

Automotive Technology 6th Edition

Chapter 72 – Ignition System Diagnosis and Service

Lesson Plan



CHAPTER SUMMARY:

1. Checking for spark and electronic ignition troubleshooting procedure
 2. Ignition coil testing using an ohmmeter, testing magnetic sensors, and testing hall-effect sensors
 3. Ignition system diagnosis using visual inspection and testing for poor performance
 4. Testing for a no-start condition, distributor indexing, secondary ignition inspection, and spark plug service
 5. Quick and easy secondary ignition tests, ignition timing, and scope-testing the ignition system
 6. Scope-testing a waste-spark ignition system and scope-testing a coil-on-plug ignition system
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OBJECTIVES:

1. Describe the procedure used to check for spark.
 2. Diagnose ignition system-related problems.
 3. Inspect and test ignition coils, magnetic sensors, and Hall-effect sensors.
 4. Discuss what to inspect and look for during a visual inspection of the ignition system.
 5. Describe how to test for poor performance and for a no-start condition.
 6. Explain how to verify the distributor position.
 7. Inspect and test secondary ignition system circuit and components.
 8. Discuss the purpose and function of ignition timing and spark advance.
 9. Describe how to test the ignition system using an oscilloscope. this chapter will help prepare for engine repair (A8) ASE certification test content area “B” (Ignition System Diagnosis and repair).
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RESOURCES: (All resources may be found at <http://www.jameshalderman.com>) Internet access required to hyperlink.

1. **Task Sheet ASE (A8-C-1) P-2, A8-C-3) P-3:** Electronic Ignition Diagnosis
 2. **Task Sheet ASE (A8-C-1) P-2:** Scan Tool Testing of the Ignition System
 3. **Task Sheet ASE (A8-A-9) P-2:** Ignition Scope Analysis
 4. **Task Sheet ASE (A8-C-2) P-1:** Primary Ignition Inspection and Testing
 5. **Task Sheet ASE (A8-C-4) P-1:** Spark Plugs Inspection
 6. **Task Sheet ASE (A8-C-4) P-1:** Ignition Coil Testing
 7. **Task Sheet ASE (A8-C-2) P-1:** Position Sensor Diagnosis
 8. **Task Sheet ASE (A8-C-2) P-1:** Position Sensor Waveform Testing
 9. **Task Sheet ASE (A8-C-2) P-1:** Primary Ignition Inspection and Testing
 10. Chapter PowerPoint
 11. Chapter Crossword Puzzle and Word Search
 12. Videos: [\(A8\) Engine Performance Videos](#)
 13. Animations: [\(A8\) Engine Performance Animations](#)
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ACTIVITIES:

1. **Task Sheet ASE (A8-C-1) P-2, A8-C-3) P-3:** Have students complete Electronic Ignition Diagnosis Task Sheet.
 2. **Task Sheet ASE (A8-C-1) P-2:** Have students complete Scan Tool Testing of the Ignition System Task Sheet.
 3. **Task Sheet ASE (A8-A-9) P-2:** Have students complete Ignition Scope Analysis Task Sheet.
 4. **Task Sheet ASE (A8-C-2) P-1:** Have students complete Primary Ignition Inspection and Testing Task Sheet.
 5. **Task Sheet ASE (A8-C-4) P-1:** Have students complete Spark Plugs Inspection Task Sheet.
 6. **Task Sheet ASE (A8-C-4) P-1:** Have students complete Ignition Coil Testing Task Sheet.
 7. **Task Sheet ASE (A8-C-2) P-1:** Have students complete Position Sensor Diagnosis Task Sheet.
 8. **Task Sheet ASE (A8-C-2) P-1:** Have students complete Position Sensor Waveform Testing Task Sheet.
 9. **Task Sheet ASE (A8-C-2) P-1:** Have students complete Primary Ignition Inspection and Testing Task Sheet.
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ASSIGNMENTS:

1. Chapter crossword and word search puzzles.
 2. Complete end of chapter 10 question quiz.
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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:
