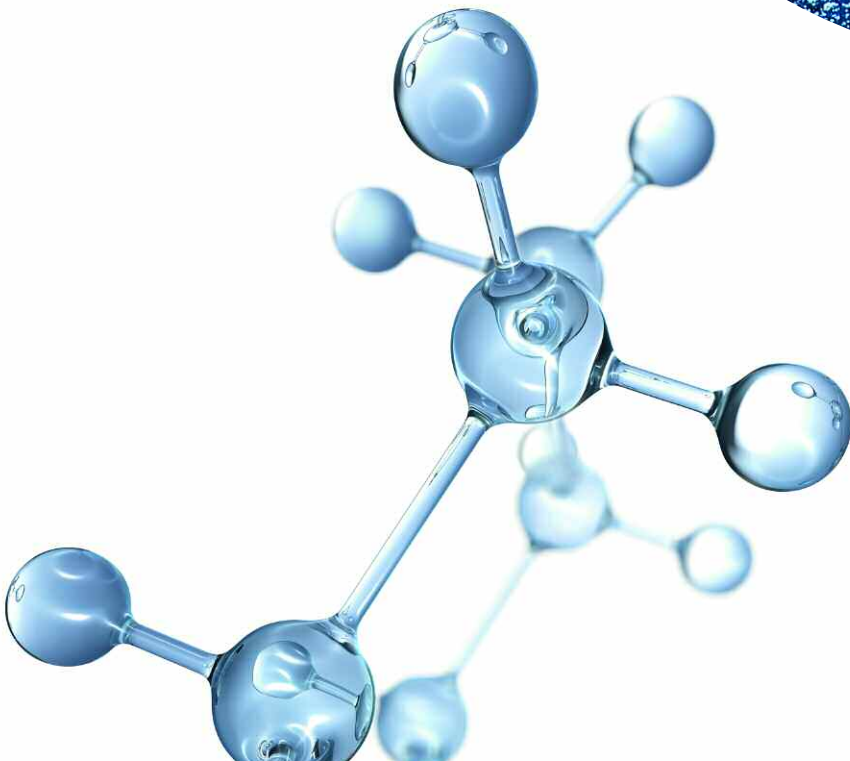


Feed Rate
Optimisation
Programme



A safe approach
to reducing costs
is on the horizon.



“In today’s modern two-stroke engines, scrapedown cylinder oil analysis has proven to be a valuable diagnostic tool. Changes in cylinder wear due to engine operation, ambient conditions and fuel sulphur levels can be detected as they are occurring, particularly if onboard sample analysis is employed. Advanced warning of cylinder condition, as seen through scrapedown oil analysis results, allows the operator to optimise feed rates while ensuring optimum engine performance.”

- *Kjeld E. Aabo*
Senior Manager Engineering Services
MAN B&W Diesel A/S



“Our experience has shown that the analysis of scrapedown cylinder oil can provide many clues regarding the operation of the engine, the impact of varying fuel sulphur levels, the effect of feed rate, and also, can serve as an early warning to potential undesirable wear situations. A frequent onboard analysis programme supplemented by land based laboratory analysis provides key information for monitoring piston running experience.”

- *Matthias Amoser*
Manager Tribology and Material Technology
Wärtsilä Switzerland Ltd.

Our Feed Rate Optimisation Programme uses the latest technology to help reduce your fleet’s operating costs.

By staying on the leading edge of technology and technical service, ExxonMobil enhances its position as the premier supplier of marine lubricants and services worldwide. Our new Feed Rate Optimisation Programme is another opportunity to show you why we should be your supplier, and how working with ExxonMobil can benefit your company’s bottom line.

- The goal of our new programme is to help reduce your operating costs by safely optimising your fleet’s slow-speed diesel engines’ cylinder oil feed rates.
- Our programme offers tools that will enable you to assess scrapedown oil samples from each individual cylinder.
- The key to the programme is the ability to capture detailed analytical data on cylinder oil. This knowledge will assist you in the evaluation of the engine’s operating condition.
- Mobilgard 570 by ExxonMobil is a key component. The patented formulation utilises consistently high quality base oils and innovative additive technology to ensure excellent product performance.

The enclosed pages provide an overview of the Feed Rate Optimisation Programme from ExxonMobil and summarise its two complementary analytical approaches.

Your local ExxonMobil Marine Lubricants representative will review all of the information with you in detail.



With Mobilgard 570 cylinder oil and our Feed Rate Optimisation Programme, you will have the lubricant technology, analytical tools, and technical expertise to lower expenses and minimise risk.

For more information,
please contact your local
ExxonMobil Marine
Lubricants representative.



ExxonMobil Marine Limited

An ExxonMobil Subsidiary
ExxonMobil House
Mailpoint 29, Ermyrn Way
Leatherhead, Surrey
United Kingdom KT22 8UX

www.exxonmobilmarinelubes.com

© 2011 Exxon Mobil Corporation

The ExxonMobil logotype, Mobilgard and
Signum are trademarks of Exxon Mobil
Corporation or one of its subsidiaries.

Printed in U.S.A.

ExxonMobil
Marine Lubricants



Programme Overview

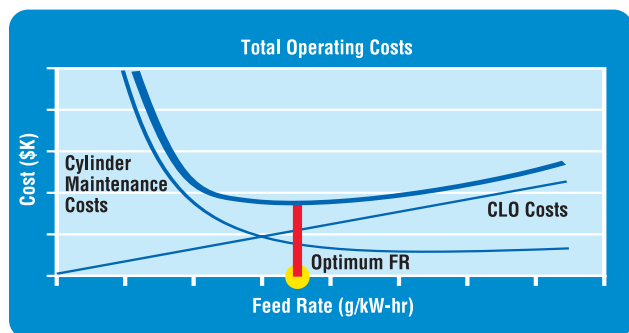
Our Feed Rate Optimisation Programme has the potential to reduce your fleet's cylinder oil consumption and wear-related maintenance costs.

