

# READ THIS FIRST

Thank you for purchasing the TAIL-LIFT from ExperimentalAero. The TAIL-LIFT has been designed to meet the needs of the Tail Wheel owner. If your TAIL-LIFT is not functioning properly, do not use and contact ExperimentalAero (sales @experimental aero.com).

## **-SAFETY-**

**Never operate the TAIL-LIFT unless you have read this manual**

### **Product Liability Waiver**

By purchasing and using products manufactured or provided by ExperimentalAero, the customer acknowledges and agrees to the following terms:

**Assumption of Risk:** Customer understands and accepts that the use of ExperimentalAero products carries some risks. These risks include, but are not limited to, injury, property damage, or other losses resulting from improper assembly or installation, or misuse.

**Release of Liability:** Customer releases ExperimentalAero, its affiliates, employees, agents, and representatives from any and all liability for personal injury, property damage, or any other loss arising from the use of ExperimentalAero products.

**Responsibility for Use:** Customer is responsible for using ExperimentalAero products in accordance with provided instructions. Any modifications or alterations made to the products are done at the customer's own risk and may void warranties or guarantees.

**Voluntary Agreement:** By purchasing and using ExperimentalAero products, customer voluntarily agrees to the terms of this product liability waiver.

### **-WARNING-**

- Chock the aircraft main tires prior to lifting.
- Do not occupy the aircraft when TAIL-LIFT is supporting the tail wheel of the aircraft.
- Do not exceed the maximum lift load: 150 lbs
- If your aircraft has an unusual forward CG, use caution when lifting the tail to prevent the aircraft nosing over.
- Failure to assemble and use the TAIL-LIFT properly could result in bodily injury or property damage.

### **Specifications:**

**Weight: ~40 lbs**

**Max Tire Diameter: 10"**

**Length: 31"**

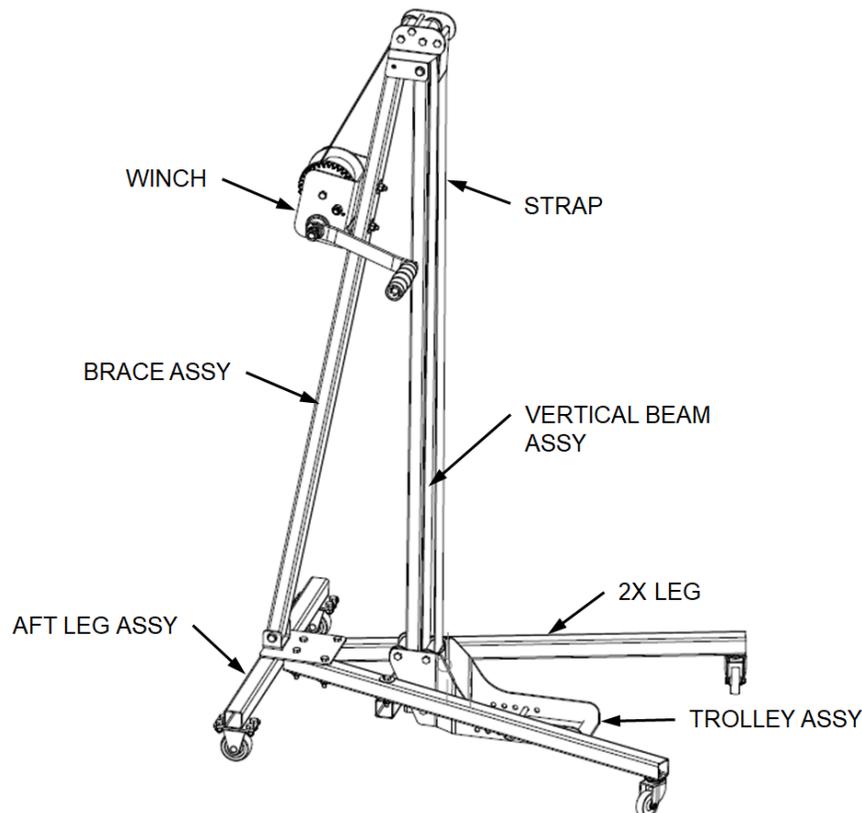
**Max Lift Load: 150 lbs**

**Max Tire Width: 4"**

**Width: 22"**

**Max Lift Height: 36"**

**Height: 51"**



### Hardware

All hardware is commercial grade. If any piece of hardware is missing or damaged, it can be purchased at your local hardware store.

