



Are You Getting the Most Out of Your Heating & Cooling System?

You rely on your heating and cooling system to keep you comfortable all year, even when the outside temperature soars to 95 degrees or plummets to 10 below.

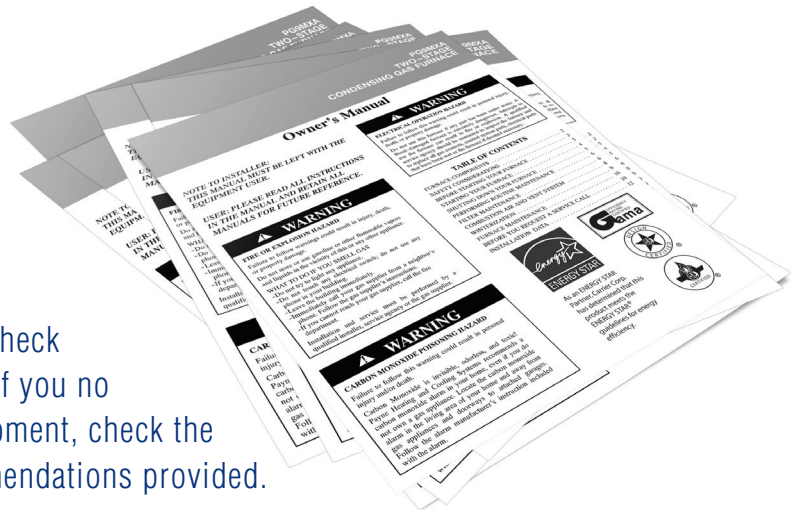
But how can you ensure that your equipment will perform properly when you need it most? If you want your home to remain comfortable all year long, make a thorough check of your system on a regular basis. Doing so will enable you to find, and correct, any problems that may prevent your equipment from working at optimal capacity.

HOW CAN YOU GET THE MOST OUT OF YOUR HEATING & COOLING SYSTEM

- **Check your manufacturer's maintenance guidelines.** These guidelines specify an annual inspection for the furnace and another for the air conditioner. At the same time, you can check any accessory items, **i.e. humidifiers, high efficiency filters, etc.** and have your **water heater** checked as well.
- **Contact a professional HVAC service technician** for routine maintenance.
- **Consider an annual service contract.**
- **Do an energy audit** to identify savings opportunities and make sure your home's HVAC system doesn't have to work too hard to maintain comfort because of deficiencies in the construction of your home.

MANUFACTURER MAINTENANCE GUIDELINES

Regardless of manufacturer, cooling and heating equipment is designed to be durable. Regular maintenance can keep it running longer, more efficiently and with fewer breakdowns. It is a well-proven fact that the money invested in regular preventive maintenance is paid back and then some. To learn how to properly maintain your system, check your manufacturer's maintenance guidelines. If you no longer have the owner's manual for your equipment, check the manufacturer's website and follow the recommendations provided.



“Whether your equipment is old or new, top of the line or standard issue, its manufacturer will advise you to check, and then clean or change, the air filter on a regular basis. This action is perhaps the most important routine activity to keep your system in good operating condition.”

A clean filter is the number one way for homeowners to increase the efficiency of their heating and cooling system. With a few exceptions, replacement filters are inexpensive and available thru your HVAC contractor or even at your local home improvement store. We often see customers not using the correct filter. Often homeowners simply assume that the slot provided for the filter is the correct size and that is often not the case. Additionally, many customers purchase expensive, high-efficiency filters for their system in an attempt to be healthier. Sometimes these filters are too restrictive or undersized for the application. System airflow is then choked and this damages the equipment, reduces comfort and increases energy consumption. By trying to be healthier, the customer has inadvertently created more problems. Please ask your professional heating contractor which filter is best for your system and what size is correct for your installation.

