Arm and Gripper Building Guide

Step 1

Parts Needed



1x 96 mm Channel



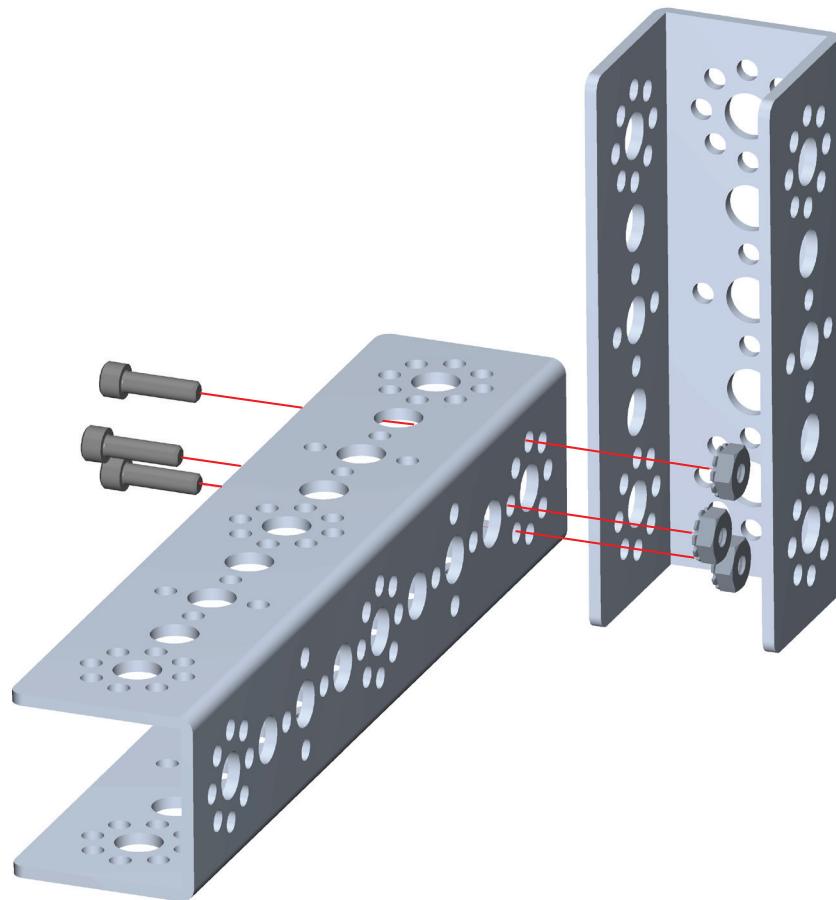
1x 160 mm Channel



3x 1/2" SHCS



3x Kep Nut



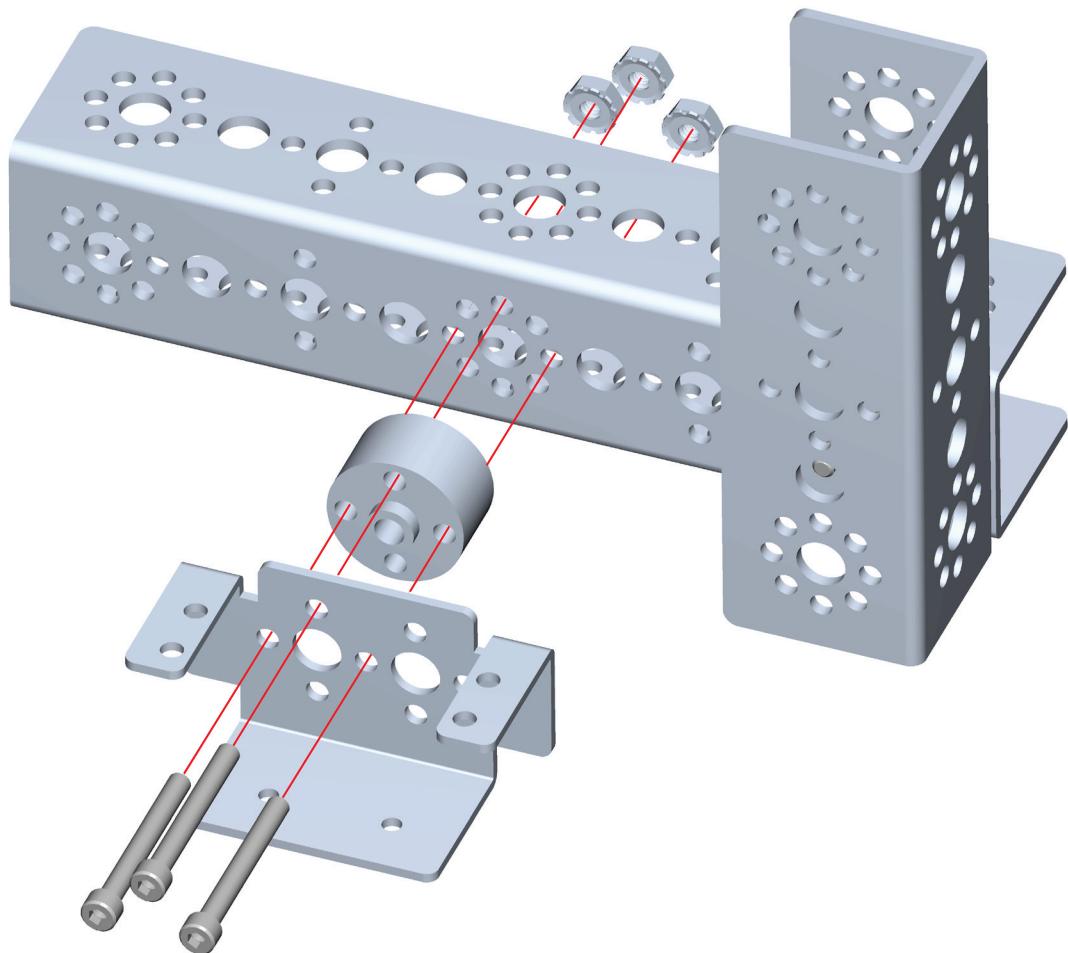
Tips

- Make sure all the internal screws are very secure, as they will be hard to retighten later.
- The 7/64", 5/64" and 3/32" hex keys will be needed to build this model.
- Use the 7/64" hex key for these screws throughout the model.
- Ensure that the teeth of the nut face the head of the screw.

Arm and Gripper Building Guide

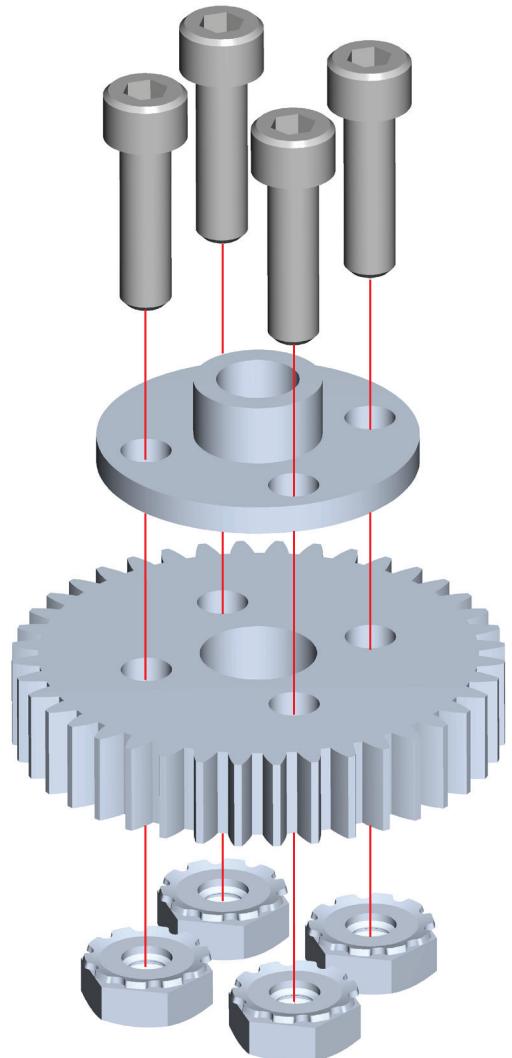
Step 2

Parts Needed



Tips

- Ensure that all screws are tightly secured at this point, as they will not be easily accessible later.
- Reminder: Ensure that the teeth of the nut face the head of the screw.

