

High Lift Fork Transfer Preventive Maintenance

⚡ ⚠ WARNING ⚠ ⚡

- Before attempting any maintenance on this equipment all involved personnel should follow plant internal regulations along with any state, federal, or province regulations.
- The maintenance inspection, checks, and procedures listed in the preventive maintenance tables are assumed with the gated area electrically locked out.
- Before attempting any maintenance or service operation, make sure that:
 - You do not begin any repair procedure until the proper shutdown procedures and the appropriate power lockout procedures have been applied.
 - The system is de-energized; main electrical switches are open.

ⓘ NOTICE ⓘ

The maintenance inspection, checks, and procedures listed in the preventive maintenance tables and corrective procedures should be performed when the equipment is immobilized and locked out.

This section contains preventive maintenance schedules with recommended lubrication intervals. Assemblies in this section include:

- **High Lift Fork Transfer**
- **High Lift Fork Transfer Lift Carriage**
- **High Lift Fork Transfer Carriage Forks**
- **High Lift Fork Transfer Drive Assembly**
- **High Lift Fork Transfer Counterweight Assembly**

Daily Checks

Observe

- Obvious signs of damage to the equipment. Listen to the conveyors - an unusual sound like screeching, grinding, or whining, are indicators of a problem.
- Damage or noticeable wear on the carrying and guide rollers.
- Signs of oil leaks on the equipment or on the floor below any gearbox.

Evaluate


- If you notice any of the above issues, evaluate the cause and the risk involved.

Act

- Schedule or perform necessary maintenance repairs as appropriate.

Mechanical Preventive Maintenance - key

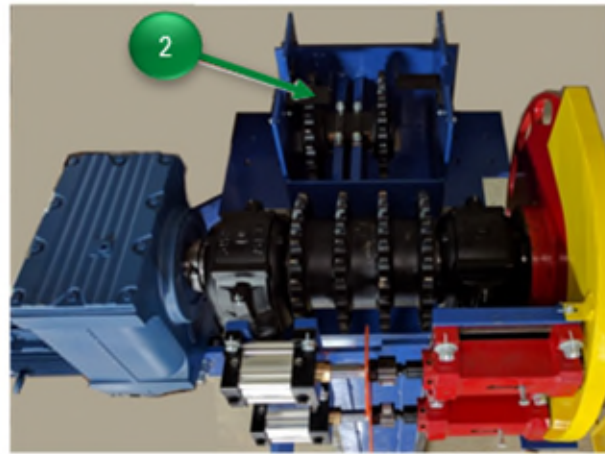
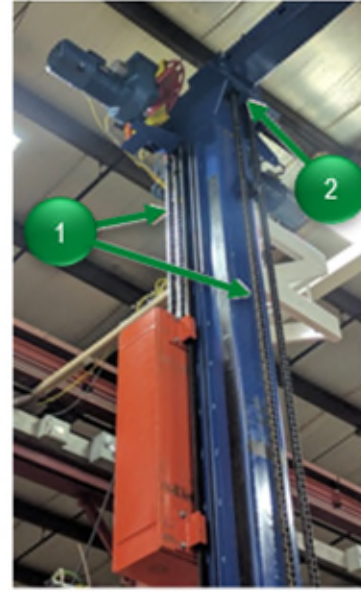
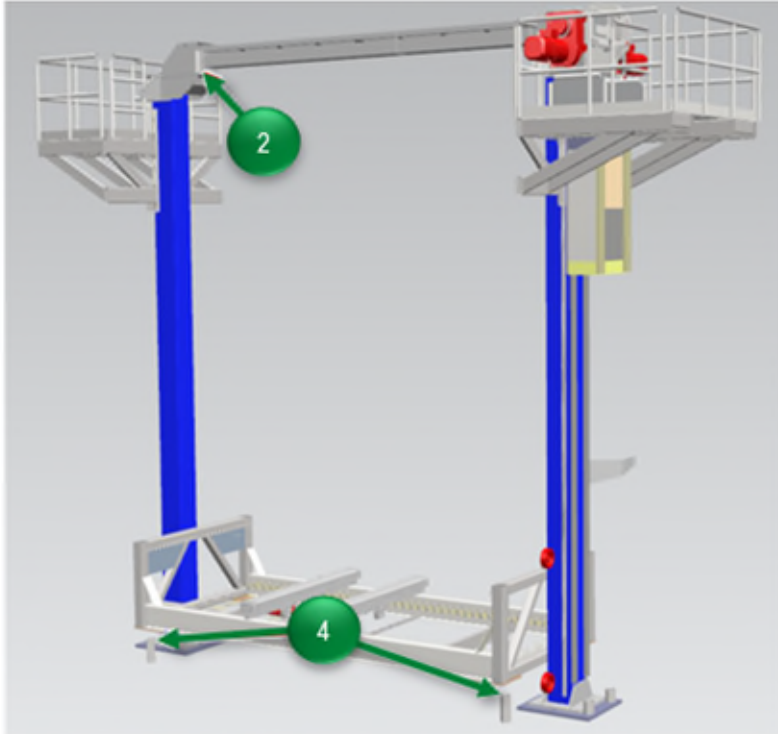
Preventive Maintenance tables consists of:



Item No.	Item Name	Required Operation	Description	Interval
1	Gearmotor	Inspection	<ul style="list-style-type: none"> Visually inspect gear unit for oil leakage. Check for oil film or grease deposits – clean if necessary. Check mounting hardware, check paint marks... 	6 Months

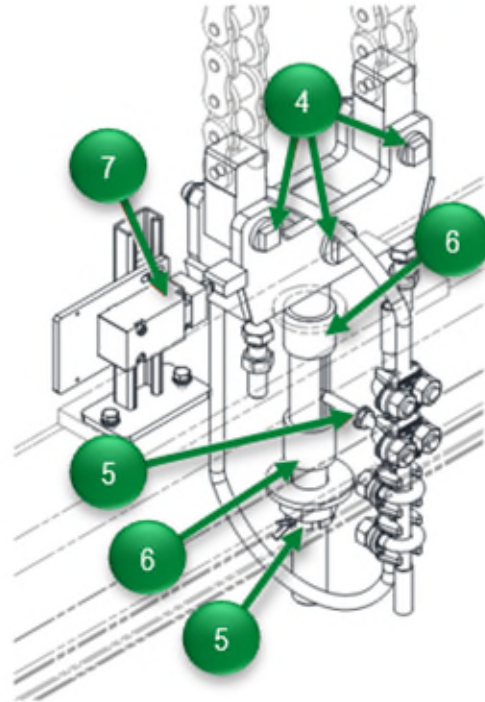
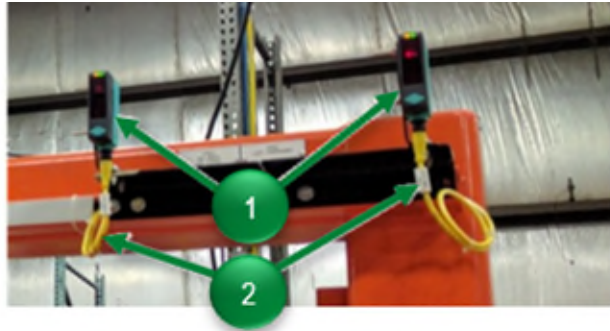
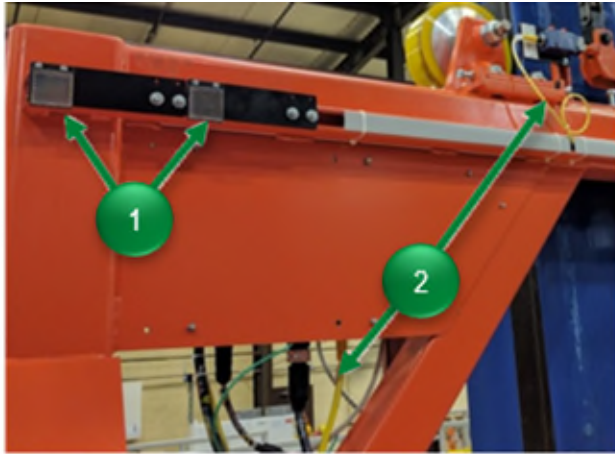
- A. Indicates the callout number associated on the schematic drawing, image or figure.
- B. Component name within the assembly.
- C. Required preventive maintenance operation - i.e., inspection or lubrication.
- D. Detailed description of the operation(s) to be performed.
- E. Recommended frequency of PM task.

