Global Horizon
TRAINING CENTER

Training Course:
Pumps, Compressors & Turbines: Operation, Maintenance & Troubleshooting

10 - 21 November 2025
London (UK)
Landmark Office Space - Portman Street

Training Course:
Pumps, Compressors & Turbines: Operation, Maintenance & Troubleshooting

Training Course code: EN236156 From: 10 - 21 November 2025 Venue: London (UK) - Landmark Office Space - Portman Street Training Course Fees: 10600 Euro

Introduction

Pumps, compressors, and turbines are critical rotating equipment used across oil & gas, power generation, water treatment, and manufacturing sectors. Their efficient operation, regular maintenance, and prompt troubleshooting are essential to avoid costly downtime and ensure plant safety and reliability. This 12-day technical training program developed by Global Horizon Training Center equips engineers, technicians, and maintenance personnel with the comprehensive skills needed to operate, maintain, and troubleshoot a wide range of pumping, compression, and turbomachinery systems.

Objectives

By the end of this program, participants will be able to:

- Understand the principles of operation of pumps, compressors, and turbines.
- Identify key components and performance characteristics.
- Implement best practices in preventive and predictive maintenance.
- Diagnose common failures and apply troubleshooting techniques.
- Optimize equipment efficiency and reliability.
- Ensure compliance with safety, operational, and OEM standards.

Organizational Impact

- Improved reliability of rotating equipment
- Reduced unplanned downtime and maintenance costs
- Increased operator safety and maintenance efficiency
- Enhanced troubleshooting capacity of in-house teams
- Better energy utilization and performance optimization

Target Audience

- Mechanical and Maintenance Engineers
- Rotating Equipment Technicians
- Reliability and Asset Management Specialists
- Operation Supervisors and Plant Engineers
- Field Technicians and Utility Operators

Training Program Outline

Day 1: Fundamentals of Rotating Equipment

- Introduction to pumps, compressors, and turbines
- Mechanical energy transformation principles
- Classification and comparison
- Key performance indicators flow, pressure, head, power

Day 2: Pump Types and Operating Principles

- Centrifugal, positive displacement, gear, diaphragm, and screw pumps
- Pump curves and system curves
- Suction head, NPSH, cavitation prevention
- Application examples water, chemical, oil

Day 3: Pump Components and Maintenance

- Bearings, seals, impellers, volutes, shafts
- Alignment, lubrication, and cooling systems
- Mechanical seal maintenance and failure modes

- Preventive maintenance checklists

Day 4: Pump Troubleshooting and Failure Analysis

- Common pump problems: cavitation, vibration, overheating
- Root cause analysis techniques
- Fault isolation steps
- Case studies: pump breakdowns in oil & gas plants

Day 5: Compressors - Types and Applications

- Reciprocating, rotary screw, centrifugal compressors
- Air vs. gas compressors
- Single-stage and multi-stage designs
- Process applications and pressure ratios

Day 6: Compressor Components and Operation

- Valves, intercoolers, pistons, rotors, casings
- Control systems and instrumentation
- Compressor performance maps
- Safety valves and shutdown systems

Day 7: Compressor Maintenance and Troubleshooting

- Predictive indicators temperature, pressure, vibration
- Troubleshooting flow restrictions, leakage, lubrication issues
- Vibration analysis and condition monitoring
- Maintenance schedules and best practices

Day 8: Industrial Turbines - Principles and Design

- Steam turbines, gas turbines, and hydraulic turbines
- Energy conversion cycle and thermodynamic efficiency

- Blades, nozzles, rotors, casings
- Combined-cycle applications

Day 9: Turbine Operation and Performance Control

- Startup and shutdown procedures
- Load and speed control mechanisms
- Turbine control systems governors, actuators
- Efficiency improvement techniques

Day 10: Turbine Maintenance and Diagnostics

- Inspection intervals and recommended practices
- Hot section vs. cold section maintenance
- Fouling, erosion, thermal fatigue
- Monitoring critical parameters vibration, temperature

Day 11: Vibration, Alignment, and Balancing

- Vibration sources and measurement methods
- Shaft alignment techniques laser, dial gauge
- Rotor dynamic balancing principles
- ISO standards and field implementation

Day 12: Integrated Troubleshooting & Reliability Strategies

- Coordinated troubleshooting for pump/compressor/turbine systems
- Failure mode and effect analysis FMEA
- Reliability-centered maintenance RCM
- Developing site-specific O&M strategies

Registration form on the Training Course: Pumps, Compressors & Turbines: Operation, Maintenance & Troubleshooting

Training Course code: EN236156 From: 10 - 21 November 2025 Venue: London (UK) - Landmark Office Space - Portman Street Training Course Fees: 10600 Euro

Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

Delegate Information

Full Name (Mr / Ms / Dr / Eng): .....
Position: .....
Telephone / Mobile: .....
Personal E-Mail: .....
Official E-Mail: .....

Company Information

Company Name: .....
Address: .....
City / Country: .....

Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng): .....
Position: .....
Telephone / Mobile: .....
Personal E-Mail: .....
Official E-Mail: .....

Payment Method

☐ Please find enclosed a cheque made payable to Global Horizon

☐ Please invoice me

☐ Please invoice my company

Easy Ways To Register

Telephone: +201095004484 to provisionally reserve your place.	Fax your completed registration form to: +20233379764	E-mail to us : info@gh4t.com or training@gh4t.com	Complete & return the booking form with cheque to:Global Horizon 3 Oudai street, Aldouki, Giza, Giza Governorate, Egypt.