

Advanced Engine Performance Diagnosis 8th Edition

Chapter 24 – Fuel-Injection System Diagnosis and Service

Lesson Plan



CHAPTER SUMMARY:

1. Fuel-Injection System Diagnosis, Testing for an Injector Pulse, and Checking Fuel-Injector Resistance
 2. Pressure-Drop Balance Test, Injector Voltage-Drop Tests, and Scope-Testing Fuel Injectors
 3. Fuel-Injection Service and Fuel-Pump Relay Circuit Diagnosis
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OBJECTIVES:

1. Explain fuel-injection system diagnosis including scan tool diagnosis.
 2. Describe how to test for an injector pulse.
 3. Describe how to check fuel-injection resistance.
 4. Describe the pressure-drop balance test.
 5. Describe injection voltage-drop tests.
 6. Describe scope-testing fuel injectors.
 7. Describe how to service the fuel-injection system.
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RESOURCES: (All resources may be found at jameshalderman.com)

1. Task Sheet: Scan Tool Diagnosis
 2. Task Sheets: Fuel Trim Diagnosis
 3. Task Sheets: Port Fuel-Injection System Diagnosis
 4. Task Sheets: Injector Resistance Testing
 5. Task Sheets: Fuel Injector Balance Test
 6. Task Sheets: Injector Voltage Waveform Test
 7. Chapter PowerPoint
 8. Crossword and Word Search Puzzles
 9. Videos: (A8) Fuel, Air Induction, and Exhaust Systems Diagnosis and Repair
 10. Animations: (A8) Fuel, Air Induction, and Exhaust Systems Diagnosis and Repair
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ACTIVITIES:

1. Task Sheet: Scan Tool Diagnosis
 2. Task Sheets: Fuel Trim Diagnosis
 3. Task Sheets: Port Fuel-Injection System Diagnosis
 4. Task Sheets: Injector Resistance Testing
 5. Task Sheets: Fuel Injector Balance Test
 6. Task Sheets: Injector Voltage Waveform Test
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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:
