



Water Source Heat pumps from

Comfort-Cire®

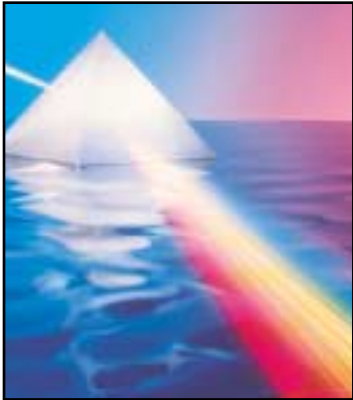
Water Source Heat Pumps can save you money and help save the planet too!

With a nearby source of ground water you can heat and cool your home using the world's most plentiful resource, the earth. no matter where you live the earth's temperature stays relatively stable throughout the year usually between 45 and 72°F depending on geographic location. even when outdoor temperatures fluctuate radically this

constant, stable energy source can be harnessed for economical year round space heating, cooling and even domestic hot water heating using a comfort-aire water source heat pump.

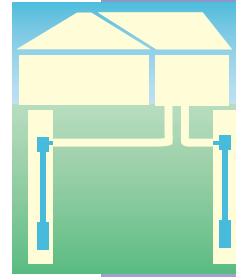
with eer's over 20.0 and cop's over 4.0 possible, your system can produce four units of energy for every one used. this allows a water source heat pump to be much more efficient than traditional space conditioning methods and can save you from 30-60% on your monthly energy bills.

Water source systems consist of two main components-the heat pump itself and a water system installed outside the home. There are two choices of water source systems from which to choose open or closed loop systems. Which system you install is dependent in part by your preference but also by your geographic area and the availability of ground water.



Two systems

Open Loop

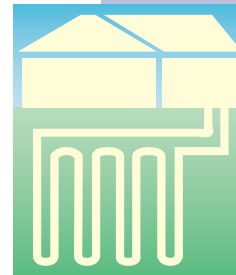


Water is removed from an aquifer whether ground water, stream, pond or lake and passed through a liquid-to-refrigerant heat exchanger. In the heating mode heat is extracted from

the water using refrigerant which is evaporated then compressed to create a higher quality heat. This heat is then utilized to heat your home.

In summer months the heat in the air of your home is extracted by your Comfort-Aire water source heat pump and removed from your home. The heat is transferred to the water that is then returned to the aquifer from where it was removed.

Closed Loop



Also called **Geothermal**, these systems utilize a heat exchanger typically constructed of polyethylene tubing buried in the earth or submerged in a pond or lake.

Heat is absorbed from the surrounding water or earth by a solution pumped through the heat exchanger. The solution is typically a water/anti-freeze mixture. The circulating heated solution delivers the heat back to the heat pump which distributes the heat to your home. During the cooling season the heat in your home is extracted by the heat pump and transferred to the fluid circulating through the closed loop heat exchanger. The heat removed from your home is then transferred to the earth, pond or lake using the closed loop heat exchanger.

High-Efficiency Water Source (Ground Water) Heat Pumps

The VPY series is constructed of only the highest quality materials featuring G-90 prepainted steel. Units are ARI certified for both capacity and efficiency. Capacities are available from 1-1/2 through 6 tons for residential applications. The VPY comes standard with a cupronickel water coil for long life in open loop applications and a third service port for ease of accessory add-ons. Seven access panels allow easy access to components. Simple electromechanical controls make this unit one of the easiest to service and install.



VPY



WWH

Available in 1 through 6 ton configurations the WWH series geothermal comfort system is specifically designed for radiant heat applications. In a radiant heat application, you will experience the even space temperatures created by using your floors, walls and/or fixtures as heat exchangers. Our WWH is specifically designed to operate with fluid temperatures from 30 to 110 deg. F.

The HPY series is the horizontal water source heat pump for open loop applications. It is available in capacities ranging from 1-1/2 tons to 6 tons. The compact design is ideally suited for confined space installations such as crawl spaces or drop ceilings. The HPY has the same great features as the VPY series only in a horizontal configuration.



HPY

As you can see, water source heat pumps can be installed almost anywhere - basement, closet, utility room, even under a counter. And, no venting is required when a unit is installed indoors.

High-Efficiency Geothermal (Ground Loop) Heat Pumps

Features

- 1 Standard right return
- 2 Sturdy corner post construction
- 3 Cabinet constructed of prepainted G-90 galvanized steel
- 4 Seven recessed access panels
- 5 Thermally insulated cabinet
- 6 Lay-in blower assembly
- 7 PSC multi-speed blower motor
- 8 Oversized copper tube/aluminum fin evaporator
- 9 Bi-Flo expansion valve



VGY

Features

- 10 Insulated oversized copper or optional cupronickel coaxial water coil
- 11 High & Low pressure switches protect compressor
- 12 Simple electromechanical controls
- 13 Heat Pump - duty compressors
- 14 Exclusive **Maxi-Dri** Humidity Control **standard** (VGY only)
- 15 Desuperheater **standard** (VGY only)
- 16 Stainless Steel drain pan
- 17 Third service port standard

Homeowners across America have discovered geothermal systems are ideal for heating and cooling! Geothermal technology has matured over the past ten years. It delivers heating and cooling in such a way that is compatible with your needs and those of the planet. It provides comfort, cleanliness and an improved environment with a lower operating cost than other systems.

The VGY series Geothermal systems (shown above) are extremely efficient in their use of energy. They don't burn fuel like fossil fuel-based units, and usually deliver 3 to 4 times more energy than they consume. In addition, the VGY series is available in a horizontal configuration - HGY series.

The VGY series also features the Exclusive Maxi-Dri system which allows the geothermal heat pump to remove excess humidity from the home beyond the normal cooling cycle to optimize efficiency, capacity and comfort. The vgy series

incorporates an integral desuperheater that allows you to use excess heat in the summer months to heat domestic hot water. During the heating season automatic controls regulate the desuperheater's function to make maximum heat

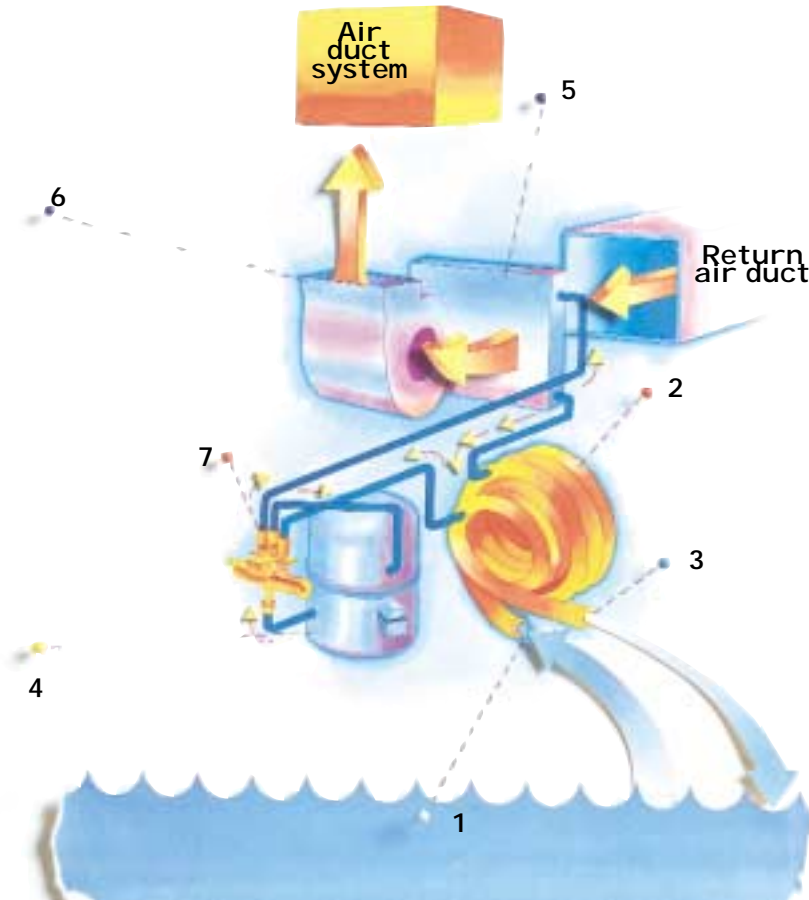
available for space heating.

Geothermal is without question the efficient source of energy to use in the 21st century.



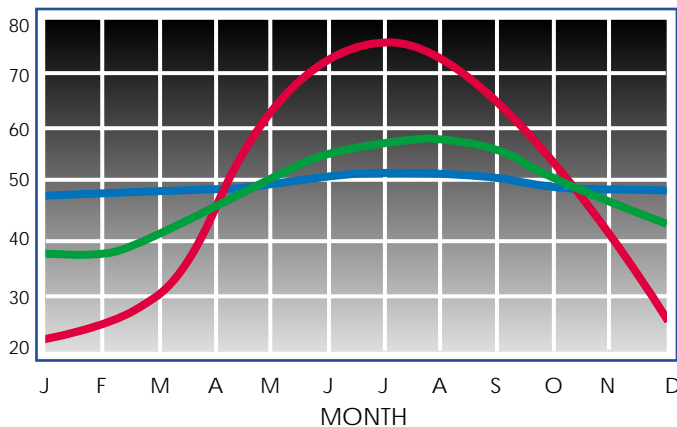
HGY

Heat and cool using nature's resources.

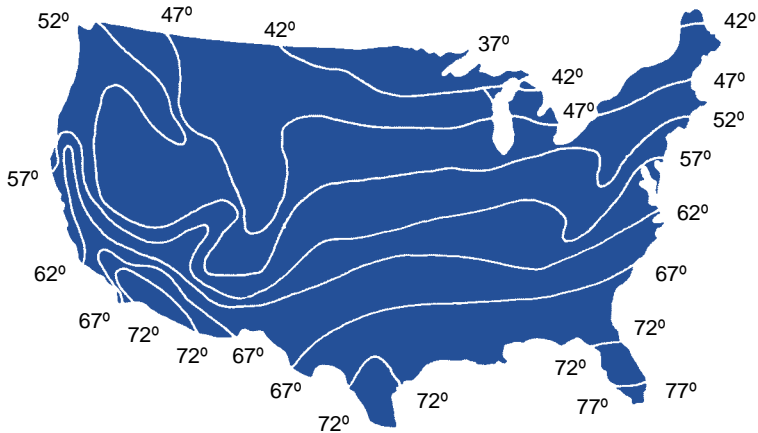


How a typical system works

- 1 Water inlet: 45- 70 degrees F water is pumped into system.
- 2 Water-to-refrigerant heat exchanger: Heat from water is absorbed by refrigerant.
- 3 Water outlet: Water is returned to source 7 - 10 degrees cooler.
- 4 Compressor: Warm refrigerant from water-to-refrigerant heat exchanger is compressed and super heated to approximately 180 degrees F and pumped to refrigerant-to-air heat exchanger.
- 5 Refrigerant-to-air heat exchanger: Cool air is drawn through super heated refrigerant coils and warmed to 100 - 125 degrees F.
- 6 Blower: Warmed air is delivered to house through air duct system.
- 7 Reversing valve: Changes direction of refrigerant flow, to allow heating or cooling.



The map below shows average temperatures of ground water in the USA. Water source heat pumps are designed to work in all areas of the country with high efficiency regardless of ground water temperatures.



Stable thermal energy source - ground water - is responsible for the performance advantages of water source heat pumps over air source heat pumps. The chart above illustrates just how stable ground water temperatures remain throughout the year.

■ Ground water ■ Earth at five feet ■ Ambient Air

Water Source Performance Ratings

Model	VPY/HPY—Ground Water Application			
	Cooling		Heating	
	Btuh	EER	Btuh	COP
018	19,600	21.1	16,900	4.6
024	27,000	19.0	22,200	4.3
030	35,700	18.5	31,100	4.1
036	37,700	18.6	32,500	4.1
042	46,000	17.3	39,300	4.0
048	56,200	18.0	46,200	4.0
054	56,600	17.0	49,900	3.8
060	62,700	17.2	61,800	3.8
072	83,000	19.0	65,900	4.1

Cooling @ 80/66.2 ent. air 59.0 deg. ent. liquid
 Heating @ 68/59 ent. air 50.0 deg. ent. liquid

Model	VGY/HGY—Ground Loop Application			
	Cooling		Heating	
	Btuh	EER	Btuh	COP
018	18,300	15.0	13,400	3.7
024	24,500	15.1	16,200	3.3
030	32,100	14.2	23,500	3.6
036	35,800	14.9	24,100	3.5
042	43,100	14.4	30,000	3.4
048	52,000	14.9	35,000	3.5
054	54,500	14.9	40,700	3.2
060	60,200	14.1	48,900	3.2
072	76,300	15.9	55,400	3.7

Cooling @ 80/66.2 ent. air 77.0 deg. ent. liquid
 Heating @ 68/59 ent. air 32.0 deg. ent. liquid

WWH—Radiant Heat Application		
Model	Heating BTUH	Cooling BTUH
015	16,500	11,600
040	42,541	30,655
050	51,748	36,304
060	58,293	41,210
070	72,900	53,800

Specifications and performance data subject to change without notice.

HEAT CONTROLLER, INC.

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