



شركة ميرك العربية السعودية  
MEIRC Saudi Arabia

## Shaft Alignment

### **Duration 5 Days**

### **Introduction**

To teach the important techniques and skills needed in performing precision shaft alignment. An accurate and precise alignment can significantly reduce premature bearing and seal wear. In turn this also will reduce the maintenance costs and unscheduled downtime while increases production availability, plant's profitability and machine life

### **Who should attend?**

Maintenance personnel who require the necessary skills to perform precision shaft alignment or anyone who is in charge with designing, installing, troubleshooting or repairing any rotating machinery.

### **Course Objective**

To teach the important techniques and skills needed in performing precision shaft alignment. An accurate and precise alignment can significantly reduce premature bearing and seal wear. In turn this also will reduce the maintenance costs and unscheduled downtime while increases production availability, plant's profitability and machine life

### **Upon the completion of this course, participants is expected to understand:**

- The importance of shaft alignment.
- The usage of dial indicator in performing shaft alignment.
- The step-by-step procedures to perform proper shaft alignment activity.
- The definition of shaft misalignment and how to adjust the misalignment until it falls within the acceptable tolerances limit.
- The usage of Laser Shaft Alignment tools.

### **Course Outline**

Shaft alignment course uses a combination of lectures, technical discussion, video and hands-on training. Specific topics include:

#### **1. Shaft Alignment : Introduction**

- Types of misalignment
- Alignment tolerances
- Alignment process overview
- Alignment procedure
- Pre-alignment
- Precision alignment
- Alignment methods



## 2. Shaft Alignment : The Benefits

- Learn the importance of shaft alignment as well as the effect of alignment
- The benefit of precise shaft alignment to the rotating machinery.

## 3. Shaft Alignment : Calculation for Horizontal Shaft Alignment

- Step-by-step approach to use dial indicator in alignment methods
- Reverse dial indicator method.
- Rim and face indicator method.
- Alignment correction for machines not subject to thermal growth

## 4. Shaft Alignment : Pre-alignment

- Base preparation.
- Procedures and precaution for taking accurate readings and measurement.
- Machinery soft foot - how to do measurement, analysis and correction.
- Measuring run out due to coupling eccentricity and bent shaft.
- How much run out is too much?

## 5. Shaft Alignment : Rough Alignment

- Procedure of rough alignment
- Preparation for alignment challenge

## 6. Shaft Alignment : Dynamic Movements

- Thermal growth effect
- Determining final desired alignment reading for machines subject to thermal growth.
- Alignment correction for machines subject to thermal growth

## 7. Shaft Alignment : Reverse Dial Method Exercise

- Applying graphical drawing/techniques
- Learn to do adjustment from graphical drawing.
- Finding the optimum moves when bolt bound or base-bound.
- Finding the optimum moves when there is thermal effect

## 8. Shaft Alignment : Case studies and Overview of shaft alignment practices.

- Hands-on with reversed dial indicator method
- Pre-alignment checks.
- Soft foot determination and correction.
- Fixture assembly.
- Taking and recording accurate readings.



شركة ميرك العربية السعودية  
MEIRC Saudi Arabia

- Compensating for thermal growth in one or both of the machines.
- Precision movement of the machinery.

#### 9. Precision Shaft Alignment : Laser Alignment-Tools and Techniques

- The tools and equipments
- Principle operation
- Setting up procedure
- Taking the reading procedure
- Correction Made
- Repo