

How to buy a new central air-conditioning system

A central air conditioner is more than just the largest appliance in a home—it's part of a carefully designed system that also incorporates a thermostat and an array of ducts that deliver and circulate cooled air throughout the structure. In most cases, a central air-conditioning system is a more energy-efficient choice for regularly cooling a home than using room air conditioners in three or four different rooms.

However, there's no getting around the fact that a central air conditioner can be fairly expensive to purchase—and that it must be installed by a qualified heating and cooling contractor. If your home doesn't have central air-conditioning—but does have a network of ducts for a forced-air furnace—you likely can use the same ducts for cooling, as long as they're the proper size and free of leaks and obstructions. On the other hand, if your home is heated by a boiler or electric baseboard units, you'll need to add a duct system, which can be both difficult and expensive—especially in a multi-level home, where you might have to sacrifice closet space or build “chases” along walls or in corners to hold the ducts.

Upgrade if your system is 10 to 15 years old

If your home already has central air-conditioning, there are a couple of

times to consider upgrading to a new system. First, start shopping if you will need to spend almost as much (or more) to repair your present unit as you would to replace it. Second, if your system is 10 years old or older, it's probably pretty inefficient, and you should consider re-

placing it with a newer one. (Some of the best models being sold today are **twice as efficient** as ones that were available 10 years ago.) Depending on use, cost of electricity and temperature, the utility bill savings gained can pay back the cost of a new cooling system within a few years.

This may be the right time to upgrade your heating system too. Since both systems share components, it doesn't make sense to add a super-efficient air conditioner to an aging forced-air furnace—and you'll likely save money

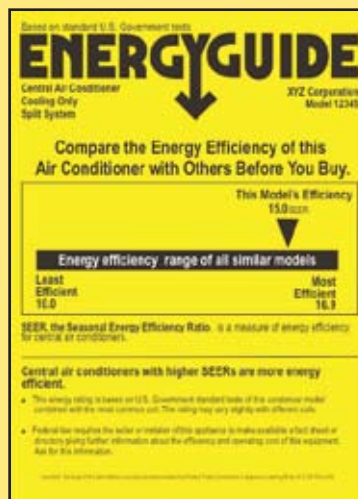
by updating both systems at the same time, as opposed to changing one now and the other in a couple of years.

First consider the type of unit you need

If you're adding an air conditioner to an existing furnace—or just upgrading your existing central air-conditioning unit—you have two choices: a **conventional split system** (with the compressor unit outside and the evaporator inside) or an **add-on, air-source heat pump** that can cool your home in the summer and help with the heating load in the winter. If you're upgrading your entire heating and cooling system (or building a new home), you

have other possibilities; in addition to a conventional split system, look at an **air-source heat pump** or a **geothermal heat pump**. (Heat pumps operate like conventional air conditioners, except they also run in reverse to provide heat during cold weather.) For more information on heat pumps, contact your local electric cooperative or visit the Iowa Heat Pump Association Web site at <http://www.iaheatpump.org>.

No matter which type of cooling unit you choose, be sure to fully explore all of the **energy-saving options** avail-



When shopping for an air conditioner, look for the EnergyGuide label that shows the energy efficiency of each model and allows you to compare the energy usage of competing systems.

Heat water with your air-conditioning system

A central air-conditioning system or heat pump can heat water with the addition of a **desuperheater**—a heat recovery unit that captures waste heat from a central air conditioner, heat pump or geothermal heat pump and uses it to heat the water in a water heater. Since the desuperheater only works when the system's compressor is running—and the equipment is relatively expensive—the payback period for a home in Iowa's climate can be pretty slow. Ask a heating and cooling contractor for a detailed analysis on whether a desuperheater makes sense for your home.

Here's a solution for an older home without a duct system

One way to get around all of the construction necessary for adding ducts in a home built without them is to use a **mini-duct central air-conditioning system**. It uses a conventional air-conditioning compressor or heat pump outdoors and a special high-powered blower in the basement (the preferred location) or the attic. The system uses ducts with a two-inch inside diameter, so it's easy to run them through walls or the corners of closets to rooms above. You can buy heavily insulated ducts to run through an attic or other unfinished space, and ceiling, wall and floor outlets are available.