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2025

OPERATION MAINTENANCE MANUAL

MODEL XOR SERIES

TITAN MANUFACTURING

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1. INTRODUCTION

This manual covers the operation and regular maintenance of the Titan Roll-Off cable hoist.

All procedures described in this manual are to be carefully studied and followed. Read the entire manual before beginning the operation of the equipment. A copy of this manual must remain in the truck cab at all times.

This hoist is designed for installation on single, tandem or multi axle chassis. It is intended for use with industry standard “Outside Rail Containers” with universal pick up attachments.

2. SAFETY

2.1 General Safety Message

For your own safety and the safety of others in the area of operation, always follow the operator instructions.
The following safety symbols are used in Sections 3 – 8 of this manual.

Failure to correctly follow a **CAUTION** statement may result in minor/moderate injury or damage to the equipment.

Failure to correctly follow a **WARNING** statement may result in serious injury, death or extensive damage to the equipment.

Failure to correctly follow a **DANGER** statement will result in injury, death or long term health hazards.

2.2 Training

Only trained personnel may operate this product. This includes operation for purposes of mounting, testing and inspection. Training must be done by a qualified person, using information from this Operation Manual as well as hands on training on the equipment.

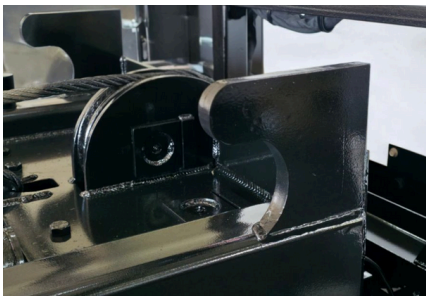
3. EQUIPMENT DESCRIPTION

3.1 Safety Devices

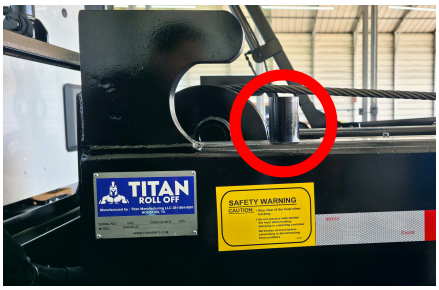
All Palfinger cable hoists are equipped with (5) container containment devices that meet or exceed all DOT regulations.
These devices are as follows:

(1) Container winch cable.

(2) Two front container stops and locks.

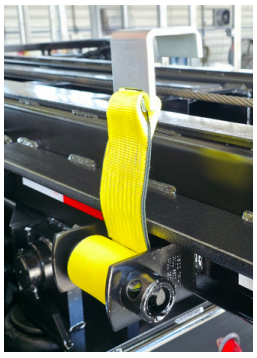


Dual container stops



Dual container locks

(3) Left and right hand rear container hold downs.



Strap winch/"C" hook rear hold down. The winch straps are placed over the top of the container longmembers after the container is drawn to and engaged with the front stops/locks and drawn up by means of a lever bar. The straps must be removed prior to off-loading or moving the container rearward. Failure to do this will damage the straps and/or winches.

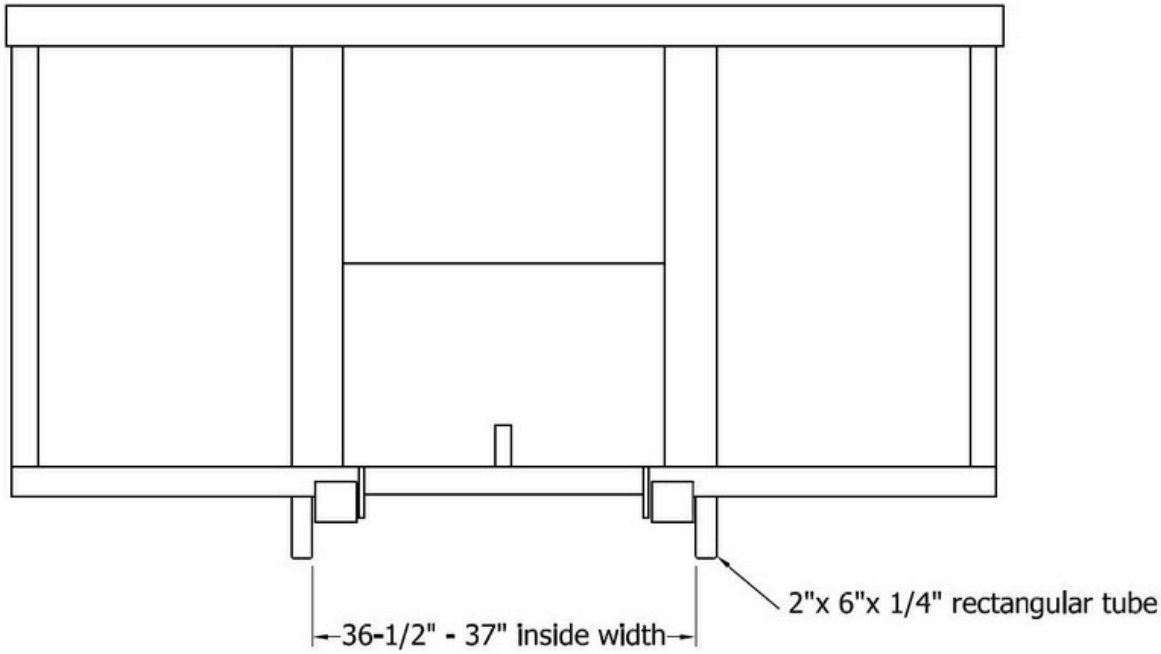
Do not operate the truck on public roads without the container properly locked by all devices

