GEOSTAR

ASTON SERIES DUAL HYDRONIC

HEATING | COOLING | HOT WATER

www.geostar-geo.com

AFFORDABLE RENEWABLE CLEAN

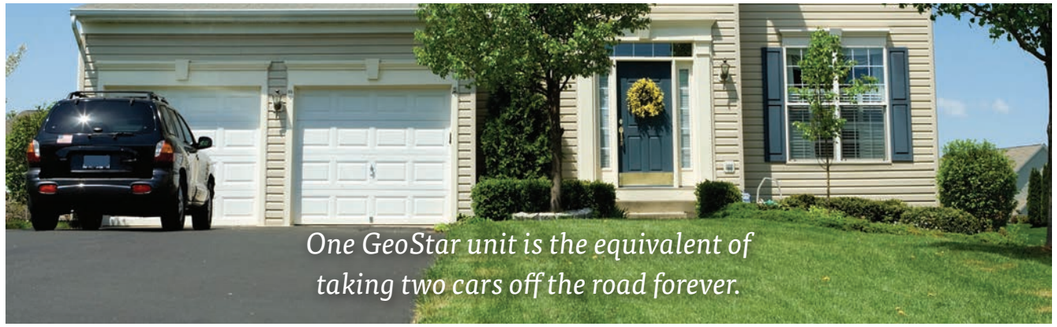
GEOTHERMAL HEAT PUMPS

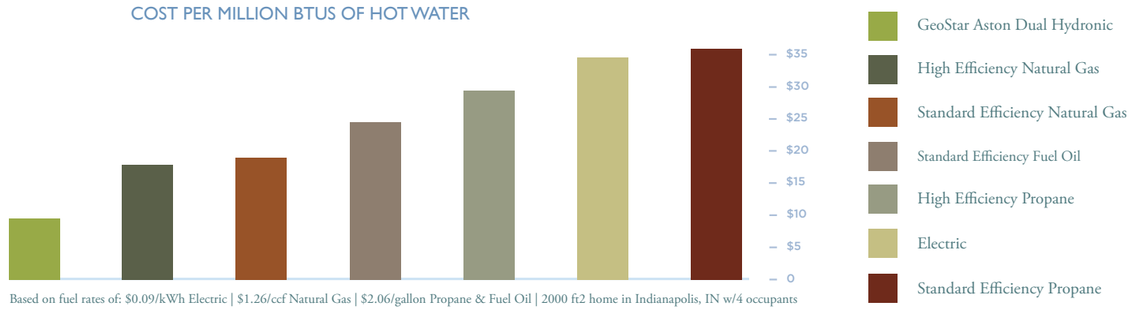
WHAT IS GEOTHERMAL?

Geothermal units 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 available.

COMPARE THE PERFORMANCE

A GeoStar unit can reduce your annual heating, cooling and hot water costs by as much as 70% 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.



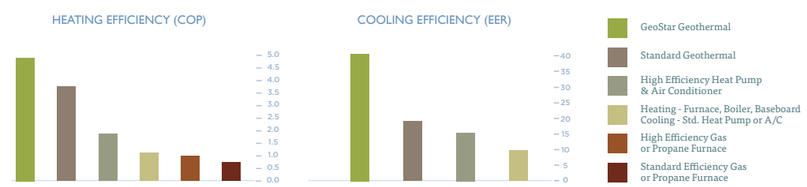


Based on fuel rates of: $0.09/kWh Electric | $1.26/ccf Natural Gas | $2.06/gallon Propane & Fuel Oil | 2000 ft2 home in Indianapolis, IN w/4 occupants

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 $5 of heating for every $1 worth of electricity used, while current "high-efficiency" fossil fuel furnaces provide only 98¢. Our units are far 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 70% on their utility bills!

GREATER COMFORT: GeoStar units are more efficient and run more often - resulting in even, consistent comfort. You won't experience the large temperature fluctuations associated with other heating and cooling solutions.

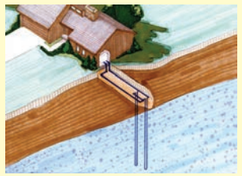
QUIET: With our units, there's no noisy outdoor equipment to disturb the peace or clutter your yard. Some homeowners have reported checking the unit to see if it's running.

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 working 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 the use of geothermal heat pumps is the most environmentally friendly and cost-effective way to condition our homes.

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.

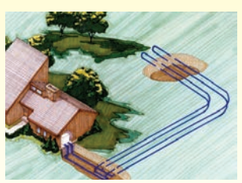


VERTICAL LOOP

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.

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.



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.

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.

ENERGY STAR

Homeowners who install an ENERGY STAR® rated geothermal system in the U.S. are eligible for a 26% federal tax credit. The 26% credit will last through 2020 and can be claimed on equipment and installation costs with no upper limit. The credit is scheduled to decrease to 22% in 2021, so act now for the most savings!

THE ASTON DUAL HYDRONIC DESIGN

Many of today's bigger homes require a large supply of hot water. The Aston Series Dual Hydronic is designed for high-demand hot water applications such as radiant floor heating, pool or spa heating*, and snow melting for icy sidewalks. Use the Aston Dual Hydronic in conjunction with a GeoStore geothermal storage tank for the greatest savings. Like all GeoStar units, the Aston Dual Hydronic is manufactured to provide long-lasting operation and unmatched performance.

ASTON DUAL HYDRONIC FEATURES

CABINET: The casing is constructed using heavy gauge steel with a clean, durable, white finish. Multiple access panels and a movable control box allow piping to be offered on the top or back for versatility and easy servicing.

COMPRESSOR: Two high efficiency scroll compressors are housed in the Aston Dual Hydronic. Heavy-duty plates, insulation and rubber grommets isolate the compressor to provide the best combination of sound/vibration absorption available.

BRAZED PLATE HEAT EXCHANGERS: Brazed plate heat exchangers provide high performance and reliability while the small footprint allows Aston Dual Hydronic units to stay compact and versatile.

CONTROLS: Easy to use controls display modes of operation and allow the user to easily adjust temperature. A microprocessor ensures peak performance of the load pump, source pump and compressor by sampling tank temperatures within the water storage tank leaving you with less to worry about.

INTELLISTART®: This optional soft starter reduces start-up amperage by up to 60% of normal draw to reduce noise, eliminate light flicker, and increase compressor life.

FACTORY QUALITY: Aston Dual Hydronic units are upheld to the strictest standards. Only the best components are used and assembled by our skilled technicians. Each unit is computer run-tested to make sure it's running at peak efficiency.

R-410A: Environmentally friendly R-410A is a non-ozone-depleting refrigerant that enhances efficiency and savings.

ENERGY STAR/AHRI/ETL LISTED: Aston Dual Hydronic units are certified by the AHRI and safety listed by ETL. 100 and 120 models are ENERGY STAR rated.

ENERGY STAR AHRI CERTIFIED Water Source HP ANSI/AHRI/ASHRAE/ISO13256-1 Intertek GEO TAX CREDIT

*Note: Not suitable for direct use with chlorinated water.

AHRI / ISO / ASHRAE PERFORMANCE RATINGS (13256-1)

Model & Size			Closed Loop		Open Loop	
			Cooling (EER)	Heating (COP)	Cooling (EER)	Heating (COP)
Dual Capacity	100	Full Load	17.2	3.1	23.0	3.4
		Part Load	22.5	3.5	25.5	3.8
	120	Full Load	16.5	3.0	22.0	3.3
		Part Load	21.5	3.4	24.0	3.8
	150	Full Load	16.0	2.8	21.1	3.2
		Part Load	20.7	3.3	22.0	3.7
	180	Full Load	15.8	2.7	19.8	3.1
		Part Load	18.4	3.5	20.9	3.7

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