

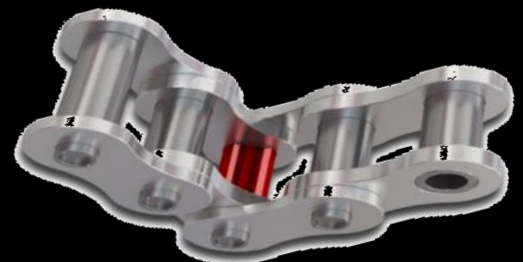
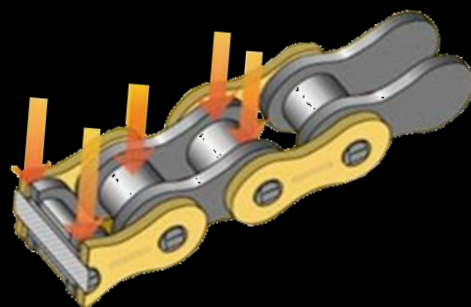


732-651-7070 | sales@sur-sealinc.com



Application Chains Industrial

INTERFLON



MicPol® Lubrication technology



Discover the advantages of our chain lubrication technology

Tests show that relubrication with Interflon extends the service life of chains. That is because the lubricant has excellent penetration power and therefore penetrates deep into the chain joint. Thanks to the addition of MicPol®, this Interflon product provides better and longer lubrication inside the links. It also repels moisture and abrasive contaminants, reducing wear and keeping the chains much cleaner.

As a result, Interflon chain lubricants:

- Extend the service life of chains
- Extend the lubrication intervals
- Repel dirt and moisture
- Reduce corrosion
- Provide better damping

Select the right product for your chains

From drive chains to hoisting and conveyor chains bearing the heaviest loads in mining, steel manufacturing or food safety environments - Interflon always has an appropriate lubricant. Select one of the following lubricants based on the environment in your business:

Chains bearing light to medium loads:

For the lubrication of chains with links of around 1 inch (25.4 mm), you might select Interflon Lube TF. For heavier loads: Interflon Lube EP. Both products are available in various bulk packaging sizes and as aerosols.

Do you work according to work food safety standards or HACCP?

For food industry applications, we advise using the dry lubricant Interflon Fin Food Lube. If the size of your links exceeds 1 inch, the bearing pressure will probably exceed 25 kg/mm². Or perhaps you want automatic lubrication. In that case, too, we advise using Interflon Food Lube G.

Extremely heavy load?

We have chain lubricants for extremely heavy loads of up to 125 kg/mm², as well as special chain lubricants for temperatures from -25°C to +230°C.





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INTERFLON





Chain problems

PAGE 4



Good chain maintenance and lubrication are key to the service life of chain.

Delivery of chains:

All chains are treated with a preservative in the factory. When they are installed on the machine, chains are often not lubricated because it's assumed that this preservative is also a lubricant.

A chain preservative is NOT a lubricant.



Wet lubrication

All types of oil / wet lubricant will attract dirt and dust, leading to accelerated wear of the chain.

No protection

Because they are not or insufficiently protected, chains will start to rust in moist or outdoor environments, leading to frequent seizing.



Dripping

Chains are often excessively lubricated to prevent wear and rust. This often leads to dripping in areas where this is inappropriate.



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Signs of chain wear:

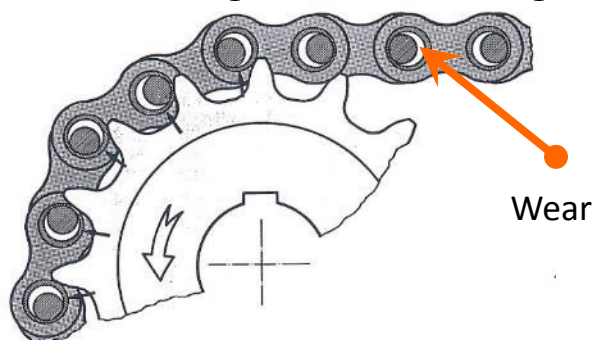
- Rust-coloured dirt on each link, always on the same spot
- Squeaky noises
- Increased energy consumption
- Stretching of the chain

Wear of the chain parts causes stretching:

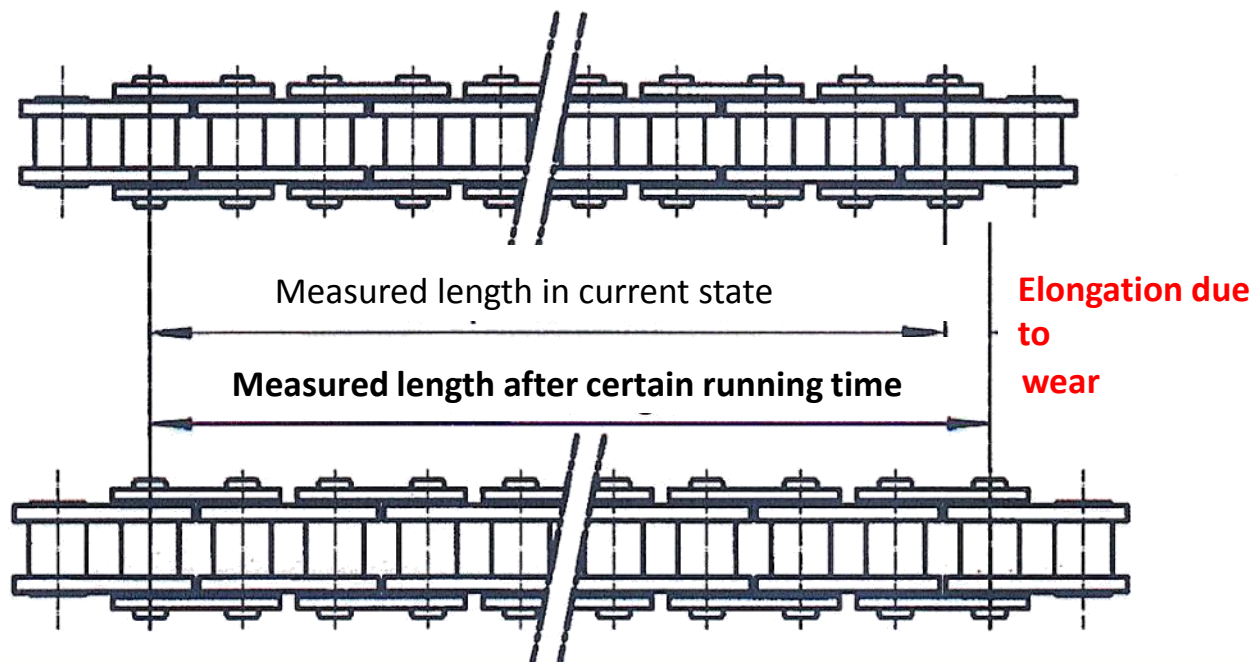
- Poorly running transmission
- Abnormal wear of the gear wheels
- Risk of chain breaking
- Poor positioning

Wear of pin-bush

Leads to elongation / stretching of the chain



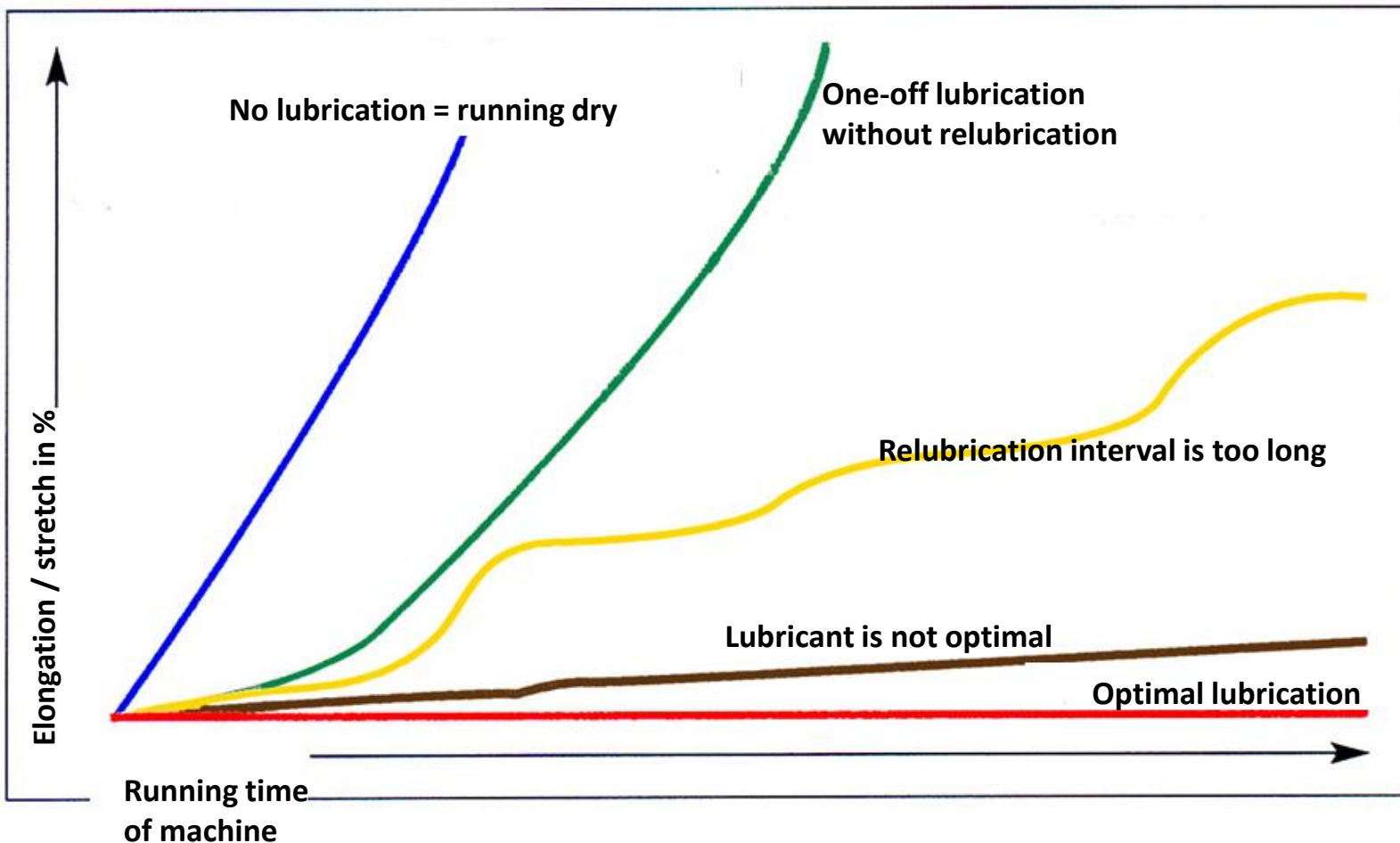
Chain stretching leads to the wear of gear wheels.

**Measurement of elongation due to wear**



Chain lubrication information

This graph shows the importance of appropriate and thorough lubrication.



The level of wear depends on the lubricant and the running time of the machine.





New chain with grease / oil preservative

Procedure for new chains:

- Always remove the preservative using a good quality slow evaporating cleaner.
- Immerse the chain in the new lubricant
- Remove any excess lubricant (do not use a detergent)
- Use an automatic lubrication system if necessary



Procedure for existing chains:

- Remove contamination as much as possible using an appropriate detergent
- After the contamination has been removed, check whether the chain is still within the wear tolerance
- Initially lubricate at short intervals
- Always remove any excess lubricant (do not use a detergent)
- When no more contamination comes out of the chain, extend the lubrication interval.
- Use an automatic lubrication system if necessary



To achieve an optimal result with Interflon lubricants, the chain should first be thoroughly cleaned. Interflon has cleaning products for every application, including biodegradable, food grade and environmentally friendly products.



Nonfood Compounds
Program Listed K1,K3
Registration 140150

Interflon Metal Clean:

Powerful, readily biodegradable cleaning and degreasing agent. Under pressure, so that dirt and grease in hard to reach places can be easily removed with the powerful spray jet.

Interflon Degreaser EM30+:

Very powerful, fast-acting cold degreaser for use in the food processing industry. Has a mild odour. Evaporates slowly so that even persistent dirt is soaked off. Does not leave any residue.



Nonfood Compounds
Program Listed K1,K3
Registration 128500



Interflon Degreaser EM56+:

Powerful, slow evaporating industrial cold degreaser with a mild odour. Very suitable for cleaning and degreasing machines, parts and surfaces with caked-on oil and grease residue.

Interflon Degreaser EM100+:

An extremely powerful cleaner with no volatile organic compounds (VOC). Ideal for places where a reduction in the emission of volatile solvents is required. Has excellent cleaning properties and a very high flash point (162°C). Suitable for use in open and closed immersion systems and sinks. Can be applied easily using a trigger.



FOOD LUBE	FOOD LUBE	FOOD LUBE	FOOD LUBE	FOOD LUBE	FOOD LUBE
G100	G150	G220	G320	G460	G680

Extremely large chains bearing heavy loads may be fitted with grease nipples and can be lubricated with an Interflon grease.

Load	Automatic	Stirring	Product	Temperature	NSF	Dry Lubricant
*****			Lube EP+	-20 +180	-	+/-
*****	*	*	Food Lube G680	-7 +100	H1	-
*****	*	*	Food Lube G460	-9 +100	H1	-
*****	*	*	Food Lube G320	-10 +100	H1	-
*****	*		Food Lube G220	-10 +100	H1	-
****	*		Food Lube G150	-10 +100	H1	-
****	*	*	Lube HT	-25 +245	H2	-
****	*	*	Lube HT/SF	-10 +245	H2	-
***			Food Lube G (aerosol)	-10 +100	H1	-
***	*		Food Lube G100	-10 +100	H1	-
***	*	*	Lube EP	-43 +170	-	+
**	*	*	Food Lube LT	-40 +80	H1	+/-
**	*	*	Food Lube	-20 +180	H1	+
**	*	*	Food Lube AL	-20 +180	H1	+
**	*		Food Lube H32	-10 +80	H1	-
**	*	*	Lube TF	-43 +170	-	+/+
*			Fin Super	-43 +170	-	+/+
Pitch in mm						12,7 25,4 38,1 50,8 63,5 - 76,2
Pitch in Inch						½" 1" 1½" 2" 2½" 3"



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LUBE	FOOD LUBE	FOOD LUBE	FOOD LUBE	LUBE	LUBE
HT/SF	HT	AL	H32	TF	EP

Recommendation by chain manufacturer IWIS

iwis
antriebssysteme
wir bewegen die welt

iwis
antriebssysteme
wir bewegen die welt

IWIS Antriebssysteme GmbH & Co. KG, Albert-Hubertus-Strasse 37, D-41363 München
Interflon Deutschland GmbH
Hertenhof-Süd 6
41334 Nettetal

Postanschrift:
Interflon 17, 20 91
D-41323 Borsdorf

Telefon: +49 (0) 7 80 124-0
Telefax: +49 (0) 7 80 124-100
E-Mail: info@iwis.com
Internet: www.iwis.com

E-Mail: Peter.Grabmann@iwis.com Telefon: +49 (0) 7809-1235 Fax: +49 (0) 7809-1235 Ihre Zeichen: Datum: 11.06.2008

Freigabe für Interflon Food Lube G150

Sehr geehrte Damen und Herren,

nach abgeschlossenen Tests in unserem Haus hat sich eine sehr positive Bilanz über die Wirkung Ihres Produktes **Interflon Food Lube G150** auf die Lebensdauer der getesteten Ketten ergeben.

Auf Grund dieser Resultate erteilen wir die Freigabe, **Interflon Food Lube G150** als Nachschmiermittel auf unseren Ketten einzusetzen.

Die Grundlagen für die Anwendungsbereiche von **Interflon Food Lube G150** sind das technische Datenblatt (TDS) und das Sicherheitsdatenblatt (MSDS).

Diese Freigabe gilt international und darf auch als Service auf Ihrer Web-Seite veröffentlicht werden.

Mit freundlichen Grüßen

IWIS Antriebssysteme GmbH & Co. KG

Peter Grabmann
(V. Peter Grabmann)
Leiter Entwicklung und Versuch

Reg. 10000 München 193 197
Reg. 10000 München 193 197
Reg. 10000 München 193 197
Reg. 10000 München 193 197

Branchen-Buch 100 München
2017 10000-100 100 100

SWT
idm
ecoplus

Release:

The company **IWIS Antriebssysteme GmbH & Co. KG** issued a letter in which they released **Interflon (Fin) Food Lube G150** for use as a relubricant on chains

Release of **Interflon Food Lube G150**

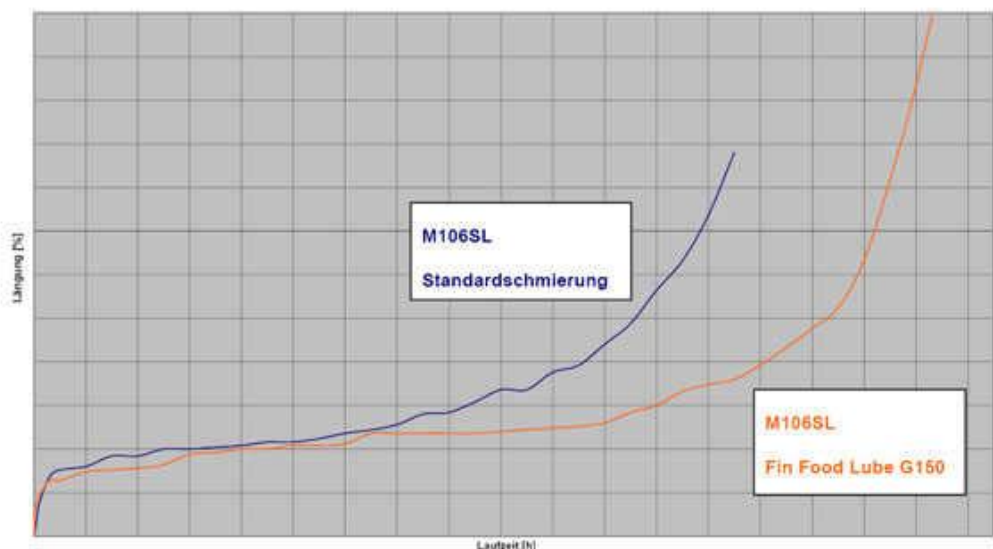
Dear Sir, Madam,

Following the completion of the tests in our company, we can conclude that your product **Interflon Food Lube G150** has a very positive effect on the service life of the tested chains. Based on these results, we have released **Interflon Food Lube G150** for use as a relubricant on our chains.

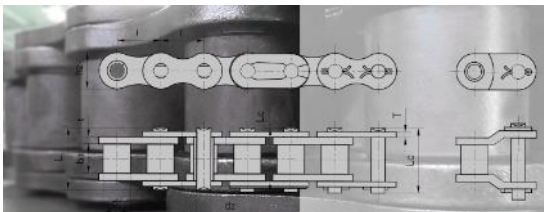
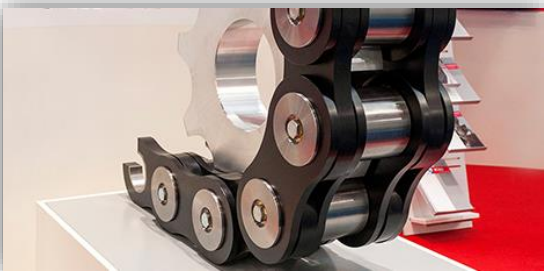
Versuchsergebnis mit Fin Food Lube G 150

Verschleißverhalten M106SL (10 B-1)
IWIS Standard-Schmierung gegen Fin Food Lube G150

iwis
antriebssysteme
wir bewegen die welt



Recommendation by chain manufacturer KÖBO



Release of Interflon products by KÖBO. We have tested your products on our chains and this has produced very positive results. We conducted the tests after a one-of lubrication of the chains. The chain links showed few traces of wear.

The chain links were immersed for 10 minutes and then left to drip for 5 minutes. They were then tightened in the chain tester, loaded with 500 kg and put in motion. Conventional chain lubricants previously tested by KÖBO proved suitable for 600,000 motions. Interflon far exceeds this.

Interflon Lube TF

Interflon Lube HT

Interflon Food Lube

Interflon Lube EP

Interflon Grease OG

Interflon Food Lube G150

Langzeit-Schwenkversuch eines 32B-1 Innen- und Aussengliedes, welche mit Korrosionsschutzöl bestrichen wurden

Versuchsdaten

Innenglied: KÖBO Standard 32B-1
 Aussenglied: KÖBO Standard 32B-1
 Belastung der Kette: 5.000N
 Schwenkwinkel: 10°
 Schwenkfrequenz: 50 Schwenkungen/ Minute

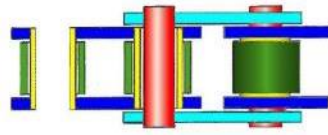
Kettenschmierversuche der Kette 32 B-1

Lfd. Nr.	Anzahl der Schwenkungen	Produktname	Hersteller	Bemerkung/Preis
1	3.295.290	Food Lube G150	Interflon	
2	2.003.490	Fin Grease OG	Interflon	
3	449.340	Fin Lube EP	Interflon	
4	356.490	Fin Food	Interflon	
5	346.650	Fin Grease MP 2/3 + Teflon	Interflon	
6	335.760	Fin Lube HT + Teflon	Interflon	
7	290.280	Fin Lube TF	Interflon	
8	7.260	ungeschmiert		

