

Ferrographic Analysis Assures Precise Diagnosis



risk equipment in critical applications. The technology detects the presence of wear and contaminant particles from 1 to 250 microns in size. When used as trend analysis, accelerated wear of critical equipment is accurately detected and correctly diagnosed for planned maintenance before production and safety are put in jeopardy. Through Analysts'

Ferrographic services, equipment and maintenance managers protect critical production equipment and extend component life of gear boxes, turbines, hydraulic systems, compressors, wheel motors, and transmissions by detecting and measuring abnormal wear.

You will receive the results and professional analysis within hours on hard copy reports. Or, you can electronically download the data through **LOADMS**®. With Analysts' services, you won't need to invest in expensive equipment and time-consuming training.

Ferrography complements Analysts' used oil analysis and physical properties tests.

As confirmation when wear has been detected through routine testing, Ferrography is an analytical protocol that authenticates the source of wear and quantifies the levels of contaminant particles present in any type of oil or grease used to lubricate any piece of machinery.

Ferrography also is used routinely to monitor the condition and wear of critical components in high-

Increased Levels of Protection

Through our direct examination of your samples, analyses, and reports, you'll know the sources and causes of abnormal wear—well before failure might shut down production or cause serious risks in operational safety.

In Ferrography, wear metals and contaminant particles are magnetically separated from a lubricant and arranged by size and composition. They are then microscopically examined and compared.

Ferrographic analysis determines the number, the size, and the shape of particles caused by wear and contamination. Ferrography is an extra level of protection in predicting maintenance requirements. It works with any lubricated component—regardless of make, model, or application.

Analysts provides two levels of Ferrographic analysis.

Direct Reading (DR) Ferrography

DR Ferrography magnetically separates wear particles from lubricants and electronically determines the quantity of large and small particles present in the

Particles in these size ranges provide the most sensitive means of detecting changes in wear condition. And, calculations from DR indicate the rate, the intensity and the severity of wear occurring in your equipment.

Analysts' DR Ferrography will register:

- Indices of both the large and small particle quantities.
- Calculations of wear rate, intensity and severity.
- Interpretation of results, detailing the source of problems detected.

Analytical Ferrography

Analytical ferrography will further pinpoint the specific type of wear occurring and its source.

Analysts' lab technicians prepare a ferrogram slide by drawing the oil sample across a transparent glass plate in the presence of a strong magnetic field. In this procedure, particles are pulled to and sorted on the plate.



Lubricant from the sample is then removed with a special solvent, leaving the particles clean, aligned with the magnetic field by size and composition, and fixed to the plate. Data analysts then examine the ferrogram to determine the composition and sources of the particles, plus the types of wear present.

Analytical Ferrography provides:

- The specific type and quantities of metallic and nonmetallic debris present.
- A color photomicrograph of the ferrogram so that you can actually see the metallic concentrations.
- An assessment of the sampled machine's or component's overall wear status.
- Interpretation of the ferrography results detailing the cause(s) and the source(s) of problems detected.
- Recommendations for corrective action.

Thorough and Competitively Priced

Ferrography is a powerful tool in controlling maintenance expenses and insuring productivity. Analyst's ferrographic technology and services are the most thorough available. Programs and individual tests for your equipment are competitively priced.

Additional Tests and Services

LEM®. The most accurate and affordable way to monitor fuel soot, LEM measures the weight percent of soot present in the engine oil which is applied to OEM-specified maximum soot levels.

LOAMS®. Reports and fleet maintenance data can be accessed on-line through Analysts' Lube Oil Analysis Management System.

FUEL ANALYSIS. Fuel cleanliness and consistency are increasingly variable. Analysts' procedures measure physical characteristics, contamination and stability in both storage and use to insure that fuel meets ASTM product standards.

COOL-TEST. Monitors cooling system antifreeze/coolant and additive levels for early warning signs of problems.

HYDRAULICS. Analysts provides complete testing of hydraulic fluids to monitor pump wear and oil condition.

Contact your Analysts representative at the lab nearest you.

We'll prove that either alone or in combination with our comprehensive oil analysis programs, Ferrography gives you a better chance to stop abnormal wear before it stops your equipment. Call today.

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