HARDWARE PARTS LIST	
DESCRIPTION	QTY.
BOLT, HEX, 1/4-20 X .625L	8
BOLT, HEX, 1/4-20 X 1.75L	2
BOLT, HEX, 1/4-20 X 2.0L	6
BOLT, HEX, 1/4-20 X 3.0L	9
BOLT, HEX, 5/16-18 X 5.0L	1
CASTER, SWIVEL, 2.0	2
CASTER, SWIVEL, 5/16 STEM, 2.0	2
NUT, HEX, 5/16-18	2
NUT, HEX, LOCK, 5/16-18	1
NUT, HEX, LOCK, JAM 1/4-20	7
NUT, HEX, LOCKING, 1/4-20	18
ROLLER, TAIL-LIFT	5
WASHER, FENDER, 1/4 SAE	12
WASHER, FLAT, 1/4 SAE	11
WASHER, FLAT, 5/16 SAE	4
WASHER, LOCK, 5/16	2

### Tail-Lift Assembly

It is important to follow the recommended assembly procedure and order provided in this manual. Assembly can be accomplished using standard mechanic's tools. Getting assistance with the final steps in the assembly will make the process easier.

### Base Assembly (Figure 1)

1. Assemble Legs (Item 2) to Aft Leg Assembly (Item 1).

**Note:** Do not tighten nuts completely until complete assembly of the TAIL-LIFT Frame.

2. Install Swivel Casters (Item 3) onto Leg. Note: be sure to use the lock washer (Item 5) between the nut and washer.
3. Tighten the Swivel Castes with the special wrench provided while holding the nut with an open end wrench or needle nose pliers if the wrench doesn't fit.
4. Install the Rigid Caster (Item 8) to the Aft Leg Assembly. Note: Hold the nut with a wrench and turn the bolt.

