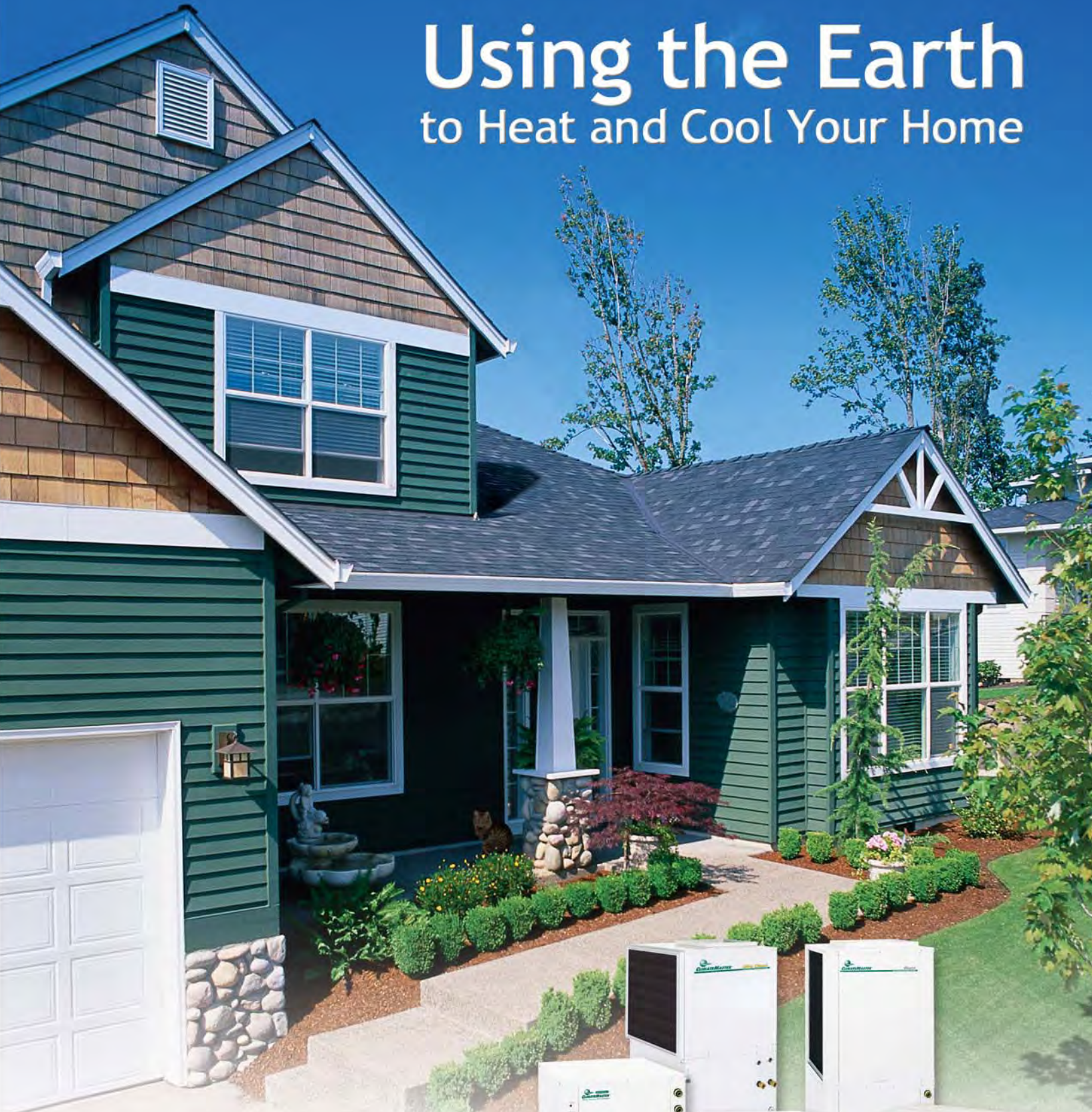


# Using the Earth to Heat and Cool Your Home



Residential Geothermal Heating and Cooling





# Geothermal Heating and Cooling Systems

## Geothermal Basics

The earth absorbs almost 50% of all solar energy and remains a nearly constant temperature of 50°F to 70°F depending on geographic location. Working with an underground loop system, a ClimateMaster geothermal unit utilizes this constant temperature to exchange energy between your home and the earth as needed for heating and cooling.

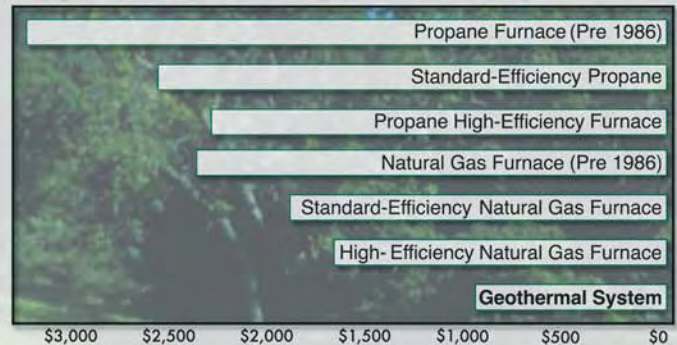
In winter, water circulating inside a sealed loop absorbs heat from the earth and carries it to the unit. Here it is compressed to a higher temperature and sent as warm air to your indoor system for distribution throughout your home.

