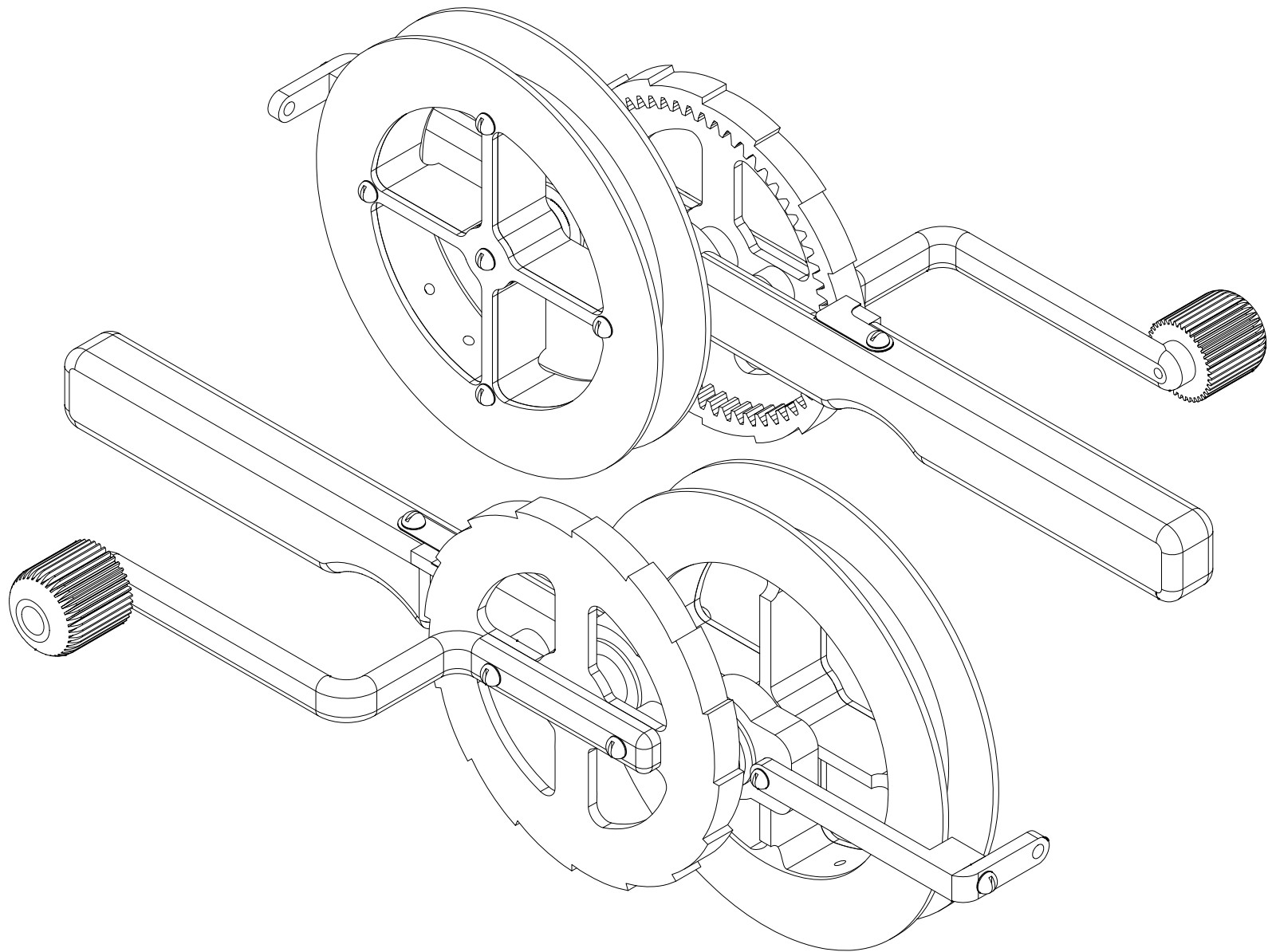


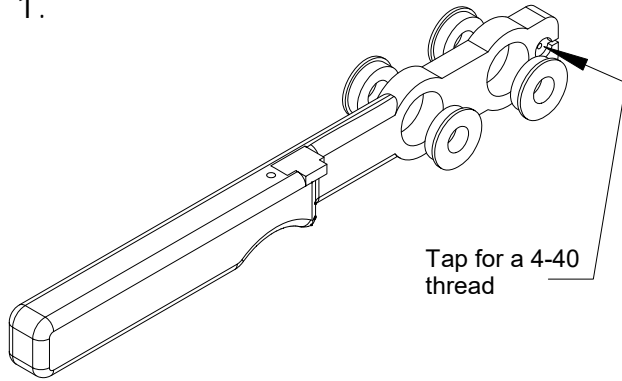
TOWLINE REEL FOR FAC SCALE GLIDERS



ASSEMBLY GUIDE Rev 1.2
SEPTEMBER 2023

BY PAUL BRADLEY

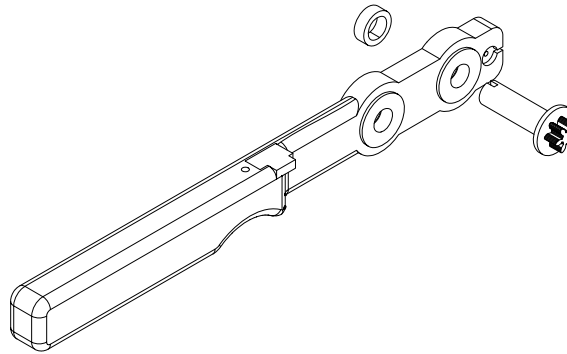
1.



Tap for a 4-40 thread

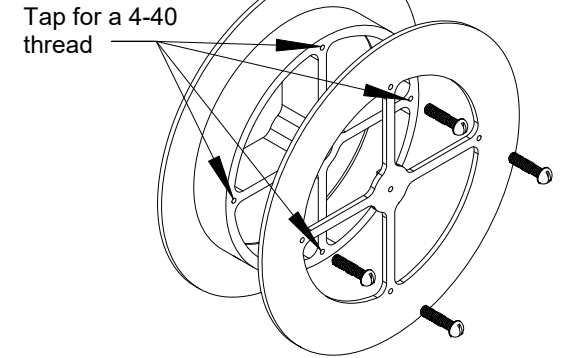
Press four 8x16x5 mm flanged ball bearings into the handle as shown. Also tap the hole in the forward recess for a 4-40 thread.

2.



Insert the reel drive gear into the forward pair of ball bearings. After inserting the drive gear, slide the spacer on to the drive gear shaft and place it against the ball bearing.

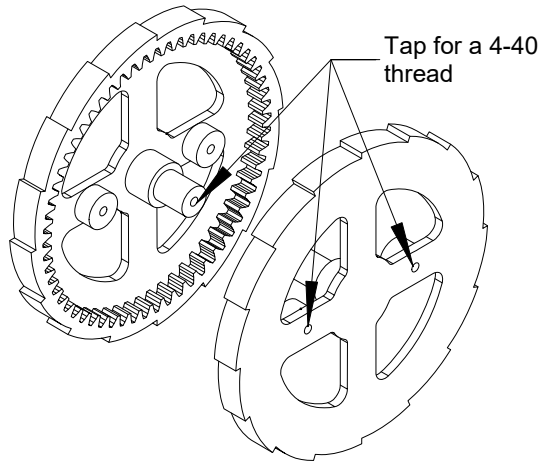
3.



Tap for a 4-40 thread

Tap the for holes in the reel for 4-40 threads as shown. Attach the reel face to the reel using four 1/2" 4-40 screws as shown.