Arm and Gripper Building Guide**Step 3****Parts Needed****Tip**

- Ensure that the teeth of the nuts are facing the gear.

Arm and Gripper Building Guide

Step 4

Parts Needed



1x 180° Servo Motor



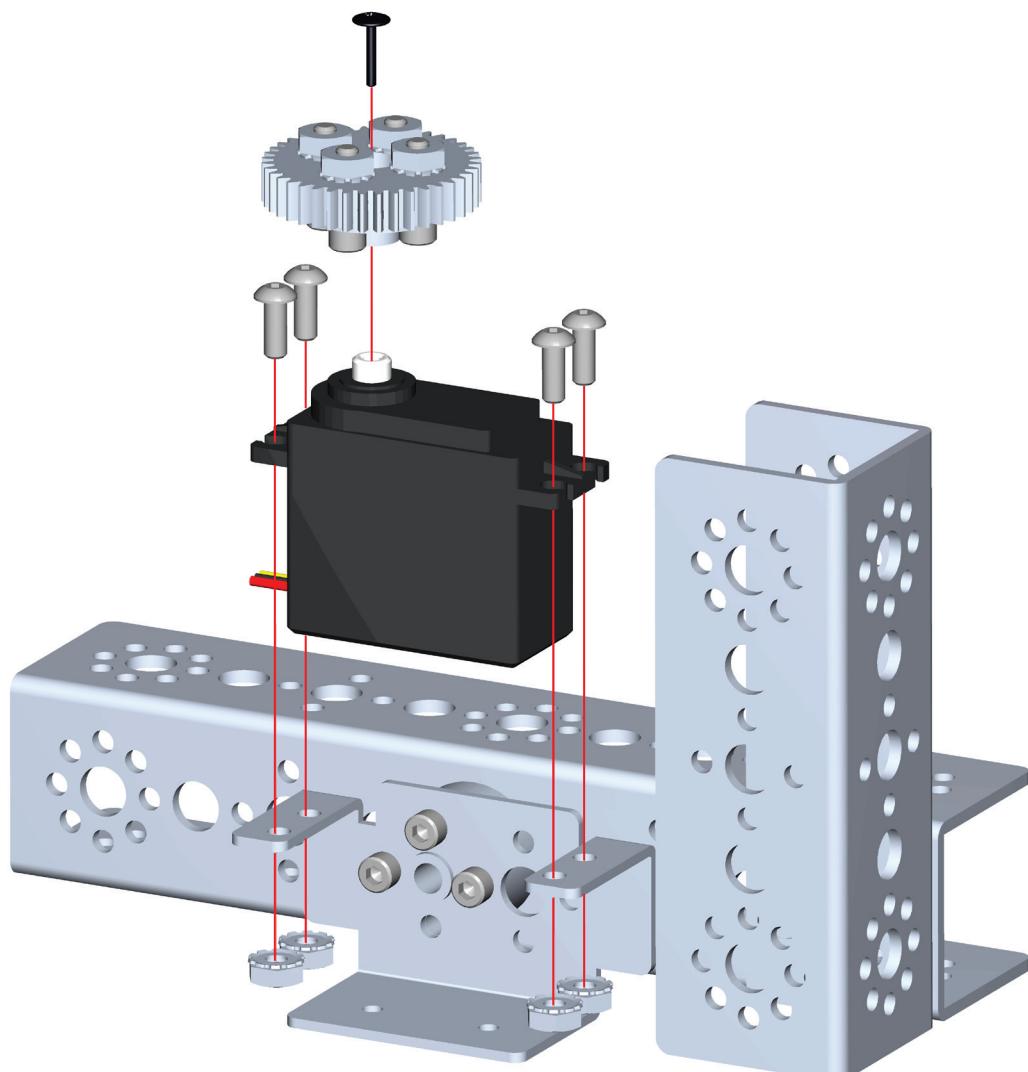
4x 3/8" BHCS



4x Kep Nut



1x Servo Screw



Tips

- Use the Phillips head on the 4-in-1 screwdriver to tighten the servo screw. This will keep the servo horn attached to the servo motor.
- Use the 5/64" hex key for the BHCS.

Arm and Gripper Building Guide**Step 5****Parts Needed**

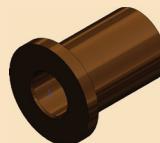
1x 80-Tooth Gear



1x 100 mm Axle



2x Axle Hub



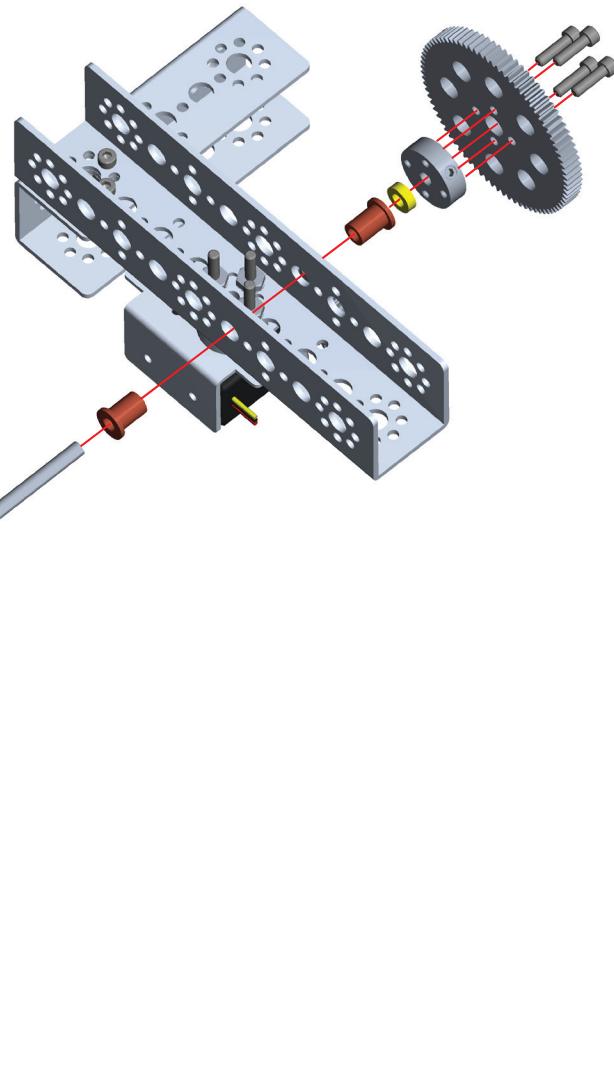
3x Bronze Bushing



2x 1/8" Axle Spacer



6x 1/2" SHCS

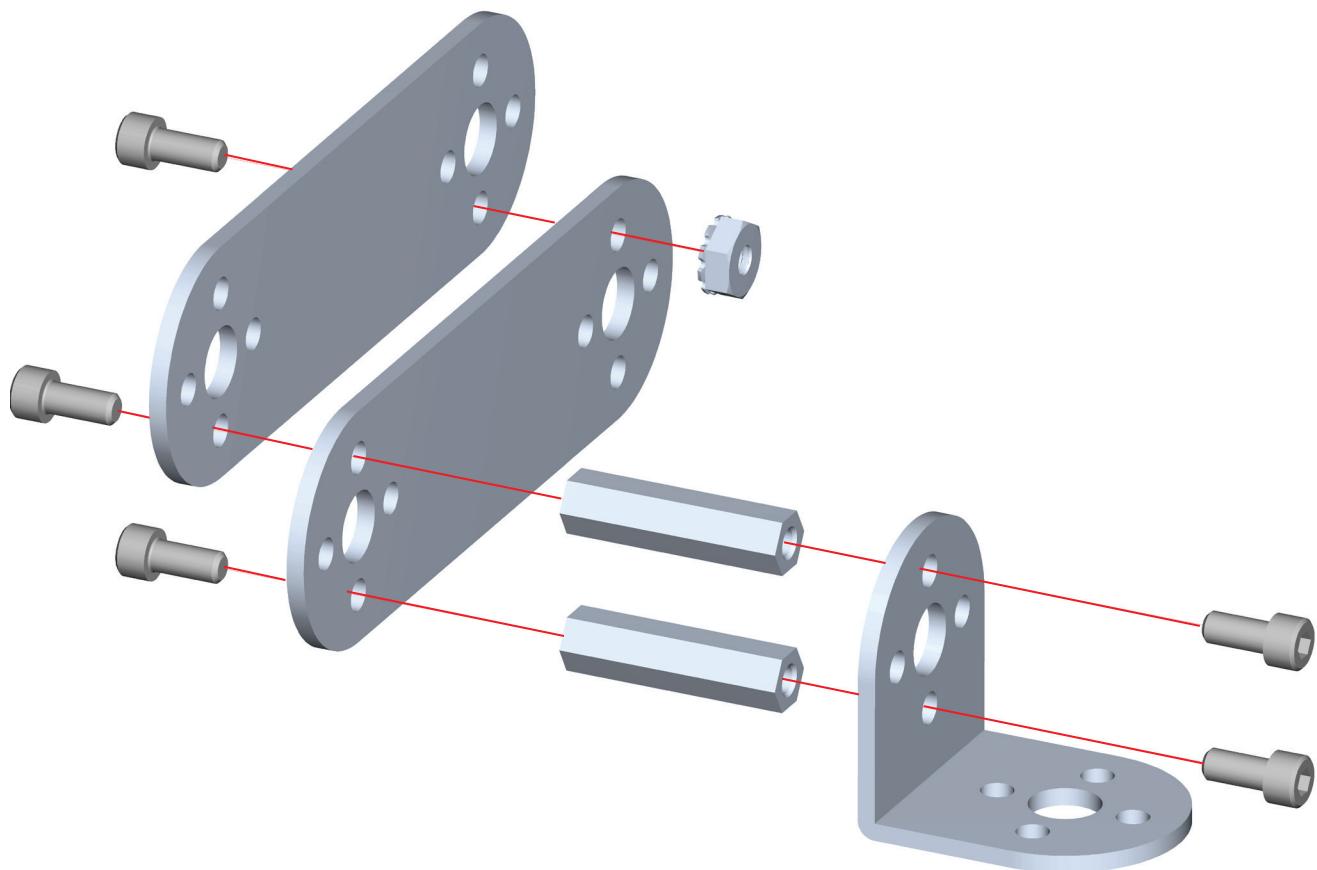
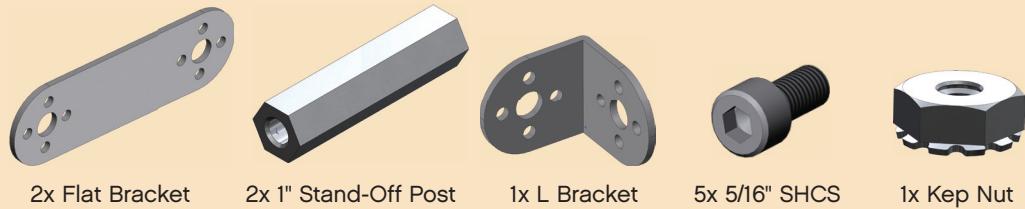
**Tip**

- The 3/32" hex key is used on the axle hubs.

Arm and Gripper Building Guide

Step 6

Parts Needed



Tip

- Reminder: Ensure that the teeth of the nut face the head of the screw.

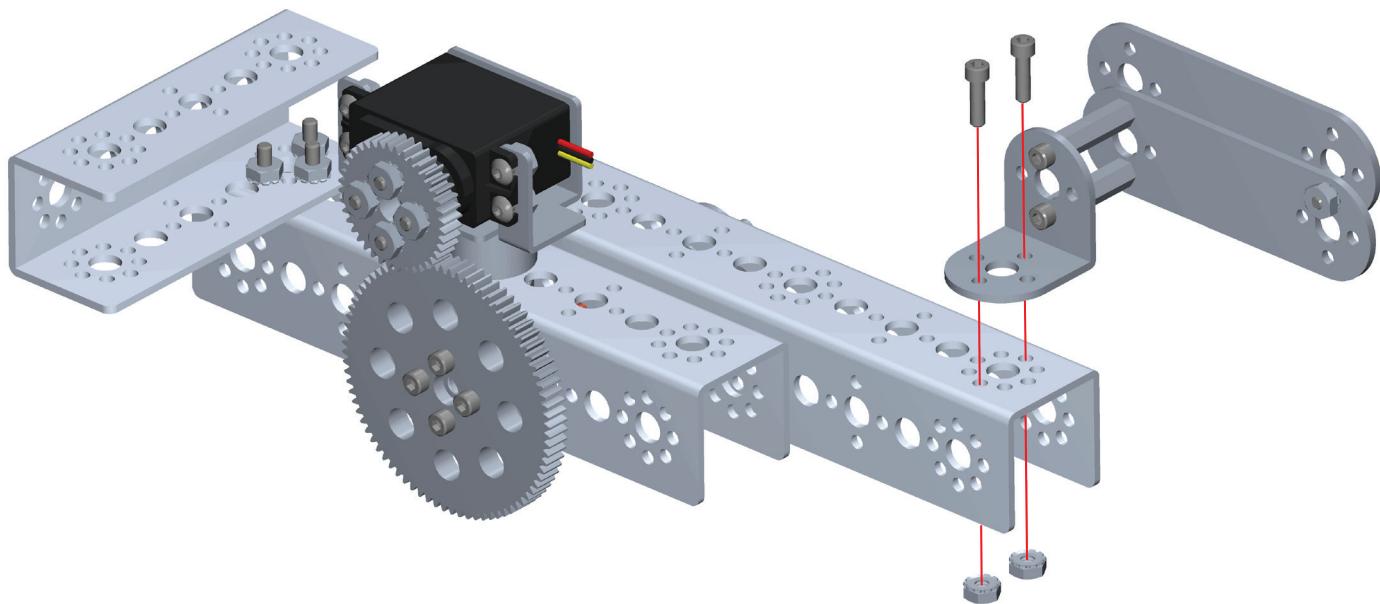
Arm and Gripper Building Guide

Step 7

Parts Needed



2x 1/2" SHCS 2x Kep Nut



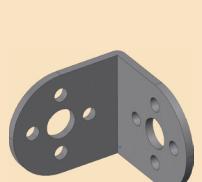
Tip

- Reminder: Ensure that the teeth of the nut face the head of the screw.

Arm and Gripper Building Guide

Step 8

Parts Needed



1x L Bracket



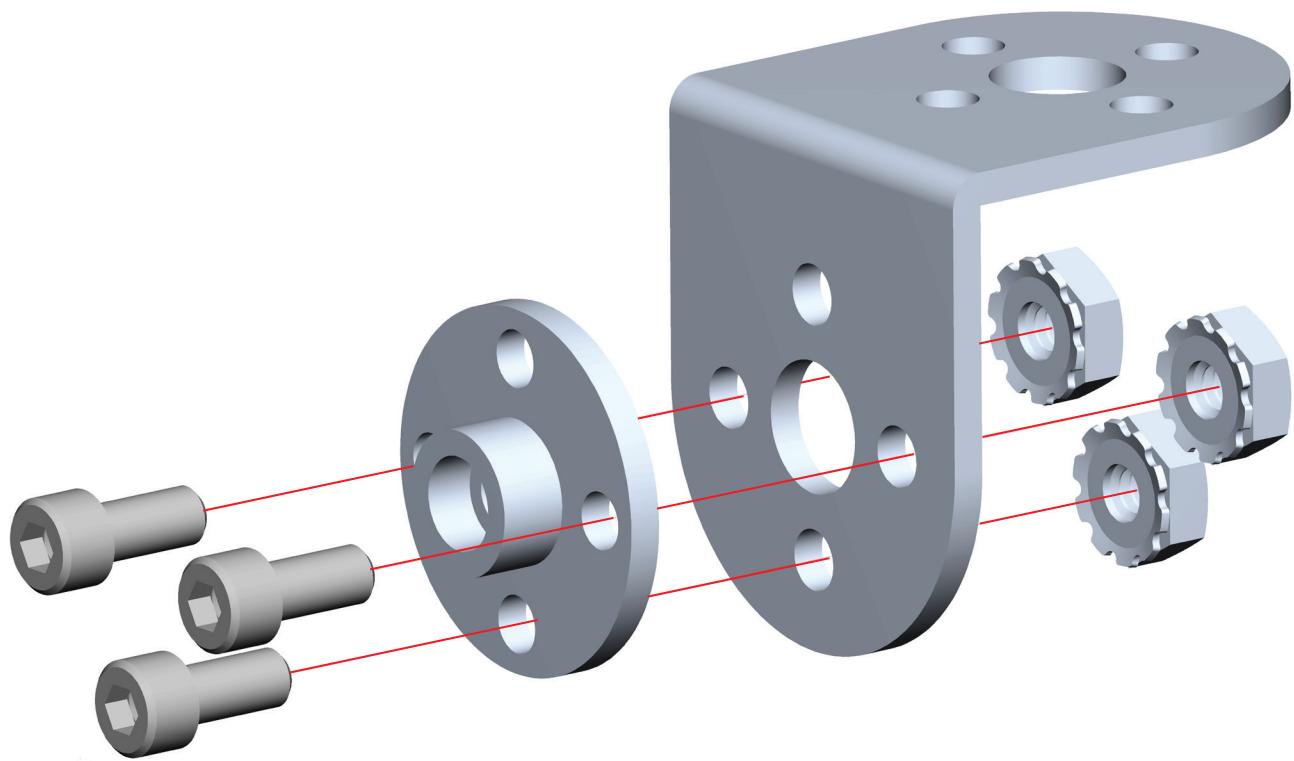
1x Servo Horn



3x 5/16" SHCS

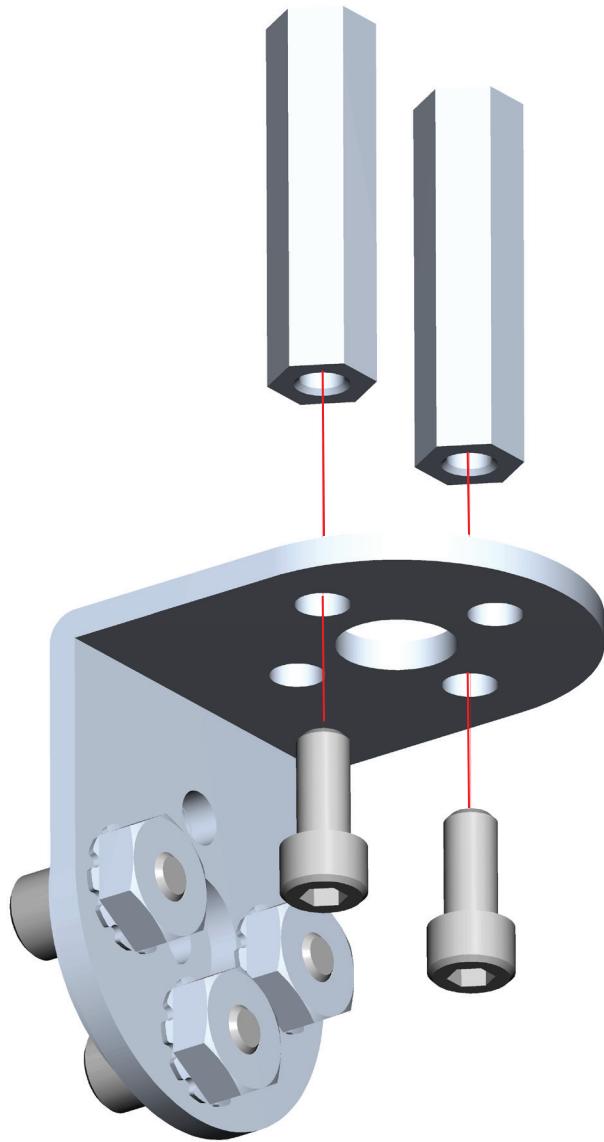
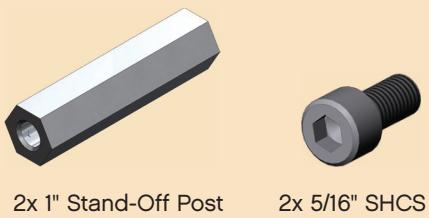


3x Kep Nut



Tip

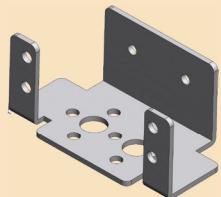
- Reminder: Ensure that the teeth of the nut face the head of the screw.

Arm and Gripper Building Guide**Step 9****Parts Needed**

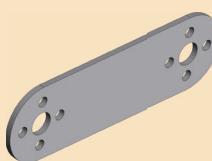
Arm and Gripper Building Guide

Step 10

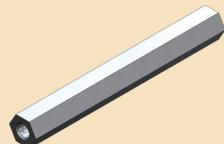
Parts Needed



1x Single-Servo Motor
Bracket



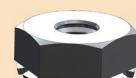
1x Flat Bracket



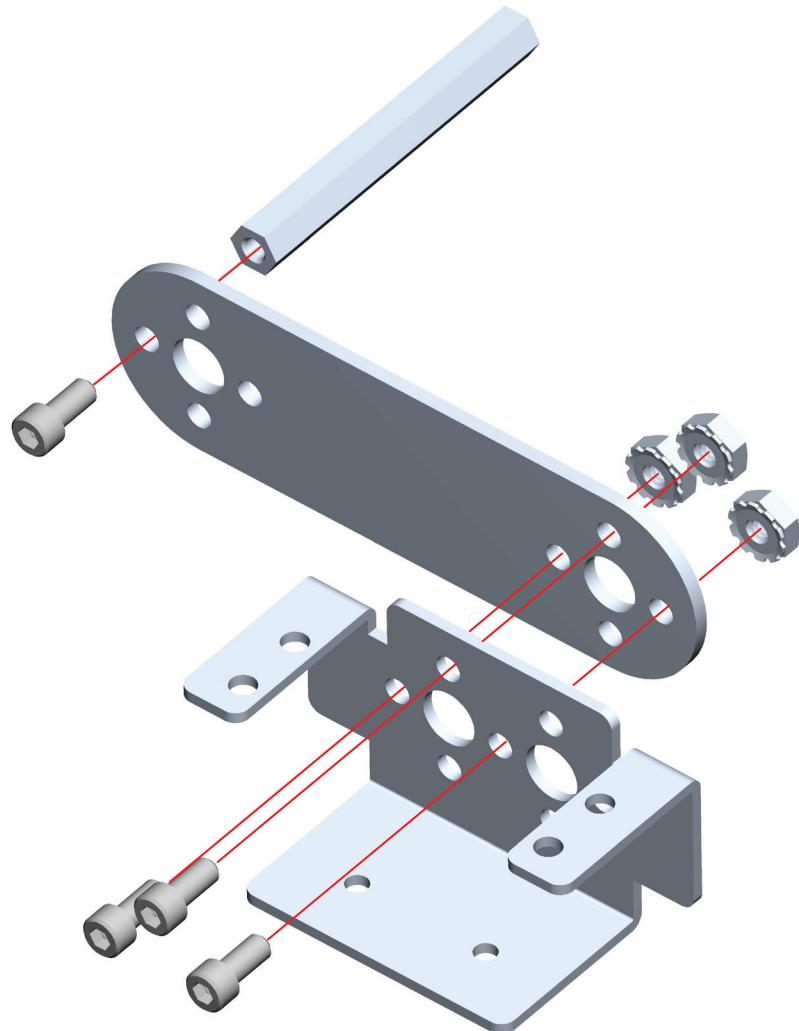
1x 2" Stand-Off Post



4x 5/16" SHCS



3x Kep Nut



Tip

- Reminder: Ensure that the teeth of the nut face the head of the screw.

Arm and Gripper Building Guide

Step 11

Parts Needed



1x 180° Servo Motor



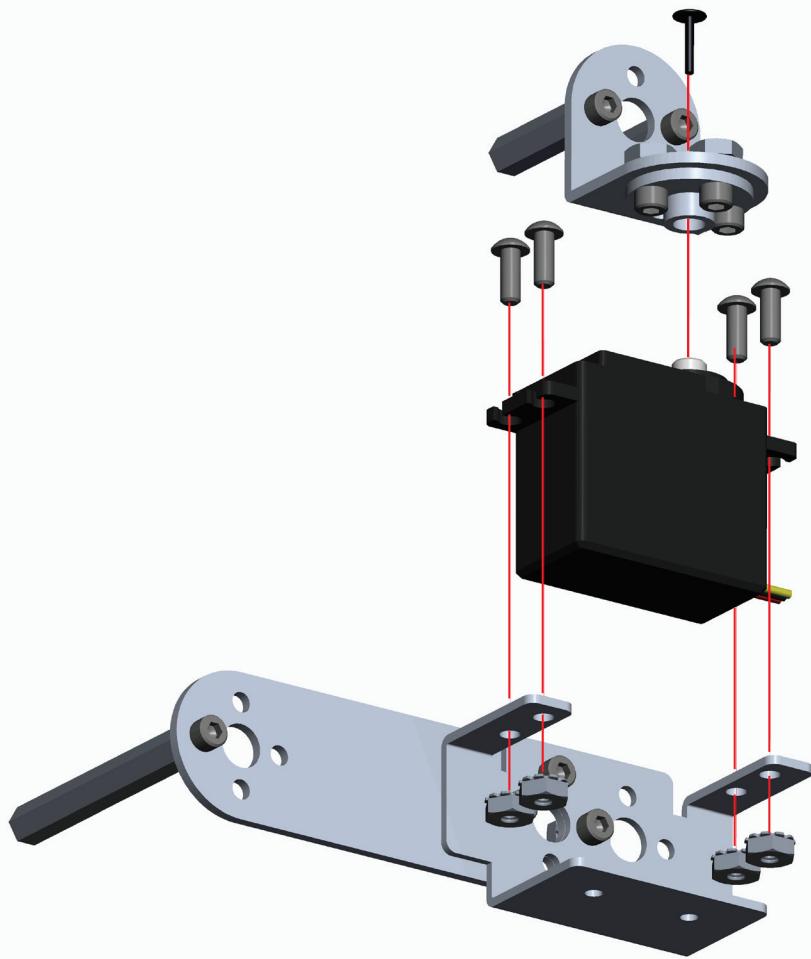
4x 3/8" BHCS



4x Kep Nut



1x Servo Screw



Tip

- Use the Phillips head on the 4-in-1 screwdriver to tighten the servo screw. This will keep the servo horn attached to the servo motor.

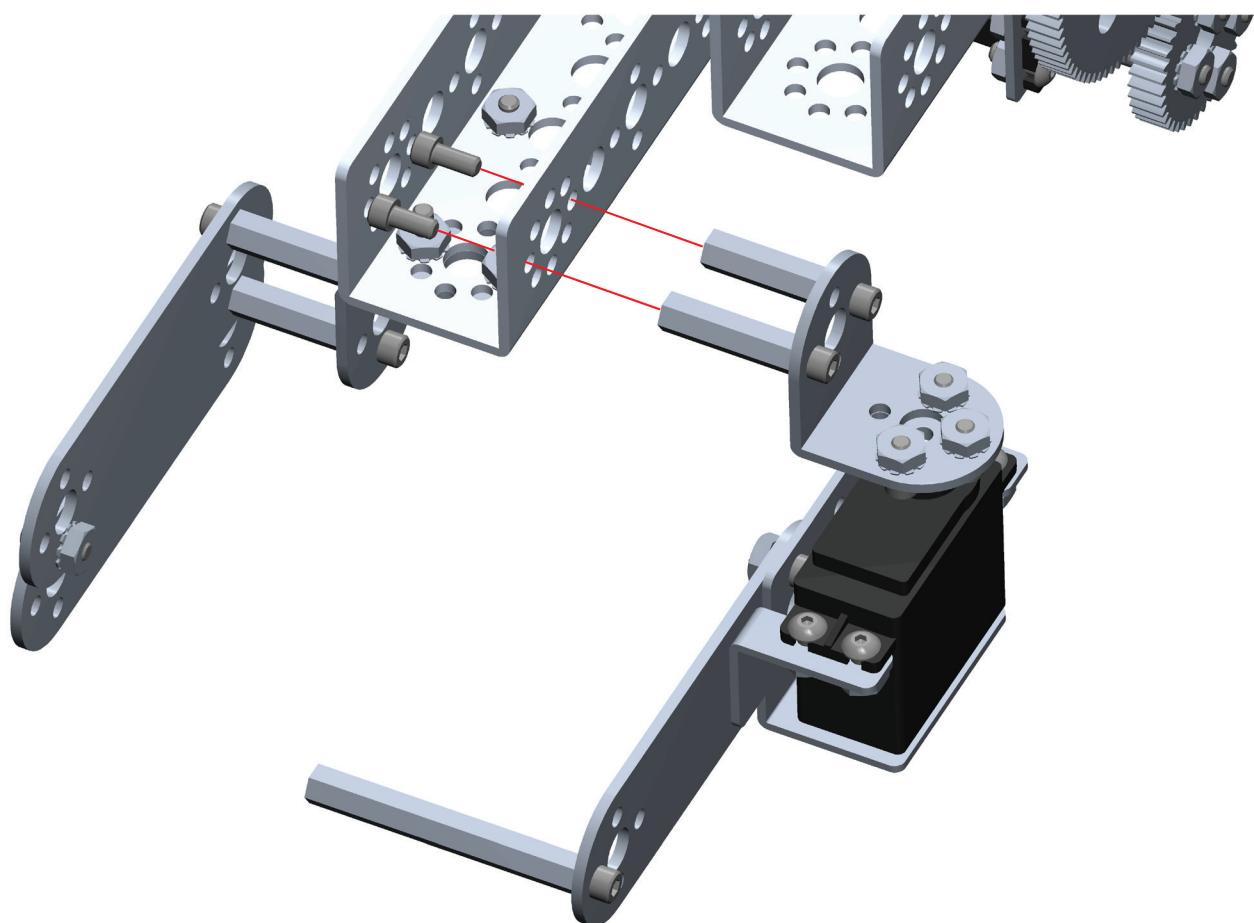
Arm and Gripper Building Guide

Step 12

Parts Needed



2x 5/16" SHCS



Tip

- To keep the arm oriented properly, tighten the screws bit by bit, alternating between them.

Arm and Gripper Building Guide

Step 13

Parts Needed



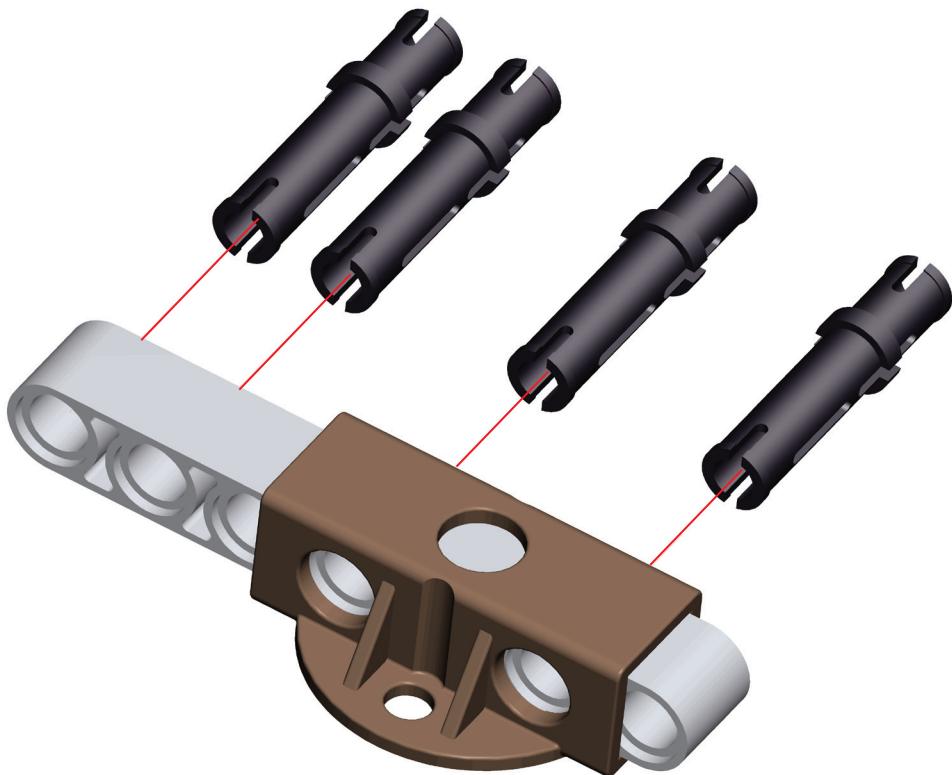
1x TETRIX® Hard Point Connector



1x 7-Module Beam

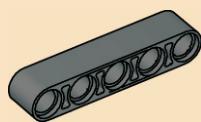


4x 3-Module Connector Peg with Friction

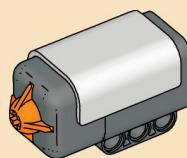


Arm and Gripper Building Guide**Step 14****Parts Needed**

2x 3-Module Connector Peg with Friction



2x 5-Module Beam



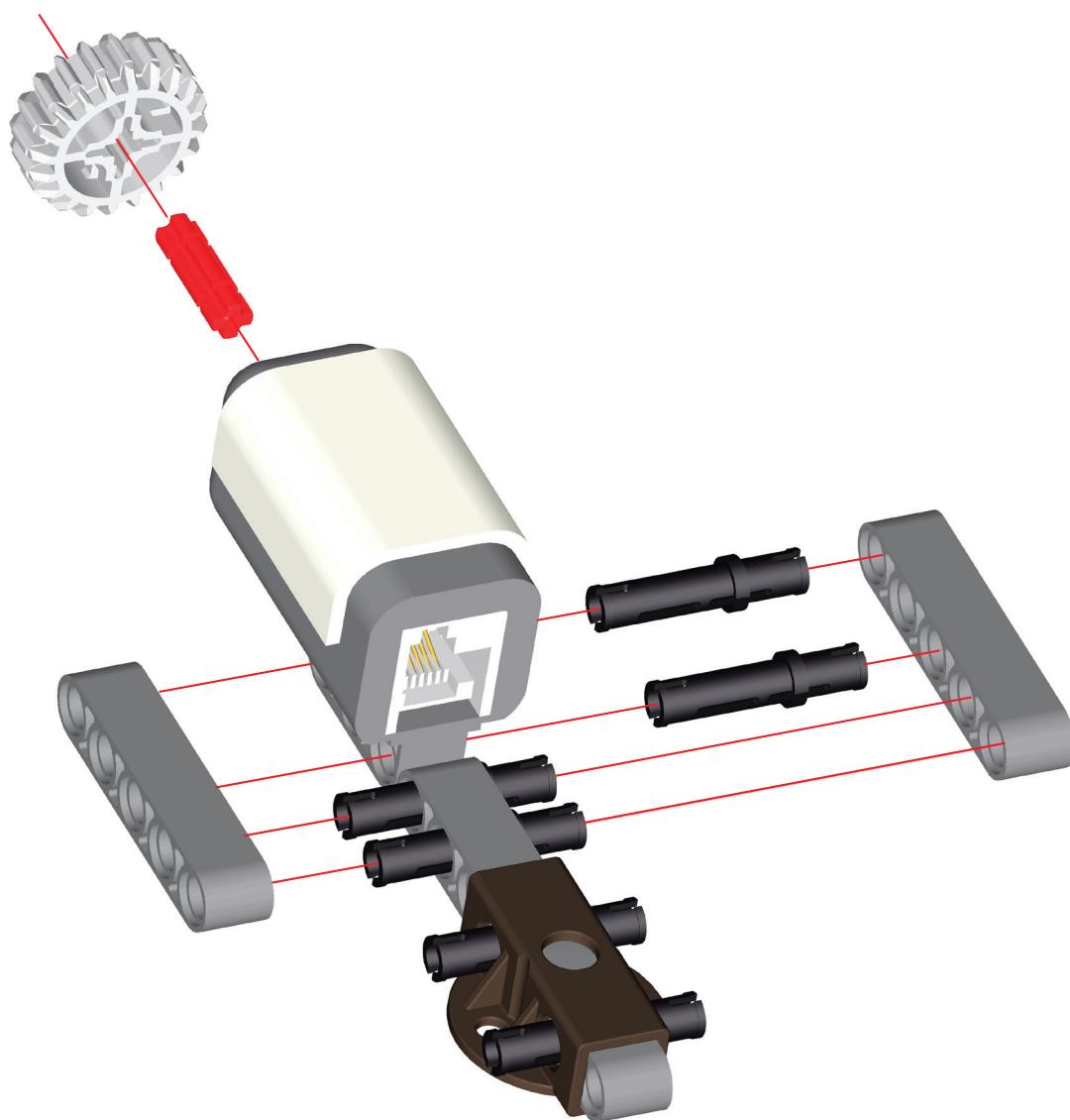
1x NXT Touch Sensor



1x 20-Tooth Gear



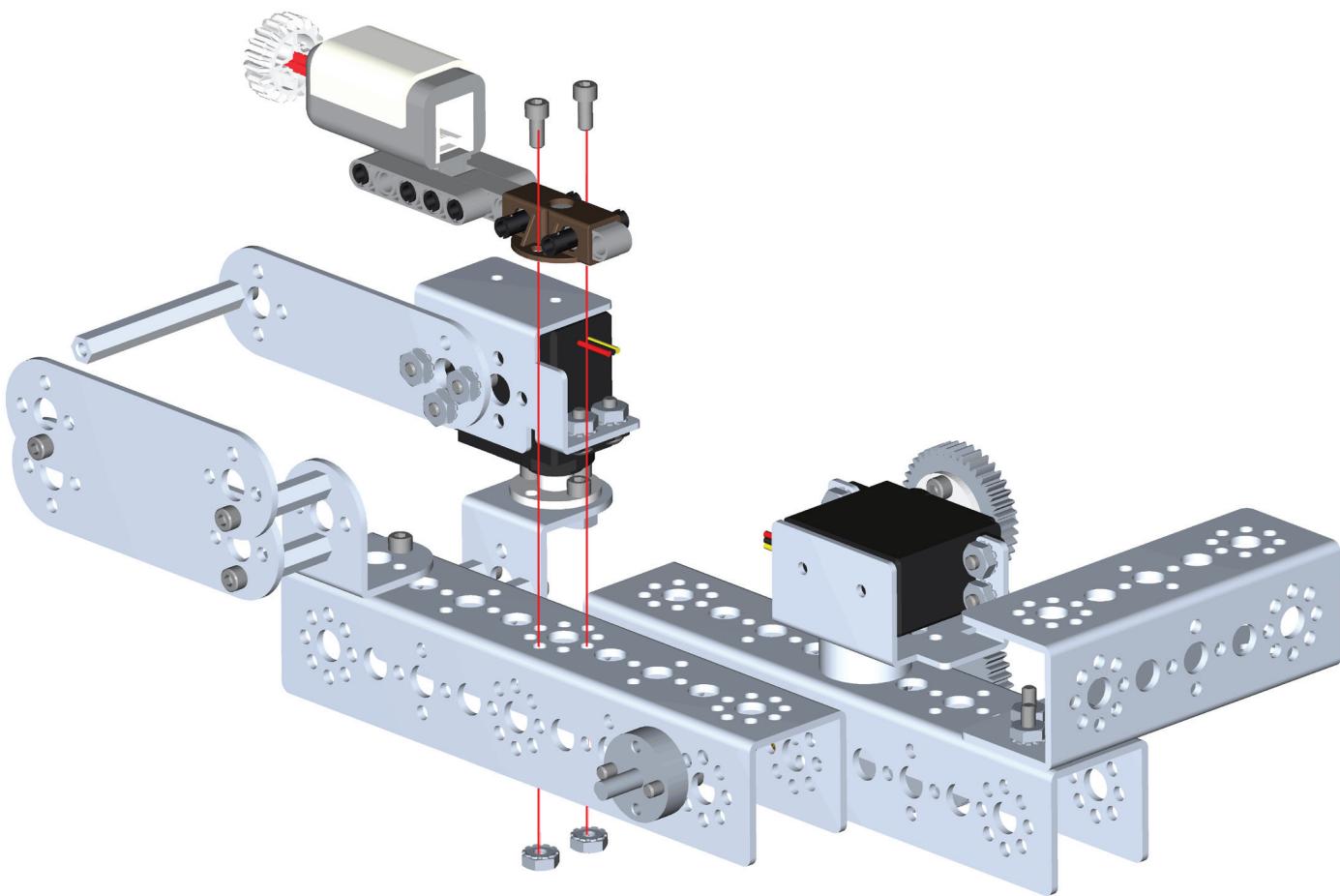
1x 2-Module Axle



Arm and Gripper Building Guide

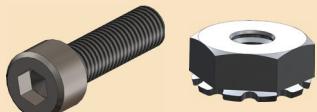
Step 15

Parts Needed

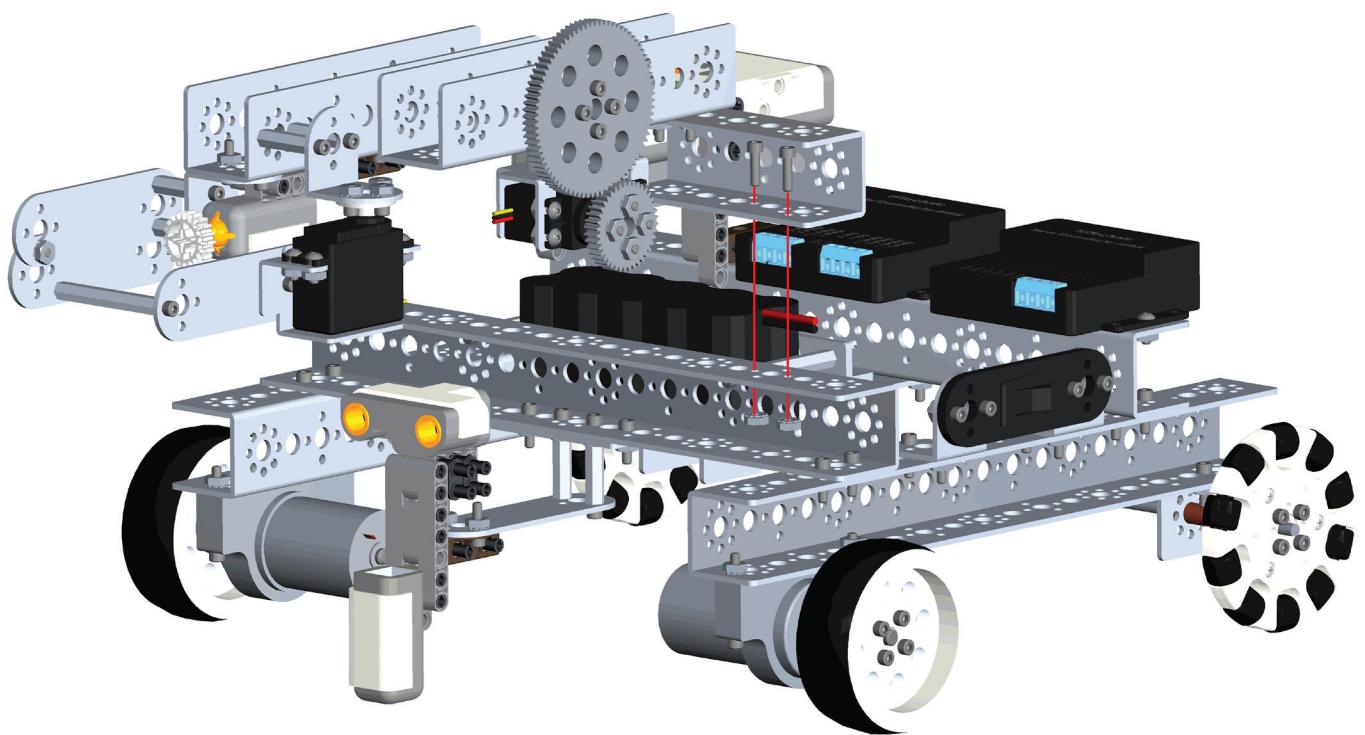


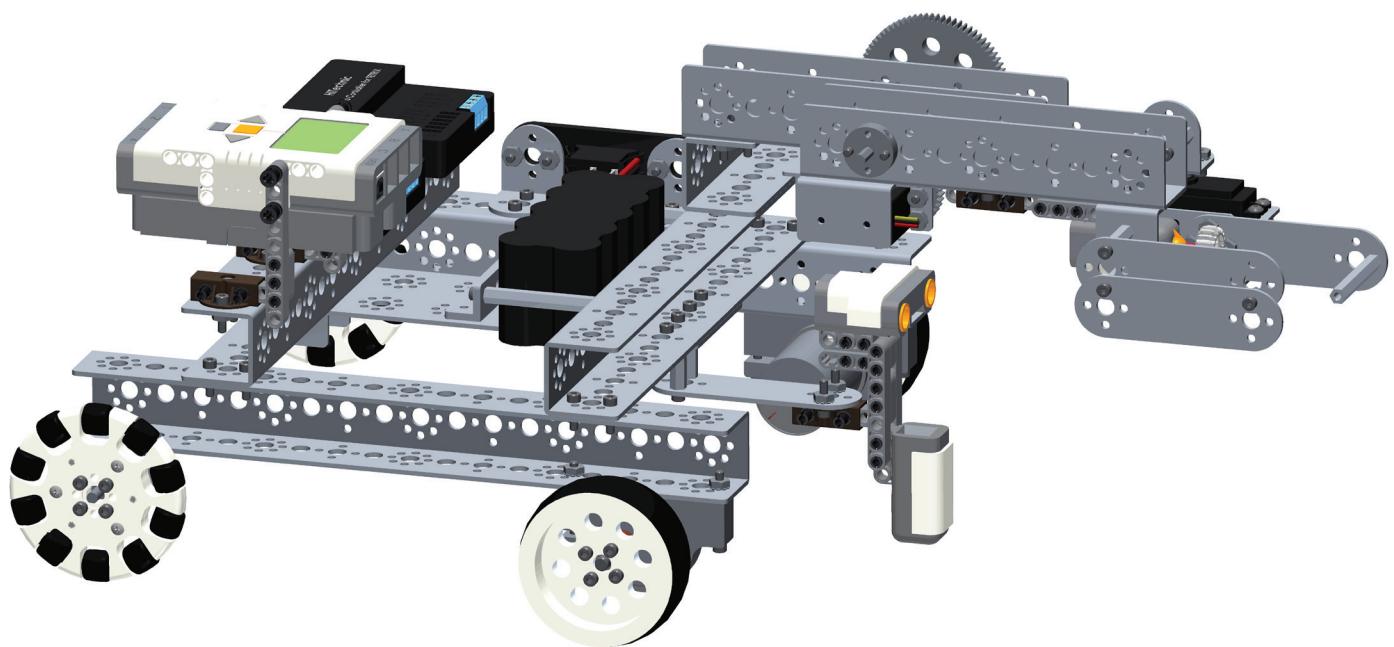
Tip

- Turn the screws only until the hard point connector is securely attached to the TETRIX® channel.

Arm and Gripper Building Guide**Step 16****Parts Needed**

2x 1/2" SHCS 2x Kep Nut



Arm and Gripper Building Guide**Final View**

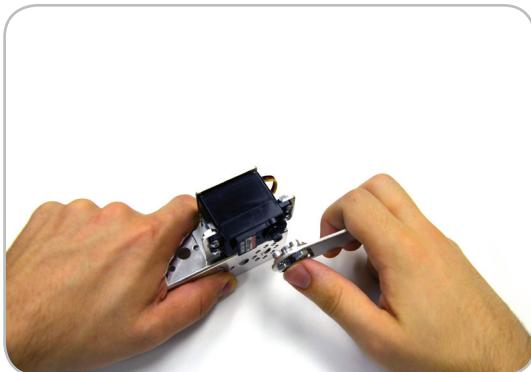
Arm and Gripper Building Guide

Servo Horn Adjustment

Note: Whenever a servo motor is used to attach an extension, care must be taken to properly adjust the servo motor position so that the desired range of motion is achieved. The best way to adjust the servo position is to unscrew the servo horn and use it, and the extension that has been built onto it, like a wrench.