Wuppertal den 21.10.2003

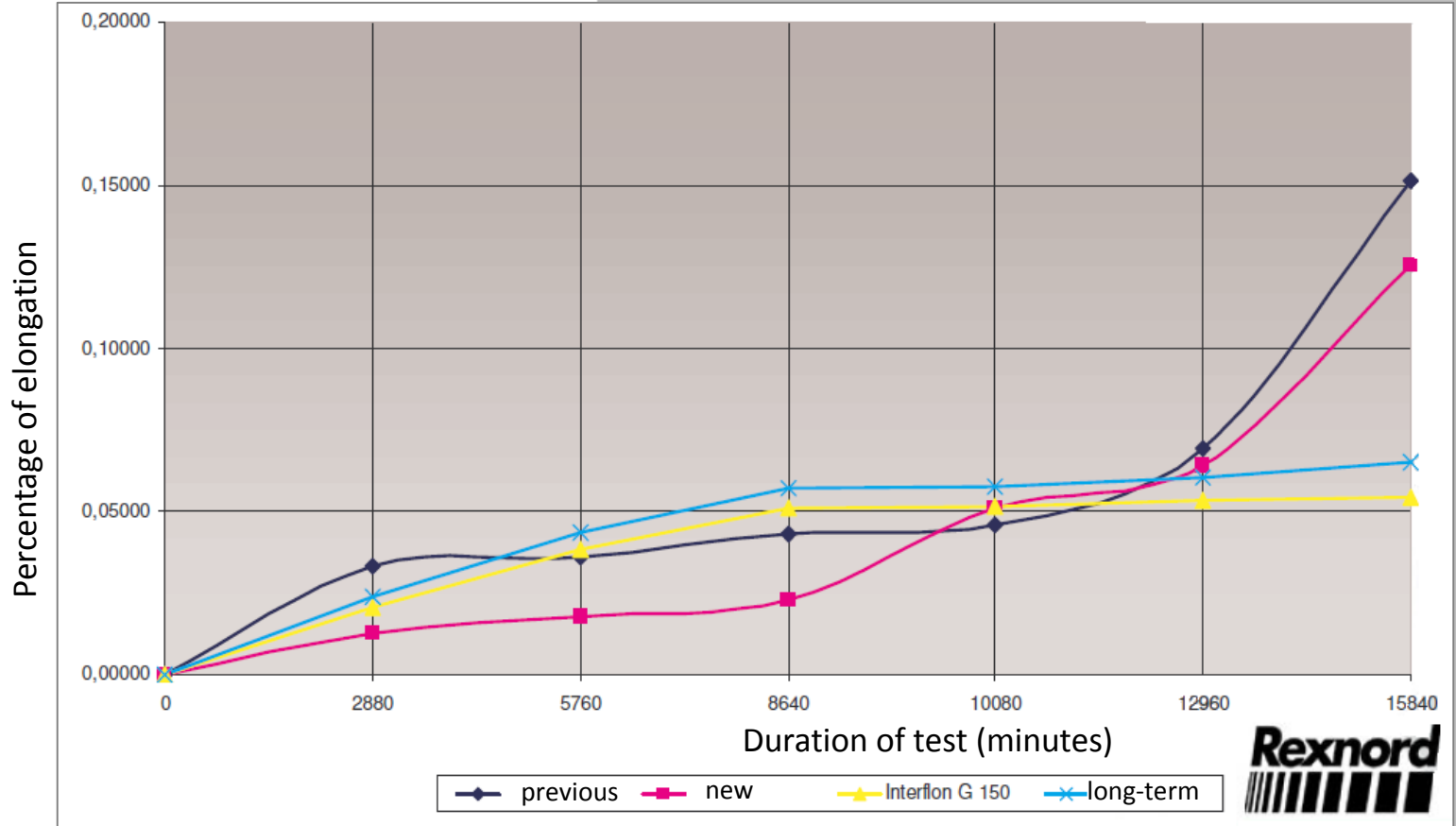
Przebiele
 Dipl.-Ing. Przebiele

Verteiler: Herr Krockenberger, Fa. Interflon
 Fax: 07267/7211#

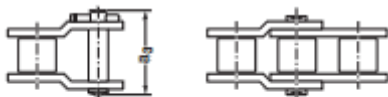
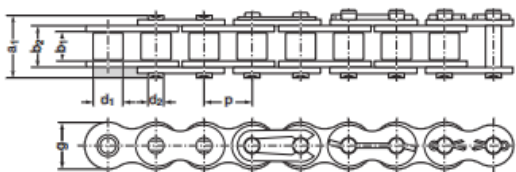


Application: Lubricant test on Rexnord 12B-1 Standard

Stretch - elongation test



Comparative test of new preservative, previously used standard preservative, long-term lubricant and **Interflon Food Lube G150** on Rexnord 12B-1 Standard roller chain



REXNORD

Information

- Duration of test was 250 hours
- Relubrication 92 - 117 and 165 hours



Recommendations by graphic machine manufacturers



MÜLLER MARTINI

So timely lubrication is important, as is critically reviewing the effectiveness of the lubricant that is used. The results of the various lubricants available vary widely.

At Müller Martini we therefore recommend using Interflon **Interflon Lube TF** chain lubricants for the maintenance of our machines



The company

MAN Roland Druckmaschinen AG

has included **Interflon Lube TF** in their list of chain lubricants.



Recommendations by machine manufacturers



MARIANI, which produces innovative PACKAGING and PALLETISING SYSTEMS, uses and recommends **Interflon Food Grease 000** for the centralised lubrication of the chains, pinions and crank mechanisms in the mechanical systems needed to produce containers used in packaging machines.



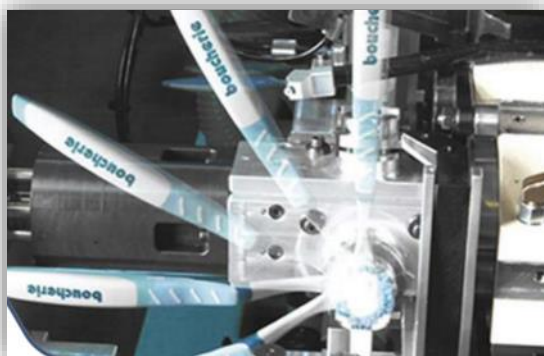
Bos Machines B.V. is specialised in manufacturing automated production lines and machines for the joinery industry.

Interflon Fin Super: lubrication of spindles, guides and chains.



To meet the strict requirements of their customers, the company Boucherie conducted several tests with lubricants for the most extreme applications. Interflon produced the best results thanks to improved and extended lubrication of the various machine parts. **Interflon Lube PN68**
Interflon Food Lube PN32.

For more information, see AS03284.



Recommendations by machine manufacturers



TETRA PAK ITALIANA S.p.A.,
Rubiera (RE), Italy.

Coding of **Interflon Food Lube AL** (NSF H1) for the lubrication of conveyor belt chains. TETRA PAK ITALIANA S.p.A. have awarded product code 70000013743 to **Interflon Food Lube AL** (NSF H1).



Approval of Interflon lubricants
Caljan Rite-Hite LTD hereby confirms that we have approved the use of Interflon lubricants on the components of our conveyor belts.

All drive chains - **Interflon Lube TF.**



Tesoma

TESOMA, Austria: Automatic lubrication of chains in annealing oven used in the production of glass plates. Good, smooth, dry links, including in the hot zones. **Interflon Lube HT/SF** can be applied to hot surfaces. Significant reduction of lubricant consumption in comparison to older machines. Longer lubrication intervals and virtually no wear thus far.



Recommendations by machine manufacturers



FABA TRANSPORTGERÄTE / LASERTECHNIK

At FABA, we now use **Interflon Lube TF** for all our products, from hydraulic elevating platforms to electric pallet trucks, so we are happy to inform you that we have released this lubricant for use.

Interflon Lube TF is applied to chains, sliding bearings and lifting systems.

The switch to Interflon extended the tool life of our systems, which in return led to lower maintenance costs and an improvement of our products.



MARTIN AG
für Umwelt- und Energietechnik

Recommendation by Martin AG, including regarding chain rust at the waste treatment plant in Winterthur, Switzerland.

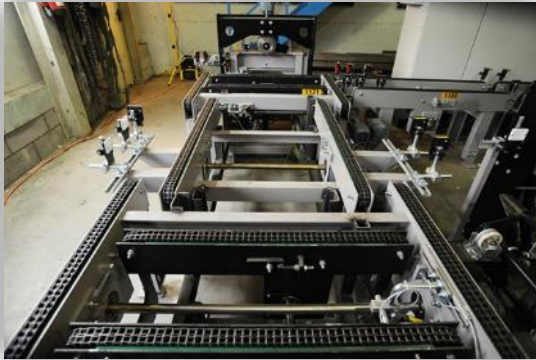
Interflon Lube HT/SF, Interflon Lube HT.



The conveyor chains on the machines manufactured by (S.A.M.M.O.) Unisorting are supplied by Ognibene Chain Technology in Bologna; these chains are pretreated with **Interflon Food Lube.**



Recommendations by machine manufacturers



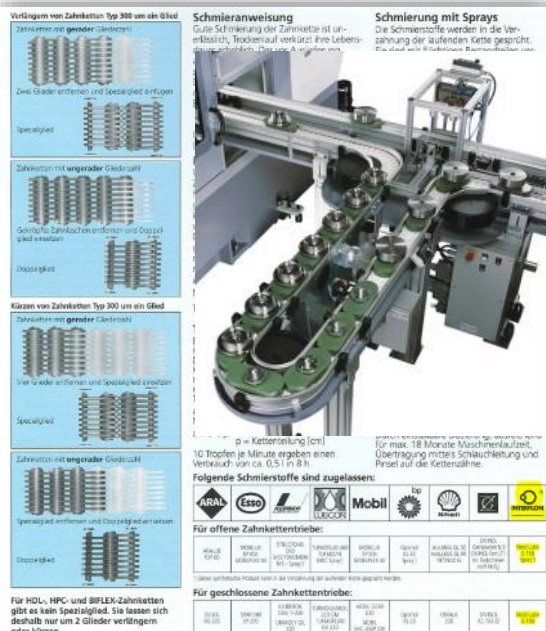
The company MSB Maschinen- und Stahlbau GmbH & Co. KG has included **Interflon Food Lube G 150** in their maintenance and lubrication schedule for the lubrication of the chains on their conveyor systems.



SENZANI BREVETTI S.p.A., Faenza (RA), Italy.
Lubrication of (3/4" duplex) conveyor chains on their product packaging machines.
Interflon Lube PN32, Interflon Food Lube H32, Interflon Food Lube G100, G150, G220.



Installation and lubrication of the gear wheel transmission.
Company: Rexroth Mecman GmbH, Germany.
Interflon products
For detailed information, see AS04062.



Recommendations by machine manufacturers



SCHROEDER

For the centralised lubrication of the conveyor chains on the parquet production machines at their plant, the company **Gebrüder Schroeder GmbH & Co. KG** uses our **Interflon Lube PN 68** and in their lubrications instructions from 08/2006 they require using it for top-ups.



VANRIET

MATERIAL HANDLING SYSTEMS

Interflon Lube TF is prescribed by Van Riet in their maintenance list for their machines / automated sorters. (Section 8.4.1 Lubricants and lubrication frequency)

MOBA

The company MOBA recommends using Interflon products and supplies a spray bottle of **Interflon Food Lube** with every new and used machine. The use of **Interflon Food Lube** is also specified in the lubrication schedule for the machine.



Recommendations by machine manufacturers



Based on lengthy testing, De Witt has decided to use the following Interflon products for the respective applications. For an overview of Interflon products, see AS02209

Interflon Fin Super for chains.



van voorden

At **Van Voorden b.v.** we are committed to technical perfection, which starts with our well trained and very diligent team of staff members. From the users of our products we have learned that Interflon maintenance products have numerous advantages when using and maintaining our machines.

Interflon Lube TF: Guides, chains, gear racks and preservation.



Illig, Germany: Lubrication of machine parts of plastics die cutter (shafts for resetting width and their nuts, conveyor chains, reverse gears, tensioning wheels, supporting strips, height controls on all aggregates) with

Interflon Food Lube AL.



Recommendations by bakery machine manufacturers



APV Baker

APV Baker, UK: **Interflon Food Lube** is used for lubricating the chains of proofing towers. After extensive testing, they have concluded that **Interflon Food Lube** is the best product for lubricating the chains in their proofing towers.

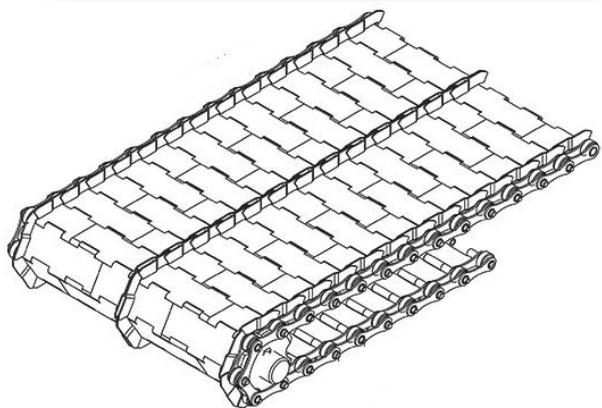


MIWE

In the operating instructions for the Thermo-Rollomat baking ovens, our product **Interflon Lube HT/SF** is prescribed for the drive chains.

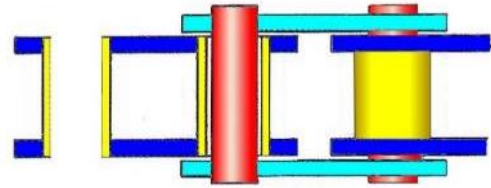
ALLERT® Conveying Technology An Oetiker Company

In the "Maintenance and assembly instructions for hinged steel belts in industrial baking ovens" of the company Kurt Allert GmbH & Co. KG, **Interflon Lube HT/SF** is recommended for the lubrication of the chains.





Pin link chains

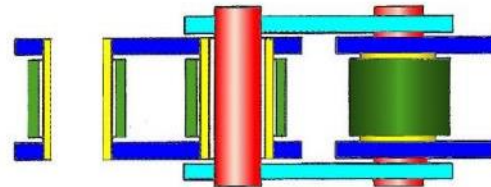


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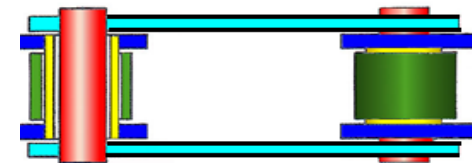
Roller chain



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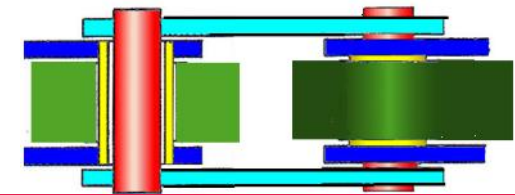
**Long-pitch
roller chains**



39



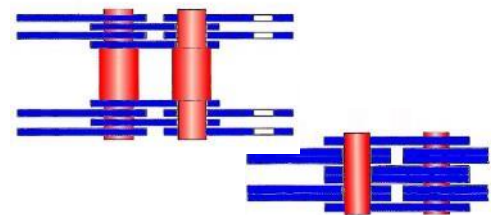
Conveyor chains



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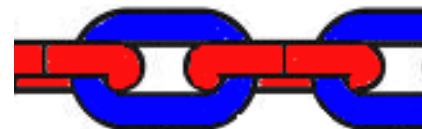
**Gall chains
Flyer chain (Leaf)
hoisting chains**



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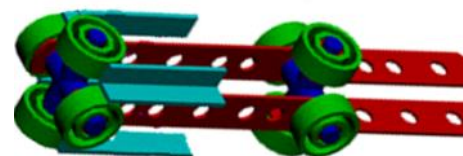
Link chain



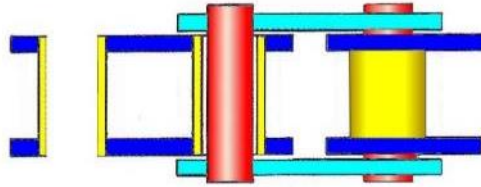
53



Special chains

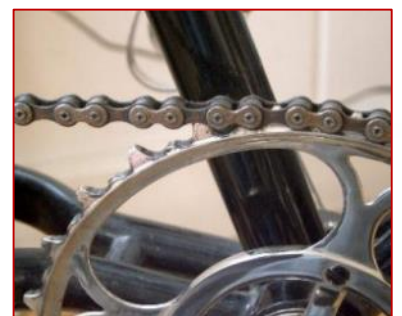


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Pin link chains DIN 8164

Are essentially identical to roller chains, except that they have no rollers.



Application: Drive chain for lock gates



Problem

The drive chain is used to operate the main lock gates at Rosyth Dockyard. The chain is submerged in seawater and operates under heavy loads. As a result of these conditions, the pins and links of the chain rusted and seized up. Due to the poor condition of the chain, more energy was needed to open and close the gates, leading to damage to the transmission system.

Environment

Seawater

Solution

Interflon Grease LS1/2

Apply a thin layer of Interflon Grease LS 1/2 to the pin and bush when installing the chain. Next, apply Fin Grease LS2 at all lubrication points. After placing all pins, thoroughly lubricate bearings with Interflon Grease 1/2 until the grease is visible at the bush.

Result:

- The lubricated pins are in very good condition and continue to operate smoothly, even after 10 years of use in seawater.

Application: Conveyor chains of combine harvesters



Conveyor chains

Problem:

- High friction
- Wear of metal parts
- High cost of replacement parts
- Corrosion

Environment

Dust, water, sand and fertilizer.
Heavy load.

Previous product: Conventional lubricants.

Solution: **Interflon Food Lube G Aerosol**

The lubrication interval of the chains is extended from every 1 to 5 days (depending on the crop) to twice per season (once per month) when using Interflon Food Lube G.

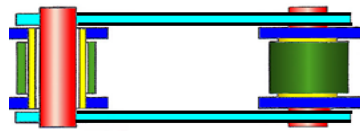
Blow dust away before applying Interflon oil.



Inclined chamber

Result:

This extends the service life of combine harvester chains by a factor of 3 to 5 compared to conventional lubricants.



Application: Chain of Troy wooden roller coaster



Problem

Rexnord chain with a length of 180 metres costs €30,000; total cost plus gear wheels and bearings of €20,000 is €50,000.

Target for tool life is 8 years.

Environment

Hot, dusty and dry

Current product

Mobil chainsaw oil

Solution

Interflon Food Lube G220

Lubrication frequency was once every 250 seconds.

Using Interflon 500 and follow-up steps, it went up to once every 750 and 1,000 seconds.

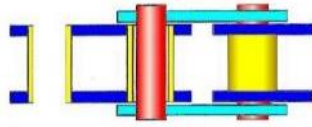


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Result:

- Reduction of lubricant consumption
- Reduction of labour hours
- No stretch and a longer tool life



Application: chain of Superwirbel roller coaster lift



Problem

A lot of contamination on the chain, consisting of sand and dust. Short tool life due to wear.

Environment

Sand, dust and damp

Current product

Wurth chain oil

Solution

Interflon Grease OG

Clean, transparent universal grease for premium general lubrication purposes. For longer maintenance-free service. Formulated to form a tough durable film that prevents metal-to-metal contact and seal out water and contaminants to lubricate even under the most demanding conditions.

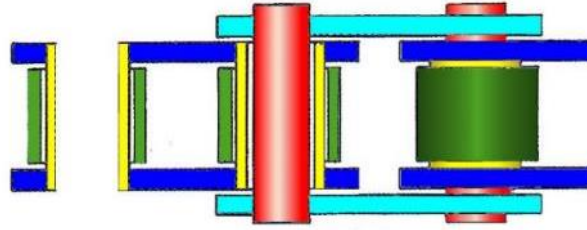


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Result:

- Clean lubrication
- Reduction of labour hours
- Penetration into the core
- No or virtually no stretch





Roller chain DIN 818

Most commonly used chain type, less wear than with pin link chain.



Simplex



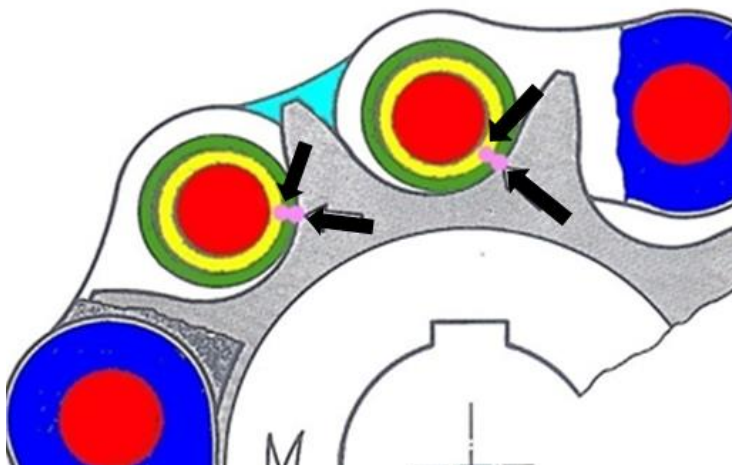
Duplex



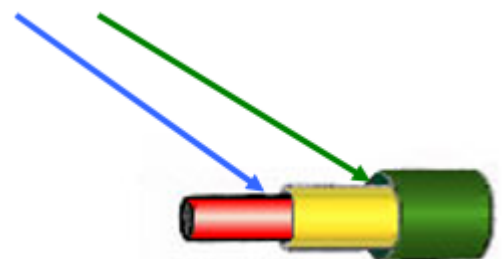
Triplex

Used for:

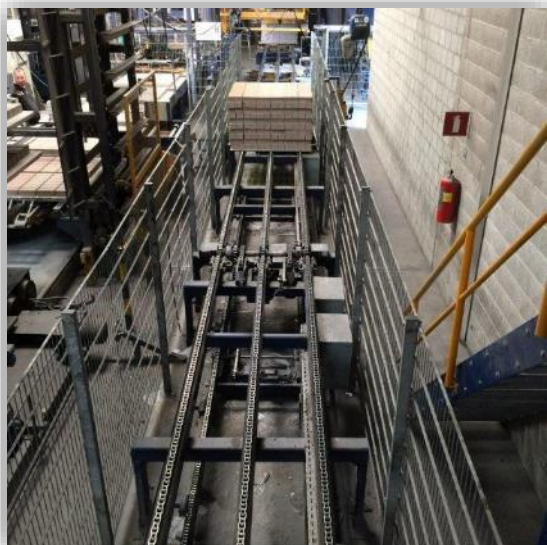
- Power drive (motor)
- Steering (camshaft)
- Transport (conveyor belt)
- Hoisting (forklift truck, crane)



2 sliding surfaces



Application: conveyor chain at a concrete plant



Problem

Transmission of conveyor belt for rocks regularly fails due to friction and wear.

Unnecessary stoppages.

Use of the current oil leads to the adhesion of sand / concrete dust to the chain, resulting in heavy friction and wear.

Chains and chain wheels are regularly replaced.

Environment

Dry, dust, sand / concrete.

Current product

Conventional chain oil.

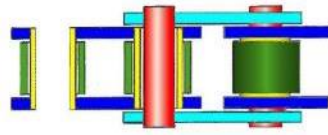
Solution

Automatic lubrication system with **Interflon Lube PN32**

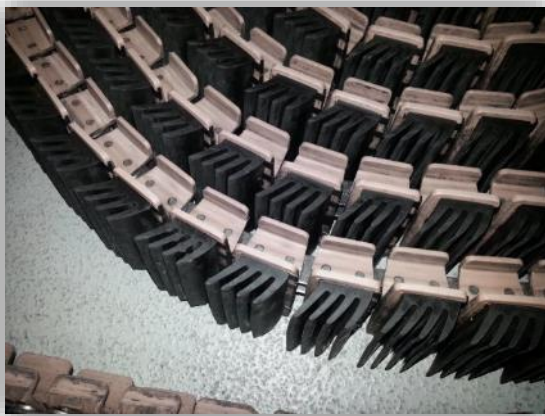


Result:

- No more thermal failures
- Less adhesion of sand / concrete dust
- Longer tool life
- Cost saving of €2,500 (purchase price, excluding installation and cost of stoppages)



Application: chain



Problem

High wear of clip-on conveyor chains.
1/2" chain with guide blocks.

A lot of corrosion and wet floors due to use of large amounts of water for rinsing and lubrication. Many thermal failures of the transmission due to high friction caused by poor lubrication with water.

New chains cost €30,000 excluding installation costs.

Current product

Water

Solution

Initially **Interflon Food Lube AL** ; they have recently switched to **Interflon Food Lube G150** , which produces a similar result.

Tool life of chain has been extended by 6 months to at least 1.5 years.

Significant reduction of maintenance/repairs (replacing the chain took 8 working days).

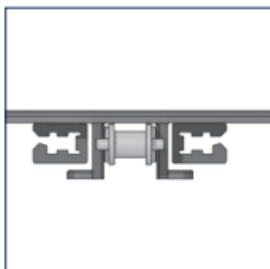
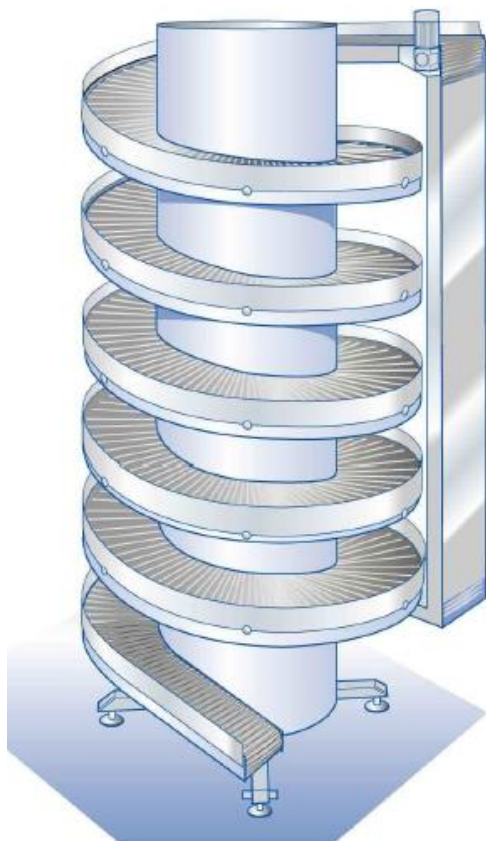


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Result:

- No more thermal failures
- Total cost saving of €114,000
- Water consumption reduced by 90,000 m3

Application: Release by AmbaFlex



As AmbaFlex also manufactures machines for the food industry, they must comply with strict hygiene standards (HACCP, EHEDG, etc.).

Partly because of this reason, we were looking for a reliable lubricant manufacturer which produces products for this specific market and is able to provide equate support and service. Based on these considerations, we selected Interflon Holland b.v. At AmbaFlex we currently use two Interflon lubricants to our complete satisfaction and we achieve good results with these products.

For the guides, we recommend using:

Interflon Food Lube PN32

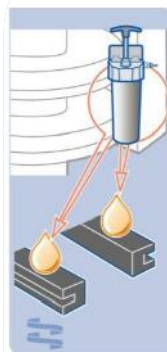
Interflon Food Lube PN32 has been approved by the prestigious testing institutes NSF, FDA and NFA, which test the composition of lubricants to determine if they can be approved for use in the food industry (as they may come into contact with food products).

AmbaFlex therefore advises its customers to use Interflon lubricants for optimal maintenance with guaranteed food safety.

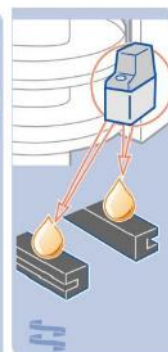
Marketing department

AmbaFlex Specialty Conveyors.

Belt guide slide

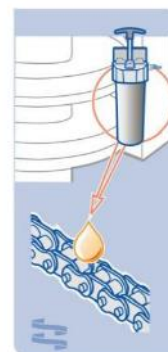


Manual

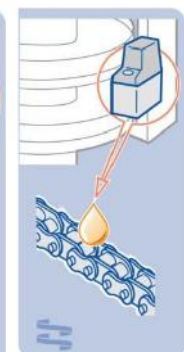


Electric

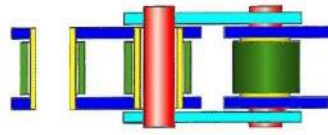
Chain lubrication



Manual



Electric



Application: chain of Ploeger EPD 530 combine harvester



Problem:

Chains of the combine head

A lot of wear, contamination and unnecessary stoppages. Costs of machine stoppages: €1,000 an hour.

Environment

Damp, caustic, outdoors, corrosive.

Previous product: Mobil Synthetic Chain Lube.

Solution:

Interflon Eco Degreaser EM100+

Interflon Food Lube (aerosol)

Interflon Grease OG (aerosol)

Degrease chains with Interflon Eco EM100+ and blow dry. Then lubricate with Interflon Food Lube, allow this to evaporate and then seal with Interflon Grease OG.

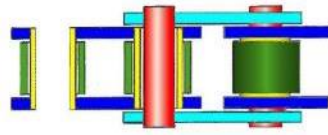


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INTERFLON

Result:

- Total cost saving per season: €1,920
- From daily lubrication to lubricating only once per season. Reliable performance in the busy harvest season



Application: Mikron VCE1600 CNC counterweight chains

Problem

Counterbalance chains do not move very far during normal cycles but are vital for precision work. If they are not properly lubricated/maintained, they can jam during precision work.

This causes the milling head to jerk, causing machining problems and loss of production.

The chain has a tool life of 1 year.

New chains cost approx. €1,390 each and there are two on the machine, which comes to a total cost of €2,780. Replacing the chains costs approx. €1,250 plus one day of lost production.

Environment

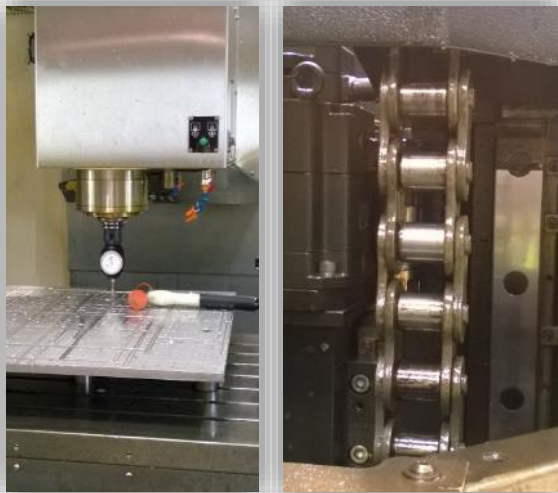
Dry and hot workshop

Current product

Standard chain oil

Solution

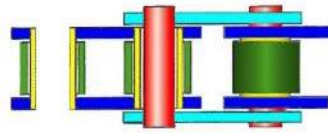
Interflon Lube EP



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Result:

- Annual cost saving of €4,000
- Fewer product rejects
- Consumption is only 4 spray cans of Interflon Lube EP a year.



Application: Chains in the printing industry



Various printing machines, including Komori and Man-Roland.

Problem

Chains are too greasy, leading to the adhesion of paper dust and anti-set-off spray powder (see picture). Continued lubrication makes the chain so dirty that fat particles drip on the paper to be printed.

Environment

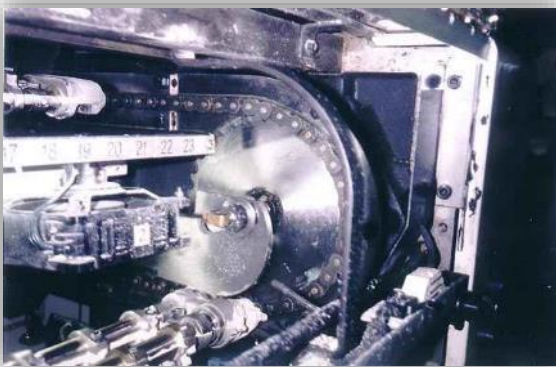
Dust, dry and anti-set-off spray powder

Current product

Standard chain oil

Solution

Interflon Lube TF



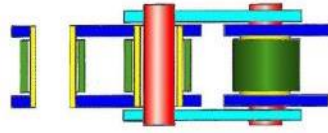
Anti-set-off spray powder



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Result:

- Clean chain and no more dripping
- Less wear
- Manufacturer complemented the printing company on the good state of the machine



Application: Heidelberg Varimatrix chain



Problem

Contaminated chain, had to be regularly cleaned.
The client also wanted to save energy.

Environment

Dust and dry

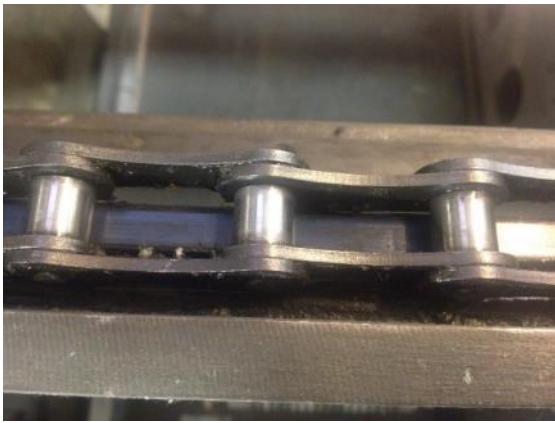
Current product

Shell Tellus 32

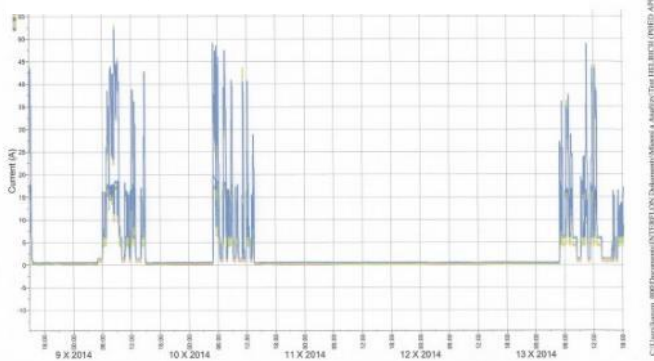
Solution

Interflon Food Lube LT

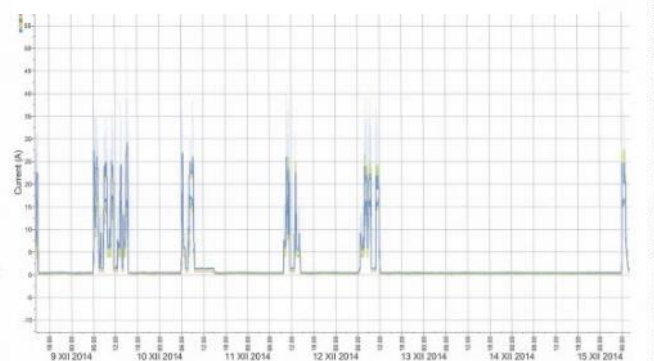
Clean the chains with Interflon Degreaser EM30+. Apply Interflon Food Lube LT lubricant to the chain manually and use it to fill the centralised lubrication system.



Measurement of electricity consumption with Shell lube



Measurement of electricity consumption with Interflon lube



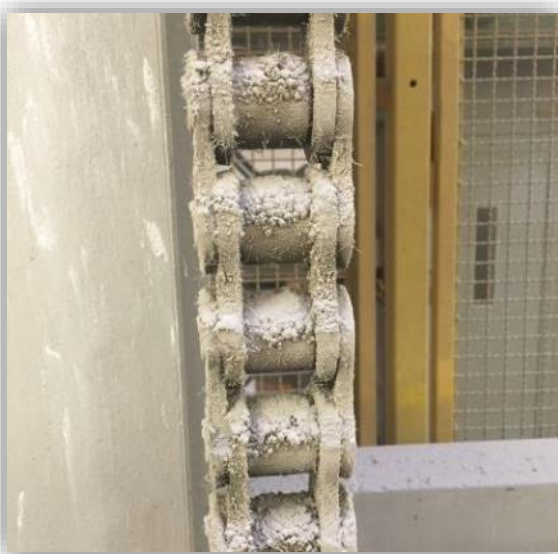
Result:

- Energy saving of 25% (€1,285)
- Clean chain
- No dripping on products

Roller chain



Application: Chain lift for building materials



Previous situation

Problem

The chain lift was not lubricated because of the high dust levels. The customer was also interested in reducing the energy consumption needed to drive the conveyor chain.

Environment

Dust and sand

Current product

None

Solution

Interflon Lube TF



Lubricated with
Interflon Lube TF



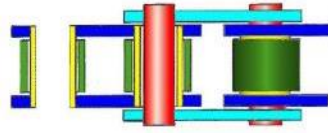
The chain, which was cleaned with Interflon Degreaser EM30+ using a steel brush and blow dried, was lubricated five times at intervals of once every fourteen days. The lubrication frequency is now once every three months



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Result:

- Clean chain
- Longer tool life
- Annual energy saving of €1,000



Application: IWIS triplex chain of Dumoulin bubble gum machine



Problem

Previously, Shell 460 oil was used and the chain had to be lubricated once a week. The chain had to be replaced after 1.5 years because it had too much play and had rusted. The Shell oil ran off the chain when it got wet. The costs of two chains, including installation costs, total €7,250.

Environment

Hot, dry, wet.

Current product

Shell 460 oil

Solution

Interflon Food Lube

Thanks to the use of Interflon Food Lube, there is no more play on the chain, nor any rust, and no replacement has been required so far.



Dumoulin machine

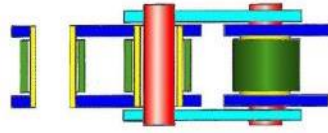


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INTERFLON

Result:

- lubricating once a month instead of weekly
- Doubling of tool life
- Cost saving of €14,500



Application: chain conveyor at concrete plant

Problem

Major problems with the conveyor due to very heavy wear, products falling off, thermal cut-offs. This led to stoppages and high maintenance costs.

