

# Hybrid Heating and Cooling Systems



**Advice when you want it.  
Help when you need it.**

## Getting the best of both worlds.

Having two sources of heat for your home may be more economical than just one. That's the basic idea behind hybrid heating and cooling systems, which combine the year-round benefits of heat pumps or geothermal systems with supplementary heat from a natural gas or propane furnace.

### Matching the Need

During most of the heating season, today's heat pumps and geothermal systems provide remarkable efficiency and quiet comfort. Once outdoor temperatures fall below a set temperature, the system automatically switches over to the furnace, which is at its most efficient when temperatures are below the set temperature.

### More Efficient Together

Because both the heat pump or geothermal system and the furnace operate when each is most efficient, you get greater efficiency and lower overall heating costs. In fact, electric heat pumps produce three times as much energy as they use. Typically, hybrid systems pay for themselves through energy savings in the first ten years, and keep saving you money after that.

### Reliable, Advanced Technology

Today's high-efficiency air source heat pumps and geothermal systems provide year-round comfort with reliable technology. Improvements to coil and motor design, coupled with variable-speed blowers and sophisticated thermostatic expansion valves make today's heat pumps a choice you can count on for years to come. In addition, because the heat pump or geothermal system and furnace split the heating work, both should have a longer service life than if you used one or the other.

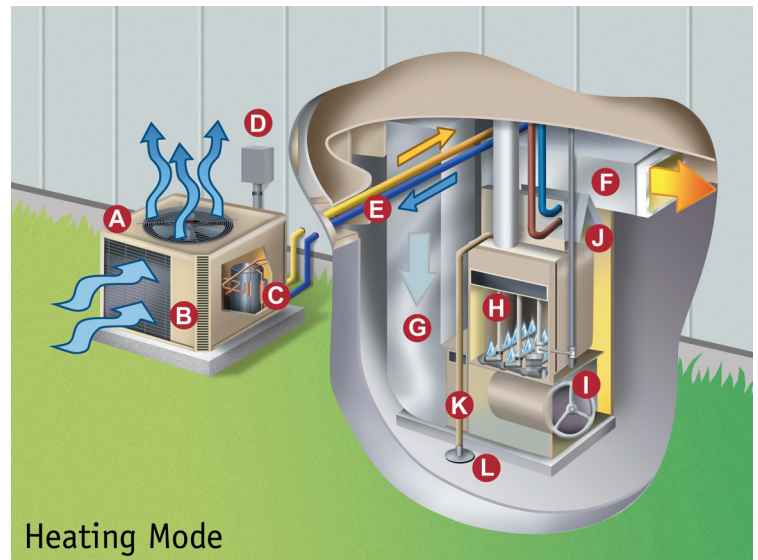
### Two Great Choices

With a hybrid system, you can choose either air-source heat pumps or geothermal systems. Air source heat pumps find the heat energy in outdoor air, and "pump" it into your home. Geothermal systems take advantage of the steady year-round temperatures several feet underground by using underground pipes to transfer heat between your home and your yard.

### Air Conditioning, Too

During the summer months, both heat pumps and geothermal systems work just like air conditioners, using a refrigerant to transfer

heat from inside your home to outside. An air source heat pump uses outdoor coils to remove the heat, while a geothermal system circulates it underground.



Heating Mode

- |                      |                      |                       |
|----------------------|----------------------|-----------------------|
| A. Outdoor fan       | E. Refrigerant lines | I. Blower             |
| B. Outdoor coils     | F. Supply air        | J. Indoor coils       |
| C. Compressor        | G. Return air        | K. Air cleaner        |
| D. Disconnect switch | H. Gas furnace       | L. Condensation drain |

With a hybrid system, both the heat pump or geothermal system and furnace are connected to the home's ductwork. The heat pump or geothermal system handles all of the home's cooling needs and most of its heating. When temperatures become very cold, the system uses the furnace to provide supplementary heat.

### Safe and Comfortable

Heat pumps do not produce dangerous gases such as carbon monoxide, so they provide safe, clean heating and cooling for your family.

### Which is Best?

Your local Energy Advisor can help you choose the right type and size of heat pump and furnace for your home. Hybrid systems can also be installed with baseboard, ceiling panel, floor and in-wall heating, although you may need to install ductwork.



A Touchstone Energy® Cooperative