

FUCHS Special Applications

Speciality Lubricants and Release Agents for Asphalt Processing



MOVING YOUR WORLD



FUCHS LUBRICANTS GERMANY

We don't just develop lubricants. For highly complex challenges in a wide range of industries, we develop innovative lubricant solutions that enable the mobility of tomorrow. Our goal: to keep our customers' world in motion. Efficient, sustainable, reliable. Today and tomorrow.

What can we move for you?



FUCHS LUBRICANTS GERMANY

Facts and figures

Company: FUCHS LUBRICANTS GERMANY GmbH, a company of the FUCHS Group

Locations: Mannheim, Kaiserslautern, Kiel and Wedel; approx. 1,400 employees

Product range: A full range of more than 3,000 products for all application areas

Certifications i. a.: ISO 9001, IATF 16949, ISO 14001, ISO 45001, ISO 50001, ISO 21469, HALAL, KOSHER (detailed certifications at www.fuchs.com/de/en)

FUCHS LUBRICANTS GERMANY is a subsidiary of FUCHS SE, the world's largest independent supplier of lubricant solutions. Around 1,400 specialists at all sites work with dedication on innovative lubricant solutions that enable the mobility of tomorrow.

The high level of technical consulting expertise combined with the largest, nationwide network of its own technical contacts makes FUCHS LUBRICANTS GERMANY a reliable local partner. A comprehensive product range, supplemented by digital offerings and Smart Services, as well as many years of lubricant expertise and a high level of research competence are the foundations for the innovative FUCHS lubricant solutions. They reduce wear and energy requirements, extend the running times and service life of machines, and thus keep the world moving - from industrial motors and e-cars to wind turbines and washing machines. FUCHS LUBRICANTS GERMANY is certified to a wide range of standards and, as a technology leader and development partner, places the highest demands on quality management.

Customers in all fields of application and key industries benefit from this commitment to quality. FUCHS makes a significant contribution to promoting sustainability with its climate neutrality strategy. Not only are lubricants manufactured using CO₂-compensated production, but the entire value chain is also considered from a sustainability perspective and is being gradually transformed with a view to a circular economy. FUCHS is also involved in research projects on sustainable raw materials and is working with suppliers and associations to develop certification standards.

MOVING YOUR WORLD



CUSTOMISED LUBRICANTS FOR YOUR APPLICATION

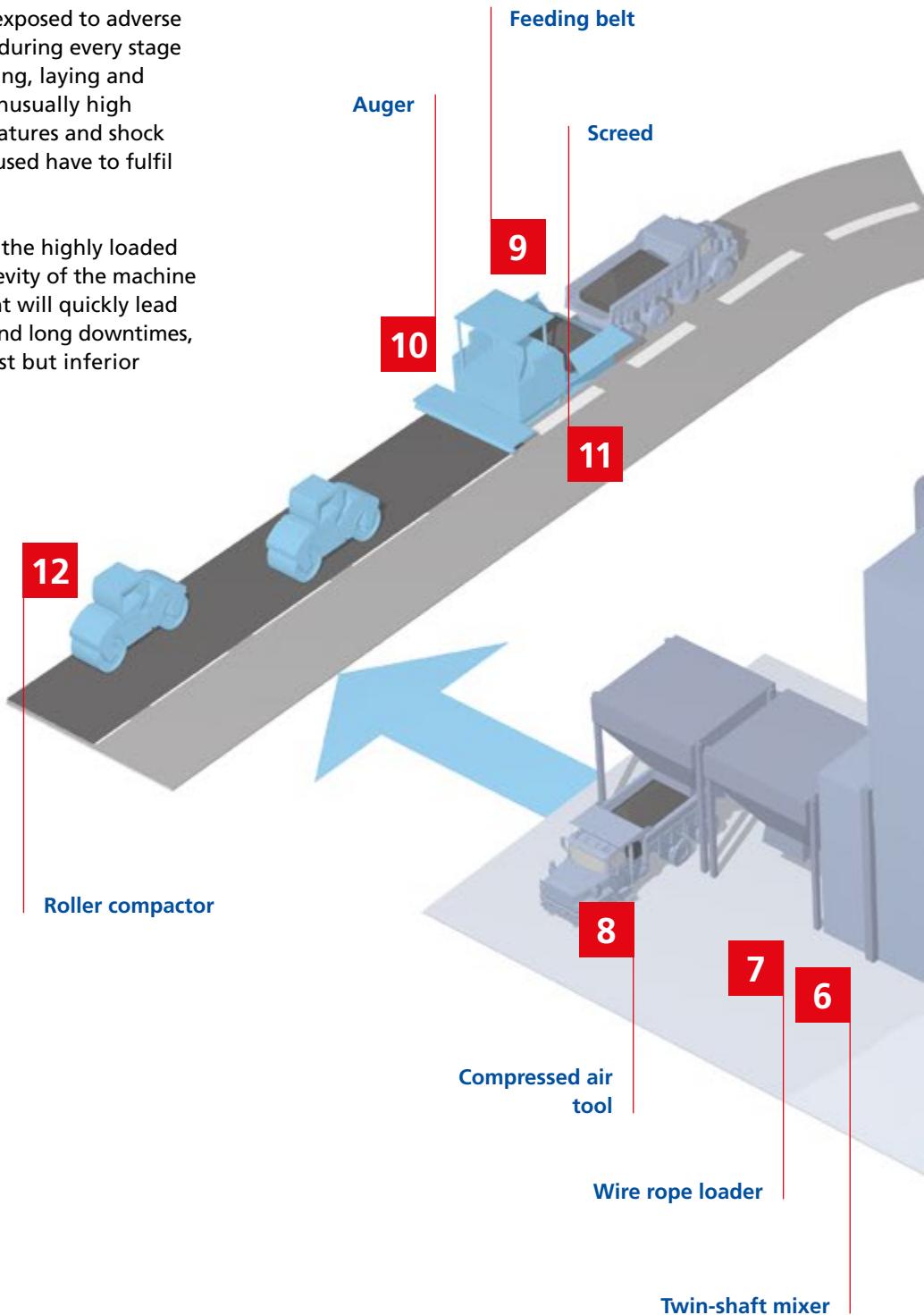
Asphalt machinery and equipment operate under high stresses and in the harshest working conditions: Dusty surroundings, high and low temperatures, strong vibrations and shock loads. Wherever work under such conditions is required we ensure the reliability of the machinery used. Together with machine manufacturers we have developed innovative release agents, cleaners and maintenance products which effectively protect your valuable machinery and construction equipment from wear while simultaneously extending their service life and reducing the extent of cleaning and repair required.

