

Automotive Technology 7th Edition

Chapter 18 – Cooling System Operation and Diagnosis

Lesson Plan



CHAPTER SUMMARY:

1. Cooling System, Cooling System Operation, Thermostats, Radiators, and Pressure Caps
2. Coolant Recovery Systems, Water Pumps, Auxiliary Water Pumps, and Coolant Flow in the Engine
3. Cooling Fans, Heater Cores, Cooling System Testing, and Coolant Temperature Warning Light,
4. Cooling System Inspection, and Cooling System Service



OBJECTIVES:

1. Explain the purpose and function of the cooling system.
2. Explain cooling system operation.
3. Explain the purpose of thermostats.
4. Explain the purpose of radiators.
5. Explain the purpose of pressure caps.
6. Explain coolant recovery systems.
7. Explain the purpose of water pumps.
8. Explain auxiliary water pumps.
9. Explain coolant flow in the engine.
10. Explain the purpose of cooling fans.
11. Explain the purpose of heater cores.
12. Describe cooling system testing.
13. Explain the purpose of a coolant temperature warning light.
14. Explain cooling system inspection.
15. Explain cooling system service.



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

1. Task Sheet: Engine Cooling System Inspection
2. Task Sheet: Radiator Testing with an Infrared Pyrometer
3. Task Sheet: Accessory Drive Belt Replacement II
4. Task Sheet: Replace Water Pump
5. Task Sheet: Replace Thermostat
6. Task Sheet: Radiator Replacement
7. Task Sheet: Engine Fan Inspection and Testing
8. Task Sheet: Engine Fan Inspection and Testing
9. Chapter PowerPoint
10. Crossword Puzzle and Word Search
11. Videos: [\(A1\) Engine Repair Videos](#)
12. Animations: [\(A1\) Engine Repair Animations](#)

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ACTIVITIES:

1. Task Sheet: Engine Cooling System Inspection
2. Task Sheet: Radiator Testing with an Infrared Pyrometer
3. Task Sheet: Accessory Drive Belt Replacement II
4. Task Sheet: Replace Water Pump
5. Task Sheet: Replace Thermostat
6. Task Sheet: Radiator Replacement
7. Task Sheet: Engine Fan Inspection and Testing
8. Task Sheet: Engine Fan Inspection and Testing
9. Crossword Puzzle and Word Search



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.



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.



NOTES AND EVALUATION:
