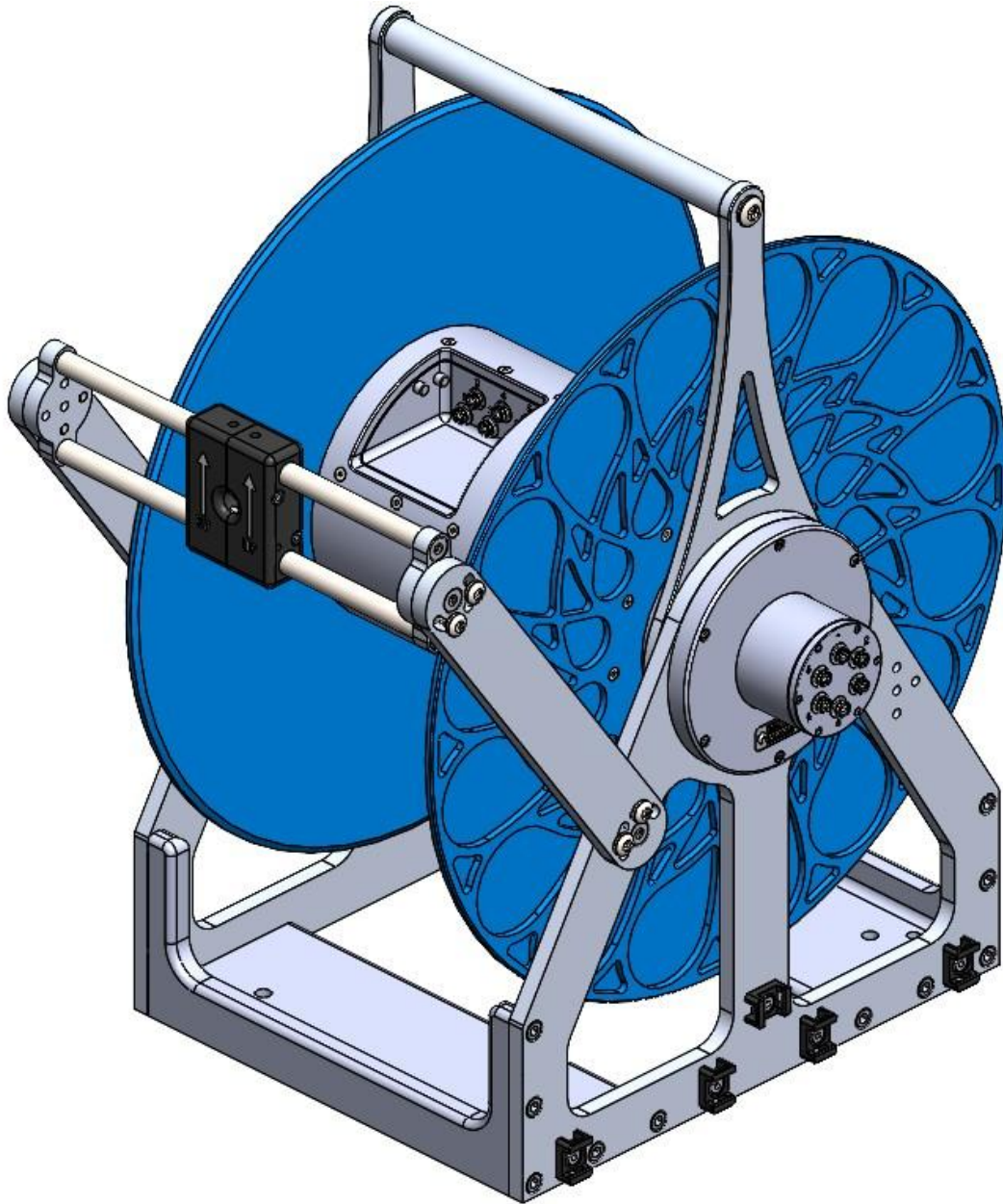


# Cable Reel User Manual

Model: FCR-1000 Series  
Princetel Inc



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## About the Reel

The FCR-1000 series cable reels are designed to fit Princetel's standard FORJs and slip rings. The rotary joints are protected inside the drum for durability and seamless deployment of single or multi-channel fiber optic and/or electrical cable with uninterrupted optical and/or electrical signal. The reels can be configured in a range of drum sizes with several options to fit most applications.

## Specifications

- Construction: anodized aluminum & stainless steel with stainless-steel fasteners & FORJ
- IP-65 rated
- Operating temperature\*: -40°C to +85°C
- Drum diameter: 154mm
- Drum length: 150-350mm (50mm increments)
- Side plate diameter: 300-450mm (50mm increments)

(\* ) Temperature rating may vary depending on the FORJ/Slip Ring model installed

## Options

- Single or Multichannel FORJ and/or multi-circuit slip rings
- Adjustable tension drum brake
- Spring rewind
- Passive cable guide
- Engineered plastic plain bearings or ball bearings for drum rotation
- Carry handle

## Part Numbering System

Manual cable reels are assigned part numbers using the following format: **FCR-AABBCC-DEFG-H-I**

FCR = Fiber Cable Reel

AA = Drum Diameter (cm) ~ 15cm-20cm

BB = Drum length (cm) ~ 15cm-35cm

CC = Drum Side Plate Diameter (cm) ~ 30cm-45cm

D = Drive Type: 1=Hand Crank 2=Spring rewind

E = Bearing: 1=Delrin Bearing 2=Ball Bearing

F = Drag Brake: 1=No Drag Brake 2=Drag Brake

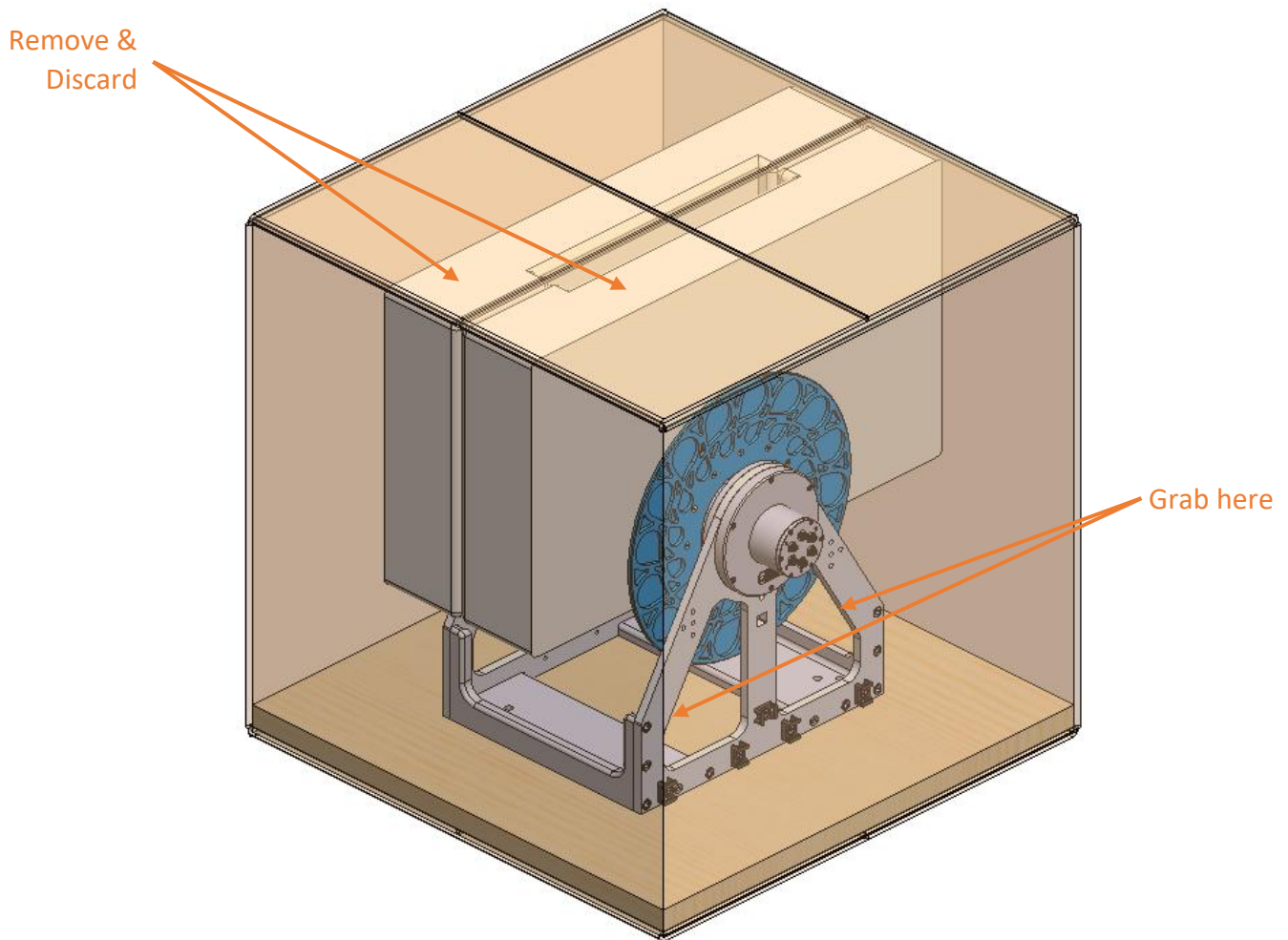
G = Accessories: 1=No Accessories 2=Carry Handle 3=Passive Cable Guide 9=All Accessories

H = FORJ and/or Slip Ring

I = Only used if the reel has a customer-specific modification

## Unboxing Instructions

The reel will be shipped bolted to a wood shipping plate inside of a corrugated cardboard box.

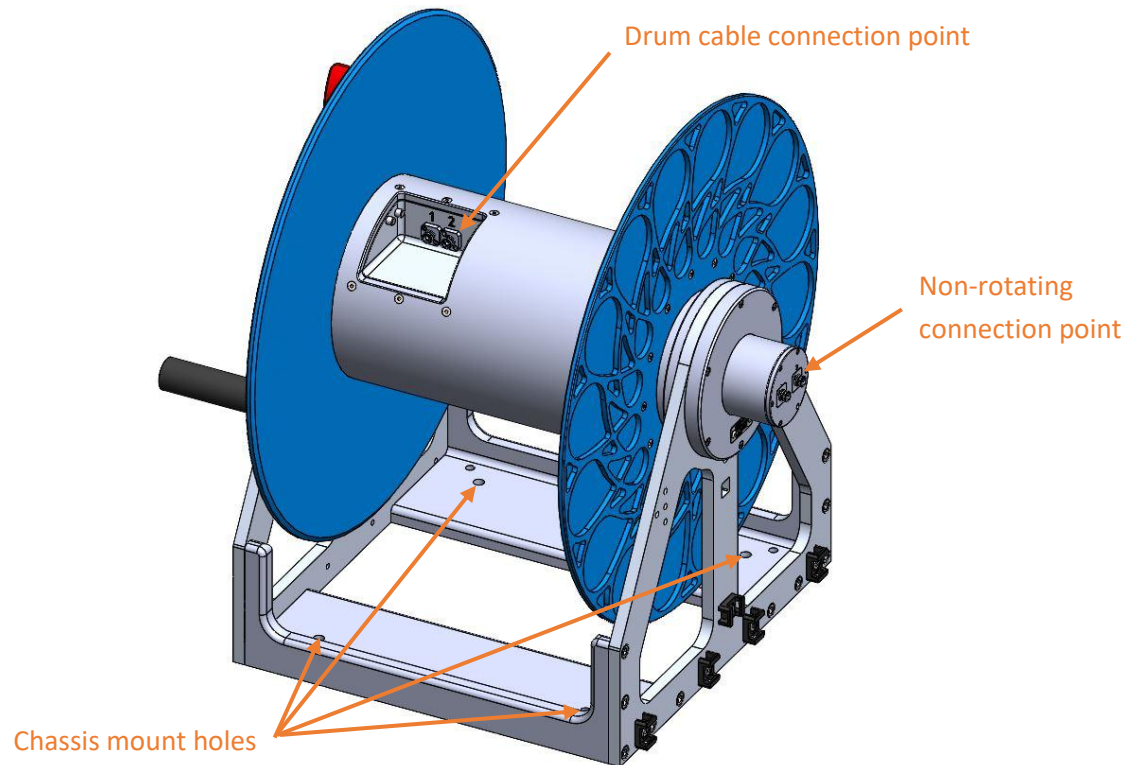


To remove the reel from the packaging:

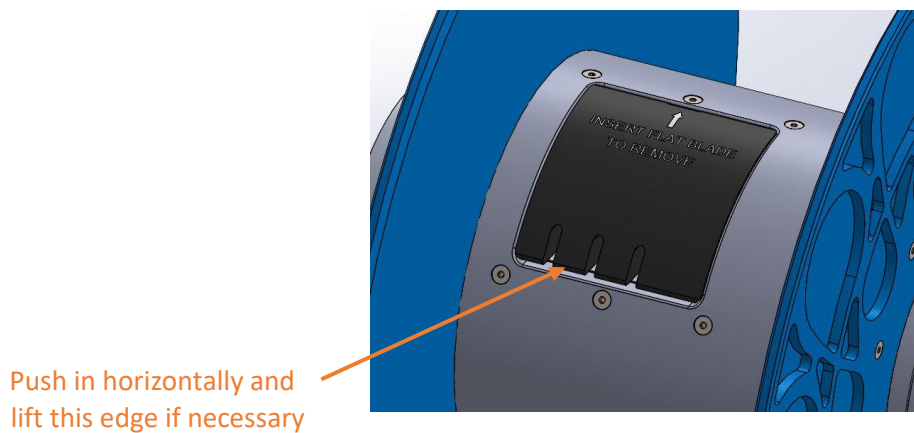
1. Open the top of the box and remove the foam spacer around the drum.
2. Cut the foam spacer in half to remove the handle and/or cable guide (if equipped). Discard the foam spacers.
3. Using a 2-person lift, grab both sides of the triangular openings in the side plates of the chassis and lift vertically out of the box.
4. Remove the (4) M8 socket head cap screws from the bottom of the wooden shipping plate. The bolts and shipping plate may be discarded. **Import note:** Do not lay the reel on the FORJ connector exit side of the reel when trying to access the shipping bolts!

## Initial Setup & Connections

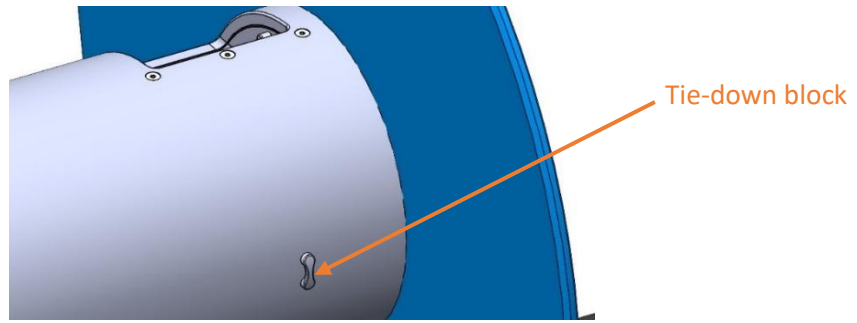
1. The cable reel must be secured to a solid surface using at least (4) M8 or 5/16" bolts, either from the top or bottom. From the top: use the (4) 8.4mm diameter holes in the chassis cross angles to secure to a solid surface. From the bottom: use the (4) M8x1.25 tapped holes.
2. Connect the vehicle/vessel/ground optical or electrical cable to the non-rotating connectors on the side of the reel as required.



3. Insert a flat blade screw driver in the slot behind the exit cover and remove by sliding it forward.
4. Connect the cable to be wound (AKA the deployment cable) on the reel to the connectors or pigtail in the drum exit port as required.
5. Align the fibers/wires with the slots in the drum exit cover and then push the cover horizontally into the drum exit port until it snaps into place. Tip: If the exit cover does not snap into place, lift the trailing edge of the cover while pushing it in until seated.

