

Lubrication and Maintenance Instructions

for Rexnord Leaf Chains

Rexnord Kette GmbH

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Lubrication and maintenance instructions

For Rexnord Leaf Chains.

1. Lubrication

1.1. Ex- Work lubricant of the chain

The chain is lubricated "Ex Work" with RexPro (VSK 001). The lubrication is for original lubrication and corrosion preventive.

1.2 Re- Lubrication

Adequate Lubrication can extend the lifetime of a chain many times. The amount of lubricant is not important, but it must find it's way into the chain joints. The graphic (fig. 1) shows a chain link and demonstrates that the lubricant has to pass a narrow gap between the sideplates in order to enter the chain joint which consists of pin and inner plates.

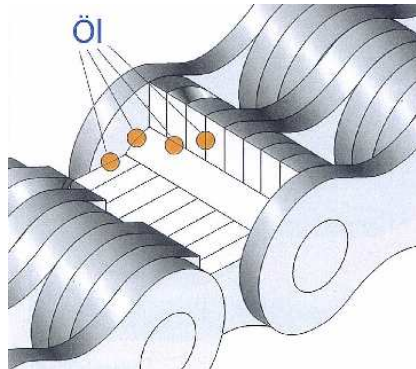


figure 1: cross section of a chain joint

The chain has to be re-lubricated short after start of service. A re-lubrication during the initiation is not required, if the ex-works lubricant is a non- standard lubricant with special properties.

1.2.1 Lubrication Products

Mineral oil ISO VG 68 to 220 at temperature of using (for instance Rexoil, motor oil or gear oil) can be used for leaf chains. The viscosity of the oil depends on the environmental temperature and on the types of lubrication.

Environmental Temperature	Class of Viscosity	Recommended Products*
> - 40°C < - 30°C	VG 15	Klüberoil 4UH 1-15 – Klüber Lubrication
> - 30°C < + 5°C	VG 68	Klüberoil 4UH 1-68N – Klüber Lubrication Anticorit LBO 160 TT – Fuchs DEA
> + 5°C < + 45°C	VG 150	Klüberoil 4UH 1-150N – Klüber Lubrication Anticorit LBO 160 – Fuchs DEA Rexoil – Rexnord Kette
> + 45°C < + 80°C	VG 220	Klüberoil 4UH 1-220N – Klüber Lubrication Rexoil – Rexnord Kette

Indication: Do not use thickening grease or thickening lubricants. Oil containing graphite or molybdenum disulphide should not to be used. The reason is: grease collar.

1.2.2 Lubrication Method

The type of lubrication depends on the environmental conditions. Manual lubrication can be applied by brush, oil can or spray for chain drives with a speed up to 0,5 m/s. Between 0,5m/s and 2m/s you can use the drip lubrication. With a dosing device sufficient oil has to be applied on the high plate cross- section, so that it can penetrate into the bearing areas of the chain.

1.2.3 Intervals of Lubrication

The first lubrication of the chain has to be made when the chain is put into service. Further lubrication intervals have to be applied according to usage.

The quantity of lubricant and the intervals of lubrication have to be chosen in order to keep always enough free- flowing oil in the joints.

Furthermore, a thin oil film has to cover the surface of the chain to prevent the chain from corrosion.

1.2.4 Storage

New Rexnord Chains can be stored in their packing. If the time of storage is longer than 12 months, the chain should be extra covered with a protection oil.

Unprotected, lubricated oil get contaminated with dirt and other material, can damage the chain and other components.

2 Cleaning

If, for any reason the chain becomes contaminated during use so that the penetration of the lubricant oil is no longer guaranteed, it will become necessary to clean the chain. The cleaning can only be made by paraffin derivatives like diesel oil, motor oil, petroleum, cleaning gasoline, etc.

Cleaning by steam jet, the use of cold cleaners or even caustic and acidic products must not be undertaken. These products can damage the chain by hydrogen embrittlement.

3 Inspection

3.1 Plan for Inspection

Regular Chain inspections are the base for achieving the maximum possible service life for the chain.

The following inspection plan should be followed:

every three months

- Control and adjust of chain set-up.

yearly

- Carry out the above mentioned inspection.
- Check the wear of links.
- Measure the chain length.
- Control the cleanness of the components.
- Remove of dirt and accumulation.
- Check rivet and adjustment of deflection roller.
- Check deflection roller wear.
- Check lubrication:
 - Line not clogged?
 - Amount of drips is adequate (Drop lubrication).
 - Oil-level is according to the specification (Drop lubrication).

Important

The chain has to be inspected immediately, if:

Elongation is over 2%.

