

Aerial Ladder Lubrication

MARCH 30, 2023



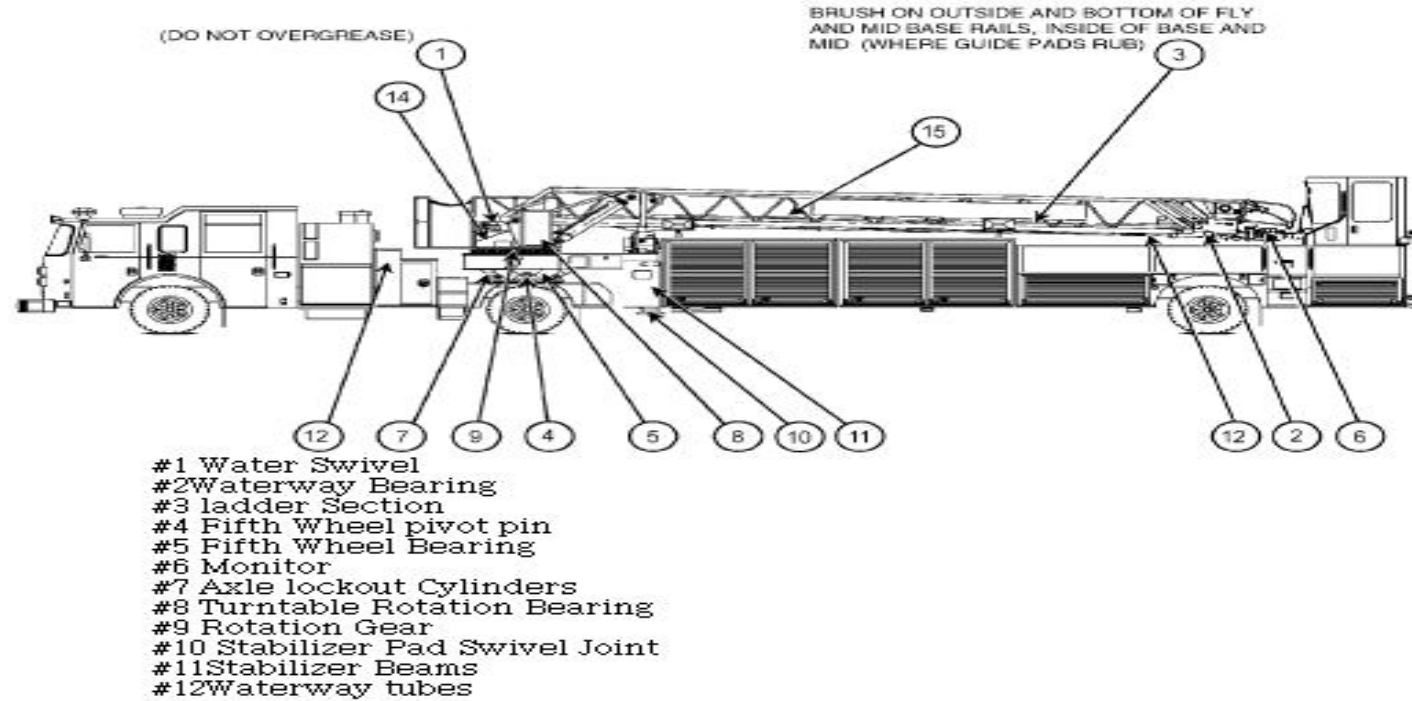


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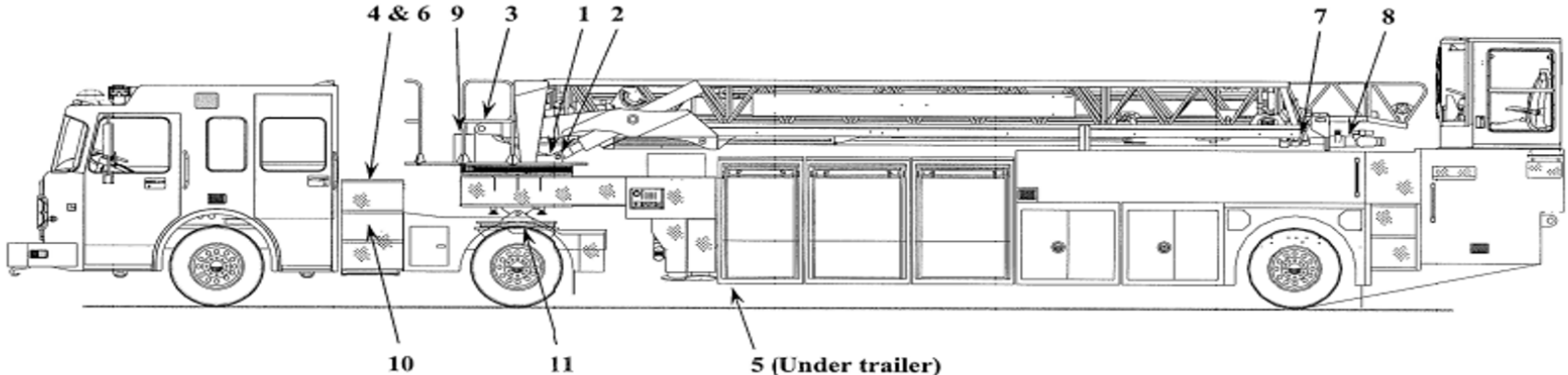
Pierce TDA/AT Ladder Lubrication Chart





Pierce TDA/AT Ladder Lubrication Chart

Spartan Ladders have rollers- **DO NOT** lube ladder rails



ITEM	DESCRIPTION	QTY	TYPE	CHECK/LIUBE	METHOD	Comments
1	Aerial Ladder Rotation Bearing	2	EP	Every 20 Hrs	Hand Gun	Slowly rotate turntable while lubing bearing (min 1 rev. ea direction)
2	Lift Cylinder Spherical Bearings	2	EP	Every 20 Hrs	Hand Gun	3 Pumps
3	Waterway Heel Pin Swivel	1	EP	Every 20 Hrs	Hand Gun	3 Pumps
4	Return Line Hydraulic Filter	1	-----	Every 20 Hrs	Replace Element	
5	Pressure Line Hydraulic Filter	1	-----	Every 20 Hrs	Replace Element	
6	Hydraulic Oil Reservoir	1	Hydro	Daily	Liquid Fill	
7	Aerial Telescopic Waterway	2-3	EP	Every 20 Hrs	Hand Gun	3 Pumps
8	Water Monitor Horizontal & Vertical Pivot Points	1 ea	EP	Every 20 Hrs	Hand Gun	3 Pumps
9	Swing Drive Planetary Gear Box	1 ea	EPGL	Every 20 Hrs	Liquid Fill	
10	Power Steering Fluid	1	Dexron III	Every 20 Hrs	Liquid Fill	As needed to fill
11	Fifth Wheel Rotation Bearing	2	EP	Every 3,000 mile	Hand Gun	Lube with tractor straight to trailer and with tractor rotated 90 deg to each side



Lubrication Specifications

ITEM #	QTY	ITEM TO CHECK/SERVICE	TYPE OF LUBRICANT
1	1	WATER SWIVEL (Do not over-grease)	PIERCE MANUFACTURING CARTRIDGE #1003040 or SYNCO SUPER LUBE #41150 —or— PIERCE MANUFACTURING 5 lb TUB #1003044 or SYNCO SUPER LUBE #41050 —or— PIERCE MANUFACTURING 30 lb PAIL #1003046 or SYNCO SUPER LUBE #41030
2	10	WATERWAY BEARINGS	
3	—	LADDER SECTION SLIDING SURFACES Brush on outside and bottom of fly and mid base rails, inside base and mid (where guide pads rub)	
4	2	FIFTH WHEEL PIVOT PIN	PIERCE MANUFACTURING CARTRIDGE PN #95-0903 — or — EXXON NLG1 No. 2 GRADE GREASE WITH MOLY — or — EQUIVALENT HEAVY-DUTY No. 2 GRADE GREASE WITH MOLY
5	1	FIFTH WHEEL BEARING (Additional information on the lubrication of this item can be found in "3,000-Mile/Semi-Annual Lubrication" on page 5-9.)	
6	2	MONITOR	
7	8	FIFTH WHEEL LOCKOUT CYLINDER PINS	
8	1	TURNTABLE ROTATION BEARING - Pump grease into the bearing while the bearing is being rotated. Greasing is considered complete when the grease overflows from the seal, forming a light film which also serves as a seal.	
9	1	ROTATION BEARING TEETH (Brush on)	
10	4	STABILIZER PAD SWIVEL JOINTS	
11	2	STABILIZER BEAMS - Brush on bottom surface of stabilizer beams and inside (top surface) of torque box stabilizer housings.	
12	Multiple	SHEAVE PINS	DEXTRON II AUTOMATIC TRANSMISSION FLUID (OR EQUIVALENT)
13	—	WATERWAY TUBES (Wipe on waterway tubes)	
14	1	HYDRAULIC SYSTEM RESERVIOR	SEE HYDRAULIC OIL TAG ON RESERVIOR
15	2	ROTATION GEAR BOX (on turntable) (See Figures 5-5 and 5-6 for specific instructions.)	API-GL5 80W90
16	—	WIRE ROPE CABLES Spray on & penetrate wire rope cables	LUBRIPLATE CHAIN AND CABLE FLUID (OR EQUIVALENT)

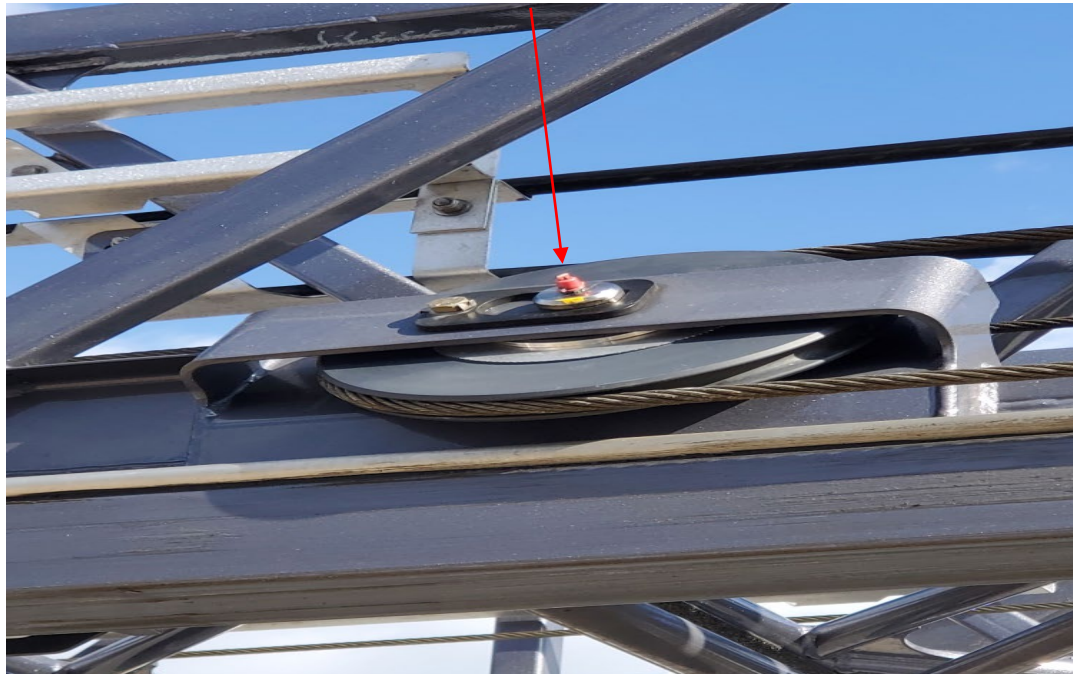


- Old PIERCE & SPARTAN Aerial Sheaves DO NOT have Zerk Grease Fittings
- New PIERCE Aerials have Zerk Grease Fittings in the Aerial Sheaves Pin
 - Sheaves are a grooved wheel or pulley wheel used for holding wire rope and incorporated into a pulley



Lube sheaves with the following (available through THEA/Station Supplies):

- Drummond Persist (Red Grease) Part # DN4380D
- Drummond Gold Rush (Gold grease) Part # DN4720
- **EQUIVALENT HEAVY-DUTY NO. 2 GRADE GREASE WITH MOLY**





ALL PIERCE AERIALS

Clean Aerial ladder quarterly to semi-annually (depending on usage):

- First scrape/wipe off old grease and dirt with flexible plastic scraper
 - Flexible Bondo spreader or credit card size flexible non-scratching scraper
- Wipe old grease off with rag/towel,
- An environmentally safe degreaser such as SIMPLE GREEN , PURPLE POWER, or equivalent, can be use for further cleaning
 - DO NOT use mineral spirits or similar chemicals
 - DO NOT Power Wash Ladder.
- Apply new SUPER LUBE with paint brush or lathered rag to achieve thin coat on ladder rails.



