

Training - Centrifugal Compressors Operation



ECC-EN-P



Face-to-face only



5 days

This course emphasizes the technology, the performance and operation of centrifugal compressors

Level

Skilled

Public

Engineers and technicians involved in operation, monitoring and maintenance of centrifugal compressors

Objectives

Attendees will be able to implement the following skills:

- Explain the construction technology of a centrifugal compressor
- Explain the influence of operating parameters on the performance of a compressor
- Describe the most common flow control modes and anti-pumping controls
- Describe typical incidents and critical points to monitor

Pedagogical & technical resources

- Case studies based on industrial feedback
- Interactive course
- Various technical drawings of actual compressors
- Use of a dynamic simulator

Assessment of achievements

Quiz

Prerequisites

No prerequisites are necessary to follow this course

Responsible

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

TECHNOLOGY

1.25 days

Different types of centrifugal compressors. Architecture of a centrifugal compressor.

Technology of the main components: stator, rotor, bearings, thrust bearing, seals.

Vibrations, critical speed, dynamic balancing. Auxiliary equipment: lubrication system, buffer gas, balancing line, etc.

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Safety devices: axial displacement, vibrations, bearing and thrust bearing temperatures, oil pressure, etc.

PERFORMANCES

1.75 days

Changes in gas velocity and pressure in a centrifugal compressor.

Mass and volume flow rate vs operating conditions.
Discharge temperature, shaft power vs operating conditions.
Compressor performance vs operating conditions, impeller rotation speed and geometry.
Compressor performance curves and circuit system curves.

OPERATION

0.5 day

Flow rate control.
Operating limits. Surge and stonewall. Antisurge devices.
Start-up and shutdown: key points.
Compressor monitoring in operation.
Troubleshooting.

DYNAMIC SIMULATION - APPLICATIONS

1.5 days

Use of a dynamic simulator (Centrifugal compressor + steam turbine).
Exercises on start-up and shutdown phases.
Applications using disturbances generated by the lecturer.

To French entities : IFP Training is referenced to DataDock ; you may contact your OPCO about potential funding.
Please contact our disabled persons referent to check the accessibility of this training program : referent.handicap@ifptraining.com