

**Automotive Technology 6<sup>th</sup> Edition**  
**Chapter 66**  
**Heating and Air-Conditioning System Diagnosis**  
**Lesson Plan**

**CHAPTER SUMMARY:**



1. HVAC diagnostic procedure and heater diagnosis
  2. Checking A/C system performance
  3. Temperature and pressure measurements
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**OBJECTIVES:**



1. List the steps to diagnose HVAC problems.
  2. Explain how to diagnose a heating system problem.
  3. Describe how to check the performance of the A/C system.
  4. Explain the procedures to measure temperature and pressure in A/C systems.
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**RESOURCES:** (All resources may be found at <http://www.jameshalderman.com>) Internet access required to hyperlink.



1. Task Sheet ASE (A7-A-2) P-1: Air Conditioning Work Order
  2. Task Sheet ASE (A7-A-3) P-1: Air-Conditioning System Performance Test
  3. Task Sheet ASE (A7-A-4) P-1: Air Conditioning Noise Diagnosis
  4. Task Sheet ASE (A7-A-5) P-1: Refrigerant Identification/Read Pressures
  5. Task Sheet ASE (A7-A-6) P-1: Leak Test the Air Conditioning System
  6. Task Sheet ASE (A7-A-7) P-2, (A7-A-8) P-1: Refrigerant Oil
  7. Task Sheet ASE (A7-B-5) P-3: Determine Need for Refrigerant Filter
  8. Task Sheet ASE (A7-C-2) P-2, (A7-C-3) P-2: Heating System Performance Check
  9. Task Sheet ASE (A7-C-1) P-1, (A7-C-2) P-2: Cooling System Inspection
  10. Task Sheet ASE (A7-D-7) P-1: Thermostat Replacement
  11. Task Sheet ASE (A1-D-8) P-1: Cooling Fan and Related Inspections
  12. Task Sheet ASE (A7-C-4) P-2: Heater System Service
  13. Task Sheet ASE (A7-D-1) P-1: Blower Motor Diagnosis
  14. Task Sheet ASE (A7-B-2) P-2: A/C Compressor Clutch Control Diagnosis
  15. Task Sheet ASE (A7-D-4) P-3, (A7-D-5) P-3: Air Conditioning Control System Diagnosis
  16. Task Sheet ASE (A7-A-1) P-1, (A7-C-3) P-2, (A7-D-7) P-2: Identify Heating and A/C Concerns
  17. Chapter PowerPoint
  18. Chapter Crossword Puzzle and Word Search
  19. Videos: [\(A7\) Heating & Air Conditioning Videos](#)
  20. Animations: [\(A7\) Heating & Air Conditioning Animations](#)
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**ACTIVITIES:**

1. **Task Sheet ASE (A7-A-2) P-1:** Have students complete Air Conditioning Work Order Task Sheet.
2. **Task Sheet ASE (A7-A-3) P-1:** Have students complete Air-Conditioning System Performance Test Task Sheet.
3. **Task Sheet ASE (A7-A-4) P-1:** Have students complete Air Conditioning Noise Diagnosis Task Sheet.
4. **Task Sheet ASE (A7-A-5) P-1:** Have students complete Refrigerant Identification/Read Pressures Task Sheet.
5. **Task Sheet ASE (A7-A-6) P-1:** Have students complete Leak Test the Air Conditioning System Task Sheet.
6. **Task Sheet ASE (A7-A-7) P-2, (A7-A-8) P-1:** Have students complete Refrigerant Oil Task Sheet.
7. **Task Sheet ASE (A7-B-5) P-3:** Have students complete Determine Need for Refrigerant Filter Task Sheet.
8. **Task Sheet ASE (A7-C-2) P-2, (A7-C-3) P-2:** Have students complete Heating System Performance Check Task Sheet.
9. **Task Sheet ASE (A7-C-1) P-1, (A7-C-2) P-2:** Have students complete Cooling System Inspection Task Sheet.
10. **Task Sheet ASE (A7-D-7) P-1:** Have students complete Thermostat Replacement Task Sheet.
11. **Task Sheet ASE (A1-D-8) P-1:** Have students complete Cooling Fan and Related Inspections Task Sheet.
12. **Task Sheet ASE (A7-C-4) P-2:** Have students complete Heater System Service Task Sheet.
13. **Task Sheet ASE (A7-D-1) P-1:** Have students complete Blower Motor Diagnosis Task Sheet.
14. **Task Sheet ASE (A7-B-2) P-2:** Have students complete A/C Compressor Clutch Control Diagnosis Task Sheet.
15. **Task Sheet ASE (A7-D-4) P-3, (A7-D-5) P-3:** Have students complete Air Conditioning Control System Diagnosis Task Sheet.
16. **Task Sheet ASE (A7-A-1) P-1, (A7-C-3) P-2, (A7-D-7) P-2:** Have students complete Identify Heating and A/C Concerns Task Sheet.

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**ASSIGNMENTS:**



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

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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:**

