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Press Release

Oil foaming reduces performance

Excessive oil foaming reduces the viscosity of oil at load points of bearings and gears thereby limiting the performance of equipment and machinery. Independent oil analysis, fluid management and condition monitoring specialist Techenomics says it is important to manage foaming to avoid costly downtime or even equipment failure.

Techenomics International CEO Chris Adsett says foam results when air is trapped in the oil and thoroughly mixed with it through agitation and churning. He says a certain amount of foam is always formed in a turbine circulation system but with correct oil in service, the foam breaks up readily so that normally there is only a very thin layer of foam spread over the surface of the oil in the reservoir.

“Excessive oil foaming reduces the oil’s lubricity and load-carrying ability by reducing the effective viscosity at the load points of bearings and gears. It occurs in hydraulics and can also happen in turbine oil and gear oils.

“Pronounced foaming may result in increase of internal gear pressure; oil loss due to foam emerging from the gear ventilation; reduced load carrying capacity of the oil in the rolling bearing and tooth contact area; and reduced heat dissipation.”



Jim Ellison,
Acting General Manager



PT. Tekenomiks Indonesia Team

There are a number of reasons behind the formation of foam and these are often influenced by operating conditions. Chris Adsett says excessive foaming is rarely due to the oil used.

With circulation lubrication the possible causes for foaming are:

- De-foamer removed by filter;
- Oil cycles too high;
- Feed pressure of pump too high;
- Cross sections of oil lines too small; and
- Intake of air.

The possible causes of foaming in immersion lubrication are:

- Wrong filling quantity; or
- Inadequate geometry of the oil reservoir or gear box.

General foaming causes are:

- Gear oil mixed with oil of another brand;
- Gear oil contaminated by bearing grease;
- Gear oil contaminated by dust; or
- Gear oil contaminated by water.

During operation of the gear air is always incorporated into the gear oil, therefore, foaming cannot be fully avoided after switching off the installation and in large oil reservoirs during operation.

Chris Adsett says, "The traditional 'clear and bright' visual test can quickly determine the presence of water in oils and when the oil is heavily worked or agitated an anti-foam agent is commonly added to shorten the air release time and reduce the potential for foaming."



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Techenomics provides innovative foaming tests throughout its network of independent laboratories, including Indonesia, Mongolia and Australia, as part of regular oil analysis. It involves testing of the foam and its characteristics by utilising the ASTM D 892 test method.

Next week's Techenomics release will outline the company's innovative solutions to tackle foaming and its deleterious effects.

For more information about foaming and Techenomics' unique solutions contact Jim Ellison, email: jim.ellison@techenomics.com or Eka Karmila, email : eka@techenomics.com