



OFWM

ONLINE FERROUS WEAR METER

Continuous monitoring of ferromagnetic iron in
piston underside drain oil.



Online Ferrous Wear Meter



TRANSFORMING ON-BOARD OIL TESTING FOR 2-STROKE ENGINES

Maximise
uptime
and reduce
operational
expenditure

The Online Ferrous Wear Meter (OFWM) is a new tool that removes uncertainty by continuously monitoring cylinder wear, maximising uptime and reducing operating costs on large two-stroke engines.

Cylinder condition must be controlled. Inspection is only possible with the engine shut down, therefore, monitoring cylinder drain oil (CDO) on the underside of the piston while the engine is running provides critical insight into condition.

Conventional analysis is infrequent and requires manual sampling of CDO that has been in contact with the piston and liner.



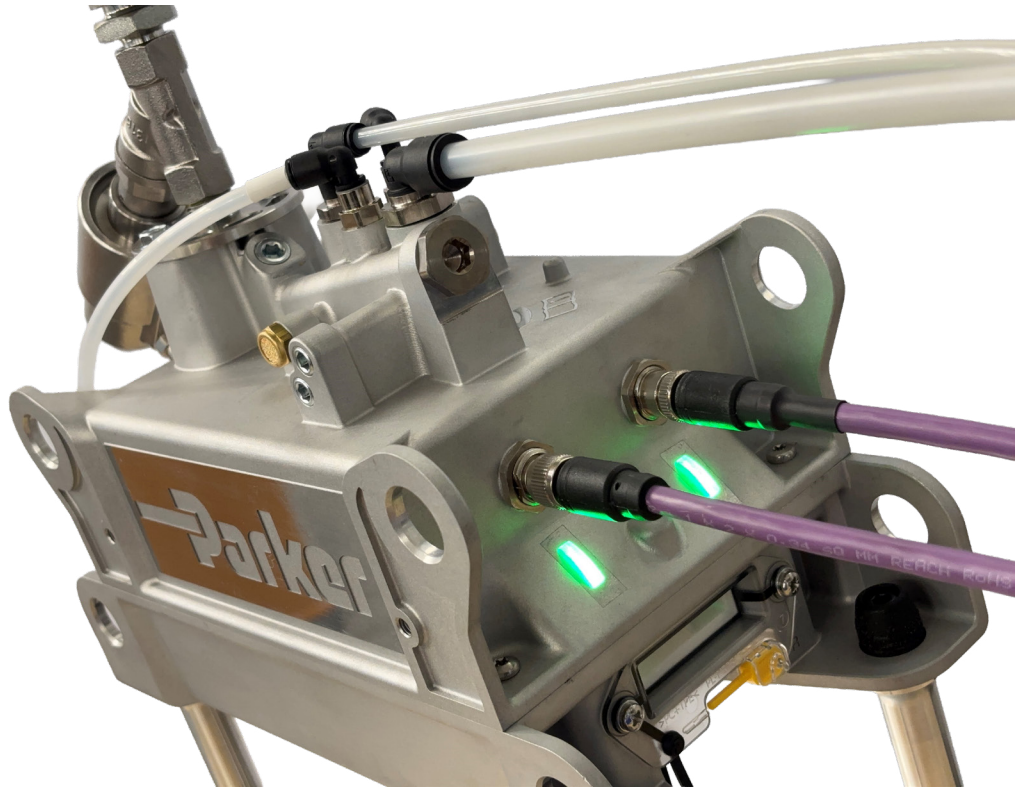
OFWM allows 24/7 automated sampling to detect, quantify, and accurately trend ferromagnetic material (magnetic iron) suspended in CDO.

With continuous feedback, abrasive and adhesive wear is monitored in line with OEM guidelines, helping reduce total cost of ownership by optimising cylinder oil feed rates, overhaul intervals and control of wear.



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of solutions
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more
about
OFWM



BASED ON BENCHMARK FWM TECHNOLOGY

Parker's popular Ferrous Wear Meter set the standard as an essential tool for monitoring of ferromagnetic iron in piston underside drain oil.

Spanning over 30 years from Kittiwake to Parker, the specialists in onboard condition monitoring have taken the FWM's patented technology and made it continuously sample so the crew don't have to.

The OFWM is a game changer for monitoring large-bore marine crosshead 2-stroke engines.

CYLINDER WEAR RATE CERTAINTY

Cylinder condition is dynamic - wear rates can change rapidly, which means periodic sampling can miss these significant and important wear changes.

Lab testing provides insight of how the lubrication condition has been. On-board testing improves wear-rate understanding but is limited by crew availability for sampling and analysis.

Don't assume wear is still what it was 100 hours ago, especially as loads or fuel change. Get high resolution feedback of wear rates, up to 30 measures per hour.

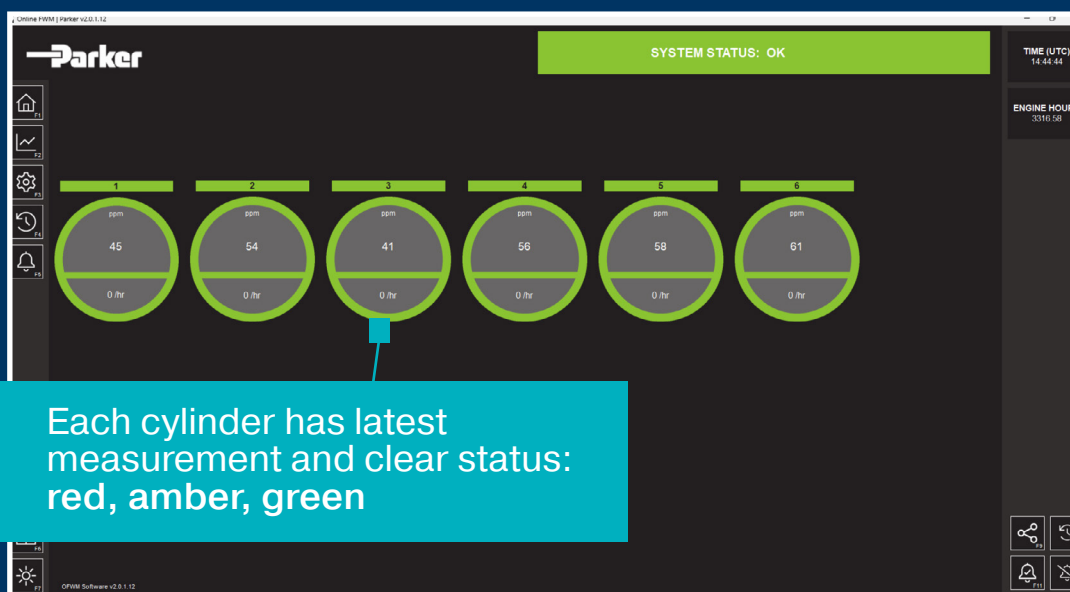
Remove uncertainty and build confidence with OFWM

- Identify deviation from baseline trends
- Gain confidence to change feed rates, to reduce over-lubrication
- Minimise manual sampling and operator influence over measurement
- Support cylinder-to-cylinder comparison and vessel-to-vessel fleet performance

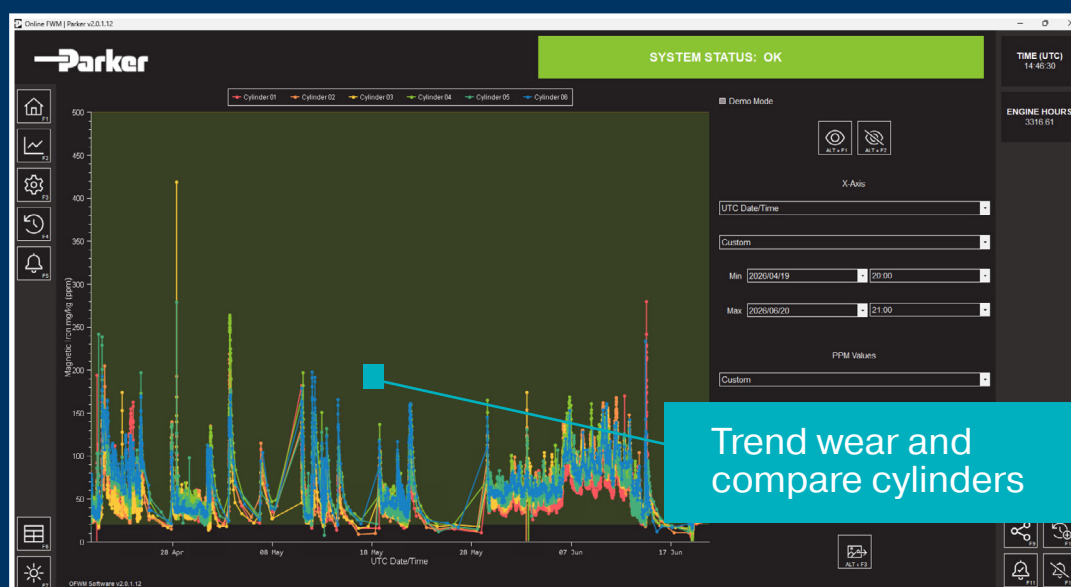
DEDICATED 24/7 MONITORING OF EACH CYLINDER

Use Parker's dedicated OFWM PC App or integrate into the vessel's supervisory system to make informed and confident maintenance decisions

- Integrate into the engine supervisory system and alarms
- At-a-glance traffic-light status
- Configurable alarms to prompt investigation



- Trend running-in, wear rates and abnormalities for informed decision-making
- Complement routine oil analysis, scavenge inspections, and OEM guidance
- Exploit the savings from cylinder oil feed-rate optimisation programs



RAPID RETURN ON INVESTMENT

- Safe feed rate reduction to OEM minimums
- Quickly respond to developments in engine wear
- Maximise liner life

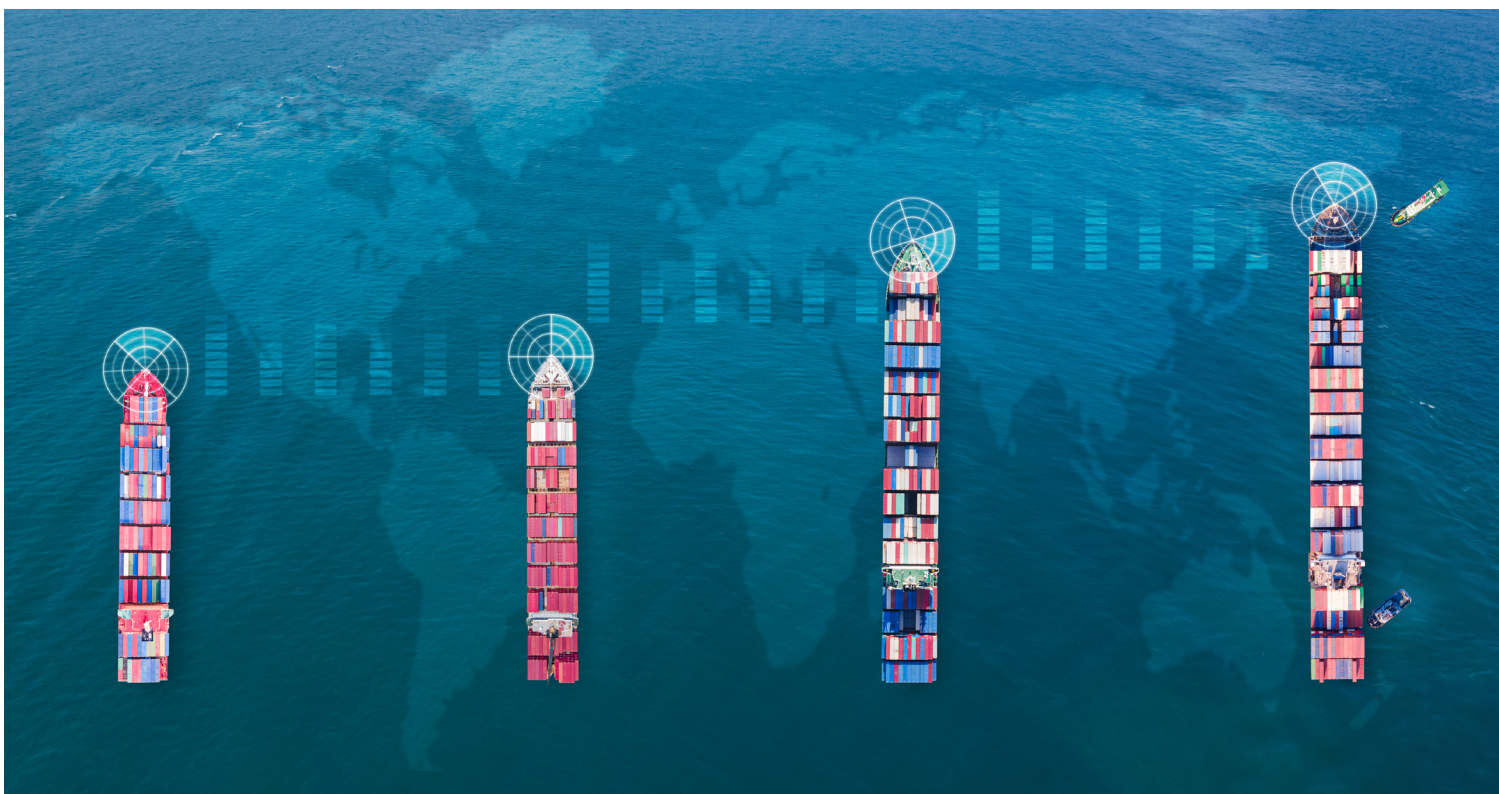


Fleet monitoring to compare vessels and learn best practice

Shore-side analytics via ship systems

- Simple installation and modification of cylinder oil drain lines
- OFWM can be specified for new buildings or for vessels in service, retrofitted around port calls.
- Daisy chained power and communications streamline installation
- Long-term measurement stability
- Self-cleaning and reliable solution
- User-replaceable valves
- Long service intervals >500 000 measurements*

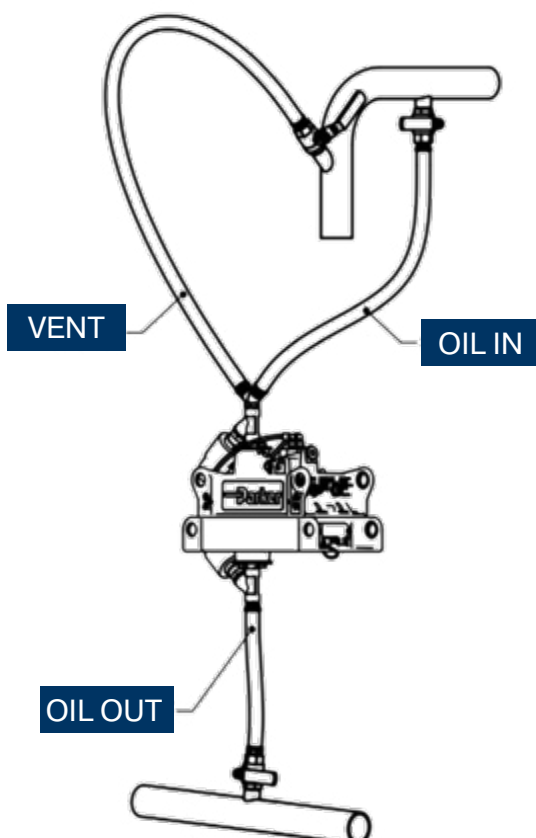
* 30 measures per hour x 24 x 365 = 262 800. Adverse conditions can shorten valve service life



SPECIFICATION AND PERFORMANCE

- Measurement: magnetic iron 20 ppm to 20,000 ppm (mg/kg)
- Fully autonomous system
- Sample volume: 12 ml per measure cycle
- Size: 120 mm x 260 mm x 160 mm.
- Weight: 5 kg
- Connections
 - Oil G $\frac{3}{8}$ "
 - Compressed air G $\frac{3}{8}$ " and G $\frac{1}{4}$ "
- Requires 24 V DC and compressed air – 8 Bar
- Sensor communication protocol: CANopen
- Data stream output to vessel: CANopen, Modbus TCP*, alarm contacts

* via PC App module or 3rd party protocol converter





www.parker.com/hife

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