



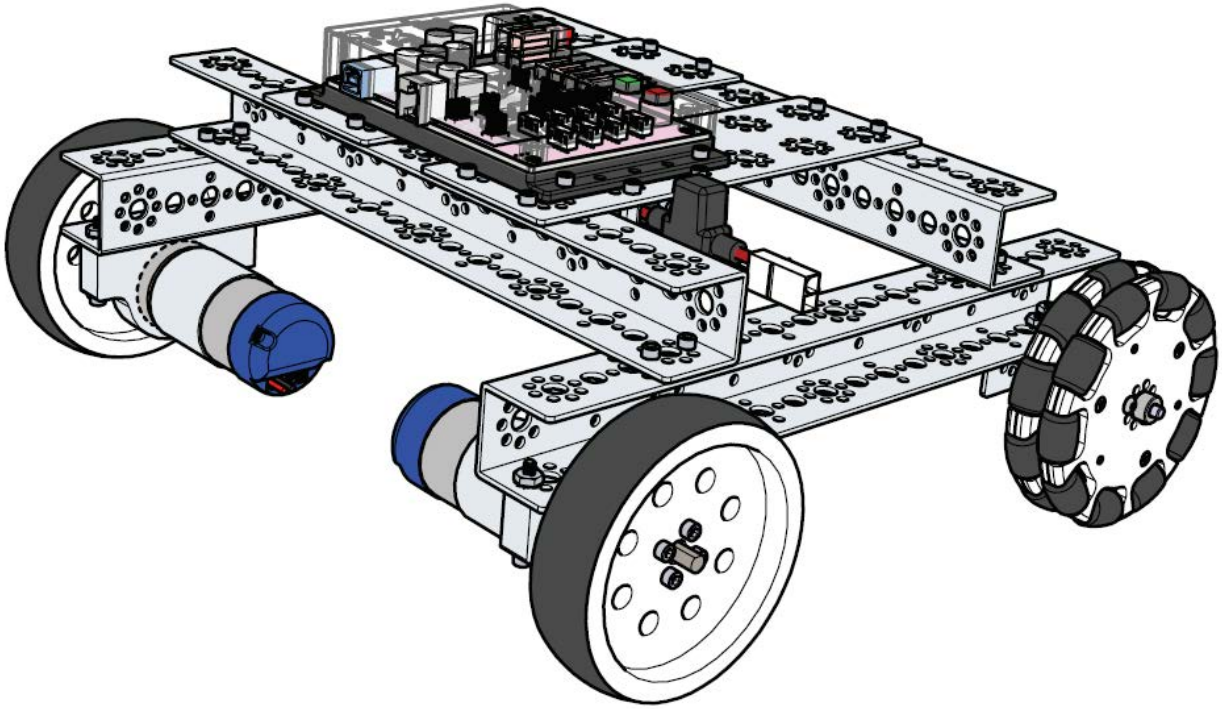
Appendix D

Mobile Robotics

SECONDARY

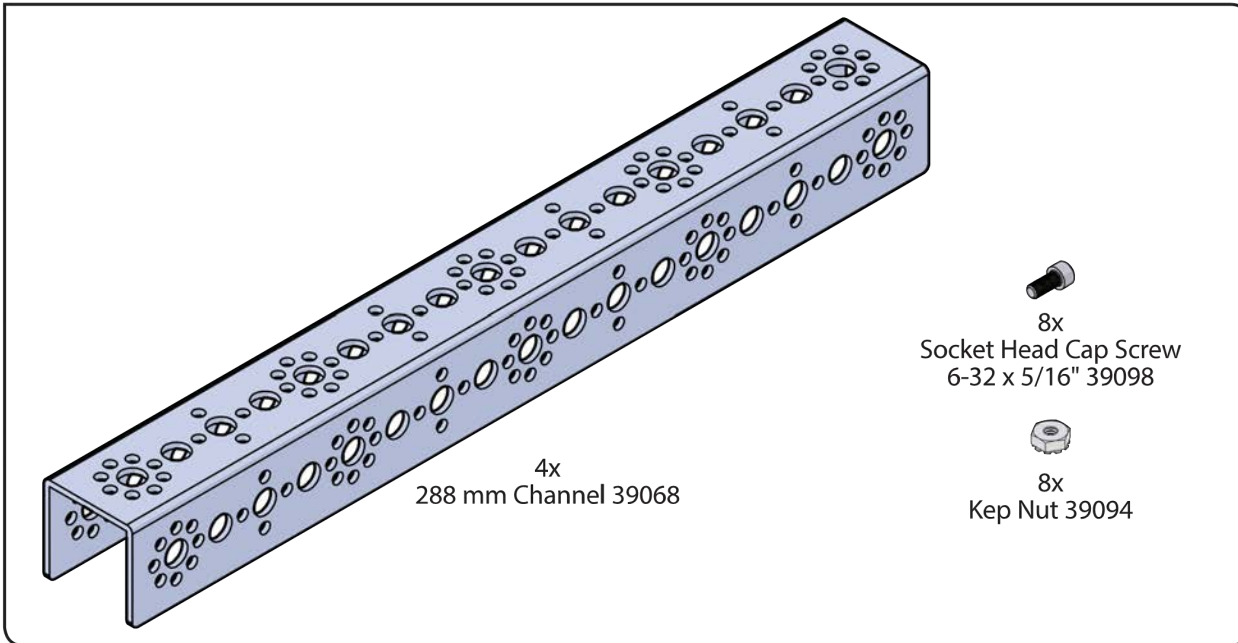
Appendix D: Approved Autonomous Challenge Chassis Optional pre-build


Overall:



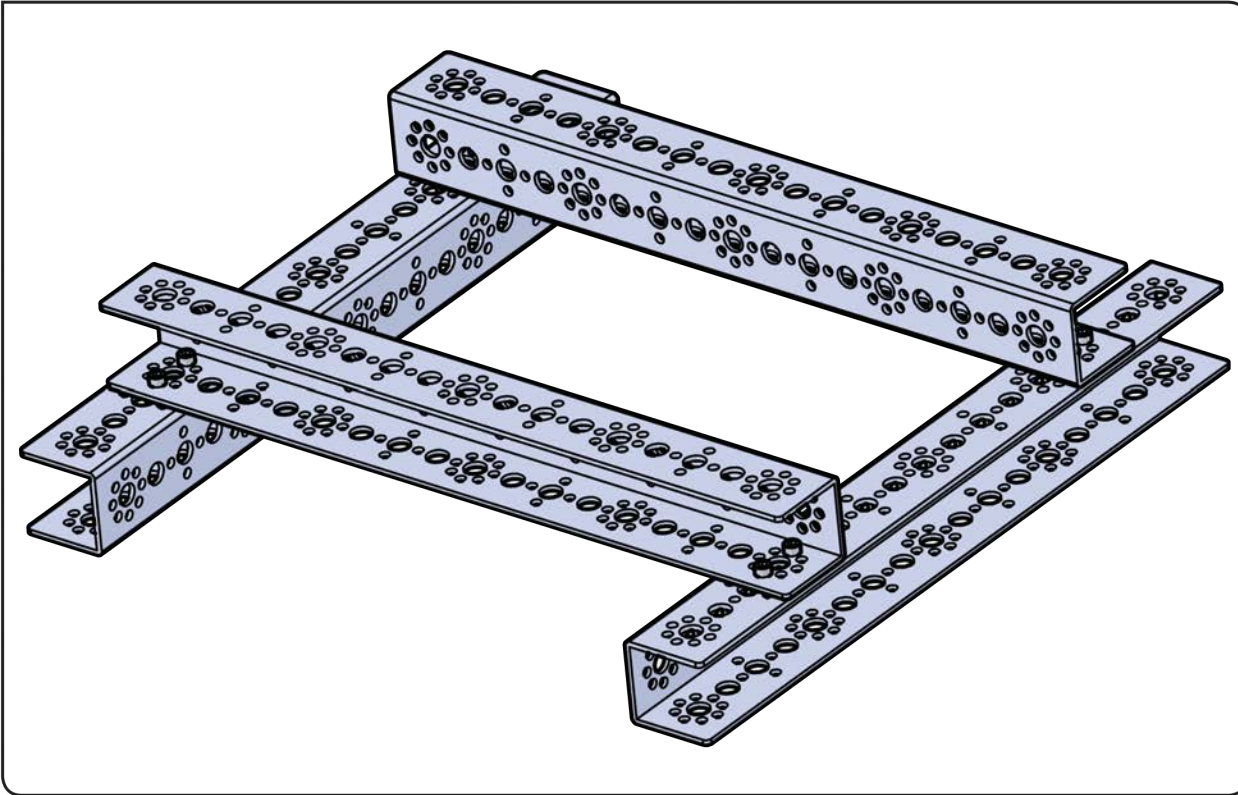
Step 1

Parts Needed

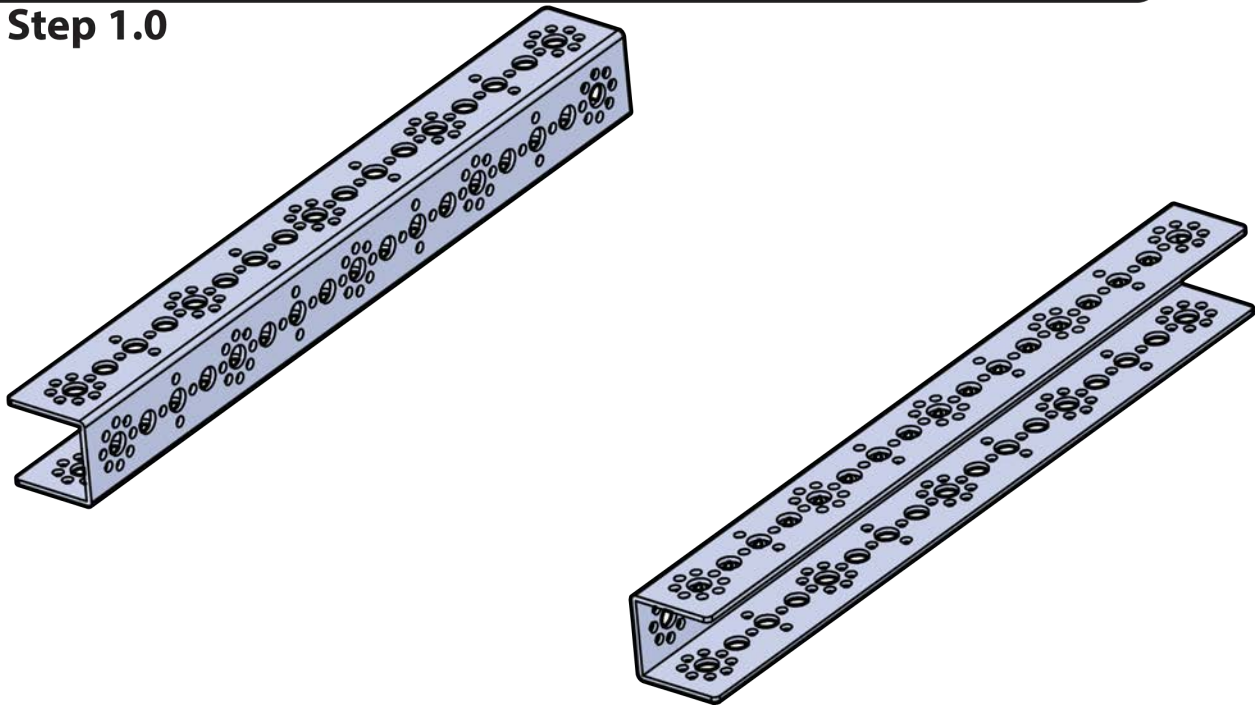


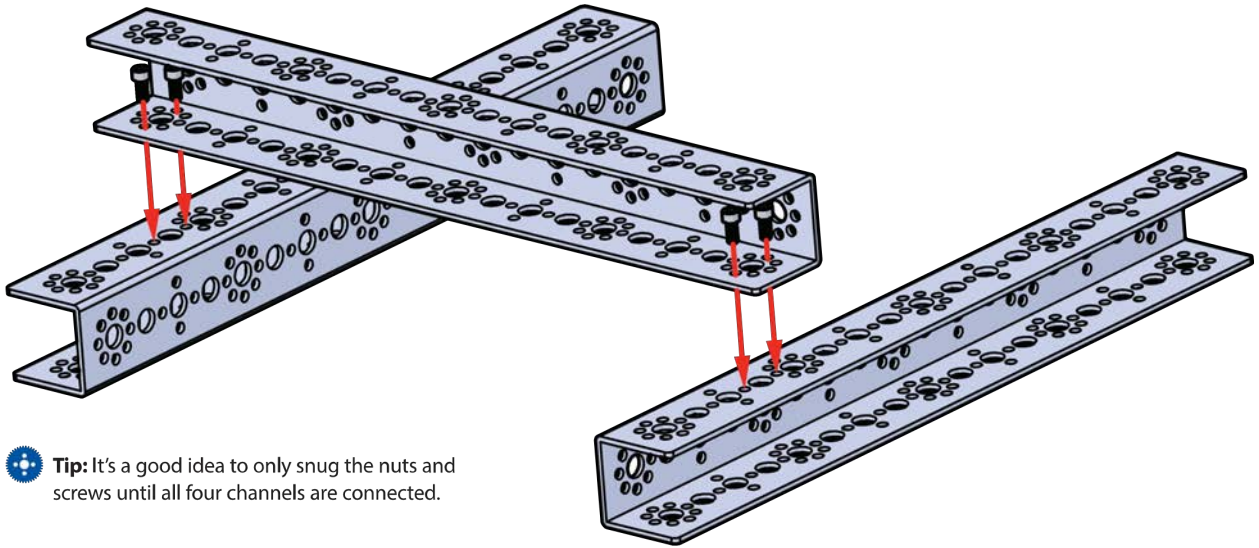
 **Tip:** See page 36 for help with identifying channel elements. Remember, channels are identified by length.


Partial assembly should look like this.



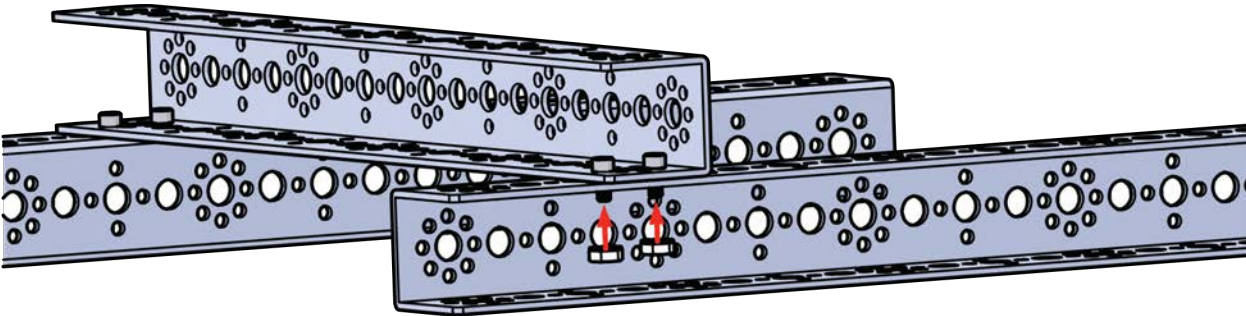
Step 1.0



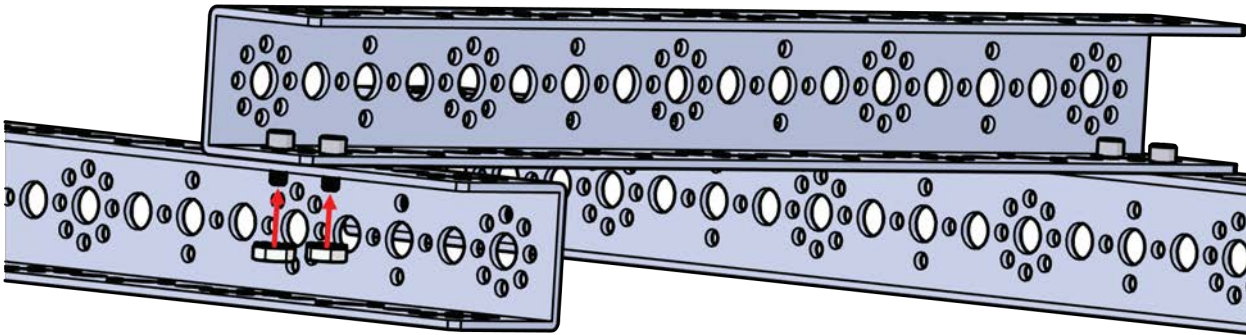


 **Tip:** It's a good idea to only snug the nuts and screws until all four channels are connected.

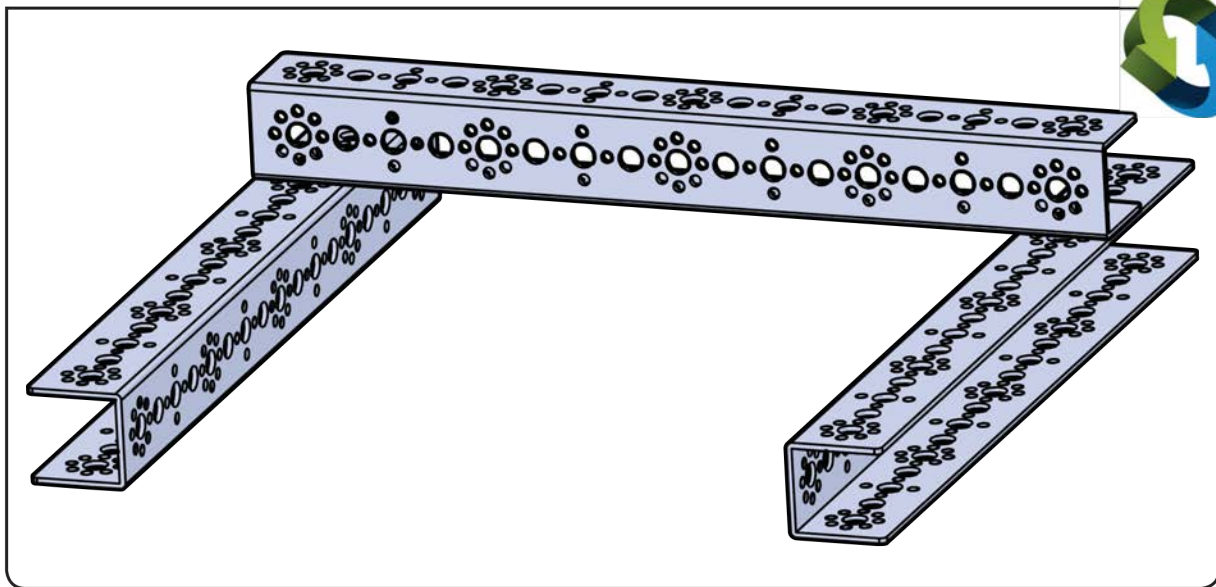
Step 1.2

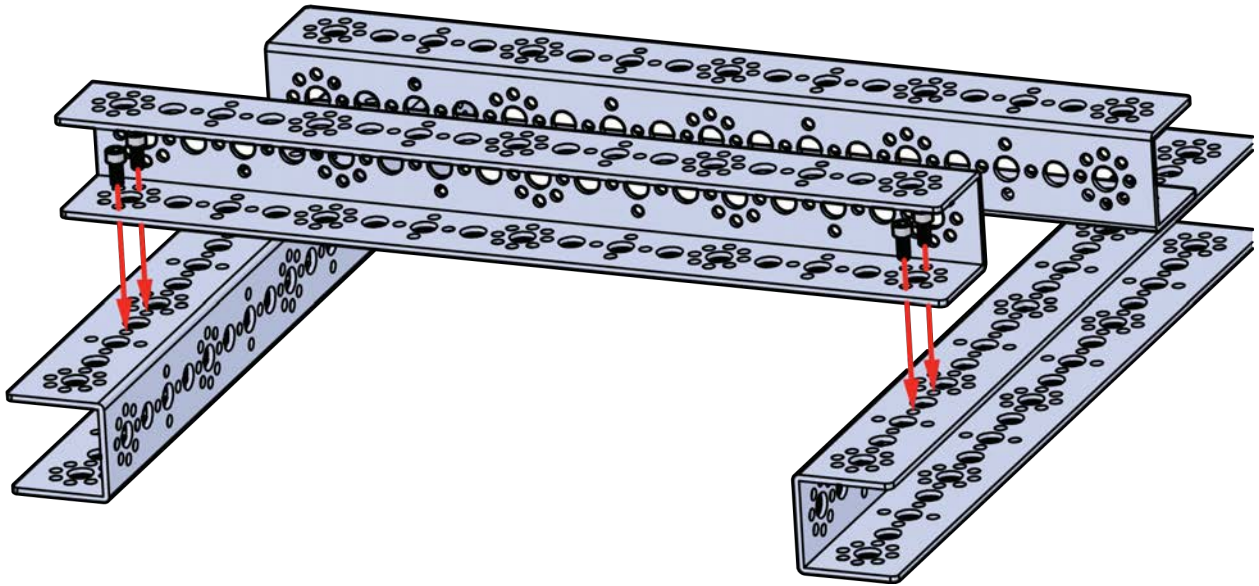


Step 1.3

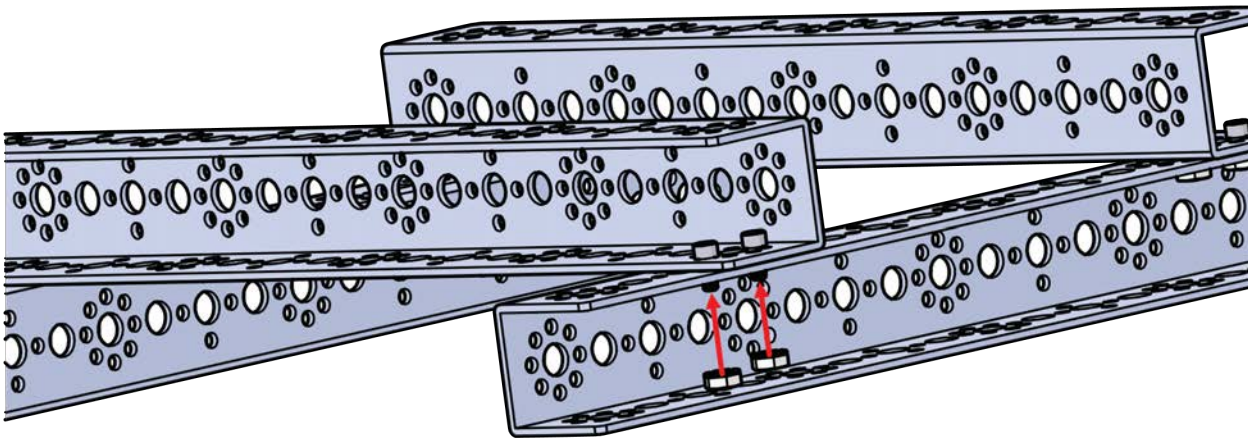


Rotate build to match this view.

