XCELERATE TRAINING INSTITUTE

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MECHANICAL ENGINEERING

Mechanical Seals Installation and Repair Training Course

DURATION	LANGUAGE	FORMAT
5 days	English	Classroom / Online

Upcoming dates

Dates	Venue	Format	Fee
12 – 16 Apr 2027	Live online	Online (live)	€1,200
18 – 22 Oct 2027	Live online	Online (live)	€1,200
15 – 19 Nov 2027	Geneva	Classroom	€4,800

Register or ask a question

Online: x8ti.com/course/mechanical-seals-installation-and-repair-training-co…

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Mechanical Seals Installation and Repair Training Course

Introduction

Introduction

Mechanical seals help systems by preventing leakage, maintaining pressure and/or excluding contamination. They are used in industrial pumps, compressors other applications. There are various types of mechanical seals, namely, pusher, unbalanced, balanced, conventional, cartridge and non-pusher types.

They are extremely critical in the entire industrial process and play a key role in ensuring the smooth functioning of industrial operations. Thus, their maintenance is one of the key areas of focus for organizations. For the same reason, good care is taken when selecting seals, including consideration of aspects such as temperature, pressure, liquid characteristics, emission concerns, etc.

This Xcelerate Training Institute course will empower you with skills and extensive knowledge about mechanical seals, thus providing you information and understanding of one of the prime areas of focus of organizations. Through this course, you will understand important aspects of consideration when selecting the kind of mechanical seals to be used as per the requirement.

Furthermore, this Mechanical Seals Installation and Repair course will help you troubleshoot failures that occur, thereby demonstrating potential and skill to undertake higher responsibilities involving equipment with seals.

Learning Objectives

- adequate knowledge and information about mechanical seals, including tips for accurate selection, troubleshooting and maintenance
- the required knowledge to consider all necessary aspects before procuring mechanical seals
- the experience and exposure to troubleshoot in case of failures and quickly restore normal working conditions, thereby reducing down times drastically
- the confidence and knowledge to train other professionals on mechanical seal selection, troubleshooting and maintenance
- the required understanding and awareness to review equipment with mechanical seals and plan maintenance activities in advance to prevent excessive or irreversible wear and tear, thus contributing to organizational cost-saving
- awareness of the most appropriate techniques for treating different types of seals to prevent unnecessary damage during maintenance
- the overall skills and capabilities required to handle all problems related to mechanical seals, thereby specializing in mechanical seals, inviting proactive opportunities offered for growth and progression
- the knowledge and understanding to conduct both preventive and predictive maintenance for mechanical seals, as required

Training Methodology

This Mechanical Seals Installation and Repair training course includes delivery of training content by a highly experienced professional from the relevant domain as well as self-participation and learning through role-plays, group activities and projects. Relevant and known case studies are also discussed with the training audience to ensure that trainees relate theoretical content with practical scenarios.

Furthermore, the trainer encourages trainees to discuss related challenges and hindrances they face in their current profile, and this is kept open for discussion and resolution with the entire training audience.

Benefits for Your Organization

- Appropriate selection of mechanical seals and adequate troubleshooting and maintenance because of trained professionals overlooking these functions
- Lesser wear and tear of mechanical seals and hence lesser purchases and reduced maintenance costs
- Prevention of leakages and other common failures because of regular inspections to check and predict the health of seals and maintenance schedules, respectively
- Lesser down times due to malfunctioning or failures in mechanical seals of equipment
- Regular training and upskilling of employees to adopt advanced techniques and ways to work with mechanical seals
- Selection and use of the appropriate kind of seal to suit the intended purpose of the operation
- No costs of outsourcing maintenance checks or repair of mechanical seals because of in-house professionals doing the same
- Organizational growth due to reduced costs, lesser down times and better quality products
- Effective risk assessment and mitigation and thus greater credibility

Benefits for You

- Complete information and knowledge of mechanical seal selection, troubleshooting and maintenance
- Increased information and experience to choose the most appropriate seal to suit the operational requirements
- Greater understanding of failures and issues with mechanical seals and effective troubleshooting to ensure quick recovery and repair
- Enhanced skill and experience to mentor other professionals to work effectively and master mechanical seal selection, troubleshooting and maintenance
- Increased ability to contribute to organizational growth through regular maintenance aimed at reducing maintenance costs and prolonging seal life
- Greater ability and potential to contribute to outsourcing costs for maintenance and repair processes
- Dynamic skill-set and experience to assume senior roles requiring knowledge and awareness of all aspects of mechanical seals, thereby fostering progression
- Increased understanding of the required standards and quality of operation involving equipment with mechanical seals so as to detect issues and resolve them well in time

Target Audience

- Vendors and suppliers of mechanical seals who need to understand their utility and importance in a mechanical setting

- Engineers and other employees working on equipment employing mechanical seals
- Managers and supervisors overseeing all operations at a plant involving equipment with seals
- Finance managers and others involved in purchase decisions and budgets of mechanical seals
- Senior members and the Board of Directors of organizations who plan strategies and projects assuming good machine life and efficiency
- Internal and external auditors inspecting equipment and the plant surroundings for employee health and safety
- Any other professional interested in knowing more about mechanical seals selection, troubleshooting and maintenance

Course Outline

Types of Mechanical Seals

- Pusher type
- Unbalanced type
- Conventional mechanical type
- Non-pusher type
- Balanced type
- Cartridge type

Components of a Simple Mechanical Seal Design

- Stationary component
- Stationary component sealing member
- Rotating Component
- Rotating component sealing member
- Spring
- Gland plate
- Clamp ring

Reasons for Failure of Mechanical Seals

- Pump or machine running dry
- Too much vibration
- Hammering couplings
- Human error
- Use of the wrong seal

Considerations for Mechanical Seal Selection

- Liquid
- Pressure
- Temperature
- Liquid characteristics
- Reliability and emission concerns

Factors Influencing Seal Leakage

- Machined finish of sliding faces
- Flatness of sliding faces
- Machine vibrations
- Mode of operation
- Characteristics of medium to be sealed
- Installation of seal

Seal Supply Systems

- Circulation
- Flushing
- Quench
- Fluid quench
- Steam quench
- Gas quench
- Barrier system

Aspects for Seal Troubleshooting

- Corrosion
- Physical damage
- Physical causes
- Product problems

Seal Face Wear Patterns

- Normal wear patterns
- Narrow wear patterns
- Wide wear patterns
- No wear patterns
- Intermittent wear patterns
- Uneven wear patterns
- Deep wear patterns

Seal Face Examinations

- Heat checking
- Cracked hard face
- Chipped edges
- Flaking and peeling
- Pitting, blistering, corrosion

Mechanical Seal Maintenance

- Lack of mechanical seals
- Keep ports on gland plant plugged
- Use a hydraulic cylinder
- Remove shaft deflection

- Reduce vibrations
- Keep stuffing box pressure within limits

Seal Failure Analysis

- Inspect rotary equipment
- Inspect mechanical seal
- Decontaminate any seal
- Inspect seal

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Registration Form

Mechanical Seals Installation and Repair Training Course

Preferred dates: ..... Venue or online: .....

Duration: 5 days Language: .....

Please complete and email this form to us, or register online. We confirm your place and send the invoice within one working day.

Delegate information

Full name (Mr / Ms / Dr / Eng): .....

Position: ..... Telephone / mobile: .....

Official email: ..... Personal email: .....

Company information

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Person responsible for training & development

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