

# € TRAINING

Pumps and compressors: operation,  
maintenance, troubleshooting and repair



20 - 31 October 2024  
Cairo (Egypt)

# Pumps and compressors: operation, maintenance, troubleshooting and repair

REF: O1471 DATE: 20 - 31 October 2024 Venue: Cairo (Egypt) - Fee: 7590 Euro

## Introduction:

This course covers the construction, design, operation, and maintenance of rotary, centrifugal and rotary compressors and pumps, as well as various topics and types of pumps, compressors, potential problems, maintenance concepts, and troubleshooting techniques. It also covers different alignment methods for pumps such as optical alignment, straight edge / RIM, and Face alignment, reverse cursor alignment, reverse connection, and laser alignment. Participants will learn how to diagnose soft foot conditions and implement correction techniques.

## Course Objectives:

At the end of this course the participants will be able to:

- Describe of centrifugation and positive displacement including pump design, rules, performance comparisons, characteristic curves, and performance testing.
- Check pump performance and apply maintenance and troubleshooting techniques accordingly.
- Determining types of frequency pumps, maintaining them, and detecting and repairing faults.
- Determine the problems of the centrifugal pump and perform maintenance and troubleshooting.
- Determine the types of compressors, how they work, their common problems, and the implementation of troubleshooting techniques.
- Apply different methods for tailoring pumps such as optical alignment, straight edge / RIM, and Face alignment, reverse cursor alignment, reverse connection, and laser alignment.
- Diagnosis of soft foot conditions and correction techniques.

## Targeted Audience:

- Factory employees and officials of the installation and maintenance of pumps and centrifugal compressors.
- Agricultural Maintenance Technicians and Mechanical Maintenance Technicians.
- Personnel in the management and supervision of operation and maintenance of pumps and compressors.

## Course Outlines:

### Unit 1: Theory of Work and Operation of The Pump:

- Centrifugal pumps.
- Design aspects.
- Pump Rules.
- Positive Separation Pumps.
- Performance comparisons.
- Special purpose pumps.
- Pump curves characteristic.
- performance test.

## Unit 2: Pump Maintenance:

- Introductory introduction to the maintenance and importance of pumps.
- Schedule the pump maintenance process in detail.
- Components and Components of Pump Maintenance.
- Stages and steps of planning, supervision, and implementation of pump maintenance.
- Monitoring and evaluation of pump maintenance.
- Models, documents, and records used in the maintenance of pumps.
- Common mistakes in pump maintenance.
- Procedures, methods, and methods used in the maintenance of pumps.
- Evaluation and performance review of the pump maintenance process.
- Criteria for evaluation and success of pump maintenance.
- Monitoring and inspection of pump maintenance.

## Unit 3: Maintenance of Rotary Pumps and Troubleshooting:

- Performance of pumps.
- Check pumps.
- Pump problems.
- Pump maintenance.
- Detecting and repairing rotary pump failures.

## Unit 4: Maintenance of Reciprocating Pumps and Troubleshooting:

- Types of reciprocating pumps.
- Problems of reciprocating pumps.
- Maintenance of reciprocating pumps.
- Detection and repair of refractive pump failures.

## Unit 5: Maintenance of Centrifugal Pumps and Fault Detection and Repair:

- Problems of centrifugal pumps.
- Maintenance of centrifugal pumps.
- Discovery of centrifugal pump failures and repair.
- Preview pumps.

## Unit 6: Maintenance of Compressors and Troubleshooting:

- Rotary spiral air compressors.
- Rotating rotary compressor.
- Compressors screw-type.
- Reciprocating compressors.
- Lubrication and cooling.

## Unit 7: Maintenance of Compressors and Troubleshooting:

- Rotary spiral air compressors.
- Rotating rotary compressor.
- Compressors screw-type.
- Reciprocating compressors.
- Lubrication and cooling.

## Unit 8: Pump Alignment Methods:

- Straight edge and sensor measurement.
- Rim and Face.
- Align the reverse cursor.
- Align the reverse connection.
- Align the laser.
- Mathematical compatibility formulas calculations.
- Graphic Solutions.

## Unit 9: Soft Foot Patch and Strength:

- Definition of Soft Foot.
- Soft foot results.
- Types of soft feet.
- Soft foot measurement.
- Soft foot correction.