

Vibration Monitoring Introduction

Purpose

The purpose of this course is to teach maintenance craftsmen basic vibration monitoring so that they can effectively use their facilities vibration monitoring equipment to detect problems in machinery. They will gain an understanding of what vibration Monitoring is, why it works and how it can help them do their job more professionally.

Objectives

At the completion of this course, the student who actively participates will:

- Understand the effect of vibration on machinery life and operation
- Understand the language of vibration.
- Have discussed common causes for vibration in industrial machinery.
- Properly set the measurement parameters to collect good data.
- Be able to collect consistent, repeatable data
- Practiced identifying trends in the data and deciding what action to take.
- Practiced using vibration monitoring equipment on actual equipment.

Description

The course begins with an exploration of the life of a rolling element bearing. The normal failure modes and effect of changing load on failure are discussed. Then after a basic description of vibration, the common causes are introduced. Their unique signatures in the vibration spectra are described, followed by practice in identifying simple signals. Next, the plants vibration equipment is introduced, with practice on simulated machinery signals. Once the students are comfortable with the equipment, actual measurements are taken on plant equipment if possible. Those signals are analyzed and uploaded to the vibration software. Heavy emphasis is placed on how to collect good data, including setup of the database and datalogger.

Content

- Introduction
- The life of a bearing
- What is vibration and where does it come from
- Common vibration causes in industrial machinery
- Field experience in using vibration dataloggers and software