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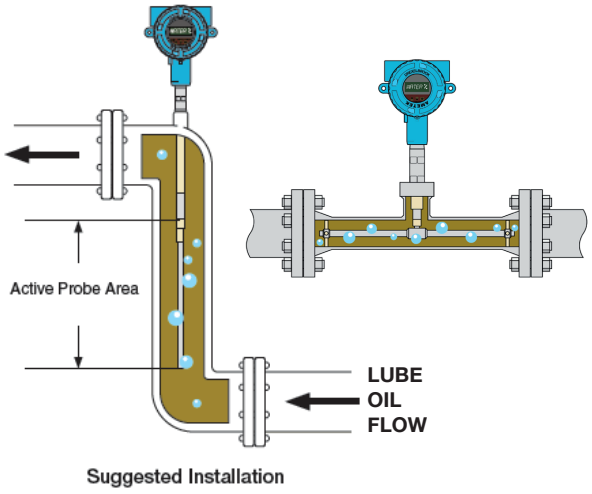
Lube Oil Contamination Monitoring Using RF Admittance

Industries:

POWER CHEMICAL STEEL PULP & PAPER FOOD & BEVERAGE



Suggested Installation

Lube Oil Monitor Mounted in vertical section of pipe. Monitor can also be mounted directly in lube oil reservoir.

The Application

Large fabricating machines such as those found in Power, Chemical, Steel, Pulp & Paper, Food and Beverage, and other manufacturing industries have bearings that require a constant supply of clean, uncontaminated oil. Lubricant oils are used to reduce friction between surfaces in mutual contact, which ultimately reduces the heat generated when the surfaces move. The property of reducing friction is known as lubricity.

The Problem

Water is a very common source of contamination in oil systems. It attacks the system in the following ways:

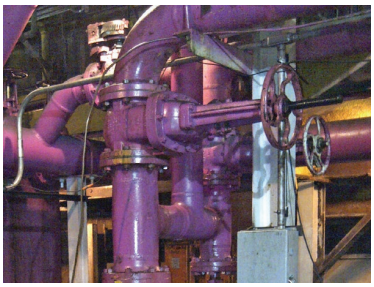
- Metal is corroded.
- The oil is decomposed, additives are liberated, the oil is oxidized and the thickness of the lubricating film layer is reduced.
- Metal fatigue on the surfaces is precipitated.
- Components can be blocked by ice crystals being formed at low temperatures.
- Wear of hydraulic components is precipitated. Water might cause liberation of the additives and consequently the formation of acids and mud, which can block nozzles, form a layer on the surface of the components and heat exchangers and block filters.

Water should be removed from oil in order to obtain the longest possible life of oil and components.

Large fabricating machines typically have ambient air or water entering the system by way of leaks. This contamination can be initiated by standard wash down procedures or inherent condensation due to recirculation heat. Bearing seals normally keep the water out of the lube oil but if a seal is compromised, water adulterates the oil causing damage to the bearings. Replacing the bearings is expensive and results in unscheduled down-time.

The Solution

ABLE's Drexelbrook Lube Oil Contamination Monitor continuously checks bearing lubricating oil for the presence of water. The Drexelbrook transmitter is factory calibrated and provides a precise digital readout of water percentage from 0 to 50% via an integral display. This allows the operator to schedule and perform maintenance before damage to the bearings can occur thereby eliminating expensive replacement and unscheduled down-time.



Typical main lubrication system piping in a HotRoll Mill

The Benefits

- Eliminate damage due to lube oil contamination.
- Constant monitoring of lube oil to determine when seals require maintenance .
- No routine maintenance required. Fit & forget technology.
- Reduce unscheduled down-time.

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