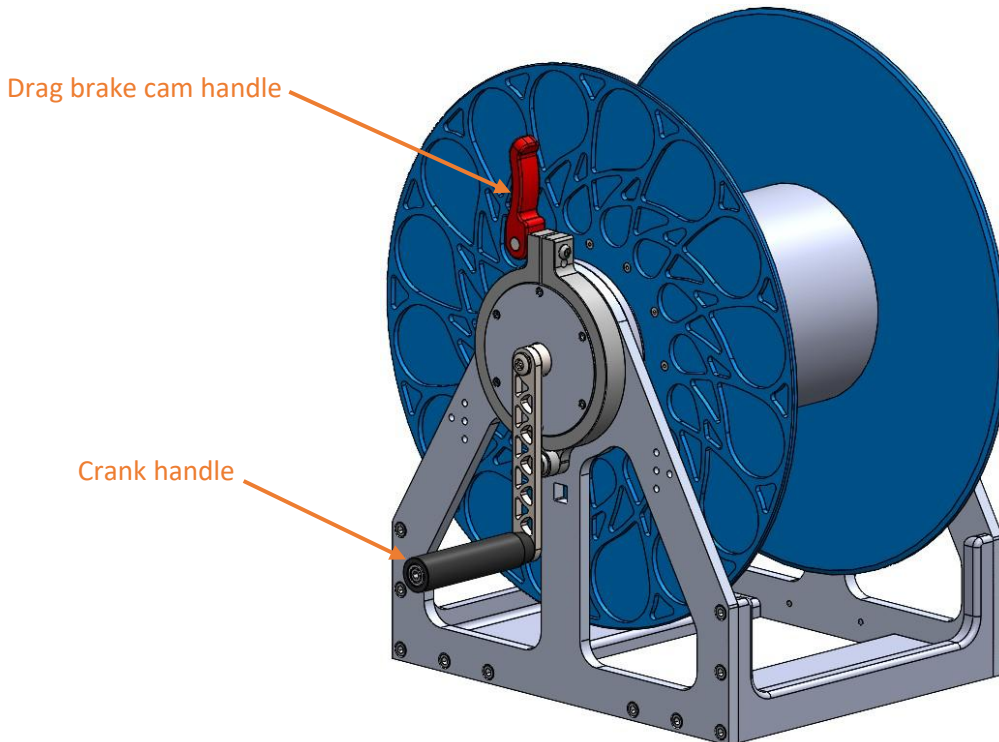


6. Rotate the drum 180° CW by hand and use a zip tie to secure the cable to the cable tie-down block.

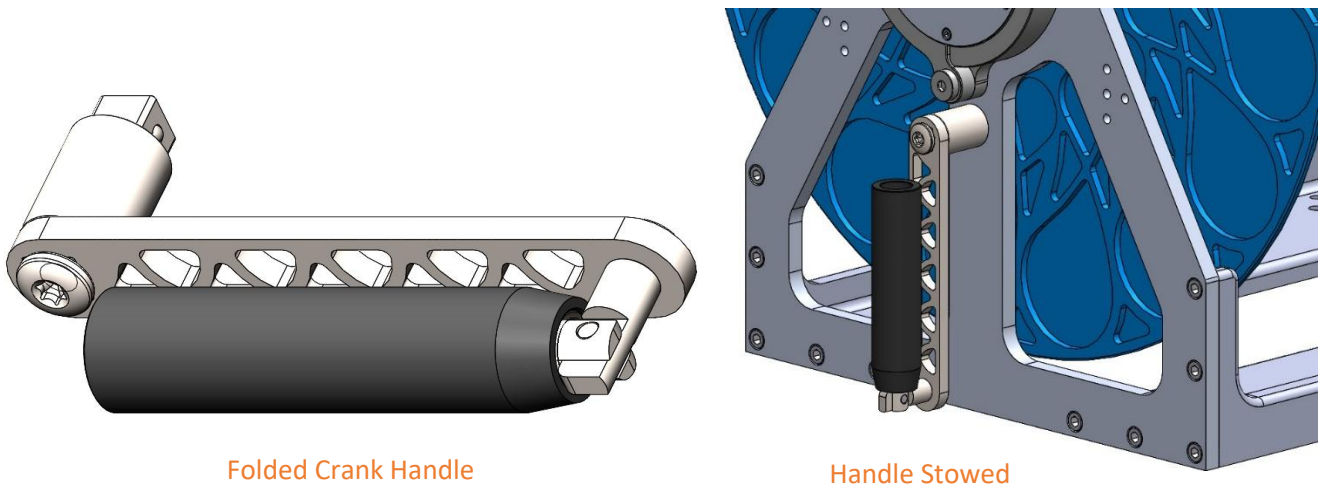


7. Adjust the drum brake (if equipped) to the desired tension. See drum brake instructions below.

8. Insert the crank handle into the side of the reel and wind the cable onto the reel. Note: If equipped with the spring rewind or cable guide options, see special instructions below.



9. Stow the crank handle by removing it from the drum, pulling the handle spindle and rotating it 90° to fold it, then insert the square drive into the square feature in the chassis side plate.

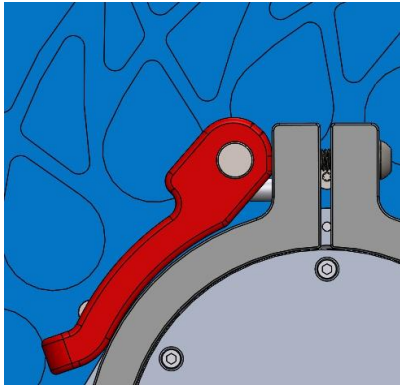




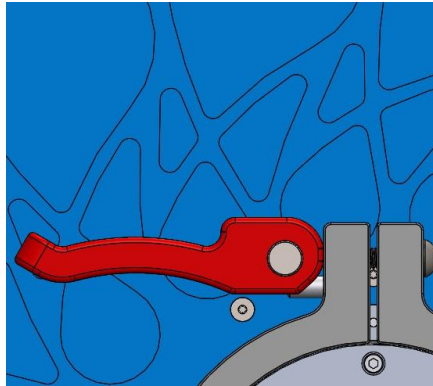
## Options

### Drum Brake

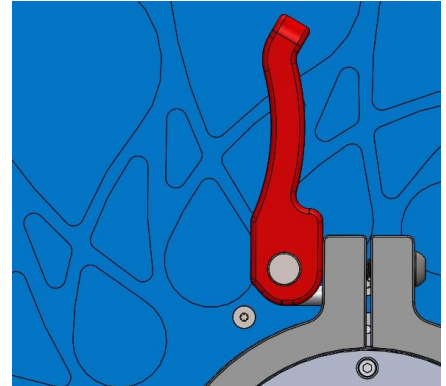
The drum brake allows the user to add drag to the cable reel drum when unwinding the deployment cable or lock the drum from rotating by changing the position of the red cam lever.



Free Rotating



Drag Position



Locked

**Free Rotating position:** Releases the brake for rewinding the cable without additional drag.

**Drag position:** Applies (\*adjustable force) drag to the drum to help minimize overrun when unwinding.

**Locked position:** Applies maximum friction to hold the drum in place.

\* To adjust the drag force, use a T30 Torx wrench to tighten or loosen the cam handle pull screw to increase or decrease the drag force.

### Spring Rewind

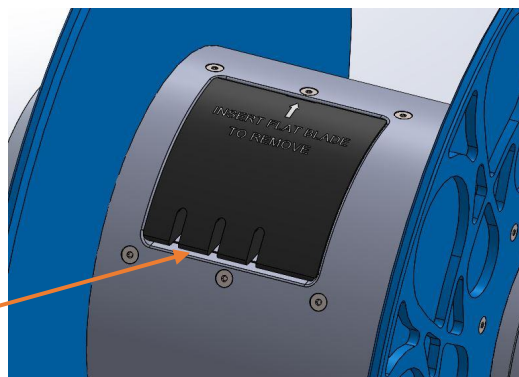
The spring rewind option will automatically rewind the reel when tension is relaxed on the deployment cable. The reel will pull with a force between 3-5Kg., gradually increasing with the number of rotations.

**Warning:** the rewind spring is under significant tension and can cause serious injury or death if removed improperly! Only qualified and trained personnel are authorized to remove the spring housing.

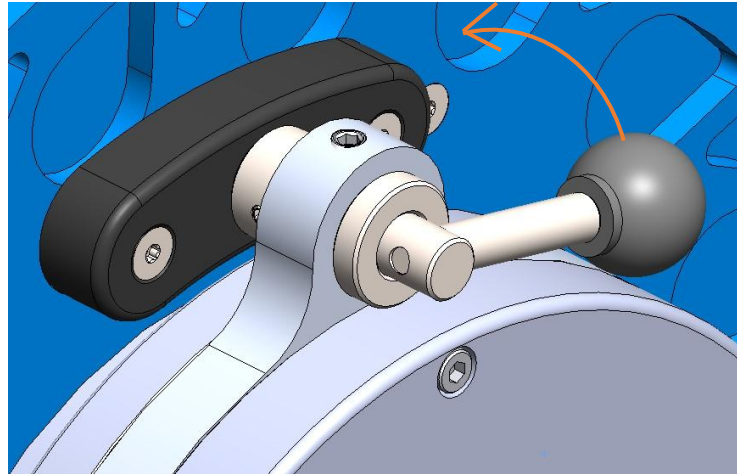
To load a deployment cable on a spring rewind reel:

1. Connect the cable to be wound on the reel to the connectors or pigtail in the drum exit port as required.
2. Align the fibers/wires with the slots in the drum exit cover and then push the cover horizontally into the drum exit port until it snaps in place. Tip: If the exit cover does not snap into place, lift the trailing edge of the cover while pushing it in until seated.

Push in horizontally and lift this edge if necessary



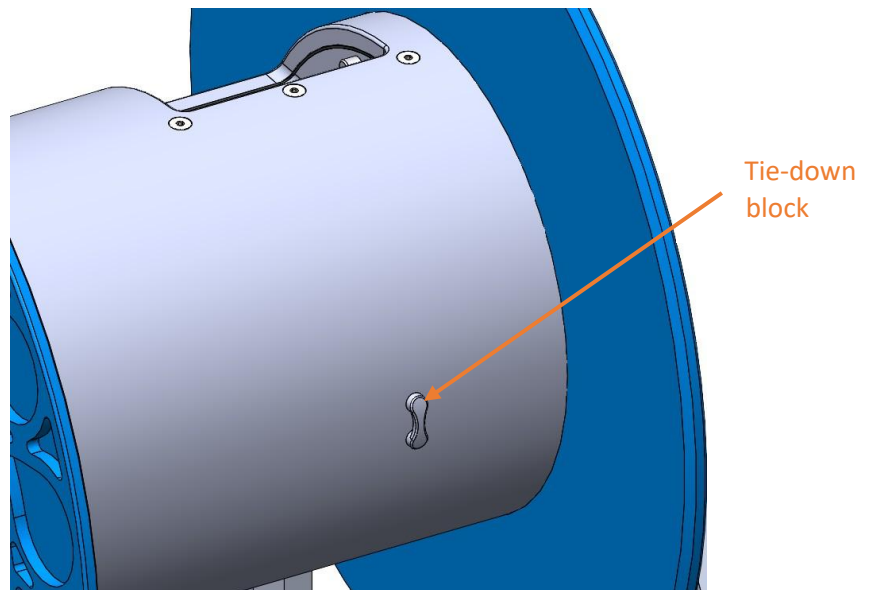
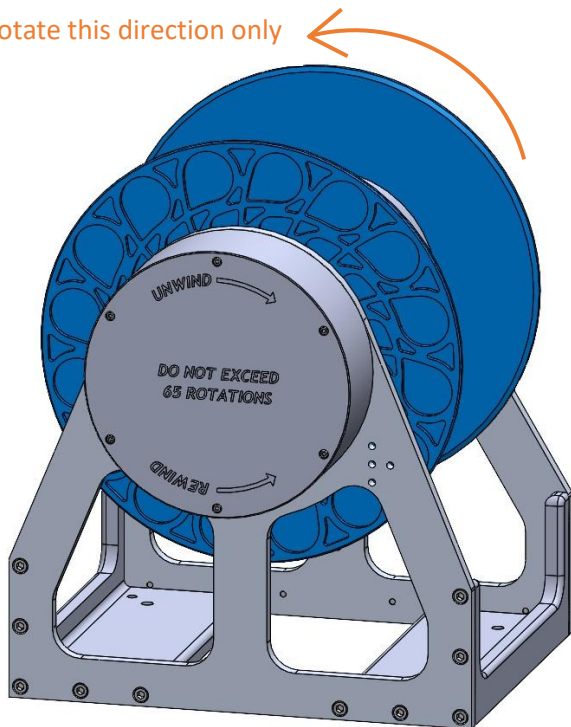
3. Rotate the drum lock handle @180° Counter Clockwise (CCW) to unlock the drum. Note: the drum should be near its “zero position” (the spring rewind mechanism is not yet tensioned) when shipped new, but the drum may rotate slightly on its own so make sure to hold the drum in place.



