

SKF

MINING INDUSTRY LUBRICATION SOLUTIONS

Increased machine service life,
reliability, productivity and
sustainable growth



LINCOLN

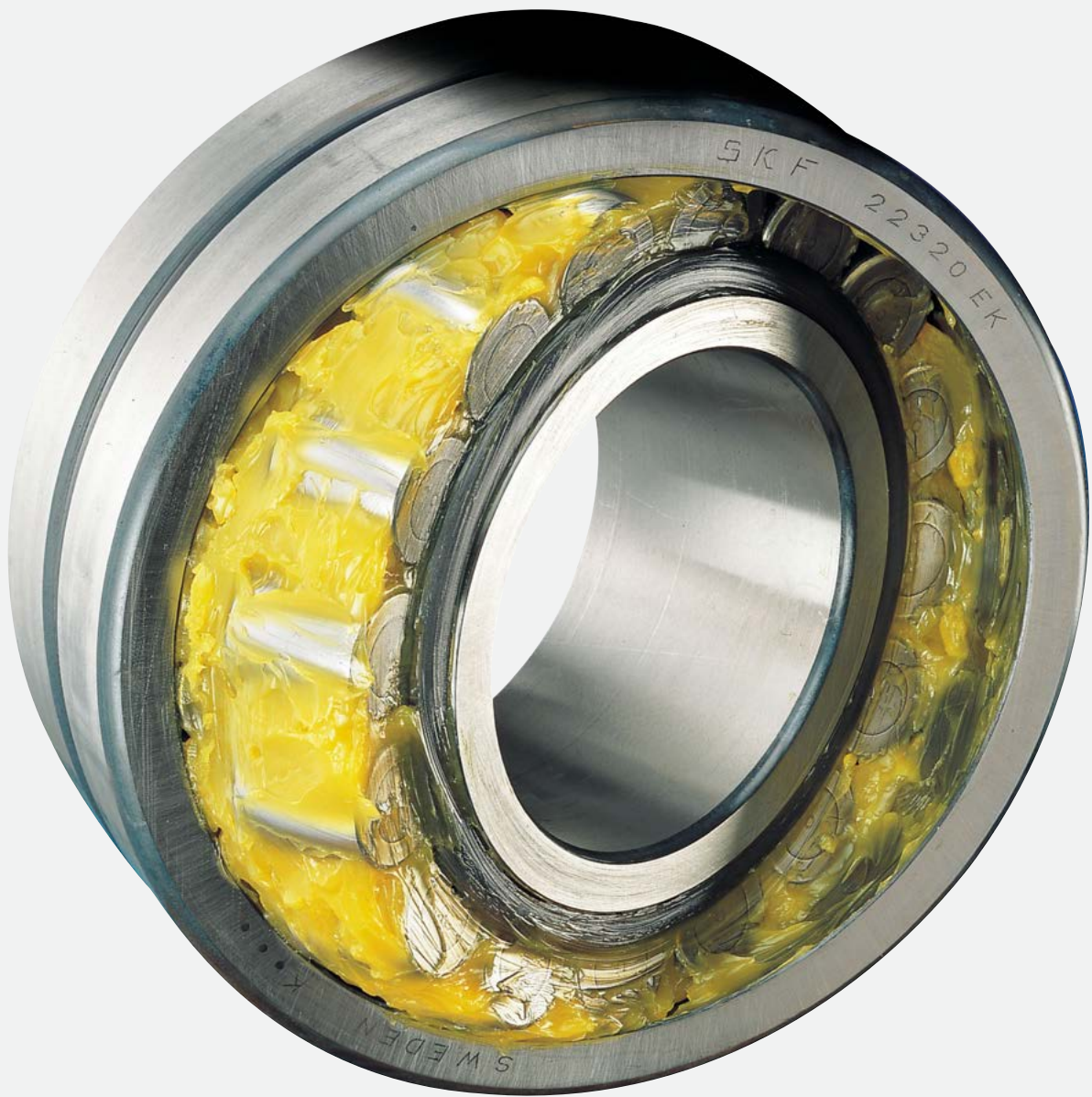


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Lubrication solutions for mining machinery

Introduction

In mining machines, lubricants amount to 2–3% of running costs. But 40–60% of maintenance costs come from poor lubrication. These numbers indicate the importance of reliable lubrication and appropriate lubrication practices. That's why we talk not only about lubrication but also about lubrication management as an essential part of machine operation and vehicle maintenance.

Proper manual lubrication usually takes about 15–20 minutes per machine and maintenance cycle. Failure to properly lubricate each lubrication point on every machine can have a negative impact on schedules, maintenance costs and running time performance.

Automatic lubrication reduces downtime, so your equipment is available when needed. In addition to helping increase reliability and availability, lubrication systems help to extend service life, reduce operational and lubricant costs and minimize environmental impact by avoiding over-lubrication. Also, reducing manual lubrication results in fewer potential accidents, and mechanics can be utilized for other tasks. Correct lubrication can already be difficult for individual points. The challenge is to do it right for all points. With the right connectivity solution, we help to step up to even more reliable lubrication.

This brochure will help you to get an overview of SKF Lincoln lubrication solutions for mining machines. Of course, it can only represent a selection of solutions; please visit [SKF.com/lubrication](https://www.skf.com/lubrication) for more:



The right lubricant...



in the right amount...



with the right method...



at the right time...



to the right lubrication point.

33%

Up to 33% lubricant savings by switching to automatic lubrication

Did you know?

Automatic lubrication saves around 200 000 t of grease per year worldwide by reducing the lubricant waste caused by manual lubrication. This corresponds to 300 000 t CO₂ savings.

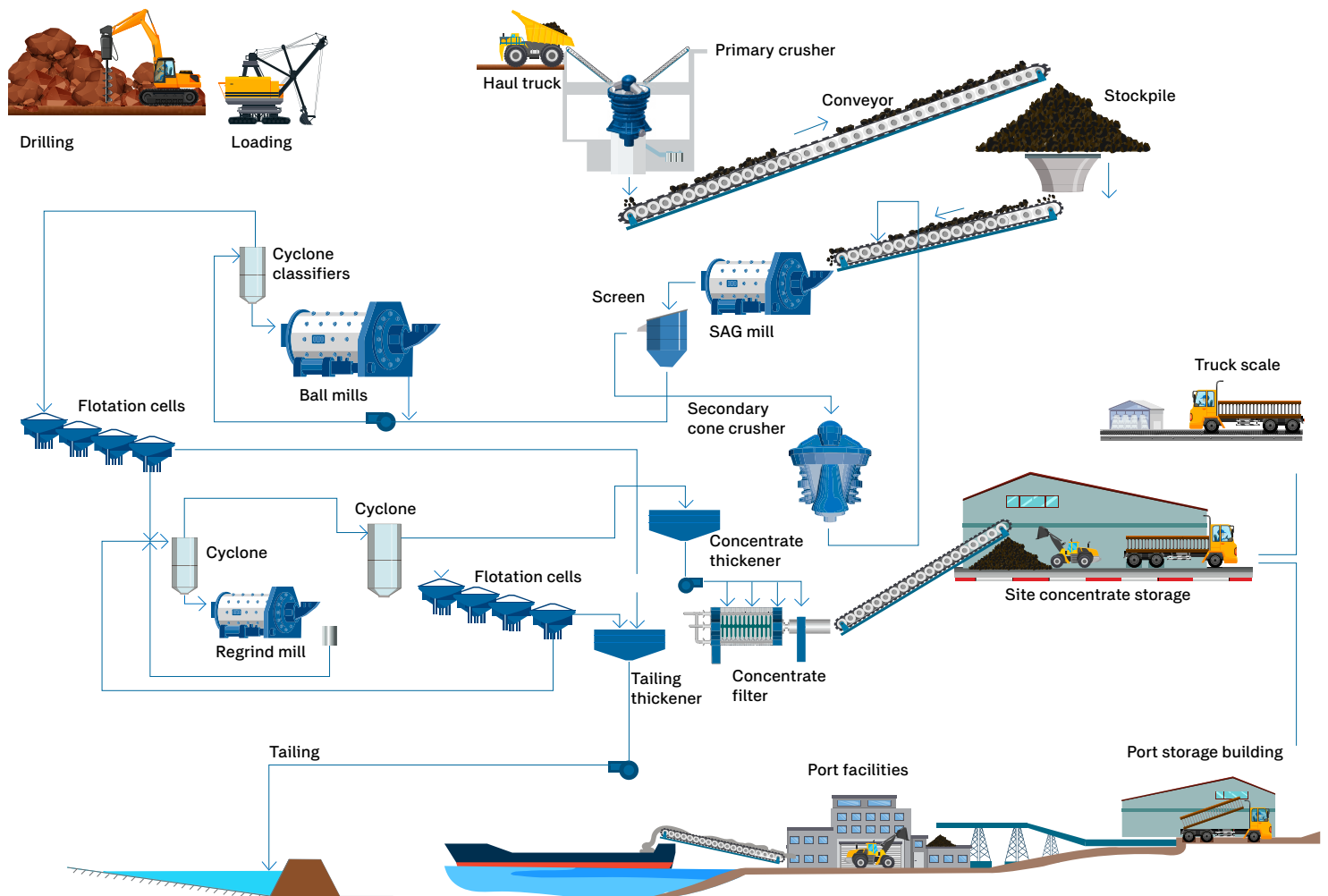


Value added by lubrication

If dust, dirt, sand and water are allowed to work their way into critical machine components, they will form a “grinding compound” that reduces components life substantially.

