

Automotive Technology 6th Edition

Chapter 67 – Heating and Air-Conditioning System Service

Lesson Plan



CHAPTER SUMMARY:

1. Blower motor service, cooling system service, and refrigerant recovery procedures
 2. Evacuation procedures, noncondensable gases and refrigerant recycling
 3. Recharging a system and retrofitting a CFC-12 system to an HFC-124A system
 4. Compressor service, condenser service, and evaporator service
 5. Receiver/drier or accumulator/drier service and orifice tube/expansion valve service
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OBJECTIVES:

1. Discuss blower motor service, cooling system service, and refrigerant recovery procedures.
 2. Describe evacuation procedures and how to identify noncondensable gas in refrigerant.
 3. Explain how to recycle refrigerants, recharge a system, and retrofit a CFC-12 system to an HFC-134A system.
 4. Describe how to service the compressor, condenser, evaporator, receiver/drier or accumulator/drier, and orifice tube/expansion valve.
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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-B-1) P-1, (A7-B-2) P-2, (A7-B-3) P2: Air Conditioning Compressor Service
 2. Task Sheet ASE (A7-B-7) P-1: Inspect the Air Conditioning Condenser
 3. Task Sheet ASE (A7-B-8) P-2: Receiver/Drier Accumulator Drier
 4. Task Sheet ASE (A7-B-9) P-1: Replace Expansion Valve/Orifice Tube
 5. Task Sheet ASE (A7-B-6) P-2: A/C Hoses and Lines
 6. Task Sheet ASE (A7-B-10) P-1: Evaporator Housing Drain
 7. Task Sheet ASE (A7-B-12) P-2, (A7-C-4) P-2: Evaporator Replacement
 8. Task Sheet ASE (A7-B-13) P-2: Condenser Replacement
 9. Task Sheet ASE (A7-C-1) P-1: Inspect Belts and Hoses
 10. Task Sheet ASE (A7-E-1) P-1: Refrigerant Handling Equipment
 11. Task Sheet ASE (A7-E-2) P-1: Identify and Recover Refrigerant
 12. Task Sheet ASE (A7-E-3) P-1: Recycle Refrigerant
 13. Task Sheet ASE (A7-E-1) P-1: Evacuate and Charge A/C System
 14. Chapter PowerPoint
 15. Chapter Crossword Puzzle and Word Search
 16. Videos: [\(A7\) Heating & Air Conditioning Videos](#)
 17. Animations: [\(A7\) Heating & Air Conditioning Animations](#)
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ACTIVITIES:

1. **Task Sheet ASE (A7-B-1) P-1, (A7-B-2) P-2, (A7-B-3) P2:** Have students complete Air Conditioning Compressor Service Task Sheet.
 2. **Task Sheet ASE (A7-B-7) P-1:** Have students complete Inspect the Air Conditioning Condenser Task Sheet.
 3. **Task Sheet ASE (A7-B-8) P-2:** Have students complete Receiver/Drier Accumulator Drier Task Sheet.
 4. **Task Sheet ASE (A7-B-9) P-1:** Have students complete Replace Expansion Valve/Orifice Tube Task Sheet.
 5. **Task Sheet ASE (A7-B-6) P-2:** Have students complete A/C Hoses and Lines Task Sheet.
 6. **Task Sheet ASE (A7-B-10) P-1:** Have students complete Evaporator Housing Drain Task Sheet. Task Sheet.
 7. **Task Sheet ASE (A7-B-12) P-2, (A7-C-4) P-2:** Have students complete Evaporator Replacement Task Sheet.
 8. **Task Sheet ASE (A7-B-13) P-2:** Have students complete Condenser Replacement Task Sheet.
 9. **Task Sheet ASE (A7-C-1) P-1:** Have students complete Inspect Belts and Hoses Task Sheet.
 10. **Task Sheet ASE (A7-E-1) P-1:** Have students complete Refrigerant Handling Equipment Task Sheet.
 11. **Task Sheet ASE (A7-E-2) P-1:** Have students complete Identify and Recover Refrigerant Task Sheet.
 12. **Task Sheet ASE (A7-E-3) P-1:** Have students complete Recycle Refrigerant Task Sheet.
 13. **Task Sheet ASE (A7-E-1) P-1:** Have students complete Evacuate and Charge A/C System 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:

