

# Odometry Pods Post Processing and Assembly Guide

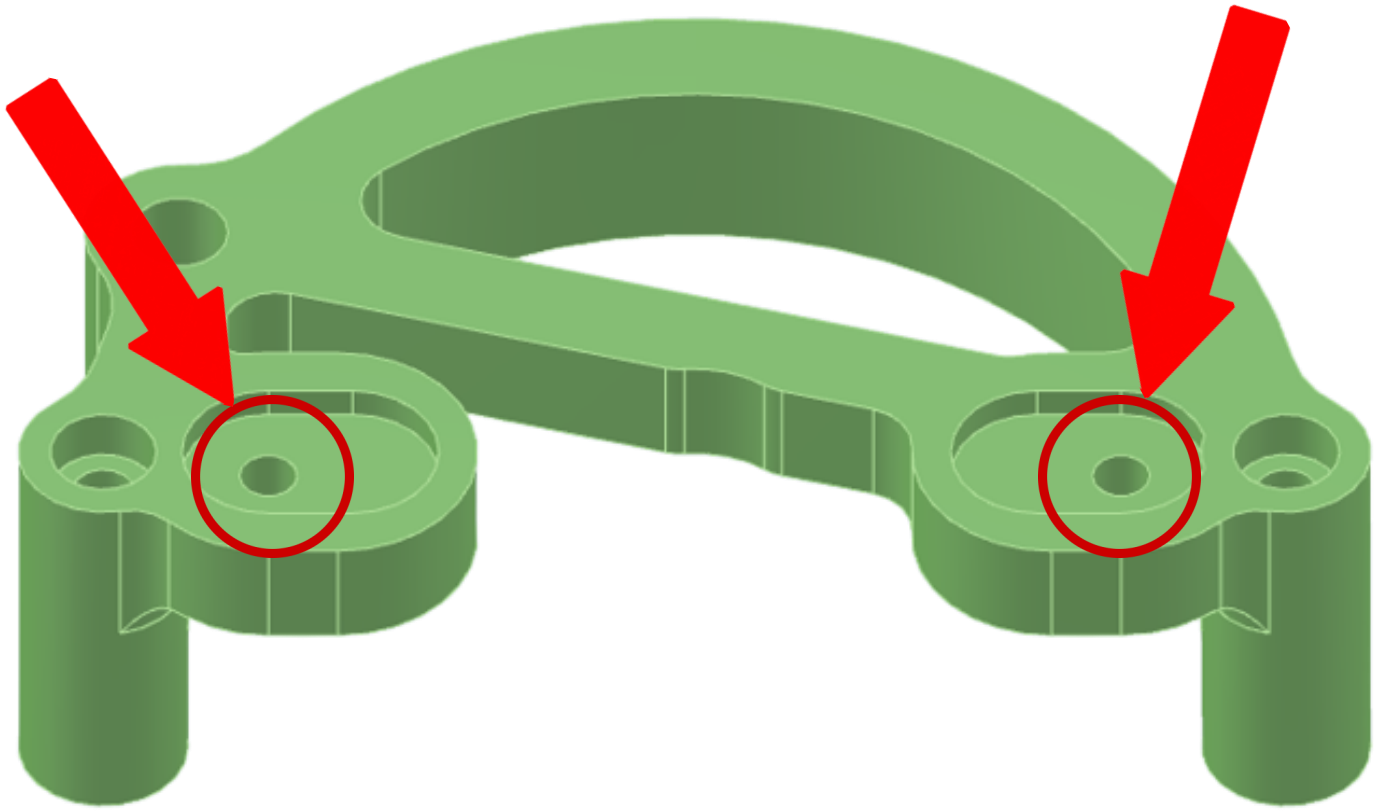
Designed By: FTC Team 288 Spare Parts

# You Will Need

- 3D-Printed Parts:
  - 1x “encoder\_side\_non”
  - 1x “other\_side\_non”
  - 3x “5mm\_.5”\_hex\_dongle” Broached to 5mm Hex
- COTS Parts:
  - 1x AndyMark Dualie 2” Omni Wheel (5mm or .5” hex bore)
  - 1x REV Through Bore Encoder
  - 1x REV 5mm Hex Axle (~2.375”-2.5” Long)
  - 1x REV Lock Collar
  - 1x REV 8mm Flange Bearing with 5mm Hex Insert
- Hardware:
  - 2x 6-32 Socket Head Bolt (1 1/4” Long)
  - 2x 8-32 Socket Head Bolt (7/16” Long)
- Tools:
  - 2x Tap (6-32, 8-32)
  - 3x Hex Key (1.5mm and Whatever Fits Your Bolts)
  - 1x Drill Index (To Bore Holes Bigger for 3D-Printer Tolerances)



# Post Processing

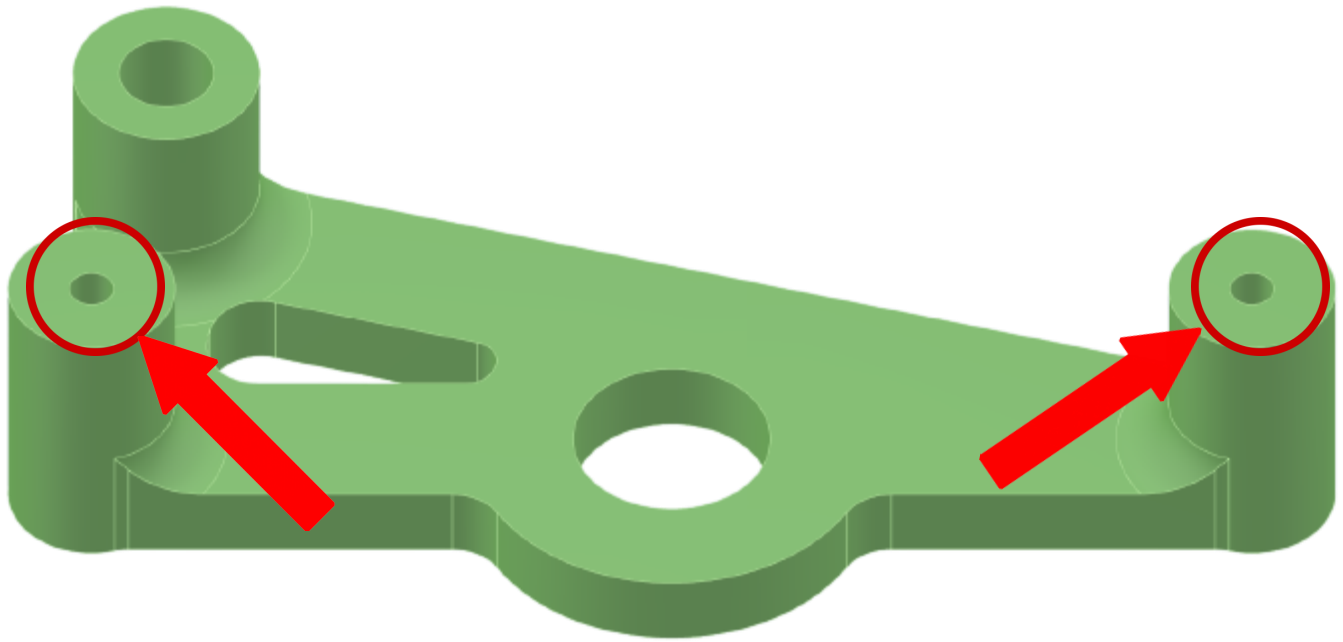


## For “encoder side non”

Remove support material (if any) and clean up any super sharp edges. Thread the 2 circled holes with an 8-32 tap. Be sure to cut the threads straight and backtrack frequently to avoid breaking the tap. Check with your bolt to make sure it threads nicely. Also, put your 6-32 bolt through the holes next to the ones you just tapped. If it doesn't go in smoothly, use your drill index and bore the holes to a #25 (.1495") or the closest equivalent available. Verify the fit again and if it doesn't fit, increase the bit size slightly and bore again. Repeat until the fit is nice. Do the same for the untouched uppermost hole, except use your 5mm hex shaft to check for fit instead of your 6-32 bolt. It should be snug and secure.



# Post Processing (cont.)



## For “other side non”

Thread the 2 circled holes with an 6-32 tap. Since the threads are somewhat long, be extra careful to cut them straight. Use your 8mm flanged bearing to check the fit of the center hole. It should go in snug and should not fall out easily. Like with the last part, if it doesn't fit, bore the hole to 12mm. Repeat the process with the 5mm hex axle and the uppermost hole. The fit shouldn't be tight, but it shouldn't move either.

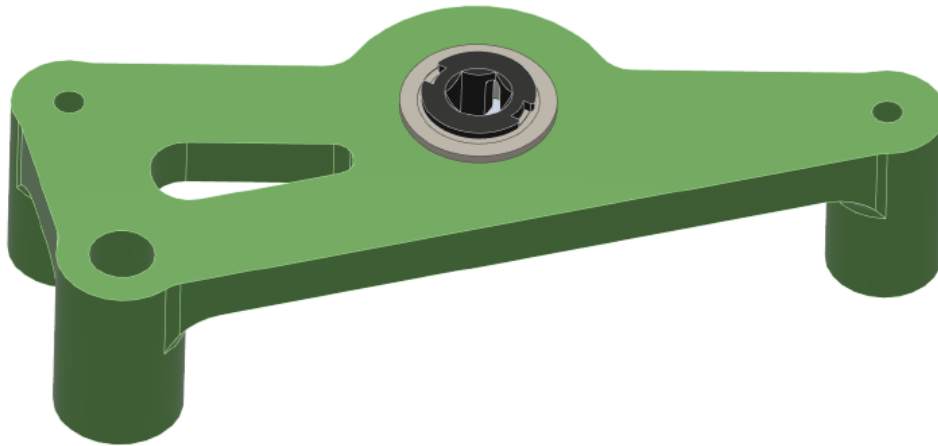


# Assembly



## Step 1

Insert 1 "5mm\_.5"\_hex\_dongle" in to the through bore encoder. If using the .5" hex version of the omni wheel, insert 2 more dongles in to it. If using the 5mm variation, do not.



## Step 2

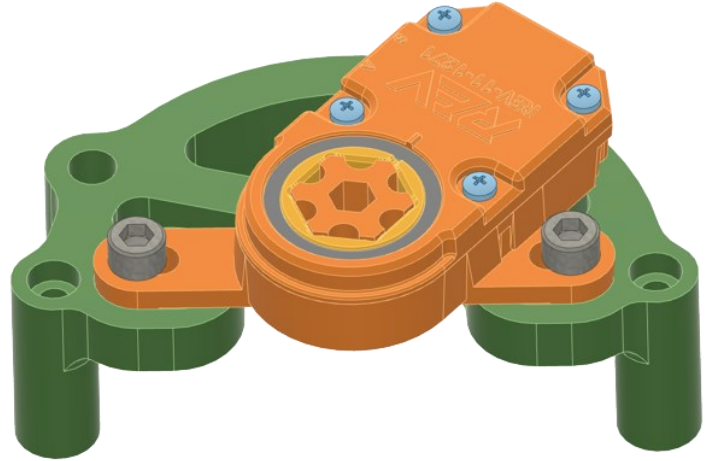
Insert the flanged bearing in to the big hole on "other\_side\_non" as pictured.



