

## Acid

Acid is created when a compressor burns out, usually because the refrigerant reaches extremely high temperatures. Having acid in a refrigeration system is a big problem for compressors.

## Air Flow Distribution

This is how we refer to the flow of air through the designated room/space. The distribution of air flow is controlled by duct work sizing and using proper blower motors.

## Air Handler

The air handle is most often located inside the property - either in an attic, garage or a closet/cupboard. It's one of the main components in a split air conditioning and heating system.

## Algae

Anybody who has spent time maintaining an AC unit will know that algae is the primary [cause of clogged drain lines](#). The algae grows inside condensate lines and thrives in a dark and humid environment.

## Amps

Also know as amperage, this is the strength of an electrical current.

## Azeotrope

This is a mixture of liquids combined in the chemical process so that they won't separate into individual components. It's used as a refrigerant because the components will evaporate and condense together as one.

## Blower Motor

The blower motor is located inside the air handler or furnace. It's job is to move the motor wheel, which in turn pushes a volume of air into heating, cooling and ventilation applications.

## Blower Wheel

The wheel is attached to the aforementioned blower motor and moves a volume of air into HVAC units. The wheels can get dirty and blocked, which can restrict air flow.

## **Breaker**

This is an automatic electric switch designed to protect a circuit from damage caused by too much current. A 40 amp breaker will trip if the electrical current exceeds 40 amps.

## **BTU**

BTU means British Thermal Unit and is a traditionally used unit of heat. It basically means the amount of heated needed to change one pound of water by one degree Fahrenheit in one hour.

When BTU is used with air conditioning units, it means the amount of BTU's it can remove within one hour. For example, a 12,000 BTU AC unit is the equivalent of 1 refrigeration ton (RT) of cooling.

## **Burnout**

This is compressor burnout, as mentioned in Acid above. When the compressor motor burns out it can create so much heat that the refrigerant is burnt, which is what creates the acid.

## **Capacitor**

A capacitor stores electrical charge to boost compressors and motors. With HVAC units the two capacitors you'll likely run into are run capacitors and start capacitors.

## **CFM**

This is an acronym for cubic feet per minute (cu ft/min) and it measures the velocity of air flowing into or out of a space.

## **Coil**

The heat transfer in a refrigeration cycle takes place in the coil. You typically would have both a condensing coil and an evaporator coil. Coils can also be found inside other common electrical devices like transformers.

## **Compressor**

This unit compresses the refrigerant so that it can flow through the refrigeration cycle. Heat pumps, split systems, mini splits, wall units, and refrigerators all have compressors in them. These are usually the most expensive part of an HVAC to replace if they become faulty.

## Condensate Drain

The condensate drain is normally made with the help of Copper, PVC or CPVC. It drives the condensate either outside the place or into some other kind of the main drain.

## Condenser

In a central heating & air-conditioning system, the outdoors unit is referred to as the condenser. The main parts present in a condenser are: Fan motor, coils & compressor. There are some other small parts as well such as contactors & capacitors.

## Condensing Coil

It is the heat exchanger present in the outdoors condensation unit (Condenser). These coils should be properly cleaned and kept away from any kind of obstructions & debris.

## Contactors

It is a relay used to complete the circuit upon the application of voltage. It normally remains open & closes only when voltage is provided. It is present in the condenser and is used to supply power to the fan motor & the compressor. It is also used to give power to the electrical heating frameworks.

## Chiller

It is usually present in huge buildings & is used for various business applications. To finish the refrigeration cycle, it makes use of cold water to move heat from the fan coil or air handler.

## Dampers

These are plates or valves which are installed in zoning frameworks in order to regulate the airflow according to temperature requirements.

## Dehumidification

The process in which moisture is removed from the air. In muggy and damp climates, it is very important in order to stop the bacteria from growing.

## Dew Point

The point at which the air condenses into liquid due to the high ratio of moisture in it is the Dew Point. An accurate calculator for dew point can be found [here](#).

## **Discharge Line**

The line which carries vapor from the compressor to the condensing coil is the discharge line.

## **Drain Pan**

It is joined with the evaporator coil. It is used to gather the moisture and then remove it via the condensate drain line.

## **Dry Bulb**

It is used to represent the air's temperature. It can be measured with the help of a normal thermometer.

## **Duct**

Heat-loss resistant material that helps to move air in a place.

## **Efficiency**

The energy needed by HVAC systems to work is its efficiency. It is calculated with the help of the SEER rating.

## **Element**

It is used in various heating applications. When the air passes over the hot element, heat is absorbed by the air. This heat is then used to heat a building or a home. The heat produced through electricity is the least efficient heating strategy in HVAC.

