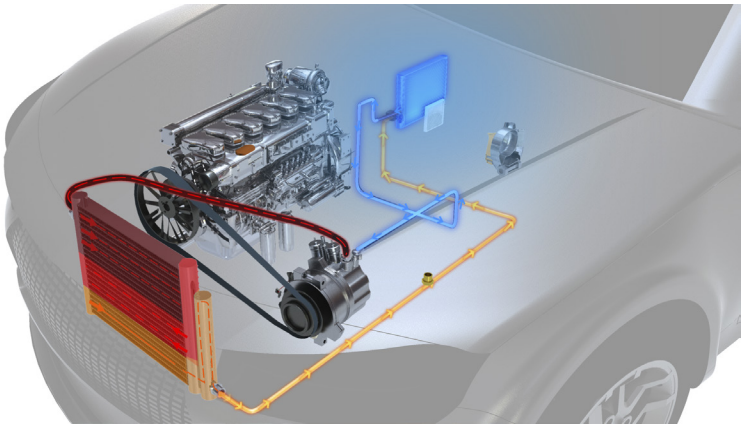
Heating, Ventilation, and Air Conditioning Basics

eLearning courses designed to increase productivity and profits



Learning made Simple, Visual, and Interactive

This course is designed to give learners a basic understanding of the automotive HVAC system, including the concept of thermodynamics, the HVAC types and components, the three operations of heating, ventilation, and air conditioning in the automotive HVAC system, and the various failure modes in the system.

Credit Hours **2**

Learning Objectives

- Understand the application of thermodynamics in HVAC system.
- Classify the HVAC system based on type, operational mode, and zonal control.
- Identify the various components in the HVAC system.
- Learn the three HVAC operations—heating, ventilation, and air conditioning.
- Recognize the failure modes in an HVAC system.
- Determine the various service precautions to tackle the failure modes in an HVAC system.

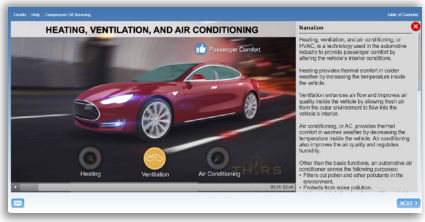
Table of Contents

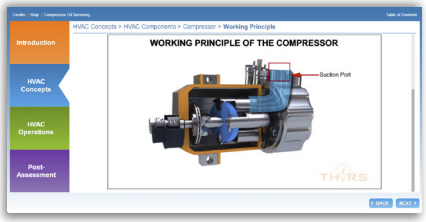
I. HVAC Concepts

- **Thermodynamics**
  - o Heating
  - o Cooling
    - - Evaporation Process
    - - Condensation Process
- **HVAC Classification**
  - o HVAC type
  - o Operational Mode
  - o Zonal Control
- **HVAC Components**
  - o Compressor
  - o Condenser
  - o Thermal Expansion Valve
  - o Evaporator
  - o Heater Radiator
  - o Blower Unit
  - o PTC Heater
  - o Supplementary Components
  - o Control Systems

II. HVAC Operations

- **Air Conditioning**
  - o Refrigeration Medium
  - o Air Conditioning Cycle
  - o Safety Devices
- **Heating**
  - o Heating Cycle
  - o Safety Device
- **Ventilation**
- **Failure Modes and Service Precautions**
  - o Condenser
  - o Evaporator
  - o Compressor
  - o Air Filter
  - o Refrigerant





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