

Automotive Technology 6th Edition

Chapter 21 – Cooling System Operation and Diagnosis

Lesson Plan



CHAPTER SUMMARY:

1. Cooling system purpose, function, and operation
 2. Thermostats, radiators and pressure caps
 3. Coolant system recovery and water pumps
 4. Coolant flow in the engine, cooling fans, and heater cores
 5. Cooling system testing, temperature warning light, and cooling system inspection and service
-



OBJECTIVES:

1. Explain the purpose and function of the cooling system, and cooling system operation.
 2. Explain the purpose of thermostats, radiators, pressure caps, and water pumps.
 3. Explain coolant flow in the engine and coolant recovery systems.
 4. Explain the purpose of cooling fans and heater cores.
 5. Describe cooling system testing and explain the purpose of coolant temperature warning light.
 6. Explain cooling system inspection and cooling system service.
-



RESOURCES: (All resources may be found at <http://www.jameshalderman.com>) Internet access required to hyperlink.

1. **Task Sheet ASE (A1-D-1) P-1:** Cooling System Tests
 2. **Task Sheet ASE (A1-A-3) P-1:** Engine Cooling System Identification
 3. **Task Sheet ASE (A1-D-1) P-1:** Engine Cooling System Inspection
 4. **Task Sheet ASE (A1-D-2) P-1, A8-A-10) P-1:** Radiator Testing with an Infrared Pyrometer
 5. **Task Sheet ASE (A1-D-3) P-1:** Accessory Drive Belt Inspection
 6. **Task Sheet ASE (A1-D-7) P-1:** Thermostat Replacement
 7. **Task Sheet ASE (A1-D-6) P-2:** Radiator Replacement
 8. **Task Sheet ASE (A1-D-8) P-1:** Engine Fan Inspection and Testing
 9. **Task Sheet ASE (A1-D-2) P-1, (A1-A-3) P-1:** Identify the Cause of Engine Overheating
 10. Chapter PowerPoint
 11. Chapter Crossword Puzzle and Word Search
 12. Videos: [\(A1\) Engine Repair Videos](#)
 13. Animations: [\(A1\) Engine Repair Animations](#)
-



ACTIVITIES:

1. **Task Sheet ASE (A1-D-1) P-1:** Have students complete Cooling System Tests Task Sheet.
 2. **Task Sheet ASE (A1-A-3) P-1:** Have students complete Engine Cooling System Identification Task Sheet.
 3. **Task Sheet ASE (A1-D-1) P-1:** Have students complete Engine Cooling System Inspection Task Sheet.
 4. **Task Sheet ASE (A1-D-2) P-1, A8-A-10) P-1:** Have students complete Radiator Testing with an Infrared Pyrometer Task Sheet.
 5. **Task Sheet ASE (A1-D-3) P-1:** Have students complete Accessory Drive Belt Inspection Task Sheet.
 6. **Task Sheet ASE (A1-D-7) P-1:** Have students complete Thermostat Replacement Task Sheet.
 7. **Task Sheet ASE (A1-D-6) P-2:** Have students complete Radiator Replacement Task Sheet.
 8. **Task Sheet ASE (A1-D-8) P-1:** Have students complete Engine Fan Inspection and Testing Task Sheet.
 9. **Task Sheet ASE (A1-D-2) P-1, (A1-A-3) P-1:** Have students complete the Identify the Cause of Engine Overheating Task Sheet.
-

Automotive Technology 6th Edition
Chapter 21 – Cooling System Operation and Diagnosis
Lesson Plan



ASSIGNMENTS:

1. Chapter crossword and word search puzzles.
 2. Complete end of chapter 10 question quiz.
-



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:
