

# VIBRATION MEASUREMENT AND ANALYSIS (REF:OTSVMA001)

## Course Objectives

Understand Vibration and the measurement and analysis of the vibration.

## Course Description

Condition Monitoring and in particular, Vibration Measurement and Analysis have become increasingly important in maintaining the reliability and efficiency of plant machinery during the last 20 years, due to escalating running costs.

The aim of this course is to familiarise the attendee with methods of vibration measurement and analysis and to make them aware of the concept of vibration, its causes, and consequences should the vibration continue and be allowed to increase.

## Who Should Attend

The course is targeted at technicians and engineers involved in the operation maintenance of rotating machinery. Experienced maintenance specialists also benefit from attending this course, as will those managers concerned with maintenance, scheduling and repair aspects of rotating machinery.

## Pre-Requisites

All Attendees should have a sound engineering background.

## Course Outcome

At the end of this course you will be able to measure and analyse vibration.

## Course Outline

### Days 1 - 2

Introduction

Introduction to the concepts of vibration as related to rotating equipment.

Define vibration terms and units of measurement.

Be able to state the common causes of machinery vibration.

Describe standard types and applications of vibration, measurement and analysis equipment.

Vibration transducers

Vibration meters

Vibration analysers

Be able to describe and utilise vibration graphic representations

Trend charts

Vibration signatures or spectrums

Time wave form data

Orbit diagrams

### Days 3 - 5

Operate an portable Analyser:

Carry out correct set-up procedures for the analyser

Obtain unfiltered amplitude readings in velocity and displacement

Obtain filtered amplitude readings in velocity, displacement and frequency

Using vibration identification and severity charts provided, be able to predict probable causes of problems in equipment operation

Apply the knowledge and practical skills gained, to carry out single plane balancing using the analyser and rotor kit; i.e.

Take necessary readings of amplitude, frequency and phase

Construct a vector diagram using the data

Apply the new weight and position data calculated to the rotor

Take the new readings of amplitude, frequency and phase and compare with original

Repeat the sequence as necessary

## Course Review and Feedback