Maintaining a proper lubricant film is key to reducing wear and downtime. Frequent lubrication acts as a means to reduce friction effectively and it virtually keeps bushing and bearings free of penetrating contaminants.

Being a bearing manufacturing company we discover again and again, that the high importance of reliable mining machinery lubrication is very often misjudged.



It starts with a smart selection of lubricants

SKF LubeSelect

SKF lubricants are designed for your needs and tested for performance in real applications. Our experience with bearings, lubricants and applications helps us to offer the most suitable lubricants for your application and improve your overall lubrication scheme. Testing and validating each production batch is our way to provide excellent lubricant quality around the globe. Specialized lubricant tests and continuous research in the field of lubrication help to optimize our knowledge further and support you with the right lubrication for your machines. The app LubeSelect for SKF greases is developed by SKF and accesses a knowledge base to help you select an appropriate lubricant for a particular application.

Lubricant selection criteria:

- Operation conditions like temperature, humidity
- Engineering guidelines depending on component type and geometry, speed, load and temperature.



SKF LubeSelect

Recommended and market proven solutions

LGEV 2

SKF LGEV 2 is a mineral oil based grease, using a lithium-calcium soap. It has a high content of molybdenum disulphide and graphite, in conjunction with an extremely high viscosity oil. This provides outstanding protection under the harshest conditions involving high loads, slow rotations and severe vibrations.

Features and benefits:

- Extremely suitable for lubricating large sized spherical roller bearings subject to high loads and slow rotations, a situation where microslip is likely to occur
- Extremely mechanically stable providing good water resistance and corrosion protection
- Suitable for medium to high loads



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LGLS 2

A high viscosity grease that has been developed to be used ideally via lubrication systems under medium to high ambient temperatures. Its anhydrous calcium thickener, combined with a high base oil viscosity, offers excellent water resistance and stickiness to surfaces as well as very good anti-wear properties.

Features and benefits:

- Excellent pumpability at medium to high temperatures
- Excellent water resistance and corrosion protection
- Excellent anti-wear properties
- Excellent adhesion to surfaces



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LGNL 2

SKF LGNL 2 is a mineral oil-based, anhydrous calcium soap thickened grease suitable for high-load applications. This premium quality, general-purpose grease is an effective alternative for traditional general-purpose and extreme pressure lithium-based greases.

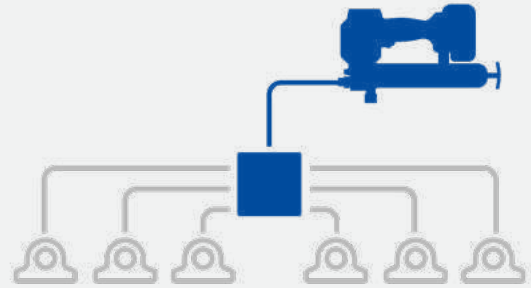
Features and benefits:

- Excellent water resistance and corrosion protection
- Good mechanical stability
- Excellent wear protection
- Good pumpability



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Manual and semi-automated lubrication

Manual lubrication

Manual lubrication of machines is a critical maintenance practice involving the application of lubricants to various components by hand via tools such as manual or electrical operated grease guns. This is the most simple but also time-consuming way of realizing lubrication.

SKF offer

- Grease nipples
- Standard manual grease guns
- One-hand-operated grease guns
- Battery-driven grease guns

Characteristics

- Low investment costs
- Very limited number of parts needed
- No installation complexity
- Low lubrication reliability
- Big maintenance effort

Semi-automated lubrication

A centralized approach can be realized by connecting several lubrication points to lubricant metering devices with only one manual lubrication point at the metering device inlet left for manual lubrication tools. This represents an advanced, time-saving approach of realizing machinery lubrication while allowing at the same time to set the precise dosages for each lubrication point.

SKF offer

- Grease guns
- Grease nipples
- Fittings and accessories
- Lubricant hoses and tubes
- Progressive metering devices
- Adjustable progressive metering devices

Characteristics

- Medium investment costs
- Limited number of parts needed
- Limited installation complexity
- Medium lubrication reliability
- Limited maintenance effort

Recommended and market proven solutions

LAGM 1000E

The SKF Grease meter LAGM 1000E accurately measures the amount of grease dispensed. Generally, it is difficult to manually deliver an accurate quantity of grease per stroke to bearings. However, supplying the right amount of grease is critical for the bearings' service life, as both over-lubrication and under-lubrication can lead to bearing damage and machine breakdown. Factors such as backpressure and wear inside the grease gun can cause variations in the lubrication amount, even when the grease is weighed per stroke. Using a grease meter is the only way to measure the actual relubrication quantity with precision.

Features and benefits:

- Corrosion-free aluminium housing with rubber sleeve protection
- Backlit LCD display with large and easy-to-read digits
- Small, compact and lightweight design
- Compatible with all SKF grease guns
- Suitable for most NLGI 0-3 greases



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TLGB 21

Developed to maximize lubrication efficiency, the TLGB 21 integrates advanced technology and a robust design for exceptional performance in a wide variety of lubrication tasks. Designed with an integrated grease meter, it ensures precise lubrication, preventing the risk of over or under-lubrication. The durable, ergonomic design with a four-point stand makes for operator comfort and convenience and the 20-volt, lithium-ion battery for longer life.

Features and benefits:

- Integrated grease meter monitors and tracks the exact amount of grease dispensed
- Two-speed flow rate adjusts from low-volume to high-volume flow, tailoring lubrication
- Battery charge display shows the charge level of the lithium-ion battery
- Cartridge grease level indicator
- LED light illuminates the work area



Premium lube trolley

Designed for convenience and portability, Lincoln's premium lube trolley package comes complete with all components needed for dispensing oil or grease directly from 55-gallon (208 l) or 400-pound (181 kg) drums. The lube trolley is suitable for servicing a full range of vehicles, as well as industrial and machinery processes. Available packages include a pneumatically operated Lincoln pump for oil or grease, a durable hose reel, metering device, air control with filter/regulator/gauge and connection hoses and fittings.

Features and benefits:

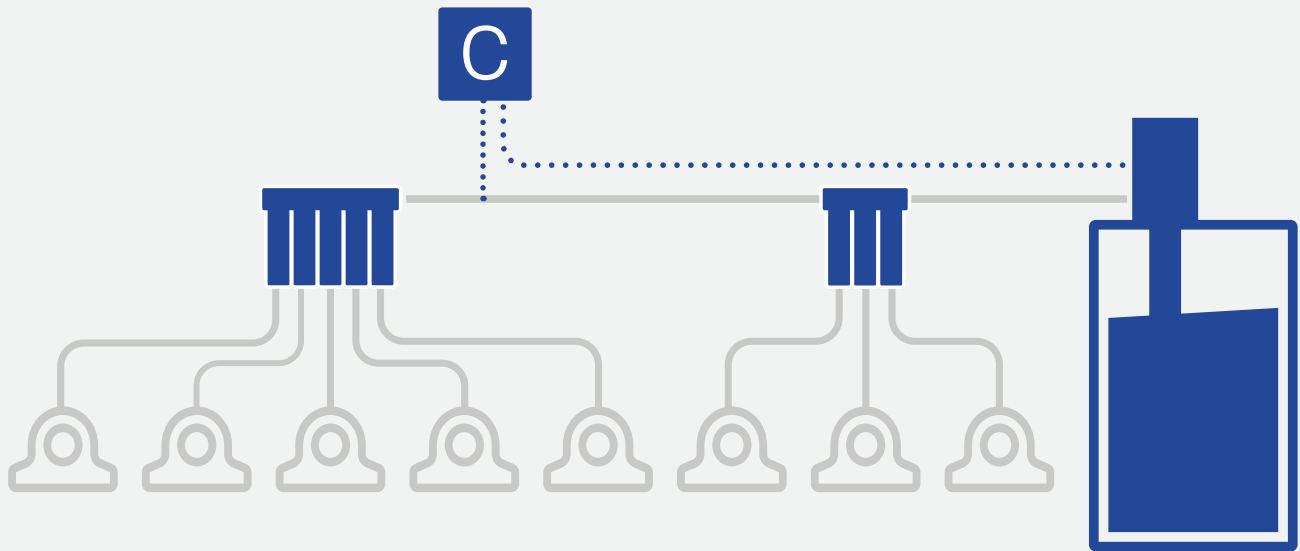
- Ability to dispense lubricant directly from 55-gallon (200 l) (oil) or 400-pound (180 kg) (grease) drums
- Easily maneuverable on uneven surfaces in shop or factory
- Makes dispensing possible without installed overhead reels or bench tanks



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Fully automated lubrication systems

Automatic lubrication means a 100% reduction of manual lubrication activities. It is realized by connecting all lubrication points via a system consisting of metering devices and lubrication lines and fittings with a central pump unit including a lubricant reservoir. This system can become also connected to an internal or external controller that enables precise and reliable, automatic machine lubrication. You will become prewarned about low reservoir filling levels.

SKF offer

- Single-line automatic lubrication systems
- Dual-line automatic lubrication systems
- Progressive automatic lubrication systems
- Oil circulation automatic lubrication systems
- Grease spraying lubrication systems (for open gears)
- Lubrication system components (pumps, metering devices, control and monitoring devices, fittings and accessories)
- Refill and barrel pumps

Characteristics

- Virtually maintenance free
- Higher lubrication reliability
- lubrication while machine is running
- Adjustable lubrication cycles
- Monitoring possibilities - automatic control of the reservoir filling level incl. low level alarm



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Recommended and market proven solutions

FlowMaster and SL-6

Compact and versatile, the FlowMaster pump features a unique rotary drive and modular gear set that allows precise adjustment of the motor speed to fit various applications. Its electric rotary motor converts motion into reciprocating pump action, ensuring efficient lubricant flow. The compact design enables easy placement almost anywhere, and optional mechanical overflow prevention enhances worker and environmental safety.

The SKF Lincoln SL-6 metering device, a single-line automatic lubrication system injector, boasts improved sealing technology to reduce bypass risk and direct bypass lubricant to the bearing in case of failure. Maintenance is simplified with a visible red indicator pin, easy-to-manage adjusting screw, and hex-shaped body for tight spaces. Together, the FlowMaster pump and SL-6 metering device form the most reliable single-line lubrication system.

Features and benefits:

- Temperature and overload protection
- Totally sealed to withstands harsh conditions and washdowns
- Durable and long-lasting solution



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SM oil circulation unit

The compact SM oil circulation unit can be designed with 50, 100 or 200 liter stainless steel reservoir. One SM unit provides one or two small machines with oil at a total flow rate up to 20 l/min. The system pressure level is adjusted by variable speed drives (VFD) or with traditional pressure regulating valves. The reservoir is equipped with a heater to control oil viscosity at start up. An optional water or air cooler will reduce the temperature of filtered oil to desired level. The filter cartridge can be changed during operation with by-pass valve included.

Features and benefits:

- Easy to use, easy to install and service
- Energy saving, most reliable compact oil supply unit



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Open gear grease spraying system

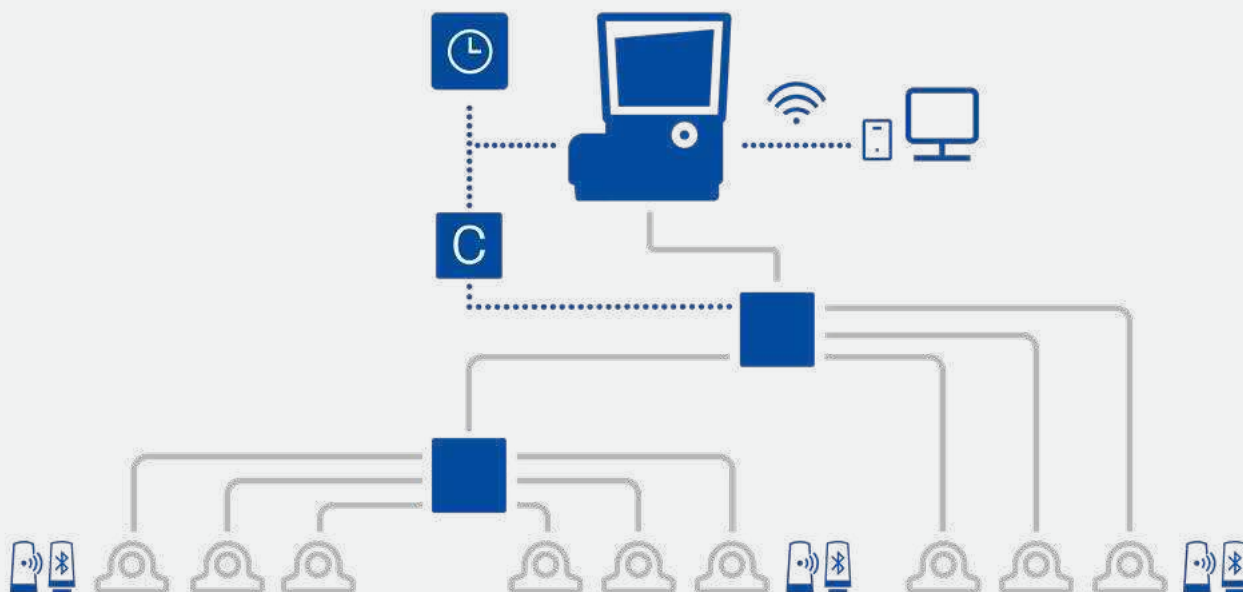
SKF Lincoln open gear comprehensive spraying systems containing all necessary mechanical, hydraulic, pneumatic, and electrical components for operating lubrication systems on large open gears. These systems are essential for process industries, where equipment like kilns, mills, rotary dryers, and presses require high power transmission. The SKF Lincoln spray open gear lubrication system enhances gear and pinion service life while reducing lubricant consumption, supporting efficient and reliable operation of critical machinery.

Features and benefits:

- Compact system for reliable open gear lubrication
- Enhanced efficiency by automatic lubrication
- Extended gear and pinion service life
- Improved operational efficiency



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Connected automated lubrication systems

Connected or intelligent lubrication systems mean you are aware of all machinery lubrication-related data in real-time. You have access to lubrication-related statistics such as lubricant consumption or lubrication cycles e.g. so you can align smartly with all collected machinery data to optimize machine performance and availability.

Characteristics

- Virtually maintenance free
- Higher lubrication reliability - lubrication while machine is running
- Adjustable lubrication cycles
- Monitoring possibilities - automatic control of the reservoir filling level incl. low level alarm
- Data collection and lubrication related statistics
- Remote control and accessibility

SKF eLube

SKF eLube is a new generation of connected automatic lubrication solutions – a complete line of smart and user-friendly components that you combine in a system to fit your needs best.

SKF eLube can help you identify issues at a glance, track machine health data, get early warning of potential failures and take preventive action. Connect it to a cloud and receive machine performance insights based on data from both your lubrication system and your bearings.

SKF eLube products are compact, fit-for-purpose and easy to integrate into your equipment.

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Smart monitoring at its easiest

Datalog controller

Features and benefits:

- Enables datalogging
- Provides operator control from the cab
- Communicate to device via Bluetooth using SKF eLube app
- Verify proper procedures were followed in rental applications
- Small size to conveniently fit into cabin



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P253 Smart

Features and benefits:

- Powerful lubrication pump with up to three pump elements and a range of reservoir sizes
- For oil and grease applications
- Remote monitoring, control and setting using the SKF eLube App



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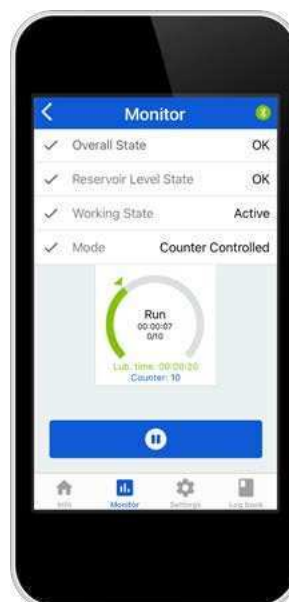


SKF eLube app

Using the SKF eLube app allows users to determine lubricant levels and pump functions remotely. There is no need to stop the machine or physically access the pump to check lubricant levels, for instance. This can save time and also reduce the risk of accidents. Wireless access to pump information helps to spot problems – such as a blocked line or low lubricant levels – very quickly. Remedial action can then be taken immediately to avoid damage to the bearing.

Features and benefits:

- Easy and intuitive setting of pump configuration
- Share settings via email and WhatsApp
- Clear visual indication of operational status
- Early warning of potential failures to take preventive action
- Log book functionality



Available on:





Haul trucks

40+
Lubrication points

Haul trucks are off-road commercial vehicles used to transport loose bulk materials such as ore, gravel or rock. Operating under diverse and often extremely challenging conditions, these vehicles are exposed to water and dirt, which can infiltrate machine parts, abrade bearing surfaces, and lead to premature wear and corrosion. The working conditions involve high loads and significant contamination, numerous lubrication points with limited accessibility, and high lubricant consumption necessitating large reservoirs. Reliable lubrication is performed best while the truck is in operation, to serve all critical machine parts, when lubrication is most required. While small to medium-sized machines tend to be lubricated with progressive systems, single-line lubrication systems for large haul trucks are the best solution to handle the required large lubricant quantities and high pressures.

