

HVAC 101: Reducing Your Footprint

Educating Homeowners on Refrigerant Pollution by HVAC Technicians:

A Path to Environmental Responsibility

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2.) Environmental Partners: Tradewater, Rebuilding Exchange, Windfree

4.) System Components, Types of Systems- Visual, DIY

5.) Heat Pumps & Energy Rebates, EESP

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Topics:

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1.) The EPA's Regulation Gap in Chicago's Residential Market:

The Environmental Protection Agency (EPA) plays a crucial role in regulating environmental practices, including those related to refrigerant handling in the HVAC industry. However, there have been instances where the EPA's oversight of refrigerant pollution by residential HVAC

technicians has been criticized for potential gaps. Some argue that while the EPA has established regulations and certification requirements for technicians, enforcement and monitoring of these practices may be challenging, especially at the residential level. This oversight could lead to instances of improper refrigerant handling, such as leaks and inadequate disposal, impacting the environment and contributing to refrigerant pollution. As a result, there's a call for increased vigilance, stricter enforcement, and perhaps even greater emphasis on public education to ensure that technicians follow environmentally responsible refrigerant practices and that the EPA's oversight effectively addresses potential shortcomings.

Behind The Scene: Montreal Protocol

The Montreal Protocol, adopted in 1987, is a national treaty, aiming to protect the ozone layer by phasing out **ozone-depleting substances (ODS)**, like **R22, R12**- revised several times to phase out other dangerous chemicals, a dangerous green house gas with a high **global warming potential (GWP)**

Read National Geographic's Article:

[*"Refrigerants Are the Worst Greenhouse Gases You've Never Heard Of.*](#)

[*Here's What You Can Do"...*](#)

2.) Refrigerant Pollution By Techs and Installers

It is crucial to clarify that the vast majority of residential HVAC technicians are committed to ethical and environmentally responsible practices. However, in some instances, a small minority of unscrupulous technicians may mishandle refrigerants, leading to unintended pollution. Refrigerant leaks can result from improper installation, maintenance, or repair procedures, which might release harmful chemicals into the atmosphere. It's important to emphasize that this behavior is not representative of the HVAC industry as a whole. Responsible HVAC professionals follow regulations and guidelines to prevent refrigerant leaks, adhere to safe disposal practices, and actively contribute to reducing environmental impact. As customers, it's essential to hire licensed, certified, and reputable technicians to ensure proper handling and maintenance of refrigerants, contributing to a healthier environment.

3.) Monitoring Refrigerant Handling:

Homeowners can take proactive steps to monitor the refrigerant practices of HVAC technicians working in their homes. Firstly, ensure that you're hiring licensed and certified professionals who adhere to industry regulations. Ask questions about their experience with refrigerant handling and inquire about their methods for preventing leaks. Request a detailed breakdown of the work they will perform, including any refrigerant-related tasks. During the service, observe their practices and ask for explanations if you have concerns. If the technician claims refrigerant needs replacement, ask them to show evidence of a leak, such as pressure readings or dye tests. Responsible technicians will always provide transparent information and offer recommendations that prioritize both system efficiency and environmental protection. By being informed and engaged, homeowners can play an active role in ensuring proper refrigerant practices during HVAC service.

4.) To Homeowners: Step Up to Take Action

Refrigerant pollution resulting from HVAC technicians' practices is a concern that demands awareness and action. Homeowners have a pivotal role in holding technicians accountable for responsible refrigerant handling, minimizing environmental impact. By educating themselves on the subject, homeowners can contribute to fostering an eco-conscious HVAC industry and a greener planet.

****1. Research and Certification:** Begin by researching HVAC certifications and standards. Understand the importance of EPA Section 608 certification, which is mandatory for technicians handling refrigerants. Verify the technician's credentials before allowing them to work on your system. Certified professionals are more likely to adhere to regulations.

****2. Ask Questions:** When hiring HVAC technicians, ask about their refrigerant handling practices. Inquire about leak detection methods, refrigerant recovery, and disposal procedures. A knowledgeable technician will be transparent about these practices and will provide satisfactory explanations.

****3. Understand Refrigerant Types:** Familiarize yourself with common refrigerants used in HVAC systems. Recognize the environmental implications of different types and inquire about the technician's intention to use or replace them. **Residential: R22, 410A**

****4. Pressure Readings and Documentation:** Request pressure readings before and after service. If a technician suggests refrigerant replacement due to a leak, ask for evidence such as pressure readings, dye tests, or visual inspections. Documenting the work done can help ensure transparency and accountability. Note on a closed system.

****5. Dye Tests:** Dye tests are often used to detect refrigerant leaks. Familiarize yourself with this process to understand when it's necessary and what to expect. Note on dye and application

****6. Preventative Measures:** Educate yourself on preventive measures to reduce the risk of refrigerant leaks. This can include regular maintenance, proper installation practices, and prompt repair of any leaks.

****7. Environmental Impact:** Understand the environmental consequences of refrigerant leaks. Learn about ozone depletion and greenhouse gas emissions associated with certain refrigerants. This knowledge will motivate you to seek responsible HVAC practices.

****8. Monitor HVAC Servicing:** During servicing, be present and engaged. Observe the technician's practices and ask questions if anything seems unclear or suspicious. Responsible technicians will appreciate your involvement.

****9. Regular Checkups:** Schedule regular HVAC checkups to detect and address potential refrigerant leaks early. This practice ensures the system operates efficiently and minimizes environmental harm.

****10. Stay Informed:** Continuously educate yourself on industry trends and best practices. Follow reputable sources, attend workshops, and engage in online discussions to stay updated on refrigerant pollution concerns and solutions. **(OR call Northwind!)**

****11. Customer Feedback:** Encourage open communication with HVAC technicians. Provide feedback on their practices, especially if you're concerned about refrigerant handling. Constructive feedback can prompt technicians to improve their methods.

****12. Choose Reputable Technicians:** Opt for established, reputable HVAC companies known for ethical practices. Research online reviews and ask for recommendations from friends or neighbors.

****13.) Use A Company who promotes the destruction of greenhouse gases, like [Tradewater Refrigerant Solutions](#) in Chicago**

Note : Companies that collect and destroy refrigerants ([Tradewater](#)) focus on preventing the release of harmful substances by safely disposing of used refrigerants. They recover these refrigerants from sources like air conditioning systems and industrial equipment, transport them safely, and use processes like incineration or chemical breakdown to ensure they don't enter the atmosphere.

On the other hand, companies that recycle refrigerants aim to extend refrigerant lifespan. They recover used refrigerants, purify them by removing impurities and contaminants, and test them

to meet industry standards. Putting these refrigerants back into the market will increase the chance of them being leaked or polluted.

In conclusion, homeowners have the power to create a more environmentally responsible HVAC industry by educating themselves on refrigerant pollution and holding technicians accountable. By familiarizing themselves with certification, practices, and environmental implications, homeowners can actively contribute to a greener future while ensuring the optimal performance of their HVAC systems. This informed approach not only safeguards the environment but also promotes sustainable practices within the HVAC industry.

5.) Thermostats: Saving Energy

Using a residential thermostat efficiently is a simple yet effective way to manage your home's temperature and energy consumption. By making thoughtful adjustments and utilizing the features of modern thermostats, you can achieve both comfort and energy savings. Here are some strategies to help you use a residential thermostat more efficiently:

1. **Programmable Thermostats:** If your thermostat is programmable, take advantage of its scheduling features. Set different temperature levels for various times of the day. For instance, when you're at work or asleep, you can allow the temperature to be slightly cooler in the winter and slightly warmer in the summer, reducing energy usage without sacrificing comfort.
2. **Smart Thermostats:** Smart thermostats take efficiency to the next level. They learn your habits, adapt to your schedule, and even allow remote control through smartphone apps. By using geo-fencing and sensors, they can determine whether you're at home and adjust the temperature accordingly, ensuring you're not cooling or heating an empty house.
3. **Energy-Saving Modes:** Many modern thermostats have energy-saving modes, like "Eco" or "Away." These modes automatically adjust the temperature to save energy when you're not home. When you return, the thermostat restores the desired comfort level.
4. **Avoid Drastic Temperature Changes:** Instead of setting your thermostat to a drastically different temperature than the current one, make incremental adjustments. This prevents the heating or cooling system from working extra hard to reach the desired temperature quickly, which can lead to energy wastage.

5. **Utilize Zoning Features:** If your home has multiple zones with separate thermostats, take advantage of this zoning. Adjust the temperatures for different areas according to their usage patterns. For instance, keep bedrooms cooler during the day and living areas comfortable for daily activities.
6. **Regular Maintenance:** Ensure your thermostat is functioning optimally by replacing the batteries (if applicable) and cleaning it periodically. Dust and debris can affect its accuracy, leading to inefficient temperature control.
7. **Take Advantage of Natural Heat:** During the winter, open curtains and blinds to let sunlight warm your home naturally. Close them at night to trap the heat. During the summer, close curtains during the hottest parts of the day to block out direct sunlight and prevent unnecessary heat gain.
8. **Consider Your Comfort Range:** Adjust your thermostat settings to a temperature range where you're comfortable. Lowering the heat slightly in the winter and raising it slightly in the summer can lead to substantial energy savings over time.
9. **Use Fans Wisely:** Ceiling fans can help distribute warm air during the winter and create a cooling breeze in the summer. Make sure your fans are set to rotate clockwise in the winter (to push warm air down) and counterclockwise in the summer (to create a cooling breeze).
10. **Monitor and Analyze Usage:** Some smart thermostats provide usage reports and recommendations. Keep an eye on these insights to identify patterns and adjust your settings accordingly.
11. **Seasonal Adjustments:** As the seasons change, your thermostat settings should also adapt. Aim for a slightly lower or higher temperature setting to align with the outdoor climate.
12. **Insulation and Sealing:** Ensure your home is well-insulated and properly sealed. This prevents heat from escaping in the winter and cool air from escaping in the summer, allowing your thermostat to work more efficiently.

6.) Thermostats: Using Fan Mode (ECM only)

The efficiency gain from using the fan mode on a residential thermostat can vary based on several factors, including climate, insulation, the layout of your home, and the specific HVAC system you have. Generally, using the fan mode alone can be more

energy-efficient compared to running the heating or cooling system constantly. However, the exact energy savings percentage is not always straightforward to determine as it depends on the context.

Here are a few ways in which using the fan mode can improve efficiency:

1. **Distribution of Air:** The fan helps circulate air throughout the house, ensuring that heated or cooled air is evenly distributed. This can eliminate hot or cold spots and make the indoor temperature more consistent.
2. **Reduced Cycling:** When the fan is running, the HVAC system may not need to cycle on and off as frequently. This can lead to energy savings by preventing the system from repeatedly starting up, which can be energy-intensive.
3. **Personal Comfort:** By using the fan mode, occupants may feel more comfortable at slightly higher temperatures in the summer and slightly lower temperatures in the winter. This allows you to adjust the thermostat settings while maintaining comfort.
4. **Reduced Strain:** Operating the fan alone is less demanding on the HVAC system than running the heating or cooling components. This can contribute to longer system life and potentially fewer maintenance needs.
5. **Humidity Control:** The fan mode can also help distribute moisture evenly, which can be particularly helpful in humid climates. This may reduce the need for the air conditioner to work harder to dehumidify the air.

Note: However, it's important to note that running the fan continuously may also consume some electricity, so the energy savings may not be as dramatic as turning off the HVAC system entirely. The actual efficiency gain will depend on how often the HVAC system would have been running without the fan mode and how well your home is insulated.

For a more accurate assessment of the energy savings from using the fan mode, consider using a smart thermostat that provides usage reports and insights. These devices can help you monitor energy consumption and understand how different settings impact your energy usage.

In summary, while using the fan mode on your residential thermostat can indeed contribute to energy efficiency, the exact percentage of energy savings will vary based on your specific circumstances.

7.) HVAC Residential DIY Tricks for Homeowners:

Effortless DIY Tricks to Enhance Efficiency: Maintaining a comfortable and energy-efficient home doesn't always require professional help. As a homeowner, there are several simple Do-It-Yourself (DIY) tricks you can employ to optimize the performance of your furnace and air conditioning systems. These straightforward techniques not only enhance your indoor comfort but also contribute to lower energy bills and a reduced environmental footprint. Here's a comprehensive guide to some valuable DIY tricks:

1. Regular Filter Replacement: One of the easiest and most effective tasks is to regularly replace the air filters in both your furnace and air conditioning units. Clogged filters restrict airflow, reducing efficiency and potentially straining the system. A clean filter ensures proper airflow and helps maintain optimal performance.

2. Thermostat Management: Adjusting your thermostat settings based on the season can make a significant difference in energy usage. Lower the thermostat a few degrees in the winter and raise it in the summer to reduce the workload on your heating and cooling systems.

