Heritage
PLUMBING • HEATING
COOLING • ELECTRIC

5 Cool Tips for Getting the Right Air Conditioning System

INTRODUCTION

When the time comes to consider buying a new air conditioning system, a little research can help you find the ideal system for your home.

After all, this is an important investment in your family's comfort, so it makes sense to learn a bit more about AC systems and the companies that install them.

That's why the team here at Heritage put together this handy homeowner's guide to help you gain a better understanding of the process and ask the right questions along the way.

We'll cover some of the basics of home cooling, proper air circulation and energy efficiency; and talk about why it is so important to select an HVAC contractor who is skilled at analyzing and understanding the unique conditions of your home.

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TIP #1

Out With the Bad Air

Effective Air Conditioning Begins with Removing Heat and Humidity

There are two approaches to cooling your home. The more typical approach involves trying to “push” or “force” cool air into a house that is already full of hot, humid air. This requires equipment with more power, it’s not very efficient and it’s also not very effective.

Here’s an example. Have you ever been in a restaurant or home with central air that either felt cold and damp, or stuffy and sticky — even though the thermostat was set at a comfortable 72 degrees? These are the kinds of problems you get when you try to “force” cool air into a room that already has high heat humidity.

However, there is a much better way. Truly efficient and effective air conditioning is not just about forcing cool air into your home, it’s about first removing excess heat and humidity. Once that excess heat and humidity is removed, your system will be able to efficiently cool your home.

Designing a system to accomplish this in your home requires a little extra effort and expertise on the part of your contractor, but it is well worth it. The job starts with carefully measuring how much heat and humidity is getting into your home — through windows, doors, walls, ceilings, air leaks, heat from appliances and people, etc.

For best results, you’ll want a contractor who analyzes exactly how the air flows through your home, then designs a system that pulls heat and humidity out of your home and replaces it with cool, comfortable air. This is absolutely essential if you want to take advantage of the second guideline — getting air flow to work for you.

TIP #2

How to go With the Flow

Consistent Air Circulation is Key to Effective Home AC

If a system lacks consistent air circulation between rooms and floors, the result will be uneven temperature and humidity control, leaving you uncomfortable — too warm or too cool.

The key to consistent comfort is consistent air circulation. Think of each room in your home as a section of a wheel. When you don't get good circulation in one room, it's like having a flat spot on a wheel; the wheel is not going to roll smoothly. With central air conditioning, one room with bad circulation can keep air from circulating smoothly through your whole house.

This is so important. Experts say that improper air flow can reduce the efficiency of your air conditioning equipment by as much as 60%! Improper air flow is also a common cause of many breakdowns in air conditioning systems. When air is not flowing smoothly, this puts extra pressure on the equipment to force cool air into the home.

The Key to consistent comfort is consistent air circulation.

So how do you get proper air circulation throughout your home? It starts with a system that is designed to draw the right amount of heat and humidity out of each room as the cool air comes in. And this is not just about having the right air conditioning equipment. Just as important is having the right size and location of the ducts that circulate the air through your home. Good ductwork design is essential to good air circulation and consistent comfort.

You should ask any professional you are considering for central air installation to submit a copy of the ductwork design with their quote and go over it with you. With a little explanation, you'll be able to understand the design, and this will help assure you that you'll be getting the proper air circulation. Without a good ductwork design, you're at risk of being disappointed with your new system's performance.

TIP #3

Conserving Energy

How to Choose an Air Conditioning System That is Highly Energy Efficient

Central air conditioners are rated according to their Seasonal Energy Efficiency Ratio (SEER). The higher the SEER rating, the more efficient the air conditioner. Many older central air conditioners achieve SEER ratings of only 6 or 7, while new equipment is required by the government to have a SEER rating of at least 13!

Since energy costs are going up all the time, it makes sense to consider purchasing the most efficient system you can afford. The American Council for an Energy-Efficient Economy recommends getting a system with a SEER rating of at least 14.5.

However, it's important to keep in mind that the actual efficiency of your air conditioning system will be significantly affected by the conditions under which your system is running. It's a bit like the mileage rating on your car. Your vehicle might be rated at 30 miles per gallon, but if it's loaded with people and you're driving up and down hills or dealing with stop-and-go traffic, you're probably not going to get 30 miles per gallon.

