

What is Indoor Air Quality?

Air Pollution surrounds us daily. Indoor air quality is important to your health. Your exposure to air pollutants can be up to 100 times higher indoors than outdoors. The American Lung Association estimates that most people spend 90% of their time indoors. So, clean indoor air is extremely important.

How Can I Improve Indoor Air Quality?

The first step is to identify the sources of air pollutants. A common solution is to clean the air handling system that delivers the heating and cooling to your living space. Ask your heating and cooling technician for ideas on how to improve your living space indoor air quality.

Ventilate Your Living Space

Specialists here at Heat King will recommend ways you can increase ventilation within your home, such as the installation of an outdoor air connection, the use of a heat recovery ventilator (HRV), or energy recovery ventilator.

Why is clean indoor air important for good health?

Indoor air quality is a concern today as most newer homes are being built "tighter" to be more energy efficient. Unfortunately, making homes more energy efficient has a price. Indoor air quality may suffer as the exchange of indoor and outdoor air is limited. How can I clean indoor air? Have my air handling duct system cleaned and sanitized. Frequent dusting, vacuuming, and washing of bedding will reduce the amount of dust and dust mites present in your living spaces. Some particles are so small they may escape through your vacuum. To capture these particles, filtration devices can be helpful.

Electronic air cleaners

As highly efficient filters that use an electrical charge to remove and collect airborne particles such as dust, smoke and pollen, the charged particles are attracted to each other and forced through an alternately charged cell where they are collected. Electronic air filters remove up to 99.98% of allergens from filtered air. The need to replace or clean filters is relevant to many variables such as run time, efficiency, size and type. Typically, low-efficiency disposable and permanent filters need to be replaced or cleaned every one or two months in peak heating and cooling seasons.

Why is it Important to have Regular Yearly Maintenance on my System?

Have you ever wondered about the mechanical condition of an airplane prior to taking off? How about your car? Sure, most people can handle the little stuff, such as checking the oil, changing wiper blades, or checking tire air pressure but to keep your car operating efficiently, you need an occasional tune-up from a professional mechanic.

Your heating and air conditioning system is no different. To get the highest performance and the longest life from your system, you should have a professional technician perform routine maintenance once each year to check for:

- ▶ Safety check for carbon monoxide
- ▶ Inspect gas pipes for leaks
- ▶ Inspect heat exchanger
- ▶ Remove and inspect burners
- ▶ Check gas valve operation
- ▶ Inspect venting
- ▶ Adjust burners for efficiency

- ▶ Clean and inspect electronic air cleaner
- ▶ Inspect gas hot water system
- ▶ Clean furnace

What do the heat pump and air conditioner ratings mean?

It is easy to feel overwhelmed by the array of efficiency ratings, abbreviations and acronyms used to describe or explain heat pumps and air conditioners. You can use the knowledge of the following definitions to make a more informed choice on your comfort needs.

Seasonal Energy Efficiency Ratings, or SEER

This is a system for rating the efficiency of cooling equipment. It is calculated by dividing the cooling capacity of a continuously operating air conditioner by the electric power input. The higher the SEER, the less your unit will cost to operate.

Heating Seasonal Performance Factor

This measurement is similar to SEER, but it measures the efficiency of the heating portion of your heat pump.

General Industry Terms

H V A C - Heating, ventilation and air conditioning. This term applies to both to the heating and cooling industry.

B t u - British thermal unit. This is the amount of heat that will raise or lower the temperature of one pound of water by one degree Fahrenheit.

B t u h - British thermal units per hour. A measurement of heat transfer rate.

W a t t - A unit of electrical power.

K i l o w a t t - One thousand Watts.

K W h - Kilowatt-hour. A unit of electrical energy equal to the work done by one kilowatt acting for one hour.

Should I Repair or Replace Old Equipment?

Three primary factors for consideration are:

- ▶ Operating Cost
- ▶ Life Expectancy of Your Equipment
- ▶ Looking at the Total System

Operating Cost

Operating cost is a continuous and ongoing factor that should be considered. Restoring an old system will only bring it back to its original level of energy efficiency. You still will not save on your energy bills.

Even a heat pump or air conditioner that is six (6) years old, is considered grossly inefficient by today's energy efficiency standards. So are most furnaces built before 1980. You could save as much as 60% on your energy bills with new high-efficiency equipment. That's how and why installing a new heating and cooling system can actually pay for itself in energy savings within a relatively short time.

Life Expectancy of Your Equipment

When you're frustrated with an equipment break-down, it can be tempting to find the least expensive "quick fix" to get on with your life in relative comfort. That "quick fix" may be the least expensive now, but it may not give you the most value - or cost you the least - in the long run.

Paying for repairs to an old or inefficient system frequently just prolongs the inevitable. It's almost like putting a bandage on a serious injury. An older system that breaks down once is likely to break down again ... and again ? and again. That means more emergency service calls or, worse yet, the risk of damage to your home or to other components of your heating and cooling system.

Looking at the Total System

When one component of your system breaks down unexpectedly, it's easy to just focus on repairing or replacing that component. But each part of your system works integrally, with the others to maintain efficiency and reliability. For that reason, heating and air conditioning professionals always recommend that their customers keep their total system in mind.

For example, replacing your old furnace with a new higher-efficiency model but leaving your old thermostat in place, will not allow you to enjoy all of the efficiency advantages the furnace has to offer. Likewise, if you install a new furnace but don't get a humidifier, the air may seem cooler, forcing you to operate your new system at a higher temperature to be comfortable. Plus, you can often save on installation costs if you have several components of your system replaced at the same time.

What Type of System is Right for our Home?

The system that is right for you will depend on a number of factors: your budget, your comfort expectations, physical factors such as what type of system currently exists in your home, the unique features of your home, and more. Below, you can explore the system options available and some of the key factors that affect your choice.

Types of Systems

For the basics of heating or cooling temperature control, you typically will have three system options:

- ▶ Gas Furnace/Air Conditioner
- ▶ Heat Pump
- ▶ Small Packaged System

Key Accessories

Additional comfort comes from having clean, fresh air as well as proper humidity levels inside. These products will fine-tune your system to help improve your overall comfort and the efficiency of your indoor comfort system.

- ▶ Air Cleaners
- ▶ Ventilators
- ▶ Humidifier
- ▶ Dehumidifier

System Control

Most people are familiar with the basic thermostat however, control of your system is more than simply setting a temperature. It includes being able to program a comfort schedule for different times of day, setting humidity levels, and even setting different temperatures for different areas of the home. Here's how:

- ▶ Electronic Thermostats
- ▶ Humidifiers

▶ Zoning System

Key Factors that Affect Your Choice

Some of your home comfort decisions will be made for you based on some of the physical considerations involved, including:

Your Home

Everybody's home is different. Some are big, some are small. Older homes are not as tightly sealed as new ones, which means efficiency is reduced. The number and size of windows, what direction the home is facing, number of mature trees in the yard and many more factors can affect your comfort, and may play a part in deciding what type of system is best for you. Your heating and air conditioning contractor should have the expertise to perform an energy audit and to assess any unusual circumstances surrounding the specific needs of your home.

Your Existing System

If you are replacing an existing system, there are physical and financial reasons to stay with the same type of system. If you want a new type of system because you were dissatisfied with your comfort, remember that a new system will bring newer comfort technology and energy efficiency. Also, your comfort problem could be related to other issues, such as improper ductwork, system balance, cleanliness or freshness of air, humidity control and system control.

Your Geographical Region

Although there are exceptions to every rule, geography can play a role in what type of system will work best in your home.

- ▶ Generally hot or cold climate
- ▶ Amount of relative humidity present the majority of the time
- ▶ Percentage of sun days per year in your region

Why should I choose a variable-speed unit?

The term variable-speed refers to the furnace indoor air blower motor. The blower motor is the component that determines the amount of air the blower is required to deliver to your home.

When your furnace is installed, the speed and airflow for your home is set. However, there are situations that can occur within the household to restrict this. Think of variable-speed technology as your assurance for home comfort the way you prefer it.

Having the technology of variable-speed in your furnace offers many benefits: electrical efficiency. Variable-speed motors can actually save you money on your energy bill as they consume less electricity than standard motors.

Cooling Efficiency

The higher the SEER, the more energy efficient the unit will be. This means even more energy savings for your household.

Zoning

Variable-speed furnaces are excellent for zoning your home. Zoning allows you to customize your comfort in different areas or zones in your home and control your energy bills.

Air Quality

A variable-speed motor combined with a humidistat allows you to better control the humidity in your home. The relative humidity in your home should be between 40-60%. This range is most

ideal to minimize growth of biological pollutants such as mold and mildew. The consistent airflow of the variable-speed motor helps to improve air filtration efficiency.

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