Environment

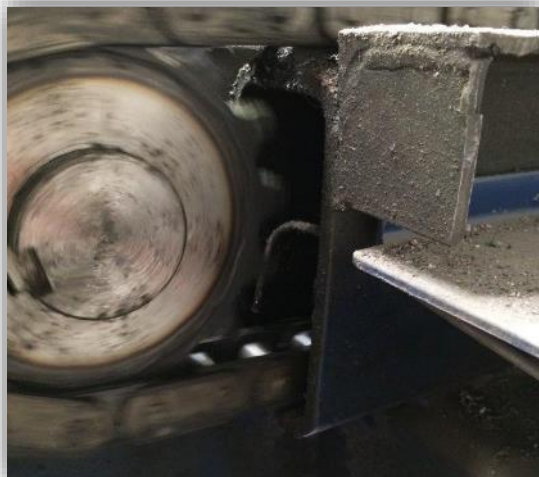
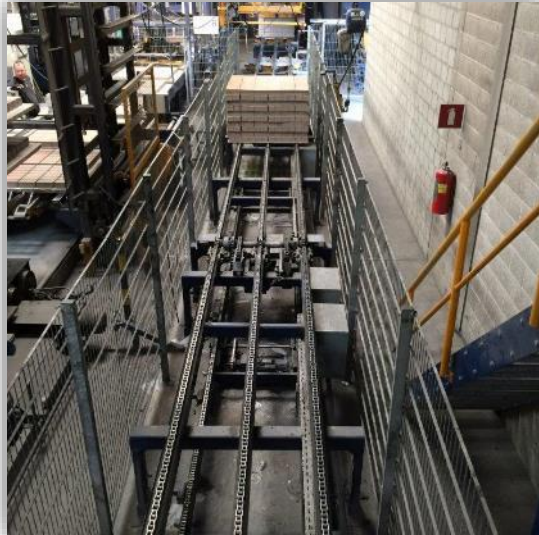
Sand / stone dust

Current product

None

Solution

Application of Interflon Lube PN32 using a lubrication unit.



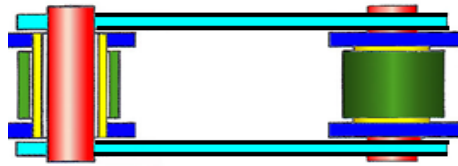
Result:

- No more failures
- Chain runs smoothly without thermal failures
- Reduction of labour hours
- Uptime



Long-pitch roller chains

PAGE 39



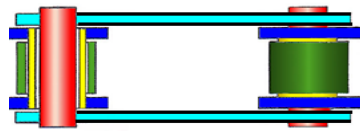
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Long-pitch roller chains DIN 8181

Long-pitch roller chains have the same measurements as the 8187/8188 roller chains, expect that they don't have a double pitch.

Some examples





Application: Release by Köbo Nederland BV



Köbo Nederland BV, a company with over 100 years of experience that specialises in non-standard conveyor chain and precision roller chains, is experiencing an increasing demand for maintenance-free and/or low-maintenance solutions.

With the addition of Interflon products, Köbo Nederland B.V. now has a complete range of products and services enabling them to supply chains with Interflon lubricants for various applications. Experience has shown that chains lubricated with Interflon have a significantly longer life than conventionally lubricated chains.



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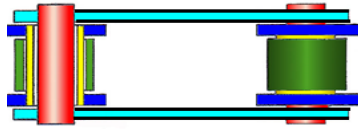
INTERFLON



KÖBO

The Chain People

Long-pitch roller chains



PAGE 41

Application: Bobst 1600 conveyor chain.

Problem

The two connected chains (originally supplied by the manufacturer Bobst) are lubricated using an automatic system (brand SKF) and are used to feed cardboard sheets into the Bobst 1600 die cutter: pitch: 75 mm; roller: 15 mm;

Environment

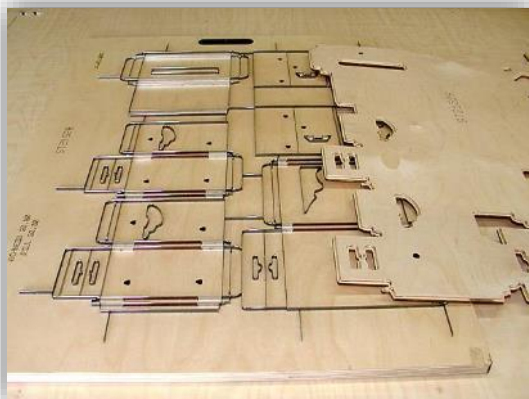
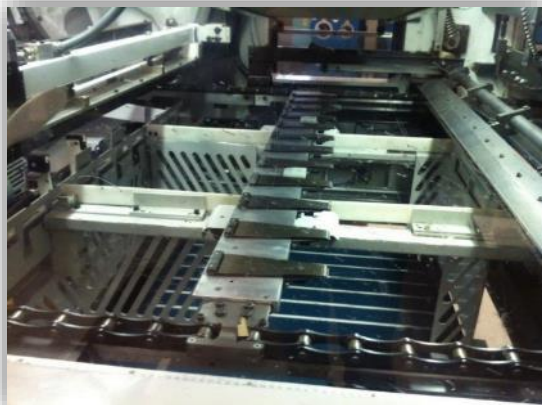
Dusty, dirty, damp, warm, waste and dust from cutting the cardboard.

Previous product

Mobil Gear 600 XP 220

Solution

Interflon Food Lube G150



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INTERFLON

Result:

- Energy saving of 5.11%
- Reduction of labour hours

Long-pitch roller chains



Application: Automatic lubrication system for conveyor chain

Bobst die cutter type SPO 2000 / SPO 203

Problem

Heavy lubricant consumption

Current product

TOTAL CORTIS SHT 200

Solution

Interflon Food Lube G150

Result

Oil consumption decreased by 4 litres in 3 - 4 weeks; cost saving of 67 - 75%.

Reduction of lubrication cycle by 50%.

Average energy consumption is now 21 A with peaks of 30 A, where it used to be 27 A with peaks of 40 A.

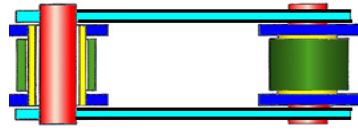


 **BOBST**

Result:

- Reduction of CO2 emissions
- Energy saving of 7 - 22.5%
- 70% less lubricant consumption
- 4 machines = annual cost saving of €6,905

INTERFLON



Application: Cleaning a new Bobst SP 142 chain.



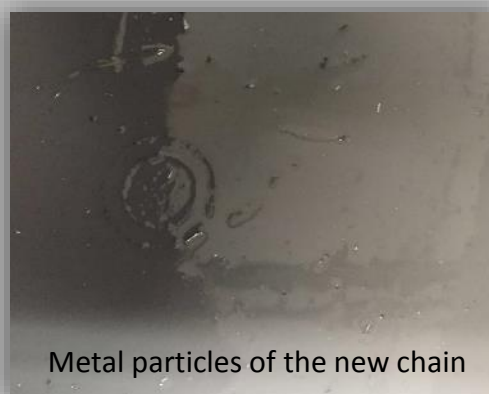
Cleaning a Bobst chain with Interflon degreaser EM56+

The picture below shows the metal particles of a new chain.

Chain are not cleaned when they are assembled, leading to accelerated wear.

Future method

- Immerse the chain in **Interflon Degreaser EM56+**.
- Blow clean with air
- Immerse in **Interflon Food Lube**.
- Install the chain on the machine
- Fill the automatic lubrication system with **Interflon Food Lube G100/150**

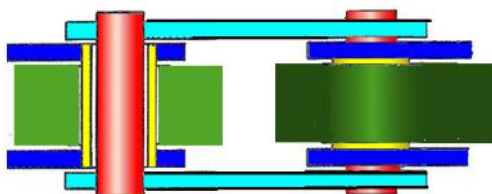


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INTERFLON

Result:

- Service life of the chain has been extended
- Reduction of maintenance hours
- Energy saving
- Quick payback period



The conveyor chains DIN 8165 and DIN 8167

are updated versions of the old pin link chains and very well suited for all types of conveyor lines (e.g. stone industry, wood industry, canned goods industry, automotive industry, etc.).

Metric pitch sizes and conveyor models without or with rollers or track rollers, including with straight and curved carriers with or without holes.



Application:



Problem

Chain is not lubricated; the rollers have been so heavily worn down that the chain links drag over the guide strip and are therefore also worn down.

Tool life of the chain is 8 years

A new chains costs approx. €7,500

Including installation costs, approx. €10,000

Length: 2 x 20 metres

Pitch: 3"

Roller diameter: 30 mm

Material: Stainless steel

Environment

Wet / damp

Current product

None



Solution

Interflon Food Lube G 150 in combination with an automatic lubrication system.



Result:

- Smoothly running chain
- Visible reduction of damage
- No elongation

Conveyor chains



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Application: Chain of carrot sorting machine



Problem

Contamination of the chain due to sand and juices.

Chain has an average tool life of 6 seasons.

Buying a new chain costs €14,000 plus installation costs.

Environment

Sand, damp and carrot juices

Current product

Conventional oil

Solution

Interflon Lube PN

They have now started to use **Interflon Lube EP** to extend the tool life.



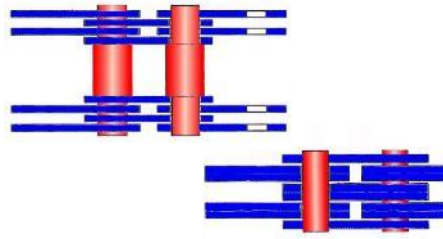
Result:

- With Interflon Lube PN32, tool life has been extended by one year and is now 7 seasons.
- They are trying to extend it to 8 seasons with Interflon Lube EP



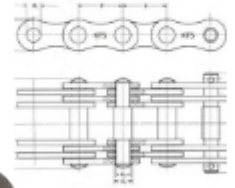
Gall chains hoisting chains

PAGE 47



Gall chains

Gall chains are used for loads that are exposed to heavy forces at low revolutions.



Flyer chain DIN 8152

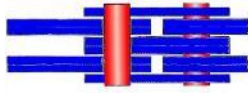
Flyer chains have been certified according to ISO 4347 and DIN 8152. They are used as load-bearing chains in cranes, lifting systems and forklift trucks.



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Gall chains

Hoisting chains



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Application: Chain of dam slides

Problem

The existing protective layer of grease had become old, dry and hard. The minimum protection and lubrication requirements were not being met.

Duration of the work when applying the traditional method: 1 Month (160 hours) per gate (approx. €41,000.00). At the client's request, the chains were to be cleaned and lubricated on-site without being disassembled.

Current product

Conventional protective grease

Solution

Interflon Lube TF

Interflon Bio Grease MP2

After cleaning the chain, apply Interflon Fin Lube TF with a brush or sprayer and wait until it has thoroughly permeated all parts (link/bush/roller/pin); then apply the protective layer of Interflon Bio Grease MP 2 with a brush and/or sprayer.

Result:

- Duration of the work when applying Interflon technology + cryogenic cleaning: 1 week (40 hours) per gate (approx. 10,400.00).

Direct cost saving: €30,600

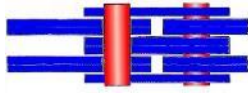


INTERFLON



Gall chains

Hoisting chains



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Application: Inclined chain



Problem

The links seize up due to the damp conditions and rust. The conventional grease that is currently used is not water-resistant. This chain has more than 4,000 lubrication nipples.

Environment

Wet / damp

Current product

Conventional grease

Solution

Interflon Grease LS1/2

This inclined chain must be able to pull more than 1,200 tonnes out of the water.



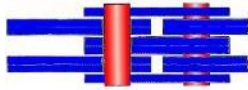
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Result:

- No jamming cables
- Reduction of maintenance / repair hours
- Cost saving

Gall chains

Hoisting chains



PAGE 50



Application: lifting chain of BT forklift truck



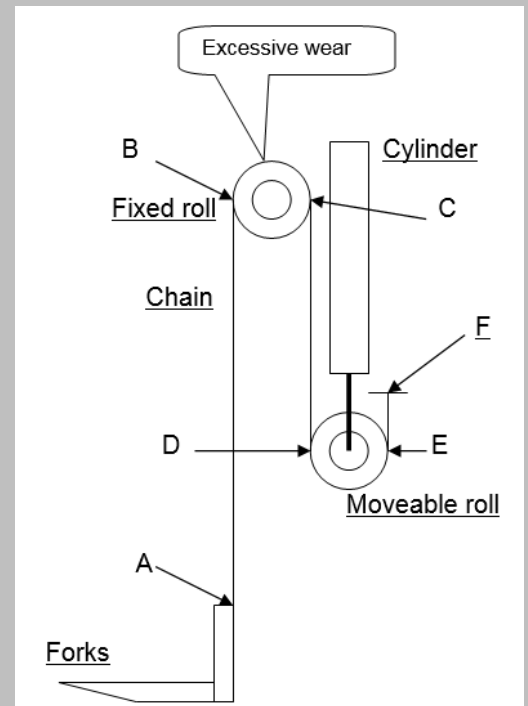
Problem:

Excessive wear of the part of the chain that lies over the roller when the forks are in the lowest position. The chain wears the most between points A and C, with the chain part between point B and C experiencing extreme wear. Wear is normal between points C, D, E and F. A new chain is 381 mm over 20 links. A worn chain is 389 mm over 20 links (2% stretch).

