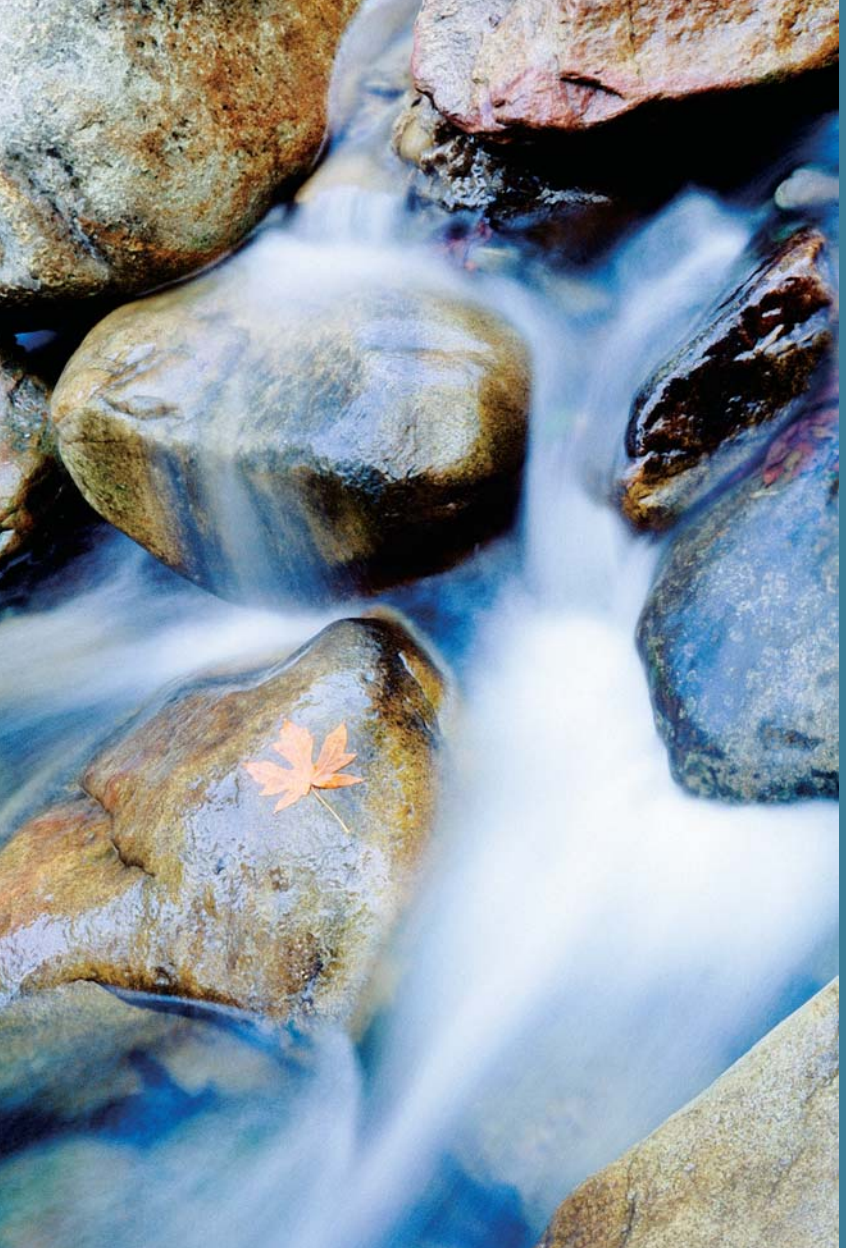
H-Series

Hydronic Combination Geothermal Heating and Cooling Systems

Geothermal Systems
Hydron Module®

www.hydronmodule.com



H-Series Combination Unit

Want the comfort of a radiant floor heating system and the cost effectiveness of forced air heating and cooling without harming the environment? The Hydron Module® geothermal combination system provides forced air heating and cooling in addition to hydronic heat for radiant floors in one efficient unit. A single combination unit allows you to experience floor warming, radiant heat in rooms with tile or wood flooring, while enjoying the efficiency of forced air heating in other areas. Naturally, this unit also delivers air conditioning throughout the entire home. Because the unit utilizes the sun's free energy stored in the ground and uses no fossil fuels, it can save you up to 70% on utility bills, and is environmentally friendly. The Hydron Module combination system combines the most comfortable heating with the most efficient technology. Purely customizable. Simply everything you could want – and more.

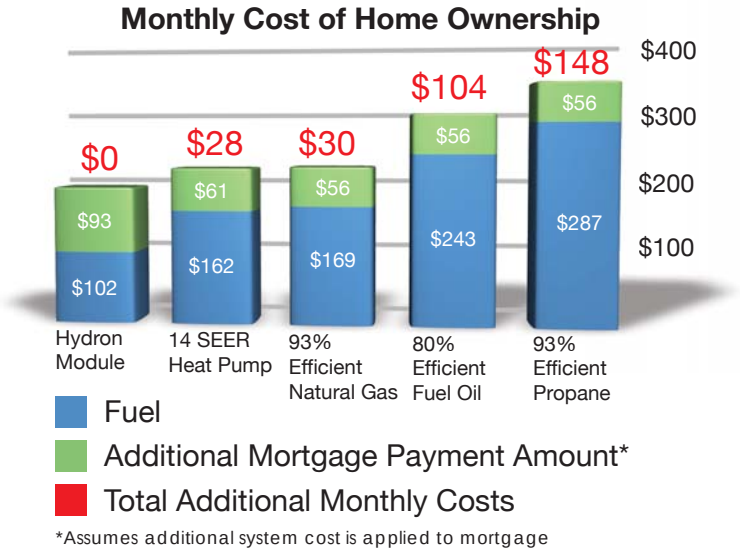
Hydron Module - ***Pure & Simple***

Why Choose Geothermal?

There are a number of different reasons why you and your family should choose a Hydron Module geothermal heating and cooling system for your home. Everyday, more and more homeowners are turning to geothermal for better comfort and lower energy costs.

Hydron Module geothermal systems are three to four times as efficient as conventional systems. They do not rely on fossil fuels which can harm the environment and they offer unsurpassed comfort through better air purification, dehumidification and more consistent air temperatures.

And don't just take our word for it, the EPA (U.S. Environmental Protection Agency) has stated that geothermal systems are, "the most energy efficient, environmentally clean, and cost-effective space conditioning systems available today.*"



Due to the loop installation costs, a new geothermal system will typically have a higher up-front cost versus a conventional system. However, that is only half of the story. Geothermal systems have significantly lower operating costs, which are realized from the very first day the system is in operation. With escalating fossil fuel prices and new State/Provincial and Federal rebates/credits, choosing geothermal becomes an easier decision every day.

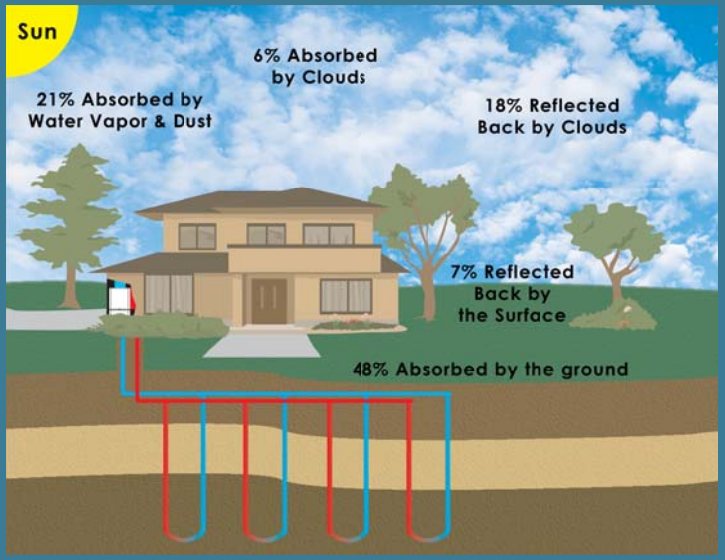
* Source: "Space Conditioning: The New Frontier

How Geothermal Works

Fundamentally, geothermal systems work differently than ordinary heating and cooling systems. Conventional systems have to produce heat by burning some type of fuel, typically propane, natural gas or fuel oil. Geothermal systems don't create heat; instead they collect and distribute it.