# Assembly (cont.)

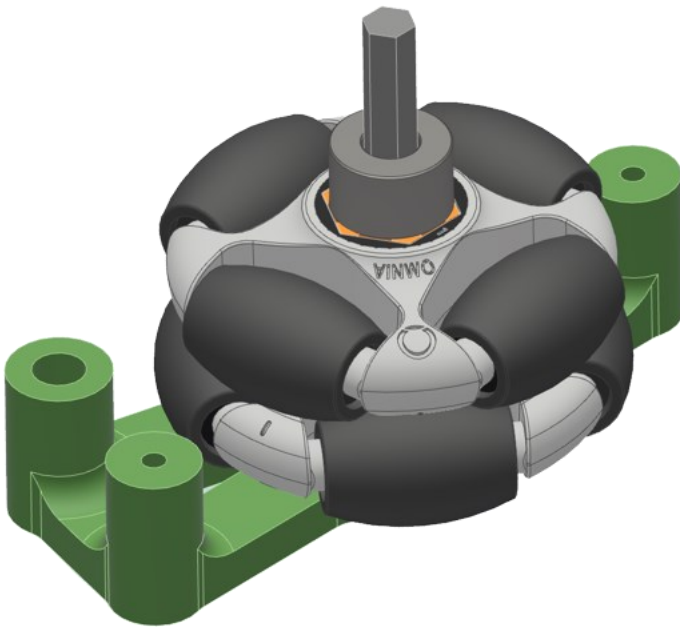
## Step 3

Use the 2 8-32 bolts and the previously cut threads to secure the encoder to “encoder\_side\_non”. The recessions should line up with the protrusions on the encoder.



## Step 4

Insert the axle in to the bearing and slide the wheel on to the axle. Put the lock collar on afterwards.

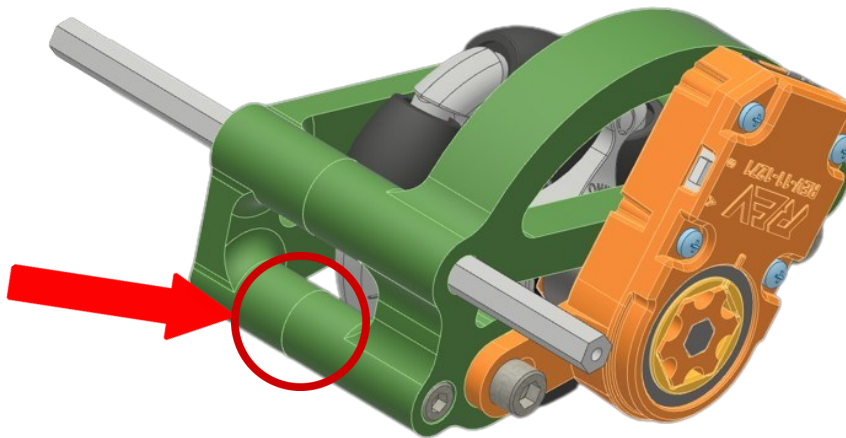
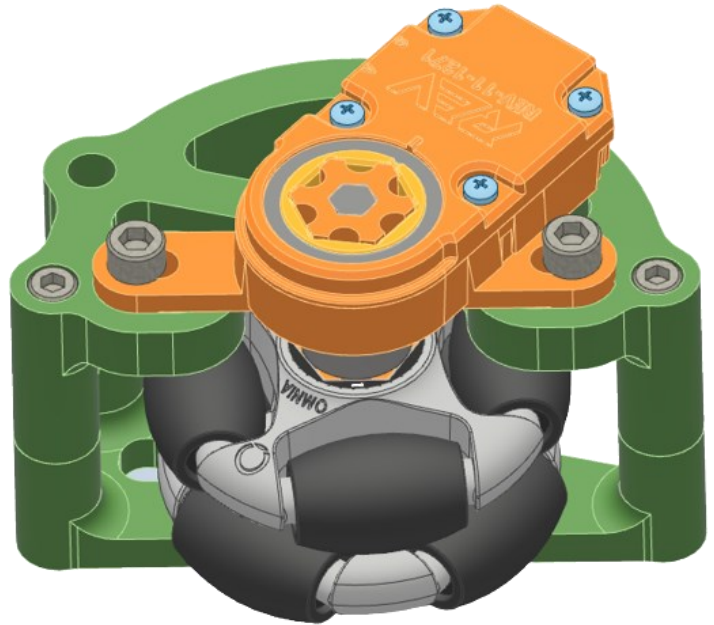




# Assembly (cont.)

## Step 5

You should have 2 subassemblies now. Align the holes as pictured and secure them with the 2 6-32 bolts. Then, center the axle with everything and tighten the lock collar.



## Step 6

Insert the axle that attaches the pod to your frame in to the remaining empty hole. It should be mounted with bearings or bushings for a free-spinning pod. Mount one end of your tensioning band or spring to the circled area and the other end somewhere above the pod. After this, adjust the tension on the pod until it is always contacting the ground when running over something. This is the final step, but remember to leave enough slack in your encoder wire to avoid reducing the effectiveness. Good luck everyone!

