When you're investing in HVAC equipment, it's important to understand some industry-specific terminology to make sure you're making the right purchase decision. Here are some terms to improve your HVAC knowledge:

Air Conditioner: An air conditioner is a system used to cool and control temperatures within a home or building. Air conditioners use refrigerant to absorb indoor heat through an evaporator and move it outside to a condenser unit that disperses the heat.

Air Handler: A component of cooling systems that contains its own fan and evaporator coil to absorb heat energy and disperse cool air; used in mini split systems and in air conditioners as an alternative to a furnace's blower motor.

Air Purifier: An indoor air quality product that provides housing for the most efficient air filters available. Works well in conjunction with an air scrubber.

Air Scrubber: An indoor air quality product that targets and eliminates VOCs and other contaminants in the air. Works well in conjunction with an air purifier.

Annual Fuel Utilization Efficiency (AFUE): AFUE is a standard indicator for furnaces and boilers that measures how efficiently fuel is transformed into heat. AFUE is measured in percentages, which represent the proportion of fuel that's converted to heat.

AFUE rates a heating system's fuel efficiency similarly to how Miles Per Gallon (MPG) rates a car's fuel efficiency. For example, a furnace with an AFUE rating of 92% will produce 92 cents of heat for every dollar of fuel.

High AFUE system ratings fall above 90%, mid-AFUE system ratings are in the 80% – 90% range, while low AFUE system ratings are anything below 80%.

Blower Motor: A blower motor is the component in an HVAC system that drives the fan that pulls air through return ducts and pushes treated air through ductwork to disperse it in your home. Blower motors are housed in the furnace, but are also utilized by air conditioners.

Brazing: A method of joining HVAC lines at a higher temperature than soldering, to produce a strong and clean fixture.

British Thermal Unit (BTU): A British Thermal Unit (BTU) is the measurement used in examining the heat content of fuels. One BTU is the heat required to raise the temperature of one pound of liquid water by one degree Fahrenheit at a constant pressure of one atmospheric unit. When using BTUs with regard to heating a household, thousands of BTUs per hour are needed.

By converting fuel sources from metrics such as weight or volume to BTU, we can accurately compare different fuels. This allows us to conduct cost analysis and efficiency comparisons of furnaces, heat pumps, air conditioners or any other heating or cooling appliance.

Capacitor: A capacitor is a device used to store electric charges. In air conditioners, they provide the electricity required to start the motor that powers the compressor, blower and fan. Once started, they also power the system to keep it running.

CFCs, HCFCs, and HFCs: Cholrofluorocarbon, Hydrochlorofluorocarbons, and Hydrofluorocarbons are used in the manufacturing of refrigerants and contribute to the Earth's ozone depletion in the upper atmosphere.

Circulator: A pump used in boiler-based heating systems to circulate hot water throughout the closed circuit.

Compressor: A component in cooling systems that creates refrigerant flow by transforming it from a low-pressure gas to a high-pressure, high-temperature gas as it approaches the outdoor condenser coil.

Condenser Coil: The condenser coil's primary responsibility in a cooling system is to disperse or release the heat that was absorbed by the evaporator coil. A condenser coil is located in the outdoor unit of air conditioning systems.

Contactor: A contactor is an electrical component tasked with controlling the on/off switch in a circuit.

Dehumidifier: Dehumidifiers remove excess moisture from the air within a home in order to improve comfort, prevent or reduce mold growth and prevent damage to wooden furniture, floor and doors.

Dehumidifiers operate by drawing in warm air to their refrigerated coils using a fan. Once the air contacts the refrigerated coils, it's cooled and produces condensation which is left behind in the appliance, and the air is returned back into the room.

Dehumidifiers may be set up as portable, standalone units or may be ducted into a home's ductwork to operate within an entire house.

Ductless Mini Split Head: The indoor component of a mini split system that is responsible for temperature moderation, including heat absorption and dispersion, using an evaporator coil and a fan. Up to four mini split heads can be installed per outdoor compressor unit.

Electric Heat Strip Kit: Coil-like elements that generate resistance-based heat when electricity flows through them. When your system blows air across them, these strips distribute that heat out into your home.

Energy Recovery Ventilation System (ERV): An indoor air quality system that automatically pumps fresh, outdoor air into the home and pumps out stale, indoor air.

Evaporator Coil: The evaporator coil is the component in an HVAC system that absorbs heat energy as refrigerant moves through it and evaporates. Evaporator coils work together with condenser coils to regulate indoor temperatures.

Flare Fitting: A compression-based method of joining tubing and piping which creates a secure, leak-proof connection.

Flue Pipe: A flue pipe acts as a furnace's chimney, and releases dangerous flue gases that are a byproduct of the combustion process safely away from the home.

Furnace Gas Valve: A furnace's gas valve is a fuel system component used to regulate the gas flow from a supply line or storage tank. The gas valve opens and closes to allow or restrict gas flow to the ignitor and burners.

Heat Exchanger: A heat exchanger is a device, typically a set of metal coils, in a furnace or boiler that safely transmits heat energy from the combustion process toward ductwork and ventilation.

Heat exchangers are capable of transmitting heat from solids, liquids, or gases and are essential to all aspects of residential HVAC and plumbing.

Heat Pump: Heat pumps are both a home heating and cooling solution and operate by absorbing heat from one area and transmitting it to another. In the cooling season, it absorbs heat from inside and pumps it outside, and in the heating season it absorbs heat from the outside and pumps it inside.

Heat pumps are an energy-efficient heating option as they don't have to create heat, they only transfer it. Heat pumps are roughly as efficient as air conditioners when in cooling mode.

HSPF2 Rating: HSPF stands for Heating Seasonal Performance Factor, and is a measurement of a heat pump's efficiency when in heating mode. HSPF2 is calculated by measuring how many BTUs of heat is delivered by a heat pump per kilowatt hour.

Humidifier: Humidifiers increase the moisture level within a home by exciting water molecules, either through vibrations or heat, and emitting the resulting water vapor into a home.

Hygrometer: A hygrometer is an instrument used to measure the humidity, or amount of water vapor, in the air.

MERV Rating: The MERV rating scale is from 1-16 and quantifies the minimum efficiency of the air filter. Lower MERV rated filters are not as effective as high MERV rated filters at removing contaminants from the air.

Mini Split: Mini splits are a ductless heating and cooling solution for homes. The operate entirely with refrigerant lines and air handlers, or heads, to move heat from one location to another. Similar to heat pumps, mini splits can be set to heating or cooling and do not have the burden of producing heat, only to transmit it. Mini splits are very energy efficient as they lose significantly less heat than duct-based heaters and coolers.

Plenum: A space within an HVAC system's ductwork that provides adequate air circulation for heating, venting, and air conditioning.

Refrigerant: Refrigerant is a chemically specialized liquid that undergoes repeated phase changes from liquid to gas and back to heat and cool our homes and appliances.

Refrigerant Lines: Refrigerant lines are typically made out of copper, and are responsible for carrying refrigerant from the condenser coil to the evaporator coil.

Return: A vent or grate that delivers air from the home back to HVAC equipment.

Return Drop: Like a plenum, a return drop provides space within an HVAC system's ductwork so that adequate air circulation can return to the heating or cooling elements.

SEER2 Rating: SEER stands for Seasonal Energy Efficiency Ratio, and the SEER2 rating is the second generation of the HVAC efficiency measurement that was implemented on January 1, 2023. The rating applies to air conditioners, heat pumps and mini splits and is calculated by first measuring the total cooling output for a season, and then dividing it by the total electric energy taken to run the system during the same season.

The SEER2 rating gives you a good indication on how much you will spend on electricity while using the appliance.

There is a minimum required SEER2 rating for air conditioners in the United States, however the requirement is different in the North from in the South. In the North, AC units must have a rating of 13.4 or higher, while in the South they must have a rating of 14.3 or higher. Mini splits and heat pumps have the same national minimum rating of 14.3 or higher.

Some air conditioners, heat pumps and mini splits have a SEER2 rating as high as 25.

Sizing: HVAC sizing refers to properly matching a heating or cooling system's output with a unique home. Factors that impact proper sizing are square footage, number of windows and doors, and number of occupants.

Smart Thermostat: A thermostat that's capable of remote functioning, tracking energy usage, evaluating system health and more.

Temperature Sensor: A small, remote device that measures the temperature of a certain area in your home. Used to improve the visibility of your thermostat in order to more closely achieve your set temperature in all rooms of your house.

Tonnage: Tonnage is a measurement of the cooling capacity of an air conditioner unit. The exact measure of an air conditioner's tonnage is the amount of heat (measured in BTUs) that the unit can remove from your home in one hour.

For example, a one-ton AC appliance can remove 12,000 BTUs of heat from your home in one hour.

Tonnage is a key measurement used in matching an air conditioner with a home. Typically, a residential home will be equipped with anywhere from a two-ton to five-ton air conditioner, depending mainly on the square footage of the house. Other factors in play are the number of occupants and the total number of windows.

While there are conflicting thoughts on industry-standard square footage to tonnage ratio, a good range to aim for is one ton of cooling for roughly every 500 square feet of your home.

VOC: Volatile Organic Compounds are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short and long term adverse health effects.

Zone Damper: A valve that regulates the airflow within ductwork or other air-handling equipment. Zone dampers support air as it turns around sharp bends within ductwork.

Zoning: The process of segmenting your home into different areas using dampers or an auxiliary system, and providing each with individual heating and cooling outputs in order to improve comfort and energy efficiency.