



Premium
Hydronic System

The Smartest Way
to Heat and Cool
Your Home.

HYDRONIC



GEOSMART
ENERGY

THE GEOSMART ENERGY WAY

In these times of fluctuating energy costs and earnest efforts to preserve the environment, the smartest way to heat and cool your home is the GeoSmart Energy way.

GeoSmart Energy draws on the passion, knowledge and experience of a seasoned team of Geothermal Specialists.

GeoSmart Energy's line of premium geothermal systems is the most cost-effective, energy efficient and environmentally friendly way to bring you worry-free, year-round indoor comfort. Using advanced geothermal technology, we tap into the earth's natural heating and cooling properties through an underground loop system to consistently and evenly heat or cool your home every season of the year.

The GeoSmart Energy brand is your guarantee of adherence to the highest standards in quality, functionality and workmanship. Every system is backed by superior customer service and the best warranties in the business.



HS model shown.

Why choose geothermal?

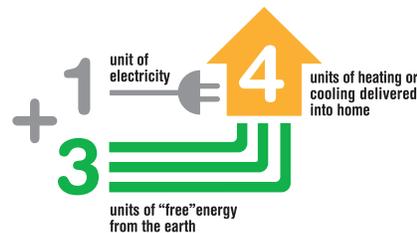
GeoSmart Energy's Premium H[®] hydronic systems have become an industry standard for high efficiency home and water heating. Switching to a geothermal system like the Premium H[®] offers unprecedented benefits that conventional heating and air conditioning systems simply can't match.



The Premium H[®] heats water at a fraction of the cost of ordinary boilers and water heaters (HT model shown).

EXCEPTIONAL COMFORT: Our high efficiency Premium H[®] systems provide quiet, consistent and comfortable heating when used for radiant floor heating. You can even regulate temperatures in different areas of your home.

ENERGY EFFICIENT: For every unit of electricity used by the



Premium H[®] to operate the heat pump, it extracts three free units of energy from the earth. That equates into a 400% efficiency rating compared with the 90% rating generated by the most efficient gas boilers or water heaters.

COST-EFFECTIVE: The Premium H[®] is so efficient that you can expect your initial investment for installation to be offset by your energy savings. It heats water at a fraction of the cost of ordinary boilers and water heaters.

SAFE, CLEAN AND ECO-FRIENDLY: The Premium H[®] is neatly installed in the basement of your home. Unlike conventional furnace and air conditioning systems, it doesn't require combustion to generate heat. Therefore, it doesn't release harmful greenhouse gases or expose your family to risks for carbon monoxide poisoning. It is the environmental equivalent of planting 750 trees or removing two cars from the road.

RELIABLE: The Premium H[®] will meet all your needs for radiant floor heating, domestic hot water, pool and/or spa heating and melting ice and snow offering you years of worry-free comfort from the moment the system is installed. Most models are also able to provide chilled water for cooling. Designed to meet a wide range of home applications, it can easily be installed in both newly constructed and existing homes, regardless of what climate you live in.

The Premium H[®]

The Premium H[®] features sophisticated state-of-the-art components that make it the preferred choice for high performance home and hot water heating. When combined with a GeoSmart geothermal system for conditioning air inside the home, the complete system provides the ultimate in savings, comfort and safe, reliable, quiet performance. Dedicated heating, cooling and heat pump models are available.

RADIANT FLOOR HEATING – It's the ideal system for radiant floor heating circulating warm water through tubing encased in the floor. It keeps floors covered in tile, wood, linoleum or stone consistently warm, even on the coldest days.

DOMESTIC HOT WATER – The Premium H[®] is exceptionally efficient for meeting heavy demands for domestic or potable hot water.

POOL/SPA HEATING – Heat your pool or spa for significantly less money than ordinary pool heaters and without the harmful emissions generated by fossil fuel burning water heaters and boilers.

SNOW & ICE MELT – Keep your sidewalk or driveway free of ice and snow during the winter and eliminate back-breaking snow shovelling using the efficiency of the Premium H[®] to melt snow and ice.

The system uses environmentally friendly R410A refrigerant, robust microprocessor controls and the unmatched energy efficiency of geothermal technology to deliver the finest in comfort and energy savings.

Premium H[®] Features

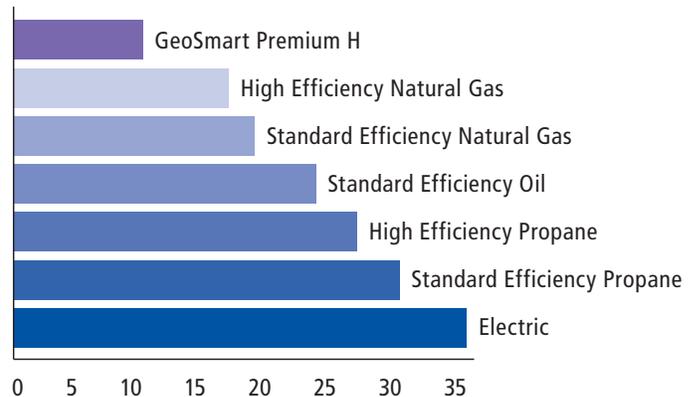
CABINET The compact outer cabinet features a durable blue and grey (HS)/stainless steel (HT) finish for long lasting beauty and protection. Reflective of today's stylish high-end appliances, the unit is fully insulated with cleanable, foil backed insulation for quiet operation.