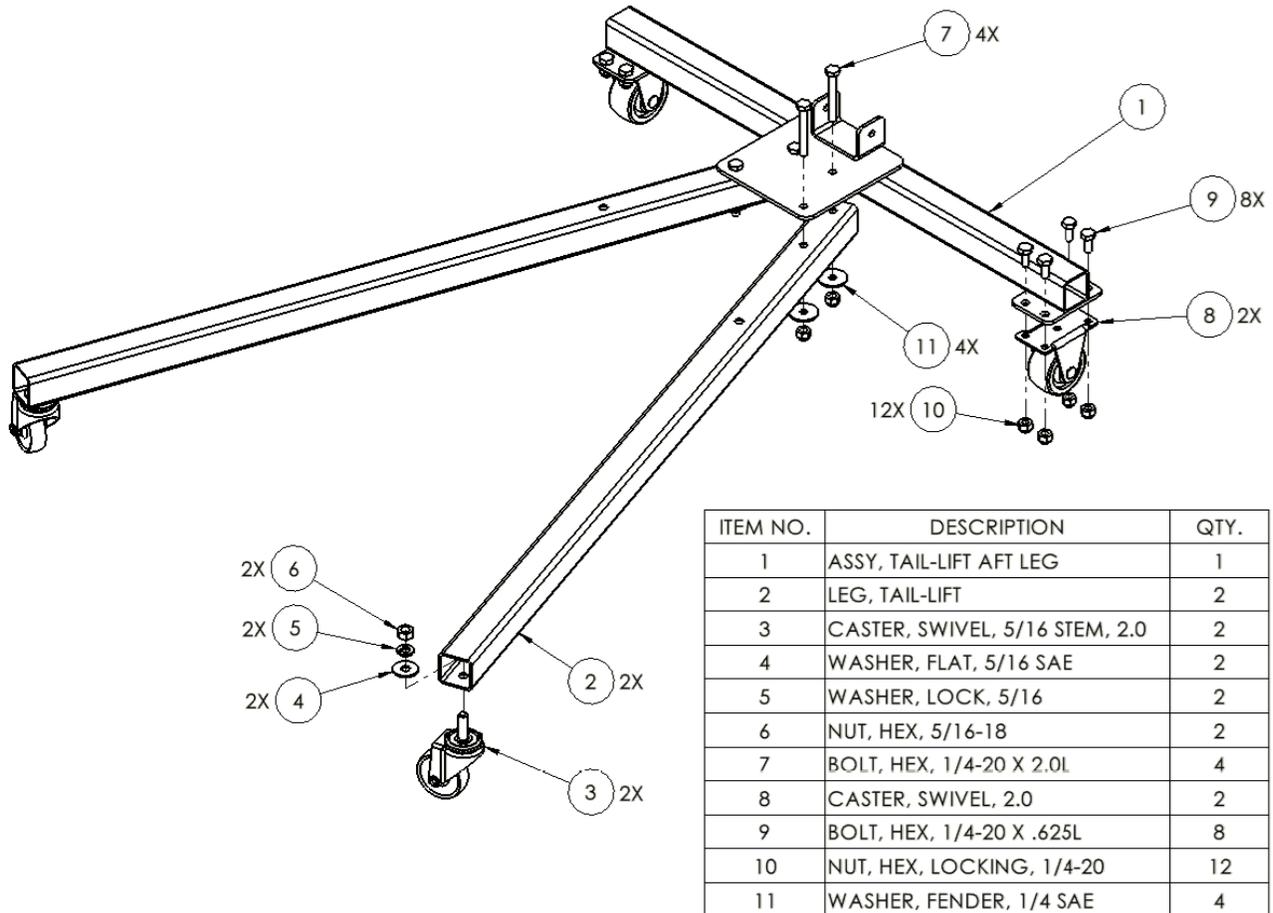


Figure 1

### Beam Mounting (Figure 2)

1. Note: Having additional help with this task will make assembly easier
2. Install the Vertical Beam (Item 7) to Base Assembly.

**Note:** Lower Fender Washer & Nut are inserted inside the cross tube.

3. Tighten all bolts in the Base Assembly.

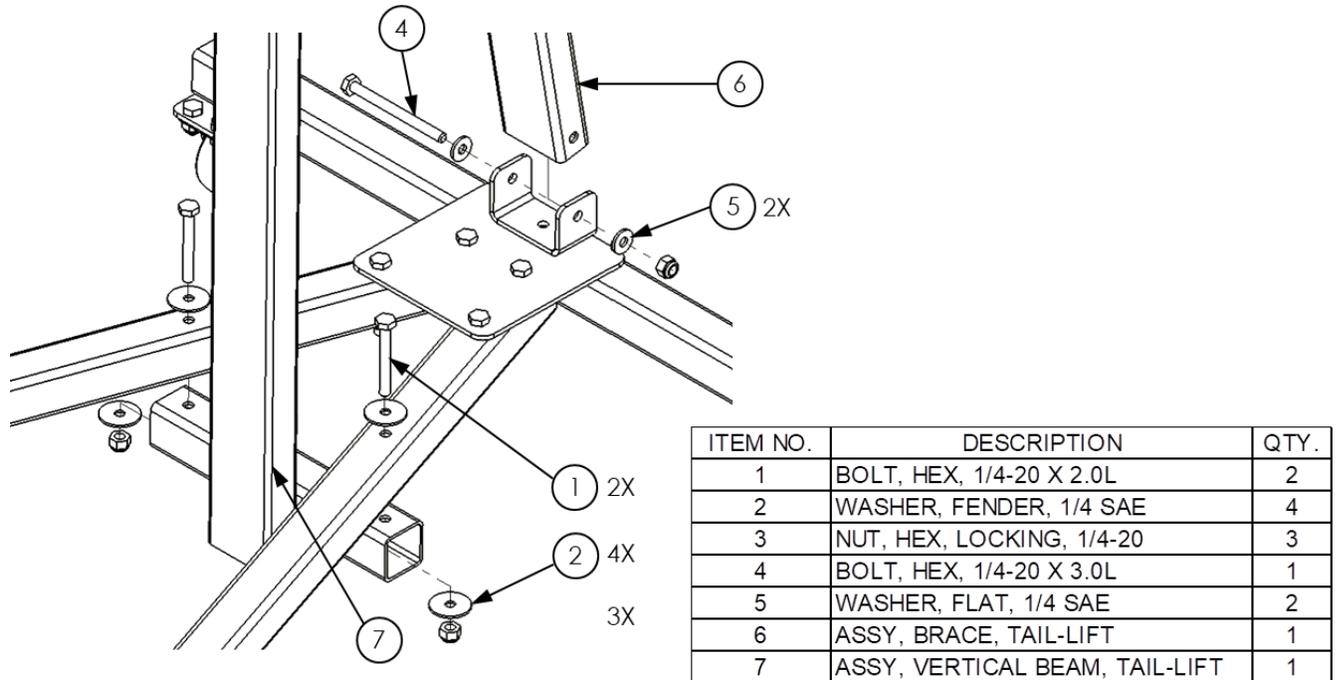


Figure 2

### Upper Roller Mounting (Figure 3)

1. Slide Brace Beam Assembly (Item 6, Figure 2) into the Vertical Beam Assembly (Item 7, Figure 2).
2. Install bolt (Item 4, Figure 2). Do not tighten this bolt/nut at this time.
3. Insert the bolt (Item 1, Figure 3) in the slot/hole in the Brace Beam/Vertical Beam Assembly. **THIS BOLT IS CRITICAL AND NEEDS TO BE TIGHT (TORQUE: 60-85 IN-LBS)**
4. Apply light oil to the outside of the Tube Spacers (Item 5) to prevent rusting
5. Insert Tube Spacers (Item 5) into Rollers (Item 6) and install in the Brace Beam Assembly.
6. Install bolts that go through the Tube Space. **Note:** Washers are only under the Nuts.
7. Do not install the other two (bolts) at this time.

## TAIL-LIFT Manual

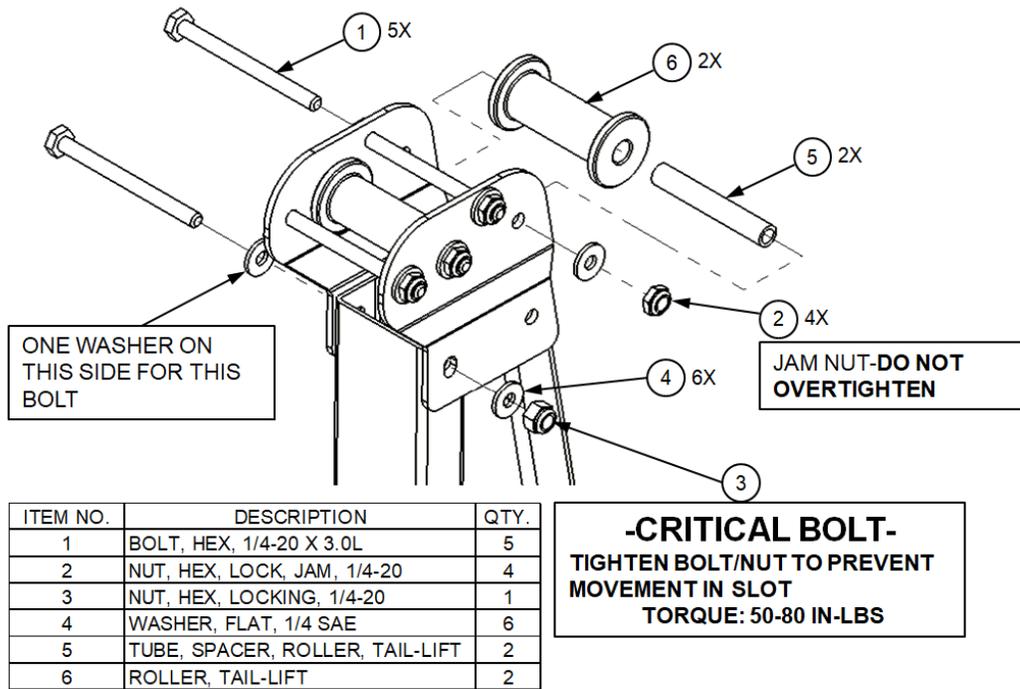


Figure 3

### Winch Installation (Figure 4)

1. Install Winch Handle on Winch with U-Bracket (Figure 6) between the Winch shaft and Handle.
2. Tighten Nut securely.

**Note:** Large torque required to prevent slippage of handle

3. Position the Winch and insert hardware as shown in figure 4.
4. Tighten bolts. Careful not to over-tighten since you will start to deform the steel tube.
5. Final alignment of the Winch may be necessary once the Strap installation is complete.

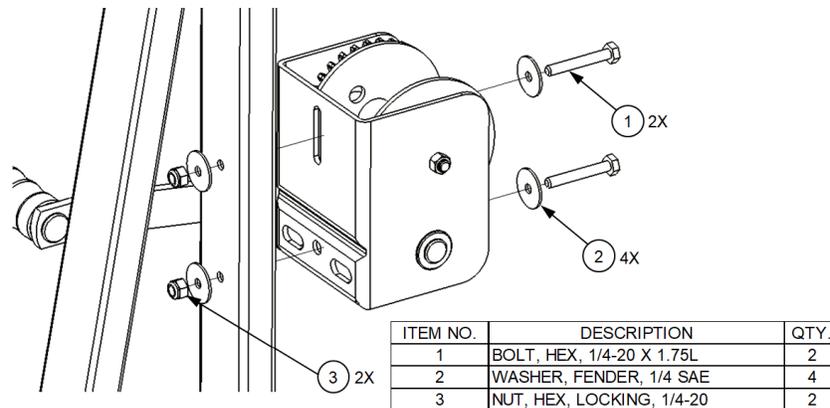


Figure 4

### Trolley Assembly (Figure 5)

1. Apply light oil to the outside of the Tube Spacers (Item 8) to prevent rusting.
2. Insert Tube Spacers (Item 3) into Rollers (Item 8) and install in the Trolley Frame (Item 9).
3. Install bolts that go through the Tube Spacers.
4. These bolts use 1/4-20 Jam Lock Nuts (Item 4) these are shorter in height than standard 1/4-20 lock nuts. Washers are under the nut side only. Do not tighten these bolts/nuts at this time.
5. Final position of 5/16 bolt (Item 6) is based on the diameter of the Tail Wheel.

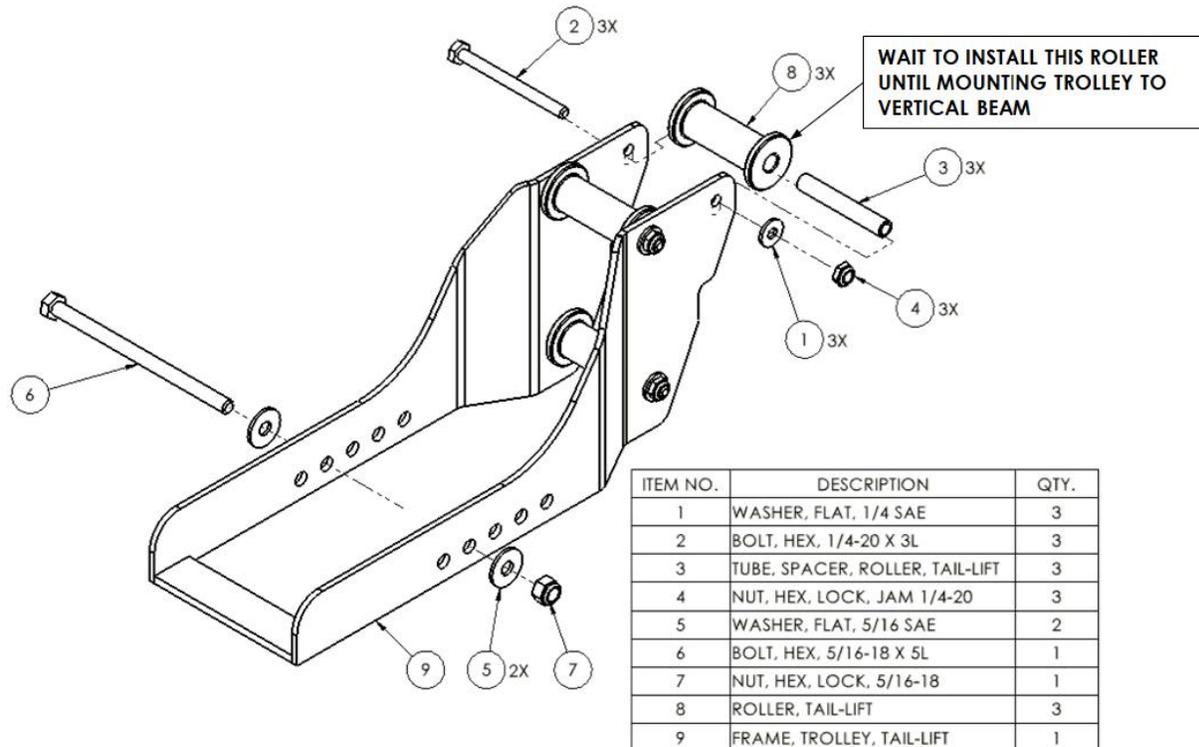


Figure 5

### Strap Installation and Routing (Figure 6 & 7)

1. Remove Strap installed on the Winch. This can be accomplished by pulling out the entire Strap and removing the anchor bolt (Figure 6).
2. Install the custom Strap provided with the TAIL-LIFT. This upgraded Strap provides additional TAIL-LIFT mechanical advantage. Reinstall the anchor bolt and nut.
3. Route the Strap on top of the Rollers and install the top bolt as shown in Figure 7.

**Note:** This bolt prevents the Strap from losing contact with the Rollers. Only tighten the bolt to prevent bolt from fall out.

4. Route the Strap under and around the forward lower Roller in the Trolley and secure the end of the Strap to the upper Anchor Bolt.

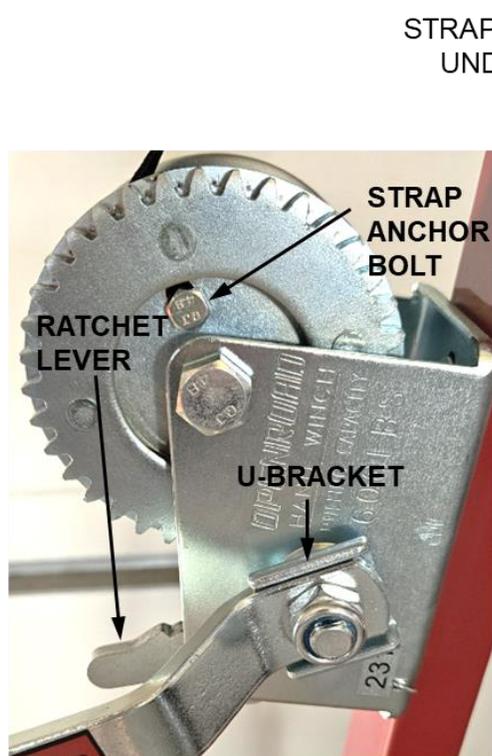


Figure 6

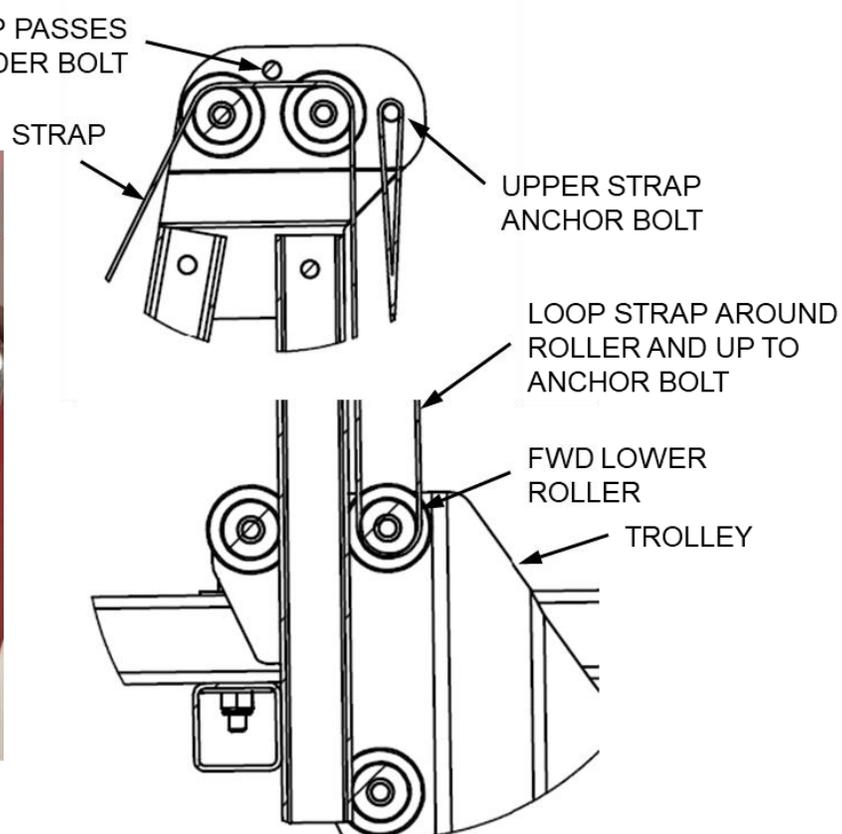


Figure 7

### Trolley Installation

1. Place the Trolley Assembly onto the Vertical Beam.
2. Install the final AFT Roller/Spacer assembly and tighten all bolts/nuts.