Components that require reliable lubrication:

- Joints, bolts, bearings and pivot points
- Suspension and shock absorbers
- Axles and bushings
- Hydraulic cylinders
- Steering system

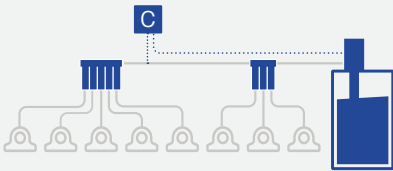


Lubricants

Product name	Description
LGLS 2	KP2K-20 high viscosity grease NLGI 2
LGCC 2	K1/2 G-50 general purpose grease NLGI 2
LGGB 2	KPE 2K-40 environmentally accepted grease NLGI 2
LGHB 2	KP2N-20 high load, high temperature grease NLGI 2



SKF Lincoln Offer

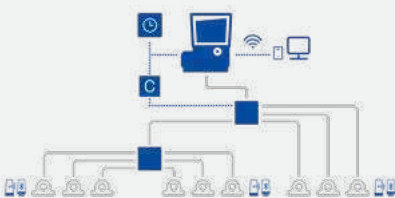


Automatic single-line lubrication system components

Product name	Description
BPH30	hydraulically driven barrel pump
FlowMaster	hydraulically or electrically driven barrel pumps
LMC 301	compact control and monitoring device
SL-1	single-line (high-pressure) metering device
SL-V	single-line (high-pressure) metering device
SL-6	single-line (high-pressure) metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer



Connected automatic lubrication system components

Product name	Description
Datalog controller	lubrication system controller (SKF eLube app)



SKF Lincoln Offer



Shovels and draglines

50+
Lubrication points

Shovels and draglines today face harsh operating conditions and high demands, pushing them to new limits. In addition, these critical assets must often endure extreme temperatures. To operate more profitably, especially in mining environments, these machines must move more material faster, while at the same time offering reliability, fuel efficiency, and operator comfort. Uptime is key, and unplanned downtime needs to be avoided. The management of a high number of lubrication points, often exceeding fifty, also leads to challenges for lubrication practices. However, reliable automatic lubrication is crucial to achieving all key performance indicators related to productivity and reaching professional predictive maintenance levels. With reliable lubrication solution, experienced operators know that they have also invested in productivity and machine lifetime extensions.

Components that require reliable lubrication:

- Joints, bolts, bearings and pivot points
- Axles, pins and bushings
- Hydraulic cylinders
- Steering system
- Swing points
- Open gears
- Wire ropes

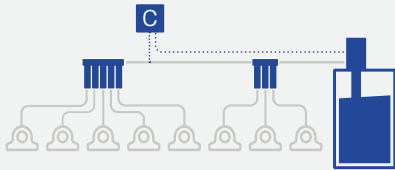


Lubricants

Product name	Description
LGLS 2	KP2K-20 high viscosity grease NLGI 2
LGCC 2	K1/2 G-50 general purpose grease NLGI 2
LGGB 2	KPE 2K-40 environmentally accepted grease NLGI 2
LGH 2	KP2N-20 high load, high temperature grease NLGI 2
LGTE 2	KPE2G-40 biodegradable grease NLGI 2



SKF Lincoln Offer

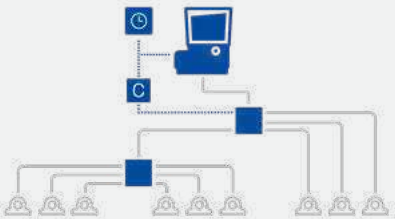


Automatic single-line lubrication system components

Product name	Description
BPH30	hydraulically driven barrel pump
FlowMaster	hydraulically or electrically driven barrel pumps
LMC 301	compact control and monitoring device
SL-1	single-line (high-pressure) metering device
SL-V	single-line (high-pressure) metering device
SL-6	single-line (high-pressure) metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer

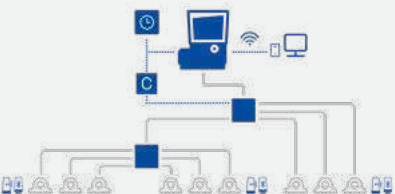


Automatic dual-line lubrication system components

Product name	Description
ZPU	electrically driven high-volume pump
LMC301	lubrication system controller
VSG	dual-line metering device



SKF Lincoln Offer



Connected automatic lubrication system components

Product name	Description
Datalog controller	lubrication system controller (SKF eLube app)



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Excavators

19+
Lubrication points

Effective lubrication of excavators and hammers is essential for efficiently loosening and moving stone and soil. Regular lubrication ensures that critical components, such as joints, bearings, and bolts, are evenly and reliably lubricated, extending their lifespan and reducing wear. Excavators are affected by rust and corrosion due to direct exposure to harsh environmental conditions. Heavy loads lead to increased friction, contributing to premature wear and tear on moving components such as pivot points, bearings, and bushings. Operator safety concerns arise from significant wear and tear caused by rust and corrosion on moving components. An automatic central lubrication system saves nearly 100% of the time required for manual lubrication, while also supporting to enhance operational safety by preventing rust and corrosion damage. Investing in efficient lubrication quickly pays off, maximising the performance and longevity of your excavators and hammers.

Components that require reliable lubrication:

- Tools including hammers
- Steering components
- Joints and bearings
- Bolts and bushings
- Hydraulic cylinders
- Tracked drives

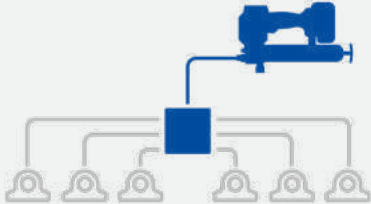


Lubricants

Product name	Description
LGLS 2	KP2K-20 high viscosity grease NLGI 2
LGCC 2	K1/2 G-50 general purpose grease NLGI 2
LGGB 2	KPE 2K-40 environmentally accepted grease NLGI 2
LGHb 2	KP2N-20 high load, high temperature grease NLGI 2
LGTE 2	KPE2G-40 biodegradable grease NLGI 2



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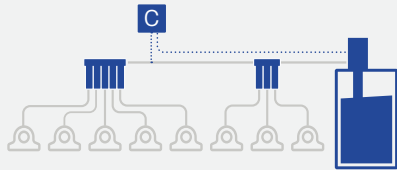


Semi-automatic lubrication

Product name	Description
LAGN 120	grease fitting kit (120 conical fittings)
TLGB 21	20V Li-ion PowerLuber, 1 battery
SSV	progressive metering device
SSVD	adjustable progressive metering device
VPK	sectional progressive metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer

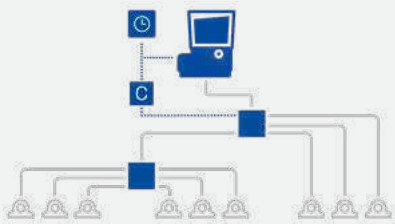


Automatic single-line lubrication system components

Product name	Description
FlowMaster	hydraulically or electrically driven barrel pumps
LMC 301	compact control and monitoring device
SL-V	single-line (high-pressure) metering device
SL-6	single-line (high-pressure) metering device
H	customized and prefilled high-pressure hose



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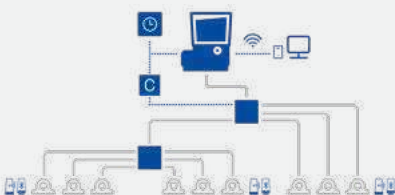


Automatic progressive lubrication system components

Product name	Description
P203 / P603	electrically driven grease pump
CLP	electrically driven compact grease pump
SSV	progressive metering device
VPK	sectional progressive metering device
HTL201	hydraulic cartridge pump for hammers
MGH	single-shot grease cartridge pump (tools/hammers)
H	customized and prefilled high-pressure hose



SKF Lincoln Offer



Connected automatic lubrication system components

Product name	Description
P253 Smart	electrically driven connected grease/oil pump
CLP Smart	electrically driven connected compact grease pump
Datalog controller	lubrication system controller (SKF eLube app)



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Drills

20+
Lubrication points

Rotary drills, blasthole drills, and underground drills operate in extremely harsh conditions, facing high dust levels, extreme temperatures, and constant vibration. Critical performance requirements exist for the winch and crowd systems, necessitating a meticulous and reliable lubrication process.

The considerable distances separating the lubrication points add complexity to lubrication procedures. Automatic lubrication systems help minimise wear and tear on moving parts, extending the lifespan of these critical assets.

