SPM
condition monitoring solutions

Machine condition

Totally committed to keeping
your machines running 24/7.

monitoring
for profitable maintenance

For any environment and production
– think maintenance profit.

More than 40 years of experience and close cooperation with our users worldwide enable SPM to present a revolutionary innovation for pro-active maintenance.

Leonova™ Infinity marks a decisive advance in machine condition monitoring

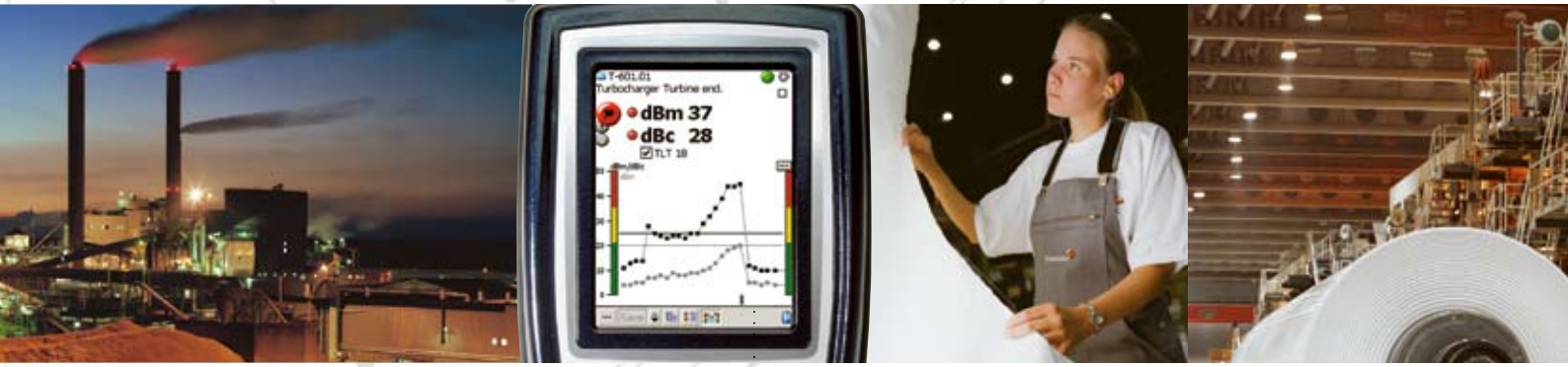
- unique machine diagnostic functions
- precision line laser alignment and balancing
- select what you need approach
- optimal ergonomic design
- revolutionary economic terms

SPM has the organisation and the know-how to increase the availability and profitability of your production equipment.

Knowing that your situation is special, we gave Leonova Infinity a comprehensive range of functions and developed a new system of financing condition monitoring.

We now leave the choice to you. Make Leonova Infinity your perfect tool.

Technical



Green for good, red for bad, yellow for early warning. High-tech makes life easy.

The backbone of all pro-active maintenance is up to date data on the machine status, obtained with two well-tested frontline techniques. Vibration severity monitoring according to ISO standards diagnoses general machine condition. Shock pulse monitoring with the True SPM® Method gives early warning of bearing deterioration, the most common cause of machine failures.

Vibration Severity plus FFT Spectrum

Leonova measures vibration velocity, acceleration and displacement according to the latest ISO 10816 standards, with menu selection of all specified machine classes and their alarm limit values.

In addition to the RMS vibration readings, Leonova displays an FFT spectrum, where you can easily identify the symptoms of imbalance, misalignment and structural weakness.

The True SPM® Method

SPM's shock pulse method is the only successful monitoring technique specialising on rolling element bearings. It presents accurate information on the mechanical state of the bearing surfaces and of the lubrication condition, throughout the bearings lifetime. Installation faults and poor lubrication, the root cause of many bearing failures, are easily detected.

solutions
for every situation

Contact free measuring point identification with SPM's patented Condition Memory.

Use the most suitable monitoring technique – Leonova Infinity offers all you may need.

Vibration Analysis

EVAM® supplies pre-programmed evaluation models and nine vibration parameters, including Crest factor, Kurtosis and Skewness. FFT analysis produces a 12800 line spectrum up to 40000 Hz, with true zoom and enveloping.

Menu selected fault symptoms highlight the relevant frequency lines and supply trendable fault symptom values.

SPM Spectrum™

This is a unique feature, an efficient tool for detailed bearing condition analysis. A time record of the signal from an SPM shock pulse transducer is subjected to an FFT analysis. This provides a spectrum that is compared with the rotational frequencies of the bearing parts. In addition, it can identify other periodic shock sources such as gear damage.

Orbit Analysis

For all machines with journal bearings, simultaneous measurement with two vibration transducers supplies an accurate graph of the shaft centre line movement.

Structural Resonances

Run up/Coast down measurement and Bump test are tools for root cause analysis.

They show the machine frame vibration characteristics, resonance frequencies and the reaction at critical speeds.

CondID®

The ID-tags are loaded with basic data and the latest measuring results. Leonova is automatically programmed via RF signal.

CondID® has triple data security through bonding and passwords.

Your

Opt for your own
air-brushed colour design.

- Automatic back light
- Interactive TFT colour screen
- RS232 and USB communication
- RF transponder for contact free measuring point identification, read and write functions in connection with CondID® memory tags
- Weight 580 g [20,5 ounces]
- Snap action function keys and touch screen
- One hand operation, right or left
- Smart battery reload with charge indication
- Li-Ion battery for minimum 8 hours normal use
- Download thousands of measuring points
- History of up to 100 sets of measuring results and comments per point
- Graphics with time and scale zoom
- Windows® CE platform
- 400 MHz Intel® XScale® processor
- 64 MB RAM, 32 MB Flash, expandable to 4 GB

Try new working conditions. Leonova is lightweight, ergonomic and easy to operate. Under menu guidance, you select Leonova functions via the key pad or the touch screen. The fast processor and very large memory make data logging more efficient than ever.

Load Leonova from the PC, then simply measure and save. All input data is pre-programmed. You get an instant condition evaluation on a green – yellow – red scale.

requirements
set the limits

- Vibration time record up to 40 kHz
- Up to 12800 line FFT spectrum
- Enveloping, true zoom, time synchronous measurement
- Pre-fault symptoms for spectrum analysis
- Waterfall, phase and real time spectrum
- Bode and Nyqvist diagrams
- Peak value tracing, earphones
- Language selection
- Automatic transducer line test
- Condition evaluation with green – yellow – red LED indicator
- Simultaneous recording of three parameters for up to 50 hours
- Two channel simultaneous vibration
- Overlapping average
- Vibration spectrum in Hz, CPM or orders
- Accepts IEPE standard vibration transducers

Sophisticated

Horizontal line laser plus large vertical target
– precision shaft alignment with LineLazer.

Root cause elimination is true preventive maintenance. A poorly aligned and balanced machine wastes much energy and wears itself out. Do not tolerate excessive noise, vibrations and failure rates. Leonova is a state of the art maintenance tool for fast and easy alignment and balancing.

Precision Shaft Alignment

Leonova uses a special line laser technique for the alignment of both horizontal and vertical machines. The LineLazer kit contains detector units and fixtures.

For easy and accurate targeting, the detector units send horizontally spread laser beams against large vertical receptors. Only one connecting cable to Leonova is needed. The laser beam is coded to guard against interference from other light sources.

Automatic precision inclinometers constantly measure the angular shaft position. Three measurements over a shaft rotation angle well below 180 degrees determine present alignment.

The graphical interface guides the user through the alignment procedure to a perfect result.

For vertical adjustment, use stainless precision shims from SPM.

tools
for corrective maintenance

In field balancing
– save energy and machine life.

Dynamic Balancing

With Leonova, single and dual plane rotor balancing in accordance with modern standard methods are easy operations. Like machine alignment, the function is available for either unlimited use or on the "Function and Use" basis.

You can apply the traditional four run technique or the two run method with time synchronous measurement triggered by a tachometer connected to Leonova.

Easy to operate

Leonovas supporting functions make it easy and reliable to conduct field balancing. It saves an influence matrix, which allows fast re-balancing calculations without stopping the machine to attach a test weight.

An initial vibration measurement with spectrum analysis clearly shows the existence and extent of imbalance, and thus the need and probable success of a balancing operation.

Features and Benefits

Leonova calculates the suitable trial weight and suggests a number of alternatives for correcting the imbalance.

Correction mass, with the trial weight removed or remaining in place, can be radially displaced and split between two of the rotor partitions. For weight removal, drill hole diameter and depth for various materials are given. Weight position is displayed as angle or distance measured along the rotor circumference. All correction masses on the rotor can be replaced by one.

For all methods, a final run can be made to check the balancing results and, if needed, save a data file for further adjustments.

Pay for performance

optimal economy with

Operate on a measuring account – order a refill file when needed.

Condition monitoring costs money for equipment, training and labour. With Leonova, you have a free choice of suitable instrument functions and how to pay for their use.

Function

The platform is a datalogger that measures speed, temperature, and vibration according to ISO 2372. It communicates with Condmaster®Nova and also accepts manual data input. Add any individual functions from the list to get the condition monitoring instrument best suited to your technical requirements. You can buy functions in packages or one by one, in the form of an update file. Expand slowly and spread the training time for personnel.

Use

Turn most of your investment into operating costs by buying "measuring credits" instead of unlimited use. Platform functions are always free, while each condition measurement costs a few credits, depending on the method.

Leonova keeps count, giving you two warnings before the tank is low, then switches to reserve.

appropriate technique

Buy more functions when required
– pay back first, expansion later.

Compatible with Condmaster®Nova Measuring point identification with CondID® Speed and temperature measurement Analog signals, current and voltage Manual recording, Check points RMS vibration, ISO 2372	Platform
Shock pulse method RMS vibration with spectrum, ISO 10816 FFT with symptoms	Frontliner
SPM Spectrum™ Lubrication analysis EVAM® evaluated vibration analysis Longtime recording	Analyser
Balancing, single and dual plane RMS vibration with spectrum, ISO 10816	Balancer
Shaft alignment with LineLazer	Aligner
Orbit analysis Two channel simultaneous vibration Run up/Coast down, Bump test Extended frequency range and resolution Extended memory	Options

Powerful software

for perfect overview and control

Expert knowledge at your fingertips
– onsite and anywhere in the world.

Leonova is a part of our commitment to cost-efficient machine condition monitoring. With Condmaster®Nova as a comprehensive software platform, SPM can provide practical solutions for condition diagnosis suited to your environment and applications.

Condmaster®Nova

The software accepts data from all SPM condition monitoring systems, hand-held as well as on-line. Module built, it can be fitted, in performance and price, to your selected hardware. It supports every preventive maintenance activity, like time planning, trend graphics, statistics and reports. Interaction with other maintenance software, access via Internet and alarm via e-mail and SMS are options.

Condmaster®Nova contains an extensive bearing catalogue and evaluation models for shock, vibration and lubrication analysis. Pre-programmed symptoms make it easy to pinpoint machine fault signatures in spectrum graphs.

Green – yellow – red coding at every surveillance level, from plant to individual measuring point, supplies a fast overview of all monitored equipment.

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