To make it easier to remember to accomplish this task, many digital programmable thermostats conveniently indicate when the filter needs to be changed—usually based upon runtime. Some more advanced units actually can measure when the filter is clogged and needs to be replaced. If yours does not, examine the filter twice a year at a minimum – as summer and winter approach – to see if it's still in good shape. Pets and children can increase the number of filter changes per year due to extra activity in your home. Our recommendation is to have your professional contractor recommend how often your filter should be changed or cleaned based on your lifestyle, the type of filter and your system.

CONTACT A PROFESSIONAL

One of the best ways to get the most out of your heating and cooling system is to call a professional HVAC service technician to perform routine maintenance. If your system has never been checked, get your system checked as soon as possible. After that, check seasonally per the manufacturer's recommendation.

Contrary to popular opinion, the best time to check a system is not at the beginning of the season. It is better to schedule your tune-up well into the season after it has been working for some time.

When your doctor wants to check your heart he orders a "stress test" Many of you might have experienced this procedure that is usually performed on a treadmill. They start out easy and then gradually speed things up and incline the treadmill to add stress. They know that problems don't show up until your heart is working hard. Similarly, problems with air conditioners and furnaces arise when they are performing under stress—very hot or cold weather. That is why it is preferable to get your unit checked after the beginning of the season.

You probably are wondering why you need to have maintenance twice a year. Your equipment is used to both heat and cool your home and each season offers its own set of distinct problems. Having your system checked out by a professional will ensure that your home will remain comfortable all year long, prevent major repairs, and alert you to potential problems. Your professional will also lubricate moving parts every six months which helps maintain the equipment. Studies consistently show that skipping a year can result in significantly reduced system efficiency—so as the manufacturers recommend, each season is the best frequency for your system tune-up.



Professional HVAC service technicians are specially trained to inspect your heating and air conditioning system both indoors and outside. They will have a long list of items to check, and they will know what trouble signs to look for. Heating and cooling professionals have specialized diagnostic tools (like combustion analyzers) and meters to really understand how well your unit is working. Most owners do not have these types of tools; so like our cars today, this activity is best left to the professionals.

When examining the air conditioning unit located outside, the service technician will check the level of refrigerant and add some if necessary; remove any debris in the cabinet; inspect the coil and clean it if needed; and inspect for damage or wear to the fan's motor and blades, the control box and its electrical parts, and the compressor and its tubing. If you consistently need to add refrigerant on an annual basis, there is likely a leak in your system. Homeowners are mistaken if they think "topping off" refrigerant annually is a customary practice. It is not and you should identify and repair the leak in your system immediately. An improperly charged system (with a leak), can yield a 15-20% loss in efficiency along with reduced life expectancy and comfort complaints, too.



These routine maintenance procedures are important because dirty air conditioning coils make it difficult for the equipment to properly cool your home. To compensate, your air conditioning unit may run longer, increasing energy costs and reducing the life of the equipment. Cleaning your equipment ensures that it will work efficiently, as airflow problems can reduce efficiency by up to 30 percent.

Indoors, during either seasonal checkup, the service technician will inspect the blower assembly, the evaporator coil, drain pan, condensate drain lines, the ignition system and its safety controls, the heat exchanger or heating elements, and the control box and its parts. If needed, your professional will clean any component that has gotten dirty. In addition, they will check for gas leaks by the furnace if you have a gas furnace and inspect the vent pipe to make sure all products of combustion are sent outside as they are supposed to.



The importance of regularly inspecting your gas powered heating system cannot be understated, as a dirty or malfunctioning unit could be a safety hazard.

While indoors, the service technician can also inspect your home's observable ductwork for leaks, as gaps waste money and energy. While this task is often not part of a standard tune-up protocol, if you are unhappy with the performance of your system, this exercise can help diagnose inadequacies in your comfort system's performance. Recently, we have added a new diagnostic procedure to check the pressure in the ductwork. This new test is much like when your medical doctor checks your blood pressure in his office. It can point out a number of problems that negatively affect the operation and efficiency delivered by your home comfort system. The thermostat's settings will also be checked to make sure your heating and air conditioning system provides the comfort you want.

The equipment will be turned on and monitored to ensure it is operating properly. The service technician will be on the lookout for unusual noises or odors. The temperature in your house will be measured, and fan settings will be adjusted accordingly. Filters will be also checked in case you forgot to clean or replace them.

Once your heating and cooling system has been thoroughly inspected, you will receive a detailed maintenance report that includes a list of the items examined along with any recommended repairs or potential problems.



Regular maintenance will ensure that your equipment will work when it needs to. And if any problems pop up, you will have the name of a reliable service technician to call that is already familiar your system that has a baseline on its operation and performance. After all, there's nothing worse than scrambling for the name of a repairman when the heat goes out on the coldest day in winter or the air conditioning on the hottest day in summer.

CONSIDER A MAINTENANCE SERVICE AGREEMENT

A good way to ensure that a service technician will be available when the unthinkable happens is to purchase a service agreement. That way, you'll have a relationship with a reliable company you trust and are familiar with. As an added bonus, many companies give customers with these agreements priority service, price breaks on parts, or waive overtime fees.

Another benefit to having a service agreement is that the company will keep track of your repair and maintenance records for you. They will call you when it's time for maintenance so that if you are protected from forgetting to take needed action. It really is a case of the old adage—"out of sight, out of mind". When it's time to purchase a new heating and air conditioning system, they will be familiar with your needs. Be sure to inquire with the technician about the age and condition of your system to minimize surprises regarding an unplanned replacement.

The types of service agreements available vary, as some cover only one appointment per year, while others cover several service calls throughout one year. And if you move out of your home, many are transferrable to the new homeowners.



CONDUCT AN ENERGY AUDIT

Once you know that your heating and cooling system is working as it should, find out if your home is as energy efficient as possible by getting an energy audit. You can conduct a preliminary evaluation yourself or simply hire an expert to do it for you. If you don't believe you are capable of diagnosing problems, or if you prefer not to climb up ladders or into crawl spaces, consider hiring a professional to conduct your energy audit.

An energy audit will review how much energy your home uses. You'll see where energy is being wasted so you can then take steps to make your home more energy efficient. Doing so will enable you to save money on your utility bills while conserving energy. To get a relative idea of how energy efficient your home is go to www.energystar.gov. This site is a treasure trove of information which is worth exploring but specifically click the “**Assess Your Home Button**” on the home page under the Improvement tab. Here you will find the “Home Energy Yardstick” evaluation which gives you a quick and easy comparison on your energy use.

When conducting an energy audit, you check the appliances and systems in your home that cost you money to run. ENERGY STAR, the U.S. Environmental Protection Agency and U.S. Department of Energy have designed programs to help consumers save money and

protect the environment via energy efficient products and practices. They offer the following breakdown of how energy is used in most homes: it says that 29% is for heating, 17% is for cooling, 14% to heat water, 13% for appliances, 12% for lighting, and 4% for computers and other electronics. Appliances and equipment that are both designed and run properly waste little or no energy.



HOME ENERGY BREAKDOWN

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As you walk through your home, be on the lookout for problems. Keeping a list of what you've discovered will help you prioritize any needed improvements. If you hire a professional energy auditor, it will also help to focus the evaluation and results. A very straightforward starting point is checking your lights. Consider using compact fluorescent bulbs. Also, it may be worthwhile to use lower watt bulbs in some fixtures. LED lights are becoming more cost effective, but still are pretty expensive to buy—though the manufacturers generally claim they will last a long time before needing to be replaced.

Outside of your home, look for holes near faucets, pipes, electric outlets, and wiring. Also watch out for cracks and holes in the mortar, foundation, and siding. Make sure doors and windows have tight seals. Don't forget to examine your chimney, too.



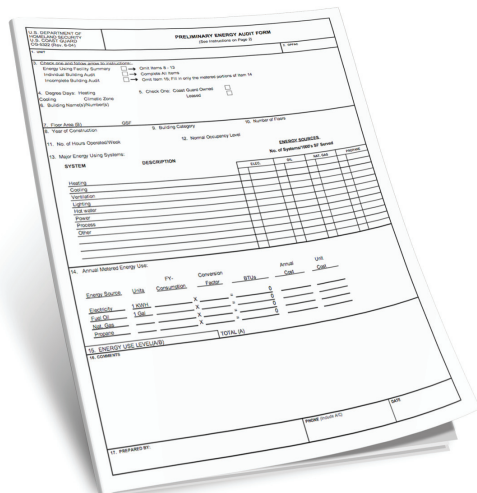
If you don't believe you are capable of diagnosing problems, or if you prefer not to climb up ladders or into crawl spaces, consider hiring a professional to conduct your energy audit. Even homeowners who conduct their own initial energy audits hire a professional to ensure they've found all inefficiencies or determine how best to correct a problem.

Many utility companies offer customers **FREE OR HIGHLY-DISCOUNTED ENERGY AUDITS**

This is the case for both gas utilities serving the greater Cleveland area where we are located. If yours does not, ask your neighbors and relatives for the names of trusted professionals. Or contact your state's Environmental Protection Agency for recommendations. Ask the person you plan to hire about their training, certifications, references and membership in industry associations.

A professional auditor will determine your home's energy efficiency using a variety of techniques, along with very specialized diagnostic equipment, including infrared cameras, a unique device called a blower door and electronic devices. He or she will also evaluate a year's worth of energy bills to identify changes you can make to lower your costs, and inspect all your appliances to determine if upgrades are necessary.

Once the energy audit is complete, you will receive a detailed report that lists problems along with ways to solve them. This report becomes the personal energy plan for your home. Your energy audit may indicate that you should seal up drafts and or leaks, add insulation, or replace/seal your leaky pipes. This provides the perfect opportunity to make small changes that will keep your equipment in good repair. Once these basic tasks have been addressed, it might be prudent to update an older, less efficient home comfort system with a high-efficiency furnace or air conditioner. Probably the last item might be windows and doors though you need to evaluate the payback here carefully.



Homeowners are often amazed to find that professional auditors' specialized equipment can pinpoint problems they did not know they had. For instance, inside your home they will check for air leaks in such places as window frames, baseboards, electrical outlets, recessed lights, switch plates, fireplace dampers, mail slots, and around entry and attic doors as well as pipes and wires. Reducing drafts in your home may save you 5 to 30 percent in energy costs per year.



In the attic, the professional auditor will check if insulation levels meet the recommended minimum requirements for your home and help to make sure that the attic is sealed from the floor below. To determine if your walls are properly insulated, he or she may perform a thermographic inspection. This is a special kind of photograph that depicts areas of energy loss.

In the basement, the professional auditor will be able to tell if insulation is under the flooring in the living area of your home. He or she will also recommend that you insulate your water heater, hot water pipes, and furnace ducts.

These are the highlights of a good energy audit and even more things are often addressed. We hope you will agree that it offers a lot of value and information to help understand how energy efficient your home is currently. It's important to remember that it requires more than an audit to save energy. You have to follow through on the recommended improvements.

CONCLUSION

Keeping your home comfort system operating properly and improving the efficiency of your home in general is a complex involved task.

There are plenty of reasons to keep your heating and air conditioning system in top form at all times. Obviously, you don't want your air conditioner to break down on summer's hottest day, or your heat to go out on winter's coldest day. But heating and air conditioning equipment that is in good shape will heat and cool your home more efficiently, saving you money on your utility bills and helping to protect the environment.

We would be happy to provide you guidance on how to keep your current heating and cooling equipment working efficiency.

P.K. Wadsworth has been a trusted Cleveland HVAC service company for 75 years. We repair, replace, remodel and upgrade every heating and air conditioning need, from historic landmark homes to new construction. We understand the area's construction and local heating and air conditioning needs. P.K. Wadsworth provides indoor comfort solutions to make homes and workplaces comfortable, healthy, and safe.





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