Environment
dusty

Current product
Various products

Solution
Interflon Lube TF



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Chain brand:
Rexnord 3/4, 6x4.



INTERFLON

Result: Clean lubrication without adhesion of dirt and dust. Lube TF also ensures there is less wear. After one year the stretch of the chain (with more than 20 links) had increased from 381 mm to 381.5 mm. Previously this was 389 mm.

Application: Trepel cargo loader chain



Problem

Heavy wear of the lifting chain due to adhesion of dust and dirt.

Each chain costs €600 (4 x = €2,400)

Environment

All weather conditions

Current product

Conventional chain oil

Solution

Interflon Lube TF

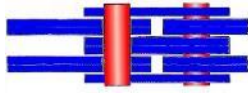


Result:

- Clean chain
- Tool life extended by 2 to 4 years
- Annual cost saving of at least €1,200
- Reduction of maintenance hours

Gall chains

Hoisting chains



PAGE 52



Application: Chain and guide of Hyster lift



Problem

Hyster lift installation, used for opening and securing the tail of a Boeing 747. It is important to keep in mind the fact that the Hyster vehicle and the chains ensure that the weight of the tail is securely balanced.

Environment

All weather conditions

Current product

Classic SAE 40 oil

Solution

Interflon Degreaser EM30+

Interflon Lube TF

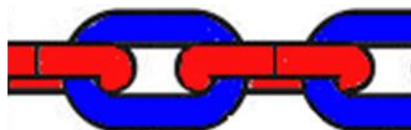
Interflon Grease OG



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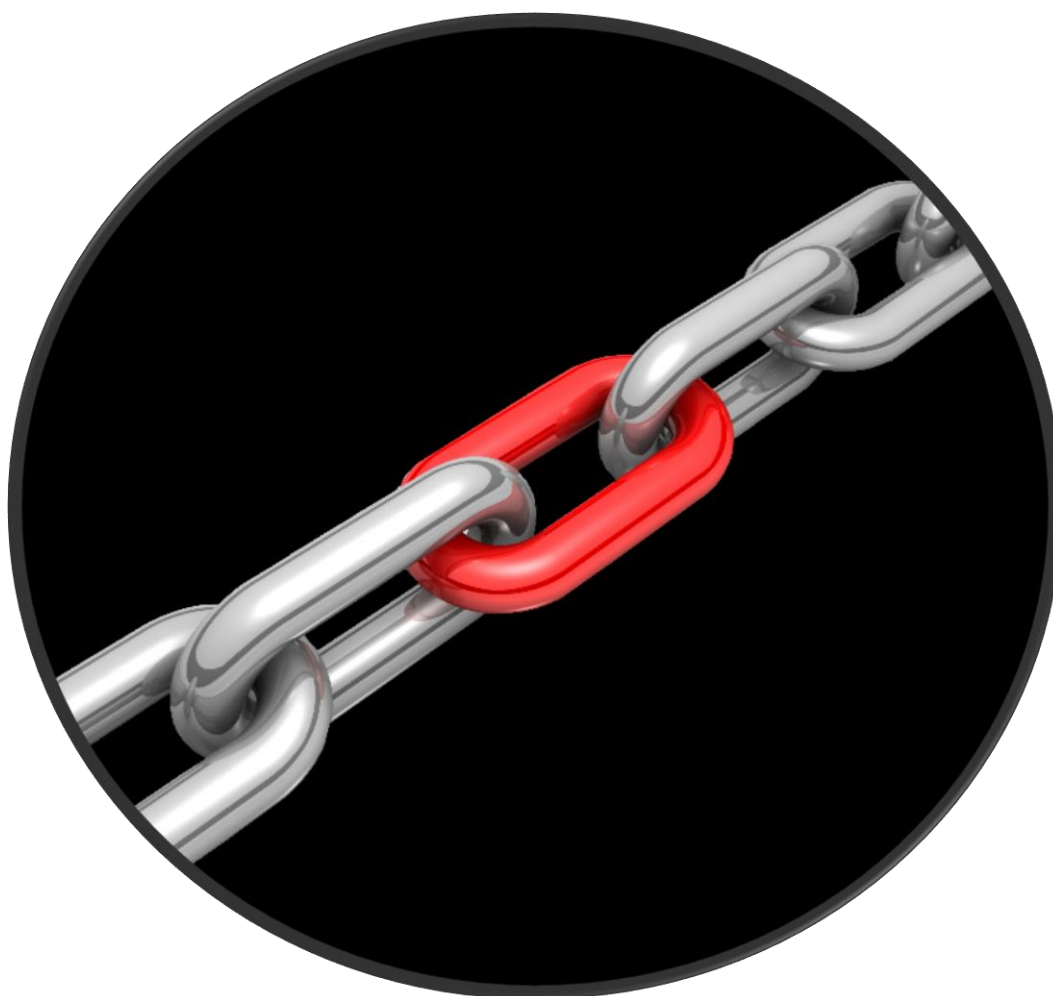
Result:

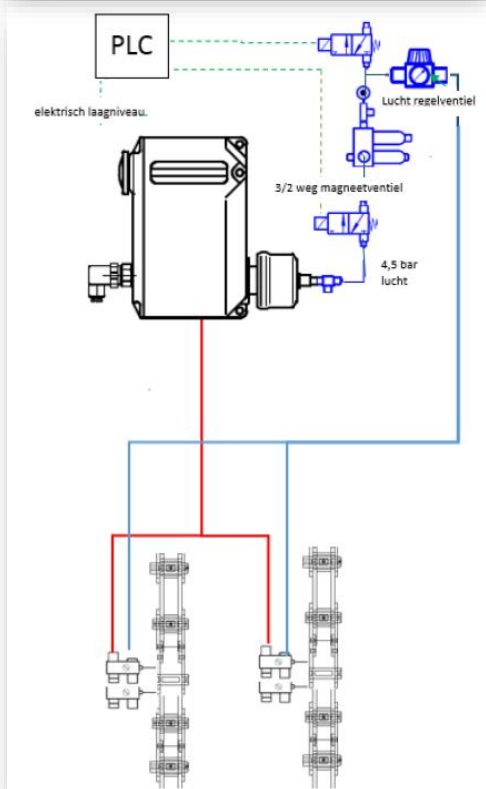
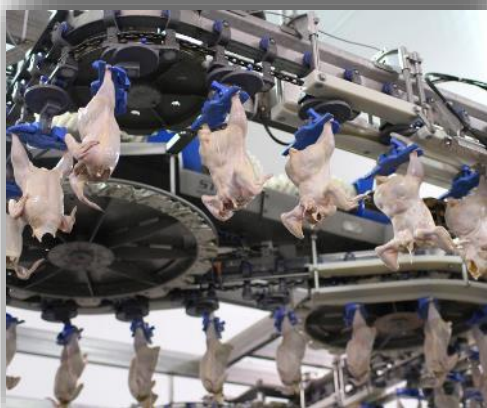
- Chain is now cleaned only once a month instead of once a week
- Reduction of maintenance hours
- Annual cost saving of €4,320



Link chain / anchor chain DIN 765, DIN 762, DIN 766, DIN 5685

A link chain / anchor chain is the simplest type of chain, consisting of directly joined, usually torus-shaped links.



Application: Linco conveyor chain Automatic lubrication system**Problem:**

Wear, high replacement costs. Maximum tool life of the chain is 2 years. Replacing the chain costs €70 per hour. And it takes 7 hours (15 men). Total cost is €70,000.

Environment:

Fluctuating temperatures, high humidity and wet.

Product used: None.

Solution:**Interflon Food Lube AL**

Tool life doubled to 4 year.

Annual cost saving due to reduction in man hours of €3,700. Total annual cost saving is €38,700.

Advantages:

- No contamination
- Major reduction of friction and wear
- Suitable for use in HACCP environments (NSF-H1).

Result:

- Food safe lubricant
- Service life extended by 100 - 150%
- Less stretching / shortening
- Reduction of labour hours

Application: Capway spiral cooler.



Problem

With the current lubrication there is a lot of contamination, leading to a lot of friction in the system.

Jerking motions.

Environment

High humidity.

Current product

BelRay chain oil in automatic lubrication system.

Solution

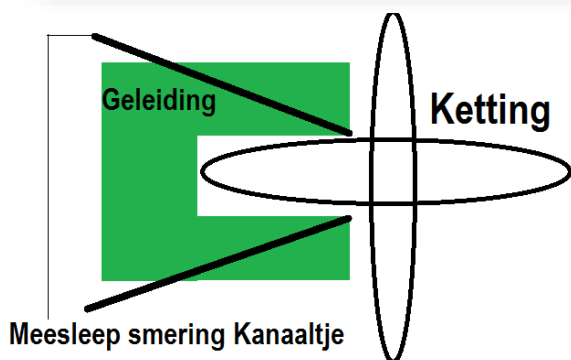
Various solutions are possible in terms of lubrication systems. Interflon advises not to use brush or spraying systems.

Interflon product selection.

Food Lube AL

Food Lube G150

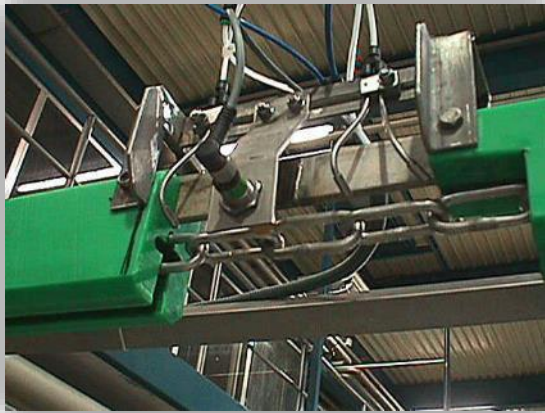
Combined with channels in the guides supplying lubricant which is then dragged along.



Results:

- Energy consumption reduced from 14 A to 11 A.
- No jerking motions.
- No adhesion.
- Major reduction of oil consumption.

Application: Chain of cheese conveyor belt



Problem

A 0.7% solution of sulphuric acid is used in an acid cleaning machine at an ambient temperature of around 45°C. The acid bath abrades the chain. If the abrasion of the stainless steel links becomes too severe, the ship chain starts to stretch. The chain stretches 1 metre a month. A new ship chain costs over €6,800 and it takes up to two hours to replace the chain.