High Lift Fork Transfer Preventive Maintenance Items



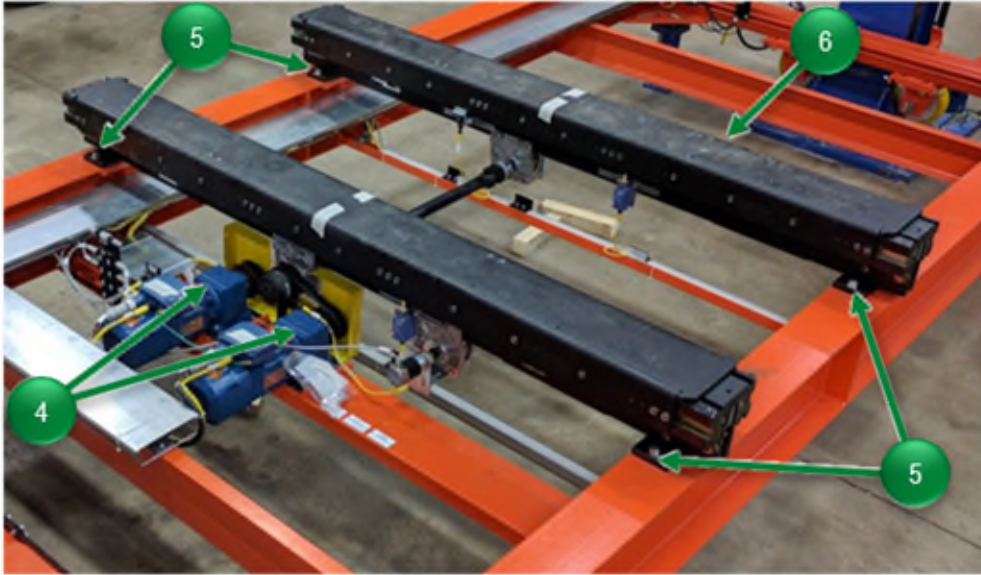
Item No.	Item Name	Required Operation	Description	Interval
1	Lift Chains	Inspection	<ul style="list-style-type: none"> Index the lift. Check lift chains run freely and without excessive noise. Check inside chain link plate and roller treads for wear. 	1 Month
		Lubrication	<ul style="list-style-type: none"> Inspect chain for proper lubrication from automatic lubricator. See auto lubricator manufacturer's instruction Service Manual for preventive maintenance schedule. 	
2	Idle Sprockets	Inspection	<ul style="list-style-type: none"> Check the brushes that apply lift chain lubrication for wear. Replace as needed. Check sprockets for wear (teeth having a hooked appearance) or contamination. Replace as needed. 	
3	Flex Cables	Inspection	<ul style="list-style-type: none"> Check flexible cables for secure connection, for wear, excessive cracks, exposed wire or burnt jacket. 	3 Months
4	Bumper	Inspection	<ul style="list-style-type: none"> Check bumpers for excessive cracks. 	12 Months

