XCELERATE TRAINING INSTITUTE

your learning & development partner

MECHANICAL ENGINEERING

# Dry Gas Seal System, Installation, Working Principle, Operation & Troubleshooting Training Course

| DURATION | LANGUAGE | FORMAT |
|---|---|---|
| 5 days | English | Classroom / Online |

## Upcoming dates

| Dates | Venue | Format | Fee |
|---|---|---|---|
| 8 – 12 ?????? 2027 | Live online | Online (live) | €1?200 |
| 15 – 19 ???? 2027 | Dubai | Classroom | €4?800 |
| 16 – 20 ????? 2027 | Live online | Online (live) | €1?200 |

### Register or ask a question

Online: x8ti.com/course/dry-gas-seal-system-installation-working-principle-o…

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# Dry Gas Seal System, Installation, Working Principle, Operation & Troubleshooting Training Course

## Introduction

Introduction

Dry gas seals are mechanical seals used in harsh working environments such as oil exploration, extraction and refining, petrochemical industries, etc. These seals consist of a mating (rotating) ring and a primary (stationary) ring.

These are highly reliable seals, and an organization incurs lesser operating and maintenance costs with these. Furthermore, leakages and emissions are reduced with dry gas seals. This type of seals is used in applications with exceptionally high speeds. The faces of dry seals are not in contact, which means that they can be no friction caused by these seals. Because of their uniqueness and safety, they are extensively used in the pipeline industry

This Xcelereate Training Institute course will provide you with a comprehensive understanding of dry gas seals, including their installation, commissioning, operation and maintenance. By undertaking this course, you will acquire the ability and confidence to effectively ensure successful operations involving dry gas seals. Furthermore, given the utility of dry gas seals, receiving detailed training on their operation and maintenance will increase your chances and opportunities for growth and career progression across various industries.

Learning Objectives

- in-depth understanding and detailed information about dry gas seals, including their installation, commissioning, operation and maintenance
- the required understanding of challenges and precautionary measures to be undertaken when working with dry gas seals, thus preventing hazards and losses to the organization
- adequate experience and knowledge to train other professionals on effectively working with dry gas seals
- an enhanced perspective and eye for detail to audit existing equipment and machinery and identify the need for maintenance and/or repair of dry gas seals
- the ability to contribute to organizational growth through reduced maintenance and repair costs
- the required understanding of international standards and benchmarks of safety and operations to ensure that the seals are used as intended
- an enhanced skill set and capabilities to work with dry gas seals in any industry, thus not feeling restricted to one industry alone

Training Methodology

All courses at Xcelerate Training Institute are highly customizable to suit the intended audience. Thus, before the commencement of each training program, the course content is thoroughly reviewed, keeping in mind the professional and/or academic backgrounds of the training audience.

A highly experienced professional from the relevant domain delivers the training using audio-visual presentations. Trainee participation is ensured through group activities, role-plays, etc. Relevant case studies are also discussed with the trainees.

Benefits for Your Organization

- Trained and experienced professionals to manage operations involving dry gas seals
- Reduced operating and maintenance costs because of the effective use of dry gas seals
- Regular inspections and audits to check existing seals for maintenance and repair as well as to ensure optimal efficiency
- Continuous training of other employees on best practices and precautions when working with dry gas seals
- More accurate risk assessment and more effective risk mitigation
- Organizational growth and development because of increased credibility and reduced costs
- Adherence to international standards and guidelines of operation, quality and safety
- Greater employer branding because of the professional workforce, rigorous training and high safety
- Appropriate use of dry gas seals in operations requiring and suiting their application
- Competitive advantage of using dry gas seals as far as possible compared to other outdated and dangerous seals

Benefits for You

- Detailed understanding and knowledge of dry gas seals, including their installation, operation and maintenance
- Increased knowledge and experience to regularly inspect existing equipment and seals for requirements of maintenance and/or repair
- Increased confidence and knowledge to train other professionals on best practices of working with dry gas seals
- Greater understanding and experience to make the correct choices of using dry gas seals according to the intended purpose
- Enhanced perspective and foresight to check for possible challenges and risks and take measures to prevent these from impacting or leading to huge organizational losses
- Greater ability to contribute to organizational growth and development through increased credibility leading to greater investments and reduced operational and maintenance costs
- Increased understanding and knowledge of international standards and guidelines for working with dry gas seals
- A sense of pride from ensuring employee safety through adequate training to employees and adherence to safety guidelines and standards for working with such equipment
- Enhanced skill set and capabilities to work in any role across any industry, thereby increasing avenues for growth and progression

Target Audience

- Senior members of an organization responsible for taking all critical decisions regarding expenses on machinery and other equipment

- Engineers and other professionals working with dry gas seals
- Managers and leads overseeing end-to-end operation involving dry gas seals
- Compliance officers responsible for ensuring that all equipment and practices adhere to the required standards
- Suppliers and vendors of dry gas seals who need to understand utility in an industrial setting
- Any other professional who would like to know more about dry gas seals

Course Outline

Types of Dry Gas Seal Configurations

- Single seal
- Tandem seal
- Double opposed seal
- Separation seal

Storage and Protection of Dry Gas Seals

- Dry storage place
- Prevention from radiation, heat, steam and ozone
- No use of corrosion protection agents
- Re-qualification of seal cartridge before installation
- Protection of spare gaskets from heat sources

Basic Installation Pre-Requisites

- Follow plant safety regulations
- Secure mixer or agitator shaft
- Remove coupling and/or drive
- Remove existing seal assembly
- Remove burrs and sharp edges
- Check shaft and vessel flange requirements
- Check assembly drawing
- Check shaft OD, vessel flange bolt size, bolt circle and distance to coupling/drive
- Handle seal assembly with care
- Pressure testing

Steps in Dry Gas Seal Installation

- Equipment check
- Seal installation
- Dry gas supply
- Seal piping
- Seal operation
- Repairs

Seal Operation Guidelines

- Maintain dry gas supply pressure

- Do not exceed maximum barrier pressure
- Do not exceed maximum vessel pressure
- Do not exceed maximum vessel temperature
- Do not exceed seal material corrosion limits

Sources of Dry Gas Seal Contamination

- Process gas
- Bearing lubrication oil
- Seal gas supply

Dry Gas Seal System Improvements

- Seal gas filter system
- Operation range of seal system instruments
- Seal gas booster
- Burst-alert for rupture disc
- Flow-meter on secondary vent
- Differential pressure on any seal stage
- Additional flow-meters on the primary vent for double-checking

Common Modes of Dry Gas Seal Failure

- Contamination
- Condensation
- Misalignment
- Explosive decompression
- Reverse pressurization
- Reverse rotation
- Failure at transient conditions

Causes of Leaking Losses

- Ill-fitting sealing elements
- Installation faults
- Construction faults
- Wear and tear
- Ageing
- Equipment failure
- Sealing element contamination
- Excursions out of normal process conditions
- Poor maintenance procedures

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# Registration Form

## Dry Gas Seal System, Installation, Working Principle, Operation & Troubleshooting 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

Company name: .....

Address: .....

City / country: ..... VAT / tax number: .....

### Person responsible for training & development

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

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

Email: .....

### Payment

☐ Please invoice me ☐ Please invoice my company

Signature: ..... Date: .....

| Call | Email this form | Register online |
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