




Keep your trucks moving

with SKF and Lincoln automatic lubrication systems for the mobile on-road market



The Power of Knowledge Engineering



Thousands of trucks, buses and commercial vehicles around the world operate more reliably and efficiently because of SKF and Lincoln automatic lubrication systems. By delivering precise amounts of lubricant to critical moving components, automatic lubrication systems provide significant benefits to fleet owners and drivers.



SKF and Lincoln have joined forces to provide the world's most complete portfolio of lubrication solutions, from manual lubricators to the most advanced centralized and automatic lubrication systems on the market. Together, we provide a full range of lubrication tools and expert services, from turnkey installation and set-up to testing and training.

Drawing on more than 200 years of combined friction management experience, we can help you improve machine reliability, reduce maintenance costs, improve productivity, enhance safety and optimize manpower resources.

Two leading brands. One global resource.

Combined knowledge of applications and products

Why choose SKF and Lincoln lubrication systems? In a word, experience. We have drawn upon our combined knowledge in this and other fields to develop efficient automatic lubrication systems tailored specifically for commercial vehicles.

For decades, on-road fleet owners have used our lubrication solutions to increase productivity, improve equipment life and maximize the return on their investment.

With the combination of SKF and Lincoln lubrication portfolios and capabilities, you now have one resource for best-in-class lubrication services and advanced automatic lubrication systems for both fluid grease and hard grease applications.

Representing both brands, your local distributor maintains a broad lubrication product offering and is prepared to provide installation or service as needed. In addition, local market specialists are available to share expertise and support based on specific applications.



Environmental awareness

SKF believes that the environment should be considered in the design and product development process, and it is a company goal to reduce the overall environmental impact of our products

across their life cycle. Our lubrication products developed for commercial vehicles are no exception. Because our automatic lubrication systems deliver small, measured amounts of lubricant to each lubrication point, excess lubricant is prevented from making its way onto the equipment and surrounding areas. This results in fewer clean-up and disposal issues, reduces lubricant waste and increases worker safety.

SKF and Lincoln – A powerful formula for reliability:

- **Superior product innovation:**
The broadest and most advanced lubrication offering in the industry
- **Unequalled global support:**
Two teams of lubrication experts join forces
- **World-class installation support:**
The combined expertise to install the right solution

To explore our solutions, visit skf.com/TheFormula

Consistent lubrication is vital to the life of chassis and body components



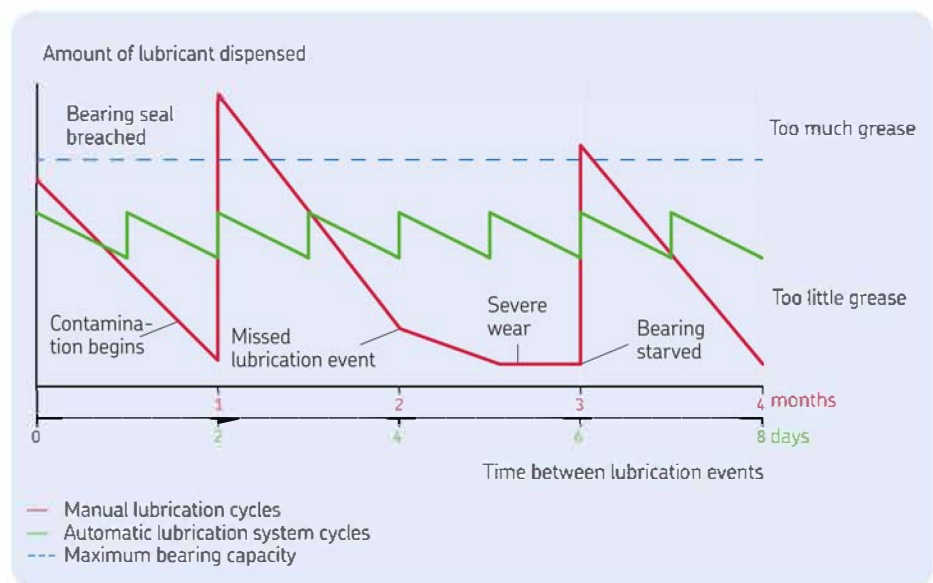
In addition to maintaining the proper lubricant film to reduce wear, frequent lubrication acts as a means to purge the chassis and body components of contaminants. If rock dust, dirt, sand and water are allowed to work their way into these components, they will form a "grinding compound" that reduces bearing life substantially.

