



MU162: Reciprocating Rotary Pumps & Compressors



Training Description:

This intensive course covers the construction, design, operations and maintenance of compressors, and rotary/centrifugal/reciprocating pumps. The training will discuss the different types of pumps and compressors, their potential problems, maintenance and testing concepts and troubleshooting techniques.

The course will also cover the various methods of pump alignments such as visual, straight edge/feeler gauge, rim and face, reverse dial indication, cross dialing and laser alignment. Participants will also learn how to diagnose soft foot conditions and perform correction techniques.

Training Objective:

By the end of the training, participants will be able to:

- ✓ Describe the operation of centrifugal and positive displacement pumps including pump design aspects, laws, performance comparisons, characteristic curves and performance testing
- ✓ Test rotary pump performance and apply maintenance and troubleshooting techniques accordingly
- ✓ Identify reciprocating pump types and perform reciprocating pump maintenance and troubleshooting
- ✓ Determine centrifugal pump problems and perform centrifugal pump maintenance and troubleshooting Identify compressor types, how they operate, their common problems, and perform troubleshooting techniques
- ✓ Apply the various methods of pump alignments such as visual, straight edge and feeler gauge, rim and face, reverse dial indication, cross dialing and laser alignment
- ✓ Diagnose soft foot conditions, and apply measurement and correction techniques

Training Designed for:

This course is intended for plant personnel responsible for the installation and maintenance of positive displacement/ centrifugal pumps and compressors, including plant maintenance technicians and mechanical maintenance technicians. It will also be beneficial for professionals managing and supervising personnel involved in the operation and maintenance of pumps and compressors.

Training Program:

DAY ONE:

- ❖ PRE-TEST
- ❖ Introduction
- ❖ **PUMP OPERATION AND THEORY**
 - Centrifugal pumps
 - Design aspects
 - Pump laws
 - Positive displacement pumps
 - Performance comparisons
 - Special purpose pumps





- Pump characteristic curves
- Performance testing

❖ **ROTARY PUMP MAINTENANCE AND TROUBLESHOOTING**

- Pump performance
- Pump tests
- Pump problems
- Pump maintenance
- Pump troubleshooting

DAY TWO:

❖ **RECIPROCATING PUMP MAINTENANCE AND TROUBLESHOOTING**

- Reciprocating pump types
- Pump problems
- Pump maintenance
- Pump troubleshooting

❖ **CENTRIFUGAL PUMP MAINTENANCE AND TROUBLESHOOTING**

- Pump problems
- Pump maintenance
- Pump inspections

DAY THREE:

❖ **COMPRESSOR MAINTENANCE AND TROUBLESHOOTING**

- Rotary screw compressors
- Rotary vane compressors
- Lobe type compressors
- Reciprocating compressors
- Lubrication and cooling

DAY FOUR:

❖ **PUMP ALIGNMENT METHODS**

- Straight edge and feeler gauge
- Rim and face
- Reverse dial indication
- Cross dialing
- Laser alignment
- Mathematical alignment formula calculations
- Graphical solutions

DAY FIVE:

❖ **SOFT FOOT CORRECTION AND TOLERANCES**

- Soft foot definition
- Effects of soft foot
- Types of soft foot
- Measuring soft foot
- Correcting soft foot

❖ **Course Conclusion**

❖ **POST-TEST and EVALUATION**





Training Requirement:

“Hand’s on practical sessions, equipment and software will be applied during the course if required and as per the client’s request”.

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures, Concepts, Role Play
- 30% Workshops & Work Presentations, Techniques
- 20% Based on Case Studies & Practical Exercises
- 20% Videos, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

As per the course location - This rate includes participant’s manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:

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Training & Career Development Department

