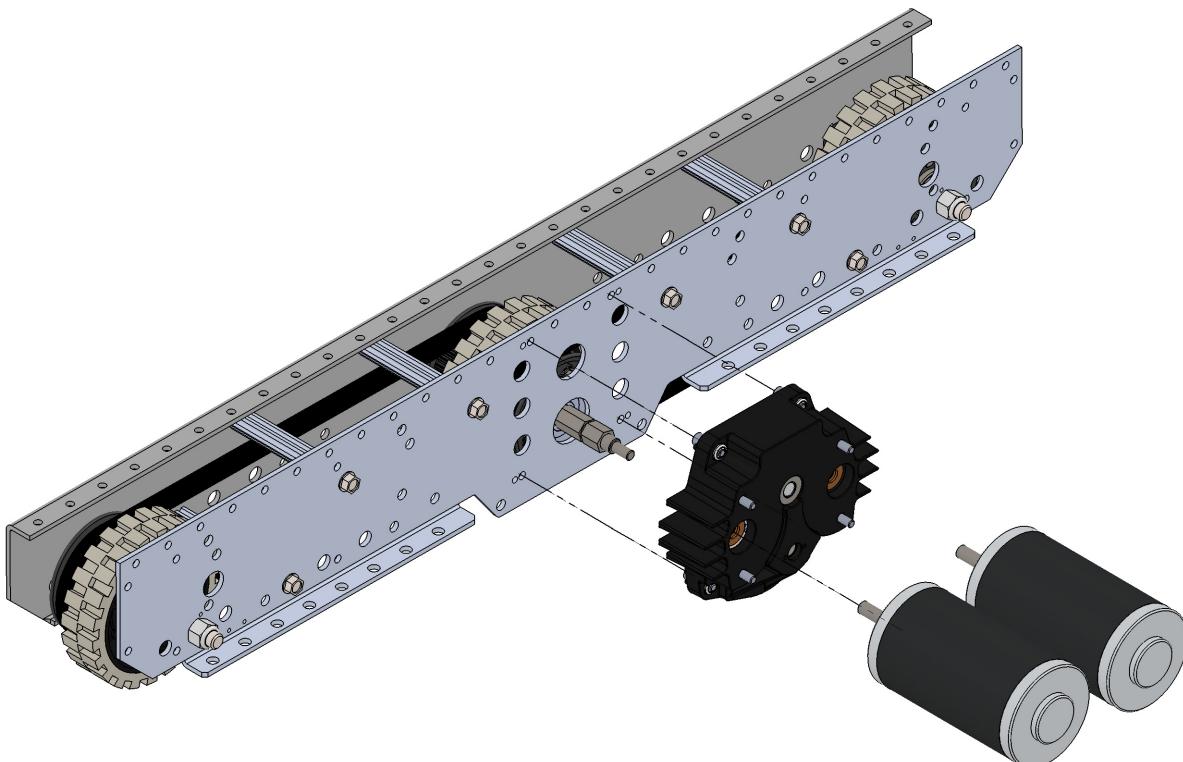


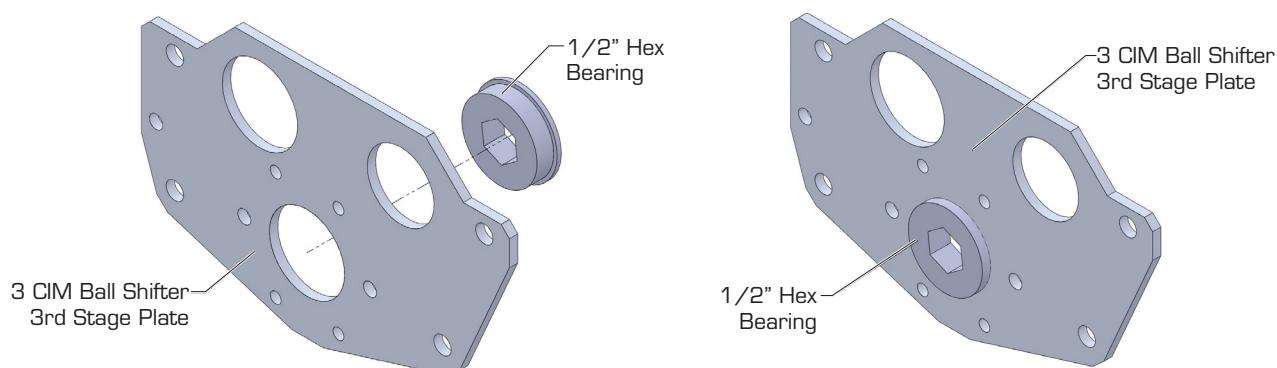
How to Use VEXpro Components with the FRC Kit of Parts Drive System

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



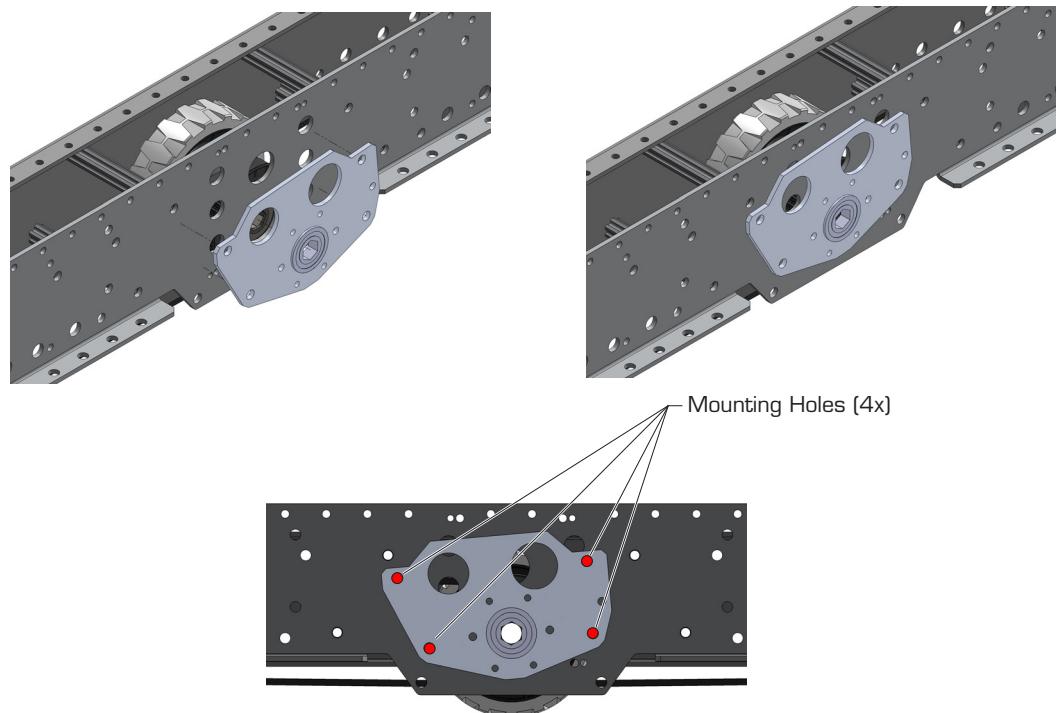
Step 1:

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:

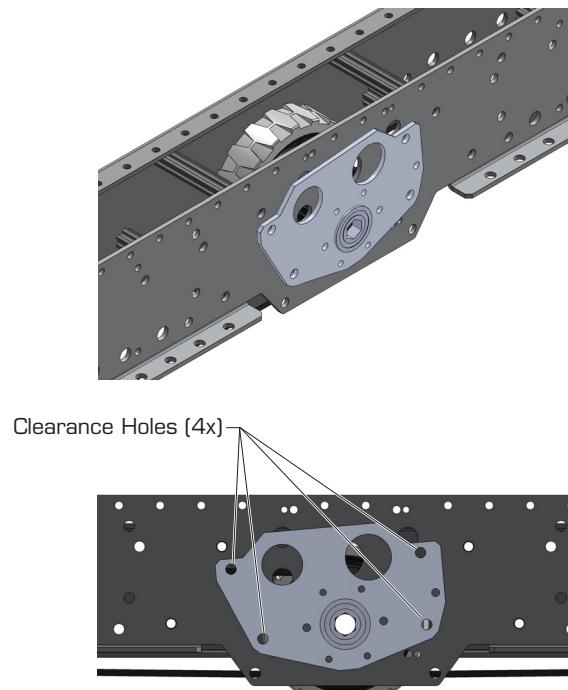
Insert the 1/2" hex flanged bearing into the 3 CIM Ball Shifter 3rd Stage Plate, as shown.



