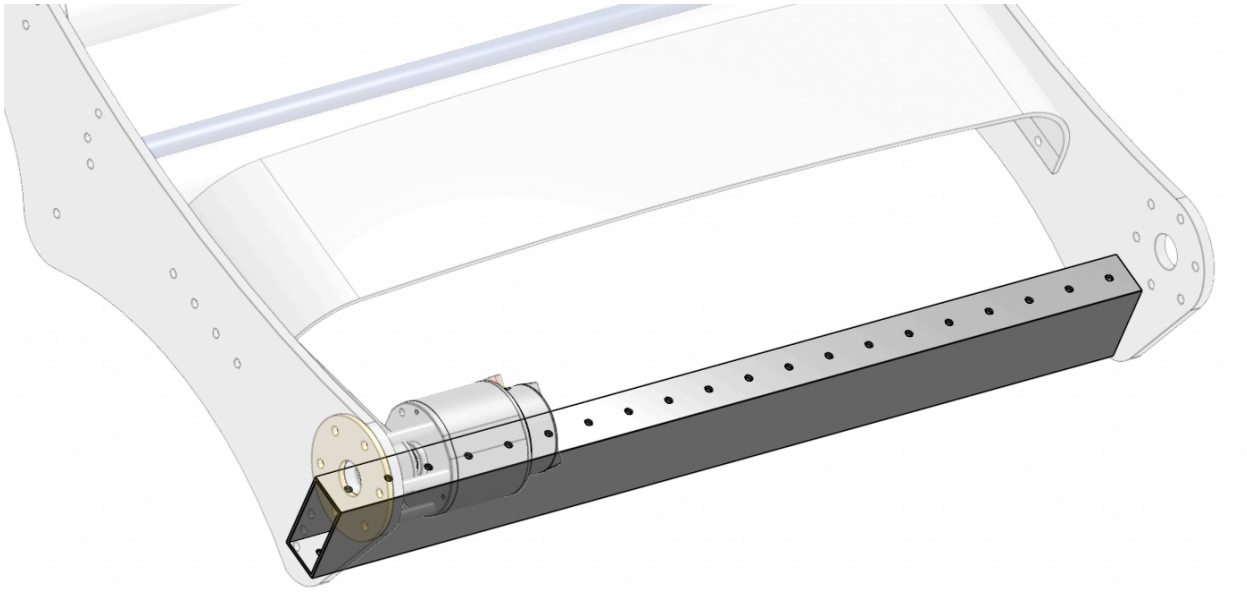
Intake Assembly Guide:

Machining:

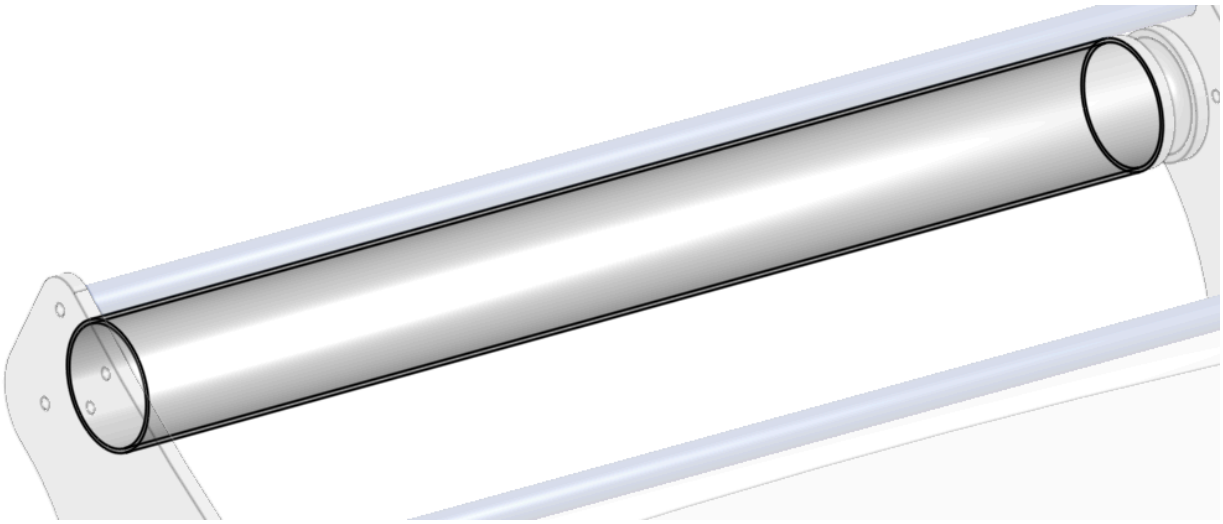
VersaFrame:

Cut a 1/16th versa frame to size 20”, the center of the closest holes should be exactly .5” away in order to ensure that the tube plug correctly fits. Part id: 5026-23-I05-VersaFrame



Polycarb Rollers:

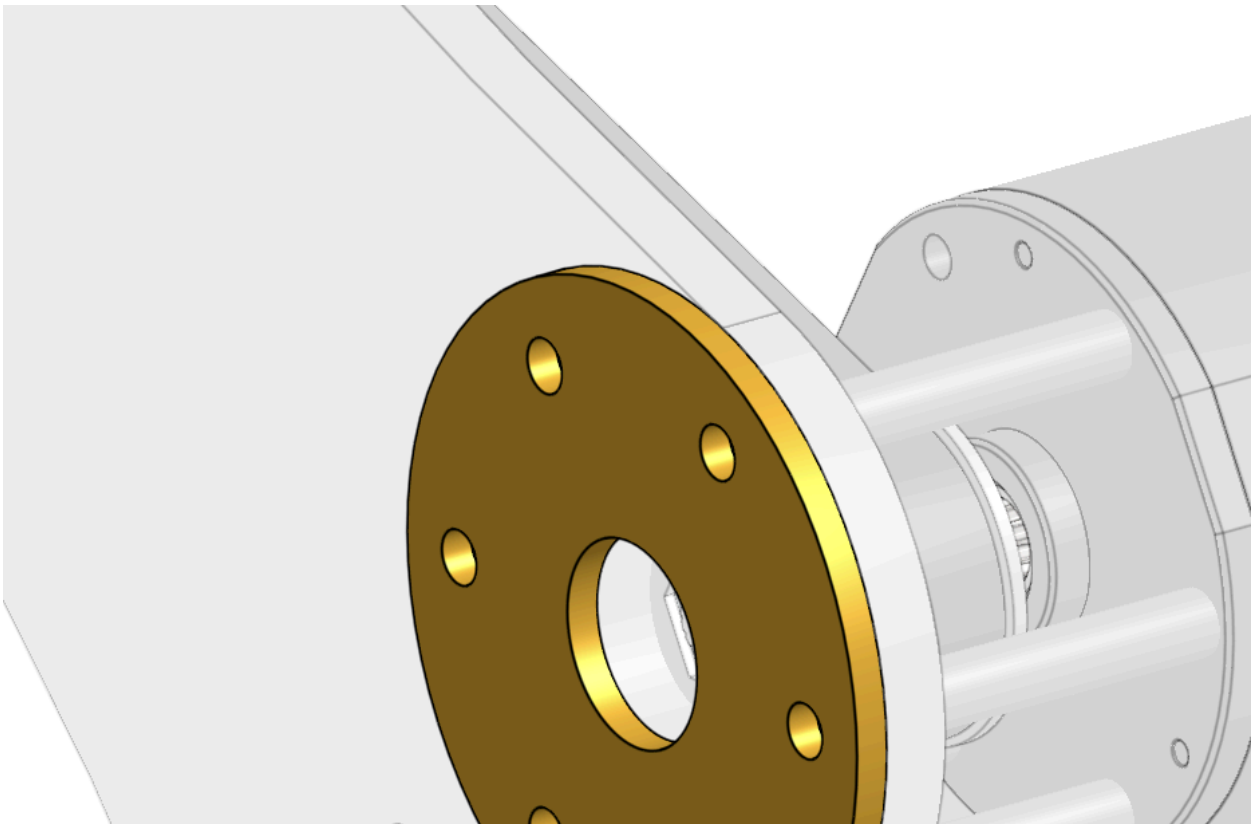
Cut the polycarb tubing to a length of 18.25”. (part id: 5026-23-I04-PolycarbTube)



Falcon Support Plate:

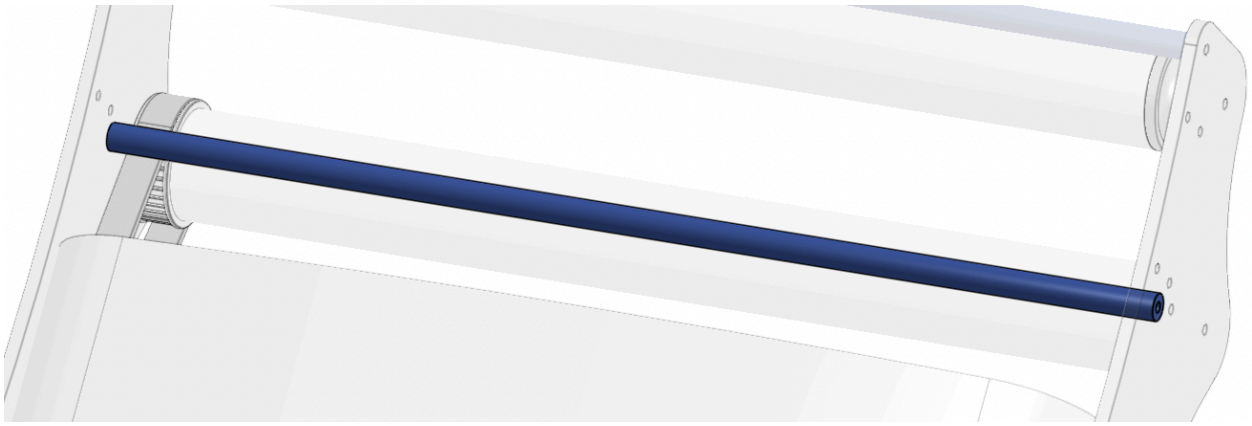
This falcon support needs to be machined out of 1/8th 6061 aluminum

Part id is: 5026-23-I01-FalconSupport



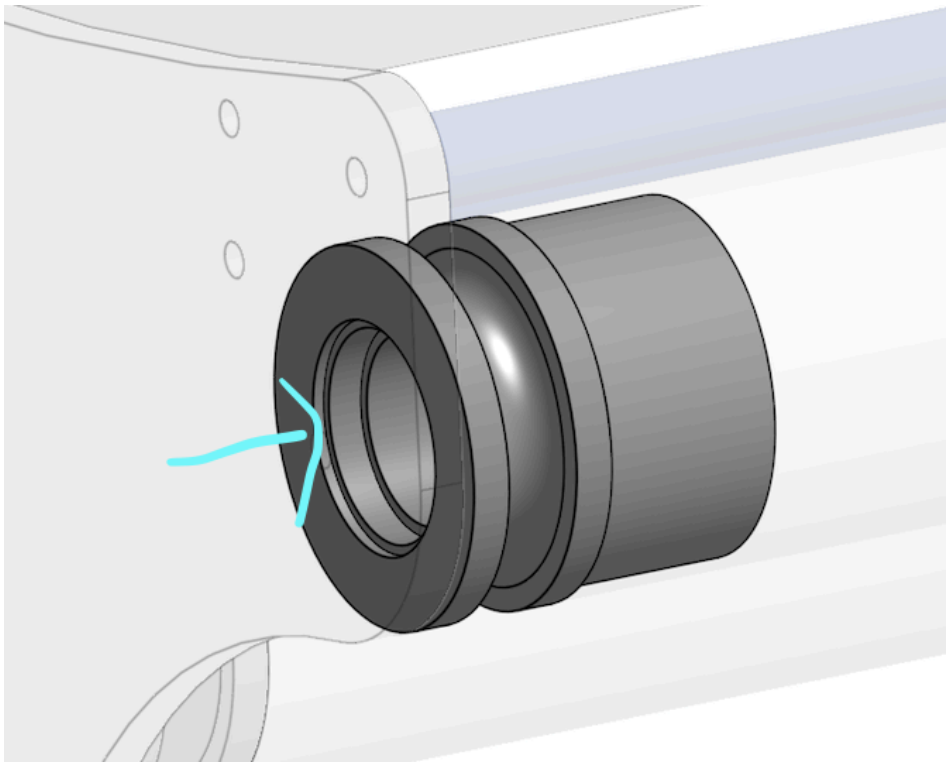
Aluminum Spacers:

Cut two aluminum spacers to size of 20”(part id: 5026-23-I06-AluminumStandoffs). Use a self-tapping screw to tap a 10-32 threading size.

