



Geothermal Heat Pumps

HEATING | COOLING | HOT WATER



AFFORDABLE RENEWABLE CLEAN

PRODUCT LINE

WHAT IS GEOTHERMAL?

Geothermal units are similar to ordinary heat pumps, but use the solar energy stored just below our feet to provide heating, air conditioning and hot water. The earth acts as a giant solar panel, absorbing roughly half of the sun's heat energy. A series of pipes called a "loop" (see next page for more) is buried just below the frost line to tap into that stored energy. In the winter,

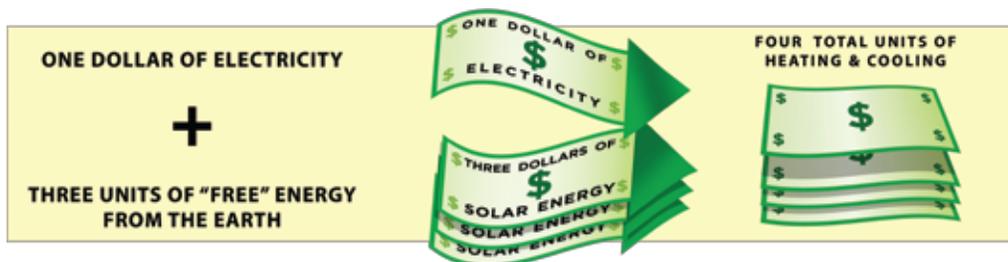
heat is brought in through the loop, concentrated, and delivered throughout your home. During summer, the excess heat in your home is removed and delivered back to the earth, completing the cycle. Because geothermal units use the earth's natural heat, they are among the most efficient and comfortable heating and cooling technologies currently available.



GEOSTAR BENEFITS

Thanks to the unique way geothermal units operate, they provide a host of exciting benefits to you and our environment.

AMAZING ENERGY EFFICIENCY: Geothermal heat pumps don't create energy, they simply move it. Only a small amount of electricity is used to circulate heat to and from your home. This allows GeoStar units to provide \$4 of heating for every \$1 worth of electricity used, while current "high-efficiency" fossil fuel furnaces provide only 96¢. Our units are 4 times more efficient than any conventional furnace!



COST EFFECTIVENESS: Though geothermal systems can be more expensive to purchase up front, the cost difference will be returned through drastically lower energy bills. Most GeoStar owners see savings up to 60% on their utility bills!

GREATER COMFORT: GeoStar units run only at the level needed by using variable speed motors. They slowly ramp up to speed rather than "roaring" to life like traditional units - resulting in even, consistent comfort. You won't experience the large temperature fluctuations associated with other heating and cooling solutions.

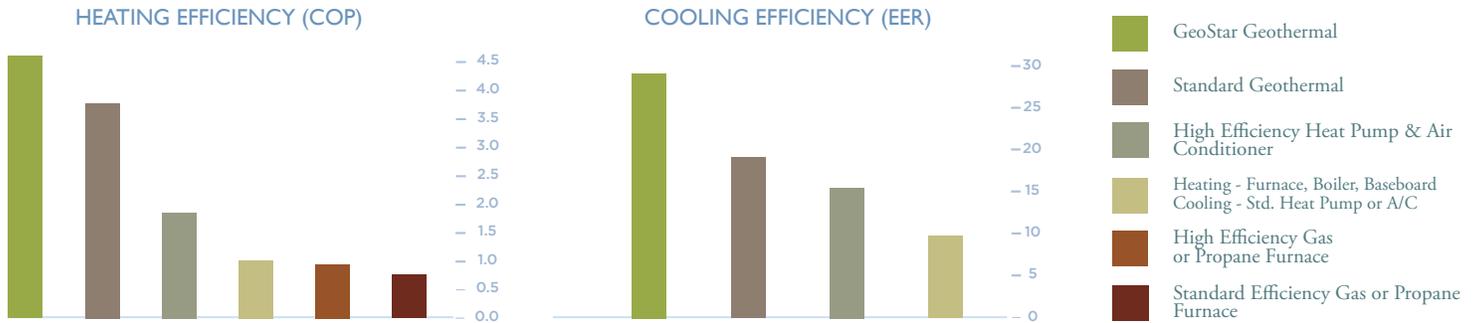
QUIET: With our units, there's no noisy outdoor equipment to disturb the peace or clutter your yard. Some homeowners have reported checking the unit to see if it's running.