High Lift Fork Transfer Lift Carriage Preventive Maintenance Items



Item No.	Item Name	Required Operation	Description	Interval
1	Sensors/ Reflectors	Clean	<ul style="list-style-type: none"> With a soft cloth and glass cleaner clean photocell sensor lenses and reflectors. 	1 Month
1	Sensors/ Reflectors	Inspection	<ul style="list-style-type: none"> Check sensors and reflectors are securely fastened. 	6 Months
2	Electrical Cables	Inspection	<ul style="list-style-type: none"> Check cables for secure connection, for wear, excessive cracks, exposed wire or burnt jacket. 	
3	Cardan Shaft	Inspection	<ul style="list-style-type: none"> Inspect for abnormal wear and cracking. Inspect the bearing for efficiency and noise. 	
4	RH/LH Guide Roller Assembly and Wheels	Inspection	<ul style="list-style-type: none"> Check guide roller for ease of movement and for bearing noise. Check that the guide roller is properly secured to roller bracket weldment. If loose torque M16 HHCS to 100Nm. Check wheel for abnormal wear, and/or cracks. Examine for side and face cracks. Replace wheel if cracks are greater than 1mm or if worn down more than 2% of the original diameter (250 mm). 	
5	Chain Termination Connection	Inspection	<ul style="list-style-type: none"> Check the M16 & M20 lock nuts are secure. Check the integrity of the M30 castle nut's cotter pin. Check the M10 x 80 set screw is secure. Tight the M10 Jam nut if loose 	
6	Chain Termination Bushing	Inspection	<ul style="list-style-type: none"> Check bushing for wear. Lube free. 	
7	Chain Termination Slack/Break Detection Switch	Inspection	<ul style="list-style-type: none"> Check the slack/break detection proximity switch for functionality. Check that the switch and switch bracket is secure. Tighten the switch M5 screws and mtg. bracket M6 screws if loose. 	

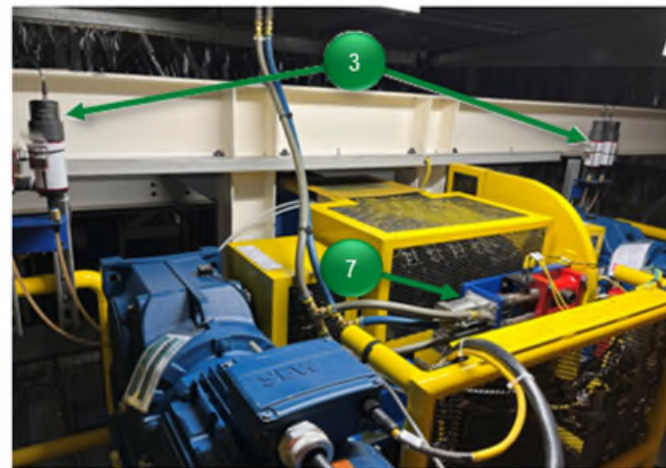
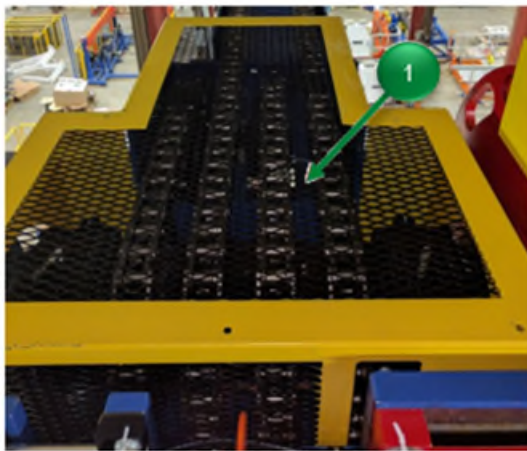
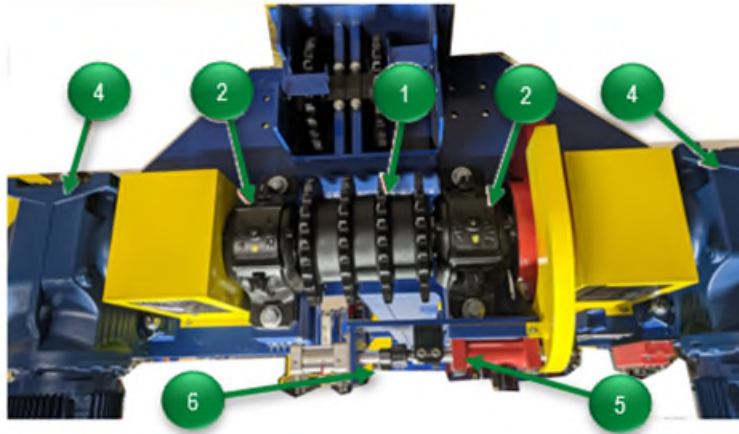
High Lift Fork Transfer Carriage Forks Preventive Maintenance Items



Item No.	Item Name	Required Operation	Description	Interval
1	Fork Motor Torque Limiter	Inspection	<ul style="list-style-type: none"> Ensure that torque limiter is tight on the drive shaft and that the torque adjustment is set to 85-90% on the scale. Refer to the Autogard Series 320 installation instructions. 	3 Months

Item No.	Item Name	Required Operation	Description	Interval
2	Fork Drive Belt	Inspection	<ul style="list-style-type: none"> Check for proper tension by using a sonic meter. New belt: 602-663 N; Used: 422-482 N. Refer to the Gates data sheet that is on the digital media that accompanies this manual. 	3 Months
3	Fork Drive Sprocket and Taper Lock	Inspection	<ul style="list-style-type: none"> Check that the sprocket and taper lock do not have any cracks. Ensure that taper lock is tight. 	
4	Fork Gearmotor	Inspection	<ul style="list-style-type: none"> Remove the oil level plug to check the level of oil. See manufacturer's documentation for oil fill plug locations. Add specified oil up to the fill line. Index the Transfer. Check for any abnormal mechanical noise (e.g. bearing failure or motor winding noises). Check brake air gap per recommended manufacturer settings. 	6 Months
5	Fork Mounting Bolts	Inspection	<ul style="list-style-type: none"> Check the telescopic forks M16 mounting bolts for proper tightness. 	
4	Fork Gearmotor	Lubrication	<ul style="list-style-type: none"> Replace the oil in the gearbox. 	
6	Telescopic Fork	Inspection	<ul style="list-style-type: none"> Refer to the MIAS Maintenance manual that is on the digital media that accompanies this manual. 	-