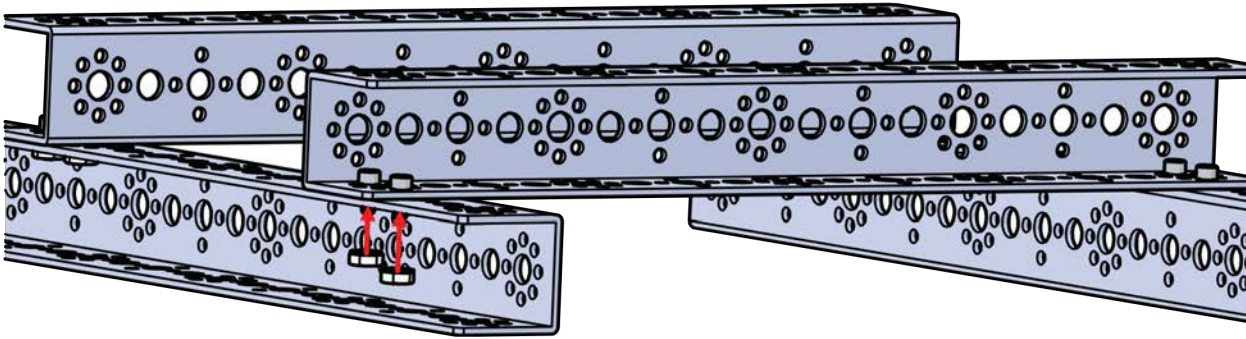





Step 1.5

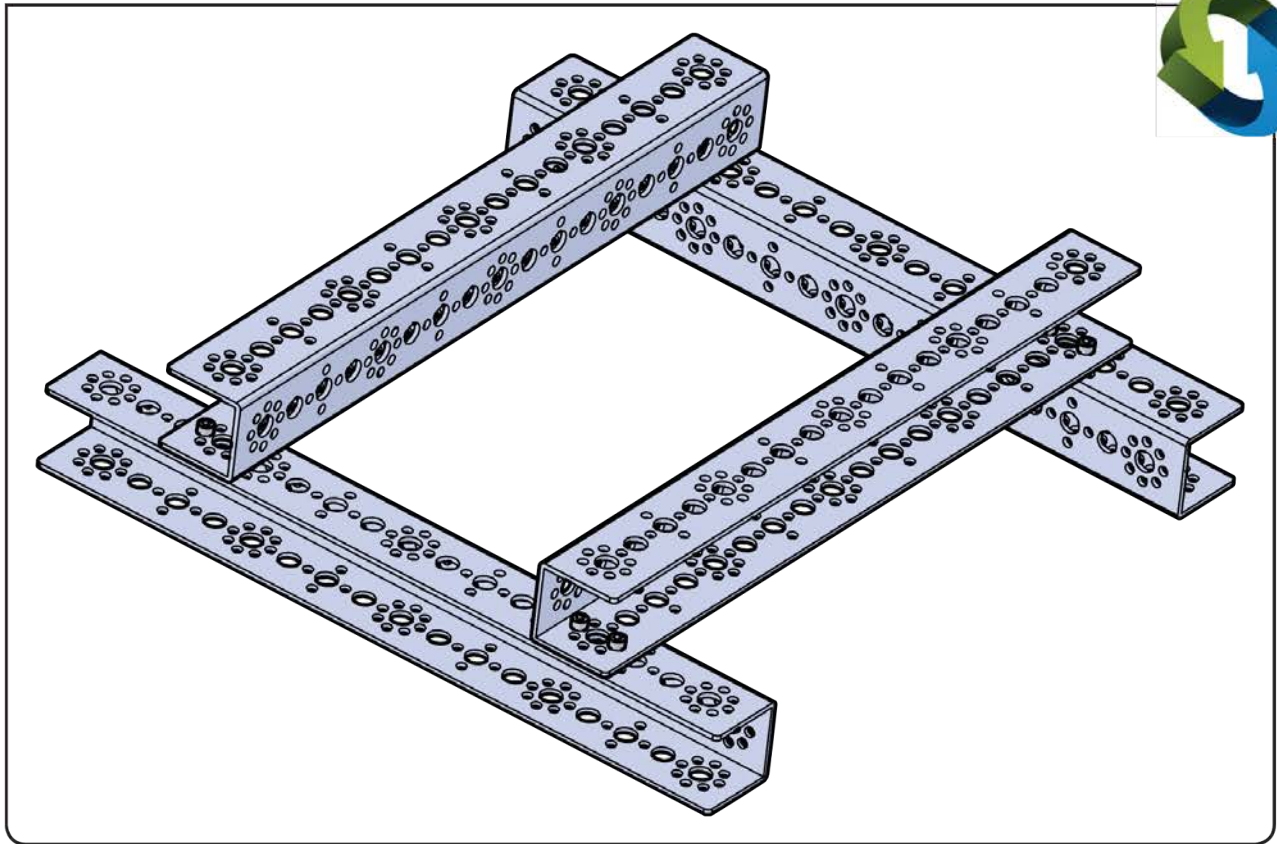


Step 1.6

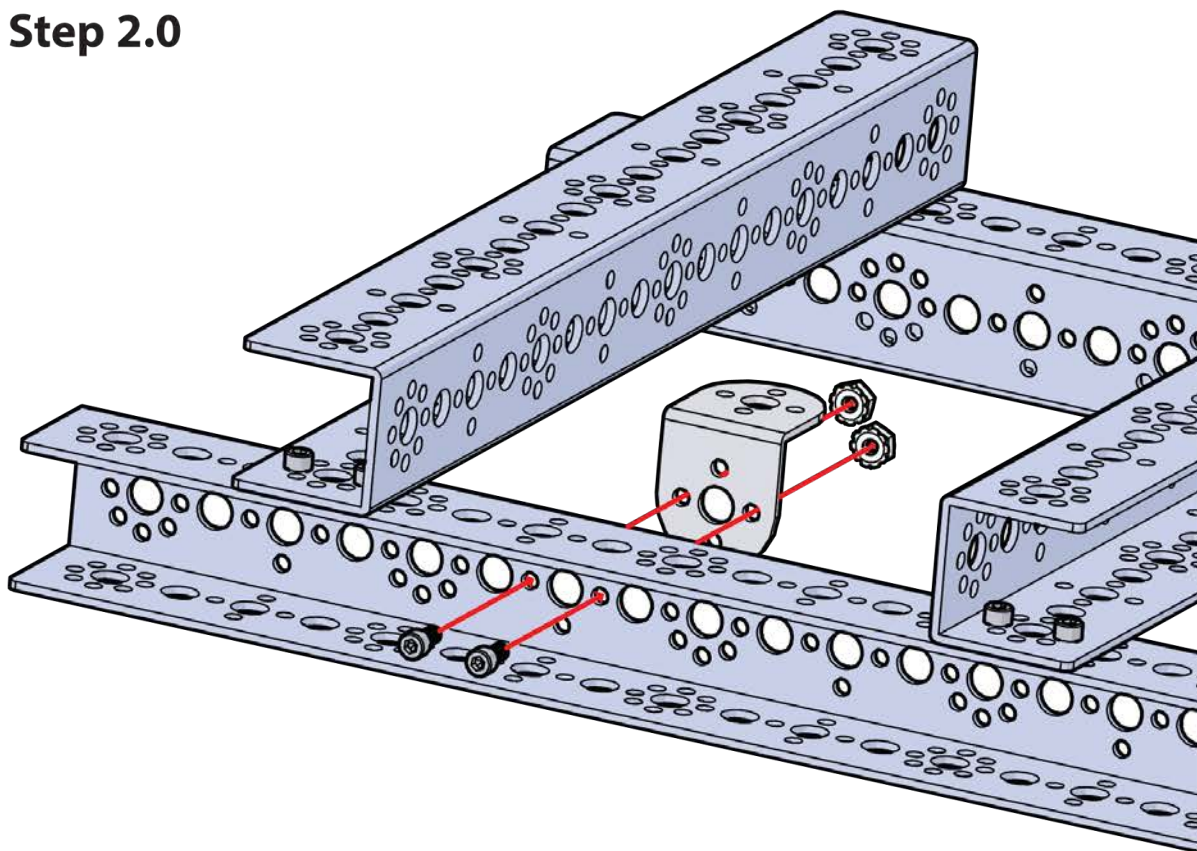


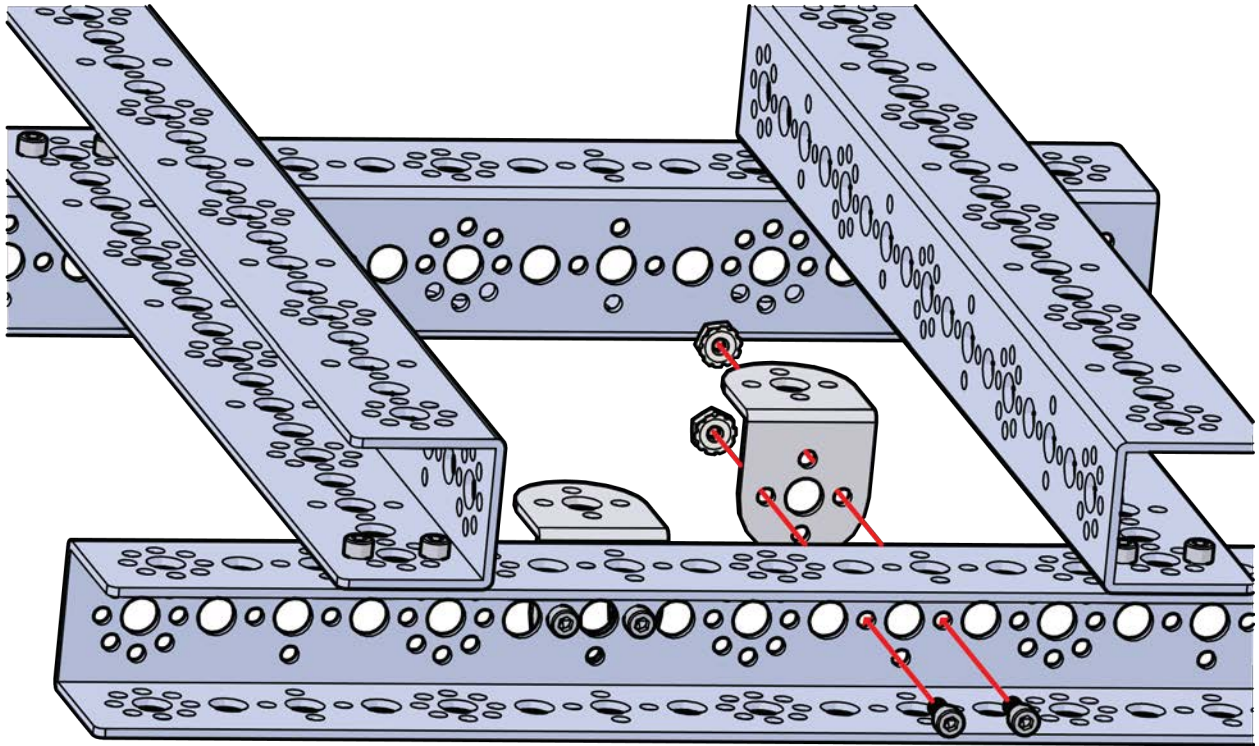
 **Tip:** After all four channels are connected and the square frame is created, don't forget to go back and tighten all the screws and nuts.

Rotate build to match this view.

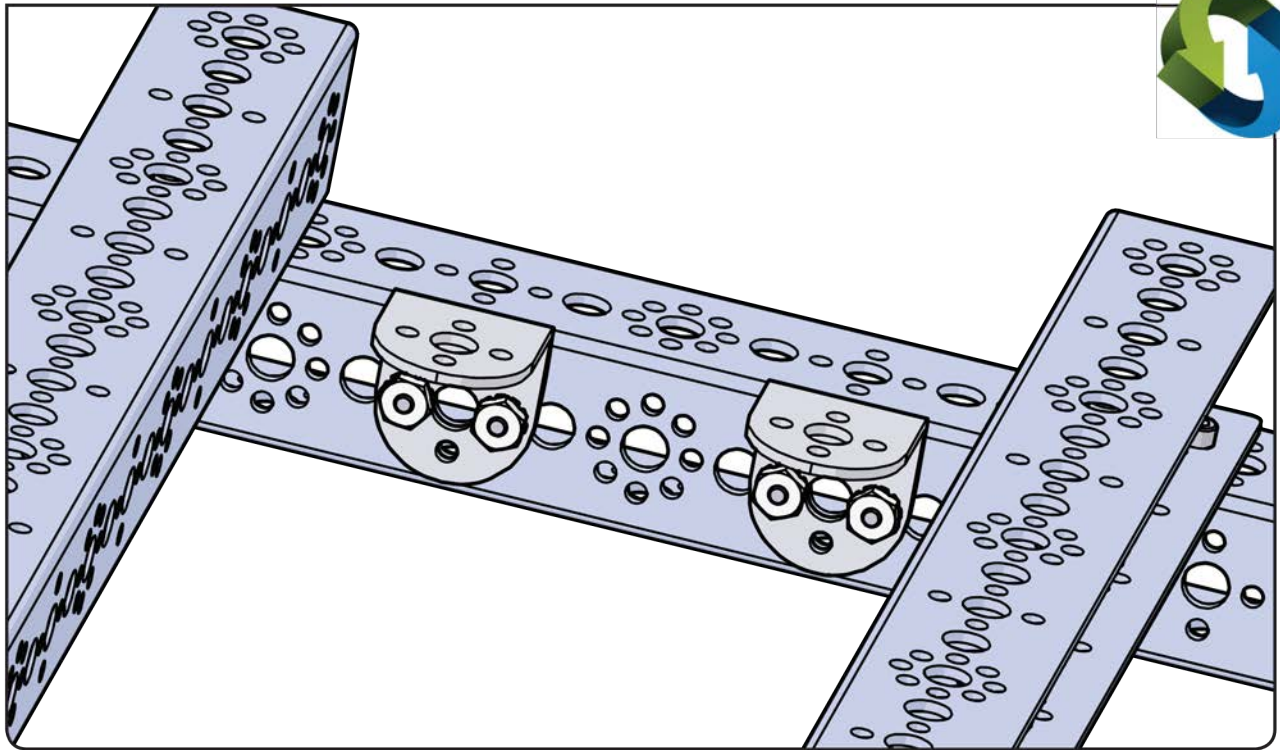


Step 2.0

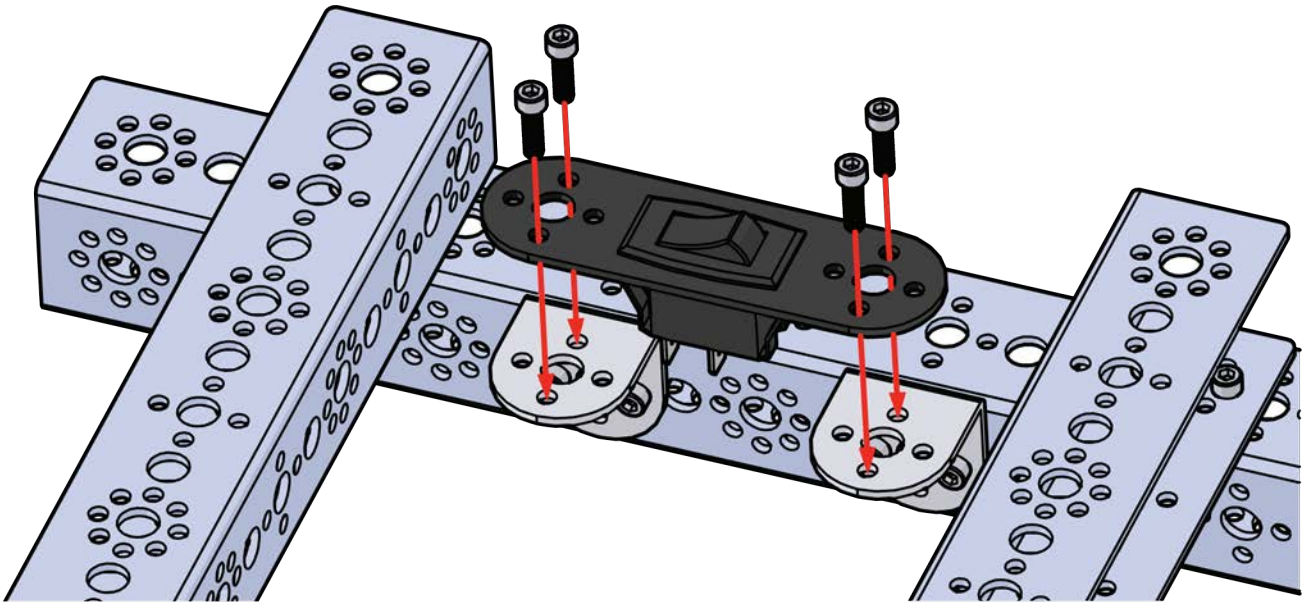





Rotate build to match this view.

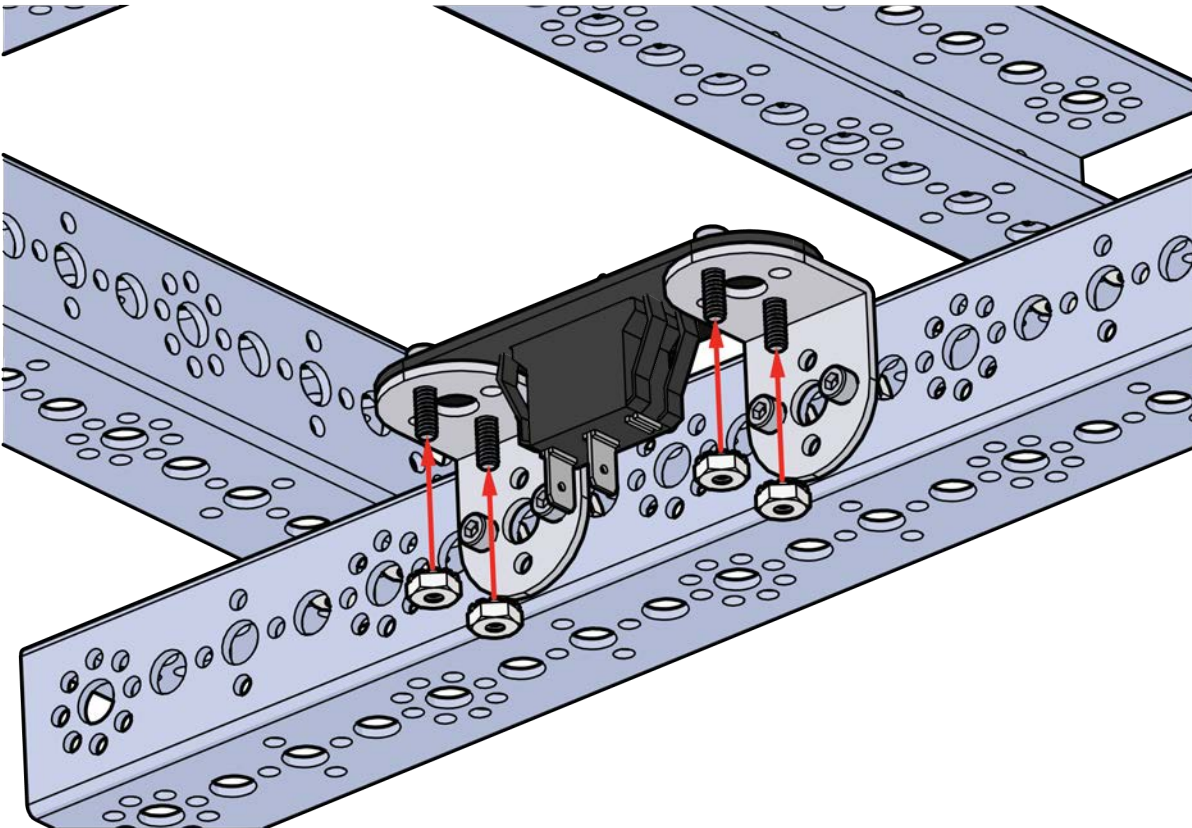


 **Tip:** This step uses Socket Head Cap Screws (39097).

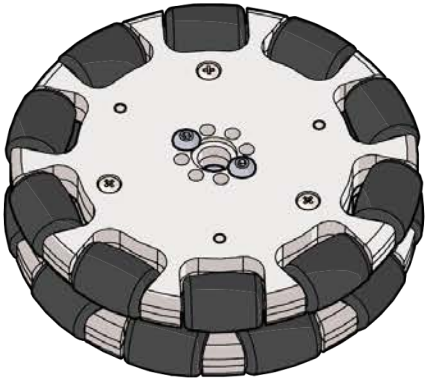
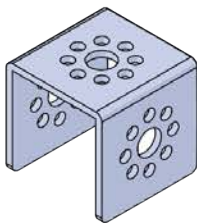
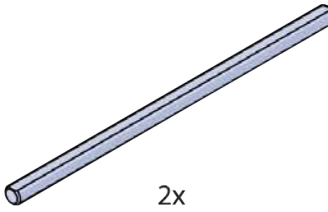







 **Tip:** It does not matter in which direction the on/off power switch is mounted in the plate. It is strictly a matter of personal preference.

