

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

## Chapter 52 – Charging System Diagnosis and Service

### Lesson Plan



#### **CHAPTER SUMMARY:**

1. Charging System Testing and Service and Drive Belt Inspection and Replacement
2. AC Ripple Voltage Check, Testing AC Ripple Current, and Charging System Voltage Drop Testing
3. Alternator Output Test, Minimum Required Alternator Output, and Alternator Removal
4. Alternator Testing



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#### **OBJECTIVES:**

1. Discuss the various methods to test the charging system.
2. Describe how to inspect and replace the drive belts.
3. Describe the AC ripple voltage check.
4. Describe how to test AC ripple current.
5. Describe charging system voltage drop testing.
6. Discuss the alternator output test.
7. Discuss minimum required alternator output.
8. Explain how to remove an alternator.
9. Explain how to install an alternator.



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

1. Task Sheet: Alternator Disassembly
2. Task Sheet: Alternator Rotor Testing
3. Task Sheet: Alternator Stator Testing
4. Task Sheet: Charging System Output Test
5. Task Sheet: Charging System Diagnosis
6. Task Sheet: Alternator Drive Belt
7. Task Sheet: Remove and Install Alternator
8. Task Sheet: Charging Circuit Voltage Drop
9. Chapter PowerPoint
10. Crossword Puzzle and Word Search
11. Videos: [\(A6\) Electrical/Electronic Systems Videos](#)
12. Animations: [\(A6\) Electrical/Electronic Systems Animations](#)



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#### **ACTIVITIES:**

1. Task Sheet: Alternator Disassembly
  2. Task Sheet: Alternator Rotor Testing
  3. Task Sheet: Alternator Stator Testing
  4. Task Sheet: Charging System Output Test
  5. Task Sheet: Charging System Diagnosis
  6. Task Sheet: Alternator Drive Belt
  7. Task Sheet: Remove and Install Alternator
  8. Task Sheet: Charging Circuit Voltage Drop
  9. 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. Review and group discussion of the five (5) chapter Review Questions.



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#### **NOTES AND EVALUATION:**

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