

# Specialty Lubricants for the Forging Industry



LUBRICANTS.  
TECHNOLOGY.  
PEOPLE.



**MOVING YOUR WORLD**



## High-performance lubricants for optimum safety and performance in the forging industry

Excellent quality of parts, optimum machinery utilisation, reduced operating costs, lower environmental impact: whenever tolerances in industrial applications decrease, our commitment to developing lubricants increases.

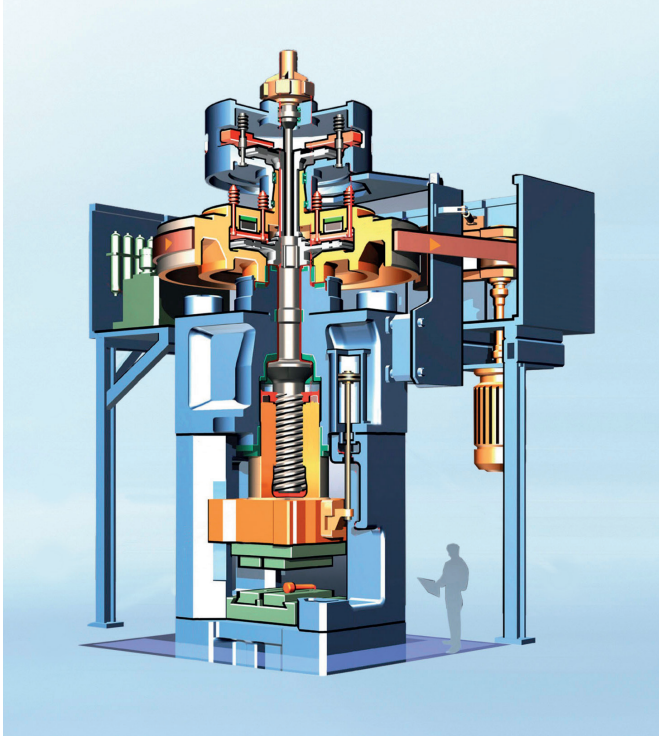
With its detailed knowledge of the forging industry, FUCHS Lubricants has developed an unsurpassed, comprehensive range of specialised products and technical services that provide optimised lubrication for high operational safety, productivity and efficiency.

Our specialty lubricants offer the highest quality and excellent application results all over the world. We develop our lubricants in close cooperation with the users – for excellent products and economical results.

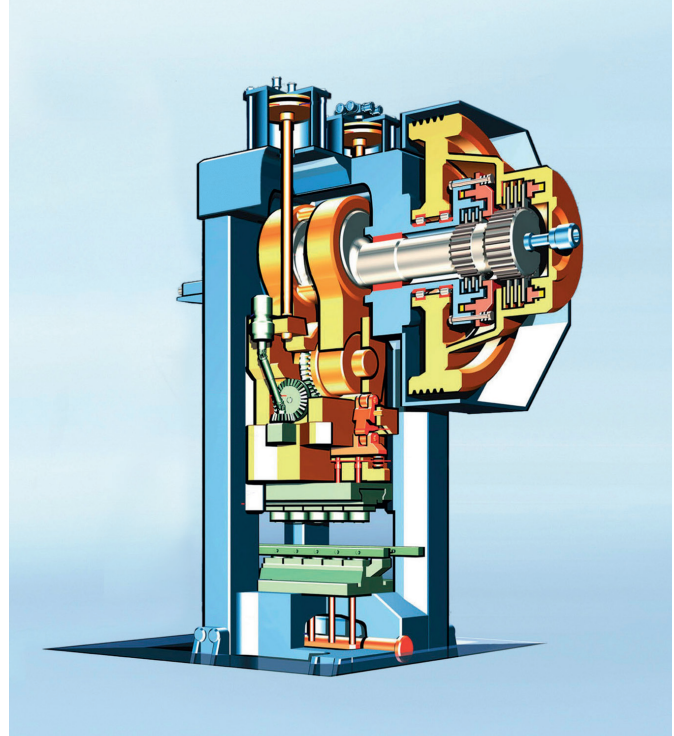
With our broad range of high-performance lubricants, we are able to provide the most suitable product for any lubrication application in the forging industry. Our high-performance lubricants have been especially developed and exceed the wide variety of requirements for process and operational lubrication.

Our brand names – LUBRODAL®, HYKOGREEN®, CEPLATTYN®, RENOLIN, LAGERMEISTER® and GLEITMO® – stand for the highest level of quality and reliability in the forging industry.

## Areas of application of lubricants in the various process stages of massive forming



Screw press



Eccentric press

Due to the variety of the components manufactured by massive forming, the individual designs of the forging units and the adjacent systems differ significantly. Depending on the process sequence the most diverse types are used, starting with the upstream units such as billet shears and reducer rolls, through to the actual forging units in the form of screw presses, eccentric presses, wedge presses, hammers, hydraulic presses, etc.

As various as the individual types are, the fields of application of lubricants can be divided into two main categories:

### Process lubricants

- Products for pretreatment of the billets
- Metal-forming lubricants

### Operational lubricants

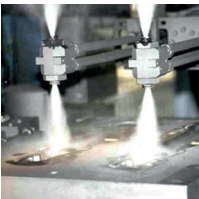
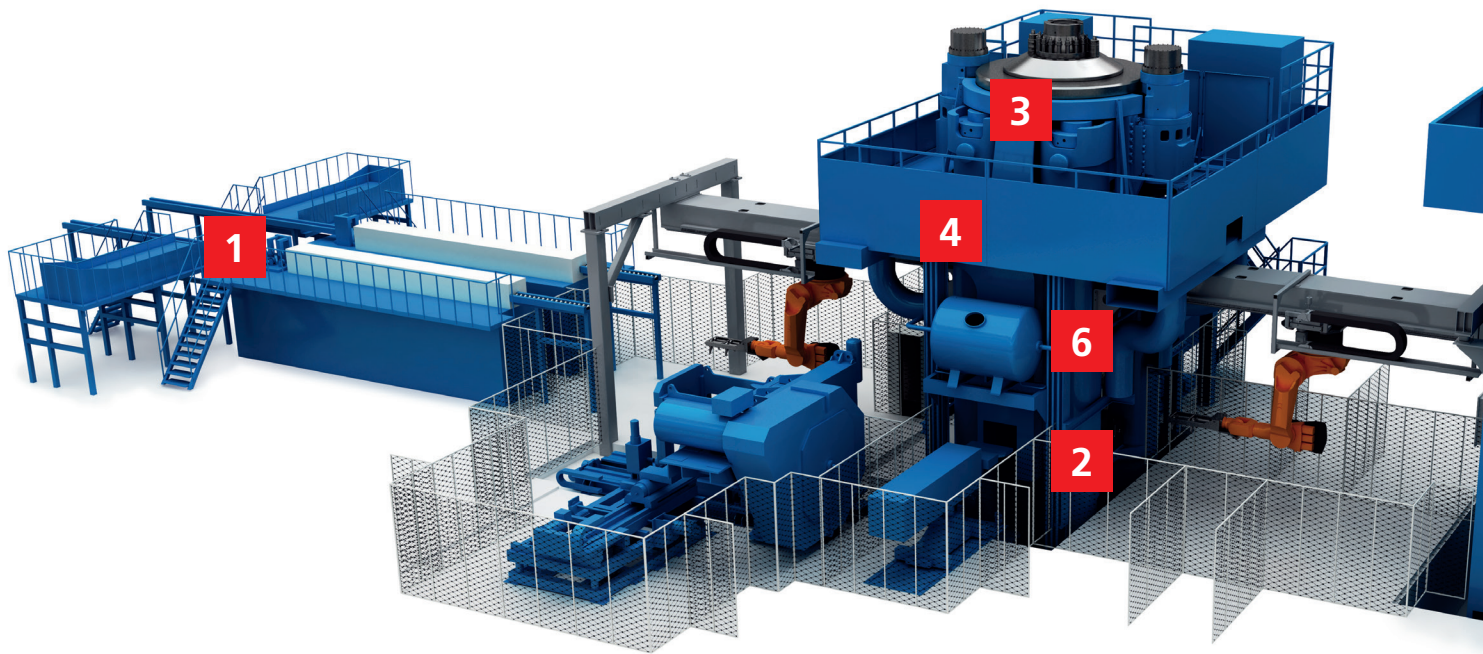
- Plain and roller bearing lubricants
- Gear lubricants