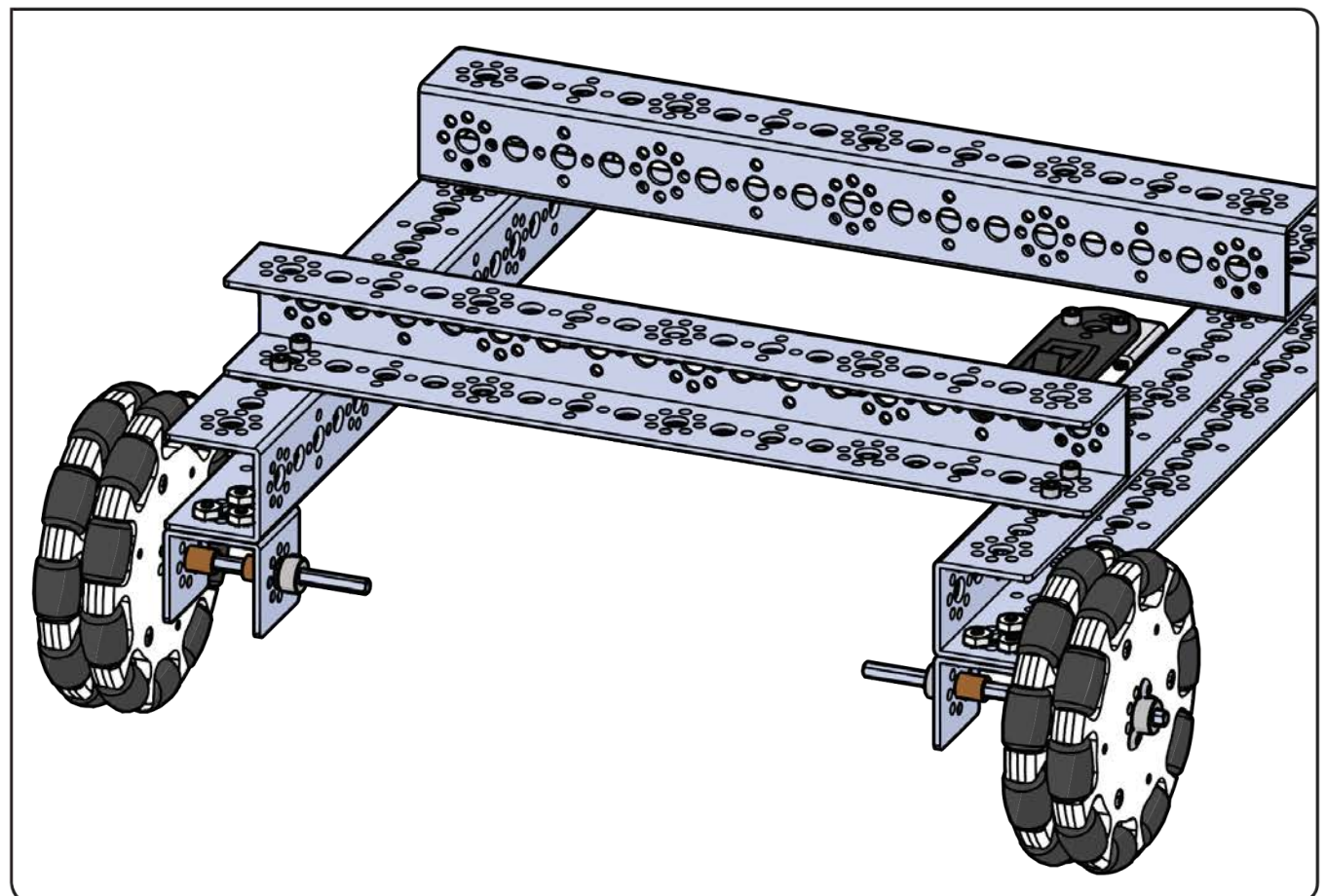
Step 2.3

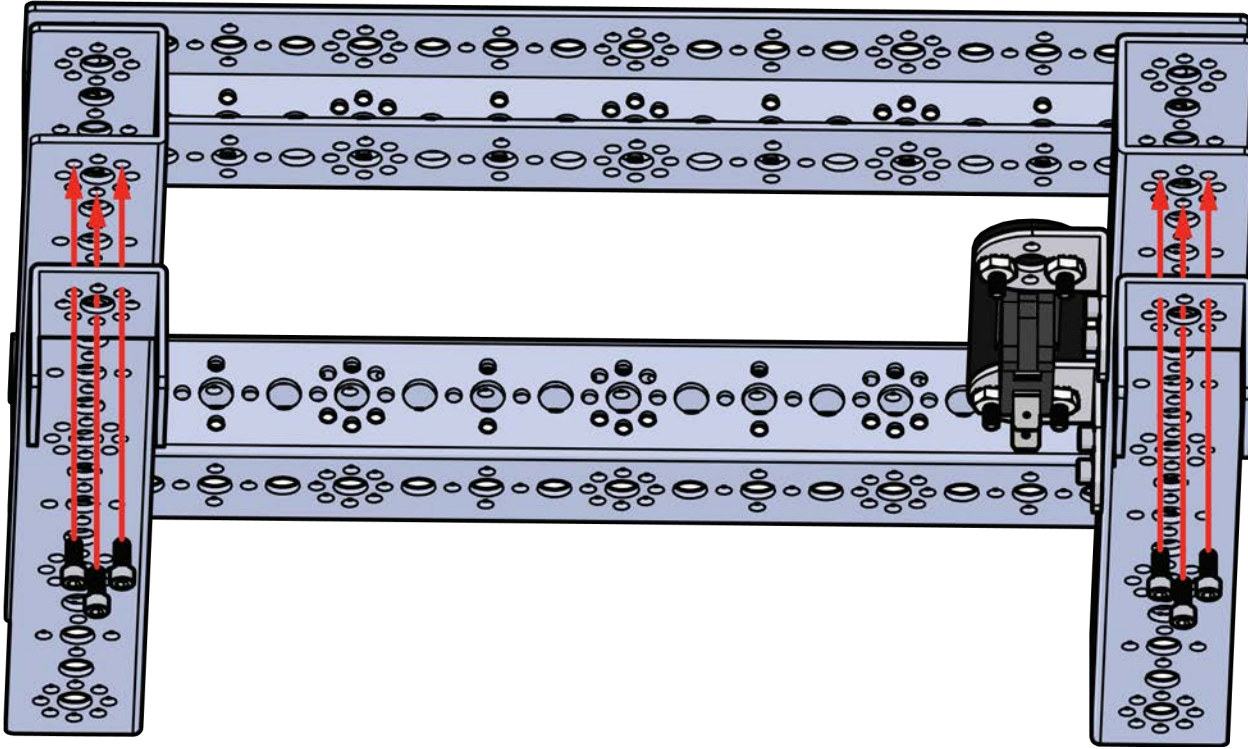


Parts Needed

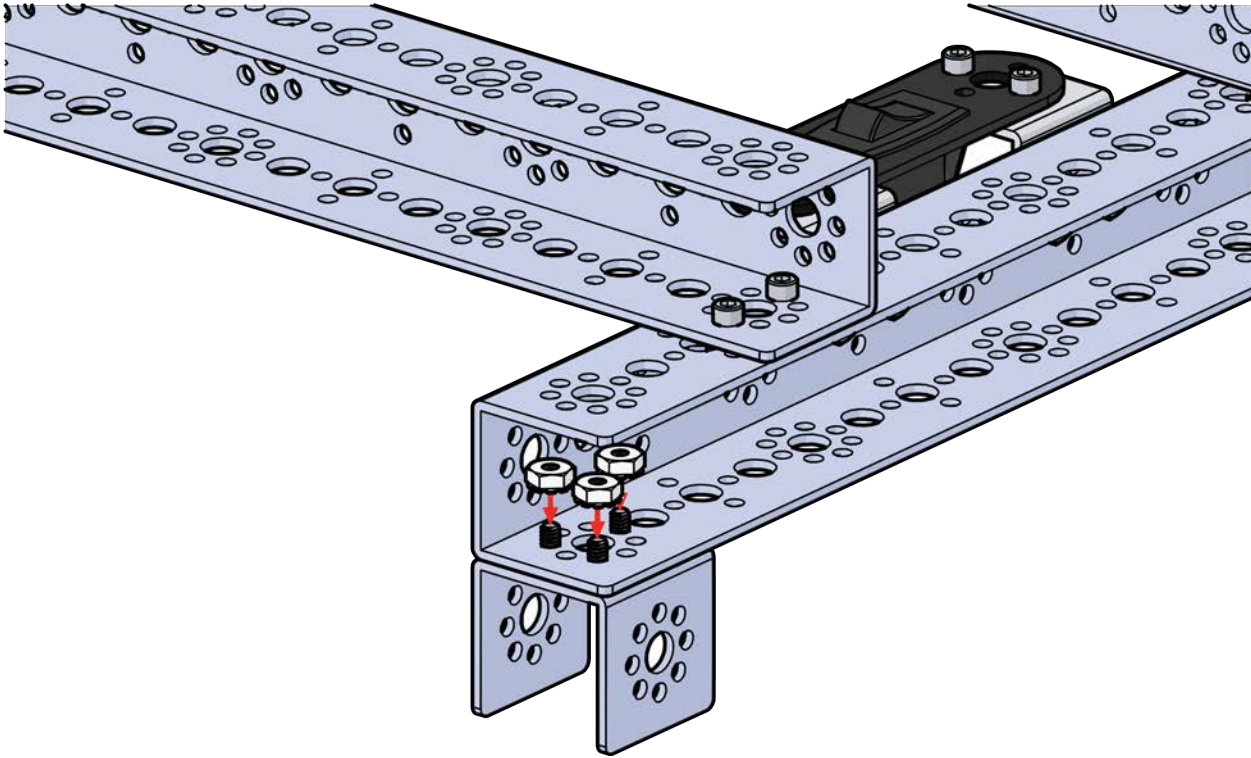
			
<p>2x 4" Omni Wheel Pack/Assembly 36466</p>	<p>2x 32 mm Channel 39065</p>	<p>2x 100 mm Axle 39088</p>	<p>4x Axle Set Collar 39092</p>
			
<p>4x Bronze Bushing 39091</p>	<p>6x Socket Head Cap Screw 6-32 x 5/16" 39098</p>	<p>6x Kep Nut 39094</p>	<p>2x Axle Spacer 1/8" 39100</p>

Partial assembly should look like this.