3.2 Container Requirements

The operator must check to ensure that all containers to be handled are compatible with the hoist system.

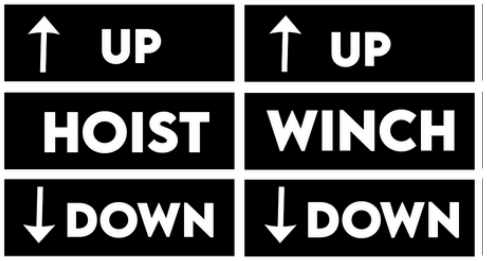
Make sure that:

- Longmembers are the correct width spacing. (36-1/2” – 37” inside width).
- Length of container is correct for hoist. (Optional short stops may be required to handle substandard length containers.)
- Longmembers are not bent or cracked.
- Pickup hook is not bent or damaged.
- Container rear door lock mechanism is operable and latched.
- Container front legs or rollers will not interfere with control valve, tank, control levers and fenders on the hoist.



3.3 Hoist Controls The standard controls are located on the outside of the driver's side of the truck. Optional
controls are located inside the cab of the truck. With either system, the levers are marked indicating their function.

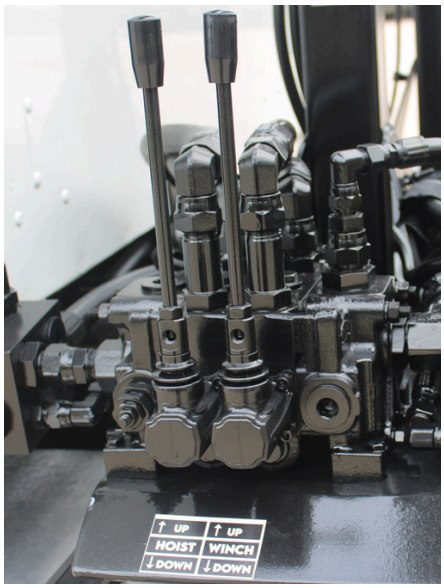
The labels and functions are as follows:



HOIST - Raises "UP" or lowers "DOWN" the main hoist cylinders, for loading, unloading or dumping.

WINCH – Retracts "UP" or extends "DOWN" container winch cable, for loading or unloading.

PTO – (Power Take Off) Connects pump to the truck's transmission to provide hydraulic pressure for operating hoist functions.



STANDARD OUTSIDE TWO SPOOL VALVE CONTROL

STANDARD INSIDE CAB CONTROLS

3.4 Safety Decals

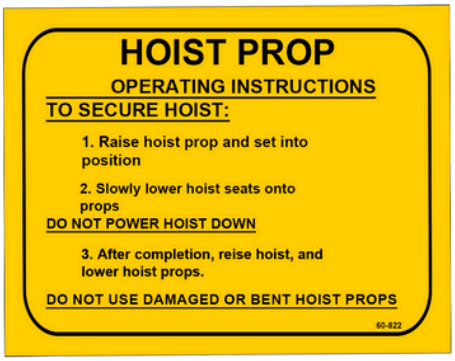
6"

4"

6"

4"

5"



4"

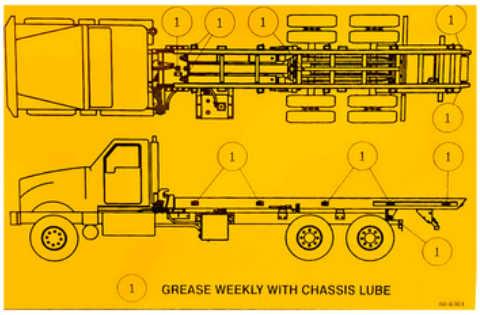
6"

4"

8"

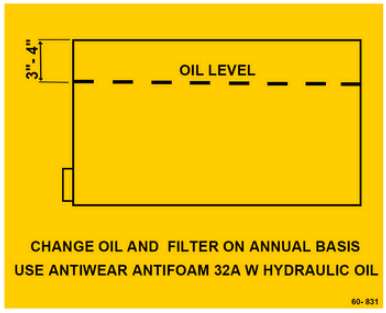
2"

6"



4"

5"



4"

4 START – UP

4.1 Inspection of Equipment

On a daily basis check the hoist and take action before operating if any of the following items are found:

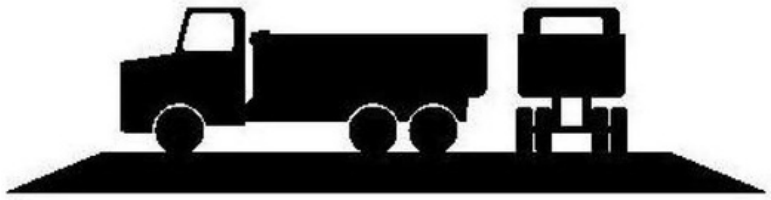
- missing safety decals
- damaged safety devices (container hold down winches, etc.)
- damaged winch cable
- oil leaks
- structural damage to hoist

Check all containers to be handled per section **3.2** of this manual.

4.2 Inspection of Work Area

Make sure that the area is large enough to allow the truck to remain in a straight line during unloading operations.

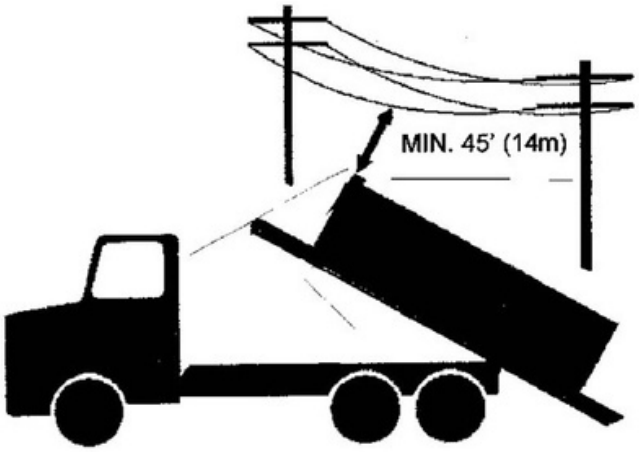
Choose a site with stable, hard and horizontal surface. Operating this equipment on an unstable, soft or sloping terrain can result in a roll-over of the vehicle.



The loading area should be free of any obstacles. Walk around the container/truck to make sure it is safe to load or unload. Make sure your rear view mirrors give you a clear view of the work area. Make sure that there are no pedestrians or bystanders near the vehicle.

Bystanders can be seriously injured or killed by the container movement or rolling truck during unloading, loading or dumping.

Keep overhead electrical wires at least 45 feet (14m) distance from the hoist when in the raised position.



4.3 PTO/Pump

- Manual Transmissions

Depress clutch, put transmission in neutral and move the PTO switch/valve lever to the "ON" position. Slowly release the clutch and in extreme cold temperatures, let the oil circulate for a short time to warm the oil up.

- Automatic Transmissions

Put transmission shift lever in neutral, move PTO switch to "ON" position. In extreme cold temperatures, let oil circulate for a short time to warm the oil up.

Warning lights in the cab of the truck will indicate:

- The PTO being engaged.
- The hoist main frame being raised.

5. UNLOADING

5.1 Preparation

- Position truck in an acceptable location for unloading (refer to section **4.2** of this manual).
- Set vehicle parking brake, engage PTO and accelerate engine to 1,000 rpm.

Do not exceed 1,000 rpm. Damage to equipment can result.

5.2 Unloading Cycle

- At the rear of the hoist, remove rear container hold down straps from both the left and ride sides.
- Move HOIST lever to “UP” position, raising main frame approximately 5’ (1.5m) at the front of the hoist. The front locks release automatically when the main frame is raised.
- Release HOIST lever and move WINCH lever to the “DOWN” position. Allow container to slide off until the rear wheels touch the ground.
- Raise the main frame completely and a lower the container until it is on the ground.
- Fully retract the reeving cylinders, WINCH “DOWN” to create enough cable slack to allow the winch cable to be removed from the container.

Be sure that the parking brake is set and the truck cannot move forward or back, before attempting to remove the cable from the container.

- Secure the winch cable link on the hook provided at the rear of the hoist, avoiding having the cable pass around the outside of the rear roller. If the hoist is raised to load a container and the cable is wrapped around the rear roller, the cable will be crushed between the roller and the ground.
- Completely lower hoist main frame HOIST “DOWN”.
- Disengage PTO and release parking brake.

Do not drive the truck with the PTO engaged, it may cause damage to the pump, hydraulic system and or transmission.

6. LOADING

6.1 Preparation

- Back truck in a straight line with the container until truck is about 3 feet (1m) from the front of the container.
- Check overhead clearance, see section **4.2**, before operating hoist.
- If the winch cable is wrapped around the rear roller, it must be moved to prevent crushing the cable during the loading operation.
- Shift the transmission to neutral, set the parking brake and engage the PTO.
- Move HOIST lever to “UP” position and raise hoist main frame until the rear roller touches the ground.
- For units with an extendable tail, extend the tail cylinder(s) by pushing the handle DOWN until the rear roller touches the ground. On units with an 80” tail, full extension will allow reduced loading or dumping angle of the hoist.

6.1 Preparation – cont'd

Do not lift the rear truck wheels off the ground since this will place unnecessary strain on the hoist and could damage the tail or tail cylinder. The tail can be retracted to raise the hoist fully. When using extendible tail units, make sure the container is aligned with the rails. Misalignment may cause damage to the tails cylinder.

6.2 Loading Cycle

- Release the brakes and back the truck up until the rear of the hoist main frame rails are positioned between the container longmembers and the container's front guide rollers contact the hoist rails.
- Reset the parking brake, go to the rear of the hoist and put the cable link over the pickup hook on the container.
- Move the WINCH lever to the "UP" position and draw the container up the hoist's main frame.

Be certain that the container longmembers are straddling the hoist's main frame rails and are aligned with the hoist during loading. If the container rails are off to either side, the container cannot be properly loaded and damage could occur to the hoist and or container.

- Pull the container up the hoist rails until the front of the container passes forward of the hoist's hinge point.

The speed that the hoist operates at is governed by the engine speed, damage to the hoist's hydraulic system can occur by operating the system too fast especially when lowering the hoist main frame.

- At this point the move the HOIST lever to the "DOWN" position while moving the
- WINCH lever to the "UP" position.
  Pull the container onto the hoist until the container guide rollers contact the hoist stops. The container locks will automatically engage when the hoist main frame is fully lowered.
- Disengage the PTO and release the parking brake.

Do not allow the rear of the container to extend beyond the rear of the hoist frame.

When using short containers, the container must be secured by the front stop/locks or by optional short stops. Confirm that the short stops are securely in position before using them.

7 DUM PING

7.1 Preparation

- Prior to dumping, make sure that the area behind the truck and container is clear, see section **4.2** of this manual.
- If the rear of the container is not even with the rear of the hoist frame, it will be necessary to remove the rear hold down hooks from both the left and right sides.
- The container should be slid backward lining up with the rear of the hoist before opening the container door or continuing with the dumping process.

Use caution when releasing the lock on the container door. Material in the container can exert a large amount of force on the door. Stand clear of the door to prevent being hit by the door when it is released and or by material that may fall from the container.

7.2 Dumping the container

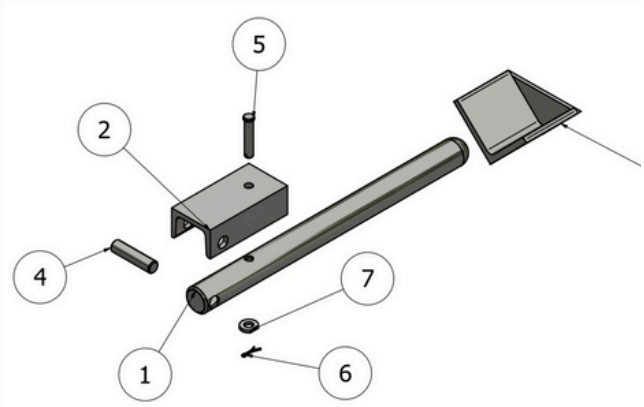
- Back the truck up until the rear of the hoist/container is at the correct location for discharging the contents.
- Engage the PTO and set the parking brake.
- Move the HOIST lever to the “UP” position, raising the hoist to close to the full height.
  It may be necessary to drive away from the load if the container is full. The hoist should not be at full extension with the rear roller on the ground when pulling forward. (This movement is not be necessary or desirable when dumping into a pit, such as at a transfer station).
- When the container is empty, move the HOIST lever to the “DOWN” position fully lowering the hoist main frame.
- Disengage the PTO.
- When conditions permit, close and lock the container door latch and reinstall the rear container hold down hooks if they were previously removed.

