

COST EFFECTIVE SOLUTIONS BY
UTILIZING NON PENETRATING
SENSOR SYSTEMS



SPECIAL FEATURES OF THE DYNATREND SYSTEMS.



Dynatrend AS

Adresse: Olav Hansens vei 11,
4021 Stavanger
E-mail: post@dynatrend.no

Phone: +4751874940
Phone: +4791640565
Webpage: www.dynatrend.no



Many of the Dynatrend principals of machinery diagnostics and anomaly detection is not described or covered in books or embedded in conventional training courses.

Therefore you most probably are unaware of the strong potentials and benefits

Receive visualized precursors of the real enemies towards reliability and efficiency of axial and radial flow machinery. Additionally, the system has a strong potential for diagnostics of any other category of complex machinery.

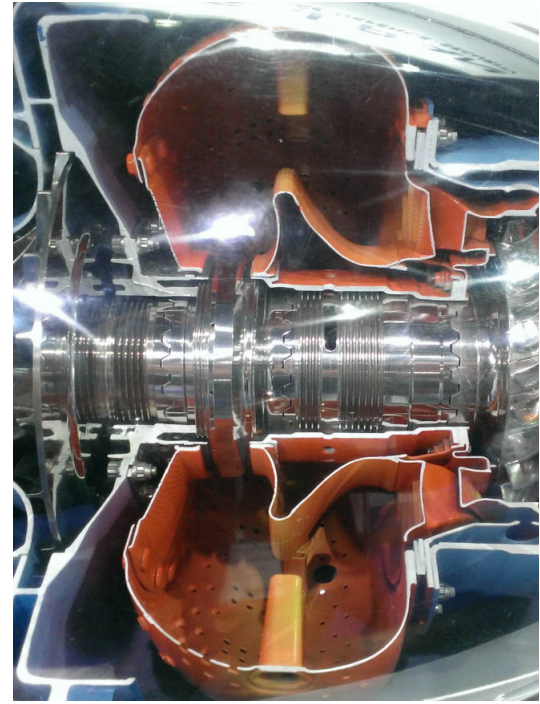
The system is very efficient for maintaining reliability control and for maintenance planning.

Examples of typical ranges of detection potentials:

- ✓ Detection of onset and direct physical contact between rotating blades and stationary components in the stator.
- ✓ Providing a feedback of the energy of the physical contact.
- ✓ Differentiating between contact between blades to stator, and stationary parts touching the rotor.
- ✓ Detecting the incipient energy of rotating stall during start up.
- ✓ Detecting rotating stall
- ✓ Detecting high speed stall
- ✓ Detecting blade resonances for each rotor stage. Not for individual blades.
- ✓ Detecting blade related information from “hidden” stages, where no penetrating probes can reach.
- ✓ The energy response from blade to stator contact is not as accurate as strain gauges, but provides very valuable feedback for event mapping and time stamping of events.
- ✓ Detecting gearbox tooth mesh contact surface condition, reducing the need for visual inspection.
- ✓ Detecting centrifugal compressor wheel sidewall resonances for mitigating operational ranges which can cause excitations.
- ✓ Rolling element bearing condition correlated to magnet chip detectors.
- ✓ Monitoring of increase of fretting energy from blade side supports, blade roots, vane rocking, or combustor liner fretting.
- ✓ Soft protection system of rotor and stator component rubs due to thermal rotor bow and casing bow effects.

Benefits:

- Fast understanding of blade or impeller related rubs/ resonances and flow instability issues.
- Fast understanding of the location of a mechanical issue. This accelerates the rectification time, and reduces the resources needed for trouble shooting.
- Fast repair reduces test cell running time. Saves personnel and fuel for testing.
- Comprehensive auto generated and instant information.
- Power preservation and reliability optimization generated by pro-active linking to the control systems.



Return of investments:

- Reduce the risk for damaging machinery failures in the field and at test cells.
- Solve mechanical problems faster by having detailed information instantly available.
- Secures high uptime for end users, increasing overall production figures.
- Reduce human work effort for machinery follow up, freeing man power.
- Reduce the need for manual analysis but increasing the level of instant diagnostics and alerting.
- Reduced amount of data.
- Free man power for strategy and planning purposes
- Limit power degradation of field machines; increasing production figures.
- Preserve high efficiency of the units limiting emission release
- Establish strong condition parameters for maintenance planning, extending maintenance intervals in a secure way in order to cut down hourly running cost.
- Combine CBM to time based maintenance in a secure and cost effective way.





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