Comfort-Aire®

GEOTHERMAL

High Efficiency Heating and Cooling

R454B

HEAT CONTROLLER

GEOTHERMAL.

When it comes to keeping you comfortable, lowering utility costs, and conserving natural resources, geothermal systems offer a proven solution that's not only practical, but readily available.

Nothing compares to the efficiency of geothermal systems

A geothermal heat pump can save half the cost of heating and cooling the average home. In fact, for every unit of energy used for operation, three to five units of heat energy are produced.

In other words, for every $1 you spend on running the heat pump and blower, $3 to $5 worth of energy is delivered.

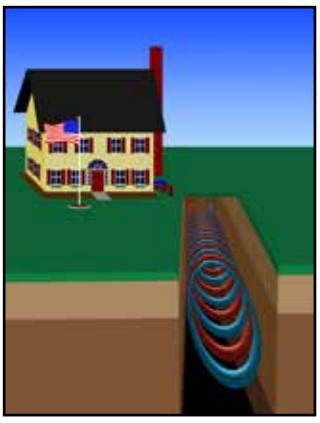
For even further energy savings, Comfort-Aire geo heat pumps include hot water generators that supplement domestic hot water (in both the cooling and heating modes).

Not only is geothermal technology efficient, it's also effective at keeping your home comfortable in every season.

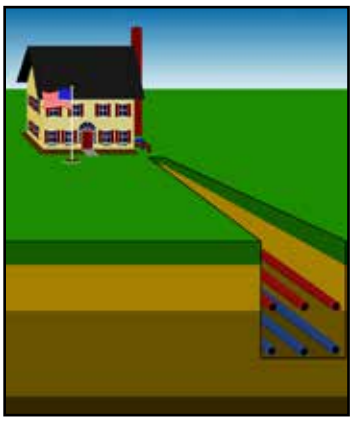
Energy Efficient & Earth Friendly

How our geothermal systems work...

- Piping or tubing is buried in the ground or submerged in a pond or lake.
- A water/coolant mixture circulates through the piping.
- In summer, hot air is extracted from the home by the heat pump and absorbed by the water mixture. This heat is transferred to the ground or pond water as the water mixture travels through the piping, and cooled water is returned to the heat pump.
- In winter, the water mixture in the piping absorbs heat from the ground or pond/lake and transfers it to the heat pump.
- The heat pump blower distributes the conditioned air throughout the home.

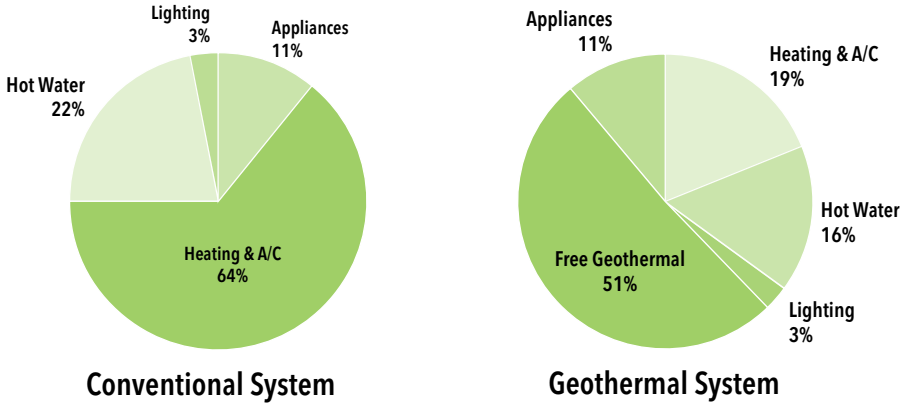


Ground Loop: slinky-type piping is buried in a horizontal trench, used when adequate land is available.



Ground Loop: pipes are buried horizontally, this trench shows six pipes–three outgoing, three incoming.

RESIDENTIAL ENERGY USE



With a Geothermal system, over half your home's energy is free.

Geothermal Advantages

- **Energy efficient**–Energy is needed only to pump the water solution and to run the geo system's blower, efficiency ratings reach as high as 27.3 EER* and 5.0 COP (full load)
- **Extended operating range**–Allows geothermal to work in virtually every climate
- **Quiet operation**–Cabinet insulation and compressor mounting system dampen vibration and associated sound
- **Safety**–No gas or oil is used, there are no fumes, and no odors
- **Long life**–There are fewer moving parts to wear out than on a conventional heating/cooling system
- **Proven technology**–Recognized by the EPA and the U.S. Department of Energy

Exceptional efficiency means fast payback...

Although the initial cost of a geothermal system is higher than a conventional heat pump or furnace/condenser combination, you can quickly recoup these costs through energy savings and potential Federal tax credits.

On average, geothermal heat pumps provide:

- 40% greater efficiency than air-to-air heat pumps
- 48% greater efficiency than gas furnaces

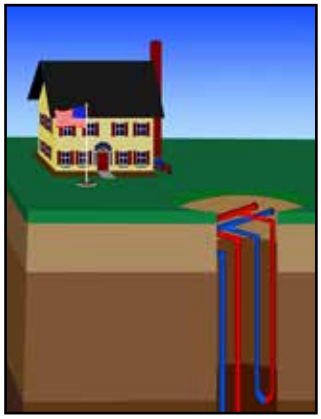
(Source: Geothermal Heat Pump Consortium)

They're also eligible for Federal tax credits. Ask your dealer to prepare a cost savings analysis for you to determine just how much you can save!

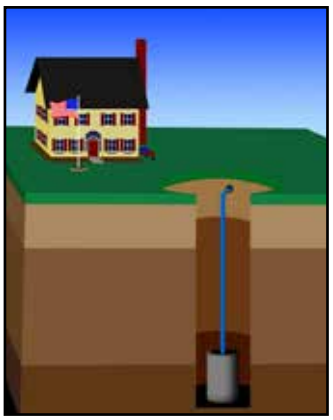
*EER-Energy Efficient Ratio
COP-Coefficient of Performance

The relative stable temperature of the ground or water at 5 feet below the surface allows heat transfer to occur in summer or winter.

Pond Loop: coils of piping are submerged in a pond, slinky piping can also be used for this application.



Vertical Ground Loop: when space is limited, a vertical bore is drilled; this one shows two u-tubes.



Ground Water: used when there is abundant well water; no piping for heat exchange fluid is required.

Installation Flexibility

Geothermal offers many options in terms of installation, so you can select the system that best meets your personal preferences, your geographic area and the availability of land or ground water. When properly designed, all systems work equally well.

Comfort-Aire®

ME Series
Vertical, Horizontal, or Downflow
Two-way communication with built-in controls. Extended range refrigerant circuit, capable of ground loop (geothermal) applications as well as open loop applications.

R454B

MJ Series
Split System
Separate air handler or blower required. For dual-fuel heating and cooling solutions, the MJ can also be paired with the MK cased coil.

ENERGY STAR

MZ Series
Horizontal or Vertical
Ultra-efficient two-stage scroll compressor, variable speed fan motor,microprocessor controls, galvanized steel cabinet construction, corrosive-resistant stainless-steel drain pan, and acoustic-type fiber insulation.

DESIGNED TO KEEP YOU COMFORTABLE FOR YEARS TO COME...

Comfort-Aire geothermal heat pumps are packed with features that promote reliability and peace of mind. Standard features on residential units are:

- **Two stage scroll compressor** for efficiency, long life and quiet operation
- **Tin-coated air coil** to resist corrosion and maximize heat exchange
- **Microprocessor controls** simplify installation and servicing, assure reliable operation
- **ECM blower motor** that automatically adapts to system load requirements for consistent indoor comfort
- **Performance monitoring** system that signals if unit isn't at peak performance so service can be scheduled–much like a car's "check engine" light
- **Epoxy powder coat finish** on steel cabinet for attractive appearance and durability
- **Interior insulation,** discharge muffler and double isolation compressor mounting system for exceptionally quiet operation

"This product complies with all California product labeling laws including, but not limited to, the Safe Drinking Water and Toxic Enforcement Act of 1986, more commonly known as Proposition 65."

Due to ongoing product improvements, specifications and dimensions are subject to change and correction without notice or incurring obligations. Determining the application and suitability for use of any product is the responsibility of the installer. Additionally, the installer is responsible for verifying dimensional data on the actual product prior to beginning any installation preparations.
Third party incentive and rebate programs have precise requirements as to product performance and certification. All products meet applicable regulations in effect on date of manufacture; however, certifications are not necessarily granted for the life of a product. Therefore, it is the responsibility of the applicant to determine whether a specific model qualifies for these incentive/rebate programs.

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HEAT CONTROLLER
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