
For the mining industry “which never stops” and the machines must continue in operation in the most hardworking conditions, the Lincoln Industrial products represent the Standard in equipment for whole the mineral exploitation companies and also for their machines and equipment fabricants. From automatic systems as Centro-Matic® to control system as System Sentry II, the Gear Spray system, PowerMaster ® pumps and move systems, the mining sector counts with Lincoln Industrial for their quality and reliability products, as well as for their world grid of services.

By including RIVI solutions in your equipment, the mining industry increase their machine productivity and obtains a important cost reduction.
The lack of lubricant can produce a no programming stop in the machines. The high cost of the obligatory maintenance and lubrication, with a big value off the machines, leads to the need of installing centralized and automatic lubrication systems.

The accumulation of hostile agents like dirty, contamination, moisture and the mechanic loads is the reason of a high wear of the bearings and friction points. So, the lubrication is absolutely necessary for supply the right protection. RIVI lube systems are a reliable way to perform the lubrication. While the machine operates, the lubricant is distributed to every lube point connected to the system, in metered volumes and automatically.

RIVI’s lubrication systems ensure that lubricant will be properly distributed to the lube points, and therefore friction and premature wearing decrease.

Big Reduction Cost = Fast Amortization

Installing a lubrication system drastically decreases repairs and maintenance costs. Also the lubricant consumption is reduced and the useful life of the machinery is extended.
Main advantages of automatic lubrication:

- Increasing of productivity
- Savings expenses for maintenance, spares and lubricants
- Operative life is extended; undesired breakdowns are avoided
- Issues related to inadequate lubrication are eliminated
- Important benefits for EHS

Grupo Técnico RIVI designs the automatic lubrication systems best fits to your needs. It is achieved by detecting the issues related with inadequate lubrication. RIVI also offers you the possibility to outsource the maintenance of lubrication area, as well as provides reports and just-in-time information of the status of your automatic lubrication systems.

The professional team of G. T. RIVI work to provide the technical solutions and services which shall optimize the lubrication of your machinery, so you will be able to focus in your production processes and other tasks more profitable.
Our technicians and specialists, not only study the lubrication processes in the customer installations, but also the machinery itself as well as the operation conditions, by means of following data collection:

- List of machines, equipment and elements.
- Points to localize and identify. Critical points.
- Ideal lubrication system.
- Environmental conditions, productive process, work conditions of the equipment and element.
- Requirements of the Normal Quality (ISO), risk prevention and environmental protection.

After getting the information, it is analyzed by Engineering and Technical Office departments, and a customized lubrication project is developed. Manufacturing area of G. T. RIVI starts the production of the equipment to install as soon as receiving the approval from the customer.

The assembly department, composed by highly-skilled fitters, welders and technicians, perform the installation and commissioning of the centralized lubrication system.
The classic Helios system: Double line

In heavy duty conditions, such as cold or heat extreme temperatures, dirt or wet environment, the double line Helios systems offer a reliable method to lubricate friction points. This centralized system is able to supply lubricant to a huge number of points efficiently. Double line systems allows even more flexibility in dosage of lubricant, by combination with progressive Quicklub.

The double line Helios system is possible to be extended at anytime.

Features:
• Perfect for disperse lubrication points.
• A maximum pressure of 400 bar allows the use of tubes with a diameter smaller.
• Visual or electric monitoring for each couple of outsides (optional).
• Simple and individual dosage – each couple of outsides can be adapted individually.
The classic Helios system: Double line

The installation of double line lube systems, allow electric control for each point to be monitored from the Control room.

This way, the maintenance staff can control and manage the lubrication of the facilities without effort and spending just a few minutes per year.

In case of alarm (stuck points, low level in the reservoir...), the correspondent work order (dosage inspection, filling tank...) might be triggered.

The Return of Investment (ROI) for these systems, is usually very short.
The flexible Single Line system: CentroMatic

The CentroMatic systems are used when the lubrication needing’s are different among diverse lube points of machinery. CentroMatic injectors – direct action – has a metal to metal adjustment, and pistons capable of deliver lubricants even at high pressures.

Each injector is individually driven, and supply to only one lubrication point. It can be adjusted with high precision to supply the exact quantity of lubricant required. Whenever the Pumpstation be powerful enough, and piping size be appropriate, the entire lube system can be expanded at anytime.