3. Seal Air Leaks: Proper insulation and sealing gaps around windows, doors, and vents can prevent conditioned air from escaping and outdoor air from infiltrating. This reduces the load on your HVAC systems and prevents energy wastage. **MASTIC**

4. Clean Registers and Vents: Regularly clean air registers and vents to ensure unobstructed airflow. Dust and debris accumulation can hinder the distribution of heated or cooled air, making your system work harder than necessary.

5. Keep Outdoor Units Clear: For air conditioning units, ensure that the outdoor condenser is free from debris such as leaves, dirt, and plants. Maintain a clear space around the unit to ensure proper airflow.

6. Balance Airflow: Check the airflow in various rooms. Adjust dampers if necessary to balance the airflow between different areas of your home. This can help maintain consistent comfort throughout your space.

7. Ceiling Fans: Use ceiling fans strategically to help distribute warm air downward in the winter and create a cooling breeze in the summer. This can help alleviate the workload on your HVAC systems.

8. DIY Insulation: Consider insulating your attic and walls with the right materials to prevent heat loss in the winter and heat gain in the summer. Proper insulation can significantly improve the efficiency of your HVAC systems.

9. Regular Maintenance: While more involved than other DIY tasks, scheduling regular maintenance can include cleaning the blower, lubricating moving parts, and checking for any

issues. This preventive care can extend the lifespan of your systems and ensure efficient operation.

10. Professional Inspections: While many tasks can be handled by homeowners, it's recommended to have a professional HVAC technician inspect your systems annually. They can identify potential issues early, perform thorough cleanings, and offer expert guidance.

Implementing these DIY tricks not only empowers homeowners to take control of their indoor comfort but also contributes to increased efficiency and reduced utility costs. By investing a little time and effort into maintaining your furnace and air conditioning systems, you'll enjoy a more comfortable and environmentally friendly living space.

8.) Heat Pump Facts: Improving Energy Costs

Certainly, here's a list of facts outlining how modern heat pumps can enhance utility costs:

1. **High Efficiency:** Modern heat pumps are designed for exceptional efficiency, using minimal energy for heating and cooling.
2. **Energy Savings:** Heat pumps can reduce heating costs by up to 50% compared to traditional systems like furnaces.
3. **Dual Functionality:** They provide both heating and cooling, eliminating the need for separate systems.
4. **Inverter Technology:** Variable-speed compressors adjust output, saving energy by avoiding frequent starts and stops.
5. **Zoning Capability:** Heat pumps can be zoned, directing conditioned air only where needed, reducing energy waste.
6. **Air-Source and Ground-Source Options:** Choose air-source for flexibility or ground-source (geothermal) for even higher efficiency.
7. **Renewable Energy:** Heat pumps utilize ambient heat from the air or ground, minimizing reliance on fossil fuels.
8. **Carbon Emission Reduction:** By consuming less energy, heat pumps help decrease carbon emissions, benefiting the environment.
9. **Consistent Performance:** Heat pumps maintain consistent indoor temperatures, reducing the need for energy-intensive adjustments.

10. **Smart Thermostat Compatibility:** Integration with smart thermostats allows precise control and optimization for energy efficiency.
11. **Low Maintenance:** Modern heat pumps have fewer mechanical components, reducing maintenance requirements.
12. **Long Lifespan:** With proper maintenance, a heat pump can last up to 20 years, providing long-term energy savings.
13. **Government Incentives:** Many regions offer incentives and rebates for installing energy-efficient heat pump systems.
14. **Quick Payback:** The initial investment in a heat pump can often be recouped through energy savings within a few years.
15. **Quiet Operation:** Modern heat pumps are designed to operate quietly, maintaining a peaceful indoor environment.
16. **Reduced Carbon Footprint:** By consuming less energy and using renewable sources, heat pumps contribute to lower greenhouse gas emissions.
17. **Reduced HVAC Cycling:** Heat pumps with variable-speed technology reduce the frequency of HVAC cycling, saving energy.
18. **Even Heating and Cooling:** Heat pumps provide uniform temperature distribution, minimizing energy wastage.
19. **Optimal Humidity Control:** Some heat pumps help maintain indoor humidity levels, enhancing comfort and energy efficiency.
20. **Customizable Solutions:** Modern heat pumps offer various sizes and designs to suit different homes and spaces.

These facts emphasize the energy-saving benefits of modern heat pumps, making them an attractive option for homeowners looking to lower their utility costs while maintaining indoor comfort.

9.) HVAC Terminology

Certainly, here's a list of 150 residential HVAC terms rearranged in alphabetical order:

1. AFUE: Annual Fuel Utilization Efficiency – furnace efficiency.
2. AHRI: Air Conditioning, Heating, and Refrigeration Institute – certifies equipment.
3. Air Changer: Replaces indoor air.

4. Air Exchange Rate: How often air is replaced.
5. Air Purifier: Removes contaminants.
6. Air-Cooled System: Uses air for cooling.
7. Airflow: Movement of air through HVAC system.
8. Airflow Restriction: Blocks airflow.
9. Blower Door Test: Measures air leaks.
10. Blower Motor: Moves air through system.
11. BTU: British Thermal Unit – heat output/energy.
12. BTU Capacity: HVAC unit's heat output.
13. BTU Output: Heat produced by unit.
14. Carbon Monoxide: Harmful gas, proper venting.
15. Circulating Pump: Moves hot water.
16. Compressor: Increases refrigerant pressure, facilitating heat exchange.
17. Condensate Drain: Removes cooling water.
18. Condenser: Releases heat outdoors in A/C or heat pump. (Outdoor Unit)
19. Condenser Coil: Releases heat in A/C.
20. COP: Coefficient of Performance – heat pump efficiency.
21. Dehumidifier: Removes excess moisture, prevents mold.
22. Deflector Plate: Redirects airflow.
23. Defrost Cycle: Prevents ice buildup.
24. Desuperheater: Transfers excess heat.
25. Duct Board: Material used for ducts.
26. Duct Cleaning: Removes dust for air quality.
27. Duct Insulation: Covers ducts to prevent heat loss.
28. Duct Sizing: Proper duct dimensions.
29. Ductless Air Handler: Part of ductless mini-split.
30. Ductless Mini-Split: Heats/cooling without ducts.

31. Dual Fuel System: Combines heat pump, furnace.
32. ERV: Energy Recovery Ventilator – exchanges heat/moisture.
33. ERV Core: Heat/moisture exchange material.
34. EER: Energy Efficiency Ratio – cooling efficiency.
35. Energy Star: Energy-efficient products.
36. Economizer: Uses outside air for cooling.
37. Evaporative Cooler: Cools air over water pads.
38. Evaporative Cooling: Cools air through water evaporation.
39. Evaporator Coil: Absorbs heat from air indoors.
40. Evaporator Fan: Blows air over coil.
41. Expansion Valve: Converts liquid to vapor.
42. Exhaust Fan: Removes stale air.
43. Exterior Air Intake: Brings in fresh air.
44. Fan Coil Unit: Part of a hydronic system.
45. Filter: Device trapping dust/particles for clean airflow.
46. Flame Sensor: Detects burner flame.
47. Flare Fittings: Connects refrigerant lines.
48. Flue: Removes combustion gases.
49. Flue Pipe: Removes combustion gases.
50. Gas Valve: Controls gas flow to burners.
51. Ground Source Heat Pump: Uses ground as heat source/sink.
52. Head Pressure: Refrigerant pressure at compressor outlet.
53. Heat Exchanger: Transfers heat from gases to air.
54. Heat Exchanger Coil: Transfers heat.
55. Heat Gain: Increases indoor temp.
56. Heat Handler: Distributes conditioned air through ducts.
57. Heat Load: Heat your HVAC needs to remove.

58. Heat Loss: Decreases indoor temp.
59. Heat Pump: Provides heating/cooling by transferring heat between indoors/outdoors.
60. Heat Pump Reversing Valve: Changes heating/cooling mode.
61. Heat Recovery: Reusing heat energy.
62. Heat Recovery System: Captures heat for efficiency.
63. Heat Recovery Ventilator (HRV): Exchanges stale air with fresh air.
64. Heat Sink: Absorbs heat from refrigerant.
65. Heat Strip: Electric heating element.
66. Heat Transfer: Moves heat between spaces.
67. Heatpump System: Combines heating/cooling in one unit.
68. HSPF: Heating Seasonal Performance Factor – heat pump efficiency.
69. Humidifier: Adds moisture, prevents dryness.
70. Hydronic Boiler: Heats water for radiant heat.
71. Hydronic Heating: Uses water to transfer heat.
72. Hydronic Radiator: Uses heated water.
73. Inverter Technology: Variable-speed operation.
74. Indoor Air Quality (IAQ): Air cleanliness/comfort.
75. Indoor Unit: Evaporator coil, air handler.
76. Induction Unit: Heats using air/steam.
77. Kilowatt (kW): Electrical energy measurement.
78. Load Balancing: Adjusts airflow for consistent temps.
79. Load Calculation: Heating/cooling needs.
80. Low Ambient Kit: Allows A/C in cold temps.
81. Manifold Gauge Set: Measures refrigerant pressure.
82. Manual J Calculation: Determines load.
83. MERV Filter Rating: Filter's effectiveness.
84. MERV Rating: Measures filter efficiency.