There are visual wear marks on the plates and / or corrosion.

A mistake in the lubrication system did occur.

A system failure did occur and therefore the chain had a load peak to suffer.

By heavy dirt and hyper humidity.

3.2 Criteria of Control

3.2.1 Elongation due to wear

The examination of a long and stretched piece of chain is required to measure the elongation of wear. The measurement should be made from one middle of the pin to the other middle of the pin.

The number of pitches in the measuring range, multiplied by the chain division gives the nominal size. The length exceeding this nominal size represents the wear.

The permissible elongation due to wear for leaf chains is 3%. With the help of the Rexnord wear ruler the wear elongation can be determined. It is for the pitch size from ½" up to 2 ½".

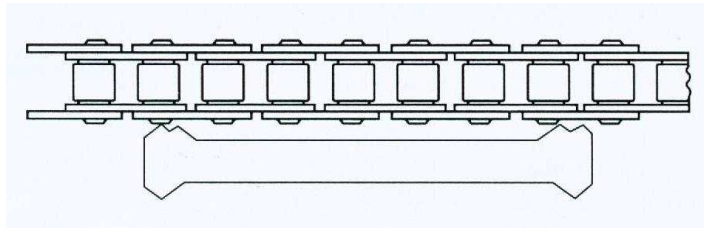


figure 2: Rexnord wear ruler

3.2.2 Tension of the chain

During the inspection the tension of the chain has to be examined and adjusted.

3.2.3 Surface rust

Surface rust can be easily recognised by the brown colour appearing on the plates. The pitting formations (small craters appearing on the surface), result from the corrosion, can be the starting point of fatigue fractures.

If rust on the surface of the chain is determined, you have to increase the lubricant film.

3.2.4 Twisted pins

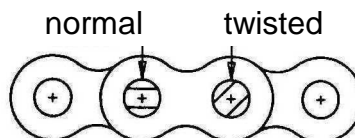


figure 3: turned pins

Does the chain has twisted pins then the blocking of the links is so strong that the press fit between the pins and the outer plates have been overcome.

Chains with twisted pins are no more reliable and have to be replaced.

3.2.5 Stiff links

The chain joint is no more functional if the chain links do not return at the stretched position after abandoning the sprocket. This phenomenon can be due to cold welding, friction corrosion, or strong dirty.

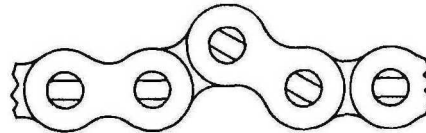


figure 4: stiff links

If the stiff chain joints do not operate after being cleaned and lubricated, the chain has to be replaced.

3.2.6 External wear

Inspections must be made to determine whether the plates of the chain indicate signs of inadmissible external wear. The wear must not exceed 5% of the primary plate cross-section.

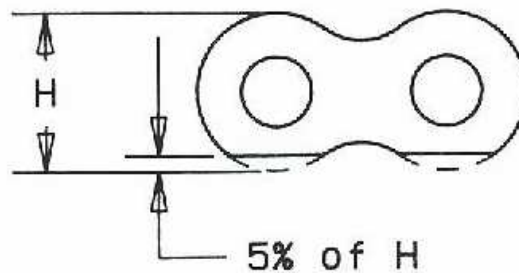


figure 5: plate with external wear

3.2.7 Damages

Do the chain plates show marks of impact or other deformations? Is wear in the holes visible?

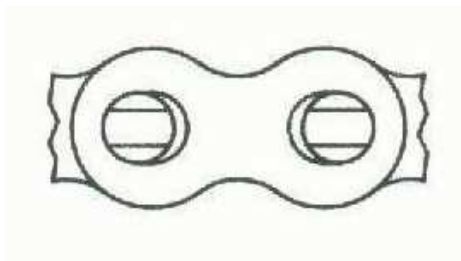


figure 6: wear at plate bore

3.2.8 Broken plates

Broken chain plates can be recognized by an "opening" of the plate in the area of the plate head or by an absence of this head part. This is a fatigue fracture (repeated stress failure) due to an overload.

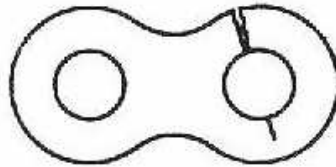


figure 7: broken plate

Corrosion can be a cause of fracture breakage too.

4 Test run

It is advisable to do a test run with the chain to regulate the oil feed, remove oil drips and check if unusual noise and vibrations arise. After the test run the chain has to be examined carefully.

For more information and support do not hesitate to contact

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Product Technology and Application