

# Automotive Technology 7<sup>th</sup> Edition

## Chapter 78 – 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



#### **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.



#### **RESOURCES:** (All resources may be found at [jameshalderman.com](http://jameshalderman.com))

1. Task Sheet: Scan Tool Diagnosis
2. Task Sheet: Fuel Trim Diagnosis
3. Task Sheet: Fuel-Injection System Diagnosis
4. Task Sheet: Injector Resistance Testing
5. Task Sheet: Fuel Injector Balance Test
6. Task Sheet: Injector Voltage Waveform Test
7. Chapter PowerPoint
8. Crossword Puzzle and Word Search
9. Videos: [\(A8\) Engine Performance Videos](#)
10. Animations: [\(A8\) Engine Performance Animations](#)



#### **ACTIVITIES:**

1. Task Sheet: Scan Tool Diagnosis
2. Task Sheet: Fuel Trim Diagnosis
3. Task Sheet: Fuel-Injection System Diagnosis
4. Task Sheet: Injector Resistance Testing
5. Task Sheet: Fuel Injector Balance Test
6. Task Sheet: Injector Voltage Waveform Test
7. Chapter PowerPoint
8. Crossword Puzzle and Word Search



#### **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:**

