PRESIDENTIAL
HEATING & AIR CONDITIONING, INC

THE ESSENTIAL GUIDE TO HEAT PUMP REPLACEMENT

When you experience heating or cooling troubles, it's time for a full diagnostic of your HVAC system to determine whether the best solution is replacement or repair.

While tune-ups and repair are often sufficient to solve your heat pump system problems, certain factors can play an important role in the decision to replace your current heat pump system with a new one.

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Repair Or Replace—The Big Picture

Can You Repair It? Talk To An Hvac Repair Specialist

First, determine whether it is possible to perform an HVAC repair instead of replacement, and how much it would cost. Sometimes it is better to replace the entire system rather than repair it because of how frequently older systems need to be repaired. Talk to your HVAC contractor about whether a repair or replacement would be better.

If you are unsure take the heat pump Repair or Replacement Quiz.

Consider Your Reasons For Replacement

Repair or replace? According to the U.S. Department of Energy (www.energy.gov), the average lifespan of a heat pump is between 10 to 15 years. It's possible to get more life out of a unit with proper repair and maintenance, but once get beyond 15 years, you are definitely on borrowed time. Experts generally recommend replacing your old heat pump system if any of the following apply:

1. It is 12 to 15 years old
2. You begin to hear continuous, unusual noises
3. The pump isn't evenly heating (or cooling) your home, even after a few repairs
4. Energy costs are draining your wallet

Choose A Properly Matched System

You might ask yourself, *"If my outdoor heat pump unit needs replacing, but my indoor unit seems fine, do I really need to replace both?"* Unfortunately, the short answer is "yes." You should always replace both units at the same time for the following reasons:

Performance: Matched systems perform better, giving you greater efficiency and optimum performance.

Efficiency: The efficiency rating you see are based on matched systems. So, even if you install a heat pump with the best SEER rating, you won't actually get the full benefit.

Advanced Technology: HVAC technology has improved by leaps and bounds. Today's units simply outperform older technology. Why shortchange your investment?

Money in Your Pocket: Replacing both ensures you the best energy savings, as well as dependability and comfort.

Buying A Heat Pump System 101— The Nitty Gritty

Buying a bargain system may save you money in the short run, but not in the long run. Durable, high-quality HVAC systems come with longer warranties and present fewer problems in the future than cheaper units. Be sure to buy your heating and air conditioning replacement locally—an HVAC system that no one in your immediate area can service is not worth the investment.

The Right Heat Pump For Your Home

Despite their name, heat pumps do a lot more than heating. They also provide air conditioning and humidity control. A heat pump transfers heat from one place to another in order to help you control the temperature.

During the winter, a heat pump moves heat from the outdoors into your home, and during the warmer months, it transfers heat from your inside house to the outside.

You can heat or cool a single room, or your entire home. Using a minimal amount of energy, a heat pump can provide you with an effective option for heating or cooling your space.

Since heat pumps move heat rather than generate it, they can heat and cool for significantly less.

There are three main types of heat pumps—air source, water source, and geothermal.

Air Source Heat Pumps: Use air as the source to heat and cool.

Water Source Heat Pumps: Use either water, or a liquid like glycol, as the source for heat rejection and absorption.

Geothermal Heat Pumps: Use the ground as the source for heating and cooling.

Under each of these three main categories of heat pumps, there are a wide variety of specialized units. Some of the most popular subcategories of heat pumps are: mini-split, hybrid, and ductless. The most popular of these is the mini-split heat pumps, which are great for heating single rooms, trouble spots, and garages.

To determine which heat pump best serves your home's needs, consult a professional comfort advisor from a reputable HVAC company to help you make a well-informed decision. This skilled and trained expert can help determine the proper size and product for your home and climate. No matter what type of heat pump system you choose, a licensed and professional heating and cooling technician should install it for you.

Seer Rating And HSPF— What's That All About?

When asked what the efficiency of a given heat pump is, most people will tell you the SEER rating. But actually that is only part of the answer.

Since heat pumps work both ways—cooling in summer and heating in winter, you need to look at a different rating for each function.

SEER stands for Seasonal Energy Efficiency Ratio and applies only to cooling. The higher the SEER, the more efficient the system. SEER measures how efficiently a cooling system will operate over an entire season.

EER stands for Energy Efficiency Ratio. EER is a measure of how efficiently a cooling system will operate when the outdoor temperature is at a specific level (95 degrees F). The higher the EER, the more efficient the system.

HSPF stands for Heating Season Performance Factor. HSPF is the most commonly used measure of a heat pumps heating efficiency. The higher the HSPF, the more efficient the heat pump.

SEER and HSPF measure the efficiencies of air-source and ductless-splits systems. A geothermal system's cooling efficiency is rated by EER.

Typically, the higher the rating, the higher the system's cost. You can spend several thousand dollars more for a more efficient heat pump. But, depending on where you live, you could save $115 a year or more on your utility bill by replacing your older heating and cooling system with an Energy Star-rated product.

Advanced Features to Look For

Along with standard key features to look for—such as lowered noise output, demand-defrost control, and reverse cycle chillers—a number of innovations are dramatically improving the performance of heat pumps.

Two-speed Compressors: Allow heat pumps to save large amounts of electrical energy and reduces compressor wear. Two-speed heat pumps also work well with zone control systems.

Variable-speed or Dual-speed Motors: Minimize cool drafts and maximize electrical savings. They also minimize the noise.

Desuperheater: Many high-efficiency geothermal heat pumps are equipped with a desuperheater, which recovers waste heat from the heat pump's cooling mode and uses it to heat water 2 to 3 times more efficiently than an ordinary electric water heater.

Scroll compressors: Compared to the typical piston compressors, scroll compressors have a longer operating life and are quieter.

Burners: Heat pumps can be equipped with burners to supplement the heat pump as a backup for cold weather and reduces its use of electricity.

Duel Fuel: This system utilizes the heat pump until the temperature outside reaches a minimum for efficiency, then switches over to gas, propane, or oil. Duel fuel systems offer maximum comfort and energy cost savings.

Today's Thermostats Are Really Cool—And So Hot!

There are several different kinds of thermostats that can complement and enhance your HVAC system. Some thermostat models offer precise options for adjusting temperatures, others are highly programmable and customizable. There are even thermostats so technologically advanced that they connect to your home's WiFi, allowing you to adjust the temperature even when you're away from home.

Thermostats are essential when operating an efficient and effective HVAC system. Because there is such a wide range of thermostats—each serving a wide range of purposes all dependent on your particular system—make sure to ask your comfort specialist which is best for your home.

Check That Warranty

The warranty on your heat pump will vary according to the manufacturer and the HVAC company, and/or installer. You will generally find that the better heat pump systems will come with a longer warranty. Also check any additional warranties from your HVAC contractor. Not all companies offer a 100% satisfaction guarantee.

Ensure Proper Installation

One of the most important features of a new heating and air conditioning system is proper installation. An improperly installed new heat pump decreases both efficiency and your comfort! Without the right installation, you could be wasting 50¢ of every energy dollar and still be uncomfortable. Make sure you hire a company that has a great reputation and stands behind their work. Improper installation of HVAC equipment will lead to expensive headaches and poor performance down the road.

Questions To Ask Yourself Before You Buy

Do You Have The Right HVAC Partner?

It's important to take the time to find a good HVAC professional. Make sure that the company is licensed and insured. Also, make sure that the technician who installs the system is certified by North American Technician Excellence (NATE). Other affiliations to look for are Quality One and Air Conditioning Contractors of America (ACCA). Additionally, a company that is a factory authorized dealer (FAD) of a reputable manufacturer such as Carrier® or similar, means that they have passed the manufacturer's standards in order to represent their equipment.

Maintenance—Are You Committed To Maintaining Your New System?

Once your heat pump has been installed, proper maintenance will keep it running at top efficiency. Simply keeping on top of changing your filter can extend the life of your system and maintain efficiency. You should also have your heating system tuned up periodically by your professional HVAC partner (the one you found for the previous question). Experts say improper installation and/or inadequate maintenance accounts for twice as many furnace problems as defective equipment. Keeping your heating and cooling systems in good working order means your utility bills will be lower, your home will be more comfortable, and you'll need to call for repairs less often.

One of the best things you can do is sign up for a maintenance agreement.

Service and maintenance agreements are highly recommended by all manufacturers. Generally with a maintenance plan you will notice increased system lifespan, improved efficiency, lower utility bills and catch problems before they occur. Also some companies will offer priority service to maintenance agreement customers—putting you at the front of the line when you need it most.

Specifying A New Heating And Air Conditioning System

If you are planning to replace your heat pump system, it is recommended to replace the indoor unit, or fan coil, at the same time. They are typically the same age and in a similar stage in their lifecycle. Not only will your system run at it's optimum capacity—keeping you more comfortable—it is also more cost effective and less disruptive to replace all the items at the same time.

There are six key considerations that you should discuss with your heating and air conditioning specialist—which will significantly improve the comfort of your home and minimize the cost

Ability To Maintain Temperature

A correctly sized system will typically maintain the temperature in your home to within ± 2 degrees Fahrenheit. Obviously systems that are undersized will not be able to hold temperature in the more extreme temperatures in our regions. This will ultimately increase your energy bills, and your home may not feel comfortable.

Similarly (but often misunderstood) oversized systems may also not hold temperature! Bigger is not always better. A unit that's too big will cost more upfront, and it will cycle on and off too many times, shortening its life.

The sizing of your system is not only about square feet—the configuration of your home, the number of windows, and the orientation of the property all play a part in the load calculations. Be sure to consult a qualified HVAC professional before making a final decision.

Noise

There are options that can reduce the noise you (and you neighbors) experience. Fans and compressors can be noisy, so select an outdoor unit with lower noise levels.

Humidity

In the DC metro area we suffer from high humidity in the summer and low humidity in the winter—extremes in either case are uncomfortable.

The high humidity of the summer can cause you to feel tired, hot and bothered. The low humidity of the winter can cause electrostatic build up—do you get a shock when you turn on the lights? That's low humidity electrostatic build-up!

Air Quality

Did you know that the air quality inside your home can often be worse than outside!

How is that possible? The combination of dust, pet dander, hair, mold—and many other contaminants that are circulated through your heating and air conditioning system—can influence the health and wellbeing of your family. Make sure that you new HVAC system includes appropriate measures to improve your breathable air quality!

Efficiency

If your system is over 12 year old, there is new high-efficiency technology that can reduce your utility bills by as much as 20%.

High-efficiency systems may also be eligible for rebates from your utility company—check with your comfort advisor to make sure you take advantage of these deals

Discounts, Rebates And Financing Options

At different times during the year there maybe several financial incentives for system replacement, including:

- Manufacturers rebates
- Utility company rebates
- Installation company discounts
- Financing options, up to 0% financing with approved credit.

These rebates do not apply to all systems, and in some cases, it is less expensive to purchase a higher performing system than the basic models.

Consult A Professional

Your comfort advisor will help you work through the six key selection criteria, and specify the best solution for your family.

And remember, it's not just about the equipment—proper installation directly impacts the performance, efficiency, and life of your heating and cooling system investment. You only replace your system every 12 or so years, so make the right decision today!