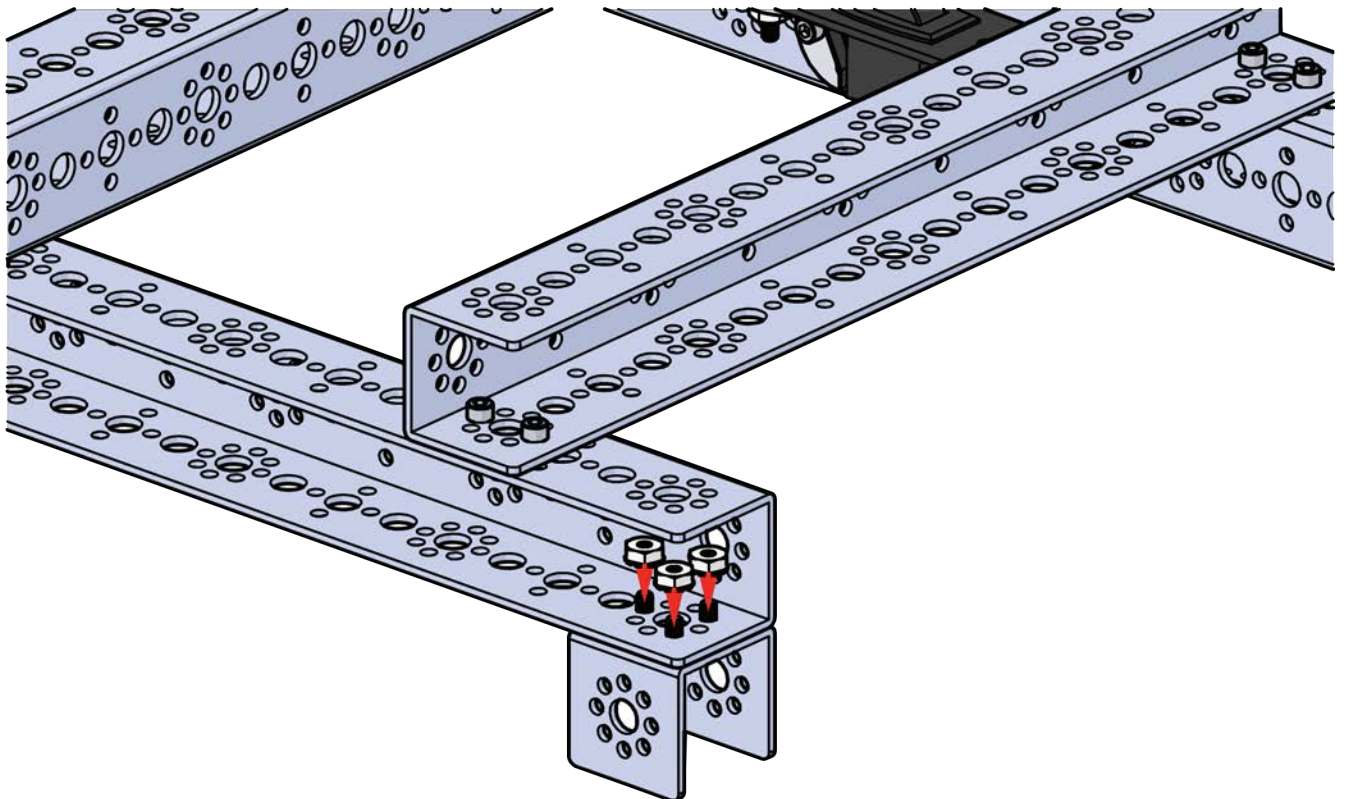


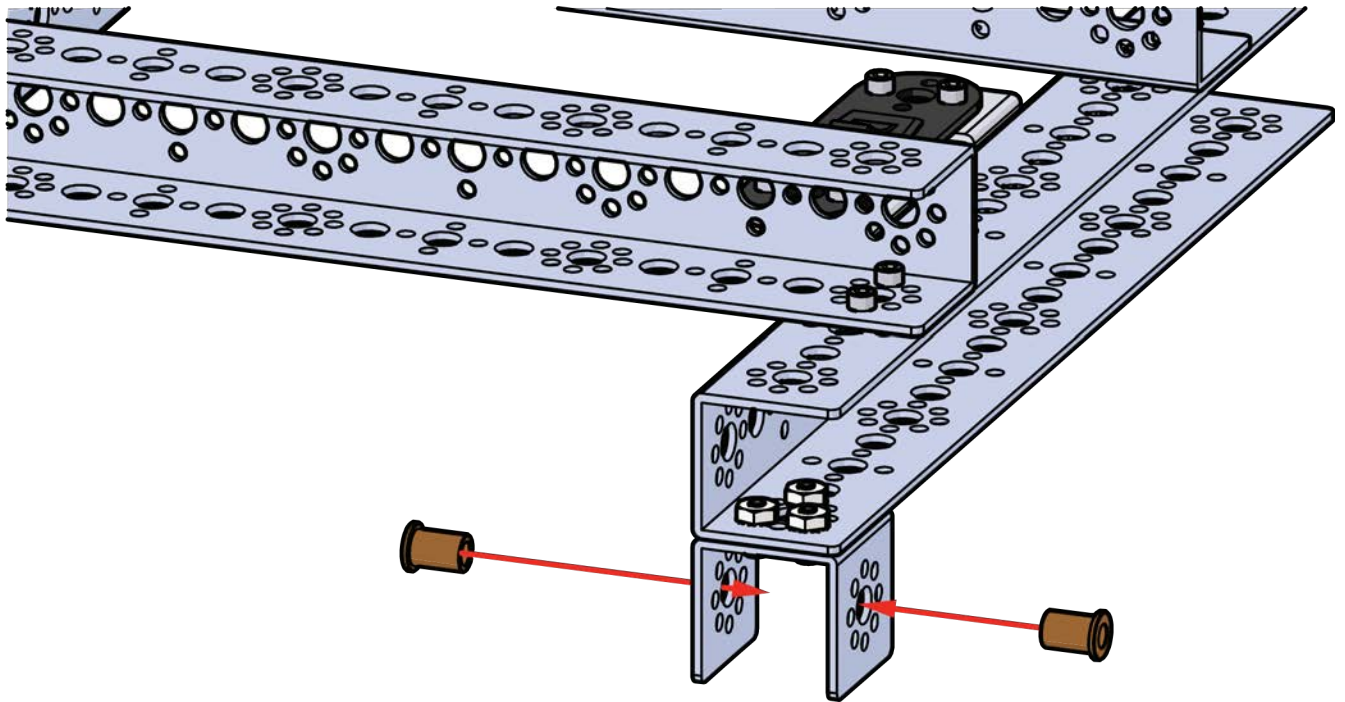


Step 3.1

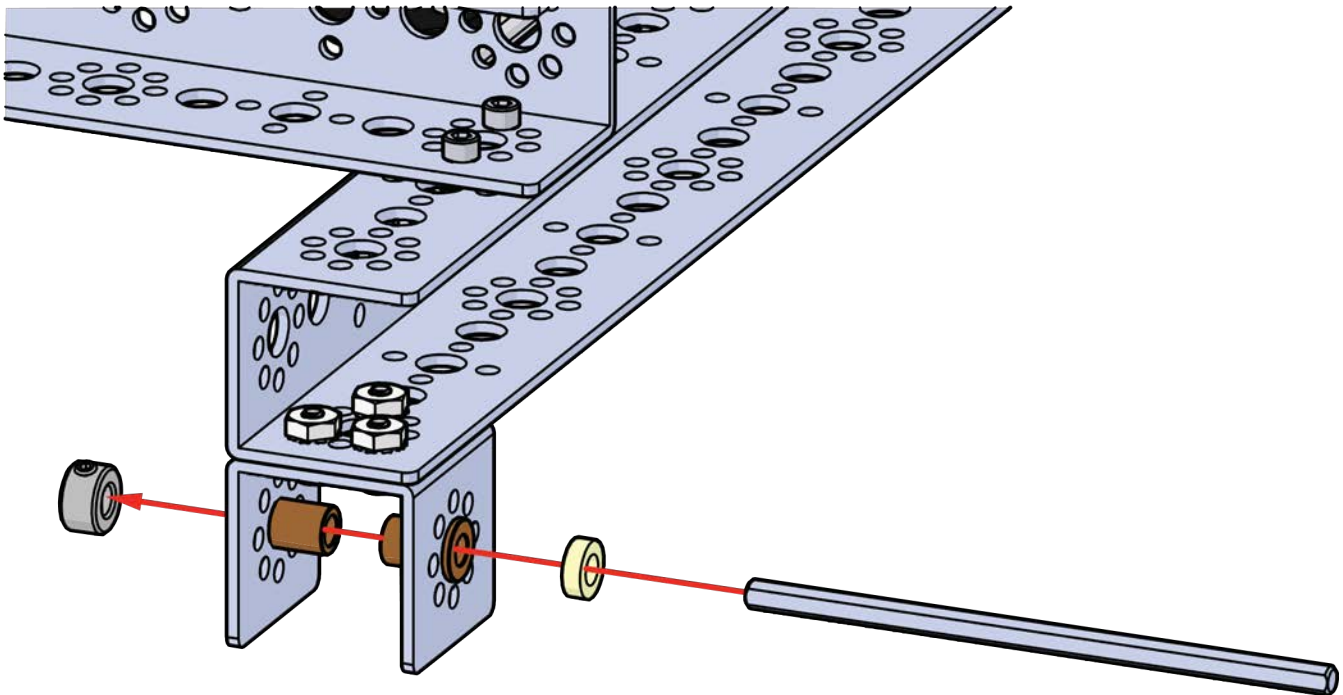


p .2

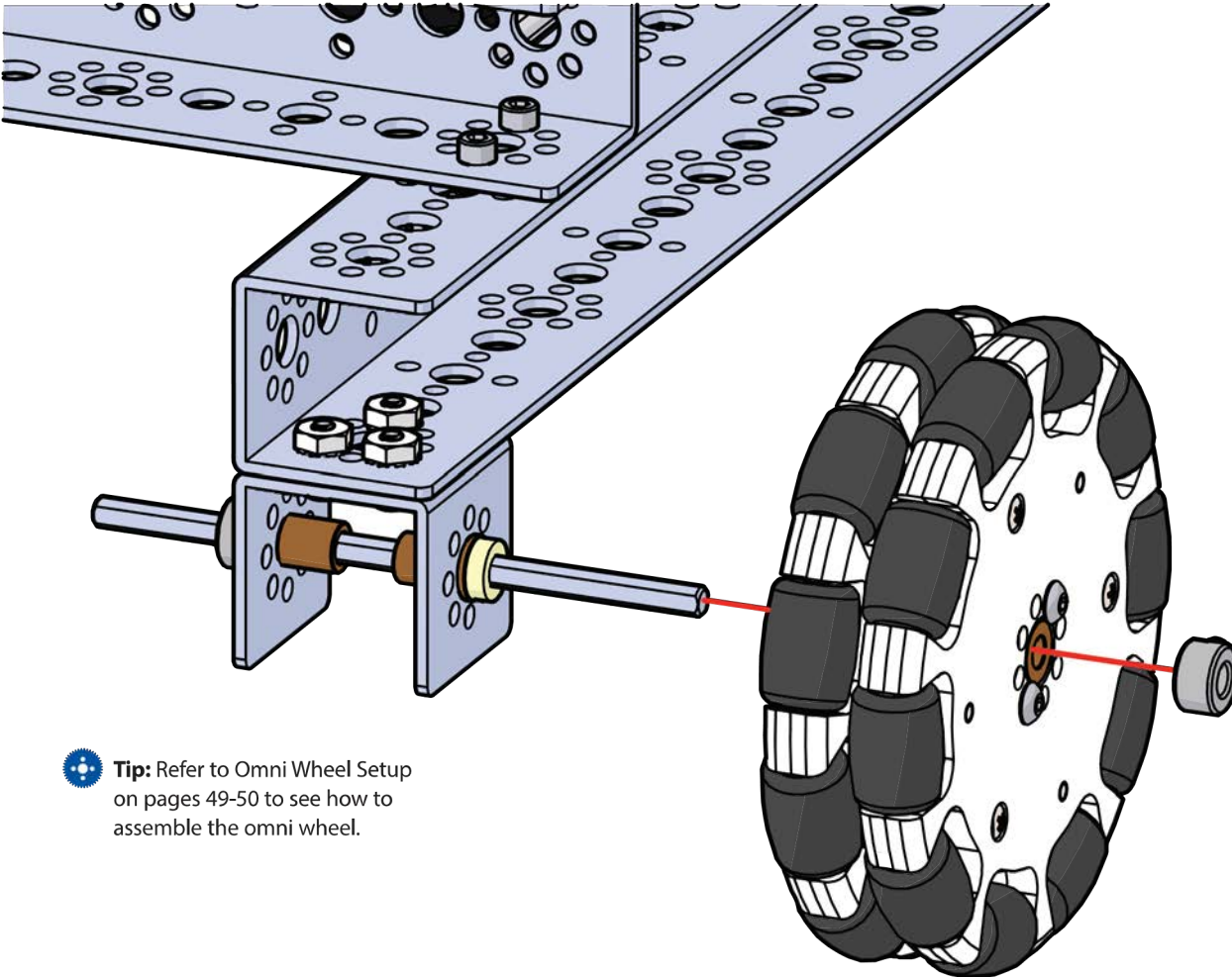





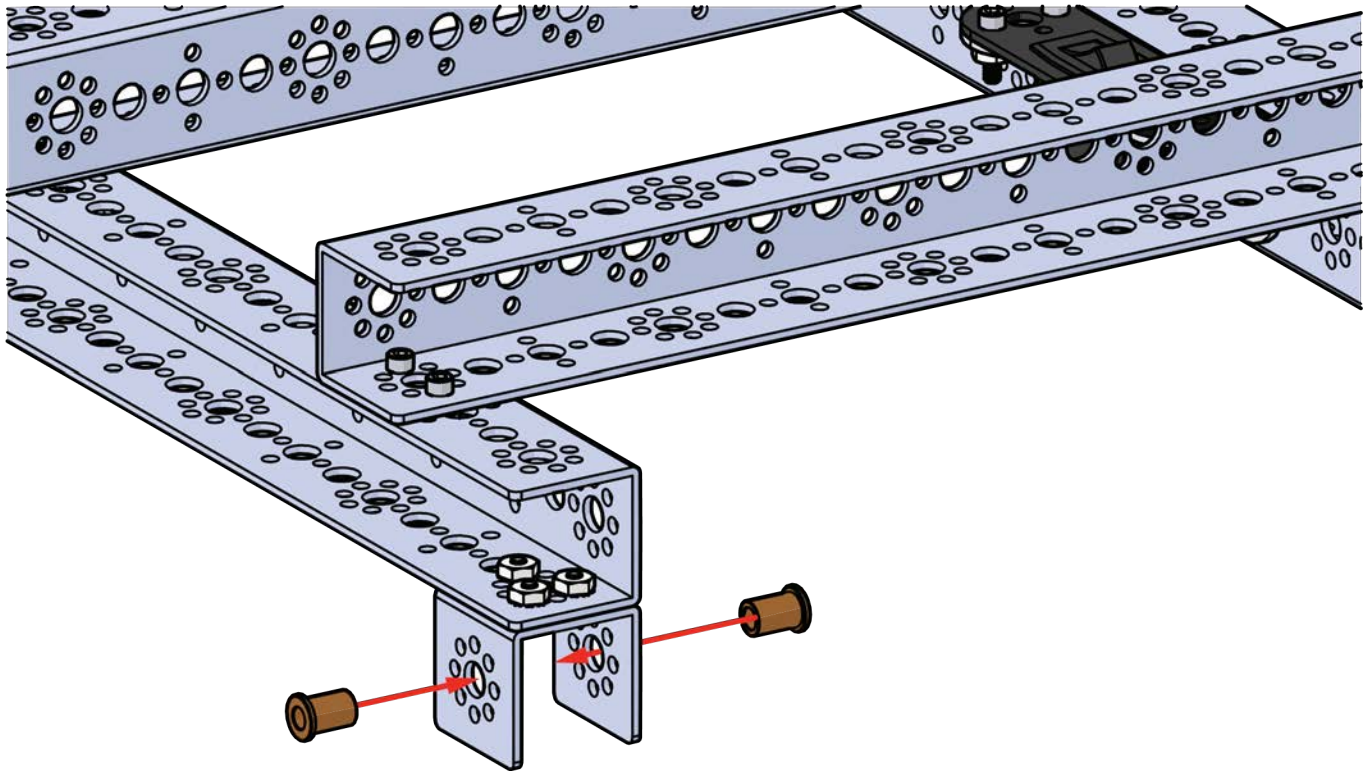
4



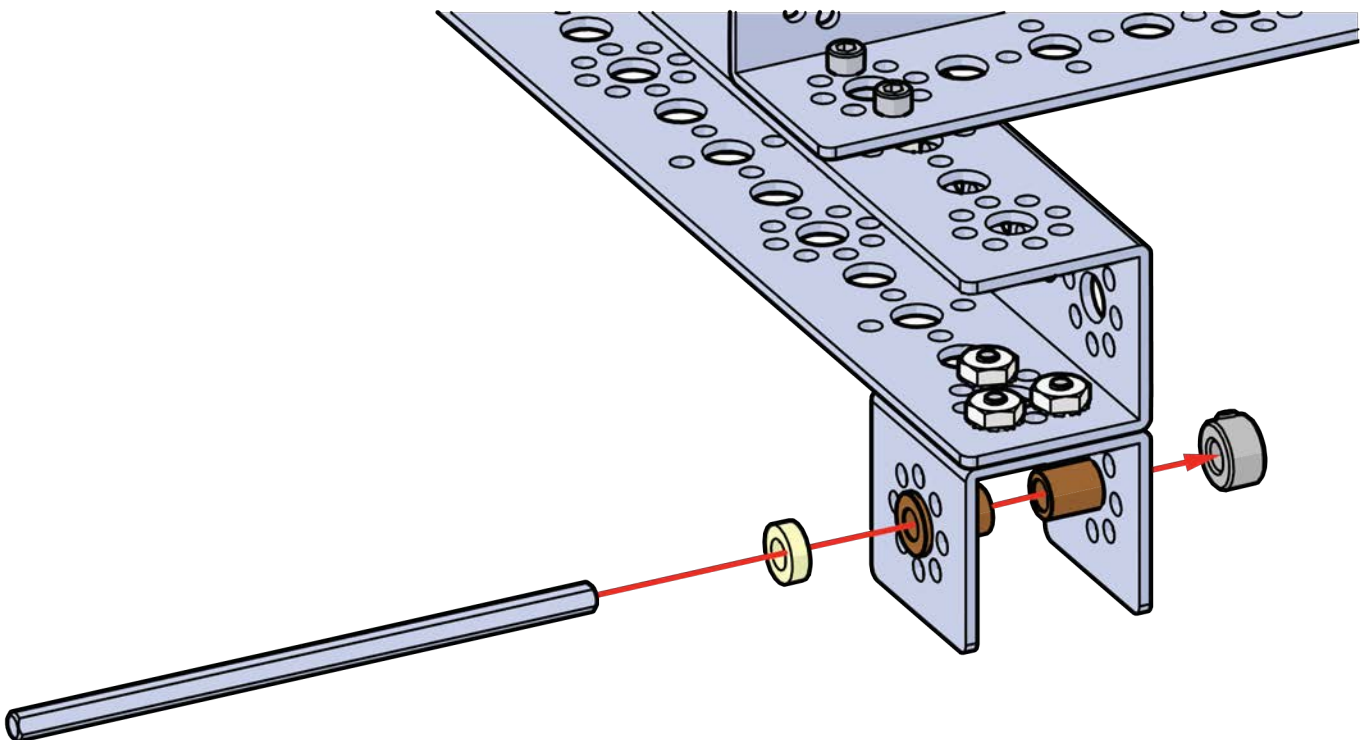
Step 3.5

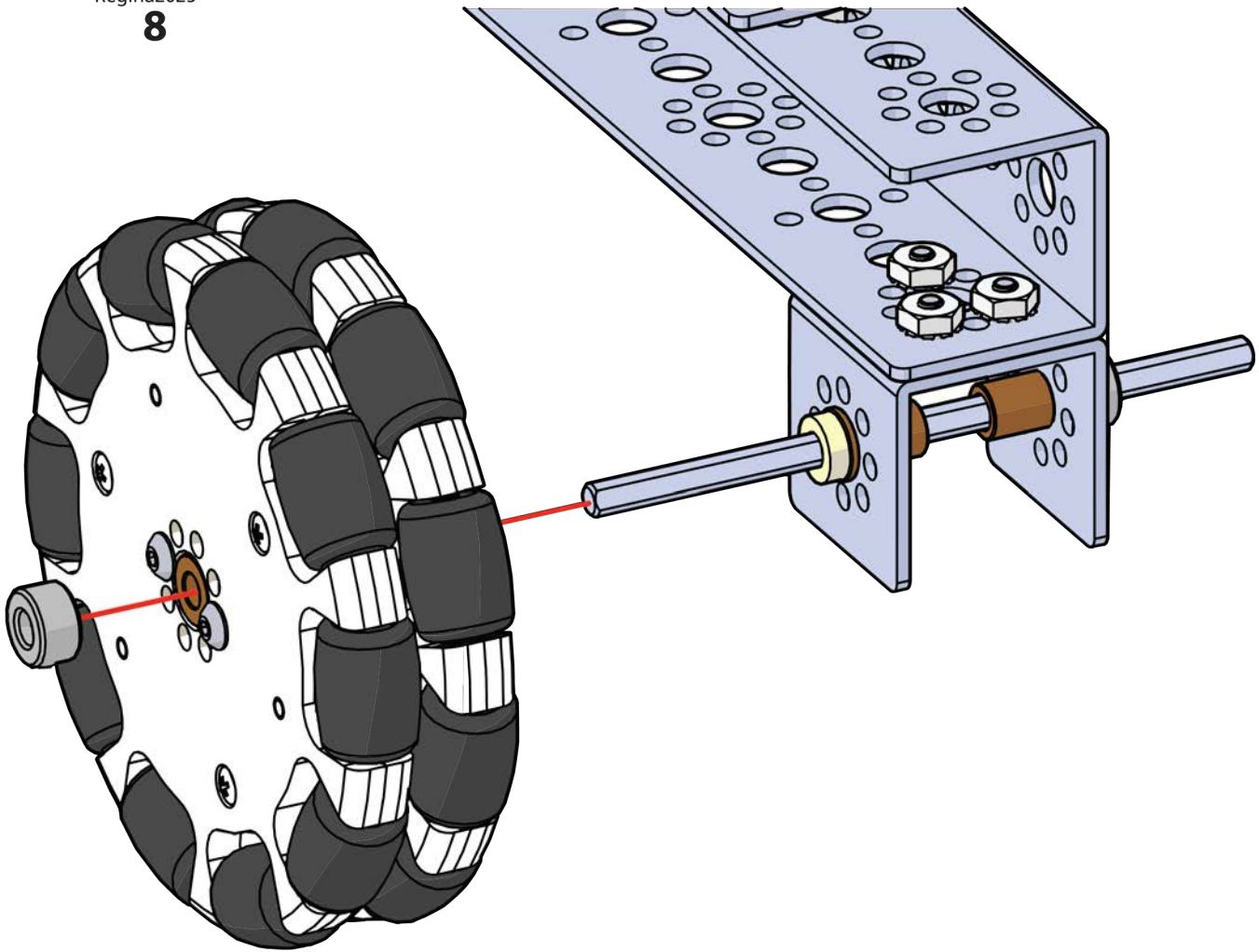


 **Tip:** Refer to Omni Wheel Setup on pages 49-50 to see how to assemble the omni wheel.

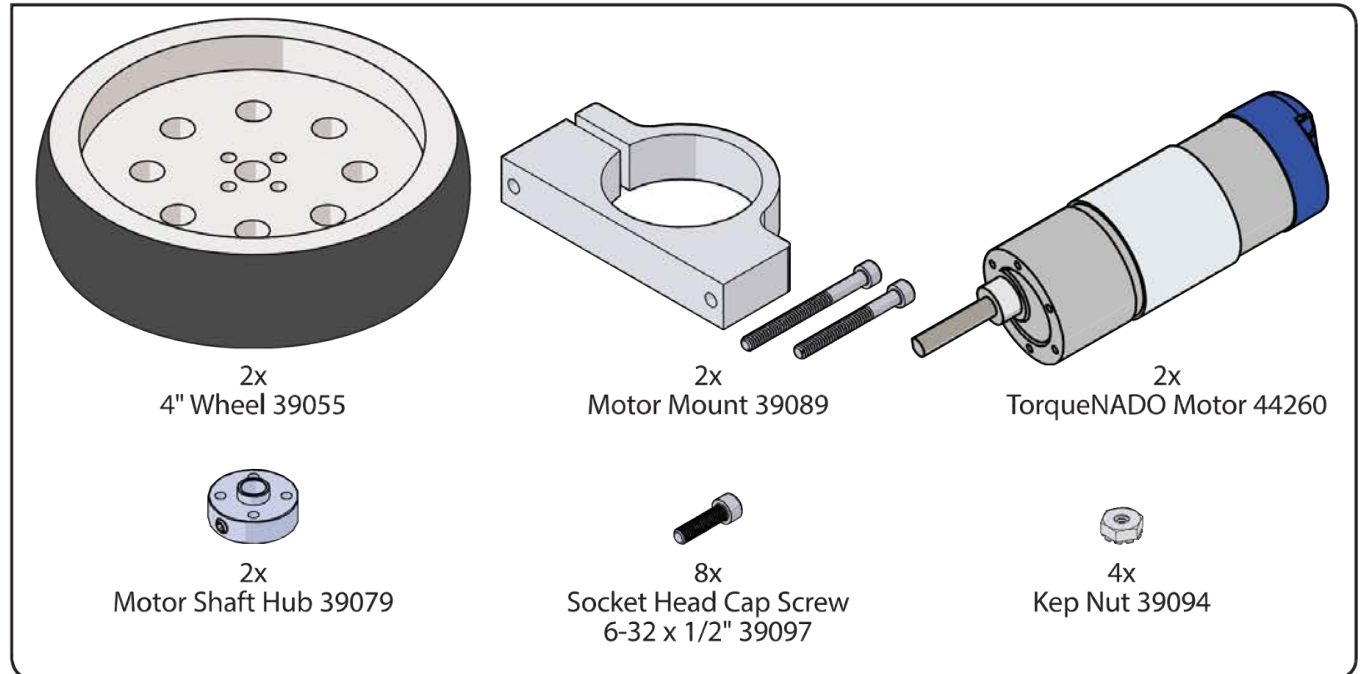


Step 3.7

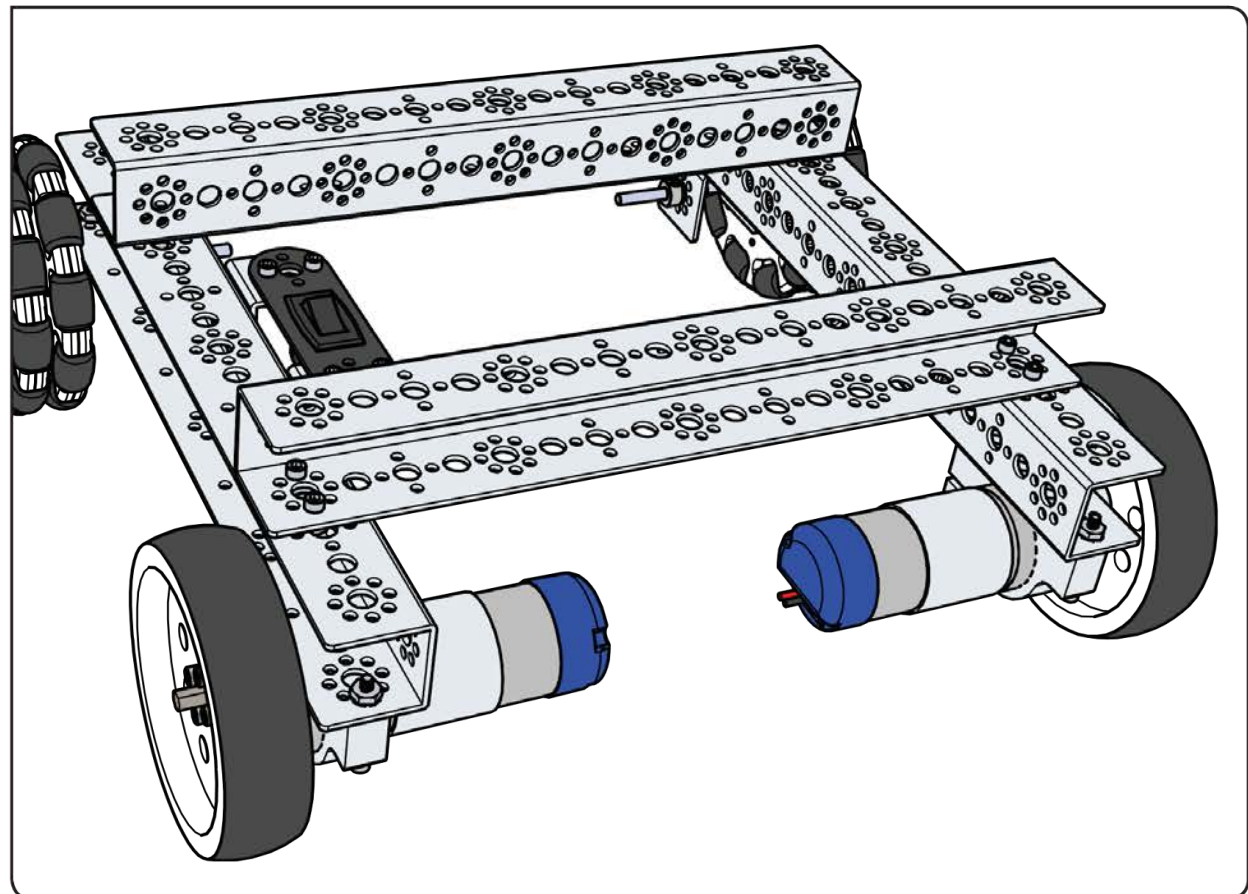





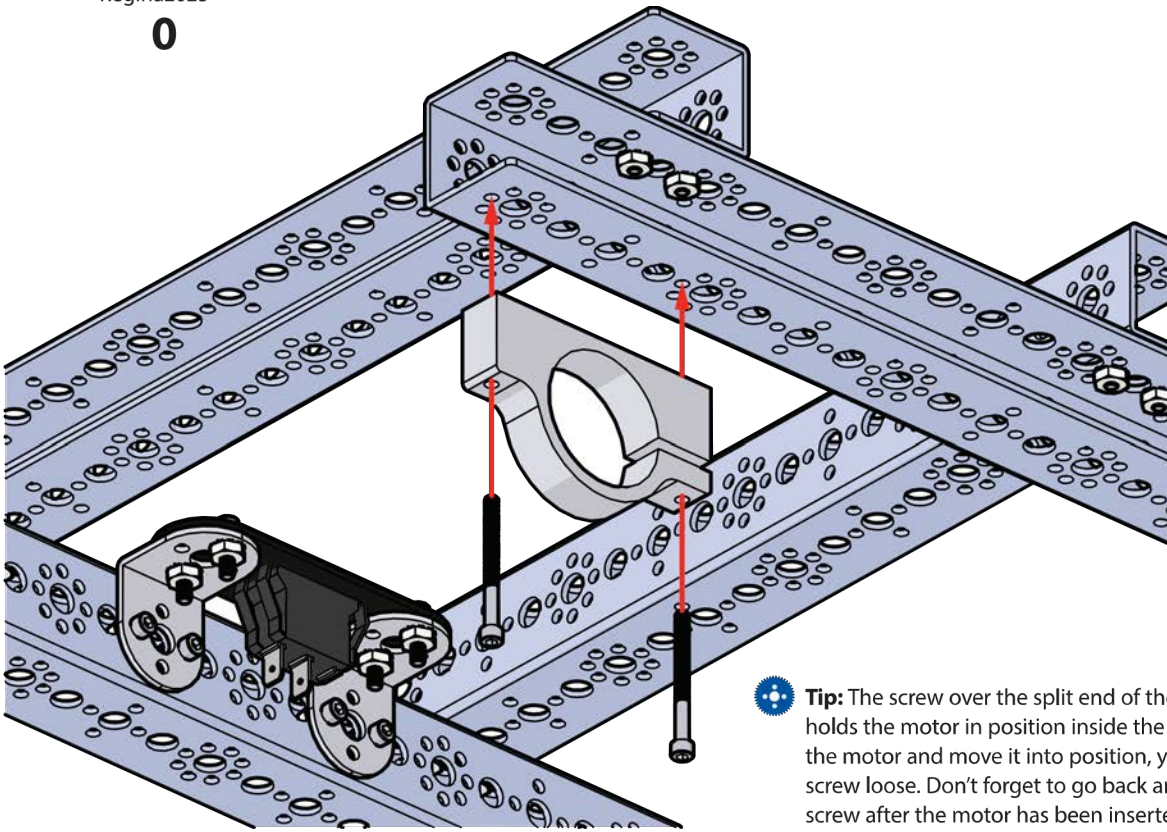
Parts Needed




Finished assembly should look like this.

