

Automotive Electrical and Engine Performance - 9th edition

Ch30: Ignition System Diagnosis and Service

Lesson Plan



CHAPTER SUMMARY:

1. Checking for Spark and Electronic Troubleshooting Procedure
2. Ignition Coil Testing and Using an Ohmmeter, Testing Magnetic Sensors, and Testing Hall-Effect Sensors
3. Ignition System Diagnosis Using Visual Inspection, and Test for Poor Performance
4. Testing for a No-Start Condition, Secondary Ignition Inspection, and Spark Plug Service
5. Quick and Easy Secondary Ignition Tests and Scope-Testing the Ignition System
6. Scope-Testing a Waste-Spark Ignition System and Scope-Testing a Coil-On-Plug Ignition System
7. Ignition System Symptom Guide

OBJECTIVES:



1. Describe the procedure used to check for spark.
2. Describe the electronic ignition troubleshooting procedure.
3. Describe ignition coil testing using an ohmmeter.
4. Describe how to test magnetic sensors.
5. Describe how to test Hall-effect sensors.
6. Discuss visual inspection of the ignition system.
7. Explain how to test for poor performance.
8. Explain how to test for a no-start condition.
9. Inspect and test ignition system secondary circuits.
10. Describe spark plug service.
11. Describe secondary ignition tests.
12. Describe how to test the ignition system using an oscilloscope.
13. Describe how to scope-test a waste-spark ignition system.
14. Describe how to scope-test a coil-on-plug ignition system.
15. Diagnose ignition system-related problems.

RESOURCES: (All resources may be found at jameshalderman.com)



1. Task Sheet: Ignition Coil Testing
2. Task Sheet: Spark Plugs Inspection
3. Task Sheet: Electronic Ignition Diagnosis
4. Task Sheet: Scan Tool Testing of the Ignition System
5. Crossword Puzzle and Word Search
6. Videos: (A8) Engine Performance Videos
7. Animations: (A8) Engine Performance Animations

ACTIVITIES:



1. Task Sheet: Ignition Coil Testing
 2. Task Sheet: Spark Plugs Inspection
 3. Task Sheet: Electronic Ignition Diagnosis
 4. Task Sheet: Scan Tool Testing of the Ignition System
 5. Crossword Puzzle and Word Search
 6. Chapter PowerPoint
 7. Crossword Puzzle and Word Search
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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. Ten (10) question end of Chapter Quiz.
 3. Five (5) end of chapter Review Question for class discussion.
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NOTES AND EVALUATION:
