Corus Northern Engineering Services

Condition monitoring

A toolbox of condition monitoring techniques

A toolbox of techniques

- Vibration analysis
- Acoustic emission monitoring
- Thermographic imaging
- Remote visual inspection
- Balancing and laser alignment
- Rotor bar testing
- Lubrication technology
- Fluid power technology

Patrol monitoring

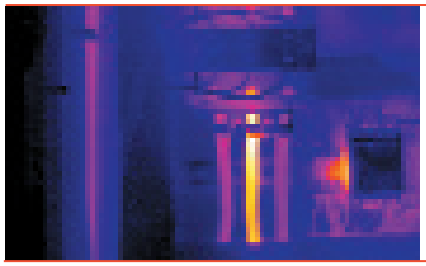
Corus have more than a quarter of a century's experience of applying and developing condition monitoring techniques to suit any industrial application. Initial surveys are usually best carried out using patrol monitoring technology and the trends analysed against the original fingerprint of the plant.

Vibration analysis

Routine vibration analysis monitors the mechanical condition of fans, pumps and motor sets very effectively. This technique can identify gradual trends and significant changes in the condition of machinery, which, if not investigated, may lead to a complete breakdown.

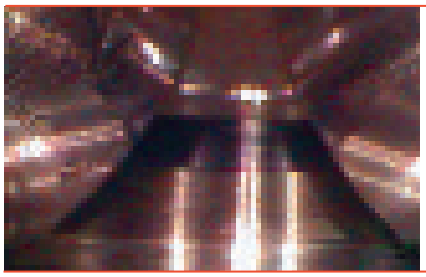
Acoustic emission monitoring

High frequency acoustic emission monitoring using a hand held probe can detect the internal rubbing from worn bearing elements at an early stage.



Thermal imaging

Comprehensive thermal imaging detects problems such as mechanical faults in machinery, blockages in pipes, insulation defects and damp spots in buildings and potential faults in electrical distribution boards.



Remote visual inspection

Rugged and portable fibre optic imaging and powerful lighting system focussing on difficult to access locations. Especially effective in identifying problems relating to worn or loose material inside machinery, boiler scaling, surface cracking and furnace corrosion.

Fixed systems

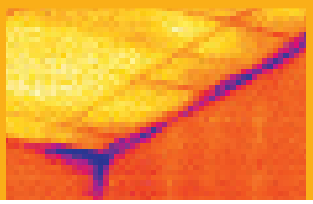
The benefits of patrol monitoring often make it apparent that further benefits can be obtained from hard-wired permanent systems. Equipment monitoring often moves to fixed systems because patrol monitoring can prove difficult for safety reasons. Permanent monitoring provides continuous data collection that can greatly improve the efficiency of operations. Since it instantaneously detects real-time changes in plant condition that can be displayed on process control monitors, it alerts operators to such things as beam mill circular saw blades going out of balance.

Aquilla AE Pro

Extremely sensitive fixed system capable of detecting high-frequency stress waves beyond the detection capability of other techniques. Highly effective at low speeds from 0.25 to 80 rpm, and for machinery completing less than one revolution in a cycle.

Aquilla AE Pro I-Mon

Semi-portable multi-channel system for acquiring several hours of data at a time. Ideal for use on plant which does not warrant a fixed system, but requires more than instantaneous data collection afforded by patrol monitoring.



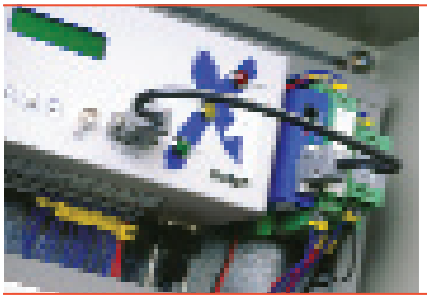
Suitable cases for monitoring
from left: Thermal images tell a hidden story; the sound made by large bearings making less than a complete revolution can speak volumes about their condition; and acoustic emission monitoring can pinpoint cable problems on suspension bridges.

Praxis fixed systems

Praxis is a service partnership between INA FAG and Corus, offering plant engineers and maintenance managers a unique solution for all condition monitoring needs.

Vibrocheck

A permanent online monitoring system capable of monitoring a large number of measuring points at once, such as in rolling mills, paper mills, and power stations.



DTECT X1

Reliable and favourably-priced online monitoring device to detect damage and faults in machines without the presence of a diagnosis expert. DTECT X1 recognises changes and automatically notifies the operator, plant builder or service provider anywhere in the world.

Additional services

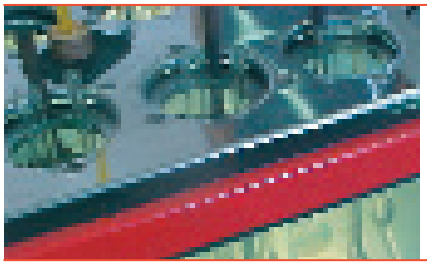
Where condition monitoring highlights the need for solutions and corrective action, Corus have further techniques to help their customers maximise machinery uptime.

Balancing and laser alignment

On site balancing and coupling alignment enhances machine performance and extends bearing life using accurate laser technology to ensure that the alignment is right first time.

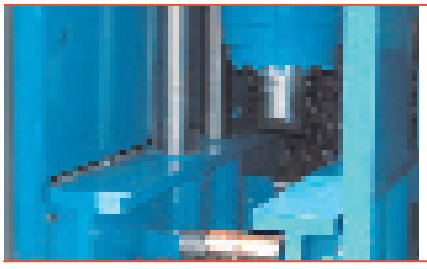
Rotor bar testing

Detailed motor current analysis can assist in detecting and estimating the severity of electrical defects such as cracked end rings and broken rotor bars in induction motors.



Lubrication technology

The correct lubricants and hydraulic fluids reduces wear and energy costs. Effectiveness of current lubricants can be determined by analysing the level of degradation and debris, allowing correct lubricant selection and change intervals.



Fluid power technology

More than 75 per cent of hydraulic system failures are as a result of contamination. Corus has the expertise to offer advice on all aspects of fluid power engineering, including filtration and fluid applications.

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