

Leonova Phase II

The 'Phase II' upgrade of Leonova Diamond and Leonova Emerald offers a significant performance increase, a strong set of vibration analysis functions and much more. Below is an overview of the further developments included in 'Phase II'.

Parallel measurement execution for greater efficiency (DIA/EME)

Parallel execution of multiple measuring assignments enables very rapid data acquisition and processing while maintaining excellent measurement accuracy. Taking full advantage of the parallel processing capability, the 'Phase II' upgrade significantly reduces measuring times, thus making large-scale measuring routes more efficient.



High-level vibration analysis for gearboxes (DIA/EME)

The Leonova instruments now offer an advanced and powerful combination of functions especially suited for gearbox analysis.

The new Pseudo Tach function in Condmaster Ruby 2014 replaces the need for a physical tachometer on the same shaft as the monitored object. Pseudo Tach creates a synthetic pulse train synchronous to a shaft that is inaccessible for tachometer mounting. When combined with Time Synchronous Averaging and HD Order Tracking, crisp and clear measuring results enable vibration analysis of the complete gearbox, including intermediate shafts.

User Defined Transducers (DIA/EME)

To measure process parameters such as pressure, flow or current, user defined transducer types can now be set up.

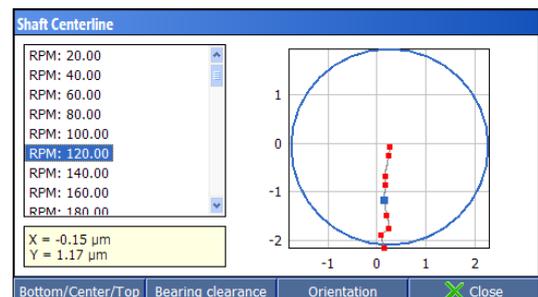
Faster computation of machine fault symptoms (DIA/EME)

Significantly faster computation of machine fault symptoms enables much faster saving of measurement data. The higher the spectrum resolution, the more noticeable the improvement. With a 12800 spectrum line resolution, symptom computation is about ten times quicker.

In addition, Phase II for Leonova Diamond also comes with the following enhancements.

Shaft Centerline Plot (DIA)

Shaft Centerline Plot displays changes in radial rotor position over a range of speed and is especially useful for assessment of lubrication during start-up of journal bearing machines. The plot can be viewed and exported from the Condmaster Ruby 2014 diagnostic software.



Frequency Response Function (DIA)

Frequency Response Function (FRF) is used to measure the vibration response (natural frequencies) of a machine structure. FRF measures a structure's mechanical response to a known applied input force by using for example an impact hammer and a vibration transducer. The FRF measuring assignment is set up in Leonova Diamond and after the measuring round is uploaded, the settings and measuring results can be viewed in Condmaster Ruby 2014. The spectrums and time signals can also be exported from Condmaster as .txt or .uff files (UFF58) and analyzed in other software.

Cepstrum Analysis (DIA)

Cepstrum analysis is especially useful for detection and analysis of vibrations and gear faults in gearboxes. Its strength is finding periodic components and repeated patterns in a time signal, which can be difficult to find in other types of spectra. While a frequency spectrum or FFT reveals the periodicity of a signal in the time domain, the cepstrum reveals the periodicity of a spectrum. In the cepstrum, overlapping sets of sidebands or harmonics will be separated, much like the spectrum separates repetitive time patterns in the waveform.

Time Signal Recording (DIA)

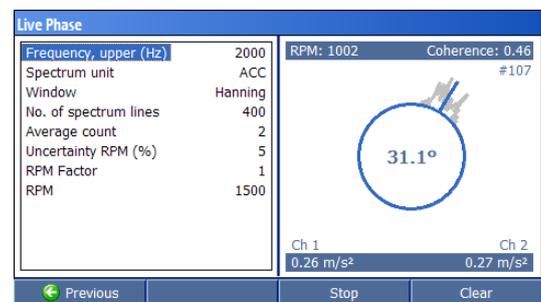
Parallel with RPM, recordings of shock pulse or vibration time signals can be made for a user specified length of time, triggered by rpm or manual on/off. This feature enables simultaneous recording of individual time signals from up to five different transducers. Via the Leonova Service Program, the recorded time signals can be exported in .uff format (UFF58) for further analysis in external software, for instance ME'scope, MatLab or LabVIEW.

Multiple two- and three channel measuring assignments per measuring point (DIA)

In Condmaster Ruby 2014, several two or three-channel vibration measuring assignments can now be set up per measuring point, providing the possibility to use more measuring techniques - in two or three directions or positions.

Live Phase (DIA)

Live phase can be used on problem machines to confirm an unclear or suspected source of vibration. Phase is the position of a rotating part at any instant, relative to a fixed reference. The Live phase function shows the vibration direction in degrees and the amplitude in real time.



Upgrading

The upgrade process is straightforward; order a new license file from your SPM representative and download the upgrade files from www.spminstrument.com, then use the latest version of the Leonova Service program to install the upgrade.

NOTE: The Leonova 'Phase II' upgrade requires Condmaster Ruby 2014 Edition.