## Fields of application for lubricants in the forging process



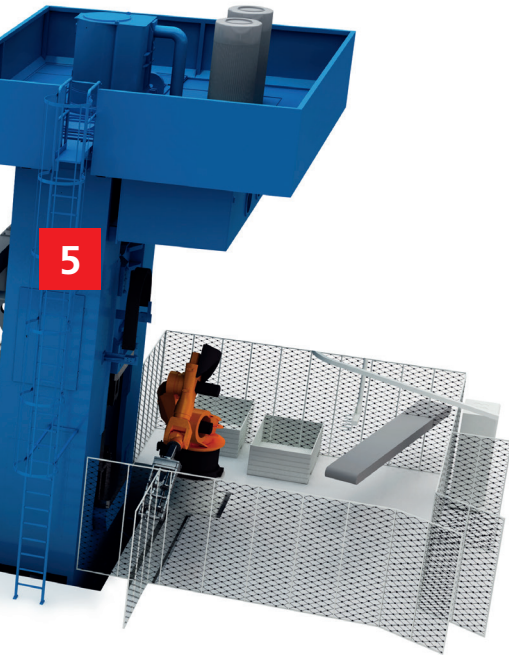
### 1 Billet pretreatment

Scale that forms during heating of the billets has negative effects on the part quality and on the die life. Billet faces sticking to each other can cause interruptions that lead to an unstable process. A pretreatment with the products of the LUBRODAL range, which have been specifically designed for such a purpose, can help to minimise these effects.



### 2 Die lubrication

The lubricants of the LUBRODAL series cover a wide range of applications. Due to the great variety of parameters in forging each application has to be considered separately. The LUBRODAL division team will be pleased to support you in this matter. In general it has to be noted that all water-based die lubricants need to be sprayed. In deep cavities with long extrusion paths (e.g. when forging crankshafts), graphite-free water-based products reach their limits. For applications like this, products containing graphite must be used.



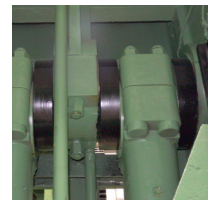
### 3 Gear drive

As operational lubricant, the high-quality adhesive lubricant CEPLATTYN KG 10 HMF ensures optimum operation reliability. Combined with the running-in lubricant CEPLATTYN RN these products allow the best possible operational conditions.



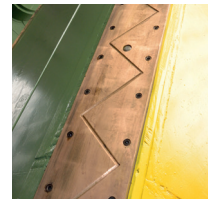
### 4 Connecting rod bearing

One highly stressed machine component is the connecting rod bearing. This is typically a plain bearing, and so has better damping characteristics than roller bearings. But differing sliding speeds and relative movements during the motion sequences demand a stable lubricating film and the best EP properties. STABYL L-TS MO (grease lubrication) and RENOLIN CHAINLUBE MO2080 (oil lubrication) are able to meet these demands.



### 5 Linear guide

Linear sliding guides can be found in a variety of forms in the forging industry. One of the most important tasks is precise guidance of the forging dies. Good adhesion and the best emergency running properties are the basic prerequisites that the lubricant must satisfy. Continual relubrication with RENOLIN CHAINLUBE MO2080 (oil lubrication) and STABYL L-TS MO (grease lubrication) will considerably reduce wear.



### 6 Central lubrication system

The high-performance lubricant LAGERMEISTER CX EP 2 is employed as a long-term grease for centrally lubricated systems. This lubricant, which is saponified with a calcium complex, has the best water-repellent properties and is suitable for the lubrication of the ejector system.



### Maintenance products

Various products are available for machine maintenance. As special rust loosener, FERROFORM SUPER 7 creeps under moisture and provides excellent lubrication properties. METABLANC is a rapid metal cleaner which reliably removes grease, oil, adhesive residues and dirt from metal parts. PBC 1574 is a high-temperature assembly paste. It prevents screws from seizing and is characterised by a high pressure resistance. It is especially suitable as anti-scuffing paste between die and die holder.

