

# Automotive Electricity and Electronics

## Chapter 23 – Charging System Diagnosis and Service

### Lesson Plan



#### **CHAPTER SUMMARY:**

1. Charging System Testing and Service and Drive Belt Inspection and Adjustment
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 Disassembly, Testing the Rectifier and Reassembling the Alternator
5. Remanufactured Alternators and Alternator Installation

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#### **OBJECTIVES:**



1. Discuss the various methods to test the charging system.
2. Describe how to inspect and adjust the drive belts.
3. Discuss the alternator output test and minimum required output.
4. Explain how to remove, disassemble, reassemble, and install an alternator and test its component parts.
5. Describe remanufactured alternators.

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



1. Task Sheet: Alternator Fusible Link Check
2. Task Sheet: Charging System Output Test
3. Task Sheet: AC Voltage from the Alternator
4. Task Sheet: Charging Circuit Voltage Drop
5. Task Sheet: Remove and Install Alternator
6. Task Sheet: Alternator Disassembly
7. Task Sheet: Alternator Rotor Testing
8. Task Sheet: Alternator Stator Testing
9. Task Sheet: Alternator Diode Trio Testing
10. Task Sheet: Alternator Rectifier Bridge Testing
11. Chapter PowerPoint
12. [Crossword and Word Search Puzzles \(A6\)](#)
13. [Videos: \(A6\) Electrical/Electronic Systems](#)
14. [Animations: \(A6\) Electrical/Electronic Systems](#)

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#### **ACTIVITIES:**



1. Task Sheet: Alternator Fusible Link Check
  2. Task Sheet: Charging System Output Test
  3. Task Sheet: AC Voltage from the Alternator
  4. Task Sheet: Charging Circuit Voltage Drop
  5. Task Sheet: Remove and Install Alternator
  6. Task Sheet: Alternator Disassembly
  7. Task Sheet: Alternator Rotor Testing
  8. Task Sheet: Alternator Stator Testing
  9. Task Sheet: Alternator Diode Trio Testing
  10. Task Sheet: Alternator Rectifier Bridge Testing
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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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