

Press Release

New improved methods to monitor bearing wear in diesel engines

Rovsing Dynamics has released an extended version of its OPENpredictor™ solution for early detection of crank-train bearing wear in diesel engines. In addition, this online condition monitoring system can predict failure of other critical machinery thus preventing downtime and improving vessel reliability and profitability.

Hamburg, Germany, September 26, 2006. At the international SMM trade fair for the maritime industry, Rovsing Dynamics a global supplier of condition monitoring systems, presents an improved upgraded method for early and accurate detection of crank-train bearing wear in diesel engines. Delivered as stand-alone or in a combined solution, OPENpredictor™ provides ship owners and managers with an effective and profitable tool to improve vessel reliability.

OPENpredictor™ provides continuous online condition monitoring of rotating and reciprocating machinery with automatic diagnosis of component faults. For a number of years it has proven its worth on a vast amount of power generation plants and on- and offshore oil and gas installations. In 2005, Rovsing Dynamics launched an advanced method for online, real-time monitoring of crank-train bearing wear which is now in operation on several containerships.

"We developed the crank-train bearing wear solution together with leaders in the maritime industry", says Rovsing Dynamics CEO, Thea Larsen. "The objective was to provide real-time information about developing wear in the bearings. This enables the ship managers to reduce the number of inspections and to take corrective actions to minimize the influence on daily operations. The system facilitates condition based maintenance and makes it possible to avoid costly open-up inspections, undue replacement of healthy spare parts and the risk of inspection induced damage."

One of the unique features is the patented AutoDiagnosis™ function. Besides automatic, early detection and identification of bearing wear, OPENpredictor™ also predicts the lead time to inspection. The vessel crew automatically receives text messages indicating the level of bearing wear plus an estimate on how long time a worn component may be kept in operation before it becomes critical.

New features have recently been added to the OPENpredictor™ Bearing Wear Monitoring:

- Wear estimation by sensor combination and running condition correction
- Correlation techniques between neighbouring sensors suggest whether main bearings or cross-head/big-end bearings are wearing the most
- Auto-configuration ensures automatic calibration of measurements and recovery of previous bearing wear estimates, in case a sensor is relocated during inspection or engine parts are exchanged

If bearing wear in the main engine remains undetected, it may lead to crucial and expensive damage to the crank shaft bearing. To detect wear at an early stage, the sensors of OPENpredictor™ measure the distance between the engine frame and the crosshead with a precision of $\pm 10 \mu\text{m}$. The system can issue the first automatic alert when approx. 10% (100 μm) of the bearing metal in the crank train bearings has been exhausted. Prediction of bearing wear is quite complex, and the system can take various parameters like crankshaft speed, temperature and power into account.

OPENpredictor™ is scalable and can easily be expanded to monitor other rotating and reciprocating components on diesel engines, turbines, turbochargers, gearboxes, pumps and fans. The system also interfaces with vessel maintenance management systems, off-line data collectors etc., and can be installed during new build or on ships in service.

Contacts

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Company backgrounder & photos on page 2

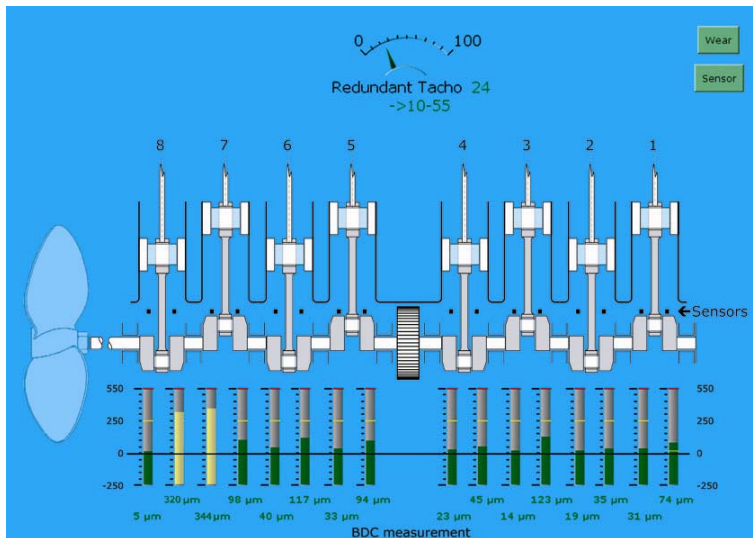
About Rovsing Dynamics A/S

Rovsing Dynamics is a global, ISO 9001:2000 certified supplier of advanced systems for the monitoring of condition and performance of critical machinery. The systems enable customers within the maritime, power generation, oil & gas, petrochemical and other heavy industries to increase revenue, whilst decreasing operation and maintenance costs. The company develops, installs and provides know-how, training and other services for its range of online predictive maintenance information systems. These are based on the company's own proprietary technology, OPENpredictor™, originally developed on the basis of know-how and experience acquired through the development of advanced condition monitoring of critical equipment at nuclear power plants and within the space industry. Since it was first commercialised in 2001, OPENpredictor™ has demonstrated its value at numerous power plants, off-shore platforms etc., increasing revenue significantly by predicting faults and avoiding down time.

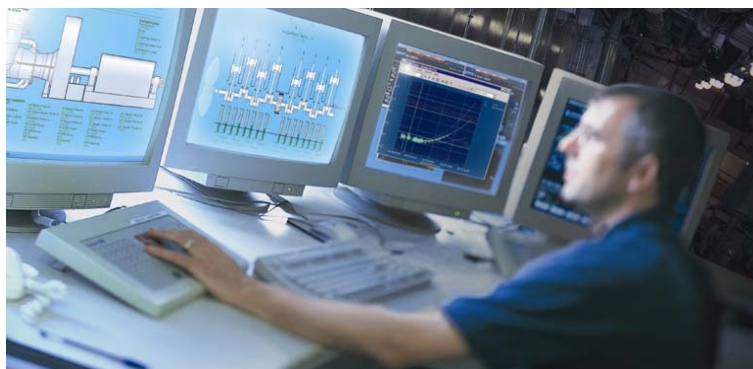
Rovsing Dynamics offers its condition monitoring systems and services worldwide from its head office in Copenhagen, Denmark, and sales offices in the Netherlands and the United Kingdom as well as through partners and agents in Europe, Russia, North and South America, the Middle East, China, Asia and Japan.

The company was established in 1997 and today employs 35 people. The shareholders of Rovsing Dynamics include globally recognized corporations such as [3i Group](#), [ABN AMRO](#), [Nordic Venture Partners](#), [Marubeni Corporation](#) and the Danish venture capital companies [LD Pension](#), [Dansk Erhvervsinvestering](#) and [Vaekstfonden](#). For more information, visit www.rovsing-dynamics.com.

Press Release Photos: "New method to monitor bearing wear in diesel engines"



Control room graphical interface showing real time wear condition



OPENpredictor™ provides the crew with real time information about the condition of critical machinery. If e.g. bearing wear increases beyond 100 µm, the bars turn yellow or red, and the system issues an early warning message



Main engine bearings are especially sensitive to wear and can, if undetected, lead to crucial and expensive damage.

High resolution photos

If you require high resolution photos, please contact Marketing Manager Annette Risberg, tel. +45 4690 7243, e-mail ari@rovsing-dynamics.com.