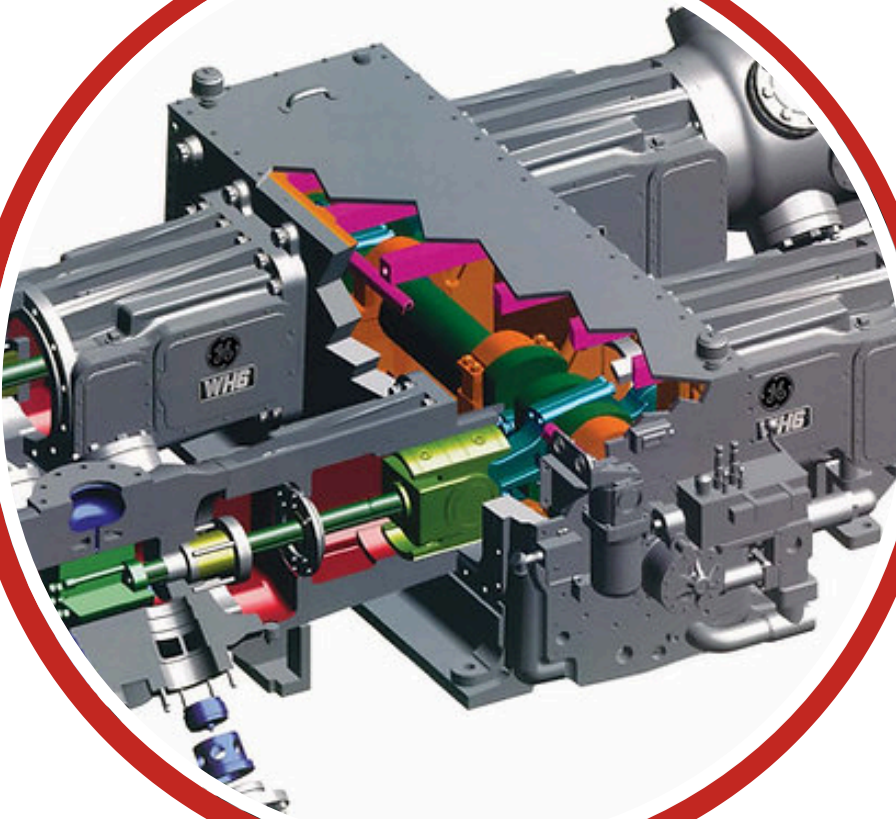


Reciprocating Compressors Operation and Maintenance

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Energy Milestones Corporation Advancing Professionals to the next level

Energy Milestones is proud to be accredited, partner and associated with the following association bodies:



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Reciprocating Compressors Operation and Maintenance

Overview

This course provides an understanding of the Reciprocating Compressor's operating principles. Attendees will learn, among other topics, about multi-staging scenarios and optimisation of Reciprocating Compressors.

Due to the importance of the maintenance process to any production or service plant, maintenance management has received considerable and intensive research, resulting in many procedures that are applicable for implementation everywhere.

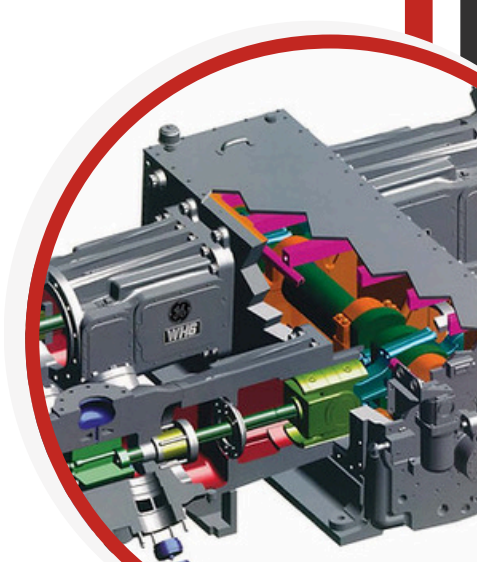
Maintenance management encompasses the organisation of maintenance resources, failure analysis, maintenance cost estimation, spare parts classification, planning, overhaul planning and management, documentation of failures and maintenance procedures, among other tasks.

This course will focus on the applied topics of maintenance management, taking into consideration the technical and economic issues.

Course Objectives

Upon the successful completion of the course, participants will be able to:

- Know the different types of compressors, their use, proper operation, and performance.
- Understand the mechanical design of compressors.
- Learn how to purchase, service, operate and maintain compressor components used in any of the process industries, such as oil and gas, Power, and
- Practice manufacturing, seals and their operations
- Understand the importance of control in reciprocating gas compressors
- Highlight the importance of seals and bearings on the availability of centrifugal compressors availability
- Learn the maintenance of compressors
- Understand the role and duties of a scheduler



Reciprocating Compressors Operation and Maintenance



Course Content

1- Introduction

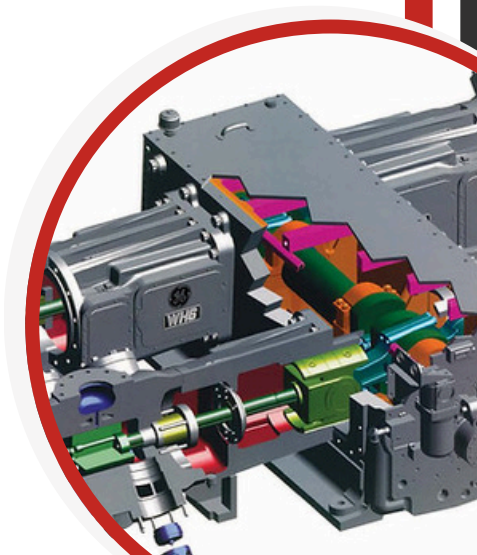
- Compression system simulation
- Equations of state and their applications
- Estimation of the thermodynamic properties
- Flow diagram to prepare the compression stages
- Basic simulation of pipelines, pumps, and compressors
- Examples and exercises
- Overview of natural gas systems and processes in gas plants
- Definitions related to gas systems: egg. natural gas, types of gas
- Gas conditioning, dehydration, and sweetening
- Rotating equipment overview
- Classification of compressors
- Arrangement of compressors
- General, Dynamic Compressor
- Positive Displacement Compressor
- Overhaul and Repair of PD Compressors

2- Performance of Compressors

- The Head-Flow Curve Shape.
- Elements of the Characteristic Shape.
- Variable-Speed Drive.
- Operation of compressors.

3- Positive-Displacement Compressor Control Systems

- Valve Unloading
- Clearance Pockets
- Bypass Operation
- Engineering Encyclopedia Compressors
- Operation of Compressor
- Control and Protection Systems



Reciprocating Compressors Operation and Maintenance

Course Content

4- Positive-Displacement Compressor Protection Systems

- Relief Valve (Stage)
- Startup Bypass
- High Process Temperature

5- Maintenance of Compressors

- Valve Testing and Inspection
- Valve failure
- Safety valve component and design
- Control valve types and selection
- Case studies

Targeted Audience

This course is intended for engineers, plant managers, maintenance managers, maintenance supervisors, operations staff, planning & follow-up staff and material suppliers.

Course Methodology

Facilitated by an experienced professional trainer, this training course will be conducted as a highly interactive workshop session. A variety of training methodologies and facilitation techniques will be employed before and during the course, as applicable. These methods are aimed at enhancing individual and group interaction while maximising learning. Some of these methods are:

- Online Pre-post Test
- Colourful Visual Aids
- Gamification
- Self-Assessment Instruments
- Simulations
- Case Studies
- Videos
- Group Exercises & Discussions
- Role-plays
- Indoor & Outdoor games

