

# Independent verification of turbomachinery rotordynamics

Significantly reduced risk of failure for critical rotating machinery: pumps, compressors, turbines, etc. Extra peace of mind for new design concepts and untested operating conditions. Independent assurance drawing on more than 30 years of experience with every major manufacturer of rotating machinery.

## Independent verification

Turbomachinery is critical on oil and gas facilities. The consequences of failure can be fatal, environmentally catastrophic and commercially crippling. Even short delays fixing problems during testing can cost millions of dollars. Discovering problems during commissioning can be a safety issue. Repairing machinery onsite is slow and expensive. In the best cases, production is limited, in the worst it can be cut off for days, weeks or months.

The burden on this critical machinery increases daily. The world's oil and gas is harder to extract. Production rates are climbing. Old designs are pressed to the outermost limits of their operational envelopes and new designs must chart new territory without the benefit of forerunners to show the way. Faced with these challenges, independent verification can significantly reduce the risk of the potentially dire consequences of failure.

By drawing on three decades of experience with all major designs of rotating machinery and incorporating expertise from all the relevant technical disciplines, independent verification can identify issues before they arise and highlight design vulnerabilities to ensure the most rapid response in the event of problems materialising.

Over thirty years of failure analysis and investigation has given us a unique insight into the rotordynamic challenges of machinery design.

Coupled with industry-leading expertise and supported by state-of-the-art tools for analysis and prediction, this experience ensures the highest quality design verification for your assurance and peace of mind.

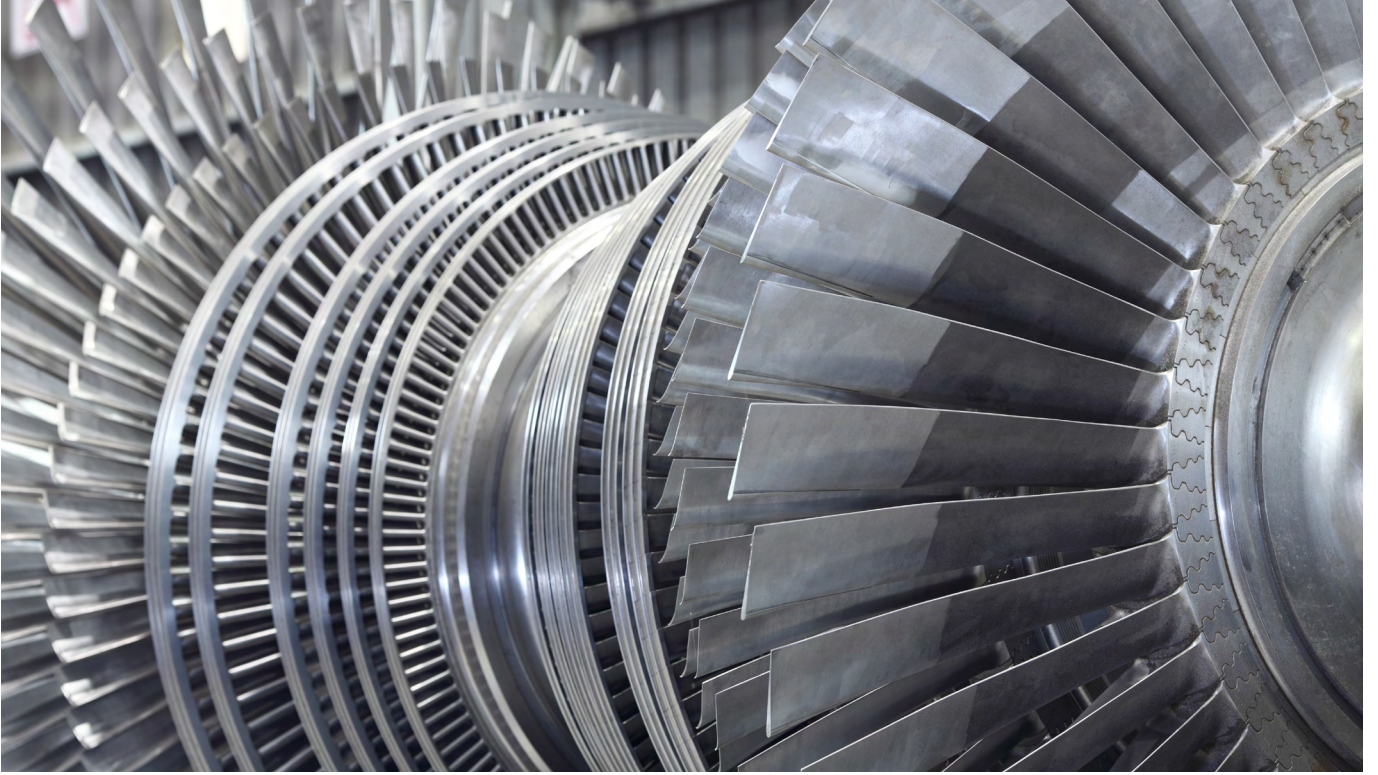
## Services

All our services are adapted to our clients' specific needs:

- Comprehensive analysis of rotating machinery for new designs, retrofits or changes in operating conditions
- Design appraisal according to industry standards, e.g. API, ISO
- Prediction of transient and steady-state responses and rotordynamic stability
- Advanced prediction of bearing and seal dynamic coefficients using worldleading codes
- Assessment of likelihood of failure
- Recommendations for improved design
- Identification of design vulnerabilities to focus troubleshooting and failure investigations in the event of problems in testing or commissioning.

## Your benefits

- Significant reduction in risk of failure or under performance of critical machinery
- Identification of design vulnerabilities facilitates and accelerates diagnosis and correction in the event of malfunction
- Qualified representation of customer interest in dialogue with equipment manufacturers.



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## Why Vysus Group

- World-leading discipline expertise and personnel
  - Global presence and fast response time
  - Resources and personnel to manage your asset through design, commissioning, and operation
  - Commercial independence from vendors and contractors
  - State-of-the-art numerical and analytical tools
  - Purpose built methods
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