LOW GWP

WaterFurnace
Smarter from the Ground Up™

Geothermal Comfort System

5 Series

504W11

The 5 Series

Smarter from the Ground Up™

As the upgrade to our popular Envision product line, the 5 Series represents some of our best features and efficiencies. Its advanced components offer a level of comfort and savings that's far greater than any ordinary system and among the geothermal industry's highest.

The 504W11 with OptiHeat Vapor Injection technology provides increased heating capacities, greater efficiencies, and higher water temperature output. Capable of delivering up to 145°F leaving hot water, this system is perfect for baseboard radiator systems, pool/spa heating, radiant floor applications, snow melt, and more. It's never been easier to upgrade to a water heating system that uses the earth as its fuel source.

Why Geothermal?

Geothermal is perfect for those who want to dramatically reduce their energy usage, save money on bills, and enjoy a more even, consistent comfort in their home. Over the next few pages we'll tell you a little more about geothermal and show you how you can benefit from a technology that's ***Smarter from the Ground Up™***.

Comfort that gives back

Geothermal's benefits

Geothermal heat pumps are not only the most comfortable way to heat and cool, they're also the most cost effective. They're versatile enough to excel in almost any home or any environment, and you'll find geothermal in more than 1 million households across Canada and all 50 U.S. states. They can be scaled for single-family homes to entire college campuses. In fact, we heat and cool our entire 110,000 square-foot headquarters with WaterFurnace equipment. Here are a few reasons why geothermal is one of the fastest growing technologies available for your home.

QUALIFIES✓ GEO TAX CREDIT **30%**

Extra savings for geothermal

A 30% tax credit on equipment and installation costs is currently available to U.S. homeowners who install an ENERGY STAR rated geothermal system. The credit can be used to offset both AMT and regular income taxes and can be carried forward into future years. The 30% tax credit will last until the end of 2032 when it is scheduled to decrease to 26% in 2033 and 22% in 2034. Hurry and act now for the most savings!

Energy Efficient

WaterFurnace systems are rated number one in energy efficiency because they can deliver almost five units of energy for every one unit of electrical energy used. Compare that to even the best ordinary system that delivers less than one unit of energy for every unit it consumes. That translates into an efficiency rating approaching 500%, compared to the most efficient gas furnace which rates only 98%.

Cost Effective

Because of the extraordinary efficiency of a WaterFurnace system, most homeowners save more on monthly bills than they pay for the system when installation costs are added to the mortgage. Any added investment over traditional equipment is usually recovered in just a few years, and many homeowners see a return on investment of 10-20% over the life of the system.

Clean

Since no fossil fuels are used, 5 Series units are perfect for clean and virtually maintenance free operation.

Environmentally Friendly

Geothermal systems are recognized by the United States Environmental Protection Agency as the most environmentally friendly, cost effective and energy efficient heating and cooling technology available. And now our systems utilize a low GWP (global warming potential) refrigerant R-454B. These systems also minimize the threats of acid rain, air pollution, the greenhouse effect and global warming—problems directly linked to the burning of fossil fuels. In fact, installing a single geothermal unit is the environmental equivalent of planting 750 trees or removing two cars from the road.

Flexible

Available as heating-only or a reversible model, the 504W11 is perfect for boiler replacement or chilled water applications. Paired with a hydronic air handler, it can also offer efficient, dehumidified cooling.

Safe

Because natural gas, propane, or oil isn't required to operate a WaterFurnace system, there's no combustion, flames, or fumes and no chance of carbon monoxide poisoning.

Quiet

WaterFurnace systems don't require noisy outdoor units that can disturb your peaceful surroundings or create unsightly additions to your home's appearance. We've taken great steps in keeping your unit as quiet as possible.

Reliable

Because geothermal units aren't subjected to the punishing effects of outdoor weather or fuel combustion, they last longer than nearly any other heating and cooling system. According to the American Society of Heating, Refrigerating, and Air-Conditioning Engineers, geothermal units have an average equipment life of 25 years while the underground loop system has a rated material life of more than 100 years. Ordinary air conditioners, furnaces and heat pumps are rated for only 12-18 years.

Comfortable

5 Series units provide consistent, comfortable heating or cooling and can better match the needs of the home during changing outdoor weather.