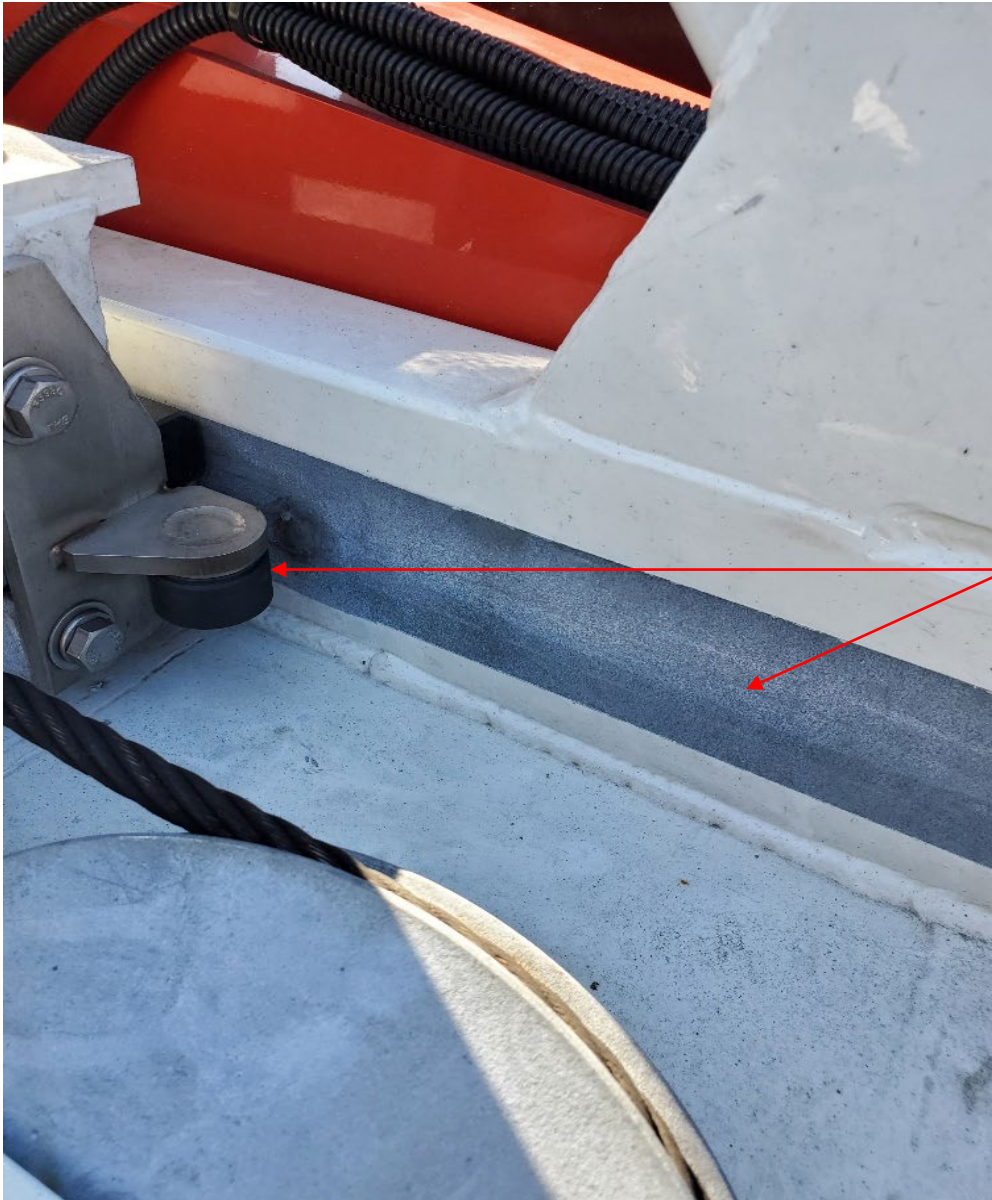
Example

Bondo spreader for cleaning off dirty ladder grease. Cut to desired size.



Example

Bondo spreader for cleaning off dirty ladder grease. Cut to desired size



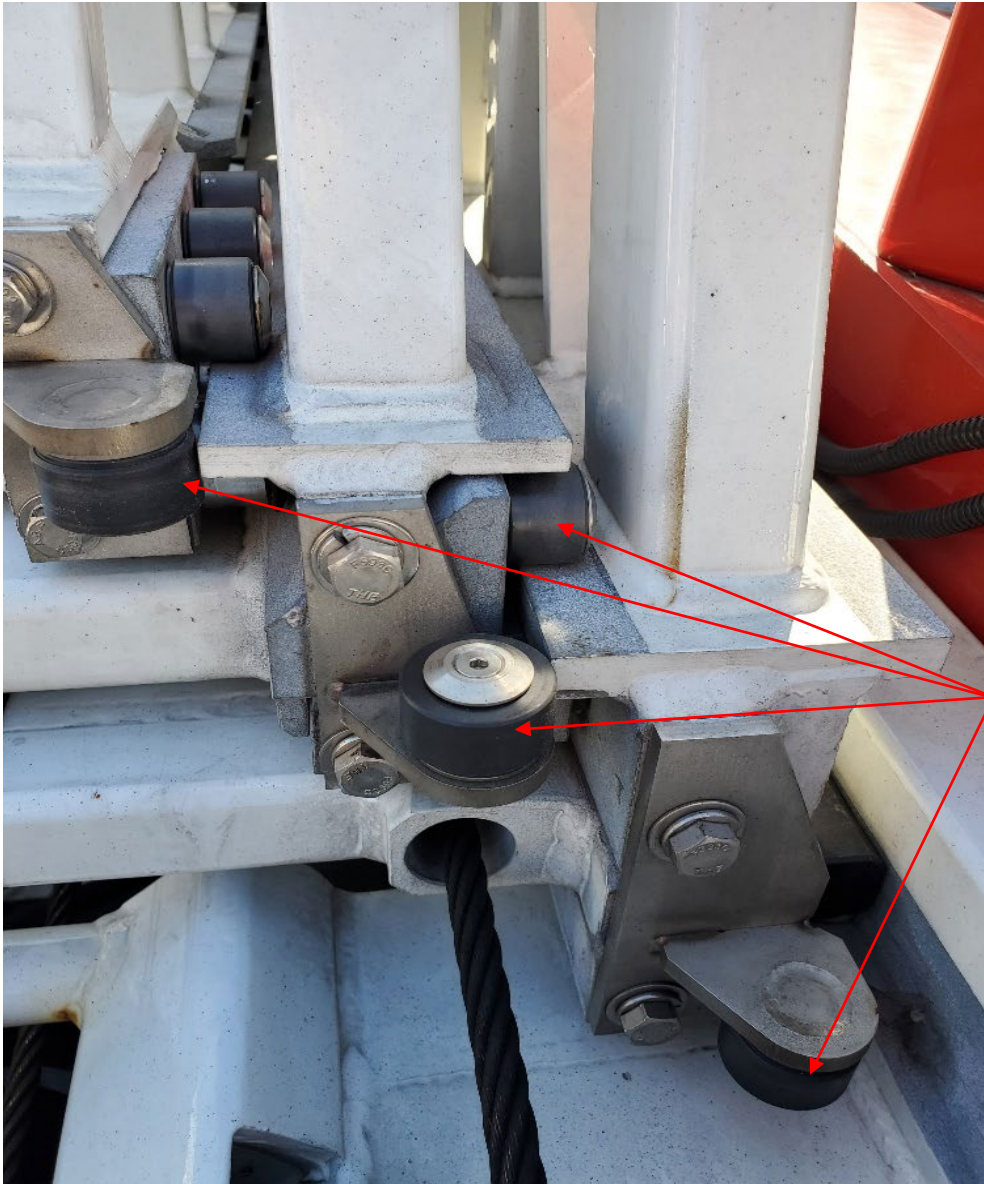
SPARTAN TDA Ladder Rail Rollers

- **DO NOT LUBE** ladder rails or rollers



SPARTAN TDA Ladder Rail Rollers

- **DO NOT LUBE** ladder rails or rollers

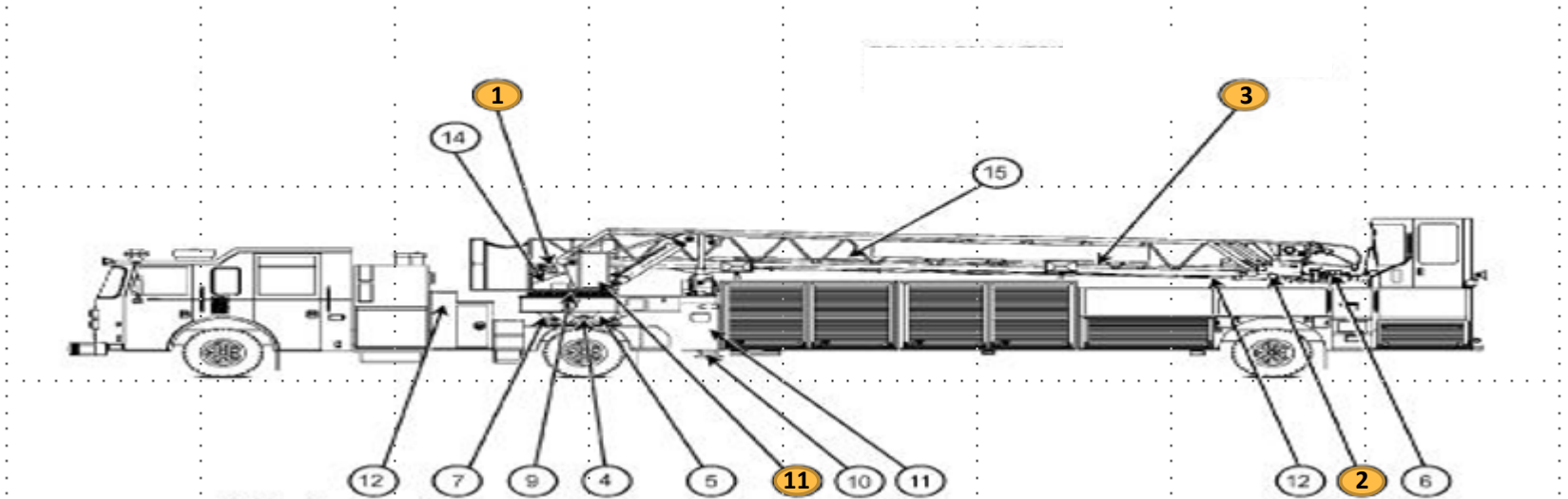


SPARTAN TDA Ladder Rail Rollers

- **DO NOT LUBE** ladder rails or rollers



Pierce TDA/AT Ladder Lubrication Chart





Pierce TDA/AT Ladder Lubrication Chart

- Item # 1 Water Swivel
- Item # 2 Waterway Bearing
- Item # 3 Ladder Section
- Item # 11 Stabilizer Beams

Lubricate with:

- **SYNCO SUPER LUBE CARTRIDGE # 41973**
- **SYNCO SUPER LUBE 5 LB TUB Pt # 41050**

Brush on bottom surface of stabilizer beams and inside (top surface) of torque box stabilizer housings



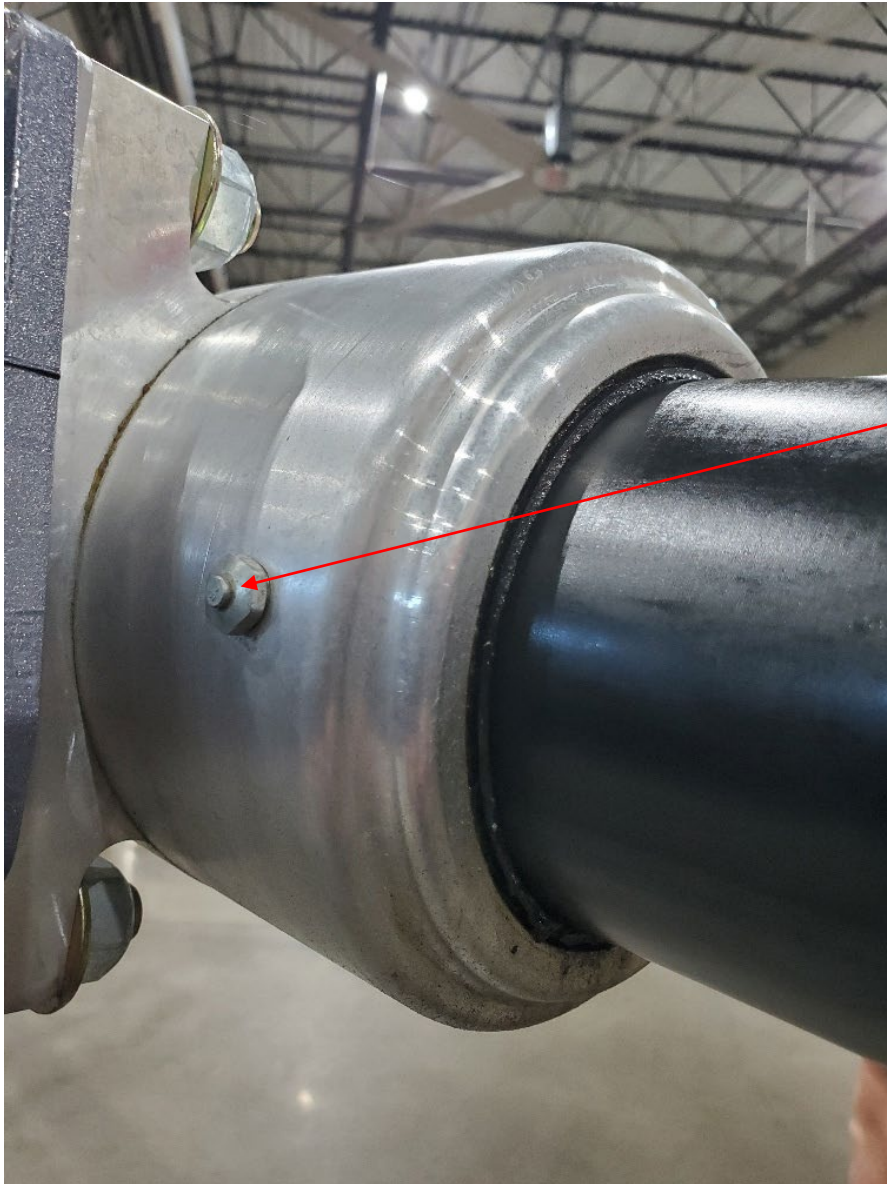
Aerial Waterway Swivel

- Zerk Grease Fitting
 - Lube with Super Lube cartridge in grease gun (2-3 pumps)



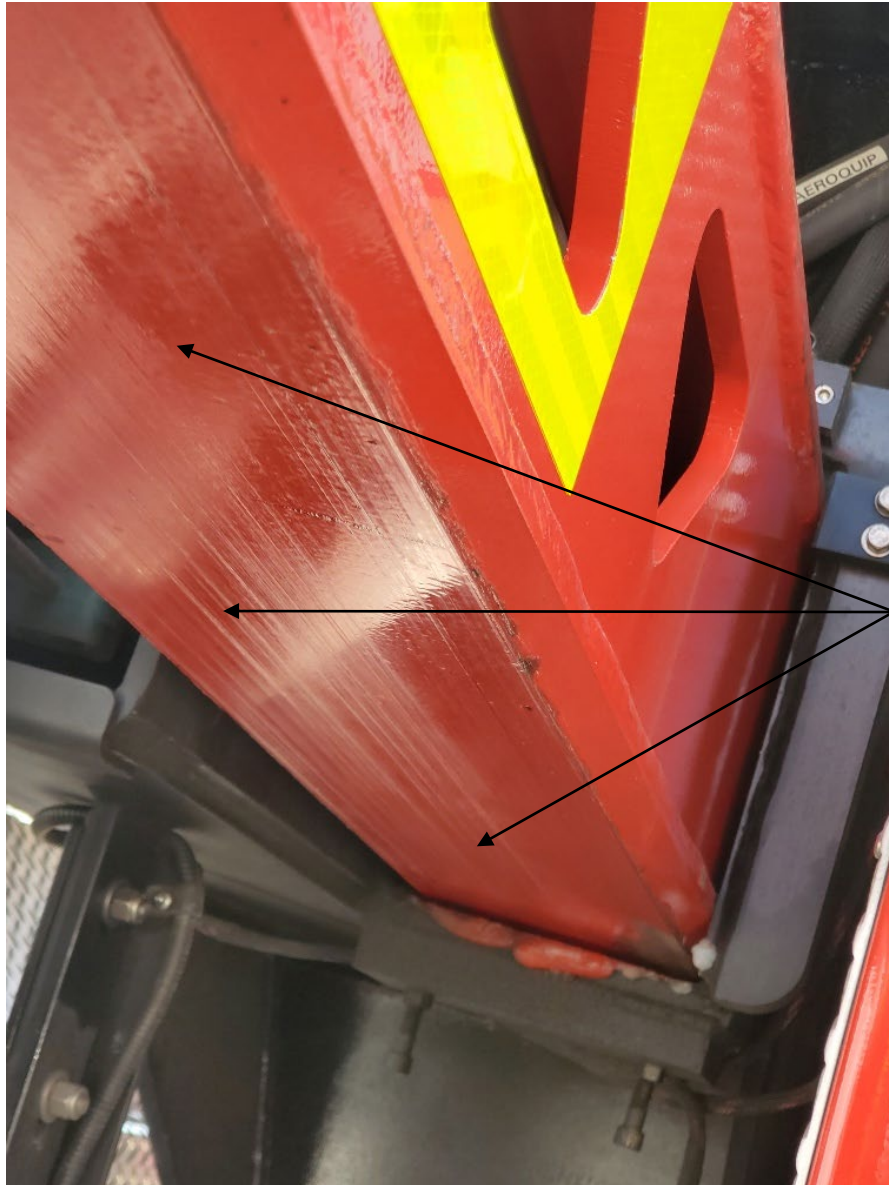
Aerial Waterway

- Zerk Grease Fitting
 - Lube with Super Lube cartridge in grease gun (2-3 pumps)



Aerial Waterway

- Zerk Grease Fitting Relief Valve Vent:
 - Allows grease to escape without damaging inner seals
 - Stop greasing when venting
 - Wipe off access



Aerial Outrigger/Stabilizer

- Brush underneath with thin coat of Super Lube



Sheave

- Zerk Grease Fitting
 - Lube with Chassis Grease (1-2 pumps)

Brush/Wipe thin coat of Super Lube on ladder rail section



Sheave

- Zerk Grease Fitting
 - Lube with Chassis Grease (1-2 pumps)

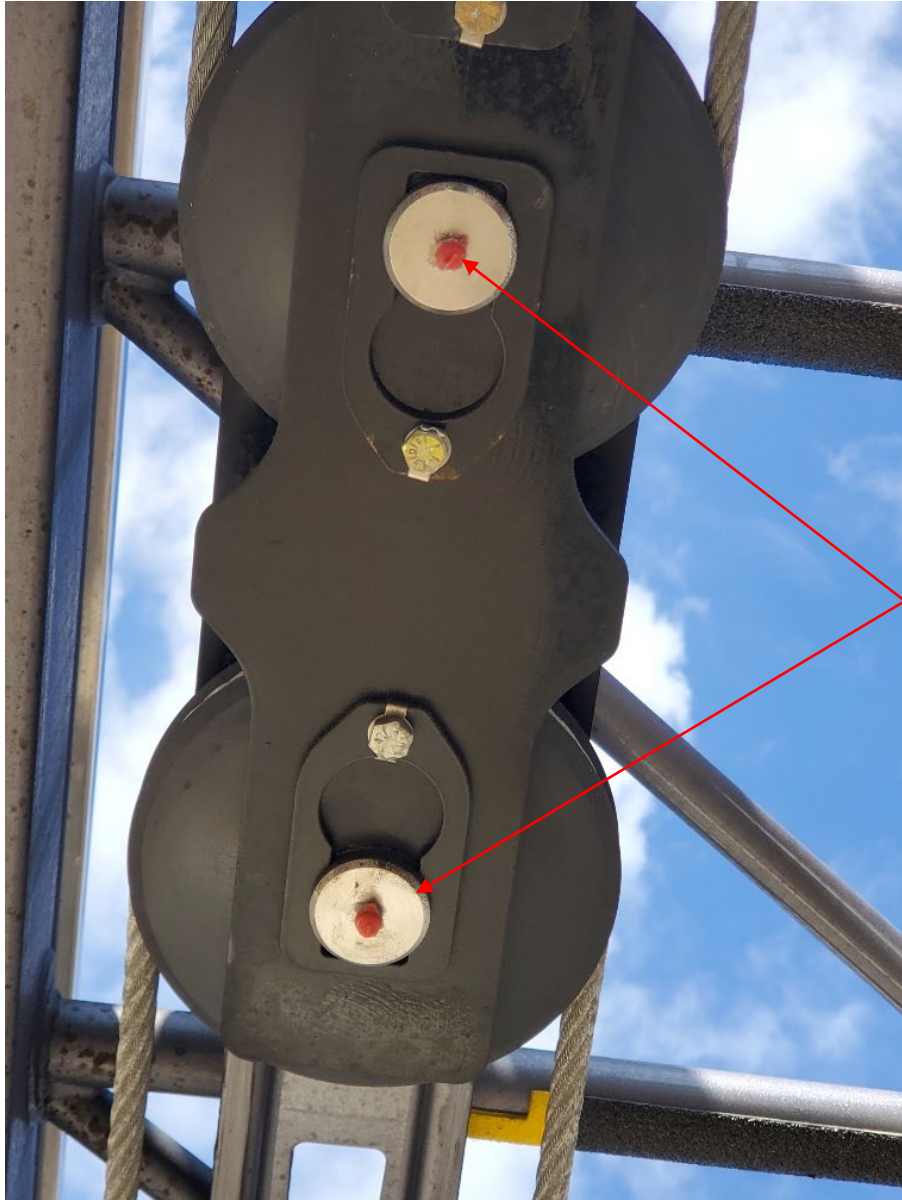


Waterway

- Zerk Grease Fitting
 - Lube with Super Lube (1-2 pumps)

Sheave

- Zerk Grease Fitting
 - Lube with Chassis Grease (1-2 pumps)



