

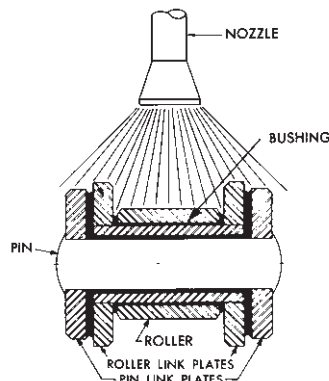
Drives Engineering Information

Lubrication Increases the Service Life

One of the most important factors in getting the best possible performance out of your roller chain is proper lubrication. No matter how well a transmission system is designed, if it is not properly lubricated, it's service life will be shortened.

Lubrication

Wear between the pin and bushing causes chain to elongate. These parts should, therefore, be well lubricated. The clearance between the pin link plate and the roller link plate on the slack side of the chain should be filled with oil. This oil forms a film which minimizes wear on the pin and bushing, thus increasing the chain's service life. It also reduces noise and acts as a coolant when the chain runs at high speeds.



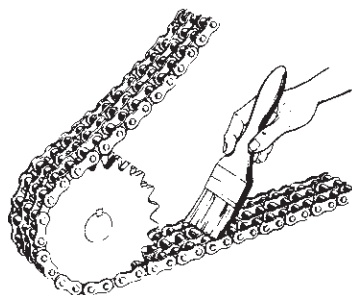
Suggested Lubricants

Only high quality oil should be used to lubricate chain. Neither heavy oil nor grease is suitable. The viscosity of the oil used will depend on the chain size, chain speed, and ambient temperature. The lubricants suggested for specific temperature ranges are given in the table to the right.

Note: Chains with thru hardened pins may wear at an increased rate if they lack adequate effective lubrication.

Temperature Degrees F	Recommended Lubricant
-20 - +20	SAE 10
20 - 40	SAE 20
40 - 100	SAE 30
100 - 120	SAE 40
120 - 140	SAE 50

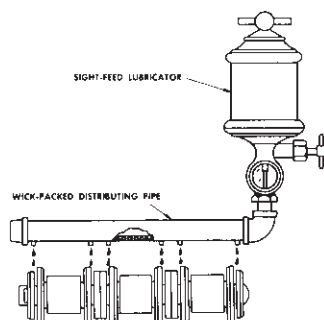
Standard Lubricating Systems:



Manual Lubrication

Oil is applied with an oil filler or brush in the gap between the pin link and roller link on the slack side of the chain. It should be applied about every eight hours or as often as necessary to prevent the bearing area of the chain from becoming dry.

Always turn off and lockout the power switch before lubricating or servicing a chain system.



Drip Lubrication

A simple casing can be used. The oil is supplied by drip feed. Each strand of chain should ordinarily receive 5 to 20 drops of oil per minute, according to increases in the chain speed.

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Troubleshooting Guide

Problem	Possible Causes	What to Do
Excessive noise	<ul style="list-style-type: none"> • Misalignment of sprockets • Loose casings or bearings • Too little or too much slack • Chain and/or sprocket wear • Inadequate lubrication or no lubrication • Chain pitch size too large 	<ul style="list-style-type: none"> • Realign sprockets and shafts • Tighten set-bolts • Adjust centers or idler take-up • Replace chain and/or sprocket • Lubricate properly • Check chain drive selection
Chain vibration	<ul style="list-style-type: none"> • Resonance to the vibration cycle of machine to be installed • High load fluctuation 	<ul style="list-style-type: none"> • Change vibration cycle of chain or machine • Use torque converter or fluid coupling
Wear on inside of link plate and one side of sprocket teeth.	<ul style="list-style-type: none"> • Misalignment 	<ul style="list-style-type: none"> • Realign sprockets and shafts
Chain climbs sprockets	<ul style="list-style-type: none"> • Excessive chain wear • Excessive chain slack • Heavy overload 	<ul style="list-style-type: none"> • Replace chain • Adjust centers or idler take-up • Reduce load or install stronger chain
Broken pins, bushings or rollers	<ul style="list-style-type: none"> • Chain speed is too high for pitch and sprocket size • Heavy shock or suddenly applied loads • Material build-up in sprocket tooth pockets • Inadequate lubrication • Chain or sprocket corrosion 	<ul style="list-style-type: none"> • Use shorter pitch chain or install larger diameter sprockets • Reduce shock load or install stronger chain • Remove material build-up or install side gashed sprockets (mud relief) • Lubricate properly • Install anti-corrosive chain or sprockets
Chain clings to sprocket	<ul style="list-style-type: none"> • Center distance too long or high load fluctuation • Excessive chain slack • Excessive chain wear 	<ul style="list-style-type: none"> • Adjust the center distance or install idler take-up • Same as above • Replace chain
Chain gets stiff	<ul style="list-style-type: none"> • Misalignment • Inadequate lubrication • Corrosion • Excessive load • Material build-up in chain joint • Peening of link plate edges 	<ul style="list-style-type: none"> • Realign sprockets and shafts • Lubricate properly • Replace with anti-corrosive chain • Reduce load or replace with chain or suitable strength • Shield drive from foreign matter • Check for chain interference
Breakage of link plate	<ul style="list-style-type: none"> • Subjected to shock load • Vibration • Moment of load inertia is too large 	<ul style="list-style-type: none"> • Reduce shock (e.g., install a shock absorber) • Install a device to absorb vibration (e.g., tensioner idler wheel) • Chain section should be checked (increase number of strands or select next larger size chain)