

Buying central air conditioning for your home

FACT SHEET



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Central air conditioning is a popular way to enhance your home. Air conditioning keeps you cool in the summer, controls humidity and can help reduce allergies. This fact sheet provides guidelines that will help you maximize the value and benefits of central air conditioning.

BUYING TIPS

Get the right size

A correctly sized air conditioner matches cooling power to the characteristics of your home. Ask your contractor to do a load calculation that takes proper account of your home's size, window area, insulation levels and other factors. With air conditioning, bigger is not better (see box below).

Buy high SEER

The Seasonal Energy Efficiency Rating, or SEER, compares the cooling power of the equipment to its electricity use. Focus recommends buying a unit that has a SEER of 15 or higher for optimum savings.

Add a thermostatic expansion valve

A thermostatic expansion valve helps keep the cooling coils at the correct temperature. This helps your air conditioner be less sensitive to irregularities in airflow or amount of refrigerant. These valves are standard in some systems, but can be added to others.

Look at moisture performance

Your comfort depends as much on controlling humidity as it does on keeping cool. Air conditioners vary in their ability to remove moisture from the air. Ask your dealer about the performance of the units you're considering.

Consider fan operation costs

Air conditioning costs depend partly on the furnace blower that distributes the cool air. If it's inefficient, your electricity costs could be quite high.

If your furnace is old, consider replacing it with a model that has a variable speed blower motor. You'll get the benefits of quieter operation and lower electricity bills.

Focus recommends setting your fan on "auto", even if you have a high efficiency blower motor. Not only will running your fan continuously cost more money, it will also increase the humidity level in your home, making you less comfortable.

INSTALLATION TIPS

Your contractor will perform a number of checks on your new system. The following two are essential:

Check airflow

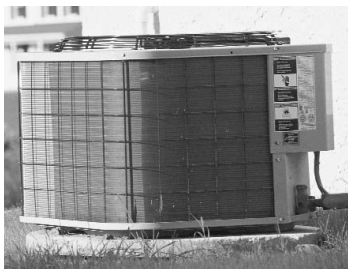
Proper airflow will prevent freezeups, ensure good dehumidification and may improve efficiency.

Check refrigerant charge

This will protect the air conditioner from possible damage, ensure efficiency and boost cooling performance. If your unit doesn't have a thermostatic expansion valve make sure your contractor performs a "superheat" test.

In addition, ensure the condensing unit is located in a shaded area away from bedrooms or other areas where noise could be a problem.

BIGGER IS NOT BETTER



The condenser is the part of a central air conditioning system that discharges heat from your house to the outdoors.

A "supersized" central air conditioning system can sound appealing, but in reality it has major drawbacks.

Higher equipment costs. Each additional ton* of air conditioning can cost you \$200 or more.

More wear and tear. An oversized unit turns on and off more often than one that's properly sized. Frequent cycling causes needless wear and tear and wastes energy.

Poor dehumidification. An oversized system may not run long enough to wring moisture out of the air.

A strained electric system. Big systems draw lots of electricity, and a city full of air conditioners can lead to more power plants and transmission lines—and higher electricity costs.

* A ton of A/C = 12,000 btu/hr. This is equal to the cooling capacity of melting one ton of ice per day (a cube 3 feet 3 inches on a side).



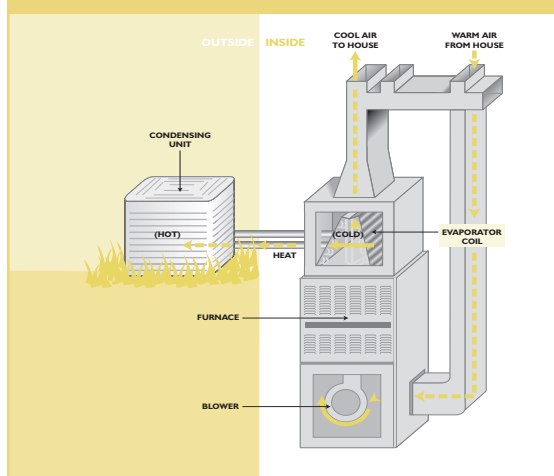
focus on energy™

The power is within you.

REPAIR TIP

If you're replacing a broken condensing unit, make sure it matches the indoor coil (evaporator coil). Not all condensing units and coils work together and mismatched coils will prevent your system from reaching the efficiency level listed by the manufacturer. If your system is ten years old or older consider replacing both the coil and condensing unit to get higher efficiency.

CENTRAL AIR CONDITIONING SYSTEM



OPERATING TIPS

Reduce cooling needs

Insulate and air seal. Sealing air leaks and insulating walls and ceilings helps prevent heat and hot air from entering your home. Insulate and air seal before buying a new air conditioner—you may be able to buy a smaller, less expensive system.

Use trees for shading. Plant deciduous trees on the south side of your home to provide shading from the hot summer sun. If that's not feasible, install window awnings.

Cool at night. Air conditioners are better at removing heat when it is cooler outside. Take advantage of this fact and do your air conditioning at night. You may also be able to take advantage of low, off-peak electricity rates. Contact your local utility for more information.

Use natural cooling methods. Don't forget about ventilation and shading. If it's dry and cool at night, open your windows and let the outdoors do the air conditioning for you. In the morning, before the heat of the day, close the windows and blinds to keep the cool air inside.

Reduce appliance waste heat

Minimize the use of appliances that add heat and humidity to your home when the demand on your air conditioning system is highest. Run the dishwasher at night or early in the morning. Also consider alternative cooking methods on the hottest days, like grilling outside or using the microwave.

You'll also decrease the load on your air conditioning system by buying efficient appliances that naturally produce less waste heat. Look for the ENERGY STAR label to guide you to efficient choices.

Run your system wisely

Set a reasonable thermostat temperature. A temperature of 78°F is usually adequate to maintain comfort, especially if you also use ceiling fans to maintain air circulation. Each degree you add to the thermostat setting above 75°F cuts your cooling costs by three percent.

Get annual maintenance. Hire a qualified service technician to maintain your system. The technician should check indoor and outdoor coils, airflow, refrigerant charge and electrical connections.

Another important thing is to change the air filter on a regular basis. Dirty filters can increase your air handler's electrical costs by up to 40 percent. Fiberglass filters need to be changed monthly, media filters can be changed less often. Ask your service technician for advice.

FOR MORE INFORMATION

Focus on Energy

Contact Focus on Energy to learn more about smart energy choices. Download the fact sheet "Cooling Basics for Your Home." The Efficient Heating & Cooling Program also provides valuable consumer information and services. Call 800.762.7077 for more information.

focusonenergy.com

American Council for an Energy Efficient Economy

The American Council for an Energy Efficient Economy maintains a list of top-rated energy efficient central air conditioners.

aceee.org/consumerguide/cooling.htm

ENERGY STAR

The federal ENERGY STAR web site provides detailed information about cooling equipment.

energystar.gov

Comfort Institute

This web site provides free consumer protection reports on buying equipment and choosing a contractor.

comfortinstitute.org

How Stuff Works

Learn how air conditioning works at the How Stuff Works web site.

home.howstuffworks.com/ac.htm