9 MAINTENANCE

9.1 Hoist Safety Props

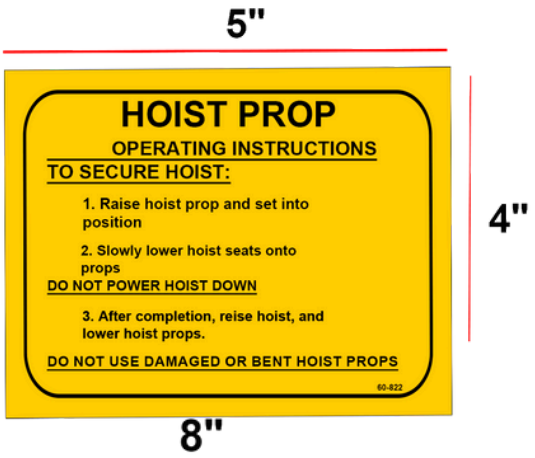
Never conduct any maintenance that requires that the hoist's main frame be in a raised position without first engaging the hoist safety props. The props are designed to support only the weight of the hoist (maximum 2,000 lb. per side) and not an empty or loaded container. If repairs must be made on a hoist that cannot have the container removed, it is necessary to support the hoist frame by use of an overhead crane or other similar means. Do not rely on blocking the hoist forward of the hinge point. Doing so may damage the hoist.

- The hoist is equipped with safety props on both sides of the hoist.
- Always engage these props prior to anyone reaching over the chassis/hoist subframe rails with the hoist's main frame raised.
- To set the safety props, raise the hoist's main frame part way.
- Remove the retention straps and rotate the props on both sides into a raised position.
- Slowly, lower the main frame until it is supported by the props.
- Disengage the PTO, turn off the engine and remove the key from the ignition.
- When the maintenance/repairs are completed, reverse this process to store the props. Always reinstall the retention straps to keep the props in their storage position.



ITEM	QTY	PART NUMBER	DESCRIPTION
7	1	HS-133-7	1/2 IN FLAT WASHER
6	1	HS-133-6	1/8 AIR PIN CUTTER
5	1	HS-133-5	PIN
4	1	HS-133-4	PIN PIVOT
3	1	HS-133-3	HOIST COP
2	1	HS-133-2	CHANNEL
1	1	HS-133-1	SAFETY HOLDER TUBE

PARTS LIST

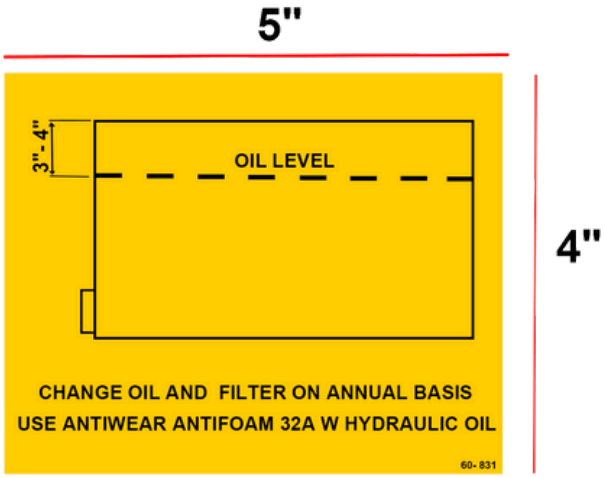


9.2 Daily maintenance

- Prior to the start of each shift, conduct a standard vehicle inspection.
- Check operation of all headlights, tail lights, turn signals, brake lights, emergency flashers and clearance lights.
- Check the air pressure of all tires.
- Confirm that the air system can create governed pressure.
- Confirm the condition and adjustment of all rear view mirrors.
- Confirm the condition and operation of the windshield wipers and washers.
- Adjust seat position for comfortable operation and the ability to operate all pedals.
- Check hoist winch cable for any damage.
- Check hoist for signs of any hydraulic leaks.