In the summer, the system reverses and expels heat from your home to the cooler earth via the loop system. This heat exchange process is not only natural, but is a truly ingenious and highly efficient way to create a comfortable climate in your home.

## Invest in Savings

This is the best news... with the installation of a ClimateMaster geothermal unit, your monthly utility bills will be lowered dramatically, leaving more savings for your family.

## Typical Operating Cost Comparisons



A typical homeowner can save in the range of \$600 to \$1,200 annually (actual saving may vary depending on usage, weather, and local utility rates).

How? The use of geothermal loops allow our units to use only a relatively small amount of electricity. The unit merely transfers heat to and from the earth, rather than creating it from fossil sources like conventional systems.

With geothermal, you will enjoy savings up to 60% over conventional systems with a short investment payback.

## Earth Loops

The loop pipe is a special high-density material that is used extensively by the natural gas industry. All underground joints are thermally fused. A properly installed closed loop has a very long life expectancy.

There are several loop configurations available. They can be vertical, horizontal, or submerged in a nearby pond or lake. In many cases, a water well can be used instead. The best application will depend on the characteristics of your property.

See the back cover for more information on loop configurations.

The results shown in the chart are based upon an independent utility study using current equipment alternatives and fuel prices, and are for comparative purposes only. Your ClimateMaster dealer can provide you with savings estimates for your home.



An example of a horizontal loop system



## Why ClimateMaster?

**Savings:** No other heating and cooling system offers lower operating costs, with savings up to 60% and more in many cases.

**Comfort:** Geothermal systems provide even temperatures in your home year round and provide increased dehumidification in the cooling mode.

Independent consumer surveys rate geothermal systems as having the highest customer satisfaction compared to other types of heating and cooling systems.

**Quality:** Every ClimateMaster unit is ruggedly built from the highest quality materials and components, then subjected to rigorous testing at the factory.

The ClimateMaster record of performance and durability assures you years of comfort.

**Environmentally Friendly:** Geothermal technology is the clean heating and cooling alternative, rated best by the Environmental Protection Agency.

**Reliability:** Geothermal units last much longer than traditional systems. Since geothermal units contain few moving parts, these heating and cooling systems can operate efficiently for years with little maintenance.

Components have been chosen for their long-term dependability, and geothermal loops have a life in excess of 50 years.

**Noise-Free Operation:** Unlike traditional air conditioners or heat pumps, geothermal units have no noisy outdoor fans to disturb you or your neighbors.

**Flexibility:** You can get heating, central air conditioning, and domestic hot water. That's three benefits – all from the same compact unit.



**Safe and Clean:** Geothermal heating and cooling has no flame, no flue, no odors, and no danger of fire or fumes.

You can also benefit from improved indoor air quality completely free of dangerous carbon monoxide gases.

**Optional Hot Water Generator:** Save even more. Hot water is produced when your geothermal system is running in either heating or cooling mode.

**Air Handler:** Genesis Split and Paradigm units can be connected to an existing or new air handler.

**Scroll Compressor:** Uses the latest generation scroll compressor for increased efficiency, longer life, and reduced maintenance.

**ClimateMaster Warranty:** Backed by a standard 10-year limited warranty on major refrigerant circuit components and a 5-year limited warranty on all remaining covered components.

**Energy Efficient:** Meets U.S. E.P.A. Energy Star Requirements.



# Geothermal Loop Systems

## Horizontal Loops

Horizontal Loops are installed in areas where the soil conditions allow for economical excavation. Taking up more land area than any other loop type, they are used where space permits. Trenches are normally 5 feet deep. Normally, several hundred feet of trench is required.



## Lake Loops

Lake Loops are usually very economical to install. If a pond or lake at least 8 feet deep is available, lake loops can utilize the water (rather than soil) for heat transfer. Reduced installation costs are characteristic of this type of loop system.



## Vertical Loops

Vertical Loops are used extensively where land area is limited. A pair of pipes with a special U-Bend assembly at the bottom are inserted into a bore hole that averages between 150 to 250 feet in depth per ton of equipment.



## Open Loop

Open Loop installations actually pump water from an underground aquifer through the geothermal unit and then discharge that water to a drainage ditch or pond. Discharging water to a pond or lake is considered ideal.



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Locally Available Through:

ClimateMaster works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice and may not be as described herein. Please contact ClimateMaster's Customer Service Department at 1-405-745-6000 for specific information on the current design and specifications. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely ClimateMaster's opinion or commendation of its products.

As an ENERGY STAR® Partner ClimateMaster has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.