To properly lubricate manually, it normally takes about 30 minutes per vehicle 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 you need it. 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.

SKF and Lincoln automatic lubrication systems help prevent bearing damage and unscheduled machine downtime, while optimizing manpower resources.

Automatic lubrication systems supply the correct amount of grease at the best time – while the bearing is in motion.



Proven, reliable and effective

Precise automatic lubrication provides significant benefits to fleet managers:

- Extends preventive maintenance (PM) intervals
- Reduces PM man-hours
- Decreases component failures
- Reduces road failures
- Increases truck usage
- Extends truck life
- Reduces tire wear
- Improves fleet safety and reliability
- Increases resale value of equipment

Experience in a wide range of applications

SKF offers a complete selection of high-performance lubrication systems for the on-road market, which are tailored to the customer's specific requirements. Original equipment manufacturers (OEMs) and their dealers offer SKF and Lincoln lubrication systems as standard options. In addition, our global network of qualified distributors can custom design and install systems on most commercial vehicles.

SKF offers automatic lubrication systems compatible with standard hard grease and fluid grease to meet the requirements of your OEM and your operating conditions.

Return-on-investment (ROI) calculation

- At least 95% reduction in man-hours to lubricate
- At least 50% reduction in man-hours for repair
- Typically a 10% increase in steering tire life
- At least 10% increase in truck usage through extended preventive maintenance intervals and decreased component failures
- At least 50% reduction in replacement part costs for slack adjusters and tie rod ends

Maximize production, reduce life cycle costs, optimize equipment utilization and enhance resale value with automatic lubrication.



Automatic lubrication systems provide benefits for many types of on-road vehicles.





Truck chassis applications



Pump location

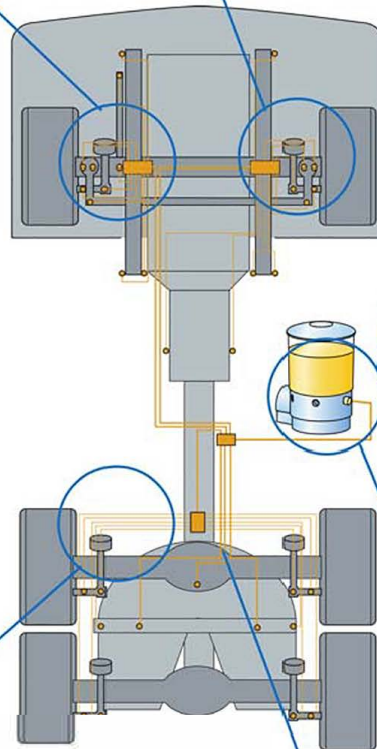
The pump typically is mounted on the frame rail of the truck chassis for easy reservoir refilling and inspection.

Front-end

- Kingpins (top and bottom)
- Tie rod ends
- Transmission cross shafts
- Spring shackle pins
- Cam shaft bushings
- Slack adjusters
- Steering arms

Rear-end

- Brake cams
- Slack adjusters



The example shows a progressive automatic lubrication system on a truck tractor. Depending on your OEM's recommendations, it also is possible to install an SKF single-line lubrication system that operates with fluid grease.

In a progressive lubrication system, the primary metering device is located near the pump, which allows for quick inspection and verification of system operation. Secondary metering devices are located closer to the lubrication points in the front and rear of the vehicle.

The cycle indicator pin on the primary metering device provides a visual confirmation that the device is working properly.



High-impact areas

Lubricant feed lines are wrapped with "spiral wrap loom" to protect against the elements and road debris.



Fifth-wheel

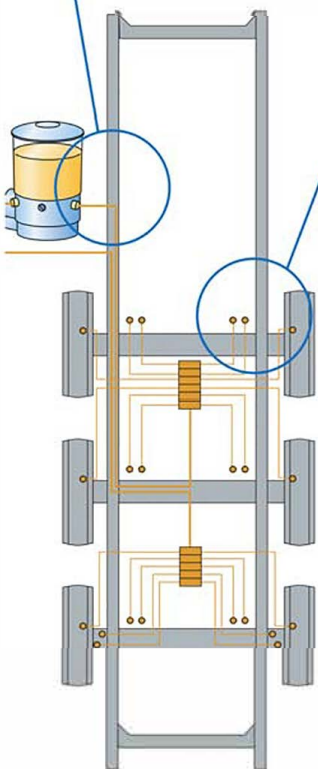
The automatic lubrication system supports the fifth wheel to maintain the proper lubricant film, reducing component wear and improving tire life.



