

## FUNDAMENTALS OF PRECISION SHAFT ALIGNMENT

*"Ensure Mechanical Reliability through Accurate and Effective Shaft Alignment Techniques"*

### Schedule

| Date             | Venue       | Fees (Face-to-Face)   |
|------------------|-------------|-----------------------|
| 13 - 15 Oct 2026 | Doha, Qatar | USD 2495 per delegate |

► **Available delivery methods:** Face-to-Face & Online Training

### Introduction

Misaligned shafts are a leading cause of premature equipment failure, excessive vibration, bearing wear, and energy losses in rotating machinery. Precision shaft alignment is a critical skill for maintenance and reliability professionals seeking to improve machine performance and extend equipment life.

This hands-on 3-day course delivers foundational knowledge and practical skills required to perform accurate shaft alignment using dial indicators and laser alignment tools. It also emphasizes the root causes and corrective actions for misalignment, preparing participants to apply industry best practices confidently in the field.

### Objectives

By the end of this course, participants will be able to:

- Understand the principles and importance of shaft alignment in rotating equipment
- Identify symptoms, causes, and consequences of misalignment
- Perform alignment using traditional (dial gauge) and modern (laser) techniques
- Analyze soft foot, thermal growth, and other alignment challenges
- Implement best practices for alignment documentation and continuous improvement

## Why Attend

- Gain critical skills to reduce unplanned downtime and maintenance costs
- Improve energy efficiency and asset reliability through precision alignment
- Learn both theory and hands-on practice with alignment equipment
- Understand how to detect and prevent machinery damage caused by misalignment
- Enhance your ability to support predictive and preventive maintenance programs

## Target Audience

This program is designed for:

- Mechanical maintenance technicians and engineers
- Reliability and condition monitoring professionals
- Rotating equipment specialists
- Plant supervisors and maintenance planners
- Anyone involved in installation, inspection, or maintenance of rotating machinery

## Individual Benefits

Key competencies that will be developed include:

- Shaft alignment techniques (rim and face, reverse dial, laser)
- Measurement interpretation and error correction
- Soft foot detection and correction
- Equipment setup and alignment procedure standardization
- Troubleshooting misalignment and related mechanical faults

## Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Increased equipment uptime and reduced maintenance interventions
- Fewer equipment failures due to vibration and misalignment
- Greater workforce competency in maintenance precision techniques
- Improved documentation and alignment quality control
- Enhanced safety and operational efficiency

## Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings - Fundamentals of alignment, machine dynamics, and failure modes
- Case Studies - Misalignment examples and their operational consequences
- Workshops - Dial indicator and laser alignment simulations and live exercises
- Peer Exchange - Sharing alignment challenges and techniques from participant industries
- Tools - Alignment checklists, measurement logs, and error correction charts

## Course Outline

### DETAILED 3-DAY COURSE OUTLINE

**Training Hours:** 7:30 AM – 3:30 PM **Daily Format:** 3–4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

#### Day 1: Introduction to Shaft Alignment and Machinery Fundamentals

- Module 1: Importance of Shaft Alignment (07:30 – 09:30) • Benefits of alignment for reliability and performance • Failure modes caused by misalignment
- Module 2: Alignment Terminology and Concepts (09:45 – 11:15) • Angular vs. offset misalignment • Shaft centerlines and coupling relationships
- Module 3: Tools and Preparation for Alignment (11:30 – 01:00) • Overview of alignment tools (straight edge, dial indicators, laser systems) • Safety precautions and setup procedures
- Module 4: Workshop – Visual Inspection & Pre-Alignment Checks (02:00 – 03:30) • Soft foot detection and base condition assessment

#### Day 2: Alignment Techniques and Applications

- Module 1: Reverse Dial and Rim-Face Methods (07:30 – 09:30) • Step-by-step calculation and adjustment process • Measuring and correcting misalignment
- Module 2: Introduction to Laser Alignment Systems (09:45 – 11:15) • Components, calibration, and system setup • Interpreting laser measurement results
- Module 3: Workshop – Dial Indicator Alignment Exercise (11:30 – 01:00) • Hands-on alignment using reverse dial method
- Module 4: Workshop – Laser Alignment Simulation (02:00 – 03:30) • Practice session using laser alignment tools

#### Day 3: Problem Solving, Documentation, and Precision Maintenance

- Module 1: Dealing with Alignment Challenges (07:30 – 09:30) • Thermal growth, pipe strain, vertical/horizontal corrections • Repeatability and measurement accuracy
- Module 2: Soft Foot and Base Issues (09:45 – 11:15) • Detecting and correcting soft foot conditions • Mounting surface preparation
- Module 3: Workshop – Final Alignment Practical (11:30 – 01:00) • End-to-end alignment procedure with documentation
- Module 4: Documentation and Continuous Improvement (02:00 – 03:30) • Recording alignment data • Incorporating alignment into preventive maintenance programs

## Certification

Participants will receive a Certificate of Completion in Fundamentals of Precision Shaft Alignment, validating their ability to perform accurate shaft alignments using both traditional and modern tools, and to enhance machinery performance through precision maintenance practices.

## Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation's unique goals.

### In-House / Customized Training

Interested in running this course for your team?

Please contact us:

TEL:

**+601116373203**

EMAIL:

**info@mawaevents.net**

## MAWA EVENTS

**Address:** No. 857, Block A2, Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

**Phone:** +601116373203 | **Email:** info@mawaevents.net

---



© Material published by MAWA Events shown here is copyrighted. All rights reserved. Any unauthorized copying, distribution, use, dissemination, downloading, storing (in any medium), transmission, reproduction or reliance in whole or any part of this course outline is prohibited and will constitute an infringement of copyright.