FluidSIGHT™ OIL MONITOR

Solution Overview & Considerations for Marine Applications

Gastops' innovative online, oil condition and contamination monitoring system provides real-time detection of critical oil-related failure modes in marine reciprocating engines. Built off the industry leading MetalSCAN technology, the product adds fluorescence spectroscopy to measure the quality of the oil and its additives, the quantity of contaminants such as fuel and water, and the quantity of wear debris in the oil. This provides a holistic view of engine health and enables the shift from preventative maintenance to predictive maintenance.

FLUIDSIGHT PROVIDES A HOLISTIC VIEW OF ENGINE HEALTH AND ENABLES THE SHIFT FROM PREVENTATIVE TO **PREDICTIVE MAINTENANCE**

Gastops' Innovative Solution

FluidSIGHT leverages spectroscopy technology to bring oil analysis on-engine without the bulky, expensive equipment of lab-based methods. This is combined with Gastops' industry-leading MetalSCAN technology that uses inductive sensing technology for oil debris monitoring.

Key Benefits of Gastops Solution

FluidSIGHT offers marine operators real-time insight into main and auxiliary engine health to shift maintenance planning from preventative to predictive. Leveraging advanced sensing technologies and algorithms tailored to detecting engine health, operators can trust that their critical equipment is operating within the designed levels of protection, and that variances are reported in real-time. Operators then have advanced, reliable notice to plan maintenance and avoid unscheduled or unnecessary maintenance.

Keep vessels on course, on time, and on budget: maximize availability & reduce cost.

Key Operational Benefits

- Prepare for decarbonization and fuel transitions with real-time engine health insights
- Extend maintenance intervals and oil life – change oil based on condition instead of operating hours
- Reduce/eliminate routine oil sampling
- Reduce maintenance-induced issues
- Prevent failures by ensuring adequate oil quality in varying operating conditions
- Detect minor faults early to prevent them from escalating into major damage
- Reduce troubleshooting time and optimize maintenance by pinpointing root cause
- Prevent disruptions and reduce downtime by proactively planning and combining maintenance activities

Better Prepare for Changing Fuels and Operational Complexities

One solution to the challenge of decarbonization is to retrofit vessels to use alternative fuels that have lower carbon emissions.

Overall, the effects of using fuels such as methanol and ammonia are not yet well understood, creating a high level of risk of unanticipated damages and failures. This makes real-time monitoring of engine and fluid health even more valuable.

Gastops' solution for on-engine monitoring of oil condition and contamination uses probes that can be inserted directly into the oil line.

Reduce Operational Costs by Reducing Maintenance

Gastops' technology analyzes the molecular composition of the oil, detecting distinct spectral signatures for different compounds and contaminants. This approach enables higher accuracy in measuring the level of additives, oxidation byproducts and contaminants to better predict remaining useful life. The system's output can be used to extend maintenance intervals and oil life by changing the oil only when needed. Methods such as topping up of additives can be used to optimize the oil life at a lower cost compared to a full oil change.

Prevent Failures by Ensuring Adequate Fluid Health

On-engine sensors offer real-time data, reduced human error, and immediate alerts to changes in oil condition. Immediate action can be taken to fix the root issue and address the quality of the oil. Similarly, in conditions where the thermal oxidation of the oil is higher, an additive package may be used to rejuvenate the oil and prevent damage to critical engine components.

Understanding the root cause provides a significant advantage in enhancing maintenance planning and optimization.

Detect Failures Earlier and Pinpoint Root Cause to Optimize Maintenance

Gastops' spectroscopy technology directly measures the specific molecular constituents in the oil and detects additive depletion before the base oil begins to break down. It detects fuel contamination before it reaches 1%.

Gastops' debris monitoring technology enables early detection of damage and the ability to identify the root cause. The data, in combination with intelligent algorithms, is harnessed to predict remaining safe operating life and further improve maintenance planning and reduce downtime.

About Gastops

Gastops is the world's leading provider of intelligent condition monitoring solutions used in Aerospace, Defence, Energy, and Industrial applications to optimize the availability, performance, and safety of critical assets. We offer peace of mind to our customers with innovative online monitoring sensors, at-line analysis, complex modeling and simulation, world-class laboratory testing, engineering, design, and MRO services that predict performance to enable proactive operating decisions. Gastops has been providing powerful insights into the condition of critical equipment since 1979.

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