Likewise, if your air conditioning system is burdened by a poor air flow system, or if it is not designed to remove heat and humidity from the home, these factors will actually lower your SEER rating. In other words, even if you have equipment with a SEER rating of 13, poor air flow could reduce the effective SEER value to 6 or 7! That's why the design and installation of the entire system is so important.

By purchasing equipment with a high SEER rating — and by getting the right design and installation — you'll be maximizing your annual savings on energy costs, keeping your home more comfortable and protecting the environment as well.

TIP #4

The Goldilocks Formula

Not 'Too Big,' Not 'Too Small' – AC System Should Be 'Just Right' for Your Home

The most common mistake people make when purchasing central air conditioning is getting a system that is the wrong size for their home — a system that is either too large or too small for the size, style and unique characteristics of the house.

This can happen when contractors recommend an oversized unit, claiming that "bigger is better." It isn't — it's just more expensive. Or it can happen when contractors try to sell you a smaller unit in an effort to underbid other contractors and make sure they get the job.

Consider some of the problems you can get into from overbuying or underbuying.

An oversized central AC system will turn on and off too frequently, which will wear down your equipment and waste electricity. Plus, the larger system will cost you more upfront.

This frequent cycling on and off will also make your indoor temperatures fluctuate more, resulting in a less comfortable environment. The oversized unit will lower temperature too quickly and then turn off before removing the appropriate amount of humidity. This is another reason why homes with oversized units feel cold and clammy, or chilled; the air is cold and damp.

EPA

The Environmental Protection Agency estimates that nearly half of all existing air conditioning equipment is oversized and wasting energy!

Likewise, a system that is too small for your home will overwork the air conditioner and may fail to keep your home adequately cool.

Such a unit will lower humidity, but will not lower the temperature enough, so the air will feel dry but warm. Plus, the system will run all the time, which will lead to premature breakdowns.

Even if you get the right size air conditioning equipment, you also have to beware of “buying too small” when it comes to your air duct or air flow system. Industry sources say it’s not unusual to see return air systems undersized by 30-50%. Improperly placed and installed air distribution systems can cause equipment problems that include compressor burnout and frozen indoor air conditioning coils.

A good way to be sure the equipment you’re buying is not oversized or undersized is to work with a contractor who plans to do a formal “load calculation.” Ask for a copy of the calculation to be submitted with the proposal. This will at least assure you that the contractor takes capacity design seriously and that he’s not just “winging it.”

TIP #5

The Homework Factor

Work with a Professional Who Studies Your Home Before Designing Your System

The EPA advises only working with a NATE-certified HVAC contractor who will spend significant time inspecting your current system and home to assess your needs. This includes taking measurements, checking insulation and ductwork, running calculations and asking plenty of questions.

At Heritage, for example, we never recommend a central AC system without first doing a complete analysis of your home and checking a list of factors that include:

- ✓ The size and style of your house and how many windows it has
- ✓ How well insulated or airtight it is
- ✓ How much solar energy comes in through the windows
- ✓ How much shade is on your home's windows, walls and roof
- ✓ How much heat the lights and appliances give off
- ✓ Your typical thermostat settings
- ✓ The number of occupants in the home
- ✓ How much air leaks into your home from the outside

We take all of these factors into account — measuring all rooms, examining insulation, checking windows and doors, and then inputting all the data into special industry software to calculate cooling load.

We will also ask you a lot of questions, such as:

- ✓ Do you have moisture problems?
- ✓ Do you have hot or cold rooms?
- ✓ Do you have any “problem areas”?
- ✓ Are you about to make any changes to your home?
- ✓ How have your energy bills been running?

All of this information helps us determine how much cool air the system must generate on the hottest days in order to keep you comfortable.

At Heritage, we make sure that all the components of your new system are matched, tuned and designed to work together. We will customize and tweak the setup and operation of your new equipment so it operates at peak performance and efficiency within the unique conditions of your home.

Hopefully we’ve answered most of your questions, because we know you’ll be counting on your air conditioning system to keep your home cool and comfortable for many years to come. Please don’t hesitate to contact us if you have additional questions or to request a free, no-obligation Home Comfort Survey.