

Advanced Engine Performance Diagnosis 7th Edition

Chapter 22 – Fuel-Injection Components and Operation

Lesson Plan



CHAPTER SUMMARY:

1. Electronic Fuel Injection Operation and Speed-Density Fuel-Injection Systems
 2. Mass Airflow Fuel-Injection Systems, Port-Fuel Injection, and Fuel-Pressure Regulator
 3. Vacuum-Biased Fuel-Pressure Regulator and Electronic Returnless Fuel System
 4. Mechanical Returnless Fuel System and Demand Delivery System (DDS)
 5. Central Port Injection, Fuel-Injection Modes of Operation, and Idle Control
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OBJECTIVES:

1. List the types of fuel-injection systems and explain their modes of operation.
 2. Describe how throttle-body injection and port fuel-injection systems work.
 3. Discuss the function of the fuel-pressure regulator and describe a vacuum-biased fuel-pressure regulator.
 4. Describe the different types of returnless fuel systems and how they function.
 5. Describe the purpose and function of a demand delivery system.
 6. Discuss fuel injectors and fuel-injection modes of operation.
 7. Explain the operation of the idle control system.
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RESOURCES: ([All resources may be found at jameshalderman.com](http://www.jameshalderman.com))

1. Task Sheet: Modes of Fuel Injection Operation
 2. Task Sheet: Idle Air Control
 3. Task Sheet: Air Intake Inspection
 4. Chapter PowerPoint
 5. [Crossword and Word Search Puzzles \(A8\)](#)
 6. [Videos: \(A8\) Engine Performance](#)
 7. [Animations: \(A8\) Engine Performance](#)
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ACTIVITIES:

1. Task Sheet: Modes of Fuel Injection Operation
 2. Task Sheet: Idle Air Control
 3. Task Sheet: Air Intake Inspection
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ASSIGNMENTS:

1. Chapter crossword and word search puzzles from the website.
 2. Complete end of chapter quiz from the textbook.
 3. Complete multiple choice and short answer quizzes downloaded from the website.
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CLASS DISCUSSION:

1. Review and group discussion chapter [Frequently Asked Questions](#) and [Tech Tips](#) sections.
 2. Review and group discussion of the five (5) chapter [Review Questions](#).
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NOTES AND EVALUATION
