MAWA EVENTS

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

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ADVANCED MECHANICAL & DRY GAS SEAL MAINTENANCE AND TROUBLESHOOTING TECHNIQUES

"Mastering the Art of Mechanical and Dry Gas Seal Maintenance for Enhanced Reliability and Performance"

Schedule

Date	Venue	Fees (Face-to-Face)
10 – 14 Aug 2026	London - UK	USD 3495 per delegate

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

Introduction

Mechanical seals and dry gas seals are critical components in rotating machinery, particularly in applications involving pumps, compressors, and other high-speed equipment. This comprehensive 5-day course covers the essential aspects of maintenance and troubleshooting techniques specific to mechanical and dry gas seals. It is designed to equip participants with the knowledge and practical skills required to ensure the performance, reliability, and longevity of these vital components.

Throughout the course, participants will explore the principles of mechanical and dry gas seals, common failure modes, advanced troubleshooting techniques, and effective maintenance strategies. Real-world case studies and hands-on exercises will allow participants to gain practical experience and a deep understanding of how to diagnose and solve seal-related issues efficiently.

Objectives

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

- Understand the operating principles of mechanical seals and dry gas seals
- Identify common failure modes of mechanical and dry gas seals
- Troubleshoot and diagnose issues effectively in seal systems
- Perform advanced maintenance practices to extend the lifespan of seals
- Optimize seal performance to minimize leaks and reduce downtime
- Understand seal design variations and their impact on performance in various industries

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Why Attend

- Gain a deep understanding of the functioning and design of mechanical and dry gas seals
- Learn advanced troubleshooting techniques to quickly diagnose and resolve seal-related problems
- Improve your ability to maintain seals for optimal performance and reduced failure rates
- Acquire hands-on experience with the latest seal maintenance technologies and practices
- Enhance your expertise to solve real-world challenges in seal operations and increase your technical proficiency

Target Audience

This program is designed for:

- Maintenance engineers, technicians, and managers working with rotating machinery
- Mechanical engineers responsible for seal system integrity in industrial applications
- Engineers and technicians working in industries such as oil and gas, petrochemical, and power generation
- Personnel responsible for the maintenance and troubleshooting of mechanical seals and dry gas seals
- Professionals looking to enhance their skills in mechanical and dry gas seal maintenance and troubleshooting

Individual Benefits

Key competencies that will be developed include:

- Expertise in the operation, maintenance, and troubleshooting of mechanical and dry gas seals
- The ability to diagnose and repair mechanical seal failures effectively
- Practical knowledge of advanced maintenance strategies to extend seal life and enhance machinery performance
- Enhanced troubleshooting skills to quickly identify and resolve seal-related issues
- Improved understanding of the impact of seal failures on machinery performance and how to minimize these risks

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- A significant reduction in seal-related failures and associated downtime
- Enhanced ability to diagnose and repair seals in-house, leading to cost savings on external repairs
- A stronger maintenance approach that improves equipment reliability and operational efficiency
- The ability to develop proactive seal maintenance strategies that extend asset life and reduce operational disruptions
- Improved team competency in seal technology, increasing organizational expertise and reducing reliance on external specialists

Instructional Methodology

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

- Strategy Briefings – Overview of mechanical and dry gas seal technology, design principles, and key components
- Case Studies – Real-world examples of seal failure incidents, troubleshooting solutions, and successful maintenance strategies
- Workshops – Hands-on exercises for diagnosing, maintaining, and overhauling mechanical and dry gas seals
- Peer Exchange – Group discussions on challenges in seal maintenance, troubleshooting experiences, and solutions
- Tools – Practical tools and templates for seal inspections, troubleshooting guides, and maintenance schedules

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Course Outline

Detailed 5-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 Mechanical and Dry Gas Seals

- Module 1: Overview of Mechanical Seals (07:30 – 09:30)
- Introduction to mechanical seal technology and its importance in rotating machinery
- Key components of mechanical seals and their function in sealing systems
- Design considerations and material selection for mechanical seals
- Module 2: Overview of Dry Gas Seals (09:45 – 11:15)
- Understanding dry gas seal technology and its applications in high-speed machinery
- Key components and functionality of dry gas seals
- Comparison between mechanical and dry gas seals
- Module 3: Seal Selection Criteria (11:30 – 01:00)
- How to select the right seal based on application and environmental factors
- Common challenges in seal selection and how to address them
- Case study on seal failure due to improper selection

Day 2: Seal Failure Modes and Troubleshooting Techniques

- Module 4: Common Mechanical Seal Failure Modes (07:30 – 09:30)
- Identifying the most common failure modes in mechanical seals (e.g., leakage, wear, thermal degradation)
- Analyzing root causes of failure and troubleshooting methods
- Preventive measures to reduce mechanical seal failures
- Module 5: Common Dry Gas Seal Failure Modes (09:45 – 11:15)
- Understanding dry gas seal failures (e.g., leakage, high-speed vibration, material wear)
- Identifying the causes of seal failure and methods to diagnose them
- Solutions for mitigating dry gas seal issues in machinery
- Module 6: Troubleshooting Methodologies (11:30 – 01:00)
- Practical troubleshooting techniques for diagnosing seal failure
- Tools and equipment used for troubleshooting mechanical and dry gas seals
- Case studies on successful troubleshooting of seal failures

Day 3: Advanced Seal Maintenance Techniques

- Module 7: Preventive Maintenance for Mechanical Seals (07:30 – 09:30)
- Techniques for performing regular seal inspections and maintenance
- Developing a preventive maintenance schedule for mechanical seals
- Case study on effective preventive maintenance leading to reduced failures
- Module 8: Advanced Dry Gas Seal Maintenance (09:45 – 11:15)
- Maintaining dry gas seals in critical applications
- Inspection techniques for dry gas seals to ensure optimal performance
- Identifying early signs of wear and implementing corrective actions
- Module 9: Seal Lubrication and Cooling Systems (11:30 – 01:00)
- Importance of lubrication and cooling in seal performance
- Maintenance of lubrication and cooling systems for both mechanical and dry gas seals
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Troubleshooting lubrication system failures

Day 4: Seal Overhaul and Repair Practices

- Module 10: Mechanical Seal Overhaul Procedures (07:30 – 09:30)
- Step-by-step process for dismantling and rebuilding mechanical seals
- Best practices for inspecting seal components during overhaul
- Ensuring correct assembly and testing after an overhaul
- Module 11: Dry Gas Seal Overhaul Procedures (09:45 – 11:15)
- Rebuilding and maintaining dry gas seals for high-performance machinery
- Techniques for disassembling and replacing components in dry gas seals
- Post-overhaul testing procedures and validation
- Module 12: Cost-Effective Seal Repair and Replacement (11:30 – 01:00)
- Strategies for reducing repair costs while maintaining high-quality seal performance
- Comparing repair and replacement options for mechanical and dry gas seals
- Techniques to maximize the service life of seals through effective repair

Day 5: Certification and Course Review

- Module 13: Case Studies and Industry Applications (07:30 – 09:30)
- Analysis of real-world case studies on mechanical and dry gas seal failures and repairs
- Group discussion on lessons learned from industry-specific challenges
- Module 14: Review and Final Q&A (09:45 – 11:15)
- Recap of key concepts covered during the course
- Final Q&A session for addressing any remaining queries
- Module 15: Certification and Course Closure (11:30 – 01:00)
- Distribution of certificates of completion
- Closing remarks and networking opportunity

Certification

Participants will receive a Certificate of Completion in Advanced Mechanical & Dry Gas Seal Maintenance and Troubleshooting, validating their expertise in seal technology, diagnostics, and maintenance strategies.

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**