



A Cleaner Environment It's In Our Nature

There's enough energy in your backyard
to heat and cool your home—without

using expensive fossil fuels that pollute the air we breathe. Now you can have

safe, reliable, energy-efficient heating and cooling from one piece of equipment. WaterFurnace comfort systems are the leading edge of geothermal technology. Instead of burning fossil fuels, they move **energy to and from the earth** to heat and cool your home. Compared to ordinary systems, WaterFurnace geothermal technology can **save you up to 60 percent** on your monthly energy bills, while **protecting your family** from the danger of carbon monoxide and keeping the environment clean.

waterfurnace.com



Breathe Easy With WaterFurnace

The Cutting Edge

WaterFurnace geothermal systems capitalize on the solar energy stored year-round just beneath the earth's surface. By using this free and renewable energy with a small amount of electricity to power a compressor and fan, geothermal systems can heat and cool homes with unmatched efficiency—providing savings of up to 60 percent on monthly energy bills.

Geothermal energy is an unlimited resource. The lot surrounding a suburban home contains a vast reservoir of low-temperature thermal energy, typically 10 times more than is required over an entire heating season. And this resource is constantly replenished by the sun, the surrounding earth and heat rejected while the geothermal system is cooling in the summer.

Use Resources Wisely

WaterFurnace geothermal systems are recognized by the United States Environmental Protection Agency as the most environmentally friendly, cost-effective and energy-efficient heating and cooling technology available. So, you can make a significant contribution to a cleaner environment—while saving up to 60 percent on your home's energy bills.

For each unit of electricity consumed, a WaterFurnace geothermal system delivers three to four units of energy, giving it a 300-400 percent efficiency rating, on average. The most efficient—and expensive—gas furnace provides only 90 percent efficiency. This efficiency ratio is the basis for a geothermal system's remarkable potential for energy conservation and the foundation of geothermal technology—moving heat rather than creating it. A typical 2,500-square-foot home with a geothermal system saves the electric utility company from having to burn more than nine additional tons of coal a year, compared to an electric resistance heating system. And this savings increases with larger installations.

Help Reduce Global Warming

Geothermal heat pumps help electric utilities achieve significant reductions in their peak demand loads. By reducing the demand on electric utilities, geothermal systems reduce the need for new power plants, which typically are powered by coal or natural gas. These systems also minimize the threats of acid rain, air pollution, the greenhouse effect and global warming—problems directly linked to the burning of fossil fuels.



Growing Green

- ✓ Installing a single geothermal unit is the environmental equivalent of planting 750 trees or removing two cars from the road.
- ✓ Geothermal heat pumps produce no emissions—which means that they do not pollute the atmosphere.
- ✓ The U.S. General Accounting Office estimates that if geothermal systems were installed nationwide, they could save several billion dollars annually in energy costs and substantially reduce pollution.

E Series® A Breath of Fresh Air

As environmental standards for refrigerants were becoming more stringent, WaterFurnace was the first to develop a geothermal heating and cooling system—the E Series—using the environmentally safe and performance-enhancing R-410A. Unlike other currently used refrigerants, R-410A will not harm the earth's ozone layer.

The E Series also sets the standard for performance, with the highest energy efficiency ratings in the industry in both heating and cooling. For example, even the most efficient gas furnace returns about 90¢ in energy for every dollar in operating costs. The E Series will return \$3 to \$4 worth of energy.

With the E Series from WaterFurnace, you'll do your family and the environment a big favor. Because WaterFurnace geothermal systems don't burn fossil fuels, they emit no harmful greenhouse gases. No flames. No fumes. No odors. And no danger from carbon monoxide in your home.



At Work in The Real World



\$253

Estimated Annual Heating and Cooling Cost

2,000 square feet
Panama City, Florida



\$294

Estimated Annual Heating and Cooling Cost

2,750 square feet
Kansas City, Missouri



\$840

Estimated Annual Heating and Cooling Cost

5,570 square feet
Louisville, Kentucky

FAQ

High efficiency WaterFurnace geothermal systems use the energy found beneath the earth's surface. They combine this stored energy with safe electric power to deliver homeowners heating and cooling savings of up to 60 percent.

Q. How does a geothermal system work?

A. Outdoor temperatures fluctuate with the seasons. However, underground temperatures do not. About four to six feet below the earth's surface, temperatures remain relatively moderate and constant year-round. Geothermal systems utilize these constant temperatures.

In winter, fluid circulating through the system's earth loop absorbs stored heat and carries it to the home. The indoor unit compresses the heat to a higher temperature and distributes it throughout the home. In summer, the system reverses, pulling heat from the home, depositing it in the cooler earth.

Q. Why is geothermal better?

A. A geothermal system uses the energy from the sun, which is stored in the earth, to heat and cool homes. Typically, electric power is used only to operate the unit's fan, compressor and pump. These systems simply transfer heat to and from the earth.

Q. How efficient is geothermal?

A. A geothermal system is more than three times as efficient as the most efficient ordinary system. Because geothermal systems do not burn fossil fuels to make heat, they provide three to four units of energy for every one unit used to power the system.

Q. Does geothermal help nature?

A. Because geothermal systems work with nature, not against it, they minimize the threats of acid rain, air pollution and the greenhouse effect. An environmentally friendly fluid is used in the closed loop.

Why Geothermal?

Lower operating costs: Operates more efficiently than ordinary heating and air conditioning systems, saving up to 60 percent in most cases.

Safe and clean: No flame, no flue, no odors and no danger of fire or carbon monoxide. High-efficiency air cleaners remove dust and pollens to improve indoor air quality.

Quiet operation: A super-efficient compressor and soft-start, variable-speed fan make the E Series so quiet that many people find themselves checking to make sure the system is actually on.

Comfortable: Provides precise distribution of warm air in winter. Gone are the uneven temperatures experienced with ordinary furnaces. In summer you get central air conditioning with better dehumidification.

Flexible: Heating, central air conditioning and domestic hot water. Three systems—all from the same compact unit.

Environmentally friendly: The system emits no carbon dioxide, carbon monoxide or other greenhouse gasses, which are considered to be major contributors to environmental air pollution.

Reliable: Microprocessor controls and state-of-the-art components allow smooth operation and years of virtually maintenance-free service.

Earth Loops At the Heart of It All

The earth loop transfers heat to and from the ground—eliminating the need for fossil fuels. It's the heart of a geothermal system, and its biggest advantage over ordinary technologies.



Earth loops come in two basic types. Closed loops,

made of durable, high-density polyethylene pipe, are buried in the earth or submerged in a lake or pond. They transfer heat by circulating a solution of water and environmentally safe antifreeze. Open loops use ground water pumped from a well as a heat source. Which type to use depends on the terrain, the cost of trenching or drilling and the availability of quality ground water and land. Your independent WaterFurnace dealer will help you make the best choice.

Horizontal Loops are used where adequate land is available. One or more trenches are dug using a backhoe or chain trencher. Polyethylene pipes are inserted and the trenches are backfilled.

Vertical Loops are installed where space is limited. Holes are bored using a drilling rig, the pipe is inserted, and the holes are filled. The pipes are connected horizontally a few feet below the surface.

Pond Loops can be installed if an adequately sized body of water is close to the home. A series of coils are placed on the bottom, connected by a header with supply and return pipes leading to the home.

Open Loops are used where there is an abundant supply of quality well water. The well must have enough capacity to provide adequate flow for both domestic use and the WaterFurnace unit.