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Automated Lubrication pump at a cement plant

AUTOMATED LUBRICATION

Automated/Centralized Lubrication Systems

As more and more companies continue to expand due to market demands, production targets and goals have to be met and exceeded. Fierce competition also demands that an organization reduces its cost of production in order to remain competitive.

This however, is not happening due to frequent unplanned shutdowns caused by equipment failure. These failures are mainly attributed to poor lubrication practices.

Modern and efficient maintenance methods require less reliance on manual lubrication activities. Production requirements and modern equipment can no longer be managed manually and therefore the need to automate lubrication. Additionally, safety concerns increase the need to automate.

Principle of Automation

Automated Lubrication Systems also referred to as Centralized Lubrication Systems comprise of a controller or timer, pump, grease or oil reservoir, metering valves and fittings and supply and feed lines. The system delivers a controlled amount of grease or oil periodically to multiple lube points on a machine while it is operating. Whether the equipment is stationary or mobile such as mining and construction equipment, application of the lubricant is often most effective when it is dispensed in small, measured quantities over short, frequent time intervals.

Benefits of Automated Lubrication

1. All critical components of the equipment are lubricated
2. Lubricant is distributed evenly in the bearing thereby increasing machine availability
3. Less wear of the components means extended equipment life, fewer failures, reduced downtime, reduced replacement costs and reduced maintenance costs
4. Measured amounts means no wasted lubricant
5. Increased safety as access to dangerous areas is not required
6. Reduced energy consumption due to less friction
7. Increased overall production due to machine availability and reduced downtime due to breakdowns

Capital Cost of a System

The capital cost of a lubrication system includes:

- Lubrication pump and fittings
- Piping system
- Engineering of the system
- Installation and commissioning

System Operating Costs

Operating costs of the system include:

- Maintenance of the system which is typically low as most components are self-lubricated
- Lubricant costs which is essential but reduced on automation

Industries

Centralized lubrication systems are to be found in many industries such as;

- Cement & Aggregates
- Food & Beverage
- Glass Manufacturing
- Mining
- Paper & Pulp
- Power Generation
- Steel
- Water & Waste Water
- Wind Energy

Total Cost of failures

Although bearings are just a part of the equipment components, their failure results in the failure of other components such as seals, impellers and shafts. This means that indirect failures are often much more than the bearing failure itself. Installation of automated lubrication systems hence becomes extremely essential and not an option for manufacturers and equipment owners looking to reduce operating costs and increased production. ■