



MAINTENANCE TROUBLESHOOTING INTERNATIONAL LLC

IMS-301

Hands-On Training Center: 2860 Ogletown Road, Newark, DE 19711
 Corporate Offices & Mailing Address: 2917 Cheshire Road Wilmington, DE 19810
 Phone/TXT: 302.593.2698 (Frank) Email: Frank@mtroubleshooting.com
 Website: www.mtroubleshooting.com

IMS-301 Introduction to Mechanical Seals

A short and jam-packed one day course that introduces the trainee to shaft mechanical seals: how they work, the theory behind time, how to install them, and how to troubleshooting problems. Mechanical seals are expensive and improper handling or mistakes made during installation can add a lot of money to the maintenance budget. "Reading seal faces" to troubleshoot inherent problems and choosing the correct materials for stationary faces, rotating faces, and secondary static seals will be discussed. Single, double, tandem, component, and cartridge seals will be used in the class. Various seals are disassembled and reworked to return them to service.



MECHANICAL SEALS

- Fundamental Seal Operation
- Seal Requirements
- Simple Mechanical Seals
- Seal Face Lubrication

BASIC SEAL DESIGNS

- Pusher Seals
- Non-pusher Seals

VARIATIONS OF BASIC SEAL DESIGNS

- Unbalanced Seals
- Balanced Seals
- Mixer Seals
- High Pressure Seals
- High Speed Seals

MECHANICAL SEAL ARRANGEMENTS

- Inside Seals
- Outside Seals
- Double Seals
- Tandem Seals
- Cartridge Seals
- Barrier Fluid Seals
- Split Seals

TROUBLESHOOTING SEAL PROBLEMS

- Temperature problems
- Chemical problems
- Installation Problems
- Inside Seals

- Outside Seals
- Double Seals
- Tandem seals

SEAL DESIGNS

- Single Unbalanced Seals
- Single Balanced Seals
- High Pressure and High Speed Seals
- Double Seals
- Tandem Seals
- Mixing Applications
- Fundamental Seal Operation
- Seal Requirements
- Simple Mechanical Seals
- Seal Face Lubrication

MATERIAL OF CONSTRUCTION

- Face Materials
- Secondary Seal Materials
- Mechanical Seal Hardware

ENVIRONMENTAL CONTROLS

- Temperature Control
- Control of Dirty, Incompatible or Hazardous Environments

STATIONARY INSERT AND GLAND RING DESIGNS

- Insert Mounting Designs
- Piloting of Stationary Members
- Gasketing of Stationary Members
- Gland Features

SELECTION AND APPLICATION

- Process Liquid
- Stuffing Box Pressure
- Equipment Design
- Common Seal Applications

INSTALLATION, OPERATION, MAINTENANCE AND TROUBLESHOOTING

- Introduction
- Installation
- Startup and Operation
- Maintenance
- Troubleshooting and Seal Failure Analysis

CLASS FORMATS AVAILABLE

MTI Hands-On Center \$995/person

CLASS DURATION

1-day, 7.5 hours of instruction
 20% Hands-On

Class Details: Each student will receive class books, work activity sheets, self-test progress evaluations, as well as questions from the instructor to make sure they understand the material presented. It is expected that an attendee will leave the class with the basic knowledge of the subject and possess new found skills to better equip them when they return to their job. A certificate suitable for framing will be issued to each attendee who successfully completes the course. Call, email or check the website for the next time this course is scheduled at the MTI training center or as a ZOOM interactive session. On-site sessions? Request a quick 48-hour turnaround quote. Revised: 02/01/2021