

CONDUCTED BY: VIBROTECH TRAINERS & CONSULTANTS PVT. LTD.



PROGRAMME OVERVIEW:

This Certification Training program is designed for those having experience in measuring and analyzing machine vibrations. This program is conducted on behalf of Vibration Institute, USA in India through Vibrotech Trainers and Consultants Private Limited., Chennai, representative in India.

**Chapters covered in ISO Certification Training Program
(For Detailed topics in each Chapter refer Annexure I)**

Category – I Training Topics

1. Vibration Sources and Uses
2. Basic Machinery Vibrations
3. Data Collection
4. Machinery Characteristics
5. Vibration Instruments
6. Vibration Testing
7. Basic Analysis
8. Vibration Severity

Category – II Training Topics

1. Basic Machinery Vibration
2. Data Acquisition
3. Data Processing
4. Fault Diagnosis
5. Machine Condition Evaluation
6. Machine Testing
7. Periodic Monitoring
8. Basic Balancing of Rotating Machinery

Certification:

Examinations for certification will be held at the end of the course. Certification exams are open to all qualified officials depending on the current level of experience / certification. Aspiring officials may contact us to register for a certification exam – category - I, II or III in accordance with the Vibration Institute (USA) requirements and ISO Standard 18436-2.

Course Benefits:

- Exposure to better Analysing aptitudes
- Provision of a Deeper Understanding of Vibration Principles & Techniques
- Helping Analysts achieve the Standard Level of Knowledge and Expertise.

Who should attend?

Technical Superintendent / Chief Mechanic/Electrician, Maintenance Manager/Engineer/Staff who involve in direct maintenance, trouble shooting of rotating machinery and those who want to enhance their knowledge in best maintenance practices and continuous improvement.

Note: Since Examination is conducted on behalf of Vibration Institute, USA, prior intimation is to be provided to provided. Hence we (Vibrotech Trainers & Consultants Pvt. Ltd.) request you to kindly provide at least 06 week advance notification along with the candidate details to conduct the Certification Examination.

M/s. VIBROTECH TRAINERS & CONSULTANTS PVT LTD.

(INTERNATIONAL REPRESENTATIVE OF M/s. VIBRATION INSTITUTE, USA)

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ANNEXURE – I

Category – I Training Topics

1. Vibration Sources And Uses

- Sources
- Effects
- Uses of vibration
- Measurement & Analysis

2. Basic Machinery Vibrations

- Units
- Physics
- Measurement
- Motions
- Period
- Frequency
- Amplitude
- Conversions
- Excitation

3. Data Collection

- Physical Observations
- Data Collection
- Measure Selection
- Sensors
- Sensor Selection
- Mounting and Location

4. Machinery Characteristics

- Machinery Knowledge and Categories of Vibration Sources
- Bearings
- Centrifugal Machines
- Gears
- Electrical Machines
- Process Machines and Turbines

5. Vibration Instruments

- Meters
- Oscilloscopes
- Data Collectors
- Analyzers & Virtual Instruments

6. Vibration Testing

- Periodic Monitoring
- Collection Procedures
- Frequency of Data Collection
- Screening & Trending
- Alarms
- Reports
- Machine Analysis
- Acceptance Testing
- Design Characteristics

7. Basic Analysis

- Spectrum Analysis
- Time Waveform Shape
- FFT
- Analysis Terminology
- Common Machine Faults

8. Vibration Severity

- Bearing Housing
- Shaft Vibrations
- Gears and Bearings

Category – II Training Topics

1. Basic Machinery Vibration

- The Physical Nature of Vibration
- Vibratory Motion
- Measures & Vibration & Phase Measurement
- Vibration Analysis
- Excitation
- Natural Frequencies, Mode Shapes ,and Critical Speeds

2. Data Acquisition

- Selecting a Measure
- Vibration Transducers
- Triggering Devices
- Transducer Selection
- Transducer Mounting
- Transducer Location
- Frequency Spans
- Data Display

3. Data Processing

- Oscilloscopes
- FFT Analyser
- Electronic Data Collector
- Data Sampling & Aliasing
- Windowing & Averaging
- Dynamic Range
- Setup of FFT Analyser and Data Collector

4. Fault Diagnosis

- Fault Diagnosis Techniques
- Operating speed Faults
- Rolling Element Bearings
- Gearboxes
- Centrifugal and Axial Machines
- Electric Motors
- Pumps
- Fans
- Compressors

5. Machine Condition Evaluation

- Shaft Vibration
- Bearing Vibration
- Casing Vibration

6. Machine Testing

- Test Plans
- Selection Of Test Equipment
- Site Inspection
- Acceptance & Baseline test
- Resonance and Critical Speed Testing
- Fault , Condition , and Balance Tests
- Specifications
- Environment and Mounting
- Presentation of Data
- Reports

7. Periodic Monitoring

- Listing and Categorization
- Machinery Knowledge
- Route Selection and Definition
- Measures and Measurement Points
- Baseline Data
- Selection of Test Equipment
- Screening
- Trending
- Alarms
- Reports

8. Basic Balancing of Rotating Machinery

- Types of Unbalance
- Balancing Equipment
- Pre balancing Checks
- Measurements & Relationship between Mass Unbalance and Phase
- Trail Weight Selection
- Balancing Pitfalls
- Vector Method
- Weight Splitting & Consolidation
- Acceptable Vibration Levels

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