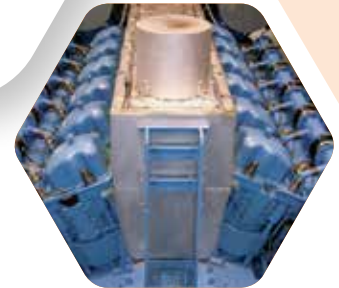




Official Partner of
Manchester United



Gulf Oil Marine

GulfSea Ferrous Wear Meter



Your Go-to Technical Experts

GulfSea Technical Solutions

GulfSea Ferrous Wear Meter

Ship operators have been running engines at reduced speeds as a means to improve fuel efficiency. Unfortunately, this reduction is accompanied by a drop in engine temperature, causing acids to precipitate and hence, corrode cylinder liners. The iron compounds formed by this “cold corrosion” process are flushed from the engine by the cylinder oil, causing extensive liner wear. The specific properties directly associated with such ferrous wear particles allow detection with the use of sophisticated equipment.

Given the severity of the “cold corrosion” problem, real-time condition-monitoring becomes critical in managing the issue. Knowing the wear properties, allows operators to take mitigating measures such as, lubricant feed-rate adjustments, avoiding significant liner or ring-pack damage.

Gulf Oil Marine’s Ferrous Wear Meter (FWM) is designed to detect ferrous-wear instantly. Adapted for field applications, this easy-to-use instrument accurately detects metal particles in oil samples taken from lubricated machinery on vessels. It is ideal for testing and analysing oil samples on-board vessels, where full laboratory analysis is not possible. Features include:



FEATURES

- ✓ Immediate ferrous wear measurement in PPM on the LCD screen.
- ✓ Suitable for testing and analyzing oil samples on-board.
- ✓ Simple, easy-to-operate, instrument requiring minimal training.

BENEFITS

- ✓ **Reduced Operating Costs**
By trending of ferrous wear measurements, any increase in wear levels over time can be monitored and appropriate actions taken to mitigate any damage, preventing more serious damage occurring.
- ✓ **Decreased Downtime**
Monitoring of ferrous wear levels with your oil samples allows any deterioration in machine condition to be quickly detected, saving you downtime and money.
- ✓ **Reduced Scrape Down Oil Usage**
Measurements of ferrous wear debris in oil samples can be taken from a variety of machinery, including used cylinder scrape down oil, gear boxes and bearings.
- ✓ **Schedule Maintenance as Required**
Machinery degradation can be observed as it happens and machines serviced as and when they need to be, rather than on a time or hours of operation basis, reducing costs and saving manpower.

Specification

| | |
|-------------------------------------|---------------------------------------------------------------------------|
| Rated Input Voltage/ Current | 24 V d.c.; 0.3A |
| Operating temperature | 15 to 40°C |
| IP Rating | IP22 |
| Measurement Range | 0 to 2500 parts per million (ppm) in milligrams per kilogram |
| Display Resolution | 5 ppm |
| Sample Container | FWM Test Tube |
| Accuracy | 0 to 1000 ppm, ± 10 ppm; >1000 ppm, ± 20 ppm or 2% (whichever is greater) |
| Test time | <3 seconds |
| Unit dimensions & Weight | 250 mm Wide, 230 mm Deep, 75 mm High; 1.1 kg |

HOW DOES IT WORK?

Simply fill the sample of oil in the supplied 5ml test tube and insert into the instrument. No further sample preparation is required. The ferrous debris content, in PPM, is displayed instantly on the screen.

SYNERGY AMONGST GULFSEA TECHNICAL SOLUTIONS

To obtain a full picture of the cylinder conditions, FWM is best used in conjunction with Scrape Down Analysis (SDA) and Base Number (BN) tests.

GULFSEA SDA INSIGHT TEST KIT

The GulfSea SDA Insight Test Kit provides a figure for the combined value of Fe²⁺ and Fe³⁺ concentrations from the comparator unit in less than 5 minutes. The figure, added to the FWM Meter reading (Fe), gives the total iron number, within the scrape down oil sample. This has a distinct advantage over other tests where only a single iron measurement is obtained - the portion of wear due to cold corrosion versus metal on metal contact (e.g. scuffing, under lubrication, ring pack damage) and their relevant contributions to the total iron number can be instantly distinguished and the right corrective action can be taken.

GULFSEA ANALYTICA BN TESTER

Coupled with on-board testing of the residual BN of the scrape down oil, using the Digital BN Test Kit, operators can fine-tune their operating regimes to ensure minimum wear, minimum lubricating oil feed rates and, overall, minimum cost.

HOW TO ORDER?

The Ferrous Wear Meter can be easily ordered, independently or jointly with other GulfSea products, and delivered to your vessel at your next port of call by simply placing a purchase order through your customer service/ sales manager.



| Product/ Part Number | Description |
|----------------------|---------------------------------------------------------------------------|
| FG-K30258-KW | Ferrous Wear Meter (complete) |
| FG-K30362-KW | FWM Consumables Pack (500-off FWM Test Tubes & 500-off Sampling Pipettes) |
| FG-K30366-KW | FWM PSU Pack (Power Supply with UK, US & EU Adaptors) |
| FG-K30368-KW | FWM Recalibration |
| FG-K19763-KW | GulfSea SDA Insight Test Kit including Reagent Pack (100 tests) |
| FG-K19875-KW | Reagent Pack (100 tests) |
| FG-K1-004-KW | Digital BN Test Kit |



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