LONGER LIFE AND RELIABILITY: Because GeoStar units don't require any outdoor equipment, they are protected from the rain, snow, environmental contaminants and abuse that hinders the efficiency of traditional air conditioners and heat pumps.

ENVIRONMENTALLY FRIENDLY: Geothermal units don't burn any fossil fuels or create carbon monoxide. This reduces our dependence on foreign oil while it works to reduce greenhouse gas emissions. One GeoStar geothermal unit is the environmental equivalent of taking two cars off the road forever. In fact, the Environmental Protection Agency (EPA) says geothermal heat pumps are the most environmentally friendly and cost effective way to condition our homes.

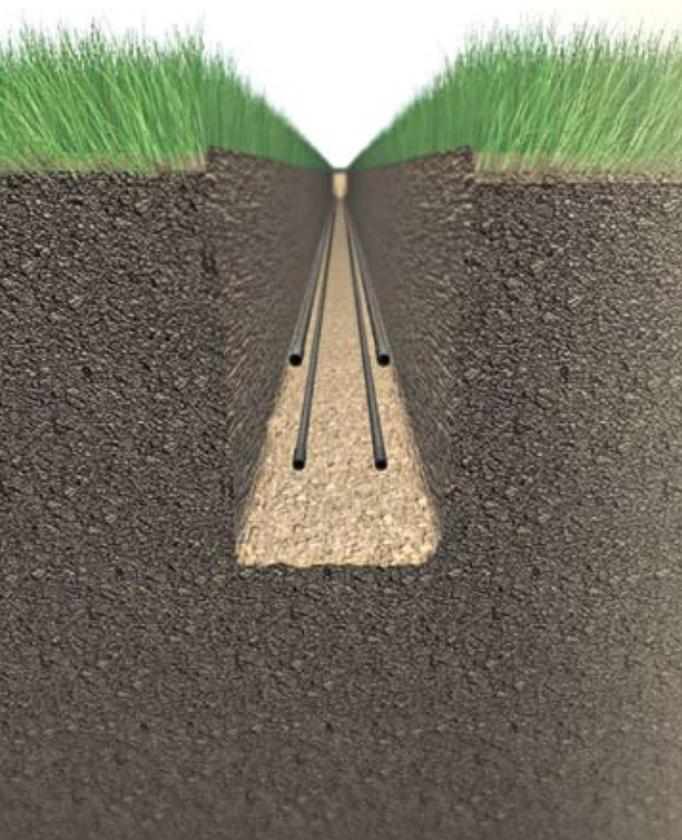
COMPARE THE PERFORMANCE

A GeoStar unit can reduce your annual costs for heating, cooling and hot water by as much as 60% per year. No other gas furnace, air conditioner or heat pump comes close to the GeoStar's efficiency. With continuous and dramatic increases in the cost of fossil fuels like natural gas, propane and fuel oil, the savings possibilities are even greater in the future. Your GeoStar dealer can use software modeling tools to estimate the heating and cooling costs for your home based on square footage, construction style, and climate.



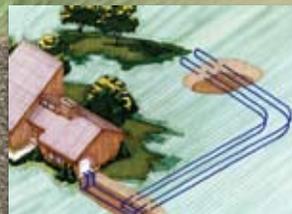
GEOTHERMAL LOOP TYPES:

There are four main loop types used in the geothermal industry today. Your GeoStar dealer can provide you with guidance and advice for your specific situation.



Vertical Loop

Used when space is limited. Holes are bored approximately 125 to 250 ft. deep using a drilling rig. A pair of polyethylene pipes with a u-bend fitting is inserted into the holes. A typical home requires three to five bores with roughly a 15-foot separation between the holes.