Sheaves

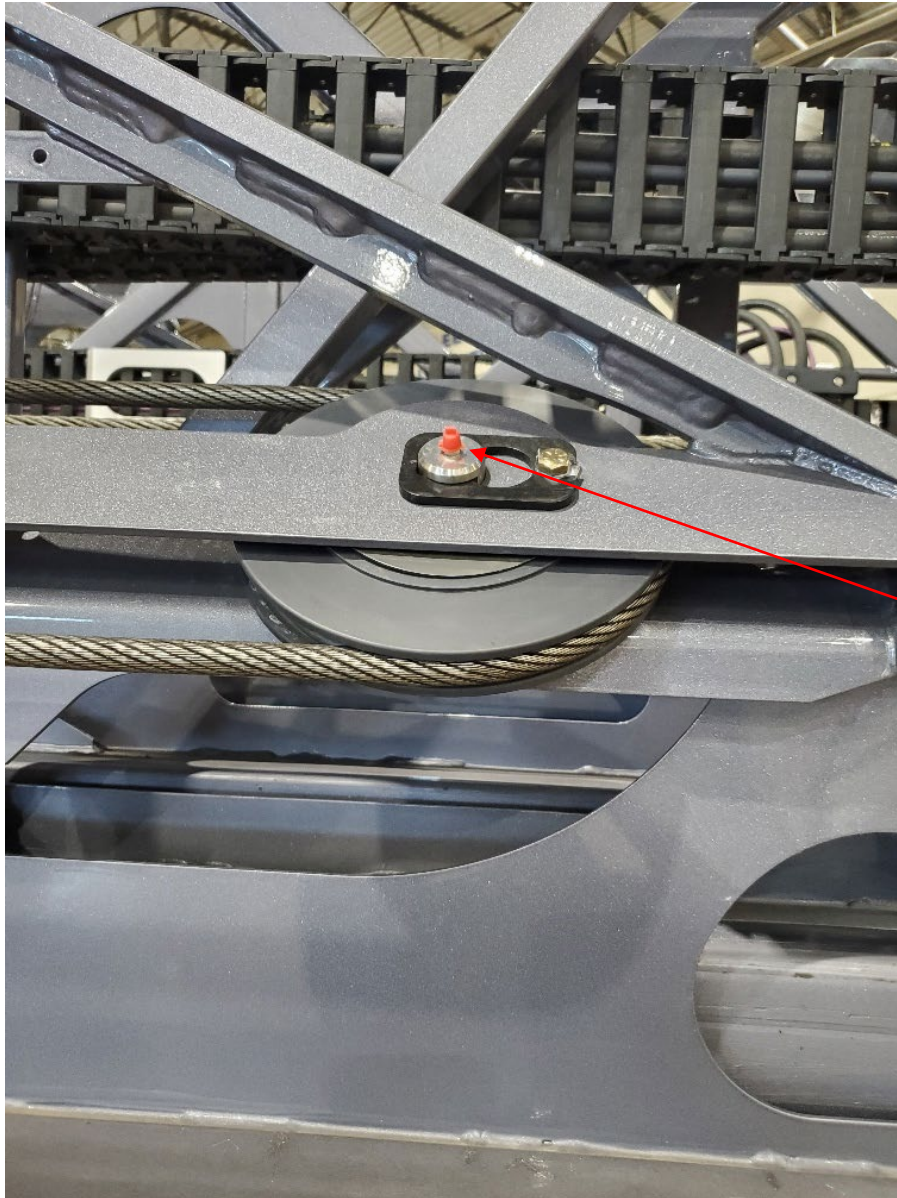
- Zerk Grease Fittings
 - Lube with Chassis Grease (1-2 pumps)



Sheave

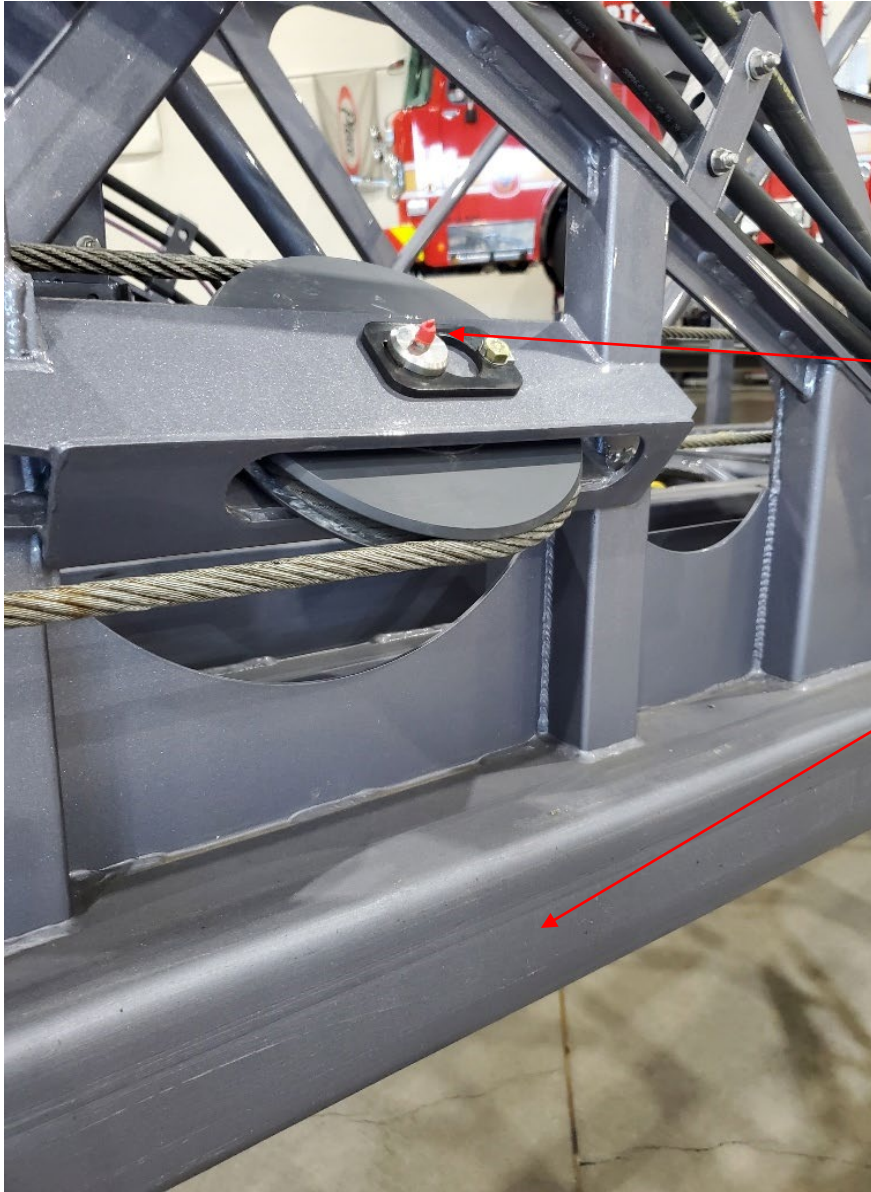
- Zerk Grease Fitting
 - Lube with Chassis Grease (1-2 pumps)

Brush/Wipe thin coat of Super Lube on ladder rail section



Sheave

- Zerk Grease Fitting
 - Lube with Chassis Grease (1-2 pumps)



Sheave

- Zerk Grease Fitting
 - Lube with Chassis Grease (1-2 pumps)

Brush/Wipe thin coat of Super Lube on ladder rail section



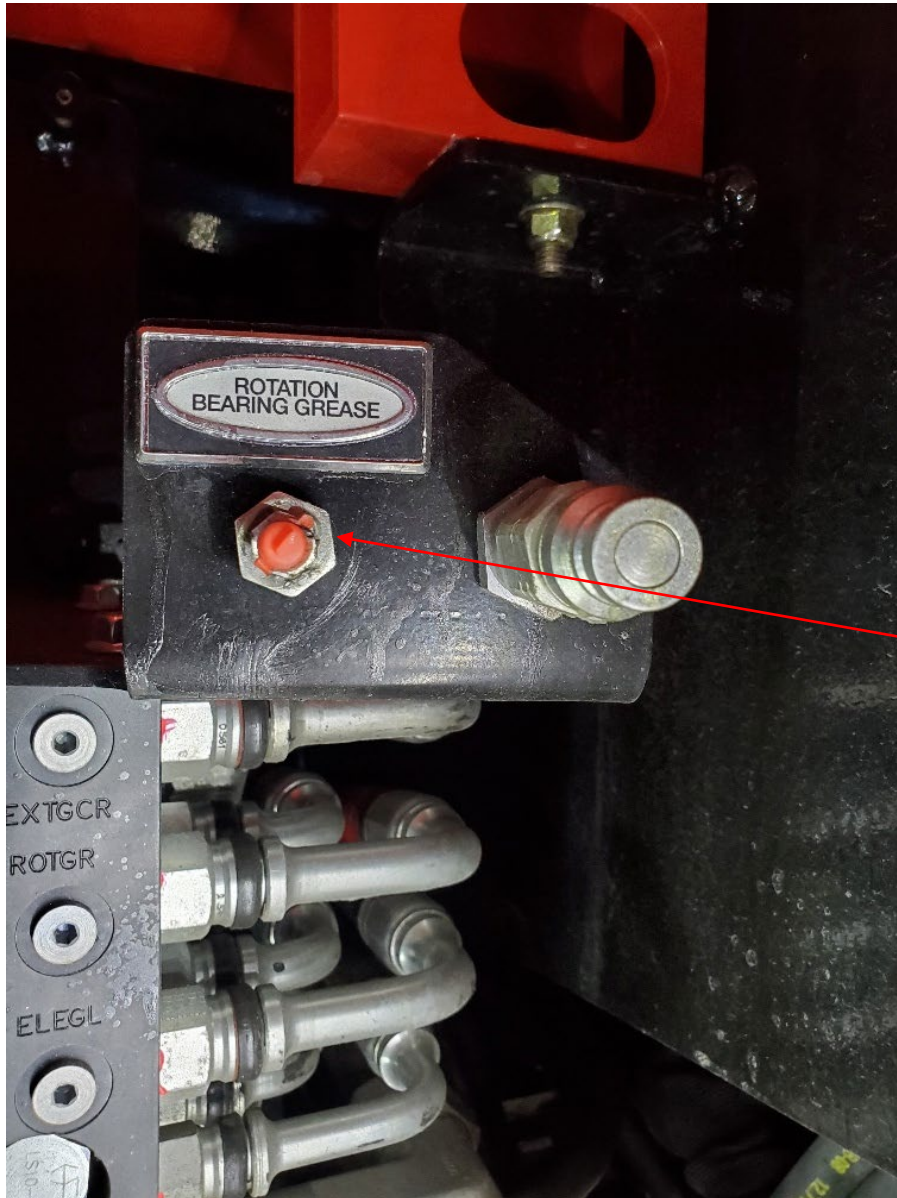
Aerial Override Compartment with Aerial Rotation Bearing

