

Chain Maintenance

Chain Inspection and Maintenance Cycle

Door and gate chain maintenance should be part of the ongoing inspection and Maintenance Control Program. Peelle recommends the follow minimum intervals for chain maintenance:

Door chain and components every 50,000 complete door cycles or 6 months whichever comes first.

Gate chain and components every 50,000 complete gate cycles or 3 months whichever comes first.

Note: Elevator environmental and usage conditions vary. It may be necessary to adjust the maintenance cycle to suit the particular application.

Regular Maintenance: At each maintenance cycle, the following items should be checked, the condition corrected, or the chain replaced as necessary:

1. Chain Condition and Cleaning

- Ensure the chain is not covered with dirt and debris.
- Ensure the chain can move freely.
- Inspect chain for rust and seized links.

Note: For simple cleaning, degreasing and lubricating use WD-40® and a clean rag. Only if necessary, apply a light amount of recommended lubrication without excess.

Note: If the chain is very dirty, greasy or oily, it should be removed, cleaned and re-lubricated according to the Chain Replacement and Chain Lubrication instructions.

AVOID ANY EXTRA LUBRICATION IN ORDER TO ENSURE PROPER CHAIN/SHEAVE TRACTION.

2. Check Chain Wear

Roller chains should be replaced promptly when worn. Chains worn on one side, elongated rivet holes and worn rivet heads require replacement of the entire chain. Never connect two pieces of new chain or splice a new section to a worn chain.

Door chain when new will measure 15" (381mm) for 24 links. Replace if 24 links are more than 15 3/16" (386mm)

Gate chain when new will measure 16" (406mm) for 36 links. Replace if 36 links are more than 16 1/4" (413mm)

3. Check for Failure

Inspect the chain for cracked, broken, or deformed parts. If any of these conditions are found, replace the entire chain.

Warning: Chains that have been damaged under excessive loading due to an accident, or otherwise, should be completely replaced because the chain, as well as the damaged component, has been loaded to a degree that will compromise the safety of the chain.

4. Check Chain Studs, Chain Rods and Connecting Links

Check connection studs and rods for condition and wear. Any worn or missing components (cotter pins, nuts, washers, links, tie-wraps, etc.) should be replaced immediately. Chain rod adjustment threads should be in good condition.



Warning: it may be necessary to remove any protection covers that prevent a good visual inspection of the chain connection components. Failure to remove covers may result in missing critical areas of inspections.

5. Check Chain Twist

Refer to the Installation section and check chain twist. Adjust the chain rod as needed to ensure chain drops straight from the sheave or sprocket to the chain rod.

6. Check Sheave and Sprocket Alignment

If there is noticeable wear on the outside surface of the chain roller link plates, the sheave may be misaligned. If there is noticeable wear on the inside surface of the chain roller link plates, a sprocket may be misaligned. Realign the sheaves and sprockets as necessary.

7. Check Drive Sheaves, Sprockets and Idlers

Check for interference between the drive and other parts of the equipment and correct it immediately. Check for and eliminate any buildup of debris or foreign material between the chain and sheaves or sprockets.

Chain Replacement

Peelle roller chain has been designed specifically for the application of suspending and operating Peelle doors and gates; only Peelle roller chain should be used. It is possible to greatly reduce a chain's life and even induce failure if the chain is abused through improper installation, operation, or maintenance procedures. In certain applications, chain failure can lead to personal injury or property damage.

Areas to be considered prior to, as well as after installation are:

- Safety.
- Chain, sheaves, sprockets, and other drive components.
- Sheave and sprocket alignment.
- Chain and connecting link installation.
- Ongoing maintenance.

Safety: When installing or connecting/disconnecting a roller chain:

- Always lock out equipment power before removing or installing chains.
- Always wear safety glasses when working with chain.
- Wear protective clothing, gloves and safety shoes as appropriate.
- Support the doors and gates to prevent uncontrolled movement of chain and parts.
- Use of press-type chain breaker is required to remove pins and links.
- Chains should only be shortened. Do not attempt to connect chains in order to extend them.

Components

When installing a new chain, the manufacturer's lubricant should not be removed.

Condition of Components: Shafts, sheaves, sprockets, bearings, and any other relevant component mounting should be examined. Any evidence of damage or wear should be repaired prior to chain installation.

Chain Inspection: When reinstalling an existing chain, ensure that it is free of grit, dirt, grease, rust or excessive oil. Rusted and/or seized chains should be replaced. If necessary, wash dirty and excessively oily chain in solvent. The chain should be allowed to thoroughly dry to remove any solvents. Once dry, it is critical that the chain be re-lubricated prior to installation.

Note: Chain should always be replaced in pairs or sets for the door or gate. Never replace only one chain as this result in difficulties adjusting length and panel alignment.



