

Frequently Asked Questions – J's HVAC Unlimited

Q. What causes the AC compressor to continue running and the freon to continue to circulate after the fan inside the house clicks off?

A. possibly a stuck contactor in the outdoor unit. or your indoor fan is overheating and shutting off

Q. What could be wrong if your central air conditioner blows cool but not cold air and seems to be always running?

A. your condenser may be dirty and the evaporator coils should be cleaned there may be inadequate air flow around the condenser. if there is a leak, your unit may be out of refrigerant you might have a leak in your duct system

Q. Is the Freon used in your car's AC the same type that is used in your home's cooling system?

A. No. Home A/C units use R-22, and many, if not most, automobiles use R134a

Q. What would cause the outside part of your air conditioner to frost over?

A. Because of high humidity in the air, the evaporator gets cold enough to cause the extra moisture to freeze. This could happen if you are low on refrigerant or if your coils or filters are dirty. If you are low on freon, you most likely have a leak and should hire a professional to fix this.

A temporary fix is simply to turn off the unit until it warms up/thaws. Then turn it back on. But this is not a permanent solution. Clean any dirty coils or filters and if this doesn't fix the problem, have a professional check for leaks and refrigerant levels.

if it is a heatpump you probably have a defrost problem most common problem is a faulty defrost klixon (sensor). if the system operated for a long enough time period, the system will automatically switch to the defrost cycle (air conditioning), shut down the outside fan, circulate hot gas thru the od coil to melt the ice, the auto switch back to the heat pump cycle.

Q. Is using ceiling fans and the air conditioner at the same time cost efficient or a waste of energy?

A. If you only use ceiling fans in the rooms that you are in, then it will save a bundle. Just remember to turn the fans off when you leave a room. You can also buy motion sensors that will turn lights or fans on automatically.

Q. What does the abbreviation 'HVAC' mean?

A. Heating, Ventilation, and Air-Conditioning

Q. What is a programmable thermostat?

A. It senses the room temperature and controls the HVAC system according to a schedule established by the homeowner. This type of thermostat allows different temperature settings to automatically regulate the HVAC system at different preset times. Modern programmable thermostats use a chip to provide smart memory to these thermostats. they can then be set up for optimized start of the system. this makes it a smart thermostat. combined with outdoor sensors, indoor sensors the system has the capability to pre-cool / heat a facility to a given temp based on internal and outdoor temperature. thus handling the heat load in a building / home before it becomes active or occupied.

Q. What kind of Freon does a home air conditioner use?

A. Most home systems used to use R-22 refrigerant. EPA mandates that production on this ozone depleting will cease production in 2010. in its place today's advanced modern air conditioning systems use PURON, known as 410A.

Q. What is 'SEER'?

A. Seasonal Energy Efficiency Ratio (SEER) — A measure of seasonal or annual efficiency of a central air conditioner or air conditioning heat pump. It takes into account the variations in temperature that can occur within a season and is the average number of Btu of cooling delivered for every watt-hour of electricity used by the heat pump over a cooling season.

Q. If when the AC is running some parts of your house feel almost too cold while others aren't cool at all what causes this?

A. air flow dividing is a function of the ventilation duct layout. if it was built by a certified HVAC contractor, it was laid out properly, and was later tampered with or has developed a blockage. If you know something was done to ducting or vents, that is probably where the trouble was started. Re-establishing flow balance is not simple, it requires some knowledge and some math. call a HVAC tech, and get help there.

Q. What certifications does an HVAC specialist need?

A. First and foremost, they require EPA refrigeration certification. There may also be state and local licenses and certifications that would vary from place to place. But EPA certification is on a Federal level and if you work with refrigerants, you MUST have this certification. Most technicians today have become NATE certified. NATE certified technicians have proven their worth in knowledge by passing rigid testing and recertification every 5 years. They must also have factory training and certification on an ongoing basis.

Q. What is a compressor contactor?

A. It is the electrical switch turns the compressor on and off if you look in your unit follow the power wires from disconnect the should go straight to the contactor. If you do this, turn the unit power off first, OR the next time the unit maintenance is performed, ask the service technician to show you the contactor.

Q. Why is your home air conditioner blowing air but no cold air is coming out?

A. Freon does not loose it's ability to cool. There is either insufficient Freon for the size of the system indicating a leak, or the pump is wearing to the point where it can no longer provide sufficient compression of the gas. In either case, a trained tech is required and should be able to provide an immediate diagnosis.

Q. If you shut off the AC when you are gone from the house does it cost more to cool the house back to the right temperature when you return?

A. With air conditioning systems, the equipment runs at peak efficiency when it operates for long periods. Cooling your house back to the comfortable temperature will use less electricity than the unit would use cycling on and off for short periods to maintain the set temperature. If your house takes too long to get back to a comfortable temperature, you might investigate getting a programmable thermostat, and set it to start heating or cooling your house an hour or so before you return. You could also set the thermostat back, to a lower temperature for heating, or a higher one for cooling, while you are gone, rather than turning it off completely.

From "The Home Energy Saver" a webpage from the Berkeley Lab website.

Q. If it cools down outside, is it ok to turn off the air conditioner?

A. There is no easy answer to this question. A lot of people like to turn off the air conditioner at night, or when it cools off for a day or two. If you live in an area with high humidity, this can be a problem.

A central air conditioner's first job is to remove the moisture or humidity from the air in your home. Often this process will take several days. Once the humidity has been removed, it is much easier for your unit to maintain a comfortable temperature. If the relative humidity outdoors is higher than the relative humidity indoors, turning off your unit and opening the windows will cause the humidity level to rise again inside the house. When the temperature rises again, your air conditioner will have to work harder to lower the level once again.

If the humidity level outdoors is low, and the temperature drops a few degrees, then open the windows for a few hours and get some fresh air indoors if you like.

Q. What is the best temperature for the air conditioner?

A. The short answer is the temperature at which you are most comfortable. When choosing a temperature remember that your central air conditioner will lower the relative humidity in your home, allowing you to be comfortable at a higher temperature. During the winter you might find 72°F, but in the summer you'll probably be comfortable at 76-78°F.

Q. What is the life expectancy of a typical air conditioner?

A. Life expectancy is one of those things that will vary widely from location to location. Obviously a air conditioning units in warm climates will probably need to be replaced more frequently than units in cooler climates.

Q. How does an air conditioner work?

A. Air conditioning systems work by moving heat from inside your home to the outside. In a central air conditioning system air is drawn into the ductwork system through the return air ductwork. Installed on the downstream side of the furnace or fan coil unit is an evaporator coil. This coil is connected to the condenser, the unit that is outside your home, by copper tubing, the line set. Refrigerant is pumped from the condenser to the evaporator coil. As the refrigerant passes through the inside of the evaporator coil, warm air from inside your home passes over the outside of the evaporative coil. Because the refrigerant is cooler than the warm air, the refrigerant absorbs heat from the air. The refrigerant is then sent outside to the condenser unit.

When the warmed refrigerant is in the condenser unit it is compressed by the compressor; the compression of the refrigerant causes it to boil. As the refrigerant boils it gives off the heat it picked up from inside your home. The refrigerant is then passed through the coil in the condenser unit where it gets cooled again and is ready to go back inside to pick up more heat from your home. As this whole process is going on, the temperature and relative humidity in your home are both lowered. The relative humidity level drops because cooler air cannot hold as much moisture. As the air cools, it gives up some moisture and it gets collected in the base of the evaporator coil and is then drained away.

Basically speaking, air conditioning is removing heat from an area where it is not wanted and transferring it to a place least objectable.

Q. Why do I need a high efficiency filter? Can't I just buy those cheap ones at our Home Center?

A. Cheap filters are exactly that; you get what you pay for. Most high efficiency furnaces and central air conditioners should be equipped with a high efficiency filter. This will prevent unnecessary service

and cleanings to the coils. The high efficiency filters will last longer, will alleviate some allergy problems, and limit the need for frequent dusting.

Q. What exactly is a BTU?

A. BTU stands for British Thermal Unit and is the internationally agreed upon standard for measuring heat. The room size that correlates with each BTU size air conditioner is stated with each product listing. Keep in mind this is the recommended room size under average conditions. Warmer climates, houses with less insulation, cinderblock construction, kitchens, and vaulted ceilings all increase the needed BTUs.

Q. Why would I need to purify the air when I have a 1" filter in my central air system?

A. Those 1" filters are generally designed to protect the inner-workings of your central air system. They do not filter the air efficiently enough to reduce indoor air pollution and to alleviate allergy symptoms. Electronic Air cleaners pull dust, pollen, tobacco smoke, and mold spores out of the air. In addition, duct-mounted filters only work while the central air system is running. During the spring and fall months, allergy seasons, the central system is usually shut off.

Q. What does CADR mean?

A. CADR stands for Clean Air Delivery Rate. It is a standard set by AHAM (Association of Home Appliance Manufacturers) to measure the efficiency of air purifiers. "The higher the CADR rating, the faster the unit filters the pollutants out of the air (source: AHAM 2000 Directory of Certified Room Air Cleaners, Edition 4, 10/00).

Q. What are the basic components of an air conditioning system?

A. A Condensing Unit (the outdoor section), A matching indoor Air Handler or Furnace with coil, Ductwork to transfer the cooled air throughout the home and a thermostat.

Q. What is Indoor Air Quality?

A. A study conducted by the U.S. Environmental Protection Agency found that indoor air could actually be more polluted than outdoor air. Considering that most individuals spend up to 90 percent of each day indoors--more than half of that time at home--you may be experiencing indoor air pollution without even knowing it. Today, homes are sealed more tightly to conserve energy. Unfortunately, this seals in mold, pollen, bacteria and other pollutants. And since the U.S. EPA ranks indoor air pollution among the top five environmental risks to public health, many homeowners are concerned.

Fortunately, there's a solution to most indoor air quality problems. KVN Heating & Air offers an array of choices designed to ventilate stale indoor air, zap airborne germs, trap airborne particles and moisturize parched air.

Q. What is involved in replacing an old system?

A. Aside from the placement of the new equipment, J's HVAC will inspect several items and make a determination of whether or not these items need to be supplied or replaced. Some of the items include: ductwork, insulation, refrigerant piping, electrical service, wiring, thermostat, condensate piping, slabs, filter, driers, registers, grills, drain pans and evaporator coil.

Q. Which manufacturer makes the best air conditioner?

A. Air conditioning is a matured technology so most of the popular brands work well. Many of them use parts made by the same manufacturers. So, the main considerations are the price, warranty, attractiveness, noise, etc. Some manufacturers offer a 5 year warranty on all parts while others offer

only 1 year. Some units are unattractive and will not compliment your landscaping. Whatever you decide, the most important consideration is the contractor you use. You may buy the best system in the world but if it is not properly installed, you will actually be buying nothing but a big headache for years to come. For your protection, make sure you use a specialized contractor.

Q. Why is my unit icing-up? Why am I getting so little air flow from my registers?

A. There are several things that can cause frost on your coil and/or reduced air flow.

Anything that restricts the airflow through the inside unit will cause frost. As the frost builds up on the coil, the airflow becomes more and more restricted making the condition worse. When the frost is also on the outside pipes next to the compressor, damage to the compressor can occur.

Extremely dirty air filter restricting the airflow through the inside unit.

Extremely dirty (clogged) cooling coil restricting airflow through inside unit.

System low on freon, causing coil to freeze up.

Check your return grill to make sure that it is not being obstructed.

Blower motor overheats and "kicks off" on safety switch.

Q. The system is running but the air is not very cold, what's wrong?

A. If you have some cooling, but not enough, then chances are that the system is low on freon. The only reason a system would need freon is because the freon leaked out. If the leak is not sealed before recharging with freon, the freon will eventually leak out again. Leak repairs are expensive so if it's a small leak it may be more cost effective to recharge the system every two or three years. Freon recharging is not a do-it-yourself job. Only people certified to handle refrigerant (freon) are allowed to recharge an air conditioning system.

Q. Why is my heat pump outside coil iced-up in winter

A. Heat pumps do ice-up in the winter time. It is normal for the entire coil to be covered in a white frost, even light ice, during certain weather conditions. It is not normal however, for the entire unit to be encased in ice, including the top of the unit and the insides of the coil for an extended period of time.

This indicates a problem and should be addressed quickly to save energy and avoid serious damage to the equipment.

Heat pumps will naturally ice-up in the winter but will periodically go into a defrost cycle to de-ice the coils. This keeps the unit running efficiently. If the coils are blocked by ice, proper heat transfer between the freon and the outside air cannot occur.