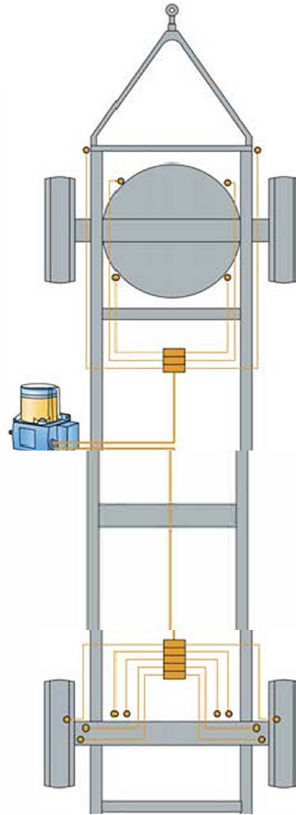
Trailer and semi-trailer applications



Examples:
Progressive automatic
lubrication system



- Brake cams
- Slacks
- Spring shackle pins



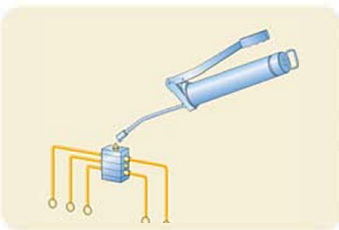
Trucks with frequent trailer changes

For this type of vehicle, an automatic lubrication system can be mounted directly on the trailer. The system supplies precise lubrication without the need for continuous power by using the power from the trailer's brake lights.

A controller keeps track of the time a trailer is in use by monitoring its vibration. The system keeps lubricating each time the trailer's brakes are applied until its controller adds up the "on times" and determines that the pre-set time for a complete lubrication cycle has been reached.

Truck tractors with trailers or semi-trailers without frequent vehicle changes

For this application, the pump is installed on the truck tractor, and the main line of the following vehicle is connected to the tractor's lubrication system via a plug and socket coupling. The feed capacity is sized so that all standard interconnected vehicles can be supplied.



Trailers with up to 22 lubrication points

This manual, centralized lubrication system is a cost-effective solution to service up to 22 lubrication points using a central metering device.



Vocational trucks – lubrication applications above the chassis

Municipalities, fleet operations, construction trucks, military equipment and transportation companies constantly are under pressure to save money, increase productivity and make the most of their investment in vocational vehicles.

Typical applications:

- Waste trucks – side, front and rear loaders
- Concrete trucks (mixers and pumps)
- Dump trucks (snow plows)
- Sewer-cleaning trucks
- Fire-fighting trucks
- Low-boy and heavy-duty service trucks
- Truck cranes and boom trucks
- Street sweepers
- Water vacuum trucks
- Kiln trucks
- Hot oil trucks
- Winch trucks
- Vacuum tank trailers ... and more!