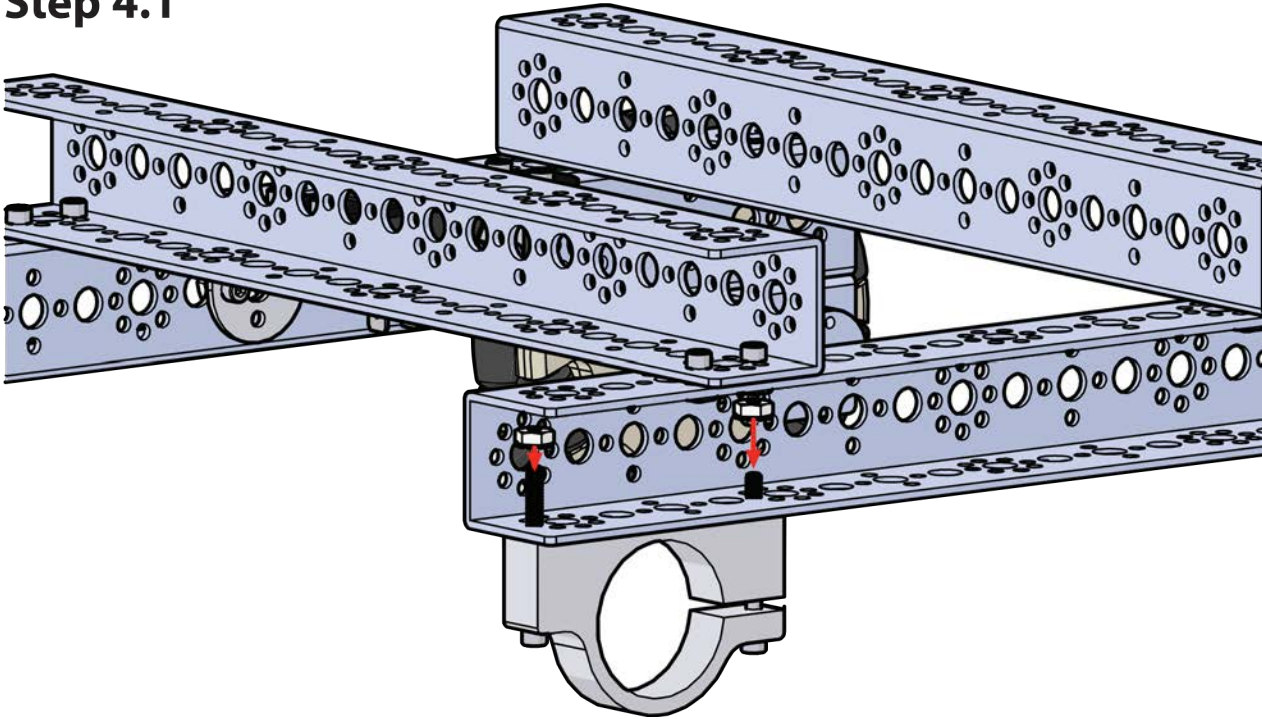


 **Tip:** See the setup tips on page 48 for help distinguishing between the motor shaft hub and axle hub.

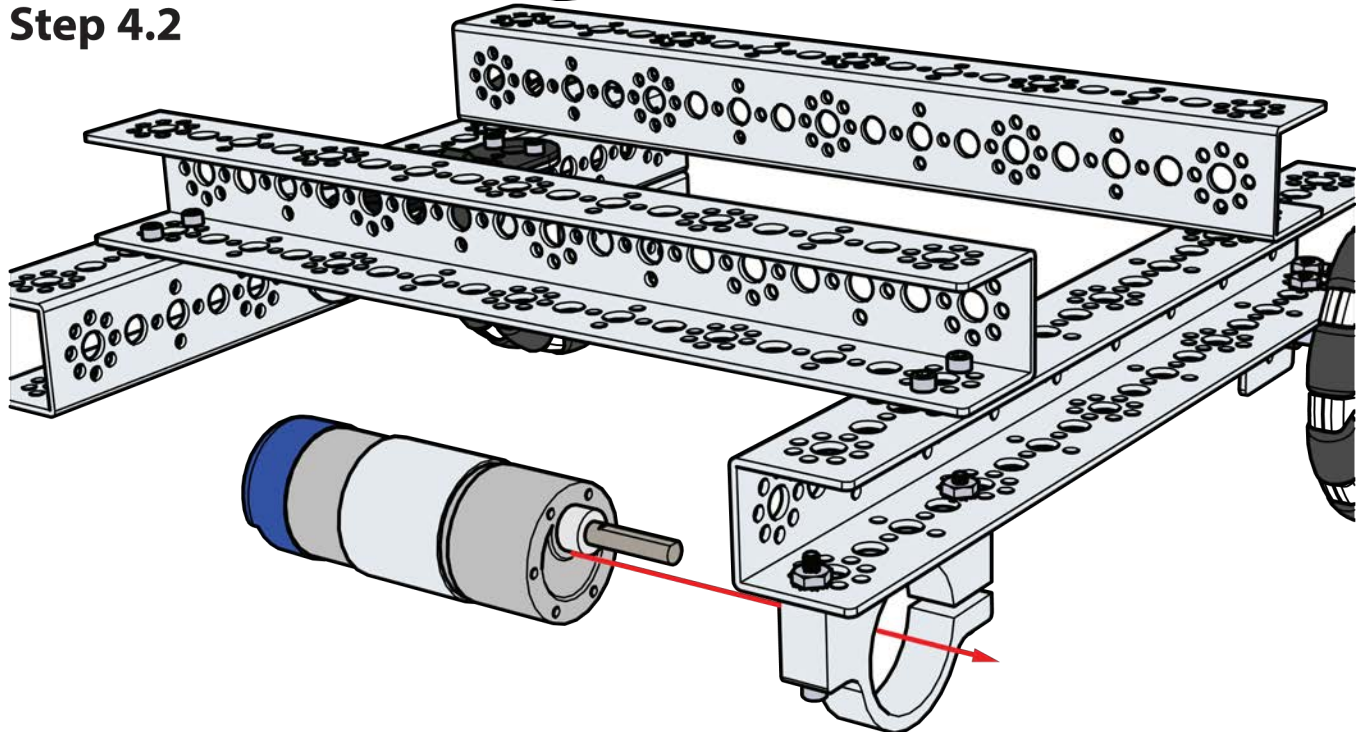


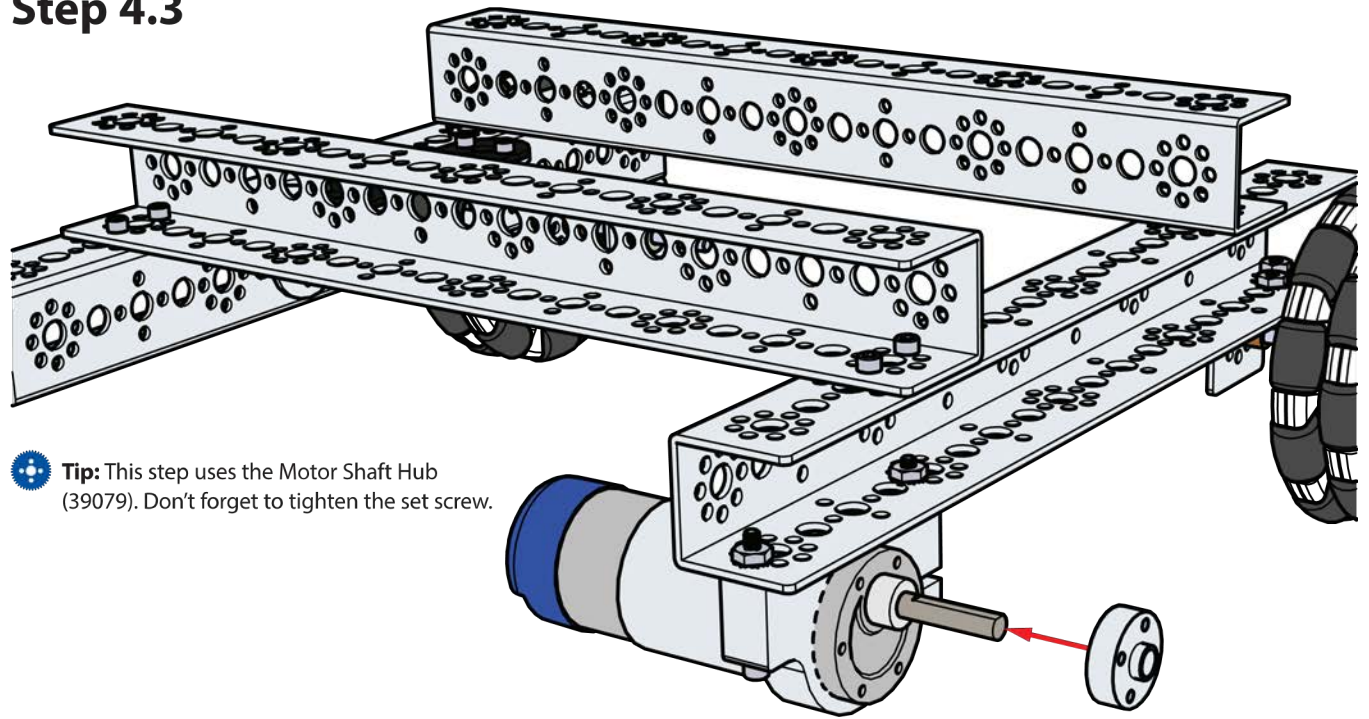
 **Tip:** The screw over the split end of the motor mount holds the motor in position inside the mount. To insert the motor and move it into position, you must keep the screw loose. Don't forget to go back and tighten this screw after the motor has been inserted and moved into the desired position.


Step 4.1



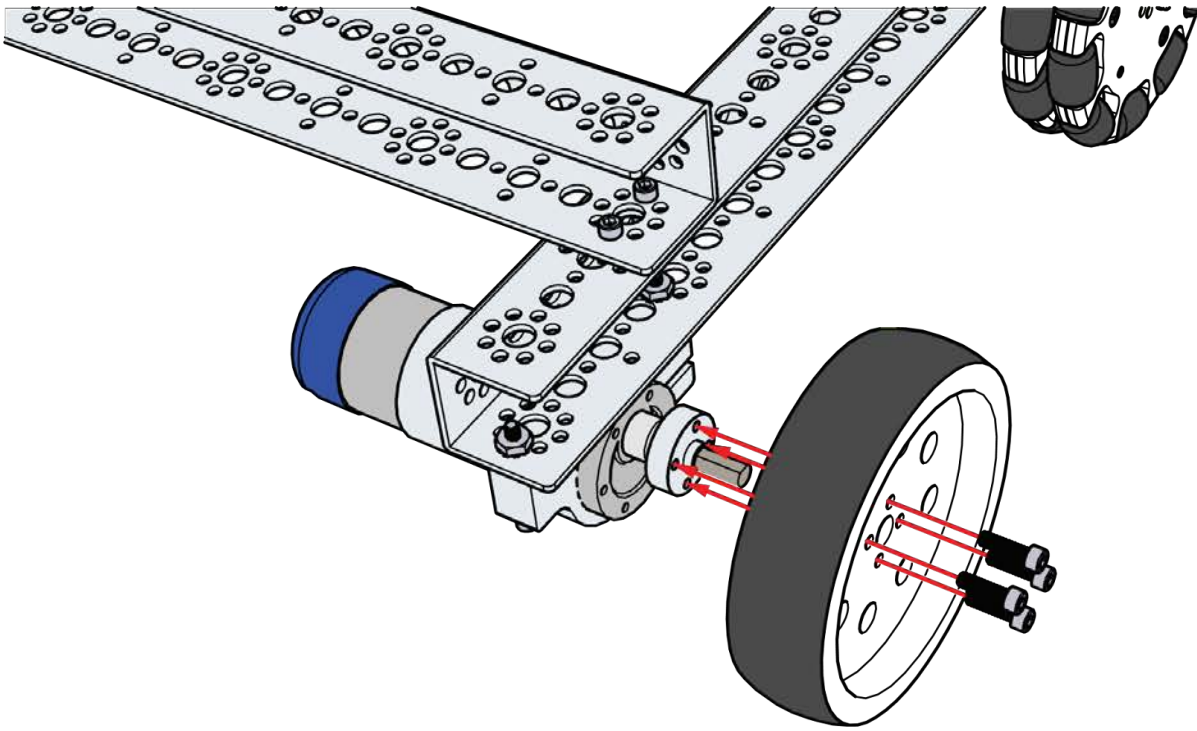
Step 4.2






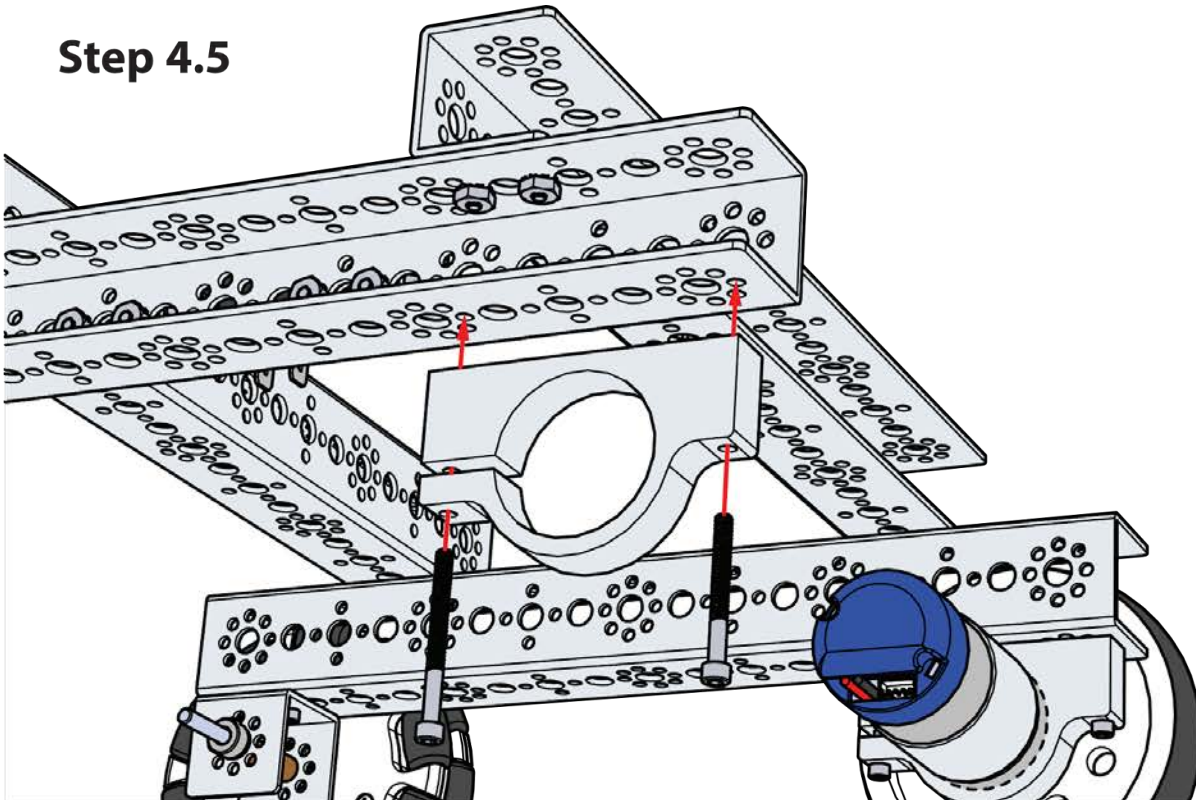
 **Tip:** This step uses the Motor Shaft Hub (39079). Don't forget to tighten the set screw.

4

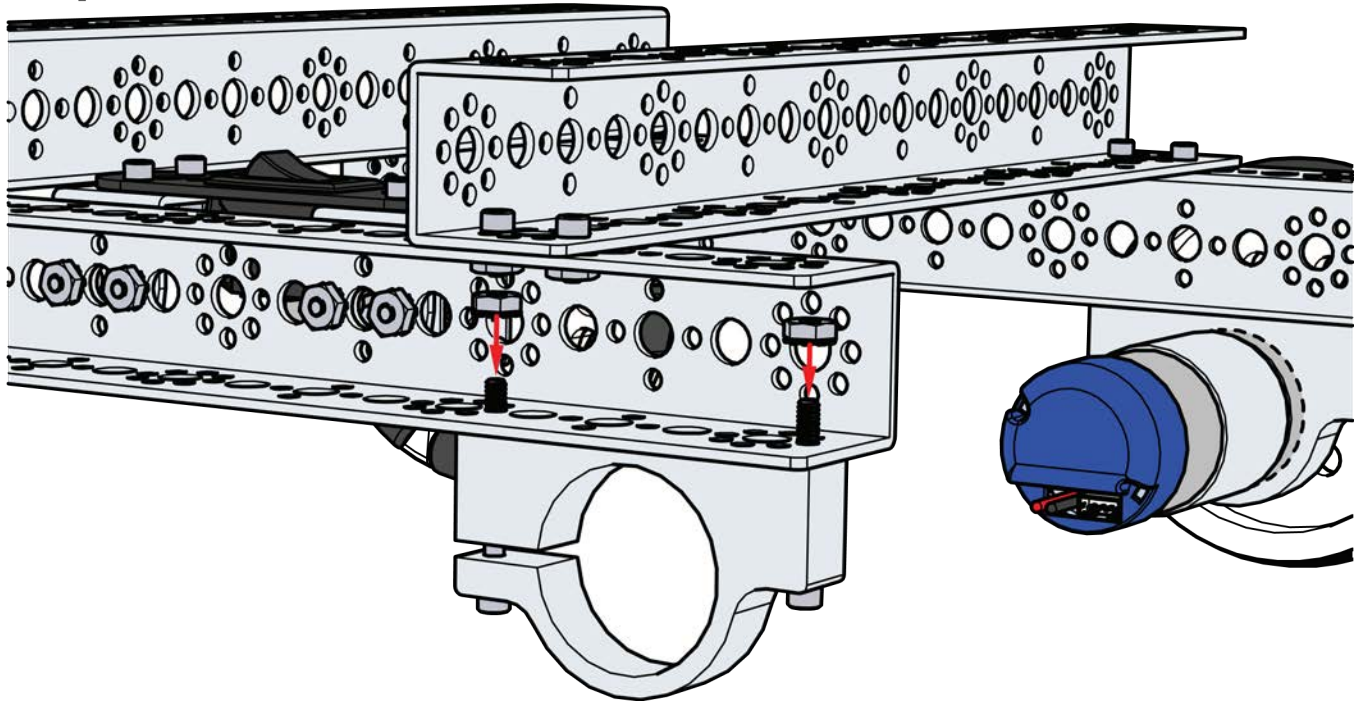


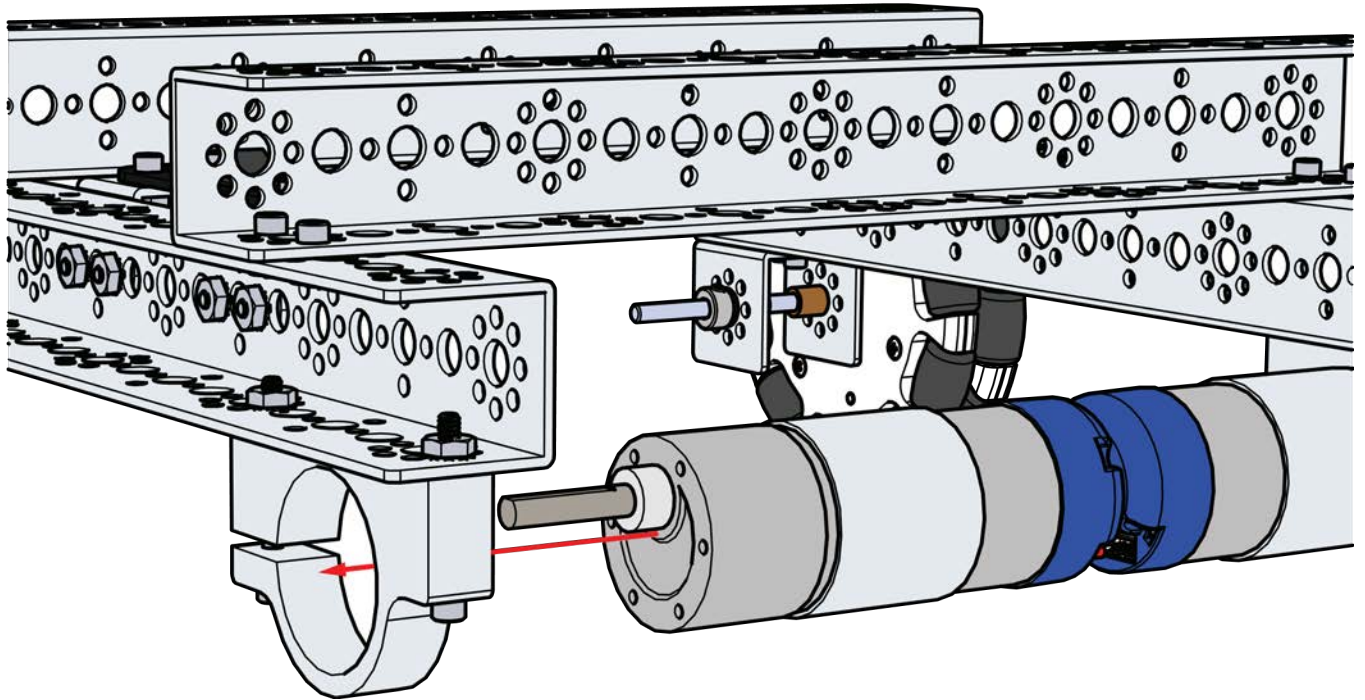
 **Tip:** The screw over the split end of the motor mount holds the motor in position inside the mount. To insert the motor and move it into position, you must keep the screw loose. Don't forget to go back and tighten this screw after the motor has been inserted and moved into the desired position.

Step 4.5

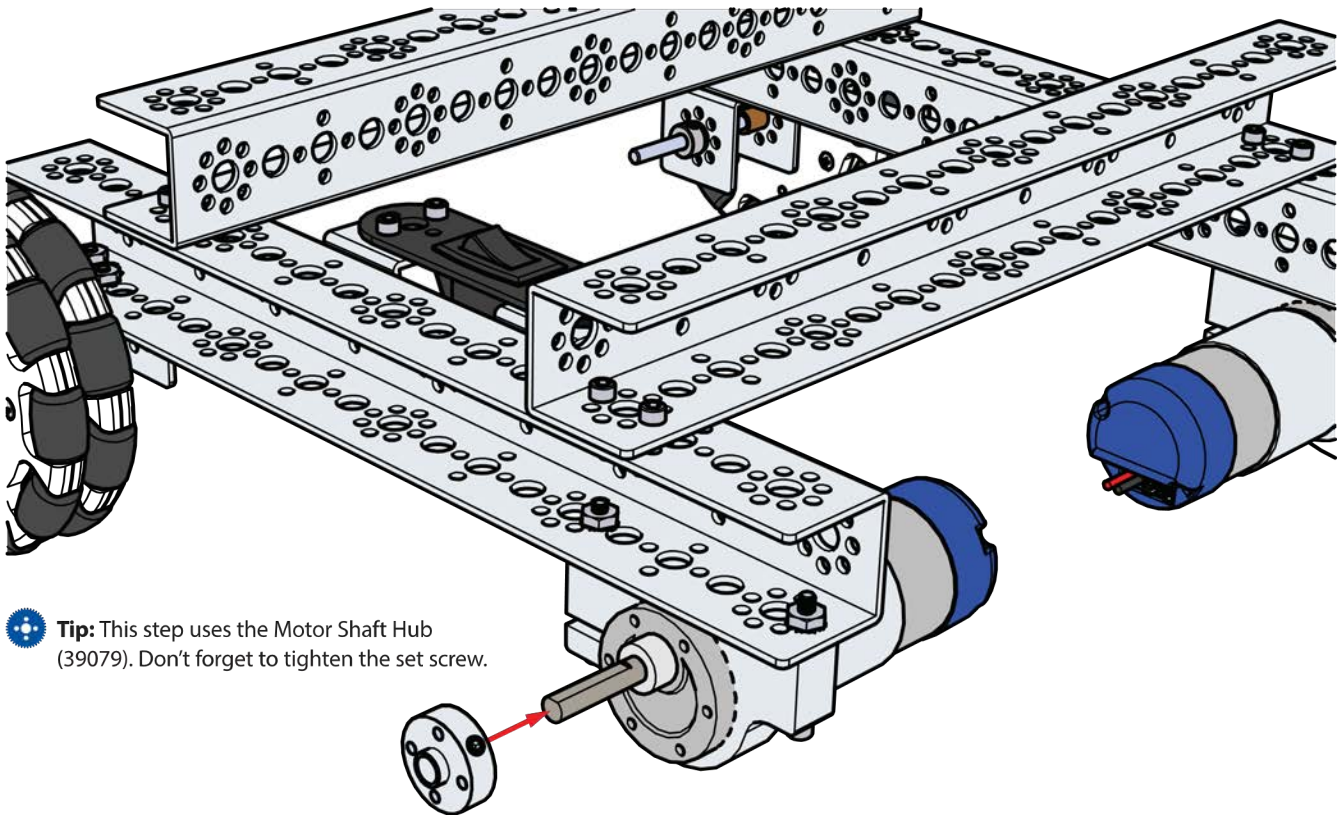



p 4.6



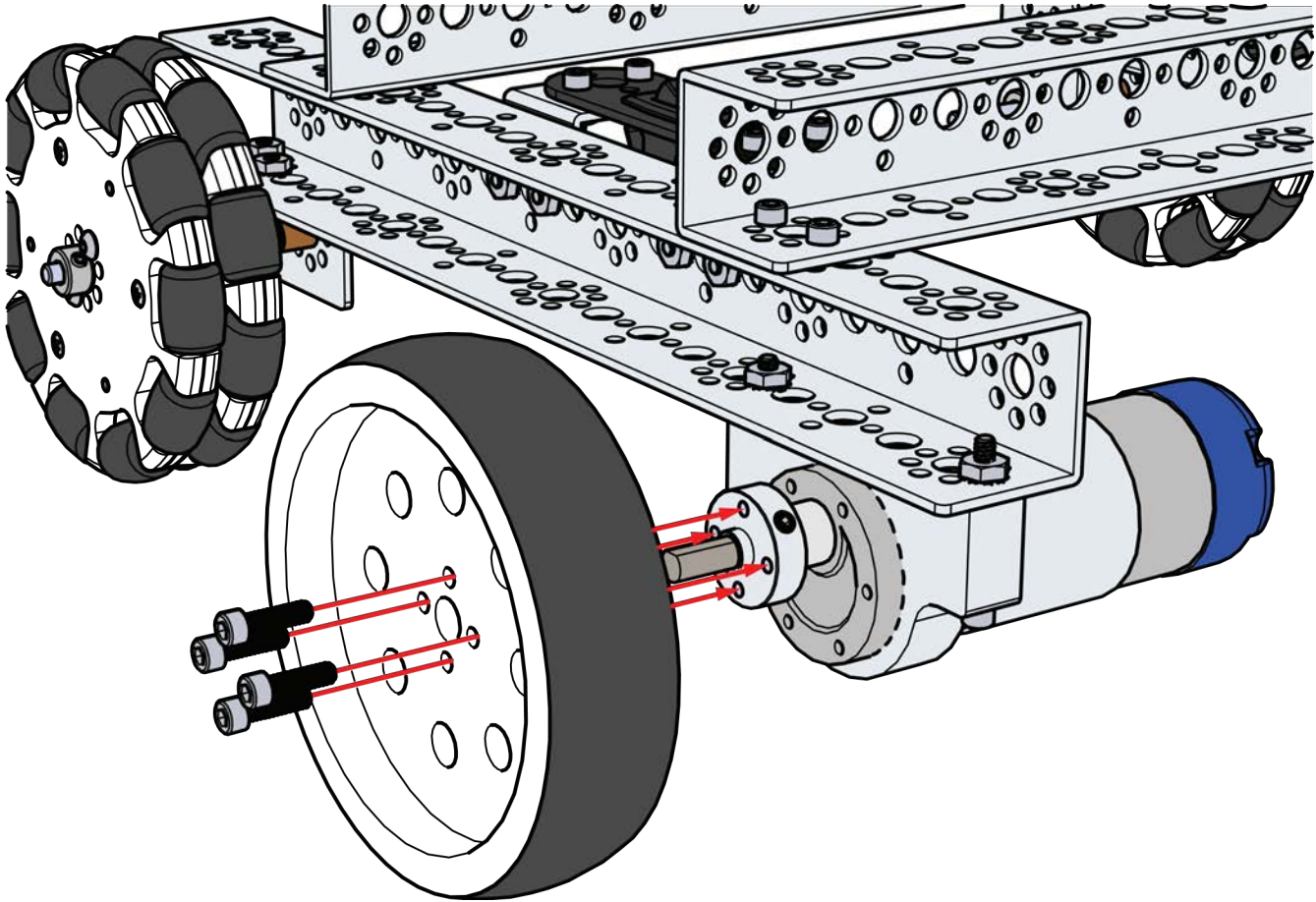


8

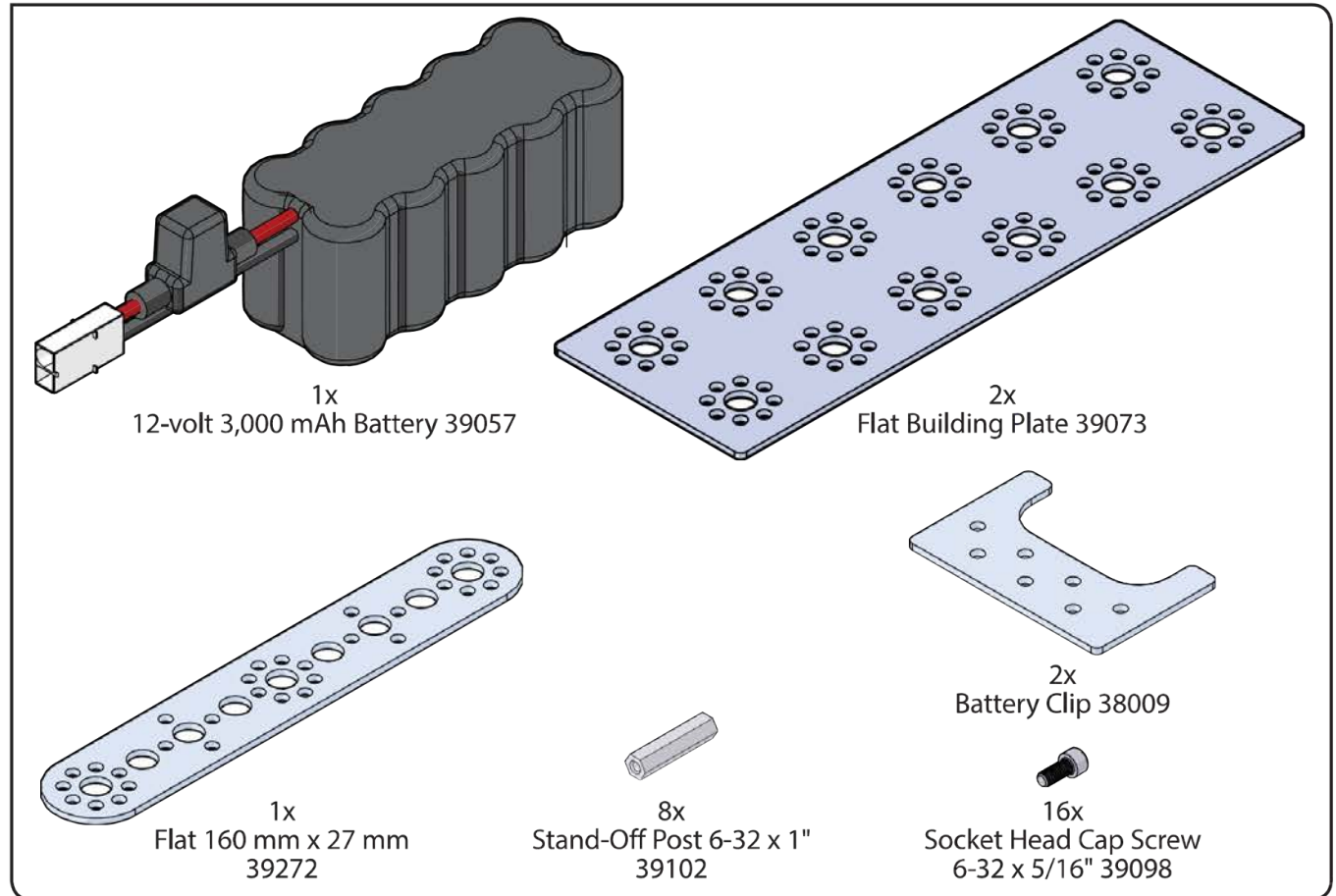


 **Tip:** This step uses the Motor Shaft Hub (39079). Don't forget to tighten the set screw.

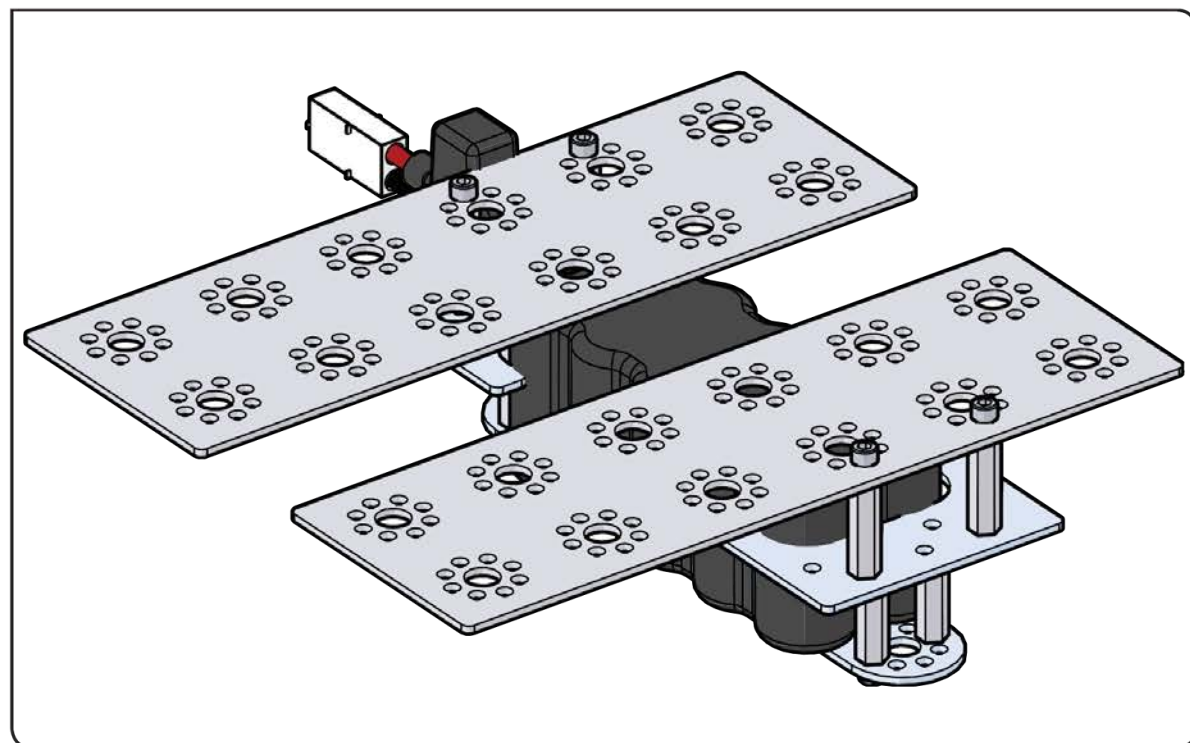
Step 4.9

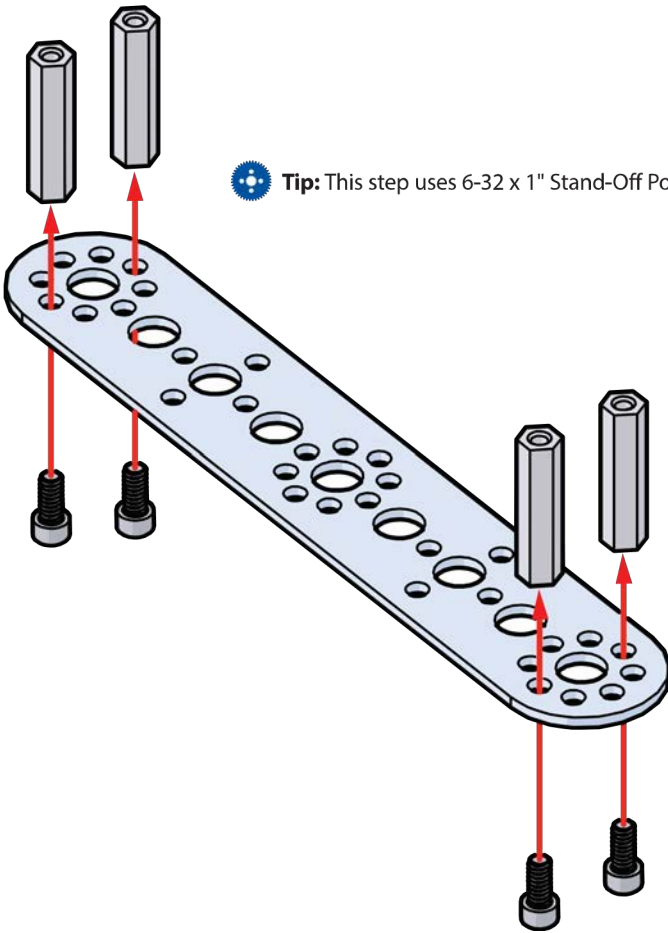



Parts Needed



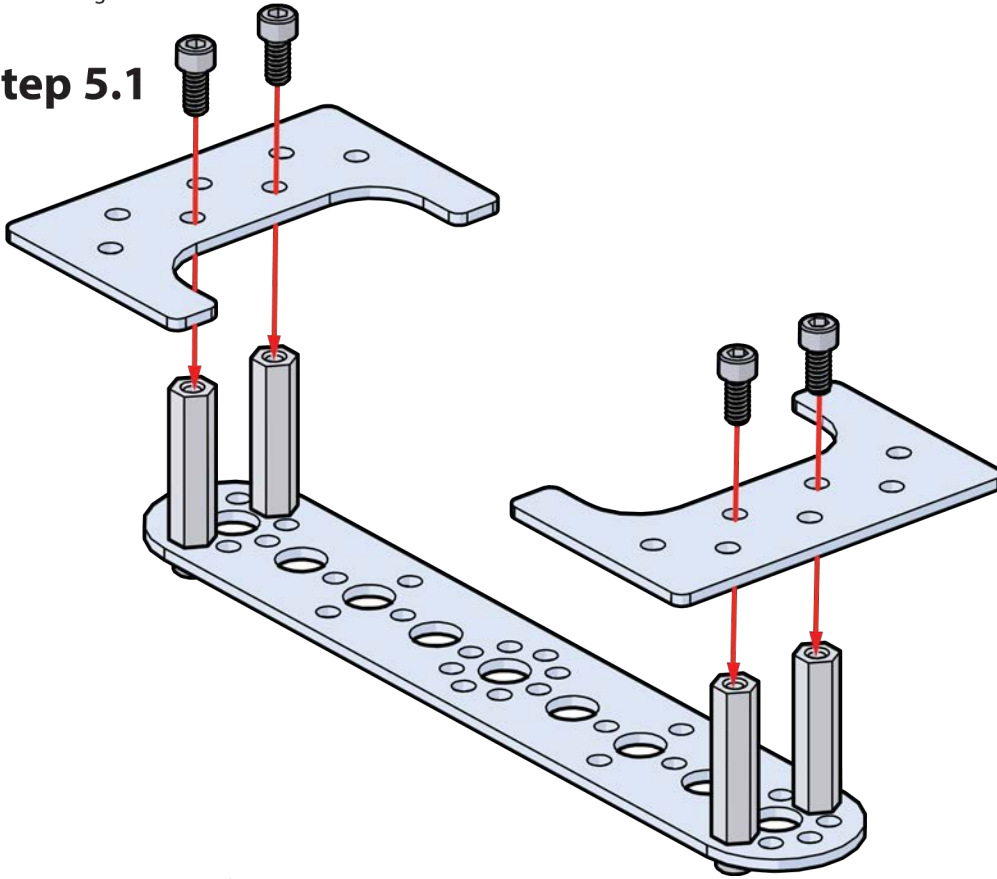
Finished assembly should look like this.



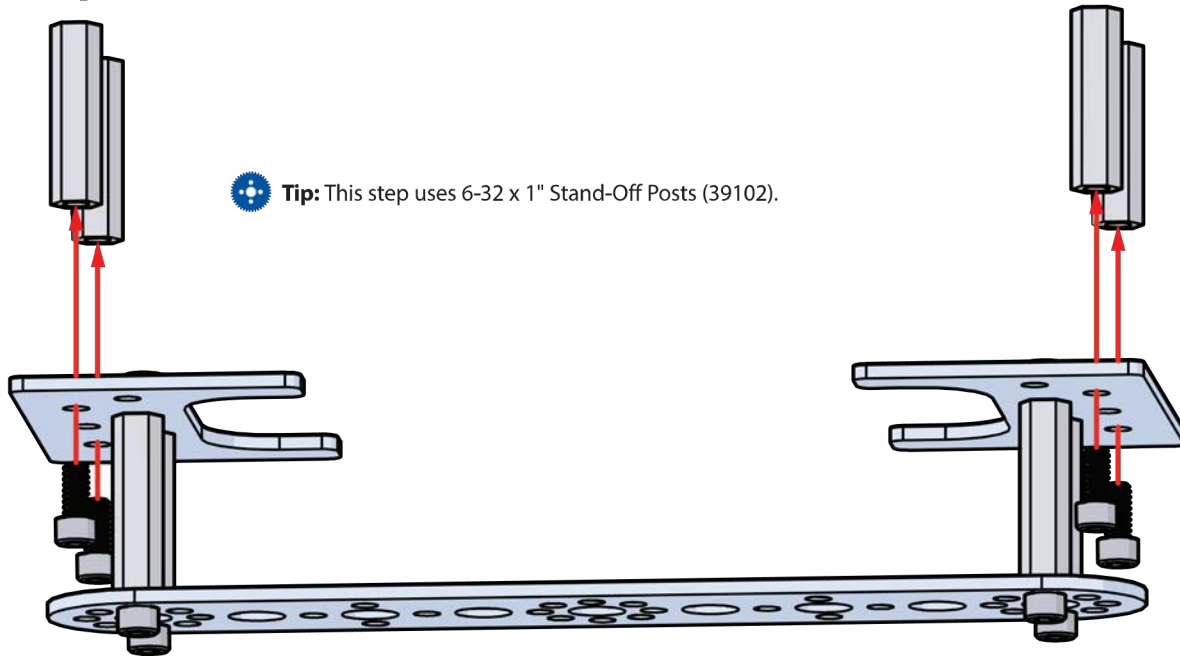



 **Tip:** This step uses 6-32 x 1" Stand-Off Posts (39102).

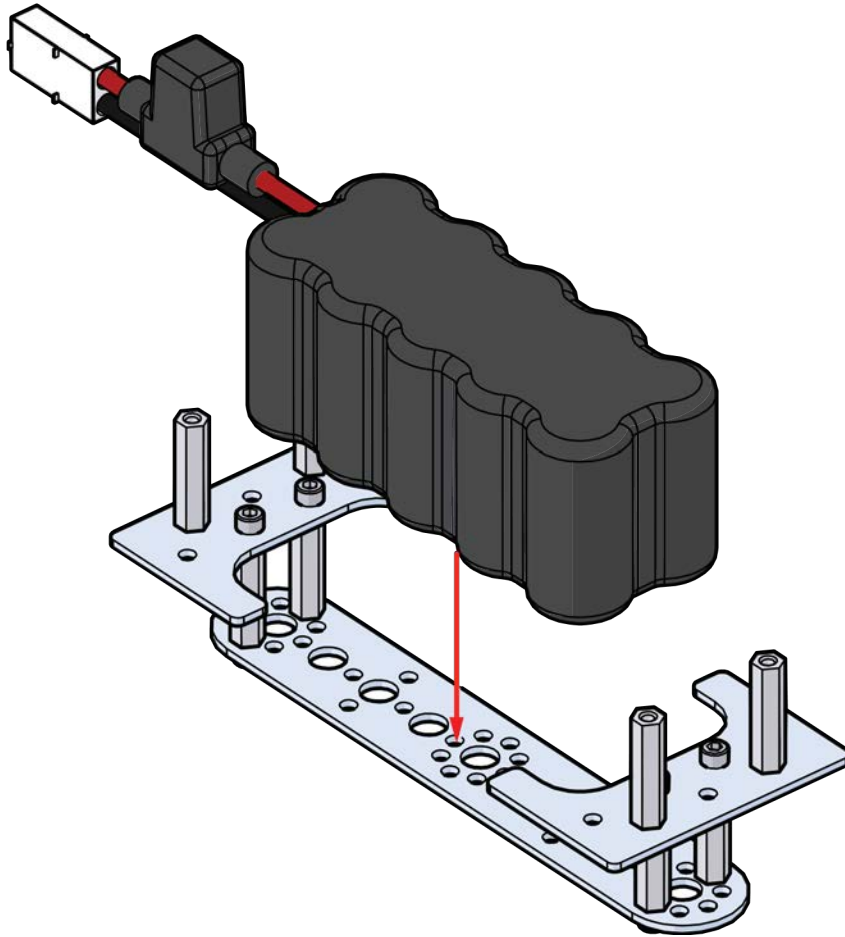
Step 5.1

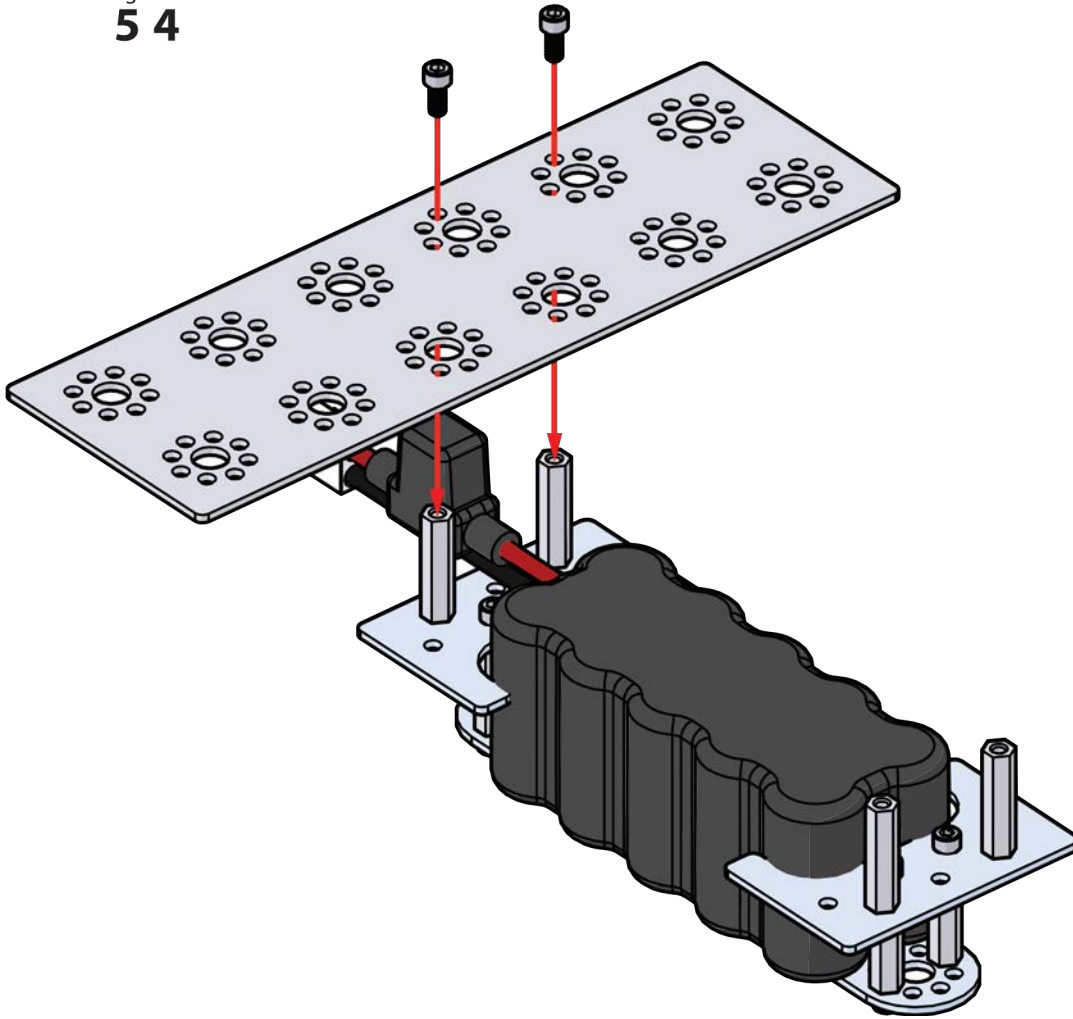


p 5.2

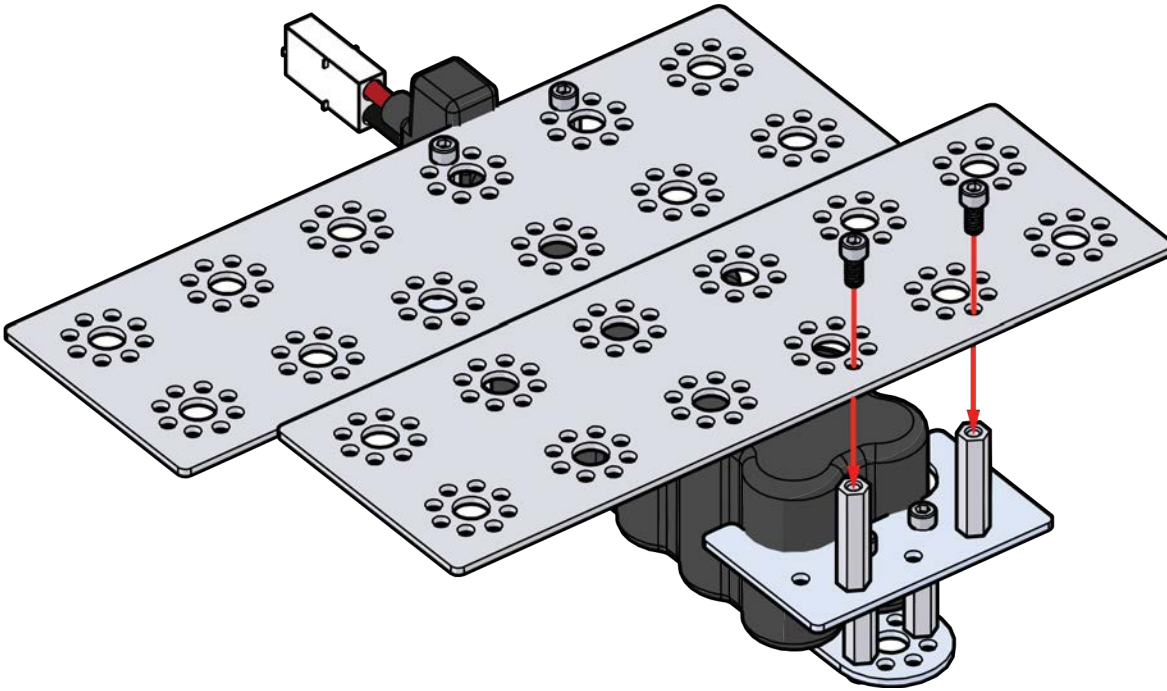


 **Tip:** This step uses 6-32 x 1" Stand-Off Posts (39102).





Step 5.5



Parts Needed

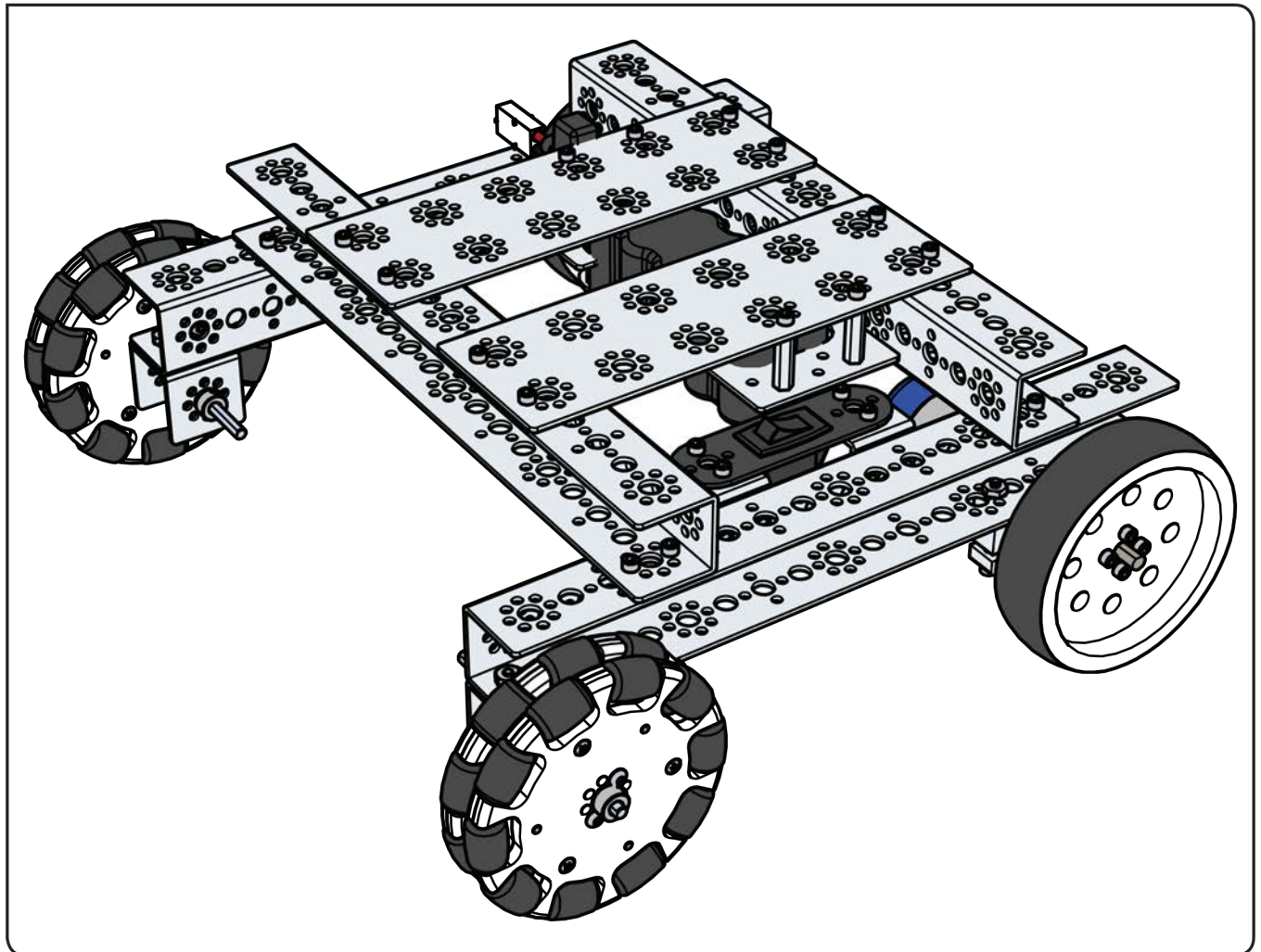


8x
Socket Head Cap Screw
6-32 x 5/16" 39098

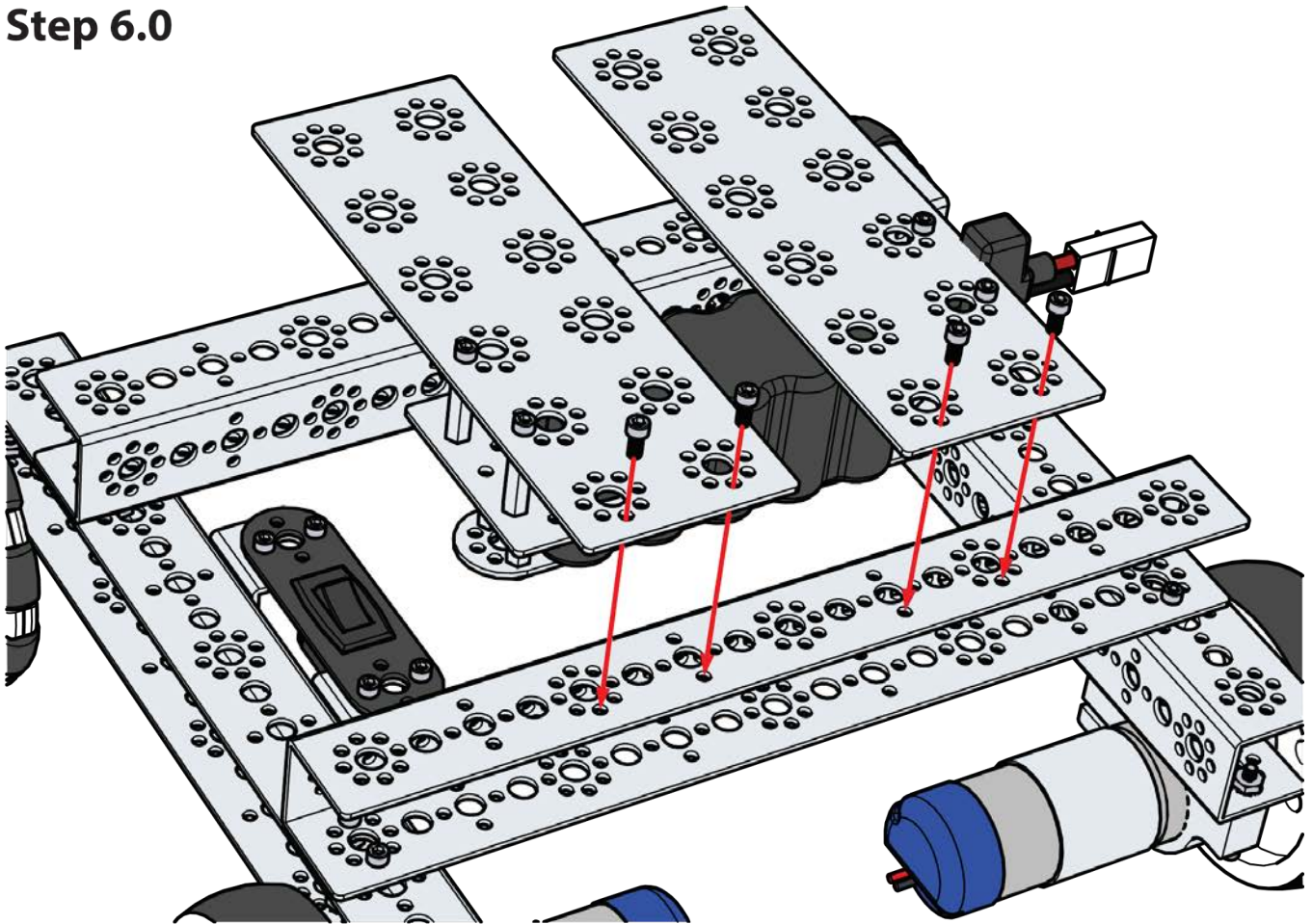


8x
Kep Nut 39094

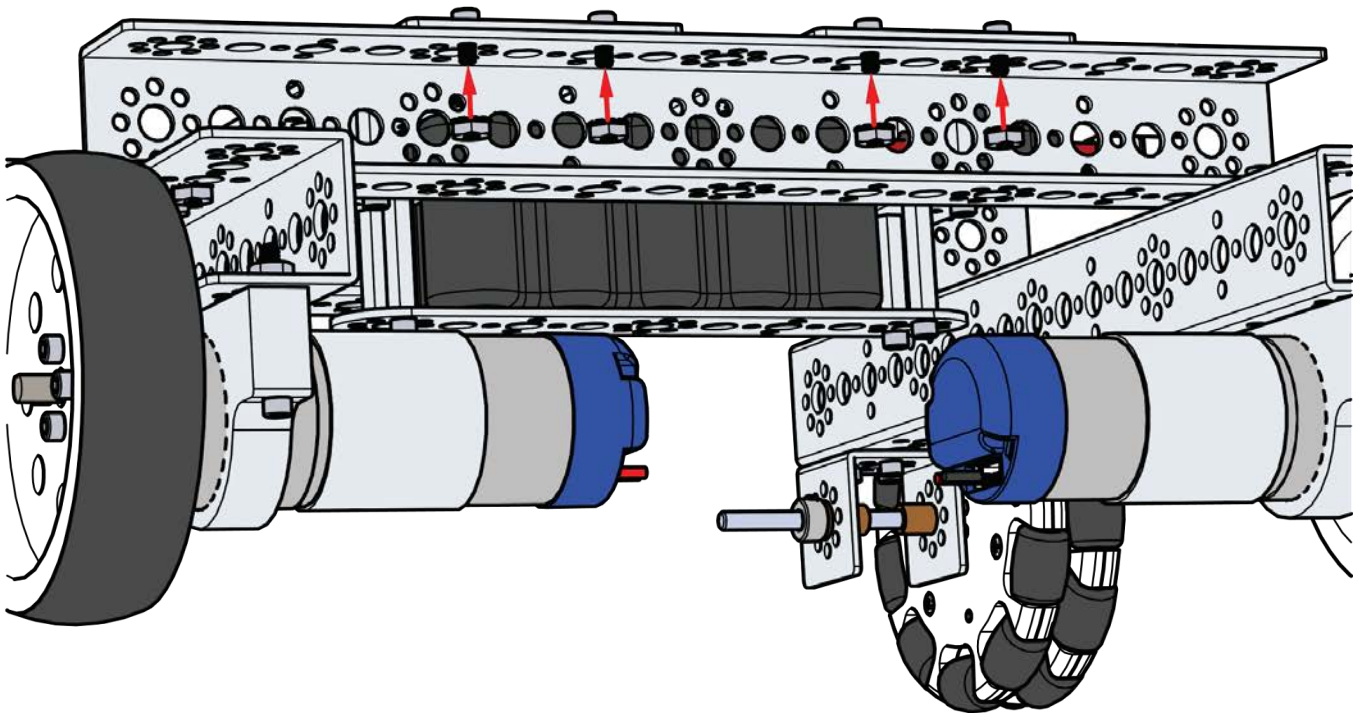
Finished assembly should look like this.

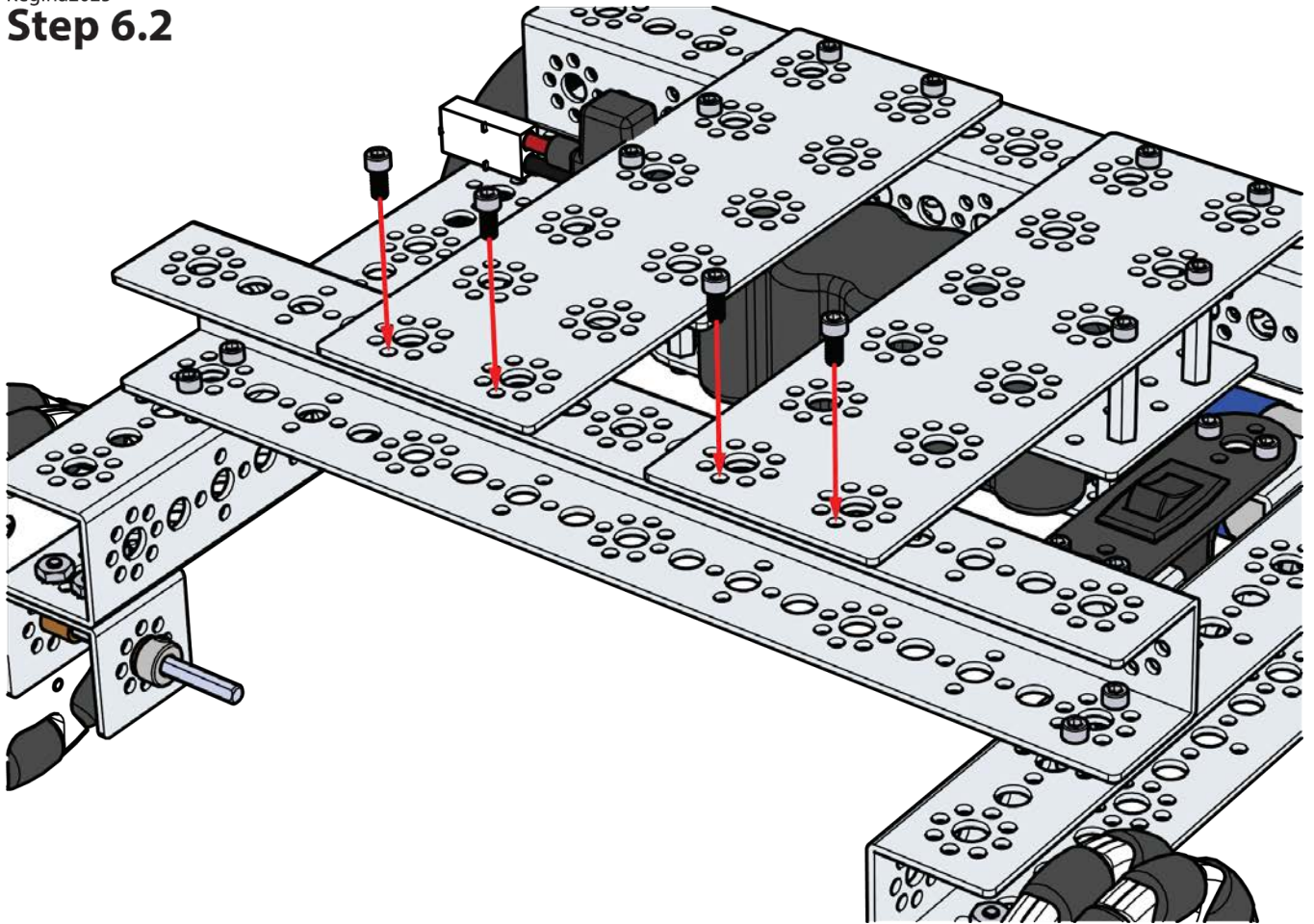


Step 6.0

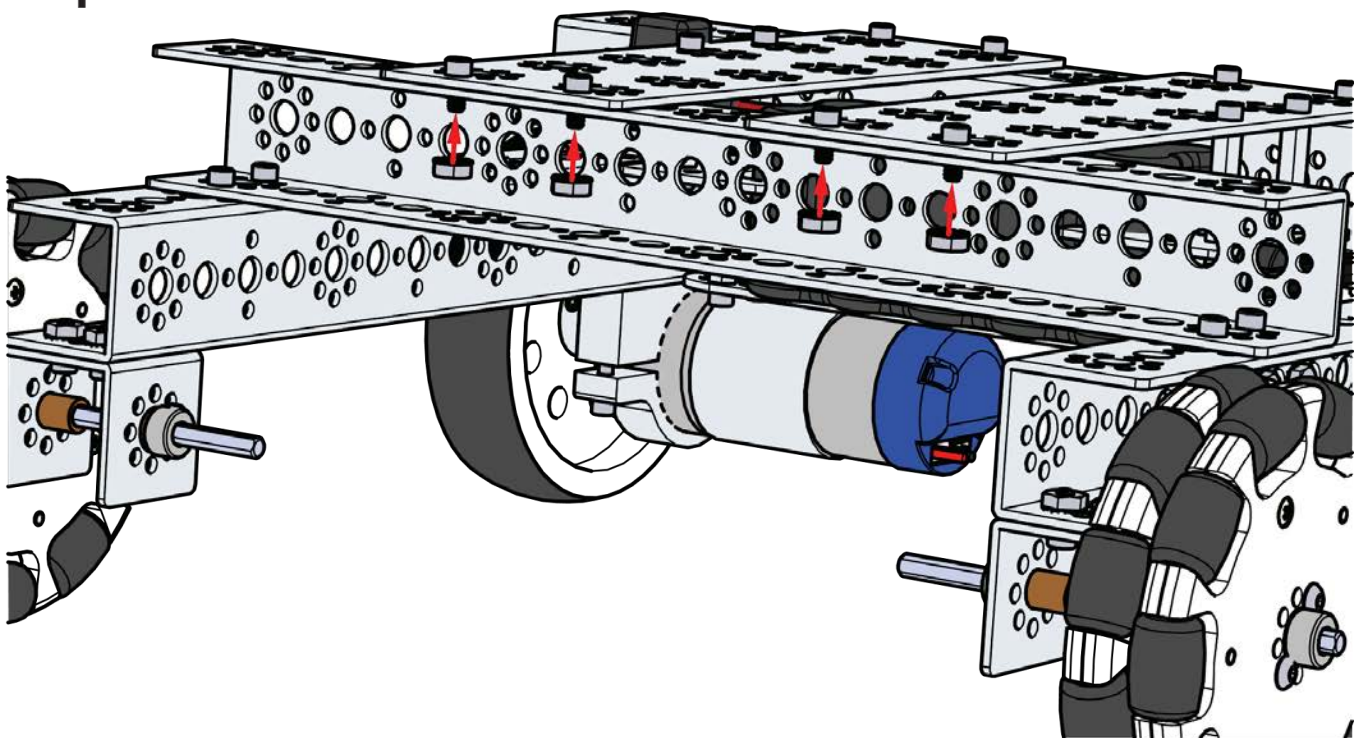


Step 6.1



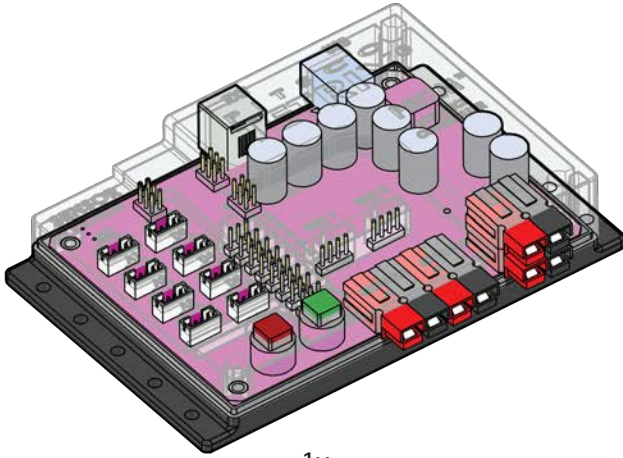


Step 6.3



Step 7

Parts Needed



1x
PRIZM Robotics Controller
43000

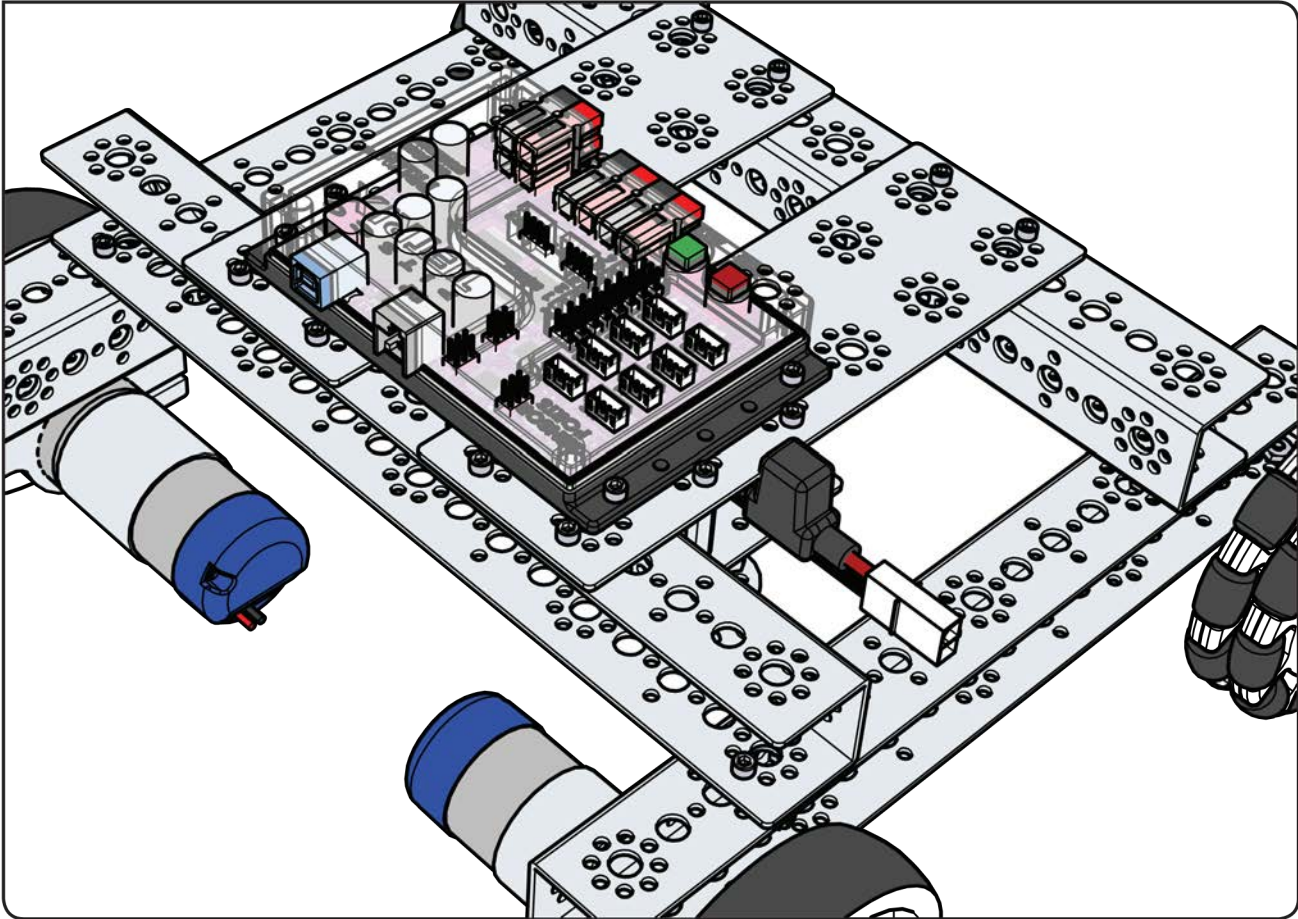


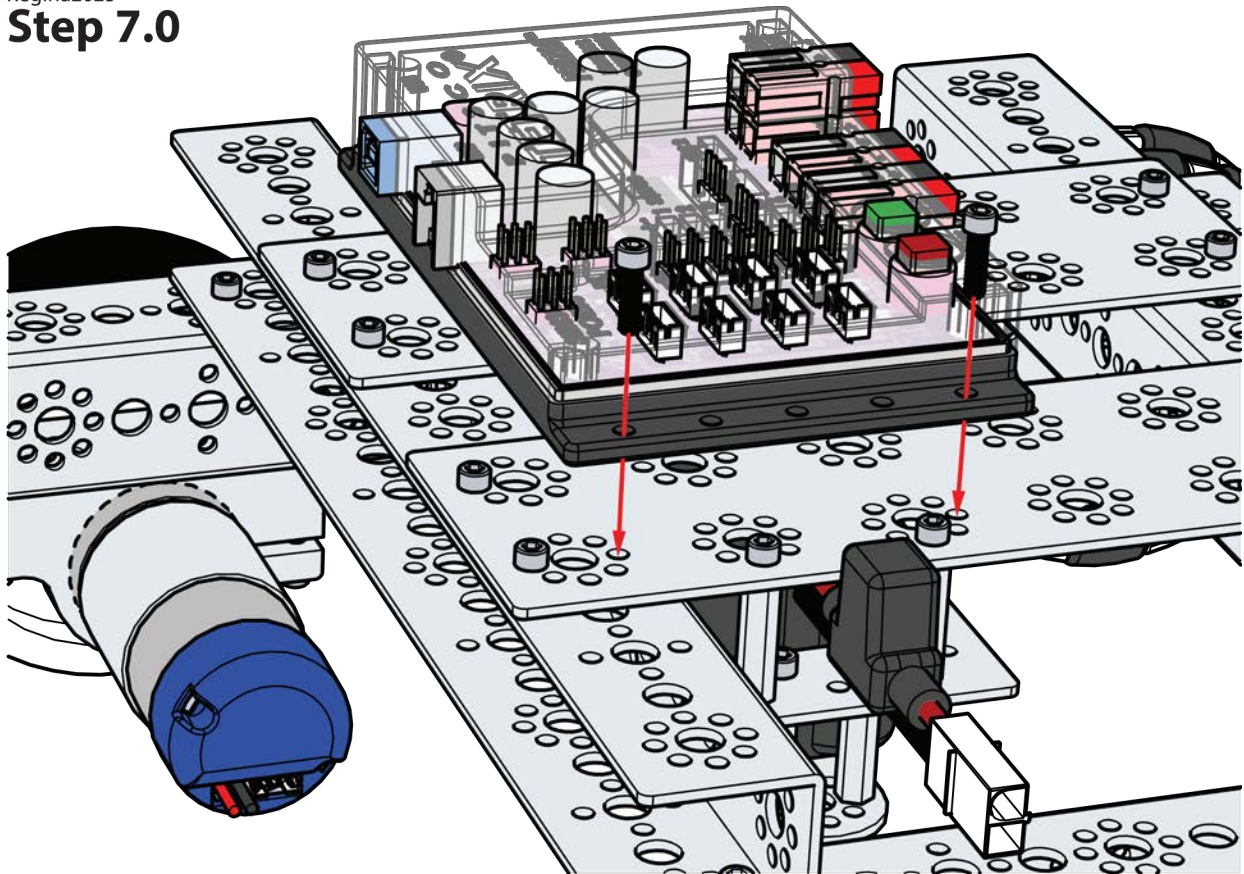
4x
Socket Head Cap Screw
6-32 x 1/2" 39097

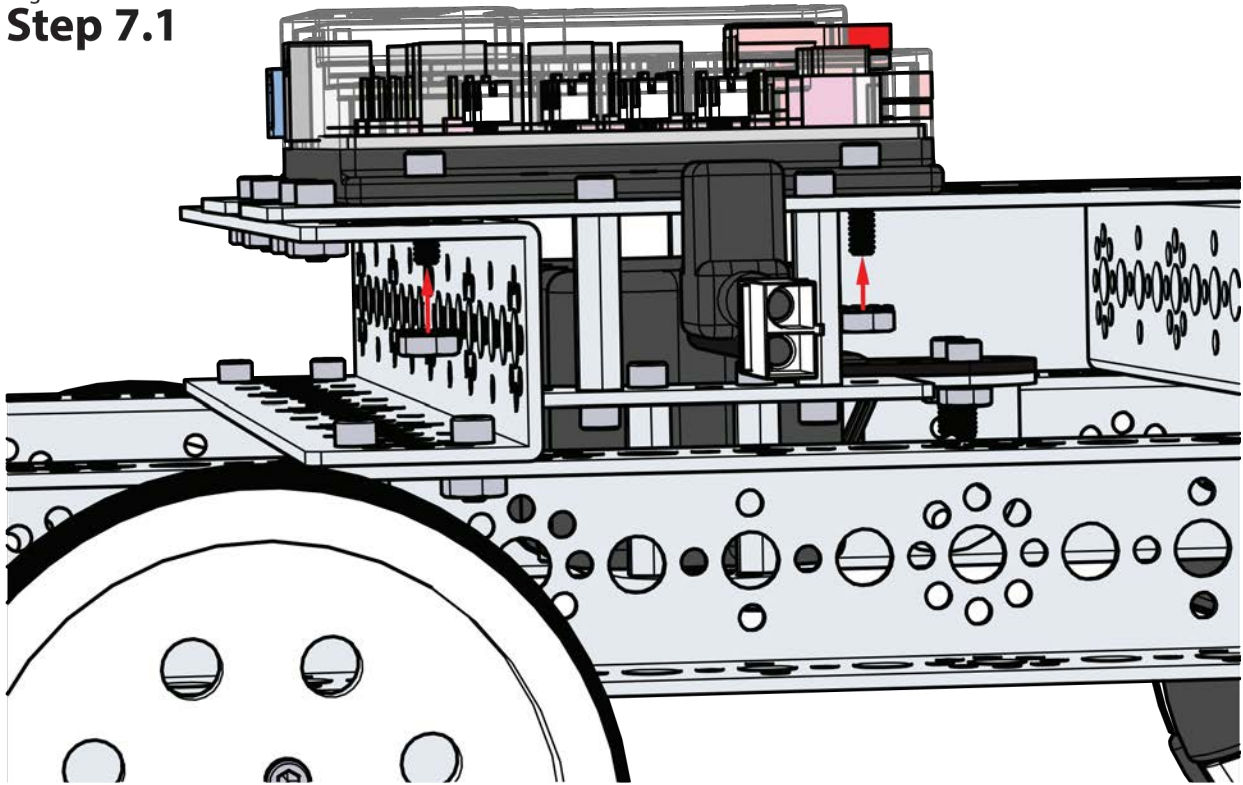


4x
Kep Nut 39094

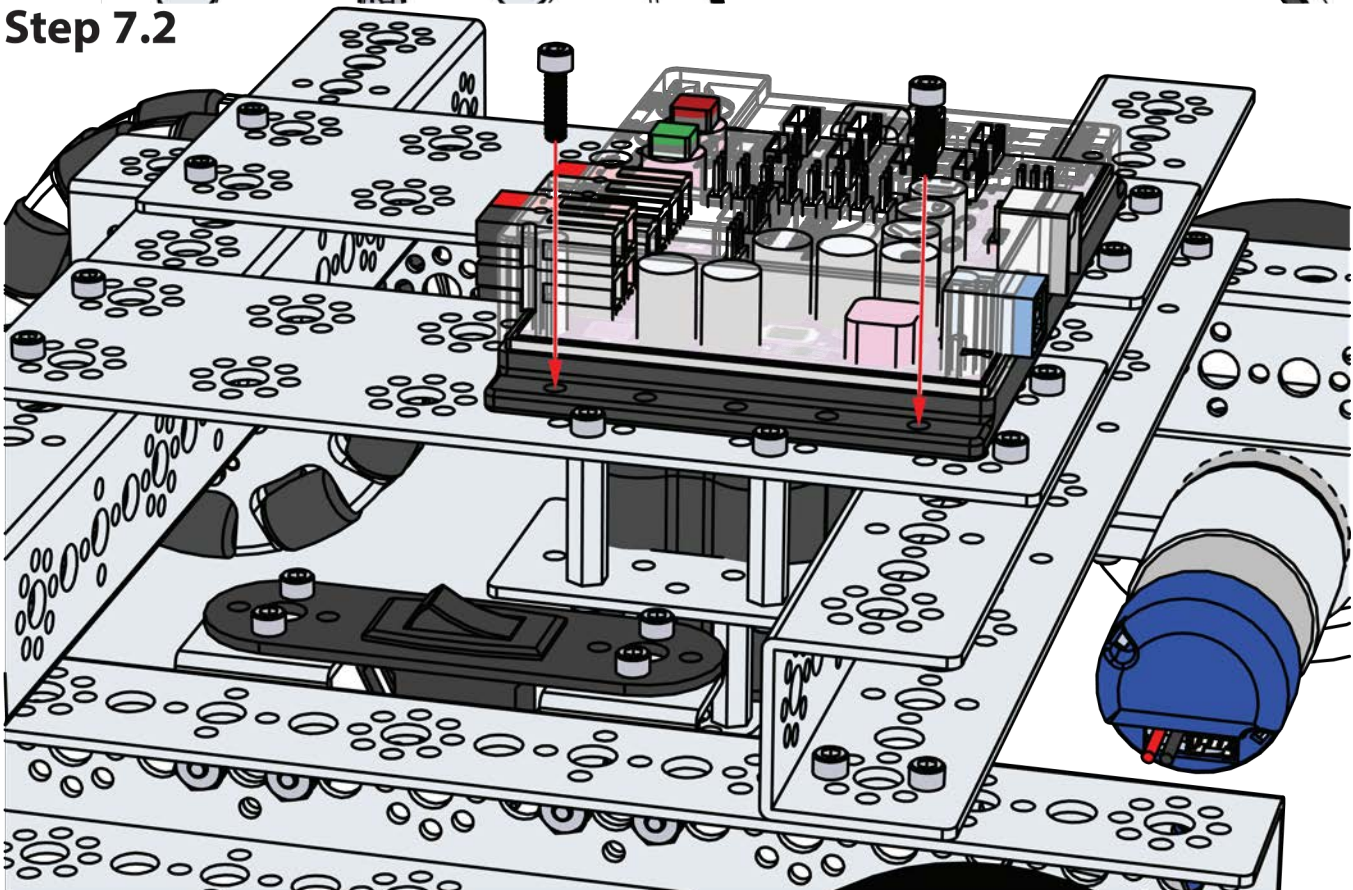
Finished assembly should look like this.



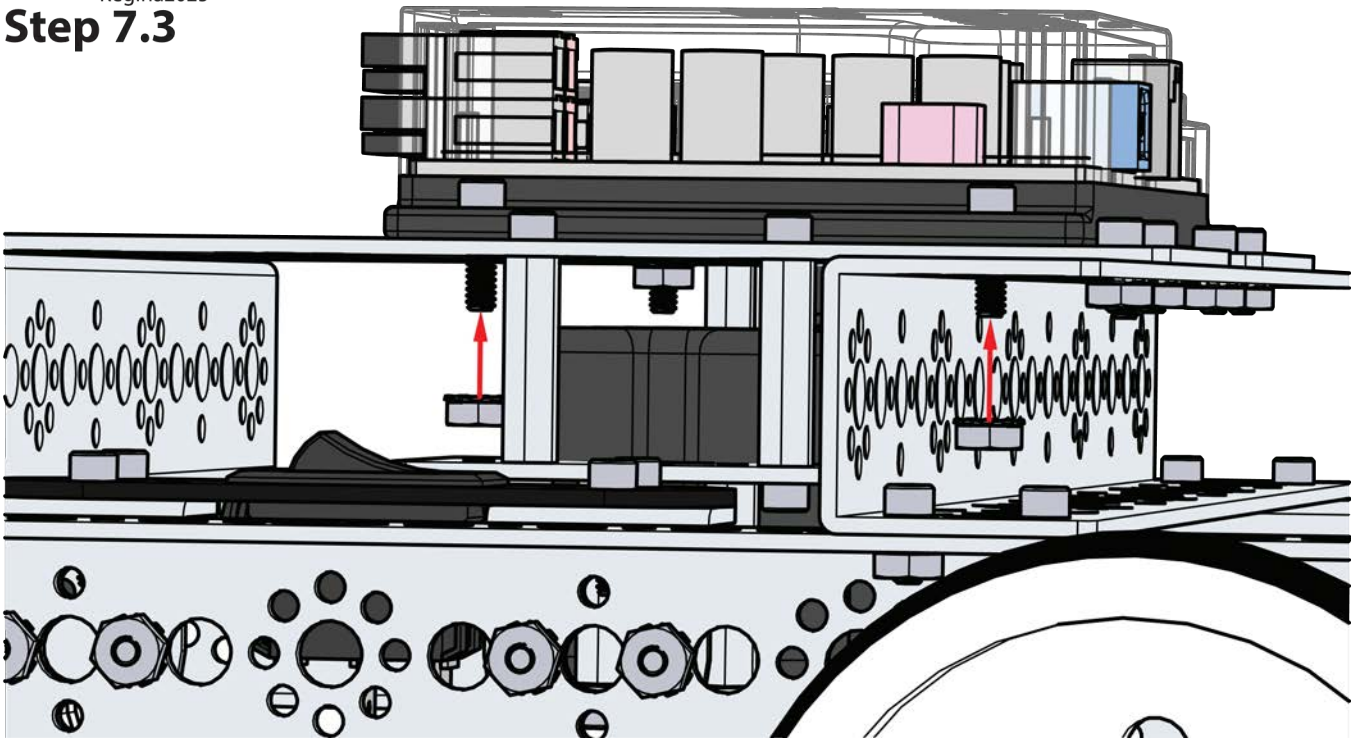




Step 7.2



Step 7.3



Final result:

