



## Module de spécialisation machines tournantes : les compresseurs centrifuges [PC-5]

**Minimum number of participants: 6**

### Objective :

- Define centrifugal compressor performance criteria.
- Understand the field of operation.
- Identify causes of deviating behavior.

### Target group :

- This course is aimed at operators, foremen, technicians or engineers in operations, maintenance or process departments.
- Prerequisites: Introduction to rotating machines or equivalent experience.
- Maximum 8 to 10 people per session.

### Contents :

09:00 - 10:30

#### OPERATION

- Performance and operating limits :
  - o Minimum flow and compressor overload
  - o Maximum speed: overspeed
  - o Maximum discharge gas temperature

10:30 - 10:45

Break

10:45 - 12:15

#### OPERATION

- Centrifugal compressor start-up
  - o Making networks available: purging liquids
  - o Checking safety systems and alarms
- Operating point monitoring and operating limits:
  - o Suction and discharge temperature monitoring
  - o Seal leakage rate
  - o Minimum flow rate
- Protection and safety
  - o Anti-pumping valve and safety valves on each stage
  - o Protection against abnormal vibration and axial displacement
  - ? Safety principles and logic, acceptable limits.
  - o Lubrication circuit
  - o Non-return valve on discharge line

12:15 - 13:15

Lunch

13:15 - 15:15

#### MALFUNCTION ANALYSIS

- Causes :
  - o Nature and quality of gas: deposits and fouling
  - o Abnormal pressure drops: suction filter
- Behavioral anomalies :
  - o Abnormal rotor vibration
  - o Abnormal axial displacement
  - o Abnormal heating of bearings
- Failure analysis: cause tree and common failures

15:15 - 15:45

Break

15:45 - 17:00

#### INSTALLATION

- Pipe docking: principle and tolerances

#### MAINTENANCE ELEMENTS

- Maintenance program: policy and strategy
- Rotor inspection: non-destructive, dimensional and geometric checks, balancing.

#### Implementation / working method :

Interactive, one-day, face-to-face course. Powerpoint support will be shared at the start of the course in paper and digital formats.

A questionnaire will be sent to trainees before the course in order to adapt the course content to participants' expectations as far as possible.

A course evaluation questionnaire will be distributed to participants at the end of the course.

#### Course language and materials:

French

## Event Properties

<b>Event Date</b>	Thursday, 18 September 2025 - Thursday, 18 September 2025
<b>Registration Start Date</b>	Monday, 30 November -0001
<b>Cut off date</b>	Monday, 30 November -0001
<b>Individual Price</b>	Membre CHF 600.00, non-membre CHF 750.00, étudiants/doctorants/AVS CHF 320.00 (incl. Lunch)
<b>Lecturer</b>	<a href="#">Michel Huet</a> , PRIMCO
<b>Course language</b>	French
<b>Location</b>	<a href="#">PRIMCO Thônex, Thônex</a>

