

Helping your machines run more smoothly

SKF Lincoln Automatic lubrication systems for your application











Inappropriate lubrication leads to poor performance and waste

Lubrication is critical to manufacturing, yet it is often treated as an afterthought—something so basic that it seems unworthy of anybody's time. This is despite knowing that without lubrication, machinery can quite literally grind to a halt.

Studies show that around 36% of bearing failures result from poor lubrication practices. If we add contamination it is around 56%, and even more if we consider equipment such as industrial chains.

If particles, dirt, and water are allowed to enter critical machine components, they will form a "grinding compound" that substantially reduces the components' life. Maintaining a proper lubricant film is vital to reducing wear and downtime. Frequent lubrication effectively reduces friction and virtually keeps bushings and bearings free of penetrating contaminants.

Inappropriate lubrication can lead to huge waste in terms of both capital and resources. Automating lubrication can help reduce lubricant consumption by up to 33% compared to manual lubrication. This is a big step at a time when environmental concerns (such as CO2 emissions) are at the core of everything.



How to ensure lubrication reliability?

Correct lubrication can already be difficult for individual points. The challenge is to do it right for all points. A common description of a reliable lubrication approach is the "5-R-Method": The right lubricant needs to be applied in the right amount and with the right method at the right time to the right lubrication point. By adding a sixth "R", we highlight the right connectivity method.



Benefits of proper lubrication

- Reduced friction
- Prevented wear
- Dissipated heat
- Prevented corrosion
- Prevented leakage
- Reduced noise
- Reduced energy consumption
- Improved efficiency
- Improved safety

Step by step towards an automatic lubrication approach

SKF's lubrication solutions adhere to a performance-based approach. Our portfolio comprises manual, point-by-point lubrication to fully automatic lubrication systems with remote monitoring. All solutions can be connected to cloud-based solutions for improved monitoring and datalogging options.

Before planning a lubrication system, determine the operating conditions, including the number of lubrication points, back pressures, temperature range, lubricant, and pump energy. SKF experts can help choose the right lubricant for your application and design a system that ensures proper lubrication, reduces wear, and avoids over-lubrication. 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, lubrication lines, and fittings with a central pump unit, including a lubricant reservoir. This system can also be connected to an internal or external controller that enables precise and reliable automatic machine lubrication. Users will be pre-warned about low reservoir filling levels.



Automatic lubrication systems supply the correct amount of lubricant at the best time—while the asset is in motion.



⁻ Automatic lubrication

Overview of SKF automatic lubrication systems



Single-line lubrication systems

Single-line lubrication systems are designed for oil, fluid grease, and grease up to NLGI 3. They are used in applications such as machine tools, textiles, printing (for oil and fluid grease), and heavy industries like mining, food and beverage, and construction (for grease).

Regardless of the application, the principle remains the same: a central pump unit delivers lubricant through a single supply line to metering devices. Each outlet serves one lubrication point and can be adjusted for precise lubricant delivery. These systems can be monitored and controlled using pressure switches and control units, serving individual machines or segmented zones within a machine.

Benefits:

- Continuous automatic lubrication
- Easy to install, adjust, expand and maintain
- Available in both preset and adjustable models
- · Integrated system control and monitoring
- Enables to pump lubricants over long distances
- Operate in wide temperature range

Applications:

- Machine tool, printing, textile, food and beverage, light trucks
- Mining and construction machines



Dual-line lubrication systems

Dual-line lubrication systems are designed for oil, semifluid grease, and grease up to NLGI 2. They are used in heavy applications such as pulp and paper, mining, and metals.

These systems dispense a precise, metered amount of lubricant to up to 2,000 lubrication points over long distances (up to 120 m or 131 yd). Even if one pair of outlets becomes blocked inside a metering device, dualline systems provide sufficient lubrication for the remaining points. Lubricant volumes can be individually metered for each pair of outlets and monitored visually or electrically.

Benefits

- · Simple to design, easy to extend or reduce
- · Reliable, precise, metered amount of lubricant
- Up to 2000 lubrication points over long distances up to 120 m (131 yd)
- Variety of applications
- Effective in harsh conditions including potentially high lubrication-point back pressure, dirty, wet or humid environments and low temperatures

Applications:

• Heavy industry, metal working plants, pulp and paper production, mining, mineral processing, power plants, cement factories, steel work



→Single-line lubrication systems for oil and grease



 \rightarrow Dual-line lubrication systems for grease



Progressive lubrication systems

Progressive lubrication systems are designed for oil, semi-fluid grease, and grease up to NLGI 2. They're suitable for small to medium-sized machines with dispersed lubrication points.

These systems deliver frequent and measured amounts of lubricant to each point. As long as the pump operates, progressive systems provide continuous lubrication. If the pump stops, the pistons in the metering device remain in their current positions. When lubricant supply resumes, the pistons continue from where they left off. If a lubrication point is blocked, the progressive circuit stops, prompting maintenance. Monitoring is possible for one outlet of a primary or secondary metering device, depending on the chosen setup.

Benefits

- Continuous lubrication as long as the pump- Delivers frequent and measured amounts of lubricant to each lubrication point
- Reliable monitoring and control Easy system monitoring and simple blockage control, integrated system control and monitoring

Applications:

- Construction and farm machinery machines (loaders, excavators, harvesters, baler)
- Wind turbine generators, food and beverage facilities and more



Multi-line lubrication systems

Multi-line lubrication systems are suitable for oil, semifluid grease, and hard grease (NLGI grades 000 to 3) and meet ATEX and API standards.

These systems offer 1 to 30 outlets, with each lubrication point having its own pumping element. Multi-line pumps can be actuated mechanically, electrically, or hydraulically, allowing for individual lubrication volume settings per pump outlet.

Benefits

- Sturdy durable pump series designed for 24/7 operation
- Simple continuous lubrication without electrical cycle timers, in most cases
- Versatile select individual pump element characteristics and oil reservoir size

Applications:

- Vacuum pumps, compressors (all types) and the hyper-compressor industry
- Rubber-mixing machinery, presses, crushers, cranes, water and slurry pumps
- Construction and mining machinery
- Tunnel-boring machines
- Meet ATEX and API standards (upon request)



→Progressive lubrication systems for oil and grease







Oil circulating lubrication systems

SKF CircOil systems are designed to cool and lubricate stressed bearings in various machine sizes. These systems not only cool but also flush bearings and gearboxes, removing contaminants from friction points.

With flow rates ranging from 0.1 to 3,000 l/min, SKF offers customized turnkey solutions. The patented tank design, featuring SKF plate separator technology, enhances operating efficiency by up to 90%. It removes air and water from the oil, preventing corrosion and premature deterioration. Adjustment valves supply oil to lubrication points, and they can be visually or electronically monitored for predictive maintenance.

Benefits:

- · Cooling of stressed bearings and gearboxes
- Removal of particles from bearings and gearboxes
- Oil reservoir sizes from 3 to 40 000 liters (0.79 to 10567 gal)
- High operating efficiency
- Easy expansion of the lubrication system

Applications:

- Pulp and paper
- · Metals and mining
- Automobile presses, automation, printing, food and beverage
- Explosive environments (ATEX / EEX) (upon request)
- API (upon request)

Oil and air lubrication systems

SKF Oil+Air lubrication systems are designed for highspeed bearings, chains, and special applications in the steel industry. A pump injects a metered amount of oil into a mixing valve, where it combines with a controlled air flow. The oil then slowly reaches the lubrication point, maintaining a slight overpressure to protect sensitive bearings from dirt.

This concept is environmentally friendly, as it avoids oil mist or fog. SKF offers customizable systems with advanced oil-streak sensor technology.

Benefits:

- Small, continuous stream of oil and air
- Super precise lubrication

Applications:

- · High-speed bearings and spindles
- Chains
- Special applications in the steel industry









Effective lubrication is key to maximize chain life in order to keep your chain and conveyor processes moving. An automatic chain lubrication system can provide many benefits when compared to manual lubrication. Regardless of application, chain type, or lubricant requirements, our experts will work with you to design a solution to prevent premature wear, corrosion, noise and chain failure.

Systems:

- Air-assisted oil projection system for small, fast-moving conveyor roller chains
- Airless oil projection system for large, slow-moving conveyor roller chains
- Grease injection system for roller chains and forged chain trolleys
- Oil lubrication with brushes for agricultural machines

Benefits

- Maximize chain service life
- Minimize downtime from insufficient lubrication
- Optimize lubricant consumption

Applications

- Food and beverage ovens and processes
- · Industrial painting process conveyors and ovens
- Overhead, floow, steel coil conveyors
- Material process conveyors
- Luggage and sorting conveyors
- Agricultural machines (balers, harvesters)



Wire rope lubrication

Developed as a service tool, the Lincoln Wire Rope Lubricator is attached periodically to equipment on a monthly, quarterly or other cycle to lubricate wire ropes. ubrication intervals should be determined according to rope manufacturer specifications.

Also, lubricating a wire rope while in service helps to prevent corrosion of the wires. Corrosion can be internal and external, and it often is caused by acids, alkaline waters, salt air, humidity, fumes, and abrasive and industrial environments in general.

Benefits

- Reduces friction
- · Protects against corrosion
- Enables lubricant to adhere to each wire and penetrate to the core for long-lasting protection
- Fast and efficient
- Increases operator safety

Applications

- Traveling cranes, wharf cranes, ship cranes, mobile cranes
- · Deck winches, ship hoists
- Winding machines in open pit mining
- Oil and gas rigs
- Ropes
- · Chair and ski lifts
- Elevators
- Drag ropes





 \rightarrow Wire rope lubricator

300 years of cumulated lubrication experience

1907	1916	1929	2004	2010	today
SKF's lubrication expertise is built on more than 300 years of cumulated experience, combining the know-how of over ten leading lubrication brands within SKF.			Alemite High-Pressure Lubricating Sys- tem (1916). Lincoln's grease guns and fittings and Willy Vogel's centralized lubrication system (1929) further con- tributed to a life with less friction.	-	SKF.
At the start of the 20th century, innova- tions revolutionised daily tasks, enhancing machinery efficiency, reduc- ing friction and costs, saving energy and time, and improving safety.			Today, the spirit of these early innova- tions is combined in one company. The journey of innovation never stops, focusing today on using resources responsibly and achieving sustainabil-		ALEMITE.
Notable i friction ir self-align automati	nventions ai ncluded SKF ing ball bear c lubrication	ming to reduce 's double-row ing (1907), Helios' device, and the	ity. SKF RecondOil's circular oil technol- ogy removes contaminants and enables repeated oil usage while minimizing CO ₂ emissions.	- S	RecondOil



Do you want to get the full picture?

Download the comprehensive story of SKF lubrication management and read why proper lubrication is essential for a life with less friction. Learn how lubrication management helps make repetitive tasks easier and preserve resources. Our experts guide you through the entire lubricant lifecycle and recommend SKF solutions for each step. Finally, the brochure discusses the future of lubrication management and how our innovations contribute to a more sustainable way of living.



 \rightarrow Download brochure "The next step in machine care"

skf.com | skf.com/lubrication

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