

Progressive automatic lubrication systems for extended life



Progressive automatic lubrication systems from SKF Group Company, Lincoln Lubrication South Africa, are specially designed for the continual lubrication of stationary and mobile machines and systems to ensure sustainable operation even in harsh and unforgiving environments. Lincoln Lubrication SA's sales consultant, Joe Barnard, describes the advantages.

"Alongside extended machine and equipment availability and life span, customers will reap the benefits of increased uptime and productivity and reduced operational costs."

By delivering the correct amount of lubricant, the progressive automatic lubrication system eliminates the common and costly problem of under- and over-lubrication that is normally associated with inaccurate and irregular manual lubrication. Barnard explains that under-lubrication can lead to component wear and tear and equipment failure while over-lubrication is wasteful and pollutes the environment. "Furthermore, use of our lubrication systems will prevent unnecessary stoppages in order to perform

lubrication tasks and manpower is no longer required to lubricate all connected points."

A progressive automatic lubrication system consists of a pump connected to at least one primary metering device. A second level metering device can be connected to the outlets of the primary metering device if required, to increase the number of lubricated points, depending on the pump's operating pressure. The outlets of the primary and second level metering devices are connected via branch lines to the lubrication points of the machine. The pump supplies lubricant to the metering devices at a pressure of up to 550 bar (8 000 psi), depending on the pump model. The metering devices split the lubricant into even or predefined amounts of lubricant (depending on the metering device), that are positively displaced to the lubrication points or to the inlet of a connected secondary metering device.

These progressive systems can dispense a precise, metered amount of lubricant to up to 150 lubrication points over distances of approximately 15 m, depending on case values. For oil applications, even in connection networks with flow limiters, distances of over 100 m can be accommodated.

Barnard goes on to explain that progressive systems provide continuous lubrication as long as the pump is in operation. "Once the pump stops, the pistons of the progressive metering device stop in their current position and will restart as soon as the pump starts

A P205 lubricant pump station with a 30 kg reservoir from Lincoln Lubrication SA for a new coal processing plant.



P215 525 V lubricant pump station with a 30 kg reservoir from Lincoln Lubrication SA to meet lubrication requirements on a coal processing plant.

supplying lubricant again. The progressive circuit of one outlet of the pump will stop when only one lubrication point is blocked, alerting personnel to service the system."

In order to recommend an optimum lubrication solution, which includes the best lubricant for each individual application, trained Lincoln Lubrication SA application engineers first determine a number of variables such as the number of lube points, back pressures at the lube points, operating temperature ranges, the feed pump's drive energy, and control and monitoring. "We prescribe different lubricants; oil, fluid-grease or grease, for example, which have different viscosities to suit each application," Barnard continues. The different types of oils include mineral, organic and synthetic, which are classified in ISO VG viscosity classes from 2 to 3200. NLGI grade 000, 00 and 0 greases are also known as fluid greases. Greases classified as NLGI Grade 1 to 6 are consistent lubricants that are

soft to hard, triple-component mixtures of a base oil as the lubricating fluid, a thickening agent and additives. "In most instances, greases of NLGI grade 1 to 3 are suitable for use in our lubrication systems, but we recommend a compatibility check prior to using any oil or grease for progressive automatic lubrication," advises Barnard.

These ultra-reliable robust progressive automatic systems can cope with stringent operating conditions, such as potentially high lubrication-point back pressure, low temperatures and dirty, wet or humid environments. The systems are extensively used in a wide range of small, medium and large machines and equipment: mobile machines (wheel loaders, excavators and trenchers), construction machines (concrete and mortar pumps), agricultural machines (harvesters, balers, manure spreaders and sugar cane loaders), wood reclaimers, materials handling machines (reach stackers and

crane carts), on-road trucks (waste press) and buses.

Additional applications of these versatile lubrication systems include hydro-electric plants (wind turbine generators), asphalt mixing plants, food & beverage facilities (fillers and washing machines), quarries (screens and crushers) as well as in the oil and gas industry for equipment such as reciprocating compressors.

Lincoln Lubrication South Africa recently secured an order to supply and install 13 progressive automatic lubrication systems at a newly built coal processing plant in Mpumalanga. "The plant is building a new conveyor belt system with take ups, pulleys, drives, etc, which will travel from the new mining area to the existing plant. This is a large area that requires lubrication and we will be installing the durable, versatile and reliable P205 and P215 525v pump stations with 30 kg reservoirs to meet the application requirements," concludes Barnard.

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New SKF Lincoln SL6 grease injector with maintenance in mind.

The new SKF Lincoln SL-6 injector has been designed with ease of use and maintenance in mind, with outstanding leak protection and service life, even with harsh extreme pressure (EP) greases. The SL-6 can easily be retrofitted to existing single-line pump systems.

SKF product manager, Jordan Butler, explains: "With higher demands on productivity, less time for maintenance and low tolerance for unplanned stops, lubrication performance is an important key to machine performance. Reliable lubrication solutions are a must to get the uptime you have invested in."

Innovations in the SL-6 are focused on supporting the harsh environments for which it is designed, including in dump trucks, excavators and other mining and construction equipment.

Quick maintenance features include a highly visible red indicator pin, an adjusting screw requiring only basic tools and a hex-shaped body which maximises working space, making it easy to handle and work with.

For optimally effective lubrication, its vent speed is faster than that of any competitor. This is aided by a daisy-chain effect: as soon as each injector finishes venting, it helps the next one to complete its cycle by consuming grease from the main line.

Improved sealing reduces the risk of lubricant bypass. In the unlikely event of a

failure, the injector's closed structure channels bypass lubricant to the bearing. Repair is then possible by simply replacing two components.

"Lubricating manually takes extra time, requires the machine to be stopped, and tends to swing between wasteful initial over-greasing and, over time, damagingly low lubrication," says Butler. On the benefits of automatic lubrication, he adds: "The SL-6 injector with the SKF Lincoln lubrication system helps customers to take a giant step towards increased productivity. With less maintenance, less time spent on manual greasing, reduced grease consumption and longer component life, customers will soon see a return on their investment," he concludes. □



The SL-6 injector is equipped with quick maintenance features such as a highly visible red indicator pin.



The SL-6 lubricant injector from SKF is equipped with quick maintenance features.