HOT WATER ASSIST (OPTIONAL FEATURE) Larger models of the Premium HS[®] offer the option of a desuperheater (hot water assist function) to provide supplemental heating of potable water as a by-product of space heating or cooling.

Compare the Performance

GeoSmart geothermal systems can dramatically reduce your water heating costs by as much as 60% per year. Smart homeowners who purchase Premium H[®] units will experience the benefits of high efficiency water heating. In fact, ordinary boilers and waterheaters operate at a fraction of the efficiency of the Premium H[®] unit. And with skyrocketing costs of natural gas, propane and fuel oil, future savings could be even greater. The graph below illustrates comparisons of various water heating systems.

Cost Per Million BTUs of Hot Water



Base on fuel rates of:
\$0.12/kWh Electric
\$1.50/ccf Natural Gas
\$2.80/gallon Fuel Oil
\$2.20/gallon Propane

CONTROLS A sophisticated microprocessor allows you to view all modes of operation. It controls the load loop pump, source loop pump and compressor. The control panel is easy to read and quickly alerts you to any detected faults in the system to ensure safe, reliable operation.

COMPRESSOR Premium H[®] systems feature high efficiency scroll compressors to reduce operating costs and provide years of superb efficiency and reliability.

Radiant Floor Heat

Although the technology behind the GeoSmart Premium H[®] is a breakthrough, radiant floor heating systems aren't new. In fact, ancient Romans heated their stone floors from beneath using wood fires. Today, thousands of years later, people are still enjoying the benefits of radiant floor heating and warm floors. These systems offer exceptional comfort without moving air. Not only is the floor kept toasty warm, but the entire floor radiates heat to the occupants, furnishings and the air.

Homeowners with radiant floor heating systems enjoy the benefit of warm bathroom floors even with bare feet. Basement floors or other concrete slab floors are also a perfect application for radiant heating. Regardless of the application, you'll find temperature control is very flexible. With an individual thermostat in every room, you can simultaneously keep the bathroom floors at a higher temperature, your bedrooms and main living spaces warm and cozy, and take the chill off a basement floor.



HS model shown.

The Premium H[®] units from GeoSmart are a smart choice for radiant floor heating, domestic water heating, or pool or spa heating, and even snow melt applications. Whether the unit is used to provide water for a hydronic system or hot water for potable water purposes, the Premium H[®] unit heats water at a fraction of the cost of ordinary boilers and water heaters.

A Mark of Excellence

The GeoSmart Energy Premium H[®] is safety listed by ETL (Electric Testing Laboratories) and holds the ENERGY STAR[®] rating.



Installing Geothermal Loops

When it comes to geothermal installation, no one knows more about how to do it right than GeoSmart's Geothermal Specialists. Backed by extensive training, our Geothermal Specialists are skilled in selecting and installing the geothermal loop system best suited for your home or business regardless of the weather and soil conditions in your area.

Each loop system uses GeoSmart's high density PE100 green geothermal pipe, the most resilient geothermal pipe available on the market today. Once inserted in the ground, the pipe leads into the foundation of your building through either a sleeve cemented into the wall or under the footings and connects directly to your heat pump, bringing you years of worry-free, high performance renewable heating and cooling using the earth as a natural energy source.



1



HORIZONTAL LOOPS

Horizontal loops are the most common type of loop system, and are commonly used in rural areas due to the land space needed for installation. An excavator will dig several trenches about six feet deep in the ground, each one up to 300 feet long. Our green geothermal pipe is placed in the trenches which are then backfilled with soil.

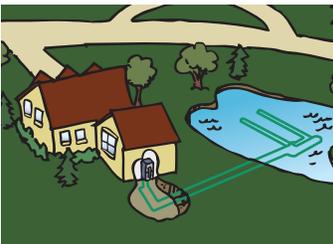
2



VERTICAL LOOPS

Vertical loops are primarily used in urban areas because they require little land space for installation. A specially designed geothermal drilling rig bores vertical holes into the ground each ranging from 180 to 540 feet deep. Our green geothermal pipe is inserted into each vertical bore and then the holes are filled with bentonite grout.

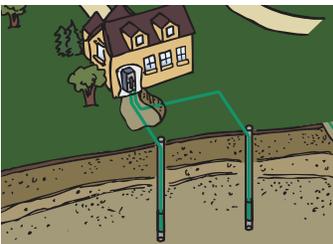
3



POND OR LAKE LOOPS

On properties that have a nearby lake or pond that is appropriate in size and eight feet deep, a loop system can be submerged at the bottom of the body of water. A single trench is excavated from the home to the water and typically two pipes are inserted into it. These two pipes connect to several green geothermal pipes that are submerged at the bottom of the lake or pond.

4



OPEN LOOPS

Open loops are most commonly used on rural properties that have existing high capacity water wells. Ground water is withdrawn from an aquifer through a supply well and pumped into the heat pump, while discharged water from the heat pump is redirected into a second well and back into the same aquifer.

For more information about the **GeoSmart Energy Premium H[®]** systems, please visit our website at www.geosmartenergy.com

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