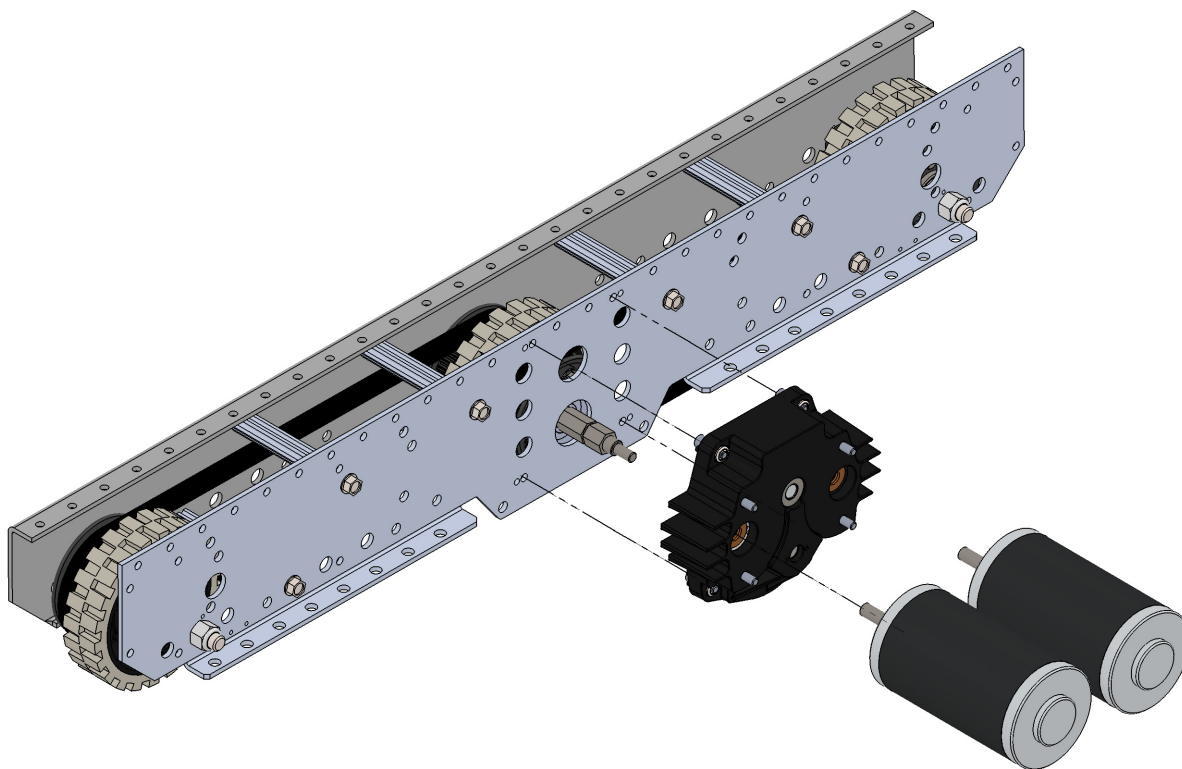


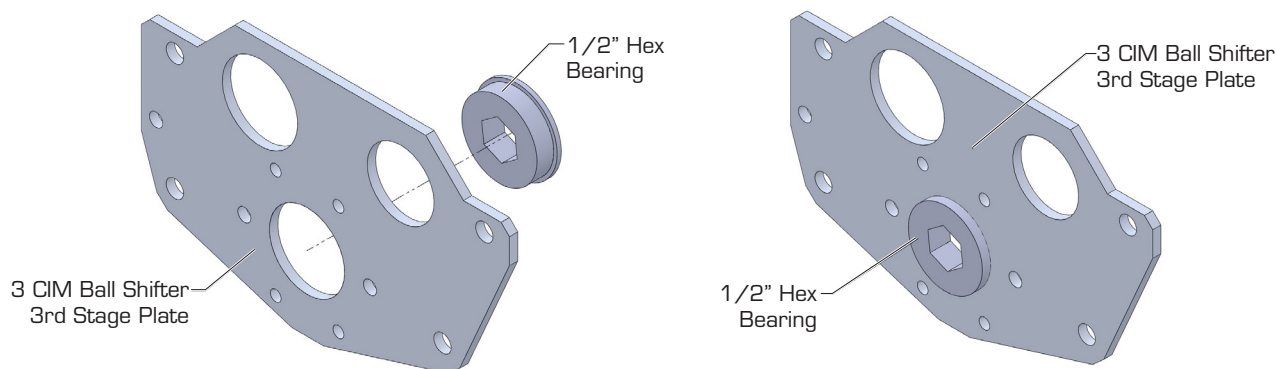
How to Use VEXpro Components with the FRC Kit of Parts Drive System

Mounting a 3 CIM Ball Shifter with 3rd Stage (P/N 217-3268)



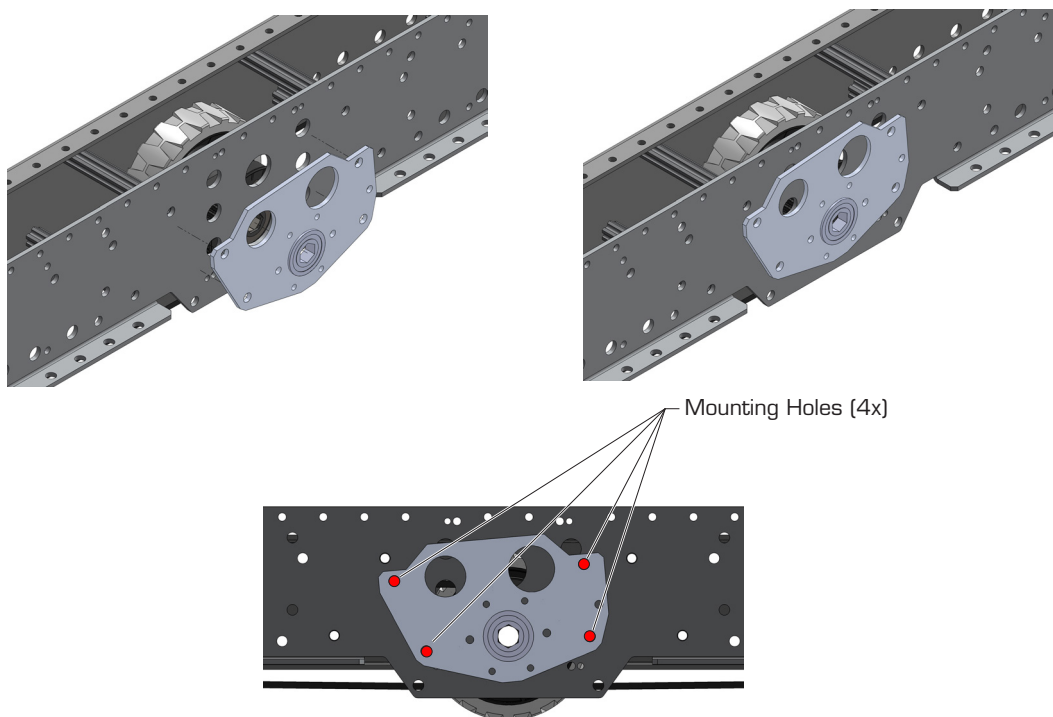
Step 1:

Remove the AndyMark ® Toughbox Mini transmission housing, gears, motors, and input shaft. Leave the 1/2" output shaft in the chassis to keep the wheel in place.



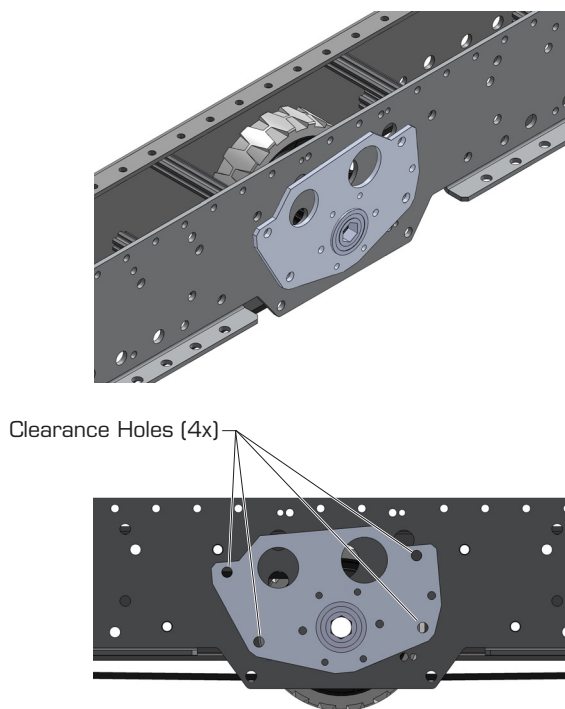
Step 2:

Insert the 1/2" hex flanged bearing into the 3 CIM Ball Shifter 3rd Stage Plate, as shown.

**Step 3:**

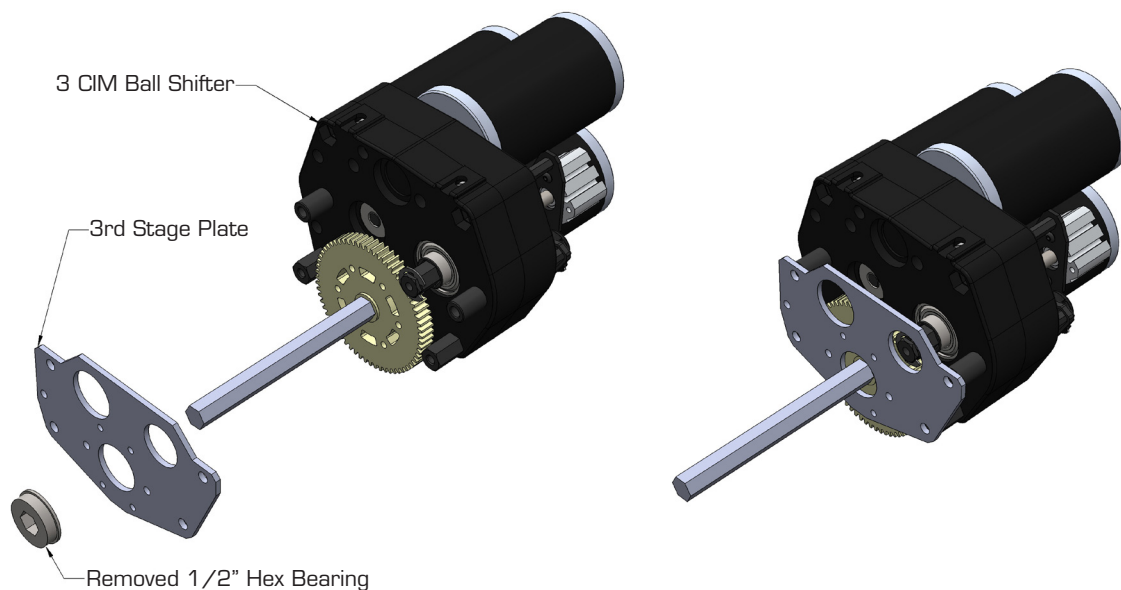
Using the bearing as a pilot, place the 3rd Stage Plate against the chassis frame. Rotate the plate until the (4X) mounting holes do not interfere with any existing spacers or holes in the drivetrain. Clamp the plate in place.

Note: The 3rd Stage Plate is non-symmetrical. Mirror for opposite side.

**Step 4:**

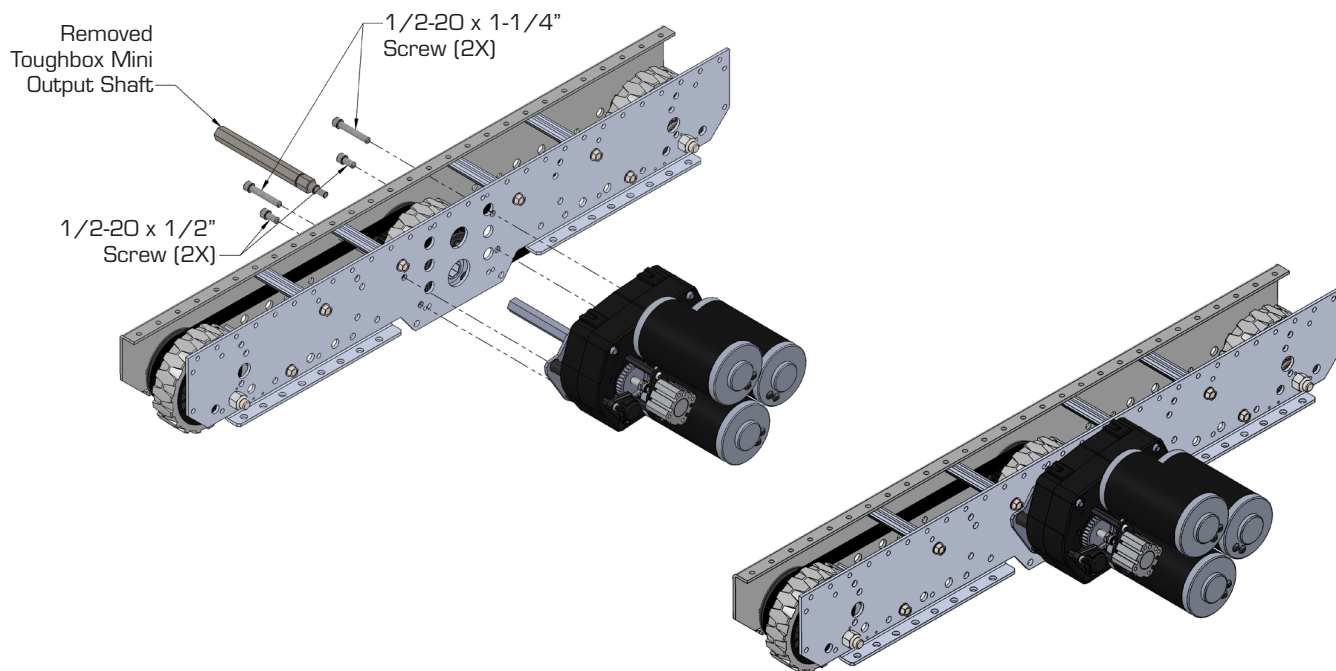
Match drill (4X) 1/4-20 clearance holes into the AM14U chassis plate, as shown.

Note: If teams wish to drill access holes in the outer rails, this is best done before installing the 3 CIM Ball Shifter.



Step 5:

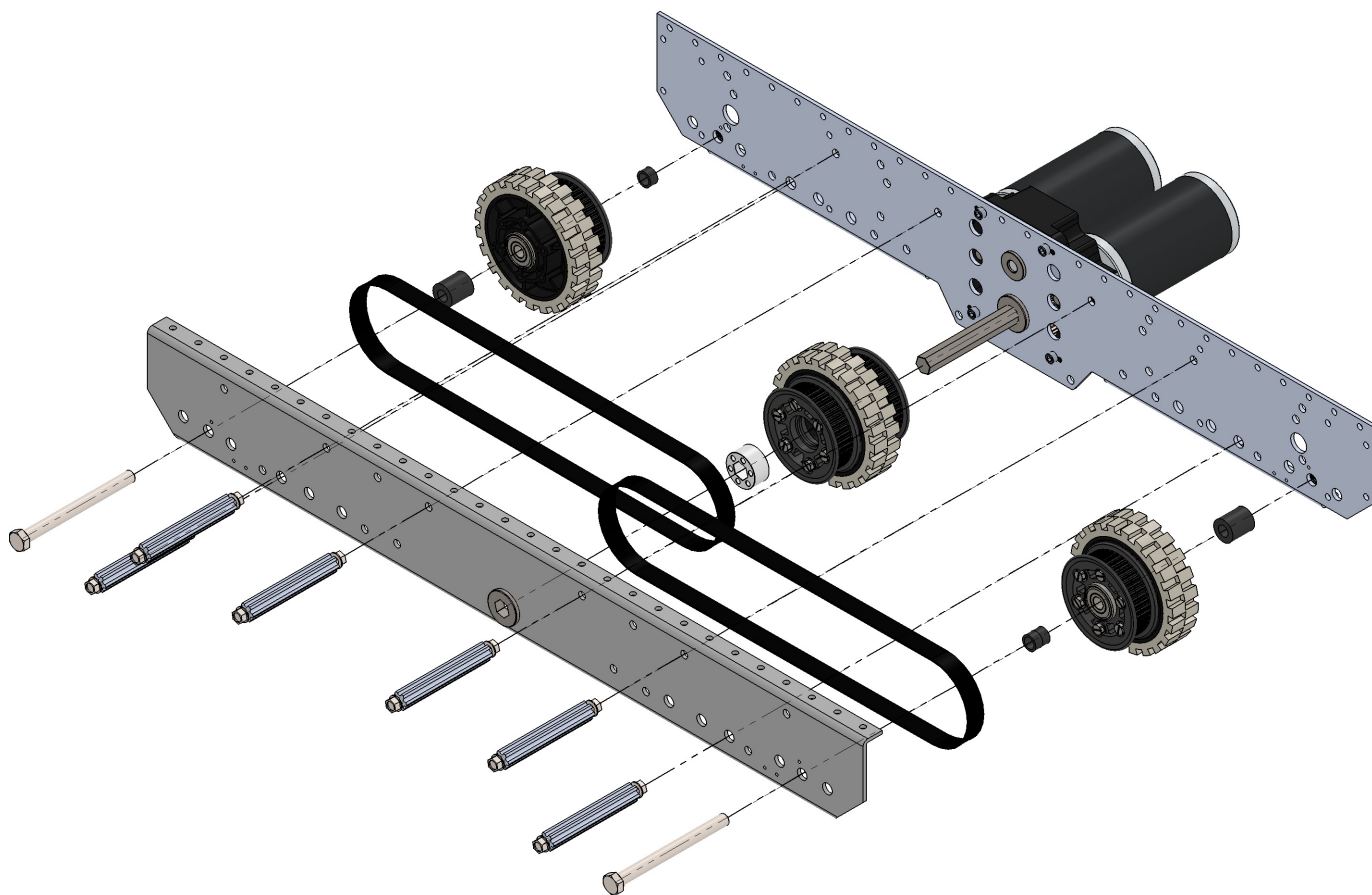
Remove the 1/2" hex flanged bearing from the output of the 3 CIM Ball Shifter with 3rd Stage, as shown.



Step 6:

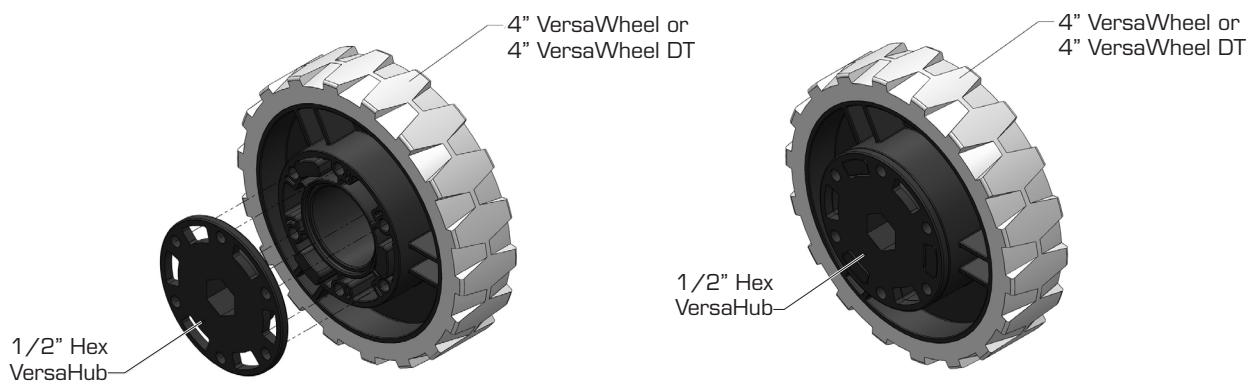
Remove the Toughbox Mini output shaft. The wheel should be held in place by belt tension. Then use (2x) 1/4-20 x 1/2" screws and (2x) 1/4-20 x 1-1/4" screws to install the CIM Ball Shifter with 3rd Stage, as shown. Use of Loctite is recommended with all screws.

Replacing AM Wheels with VersaWheel (4") (P/N 217-2903) or VersaWheel DT (4") (P/N 217-3197)



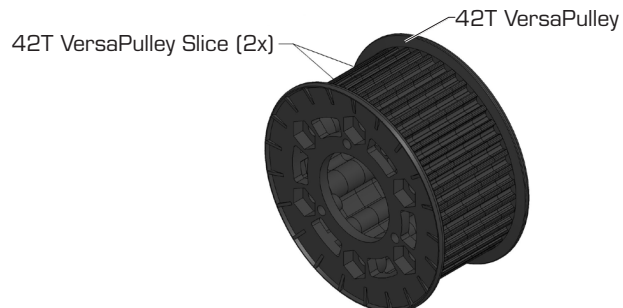
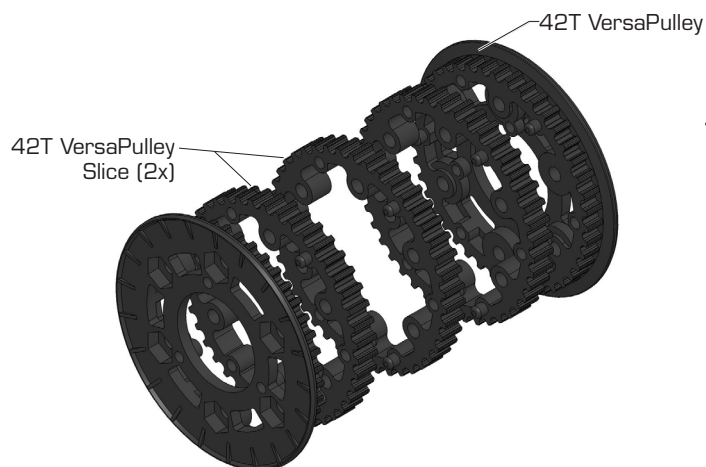
Step 1:

Remove the outer side plate and all existing wheels and belts.

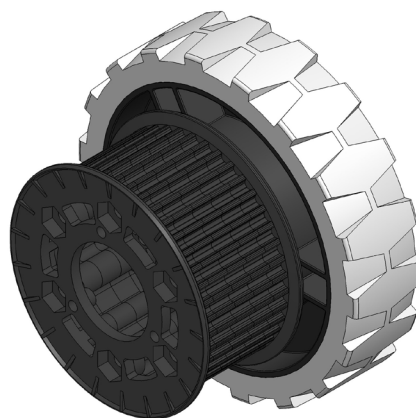
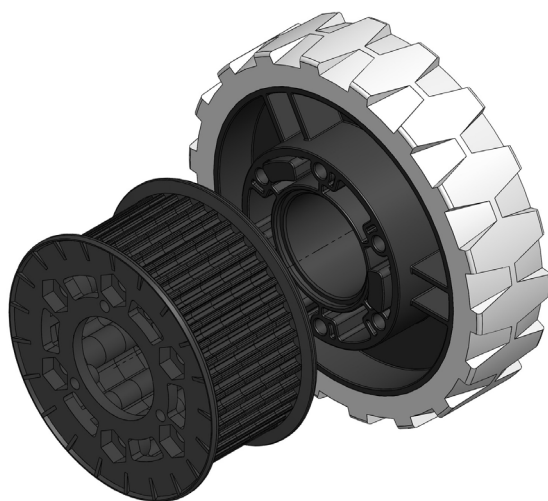


Step 2:

Insert a 1/2" Hex VersaHub (P/N 217-2592) into a 4" VersaWheel or 4" VersaWheel DT, as shown.

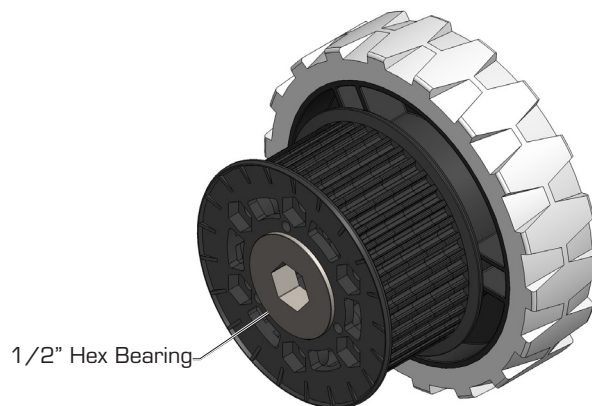
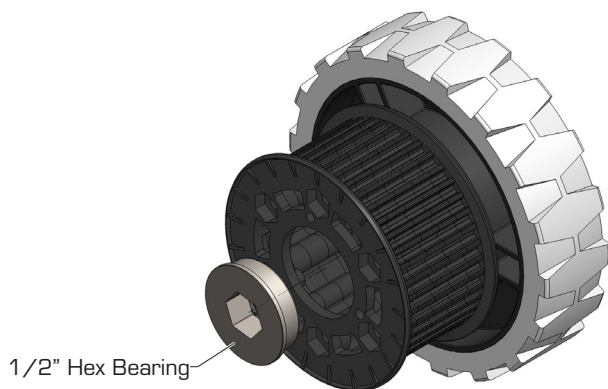
**Step 3:**

Insert (2X) additional 42T VersaPulley slices (P/N 217-3248) into a 42T VersaPulley (P/N 217-3199).

**Step 4:**

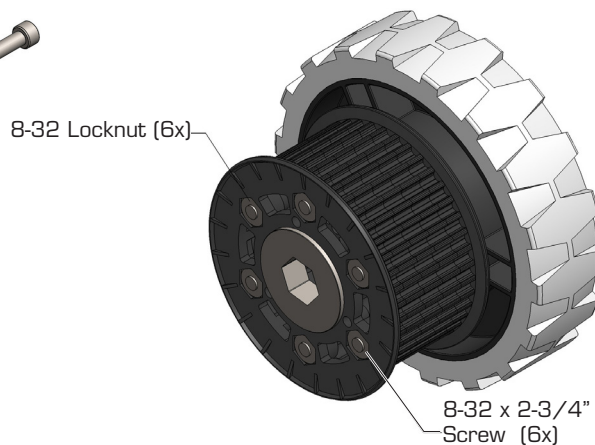
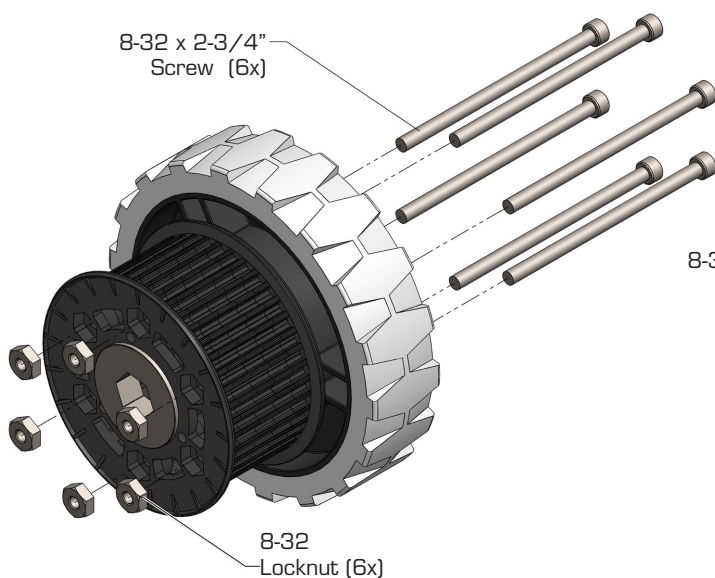
Attach the 42T VersaPulley to the wheel opposite the VersaHub, as shown.

Note: The VersaPulley is not retained at this time. Take care when handling to avoid losing pieces.



Step 5:

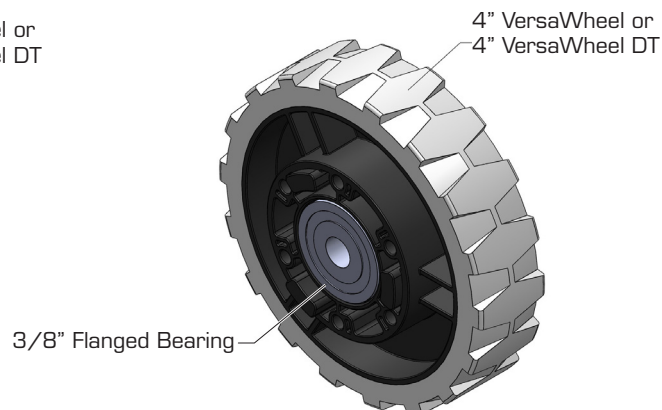
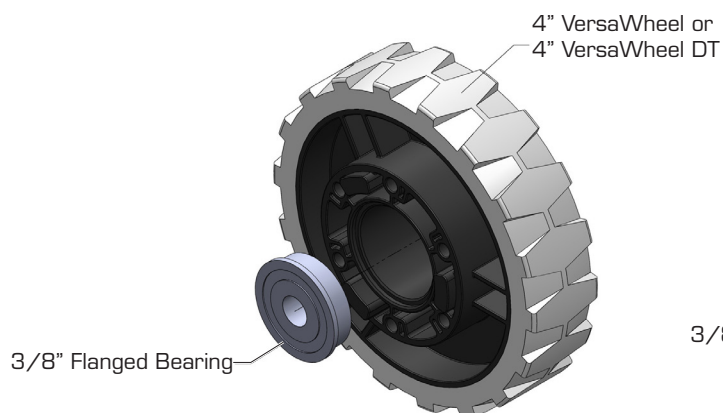
Insert a 1/2" hex flanged bearing (P/N 217-2734) into the 42T VersaPulley.



Step 6:

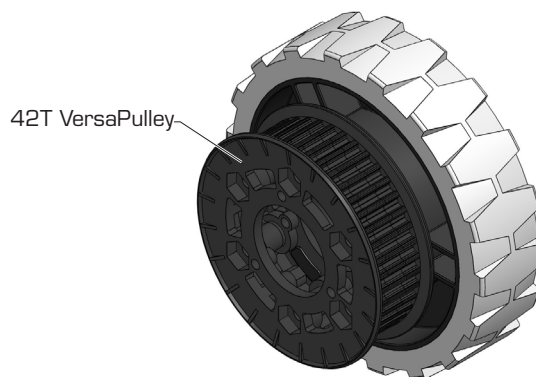
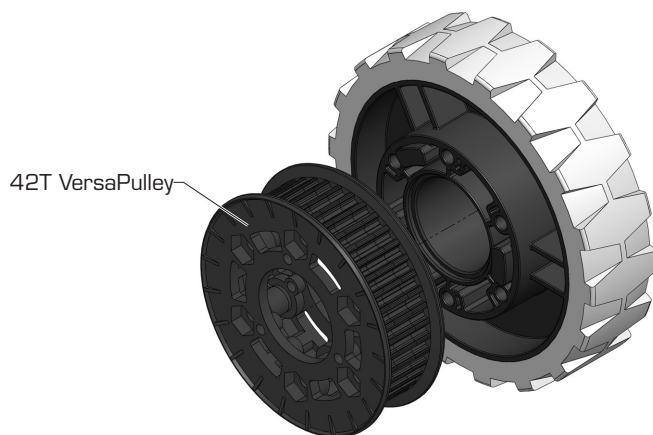
Use (6X) 8-32 Nylock nuts and (6X) 8-32 x 2-7/8" screws to assemble the wheel, as shown.

Note: The Center Wheel Assembly is now complete. Set it aside for the final assembly.



Step 7:

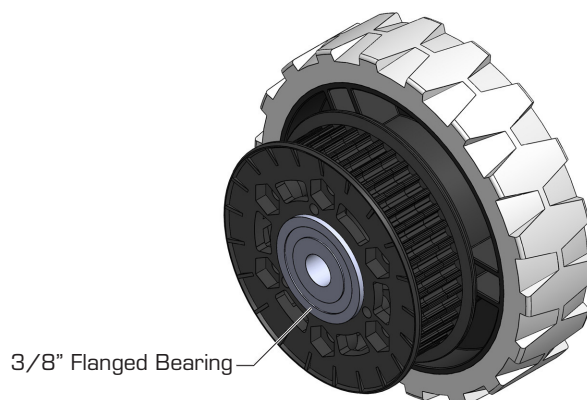
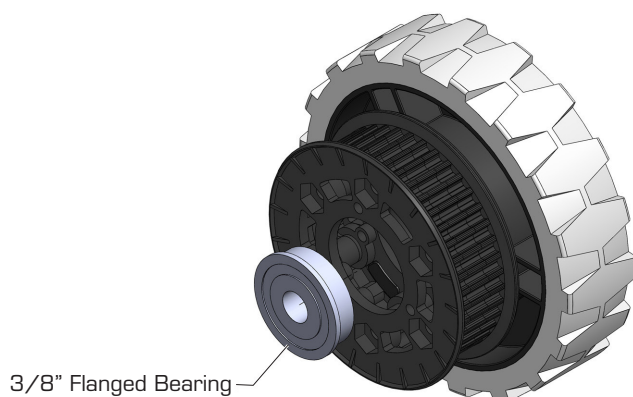
Insert a 3/8" flanged bearing (P/N 217-2732) into a 4" VersaWheel or 4" VersaWheel DT.



Step 8:

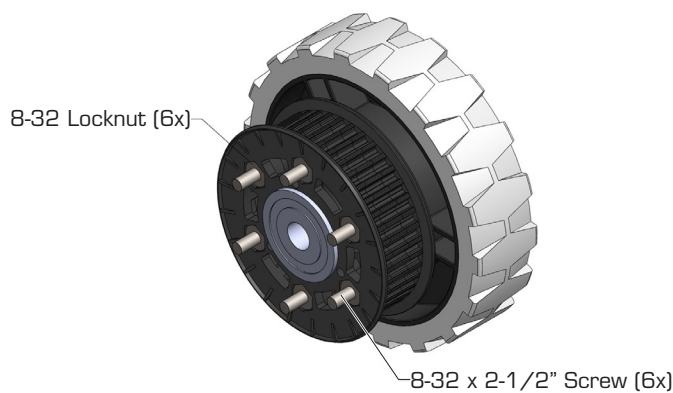
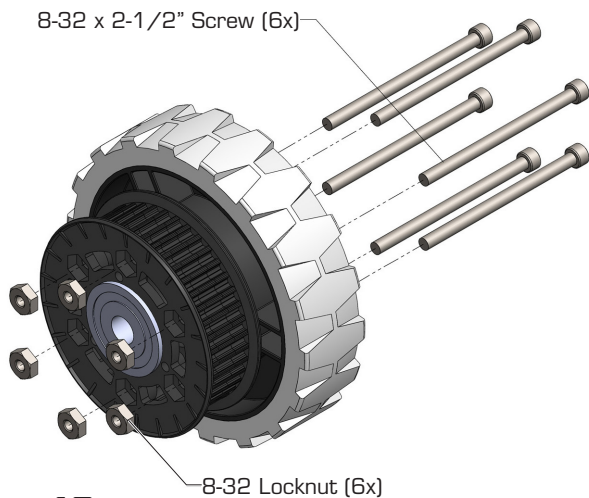
Attach a 42T VersaPulley to the wheel opposite the bearing, as shown.

Note: The VersaPulley is not retained at this time. Take care when handling to avoid losing pieces.



Step 9:

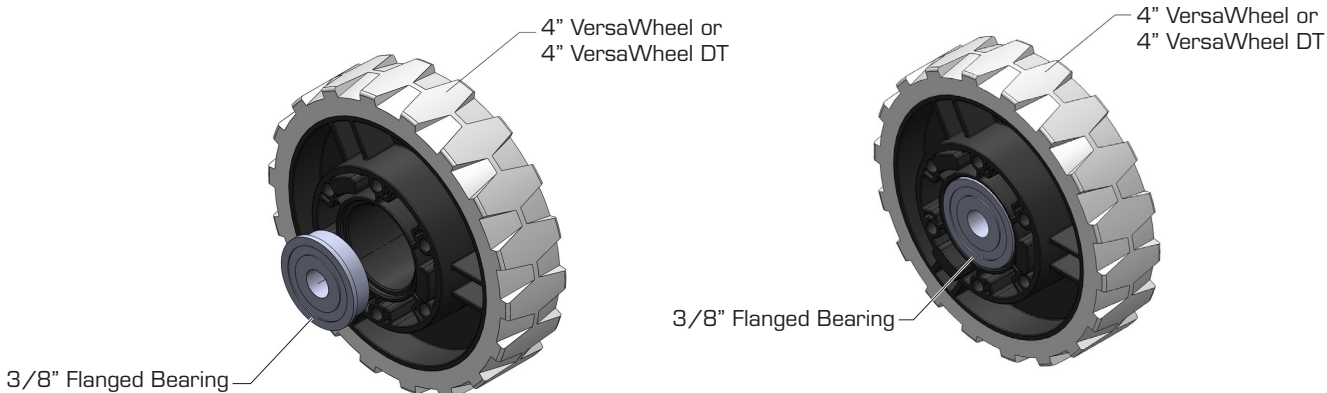
Insert a 3/8" flanged bearing into the 42T VersaPulley.



Step 10:

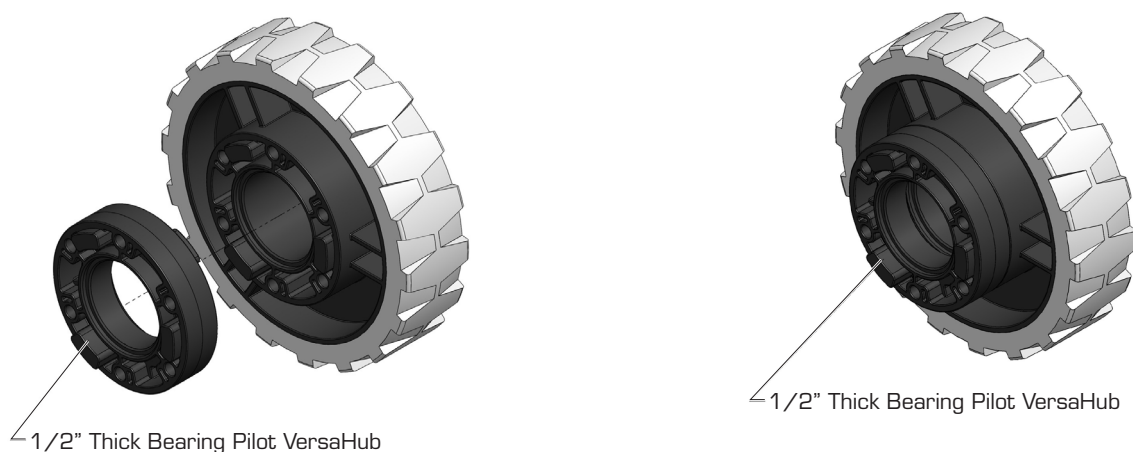
Use (6X) 8-32 Nylock nuts and (6X) 8-32 x 2-1/2" screws to assemble the wheel, as shown.

Note: The Short Wheel Assembly is now complete. Set it aside for the final assembly.



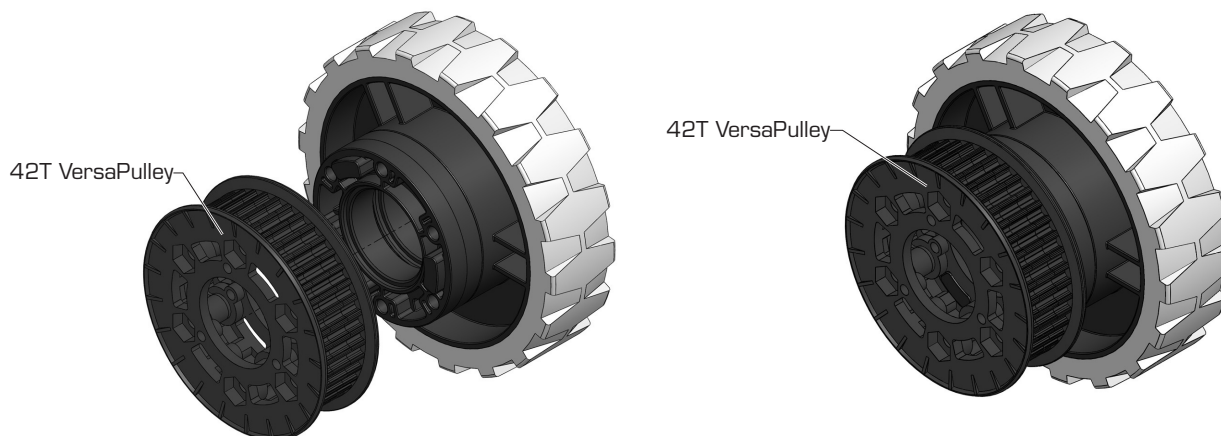
Step 11:

Insert a 3/8" flanged bearing into a 4" VersaWheel or 4" VersaWheel DT.



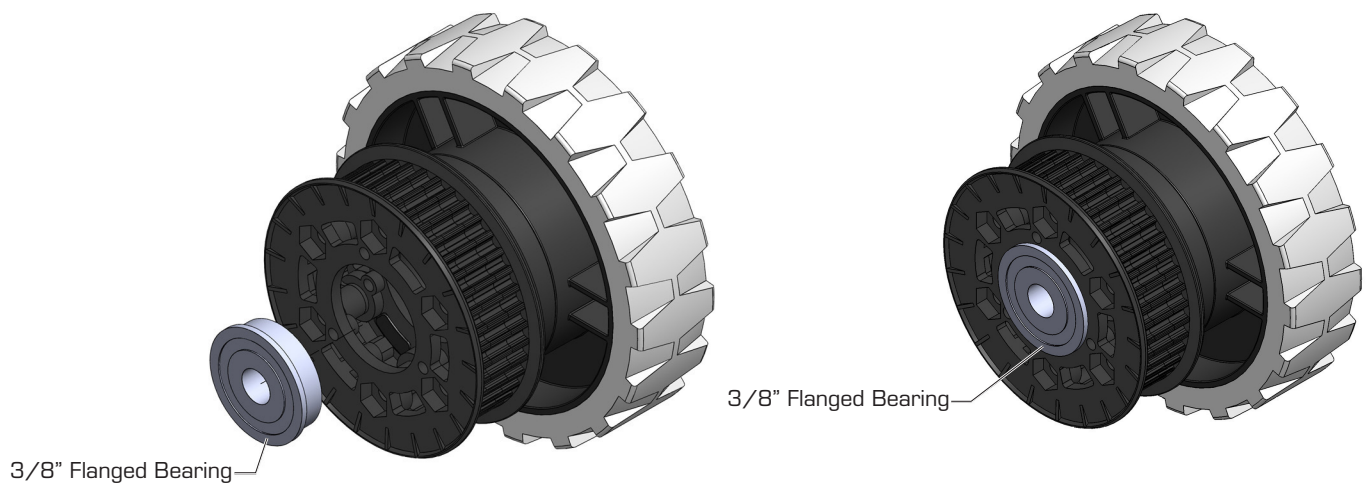
Step 12:

Attach a 1/2" Thick Bearing Pilot VersaHub (P/N 217-2591) onto the VersaWheel opposite of the bearing.



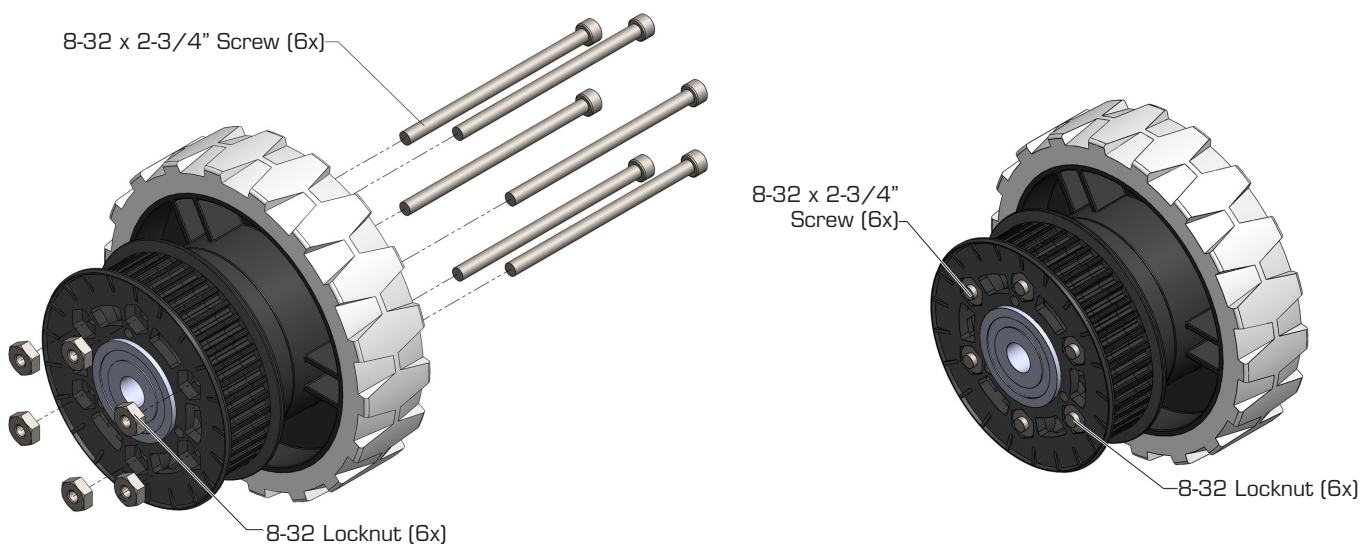
Step 13:

Attach a 42T VersaPulley to the VersaHub, as shown.



Step 14:

Insert a 3/8" flanged bearing into the 42T VersaPulley.



Step 15:

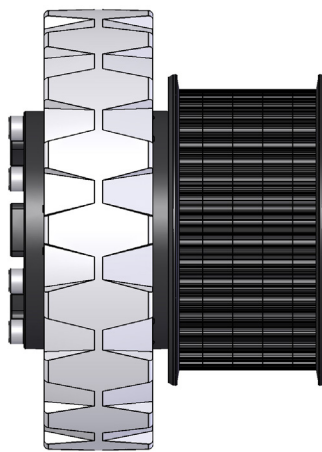
Use (6X) 8-32 Nylock nuts and (6X) 8-32 x 2-3/4" screws to assemble the wheel, as shown.

Note: The Long Wheel Assembly is now complete. Set it aside for the final assembly.

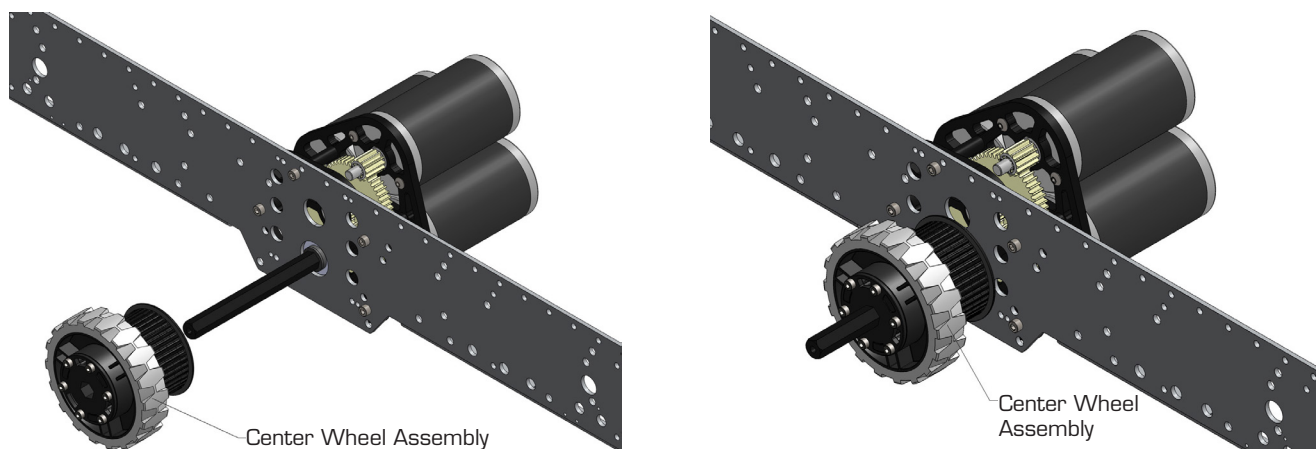
**Step 16:**

Slide a 1/2" Hex x 1/16" Delrin Washer (P/N 217-3257) onto the output shaft of the 3 CIM Ball Shifter.

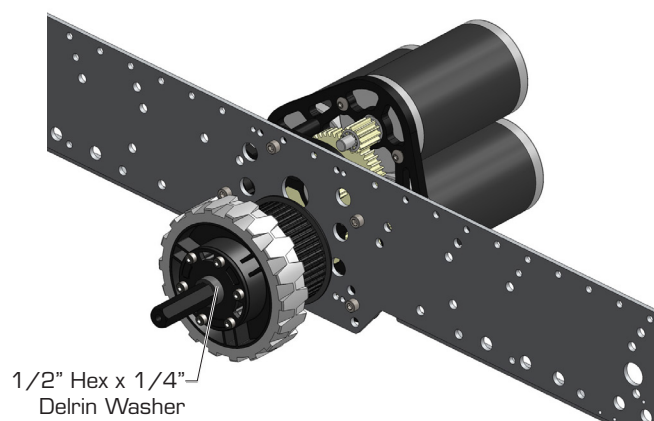
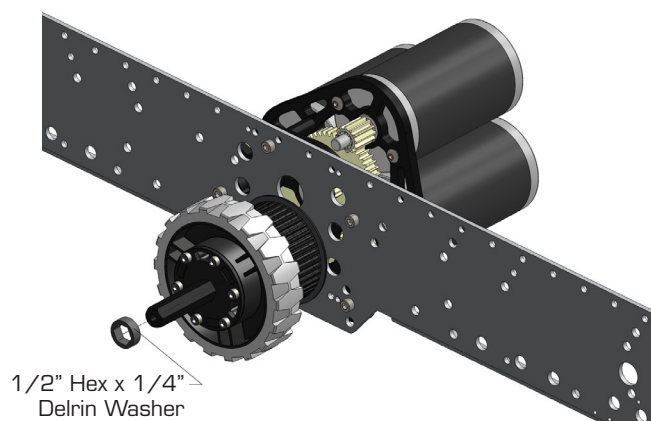
Note: If using a WCP transmission, add an additional 1/2" Hex x 1/8" Delrin Washer (P/N 217-2758) spacer, as shown.



Center Wheel Assembly

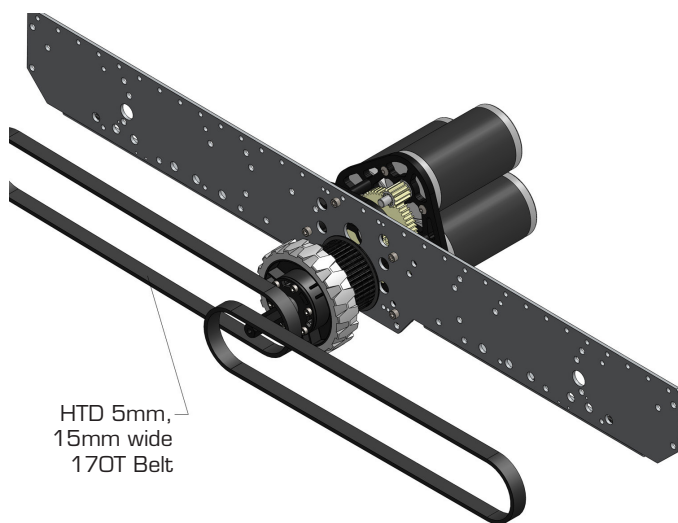
**Step 17:**

Slide the Center Wheel Assembly onto the transmission output shaft as shown. Make sure that the pulley is on the inside of the chassis closer to the gearbox.



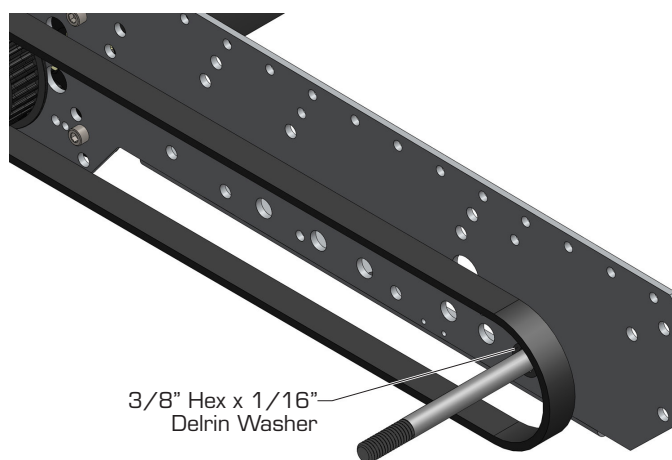
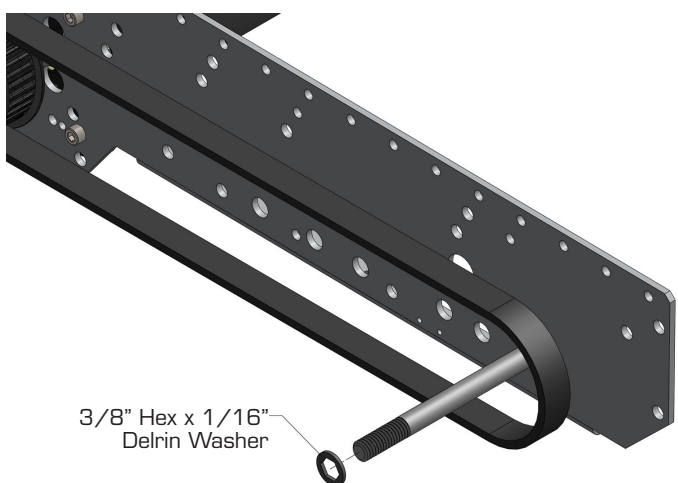
Step 18:

Slide a 1/2" Hex x 1/4" Delrin Washer (P/N 217-3259) onto the transmission output shaft.



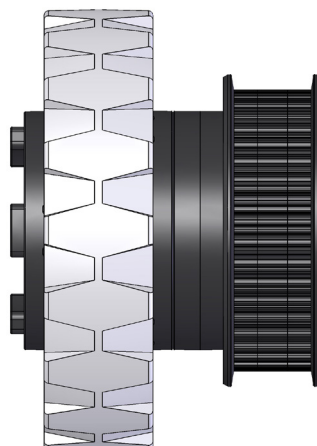
Step 19:

Place the (2X) HTD 5mm, 15mm wide 170T belts around the pulley on the center wheel, as shown.

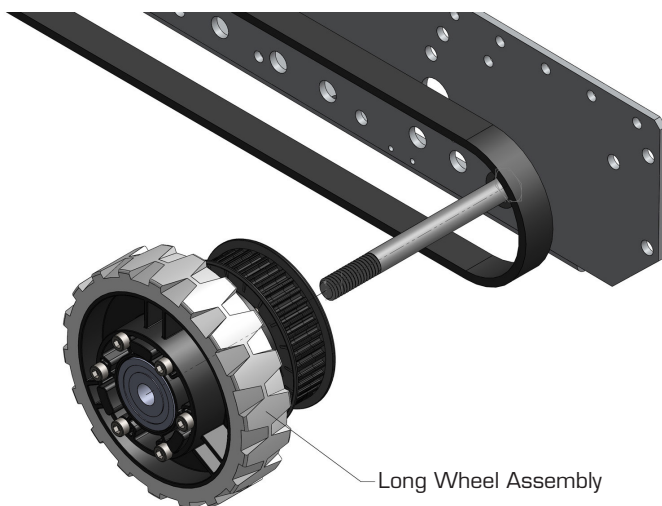


Step 20:

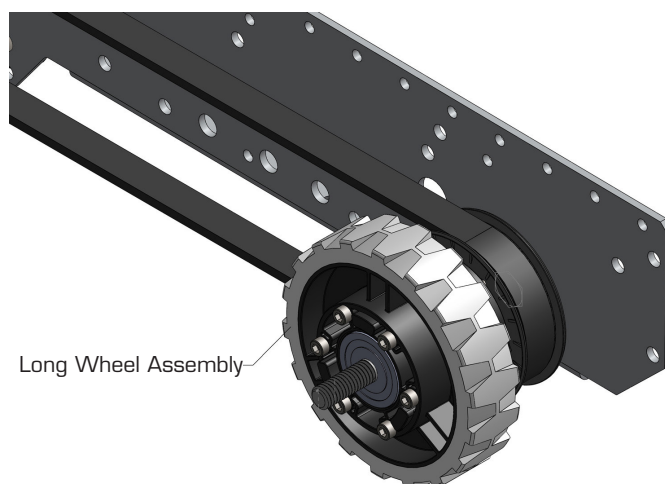
Slide a 3/8" Hex x 1/16" Delrin Washer (P/N 217-3258) onto one of the wheel axles.



Long Wheel Assembly



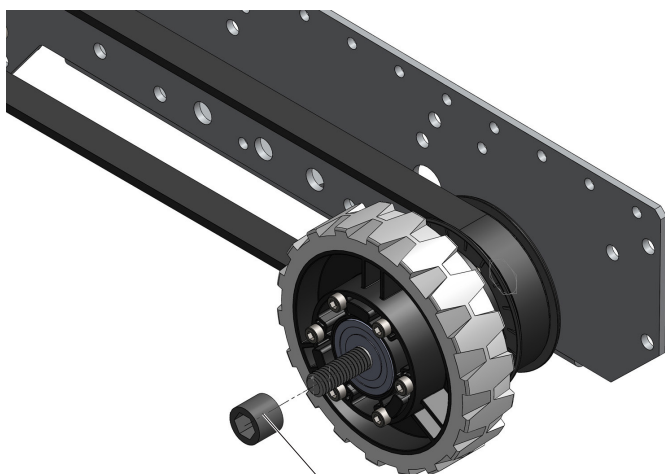
Long Wheel Assembly



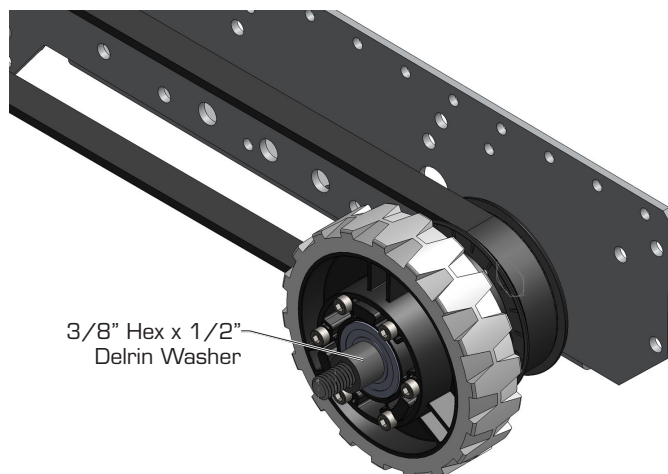
Long Wheel Assembly

Step 21:

Slide the Long Wheel Assembly onto the wheel axle, and place the belt around the outer wheel as shown.



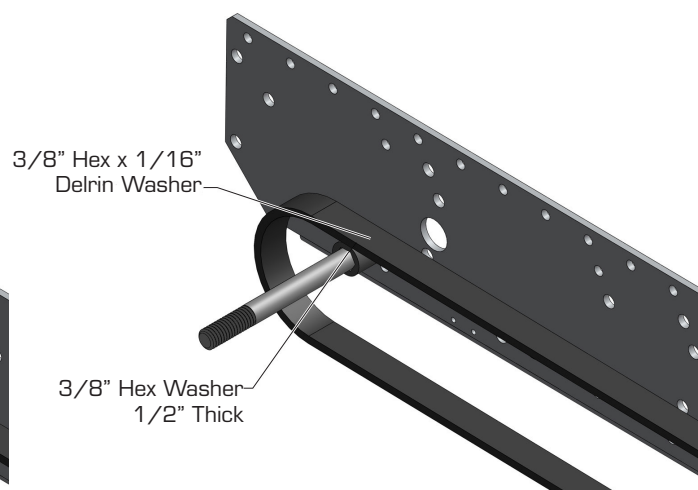
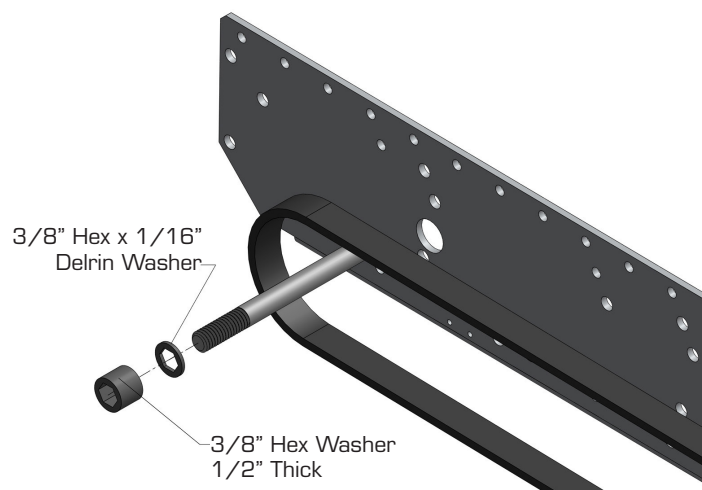
3/8" Hex x 1/2" Delrin Washer



3/8" Hex x 1/2"
Delrin Washer

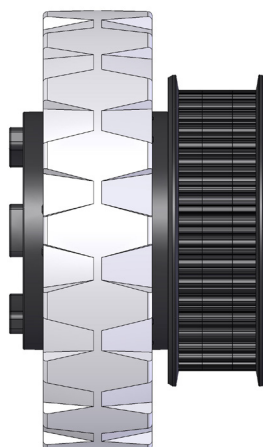
Step 22:

Slide a 3/8" Hex x 1/2" Delrin Washer onto the wheel axle, as shown.

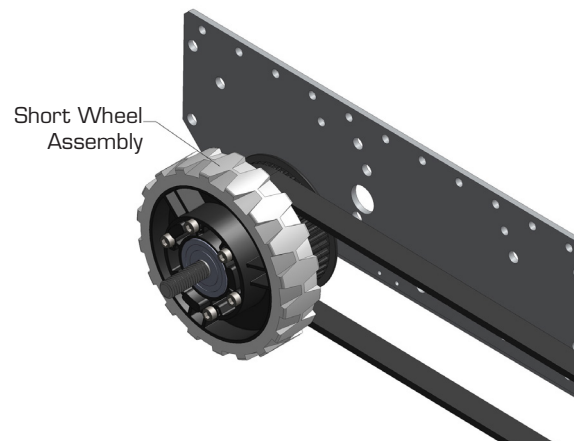
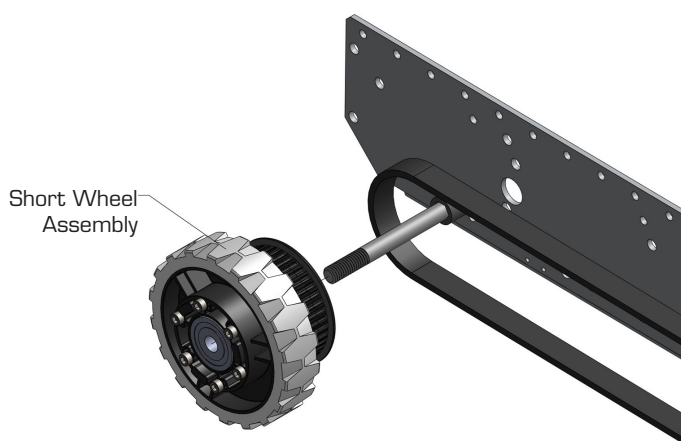


Step 23:

Slide a 3/8" Hex x 1/16" Delrin Washer and a 3/8" Hex x 1/2" Delrin Washer (P/N 217-3262) onto the remaining wheel axle.

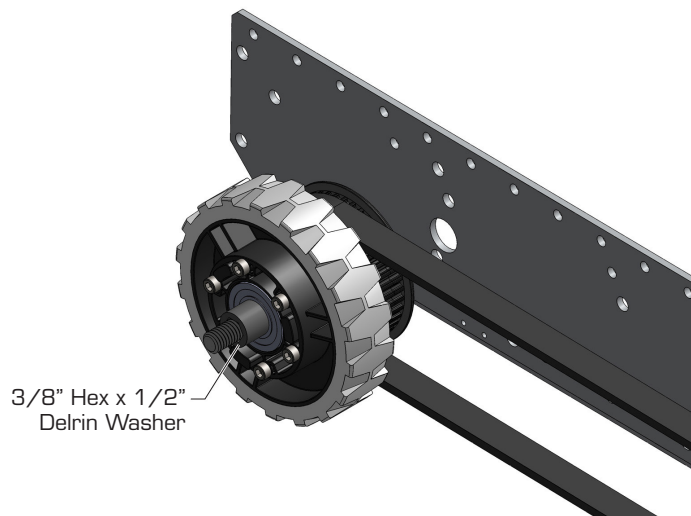
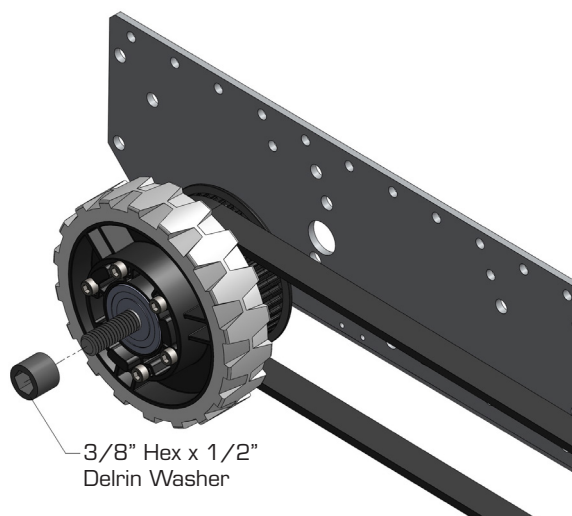


Short Wheel Assembly



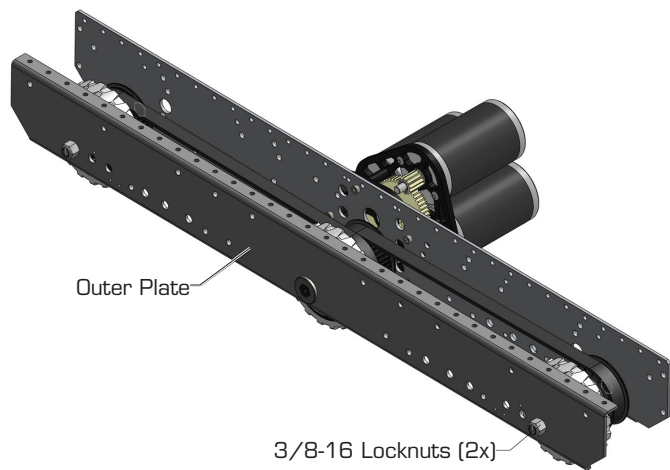
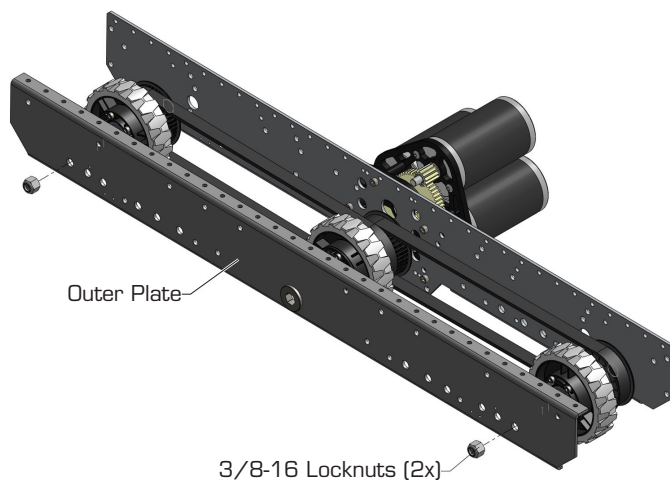
Step 24:

Slide the Short Wheel Assembly onto the wheel axle and place the belt around the pulley.



Step 25:

Slide a 3/8" Hex x 1/2" Delrin Washer onto the wheel axle.



Step 26:

Reattach the outer side plate and (2X) 3/8-16 Nylock nuts as shown.