## Product overview

Application	Product	Description
Pre-coating	LUBRODAL RV 20	By coating the faces of large billets with LUBRODAL RV 20 an inorganic protective layer is formed. This layer prevents the sticking of the billets to each other during heating and thus related process interruptions.
	LUBRODAL FC 331	LUBRODAL FC 331 is used as a billet pre-coating during warm forging of steel to minimise scale formation during inductive heating and also to optimise flow behaviour and tool life.
	LUBRODAL SR 300	By using LUBRODAL SR 300, the oxidation of the billets in the furnace can be reduced significantly. The remaining scale is a lot easier to remove, which leads to reduced abrasive die wear.
General roller bearings	LAGERMEISTER LP 2	LAGERMEISTER LP 2 is an EP grease on a mineral oil basis and can be used as an all-round grease for general-purpose lubrication.
High-temperature roller bearings	LAGERMEISTER XXL	LAGERMEISTER XXL forms a firm grease collar on the bearing seal and allows long lubrication intervals. Thus it is predestined for the lubrication of bearings on forging presses.
Herringbone gearing	CEPLATTYN KG 10 HMF	CEPLATTYN KG 10 HMF was specially developed for use on Open Gears. The high-quality adhesive lubricant has cushioning properties and also reduces wear with shock-type loads.
Tappet guides/sliding guides (Grease lubrication)	STABYL L-TS MO	STABYL L-TS MO (for grease lubrication) and RENOLIN CHAINLUBE MO2080 (for oil lubrication) are ideally suited for the lubrication of tappet guides/connecting rod bearings thanks to their good adhesion in conjunction with low application quantities. The MoS <sub>2</sub> solid lubricant offers outstanding emergency running properties and protects against wear even under extreme loads.
Tappet guides (Oil lubrication)	RENOLIN CHAINLUBE MO2080	
Connecting rod bearings (Oil/grease lubrication)	RENOLIN CHAINLUBE MO2080/ STABYL L-TS MO	
Ejector systems	LAGERMEISTER CX EP 2	Based on the special saponification of LAGERMEISTER CX EP 2 and its outstanding corrosion protection, the ingress of moisture, which is produced by the die lubricant during the forming process, into the ejector mechanism is greatly reduced.
Gearboxes/transmission gears	RENOLIN CLP PLUS range	The RENOLIN CLP PLUS range CLP range is characterised by a high thermal loading capacity, very good resistance to ageing and extraordinary protection against wear. An extension of the oil change intervals is thus possible in many cases.
Transport chains	RENOLIN CHAINLUBE G1000	RENOLIN CHAINLUBE G1000 is dust-repellent and displaces water. It offers optimal lubrication of chain links thanks to its outstanding creeping effect. Based on its graphite content, very good emergency running properties are also achieved.
Transport chains (high temperature)	CEPLATTYN HT	CEPLATTYN HT exhibits a reliable lubrication even at high temperatures of up to 600°C. Thanks to the graphitised solid lubricant, dry lubrication is ensured even after the evaporation of the carrier oil.
Forming	LUBRODAL F 21 A SET	Due to its well-balanced mix of graphite types, LUBRODAL F 21 A SET helps to reduce die wear and to optimise material flow in the forging process of complex steel parts.
	LUBRODAL F 318 N	To improve industrial hygiene, water-based lubricants which are free of graphite and mineral oil are used, such as LUBRODAL F 318 N, which has excellent releasing properties.
	LUBRODAL F 25 AL	LUBRODAL F 25 AL is an emulsion concentrate with excellent wetting properties that ensures best results during forging of non-ferrous metals like aluminium.
	HYKOGREEN 217	HYKOGREEN 217 is a non-water-miscible, graphite-containing product with good lubrication properties. It can be used for most difficult forming operations.



## FUCHS LUBRICANTS CO. –

Since 1931, we have been pursuing the same goal: to keep the world moving. With innovative and technological lubricant solutions that have a sustainable impact on the future. Unconditional reliability is our top priority, it is the foundation of our company and the basis for everything that defines us.

Long-term experience, high development strength and the fulfillment of far-reaching standards are the basis for the special quality of our world-leading product brands. We deliver solutions that are simply more efficient and therefore more sustainable. We always think in holistic solutions. For the development of individual solutions, we enter into an intensive customer dialog with you. This is the way we live up to our claim of moving your world.

## Innovative lubricants need experienced application engineers

Every lubricant change should be preceded by expert consultation on the application in question. Only then the best lubricant system can be selected. Experienced FUCHS engineers will be glad to advise on products for the application in question and also on our full range of lubricants.

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