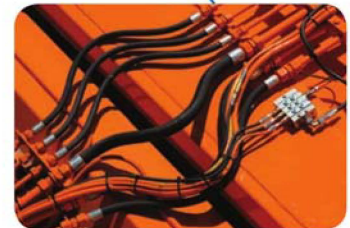
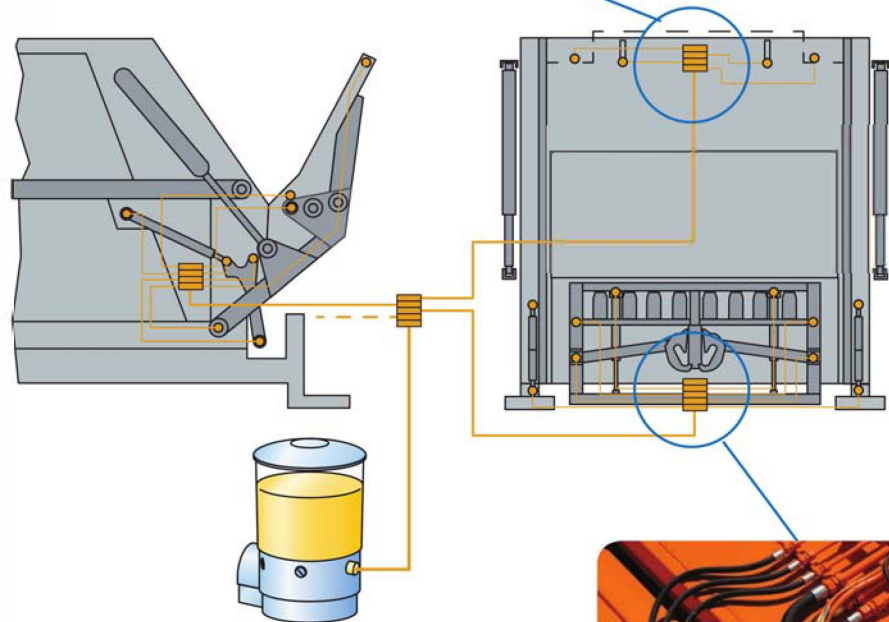
Automatic lubrication systems can lubricate vocational truck chassis, as well as body components that are subjected to high wear.

The system can be part of the chassis lubrication system or installed as a stand-alone system for the body. The pump unit preferably is mounted on the frame rail of the chassis.



Example:

Progressive automatic lubrication system on a rear-loader waste truck



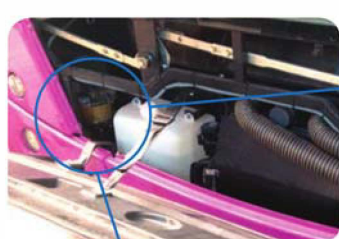
Also, single-point systems that condense lubrication points on the vehicle can provide effective solutions that save time and lower direct operating costs.



Bus chassis applications

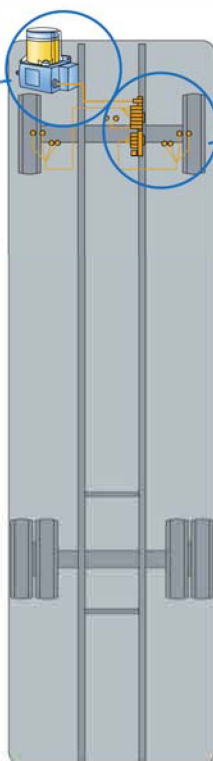
Regardless of whether a bus has two axles or three axles and a ring, its pins, bushings and ring need reliable lubrication to lower maintenance cost and effort.

The **example** shows a single-line automatic lubrication system for fluid grease mounted on a bus. Depending on your OEM's recommendation, it also is possible to install an progressive lubrication system to operate with hard grease.

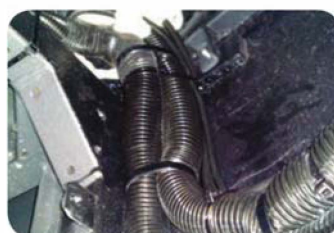


Pump location

The pump is mounted on the frame of the bus chassis and can be served through the engine hood.



Single-line lubricant metering devices can be connected to manifolds to support easy and space-saving installation.

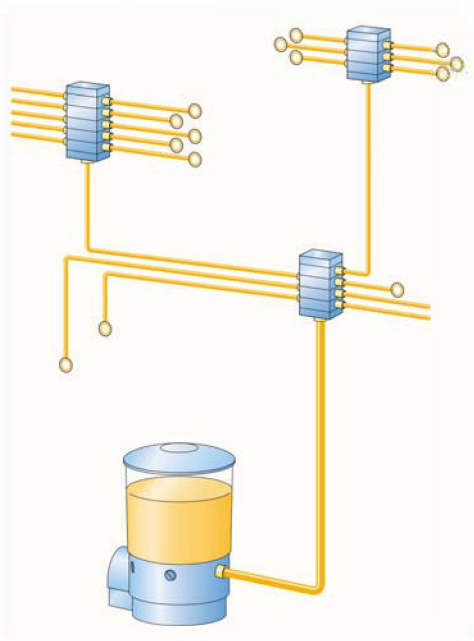


High-impact areas

All lubricant feed lines are protected against the elements and road debris.

Validate lubrication

with progressive automatic lubrication systems
for hard grease



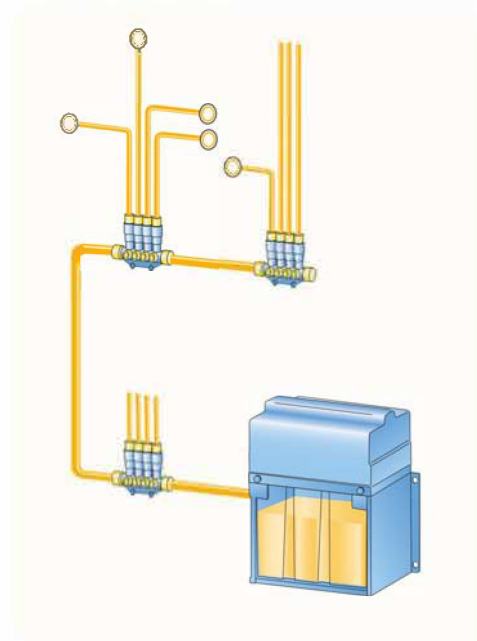
In progressive automatic lubrication systems, a piston pump supplies a defined amount of lubricant through the main line to the metering device that serves each outlet. SKF ProFlex and Lincoln Quicklub systems are designed for specific applications and can be configured to meet the unique requirements of every lubrication point on the equipment.

Advantages:

- Standard grease NLGI class 2, provided by your supplier
- Continuous delivery of lubricant during pump running time
- Easy system monitoring to confirm that each lubrication point is lubricated
- Datalogger models track pump performance and notify operator if system requires service
- Pump models can be connected to telematic systems
- Manual grease points to easily check and repair the system

Adjustable lubrication

with single-line automatic lubrication systems
for fluid grease



In single-line lubrication systems, a pump feeds the lubricant via the main line to the lubricant metering devices, where it is metered and fed to the lubrication points. Each outlet serves one lubrication point. The individual lubricant requirements for each lubrication point can be adjusted using interchangeable metering nipples. The parallel setup of the single-line metering valves enables a reliable system design with simple installation.

Advantages:

- Standard grease NLGI class 00, 000, provided by your supplier
- Re-lubrication metering devices feed the lubricant after the pump has been turned off
- Modular design provides scalable system planning
- System continues to work if a lubrication point is blocked
- Functions reliably in low temperatures
- Easily adjustable delivery volumes

Comprehensive portfolio of components

for a wide range of lubrication applications



Certain criteria, such as ambient conditions, required delivery rates, lubricant used and service intervals, determine which lubrication pump and metering devices should be selected.

SKF's portfolio includes:

- **Pumps**
 - Pneumatic and electric (12 / 24 V DC) drives
 - Sturdy designs
 - Weather-resistant housings
 - Clear reservoirs to check fill level
 - Models with stirring paddles to keep hard grease flowing and to avoid separation
- **Metering devices**
 - High-precision components
 - Visual or electronic monitoring
- **Optional monitoring**
- **All necessary accessories for your specific lubrication solution**

Depending on the number of lubrication points to be covered, SKF offers a wide range of pump units and metering devices in a variety of sizes.

Pre-assembled kits for both progressive and single-line lubrication systems are available to minimize installation time. Most can be installed in eight man-hours or less.

These systems are available at the OEM level or can be professionally installed on site.

No matter which system you choose, our local distributors can provide service and easy access to parts.

Complete in-shop maintenance equipment

Our comprehensive line of performance-proven pumps, hose reels, dispense valves, grease guns and fluid inventory control systems offers everything needed to build a fully functional lubrication station.

Advantages:

- Complete offering from storage tank to dispense points
- Ability to design systems for any length of run, lubricant/ fluid, temperature and flow rate
- Fluid inventory control systems accurately track lubricant dispensing

Features:

- Proven pump designs for any type of container and lubricant
- Provide range of hose reels with varying lengths and diameters
- Complete offering of metered and non-metered dispense valves for all weather conditions, including temperature and moisture
- Complete used fluid handling offering, including portable drains and pump-operated systems



State-of-the-art lubrication trucks

Many contractors rely on the services of a good lubrication truck to maintain equipment in the field. These trucks feature on-board pumps, reels, dispense valves and accessories that enable quick, on-site equipment lubrication.

Advantages:

- Proven installations withstand rough, off-road driving and severe weather conditions
- Flexibility provided by range of products

Features:

- Heavy-duty reels with narrow footprints endure flexing and vibration
- Family of metered and non-metered dispense valves designed for high flows
- Option of using hydraulically or air-operated pumps



Power when no automatic lubrication is available

Lincoln's offering of manual lubrication tools is designed with power and performance in mind.

Advantages:

- Most extensive offering of hand-operated lubrication tools
- Provides easy, point-by-point lubrication

Features:

- Lincoln's PowerLuber family provides a wide range of pressures and volumes



Global experience, global support, local installation

More than 200 years of combined SKF and Lincoln experience

By uniting the worldwide experience, portfolios and distribution networks of the SKF and Lincoln brands, we offer the industry's most complete range of lubrication management solutions across the globe.

Whatever the size or design of your machines, SKF has the products and resources to help you increase bearing life, machine uptime and safety, while minimizing manpower hours, maintenance costs and environmental impact.

A network of experienced partners

SKF- and Lincoln-branded products, systems and services are available through a global network of distributor partners, supported by one unified sales organization committed to your success. System house distributors around the world offer turnkey solutions and extensive aftermarket support.



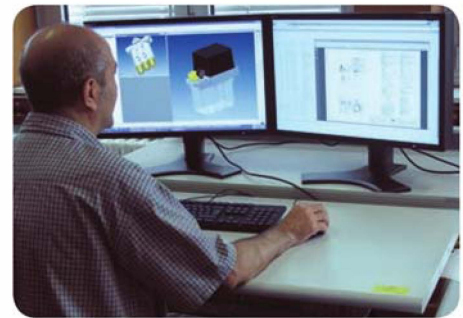
Retrofitting lubrication systems

- On-site, professional retrofitting of centralized lubrication systems at your location
- Custom design and installation of systems on most pieces of equipment



Service and repair

- On-site installation, service and maintenance contracts
- Training for operators and maintenance personnel



Turnkey engineering

- Working together with customers to develop tailor-made lubrication solutions to meet specific needs
- 3D CAD data are available in native format in the online product catalogue
- SKF LubCAD app for mobile devices
- Investment in research and development, resulting in numerous patents

Here for you, wherever you are

With lubrication application centres located on every continent and a worldwide distributor network, SKF has the people, products and support you need to optimize your lubrication management programme.

For more information, contact your SKF representative or visit

skf.com/TheFormula.

- Customized lubrication system design
- System installation and start up
- Service and repair
- Lubrication analysis and testing
- Lubrication management training
- Warranty support
- System maintenance contracts
- Surveys and recommendations
- Return-on-investment (ROI) analysis
- Guidance on safety and environmental issues
- Pre-assembled lubrication kits for easy retrofitting
- Local inventory of system components and spare parts
- Procurement logistics and synchronized production



Global availability

- Worldwide distributor network
- Combined network of experienced partners

The Power of Knowledge Engineering

Combining products, people, and application-specific knowledge, SKF delivers innovative solutions to equipment manufacturers and production facilities in every major industry worldwide. Having expertise in multiple competence areas supports SKF Life Cycle Management, a proven approach to improving equipment reliability, optimizing operational and energy efficiency and reducing total cost of ownership.

These competence areas include bearings and units, seals, lubrication systems, mechatronics, and a wide range of services, from 3-D computer modelling to cloud-based condition monitoring and asset management services.

SKF's global footprint provides SKF customers with uniform quality standards and worldwide product availability. Our local presence provides direct access to the experience, knowledge and ingenuity of SKF people.



SKF BeyondZero

SKF BeyondZero is more than our climate strategy for a sustainable environment: it is our mantra; a way of thinking, innovating and acting.

For us, SKF BeyondZero means that we will reduce the negative environmental impact from our own operations and at the same time, increase the positive environmental contribution by offering our customers the SKF BeyondZero portfolio of

products and services with enhanced environmental performance characteristics.

For inclusion in the SKF BeyondZero portfolio, a product, service or solution must deliver significant environmental benefits without serious environmental trade-offs.

MFP

**AUTOMATION
ENGINEERING**

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