



South Central College

AGME 2853 Diesel Injection (Pumps)

Common Course Outline

Course Information

Description	This course covers the operation, disassembly, repair and adjustment of injection pumps. Rotary injection pumps covered are the Standyne (Roosa Master) DB,DC, DM2, DM4 and DB2 diesel pumps, the CAV DPA diesel pump, the Robert Bosch VE diesel pump and the United Technologies Model 100 diesel pump. The Robert Bosch PES pump with the RSV governor will be included. Students will identify pump operation and component parts; disassemble, repair, and adjust internal parts; reassemble the pump and perform pump adjustments on the test bench. Theory and basic's of electronic injection will also be covered.
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Total Credits	3
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Total Hours	96
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Types of Instruction

Instruction Type	Credits/Hours
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Lab	
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Pre/Corequisites

None

Course Outcomes

1. Identify Safety precautions

Learning Objectives

Do not allow high-pressure fuel to come in contact with hands or arms, as it may puncture the skin and cause infection or blood poisoning.

Seek medical attention immediately if skin is punctured by high pressure fluid.

Wear gloves if test oil irritates skin.

2. Identify different types of fuel systems

Learning Objectives

identify unit injector

identify pressure time system

identify multi-plunger

identify distributor type

3. Identify fuel metering methods

Learning Objectives

identify and explain port and helix metering
identify and explain inlet metering
identify and explain sleeve control metering

4. Explain delivery valves**Learning Objectives**

identify and inspect sleeve type delivery valve
identify and inspect conventional style delivery valve
disassemble both types of delivery valve
reassemble both types of delivery valve

5. Identify different types of governors**Learning Objectives**

identify and explain the operation of a mechanical governor
identify and explain the operation of a hydraulic governor
identify and explain the operation of a pneumatic governor
identify and explain the operation of a electric governor

6. Explain Roosa Master pump operation**Learning Objectives**

disassemble roosa master pump
inspect pump componenets
perform roller to roller adjustment
reassemble roosa master pump
calibrate roosa master pump on stand

7. Explain CAV pump operation**Learning Objectives**

disassemble CAV pump
inspect pump componenets
set roller to roller dimension
reassemble pump

8. Explain American Bosch (model 100) operation**Learning Objectives**

disassemble model 100 pump
inspect and identify model 100 parts
identify model 100 intervance
identify model 100 low pressure feed pump
identify model 100 excess fuel device
reassemble model 100 pump

9. Explain Bosch PES-A pump operation**Learning Objectives**

disassemble PES-A pump
inspect pump componenets
install and time control rack and sleeves
reassemble PES-A pump

10. Identify different types of fuel injection**Learning Objectives**

identify common rail technology
identify HEUI injector technology
identify MEUI injector technology
identify cummins electronic technology

SCC Accessibility Statement

Disability Services provides accommodations and other supports to students with permanent and temporary disabilities that affect their SCC experience. Disabilities may include mental health (anxiety, depression, PTSD), ADHD, learning disabilities, chronic health conditions (migraine, fibromyalgia), sensory disabilities, and temporary disabilities (broken arm, surgery). Common accommodations are extended test time, private room for testing, audiobooks, and sign language interpreter.

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