

Section 5

SECTION 5 MAINTENANCE AND SPARE PARTS

Inspection Schedule

Interval	Component(s)	Key Observations
Daily	General	<ul style="list-style-type: none"> Verify Guards/Covers in place and secured Inspect for egg debris along entire length of conveyor
	Drive Units (Front, Mini, Transfer, Intermediate, and End Drives)	<ul style="list-style-type: none"> Inspect any Discharge Wheels and Transfers for correct adjustment Monitor for any unusual sounds and/or vibrations
	Tensioning Units (Front Drive, Transfer Drive, End Drive, Cantilever Drive, Bolt-In Tensioner, and End Piece)	<ul style="list-style-type: none"> Verify tensioner is operational and adjusted correctly
	Oiler Units (Top and Tandem)	<ul style="list-style-type: none"> Check oil level Check flow to both sides of conveyor chain
1 to 3 months	General	<ul style="list-style-type: none"> Inspect chain for damaged or bent cross rods Inspect Closing Rods for missing Security Elements
	Gearboxes	<ul style="list-style-type: none"> Inspect for oil leaks
3 to 6 months	Drive Units (Front, Mini, Transfer, Intermediate, Cantilever, and End Drives)	<ul style="list-style-type: none"> Inspect Drive Sprockets for wear Inspect Brushes for build-up
	Intermediate Drives	<ul style="list-style-type: none"> Inspect Metal Chain Slideways for wear
12 to 18 months	General	<ul style="list-style-type: none"> Inspect and clean all chain sliding surfaces

Preventive Maintenance

- The following table suggests a time interval, component, and action for Preventive Maintenance.
- Once Preventive Maintenance (PM) rotation is complete through Month 48, repeat procedures starting at Month 6 and continuing through Month 48 (7.5 years total PM)

Interval	Component(s)	Action(s)
Month 6	Intermediate Drives	<ul style="list-style-type: none"> • Rotate Drive Sprockets • Rotate Metal Chain Slideways (left/right)
	Front or Transfer Drive	<ul style="list-style-type: none"> • Clean Brushes
Month 12	Intermediate Drives	<ul style="list-style-type: none"> • Replace Drive Sprockets • Rotate Metal Chain Slideways (top/ bottom)
	Drive Units (Front, Transfer, Mini, Cantilever, or End Drives)	<ul style="list-style-type: none"> • Clean Brushes • Replace drive shaft bearings
Month 18	Intermediate Drives	<ul style="list-style-type: none"> • Rotate Drive Sprockets • Rotate Metal Chain Slideways (left/right)
	Front or Transfer Drive	<ul style="list-style-type: none"> • Clean Brushes
Month 24	Intermediate Drives	<ul style="list-style-type: none"> • Replace Drive Sprockets • Replace Metal Chain Slideways (top/ bottom) • Replace UHMW Chain Slideways (left/ right)
	Drive Units (Front, Transfer, Mini, Cantilever, or End Drives)	<ul style="list-style-type: none"> • Clean Brushes • Replace drive shaft bearings
Month 30	Intermediate Drives	<ul style="list-style-type: none"> • Rotate Drive Sprockets • Rotate Metal Chain Slideways (left/right)
	Front or Transfer Drive	<ul style="list-style-type: none"> • Clean Brushes
Month 36	Intermediate Drives	<ul style="list-style-type: none"> • Replace Drive Sprockets • Rotate Metal Chain Slideways (top/ bottom)
	Drive Units (Front, Transfer, Mini, Cantilever, or End Drives)	<ul style="list-style-type: none"> • Clean Brushes • Replace drive shaft bearings
Month 48	Intermediate Drives	<ul style="list-style-type: none"> • Replace Drive Sprockets • Replace Metal Chain Slideways (top/ bottom) • Replace UHMW Chain Slideways (left/ right)
	Drive Units (Front, Transfer, Mini, Cantilever, or End Drives)	<ul style="list-style-type: none"> • Replace Brushes • Replace drive shaft bearings • Replace Deflection Wheels • Replace Sliding Shoes • Rotate Drive Sprockets • Replace Deflection Wheel Bearings (End Drive metal deflection wheels only)
	End Unit, End Piece, and Bolt-In Tensioner	<ul style="list-style-type: none"> • Replace Deflection Wheels

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Critical Spares Overview

1. *Critical Spares* are defined as components and/or subassemblies maintained on-site to prevent extended periods of downtime in the case of failure.
2. The following charts detail the recommended components to inventory and a minimum quantity to repair most breakdowns.

Note: Minimum quantities should be adjusted based on components within each specific installation. The following charts detail all places where certain components are utilized, but do not always require a certain number of spares be maintained for each location. For example, if a component is used on a Front Drive and Intermediate Drive, the site is not required to maintain a recommended quantity for both as Critical Spares. Typically, having enough on hand to repair one or the other is sufficient as multiple components rarely fail simultaneously.

Note: *Critical Spares* are not *Preventive Maintenance* (PM) spares. PM Spares should be maintained as needed for upcoming scheduled repairs.

3. The following charts are separated into *All Types* and *Type Specific* components. *All Types* components are shared between multiple conveyor widths whereas, *Type Specific* are utilized only in specific width conveyors (e.g. Type 500, etc.).
4. The following charts are provided as a suggested guideline only. Each site should develop and maintain a spares program to suit each system.
5. Always rotate stock to ensure the components are in good working order when needed.

Critical Spares All Widths

Part Number	Description	Recommended Min. Qty.	Front Drive	Intermediate Drive	Mini Drive	Transfer Drive	End Drive	End Unit	Cantilever Drive	End Piece	Idler Unit	Connecting Part	Pivot Unit	Top/Tandem Oilers	Bolt-In Tensioner
S-87.3	Stober Gearbox	1	•	•	•	•	•		•						
G580	Motor 1/3hp 3ph 208-230/460 60Hz	1		•		•			•						
G513	Motor 1/3hp 1ph 115-208/230 60Hz	1		•			•		•						
6K950	Motor 1/3hp 1ph 110/220 50Hz	1		•			•		•						
G581	Motor 1/2hp 3ph 208-230/460 60Hz	1	•		•	•			•						
N411	Motor 1/2hp 3ph 208-230/460 60Hz SS	1	•		•	•			•						
G515	Motor 1/2hp 1ph 115-208/230 60Hz	1	•		•	•			•						
34 10 205	4-Bolt Flange Bearing 25mm	2	•	•	•	•	•		•		•				
6205.2RSR	Bearing 25mm	2	•	•	•	•	•		•						
6002.2RSR	Bearing 15mm	4					•								
185 500 55 01	Flange Complete Main Drive	1	•		•	•	•								
185 500 55 02	Flange Complete Intermediate Drive	1		•					•						
27 43 070	8 x 7 x 28 Parallel Key	6	•	•	•	•	•		•		•				
705 001 02 00	Main Drive Sprocket	2	•	•	•	•	•				•				
705 001 03 00	Intermediate Drive Sprocket	2		•					•						
185 515 03 00	Driving Sprocket	2									•				
185 515 21 00	Deflection Wheel Grooved 94.7mm	4	•			•	•								
185 515 21 01	Deflection Wheel Grooved 155mm	2													•
185 515 22 00	Deflection Wheel Smooth 94.7mm	2	•			•	•	•	•						
185 515 22 01	Deflection Wheel Smooth 155mm	2							•						•
185 100 23 00	Deflection Wheel Steel Complete	2					•								
26 43 064	Adjusting Ring A20-705	8	•			•		•	•	•					•
707 120 02 00	Sliding Shoe Complete	6										•			
185 100 11 00	Sliding Shoe Long Complete	4	•			•							•		
185 100 13 00	Sliding Shoe Short Complete	4	•			•									
185 525 05 01	Sliding Shoe Long	4	•			•							•		
185 525 05 02	Sliding Shoe Short	4	•			•									
LBG78-035	Lubricant Food Grade 5 Gallon	1													•
185 516 07 08	Chain Slideway, LH	2		•											
185 516 07 09	Chain Slideway, RH	2		•											
185 516 05 01	Chain Slideway, Metal	4		•											
185 540 04 02	Security Elements	20													
835380	Solenoid 120v	1													•
835381	Solenoid 240v	1													•

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Critical Spares T250

Part Number	Description	Recommended Min. Qty.	Front Drive	Intermediate Drive	Mini Drive	Transfer Drive	End Drive	Cantilever Drive	End Unit	End Piece	Idler Unit	Connecting Part	Pivot Unit	Top/Tandem Oilers	Bolt-in Tensioner	Standard Chain	Coated Chain	Hybrid Chain
186 516 01 01	Drive Shaft T250	1	•	•	•	•		•										
186 516 01 07	Return Shaft T250	1									•							
186 500 11 02	Discharge Wheel Complete T250	1	•		•	•					•							
186 500 10 03	Transfer Complete T250 x 95mm	1	•		•	•					•							
4921	Conveyor Chain T250 Standard (roll)	1														•		
4924	Closing Rod T250 Standard	1														•		
5921	Conveyor Chain T250 Hybrid (roll)	1																•
5924	Closing Rod T250 Hybrid	5																•
4935 ¹	Intermediate Drive T250	1		•														

¹It is recommended that a complete spare unit be kept in inventory to reduce downtime. Replacement of the entire unit is often quicker than servicing/repairing a unit installed in the system. The removed unit can be repaired and placed in inventory for future use.

Critical Spares T350

Part Number	Description	Recommended Min. Qty.	Front Drive	Intermediate Drive	Mini Drive	Transfer Drive	End Drive	End Unit	Cantilever Drive	End Piece	Idler Unit	Connecting Part	Pivot Unit	Top/Tandem Oilers	Bolt-in Tensioner	Standard Chain	Coated Chain	Hybrid Chain
187 516 01 01	Drive Shaft T350	1	•	•	•	•	•		•									
187 516 01 07	Return Shaft T350	1									•							
187 500 11 02	Discharge Wheel Complete T350	1	•		•	•					•							
186 500 10 03	Transfer Complete T350 x 95mm	1	•		•	•					•							
4861	Conveyor Chain T350 Standard (roll)	1														•		
4864	Closing Rod T350 Standard	5														•		
4868 ¹	Intermediate Drive T350	1		•														

¹It is recommended that a complete spare unit be kept in inventory to reduce downtime. Replacement of the entire unit is often quicker than servicing/repairing a unit installed in the system. The removed unit can be repaired and placed in inventory for future use.

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Critical Spares T500

Part Number	Description	Recommended Min. Qty.	Front Drive	Intermediate Drive	Mini Drive	Transfer Drive	End Drive	Cantilever Drive	End Unit	End Piece	Idler Unit	Connecting Part	Pivot Unit	Top/Tandem Oilers	Bolt-in Tensioner	Standard Chain	Coated Chain	Hybrid Chain
185 516 01 01	Drive Shaft T500	1	•	•	•	•	•	•										
185 516 01 07	Return Shaft T500	1									•							
185 500 11 02	Discharge Wheel Complete T500	1	•		•	•					•							
185 500 10 03	Transfer Complete T500 x 95mm	1	•		•	•					•							
4821	Conveyor Chain T500 Standard (roll)	1														•		
4824	Closing Rod T500 Standard	1														•		
4832	Conveyor Chain T500 Plastic Coated (roll)	1															•	
4833	Closing Rod T500 Plastic Coated	1															•	
5821	Conveyor Chain T500 Hybrid (roll)	1																•
5824	Closing Rod T500 Hybrid	5																•
4824-1	Closing Rod T500 Grub Screw	5														•		
4835 ¹	Intermediate Drive T500	1		•														

¹It is recommended that a complete spare unit be kept in inventory to reduce downtime. Replacement of the entire unit is often quicker than servicing/repairing a unit installed in the system. The removed unit can be repaired and placed in inventory for future use.

Critical Spares T750

Part Number	Description	Recommended Min. Qty.	Front Drive	Intermediate Drive	Mini Drive	Transfer Drive	End Drive	Cantilever Drive	End Unit	End Piece	Idler Unit	Connecting Part	Pivot Unit	Top/Tandem Oilers	Bolt-in Tensioner	Standard Chain	Coated Chain	Hybrid Chain
188 516 01 01	Drive Shaft T750	1	•	•	•	•	•	•										
188 516 01 07	Return Shaft T750	1									•							
188 500 11 02	Discharge Wheel Complete T750	1	•		•	•					•							
188 500 10 03	Transfer Complete T750 x 95mm	1	•		•	•					•							
4891	Conveyor Chain T750 Standard (roll)	1														•		
4894	Closing Rod T750 Standard	1														•		
4892	Conveyor Chain T750 Plastic Coated (roll)	1															•	
4893	Closing Rod T750 Plastic Coated	5															•	
5892	Conveyor Chain T750 Hybrid (roll)	1																•
5894	Closing Rod T750 Hybrid	5																•
4894-1	Closing Rod T750 Grub Screw	5														•		
4898 ¹	Intermediate Drive T750	1		•														

¹It is recommended that a complete spare unit be kept in inventory to reduce downtime. Replacement of the entire unit is often quicker than servicing/repairing a unit installed in the system. The removed unit can be repaired and placed in inventory for future use.

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Critical Spares T1000

Part Number	Description	Recommended Min. Qty.	Front Drive	Intermediate Drive	Mini Drive	Transfer Drive	End Drive	Cantilever Drive	End Unit	End Piece	Idler Unit	Connecting Part	Pivot Unit	Top/Tandem Oilers	Bolt-in Tensioner	Standard Chain	Coated Chain	Hybrid Chain
191 516 01 01	Drive Shaft T1000	1	•	•	•	•		•										
191 516 01 07	Return Shaft T1000	1									•							
191 500 11 02	Discharge Wheel Complete T1000	1	•		•	•					•							
191 500 10 03	Transfer Complete T1000 x 95mm	1	•		•	•					•							
5421	Conveyor Chain T1000 Standard (roll)	1														•		
5423	Closing Rod T1000 Standard	1														•		
5461	Conveyor Chain T1000 Hybrid (roll)	1																•
5464	Closing Rod T1000 Hybrid	5																•
5423-1	Closing Rod T1000 Grub Screw	5														•		
5435 ¹	Intermediate Drive T1000	1		•														

¹It is recommended that a complete spare unit be kept in inventory to reduce downtime. Replacement of the entire unit is often quicker than servicing/repairing a unit installed in the system. The removed unit can be repaired and placed in inventory for future use.

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Electrical Specifications

Drip Oiler Solenoids

Part Number	Voltage	Frequency (Hz)	Power (Watts)
835380	120	60	11
835381	240	60	11

Motors (nameplate data)

Mfg.	Model	Frame	Encl.	HP	Phase	Voltage	Freq. (HZ)	Full Load Amps	RPM	Service Factor
Marathon	G515	56C	TEFC	1/2	1	115/230	60	8.6/4.3	1725	1.15
	G581	56C			3	208-230/460		2.3-2.4/1.2	1725	1.15
	N411	56C	TENV	3	208-230/460	1.5-1.6/.8		1750	1.15	
	G513	56C	TEFC	1/3	1	115/208-230		6/3-3	1725	1.15
	G580	56C			3	208-230/460		1.4-1.6/.8	1725	1.15

Note: Motors not purchased from Lubing Systems must match the above criteria for proper operation. Failure to match these specifications may result in damage to the chain and/or other components within the system.

Note: Always verify “advertised” specifications to the “actual” data on the nameplate.

Mechanical Specifications

Conveyor Speed (ft/min.)

Motor rpm	Freq. (HZ)	Gearbox	Speed (approx.)
1800	60	S-87.3 Stober	25 ft/min. ¹
1500	50		21 ft/min. ¹

¹Linear speed dependent on all variables. Deviation from any parameter above will yield differing speeds. System designed for approx. 25 ft/min for best performance and longevity. Any increases in speed should be accompanied with increases in acceleration/deceleration time for the drives. Speeds exceeding 30 ft/min will result in increased product damage and decreases in system longevity.

Conveyor Capacity (cases/hr)

Conveyor Type	Width (mm/inches)	Capacity (cases/hr)
250	250/10	90
350	350/14	125
500	500/20	190
750	750/30	300
1000	1000/40	400

Inclines/Declines (max. angles)

Conveyor Chain Type	Incline or Decline Max. (degrees)
Standard	20 ¹ (18 for Type 1000)
Hybrid	
Plastic Coated	18 ¹

¹Maximum angles are given as reference only, other variables may dictate lesser angles. Consult your Lubing representative or the provided engineered layout drawing for recommended angles.

