Operators, mechanics and engineers worldwide rely on Windrock diagnostic solutions to assess the performance and mechanical condition of diesel engines in industrial applications.

Want to know more? Contact us.

wrk.sales@apergy.com | 865-330-1100 | www.windrock.com
Only Windrock combines traditional cylinder pressure measurements and calculations with phased vibration and ultrasonic vibration measurements to provide a comprehensive, nonintrusive examination of internal components. Optional FFT/Spectrum vibration capability adds complete vibration assessment of rotating components such as turbochargers, pumps and motors. Here's why complete, component-level analysis of your engine by Windrock improves your productivity and profitability.

**Increases Reliability**
Avoiding unexpected component failure is the key to improving reliability. Windrock systems identify component degradation before failure, providing the early warning you need to take corrective measures.

**Optimizes Performance**
An engine operating at optimum condition and within performance specifications consumes at least 5% less fuel and emits lower emissions than a unit without combustion monitoring and proper maintenance. With 60% of operating and maintenance budgets typically spent on fuel, optimizing engine performance with Windrock tools results in meaningful savings in your most critical cost center.

**Reduces Maintenance Costs**
Industry studies show plants spend as much as 55% of their maintenance budget on unplanned activities. By using comprehensive portable or online diagnostics, you move from responding to breakdowns to optimizing performance, significantly reducing maintenance expenditures.

**Avoid Failures, Increase Productivity**
Today's diesel engines are technically advanced and built to survive demanding environments. However, these complex machines have thousands of parts, incorporate multiple subsystems and operate at high speeds. When any component fails, it can lead to lost production, downtime and other negative or potentially catastrophic events. To keep them running, trust Windrock - the experts with more than 25 years of engine diagnostic experience.

**6400 Diesel Analyzer Features**
- Five models to fit your requirements and budget
- Ergonomic, lightweight, yet ruggedly durable
- Easy setup and high-resolution color LCD screen
- Smart sensors with built-in calibration, high-definition vibration and ultrasonics
- Integrated encoder/wireless minimizes data acquisition time on the machine and improves safety

**Platinum™ and On-Guard® Online Systems**
- Continuously monitors engine health 24/7
- Provides alarms to machinery control systems, alerting operations of problems within the engine and helping to avoid catastrophic failure
- Real-time data and event playback
- A customizable online system to fit your exact needs

**Spotlight for Engines**
- Get a complete picture of your assets in a single application
- Monitors valve trains, power cylinder condition, turbo health, main bearings and frame vibration
- Up to 1/10th the price of comparable systems
- Saves time and resources by installing in as little as half a day vs. traditional analyzing systems which can take weeks
- Compatible with both Windrock MD and Windrock Enterprise, Spotlight can also receive and integrate data from control networks and historians into the dashboard, creating a seamless transition between old and new technology
A PROVEN APPROACH

Traditional Indicator Cards and Vibration Analysis

Traditional diesel analysis relies solely on measurements of cylinder pressure versus crank angle ("indicator cards"). While useful for measuring engine performance, this method fails to identify the mechanical condition of components. Vibration monitoring and analysis is a proven technology used to identify component degradation and reduce failures of rotating equipment. However, this spectrum or frequency based approach is impractical and cannot be effectively used for diesel engines and other reciprocating machinery.

A Better Way

For over 25 years, Windrock and our customers have successfully used crankshaft referenced vibration and ultrasonic vibration measurements to assess the mechanical health of reciprocating machines. Crankshaft reference data is time based, not spectrum based, and allows simple visualization and analysis of internal components (Figure 1). Synchronizing the position of the crankshaft and resultant piston position throughout the stroke and then plotting a once-per-degree resolution allows all internal mechanical events to be visualized. It also provides a clean signature of valve events, injector events and abnormalities such as liner wear and bearing degradation.

Advanced Windrock MD analysis software and its automated diagnostics features make analysis and reporting simple. Combining crank-angle-based vibration and ultrasonic technology with traditional indicator card readings gives you a full, easy-to-interpret assessment of the condition and performance of all types of diesel engines.

Crankshaft Referenced Measurements
Diesel Engine Analysis Training

Windrock offers courses to meet the needs of mechanics, operators and engineers at every level, from basic instruction for beginners to advanced training for seasoned analysts. Our highly experienced staff of instructors conduct classes at our training center or at your location.

For solutions that make machines more reliable, processes more productive and your operations more profitable, get in touch with Windrock. We’re ready to help you get the benefits of next-generation analysis today.