### Trolley Setup For Tire Size (Figure 8)

**It is the owner's responsibility to insure the Tire is securely captured in the Trolley. Failure to proper setup the Trolley could result in personal injury or property damage,**

1. Measure your Tail Wheel Tire diameter.
2. Insert the 5/16 bolt (Item 6, Figure 5) in the corresponding recommended location for the Tire diameter (Figure 8)
3. **Tighten the 5/16 Nut just enough to prevent rotation of the bolt. Additional torque will cause bowing of the Trolley frame.**
4. If the bolt spacing is too large for the Tire, rubber tubing (automotive fuel line) can be added around the bolt to reduce this spacing.

Recommended 5/16" bolt location based on Tire diameter  
!! It is owner's responsibility to insure Tire is securely captured in Trolley by using proper bolt spacing and rubber tubing !!

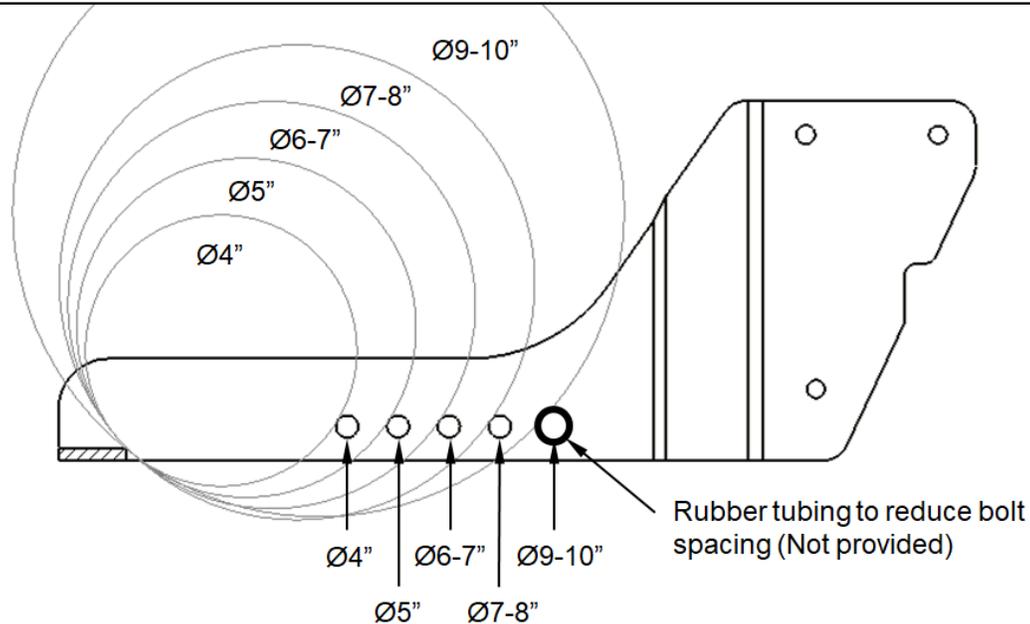


Figure 8

### TAIL-LIFT Operation

1. Read the Winch instructions for proper Winch operation (included with Winch)
2. Position TAIL-LIFT Trolley under Tail Wheel.
3. Set the Ratcheting Lever (Figure 6) in the upper position on the Winch for raising the Trolley.
4. Rotate the Winch Handle to raise the Trolley.

**If there is a concern when lifting the tail beyond a certain height that the aircraft might nose over, weight should be added to the tail to prevent this. Weight can be hung on the Tail Wheel Spring or placed on top of the Horizontal Stabilizer. Securing the Tail Wheel/Spring to the Trolley will not prevent this possible nose over condition.**

5. To lower the Trolley (Tail), apply pressure to the Handle.

**Failure to apply pressure during lowering and releasing the ratchet could result in losing grip on the Handle and dropping the tail of the aircraft to the ground violently!**

6. Move the Ratcheting Lever to the middle position. The Winch has a lower Lever position but it is not needed for TAIL-LIFT operation.
7. Slowly rotate the Winch Handle and lower the Trolley.