9.3 Weekly maintenance

- Lubricate all sheaves and pins at hinge and pivot/rotation points.
- Check hoist for hydraulic leaks
- Check hydraulic hoses for any damage or leakage.
- Check hoist winch cable for wear or damage.



9.4 Monthly maintenance

- Check oil level in tank. The oil should be within 3” – 4” from the top of the tank with the all hoist and winch cylinders fully retracted.
- Confirm that all cable sheaves, side and rear rollers are free to rotate.
- Check all cylinders for leakage at the packing glands and also hydraulic fittings.
- Confirm that all hoist mounting bolts are in place and fully tightened.

9.5 Bi-Annual maintenance

- Remove and replace oil filter element.

9.6 Annual maintenance

- Drain tank.
- Remove suction filter, clean and reinstall.
- Refill tank with the correct weight of high quality hydraulic oil containing anti-foam agents, anti-wear additives and low VI index. Typical acceptable oil – Gulf Harmony 32 AW.

All prescribed maintenance must be conducted on the recommended interval to not void the manufacturers' warranties.

9.7 Reeving Cable Installation (Dual reeving cylinders)

- To make the installations easier, put a point on the tail end of the cable (the end without a hook). **Do not weld the new cable to the old.**
- Lay the cable out on the ground and free it of loops or twists. Start by inserting the pointed end down through the top of the head sheave directly behind the cab.
- Loop the cable around sheaves 2,3,4, and 5 as shown in figure 8-7-1. A large screwdriver or a piece of plate will help the cable through sheaves 3 and 4. Loop 4-6' of cable through the slot in the cylinder mounting section. (The cable sleeve must be installed in the slot prior to inserting the cable.) Attach one cable clamp to the end of the cable and tighten the clamp to the cable end. The tail should be on under side of the cable. (See figure 8-7-1)
- Using a binder or come-a-long, attach one end to the cable clamp and the other to the cross strap in the track.
- Slowly extend the cylinders. When the cylinders are fully extended, the cable should be pulled snuggly into the head sheave. It may be necessary to tighten the binder or come-a-long to take up slack in the cable if the cable hook cannot be pulled into the head sheave. If you cannot fully extend the cylinders before the hook reaches the head sheave, loosen the binder or come-a-long. Fully extend the cylinders again and retighten the binder.
- To compensate for cable stretch, retract one cylinder 4" (or both a total of 4"). Retighten the binder or come-a-long so that the cable hook is pulled into the head sheave again.
- Install 4 cable clamps spaced 6" apart. The first clamp should be installed as close as possible to the cable sleeve in the cylinder mounting section. Loosen the binder or come-a-long after installing the first three clamps.
- Retract the cylinders, pull out the cable, and wrap the cable around the rear roller and hang it on the cable hook.
- Check all five of the cable sheaves for grease. Remember that they must be greased every week.

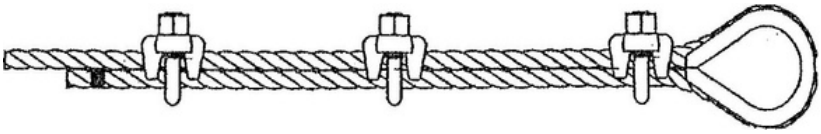


Fig. 9.7.1

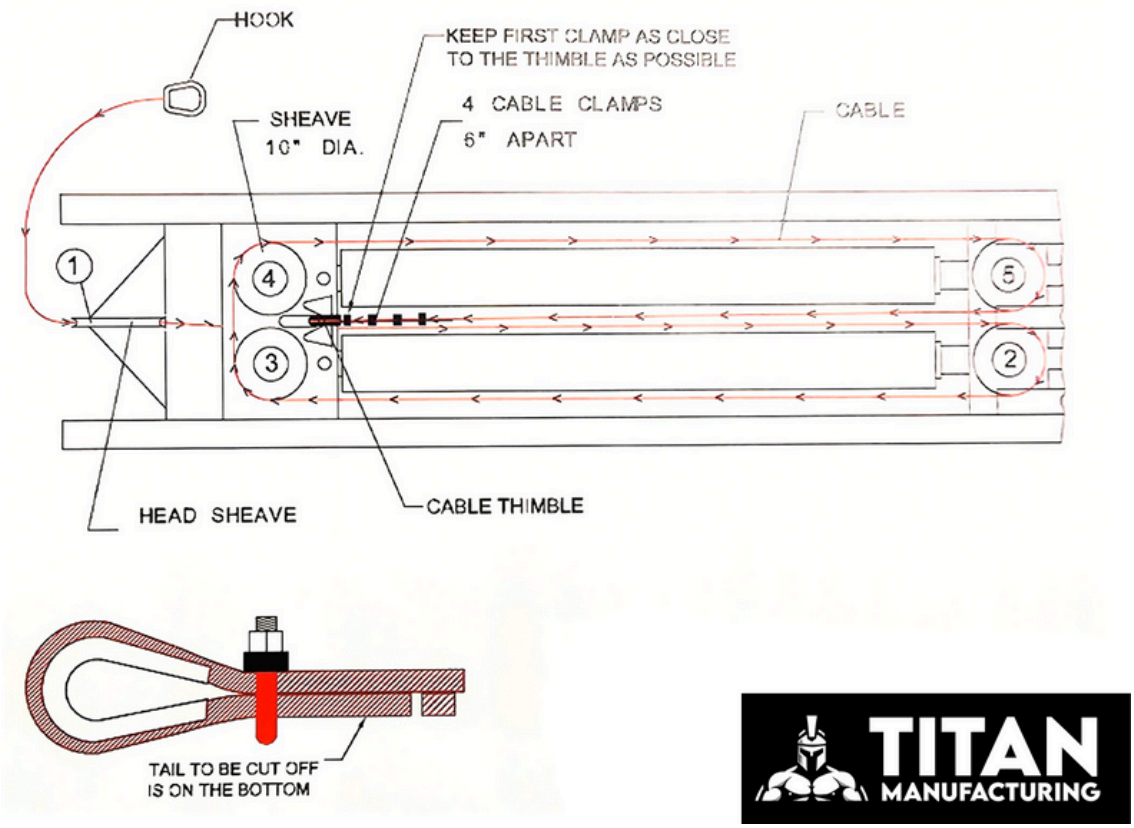


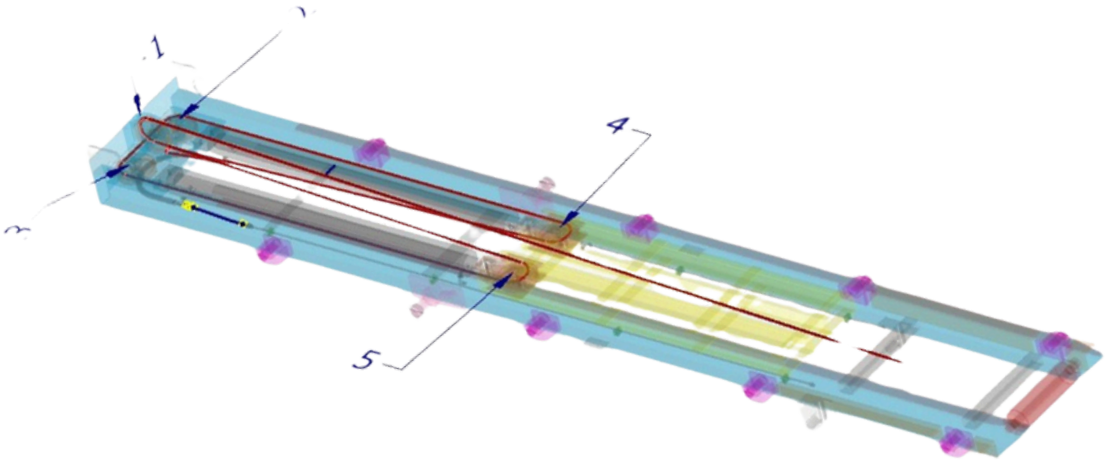
Fig. 9.7.2

9.8 Reeving Cable Installation (Single reeving cylinder)

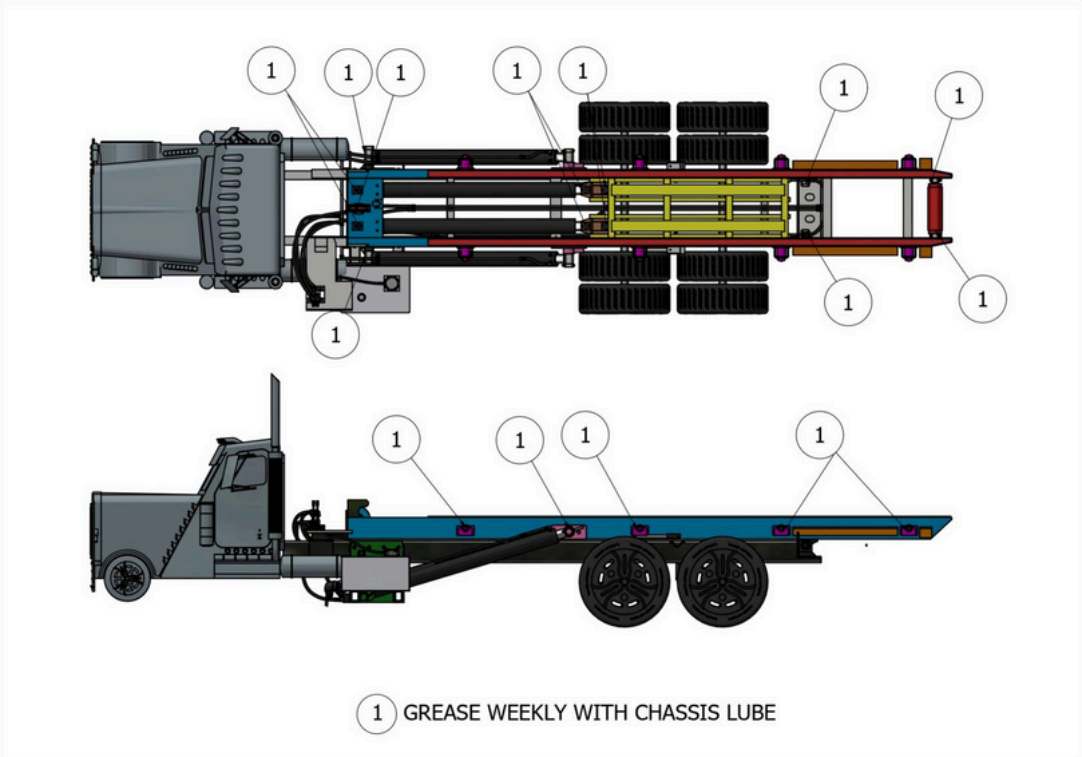
- To make installation for ART 12 &20's easier; put a point on the tail end the cable (the end without a hook). ARB/ARD-60 and ART 30 – 75 have buttons on both ends of their cable so do not get pointed.
- Lay the cable out on the ground and free it of loops or twists. Start by inserting the end down the top of the head sheave 1 directly behind the cab.
- Loop the cable around sheaves 2, 3, 4, and clamp in 5 as shown in Figure 11 or install in cable adapter on ART 30/40's or holder on 60/75's
- ART's 12 & 20's follow 4 thru 9 to complete cable installation
- Loop 4-6' of cable through the bracket on the front section. (The cable thimble must be installed on the pin prior to inserting the cable).
- Attach one cable clamp to the end of the cable and tighten the clamp to the cable.
- Using a binder or come-a-long, attach one end to the cable clamp and the other to the cross strap in the track.
- Slowly extend the cylinder. When the cylinder is fully extended, the cylinder should be pulled snugly onto the head sheave. It may be necessary to tighten the binder or come-a-long to take up the slack in the cable if the cable hook cannot be pulled into the head sheave.
