



All About Geothermal Heat Pumps





What is a geothermal heat pump?

Geothermal heat pumps are electrically powered home heating and cooling devices which transfer heat to and from the earth via a refrigeration process. Heat pumps have been in operation for over 50 years and operate on the same principle as your household refrigerator or air conditioner.

How It Works

In the winter heat energy is absorbed from the ground via underground piping or by pumping well water to the heat pump. The heat pump concentrates the energy and delivers it to your home in the form of warm air or hot water. During summer operation the process is reversed. Warm air is collected from the home and rejected to the cooler earth.

Heat pumps can also produce domestic hot water any time it operates. Geothermal heat pumps are suitable for both forced air and in-floor heating systems in a variety of output capacities that can accommodate any building design.



What can you expect from a geothermal heat pump?

Savings

Compared to electric heat, a geothermal heat pump will save you up to 75% on your heating costs.

Comfort

The geothermal heat pump is completely automatic and provides heating, cooling and hot water with a centrally located thermostat.

Cleanliness

There is no combustion in the home and the system is exceptionally clean. This makes geothermal heat pumps a good option for people with allergies.

Durability

Geothermal heat pumps have a solid track record for longevity and are protected by various warranties.

Reliability

Your geothermal system is housed indoors and underground, protecting it from the harsh elements. With few moving parts the system is virtually maintenance free.

Green Energy

Heating and cooling a home with renewable energy is great for the environment and will help decrease the size of your carbon footprint.

Geothermal Energy is Renewable & Efficient

Solar heat that has been stored in the earth's crust provides inexhaustible source of supply energy for a geothermal heat pump. This energy is replenished each year by the sun during the normal cycle of our seasons. There is enough energy stored in the earth to supply your home's heating and cooling requirements. All we need to do is extract that energy and the geothermal heat pump has been designed to do just that!

In a study by the Department of Energy, geothermal heat pumps were ranked the #1 most efficient heating and cooling system.

When compared to an electrically heated home, geothermal heat pumps consume 25% of the electricity required to heat the same structure. This means 25% of the emissions as well.



Geothermal Cost Savings

Purchasing a geothermal heat pump for your home is both a big decision and a sound investment. Here's a cost comparison of how much you'll save on a monthly basis with a geothermal heat pump compared to traditional and competing technologies. This example uses the heat requirement for a 2,200 square foot home.

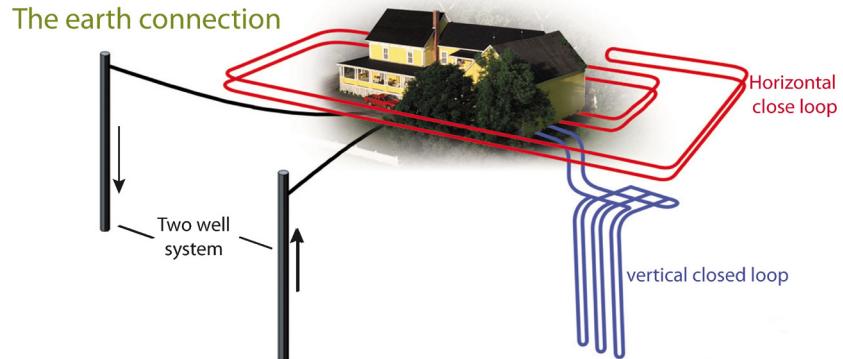
Heating Method	Calculation	Total Savings/Yr
Electric Baseboard Heat		
Electricity Required x Electric Rate	29,900 kWh x \$0.13	\$3,887
Hot Water for 4 People x Electric Rate	5,650 kWh x \$0.13	\$734.50
Total Cost	\$3,887 + \$734.50	\$4,621.50
Air Source Heat Pump		
Electricity Required x Electric Rate	14,950 kWh x \$0.13	\$1,943.50
Hot Water for 4 People x Electric Rate	5,650 kWh x \$0.13	\$734.50
Total Cost	\$1,943.50 + \$734.50	\$2,678
Geothermal Heat Pump		
Electricity Required x Electric Rate	7,475 kWh x \$0.13	\$971.75
Hot Water for 4 People x Electric Rate x 35% cost savings	3,672.50 x \$0.13	\$477.50
Total Cost	\$971.75 + \$477.50	\$1,449.25

Available System Types

We manufacture heat pumps for both ducted air systems and for in-floor hydronic heating. All systems absorb heat from the ground from one of the three energy supply sources shown to the right. Your dealer will help you choose which system is best for your home.

Ducted Systems

Our TF, R, and DX series heat pumps are available with outputs from 35,000 to 75,000 Btu/hr in both horizontal and vertical configurations. These systems provide heating, cooling and domestic hot water.



In-floor Heating

In-floor heating is one of the most popular ways to heat new buildings. We make a W Series liquid-to-water heat pump with enough output to heat everything from small homes to large businesses.



About Nordic Heat Pumps

By purchasing a Nordic heat pump you are investing in a product which has undergone many years of research and development. In 1983 we manufactured our first heat pump in New Brunswick, Canada. Every year since, we have improved our products by selecting the most reliable and durable components. Our skilled craftsman produce some of the finest heat pumps available today. Every heat pump is run-tested before shipping to ensure you are totally satisfied with the end product.

Each heat pump model is electrically and performance tested in our own CSA certified test lab to the appropriate UL/AHRI/CE/CSA 446 standards. This computer controlled facility allows us to test each design thoroughly to ensure maximum efficiency and reliability. We're the only heat pump manufacturer in Canada with our own CSA certified HVAC test lab.

Through innovation and technical achievement the we're committed to the goal of providing the most energy efficient and reliable heat pumps available today.

Nordic Heat Pump Features

- High efficiency compressor
- Full load heating and cooling
- Quiet operation
- Long lived components
- Attractive finish
- Domestic hot water generator
- Digital, programmable thermostat
- Acoustically insulated cabinet

Why the Experts Choose Geothermal Systems

Geothermal heat pumps are one of the most popular options for luxury homes and new construction builds, the experts choose geothermal because they know this technology is the #1 best option for home heating and cooling. Here's what you can expect from your geothermal system:

- Reduce heating costs by up to 75% since 3/4 of your heat is taken from your own property.
- Ecologically sound - the energy source is renewable.
- Low maintenance
- Produces all the heat required without back-up heat in most cases.
- Clean and quiet with no chance of fire or creosote problems.
- Automatic thermostatically controlled operation.
- Provides central air conditioning during summer for mere pennies per hour.
- Small compact size - can replace most oil, gas or electric furnaces.
- Designed and manufactured in Canada for North American conditions.
- Standard 10 year warranty on major refrigeration circuit parts.

Want more information?

Visit our website at nordicghp.com for information on finding a dealer or choosing a heat pump. You can also contact us at **506-756-8135**.