

UNDERSTANDING YOUR NEXT HVAC PURCHASE

A STEP-BY-STEP GUIDE FOR BUYING A
HIGH-QUALITY HEATING AND AIR CONDITIONING UNIT



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by Robert T. Lauwers Jr.

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Website:
www.aspireheatingcooling.com

Printed in U.S.A

Table of Contents

Introduction.....	9
Chapter 1	11
Is It Time to Replace Your HVAC System?.....	11
Chapter 2	15
Understanding Industry Terminology Can Help You Choose the Right Unit	15
Chapter 3	23
Understanding Your Warranty and Other Tips for Choosing the Best Unit for Your Home	23
Chapter 4	29
How to Choose a Contractor	29
Conclusion.....	33

Introduction

HVAC systems are a lot more complicated than people think, and they take care of a lot more than just heating or cooling the air in your house. Today's HVAC systems can purify your air and ensure that it has just the right level of humidity for your health and comfort. They can



also get rid of problems like hot and cold spots in your home and improve the overall energy efficiency of your house to give you lower utilities bills and more comfort at the same time.

To get all of these benefits, though, you really need to know a few things about the equipment you're installing, as well as how to choose a good service provider to perform your installations and regular maintenance on your HVAC system. In this guide, we will go over everything you need to know to ensure that you make the right decisions on your next HVAC purchase.

From how to tell if it's time to replace your HVAC system to understanding industry terms, and from understanding manufacturer warranties to choosing the best contractor for the job, in this guide we will walk through every step of the process. By the time you are finished reading, you should have all of the information you need to be confident when you need to go shopping for a new HVAC system. Let's get started!

Chapter 1

Is It Time to Replace Your HVAC Sys-

Repair or Replace?

Think back to last summer. Did your HVAC unit keep your home cool as a cucumber, or did it struggle to keep up with rising temperatures in the hotter months? Did you notice an unusually high spike in your utilities bills? Was your air conditioner louder than usual when the fan kicked on?

What about last winter? Did your house seem cold, even when you had the heat cranked up all day? Were some rooms and some areas in your home hot while others were always chilly? Did you feel like you were going to choke when you got your gas or electric bill after the first month you had your heater turned on?

All of these are signs that your HVAC system is not functioning as efficiently as it should, and it either needs to be repaired or replaced... But how can you tell which? First, let's go over how you can tell if you need to call for a repair or tune-up. Then we'll discuss the telltale signs that you need to replace your HVAC system.



When to Call for HVAC Repair

If you have a fairly new HVAC system that was properly chosen and installed in your home, then you probably don't need to get the whole thing replaced. In fact, you may just need a tune-up or a small repair.

It's a good idea to get an annual tune-up in the spring or fall before the weather gets too hot or too cold and you have to rely

heavily on your HVAC system. This will ensure that your system is in good working order when you need it, and your HVAC repair service techs can tell you if any parts in your system are looking worn and should be replaced soon. Savvy homeowners will often set up a maintenance agreement with their HVAC service providers so that they know they'll be up to date on their annual tune-up and any necessary repairs.

Of course, if your heater or air conditioner stops working, it may not be a maintenance or repair issue – it may be a replacement issue. Fortunately, you don't have to be an HVAC expert to know whether you just need a tune up or some repairs or whether it's time to invest in a new system altogether. Just go over this checklist of factors, and you'll know what to do...

Telltale Signs It's Time to Replace Your HVAC System

- Your boiler or furnace is 15 years old or older – Older furnaces and boilers are not only likely to go out, but they're also significantly less efficient than newer ones. Replacing the unit will be more cost effective in the long run than repairing it.

- Your air conditioner or heat pump is 10 years old or older – Again, older units are going to be much less efficient (roughly 20%) than newer ones. Buying a new unit will ensure lower energy bills and a smaller carbon footprint.

- Your air conditioning or heating system makes a lot of noise – This could be an issue with the sealing of your ducts, or the indoor coil for your air conditioner could be malfunctioning.

- You have issues with excess humidity in your home – Leaky ducts and underpowered or inadequate HVAC equipment can cause this problem, and replacing your system is often the best solution.

- Your house gets really dusty when you turn on the A/C or heat – This is usually an indication that you have leaky ductwork and that your HVAC unit is pulling dusty air from your basement or attic.

- You're on a first-name basis with your HVAC repair people – If your HVAC system is repeatedly breaking down, making noise, or functioning inefficiently, then you'll save a lot of money over the long term by replacing it instead of getting it repaired again and again. Likewise, if you keep having to call to have the refrigerant replaced, then you probably have a leak, and that's best fixed with a new HVAC unit.



- You have hot or cold spots in your home – If some rooms (or specific areas of certain rooms) are always hotter or colder than the rest of the house, then you have a problem with your HVAC system that most likely won't be fixed by a simple repair. The better bet is to choose an up-to-date HVAC unit and have a professional contractor install it for you to ensure that your entire system is in good shape and will heat and cool your home evenly and efficiently.

If any or all of these factors sound familiar, you are most likely in the market for a new HVAC system. As you start to search for the right one for your home, though, chances are good that you're going to encounter a few acronyms, words, and phrases that mean absolutely nothing to you. How can you choose the right system if you don't know what it terms like SEER, HSPF, NATE, BTU, and EER stand for, let alone what they mean for your air conditioning and heating units? In the next chapter, we'll go over all of these terms and more to help you understand what you're looking at as you shop for your next HVAC system.

Chapter 2

Understanding Industry Terminology Can Help You Choose the Right Unit

If it's time to buy a new HVAC system, you've probably started doing some research online to see what you can expect to get and what you'll expect to spend on your purchase. Of course, as you look at different units and systems, you're going to come across so many different technical terms and acronyms that you'll likely feel like you're reading a whole new language.



You know that all of those acronyms and specialized terms have important meanings, and you know that they can tell you a lot about how efficient a unit is, energy loss in the ducting, the quality of your home's air, and much more... To really understand what you're getting into, you need to have at least a little bit of understanding of HVAC industry terminology. That's why we've put together this handy list of the most common industry terms, their definitions, and what they mean to you as a buyer.

Important Terms for Energy Ratings

We'll start by defining a few of the terms you'll run into that refer to your system's energy ratings. Knowing what these acronyms stand for and what they mean will help you understand how efficient the systems you're considering are and whether or not you're looking at a good investment for your home.

BTU

British thermal units (BTUs) are measures of heat energy. Technically speaking, a BTU is the amount of energy necessary to raise the temperature of one pound of water by one degree (Fahrenheit). Heating and cooling units are often rated in BTUs to show their efficiency and heating or cooling capabilities. If a system has a high BTU rating, it has a greater heating capacity.

SEER

SEER stands for seasonal energy efficiency ratio, and it's the rating that measures how efficiently your air conditioner operates. Your unit's SEER rating is measured in BTUs over watt-hours in a specific temperature range, and the higher the number, the more efficient your unit is.

EER

EER (energy efficiency ratio) is a lot like SEER. However, whereas SEER is measured in a temperature range to gauge seasonal efficiency for your unit, EER is measured with the intent to rate the unit's overall efficiency, using a constant outside temperature of 95 degrees. When you buy your unit, you'll likely hear more about its SEER than its EER, as this is a term that's more valuable to technicians and engineers than for selling heaters and air conditioners. It's good to know, though, as you may need to understand what your technician is talking about when you get your unit serviced.

HSPF

Short for "heating seasonal performance factor", your unit's HSPF is a rating for your heat pump's heating efficiency. Just like with your air conditioning unit's SEER, the higher your HSPF rating, the more efficiently your unit will heat your home.

Comfort and Air Quality Terms to Know

In addition to learning about the energy efficiency and capabilities of your heating and air conditioning units, you should also know and understand a few terms that refer to the quality of the air in your home and how it's affected by your HVAC system.

IAQ

IAQ stands for indoor air quality, and it's a pretty simple concept. Your home's IAQ will be negatively affected by toxic gases like carbon monoxide and VOCs (volatile organic compounds), microbial contaminants like mold, and by any other factors that can induce health and wellness problems. A good system will ensure that you have great IAQ and that you won't be subjected to harmful airborne particles and gases in your home.



Humidification and Dehumidification

Humidification and dehumidification refer to a system's ability to normalize the moisture in your indoor air. Basically, your goal should be to have about 30-50% relative humidity in your home, and depending on where you live and other factors you may need a system that adds moisture to the air or that effectively dehumidifies it to avoid health and structural problems for you and your home, respectively.

Zoning

If you have hot or cold spots in your home, then you likely have an issue with zoning that you should address when you buy a new system. Basically, when HVAC professionals talk about zoning, they're talking about strategically placing multiple thermostats around your home.

These will be linked into your HVAC system and will operate dampers in your ducts to force more heated or cooled air to the areas that need it and less to the areas that don't. Good zoning can increase your HVAC system's efficiency, keeping all of your home at a more comfortable temperature while reducing your energy bills at the same time.

Airflow

Finally, airflow is one of the most important factors in the efficiency of your HVAC system. If air is not able to flow well through

your ductwork, it won't reach the areas of your home that need heating or cooling the most. Poor airflow through your system can be due to poor ductwork design or failing seals. An HVAC professional can take a look at your system and tell you whether you need better ductwork sealing to prevent leaks or whether you need to upgrade or redesign the ductwork in your home for better zoning and more efficient heating and cooling.

Types of Units and Systems

Next, you'll also want to understand how the system you buy works and why you might want to purchase one type of unit or system over another. Here are a few terms to help you understand what you're looking at.

Geothermal Systems

In a geothermal HVAC system, your heat pump will actually use the earth's heat to help heat your home in winter. In the winter, your geothermal system will use a ground source heat pump (GSHP) to pull heat from the ground to heat your home. Then, in the summer, it will pump heat back into the earth, using the ground near your home as a heat sink.

Geothermal systems involve a little bit more of an investment upfront because the setup process is more involved, but they are highly energy efficient. Over time, consumers usually make back their initial investment (and then some) in reduced heating and cooling bills throughout the year.



Two-Stage Systems

Two-stage cooling systems are another efficiency booster for your HVAC system. Essentially, if you have a two-stage system, it means that your heat pump or air conditioner's compressor has two stages of operation.

During hot summer days it will operate on high to keep your home comfortably cool. Then, on milder days, it will operate on low.

For most two-stage systems, the low setting is plenty adequate to handle about 80% of your home cooling needs throughout the year. This means that you get a more efficient system that keeps temperatures even in your home throughout the year. Also, two-stage systems remove twice as much humidity from the air as single-stage systems, decreasing the chances of developing mold and other airborne allergens in your home.

Variable Speed Systems

When you hear HVAC experts talking about a variable speed system, they're referring to the capabilities of the fan motor for the air handler. Your air handler is the part of your HVAC system that operates inside your home to move heated or cooled air throughout the building.

Traditionally, air handlers' fan motors had only one speed. When the thermostat indicated that more heating or cooling needed to occur, the fan motor turned on, and it turned back off when the appropriate temperature was reached. With a variable speed motor, you get more efficient heating and cooling, a higher SEER rating, and better zoning, IAQ, and humidity control, too.

Ductless Mini-Split Systems

If you have an older home that doesn't have ducted HVAC or you've added a room onto your home that isn't patched in to your HVAC system, you may be able to achieve more comfortable temperatures and improve your home's energy efficiency with a ductless mini-split system.

Mini-split systems work in much the same way as standard HVAC systems in that they have an outdoor compressor or condenser and an indoor air handler, linked together by a conduit with the unit's refrigerant and suction tubing, condensate drain, and power cable. If you choose an Energy Star® compliant unit, you'll be certain to get one that's much more efficient than any traditional window unit.

A Couple of Other Useful Terms

Before we finish out this chapter, we should touch on two more terms that don't quite fit into the above categories but that should definitely affect your decision when you make your next

HVAC purchase.

ROI

ROI is actually not an HVAC-specific term. In fact, it's most often used in the world of business, finance, and investments, as it stands for "return on investment." Why is ROI so important when choosing your HVAC system? When you buy your system, you'll have the opportunity to spend as much or as little on it as you like. The sky is the limit on high-tech equipment and ductwork designs, and – at the same time – you can find a number of lower-budget options, as well.

At the end of the day, when you decide which system you want to purchase for your home, you should take into account how much return you're going to get on your investment. If you spend an extra \$500-1000 now, will you experience significant decreases in your energy bills over the next several years? And will you be buying a system that will far outlast the cheaper systems you could buy right now? These questions are exactly why you should consider your ROI when you make your next HVAC purchase.



NATE

NATE stands for "North American Technician Excellence", and it is a national certification throughout the United States for technicians who work on home heating and cooling systems.

NATE is the only certification that's recognized across the entire HVAC industry, so when you choose a service provider to install, maintain, and/or repair your HVAC system, make sure they're NATE certified. That way you'll be sure to get service that stands up to industry standards.

Now that you have a good understanding of the most common industry terms and acronyms that you'll come across in your search for the perfect HVAC system for your home, let's move on. In the next chapter, we'll discuss how you can understand your system's warranty. We'll also discuss tips for choosing the right

manufacturer and the best unit and ductwork design for your home.

After that, we'll move on to talk about how you can be sure to choose the best contractor to install your system so that you can enjoy years of comfort in your home all year-round.

Chapter 3

Understanding Your Warranty and Other Tips for Choosing the Best Unit for Your Home

Even with all of the information we gave you in the last chapter, you still may not quite have everything you need to make the right decision about your HVAC purchase. Many manufacturers, for example, offer units and systems that look very similar on paper. You might think, then, that your best bet would be to pick your specifications and then go with whichever model meets your needs at the lowest price.

That's really not necessarily the best way to buy an HVAC system, though. First of all, not all brands have the same reputations, and you don't want to get a unit that won't last or won't perform the way you need it to. Second, some manufacturers and service providers offer better warranties than others. Just having the peace of mind that you'll be covered if something goes wrong with your system can be worth a lot more than a small price break on a system that doesn't come with a solid warranty.

So what are the differences between manufacturers? And how can you tell if you're getting a good warranty or not?

Choosing the Right HVAC Brand

When choosing manufacturers for your HVAC system, you'll need to understand that this is a much more complicated purchase than buying a car, a laptop, or a smartphone. When you buy any of those products, you'll choose the manufacturer you prefer, and then you'll get the model that meets your needs and your budget.

With an HVAC system, though, you're looking at buying a number of different parts and pieces of equipment, all of which may come from different manufacturers. Some of them work better

together than others, and some have better warranty and service options than others, as well. This is why it's important to choose an expert contractor to install your system for you. We'll get to how to choose the best contractor for the job in the next chapter, but first here are a few of the most trusted manufacturers in the business:

- Trane
- Lennox
- Carrier
- Rheem

These manufacturers also own a few other well-known brands, as well. For example, Trane owns American Standard, and Lennox owns Concord, Allied, and Ducane. Rheem owns Ruud, and Carrier owns Tempstar, Payne, and Bryant. These are all typically well-trusted, quality brands, and the most important thing to know when choosing a brand (or brands) is that they make the product(s) you need and that your contractor has experience working with the brand(s) you've chosen.

With that in mind, let's talk about your warranty...

Understanding Your Warranty

When you buy a car or motorcycle, you take some time to look at the warranty, right? In fact, you probably do this for almost any large purchase because you want to ensure that you're not about to throw money away on something if it has a problem caused by a quality control oversight during manufacturing or by an error in installation.

You should do the same for your HVAC system. Before you buy, read all of the fine print about the scope of the warranty, any requirements on your end, what constitutes misuse and abuse, and whether or not you can transfer the warranty to the new owner if you sell your home. Furthermore, you should check into both your manufacturer's warranty and any warranties that your ser-



vice provider offers.

Your Manufacturer's Warranty

- **Scope** – Is this a full or partial warranty? If something breaks while the system is under warranty, will the manufacturer cover parts and labor or only parts? Is there a deductible?
- **Maintenance and Repair Requirements** – If you don't get regular maintenance, does it void your warranty? If so, be sure that you'll be able to stay on schedule and that you keep all of your service records and receipts so that you can prove that you have upheld your end of the bargain in case of a warranty claim.
- **Terms of Use** – If you're buying an HVAC system for a rental property, make sure that the warranty doesn't require you to be an owner-occupant to receive warranty benefits.
- **Transfer of Ownership** – Some manufacturers do not extend their warranties to the next owner of the home, even if the home is sold within the period that the warranty is active.

Your Service Provider's Warranty

If you've found a great manufacturer's warranty on an HVAC system, you may be wondering why you need to pay any attention to your contractor or service provider's guarantees. After all, if they're NATE certified, they should be able to get the job done right the first time with no trouble, right? Absolutely, but your contractors are just as human as you are. Accidents and mistakes happen. And, if your HVAC system fails due to improper installation, you're not looking at something that the manufacturer will cover.

So, when shopping around for a good contractor, you should absolutely check out the warranty or guarantee they offer for their services. Here are a few questions to ask concerning your service provider's warranty:

- Do they guarantee your 100% satisfaction?
- How long is their product installation guarantee?

- If you have a problem with your installation, will they address it for free, or will they charge for parts and/or labor?
- If you aren't happy with your HVAC system and the issues cannot be addressed, will they uninstall the system and refund your money?

Asking these questions will help you find out everything you need to know about your contractors and how much they stand behind their products and labor. Finding a manufacturer with a solid warranty and a service provider that stands behind their work will put you in good stead for choosing the best HVAC system for your home.

A Few Tips for Choosing the Best Unit for Your Home

Once you have a good understanding of your manufacturer's warranty and your contractor's guarantee, you just need to keep a few other things in mind when shopping around for the right HVAC unit for your home...

Size Matters

First, you absolutely must make sure that the size of your unit works with the size of your home. If you have a smaller, underpowered unit with a weak compressor or condenser, then your HVAC system is going to struggle to keep your home comfortable throughout the year.



It won't matter if you have the most efficient unit on the market – if it isn't powerful enough to push heated or cooled air throughout your home, then you are going to be paying a lot more in energy bills. Furthermore, if you're constantly taxing your system, you can expect a lot more visits from your HVAC technicians because your system is going to have problems and will likely fail altogether a lot sooner than if you got the right unit for the job.

Energy-Efficient Features

In addition to checking out the SEER, EER, and other ratings for your system's energy efficiency, you can also look into some really great energy-efficient features, like smart thermostats and reminder lights that come on when maintenance is needed.

With a smart thermostat, you can monitor your system's efficiency from your smartphone or tablet. You can set it to turn your HVAC system down when you're away and alert it when you're on your way home so that your house is nice and cool (or warm, depending on the season) when you get there.

With a maintenance reminder light, you won't go weeks or months with an inefficient system. Instead, you'll know when you need to call a technician to make sure that everything is operating up to par.

Spend More Now – Less Later

Finally, as you narrow your options down, remember that you're making an investment. While you shouldn't necessarily completely blow your budget on the top-of-the-line, most cutting-edge HVAC system out there, if you spend a little bit more money upfront, you can usually get a higher-rated unit with a better overall system that will function more efficiently. This will keep you cooler in the summer and warmer in the winter, all while saving you a lot of money on your energy bills each month.

Now that you have a good understanding of how to choose an HVAC system for your home, it's time to discuss how to choose the right contractor for the job. In the last chapter of this book, we'll go over the hiring process and everything you need to ask your contractor to be sure that you're choosing the right people for the job.

Remember, you're not just hiring people to install a piece of equipment – you're hiring them to create the best ductwork design and install the right products to heat and cool your whole house as efficiently as possible. Not only that, but you'll also need to be able to trust these people to do work in your home. That's a big deal, and you don't want to take the decision lightly.

Chapter 4

How to Choose a Contractor

So now you have all of the information you need to know to make an informed decision on your next HVAC purchase. Now you just need to choose the right contractor or service provider to get the job done for you. As you know, even the best equipment won't work if it's improperly installed, and you don't want to trust maintenance and repairs of an expensive HVAC system to anyone but experts you can trust. Here's how to find them...



Do Your Homework

First of all, you can start by asking friends, family members, and coworkers if they have any recommendations for great HVAC contractors or by going online and searching for HVAC contractors and technicians near you. Don't just choose the first one that your brother recommends or the first one to pop up in the search results. Make a list of contractors who work in your area and then start checking them out. As you narrow your list down, you'll want to make sure that the contractors you're considering fulfill a few minimum requirements, including:

- They work on your preferred brand(s) of HVAC units and systems.
- They have a lot of positive reviews on sites like Yelp and Angie's List.
- They include positive customer testimonials on their website.
- They guarantee your satisfaction with their work.

Once you've built a list of contractors who meet these requirements, you're going to want to start calling them to find out if they can take on your HVAC job and if they're the ones you want to hire. When you call them, be sure to ask for references and to follow up on them. Find out if the people they use as references really think highly of them and would recommend them for the kind of installation and service you need.

Ask the Right Questions

In addition to asking about their availability and for references, you should always ask your potential contractors these questions:

- Are you NATE certified, and do you use Energy Star® approved equipment and practices? (If the answer is no, move on to the next contractor immediately. There's no point in continuing the interview.)
- Are you a licensed contractor, and are all of your workers properly insured? (You don't want to be liable if a worker gets injured on your property.)
- Can you use my current ductwork, or does it need to be replaced? How much more efficient will my system be if you replace the ductwork?
- What brands do you carry? What brands are you most comfortable working with?
- When can you get started? And when can you have the job completed?
- What kind of service plans do you offer? Do you have a maintenance agreement I can sign up for?
- When can you come see the house for an evaluation? How long will it take to get a written estimate for the job?

After you've interviewed your candidates, you'll no doubt have

narrowed your list down a lot further. If you still have more than one choice, you may want to go with the one who you just seem to get along with better. Before you make your choice, though, be sure to get estimates in writing from each of your potential contractors.

Get Your Estimates in Writing

It's important to get your estimates in writing. This keeps everyone honest, and it can help you avoid a lot of awkward situations. For example, what happens if you remember a lower verbal estimate than your contractor remembers? Who knows which of you is right, and both of you can end up feeling cheated.



Instead, always get a detailed, written estimate, and never agree to a contract without first having your contractor come out for a home evaluation. Without this step, there's really no way for them to know how much work is necessary or how much to charge you. With a thorough home evaluation and written estimate from each of the contractors you're considering, you should have the answer for which one you want to hire right in front of you, and you shouldn't have anything to worry about with installation or maintenance.

And now you have everything you need to know for your next HVAC purchase, whether you're just replacing one part, like a heat pump or air handler, or you're installing a whole new system. With the information in this guide, you should have no problem understanding the equipment you need and hiring the best service provider for the job.

Conclusion

Now that you've finished this guide, you hopefully have all of the knowledge you need to confidently find the best HVAC system for your home. You should now be able to determine whether or not it's time to replace your whole system or whether you only



need a few repairs. You should understand a few of the most commonly used industry terms and why they matter when shopping for new HVAC parts and equipment, as well as what kind of warranty to look for and how to find the best contractor to do the job for you.

If you still have any questions about your next HVAC purchase, don't hesitate to call [Aspire Heating and Cooling](https://www.aspirehvac.com) at **336-970-1359** to talk with an HVAC expert about your needs and how to heat and cool your home more efficiently. Spending a little bit of money on your HVAC system now could save you a lot down the road, and it could make your home a much more comfortable place to live at the same time. Give us a call today.