



## Centrifugal Pumps & Compressor

### Overview

This course will introduce delegates to the different types of pumps, motors and drives and their associated terminology. Centrifugal and positive-displacement pumps and compressors, packing, mechanical seals and sealing systems, bearings and couplings will all be discussed.

The application of the different types of pumps and compressors will be discussed along with their suitability for different operational duties. Pump operation, troubleshooting and maintenance will be dealt with in depth.

### Who should attend?

Mechanical Technicians and engineers and anyone involved in the use of Centrifugal Pumps.

### Objectives

The objective of this training program of 5 days duration is to impart Training on Operation, Maintenance and Trouble Shooting aspects of Centrifugal Pumps and compressors commonly used in petroleum / petrochemical / fertilizer and power generation plants. The training covers the theory and practice of centrifugal pumps and compressors and their controls.

### Course outline

- **Centrifugal Pumps**
  - Pump Description
  - Pump Maintenance: General
  - Disassembling the Casing
  - Removing the Rotating Element
  - Inspecting the Casing
  - Disassembling the Rotor
  - Measuring Packing Sleeves
  - Measuring Impellers and Wearing Rings
  - Measuring the Shaft



- Inspecting Seal and Bearing Parts
- Measuring Bearing Oil Clearance
- Assembling the Rotor
- Installing the Rotor
- Measuring Sleeve Bearing Oil Clearance
- Assembling the Bearings
- Assembling the casing
- Tightening Casing Studs and/or Bolts
- Installing Packing
- **Test Operating the Pump**
  - Pump Disassembly
  - Shaft and Bearing Removal
  - Shaft and Impeller Inspection
  - Pump Reassembly
  - Setting Pump Impeller Clearance
  - Mechanical Seal Installation
- **Setting Vertical Pump Impeller Clearance Air Compressors and Blowers**
  - Reciprocating Air Compressor Discharge Valve Removal and Disassembly
- **Seat Cleaning, Inspection, and Lapping**
  - Guard Cleaning, Inspection, and Maintenance
  - Reinstallation
  - Suction Valve Unloader Removal and Disassembly
  - Unloader Testing
- **Installation**
  - Reciprocating Air Compressor Disassembly
  - Piston and Piston Rod Removal
  - Measurements

# OUTLINE



## ➤ **Piston-to-Cylinder Head Clearance Adjustment**

- Rotary Blower Disassembly
- Removing the Timing Gears
- Removing Head Plate and Shafts
- Removing the Bearings
- Installing the Bearings and the Seal
- Installing the Timing Gears
- Adjusting the Timing and Reassembly