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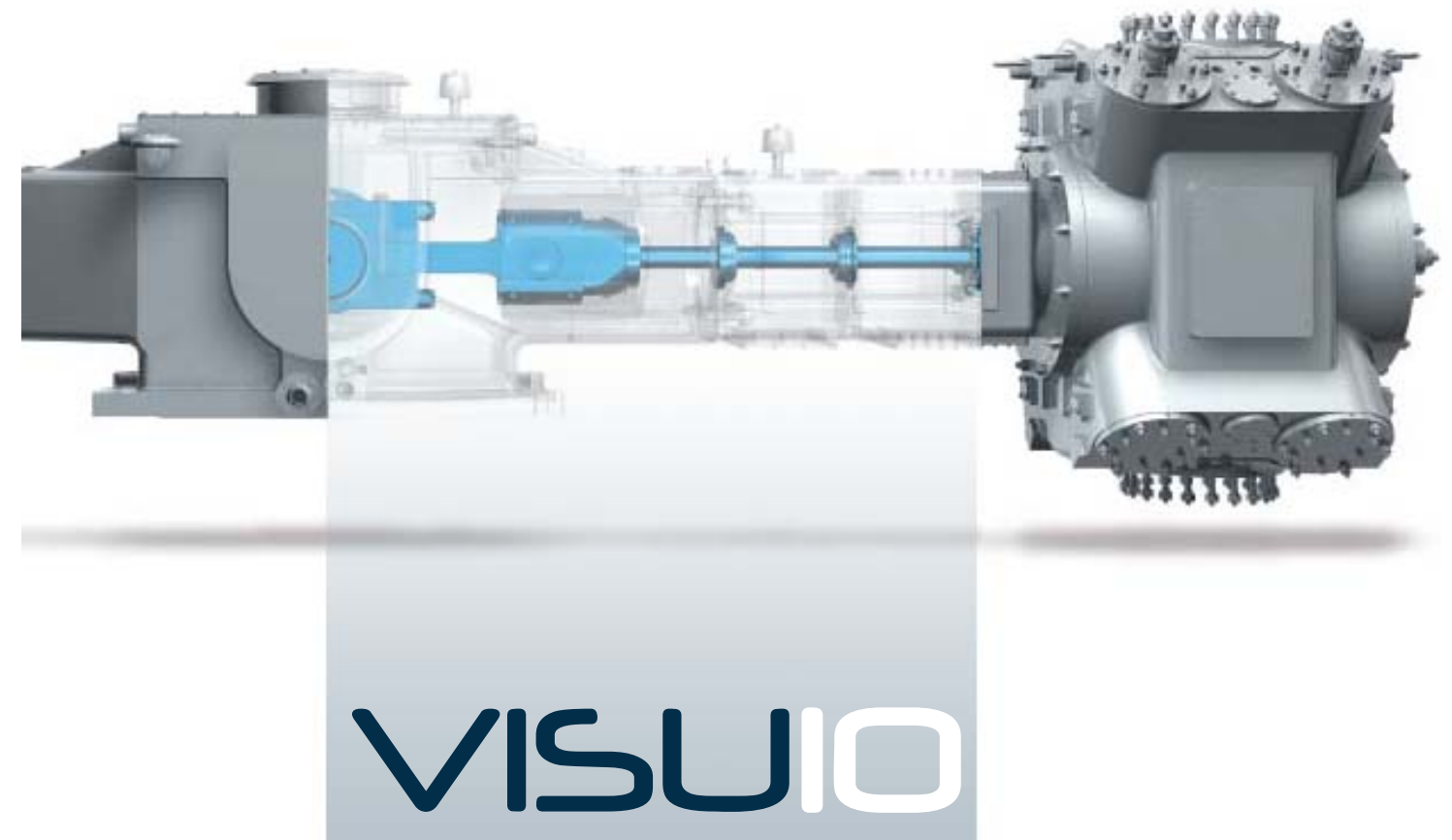
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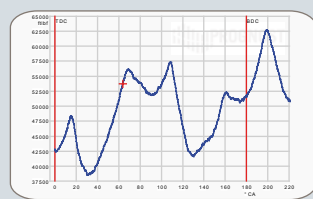
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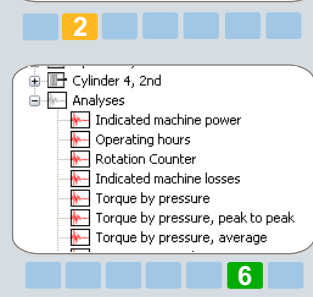
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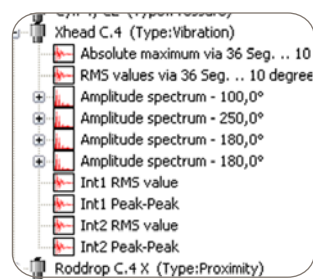
Torque Measurement

- New method for torque measurement on the driveshaft.
- Direct measurement of torque on the driveshaft by using strain gauge.
- Analysis of Peak-to-peak value for torque over one revolution.
- Analysis of Average value of torque over one revolution.



Torque Calculation and Driving Gear Forces

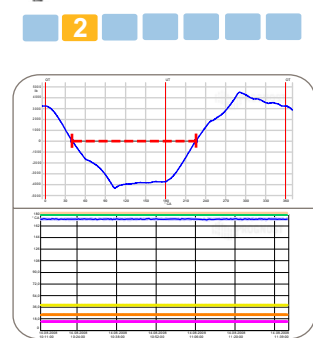
- Calculation of torque based on dynamic pressures.
- Torque plots
- Rod-Load plots
- Analysis of peak-to-peak value for torque over one revolution.
- Analysis of average value of torque over one revolution.
- In the online view the driving gear forces are refreshed in sync with the measured signals.



Integration of Vibration Signals (Acceleration > Velocity > Displacement)

- Vibration signals (acceleration) can be integrated 1x or 2x.
- Analysis of peak-to-peak value of integrated signal over one revolution.
- Analysis of RMS value of integrated signal over one revolution.

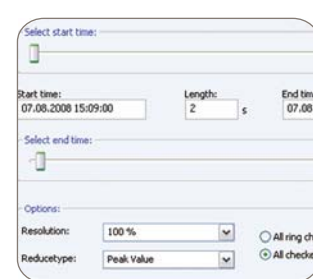
The signal analyses utilize already installed acceleration sensors and provide - based on mathematical calculation - velocity or displacement information of the specific acceleration signal of cylinder or machine.



API 618 standard "Minimal Rod-Load Reversal"

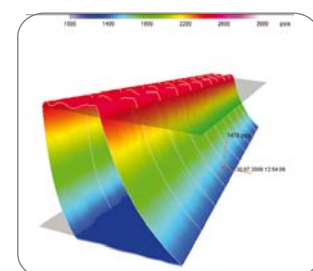
- New Safety Protection analysis "Rod-Load Reversal" according to API 618.

The lubrication of the crosshead pin bearing is injected through boreholes in the connecting rod small end. A sufficient rod load reversal is necessary to allow the lubrication to cover the complete bearing. If this reversal period is too short and the crosshead pin partly seals the bearing, major bearing damages can occur due to partial under-lubrication. The measurement of the rod load reversal period - according to API 618 - detects this potential failure mode. This analyses can be used as a emergency safety shutdown parameter.



Ring buffer

- The ring buffer can be saved in sections with selected signal compositions
 - Reduction of data storage capacity.
 - Limitation of signals.
- Comments can be attached to ring buffers
 - Additional information of the saved ring buffer.



3D Plot

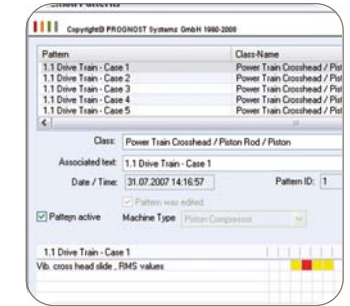
- 3D plot of orbits and p-V diagrams when using ring buffers and online signals.
- Display of segment number when using saved 3D plots (*.opl).
- A saved trend-file can be displayed offline as 3D plot.

Enhancements in the BaseSystem



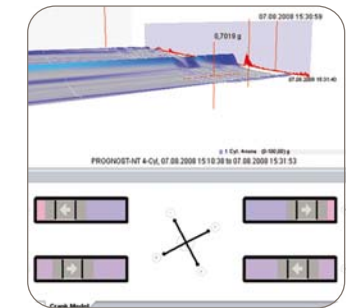
Condition Pattern data base

- More precise diagnosis based on taylor-made condition patterns
- Integration of additional information from practical experiences into the diagnostic data base
- The condition patterns of the following damage classes are added:
 - High piston rod vibrations
 - High piston rod load tension
 - Rod load reversal period (too short time period)



Crank Model

- Visualization of the crank model is also available for 3D-trends.
- Individual view of the crank model for plunger- / hyper compressor.

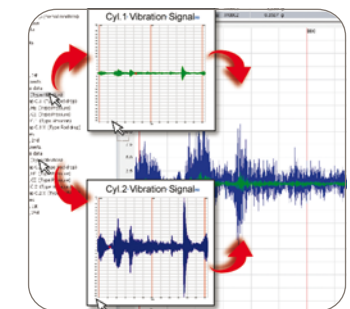


Drag&Drop-function

- Drag&drop-function to compose online- or trend signals out of the machine-tree.

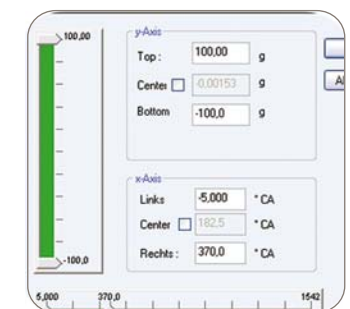
Description for the Drag&Drop-function

- If you drag an analysis from the machine-tree and drop it into an open trend- or online-view, the analysis will be added to the existing composition.
- If you drag an sensor or another group and drop it into an open trend- or online-view, all corresponding analyses will be added to the composition.
- If no trend- or online-view is open, a Drag&Drop will open the analysis in a new window.



Scaling

- Scaling dialogues expanded to data insertion in graphical and numerical way.
- Scaling of bar charts.



General

- Monitoring unit compatible to Windows XP embedded.
- Calculation of ratios and differences from analyses and process data.
- Optimized, userfriendly VISU interface.
- Functions to arrange windows inside the VISU.
- Icons now also visible in the context menu bars.
- Balloon tip showing up in the taskbar, if the machine status changes.
- Context menu for status light in the task bar.
- Legends of online and trend-views can be sorted.