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.

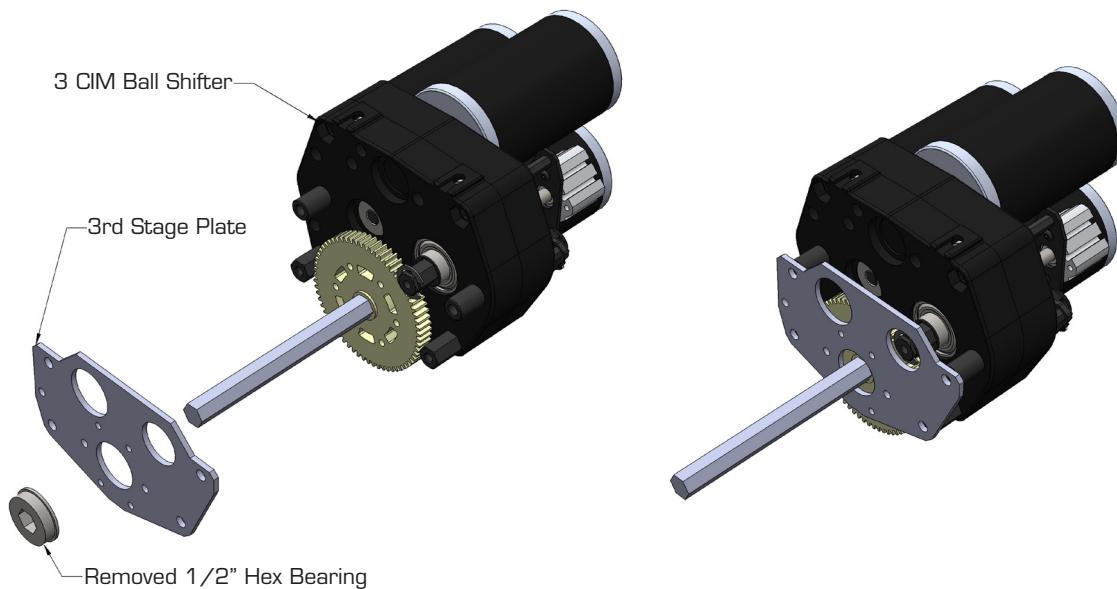
Note: The 3rd Stage Plate is non-symmetrical. Mirror for opposite side.



Step 4:

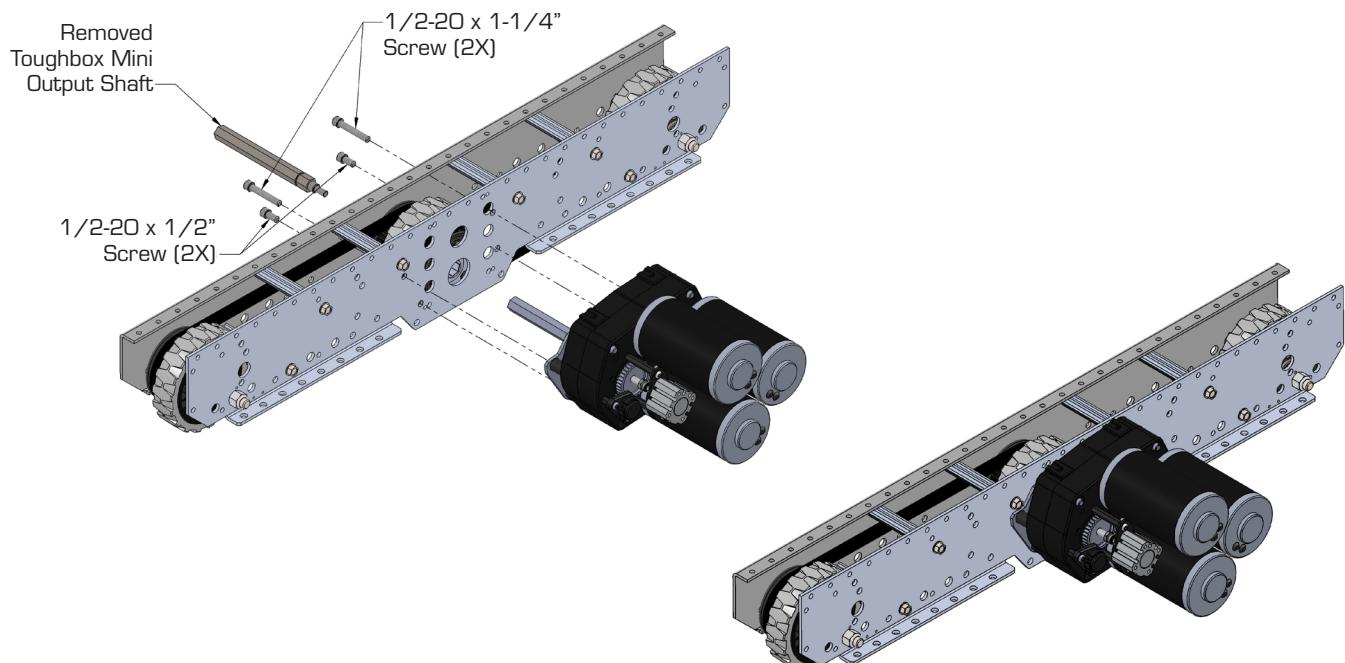
Match drill (4X) 1/4-20 clearance holes into the AM14U chassis plate, as shown.

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:

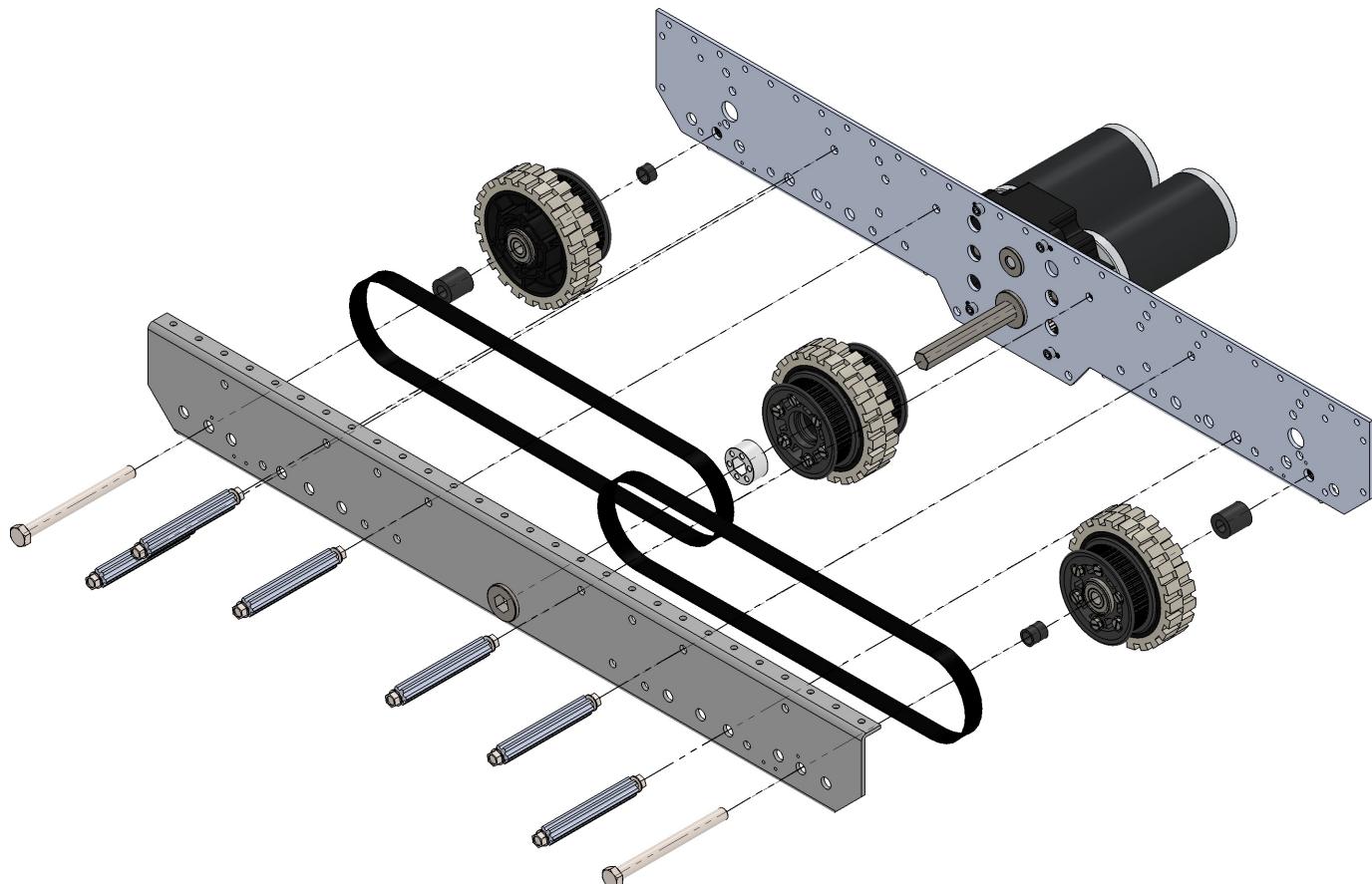
Remove the 1/2" hex flanged bearing from the output of the 3 CIM Ball Shifter with 3rd Stage, as shown.



Step 6:

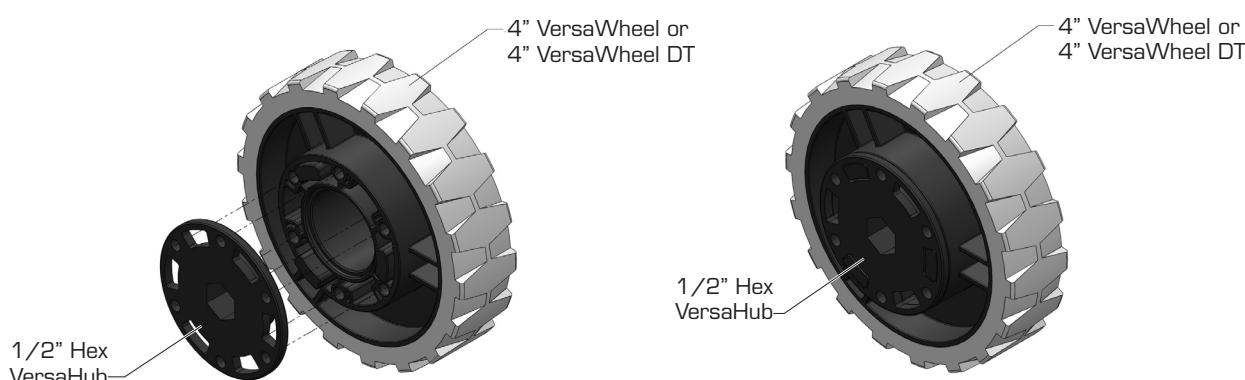
Remove the Toughbox Mini output shaft. The wheel should be held in place by belt tension. Then use (2x) 1/4-20 x 1/2" screws and (2x) 1/4-20 x 1-1/4" screws to install the CIM Ball Shifter with 3rd Stage, as shown. Use of Loctite is recommended with all screws.

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



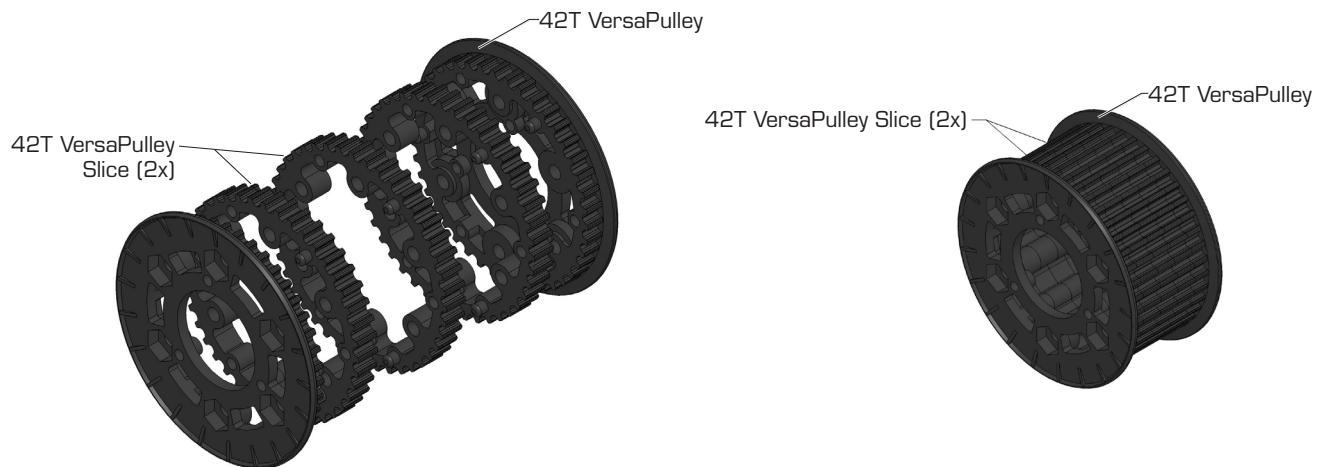
Step 1:

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

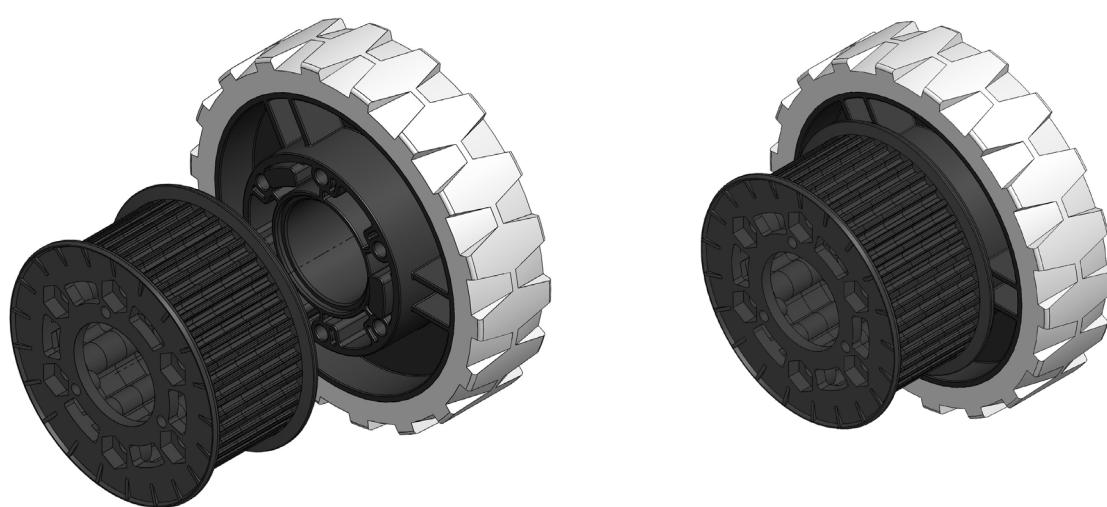


Step 2:

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

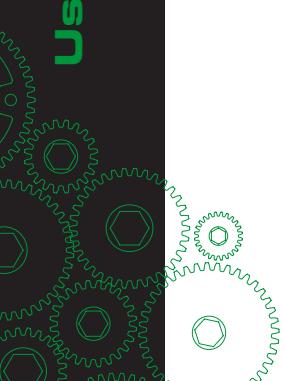
**Step 3:**

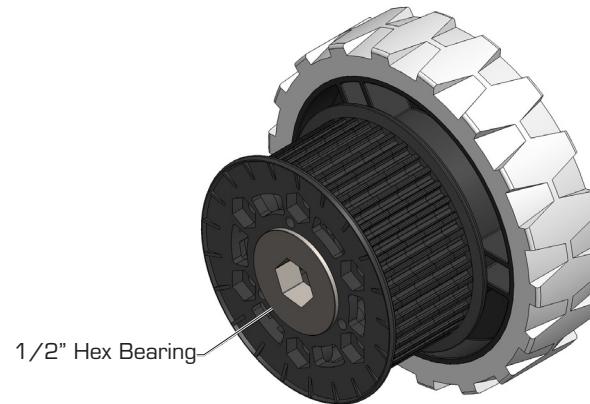
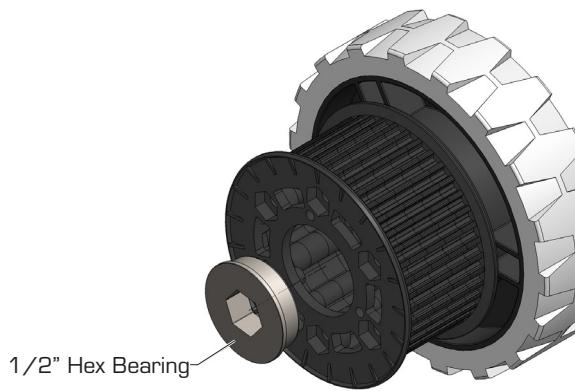
Insert (2X) additional 42T VersaPulley slices (P/N 217-3248) into a 42T VersaPulley (P/N 217-3199).

**Step 4:**

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

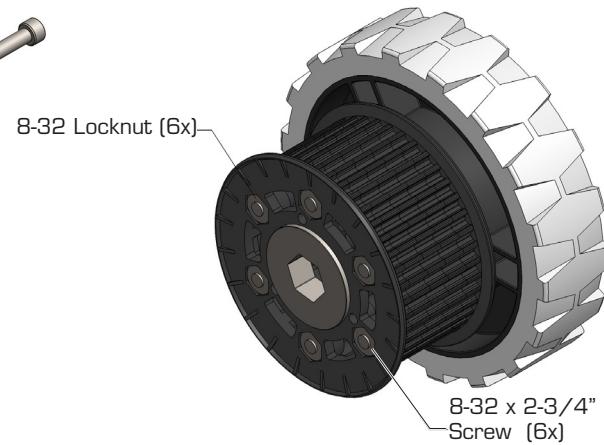
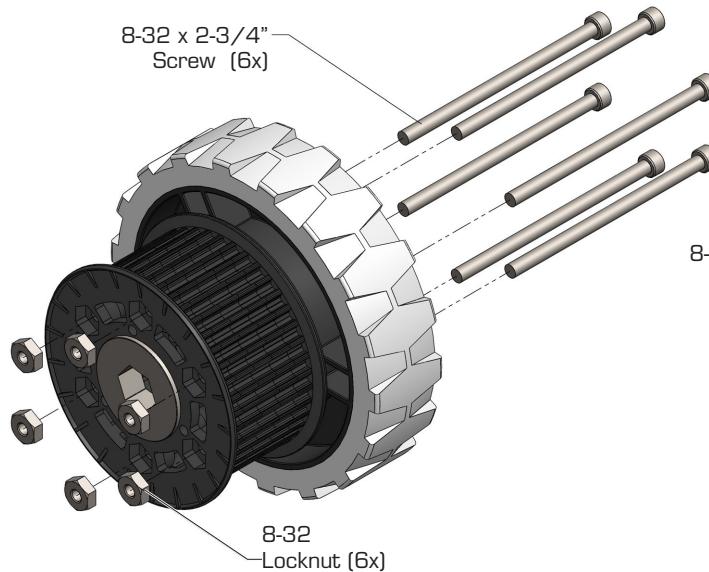
Note: The VersaPulley is not retained at this time. Take care when handling to avoid losing pieces.





Step 5:

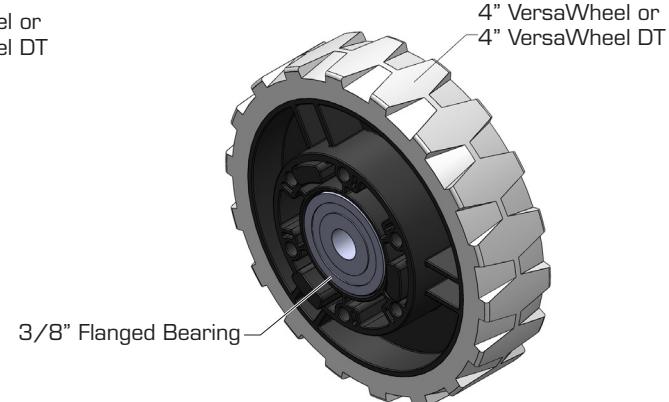
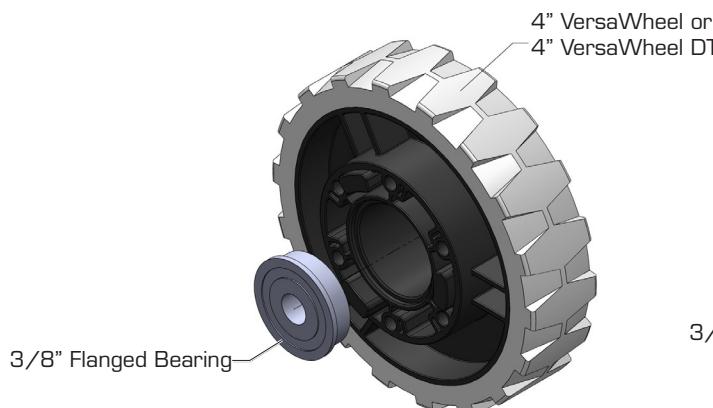
Insert a 1/2" hex flanged bearing (P/N 217-2734) into the 42T VersaPulley.



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:

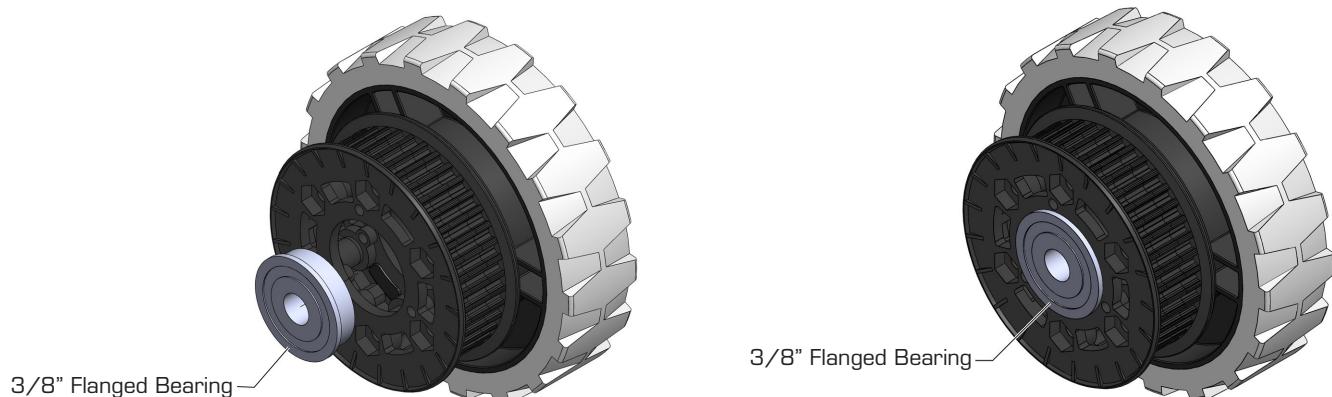
Insert a 3/8" flanged bearing (P/N 217-2732) into a 4" VersaWheel or 4" VersaWheel DT.



Step 8:

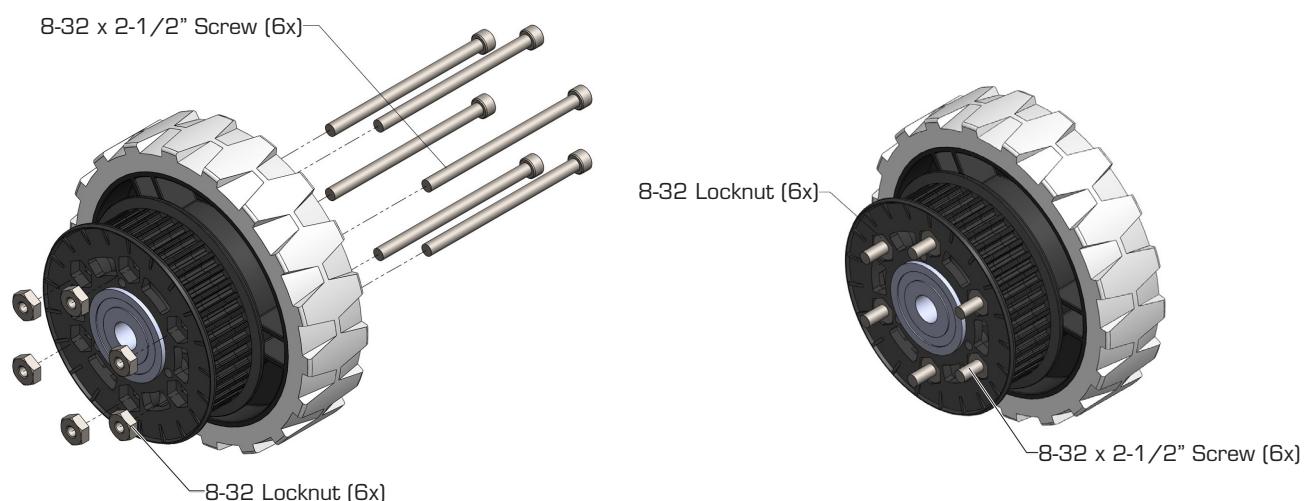
Attach a 42T VersaPulley to the wheel opposite the bearing, as shown.

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



Step 9:

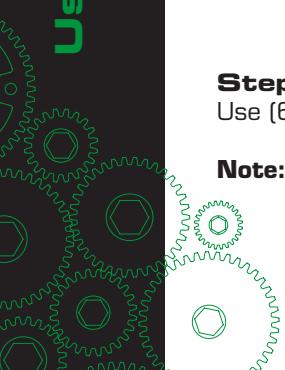
Insert a 3/8" flanged bearing into the 42T VersaPulley.

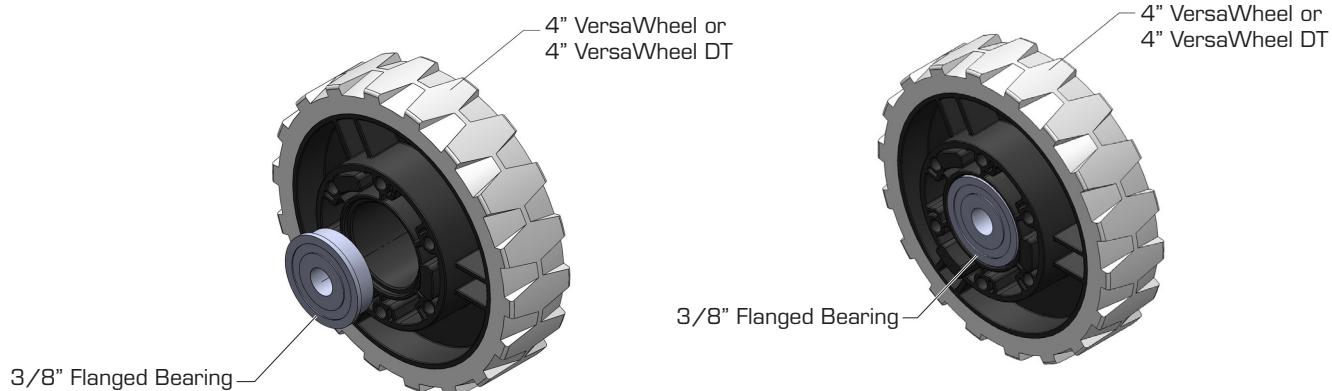


Step 10:

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

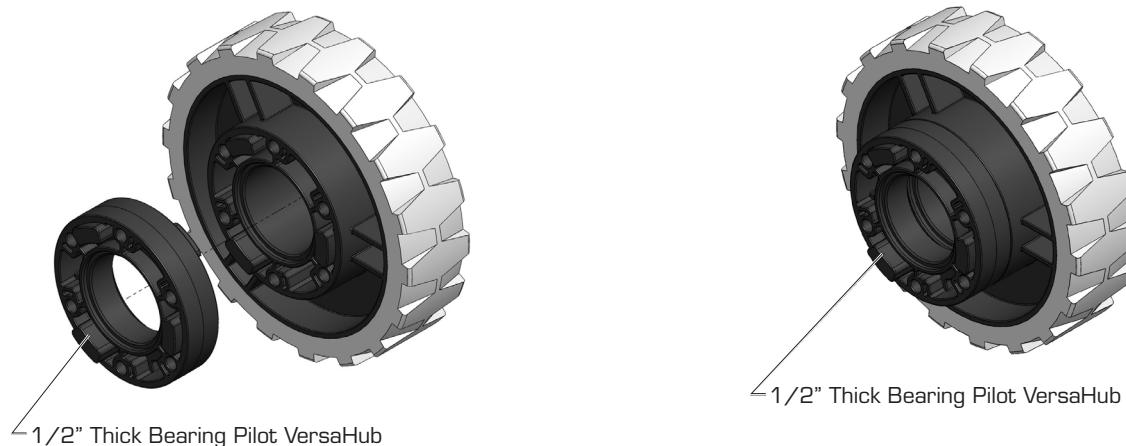
Note: The Short Wheel Assembly is now complete. Set it aside for the final assembly.





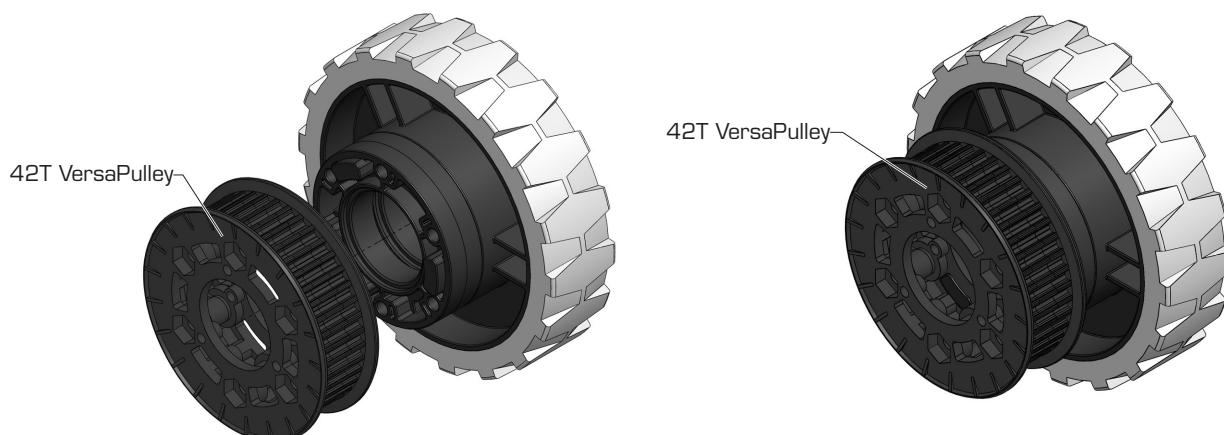
Step 11:

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



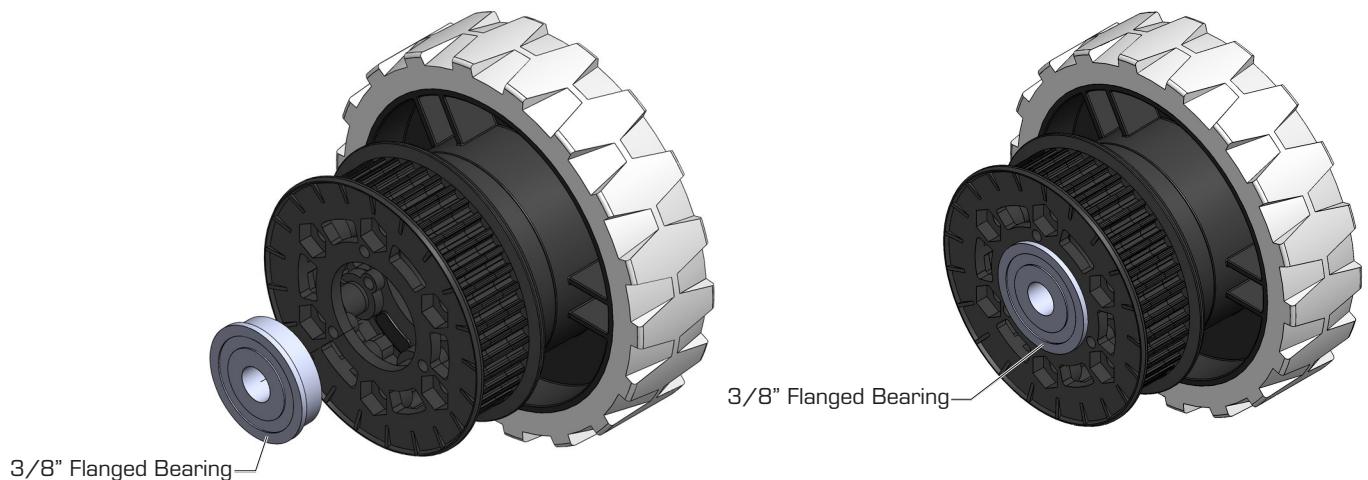
Step 12:

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

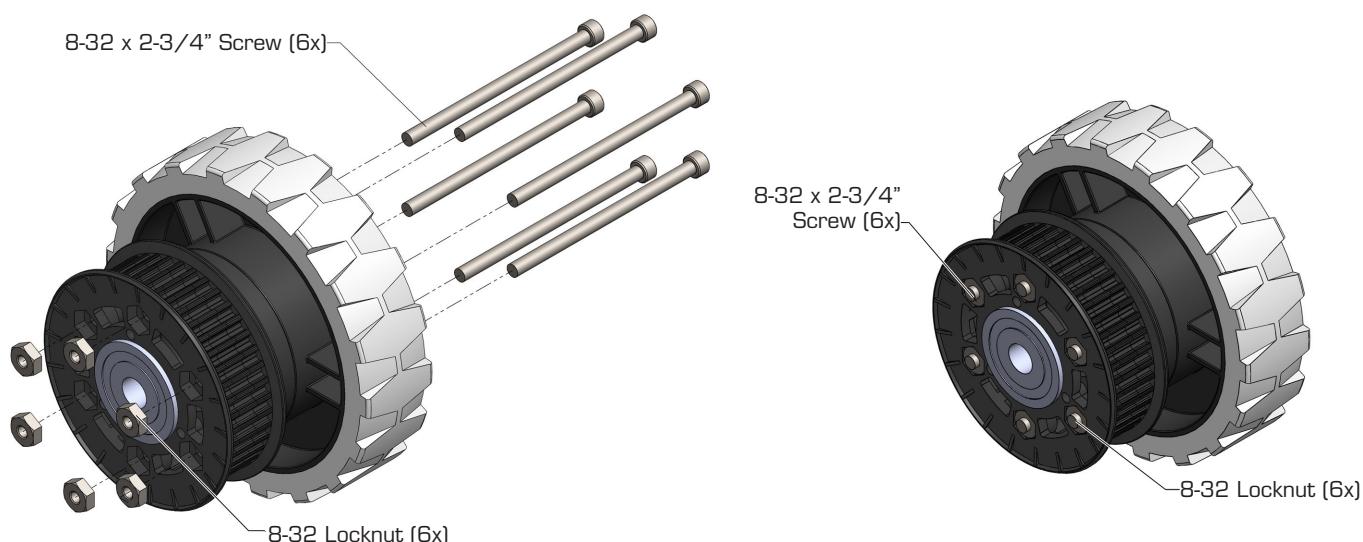


Step 13:

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

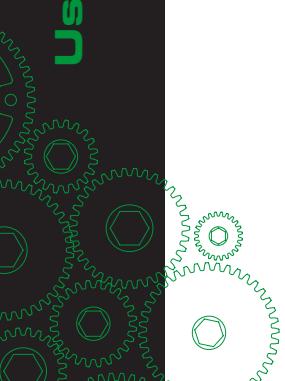


Step 14:
Insert a 3/8" flanged bearing into the 42T VersaPulley.



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.

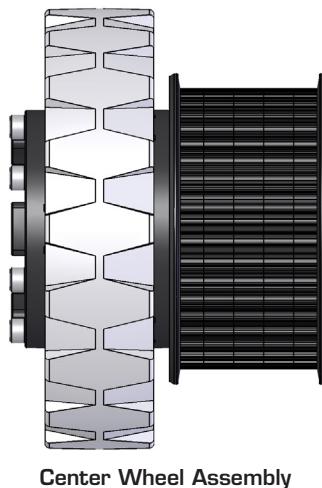




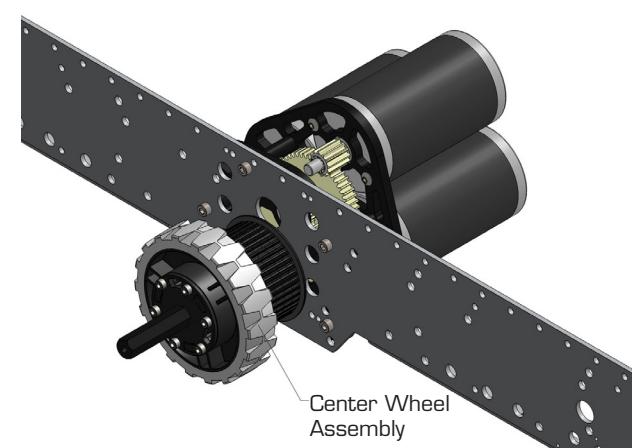
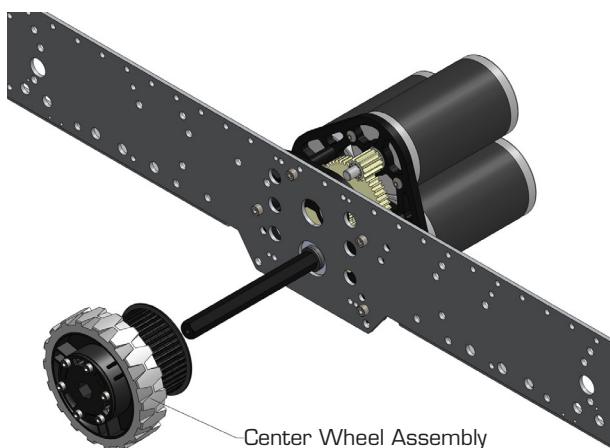
Step 16:

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.

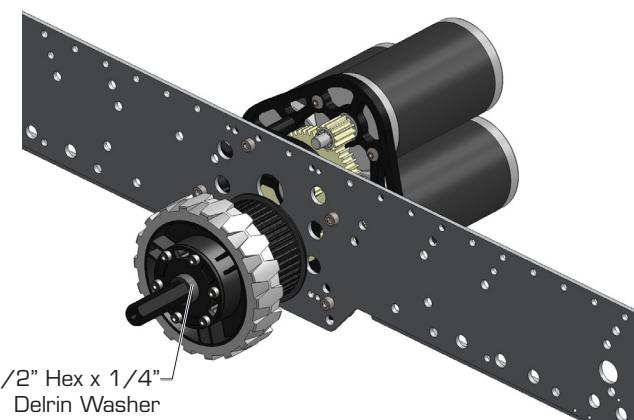
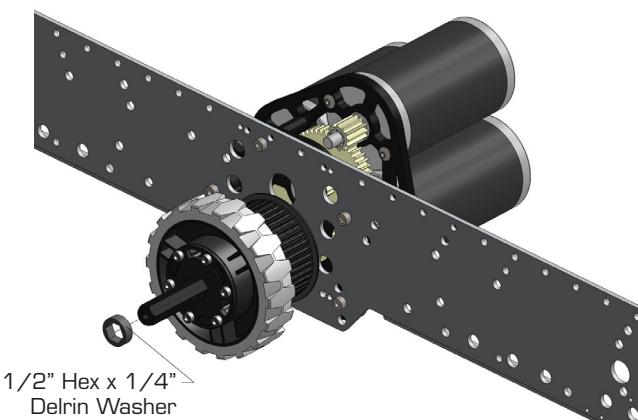


Center Wheel Assembly



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.



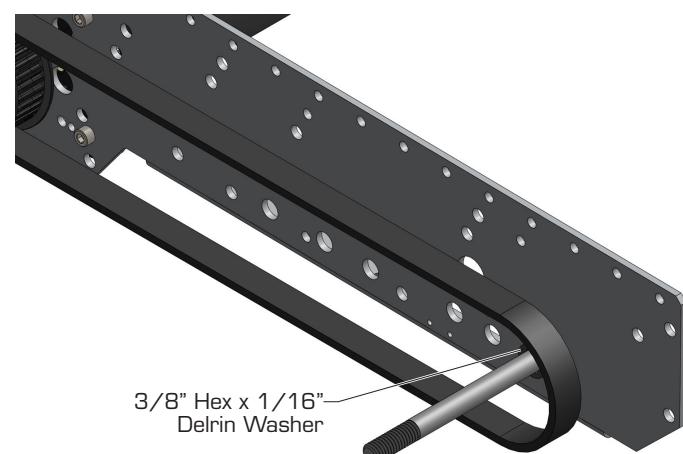
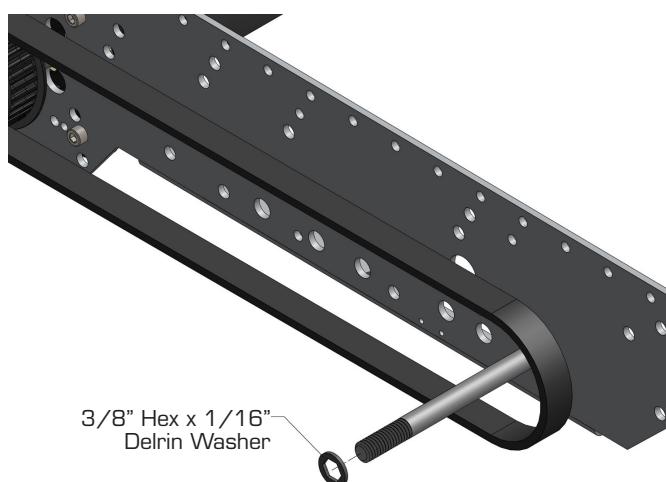
Step 18:

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



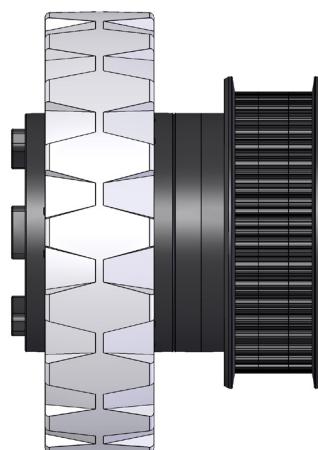
Step 19:

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

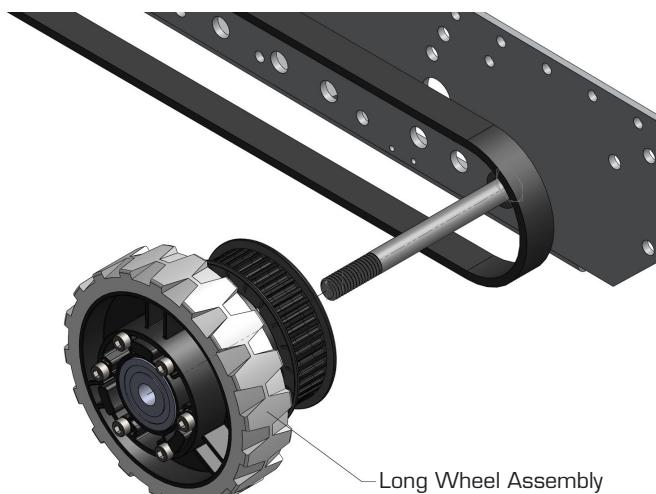


Step 20:

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



Long Wheel Assembly



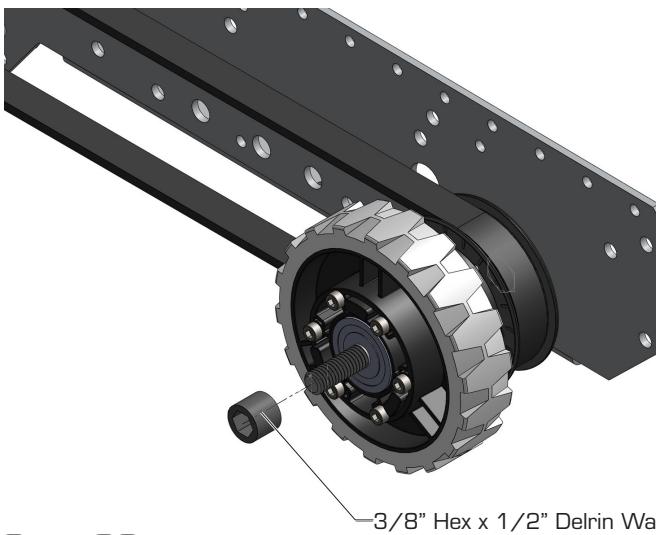
Long Wheel Assembly



Long Wheel Assembly

Step 21:

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



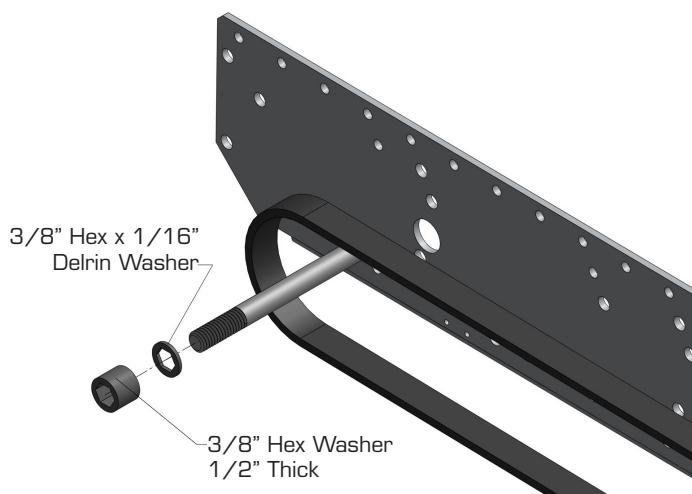
3/8" Hex x 1/2" Delrin Washer



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

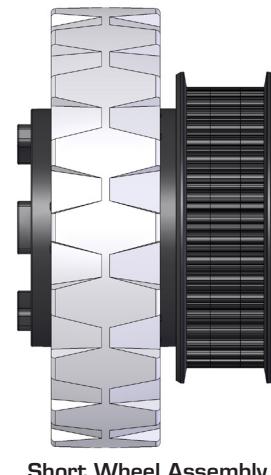
Step 22:

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

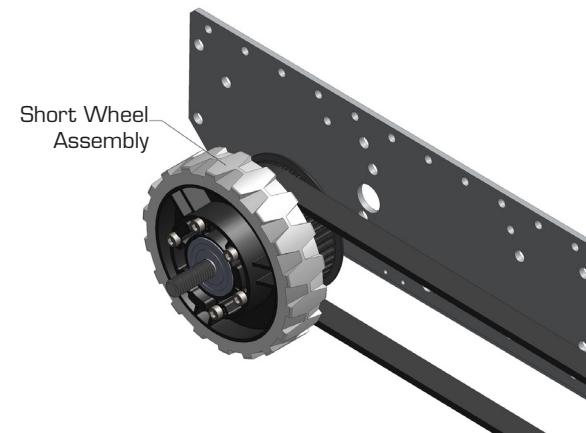
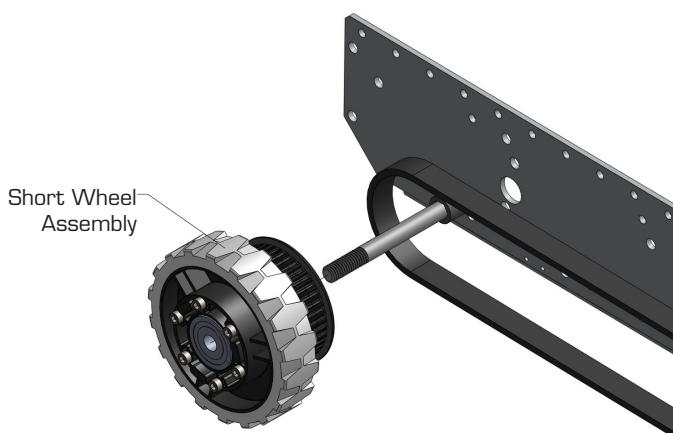


Step 23:

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.

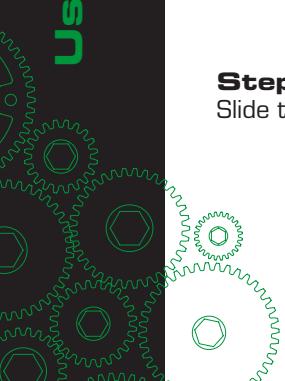


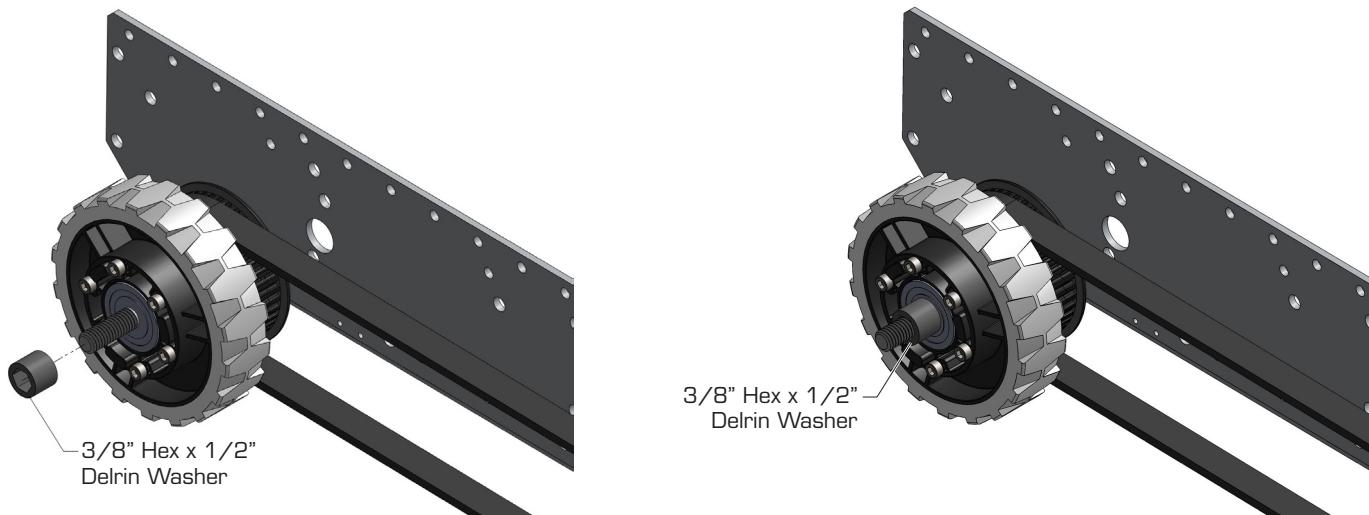
Short Wheel Assembly



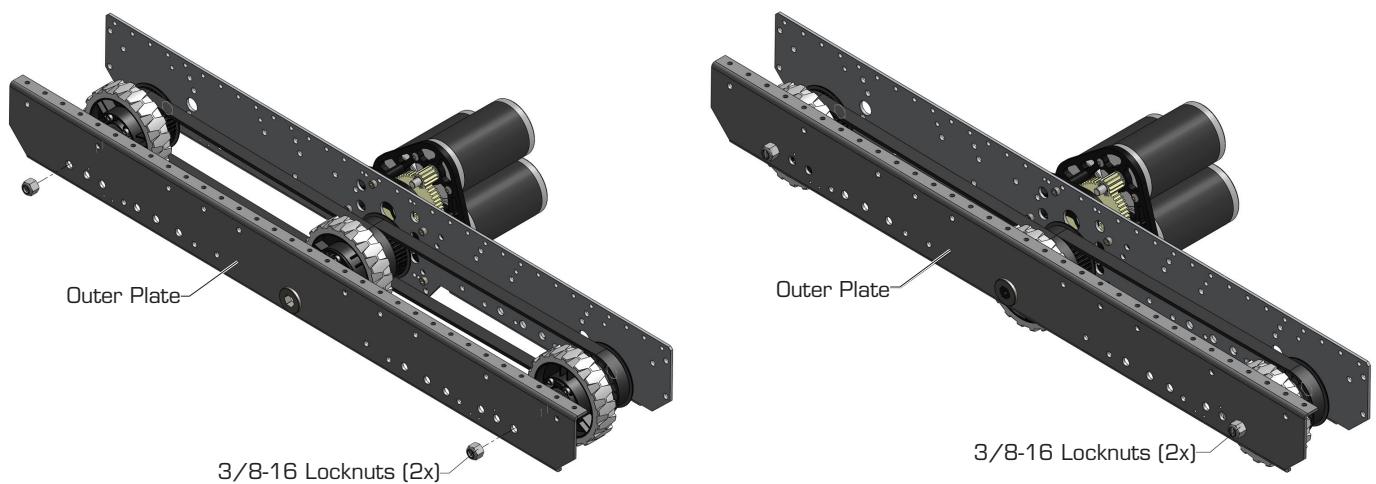
Step 24:

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.

