

"The Water Professionals"



Well Drilling • Pumps • Water Treatment

Residential GeoExchange

DOWN TO EARTH TECHNOLOGY



A Residential GeoExchange

system can be installed in a residential structure of any size, anywhere, whether single-family or multi-family. GeoExchange can be installed on almost any size lot: under lawns, landscaped areas, driveways or the house itself. An existing house can be retrofitted with a GeoExchange system using the ductwork already there. Your dealer/installer will be able to determine ductwork requirements and if any minor modifications are needed. Home builders and homeowners can both take advantage of the special financing that is offered in many locations on GeoThermal through either the utility or manufacturer.

The Department of Energy (DOE) and the Environmental Protection Agency (EPA) have both endorsed ground source heat pump systems as among the most energy efficient and environmentally friendly heating, cooling, and water heating systems available. In a 1993 report, the EPA concluded that geothermal technologies represent a major opportunity for reducing national energy use and pollution, while delivering comfort, reliability and savings to homeowners.

Fogle Pump & Supply, Inc. is a certified
International Group Source
Heat Pump Association Member

GeoExchange systems offer great benefits:

- Can be a combination heating/cooling and hot water heating system
- Some can save you up to 50% on your water-heating bill by preheating tank water
- Made of mechanical components that are either buried in the ground or located inside the home
- About the same size as a traditional heating/cooling unit
- Pipe carries up to a 50-year warranty
- Can cut energy consumption by 20% to 50% and reduce maintenance costs
- Keep the air warmer in the winter (90 - 105° F) and at a more consistent temperature throughout the home, eliminating the hot and cold spots common with other systems
- Very quiet, providing a pleasant environment inside & outside the home
- No noisy fan units to disturb outdoor activities
- No exposed equipment outdoors; children or pets cannot injure themselves or damage exterior units
- No open flame, flammable fuel or potentially dangerous fuel storage tanks

GeoExchange offers great savings:

- One of the most efficient residential heating and cooling systems available today
- Heating efficiencies 50% to 70% higher than other heating systems and cooling efficiencies 20% to 40% higher than available air conditioners
- Save money in operating and maintenance costs
- Investments recouped in only a few years
- Positive cash flow; energy savings usually exceed the cost of the system
- Some utilities offer rebates or incentives to their customers who purchase GeoExchange systems
- Many heat pump manufacturers, local utilities, and lending institutions have special financing for homeowners who are installing GeoExchange systems

GeoExchange systems are environmentally friendly:

- Conserve natural resources by providing climate control efficiently and thus lowering emissions
- Minimize ozone layer destruction by using factory-sealed refrigeration systems, which will seldom or never have to be recharged
- Uses underground loops to transfer heat, with no external venting and no air pollution

Well Drilling • Hydrofracturing • Well Rehabilitation • Certified Flow Test

Frequently Asked Questions

How does a GeoExchange heating and cooling system work?

Outdoor temperatures fluctuate with the changing seasons but underground temperatures don't. Six feet below the earth's surface, temperatures remain relatively constant year-round. A GeoExchange system, which typically consists of an indoor unit and a buried earth loop, capitalizes on these constant temperatures to provide "free" energy. In winter, fluid circulating through the system's earth loop absorbs stored heat and carries it indoors. The indoor unit compresses the heat to a higher temperature and distributes it throughout the building. In summer, the system reverses, pulling heat from the building, carrying it through the earth loop and depositing it in the cooler earth.

What makes a GeoExchange system different from conventional systems?

Unlike ordinary systems, GeoExchange systems do not burn fossil fuel to generate heat; they simply transfer heat to and from the earth to provide a more efficient, affordable and environmentally friendly method of heating and cooling. Typically, electric power is used only to operate the unit's fan, compressor and pump.

What are the components of a GeoExchange system?

The three main parts consist of the heat-pump unit, the liquid heat-exchange medium (open or closed loop), and the air-delivery system (ductwork).

How efficient is a GeoExchange system?

A GeoExchange system is three to four times more efficient than the most efficient conventional 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.

Is the efficiency rating actual or just a manufacturer's average?

All heating and cooling systems have a rated efficiency

from a U.S. governmental agency. Fossil fuel furnaces have a percentage efficiency rating. Natural gas, propane and fuel oil furnaces have efficiency ratings based on laboratory conditions. To get an accurate installed efficiency rating, factors such as fuel gas, heat losses and cycling losses caused by oversizing, blower fan electrical usage, etc., must be included.

GeoExchange heat pumps, as well as all other types of heat pumps, have efficiencies rated according to their coefficient of performance or COP. It's a scientific way of determining how much energy the system produces versus how much it uses. Most GeoExchange heat pump systems have COPs of 3 - 4.5. That means for every unit of energy used to power the system, 3 - 4.5 units are supplied as heat. Where a fossil fuel furnace may be 78 - 90 percent efficient, a GeoExchange heat pump is about 400 percent efficient. Some GeoExchange heat pump manufacturers and electric utilities use computers to accurately determine the operating efficiency of a system for your home or building.

Do GeoExchange systems require much maintenance?

No. GeoExchange systems are virtually maintenance free. When installed properly, the buried loop will last for generations. The other half of the operation—the unit's fan, compressor and pump—is housed indoors, protected from the harsh weather conditions. Usually, periodic checks and filter changes are the only required maintenance.

What does geothermal mean for the environment?

GeoExchange systems work with nature, not against it. They emit no greenhouse gasses, which have been linked to global warming, acid rain and other environmental hazards. GeoExchange systems provide an earth-loop antifreeze which will not harm the environment in the unlikely event of a leak. Most systems use a R-140A, a performance-enhancing refrigerant that will not harm the earth's ozone layer.

***Whatever the job or challenge let Fogle Pump & Supply's
"Water Professionals" get results for you***

***Certified
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