First, you should realize that the earth absorbs and stores nearly half of the sun's solar energy. As a result, at a depth of six feet it maintains a fairly constant temperature of 45 to 70 degrees F. The geothermal system taps into that free, renewable energy and puts it to work.

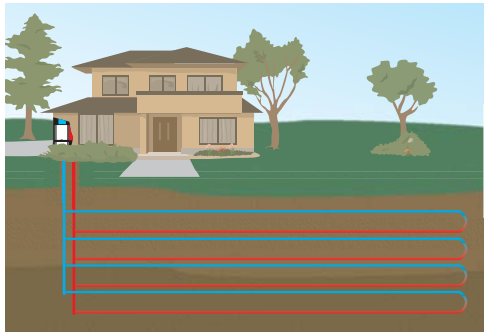
The earth's natural heat is collected in the winter by a series of pipes called a loop system. Fluid circulating in the loop system carries this heat to the home, where it is compressed and released to raise the inside temperature.



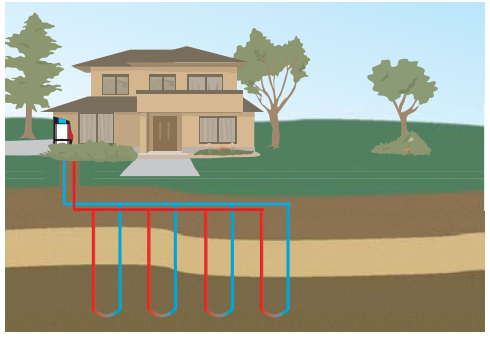
In the summer, this process is reversed in order to cool the home. Heat is drawn from the home, rejected to the loop and absorbed by the earth. The result is a comfortable home all year round.

Since most of the energy used for heating and cooling is free from the earth, geothermal systems are the most efficient and environmentally friendly systems on the market today.

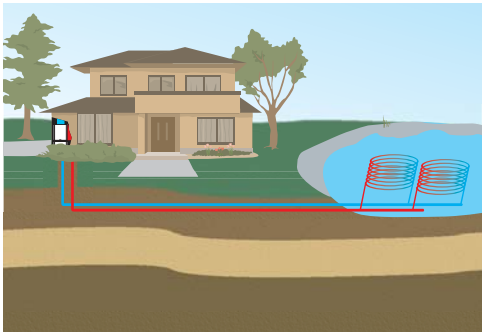
The Heart of the System: Geothermal Earth Loops



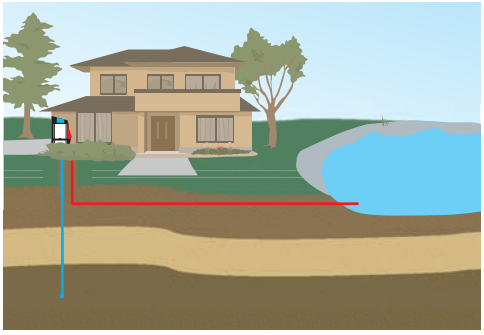
Horizontal Loop: This is the most common loop used when adequate land area is available. Loop installers use excavation equipment such as chain trenchers, backhoes and track hoes to dig trenches approximately 6-8 feet deep. Trench lengths range from 100 to 300 feet per ton, depending on the loop design and application.



Vertical Loop: This loop is used mainly when land area is limited and in retrofit applications of existing homes. A drilling rig is used to bore holes at of depth of 150 to 300 feet per ton. A U-shaped coil of high density pipe is inserted into the bore hole. The holes are then backfilled with a sealing solution.



Pond Loop: A pond loop is an option if a large body of water is available within approximately 200 feet of the home. A ½ acre, 10 to 12 foot deep body of water is usually adequate to support the average home. The system uses coils of pipe typically 300 to 500 feet in length. The coils are placed in and anchored at the bottom of the body of water.



Open Loop: This system can be installed if an abundant supply of high quality well water is available. A typical home will require 4 to 8 gallons of water per minute. A proper discharge area such as a river, drainage ditch, stream, pond, or lake must be present. Check for local restrictions before selecting a specific discharge method.

1. All Hydron Module units have ***coated air coils*** which prevent corrosion, ***enhancing reliability and life expectancy.***

2. A ***durable stainless steel drain pan is standard*** on all Hydron Module systems. This means ***no corrosion*** and a ***long life span.***

3. Hydron Module uses only ***Copeland scroll compressors***. This proven compressor technology ensures ***better reliability*** due to fewer moving parts.

4. Digital controls insure ***proper operation*** and a variety of field selectable settings for each installation. Advanced safety controls help ***protect the equipment.***

5. ***Hot Water Generator*** is standard with all Hydron Module units. This allows the capture of free unused heat, ***typically cutting hot water costs by 30 - 50%.***

6. ***ECM blower motors are standard*** on all Hydron Module two-stage equipment. These variable speed motors ***ensure quiet start up*** and operate at a ***fraction of the cost*** of a conventional blower motor.

7. ***Optional auxiliary electric heaters*** for backup heating or emergency heating situations ***provide additional heat*** in extreme cold weather, allowing the system to be correctly sized for heating and cooling.

8. ***Condensate overflow sensor protects against potential overflows*** due to clogged drains.

9. The Hydron Module combination unit features a ***hydronic heating function.*** This feature allows a ***single unit*** to provide forced air heating, forced air cooling, and radiant floor heat. The fact that only one unit is required ***reduces installation costs and minimizes system maintenance.***

Additional Unit Features

- Priority Selection (Forced Air Heating / Hydronic Heating)
- Foil Backed, Recycled Blue Jean Insulation (No Fiberglass)
- 10 Year Limited Warranty (2009 or newer models)
- Insulated Refrigerant Circuit
- Bolted, Stainless Steel Cabinet
- All Panels Removable For Easy Access
- Flow Switch Protected

Unit Performance

Model	Capacity	Heating		Cooling	
		Btu/hr	COP	Btu/hr	EER
H026	Full Load	22,200	3.7	29,000	16.0
	Part Load	16,500	4.2	21,500	20.0
	Hydronic	21,000	3.7		
H038	Full Load	31,400	3.6	39,400	18.0
	Part Load	20,900	4.5	26,300	24.0
	Hydronic	31,600	3.7		
H050	Full Load	45,600	3.5	57,200	17.6
	Part Load	30,300	4.3	37,900	23.8
	Hydronic	44,700	3.6		
H062	Full Load	52,200	3.5	65,400	17.4
	Part Load	36,500	4.3	45,700	23.6
	Hydronic	50,000	3.5		
H072	Nominal	61,000	3.4	75,800	16.0
	Hydronic	61,400	3.3		

Unit Applications

One of the many advantages the H-Series Combination unit offers is the flexibility of applications designed for each home.

- Radiant Floor Heating
- Domestic Hot Water
  (Heat Exchanger Required)
- Snow Melt
- Forced Air Heating / Forced Air Cooling

Notes (Forced Air):
Certified in accordance with ISO Standard 13256-1 which includes Pump Penalties.
Heating capacities based on 68.0°F DB, 59.0°F WB entering air temperature.
Cooling capacities based on 80.6°F DB, 66.2°F WB entering air temperature.
Entering water temperatures Full Load:
32°F heating / 77°F cooling.
Entering water temperatures Part Load:
41°F heating / 68°F cooling.

Notes (Hydronic):
Rated in accordance with ISO Standard 13256-2 which includes Pump Penalties.
Heating capacities based on 32°F EST & 104°F ELT.
Entering load temperature over 120°F heating is not permissible.
Floor heating is most generally designed for 85°F entering load temperature.

Geothermal Systems

Hydron Module®

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