# Fuel Cell Standards

## XVII. Cathode Subsystem

# XVII.d Compressors and Turbo Machines



## Overview:

Classroom and lab

- Primary functions of the compressor function in a fuel cell system
- Physics of compression and compressors
- Types of compressors and turbo machines used in fuel cell systems
- High voltage and low voltage harness
- Integrated versus external power inverters
- Logic in determination of a fault
- Faults caused by a faulty compressor

## Description:

Due to the high volume of air required for efficient fuel cell operation, the need to balance the pressure on each side of the membrane and the small cathode passages various type of compressors are used to supply the atmospheric air to the fuel cell system.

## Outcome (Goal):

Student will be able to explain the types of compressors, the functions of the compressor system and potential faults and causes.

## Objectives:

Students shall be able to:

1. Identify air leaks and repair
2. Locate, inspect and replace the compressor

3. Calculate approximate temperature rise across a compressor

Tasks:

Students will

1. Locate, remove and replace the compressor assembly using OEM service instructions
2. Use vehicle data to identify a defective compressor
3. Compare actual temperature rise versus estimated across the temperature
4. Inspect compressor low and high voltage wiring
5. Use OEM service instructions to identify any preventative or periodic maintenance

To comment or offer suggestions on this standard, contact Ken Mays:

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