Bend Units (standard/custom angles)

Standard bend angles are available as 45 and 90 degrees.

Custom bend angles are available, consult your Lubing representative or the provided engineered layout drawing for recommended angles.

Lubricants (approved alternates)

Drip Oiler Capacity	Recommended Lubricants	Mfg.
1 quart	LBG78-035	Lubing
	FG100	Amoco
	FM-E ISO 100	Chevron
	Magna-Plate 78	JAX

Refer to the *OEM Contact Section* to find a distributor for your area.

Gearboxes (oil levels)

Contact Manufacturer for recommended gearbox oil and levels. Refer to the *General Information Section* for OEM contact information.

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Recommended Tool List

Conveyor Manual	Assembly, Installation, Start-up, and Troubleshooting guide
Conveyor Layout	Drawing specifically engineered for your system
Tape Measure	Measuring distances, modifying Connecting Part lengths, etc.
Level	Setting components level during installation
Combination or Speed Square	Marking cut lines when modifying Connecting Part lengths
Metric Hex Keys (Allen Wrenches)	1.5mm - 10mm range
Metric Sockets/Ratchet	8mm - 19mm range (1/4" or 3/8" drive ratchet)
3" Extension	For ratchet/sockets above
#2 & #3 Phillips Screwdriver	Misc. fasteners
Flat blade Screwdriver	Misc. fasteners
T20 Torx Bit	Misc. self-tapping fasteners
5/16" or 8mm Drill Bit	Adding holes when modifying Connecting Part lengths
Cordless Drill (3/8" chuck)	Adding holes when modifying Connecting Part lengths
Hammer/Punch	Loosening Eccentric Collar on 4-bolt Flange Bearing
Hacksaw/Blade	Cutting Sidesheets when modifying Connecting Part lengths
6" Tongue and Groove Pliers	Small-head pliers for installing Security Elements
Cutting Wheel/Bolt Cutters	Cutting Chain Rolls
True RMS Meter	Voltage readings when using VFDs
True RMS Amp Meter	Current readings when using VFDs

Materials of Construction

Components	Material (contact surface)	Finish
Chain Path	UHMW-PE	None
Red Capping	ABS	None
Transfers	PVC, Rigid	None
Discharge Wheel Tubes	PVC, Rigid	None
Cleaning Brush Bristles	Nylon	None
Conveyor Chain, Standard	Steel	Electro-galvanized
Conveyor Chain, Hybrid	Stainless	None
Conveyor Chain, Plastic Coated	ABS	None
Sidesheets (Aluminum)	Aluminum 6063-T5	Clear Anodize
Sidesheets (Stainless)	Stainless	None
Drip Oiler Reservoir	Glass	None

Component Replacement

General

1. Always observe all Lockout-Tagout and safety procedures for your facility prior to performing any work on the system.
2. Always wear all *Personal Protective Equipment* (PPE) when servicing equipment.
3. When servicing the conveyor requires the replacement of a particular component, please refer to the *Assembly and Installation Section*, *Start-up Checklist*, and the *Break-In Tables* provided in this manual.
4. It is recommended that the item removed is replaced with the exact component. Please discuss any changes with your Lubing representative.

Conveyor Chain

5. When replacing Conveyor Chain, use the same style existing in the system (i.e. Standard, Plastic Coated, or Hybrid). Mixing chain styles is not recommended and can lead to damaged product, collectors, transfers, or other components within the system.
6. Replacing full chain roll lengths will decrease the number of Closing Rods within the system.

Drive Components

7. When replacing any component containing motors and gearboxes, ensure the component is installed in the same orientation as the unit being replaced. Always verify motor rotation before re-installing motors and gearboxes.
8. In the case of Intermediate Drives, ensure the drive is set to the proper configuration (i.e. Top or Bottom Drive). Refer to the *Assembly and Installation Section* for proper Intermediate Drive setup.

Note: Downtime can be reduced by maintaining a spare Intermediate Drive with the proper Sprocket widths and gaps as detailed in the *Assembly and Installation Section*.

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Motors and Gearboxes

9. When replacing motors, ensure the nameplate data on the new motor matches that on the one being replaced. Refer to the *Electrical Specifications Table* in this manual for motor information.

Note: Motors not purchased from Lubing Systems must meet the same criteria. Failure to match all parameters may result in damage to the chain and/or other components within the system.

Note: Always verify motor rotation before installing onto Drive Components. Incorrect rotation will result in damage to the chain and/or other components within the system.

10. When replacing gearboxes, match the exact gearbox present within the system.

Note: Failure to match gearboxes may result in damage to the chain and/or other components within the system.

Tips and Tricks

Installation

1. Correct installation begins with the first component. Taking time to properly elevate and level downstream equipment and then the first component of the new installation will better guarantee good results when starting and operating the system.
2. Provide accurate measurements for best layout engineering.
3. Do not compromise the layout when installing. Should issues arise, it is best to communicate these to your Lubing representative to avoid possible delays later.

Maintenance

1. *Maintenance and Inspection Tables* and time-lines are provided as guidelines only. Develop your own schedules and areas of observation based on equipment on site.
2. Maintenance suggestions are made to reduce downtime and costs by, when possible, rotating and reusing components to extend their service life.
3. Review the *Component Details Section* to see how parts are offered. It is often possible to stock items as subassemblies in order to make repairs quicker and reduce downtime. Once the entire subassembly has been replaced, order the required components, repair, and stock the subassembly for future use.
4. In systems requiring multiple identical components, it may be more cost and time effective to stock an entire component as a spare. As with subassemblies, replace the entire component, order the appropriate replacement parts, repair, and stock the assembly for future use.

Motors and Gearboxes

1. Motors not purchased from Lubing Systems must match the exact horsepower and output speed (rpm). Failure to match will cause issues possibly leading to damage to the chain and/or drive units.
2. Gearboxes are intended for a specific mounting (motor vertical facing up). Contact the manufacturer if attempting to run in another mounting orientation.
3. Variable Frequency Drives (VFDs) or other “soft start” devices should be implemented to increase component life and reduce downtime due to breakages. All drives should start/stop together.

Spares

1. All spares should be properly stored. Prolonged exposure to weather, excessive temperatures, sunlight, or other environmental elements may damage components.
2. Rotate inventory on spares to prevent excessive age before use. This is especially critical for bearings or other items containing lubricants or grease.
3. When servicing an older system, verify any fasteners involved with replacing a component(s) to the current fasteners employed on the system. If variations are found, order the appropriate fasteners with the component(s) to be replaced. See *Section 2 Component Details* for current BOMs.

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Conveyor Chain

1. Conveyor Chain is manufactured within a specific tolerance, however, there are variations between manufactured batches of chain. For best results, order enough chain for the system and spare at the same time for best results.
2. If serious damage occurs to the chain, inspect all Closing Rods. If the Closing Rod has been overstressed, the Security Elements will often be loose or missing.
3. If the eggs begin to show excessive oiling picked up from the conveyor, check the Cleaning Brushes. The Cleaning Brush can sometimes begin to wick oil from the chain links and allow the oil to migrate toward the center of the conveyor. If this is observed, clean the Brushes and trim back the first inch or so of bristles on both sides away from the chain links.
4. If an intermittent issue is occurring at a drive location, mark the section of chain passing through the drive during the issue. If the drive smooths out or the issue goes away once the marked section has exited the drive, replace that section of chain.

Chain Lubricant (Oil)

1. Attempts to reduce costs with lesser expensive oils will lead to increased maintenance and repair costs. The specified oil and the acceptable alternate oils provided in the *Mechanical Specifications Section* of this manual are engineered for the conveyor system and must be used.
2. The specified oil is designed to travel with the chain and transfer onto the sliding surfaces throughout the conveyor system. Mineral Oils and other lubricants not specified do not contain the proper additives for adequate transfer onto the sliding surfaces and will lead to issues such as chain surging, increased product damage, premature wear of components, and possibly, chain breakage.
3. Less expensive oils often cost more due to the increased amount required in an attempt to prevent chain surging and other side effects associated with their use. Slip hazards may also increase with these non-approved substitute lubricants.