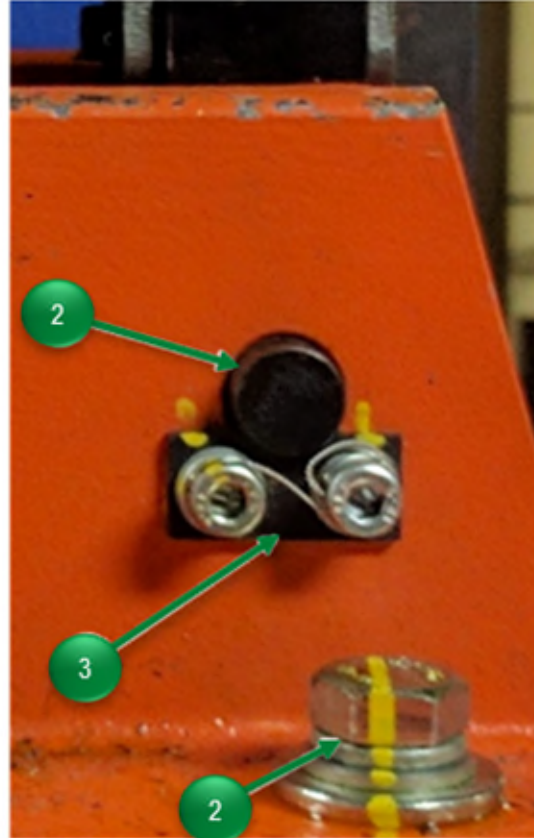
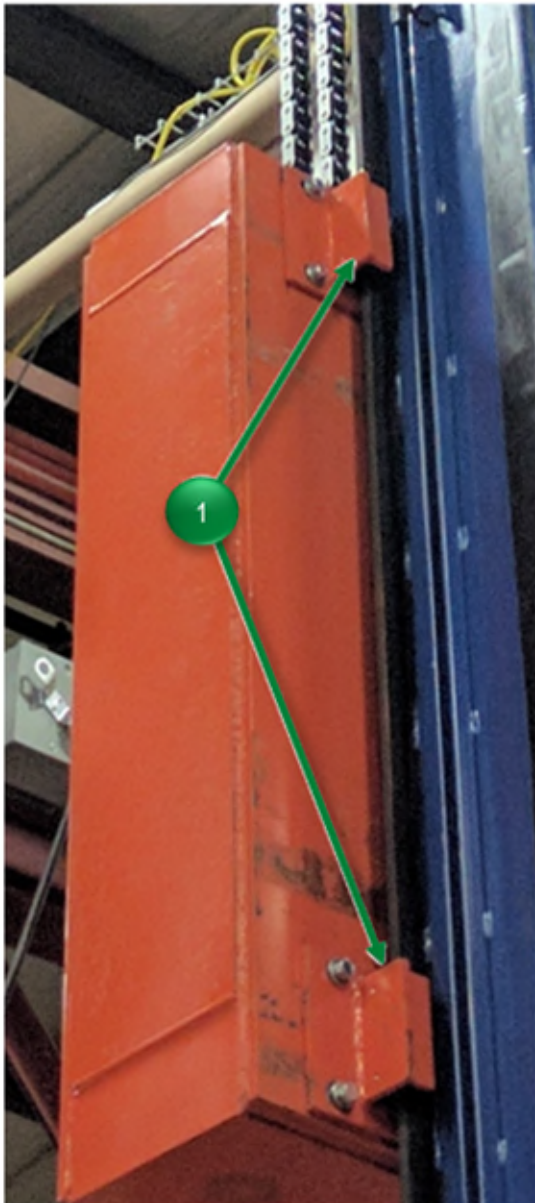
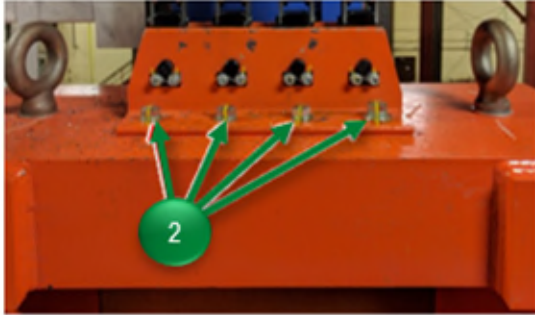
High Lift Fork Transfer Drive Assembly Preventive Maintenance Items



Item No.	Item Name	Required Operation	Description	Interval
1	Drive Sprocket	Inspection	<ul style="list-style-type: none"> Check drive sprocket for wear (teeth having a hooked appearance) or contamination. Replace as needed. 	3 Months
2	Pillow Block Bearings	Lubricate	<ul style="list-style-type: none"> Add all-purpose/NLGI 2 grease through manifold until new grease displaces the old. 	
		Inspection	<ul style="list-style-type: none"> Check for bearing noise. 	
3	Lubricant Cartridges (4)	Inspection	<ul style="list-style-type: none"> Change the out old cartridges with new. 	6 Months
4	Gearmotor	Inspection	<ul style="list-style-type: none"> Remove the oil level plug to check the level of oil. See manufacturer's documentation for oil fill plug locations. 	
			<ul style="list-style-type: none"> Add specified oil up to the fill line. Index the Transfer. Check for any abnormal mechanical noise (e.g. bearing failure or motor winding noises). Check brake air gap per recommended manufacturer settings. 	

Item No.	Item Name	Required Operation	Description	Interval
5	Pin and Bushing	Inspection	<ul style="list-style-type: none"> Check pins and bushings for cleanliness and damage. 	6 Months
6	Proximity Switches	Inspection	<ul style="list-style-type: none"> Check switches for secure mounting and proper operation. 	
7	Air Cylinder	Inspection	<ul style="list-style-type: none"> Check that pneumatic connections are secure. 	
4	Gearmotor	Lubrication	<ul style="list-style-type: none"> Replace the oil in the gearbox. 	36 Months

High Lift Fork Transfer Counterweight Assembly Preventive Maintenance Items



Item No.	Item Name	Required Operation	Description	Interval
1	Guide Blocks	Inspection	<ul style="list-style-type: none"> Check the UHMW Guide blocks for wear and excessive cracks. 	3 Months
2	Chain Termination Assembly	Inspection	<ul style="list-style-type: none"> Check that the chain termination assembly angle mount screws are secure. Tighten if loose. Check pin mechanical integrity. Check for wear spots and stress fractures. 	6 Months
3	Pin Retainer Plate	Inspection	<ul style="list-style-type: none"> Check that the chain termination assembly pins are secure. Tighten M8 SHCS if loose. 	