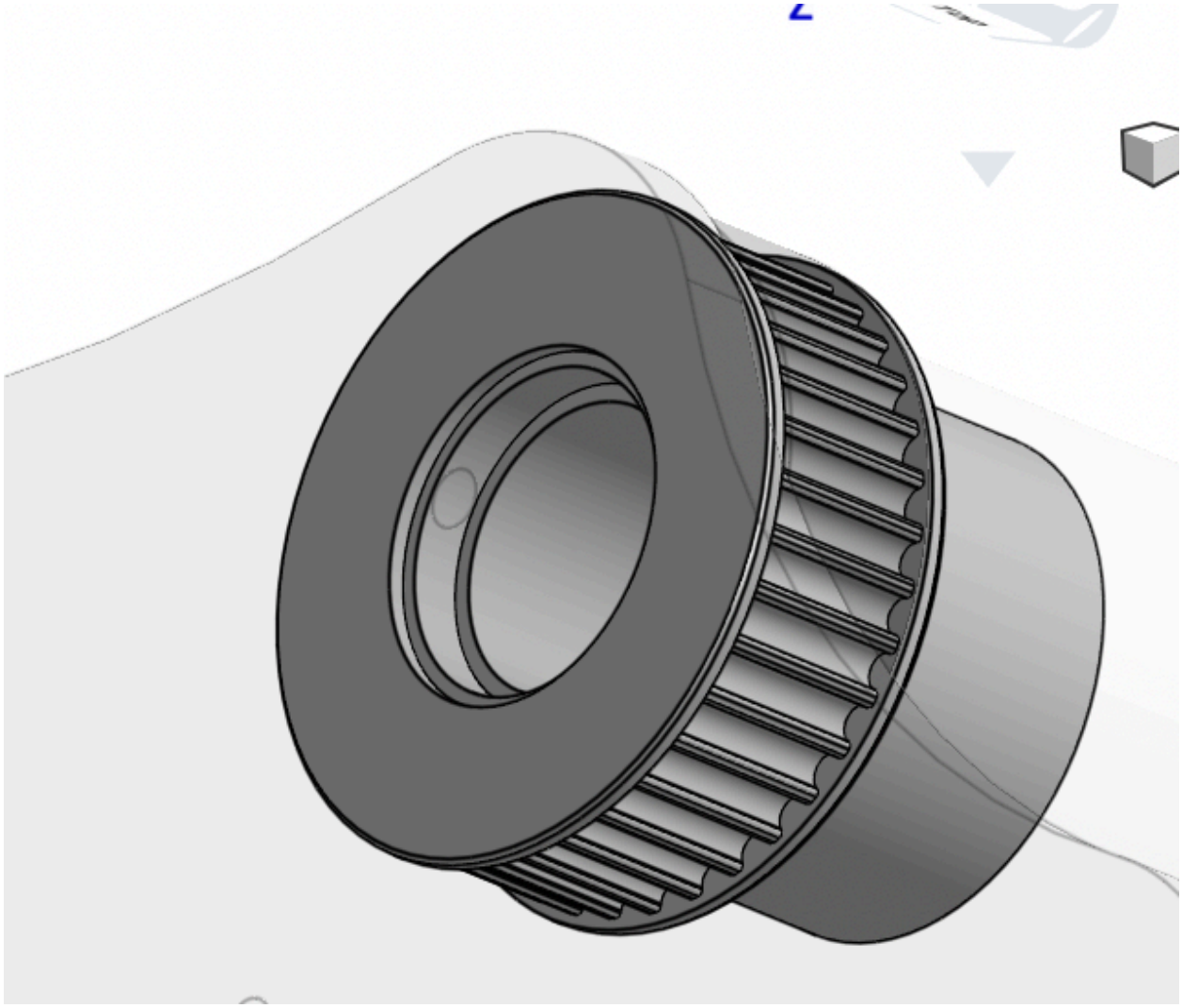


Pulleys:

Print 4 of these polycord pulleys. **MAKE SURE THAT THE BEARING SIDE IS FACING UPWARDS. (**Bearing side has a blue arrow pointing towards it) Part id is: 5026-23-I02-Figure8Pulley)