In today's highly competitive global marketplace, many vessel owners are searching for ways to minimise operating expenses. For those operating slow-speed crosshead engines, the new Feed Rate Optimisation Programme has been proven to make a positive difference.

Our programme offers a technically advanced approach to safely optimising cylinder oil feed rates. By analysing scrapedown oil collected from the scavenge space, the programme allows shipboard personnel to monitor the condition of the engine's cylinders and detect changes as they occur. Elements of the programme include:

- Signum Oil Analysis for comprehensive testing and analysis of scrapedown oil samples.
- Proprietary onboard test equipment and analytical tools.
- Mobilgard 570, which is proven to protect slow-speed, two-cycle crosshead engines better than any other marine cylinder oil on the market today.

Your local ExxonMobil Marine Lubricants representative will review the features and benefits of our Feed Rate Optimisation Programme with you in detail.



The Feed Rate Optimisation Programme from ExxonMobil can help you find an acceptable balance between the cost of cylinder oil and expense of wear-related cylinder maintenance.



In your drive to optimise cylinder oil feed rates, remember that Mobilgard 570 is proven to meet the lubrication challenges facing today's demanding slow-speed crosshead engine designs.

Our programme can help you optimise feed rates while ensuring minimum risk to the engines.



ExxonMobil Marine Lubricants

Lab Testing

Scrapedown Lab Analysis provides complete information about the condition of your slow-speed engines and cylinder oil.

For many years ExxonMobil has been using Signum Oil Analysis

SIGNUM
OIL ANALYSIS

to help customers monitor the performance and condition of their fleets' lubricants, engines and equipment. We have extended the Signum programme to include analysis of scrapedown cylinder oil.

To fully understand the condition of used cylinder oil and engines, ExxonMobil laboratory technicians perform a comprehensive slate of tests on the samples. These include:

- Inductively Coupled Plasma Emission Spectroscopy — monitors wear metals, including iron (primary wear indicator) and phosphorus (system oil contamination).
- Physical and/or chemical analysis — TBN, viscosity and water, as indicators of oil degradation and contamination.

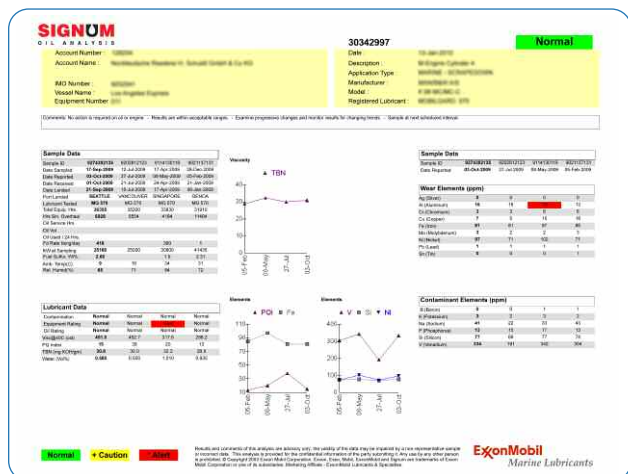


Our testing, analysis and expert interpretation of results provide the information you need to adjust cylinder oil feed rates to optimised levels without risk to your engines.

- Particle Quantifier (PQ) — safeguard for monitoring abrasive wear.
- Ferrography (*when requested*) — useful in identifying wear type and cause.

An ExxonMobil technician will analyse and interpret the results before we communicate the information to you.

Your local ExxonMobil Marine Lubricants representative will review our Feed Rate Optimisation Programme's lab testing option with you in detail.



After your engine's scrapedown cylinder oil has been tested and analysed, ExxonMobil will send you an easy-to-read lab report by e-mail or via the Web. If you need a hard copy, the report can be faxed or mailed.

Our programme's graphing capability will help you identify wear indicators before problems occur.



Onboard Testing

Onboard testing offers you immediate access to key analysis results.

We understand that there may be times you will not want to wait days or even weeks for a comprehensive lab report. Our Feed Rate Optimisation Programme includes an option for onboard testing that enables you to quickly detect substantive changes in cylinder condition. ExxonMobil offers the tools you need to test your scrapedown cylinder oil samples' most important properties relative to wear and optimising feed rates. Elements include:

- Our new Mobilgard Scrapedown Analyser instantly measures and displays the iron content of a used cylinder oil sample. The Mobilgard Scrapedown Analyser unit is robust, accurate and easy to operate.
- The Signum Onboard Test Kit, which monitors lubricants for alkalinity retention (TBN), water contamination and changes in viscosity, now includes a digital test cell for easier reading.
- The Mobilgard Scrapedown Analyser Logbook allows you to store results, graph trends and analyse relationships between variables.



Our Mobilgard Scrapedown Analyser's step-by-step instructions make reading and recording test results easy and efficient.



Our programme's option for onboard testing includes the proprietary Mobilgard Scrapedown Analyser, a tool which instantly detects ferrous debris in used cylinder oil samples.

If you are actively trying to optimise feed rates, our programme's option for onboard testing is recommended. Having access to key analysis results in "real-time" can provide the ability to identify and correct problems before they become serious.

Your local ExxonMobil Marine Lubricants representative will review our Feed Rate Optimisation Programme's onboard testing option with you in detail.

Please be sure to also read about our programme's comprehensive laboratory testing to support your onboard efforts.

Our programme's onboard test equipment provides access to key results in a matter of seconds so you can make feed rate adjustment decisions quickly.