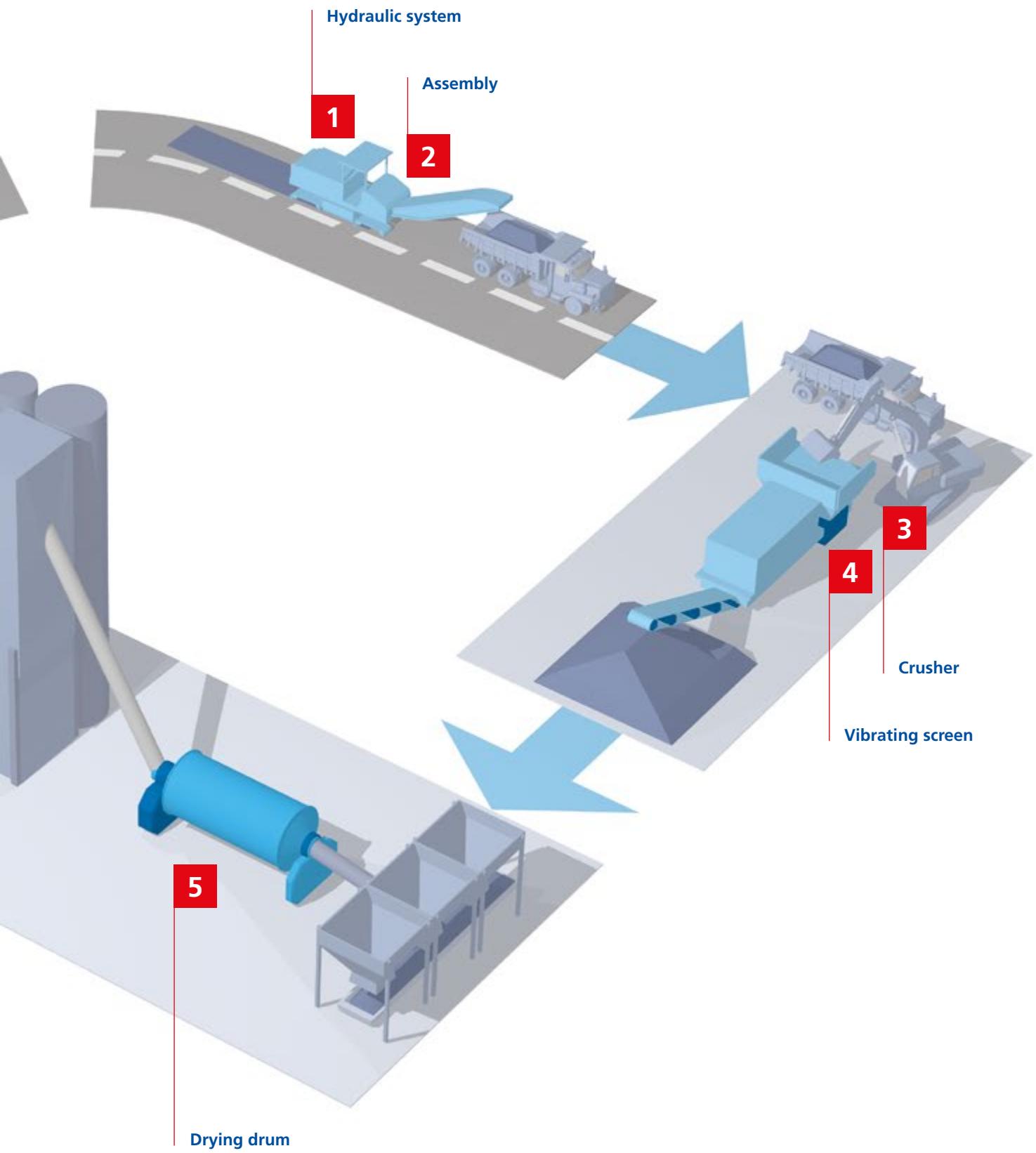


Customized lubricants for your application

Asphalt machinery and equipment are exposed to adverse weather and environmental conditions during every stage of production: Stripping, recycling, mixing, laying and compressing. They are influenced by unusually high stresses such as vibrations, high temperatures and shock loads. For these reasons, the lubricants used have to fulfil the highest demands.

Ultimately it is the lubricant protecting the highly loaded parts from wear and effecting the longevity of the machine parts. An unsuitable or inferior lubricant will quickly lead to damage entailing expensive repairs and long downtimes, putting the savings when using low cost but inferior lubricants into the right perspective.





Stripping, crushing/milling



Image: Joseph Vögele AG



Image: Wirtgen GmbH

Hydraulic system

Construction machines have to work under extremely changeable temperatures making the behaviour of the hydraulic fluid's viscosity really important. Manufacturers of hydraulic pumps write in their operating manuals that the pump can only produce the necessary working pressure if the viscosity of the hydraulic fluid does not exceed a specific value.

Due to the very good viscosity-temperature behaviour of **RENOLIN HVI PLUS** hydraulic oils, we can guarantee that at low temperatures a fast and reliable start of the machine is possible and at high temperatures a sufficient viscosity is available. This characteristic ensures the forming of a stable lubricating film resulting in a good seal and a consistent function of the hydraulic system.

Assembly

To provide a fast tool change, screw connections should be prepared with an assembly paste. This assembly paste will allow a reliable screw-in and loosening process without seizures, even in the bad conditions in which construction machines have to work. The time required for tool changes is reduced to a minimum, and the lifetime of the screw connections is extended.

GLEITMO100 S SPRAY is a smooth assembly spray with a large range of applications. The selection of solid lubricants achieves minimum friction coefficients of screw connections. During force fitting and insertion of bushes, pins and bearings, galling and slip stick are prevented effectively.



Image: Sandvik GmbH

Crusher

Normally jaw breakers or impact crushers are used to chop the asphalt during the recycling process. These machines' bearings have to withstand high shock and dust loads whilst being exposed to all types of weather conditions. EP greases (EP = Extreme Pressure) must be used in such applications.

LAGERMEISTER XXL and **LAGERMEISTER EP 2** are ideal for the highest demands and also for lifetime lubrication. In central lubrication systems these greases are still well pumpable at low temperatures. Using **LAGERMEISTER XXL** longer lubrication intervals are achievable than with conventional multi-purpose greases.



Image: Sandvik GmbH

Vibrating screen

The bearings in vibrating screen machines have to deal with specific operational conditions prompting manufacturers of roller bearings to specify special instructions for the lubrication process and for the lubricant used. Standard multipurpose greases are normally unsuitable and can lead to bearing damage.

Only approved and tested greases are permitted. Unsuitable greases will lead to an increased oil separation of the lubricant resulting in an interrupted lubricating film in the bearing due to its vibration. **LAGERMEISTER XXL** is a specially developed grease guaranteeing a long and reliable lubrication of these highly loaded bearings.

Classifying, drying, mixing



Image: ThyssenKrupp Polysius AG



Image: Ammann Group

Drying drum

The low-speed pillow blocks of the castor and support roller stations of the drying drum experience high loads and considerable temperature fluctuations. This is because they are exposed to weather conditions and also get hot through the radiation heat of the dryer. The demands on the grease are thus very high.

LAGERMEISTER XXL surpasses these demands, thus meeting the criteria of a wide working temperature range and fulfilling the requests of heavy duty applications. Thanks to its excellent worked stability and its high thermal resistance, the lubricating intervals are much longer than using conventional lithium greases. **LAGERMEISTER XXL** forms a very stable grease collar on the bearing, which protects it against the ingress of environmental dust and humidity.

Twin-shaft mixer

Twin-shaft mixers are favoured due to their efficient work in asphalt mixing plants. Still the pillow blocks positioned on the outside of the mixing chamber experience high temperatures and loads. This is because the high temperatures of the mixing goods and the vibrations created during the mixing procedure are transferred via the mixer shafts directly into the pillow blocks.

RENOLIT PU-FH 300 is a high-temperature and heavy-load grease, which leads to long re-lubricating intervals because of its high shear and temperature stability. **RENOLIT PU-FH 300** also forms a stable grease collar on the outer edge of the bearing protecting the bearing from the ingress of environmental dust.

RENOCAST AP 2410 is an asphalt release agent specially designed for asphalt mixing plants that protects the mixer and the transport slide from bitumen and asphalt adhesion. **RENOCAST AP 2410** has a flash point and ignition temperature of $>200\text{ }^{\circ}\text{C}$ and therefore meets the requirements of plant manufacturers.



Wire rope loader

The loading of the different hoppers with mixed asphalt is usually undertaken using a wire rope-pulled loader. As the cable winch is often on the outside, it has to withstand all weather conditions and cope with dust loads upon the steel rope. During production wire ropes receive an inner rope lubrication, however their exterior has to be relubricated and preserved occasionally in order to minimise wear and rust formation especially at the point of belt return.

CEPLATTYN 300 SPRAY and **ANTICORIT** are reliable graphited wire rope lubricants, which have very good lubricating, dry running and corrosion protection properties prolonging the service lives of the wire ropes.

Compressed air tool

Proportioning valves on scales and material discharges have to close and open in a really short time. The elastomer seals of the pneumatically operated cylinders must be lubricated with oils for compressed air tools. Without a suitable lubrication the seals become brittle leading to leaks and environmental dust entering the cylinders. Scoring and surface wear of the plunger rods will occur, resulting in blowing off during standstill and jerky movements while opening or closing or, in the worst case, to the overflow of the material.

Oils for compressed air tools of the **KOMPRANOL** range are excellently compatible with elastomers. The lubricant is kept in the lubrication area, does neither move outward nor does it stick to the plunger rod, therefore preventing environmental dirt from sticking to the plunger rod. Thanks to the special oil component, **KOMPRANOL** is suitable for a very wide temperature area without losing its lubricity.

Transporting, laying, compressing

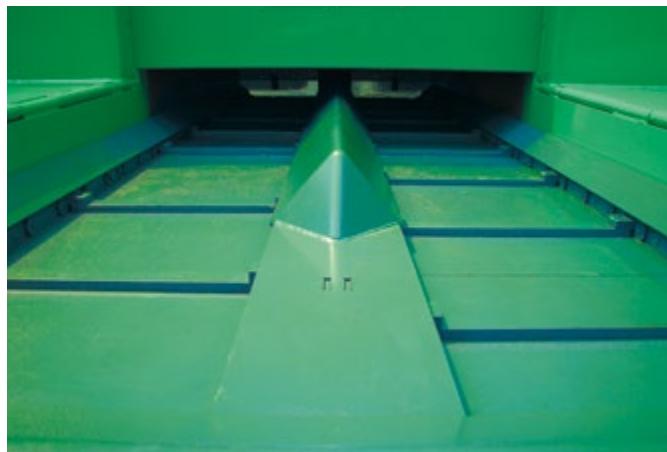


Image: Joseph Vögele AG

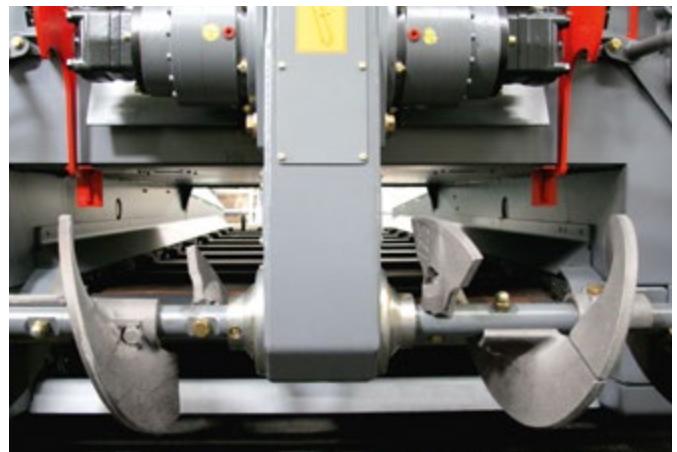


Image: Joseph Vögele AG

Feeding belt

The feeding belt can be equipped with a chain drive and return system. Due to the radiation heat of the hot asphalt, a chain lubricant with a high thermal resistance and a good adhesion is required, which sufficiently creeps into the chain links to be lubricated and protects them from corrosion.

CEPLATTYN KG 10 HMF is a special, extremely sticky, highgraphite semi-fluid grease. Due to its flow properties the graphite is transported to the lubricating point, achieving very good dry running properties with long re-lubrication intervals and preventing dust, water and bitumen from ingressing. To guarantee an unobstructed material flow in the hopper and on the scraping conveyor, they should be sprayed with a bitumen and an asphalt release agent. This also applies to dump trucks and transport vehicles.

The **RENOCAST AP 2690** asphalt release agent ensures unimpeded material flow and reduces the cleaning effort required for feeding belts, asphalt truck loading areas, and receiving buckets.

Auger

During the production process, the auger is completely enveloped by hot asphalt. Therefore its bearing is indirectly subjected to the same temperature as the asphalt. It is important that the lubricant builds up a grease collar so that the hot bitumen, which exists in the asphalt, can not enter the bearing.

RENOLIT PU-FH 300 is a polyureabased high-temperature grease suitable for temperatures of up to 180°C. Due to the high viscosity of the base oil, it is ideal for this low-speed bearing and develops a strong stable grease collar on the outer edge of the bearing. Thanks to the special polyurea thickener this grease has a very high ability to absorb pressure and maintains its worked stability for a long time. This characteristic allows for long re-lubrication intervals and therefore quantity savings. **RENOLIT PU-FH 300** also offers a very good pumpability in central lubrication systems.

The mineral oil-based **RENOCAST AP 2001** reduces bitumen adhesion to a minimum, thus ensuring smooth distribution of the asphalt.



Image: Joseph Vögele AG



Screed

The moving parts of the so-called vibrating or extending screed of road finishing machines are exposed to weather conditions and also to the high temperature of the asphalt. The chosen lubricants must therefore not only protect the lubricated parts from humidity (e.g. rain), but also be resistant to high temperatures, in order to guarantee a long life. There must also be good separation between the moving parts and any asphalt contamination to prevent asphalt from entering the lubrication area.

CHEMPLEX SI 300 is extremely temperature-resistant silicone lubricants meeting the outlined requirements to guarantee a long service life. For easy application, **STABYLAN SI 310** is also available as an aerosol.

Roller compactor

Asphalt release agents prevent the asphalt from sticking to metal surfaces.

The mineral oil-based **RENOCAST AP 2690** or the mineral oil-free emulsion concentrate **RENOCAST AP 5150 C** are used specifically for rubber-wheeled rollers. Both asphalt release agents have excellent wetting properties at high temperatures, enabling complete wetting of the roller body.

Products for asphalt manufacturing on roadworks

Machine Part	Lubricant	Product
Hydraulic	Hydraulic oil	PLANTOSYN 3268 RENOLIN B PLUS range RENOLIN B HVI PLUS range
Crusher	Roller bearing lubricants	LAGERMEISTER EP 2 LAGERMEISTER XXL RENOLIT H 443-HD 88 RENOLIT HI-TEMP 220
Assembly	High temperature screw paste Assembling paste	GLEITMO 165 GLEITMO 100 S SPRAY
Vibrating screen	Special grease	LAGERMEISTER XXL RENOLIT HI-TEMP 220 RENOLIT PU-MA 2
Wire rope loader	Rope lubricants	ANTICORIT SL-DS SPRAY CEPLATTYN 300 SPRAY
Twin-shaft mixer	High temperature grease Asphalt release agent	LAGERMEISTER AP 2, URETHYN MP 2 replaced by RENOLIT PU-FH 300 RENOCAST AP 2410 RENOCAST AP 3485
Drying drum	High temperature grease	LAGERMEISTER XXL RENOLIT PU-MA 2
Compressed air tool	Pneumatic oils	KOMPRANOL 1002 KOMPRANOL PF 84 KOMPRANOL GRÜN
Asphalt transport truck loading area	Asphalt release agent	RENOCAST AP 2001 RENOCAST AP 2690
Feeding belt	Chain lubrication Asphalt release agent	CEPLATTYN KG 10 HMF RENOLIN CHAINLUBE G 1000 RENOCAST AP 2690 RENOCAST AP 5150 C RENOCAST AP 4815 AQUA
Roller compactor	Asphalt release agent	RENOCAST AP 2690 RENOCAST AP 5150 C RENOCAST AP 4815 AQUA
Extending screed	Silicone lubricant	GLEITMO SIL 300M
Spreading auger	Roller bearing lubricant Asphalt release agent	LAGERMEISTER AP 2, URETHYN MP 2 replaced by RENOLIT PU-FH 300 RENOCAST AP 2001 RENOCAST AP 2690

Other Lubricants	Lubricant	Product
Stationary gear	Gear oil	PLANTOGEAR S range RENOLIN CLP range RENOLIN UNISYN CLP
Stationary small gear box	Gear semi-fluid grease	RENOLIT LX G 400 RENOLIT LX P 400 RENOLIT EPLITH 00 RENOLIT SF 7-041 RENOLIT SO-GFB
Automatic lubrication machine	Semi-fluid grease	PLANTOGEL ECO 000 S RENOLIT LZR 000
Cleaner	Bitumen cleaner	RENOCAST CL 1020 RENOCAST CL 1020 SPRAY

Note: These product recommendations are based on our experience or the guidelines of machine and plant manufacturers.
For detailed information please read our technical data sheets or contact us directly at www.fuchs.com/de



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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