AIR CONDITIONING 101

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Finding the right air conditioner for your home or business can be challenging if you aren't sure what to look for. There are different types of systems that can keep you cool and understanding how to maintain them is important. You also may be struggling with making the decision to replace your current cooling system. There are signs that indicate your system needs replaced and there are also ways to troubleshoot problems with your air conditioner.

Types of Air Conditioners

Deciding the best option for your cooling needs can be confusing and exhausting when looking at everything available in the industry. We want to provide you with information that is concise and easy to understand how they operate. Information is knowledge and knowledge is power, so we want to give you the power to buy smart for both your wallet and your needs! Below are the most common types of air conditioning systems and the process by which they operate.

Central Air Conditioners

Central air conditioners are the most commonly used cooling system in the U.S. This system takes cool air and circulates it through a system of supply ducts and return registers. These supply ducts and registers can be found in many locations:

- Openings in walls
- Openings in floors
- Grills in the ceilings

As the system carries the cool air through the home, it becomes warmer as it travels through the system. The air then circulates back to the central air conditioner through the return ducts and registers. A benefit of a central air conditioner is that it helps dehumidify the incoming air but with extreme humidity, you may have to invest in a dehumidifier to help lower the moisture in the air.

There are also two different types of central air conditioners to choose from.

- **Split-system central air conditioner** – for this type of system, there are two separate cabinets. One is located outside in a metal cabinet and houses the condenser and compressor. The second cabinet is on the inside of the house and contains the evaporator. Typically, the indoor cabinet contains a furnace or part of a heat pump, which has the evaporator coils installed in the main supply duct of the heat pump or furnace. This system is great for anyone who already has a furnace but no air conditioner. It offers the most affordable option for their needs.
- **Packaged central air conditioner** – the name is a good indicator of what to expect from a packaged central air conditioner. The evaporator, compressor, and condenser are all installed in one cabinet. This cabinet is typically placed on a roof or a concrete slab near the house's foundation. Packaged ones normally include electric heating coils or a natural gas furnace, which eliminates the need for a separate furnace inside.

Ductless Mini Split Air Conditioners

This is a great option for cooling your home or business without having to deal with the ductwork. Other systems require ductwork so that the cool air can travel throughout the space. A ductless mini split air condition doesn't require ductwork because it has an air conditioner or a heat pump outside that connects to units in the home that handle the cooling being pushed into them from outside. You can control the temperature of a whole home or just one room by controlling the air handlers in each specific area. This allows for more control and a more efficient way to control the temperature and cost of operating the ductless mini split air conditioner.

Heat Pumps

A heat pump is a type of split system that utilizes the functions of both heating and cooling in the home. During the summer months, it provides cool air to flow throughout your house and during the winter months, it supplies warm air to keep you comfortable in the chilly weather. There are two types of heat pumps available:

- Air source heat pumps – These pumps pull the heat from the outdoors or release the heat from your home into the outdoors. Air source heat pumps achieve the goal of heat and cool no mater what the weather is.
- Geothermal heat pumps – Also known as ground source heat pumps, they pull the heat from or put the heat back into the earth in order to cool and heat your home.

Does My Cooling System Need Replaced?

Not everyone knows when it's time to replace his or her cooling system or if it just needs some repair work done. Here are a few key things to take into consideration when deciding to replace your system.

- If your system is more than 10 years old.
- If your system isn't efficient as it was or should still be, especially if your system has a low SEER rating.
- If your having to invest in expensive repairs, it may be time to weigh the costs of those repairs compared to buying a new and more efficient system.
- Breakdown, breakdown, breakdown! If there are constant malfunctions of your system, even if the repairs are cheap, the constant breakdowns add up in cost over time.
- If your system uses R22 Freon, which the federal government wants to phase out in order to conserve energy across the nation. Therefore, Freon is far more expensive and harder to come by in this day and age.
- If your home isn't keeping you comfortable with a cool atmosphere.

Troubleshooting Your Air Conditioner

There can be several reasons why your air conditioner isn't working properly. Checking these few things might help you troubleshoot a problem with an easy fix.

- Make sure all the registers are opened wide
- Ensure the furnace filter is clean and fits properly
- Clean off the condenser coils outside

If your system still is not functioning properly then contacting a certified HVAC contractor would be the best option to discover what the issue might be.

Improving Cooling System Efficiency

You can improve the efficiency of your cooling system rather easily with some easy options. All of these things will ensure that your home stays cooler and that your air conditioner doesn't have to run quite as hard or as often, which is better for the environment and better for your wallet!

- First, make sure the area around your outdoor cabinet is clear of any dirt and debris. This will allow your system to operate more efficiently without dealing with clogging.
- Second, make sure your indoor vents are free from blockages and you can also vacuum the indoor vents as well. This prevents dust from getting into the vents and disrupting the steady airflow.
- Third, try increases or decreases your thermostat by 5 to 8 degrees. The temperature change helps your system to not work as hard to achieve dramatic drops and spikes in the indoor temperature unnecessarily.
- The fourth option is to try and keep any appliances or lamps away from the thermostat. The heat from these things can confuse the thermostat and make the air conditioner work harder to cool the home.
- Number five is simply and just requires you to close curtains and blinds during the hottest part of the day.
- Option six is to try and avoid using your oven or dryer during the hottest hours of the day, that would help decrease your cooling system from having to deal with the hot temperatures indoors and outdoors.
- Lastly, try to make sure any ductwork that is exposed is insulated and that no leaks are present, that way nothing from your air conditioner leaks out.