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# Shaft Alignment

## Purpose:

The purpose of this course is to teach machinery repair and installation personnel and supervisors to correctly align rotating machinery.

## Objectives:

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

- Describe the importance of correct shaft alignment
- Describe how misalignment is measured
- Describe coupling types and limits
- Describe foundations and base plates, including grouting.
- Have performed rough alignment using straight edge & feeler gage.
- Have performed alignment using rim and face methods
- Have performed alignment using dial indicator reverse method
- Have performed laser alignment
- Have graphed machinery position
- Have used graphing to solve bolt bound problems
- Have performed machine train alignment
- Have performed Jackshaft alignment
- Be able to explain thermal growth and it's effect on alignment
- Describe how to estimate thermal growth.
- Describe how to measure thermal growth
- Describe magnetic center in an electric motor and it's effect on alignment
- Describe how to determine magnetic center
- Under stand how to use a vibration signal to spot misalignment
- Describe the effect of piping stress on alignment
- Describe how to measure and correct piping stress
- Describe soft foot and its effect on alignment
- Describe how to measure and correct soft foot

## Description:

This course is designed to teach industrial maintenance technicians the importance of correct machinery installation and alignment in extending equipment life, reducing unscheduled downtime and minimizing maintenance costs. They will learn how misalignment is measured, how to do a rough preliminary alignment, how to detect and correct conditions that effect alignment and several methods of performing alignment.

Content:

- Introduction
- Importance of shaft alignment

- Machinery installation
- Couplings
- Misalignment
- Preparation for alignment
- Basic alignment techniques for rough alignment
- Computation and graphical methods
- Advanced dial indicator techniques
- Laser alignment
- Other methods
- Machine Train Alignment