MAWA EVENTS

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

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

DESIGN & APPLICATION OF RECIPROCATING COMPRESSORS

"Enhancing Efficiency in Compression Systems through Expert Design and Application"

Schedule

Date	Venue	Fees (Face-to-Face)
14 – 16 Jul 2026	Manama, Bahrain	USD 2495 per delegate
20 – 22 Oct 2026	Doha, Qatar	USD 2495 per delegate

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

Introduction

This 3-day course focuses on the design and application of reciprocating compressors, essential components in various industrial sectors such as oil and gas, chemical, and power generation. The course covers the fundamental principles of reciprocating compressors, key design aspects, and best practices for their operation and maintenance. Participants will gain a comprehensive understanding of the technical specifications and practical applications of these compressors, as well as troubleshooting techniques to ensure efficiency and reliability in industrial settings.

Objectives

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

- Understand the principles of reciprocating compressor design and operation
- Apply design considerations for selecting the right compressor for various applications
- Perform key calculations for compressor sizing and performance optimization
- Identify common issues in reciprocating compressor operation and apply troubleshooting techniques

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Why Attend

- Gain a deep understanding of reciprocating compressor mechanics and application
- Learn best practices for selecting, designing, and operating compressors in industrial systems
- Develop troubleshooting skills to identify and resolve operational issues effectively
- Improve maintenance strategies to enhance compressor efficiency and lifespan
- Network with experts and peers in the field to exchange insights and solutions

Target Audience

This program is designed for:

- Mechanical engineers and technicians working with compression systems
- Plant operators and maintenance personnel
- Engineers involved in the selection and design of compressors
- Project managers and consultants in industrial settings
- Professionals responsible for system performance and reliability

Individual Benefits

Key competencies that will be developed include:

- Expertise in reciprocating compressor design, operation, and maintenance
- Ability to select the appropriate compressor for various industrial applications
- Skills in troubleshooting and diagnosing compressor issues
- Proficiency in performing calculations for compressor performance optimization
- Enhanced problem-solving skills related to compressor efficiency and reliability

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- A comprehensive understanding of reciprocating compressor systems
- The ability to optimize compressor selection and application to reduce downtime and costs
- Enhanced reliability and efficiency of compressors in operational settings
- Increased ability to address operational issues swiftly and effectively
- Improved maintenance strategies leading to cost savings and extended equipment lifespan

Instructional Methodology

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

- Detailed presentations covering compressor theory and design principles
- Real-world case studies to illustrate common compressor applications and challenges
- Hands-on exercises for performing compressor calculations and troubleshooting
- Group discussions on practical issues and solutions in reciprocating compressor systems
- Demonstrations of compressor maintenance and performance analysis techniques

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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 Reciprocating Compressors and Design Principles

- Module 1: Overview of Reciprocating Compressors
- Definition and working principles of reciprocating compressors
- Key components and their functions in compressor systems
- Types of reciprocating compressors and their applications
- Module 2: Design Considerations for Reciprocating Compressors
- Key factors influencing compressor design
- Performance specifications and selection criteria
- Sizing and capacity calculations for compressors
- Module 3: Compressor Efficiency and Performance Optimization
- Methods for evaluating compressor efficiency
- Optimizing compressor performance through proper design
- Addressing energy consumption and cost-efficiency

Day 2: Application and Operation of Reciprocating Compressors

- Module 4: Compressor Applications in Various Industries
- Application of reciprocating compressors in oil, gas, and chemical industries
- Industry-specific considerations and requirements for compressor selection
- Case study analysis of compressor applications in real-world scenarios
- Module 5: Operating and Troubleshooting Reciprocating Compressors
- Common operational issues and failure modes in compressors
- Troubleshooting techniques and diagnostic tools
- Preventative measures to minimize downtime and failure
- Module 6: Maintenance Strategies for Reciprocating Compressors
- Routine and preventive maintenance practices
- Monitoring and diagnostics for compressor health
- Best practices for extending compressor lifespan and improving performance

Day 3: Advanced Topics in Compressor Design and Maintenance

- Module 7: Advanced Compressor Design Techniques
- Innovative design considerations for enhancing compressor performance
- Use of simulation and modeling tools in compressor design
- Addressing complex design challenges in large-scale systems
- Module 8: Maintenance Optimization and Spare Parts Management
- Optimizing spare parts management for reciprocating compressors
- Strategies for minimizing operational disruptions due to maintenance
- Case studies on successful maintenance optimization
- Module 9: Final Workshop – Practical Application and Troubleshooting
- Hands-on exercises in compressor diagnostics and problem-solving
- Group discussion on practical challenges and solutions
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Wrap-up and course review

Certification

Participants will receive a Certificate of Completion in Design & Application of Reciprocating Compressors, validating their expertise in selecting, designing, operating, and maintaining reciprocating compressors for various industrial applications.

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**