



**Correlation of
Modern Refrigeration and Air Conditioning, by Althouse, Turnquist, Bracciano
(Goodheart-Willcox Publisher ©2021)**

to

AHRI Curriculum Guide: XVI. System Installation and Start-Up

The following chart correlates the *Modern Refrigeration and Air Conditioning* textbook (©2021) to a section of the Curriculum Guide developed by Air-Conditioning, Heating, and Refrigeration Institute (AHRI) and used for PAHRA accreditation.

The chart lists the Curriculum Guide’s knowledge and task competency objectives and the corresponding chapter numbers from *Modern Refrigeration and Air Conditioning*.

For more information on the Partnership for Air-Conditioning, Heating, Refrigeration Accreditation (PAHRA) and related accreditation, please visit: www.pahrahvacr.org



| XVI.A. Heating Start-Up, Checkout, and Operation | |
|---|---|
| Knowledge | Textbook Chapter(s) |
| 1. Understand the importance of manufacturers’ installation and operation requirements. | Chapters 13, 15, 16, 18, 29, 30, 31, 32, 33, 38, 39, 40, 41, 42, 43 |
| Tasks | Textbook Chapter(s) |
| 1. Demonstrate use of tools and instruments. | Chapters 7, 8, 29, 30, 31, 38, 40, 41, 42, 43 |
| 2. Determine equipment electrical, mechanical, and code requirements. | Chapters 2, 3, 7, 8, 12, 13, 15, 16, 18, 31, 32, 33, 38, 39, 40, 41, 42, 43 |
| 3. Verify equipment airflow and distribution requirements. | Chapters 27, 29, 30, 38 |
| 4. Check operation of all electrical control components. | Chapters 12, 13, 15, 16, 18, 30, 38 |
| 5. Check operation of gas train components and measurements. | Chapters 7, 8, 38, 39, 41 |
| 6. Check oil burner components and measurements. | Chapters 7, 8, 39, 42 |
| 7. Check ignition systems. | Chapters 16, 18, 38, 39, 41, 42 |

**Correlation of *Modern Refrigeration and Air Conditioning* to AHRI Curriculum Guide:
XVI. System Installation and Start-Up—page 2**

| XVI.A. Heating Start-Up, Checkout, and Operation (continued) | |
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| Tasks | Textbook Chapter(s) |
| 8. Evaluate fuel supply systems. | Chapters 39, 41, 42 |
| 9. Test for proper combustion. | Chapters 41, 42 |
| 10. Check electrical components for operation and wiring connections. | Chapters 12, 13, 15, 16, 18, 32, 35, 36, 38, 40, 41, 42, 43 |
| 11. Check for correct heating input and adjust to manufacturers' specifications. | Chapters 12, 13, 15, 16, 18, 32, 35, 36, 38, 40, 41, 42, 43 |
| XVI.B. Heat Pump Start-Up, Checkout, and Operation | |
| Knowledge | Textbook Chapter(s) |
| 1. Understand the importance of manufacturers' installation and operation requirements. | Chapters 2, 3, 7, 8, 12, 13, 15, 16, 18, 31, 32, 38, 40 |
| 2. Understand alternative fuel methods. | Chapters 38, 40, 41, 42 |
| Tasks | Textbook Chapter(s) |
| 1. Demonstrate use of tools and test equipment. | Chapters 3, 7, 8, 32, 33, 36, 38, 40 |
| 2. Determine equipment electrical requirements. | Chapters 3, 7, 8, 12, 13, 15, 16, 18, 38, 40 |
| 3. Verify equipment airflow and distribution requirements. | Chapters 27, 29, 30, 32, 38, 40 |
| 4. Check operation of all electrical and mechanical components. | Chapters 3, 7, 8, 15, 16, 18, 27, 29, 30, 38, 40, 43 |
| 5. Check system operation in the heating, cooling, and defrost modes. | Chapters 16, 18, 27, 29, 30, 38, 40 |
| 6. Check supplementary and emergency heat. | Chapters 16, 18, 27, 29, 30, 38, 40 |
| 7. Instruct customer on operation and maintenance of system. | Chapters 3, 36, 40 |
| XVI.C. Air-Conditioning Start-Up, Checkout, and Operation | |
| Knowledge | Textbook Chapter(s) |
| 1. Understand the importance of manufacturers' installation and operation requirements. | Chapters 3, 27, 29, 31, 32, 33, 36, 38 |
| Tasks | Textbook Chapter(s) |
| 1. Demonstrate use of tools and test equipment. | Chapters 7, 8, 10, 11, 29, 30, 31, 32, 33, 38 |
| 2. Determine equipment electrical requirements. | Chapters 12, 13, 15, 16, 18, 31, 32, 33, 38 |
| 3. Verify equipment airflow and distribution requirements. | Chapters 7, 27, 29, 30, 38 |
| 4. Check operation of all electrical and mechanical components. | Chapters 3, 7, 8, 10, 11, 15, 16, 18, 27, 29, 30, 31, 32, 33, 38 |

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XVI. System Installation and Start-Up—page 3**

| XVI.C. Air-Conditioning Start-Up, Checkout, and Operation (continued) | |
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| Tasks | Textbook Chapter(s) |
| 5. Check system operation while following all safety procedures. | Chapters 3, 10, 11, 12, 13, 15, 16, 18, 27, 29, 30, 31, 32, 33, 54 |
| 6. Pull and verify deep vacuum. | Chapters 10, 11, 55, Appendix |
| 7. Perform leak check and make repairs. | Chapters 10, 11, 55, Appendix |
| 8. Conform to all applicable governmental regulations. | Chapters 9, 10, 11, 31, 32, 33, 55, Appendix |