

Automotive Electrical and Engine Performance - 9th edition

Ch12: Batteries and Battery Testing and Service

Lesson Plan



CHAPTER SUMMARY:

1. Automotive 12-Volt Batteries, Battery Construction, How a Battery Works, Types of Batteries
2. Battery Ratings, Causes of Battery Failure, and Battery Service Safety Considerations
3. Battery Maintenance and Service, Battery Load Testing, and Battery Charging
4. Battery Electrical Drain Test and Maintaining Electronic Memory Functions



OBJECTIVES:

1. Describe the purpose and function of a battery.
2. Describe how batteries are constructed.
3. Describe how a battery works.
4. Describe the types of batteries.
5. Discuss battery ratings.
6. Describe the causes and types of battery failure.
7. Describe battery safety considerations.
8. Discuss battery maintenance and service.
9. Discuss how to test battery state of charge.
10. Describe how to perform a battery load test and conductance test.
11. Discuss battery charging, float-type chargers, and jump starting a battery.
12. Discuss how to perform a battery drain test.
13. Describe how to prevent loss of memory functions and reinitialize memory functions.



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

1. Task Sheet: Battery Specifications
2. Task Sheets: Service and Replace the Battery
3. Task Sheets: Battery Charging
4. Task Sheets: Battery and Capacity Tests
5. Task Sheets: Jump Starting
6. Task Sheet: Reinitialization
7. Crossword Puzzle and Word Search
8. Videos: (A6) Electrical/Electronic Systems Videos
9. Animations: (A6) Electrical/Electronic Systems Animations



ACTIVITIES:

1. Task Sheet: Battery Specifications
 2. Task Sheets: Service and Replace the Battery
 3. Task Sheets: Battery Charging
 4. Task Sheets: Battery and Capacity Tests
 5. Task Sheets: Jump Starting
 6. Task Sheet: Reinitialization
 7. Chapter PowerPoint
 8. 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:
