bryant®
Heating & Cooling Systems

GEOTHERMAL COMFORT SYSTEMS

PACKAGED, SPLIT, and WATER-TO-WATER UNITS

Models GC, GP, GB, GW, GZ

ENERGY STAR
LEARN MORE AT energystar.gov
Qualifying Systems Only

The Bryant® Geothermal Advantage

Throughout Bryant's historic 100-year legacy, the company has provided millions of homeowners with the finest comfort systems available. Offering a wide variety of state-of-the-art furnaces, air conditioners and heat pumps, Bryant dealers are trusted professionals when it comes to customized home comfort systems. But it doesn't end there. Bryant also offers a complete line of exceptional geothermal comfort systems for your home.

Bryant geothermal systems provide several good options for efficient indoor heating and cooling by tapping into the earth to capture its renewable energy.

Here's how it works:

The earth absorbs energy from the sun and stores it in the ground. A geothermal system extracts that energy for home heating during the winter. For cooling, the system removes heat from the home and places it into the cooler earth. This transfer of heat energy is done through a series of pipes either buried in the ground, sunk in a pond, or by using well water.

GEOTHERMAL heating & cooling

Why Choose Geothermal?

Geothermal systems can provide homeowners with a wide range of benefits.

SAVINGS
Geothermal systems can offer lower operating costs compared to ordinary forced air heating and cooling systems. Those savings can be as high as 70% in heating and cooling costs.[1]

COMFORT
These systems can provide even temperatures throughout the home year round, with excellent dehumidification during cooling.

ENVIRONMENTAL IMPACT
Geothermal is a renewable technology that can reduce your carbon footprint now and for future generations.

RELIABILITY
Geothermal units are known for durability and can operate for years with little maintenance.

QUIET OPERATION
Unlike ordinary air conditioners and heat pumps, no outdoor unit is required. Bryant geothermal units use heavy-duty, fully-insulated cabinets for quiet operation. Quiet, soft starting variable-speed blowers are used in many models.

FLEXIBILITY
Geothermal comfort systems can provide heating, cooling and supplemental water heating from a single unit with a wide variety of models and options to fit most applications.

HOT WATER
Excess heat from system operation can be used to supplement the home's water heater.

REDUCE ENERGY DEPENDENCE
Geothermal systems can reduce our need to import fuel.

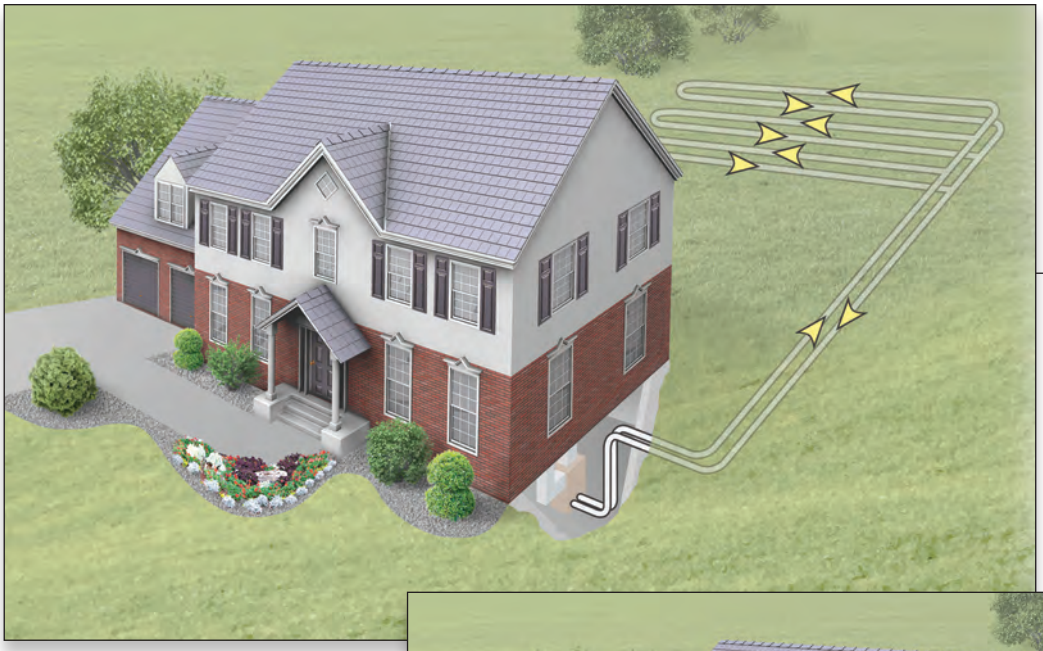
[1]Savings calculated using LoopLink software. Comparison based on simulation in Dallas, TX. Bryant 6-ton unit vs. standing pilot propane furnace, standard air conditioner and local fuel rates. Actual savings will vary based on configuration, weather and local energy costs.

Renewable Energy From the Earth

Geothermal systems use renewable energy from the earth, so the technology is one that can reduce your carbon footprint. On a grander scale, imagine the impact of the reduced emissions resulting from every current geothermal comfort system installation today. The collective result would be a dramatic reduction in carbon footprint.

Loop System Configurations

Geothermal systems can be installed with a variety of loop system configurations. “Closed loops” use re-circulated fluid in a series of pipes installed vertically, horizontally, or in a pond. “Open loops” use well water. Your dealer will determine which design works best for your home.



HORIZONTAL LOOPS

Used on larger lots. Installed using a backhoe or trencher.

VERTICAL LOOPS

Used where land area is limited or soil conditions prohibit horizontal loops. Installed using a drilling rig.

POND LOOPS

Coils of pipe are connected and sunk to the bottom of the pond.

OPEN LOOPS

Well water from an existing well can be used, then discharged into a drainage ditch or pond.

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GEOTHERMAL SYSTEMS

PACKAGE UNITS

VERTICAL UPFLOW / VERTICAL

✓ Efficiency – Up to 4.7 COP and 32.0 EER (closed loop)
✓ Copeland two-stage scroll compressors*

Applications	EVOLUTION™ SYSTEM **GC** "Best" overall. Exceptional comfort, performance & control	PREFERRED™ SERIES **GP** Great choice for excellent performance & reliability
Sizes	2, 3, 4, 5, 6	2, 3, 4, 5, 6
AHRI Ratings (13256-1) Closed Loop (GLHP) Ground Water (GWHP)	3.8 – 4.7 COP 18.5 – 32.0 EER 4.5 – 5.2 COP 23.1 – 37.0 EER	3.5 – 4.0 COP 15.5 – 24.5 EER 4.0 – 4.6 COP 19.6 – 30.0 EER
Refrigerant	Puron® refrigerant	Puron® refrigerant
Compressor	Two-stage unloading scroll	Two-stage unloading scroll
Blower	Variable-Speed ECM Constant CFM	Variable-Speed ECM Constant CFM
Cabinet Configurations	Vertical upflow Vertical downflow Horizontal	Vertical upflow Vertical downflow Horizontal
Stages *(* with Aux.)*	3 stages heating* 2 stages cooling	3 stages heating* 2 stages cooling
Control	Evolution™ Connex™ control Advanced Diagnostics Wi-Fi® / Remote Access	Microprocessor control
Air Coil	Tin-plated copper tubing	Tin-plated copper tubing
Air Filter	MERV 13, 2"	MERV 8, 2"
Cabinet Insulation	Closed cell foam	Closed cell foam
Compressor Blanket	Yes	Yes
Desuperheater	Optional Internal mount pump	Optional Internal mount pump
Auxiliary Heat	Optional Internal mount on vertical units	Optional Internal mount on vertical units
Smart Start	No	Optional (field installed)
Zone Control	Evolution™ Connex™ zoning control	Optional
ENERGY STAR® rated	All sizes	All sizes
	Ratings are subject to change. See AHRI.org for official ratings.	
Dealer Notes		

DOWNFLOW / HORIZONTAL

- ✓ Variable-speed ECM blower motors*
- ✓ Microprocessor control

*On Selected Models

SPLIT UNITS

- ✓ Efficiency - Up to 4.6 COP and 28.8 EER (closed loop)
- ✓ Install indoors or outdoors
- ✓ Use with FE/FV fan coils or Bryant furnaces with variable-speed blowers
- ✓ Great for Hybrid Heat® applications

WATER-TO-WATER UNITS

- ✓ Efficiency - Up to 3.2 COP and 22.1 EER (closed loop)
- ✓ Copeland two-stage scroll compressors
- ✓ Rugged, durable and reliable for a variety of hydronic applications

LEGACY™ LINE	EVOLUTION™ SYSTEM	PREFERRED™ SERIES
		
GB	**GZ**	**GW**
Standard, solid performer at a base tier price	Great performance. Used with air handler or gas furnace	Heating and cooling capable for various hydronic applications
1.5, 2, 2.5, 3, 3.5, 4, 5	2, 3, 4, 5, 6	2, 3, 4, 5, 6, 10
3.7 – 4.3 COP 18.5 – 21.7 EER 4.3 – 5.2 COP 22.7 – 28.1 EER	3.3 – 4.6 COP 14.8 – 28.8 EER 3.8 – 5.2 COP 19.2 – 29.1 EER	(13256-2) 3.0 – 3.2 COP 14.6 – 22.1 EER 3.4 – 3.8 COP 18.8 – 25.7 EER
Puron® refrigerant	Puron® refrigerant	Puron® refrigerant
Single-stage scroll	Two-stage unloading scroll	Two-stage unloading scroll
Multi-Speed ECM Constant Torque	Used with ECM furnace or fan coil	Not applicable
Vertical upflow Horizontal	Compact cube	Compact cube
2 stages heating* 1 stage cooling	3 stages heating* 2 stages cooling	2 stages heating 2 stages cooling
Microprocessor control	Evolution™ Connex™ control Advanced Diagnostics Wi-Fi® / Remote Access	Microprocessor control
Tin-plated copper tubing Coated coil	Depends on air handler selected	Not applicable
MERV 8, 2"	Depends on air handler selected	Not applicable
Fiberglass	Closed cell foam	Fiberglass
No	Yes	Yes
Optional Internal mount pump	Optional Internal mount pump	Optional Internal mount pump
Optional Internal mount on vertical units	Depends on air handler selected Hybrid Heat® option	Not applicable
Optional (field installed)	Yes	Optional (field installed)
Optional	No	Not applicable
All sizes	Evolution™ Connex™ zoning control	All sizes
	All sizes (except 6 ton)**	

**GZ072 does not meet ENERGY STAR® requirement when used with fan coil.

Features and Benefits

Bryant offers a wide range of model options and configurations to fit a variety of applications.
Our most popular models include the following product features and benefits.

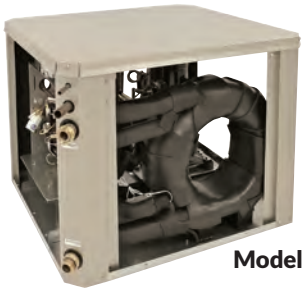
Main Product Features	Benefits
Copeland Ultra-Tech™ two-stage unloading scroll compressor (single-stage scroll compressor on GB)	Provides energy savings, comfort, dehumidification, reliability, and quiet operation
Variable-speed ECM fan (GC, GP models)	**Energy savings, comfort, dehumidification, reliability, and quiet operation**
Tin-plated copper tubing in air coil	Formicary corrosion is a known issue when it comes to indoor air coils. The tin-plated copper provides a coating on indoor air coil to help prevent decay of tubing and provide heightened durability and longer life
Fully insulated cabinet	**Closed cell and fiberglass insulation inside cabinet provides additional insulation against the normal operating sound of the compressor**
Filter frame with two-inch MERV 13 filter (GC) (two-inch MERV 8 on GP, GB)	Improved indoor air quality, keeps coil clean for energy savings and comfort
Stainless steel drain pan	**Stainless steel drain pans are a high quality option that provide increased resistance to bacteria growth and ability to resist corrosion and leaks**
Microprocessor control	Precise sequencing for optimum performance, ease of service
Dual level compressor isolation	**Quiet operation**
Heavy gauge steel cabinet	Heavy gauge steel cabinets give an attractive unit look while providing a durable casing that helps contain sound
Smart Start (optional feature in GP, GB, GW)	**Optional electronic start assist device for compressor that reduces start-up amperage to reduce noise, eliminate light flicker, and increase compressor life**

Key Features – GC and GZ Evolution™ Models

Main Product Features	Benefits
Remote Access	Access your Evolution™ System from anywhere in the world with Internet access. Monitor energy usage, change schedules and setpoints, receive email alerts, and more, all with your mobile device.
Advanced Comfort Control and Energy Efficiency	**The Evolution™ System continuously monitors indoor and outdoor conditions to give you the best balance of comfort and efficiency, all at your command. The optional Advanced Smart Setback feature chooses the right temperature for your home while you're away, while anticipating comfort on your return, to help maximize energy efficiency.**
Perfect Humidity® technology	Perfect Humidity® technology does not require a call for cooling to initiate dehumidification, providing an increased level of comfort in the home. Super Dehumidify mode allows the maximum amount of dehumidification, with the minimum amount of overcooling.
Personalized Comfort Anywhere in Your Home	**The Evolution™ zoning system allows you to set personal comfort levels in up to eight areas of your home, while allowing you to choose individual energy-efficient setpoints and schedules for those areas when no one is using them.**
SmartEvap™ technology	This Bryant® patented technology operates after a dehumidification cycle in cooling and turns off the blower for five minutes to allow condensate to drain from the evaporator coil, and not re-evaporate into the home.
Fan-On *Plus*™ technology	**Unlike ordinary systems with only one continuous fan setting, this Bryant patented technology allows a homeowner to select their fan speed for constant fan mode, and have different settings for each programmed Comfort Profile.**

*Full Evolution™ System with the Evolution™ Connex™ control with Wi-Fi® capability. Remote access requires Wi-Fi model wall control and Apple® or Android® mobile device. Energy Tracking requires compatible equipment.

Model GC



Model GZ

EVOLUTION™ SYSTEM

The Evolution™ Connex™ Control

To gain all the benefits from your new Evolution™ Geothermal System, be sure to install the Evolution™ Connex™ control.

Frequently Asked Questions

Q: How efficient are geothermal heat pump systems?

A: Actual efficiencies will depend on a number of factors but, generally speaking, a geothermal heat pump can be between 2 to 5 times more efficient at producing heat than a gas, propane or oil furnace (based on the amount of energy consumed to produce a given amount of heat). For cooling, a geothermal system (30 EER) can be up to three times more efficient than an air source air conditioner (10 EER).

Q: Why are geothermal heat pumps so efficient?

A: Geothermal heat pumps use the ground temperature as a "source" for heat energy to help warm your home, and use the ground as a heat "sink" during cooling. The earth acts as a giant energy battery, providing an endless, renewable source for heating and cooling comfort. Standard heat pumps use outdoor air for heating and cooling. Because the ground temperature is much more moderate and stable than air temperatures, geothermal system operation is much more energy efficient, especially at extreme outdoor temperatures.

Q: Are these systems reliable?

A: Yes. Geothermal units are not subject to some of the same forces that cause wear and tear on other types of systems. And, earth loops are installed using a special grade of polyethylene pipe with heat-fused fittings designed for durability and long life.

Q: What kind of underground loop system is best?

A: It depends on several factors. Homes on larger lots usually have horizontal loops installed. Smaller lots may require a vertical loop. A nearby pond can also be used. If you have a well water system, that may be an option. Your Bryant dealer is trained to determine which loop design is most appropriate for your home. Regardless of the loop system selected, the operating costs are all about the same.

Q: How much space is needed for a closed loop system?

A: The smallest closed loop design, the vertical loop, may require a space of only 15x15 feet, or a line of 3x45 feet, located at least 10 feet away from the home, and 10 feet from property lines. Horizontal loops require considerably more space.

Q: What about radiant floor heating?

A: A geothermal system can be designed to provide warm water for radiant floor applications. Bryant's water-to-water geothermal units are much more efficient than today's best boilers.

Q: How is the unit size and loop design determined?

A: Bryant dealers use geothermal system design software to determine the most appropriately sized unit and loop for your home. The software takes many factors into consideration including: the heating and cooling requirements of the home, loop type, depth, soil conditions, earth temperatures, outdoor air temperature extremes, local fuel rates and much more. In addition, the software can demonstrate energy costs for a Bryant® geothermal system versus another type of heating and cooling system.

Q: How big does a pond have to be for use with a geothermal system?

A: For most installations, the pond should have a surface area of at least half an acre and a minimum depth of 10 feet. Bigger is better.

Q: Will the fluid in the loops freeze during a long, cold winter?

A: No. Antifreeze in the loop fluid eliminates any concerns about freezing.

Q: What is the actual efficiency of a geothermal system?

A: The energy efficiency of a geothermal system is rated by an industry standard known as ARI/ISO 13256-1, which specifies a set of conditions by which efficiency is determined. The rating for heating is Coefficient of Performance (COP). It's a ratio of the amount of energy used to operate the unit compared to the amount of energy output. Bryant's highest efficiency geothermal units have a COP in excess of 4.5 (that's 450% efficient), compared to a high-efficiency air source heat pump with an average seasonal COP around 1.8. The rating for cooling is called Energy Efficiency Ratio (EER). It's calculated by dividing BTUs per hour output into the watts used. Bryant's highest efficiency geothermal units have EERs around 20-32. That's about 2 to 3 times better than many air conditioners and heat pumps. But because geothermal units are not rated according to the same industry standard as furnaces, air conditioners, and heat pumps, it is difficult to compare, for example, an AFUE and HSPF to COP, or SEER to EER. To get the full energy efficiency story, compare the dollars. Your Bryant dealer can calculate operating cost estimates using Bryant's geothermal system design software.

Q: Can a well be used instead of an earth loop?

A: Yes. Prior to using a well for a geothermal installation, the water quality must be checked. Sufficient water volume is needed for the unit, usually about four to nine gallons per minute during unit operation. A discharge location like a pond or drainage ditch is also required.

Q: Is comfort compromised to get all this efficiency?

A: No. In fact, geothermal systems can provide exceptional comfort without the "cold blow" from standard air source heat pumps during heating; or short, hot blasts of air associated with some standard efficiency gas furnaces. Geothermal units deliver air at temperatures that provide comfort throughout the house. The Bryant® dual capacity units with variable-speed fans precisely match the needs of the home to deliver comfort no matter what the outdoor air temperature is.

Q: Can the existing duct work and electrical service be used?

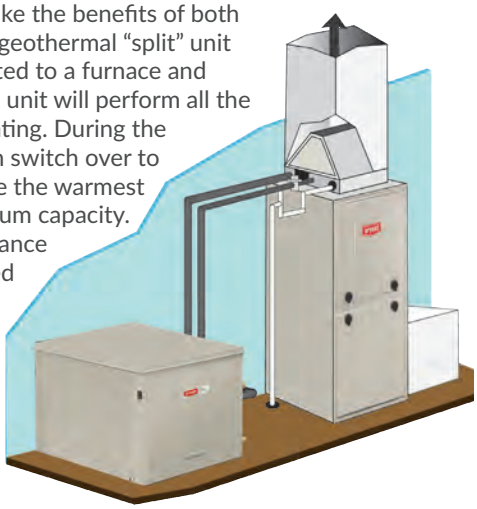
A: Generally, the existing duct work can be used with a geothermal unit without extensive modification. Variable-speed blowers used in many of the Bryant geothermal units can compensate for a less-than-optimum duct system. For the electrical supply, a 200-amp service for the home is recommended.

Q: Are geothermal systems more expensive to install, and how long does it take for the extra expense to pay for itself?

A: Geothermal systems are generally more expensive to install than ordinary systems. For replacement installations, the added cost can be recovered faster than you think, due to the high energy efficiency of geothermal. In a new home where the added cost of the system is included in the mortgage, the monthly energy savings may be greater than the added cost, providing the homeowner with a positive cash flow from day one. Because every situation is somewhat unique, your Bryant dealer can demonstrate the complete financial scenario for your home using the geothermal system design software. Many homeowners find that a Bryant geothermal system is a great investment.

Q: Can a geothermal unit be combined with a gas or propane furnace?

A: Yes. Some homeowners like the benefits of both technologies. In this case, a geothermal "split" unit (compressor only) is connected to a furnace and cooling coil. The geothermal unit will perform all the cooling and some of the heating. During the coldest days, the system can switch over to furnace operation to provide the warmest air temperatures and maximum capacity. The most cost effective "balance point" can be pre-determined by the dealer to maximize efficiency and comfort. This Hybrid Heat® system may be a good choice for a replacement installation or a new home.



Incentives, Rebates and Tax Credits

Because geothermal systems can be part of the solution for national energy policy, and for efficiency programs of various utilities, many incentives are available throughout the U.S. and Canada. Qualified homeowners in the U.S. may be eligible for a tax credit. Check with your Bryant dealer to find out what incentives are available in your area, and which ones you may qualify for.

Limited Warranty

As part of our commitment to quality, all GC, GP, GZ, and GW model geothermal units are backed with a 10-year parts and labor limited warranty upon timely product registration (10-year parts and five-year labor without timely registration). All GB model geothermal units are backed with a 10-year parts and five-year labor limited warranty upon timely product registration (five-year parts and five-year labor without registration). Ask your Bryant dealer for details.

As an ENERGY STAR® Partner, Bryant Heating & Cooling Systems has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

energy

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For further information, please contact:

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