ATMW-2500: COMBUSTION TURBINE

Cuyahoga Community College

Viewing: ATMW-2500 : Combustion Turbine

Board of Trustees:
2007-05-24

Academic Term:
Fall 2025

Subject Code
ATMW - Appld Ind Tech - Millwrighting

Course Number:
2500

Title:
Combustion Turbine

Catalog Description:
In-depth study of combustion turbine use, installation, and repair. Topics include turbine safety concepts, component identification, maintenance, rigging procedures, installation, and fuel nozzle installation and repair.

Credit Hour(s):
2

Lecture Hour(s):
2

Requisites

Prerequisite and Corequisite
Acceptance to Millwrighting Technology apprenticeship program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

Outcomes

Course Outcome(s):
Work safely, effectively, and efficiently on a job site where work with combustion turbines occurs.

Objective(s):
1. Analyze and assess OSHA regulations and turbine safety.
2. Evaluate combustion components and explain their uses.
3. Contrast installation and maintenance issues and procedures.
4. Safely perform rigging procedures required for turbine installation and maintenance.
5. Install a fuel nozzle.
6. Organize procedures for disassembly and maintenance of fuel nozzle components.

Methods of Evaluation:
1. Quizzes
2. Exams
3. Classroom participation
4. Demonstration of assigned projects

Course Content Outline:
A.Concepts
1.General OSHA regulations:turbine safety
2.General OSHA regulations:lead

3.General OSHA regulations:asbestos
4.General OSHA regulations:toxicology
5.General OSHA regulations:site safety
6.Combustion terms and components
7.Compressor end
8.Turbine end
9.Turbine installation
10.Turbine maintenance
11.Blading
12.Bearings
13.Fuel nozzle: components
14.Fuel nozzle:installation
15.Fuel nozzle:clearance specifications
16.Fuel nozzle:standard replacement procedures
17.Combustion area
18.Installation issues and procedures
19.Maintenance issues and procedures
20.Rigging procedures
21.Diaphragms
22.Mechanical package
23.Inlet guide vanes
24.Outer shell
25.Outer shell removal
26.Rotors
27.Rotor removal
28.Rotor installation
B.Skills
1.Analyzing, assessing, and applying knowledge of OSHA regulations and turbine safety
2.Evaluating combustion components and explaining their uses
3.Contrasting installation and maintenance issues and procedures
4.Safely performing rigging procedures required for turbine installation and maintenance
5.Installing a fuel nozzle
6.Organizing procedures for disassembly and maintenance of fuel nozzle components
7.Installing and maintaining equipment
8.Using inlet guide vanes
9.Removing an outer shell
10.Removing and installing rotors
C.Issues
1.Safety
2.Professional demeanor to promote credibility of the trade
3.Communication skills to promote effective interpersonal skills

Resources

Basaraba, Bruce. *Industry Trades Training Manual.* Alberta: IPT Publishing, 1998.

United Brotherhood of Carpenters. *Combustion Turbine Program.* Washington: United Brotherhood of Carpenters, 1976.

United Brotherhood of Carpenters/Westinghouse. *Instructional Materials for the Millwright.* Washington: United Brotherhood of Carpenters, 1999.

Gas Turbines: Familiarization. Las Vegas, NV: Carpenters International Training Fund, 2013.

United Brotherhood of Carpenters/Westinghouse. *Instructional Materials for the Millwright*. Washington: United Brotherhood of Carpenters, 1999.

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