- To compensate for cable stretch, retract the cylinder 2". Retighten the binder or come-a-long so that the cable hook is pulled into the head sheave again.
- NOTE: on ART 20-18's adjust the cable with reeve cylinder at full extension.
- Install 4 cable clamps spaced 6" apart. The first clamp should be installed as

close as possible to the cable sleeve in the cylinder mounting section. Loosen the binder or come-a-long after installing the first three clamps.

- Retract the cylinders, pull out the cable and wrap the cable around the rear roller and hand it on the cable hook.



GREASE POINTS CHART



10.0 WARRANTY

Effective Date: 01 January, 2025

Titan Manufacturing Roll-Off Warranty and Guarantee Terms

Titan Manufacturing LLC grants the end customer one (1) year of full guarantee and (3) years on load bearing structure not including wear items (rollers, pins, etc).
The guarantee period starts to run on handover to the end customer, though no later than 6 months after delivery by Titan Manufacturing to the contracting partner.

With the exception of the UN Convention on the International Sale of Goods, the only law applicable is US law. The legal venue is in Texas.

The warranty becomes void if the contracting partner does not register the Roll-Off within the time limit set out in the main section of the Warranty & Guarantee of Terms.

The extended warranty does not extend to hydraulic pumps or PTO’s (Power Take Off).