Solution

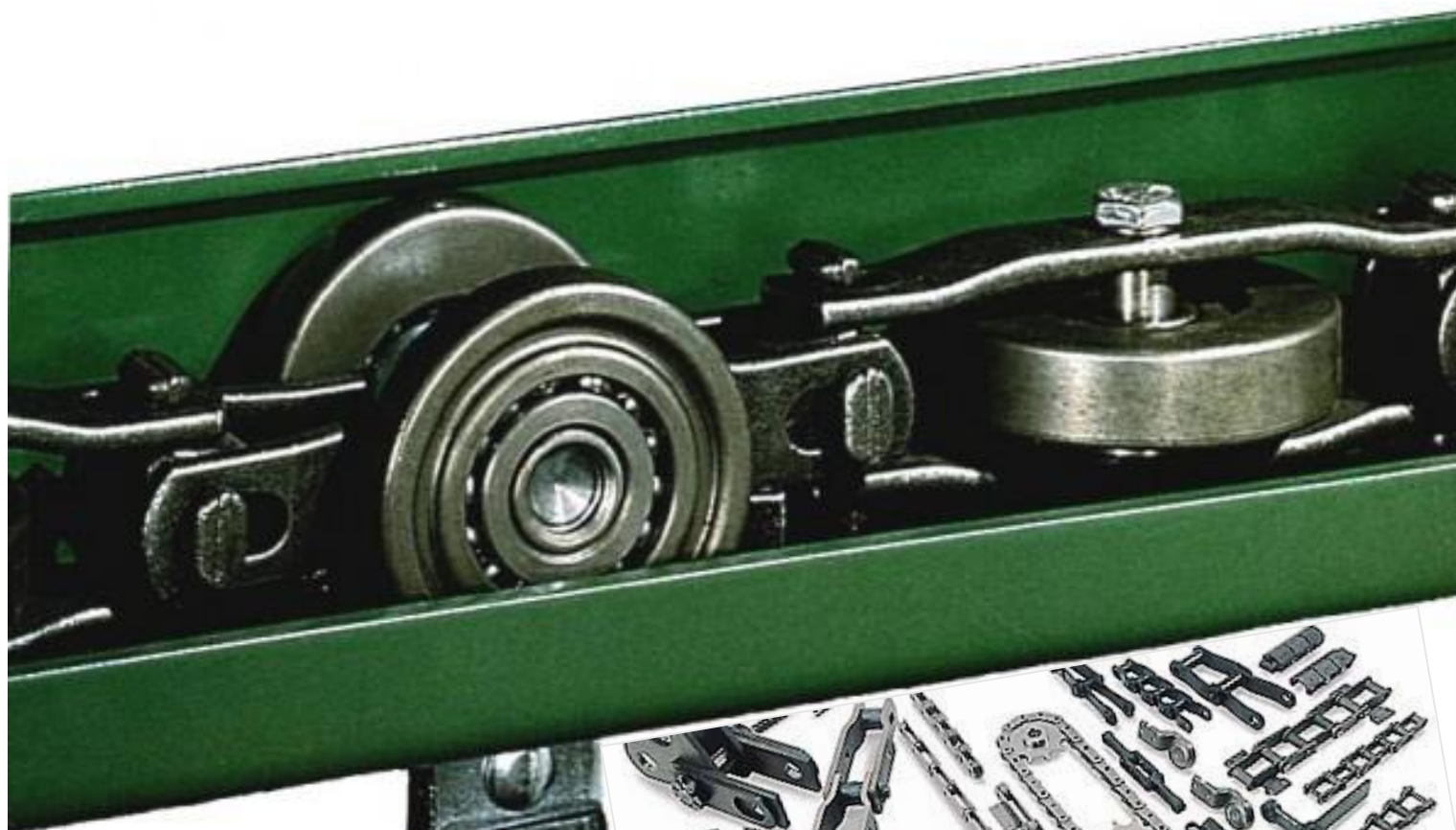
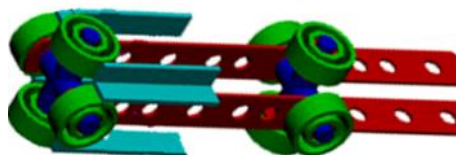
Interflon Food Lube AL

Thanks to the use of the Interflon lubrication system and Fin Food Lube AL, the chain stretched less than one metre over a period of 8 months. Normally speaking, 10% stretch on a chain is acceptable. Cost saving: tool life of the chain is now at least 8 times longer and fewer labour hours spent on repairing the stretching, so more production time.

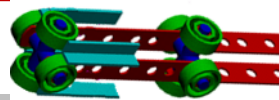


Result:

- Tool life is now 8 times longer
- Reduction of labour hours
- Cost saving of €54,000 in 8 years and no more installation and stoppage costs



Application: Chain of powder coating line



Molyguard ERRE/9 Interflon Lube HT

PRODOTTO		
- Quantità per applicazione (l)	1,20	1
- Costo per unità (l) in €	€ 19,36	€ 37,97
- Costo prodotto per applicazione (*)	€ 23,23	€ 37,97
- Durata lubrificazione in gg	15	60
- Numero applicazioni in 1 anno	24	6
- Costo totale prodotto/anno	€ 557,57	€ 227,82
- Risparmio su lubrificante		€ 329,75

SOSTITUZIONE CUSCINETTI		
- Tempo di manodopera (h) per sostituzione	0,75	0,75
- Tempo di fermo impianto (h)	0,50	0,50
- Numero sostituzioni in 1 anno (**)	45	30
- Costo del cuscinetto	€ 40,00	€ 40,00
- Costo orario manodopera	€ 30,00	€ 30,00
- Valore orario della produzione	€ 654,00	€ 654,00
- Costo totale cuscinetti sostituiti (***)	€ 3.600,00	€ 2.400,00
- Costo totale manodopera/anno	€ 1.012,50	€ 675,00
- Costo totale mancata produzione	€ 14.715,00	€ 9.810,00
- Risparmio su manodopera		€ 337,50
- Risparmio su cuscinetti		€ 1.200,00
- Risparmio su mancata produzione		€ 4.905,00
		€ 6.772,25

Problem

The powder coating line consists of two zones that each have an oven: one at the underside (+120/130°C) and one where the powder coating takes place (+180°C). The manually activated automatic lubrication of the chain of the overhead conveyor system is carried out once every two weeks in the zone at the underside and once every 10 to 15 days in the powder coating zone (with photovoltaic cell for identifying the links and bearings). The most critical zone is the powder coating zone, where the chain immediately runs dry right away, leading to jerking and squeaking of the conveyor. A lot of product rejects due to dripping of lubricant.

Current product

Molyguard ERRE/9

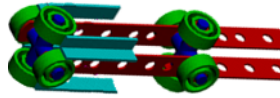
Solution

Interflon Lube HT



Result:

- Lubrication interval is now four times longer
- Reduction of lubricant consumption by 16%
- Production increase (+50%);
- Annually saving on installation costs of 33.78%



Application: Overhead conveyor of calf slaughter line



NAWI cardan chain

Problem

The problem is that the currently used lubricant stays greasy and due to condensation runs off in black tracks that drip on the calf carcasses. Because the area is refrigerated (to protect the meat against dehydration) and cleaned with water at 55 degrees Celsius, condensation cannot be avoided.

Environment

Area is refrigerated at 2 to 3 °C and damp

Current product

Cassida Chain Oil LT

Solution

Interflon Food Lube G150

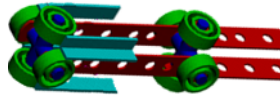
Chain lubrication requirements:

- Good protection against wear
- No oil dripping
- Good capillary action



Result:

- Applied through an automatic lubrication system and spraying
- No dripping (main reason)
- Chain is properly lubricated



Application: Chain of paint spraying line



Problem

Wear of the pins and shaft sleeves of the chain. The current product has a short service life and the line has to be stopped for lubrication. The current lubricant drips on the products, which regularly leads to rejects.

Environment

Temperature: 110°C

Current product

OKS chain lubricant

Solution

Interflon Lube HT (aerosol)

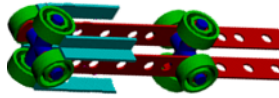


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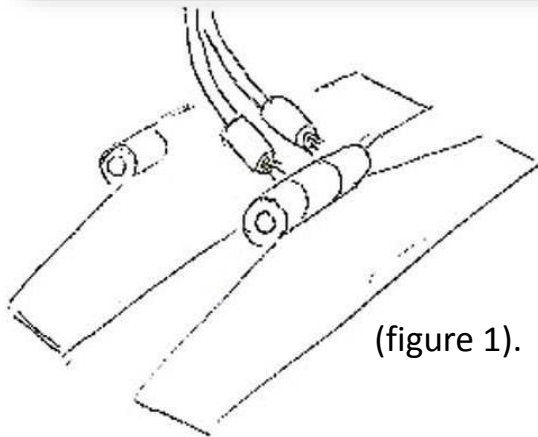
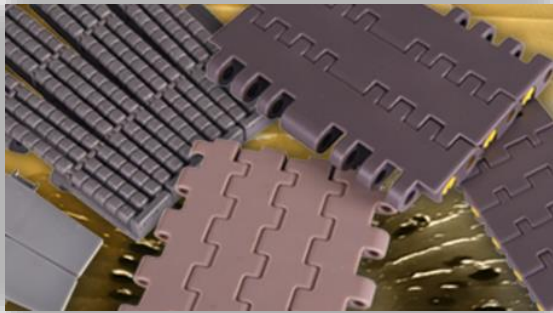
INTERFLON

Result:

- Lubrication interval has been extended from 3 to 20 days
- No more dripping and product rejects
- Reduction of labour hours

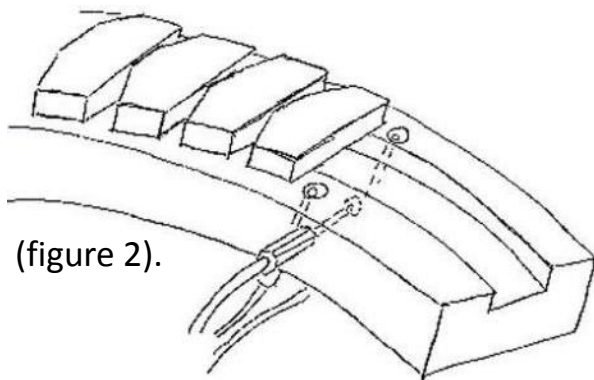


Application: Test of Rexnord Flat Top Europe BV hinged belt chain



(figure 1).

Nozzles spray Food Lube AL on the hinges.



(figure 2).

Food Lube AL is dosed through nipples and dragged along by the chain, which lubricates the guide.

Test of hinge pin (steel hinge pin chain)

Hinge pins are the most vulnerable parts of (steel) hinge pin chains. Particularly at high speeds, they are exposed to heavy forces and wear in the bends. Applying a small amount of lubricant is sufficient to reduce wear. A test was conducted in which **Interflon Food Lube AL** was applied through a continuous spray system to assess the impact on the tool life of the pins. The test was conducted for a period of twelve weeks (24/7) with a load of fifty kilogrammes. Every four days, the hinges were lubricated during one full chain circuit (figure 1).

Results of hinge pins test

The results of the hinge pins test are: # reduction of friction on the pins # no noticeable wear on the pins # lubricant has good load characteristics in the bends # very low dosage

Dry running test (plastic hinge belt chain)

When these chains are not lubricated, they start to heat up at a speed of around 70 metres per minute (friction). This rapidly increases the wear of the chain and guide (this is known as 'chipping'). The wear can be so severe that the hinge pins eat into the guide. In addition, there is a major increase in noise levels at higher speeds.

A test was conducted in which these chains were lubricated with a continuous spray system (lubricant is dosed through nipples and dragged along) and **Interflon Food Lube AL** (figure 2) for over seven weeks, during which the chain was in operation 24/7.

Results of dry running test

The results of the dry running test are: no damage to the material, major reduction of noise levels, major reduction of friction, no fluctuations in friction, very low dosage, enables a major increase of the speed (≥ 120 instead of 70 m/min)

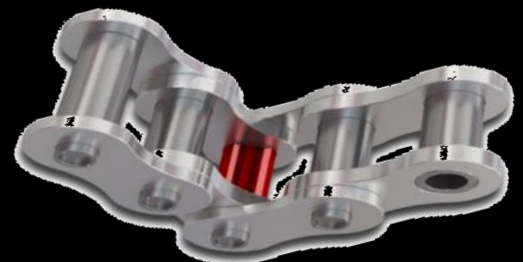
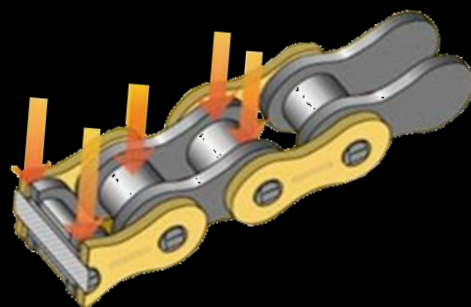


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Application Chains

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MicPol® Lubrication technology