Features:
- Individual lubricant injection for each lubrication point.
- Visual and electric (optional) monitoring.
- Lubrication even at high pressure.
- Simplicity – easy to understand and install.
- Expandable.
- Injectors made of Stainless steel are available.
Hydraulic pump FlowMaster: Powerful and versatile

The exclusive pump FlowMaster, hydraulic driven, offers to the users almost unlimited opportunities. Great possibilities to control it, allows to adjust the lubricant quantity and the pressure required for each application. The bigger is the hydraulic power inlet, the bigger is the power that Flowmaster is able to provide at the outlet.

The extreme temperatures do not stop the FlowMaster. It has passed strict tests in artic and desert conditions. The pump works good with greases of high penetration degree (NLGI 2 and up) as well as low temperatures due to suction tube has a pre-load camera and an interchange cylinder to allow a better pumping. An internal ball control returns with the cylinder of the pump allowing a better grease flow to the camera pump.

With an awesome range, the FlowMaster is suitable to small mobile machinery (low lubrication needs) as well as to the greatest mining machines (high grease consumption).
Progressive system Quicklub: Economic and reliable

The Quicklub systems have been designed to satisfy the most restrictive lubrication requirements of machines and equipment. Its reliability is based on the principle of progressive function, where the lubricant is delivered to the lubrication points by pressure-driven pistons. The lubrication occurs in intervals regulated a maximum pressure of 350 bar. So that, the lubrication of the lube points is also feasible even against high backpressures.

The QuickLub can service up to three independent circuits, each one with its own pump elements and numerous lubrication points. Every Quicklub system is easy to monitor and it ensures that the precise and metered quantity of lubricant reaches to each one of the lubrication points connected to the system.
Benefits of Quicklub system:

- There is not corrosion of the pump housing, made in fiber reinforced resin, especially for hard activities.
- Pump engine is protected for wear and wet.
- Few sizes of reservoir available.
- Up to 3 outlets (fixed flow or adjustable).
- Safety valve, also equipped with visual indication and return line to reservoir.
- Integrated Control Plate (optional).
- Touch Display and Data Logger to collect lube information.
- The installation can be done by using Quicklinc fittings (until 350 bar) or lock (DIN2353)
- Monoblock design of Lincoln progressive Metering Devices prevents from leakages, and allow operation up to differential pressure of 100 bar (inlet vs outlet).
As important as the right choice for centralized lubrication system, is the selection of the interconnection elements and the machine installation.

Only specialized staff, using the right hoses, fittings and accessories, can ensure the lack of leakages and the correct installation of the system designed.
The importance of lubrication in quarries and mining plants, leads to ensure the production, without undesired breakdowns for corrective or preventive maintenance.

The design of a lubrication system in these plants is a complex process due to few particularities:

- Hardness of the grease (NLGI grade)
- Huge distances among conveyors, hoppers, mills, etc...
- Environmental conditions (temperature, moisture...)
- Number of points, with different needs of re-lubrication.
- Vibrations.
Lubrication systems & equipment for Mining and Construction machinery

Cartridge pumps, for lubrication of hydraulic hammers.
Lubrication systems & equipment for Mining and Construction machinery
El recambio de piezas se redujo, por lo menos, en un 25%
Lubrication systems & equipment for Mining and Construction machinery

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Under the hardest operation conditions is where Lincoln products highlight for their reliability, effectiveness and durability. The Flowmaster, 24VDC or 230 VAC, has been specifically designed to supply grease to the lubrication points in machinery of mining processes.

Our customers guarantee our quality.
Lubrication systems & equipment for Mining and Construction machinery

- Manual lubrication pumps
- Centralized lubrication pumps
  - Pneumatic (membrane, cane...)
  - Electrical (12/24VDC – 230VAC)
  - Hydraulic
- Hose reels “heavy duty series”
- Grease and oil dosage
  - Simple line (Centromatic)
  - Double line (Helios)
  - Progressive (Quicklub)
- Electric control panels
- Monitoring systems
- Pneumatic elevators / hoist
- Filtration
- Dosage
- Interconnection accessories
- Flexible tubes
Example of double line systems:
Example of simple line systems (with pneumatic pump, from original barrel 200 Kg):