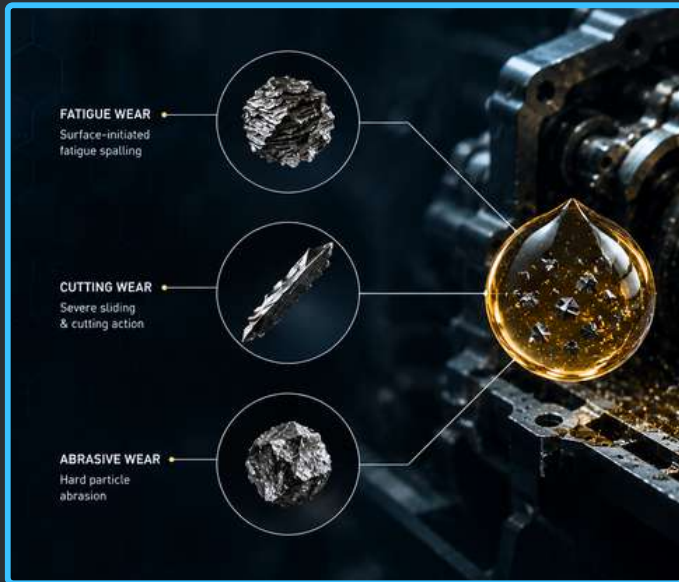


NEWSLETTER

June, 2026



See Beyond the Oil Sample: Wear Particle Analysis from Screening to Root Cause Diagnosis

June, 2026 – **Abnormal wear in gearboxes can be detected through oil analysis** before visible or audible signs of failure occur. Ferrography captures wear particles on a slide, allowing analysts to identify the type of wear, such as rubbing, fatigue, adhesive, abrasive, or corrosive damage.

QualiFG™ Ferrograph lineup offers **comprehensive ferrography solutions** from fast quantitative direct-reading screening to dual-channel analytical ferrogram preparation, laboratory and field-deployable systems, bichromatic ferrograph microscopy, AI-assisted analysis software, and portable on-site instruments.

This range provides the necessary tools for routine monitoring or in-depth failure investigations.

Product Highlight

Dual Analytical Ferrograph

QualiFG™ 1000

Feature/Advantages:

- **Dual-Channel Ferrogram Preparation:** Simultaneously prepares two ferrograms from a single oil sample, enabling direct comparison and result verification.
- **Flexible Operating Modes:** Automatic, semi-automatic, and manual operation accommodate both routine analysis and advanced research requirements.
- **High-Gradient Magnetic Separation:** Precisely deposits wear particles in a size-ordered pattern for consistent and reproducible analysis.
- **Microscopy-Ready Ferrograms:** Produces transparent ferrogram substrates suitable for immediate microscopic examination and particle classification.
- **Reliable Laboratory Performance:** Designed for oil analysis laboratories and condition monitoring programs requiring dependable wear debris evaluation.



Laboratory Dual Analysis Ferrograph

QualiFG™ 2000

Feature/Advantages:

- **Synchronous Dual-Channel Preparation:** Both ferrogram channels operate simultaneously from a single sample, reducing preparation time and improving workflow efficiency.
- **Automatic & Semi-Automatic Operation:** Automated sample handling minimizes operator intervention while supporting consistent processing of routine sample batches.
- **Adjustable Sample Flow Control:** User-adjustable flow rates optimize particle deposition across a wide range of oil viscosities and contamination levels.
- **Integrated Waste Management:** Built-in waste collection system simplifies solvent handling and reduces post-analysis cleanup requirements.
- **High-Throughput Laboratory Performance:** Designed for oil analysis laboratories and maintenance programs processing large volumes of routine samples.



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Fast Dual Analysis Ferrograph

QualiFG™ 3000

Feature/Advantages:

- **Rapid Dual Ferrogram Preparation:** Produces two complete ferrograms from a single sample in less than 20 minutes, maximizing laboratory throughput.
- **Automated Sample Processing:** Fully automated sample handling and magnetic separation minimize operator intervention and improve result consistency.
- **Precision Particle Deposition:** Optimized magnetic field and flow control create dense, well-ordered particle patterns for reliable microscopic analysis.
- **High-Volume Condition Monitoring:** Designed for commercial oil analysis laboratories, industrial maintenance programs, and fleet monitoring applications.
- **Advanced Analysis Software Compatibility:** Integrates with QualiFG™ analysis software for automated image capture, particle classification, and report generation.



Laboratory Ferrograph

QualiFG™ Lab

Feature/Advantages:

- **Gravity-Flow Operation:** Sample flows naturally without external pumps or pressure systems—simplifying setup, reducing consumable costs, and minimizing maintenance requirements.
- **Low Sample Volume Requirement:** Designed for small-volume oil, coolant, and fuel samples including limited-volume test specimens.
- **Reduced Solvent Consumption:** Gravity-flow design minimizes solvent usage, helping lower operating costs and waste generation.
- **Consistent Ferrogram Preparation:** Controlled magnetic separation produces reliable particle deposition for routine wear debris analysis.
- **Cost-Effective Laboratory Solution:** Ideal for educational institutions, research laboratories, and facilities establishing ferrography capabilities.



Direct Reading Ferrograph

QualiFG™ DRF

Feature/Advantages:

- **Rapid Wear Severity Screening:** Provides wear particle concentration (WPC) and severity index results within minutes for fast condition assessment.
- **Magnetic Separation with Optical Measurement:** Separates ferromagnetic particles and quantifies large (DL) and small (DS) wear debris fractions independently.
- **Trend-Based Condition Monitoring:** Tracks changes in wear severity over time, helping identify developing equipment issues before failure occurs.
- **Simple, Efficient Operation:** Compact benchtop design with straightforward sample handling for routine maintenance monitoring applications.
- **Integrated Ferrography Workflow:** Complements QualiFG™ analytical ferrographs by identifying samples requiring detailed wear debris investigation.



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Ferrography was invented in 1971 by Vernon Westcott and colleagues at Shell Research Ltd. in the United Kingdom. Using a magnetic field to separate wear particles from oil onto a glass substrate, the technique produces what is known as a **ferrogram**.

The first commercial system, the Ferrograph Series II, was introduced in 1974, and within a decade ferrography had become an established tool in **predictive maintenance programs worldwide**.

Today, it is widely used to assess machine wear, support condition-based maintenance, and improve equipment reliability across a broad range of industries.

Ferrograph Analysis Software

QualiFG™ FAS

Feature/Advantages:

- **AI-Powered Particle Recognition:** Automatically classifies wear particles by type, size, and morphology for faster analysis.
- **Real-Time Data & Trend Analysis:** Captures analytical data and generates wear trend reports for condition monitoring.
- **Broad Ferrograph Compatibility:** Supports dual analytical, rotary, and thistle tube ferrograph systems within a unified platform.
- **Standardized Report Generation:** Structured report templates ensure consistent documentation across operators, shifts, and sites – critical for multi-location reliability programs.
- **Scalable Lab Network Integration:** Networked software architecture allows centralized data management across multiple lab instruments and remote report review.



Ferrograph Microscope

QualiFG™ Micro

Feature/Advantages:

- **Infinity Optical System, 50x–1000x Magnification:** Wide magnification range supports both overview ferrogram scanning at low power and high-resolution particle morphology detail at high power.
- **Bichromatic Red/Green Dual Illumination:** Specialized dual-light system reveals particle characteristics invisible under standard white light – distinguishing ferrous, non-ferrous, and organic particles by color response.
- **Brightfield and Darkfield Objectives:** Switchable imaging modes provide both surface-reflected and transmitted illumination for comprehensive particle composition and morphology analysis.
- **Reflected and Transmitted Illumination:** Dual illumination paths support identification of metallic, polymeric, ceramic, and organic contamination particles on the ferrogram substrate.
- **Camera and Image Analysis Ready:** Integrated imaging port supports digital camera and analysis software connection for documented, reproducible ferrogram inspection workflows.



Portable Ferrograph Analyzer

QualiFG™ Portable

Feature/Advantages:

- **Electromagnetic Adsorption + Imaging:** Compact on-site system uses electromagnetic particle capture combined with built-in imaging for rapid field wear debris screening without sample transport.
- **Field-Based Particle Classification:** Provides immediate particle characterization and wear severity evaluation at the sampling location.
- **Rugged Industrial Design:** Durable portable enclosure designed for field, plant, and remote maintenance environments.
- **Integrated Reporting Capability:** Generates documented screening results directly in the field for maintenance decision-making.



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Which QualiFG™ System Matches Your Wear Analysis Program?

BEST FOR	RECOMMENDED MODEL	WHY THIS IS THE BEST FIT?
Flexible dual ferrogram preparation with automatic, semi-auto, and manual modes.	QualiFG™ 1000 Dual Analytical Ferrograph	Dual-channel output with three operation modes – ideal for labs needing both routine production and detailed research-grade ferrogram preparation.
Higher-throughput routine analytical ferrography with reduced manual handling.	QualiFG™ 2000 Lab Dual Analysis Ferrograph	Synchronous dual-channel preparation with automated flow management and integrated waste disposal – built for volume lab workflows.
Fastest dual-ferrogram throughput – under 20 minutes per sample.	QualiFG™ 3000 Fast Dual Analysis Ferrograph	Fully automated dual-channel output in under 20 minutes – the right tool for commercial oil analysis labs and large fleet programs.
Simple, low-cost single-channel ferrogram preparation for small labs or research.	QualiFG™ Lab Laboratory Ferrograph	Manual gravity-flow operation with minimal solvent use and no external pump – ideal entry-level ferrography for academic and small industrial programs.
Fast quantitative wear severity trending without full ferrogram preparation.	QualiFG™ DRF Direct Reading Ferrograph	Rapid DL/DS optical measurement delivers numeric WPC and severity index in minutes – the first-line screening tool before analytical follow-up.
Ferrogram microscopy with bichromatic illumination and image documentation.	QualiFG™ Micro Ferrograph Microscope	50x–1000x infinity optical system with red/green dual illumination for particle type discrimination and camera-ready imaging for documented analysis.
AI-assisted particle recognition, trending, and standardized report generation.	QualiFG™ FAS Analysis Software	Deep learning classification, real-time data acquisition, and multi-system compatibility – standardizes ferrograph reporting across operators and sites.
On-site field wear screening at the point of sampling.	QualiFG™ Portable Ferrograph Analyzer	Electromagnetic capture plus built-in imaging for field-deployable wear debris assessment – reduces lab turnaround and enables immediate maintenance decisions.

Why Choose Qualitest for Your Ferrograph Program?

Complete Workflow Coverage: From rapid direct-reading screening to advanced analytical ferrography, microscopy, AI-assisted analysis, and portable field testing, QualiFG™ supports every stage of a modern wear debris monitoring program.

Built for Global Compliance: Supports ASTM D7690, ASTM D7684, ISO 4406, and internationally recognized ferrography practices for reliable maintenance and condition monitoring programs.

Scalable Lab Economics: Qualitest's Best Price Guarantee and QualiFinance flexible payment program mean labs of all sizes can access high-performance IC instrumentation without compromising budget.

Worldwide Support Network: A central service hub, supported by a global QualiService network, ensures instruments are maintained and calibrated, minimizing downtime during critical production cycles.

Ready to Build a Smarter Wear Debris Analysis Program?

Qualitest's QualiFG™ Ferrograph lineup is built for repeatable, standards-based wear particle analysis – helping maintenance teams, oil analysis labs, and reliability engineers detect machine wear earlier, classify failure modes with confidence, and prevent costly unplanned downtime. Explore the full lineup here: <https://www.worldoftest.com/ferrograph/>

For expert guidance on selecting the right ferrograph configuration for your throughput, compliance requirements, and reporting needs, contact: sales@qualitest-inc.com

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