



# Speciality lubricants for chains

Optimum lubrication for a long service life

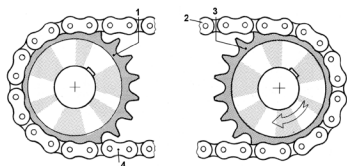
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## Reduce wear on your chains

Chains are important design elements for power transmission. Selecting the right lubricant is therefore paramount - for the initial lubrication by the chain manufacturer as well as for relubrication during operation. The right lubricant helps protect your chains effectively against premature wear and attain a longer chain life.

Chains serve a wide range of uses, e.g. as transport, drive, control or lifting chains. The roller chain is the most common chain design due to its versatility. They are highly stressed, as they run permanently in the mixed friction regime and are subject to high stress and impact loads. Hence, lubricants for chains must have a high-pressure absorption capacity and especially effective anti-wear characteristics, so that wear can be kept to a permissible minimum level despite the prevailing mixed friction conditions.

### Schematic view of a chain drive:



- 1 Driven sprocket, more than one is also common
- 2 Loaded strand
- 3 Driving sprocket
- 4 Return strand

Malfunctions in the operation of a chain are rarely due to faulty design. Premature chain failure is mostly due to inadequate lubrication methods and wrong choice of lubricants.

### Good practice tips:

- To ensure an adequate lubricant is brought to the friction points:
- lubricant must be supplied continuously to all friction points
- overlubrication has to be avoided

## Lubrication of chains - specific requirements

The motion of a chain follows a specific pattern that poses a particular challenge for lubricants:

### Linear contact leads to high surface pressures

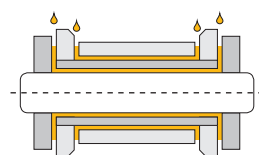


Bushes, pins and rollers have linear contact (see arrows).

As pins, bushes and rollers are cylindrically shaped, contact between them is linear, which causes very high surface pressures. Pins and bushes are under strain as they always touch at the same points. However, rollers constantly change position.

### Friction points in chains are hard to access

#### Lubrication of the chain link



The lubricant must be able to penetrate into the chain link. This means it should be applied directly into the gap between the inner and outer link plate.

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## Selected speciality lubricants for chains

Operating condition	Products	Benefits and Values
Normal temperature (up to 120 °C)	STRUCTOVIS HD series	<ul style="list-style-type: none"><li>– Chain lubricant based on mineral oil and available in different viscosity grades</li><li>– Good wear and corrosion protection</li><li>– Extremely adhesive</li><li>– Noise dampening (depending on viscosity)</li></ul>
	Klüberoil 4 UH1 series	<ul style="list-style-type: none"><li>– Low viscosity lubricating oil</li><li>– NSF H1 registration and ISO 21469 certification</li><li>– Good penetrative properties</li><li>– Corrosion protection properties to maximise component life</li></ul>
	Klüberoil 4 UH1-1500 N Spray	<ul style="list-style-type: none"><li>– NSF H1 registration and ISO 21469 certification</li><li>– Excellent ageing and oxidation resistance</li><li>– Wide service temperature range due to good viscosity-temperature behaviour</li></ul>
High temperature (up to 250 °C)	HOTEMP 2000	<ul style="list-style-type: none"><li>– Fully synthetic high-temperature oil</li><li>– High thermal stability</li><li>– Good adhesion to friction points</li><li>– Insoluble in water, good wash-off resistance</li><li>– Penetrates well into chain joints and friction points</li><li>– Resistance to centrifuging</li><li>– Durable, load-carrying lubricant film</li><li>– Also available in aerosol form (HOTEMP 2000 Spray)</li></ul>
	Klübersynth CH 2 series	<ul style="list-style-type: none"><li>– Synthetic ester oil</li><li>– Low continuous relubrication quantities</li><li>– Good wear protection results in extended chain life</li><li>– Low residue formation</li><li>– Paint-compatible raw materials to avoid paint defects and reworking</li></ul>
	Klüberfood NH1 CH2 Plus series	<ul style="list-style-type: none"><li>– Synthetic high-temperature chain oil</li><li>– Extremely good wear protection - extended chain life</li><li>– Low evaporation loss - reduced oil consumption</li><li>– High oxidation stability for optimised relubrication intervals</li><li>– NSF H1 registration and ISO 21469 certification</li></ul>

It is our aim to offer you high-quality speciality lubricants and services around the globe along with the high technical competence Klüber Lubrication is known for. We meet this aim through our worldwide network of production and sales companies, and our highly specialised local experts are ready to respond to your individual requirements.

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