**Automotive Technology 6th Edition**

**Chapter 53 –** **Cranking System Diagnosis and Service**

**Lesson Plan**

**CHAPTER SUMMARY:**

1. Starting system troubleshooting procedure and voltage drop testing

2. Control circuit testing, starter amperage test, starter removal, and starter motor service

3. Bench testing and starter installation

4. Starter drive-to-fly wheel clearance

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**OBJECTIVES:**

1. explain the procedure to troubleshoot a starting system problem.

2. Discuss how to perform a voltage drop test on the cranking circuit.

3. Perform control circuit testing and starter amperage test, and determine necessary action.

4. Describe the procedure to remove a starter motor.

5. Explain starter motor service and bench testing.

6. Describe the procedure to install a starter motor.

7. Describe how to ensure proper clearance between the starter pinion and the engine flywheel.

8. This chapter will help prepare for the ASE Electrical/Electronic Systems (A6) certification test content area “C” (Battery and Starting Systems 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**: Starter Disassembly and Testing

**2**. **Task Sheet ASE** **(A6-C-1) P-1, (A6-C-2) P-1, (A6-C-3) P-2, (A6-C-6) P-2**: Starter Voltage Drop/Current Draw Tests

**3**. **Task Sheet ASE (A6-C-5) P-2**: Starter Relays and Solenoids

**4**. **Task Sheet ASE(A6-C-4) P-1**: Remove and Install the Starter

5. Chapter PowerPoint

6. Chapter Crossword Puzzle and Word Search

7. Videos: [(A6) Electrical/Electronic Systems Videos](https://jameshalderman.com/a6_vid_lib_page/)

8. Animations: [(A6) Electrical/Electronic Systems Animations](https://jameshalderman.com/a6_anim_lib_page/)

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**ACTIVITIES:**

**1. Task Sheet**: Have students complete Starter Disassembly and Testing Task Sheet

**2**. **Task Sheet ASE** **(A6-C-1) P-1, (A6-C-2) P-1, (A6-C-3) P-2, (A6-C-6) P-2**: Have students complete Starter Voltage Drop/Current Draw Tests Task Sheet.

**3**. **Task Sheet ASE (A6-C-5) P-2**: Have students complete Starter Relays and Solenoids Task Sheet.

**4**. **Task Sheet ASE(A6-C-4) P-1**: Have students complete Remove and Install the Starter 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:**

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