

Rotating Machinery Diagnostics and Drivetrain Dynamic Analysis

Monitoring Noise and Vibration | Modelling Dynamic Systems

Rotational Dynamics Analysis

The Engineers at Xi are able to diagnose problems with rotating machinery and complex dynamic systems, providing solutions for rotational dynamics and structural related issues. We work alongside machine operators and OEM's providing accurate reports on dynamic tolerances for non-reciprocating machinery in line with relevant ISO Standards. Some common issues with rotating machinery:

- Frequency Matching
- Shaft Misalignment
- Casing Vibrations
- Shaft Oil Swirl
- Torsional Dynamic Issues

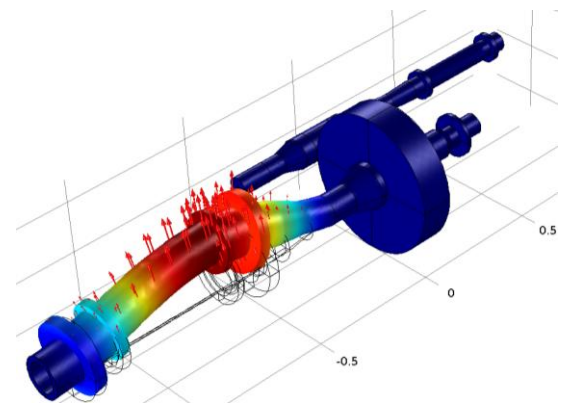
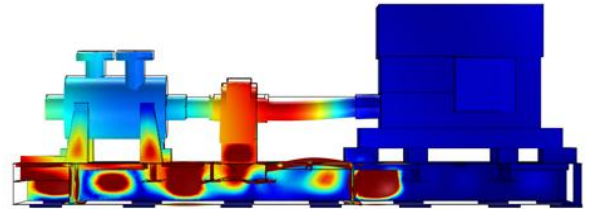
Benefits

Many machinery upgrades and installations can end in unwanted and potentially harmful vibration issues in dynamic systems. By determining the dynamic response of a system Xi can design alterations to remove problematic vibrations and remove the risk of expensive repair and maintenance operations later in the component life cycle.

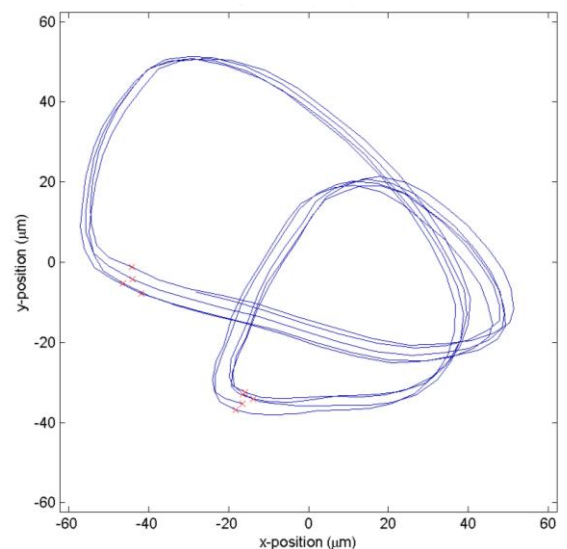
The Engineers at Xi have over 30 years experience in measurement and modelling of dynamic systems and have specified many design solutions and alterations for our clients. Our objective is to improve design and reduce downtime to prevent failure and loss of production.

Applications

- Factory Acceptance Testing
- Onsite Load Testing
- Multibody Dynamics and Drive Train Analysis
- High/Low Speed Gearbox Analysis
- Steam/Gas Turbine and Compressor Analysis
- Shaft Orbit Plot & Centreline Analysis
- Casing Tolerance Assessments
- Fatigue Assessments
- Machine Operational Deflection Shape (ODS) Analysis
- Frequency Response and Modal Analysis
- Time Waveform/Waterfall Analysis
- Isolation Specification and Solution Design



Frequency response analysis of offshore compressor pump with simulated bearing loading. Xi provided design solutions for stiffening the gearbox and pump skid.



Shaft orbit plot analysis. Xi helped the client find issues with the bearings and bring the pump motor back within tolerance