- Zerk Grease Fitting



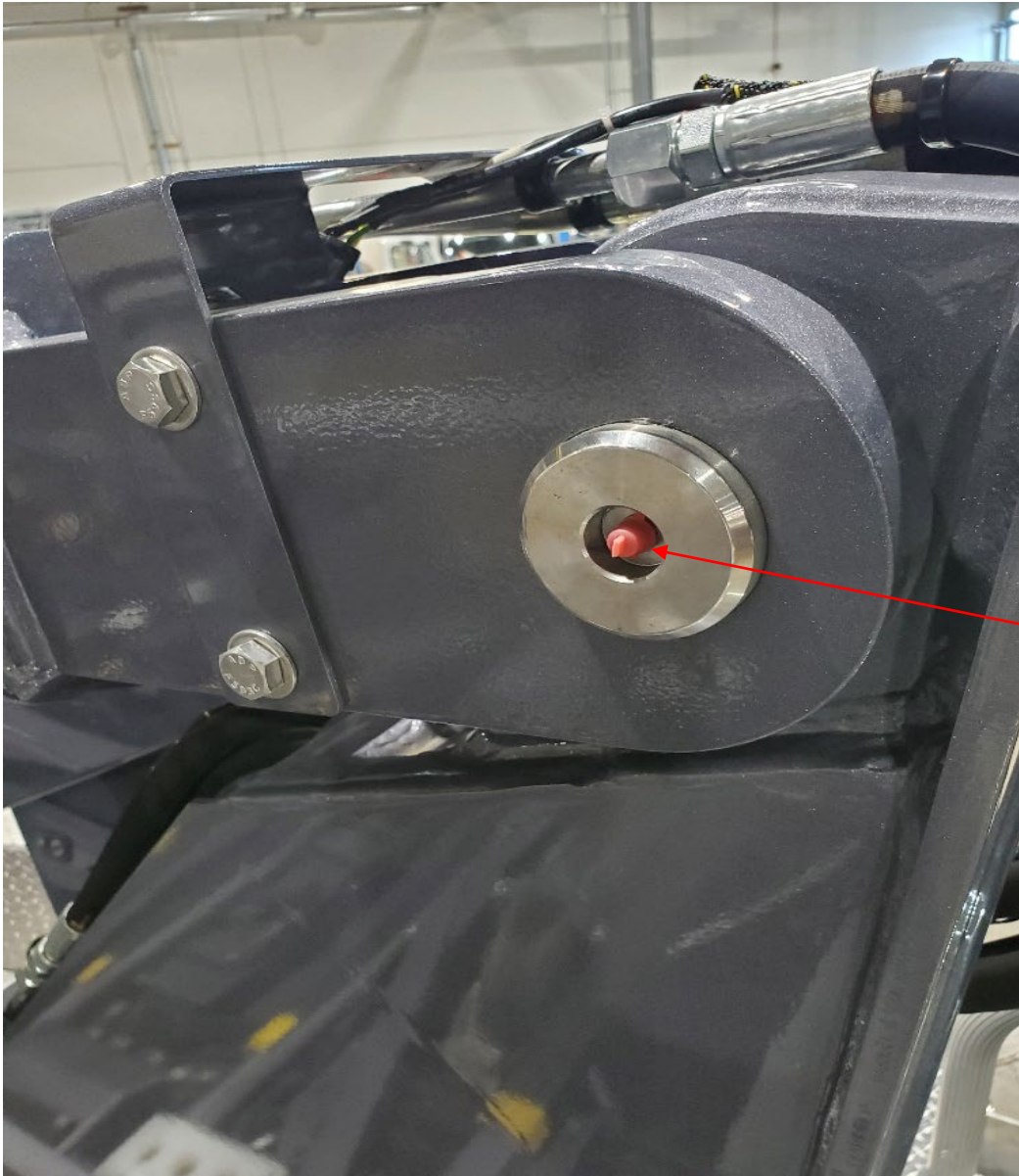
Aerial Override Compartment with Aerial Rotation Bearing

- Zerk Grease Fitting



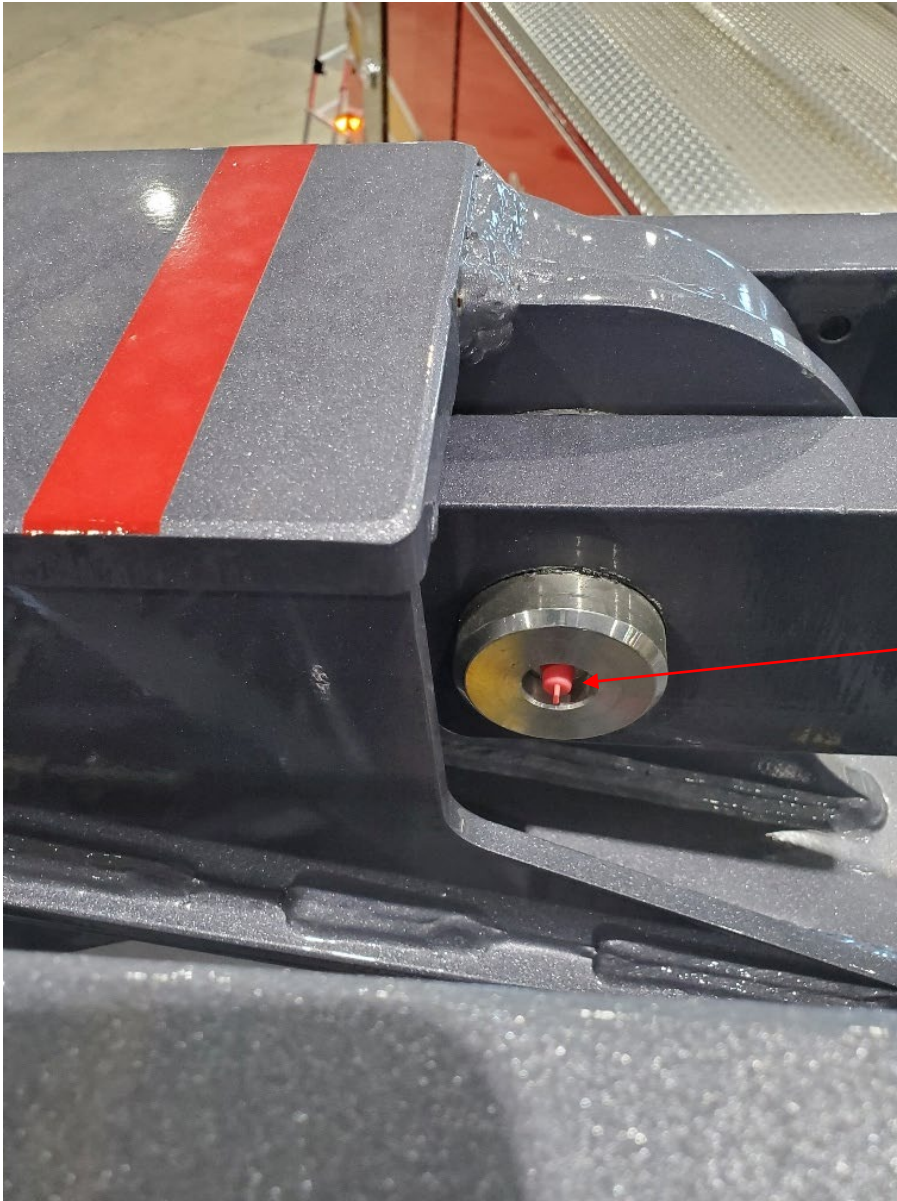
Aerial Rotation Bearing

- Zerk Grease Fitting
 - Lube with Chassis Grease (2-3 pumps)



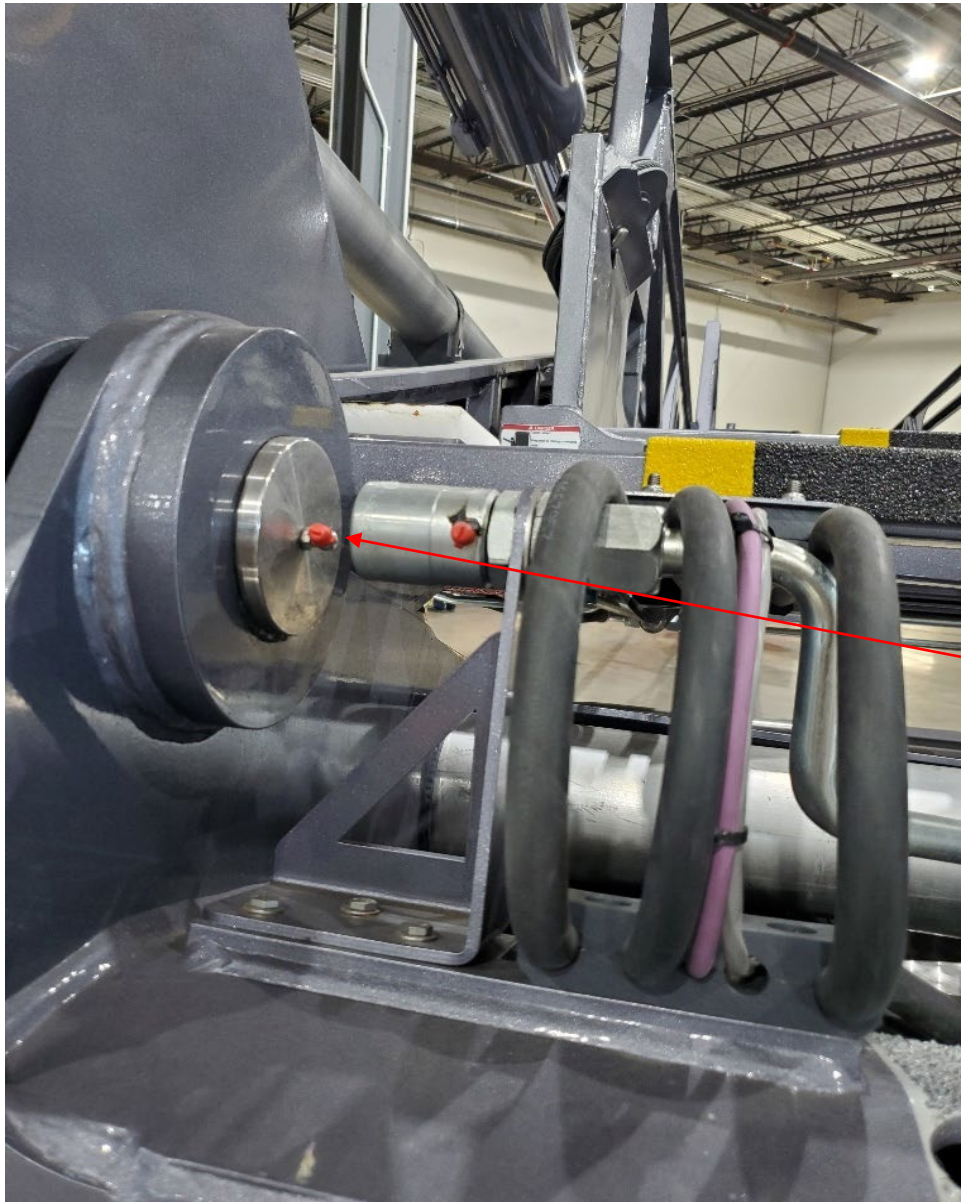
Aerial Cylinder

- Zerk Grease Fitting
- Lube with Chassis Grease
(1-2 pumps)



Aerial Cylinder

- Zerk Grease Fitting
 - Lube with Chassis Grease (1-2 pumps)

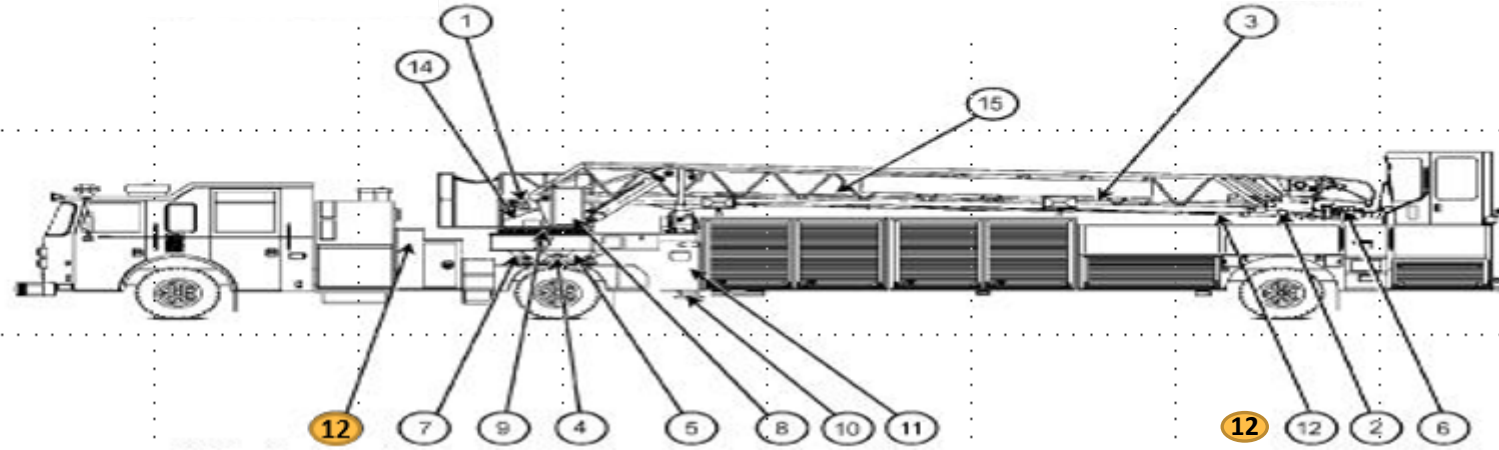


Aerial Cylinder Pin

- Zerk Grease Fitting
 - Lube with Chassis Grease (1- 2 pumps)



