Vibration Laboratory

Experiments

Vibration Fundamentals Training

- Pendulum motion
- Harmonic motion
- Free vibration
- Logarithmic decrement
- Harmonic excitation
- Frequency response
- Base excitation
- Torsional vibration
- General forced response
- 2-DOF free vibration
- 2-DOF harmonic excitation
- Beam lateral vibration
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Machinery Fault Simulator

- Unbalance
- Misalignment
- Resonance
- Bearing faults
- cracked shaft,
- Rotor and gearbox faults
- Belt drive,
- mechanical rub,
- induction motor,
- Pump, compressor, and fan systems

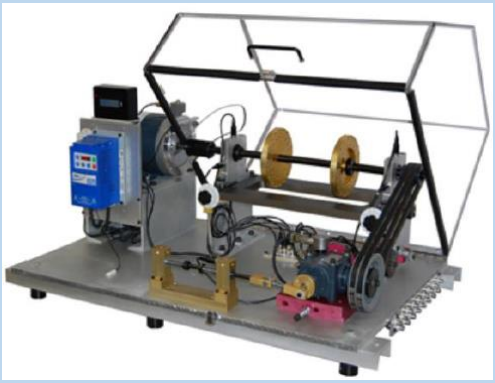
Machinery Fault Simulator – Magnum

- rotating machinery resonance
- bode plot of shaft's vibration
- Oil whirl
- Oil whip

In this lab, students learn the practical aspects in modeling and simulation of vibrational systems, fault detection, and health monitoring of rotary machines. The lab uses state-of-the-art equipment's from SpectraQuest, Inc. which enable students to study, analyze, and design experiments in the area of vibration.

- The Vibration Fundamentals Training System (VFT) is an educational package for learning the fundamental principles of mechanical vibration.
- The Machinery Fault Simulator (MFS) studies the signature of common machinery fault
- The Machinery Fault Simulator Magnum (MFS-MG) studies different vibration signatures, controlled experiments on a device e that emulates real world machinery.

Vibration Fundamentals Training System (VFT)



Machinery Fault Simulator (MFS)

Machinery Fault Simulator Magnum (MFS-MG)