## **Evaporator Coil**

It is one of the most costly parts present in an air conditioning & heating system. It is basically a heat exchanger and is present within the air handler.

## **Fan Motor**

The fan motor is basically the condensing unit. Blades are attached to the motor in order to move some amount of air.

## **Flooded**

When there is excess refrigerant in the evaporating coil or the condensing coil, we use the term Flooded. It is a term specific to HVAC.

## **Freon**

It is the Trademark name for older refrigerants.

## **Furnace**

In a gas or oil HVAC, the spot where all the heat transfer occurs while in the heating mode is called the furnace.

## **Gas**

The refrigerant is known as the gas in HVAC systems.

## **Gauges**

It is a tool used to measure the pressure of the refrigerant. Some gauges are also used to measure the temperature relative to the pressure of the refrigerant.

## **Hard Start**

It is also called the start capacitor. In order to get the compressor started, the hard start sends additional voltage. It helps to increase the compressor's life.

## **Heat**

It is the type of energy which makes the molecules move and increases a material's temperature.

## **Heat Load Calculation**

In order to heat or cool some space, a specific amount of refrigerant and airflow is needed. This is called heat load calculations. Other factors also play a part in these calculations.

## **HEPA**

It stands for High-Efficiency Particulate Air. It is a type of high-quality air filter.

## High voltage

In HVAC, there is no particular value of high voltage. However, anything greater than 50 volts is said to be high voltage. It has a different meaning in applications apart from HVAC.

## Humidistat

It is a device which controls the level of humidity.

## Humidity

The quantity of water vapor present in the air is known as humidity. High humidity levels (<60%) result in the growth of bacteria.

## HVAC

It stands for heating, ventilation and air conditioning. If there is an R, it stands for refrigeration.

## IAQ

It stands for Indoor Air Quality.

## Insulation

The kind of material which prevents the transfer of heat. It is present in suction lines, air handlers, ductwork, etc.

## KW

It stands for Kilowatt. It is equal to 1000 Watts or 1.34 Horse Power or 3.6 Mega joules.

## Latent Heat

If the material is changing state at a constant temperature, some amount of heat is either absorbed or discharged. This amount is known as Latent Heat.

## Liquid line

The small line which carries the refrigerant from the condenser to the metering device is called the liquid line. It flows in the direction of the air handler.

## **Low Voltage**

Any amount of voltage which is less than 50 Volts, is referred to as low voltage in HVAC.

## **Microns**

It is used to measure the vacuum. The number of microns is inversely proportional to the depth of the vacuum. Normally, the vacuum is pulled up to a value of 500 microns.

## **Mini Split**

An air conditioning or heating system without any ducts.

## **Megger**

It is a tool which measures the value of resistance in any electrical component like fan motor or compressor with the help of high voltage.

## **Metering Device**

It is a device used to measure the quantity of refrigerant entering the evaporator coil in the refrigeration cycle.

## **MERV**

It stands for Minimum Efficiency Reporting Value. This rating tells us the efficiency of air filters and is directly proportional to it.

## **Multi-meter**

It is a tool which measures amps, ohms, volts, temperature & microfarads.

## **Negative Pressure**

If the pressure in an area is less than the pressure of the surrounding area, we say a negative pressure has been created. In new air handlers, the evaporation coil is in negative pressure. For proper drainage, the condensate drain line has a filter when the system is working.

## **Non-Programmable Thermostat**

A type of thermostat which cannot be programmed to switch on and off at particular times & days.

## **Ohms**

The resistance is measured in Ohms. Voltage divided by the current gives us the resistance.

## **Package Unit**

If the condensing coils, evaporator, compressor, heaters, blower motor & fan come in one single unit, it is called as a package unit. They are very popular in an industrial building as well as in mobile homes.

## **Plenom**

It is a box in the ductwork which helps in distributing the air in various directions.

## **Positive Pressure**

In some air handler systems, the blower motor is present before the evaporation coil. The air is blown via the coil and into the drain line. Thus, there is no need for a trap in the condensation drain line. The new Trane Hyperion is an example of positive pressure systems.

## **Preventative Maintenance**

A series of precautionary steps which help in keeping your system up to date and working perfectly. You can get more information [here](#).

## **Programmable Thermostat**

If you can program a thermostat to work in accordance with a set schedule, it is a programmable thermostat.

## **PURON**

Carrier & Bryant use this term for refrigerant 410A.



## **Radiant Floor Heating**

This type of floor heating utilizes several types of heat transfer like (convection, radiation & conduction) underneath the floor.

## **Refrigerant**

It is also known as gas, PURON, or FREON. When the refrigerant boils inside the evaporator at low pressure & temperature, heat is absorbed by it. On the other hand, heat is released by the refrigerant inside the condenser at high pressure & temperature.

## **Refrigeration**

Coolers & Chillers are referred to as refrigeration. For example, ice makers, walk-in freezers, etc.

## **Relay**

This is a component which controls voltage in a sequence. A relay can either be closed or open.

## **Return Air**

In order to heat it or dehumidify it, blower sucks air. This air is called Return Air.

## **Return Vent**

The vent where the air filter is normally placed. As compared to supply vents, return vents are not adjustable.

## **Saturation**

When one substance becomes full of another substance, it is known to have become saturated.

## **SEER**

It stands for Seasonal Energy Efficiency Rating. It gives the efficiency of an HVAC system and is directly proportional to it. Technicians cannot measure it in the field.

## **Sensible Heat**

If the addition of a quantity of heat increases the temperature of the air but doesn't have any effect on the moisture content, then that amount of heat is known as sensible heat.

## **Sequencer**

It is a kind of relay utilized in electric heating. Sequencer is used to open the circuits in a timed way.

## **Short to Ground**

If there is no resistance from an electrical device to the ground, it is said to have been shorted to the ground. If such is the case with a compressor, then it would cost less money to get a new one instead of trying to repair the shorted one.

## **Split System**

A cooling or heating which comprises of furnace/air handler & a condenser is known as a split system. It is also called the central cooling & heating system.

## **Solenoid**

A solenoid is a valve which prevents the flow of the refrigerant. Several kinds of solenoids are used in HVAC applications.

## **State**

One of the 3 main types of matter. It can be solid, liquid or gas.

## **Starved**

If the condenser or the evaporator coil doesn't have enough refrigerant in it, this condition is known as starved.

## **Static Pressure**

The pressure present inside the ductwork is called Static Pressure. It measured in inches of water. If the ductwork is undersized, the supply side will have a high amount of static pressure.

## Subcool

There is a difference between the temperature of the liquid line and the saturation temperature. This is known as subcooling. If more heat is being transferred, it means that the value of subcooling is higher.

Measure the pressure of the liquid line. With the help of PT chart, find the temperature of the refrigerant. Take the liquid line temperature with the help of a thermocouple clamp. Subtract these temperatures. If your system uses a TXV metering device, then it has to be charged by making use of the subcooling method.

## Suction Line

Two lines go into the condenser. The line which is larger is the suction line. It is used to carry vapor to the compressor from the evaporation coil.

## Superheat

In a refrigeration cycle, whenever the refrigerant transforms from liquid to gas, it absorbs some amount of heat. This heat is known as the superheat.

If your system has a fixed metering device, then it needs to be charged by making use of superheat.

In order to measure the superheat, you need to subtract the suction line temperature from the refrigerant temperature.

## Supply

The amount of air which leaves the furnace or air handler is known as the supply. It is directed with the help of supply grills in a place.

## Thermocouple

A tool which measures temperature with the help of a reading meter. The temperature of discharge lines, suction lines, and the liquid are measured with the help of Thermocouple.

## Ton

12,000 BTUs per hour or 200 BTUs per min make a refrigeration ton. A refrigeration ton can also be represented in terms of the quantity of heat required to melt one-ton ice at 32 degrees Fahrenheit.

Normally, air conditioners are of 2-5 tons. Their size varies in accordance with the space they have to heat/cool.

## **Transformer**

A device used to reduce voltage is termed as a transformer. For example, to reduce 240 Volts to 24 Volts.

## **TXV**

It is a device which is used to meter the refrigerant from the high value of pressure to low value of pressure by controlling the quantity of refrigerant that enters the evaporator coil.

## **Vapor**

The state in which the refrigerant is in the form of a gas

## **Vaporization**

The process in which liquid turns into gas

## **Variable Speed**

It is the kind of motor which varies the speed according to the requirements. These motors come with programmed control modules.

## **Ventilation**

If we change the quantity of air which is present in a place, it is termed as ventilation. One kind of ventilation in HVAC is exhaust fans.

## **Wet Bulb**

This tells us about the quantity of humidity in the air. It is measured with the help of a sling psychrometer.

## **Windings**

The coils present inside compressors, motor, relays, contactors and other electrical parts in an HVAC system are known as windings.

## Zone

The place where dampers are incorporated in the ductwork in order to direct the flow of air. This is usually controlled with the help of a thermostat.