85. Multi-Stage System: Operates at multiple speeds.
86. Outdoor Unit: Houses compressor, condenser.
87. Outside Air Intake: Brings in fresh air.
88. Oversizing: System too large for needs.
89. Pilot Light: Ignites burner.
90. Plenum: Air distribution box.
91. Pressure Switch: Shuts off system during unsafe conditions.
92. Primary Heat Exchanger: Transfers heat.
93. Programmable Thermostat: Set schedules.
94. Radiant Barrier: Reflects heat.
95. Radiant Heating: Uses radiant heat panels.
96. Radiant System: Uses hot water to heat.
97. Radiant Tubing: Carries heated water.
98. Radiant Valve: Controls water flow.
99. Radiant Zone: Heated area.
100. Radiant Zone Valve: Controls water flow.
101. Radiant Zone Valve Actuator: Controls valve.
102. Reciprocating Compressor: Alternating motion.
103. Refrigerant: Fluid transferring heat in HVAC systems.
104. Refrigerant Charge: Amount of refrigerant.
105. Refrigerant Lines: Transport refrigerant.
106. Refrigerant Recovery: Collects and reuses refrigerant.
107. Refrigerant Recycling: Cleans and reuses refrigerant.
108. Refrigerant Reclamation: Purifies and reuses refrigerant.
109. Refrigerant Replenishment: Adds refrigerant.
110. Refrigerant Scale: Measures refrigerant weight.
111. Refrigerant Subcooling: Cools liquid refrigerant.

112. Refrigerant Superheat: Heats vaporized refrigerant.
113. Refrigerant System: Components for cooling.
114. Refrigerant Type: Specific refrigerant used.
115. Refrigerant Vaporization: Turns liquid to vapor.
116. Return Air: Pulled into system for conditioning.
117. Scroll Compressor: Moves refrigerant in spiral motion.
118. SEER: Seasonal Energy Efficiency Ratio – A/C cooling efficiency.
119. Secondary Heat Exchanger: Further heat transfer.
120. Sensible Heat: Change in temperature.
121. Single-Stage System: Operates at one speed.
122. Smart Thermostat: Controlled remotely.
123. Steam Radiator: Heats through steam.
124. Subcooling: Refrigerant cooling past condenser.
125. Suction Line: Transfers low-pressure refrigerant.
126. Superheat: Refrigerant temperature beyond boiling point.
127. Supply Air: Pushed back into home.
128. Solenoid Valve: Controls refrigerant flow.
129. Static Pressure: Airflow resistance in ducts.
130. Subcooling: Cools liquid refrigerant.
131. Suction Line: Transfers low-pressure refrigerant.
132. Superheat: Refrigerant temperature beyond boiling point.
133. Supply Air: Pushed back into home.
134. Solenoid Valve: Controls refrigerant flow.
135. Static Pressure: Airflow resistance in ducts.
136. Thermostat: Device controlling HVAC system, setting desired temperatures.
137. Thermostat Programming: Setting temp changes.
138. Thermostatic Expansion Valve (TXV): Controls refrigerant flow.

139. Two-Stage System: Operates at two speeds.
140. UVC Lights: Kills bacteria, mold in ducts.
141. UV Air Purifier: Uses UV-C light to kill microorganisms.
142. VAV System: Variable Air Volume – adjusts airflow.
143. Vent Damper: Controls ventilation airflow.
144. Ventilation: Fresh air exchange.
145. Ventilation Rate: How often air is replaced.
146. Vent Damper: Controls ventilation airflow.
147. Ventilation: Fresh air exchange.
148. Ventilation Rate: How often air is replaced.
149. Warm Air Return: Returns air for conditioning.
150. Water-Cooled System: Uses water for cooling.