Pierce TDA/AT Ladder Lubrication Chart





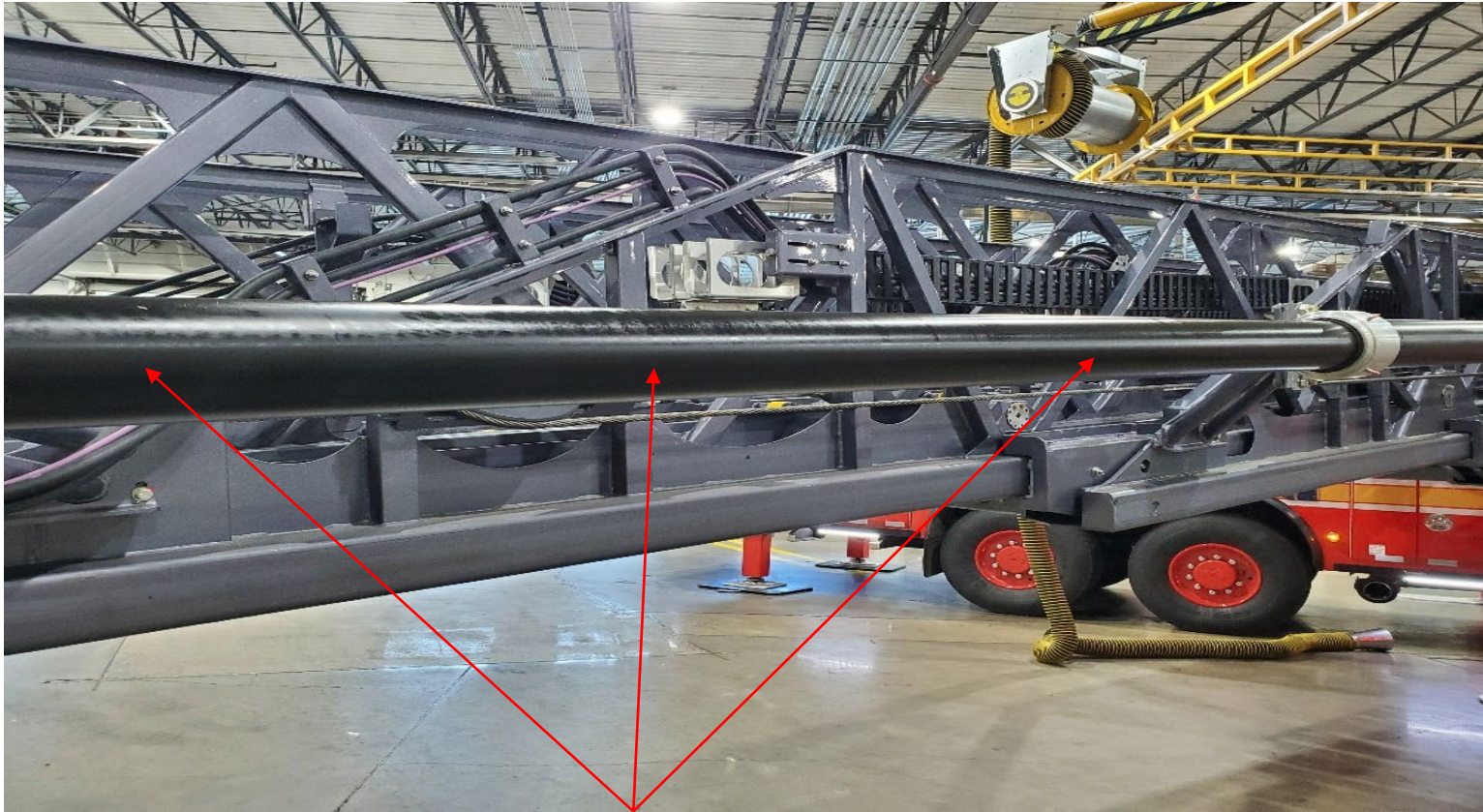
Pierce TDA/AT Ladder Lubrication Chart

Item # 12: Waterway Tubes

Lubricate with:

AUTOMATIC TRANSMISSION FLUID

Wipe on waterway tubes

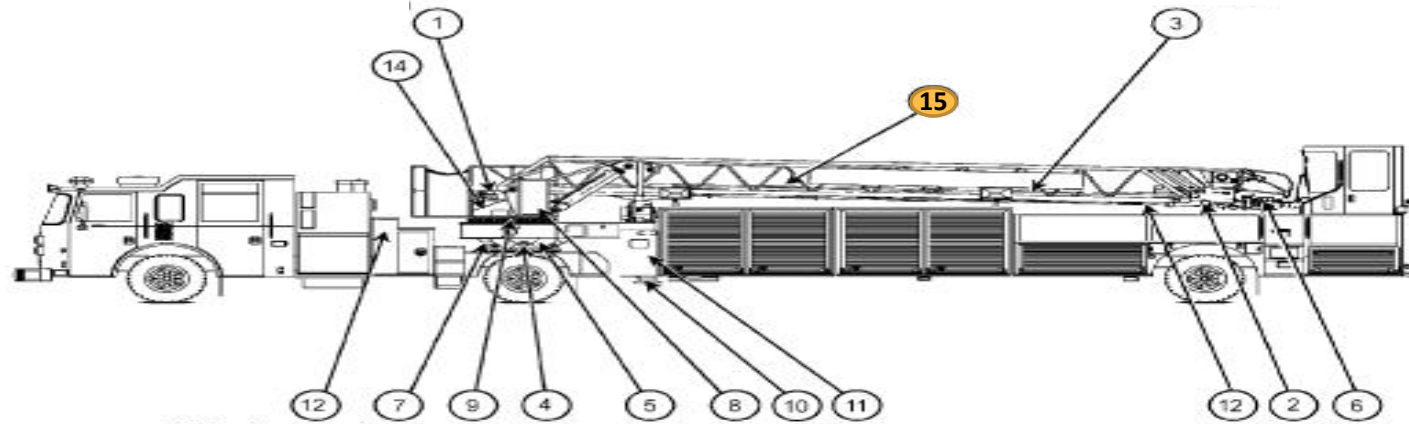


Clean and Lube Aerial Waterway

- Apply transmission fluid to rag
- Wipe Aerial Waterway tube
- Wipe access off with dry rag, leaving a film on tube



Pierce TDA/AT Ladder Lubrication Chart



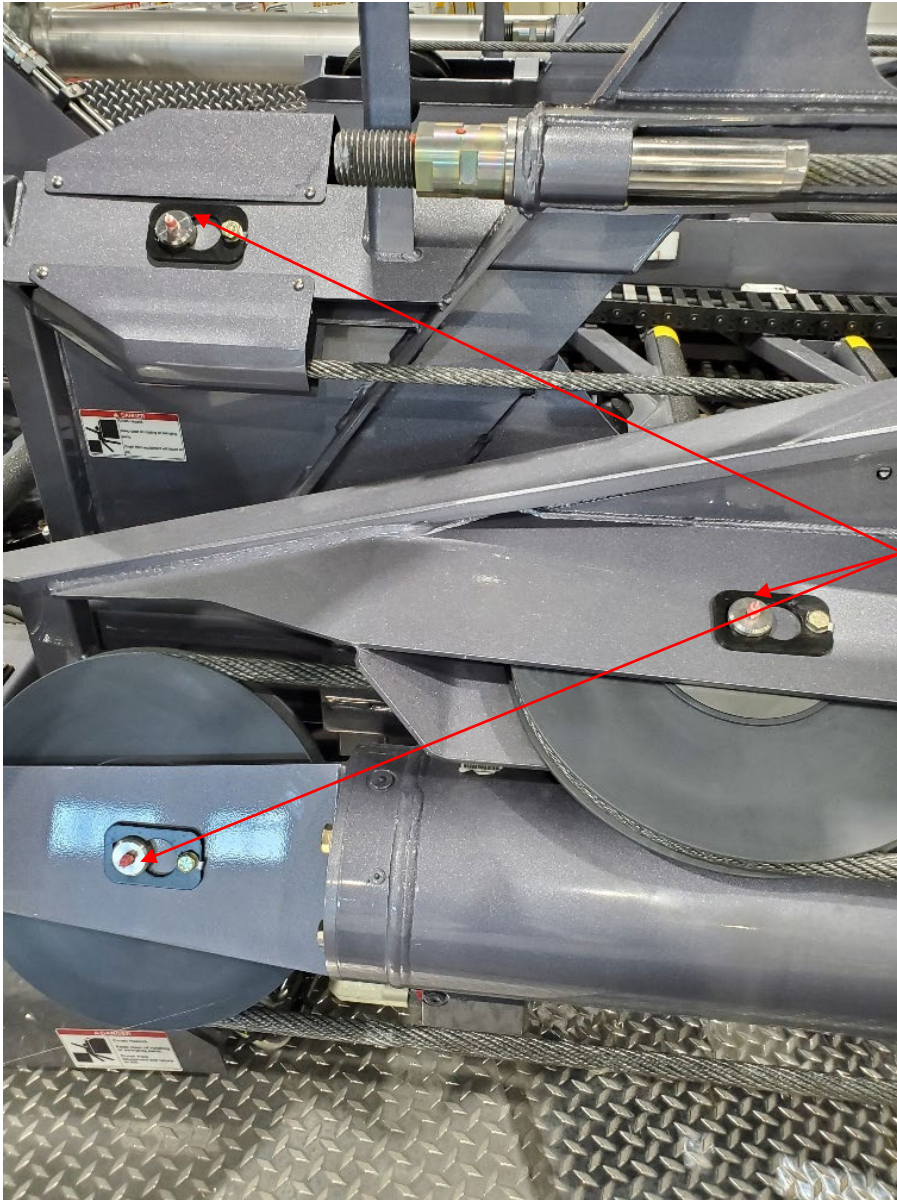


Pierce TDA/AT Ladder Lubrication Chart

Item # 15: Wire Rope Cables Ladder Cables

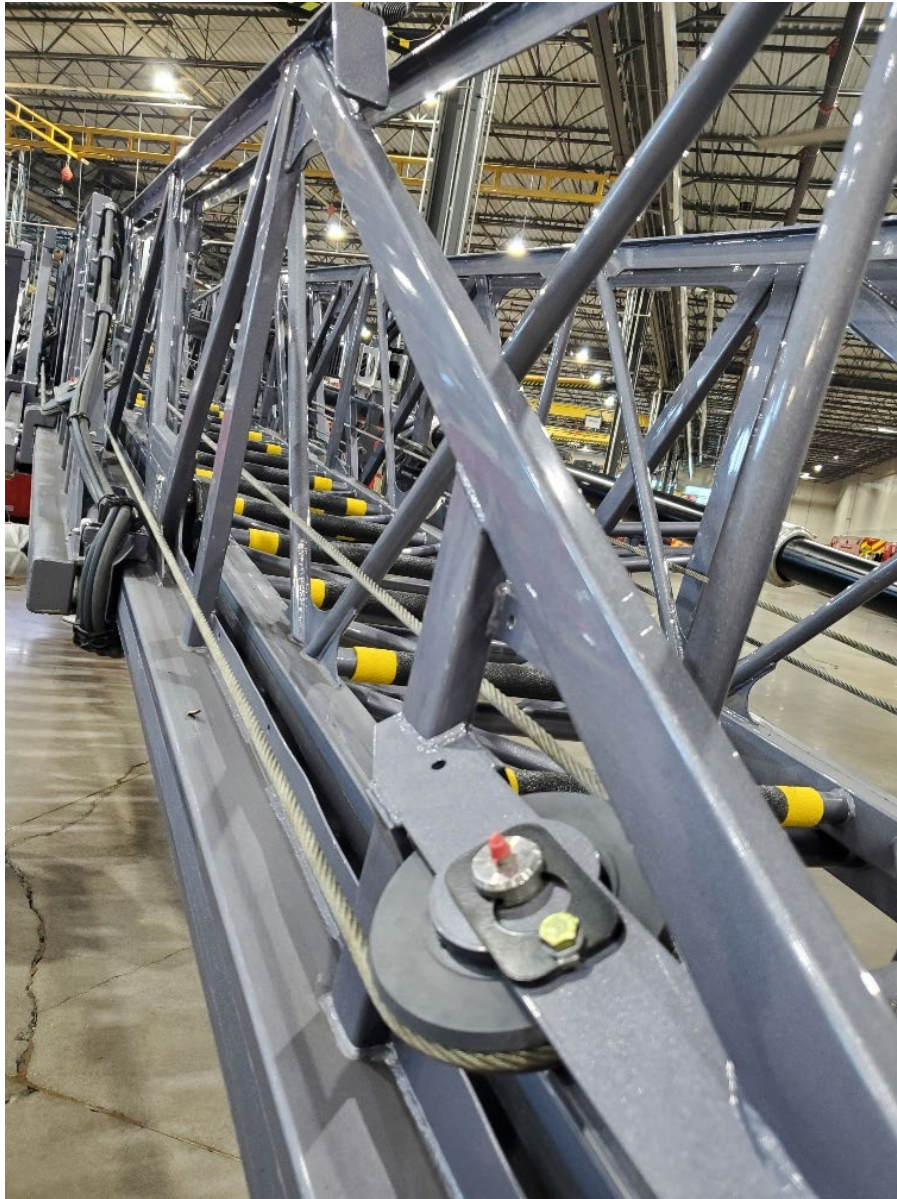
Lubricate with:

- **LUBRIPLATE CHAIN AND CABLE FLUID (or equivalent)**
- **CORE SPRAY CABLE LUBE PART # DA6631 (or equivalent)**



Aerial Sheaves

- Zerk Grease Fittings
 - Lube with Chassis Grease (1-2 pumps)



Aerial Sheaves

- Zerk Grease Fitting
 - Lube with Chassis Grease
- Check wire cables for fraying
 - Lube cables with Lubriplate (chain and cable fluid)

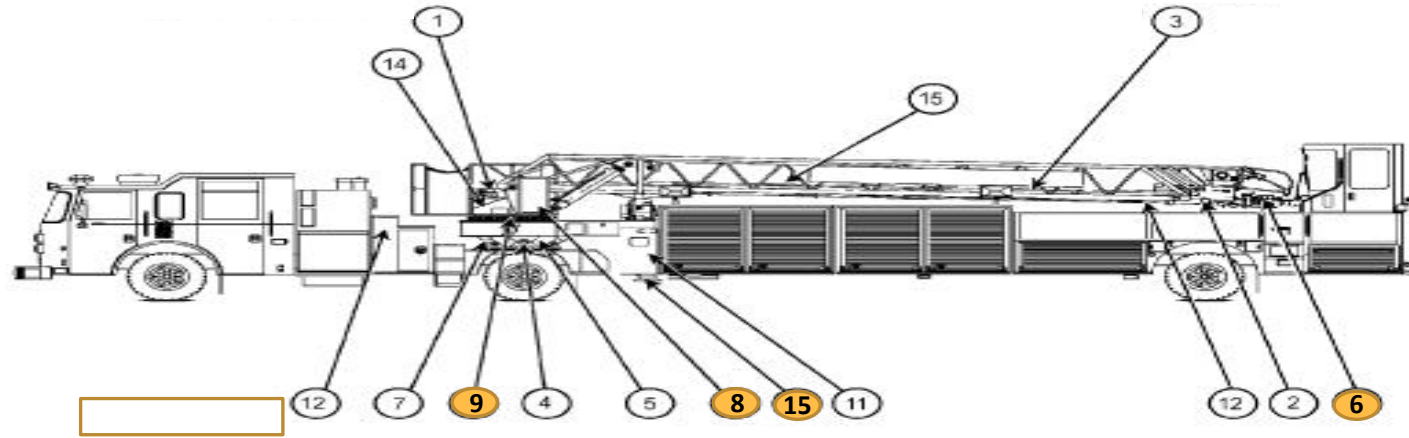


Aerial Sheaves

- Zerk Grease Fitting
 - Lube with Chassis Grease (1-2 pumps)
- Check wire cables for fraying
 - Lube cables with Lubriplate (chain and cable fluid)



Pierce TDA/AT Ladder Lubrication Chart





Pierce TDA/AT Ladder Lubrication Chart

Item # 6: Monitor (Grease Fitting)

Item # 8: Turntable Rotation Bearing (Grease Fitting)

- Pump grease into the bearing while the bearing is being rotated
- Greasing is considered complete when the grease overflows from the seal, forming a light film which also serves as a seal”

Item # 9: Rotation Gear (Brush On)

Item # 10: Stabilizer Pad Swivel Joint (Grease Fitting)

Lubricate with:

- DRUMMOND PERSIST (RED GREASE) PART # DN4380D
- DRUMMOND GOLD RUSH (GOLD GREASE) PART # DN4720
- EQUIVALENT HEAVY-DUTY NO. 2 GRADE GREASE WITH MOLY

Available to order through THEA/Station Supplies

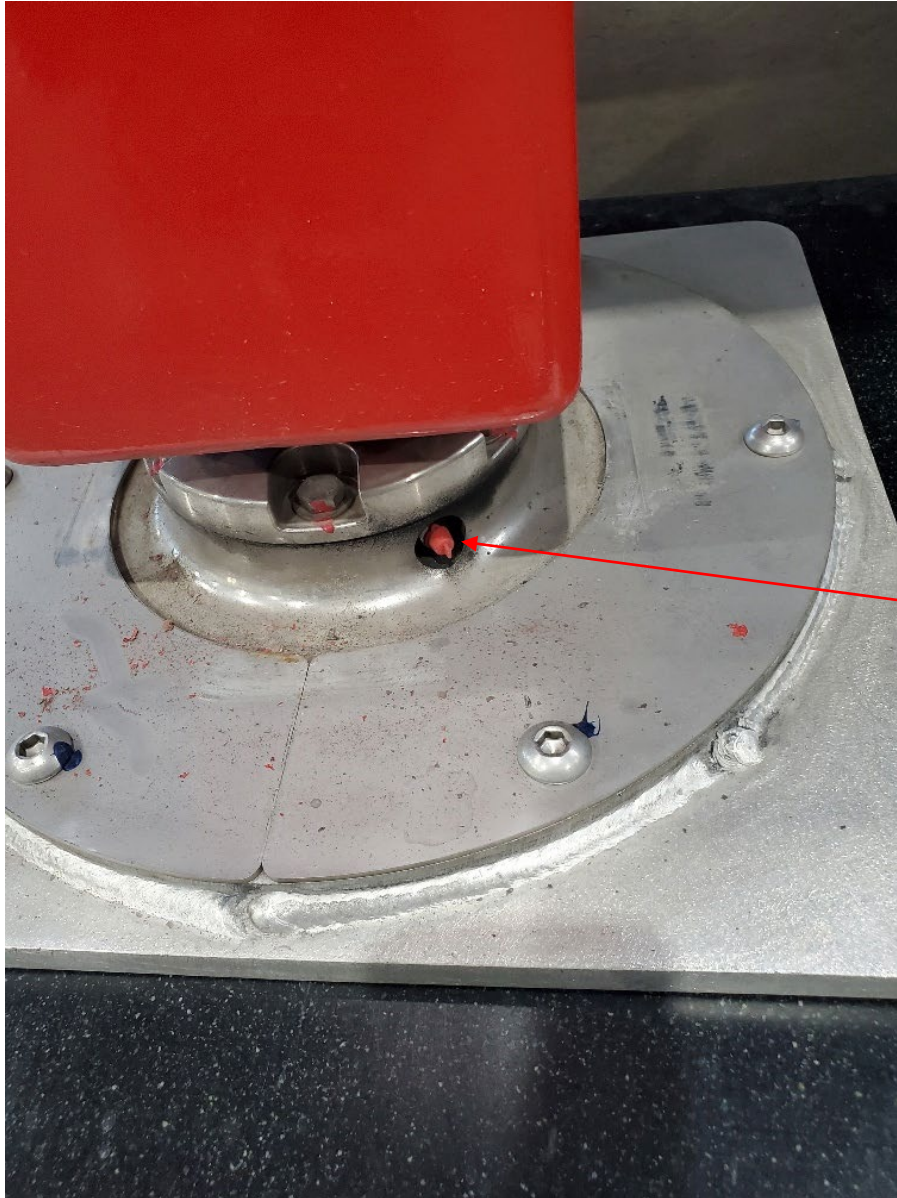


Aerial Rotation Gear Cover



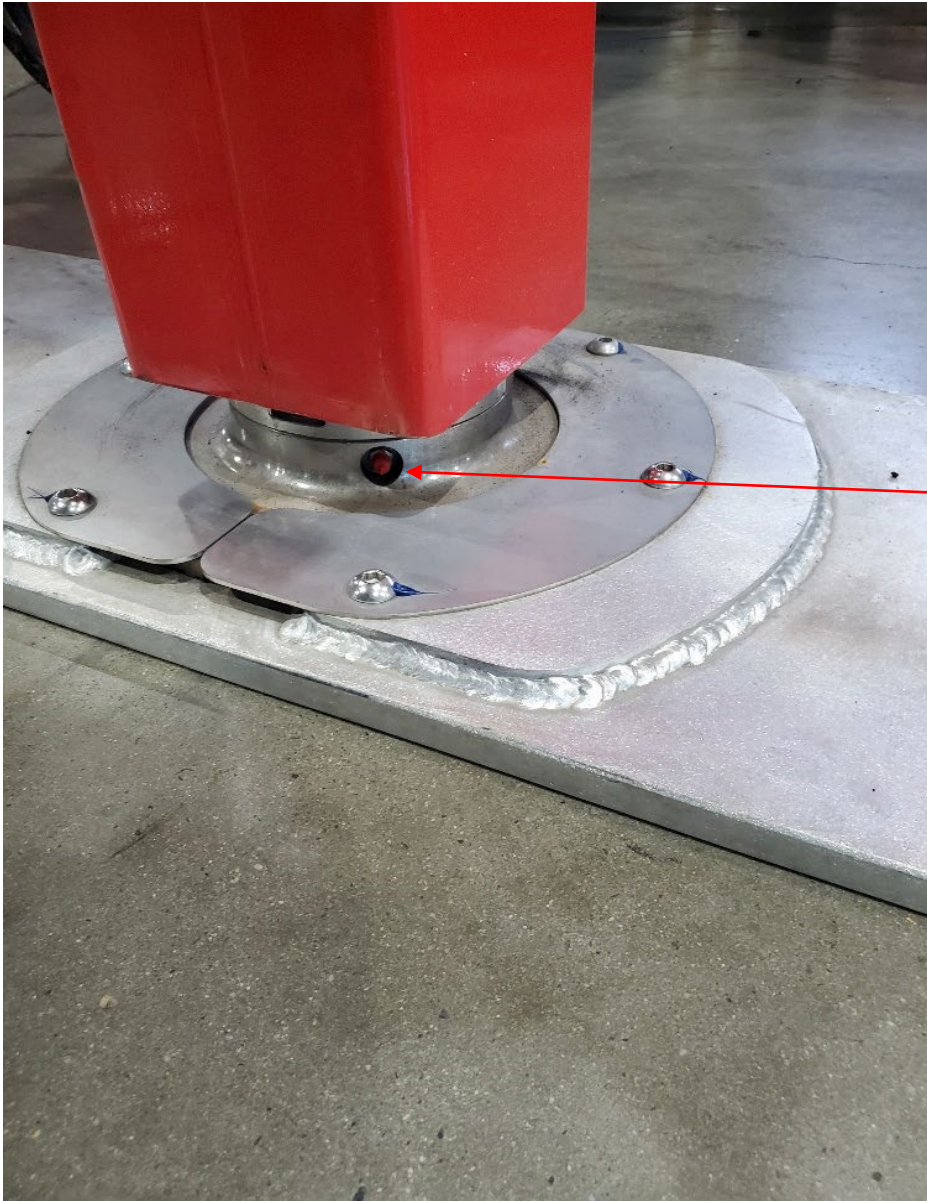
Aerial Rotation Gear

- Apply Chassis Grease with brush



Aerial Outrigger/Stabilizer Foot

- Zerk Grease Fitting
 - Lube with Chassis Grease (2-3 pumps)



