**Automotive Heating and Air Conditioning 9th Edition**

**Chapter 15 – Refrigerant Recovery, Recycling, and Recharging**

**Lesson Plan**

**CHAPTER SUMMARY:**

1. Safety First, SAE J Standards, Refrigerant Identification, A/C Servicing, and Refrigerant Recovery

2. Recycling Refrigerant, Flushing an A/C System, Replacing Components, and Inline Filters

3. Refrigerant Oil, Evacuating the System, Recharging the System, and Sealants and Stop Leaks

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**OBJECTIVES:**

1. Prepare for the ASE Heating and Air Conditioning (A7) certification test content area “A” (A/C System Service, Diagnosis and Repair).

2. Explain the steps involved in the service and repair of A/C systems.

3. Discuss the procedure for identifying refrigerants in an A/C system.

4. Explain the procedure for refrigerant recovery in A/C systems.

5. Explain the procedure for recycling refrigerant in A/C systems.

6. Discuss the purpose of flushing an A/C system.

7. Explain the procedure for evacuating an A/C system.

8. Discuss the procedure for recharging an A/C system.

9. Explain the purpose of sealants and stop leaks.

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**RESOURCES:** [(All resources may be found at jameshalderman.com)](https://jameshalderman.com/)

1. Task Sheet: Air Conditioning System Performance Test

2. Task Sheet: Air Conditioning Noise Diagnosis

3. Task Sheet: Refrigerant Identification/Read Pressures

4. Task Sheet: Leak Test the Air Conditioning System

5. Task Sheet: Determine Need for Refrigerant Filter

6. Task Sheet: Air Conditioning System Performance Check

7. Task Sheet: Air Conditioning Control System Diagnosis

8. Task Sheet: Identify the Source of A/C System Odors

9. Task Sheet: Evaporator Housing Drain

10. Task Sheet: Evaporator/Heater Core Replacement

11. Task Sheet: Condenser Replacement

12. Task Sheet: Inspect Belts and Hoses

13. Chapter PowerPoint

14. [Crossword Puzzle and Word Search (A7)](https://jameshalderman.com/a7_puzzles_lib_page/)

15. [Videos: (A7) Heating & Air Conditioning](https://jameshalderman.com/a7_vid_lib_page/)

16. [Animations: (A7) Heating & Air Conditioning](https://jameshalderman.com/a7_anim_lib_page/)

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**ACTIVITIES:**

1. Task Sheet: Air Conditioning System Performance Test

2. Task Sheet: Air Conditioning Noise Diagnosis

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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. Review and group discussion of the five (5) chapter Review Questions.

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**NOTES AND EVALUATION:**

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