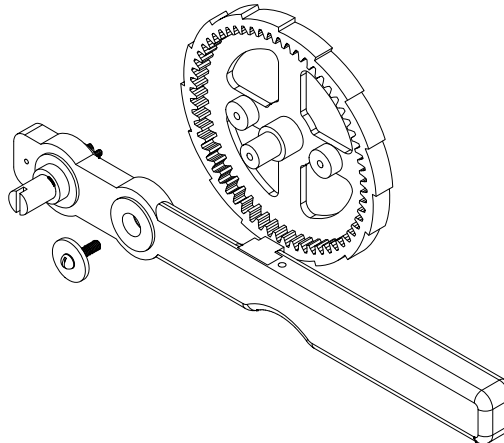
4.



Tap for a 4-40 thread

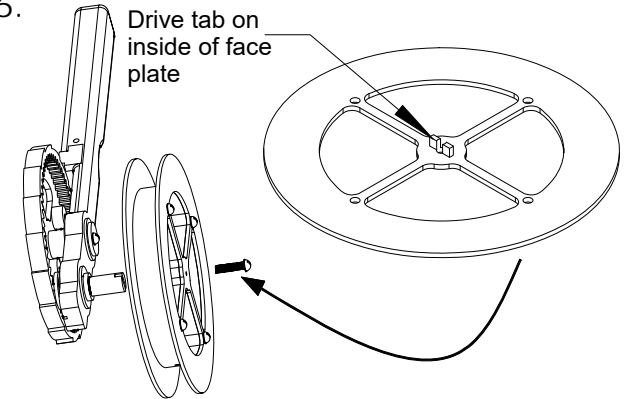
Tap the indicated holes in the crank gear for a 4-40 thread.

5.



Insert the crank gear into the rear pair of ball bearings in the handle. Secure it with a 4-40 screw and retaining plate as shown.

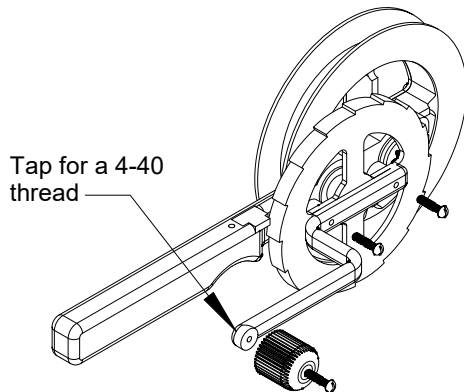
6.



Drive tab on inside of face plate

Slide the reel onto the drive gear shaft. Make sure the tab on the reel face plate is aligned with the slot in the drive gear shaft. Use a 1/2" 4-40 screw to secure the reel as shown.

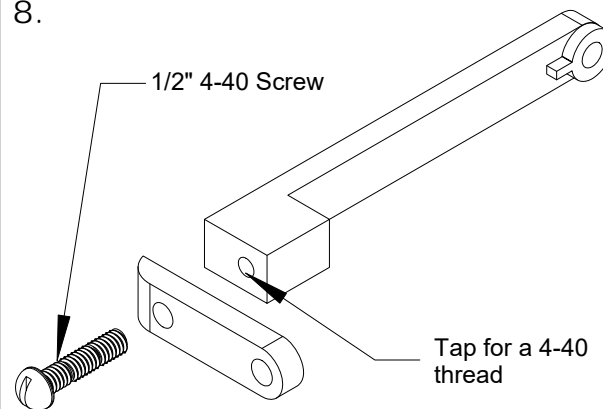
7.



Tap for a 4-40 thread

Tap the crank handle for a 4-40 thread as shown. Install the crank knob with a 1/2" 4-40 screw. Use thread locker on the screw thread where it engages the crank handle. Install the crank handle on the crank gear with two 1/2" 4-40 screws as shown.

8.

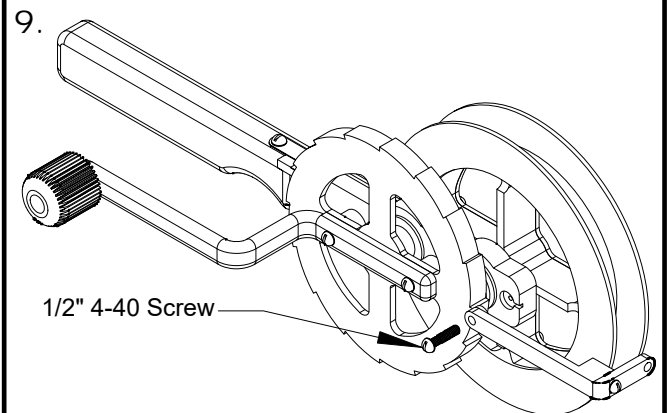


1/2" 4-40 Screw

Tap for a 4-40 thread

Assemble the line guide.

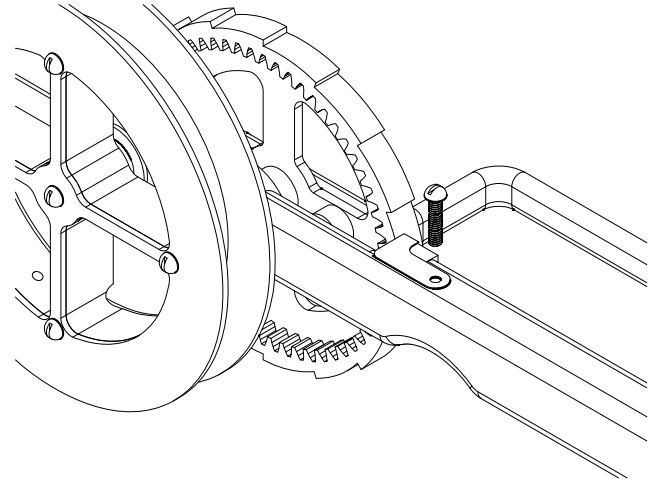
9.



1/2" 4-40 Screw

Install the line guide with a 4-40 screw as shown.

10.



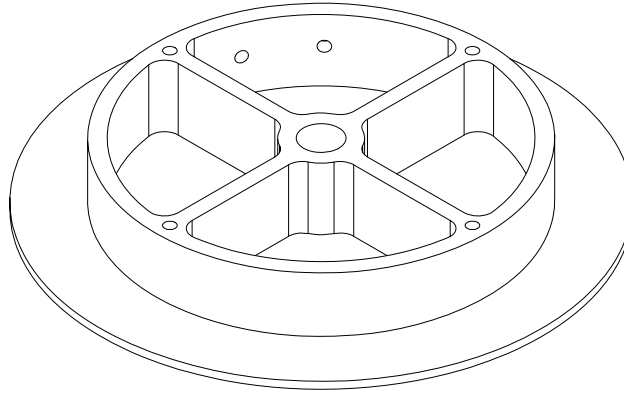
Using a 1/2" 4-40 screw, attach the backlash pawl to the handle as shown. Tighten the screw just enough to allow the pawl to be rotated when the backlash prevention feature is not needed.

NOTES FOR THE 3D PRINTED PARTS

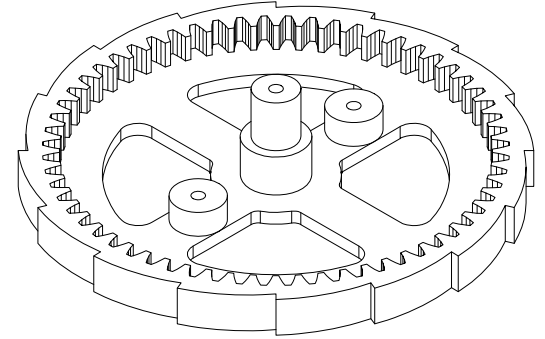
The recommended print orientation for each part is shown here.

The prototype was printed using carbon fiber filled polycarbonate filament. Other common fused filament printer filaments can be used.

Take up reel



Crank Gear



Use supports when printing the reel drive gear and shaft.

