



Variable Capacity  
Geothermal System

The Smartest Way  
to Heat and Cool  
Your Home.

VARIABLE



**GEO**SMART  
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 distribute warm or cool air throughout 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.



## Why choose geothermal?

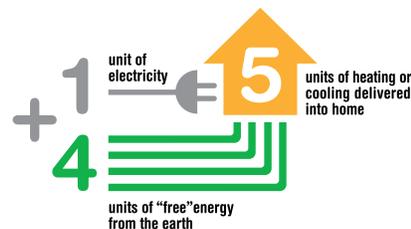
GeoSmart Energy's Premium V<sup>®</sup> systems offer the latest in efficient, eco-friendly geothermal technology, bringing you the best in heating and cooling functionality, reliability and indoor comfort. Geothermal offers unprecedented benefits that conventional heating and air conditioning systems simply can't match.



The Premium V<sup>®</sup> can provide energy savings up to 75% compared with ordinary furnaces and air conditioners. Coupled with GeoSmart Energy's intelligent thermostats and an integrated monitoring system, it will provide the finest in home comfort and reliability.

**EXCEPTIONAL COMFORT:** Say goodbye to hot and cold spots. Our high efficiency systems provide quiet, consistent and comfortable heating and cooling throughout every room in your home and offer superior humidity control. Using an optional zone control system, you can even regulate temperatures in different areas of your home.

**ENERGY EFFICIENT:** The Premium V<sup>®</sup> is one of the most energy efficient geothermal system available on the market today. When every dollar counts, the Premium V<sup>®</sup> delivers. For every dollar of electrical energy it uses to run the heat pump, it generates up to five dollars worth of energy output to heat and cool your home, representing an efficiency rating of up to 500%!



Compare that with conventional furnaces that deliver less than 98 cents worth of energy for the same dollar.

**COST-EFFECTIVE:** The Premium V<sup>®</sup> can dramatically reduce your annual costs for heating, cooling and hot water by as much as 75%! It is so efficient that you can often expect your initial investment for installation to be offset by your energy savings. Installed in a new home, you will experience an immediate positive return on your investment when the system cost is added to your mortgage. In homes where geothermal is replacing a conventional system, you could more than recover your investment through energy savings within a few years.

**SAFE, CLEAN AND ECO-FRIENDLY:** Installing the Premium V<sup>®</sup> is the environmental equivalent of planting 750 trees or removing two cars from the road. 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 also cleans the air in your home using a high efficiency air cleaner that filters out irritants like dust and pollen.

**RELIABLE:** The Premium V<sup>®</sup> can meet all of your heating, central air conditioning and partial domestic hotwater needs (optional) offering you years of worry-free comfort from the moment the system is installed. 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 V®

The Premium V® is one of the most advanced and energy efficient heating and cooling systems in the world. Hidden behind its sleek blue and stainless steel exterior, the Premium V® features a variable capacity compressor that can run at as little as 20% of normal operation for maximum comfort, and efficiency. The intelligent system then scales its output based on current weather conditions and your

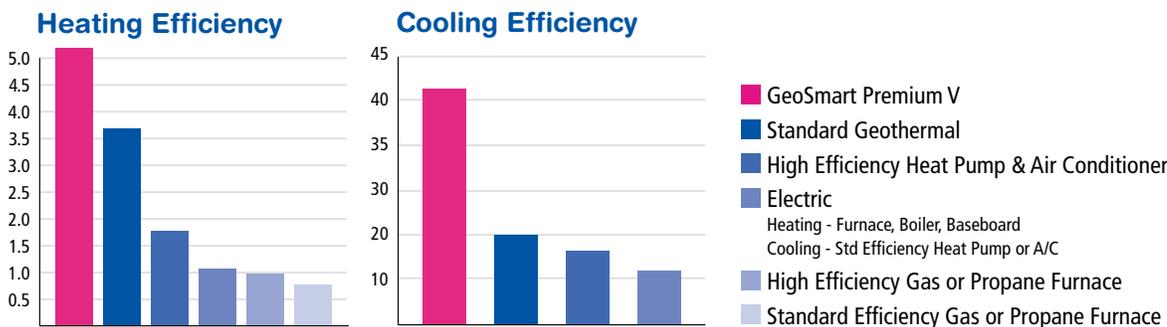
comfort requirements to ensure you have the right amount of heating or cooling when you need it.

Premium V® uses R-410A refrigerant, robust next generation communicating controls and the unmatched energy efficiency of geothermal to deliver the finest in comfort and energy savings.

## Savings and Performance

The GeoSmart Premium V® series can dramatically reduce your annual costs for heating, cooling and hot water – often as much as 75%! No other gas furnace, air conditioner or heat pump comes close to Premium V®'s efficiency. With continuous fluctuation in fossil fuel costs, your future savings will only increase.

Our GeoSmart dealers utilize GeoSmart Design Studio, a sophisticated software package designed to ensure proper design and sizing of your new Premium V® system. And only GeoSmart dealers have access to our exclusive audit software designed to estimate the heating and cooling costs for your home based on square footage, construction style and climate. You can be confident knowing your Premium V® system is specifically matched to your home and its climate.



## Premium V® Features

All GeoSmart Energy systems are the result of state-of-the-art research and development conducted with ease of consumer and installer use in mind. We perform numerous quality checks and computer-run testing during the manufacturing process to make sure our products run flawlessly and provide long-term reliability.

**1 CABINET** The compact outer cabinet features a durable blue and stainless steel 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.

**2 CONTROLS** Sophisticated intelligent microprocessor controls provide ultimate performance. The controls communicate with the thermostat to maximize your comfort and to indicate system status. Optional performance monitoring kits are also available.

**3 DIAGNOSTIC PORT** Contractors can plug an AidTool into the units cornerpost for quick troubleshooting and to communicate with the unit's onboard diagnostics to allow for easier servicing.

**4 COMPRESSOR** Premium V® variable capacity systems feature the Danfoss Performer® VRJ variable speed compressor, a scroll compressor that uses an external variable frequency drive (VFD) — also known as an inverter — to slow or speed up the AC motor that rotates the scroll. This method varies refrigerant flow by actually changing the RPM of the scroll.

**5 BLOWER MOTOR** Our variable speed ECM blower motor offers you up to 12 airflow selections, providing enhanced comfort, quiet operation and energy savings compared with standard PSC motors used in conventional HVAC systems.

**6 COATED AIR COIL** Our exclusive FormiShield™ coating on the air coil resists corrosion and increases equipment life. Its large size maximizes efficiency and dehumidification during cooling.

**7 DRAIN PAN** The plastic, corrosion-proof drain pan resists bacterial growth and eliminates the possibility of condensate flooding using microprocessor based electronic overflow protection.

## Environmentally Friendly

The Premium V® sets new standards for environmental responsibility. Engineered using R-410A and variable capacity technology, our system doesn't burn any fossil fuels, meaning there are no harmful emissions. It helps to conserve rapidly depleting natural resources while helping to reduce our dependence on foreign oil products. You can take comfort in knowing that your Premium V® works in harmony with nature while saving you money.

ISO/AHRI 13256-1

MODEL & SIZE	COMP. MODE	CLOSED LOOP		OPEN LOOP		
		COOLING EER	HEATING COP	COOLING EER	HEATING COP	
VARIABLE CAPACITY	036	High	22.0	3.5	31.5	4.6
		Part	37.0	5.3	47.2	5.9
	048	High	21.7	3.6	31.7	4.3
		Part	41.0	5.3	53.2	5.9
060	High	19.4	3.5	28.6	4.3	
	Part	36.0	5.1	45.8	6.0	

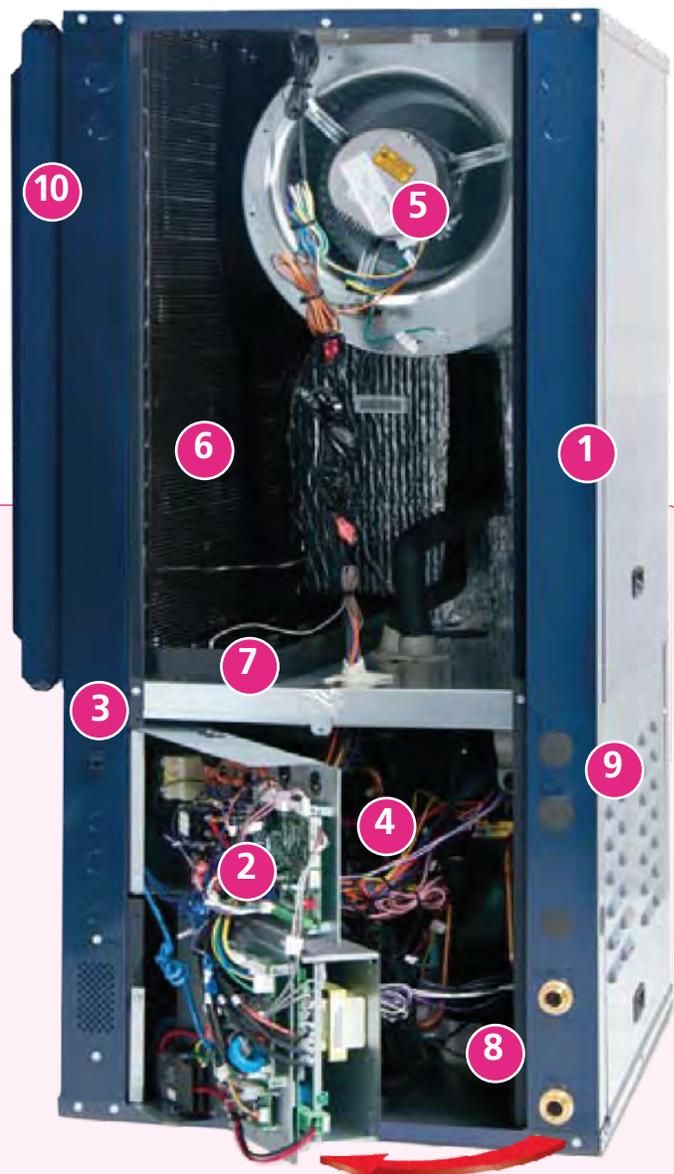
**8 COATED WATER COIL** Our exclusive next generation ThermoShield™ coating on the coaxial water coil is an industry first! ThermoShield™ is a closed cell polyurethane foam insulation that is energy efficient and protects the heat exchanger for the life of the GeoSmart system. It produces an even and airtight seal to prevent condensation and rusting. And not only is it green in colour, it is also environmentally safe.

**9 HOT WATER ASSIST (Optional Feature)** The desuperheater preheats your domestic water and delivers it directly to your water heater whenever the advanced controls inside the Premium V® determine there is excess heat available. In the heating mode hot water is generated at the efficiency of the unit. In cooling mode, waste heat is recovered and your hot water is virtually free!

**10 ELECTROSTATIC FILTER** Filter rack and factory installed 1" MERV8 washable electrostatic air filter. The filter rack is field convertible to accommodate the optional 2" MERV13 filters for enhanced IAQ.

## A Mark of Excellence

The GeoSmart Energy Premium V® is AHRI Performance Certified® by the Air-Conditioning, Heating and Refrigeration Institute, is safety listed by ETL (Electrical Testing Labs) and exceeds performance standards for 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.

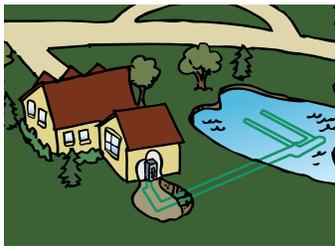
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## VERTICAL LOOPS

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.

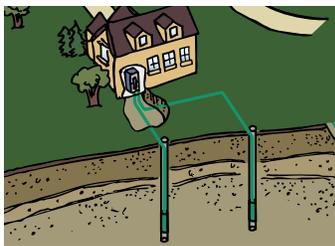
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## POND OR LAKE LOOPS

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 V®** system, please visit our website at [www.geosmartenergy.com](http://www.geosmartenergy.com)

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ENERGY

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