Horizontal Loop

Used where adequate land is available. Horizontal loops involve one or more trenches dug using a backhoe or chain trencher. Polyethylene pipes are inserted, and the trenches are backfilled. A typical home requires 1/4 to 3/4 of an acre for the trenches.



Pond Loop

If an adequately sized body of water is close to your home, a pond loop can be installed. A series of closed loops are coiled and sunk to the bottom of the pond or lake. A 1/2 acre, 8-foot-deep pond is usually sufficient for the average home.



Open Loop

An open loop is 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 GeoStar unit. GeoStar units require 3 - 10 GPM, depending on size.

G Series

The G Series represent the finest GeoStar has to offer. All units utilize environmentally safe R-410A refrigerant and include Copeland Scroll™ compressors - the most durable and efficient compressor technology. Dual capacity operation provides the finest in comfort and energy savings. And with sophisticated and robust microprocessor controls, compressor monitoring, and today's best digital thermostats, the G Series sets the new industry benchmark.

Q Series

The Q Series is a geothermal boiler, furnace and air conditioner - all in one unit. The Q Series provides ultra efficient heating and cooling along with hot water for radiant floor heat (domestic hot water option also available). It shares many of the features from our G Series line such as ozone-safe R-410A refrigerant, computer controlled components, advanced troubleshooting features, Copeland scroll compressors, and corrosion resistant air coils.

G Series Console

G Series Console units are perfect for heating and cooling small areas without ducts like basements, garages, workshops, bonus rooms or sun rooms. The versatile cabinet is available in either a slope top or flat top style. Consoles are made of galvanized steel and finished with a beige, textured powder coating for long lasting beauty and durability. The cabinet interior is fully insulated to insure quiet operation.



Our top-of-the-line units

"Best" overall. Exceptional comfort and unmatched performance.

Forced Air + Radiant + Domestic Hot Water

3-in-1 system. Forced air heating & cooling with radiant floor heat capability.

For small zones

Non-ducted. Great for bonus rooms, solariums, work-shops, basements.

Sizes	2 thru 6 ton single speed (7 sizes) 2 thru 6 ton dual capacity (5 sizes)	3 thru 6 ton (4 sizes)	½ thru 1½ tons (5 sizes)
Single speed efficiency ARI 13256-1 (GLHP) Closed loop	3.7 - 4.4 COP 18 - 22.0 EER	N/A	3.1-3.5 COP 13.5-17.2 EER
Dual Capacity efficiency ARI 13256-1 (GLHP) Closed loop	3.8 - 5.0 COP 16.8 - 30.0 EER	3.5 - 4.5 COP 15.0 - 23.7 EER	N/A
Refrigerant	R-410A	R-410A	R-22
Compressor	Copeland Scroll (single speed & dual capacity)	Copeland Scroll (dual capacity)	Tecumseh rotary (single speed)
Blower	ECM variable speed Optional PSC single speed except in dual capacity units	ECM variable speed	PSC single speed Dual blowers
Cabinet Configurations	Vertical top flow Vertical bottom flow Horizontal end or side discharge All left or right return	Vertical top flow All left or right return	Hotel-room style cabinet Flat top or slope top Less than 13" deep Fits under most windows
Stages (* with aux.)	3 heat*, 2 cool	3 heat*, 2 cool	1 heat, 1 cool
Control	Microprocessor Fault & status lights Onboard diagnostics Fault retry	Microprocessor Fault & status lights Onboard diagnostics Fault retry	Electromechanical Temperature selector mounted on unit
Coated Air Coil	Yes	Yes	No
Desuperheater	Optional Internal mount pump	Optional external mount pump	Not available
Auxiliary Heat	Optional Internal mount on vertical	Optional Internal mount on vertical	Optional Internal mount
Zone Control	Optional	Optional	Not applicable
ENERGY STAR Rated	Yes All sizes	Yes All sizes	Yes Except ½ and 1½ ton

G Series Indoor Split

G Series Indoor Splits are made for installations where space is at a premium. Combined with an air handler, the unit can provide complete home heating & cooling. When added to a fossil fuel furnace, the system works in tandem to extend heating & cooling efficiency. Since there's no outdoor fan, the unit is "whisper quiet". All units utilize ozone-safe R-410A refrigerant. The G Series Indoor Split provides the amazing efficiency of geothermal with the versatility of a split.

G Series Outdoor Split

G Series Outdoor Splits are designed for use outside when indoor systems would be difficult to install. For an aesthetic touch, a decorative rock cover is available in multiple colors. Like the indoor split, the G Series Outdoor Splits are engineered to be connected to an air handler or a fossil fuel furnace, and automatically switch to the most economical heating source for improved energy conservation. All G units utilize ozone-safe R-410A refrigerant.



The Environmental Protection Agency says geothermal heat pumps are the most environmentally friendly and cost effective way to condition our homes



Outstanding Efficiency, indoor versatility

"Best" split unit. Used indoors with remote air handler or fossil fuel furnace.

2 thru 6 ton single speed (7 sizes)
2 thru 6 ton dual capacity (5 sizes)

3.3 - 4.0 COP
15.1 - 19.9 EER

3.4 - 4.4 COP
15.0 - 25.3 EER

R-410A

Copeland Scroll (single speed & dual capacity)

ECM when mated to the GeoStar variable speed blower air handler.

Compact cube

3 heat*, 2 cool

Microprocessor
Fault & status lights
Onboard diagnostics
Fault retry

Depends on air handler

Optional
Internal mount pump

Depends on air handler
Dual fuel option

Optional

Yes
All sizes

Outstanding Efficiency, Outdoor versatility

"Better" split unit. Used outdoors with remote air handler or fossil fuel furnace.

2 thru 6 ton dual capacity (5 sizes)

N/A

3.4 - 4.4 COP
15.0 - 25.3 EER

R-410A

Copeland Scroll (single speed)

ECM when mated to the GeoStar variable speed blower air handler.

Compact unit

3 heat*, 2 cool

Microprocessor
Fault & status lights
Onboard diagnostics
Fault retry

Depends on air handler

Optional
External mount indoors

Depends on air handler
Dual fuel option

Optional

Yes
All sizes

Geothermal Storage Tank

The GeoStore Geothermal Storage Tank is designed specifically for geothermal installations. It has features not found on most ordinary water heaters and provides consistent water temperature and constant hot water in geothermal systems.

The GeoStore line uses heating elements that lasts two to three times longer than standard copper heating elements and increases the overall efficiency of the tank. The tanks also feature two-inch (R-16) insulation, a pre-mounted temperature and pressure relief valve, a lower thermostat for control of our Q Series units, a pre-pulled wire for the top exit of controls and chilled water capability.



G Series Air Handler

The G Series Air Handler is available in 2 to 5-ton capacities and comes standard with a variable speed (ECM) fan motor for maximum comfort and savings. Optional internal electric heat is also available.

The cabinet has been engineered for tight installations like attics, and a field adjustable, four-position design that allows for horizontal, vertical, and bottomflow right/left configurations. A sliding blower assembly is standard for ease of conversion in the field. The G Series Air Handler contains many other premium features such as a factory-installed txv, a 1" filter rack, and a corrosion proof stainless steel drain pan.



Thermostats

Properly using a programmable thermostat in your home is one of the easiest ways you can save energy, money, and help fight global warming. GeoStar offers advanced programmable thermostats to make saving easy with pre-programmed settings to regulate your home's temperature in both summer and winter — when you are asleep or away.

TP32U03

3 Heat, 2 Cool

Fully Programmable

Comfort Alert
- ComfortTalk displays system errors as text

Dual Fuel

TP32U04

3 Heat, 2 Cool

Fully Programmable

Comfort Alert
- ComfortTalk displays system errors as text

Dual Fuel

Humidity Control

TP32U05

3 Heat, 2 Cool

Fully Programmable

Comfort Alert
- ComfortTalk displays system errors as text

Dual fuel

4 Wire Installation





Notes

Brought to you by:

