

T-009 MECHANICAL SEALS

An in-depth course on mechanical seals design, configuration, selection, and maintenance

Eighty-five percent of pump failures involve their seals. Mechanical seals are the most sensitive component in centrifugal pumps and require that all technical staff involved in the pump selection, operation, and maintenance understand their design characteristics, operating requirements, and limits.

This course takes a deep-dive into mechanical seals technologies, explains how seals are designed and manufactured, how they should be selected, and how they should be operated and maintained.

Ensuring that the sealing fluid reaches the seal in the right condition is one of the most important aspects in ensuring an adequate seal life, making the selection of the piping plan a key step in seal selection. API 682 piping plans are therefore presented in detail, explaining pros and cons for each plan and the basic criteria for selecting the right piping plan for each application.

Who should Attend?

The course is suitable for the following:

- Engineering staff
- Process & Operations Engineers and Supervisors
- Maintenance Engineers and Supervisors

Duration

1 day

Course structure and content

A 1-day technical course aimed at responsible managers and engineers:

- Mechanical seals design fundamentals
- Balanced and unbalanced seals
- Gas-lubricated pump seals
- Seal types:
 - Single and double seals
 - Unpressurized seals
 - Pressurized seals
 - Reverse-pressure tolerant seals
 - Cartridge seals
- API 682 seal arrangements
- Seals selection

- Seals maintenance best-practices
- Seals installation
- Seals failure and troubleshooting: preventing failures
- Seals overhaul
- API 682 seal piping plans

Training Outcome

On completion of the course, you should be able to:

- Understand the operating principles of mechanical seals, their design and selection aspects
- Understand the various types of mechanical seals available
- Select the right seal type and piping plan for each application

Course Presenter

Ron van den Handel: with a career of over 35 years with Shell, Ron has worked as rotating equipment engineer in refineries, LNG, upstream plants, and large Shell projects. In the later part of his career Ron was Global Manager for Rotating Equipment in Shell Global Solutions, providing consultancy and advice to all Shell Operating Units and Projects around the world.