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Press Release

Regular health checks by Techenomics keep equipment running optimally

Service includes particle counts, viscosity and oxidation tests

Regular oil testing by Techenomics, Your Partner in Lubrication Reliability, combined with trending patterns keeps engines and mechanical equipment running optimally.

These comprehensive health checks on oil and lubricants are a key part of the total fluid management program offered by Techenomics.

Tests on lubricant samples taken from operating equipment include spectroscopy, particle counts, viscosity and oxidation, and ensure operating levels are optimal and maintenance downtime is reduced, thereby improving productivity and decreasing costs.

They are performed by fully trained staff using state-of-the-art equipment in ISO-accredited laboratories and, because Techenomics is an independent specialist, are always carried out for the benefit of clients. Full benefits of regular testing are gained when results are trended over a certain amount of time.

CEO Chris Adsett said while spectroscopy identified the amount and type of wear metals, additives and contamination in new and used lubricating oil, other regular tests carried out by Techenomics included particle counts, viscosity and oxidation.

He said commonly used to monitor hydraulic systems, transmissions and turbines, particle counting indicated the cleanliness of oil by determining the level of solid contaminant particles present.

A particle count measures all particles that accumulate within a system, including metallic and non-metallic particles, fibres, dirt, water, bacteria and other forms of debris.

“By using a light scattered principle, the particle size can be analysed and results are presented utilising ISO 4406 level coding.”
Viscosity measures a lubricant’s resistance to flow at temperature, which Adsett said was the most important physical property of oil.

“Two temperatures are routinely employed for most oil analysis – 40 degrees C for ISO oils and 100 degrees for SAE oils.
“In viscosity tests oil baths are heated to one of these two temperatures. Ä small sample of oil is heated in a capillary tube until it is the same as the bath temperature. The oil sample then flows downward via gravity through a measuring volume area within the tube and is timed as it flows through. The viscosity is based on the time spent in the measuring area.

“The Viscosity Index of lubricant is measured on the basis of viscosity values at 40 degrees and 100 degrees and can identify the lubricant grade as mono or multi,” he said.

Oxidation is the chemical degradation of a lubricant caused by a reaction with oxygen, primarily at high temperatures.

“While most lubricants contain special additives to inhibit oxidation,” Adsett said, “excessive oxidation can still occur under some operating conditions.
“When it does occur, a wide range of harmful by-products are produced which increase component wear, retard performance and shorten equipment life.”

He said high oxidation levels indicate oil thickening and could result in equipment failure due to inadequate lubrication.

“Oxidation levels can be identified from the infrared signature of the oil and any deviation from the virgin oil indicates its severity.”

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