Using the earth to heat & cool

The geothermal difference

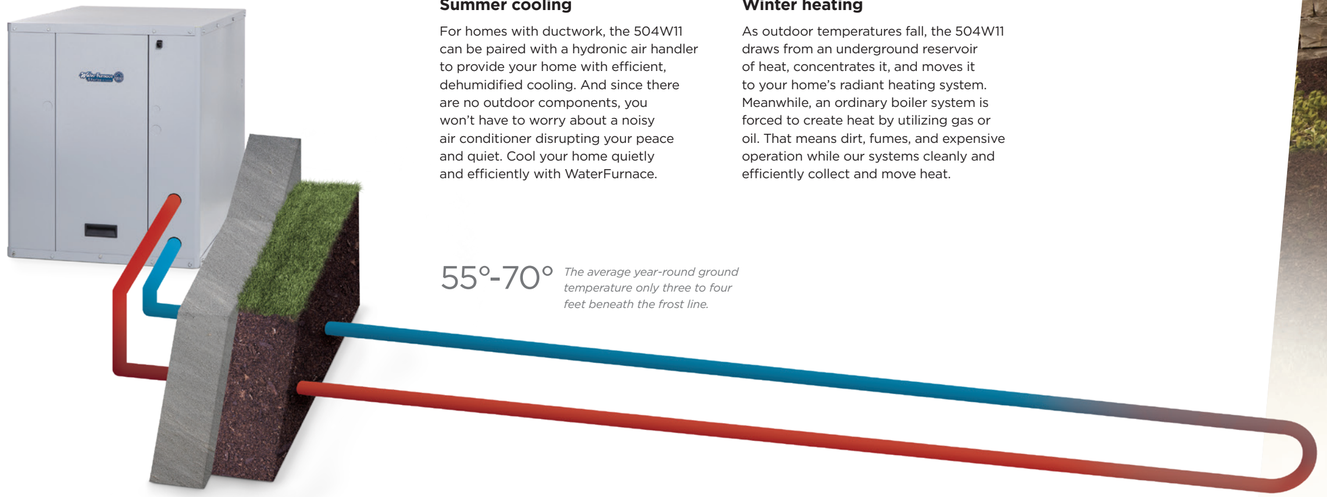
A geothermal heat pump (GHP) taps into the renewable solar energy stored in the ground to provide savings up to 70% on bills. Using a series of underground pipes, it exchanges heat with the earth instead of outdoor air. While air temperatures can vary greatly from day to night or winter to summer, the temperature just a few feet below the earth's surface stays an average 55°-70°F year-round.

Summer cooling

For homes with ductwork, the 504W11 can be paired with a hydronic air handler to provide your home with efficient, dehumidified cooling. And since there are no outdoor components, you won't have to worry about a noisy air conditioner disrupting your peace and quiet. Cool your home quietly and efficiently with WaterFurnace.

Winter heating

As outdoor temperatures fall, the 504W11 draws from an underground reservoir of heat, concentrates it, and moves it to your home's radiant heating system. Meanwhile, an ordinary boiler system is forced to create heat by utilizing gas or oil. That means dirt, fumes, and expensive operation while our systems cleanly and efficiently collect and move heat.



55°-70° *The average year-round ground temperature only three to four feet beneath the frost line.*

Note: Illustration represents how geothermal works and is not to scale. Loops are generally 4-6 feet below the earth's surface and between 150-400 feet long.

Traditional Air Conditioner

Summer air is already saturated with heat and is less willing to accept more. Thanks to the constant temperature of the earth, geothermal is more than twice as efficient at cooling than any ordinary heat pump or air conditioner.

Fossil Fuel Boiler

Ordinary boilers are expensive to operate and can be detrimental to the environment, since they burn fossil fuels. A geothermal system uses the heat from the earth and returns up to five dollars of heat for each dollar spent on electricity. That's because our units don't create heat through combustion. They simply collect and move it.

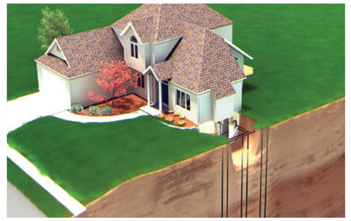
The heart of a geothermal system

Geothermal earth loops

A geothermal system uses a series of underground pipes called a “loop.” The earth loop eliminates the need for fossil fuels. It’s the heart of a geothermal system and its biggest advantage over ordinary heating and cooling technologies. The type of loop used is based on available land space and installation costs for specific areas.

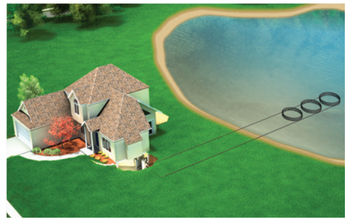
Horizontal Loop

Used where adequate land is available, horizontal loops involve one or more trenches that are dug using a backhoe or chain trencher. High density polyethylene pipes are inserted, and the trenches are backfilled. A typical home requires 1/4 to 34 of an acre for the trenches.



Vertical Loop

Vertical loops are used when space is limited. Holes are bored using a drilling rig, and a pair of pipes with special u-bend fittings is inserted into the holes. A typical home requires three to five bores with about a 15-foot separation between the holes.



Pond Loop

If an adequately sized body of water is close to your home, a pond loop can be installed. A series of coiled, closed loops are sunk to the bottom of the body of water. A 1/2 acre, minimum 8-foot deep pond is usually sufficient for the average home.

Open Loop

An open loop is used where there is an abundant supply of quality well water. The well must have enough capacity to provide adequate flow for both domestic use and the WaterFurnace unit. 5 Series units require as low as 3-10 GPM, depending on size.

Directional Bore

Perfect for homeowners who need minimal landscape disruption, these loop types take advantage of the space available below ground. A directional bore loop can be installed either vertically or horizontally depending on yard space.

OptiHeat vapor injection technology for higher temperatures and greater efficiencies

Water temperatures up to 145°F

Hydronic heating is a versatile, energy efficient solution for conditioning your home. It uses tubing to distribute hot water under the floor, through baseboard radiators, or through larger cast iron radiators. Heat is gently transferred throughout the room in a consistent, even manner. Hydronic heat can also be paired with forced air systems and fan coil units.

OptiHeat
VAPOR INJECTION TECHNOLOGY

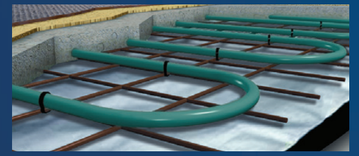
OptiHeat Vapor Injection technology incorporates an additional heat exchanger that diverts excess heat and reinjects it into the system. This creates higher exiting water temperatures and optimum compressor operating conditions. Smaller loads are required and result in the ultimate in efficiency.

Baseboard Radiation

Baseboard units are typically copper pipe with aluminum fins covered with a decorative shell to hide the piping. The operation of a baseboard radiation system depends on creating convection currents in the room. Air is warmed by the fin tube, rises and displaces cool air. This process is difficult to sustain with the 130° water most hydronic geothermal systems generate. The 504W11 changes that.

Cast Iron Radiation

In many retrofit applications, the replacement system is required to work with existing cast iron radiators. These systems also rely on convection currents and typically operate with water temperatures of 125° to 160°F. The 504W11 is capable of 145°F water output making it perfect for upgrades.



Radiant Floor Heating

In a building with a radiant floor heating system, the entire floor acts as a heat source for the room. Many people consider this method of heating the most comfortable available. With its higher water temperatures, the 504W11 is able to be installed between joists under the floor which removes the need to alter existing flooring.

Innovations for greater efficiency and reliable comfort

Components of the 5 Series

*Reverse side shown

Design Components:

1. OptiHeat Vapor Injection: This patented technology incorporates an additional heat exchanger that diverts excess heat and reinjects it into the system. This creates higher exiting water temperatures and optimum compressor operating conditions. Smaller loads are required and result in the ultimate in efficiency.

2. Water Lines: The 504W11 features flush-mount connections to allow for leak-free connections.

3. Discharge Muffler: A discharge muffler is standard on this system to limit noise even more than before. Add that to our double isolation plate mounted top-of-the-line compressors and you'll be able to enjoy the comfort of geothermal in peace and quiet.

4. ThermaShield™: Our exclusive coaxial heat exchanger coating protects against condensation for temperatures below 50°F, extending its life.

ISO/AHRI 13256-2

		Closed Loop		Open Loop	
	Model & Size	Cooling EER	Heating COP	Cooling EER	Heating COP
048	Single	16.1	3.3	20.1	3.9
060	Single	16.1	3.2	20.1	3.7

3/17/25

ENERGY STAR Most Efficient 2025 www.energystar.gov

AHRI CERTIFIED Water Source HP ANSI/AHRI/ASHRAE/ISO13256-2

5. Field Switchable Control Box: The ultimate in versatility, the 504W11 features a field switchable control box so that the unit can be oriented two different ways. Your dealer can move the control box to the opposite end if that is the most accessible side of the system in your home.

6. Aurora Premium Controls: The powerful Aurora controls offer two-way communication between components, operating logic, and robust troubleshooting capabilities. Diagnosis and setup are also simplified, making service much simpler for the technician.

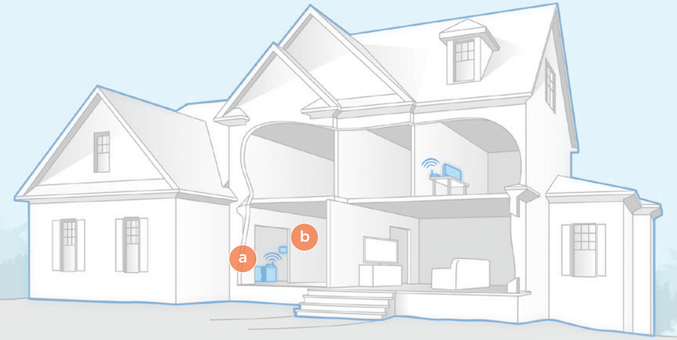
7. IntelliStart`: This optional soft starter reduces start-up amperage by 60% of normal draw to reduce noise, eliminate light flicker, and increase compressor life.

8. Compressors: For superb efficiency, all 504W11 units feature Copeland scroll compressors with vapor injection technology. All compressors are double isolation mounted for extra quiet operation.

Finishing touches

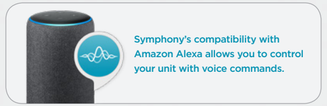
Accessories

Choosing the right accessories can greatly improve the comfort levels in your home and can even allow you to expand the functions of your existing WaterFurnace system. Each item has been designed to work hand in hand with your system to allow flawless and convenient operation. Here are some of our most popular accessories. Visit ***waterfurnace.com*** for more.



Symphony Web-Enabled Home Comfort Platform

Imagine a platform that can provide detailed feedback of your comfort system in real-time and the tools to control it all from any web-enabled smart phone, tablet, or computer. That's Symphony. Symphony is a Wi-Fi based comfort platform that's unsurpassed in its ease of use, feature set and the level of information it provides. Symphony marries the Aurora controls of a WaterFurnace geothermal system with our WebLink router, giving you access to the comfort system from practically anywhere. Symphony is cloud-based so there's no software to install and provides control over the entire geothermal system-not just the temperature as in other 'smart thermostat' systems.



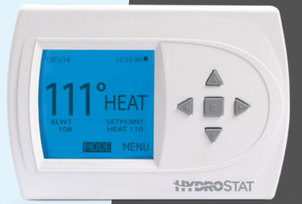
Symphony's compatibility with Amazon Alexa allows you to control your unit with voice commands.

a. Aurora WebLink
b. Symphony Thermostat

Note: Depending on the control package not all Symphony features may be available.

GeoTank®

The WaterFurnace GeoTank is simply the best way to store water from your unit.



HydroStat HSC Thermostat

A communicating controller perfect for single stage systems, the HydroStat provides an LCD display to control and regulate water tank temperature. It's also compatible with the Symphony Home Comfort Platform. Outdoor Reset (OAT) feature available when paired with the Outdoor Modbus Remote Sensor (TSC01K).

HydroZone HZO Thermostat

The HZO provides efficient control and regulation of water tank temperature and adds features like outdoor reset, warm weather shutdown, and staging (up to 4 compressors) to ensure you're heating water the best way possible.

HydroZone HZC Thermostat

The HZC features an LCD display, outdoor reset, and warm weather shutdown to ensure you're only heating when you need to. It's perfect for controlling and regulating water tank temperatures on single compressor systems.

The WaterFurnace name has been synonymous with geothermal since we were founded in 1983. Over the years we've worked to innovate new technologies, integrate key trends and grow our core business to represent clean and sustainable solutions. Our units combine sound engineering with the highest levels of quality control to provide you with some of the most efficient heating and cooling systems on the planet. WaterFurnace—***Smarter from the Ground Up.***

ISO Accreditations:

Registered ISO 9001:2015 Company

Accredited ISO 17025:2017 Laboratory

Certified ISO 14001:2015 Company

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