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AND INSTALLATION

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Chain Lubrication: Peelle chain requires lubrication in order to resist wear of the pin-bushing joint, lubricate contact surfaces and prevent rust or corrosion. Petroleum oil without additives is recommended.

Note: greases applied to the chain serve no purpose and should not be used.

Excessive oil will prevent the traction sheave from functioning properly. Look for and remedy excessive oil on the chains and sheaves if you encounter any of these problems:

1. The door or gate moves freely by hand but the operator/sheave slips and struggles to move the gate.
2. Gate reversal distance is excessive. Upon initiation the gate should reverse in approximately 6 to 12 inches.
3. Oil is dripping from the chains.

Note: gate reversal distance depends on control reopen initiation time, chain/sheave traction, gate size and proper counterweight balance.

The following table provides a guideline for selecting the proper lubricant viscosity at various ambient temperatures:

Ambient Temperature Deg C (Deg F)	Recommended Lubricants		
	SAE Engine Oil	SAE Gear Oil	ISO VG
-15 to 5 (5-40)	20	80W	68
5 to 25 (40-80)	30	85W	100
25 to 40 (80-105)	40	90	150

Applying Lubricant: Apply lubricant to the upper edges of the link plates preferably by dripping onto the chain somewhere over the top of a sheave or sprocket. Lubrication flows to the pin/bushing area between the link plates. Lubricate directly to each row of chain link plates. Do not lubricate the rollers. AVOID ANY EXCESSIVE LUBRICATION.

Note: it is best to lubricate the chain when it is slack or removed. This allows the lubrication to penetrate into the critical pin/bushing area.

Aligning Sheaves and Sprockets: Sheaves should be parallel with chain direction and level or upright. This condition may be checked using a level. Misalignment results in uneven loading across the width of the chain and may cause damage to sheaves and sprockets.

Aligning Chain Rods: Chain rods should not allow the chain to twist. The chain should hang straight from the sprocket or sheave to the chain rod. For round section chain rods, if the chain rod tends to twist in the chain hanger, secure the top of the chain rod with an additional nut. For cross chains, look directly along the chain from one end to see the alignment of the sprocket or sheave at the other end. Repeat from the other side.

Chain and Connecting Link Installation

WARNING!

DO NOT STRIKE / HIT CHAIN

The components of a chain are hardened parts. Striking these parts may cause metal chips to break off from the chain or the tools used resulting in personal injury. During all stages of chain disassembly and assembly, wear safety glasses to prevent metal parts or chips from entering your eyes and have personnel in the immediate area do likewise.

SHUT OFF POWER PRIOR TO SERVICE

Serious injury may occur if attempting to install chain on equipment under power. Shut off power and secure and support doors and gates before attempting installation.

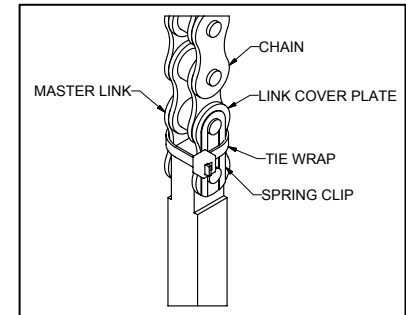
Installing the Chain: Fit chain around the sheave or sprocket bringing the shortest hanging side to the counterweight or panel for the first connection. This will ensure that the weight of the chain does not cause it to slip around the sheave.

Measure and Cut the Chain (Pin Removal):

1. Measure and mark chain to desired length.
2. Grind pin heads off so pin ends are flush with the link plate.
3. Drive pins out of link plate using a Peelle Chain Pin Extractor Part #0608.

Installing the Connecting Link:

1. Insert the "Master Link," the portion of the link that contains the pins, into the chain and chain stud.
2. Slide the cover plate over the pin ends to a location which clears either the spring clip groove.
3. Install the spring clip so that the split is facing downward.
4. For additional security, after the installation of the connecting link, use a nylon tie-wrap secured around the complete connecting link, tighten and snip the end.



Chain End Connection:

Chain studs and tension latches are provided where appropriate for end-of-chain connection. Chain studs that go into the counterweight assemblies and tension latches are not adjustable. Follow the product installation instructions for chain studs and tension latches.

Chain rods are connected to the door or gate panel hangers and are provided with adjustment. Ensure that the appropriate nuts and washers are used according to the product installation instructions. Make sure that a new cotter pin is used at the bottom of any chain rod to prevent the nut from coming out. Replace any damaged or missing cotter pins.

Chain Adjustment: It should be expected that new chains will elongate slightly more during the first few days of service than in the months of subsequent operation. Some adjustment should be expected after the initial installation. Because of this, it is best to set the chain length so that the chain stud has room for adjustment to shorten the chain (about 0.5" or 13mm). Panels should hang level and even to prevent binding in the guides. When closed and opened the stops on each side should engage together.



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