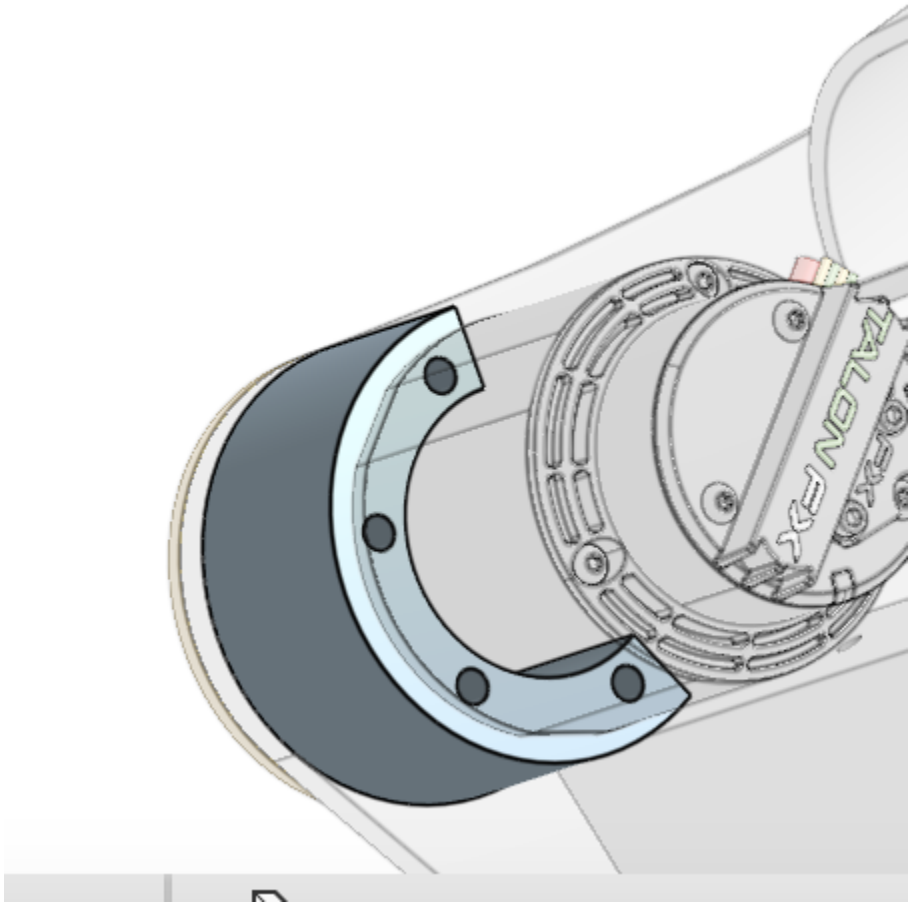


Print two pulleys, with bearing side facing up. Part id is : 5026-23-I03-PLApulley



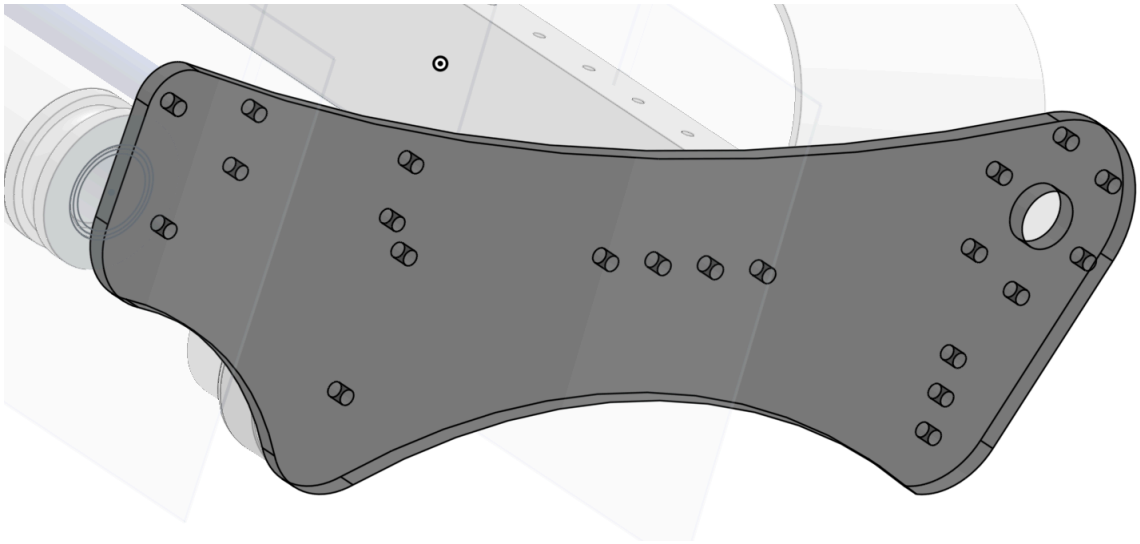
Falcon Spacer

Additionally, last 3d print should be a spacer for the falcon(Part id: 5026-23-I08-FalconSpacer):



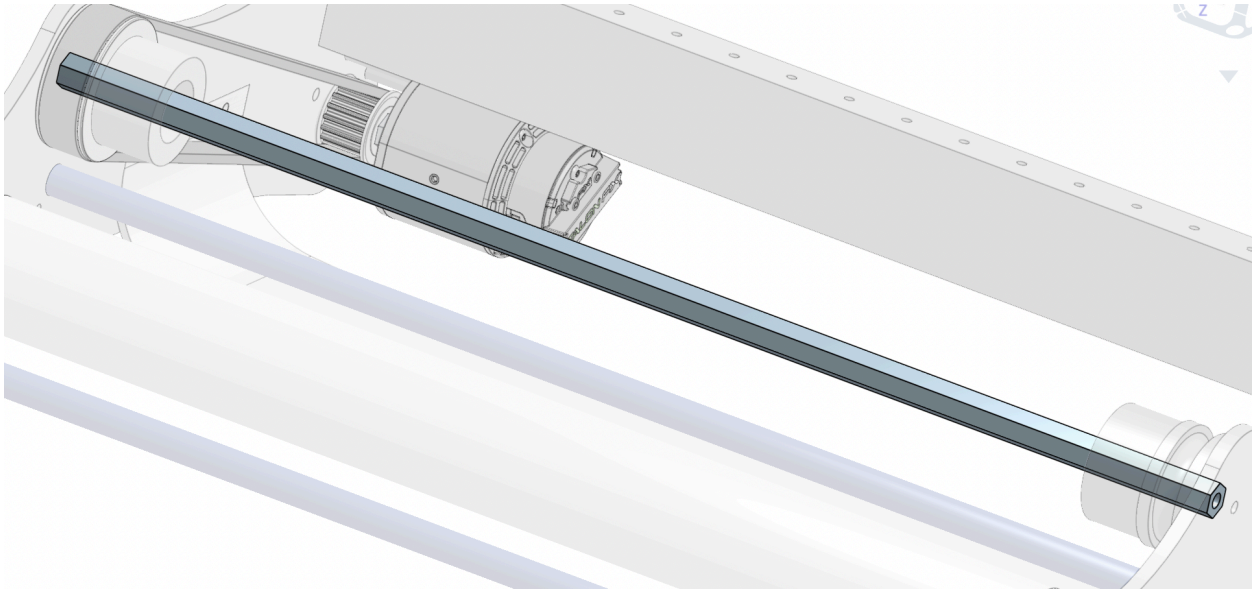
Side Plates:

Machine 2 intake side plates using the shaper (part id: 5026-23-I07-SidePlates)



Hex Shaft:

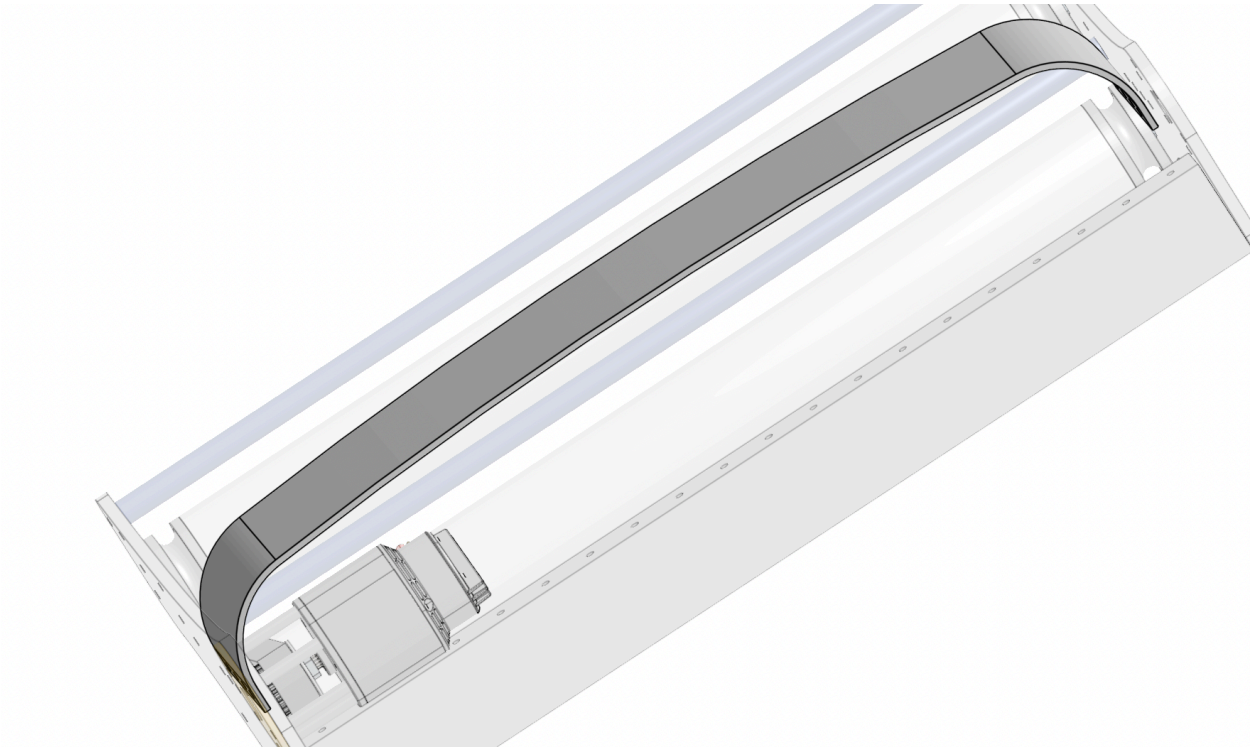
Cut two aluminum hex shafts of size 20 inches.



For the hex shaft, make sure to tap them with self-tapping bolts to an appropriate length for a 10-32 fastener to fit through.

Polycarb Net:

Next, cut out a 20”x3.875”x1/8th” polycarb. (I know this is bent, ignore that for now)



Assembly:

Parts List:

8-32x.4375 Bolt (10)

8-32 x2.125 (4) (you can also use 2 inch long screws for this)
1/16 Tube plug from WCP(2)

1/2” hex bearings(4)

Falcon -> Hex Shaft Connector(1)

Falcon 500 (1)

18T WCP Pulley(1)
5026-23-I02-Figure8Pulley(3)

10-32x1” (8)
10-32 Rivets (8)

5026-23-I03-PLApulley(4)

5026-23-I08-FalconSpacer(1)

5026-23-I04-PolycarbTube(2)

20” Hex Shaft, 10-32 threaded (2)

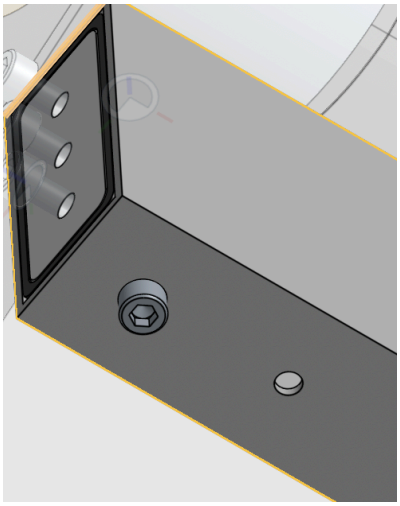
5026-23-I07-SidePlates(2)

5026-23-I01-FalconSupport(1)

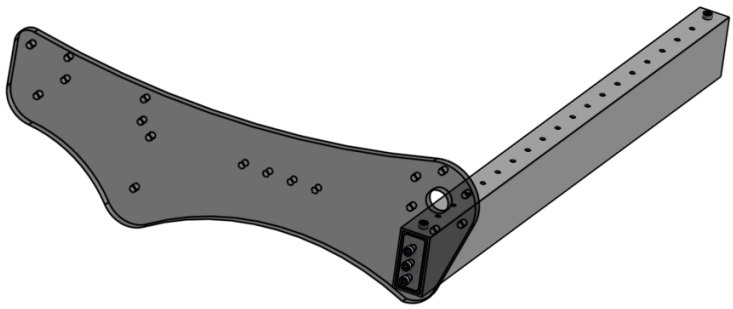
135T Belt (1)

14” O-Ring(1)
10-32 self tapping screws (6)

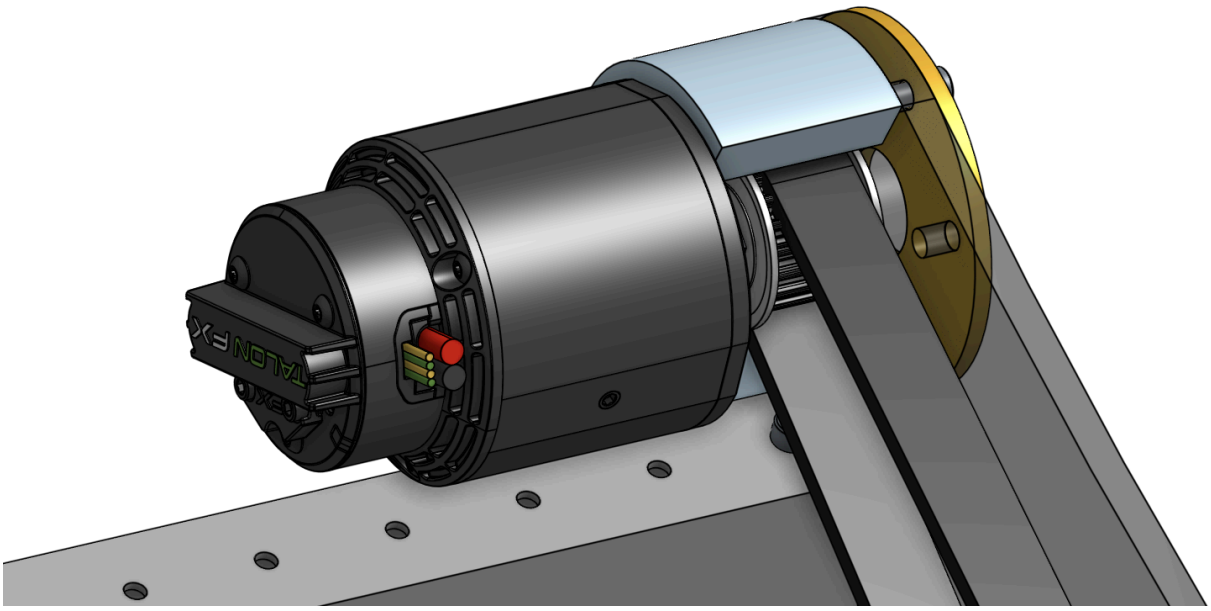
1. Take the tube plugs, and thread through the versaframe that you cut using 4 of the 8-32 bolts on each side:

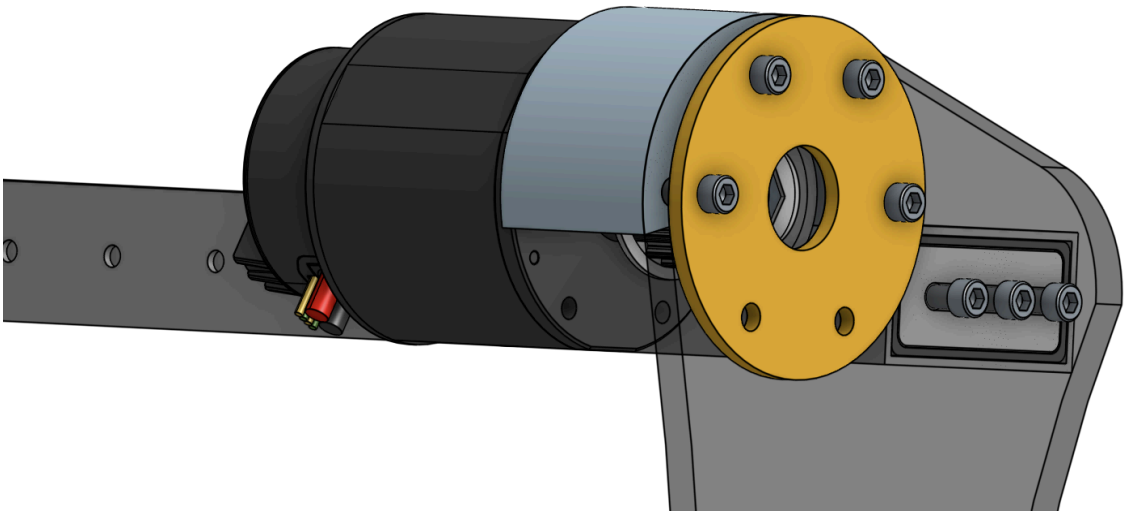
a. 

2. Next, take one of your intake plates, and thread through the side holes, and connect to the WCP tube plugs:**VERY IMPORTANT TO DO ONLY ONE**
    a. Assembly should look like this:

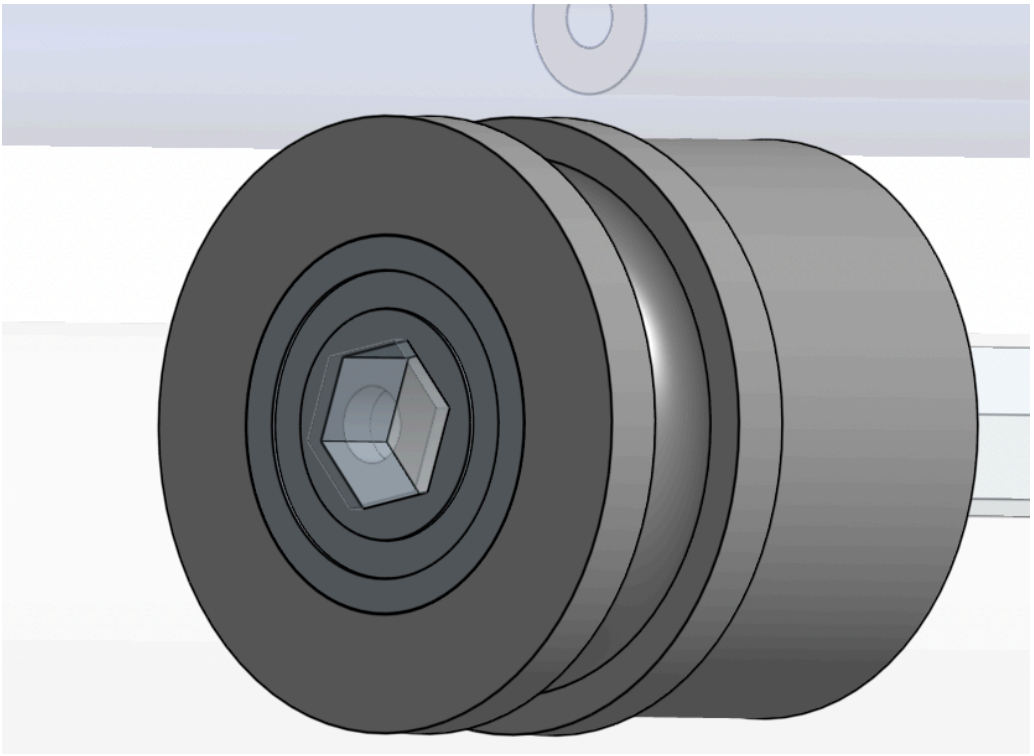


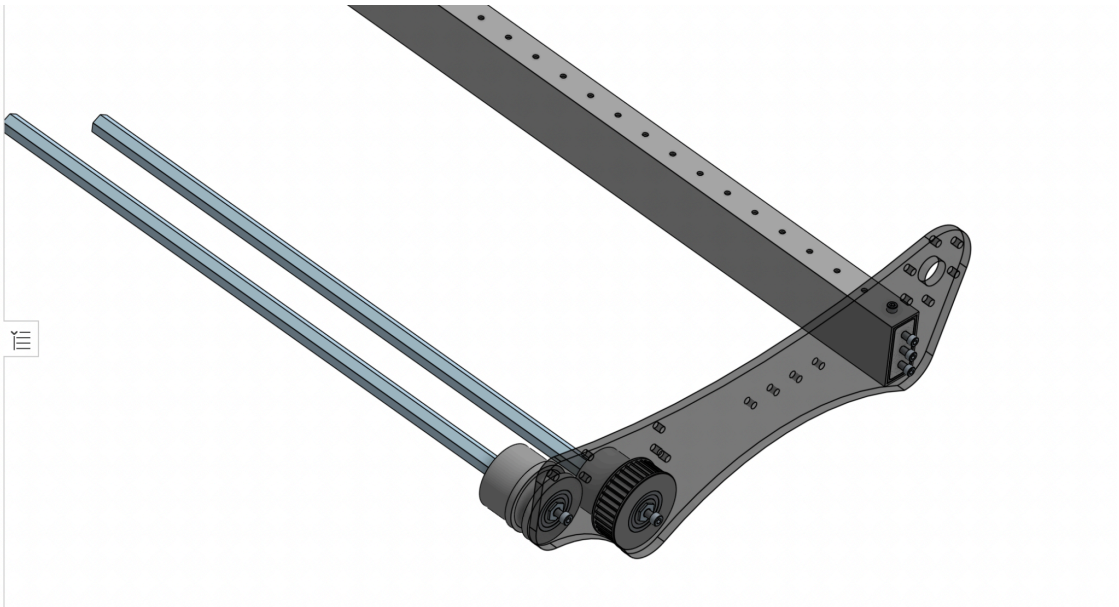
3. Next, use the falcon spline -> 1/2” hex shaft converter, and attach the 18t Pulley onto it. Loop one side of the 135T belt onto the pulley, this will make your life easier. Use the 3d printed falcon spacer, and attach it using the falcon support on the other side.

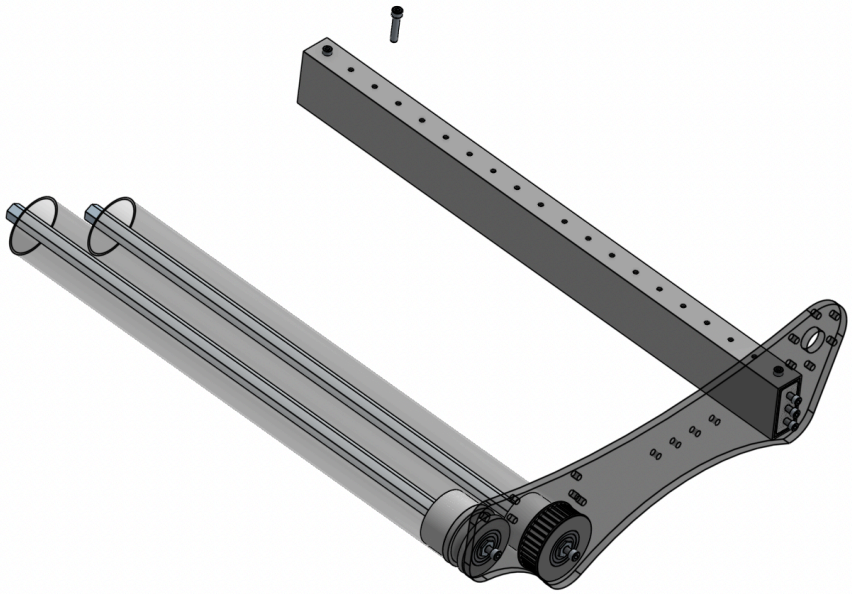
a. 

b. 

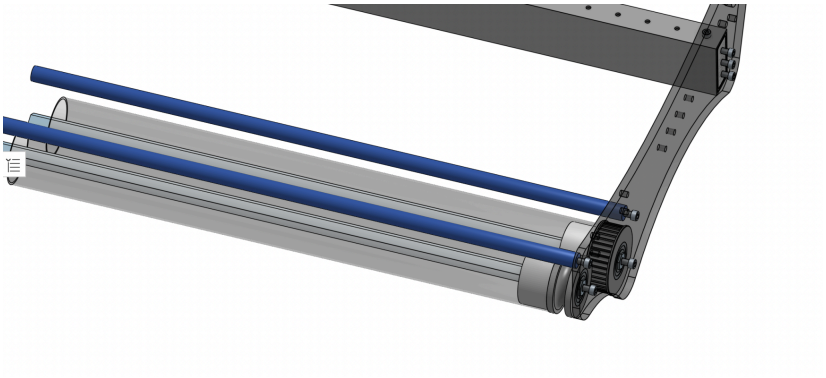
4. Put your bearing into the pulleys, making sure that it has a relatively tight fit. Repeat for all 4 pulleys
    a.



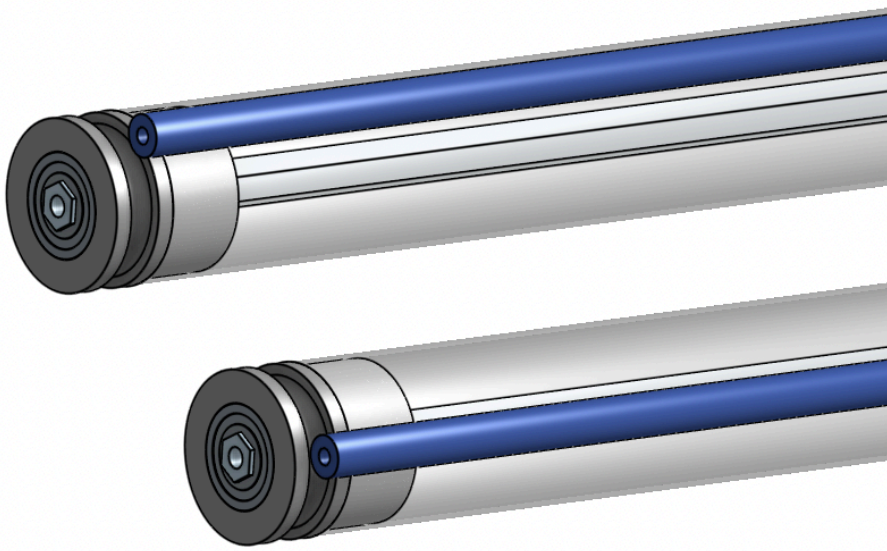
5. First, loop the other side of the 135T belt onto the pulley that is not smooth. Next take your threaded hex shaft stock, and fit it through your hex shaft, and leave it at the end. Take a 10-32 bolt, and thread it through the tapped hex-shaft and the plate
    a. 
6. Next, take your polycarb rollers and fit them on top of the pulleys:
    a. These should fit normally, then consult either a mentor or Neel regarding attaching them with self-tapping screws.



7. Take your taped 20” aluminum spacers,

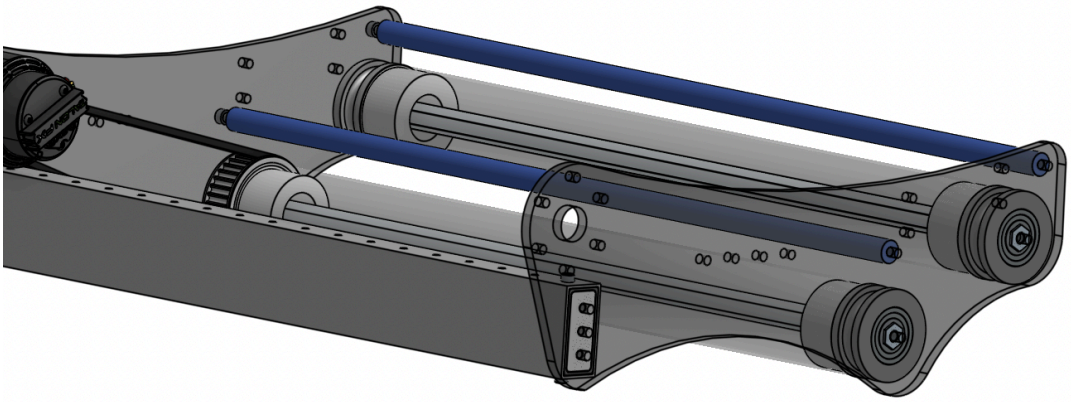


    a.
8. Take the o-ring, turn it into a figure 8 then attach onto the following pulley. Consult Neel/Mentor before doing so.



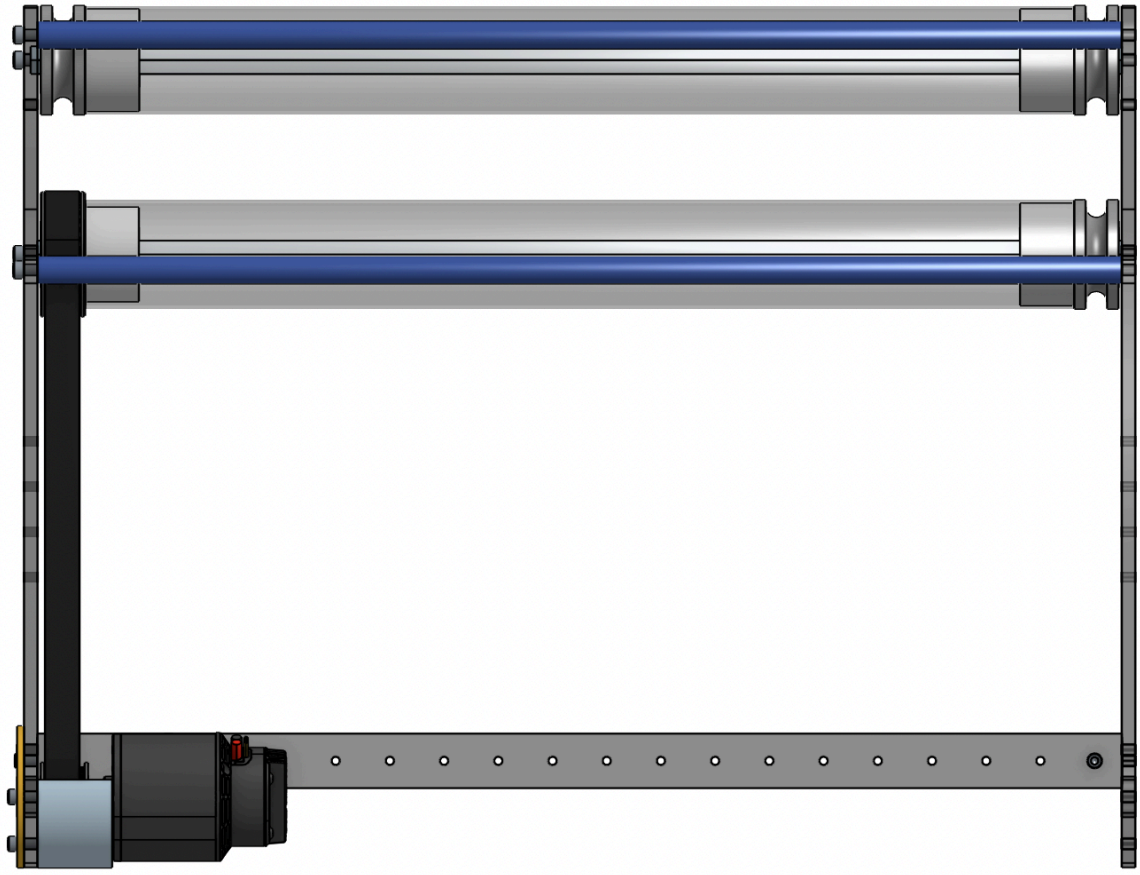
a.

9. Next, take the other intake side plate, repeat all screws and bolts as the other side.



a.

10. Intake should look like this (with a figure 8 belt on the other side)



a.

b.