4. Rotate the drum 180° in the **rewind direction** by hand and use a zip tie to secure the cable to the cable tie-down block.

**Important Note:** Take note of directional arrows on the spring housing. To avoid permanent damage to the rewind spring do not rotate the drum more than 90° in the unwind direction past the zero position!

Rotate this direction only



5. Rotate the drum in the **rewind direction** to wind the user cable onto the drum as needed.

**Important Note:** do not exceed 65 rotations of the drum. Additional rotations could result in damage to the spring.

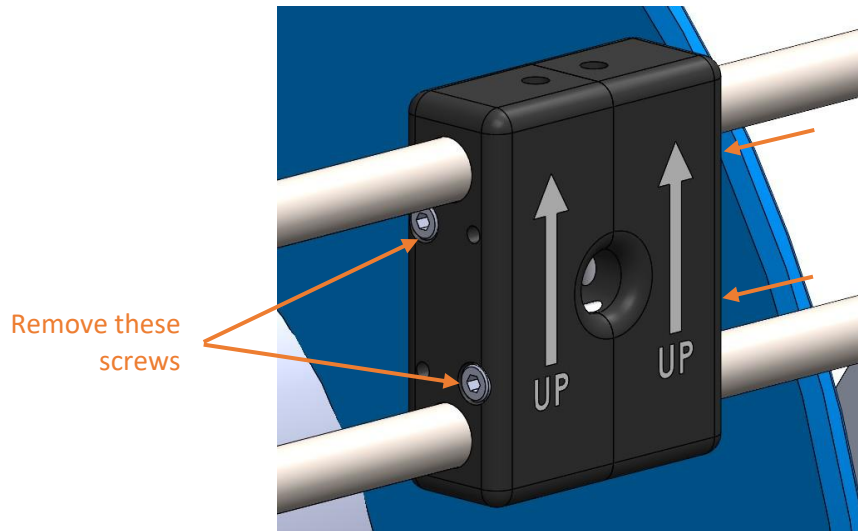


## Passive Cable Guide

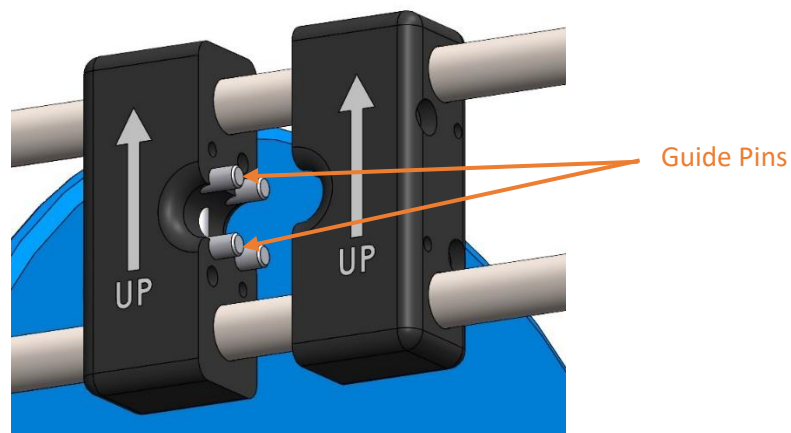
The passive cable guide is used to help wind the deployment cable on to the reel in a more even pattern and/or to prevent damage to the cable if the load angle is variable or at a severe angle.

To load a deployment cable on a spring rewind reel:

1. Feed the cable through the hole in the black plastic cable guide block. Note if the connector on the end of your cable does not fit through the hole, the two halves of the block can be separated as follows:
  - 1.1 Use a 3mm hex key to remove the (4) M4 screws holding the blocks together.



- 1.2 Slide the blocks apart, making sure to not lose the roller pins between the blocks.



- 1.3 Feed the connector/cable through the middle of the blocks.
  - 1.4 Slide the blocks back together and re-connect them with the (4) M4 screws.
2. Connect the cable to the drum exit connector and secure to the drum as described in the “Initial Setup and Connection” section above.

**-END-**