Aerial Outrigger/Stabilizer Foot

- Zerk Grease Fitting
 - Lube with Chassis Grease (2-3 pumps)

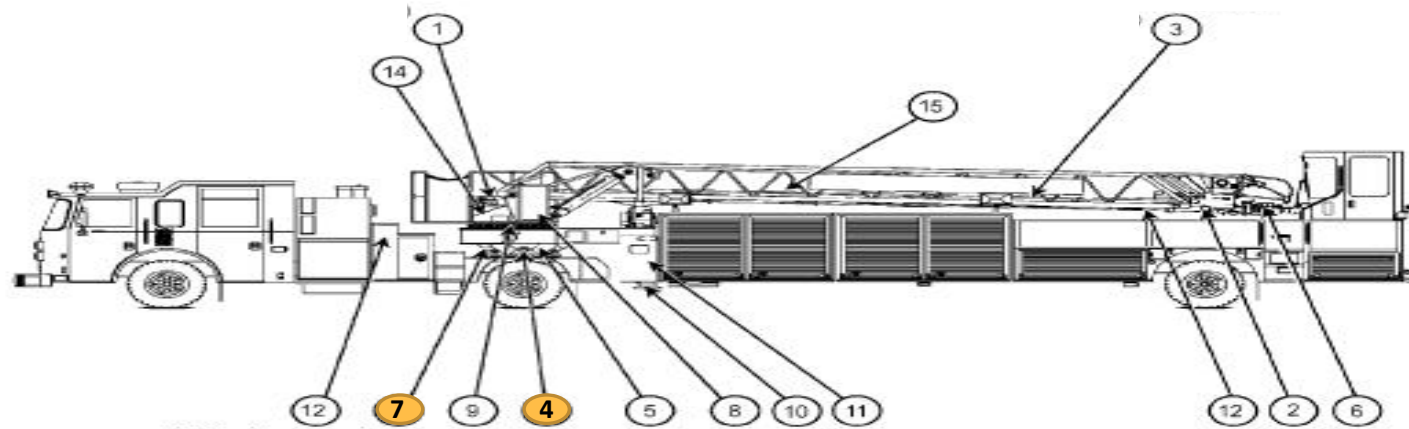


Aerial Outrigger/Stabilizer Foot

- Zerk Grease Fitting
 - Lube with Chassis Grease (2-3 pumps)



Pierce TDA/AT Ladder Lubrication Chart





Pierce TDA/AT Ladder Lubrication Chart

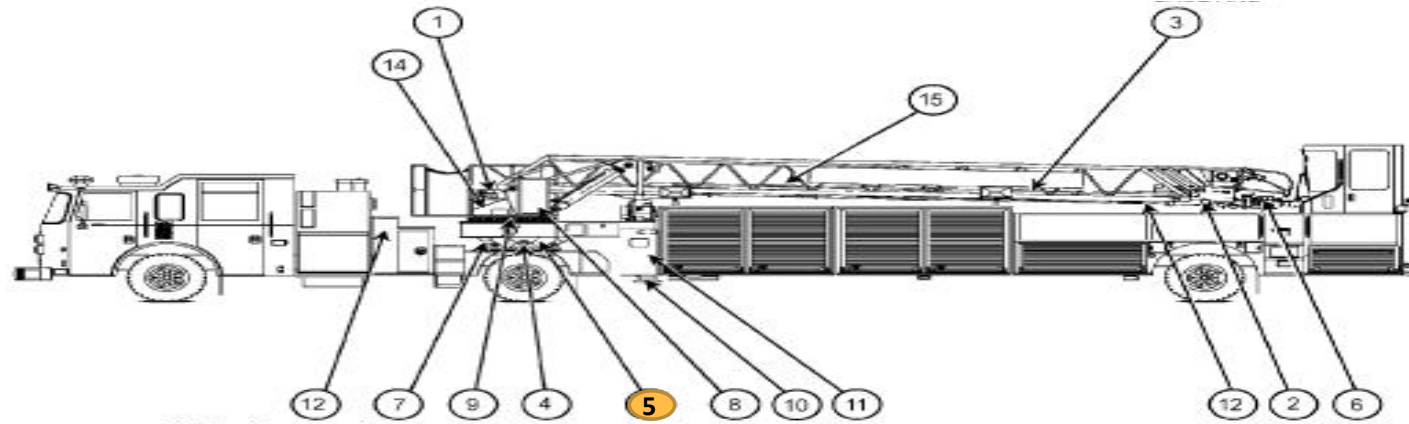
Item # 4 Fifth Wheel Pivot Pin

Item # 7 Axle Lockout Cylinders

- If these items are lubricated with VOGLE LUBE, no action is required at the station level
- If these items are not lubricated with VOGLE LUBE:
 - Lube Zerk Grease Fittings with CHASSIS LUBE



Pierce TDA/AT Ladder Lubrication Chart





Pierce TDA 5th Wheel Bearing Lubrication Procedure

Fifth Wheel Bearing Grease Fittings Location



There are two grease fittings (1) Remotely mounted on the upper fifth wheel Weldment (2) directly above the fifth wheel bearing. Each fitting is connected to the bearing with grease line tubing, spaced 180 degrees apart. Each of the grease fittings are easily reached by standing next to the rear chassis tires.



TDA Fifth Wheel Bearing

- Zerk Grease Fitting
 - Lube with Chassis Grease (3-4 pumps)

**Fifth Wheel Lock Out
Cylinder**



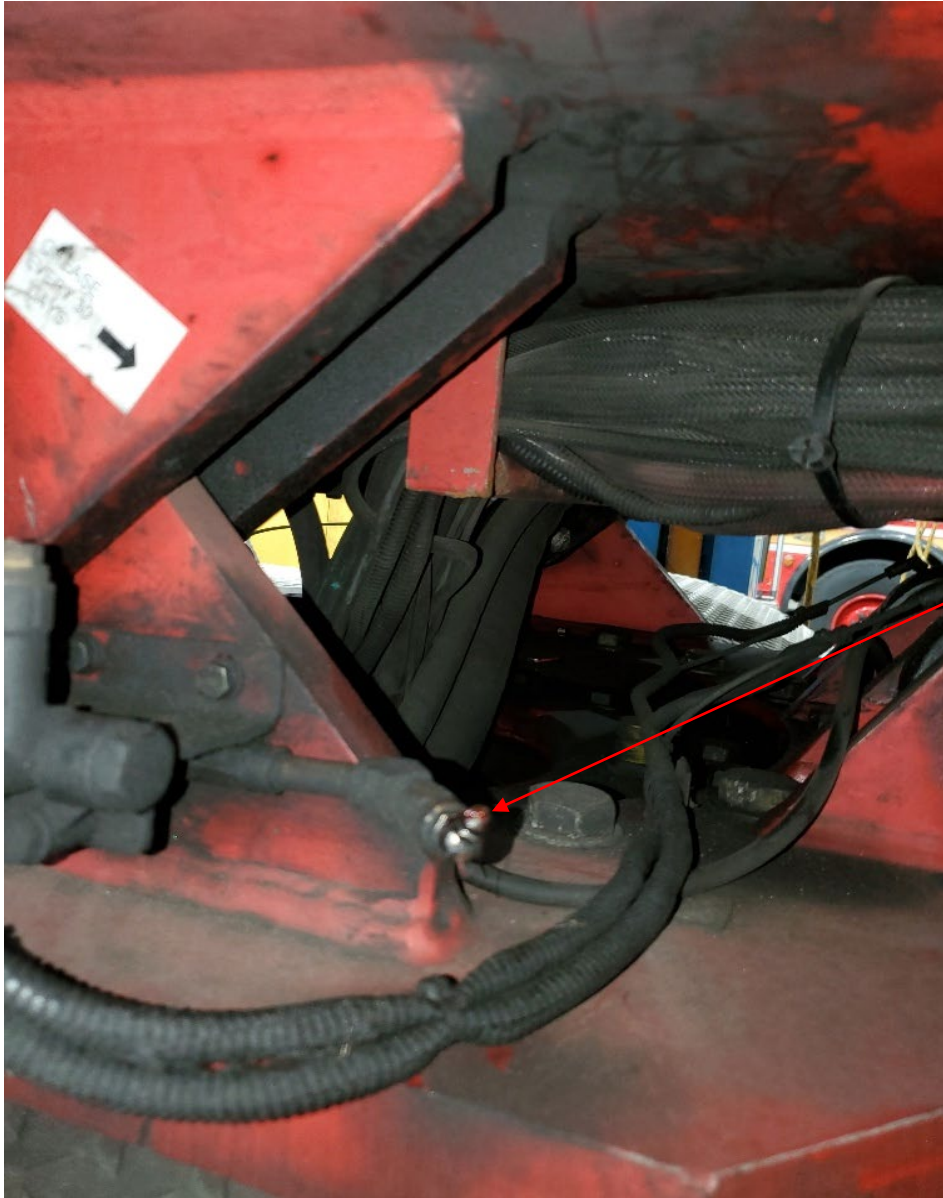
TDA Fifth Wheel Bearing:

- Zerk Grease Fitting
- Lube with Chassis Grease (3-4 pumps)



TDA Fifth Wheel Bearing

- Zerk Grease Fitting
- Lube with Chassis Grease (3-4 pumps)



TDA Fifth Wheel Bearing

- Zerk Grease Fitting
 - Lube with Chassis Grease (3-4 pumps)



Pierce TDA 5th Wheel Bearing Lubrication Procedure

WARNING

If an operator is being used to reposition the vehicle during this procedure, the service technician must remain clear of the vehicle when the tractor/trailer is being repositioned. Failure to comply may result in personal injury or death.



Pierce TDA 5th Wheel Bearing Lubrication Procedure

CAUTION

To distribute the grease throughout the circumference of the bearing, the bearing needs to be rotated by pivoting the tractor/trailer combination during the procedure. Failure to follow this procedure completely may result in areas of the bearing being under-lubricated.



Pierce TDA 5th Wheel Bearing Lubrication Procedure

1. Position the tractor / trailer in jackknife condition, 90 degrees to one side.
2. Put the transmission in NEUTRAL and apply the parking brake!
3. Using a grease gun, dispense two pumps of grease into each grease fitting.
4. Reposition the unit approximately 20 degrees from the jackknife position (70 degrees from straight ahead), put transmission in neutral and apply the parking brake! Dispense two more pumps of grease into each fitting.
5. Repeat this procedure every 20 degrees (total of 10 grease positions) until the unit is in opposite jackknife position.



Pierce TDA 5th Wheel Bearing Lubrication Procedure

Lubrication Specifications for the 5th Wheel Bearing

The following grease can be used:

- PIERCE MANUFACTURING CARTRIDGE PN #95-0903
- EXXON NLG1 NO. 2 GRADE GREASE WITH MOLY

The following are available through THEA/station supplies:

- DRUMMOND PERSIST (Red Grease) Part # DN4380D
- DRUMMOND GOLD RUSH (Gold Grease) Part# DN4720
- **EQUIVALENT HEAVY-DUTY NO. 2 GRADE GREASE WITH MOLY**