

CONSULTANCY SERVICES

What we do?

DIAGNOSTIC ENGINEERING (DiEg) Solution

- **Vibration Diagnosis – testing, measurement, analysis**
- **Infrared Thermography**
- **Ultrasonic testing and survey**
- **Electrical Machine Diagnostics Study**
- **Power Quality Analysis – transient and harmonic study.**
- **Assessment of Root Cause Failure Analysis**
- **Scheduled (periodical) machinery auditing**
- **Implementation of proactive maintenance**
- **Shaft power, Torque & Torsional vibration measurement of**
Engine. Propeller Shaffing system, Gear boxes etc



CORRECTIVE SERVICES

- **In-situ dynamic balancing – rigid & flexible rotor**
- **Precision optical laser alignment**
- **Bore / Flatness / Straightness measurement**

Vibration Diagnosis:

- **Vibration measurement, monitoring, test, trouble shooting, Fault diagnosis of rotating / reciprocating machineries, Propulsion Shaft, structures, piping, building & ground**
- **Identify natural frequency (resonance states) of entire machinery or machinery components including Transient analysis during start-up / coast down**
- **ODS – Operational Deflection Shape / Modal analysis**

Torsional Vibration Diagnosis:

Torsional Vibration Diagnosis of Generators, Coupling, Gearbox, Pumps / Compressors, Reciprocating Engines etc

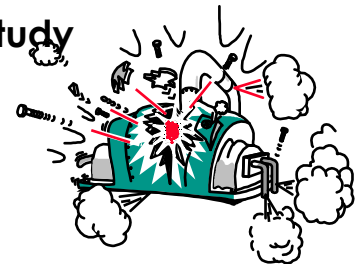
CONSULTANCY SERVICES

Machinery Dynamic Study

- Analytical modelling: FEM / FEA to predict and establish the influence of machinery interaction with Bearings, Rotors, Structures, Foundation, Sub soils etc
- Machine design audit to predict, and assess residual life (life span) of the critical equipment and its components

Failure Avoidance / Analysis

- Structural modification – *shifting natural frequency*
- Fatigue & Life estimation of the critical components
- Analytical design review on system integrity
- Simulation of faults and dynamic response study
- Cause & impact analysis
- Damage assessment



Corrective Services

- In-situ Dynamic Balancing *of symmetric / asymmetric rotors*
- Precision Optical Laser Alignment – *cold / hot state condition*
- Bore / Flatness / Straightness Measurement
- Multi-plane Rigid & Flexible Rotor Dynamic balancing*

Other Condition Monitoring Techniques

- Infrared Thermography study - *identification of thermal anomaly*
- Acoustic & Ultrasonic Study *friction, arching, turbulent phenomena*
- Electrical Motor Signature Analysis - *identify stator & rotor related failures*
- Power Quality Analysis – *transient & harmonic study*

Expert Solutions for Turbo Machineries

- Life estimation (*Fatigue and Fracture*) of turbine / Compressors blade components
- Analytical model for turbo machinery rotor & support
- Torsional Vibration study / Power measurement
- Journal bearing / Coupling modification
- Expert system for On-line Vibration Diagnosis system