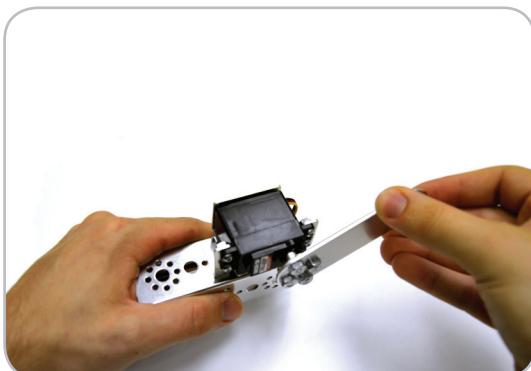
Step 1 Starting Point:

Attach the servo horn to adjust the servo position.



Step 2 Rotate:

Rotate the servo so that it has been positioned at the end of its range of motion.



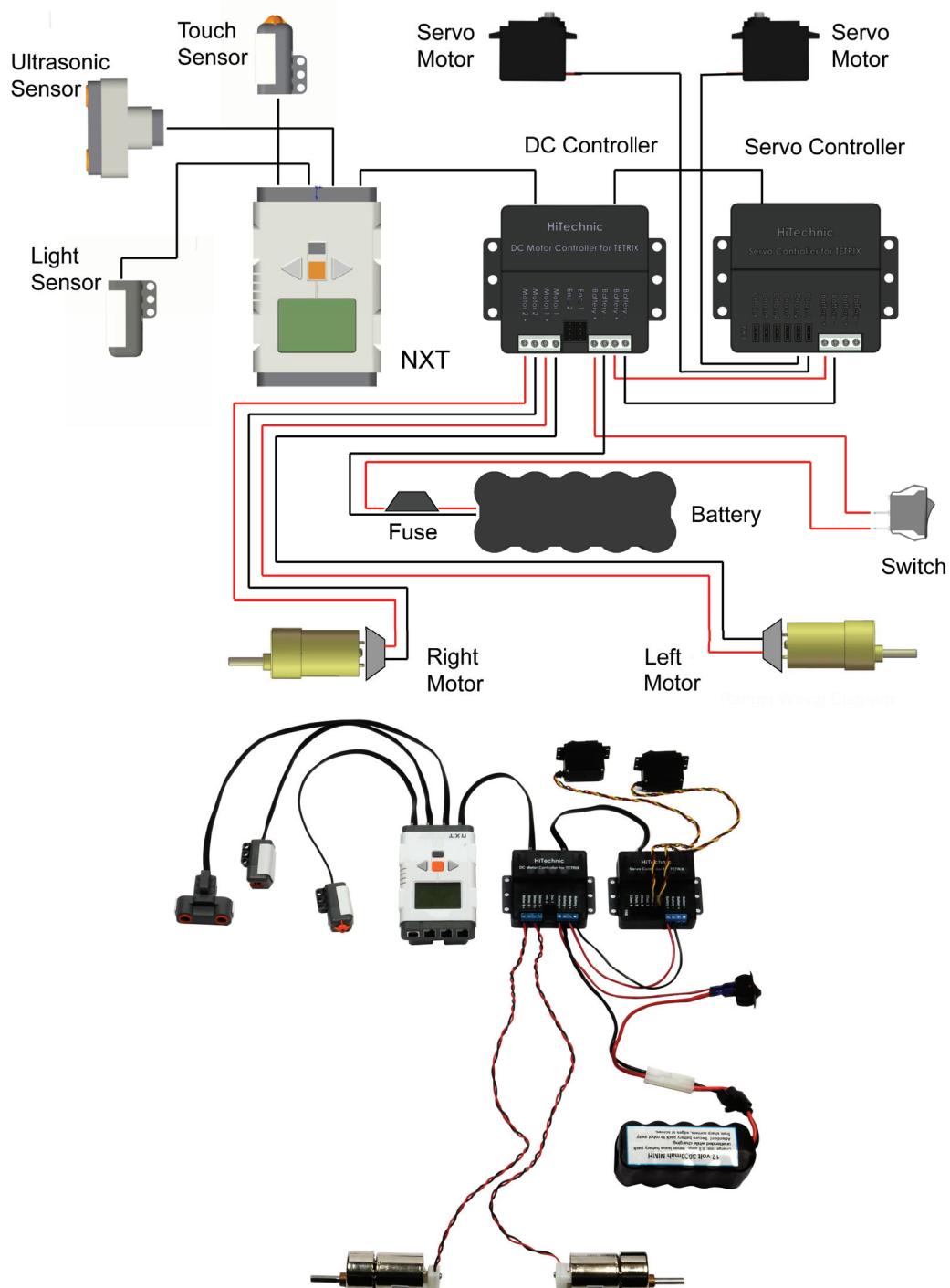
Step 3 Final Positioning:

Reattach the servo horn with the extension piece in the appropriate position for that servo location.



Arm and Gripper Building Guide

Wiring Diagram



Tips

- Tighten the screws on the HiTechnic controller after the wires have been inserted.
- ⚠ Complete all wiring before attaching the battery.