PetroSkills

# Pumps and Compressors

MODULE

## About the Skill Module

This skill module provides an overview of types of pumps and the basic principles and criteria that apply to all pumps. The emphasis is on process-type pumps used in surface facilities. The concepts of Cavitation, Net Positive Suction Head Required (NPSHR), and Net Positive Suction Head Available (NPSHA) are also discussed. The second important focus in this skill module is compressors, including their applications, types, and selection criteria. The skill module ends with a discussion of the principles of operation of the various types of compressors.

See example Mechanical eLearning module

## Target Audience

Designed for Production and processing personnel involved with natural gas and associated liquids, to acquaint or reacquaint themselves with gas conditioning and processing unit operations. This course is for facilities engineers, process engineers, senior operations personnel, field supervisors, and engineers who select, design, install, evaluate, or operate gas processing plants and related facilities. A broad approach is taken with the topics.

## You Will Learn

Participants will learn how to:

- Identify types of pumps and common applications in oil and gas processing facilities
- Describe how a pump selection chart can be used to select pump type
- Explain the relationship between head and pressure
- Calculate the pump power requirement
- Describe the differences in performance characteristics of centrifugal and positive displacement pumps
- Describe cavitation
- Define NPSHR and NPSHA
- Explain the principle of operation of a single stage centrifugal pump, and identify the main pump components
- Describe the system head curve and explain how it affects pump selection
- Explain the principle of operation of plunger pumps, common configurations, and identify the main pump components
- Identify types of compressors and common applications in oil and gas processing facilities

- Describe how a compressor selection chart can be used to select compressor type
- Explain the relationship between compressor head and pressure
- Calculate the compressor power requirement
- Estimate the compressor discharge temperature
- Explain the principle of operation of a centrifugal compressor, and identify the main compressor components
- Describe a centrifugal compressor performance curve, and identify and describe the surge line and stonewall
- Explain the principle of operation of a reciprocating compressor, and identify the main compressor components
- Explain the principle of operation of a rotary screw compressor, and identify the main compressor components
- List common drivers used for each compressor type

**Product Details**

Categories: Midstream

Disciplines: Gas Processing Mechanical Engineering

Levels: Basic

Product Type: Individual Skill Module

Format: On-Demand

Duration: 4.5 hours (approx.)

**$395.00**