

# ADVANCED SYSTEM ANALYSIS AND DIAGNOSTICS TESTING

## INTRODUCTION

**ProPump Services** has the experienced engineers equipped with the tools to identify and solve your most complex pump, drive and system related problems.



## TYPICAL SCOPE OF WORK

**A Diagnostic Specialist** will visit the site, review the pump operating and maintenance history, interview operation and maintenance personnel, and perform required specialized testing such as:

### Modal Analysis

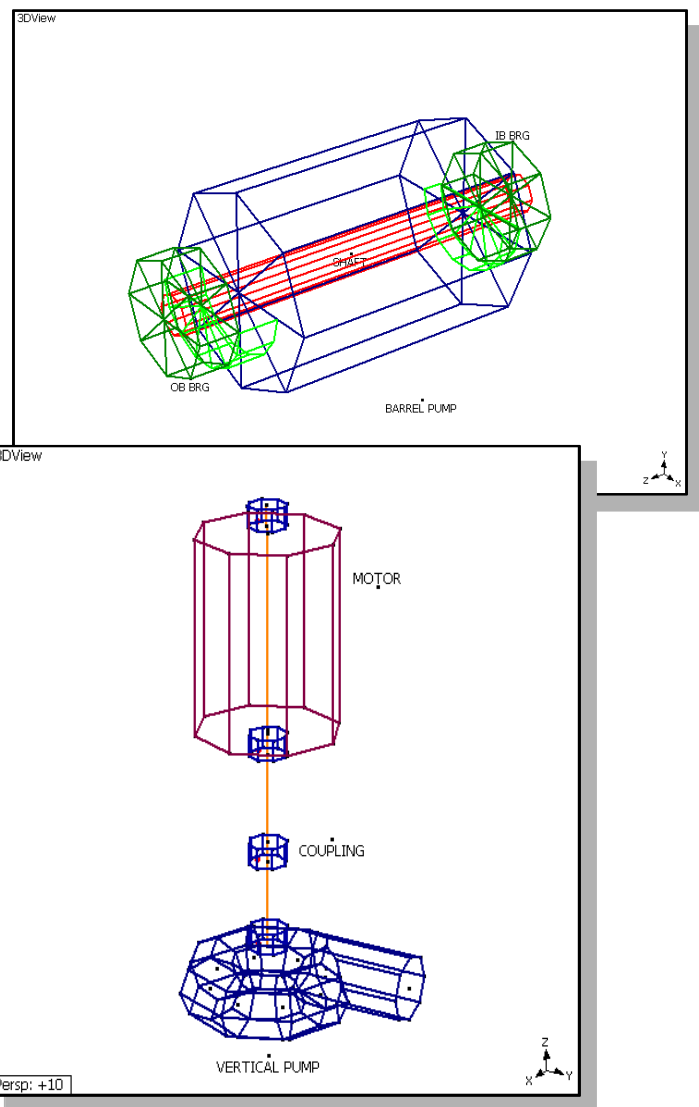
**Modal Analysis is used to characterize resonant vibration in machinery and structures.**

Resonant vibration can cause or contribute to a wide variety of machinery problems which include:

- Inability to maintain tolerances
- Accelerate component wear
- Premature fatigue
- Unacceptable noise levels

### Operating Deflection Shape (ODS)

**An ODS is the simplest way to see how a machine or structure moves during its operation**, either at a specific frequency or at a moment in time. These shapes are used to determine resonant vibration as well as internal and external excitation forces.



ODS Models

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Other specialized testing includes:

## Advanced Vibration and System Analysis

- Impact Testing
- High Resolution Analysis
- Bearing/Gear Analysis
- Run-up and Coastdown Testing
- Cross Channel Amplitude/Phase
- Orbit Plotting
- Pressure Pulsation Testing

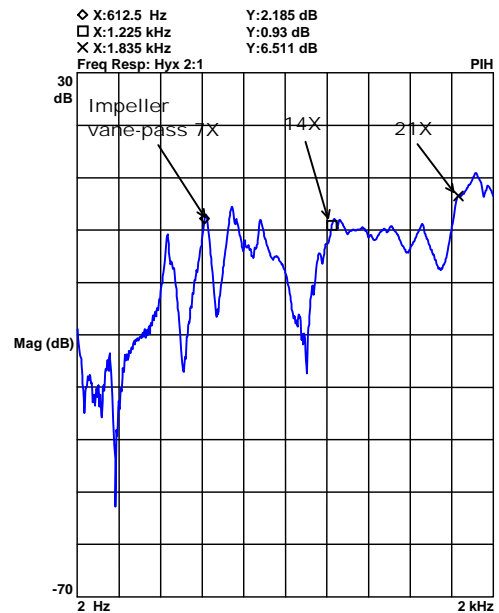
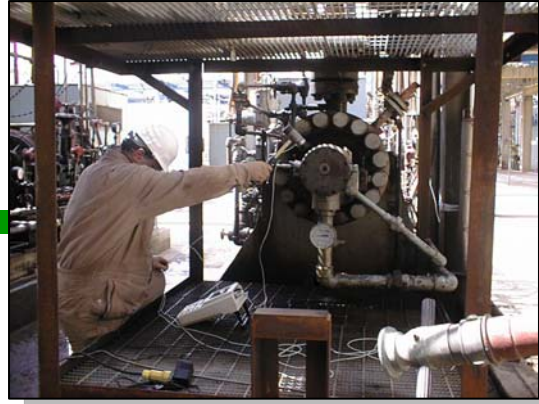
## TYPICAL INSTRUMENTATION

- Multi-channel vibration spectrum analyzer
- Post Processing Modal and ODS Software
- Calibrated Impact Hammer
- Infrared Temperature Measurement
- Digital Camera

## DELIVERABLES

*Advanced Vibration Analysis Report will include:*

- Historical Background, Comments and Recommendations
- Testing Methods, Test Data, Discussion of Data
- Digital Movies™ – MS AVI file to view the Modal and ODS animation



Resonance Frequency Response