Components that require reliable lubrication:

- Drill spindle bearings
- Spindle rotating device
- Steering components
- Joints and bearings
- Bolts and bushings

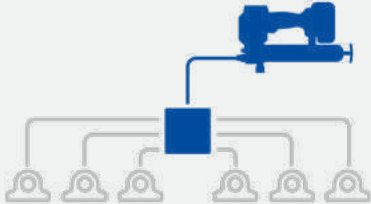


Lubricants

Product name	Description
LGLS 2	KP2K-20 high viscosity grease NLGI 2
LGCC 2	K1/2 G-50 general purpose grease NLGI 2
LGGB 2	KPE 2K-40 environmentally accepted grease NLGI 2
LGHB 2	KP2N-20 high load, high temperature grease NLGI 2



SKF Lincoln Offer



Semi-automatic lubrication

Product name	Description
LAGN 120	grease fitting kit (120 conical fittings)
TLGB 21	20V Li-ion PowerLuber, 1 battery
SSV	progressive metering device
SSVD	adjustable progressive metering device
VPK	sectional progressive metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer

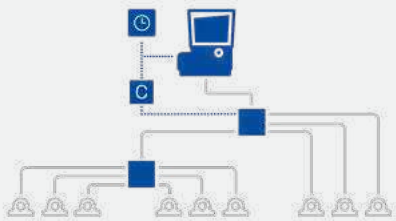


Automated single-point lubrication

Product name	Description
TLSD	single-point automatic lubricators
TLMR	single-point automatic lubricant dispenser
LAGD	gas driven single-point automatic lubricators



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Automatic lubrication system components

Product name	Description
P203	electrically driven grease pump
EFM	electrically driven Flow Master barrel pump
CLP	electrically driven compact grease pump
SSV	progressive metering device
VPK	sectional progressive metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer



Connected automatic lubrication system components

Product name	Description
P253 Smart	electrically driven connected grease/oil pump
CLP Smart	electrically driven connected compact grease pump
Datalog controller	lubrication system controller (SKF eLube app)



SKF Lincoln Offer



Wheel loaders

23+
Lubrication points

Quick reversals, frequent stops and starts, along with contaminated and vibrating conditions, create significant challenges for lubricating wheel loader drive trains. These assets have a high number of lubrication points that are critical to keeping them running. Manual lubrication necessitates halting the vehicle to apply the lubricant, with an immediate impact on productivity. Given the working conditions, heavy loads, elevated temperatures, and significant exposure to contaminants, there is a clear requirement for robust lubrication solutions to enhance machine uptime, availability, reliability, and safety.

Components that require reliable lubrication:

- Differentials and final drives
- Steering components
- Hydraulic cylinders
- Joints and bearings
- Bolts and bushings
- Control valves



Lubricants

Product name	Description
LGLS 2	KP2K-20 high viscosity grease NLGI 2
LGCC 2	K1/2 G-50 general purpose grease NLGI 2
LGGB 2	KPE 2K-40 environmentally accepted grease NLGI 2
LGHb 2	KP2N-20 high load, high temperature grease NLGI 2
LGTE 2	KPE2G-40 biodegradable grease NLGI 2



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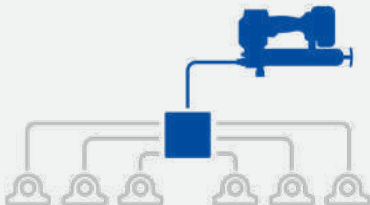


Manual lubrication

Product name	Description
LAGN 120	grease fitting kit (120 conical fittings)
TLGH 1	manual grease gun
1077600	manual grease gun
1077600H	manual grease gun with flexible hose
1077600/SET	complete manual grease gun set



SKF Lincoln Offer

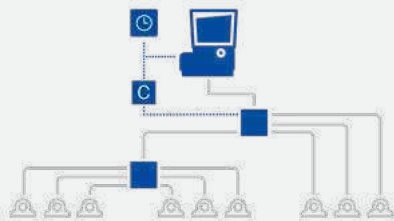


Semi-automatic lubrication

Product name	Description
LAGN 120	grease fitting kit (120 conical fittings)
TLGB 21	20V Li-ion PowerLuber, 1 battery
SSV	progressive metering device
SSVD	adjustable progressive metering device
VPK	sectional progressive metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer

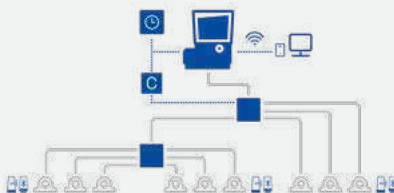


Automatic lubrication system components

Product name	Description
CLP	electrically driven compact grease pump
P203	electrically driven grease pump
SSV	progressive metering device
SSVD	adjustable progressive metering device
VPK	sectional progressive metering device
TLMP	multi-point automatic lubricator
H	customized and prefilled high-pressure hose



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Connected automatic lubrication system components

Product name	Description
P253 Smart	electrically driven connected grease/oil pump
CLP Smart	electrically driven connected compact grease pump
Datalog controller	lubrication system controller (SKF eLube app)



SKF Lincoln Offer



Mining graders

30+
Lubrication points

Costly breakdowns and downtime are common challenges faced by graders due to wear and tear on critical components. Premature wear and tear in bearings, gears, and hydraulic systems occur due to friction between moving parts. Rust and corrosion result from direct exposure to harsh environmental conditions, posing an operator safety risk due to high wear and tear on moving parts. Overheating is also a concern due to friction and harsh environmental conditions. Automatic lubrication systems offer a solution by supporting proper lubrication, which significantly reduces wear and extends the lifespan of your equipment.

Components that require reliable lubrication:

- Blade lift cylinder
- Rear axle pivot
- Steering pin
- Draw bar
- King pin
- Ball joint

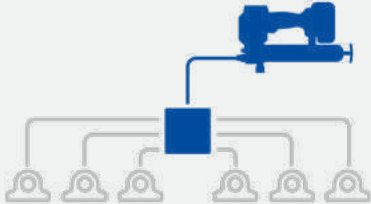


Lubricants

Product name	Description
LGLS 2	KP2K-20 high viscosity grease NLGI 2
LGCC 2	K1/2 G-50 general purpose grease NLGI 2
LGGB 2	KPE 2K-40 environmentally accepted grease NLGI 2
LGHb 2	KP2N-20 high load, high temperature grease NLGI 2
LGTE 2	KPE2G-40 biodegradable grease NLGI 2



SKF Lincoln Offer

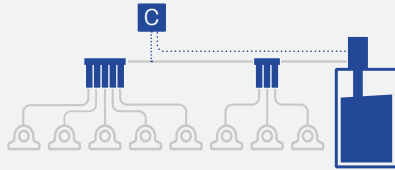


Semi-automatic lubrication

Product name	Description
LAGN 120	grease fitting kit (120 conical fittings)
TLGB 21	20V Li-ion PowerLuber, 1 battery
SSV	progressive metering device
SSVD	adjustable progressive metering device
VPK	sectional progressive metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer

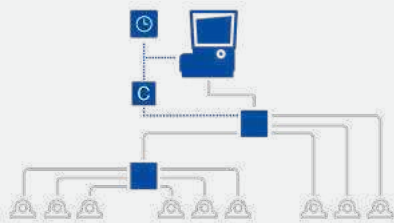


Automatic single-line lubrication system components

Product name	Description
FlowMaster	hydraulically or electrically driven barrel pumps
LMC 301	compact control and monitoring device
SL-V	single-line (high-pressure) metering device
SL-6	single-line (high-pressure) metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer

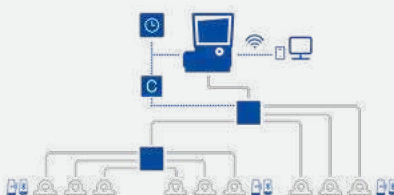


Automatic progressive lubrication system components

Product name	Description
CLP	electrically driven compact grease pump
P203	electrically driven grease pump
SSV	progressive metering device
SSVD	adjustable progressive metering device
VPK	sectional progressive metering device
TLMP	multi-point automatic lubricator
H	customized and prefilled high-pressure hose



SKF Lincoln Offer



Connected automatic lubrication system components

Product name	Description
P253 Smart	electrically driven connected grease/oil pump
CLP Smart	electrically driven connected compact grease pump
Datalog controller	lubrication system controller (SKF eLube app)



SKF Lincoln Offer



Dozers

33+
Lubrication points

The failure of heavy equipment such as bulldozers in mining projects can quickly lead to massive delays in the entire project. A demanding and challenging atmosphere results from exposure to a highly contaminated environment. Manual lubrication necessitates halting the asset to apply the lubricant, and heavy loads reduce the lifespan of joints, bushings, and bearings. Regular and reliable lubrication minimises wear and tear, extending the life of the bulldozer. Well-lubricated components such as joints, bearings, and bolts help the bulldozer operate efficiently and be less prone to breakdowns. A well-maintained bulldozer can move and level earth more efficiently. Preventive maintenance is more cost-effective than expensive repairs after a failure. Automatic lubrication systems reduce maintenance times and also help increase the reliability of the bulldozer. This means projects run like clockwork.

Components that require reliable lubrication:

- Steering components
- Joints and bearings
- Other moving parts
- Hydraulic cylinders
- Tracked drives
- Blade



Lubricants

Product name	Description
LGLS 2	KP2K-20 high viscosity grease NLGI 2
LGCC 2	K1/2 G-50 general purpose grease NLGI 2
LGGB 2	KPE 2K-40 environmentally accepted grease NLGI 2
LGH 2	KP2N-20 high load, high temperature grease NLGI 2
LGTE 2	KPE2G-40 biodegradable grease NLGI 2



SKF Lincoln Offer

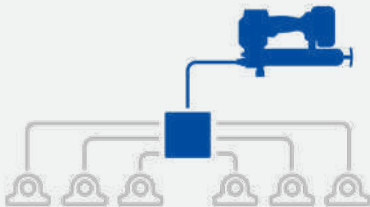


Manual lubrication

Product name	Description
LAGN 120	grease fitting kit (120 conical fittings)
TLGH 1	manual grease gun
1077600	manual grease gun
1077600H	manual grease gun with flexible hose
1077600/SET	complete manual grease gun set



SKF Lincoln Offer

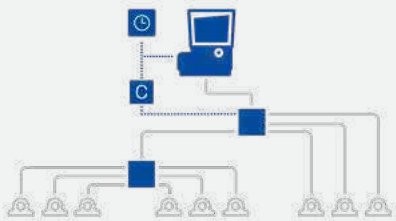


Semi-automatic lubrication

Product name	Description
LAGN 120	grease fitting kit (120 conical fittings)
TLGB 21	20V Li-ion PowerLuber, 1 battery
SSV	progressive metering device
SSVD	adjustable progressive metering device
VPK	sectional progressive metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer



Automatic lubrication system components

Product name	Description
P203	electrically driven grease pump
SSV	progressive metering device
SSVD	adjustable progressive metering device
VPK	sectional progressive metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer



Connected automatic lubrication system components

Product name	Description
P253 Smart	electrically driven connected grease/oil pump
Datalog controller	lubrication system controller (SKF eLube app)



SKF Lincoln Offer



Underground trucks

50+
Lubrication points

Underground dump trucks are engineered to boost productivity in mining applications, reduce transportation costs per tonne, and handle payloads of 30 to 55 tonnes or more. They are suitable for both hard and soft rock underground mining as well as tunnel construction.

These trucks offer a reliable solution for difficult working conditions, demonstrating good performance in cold environments. Their flexible and economical design contains up to fifty lubrication points. Automatic lubrication systems significantly enhance productivity and minimise downtime by ensuring consistent and thorough lubrication of all critical points.

Components that require reliable lubrication:

- Steering components
- Suspension components
- Joints and bearings
- Hydraulic cylinders
- Tracked drives
- Bucket area

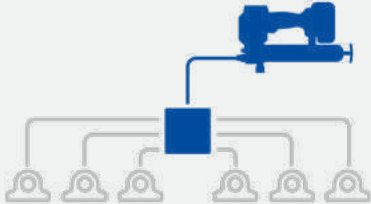


Lubricants

Product name	Description
LGLS 2	KP2K-20 high viscosity grease NLGI 2
LGGB 2	KPE 2K-40 environmentally accepted grease NLGI 2
LGHB 2	KP2N-20 high load, high temperature grease NLGI 2



SKF Lincoln Offer

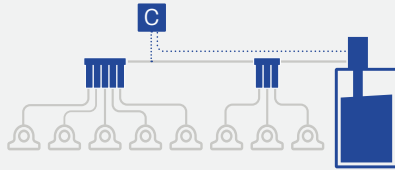


Semi-automatic lubrication

Product name	Description
LAGN 120	grease fitting kit (120 conical fittings)
TLGB 21	20V Li-ion PowerLuber, 1 battery
SSV	progressive metering device
SSVD	adjustable progressive metering device
VPK	sectional progressive metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer

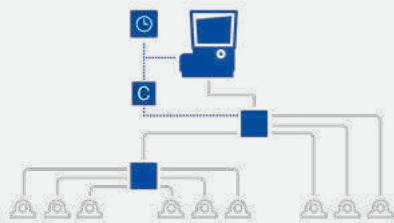


Automatic single-line lubrication system components

Product name	Description
FlowMaster	hydraulically or electrically driven barrel pumps
LMC 301	compact control and monitoring device
SL-V	single-line (high-pressure) metering device
SL-6	single-line (high-pressure) metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer

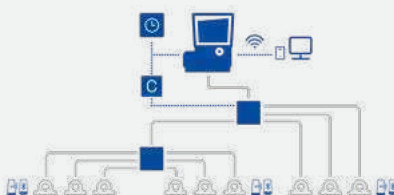


Automatic progressive lubrication system components

Product name	Description
CLP	electrically driven compact grease pump
P203	electrically driven grease pump
SSV	progressive metering device
SSVD	adjustable progressive metering device
VPK	sectional progressive metering device
TLMP	multi-point automatic lubricator
H	customized and prefilled high-pressure hose



SKF Lincoln Offer



Connected automatic lubrication system components

Product name	Description
P253 Smart	electrically driven connected grease/oil pump
Datalog controller	lubrication system controller (SKF eLube app)



SKF Lincoln Offer



Bucket wheel excavators, reclaimers and stackers

500+
Lubrication points

These machines are a substantial piece of heavy machinery utilised in surface mining for continuous excavation in open-pit operations, capable of removing thousands of tonnes of overburden each day. Experiencing a loss of one of these for several hours or even days can significantly can massively depress business results and escalate maintenance costs. The extremely demanding working conditions require the ability to handle impressively heavy loads. The lubrication process is critical and carries significant risks, particularly when executed over long distances and requiring large quantities of grease. It helps to prevent costly bearing failures to make use of automatic lubrication solutions, ensuring that wheeled or tracked continuous miners, reclaimers and stackers operate effectively despite challenges such as coal dust, water spray, high temperatures, heavy shock loads, long distances, and numerous lubrication points.

Components that require reliable lubrication:

- Slewing Mechanisms
- Bushes and Pins
- Pivot Points
- Drive unit
- Bearings
- Pulleys
- Gears

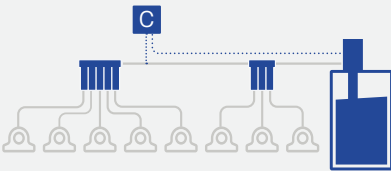


Lubricants

Product name	Description
LGLS 2	KP2K-20 high viscosity grease NLGI 2
LGEV 2	KPF2K-10 extremely high viscosity grease NLGI 2
LGGB 2	KPE 2K-40 environmentally accepted grease NLGI 2
LGHB 2	KP2N-20 high load, high temperature grease NLGI 2
LGTE 2	KPE2G-40 biodegradable grease NLGI 2



SKF Lincoln Offer

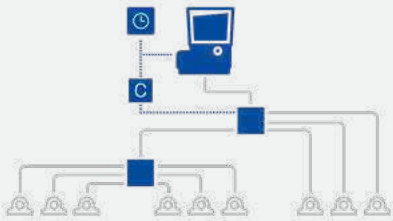


Automatic single-line lubrication system components

Product name	Description
BPH30	hydraulically driven barrel pump
FlowMaster	hydraulically or electrically driven barrel pump
PowerMaster	air operated heavy duty barrel pump
LMC 301	compact control and monitoring device
SL-1	single-line (high-pressure) metering device
SL-V	single-line (high-pressure) metering device
SL-6	single-line (high-pressure) metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer



Automatic dual-line lubrication system components

Product name	Description
ZPU	electrically driven high-volume pump
Multilube	electrically driven pump for heavy equipment
SG / SGA	dual-line metering devices
VSG	dual-line metering device
LMC301	compact control and monitoring device



SKF Lincoln Offer



Connected automatic lubrication system components

Product name	Description
Datalog controller	lubrication system controller (SKF eLube app)



SKF Lincoln Offer



Horizontal grinding mills

30+
Lubrication points

The horizontal grinding mill is one of the most critical assets in the hard rock mining industry. With only one or two horizontal grinding mills per plant, unplanned outages can halt production entirely. These mills must operate reliably under conditions of moderate to high loading, low speed, dusty environments (dry), and slurry contamination (wet). Lubrication is essential for these units to ensure smooth and efficient operation. Proper lubrication reduces friction and wear on moving parts, which is crucial under the heavy loads and low speeds typical of grinding mills. It also helps to protect components from the abrasive effects of dust and slurry contamination, preventing premature failure and costly downtime. Advantages of lubrication include extended equipment life, enhanced reliability, improved efficiency, and cost savings. By maintaining proper lubrication, horizontal grinding mills can continue to operate effectively and reliably, even in challenging conditions.

Components that require reliable lubrication:

- Open gear drive (girth ring)
- Pinion shaft bearings
- Motor and gearbox
- Trunion support
- Trunion seals

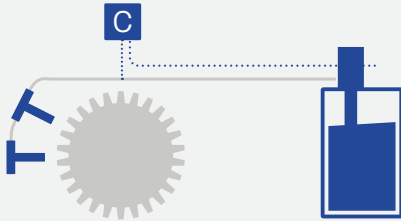


Lubricants

Product name	Description
LGEV 2	KPF2K-10 extremely high viscosity grease NLGI 2
LGHB 2	KP2N-20 high load, high temperature grease NLGI 2
LGEM 2	KPF2K-20 high viscosity grease with solid lubricants



SKF Lincoln Offer

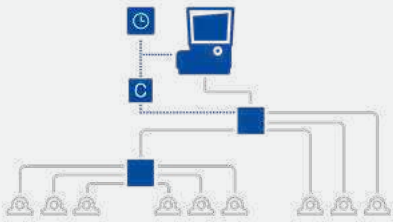


Automatic open gear lubrication system components

Product name	Description
SD	grease spraying nozzle
SDL	grease spraying nozzle, air controlled
SAF	grease barrel pump
P215	electrically driven grease pump
SPL-CC	spraying lubrication system controller cabinet



SKF Lincoln Offer

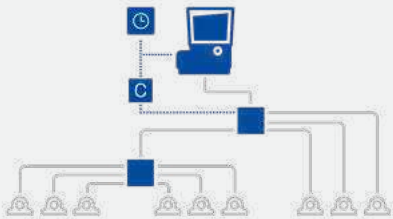


Automatic oil circulation lubrication system components

Product name	Description
OCU	oil conditioning unit
SM100	compact oil circulation unit made of stainless steel
RecondOil Box	oil regeneration with double separation technology



SKF Lincoln Offer

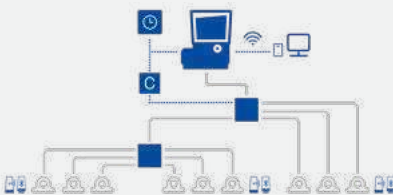


Automatic dual-line lubrication system components

Product name	Description
ZPU	electrically driven high-volume pump
Multilube	electrically driven pump for heavy equipment
SG / SGA	dual-line metering devices
VSG	dual-line metering device
LMC301	compact control and monitoring device



SKF Lincoln Offer



Connected automatic lubrication system components

Product name	Description
Datalog controller	lubrication system controller (SKF eLube app)



SKF Lincoln Offer



Crushers, screeners and apron feeders

35+
Lubrication points

Crushers, screeners and apron feeders frequently operate under challenging conditions, including high vibration and loads, exposure to shocks, and high levels of contamination. These harsh environments, which also encompass extreme temperatures, and high humidity, can significantly impact lubricant performance of critical machine parts. Automatic lubrication systems help to optimise machine performance, reduce maintenance, and extend equipment lifespan. Reliable lubrication ensures consistent operation and prevents unexpected breakdowns, thereby enhancing overall productivity.

Components that require reliable lubrication:

- Eccentric shaft bearing
- Head shaft tail shaft
- Motors

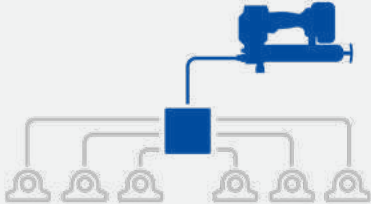


Lubricants

Product name	Description
LGEV 2	KPF2K-10 extremely high viscosity grease NLGI 2
LGH2 2	KP2N-20 high load, high temperature grease NLGI 2
LGNL 2	K2KP-30 high load grease NLGI 2
LGHQ 2	K2P-30 electric motor bearing grease NLGI 2
LGEP 2	KP2G-20 high load, extreme pressure grease NLGI 2



SKF Lincoln Offer

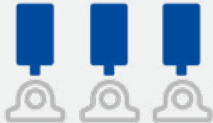


Semi-automatic lubrication

Product name	Description
LAGN 120	grease fitting kit (120 conical fittings)
TLGB 21	20V Li-ion PowerLuber, 1 battery
SSV	progressive metering device
SSVD	adjustable progressive metering device
VPK	sectional progressive metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer

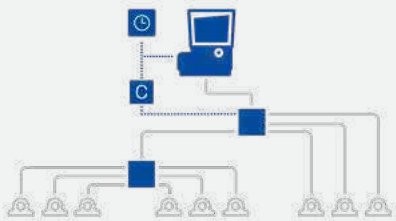


Automated single-point lubrication

Product name	Description
TLSD	single-point automatic lubricators
TLMR	single-point automatic lubricant dispenser
LAGD	gas driven single-point automatic lubricators



SKF Lincoln Offer



Automatic lubrication system components

Product name	Description
P203	electrically driven grease pump
CLP	electrically driven compact grease pump
SSV	progressive metering device
VPK	sectional progressive metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer



Connected automatic lubrication system components

Product name	Description
TLDD	connected single-point automatic lubricators
P253 Smart	electrically driven connected grease/oil pump
CLP Smart	electrically driven connected compact grease pump
Datalog controller	lubrication system controller (SKF eLube app)



SKF Lincoln Offer



Conveyors

30+
Lubrication points

Conveyors are essential to the material handling process at mine sites, transporting ore and other materials over long distances and often across challenging terrains. These conveyors operate under demanding conditions, including high levels of dust contamination, rock impacts, and remote locations. The efficient operation of these conveyors is critical, and lubrication plays a significant role in achieving this. Proper lubrication is necessary to minimise friction and wear, ensuring the longevity and reliability of the conveyor system. Additionally, it helps to prevent unexpected breakdowns, thereby maintaining continuous operation. Automatic conveyor lubrication systems have been designed to increase efficiency, even with fewer lubrication points. This saves maintenance time and costs, and helps to reduce workers' health and safety risks caused by manual lubrication and maintenance of remote, difficult-to-access areas.

Components that require reliable lubrication:

- Conveyor pulley bearings
- Conveyor drive system
- Conveyor HT motor
- Gearbox
- Motor

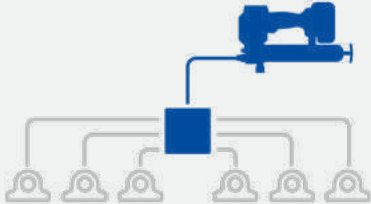


Lubricants

Product name	Description
LGNL 2	K2KP-30 high load grease NLGI 2
LGGB 2	KPE 2K-40 environmentally accepted grease NLGI 2
LGMT 2	K2K-30 general purpose grease NLGI 2
LGHQ 2	K2P-30 electric motor bearing grease NLGI 2



SKF Lincoln Offer

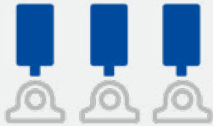


Semi-automatic lubrication

Product name	Description
LAGN 120	grease fitting kit (120 conical fittings)
TLGB 21	20V Li-ion PowerLuber, 1 battery
SSV	progressive metering device
SSVD	adjustable progressive metering device
VPK	sectional progressive metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer

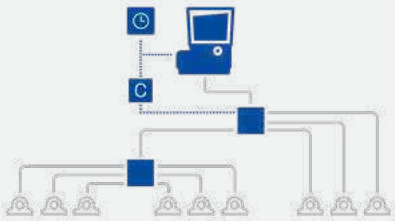


Automated single-point lubrication

Product name	Description
TLSD	single-point automatic lubricators
TLMR	single-point automatic lubricant dispenser
LAGD	gas driven single-point automatic lubricators



SKF Lincoln Offer

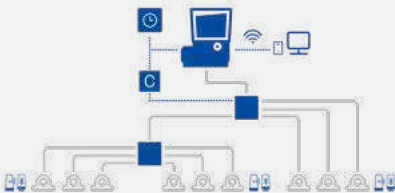


Automatic dual-line lubrication system components

Product name	Description
ZPU	electrically driven high-volume pump
Multilube	electrically driven pump for heavy equipment
SG / SGA	dual-line metering devices
VSG	dual-line metering device
LMC301	compact control and monitoring device



SKF Lincoln Offer



Connected automatic lubrication system components

Product name	Description
TLDD	connected single-point automatic lubricators
Datalog controller	lubrication system controller (SKF eLube app)



SKF Lincoln Offer



Slurry pumps

Slurry pumps are employed in applications where solids are present in the fluid stream. These pumps operate under high loads mixed with medium speed levels, which can affect bearing life. Additionally, they are exposed to harsh environmental conditions that can cause rust and corrosion. Effective lubrication systems are essential for ensuring smooth operation when handling highly abrasive or corrosive liquids. Proper lubrication reduces friction and wear, extending the lifespan of the pump components. It also helps to prevent unexpected breakdowns, ensuring reliable and continuous operation.

6+
Lubrication points

Components that require reliable lubrication:

- Bearings
- Motor

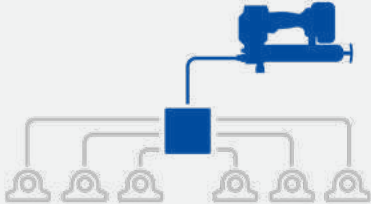


Lubricants

Product name	Description
LGNL 2	K2KP-30 high load grease NLGI 2
LGHP 2	K2N-40 high performance, high temperature grease
LGHQ 2	K2P-30 electric motor bearing grease NLGI 2



SKF Lincoln Offer

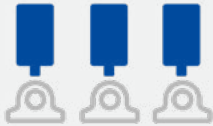


Semi-automatic lubrication

Product name	Description
LAGN 120	grease fitting kit (120 conical fittings)
TLGB 21	20V Li-ion PowerLuber, 1 battery
SSV	progressive metering device
SSVD	adjustable progressive metering device
VPK	sectional progressive metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer

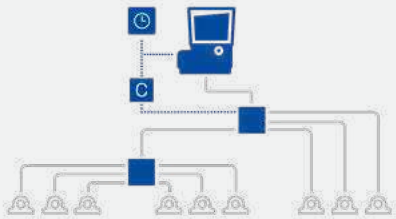


Automated single-point lubrication

Product name	Description
TLSD	single-point automatic lubricators
TLMR	single-point automatic lubricant dispenser
LAGD	gas driven single-point automatic lubricators



SKF Lincoln Offer



Automatic lubrication system components

Product name	Description
P203	electrically driven grease pump
CLP	electrically driven compact grease pump
SSV	progressive metering device
VPK	sectional progressive metering device
H	customized and prefilled high-pressure hose



SKF Lincoln Offer

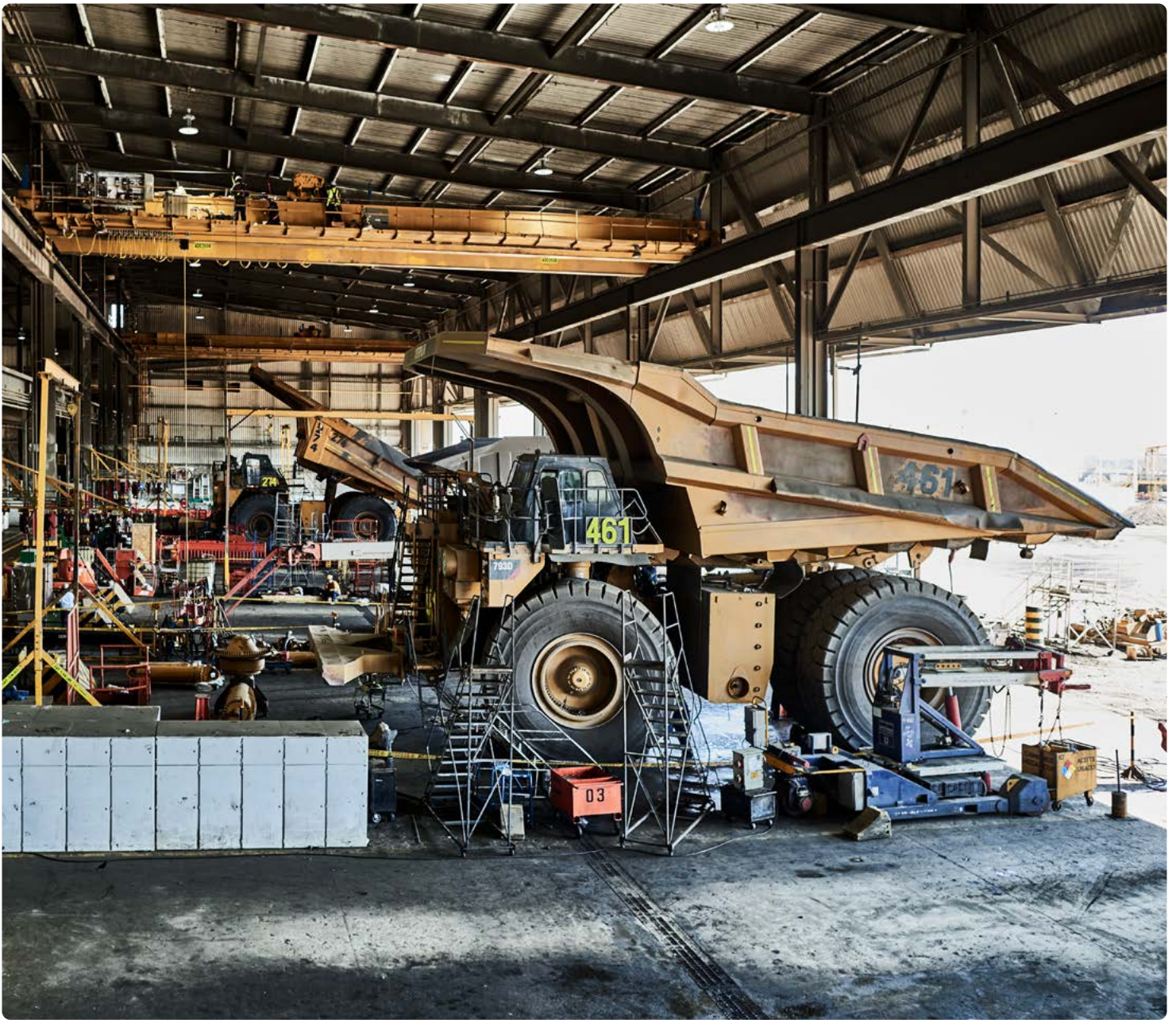


Connected automatic lubrication system components

Product name	Description
TLDD	connected single-point automatic lubricators
P253 Smart	electrically driven connected grease/oil pump
CLP Smart	electrically driven connected compact grease pump
Datalog controller	lubrication system controller (SKF eLube app)



SKF Lincoln Offer



Mining maintenance workshops

Mining machine maintenance workshops and garages play a crucial role in ensuring the longevity and efficient operation of heavy machinery used in mining operations. These facilities must be staffed with knowledgeable and experienced personnel who understand the importance of proper lubrication. Expertise in lubrication techniques is essential to reduce maintenance costs and extend the lifespan of machinery. Reliable lubrication minimises friction and wear, preventing costly breakdowns and ensuring continuous operation. Additionally, it protects components from rust and corrosion, which are common in harsh mining environments. The benefits of reliable lubrication include improved equipment performance, reduced downtime, and significant cost savings, making it a vital aspect of maintenance practices in mining machine workshops and garages.

A wide portfolio is waiting to be discovered by you:

- Greases and chain oils in various containers
- High-pressure hoses, pipes and plastic tubes
- Hose reels for varying lengths and diameters
- Manual and battery driven grease guns
- Grease nipples, couplings and fittings
- Refilling and lubricant barrel pumps
- Repair kits

Maintenance workshops lubrication solutions

PowerMaster III

Designed to fit large drums or containers, PowerMaster III pump units are ideal for lubrication systems using substantial quantities of lubricant. The modular combination of various air motors with pump tubes enables optimum adaptation to lubrication system requirements. The PowerMaster III is available in carbon steel to fit any drum size. A complete line of priming equipment and mounting devices are offered.

Features and benefits:

- Modular design for easy repair
- Only five moving parts and no metal-to-metal contact for longer service life
- Pump tubes provide ratios and outputs for any application



Discover more
on SKF.com



LFC 6000

The Lincoln LFC 6000 fluid inventory control and management system and LFC Enterprise software are designed to accurately track, monitor and dispense fluids in vehicle service applications. Utilizing a standard Internet browser to access the software, this fluid management system provides a significant savings by operating up to 50 sites with one server installation.

Overview of solutions:

- LFC 6000 fluid inventory controller
- LFC enterprise software
- Heavy-duty hose reels
- Used fluid drains
- Control valves
- Pumps



Discover more
on SKF.com



RecondOil box

The RecondOil Box is a state-of-the-art filtration system designed to remove all types of contamination from your oil. It effectively eliminates nano-sized particles, bacteria, free, bound, and emulsified water, sludge, varnish, and soluble oxidation products. This ensures your oil remains clean, protecting your machinery and extending its lifespan. Experience superior contamination control with the REcondOil Box.

Features and benefits:

- Cost-effective maintenance
- No oil changes = environmentally friendly
- Change filters instead of changing oil
- Increased machine lifetime
- Less downtime
- No oxidation in oil



Discover more
on SKF.com



Become a trained lubrication manager

Lubrication training

Lubrication should be considered a skilled job and treated as such. That is why SKF offers dealers and end customers a range of different online and classroom training courses to better disseminate knowledge of friction management and lubrication technology and to introduce the latest trends and solutions.

In addition to basic courses on lubrication systems, we are also happy to offer training on special topics such as lubricant selection, storage, transfer, applications and lubricant preparation.

Contact us!

As an introduction to the topic, we are pleased to offer best-practice videos and tutorials for lubrication products on our webpage. Have a look!



Best practices!



Discover the benefits of lubrication management

Lubrication management plays a vital role in the reliability and efficiency of machinery and equipment. It is a proactive maintenance strategy that, when executed correctly, can help prevent breakdowns, reduce downtime, lower maintenance costs, and extend the lifespan of equipment. It involves the systematic application and control of lubricants to reduce friction, heat, and wear between moving parts, ultimately extending the life of equipment and ensuring its optimal performance.

With a thought-through lubrication management approach, we can organize resources properly, improve reliability effectively, reduce inefficiencies and costs and increase safety and environmental compliance.

To better understand this complex topic, we recommend following the lubricant through its lifetime.

This is what we call the lubricant lifecycle. Discover lubrication insights on our website.



Lubrication
Management



skf.com | skf.com/lubrication | skf.com/mining

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