Lubrication Requirements - Gearmotor Oil Lubrication

Gearmotor oil can be determined by reading the attached data plates on each gearmotor. The examples below highlight the location to observe the required oil on the data plates. Do not mix oil grades when adding oil. Refer to the manufacturer's instruction manual for additional service requirements and technical data.

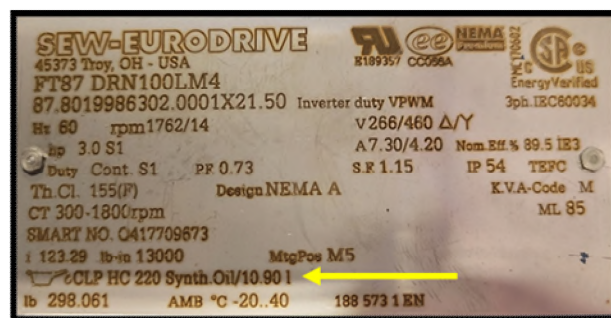
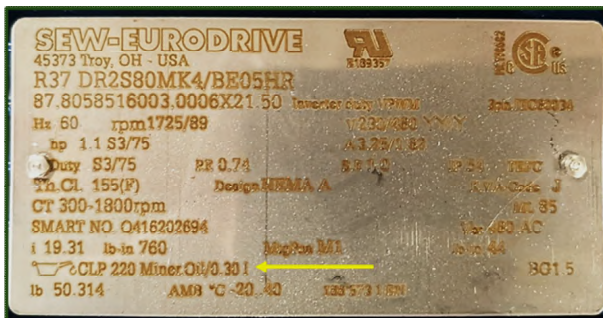
NOTICE

If you are doing a lubricant drain and refill, gearmotor manufacturers typically recommend that you use the same brand of lubricant originally supplied. If you are refilling the gearbox with a non-compatible lubricant, FATA recommends that you first remove any residual with a petroleum solvent or a hot water wash.

CAUTION

Do not use trichloroethylene as a washing solvent.

Data plates on the gearmotors identify the oil type and quantity that they use.



Gearmotor Data Plate Examples

Lubrication Requirements - Bearing Grease

The table below lists the plant approved lubricants to use in conveyor components that need lubrication.

Plant Approved Lubrication Chart

Lubrication Name	Manufacturer	Conveyor Asset	Application Points
<i>See complete manual for plant approved lubricants.</i>			

Re-Lubrication Best Practices:

- Always clean the grease fitting of all dirt before attaching the grease gun. Failure to clean the grease fitting before applying grease could result in introducing contaminants into the component resulting in increased wear or clogging the grease fitting orifice so as not to allow the entry of grease. Inspect and replace damaged fittings. It is helpful to use grease-fitting caps to keep them clean, but still wipe fittings clean before applying grease.
- Always make sure the dispensing nozzle of the grease gun is clean before using. Pump a small amount of grease out of the dispensing nozzle, then wipe the nozzle off with a clean rag or lint-free cloth before attaching it to the grease fitting.
- Do NOT over lubricate or apply excessive amounts of grease. This could lead to ruptured seals and excessive grease outside the fitting, which can attract contamination as well as create a mess on the machine.
- Know that some greases are not compatible with each other. Ensure that the proper grease is used at every grease point. Applying the wrong grease can cause an incompatibility problem which can quickly cause bearing failure.
- Once relubrication service is complete, clean off old grease and contaminants from the boot, grease/zerk fitting and surrounding components.