

Integrated solutions in the design and fabrication of equipment for bulk lubricant storage, supply and distribution to equipment reservoirs, with reservoir level monitoring and automatic refill.

SDL[®]
Lubricant Distribution Systems



TOTAL LUBRICATION MANAGEMENT

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Introduction

In many industries, there is equipment that requires large amounts of lubricant to be supplied on a regular basis. As there is a direct link between lubricant condition and equipment useful life, it is important to supply lubricants in a condition that will optimize machine component life. By centralizing lubricant distribution, it is possible to ensure that the right lubricant is available, at the right time and in the right condition, to provide optimum equipment life and prevent undue outages due to lubrication failures.

Applications

- Pumps.
- Turbo-Compressors.
- Reciprocating compressors.
- Large reservoirs with high lubricant consumption.
- Process plants.
- Areas that use various types of lubricants.
- Lubricant storage areas.

Benefits

- Increased personnel safety, through eliminating the handling of lubricants.
- Care for the environment in compliance with the ISO 14000 standards.
- Supply of clean lubricant in the right quantity at the right time.
- Avoid critical equipment failures, due to lack of lubricant or mixing of incompatible lubricants.
- Automation of lubrication, and obtain real-time equipment lubricant level readings, control consumption and ensure cleanliness of the lubricant supplied.
- Supply the correct lubricant by promoting best practices for storage.

Automatic Lubricant Supply System

- Lubricants usually travel a long way from the supplier to the turbo-machinery, which involves fluid transfer in each step, including one or more modes of transport and/or handling.
- In each step the lubricant can become contaminated, as each involves a series of activities from handling drums to filling reservoirs, which places operations personnel at risk, as injuries can often occur during the handling of drums. Sometimes mistakes can also occur in providing the correct lubricant due to poor identification or wrong labelling.

Advantages

- Efficient dosage of lubricant in the required quality and quantity, at the right time, from a central point to each of the individual equipment reservoirs.
- Increases personal safety, by preventing incidents and accidents in the handling of drums or when replacing oil in hazardous and/or confined areas.
- Improves environmental performance by avoiding oil spills during oil fills and replacement of lubricant levels in turbo-machinery.
- Eliminates the possibility of contaminating new lubricant during refill or use.
- Assists in the implementation of preventive and proactive programs.

Function

The centralized system which controls the cleanliness and automatic distribution of lubricant, is a system by which, from a central tank operated through a pump and valves, distributes lubricant to each individual equipment reservoir, metering quality lubricant at right time, in the right quantity, to the dynamic equipment.



Principal Components:

Main Lubricant Storage Tank:

An atmospheric pressure storage tank, constructed in T-304 stainless steel along with all pipes, fittings and valves. It also has ports for connecting oil purifiers, with the aim of ensuring the adequate supply of clean lubricant and preventing solid particle contaminants affecting the operation of critical rotating mechanical elements.

Filtration System:

Duplex type filter sub-system, with filtration capacity of $\beta_{3 > 200}$ absolute, with ports for oil sampling and gauges 0-200 psi, for monitoring filter differential pressure, protecting the damping and flanged valves which provide for accessible filter changes. These filters support the Particle Agglomeration purification system, to ensure clean lubrication.

Flow Measurement System:

To monitor the amount of lubricant consumed by the system connected to the turbo-machinery, a flow meter is attached which projects results on a local LCD display to monitor flow and total lubricant consumption.

Oil Contamination Monitoring System:

The level of particle contamination is measured by a sensor which utilizes a laser, whereby particles are detected when the sensor receives less light, which is a function of particle size. This system is directly integrated into the supply line and the results are given in particle count sizes of > 4 microns, $> 6\mu\text{m}$ and $> 14\mu\text{m}$ according to ISO 4406, ISO 11943 and ISO 11171 with $0.5\mu\text{m}$ accuracy in the ISO 4406 code.

Principal Lubricant Distribution System:

Pipe network that supplies lubricant to the critical equipment.

Sensor for monitoring oil level in main oil tank.

Sensors to monitor the oil level in each of the oil reservoirs of the client.