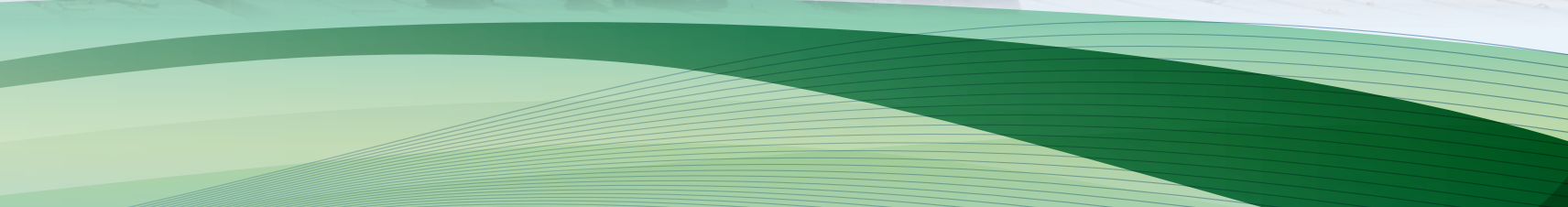


GEO EXCEL

GEOTHERMAL SYSTEMS

Go Green, Get Geo!



RESIDENTIAL



SERIES	RZ	ES	RD
Size Range	RZ024 - RZ070	ES025 - ES071	RD007 - RD070
Sizes Available (Tons)	2, 3, 4, 5, 6	2, 3, 4, 5, 6	0.5, 0.75, 1, 1.25, 1.5, 2, 2.5, 3, 3.25, 3.5, 4, 4.25, 5, 6
Efficiency (GLHP)	EER: 25.4 - 32.0 COP: 4.3 - 4.7	EER: 15.5 - 24.5 COP: 3.6 - 4.0	EER: 14.0 - 17.7 COP: 3.1 - 3.6
Efficiency (GWHP)	EER: 28.5 - 37.0 COP: 4.8 - 5.2	EER: 19.0 - 30.0 COP: 4.0 - 4.6	EER: 16.1 - 20.6 COP: 3.6 - 4.2
Efficiency (WLHP)	EER: 17.8 - 22.2 COP: 5.7 - 6.5	EER: 13.5 - 17.5 COP: 4.4 - 5.4	EER: 11.8 - 15.7 COP: 4.2 - 5.3
Stages	2 Stage	2 Stage	1 Stage
Configuration	VT, HZ, CF, CS	VT, HZ, CF	VT, HZ, CF, CS
Compressor	Ultra Tech	Ultra Tech	Various
Blower	X13, ECM	ECM	PSC, X13, ECM
Auxiliary Heat	Internal	Internal	Duct Mounted
Hot Gas Reheat	Optional	Optional	Optional
Hot Gas Bypass	N/A	Optional	Optional
Evaporator Coil	Tin-Plated	Uncoated, Tin-Plated	Uncoated, Tin-Plated
Desuperheater	Optional	Optional	N/A
Compressor Noise Reduction	Standard	Standard	Standard
Stainless Steel Drain Pan	Standard	Standard	Standard
Energy Star Qualified	Closed/Open Loop: RZ024-070 (VT, HZ, CF, CS)	Closed Loop: ES025 - ES061 (VT, HZ, CF) Open Loop: ES025 - ES071 (VT, HZ, CF)	Closed Loop: RD036 (VT, HZ, CF) Must have X13 or ECM motor Closed Loop: RD041 (VT, CF) Must have X13 or ECM motor

COMMERCIAL



HT	RD (LARGE)	CU	HW
HT025 - HT122	RD072 - RD360	CU009 - CU018	HW120 - HW420
2, 3, 4, 5, 6, 10	6, 8, 10, 12.5, 15, 17.5, 20, 25, 30	0.75, 1, 1.25, 1.5	10, 15, 17.5, 20, 30, 35
EER: 14.5 - 22.1 COP: 2.7 - 3.2	EER: 14.0 - 17.9 COP: 3.2 - 4.2	EER: 14.0 - 16.0 COP: 3.1 - 3.3	AHRI has no rating for the HW Series according to (ARI/ISO 13256-1)
EER: 18.8 - 25.7 COP: 3.4 - 3.8	EER: 18.3 - 24.0 COP: 3.8 - 5.0	EER: 17.6 - 22.3 COP: 3.4 - 3.8	AHRI has no rating for the HW Series according to (ARI/ISO 13256-1)
EER: 12.4 - 14.7 COP: 4.1 - 4.7	EER: 13.0 - 16.0 COP: 4.2 - 5.6	EER: 12.0 - 13.3 COP: 4.2 - 4.6	AHRI has no rating for the HW Series according to (ARI/ISO 13256-1)
2 Stage	2 Stage (Dual Compressor)	1 Stage	1 Stage HW120, HW180, HW210 2 Stage HW240-420
Water to Water	VT, HZ, CS	Console	Water to Water
Ultra Tech	Various	Rotary	Scroll
N/A	PSC	PSC	N/A
N/A	Duct Mounted	N/A	N/A
N/A	Optional	N/A	N/A
N/A	Optional	N/A	N/A
N/A	Uncoated, Tin-Plated	Coated	N/A
Optional	N/A	N/A	N/A
Standard	Optional	N/A	N/A
N/A	Standard	Standard	N/A
Closed/Open Loop: HT025-HT122 (CS, US)	Not Rated on Commercial Systems	Not Rated on Commercial Systems	Not Rated on Commercial Systems

GeoExcel Series Description

All systems listed use Environmentally Friendly R410a Refrigerant.

RZ Standard Features:

Sound Levels as Low as 52db per ARI 260:2001 (100hz-10kHz)
Highest Efficiency Available on the Market for Conventional Compressor Units
Deluxe Cabinet with No Visible Screws
Return Air Side Field Convertible - Left/Right (Vertical Only)
Stainless Steel Drain Pan
Constant Torque High Efficiency Blower Motor
Tin Plated Air Coil for Improved Corrosion Protection and to Provide Durability and Reliability
UltraTech™ 2-Stage Compressor for Better Efficiency, Temperature, and Humidity Control
Floating Compressor Base Pan for Noise Reduction
Unit Protection Module (UPM) - Monitors Safeties, Controls Compressor, and Reports Faults
Closed Cell (Fiber Free) Insulation for Improved Indoor Air Quality
Easy Access Filter Rack with 2" Merv Filter
Door Handles for Easy Removal
Perforated Duct Flanges - Easy to Bend into Position and Reduces Shipping Damage
Removeable Electrical Box (2 screws) and Plug-in Connections - Thermostat can be Wired Outside of the Cabinet
Less than 2% Cabinet Leakage - Heated or Cooled Air is Delivered to the Duct System instead of the Basement, Crawl Space, or Attic which Provides Energy Savings
LCD Display Communicates Unit Operation Alerts without Removing Doors, Speeds up Diagnostics
Blower Inlet Ring to Facilitate Easy Blower Motor Replacement
All Sizes Meet Energy Star Tax Credit Requirements - Energy Star "Most Efficient"
Standard Residential Warranty

RZ Options:

Variable Speed Constant CFM Blower
Cupro-Nickel Heat Exchanger
Factory Installed Auxiliary Electric Heat

RZ Options Continued:

Factory Installed Desuperheater
"Smart Start" Reduces Compressor Starting Current by 25-60% and Can Extend Compressor Life
Hot Gas Re-Heat
Pressure Differential Switch - Prevents Compressor Operation with Inadequate Water Flow
Pump Relay for Loop Pumps
Comfort Alert Module for Compressor Monitoring
10-Year Parts and Labor Allowance Warranty

ES Standard Features:

Our Number One Selling Geothermal Heat Pump
G90 Galvanized Steel Cabinet
Stainless Steel Drain Pan
ECM Blower Motor
Ultra Tech™ 2-Stage Compressor
Floating Compressor Base Pan
Unit Protection Module
Four Sided Filter Rack
Energy Star Tax Credit Qualified (Most Models - See Table)
Standard Residential or Commercial Warranty

ES Options:

Tin-Plated Air Coil
Cupro-Nickel Heat Exchanger
Factory Installed Auxiliary Electric Heat
Factory Installed Desuperheater
Compressor Sound Blanket
Quiet Package
Hot Gas Bypass
Hot Gas Re-Heat
DDC Controls
10-Year Parts and Labor Allowance Warranty

RD Standard Features:

G90 Galvanized Steel Cabinet
PSC Blower Motor
Stainless Steel Drain Pan
Floating Compressor Base Pan
Unit Protection Module

RD Standard Features Continued:

Blower Inlet Ring to Facilitate Blower Motor Replacement
Energy Star Tax Credit Qualified (Select Models-See Table)
Standard Residential or Commercial Warranty

RD Options:

Tin-Plated Air Coil
Constant Torque or Constant Airflow ECM
Extended Range
Cupro-Nickel Heat Exchanger
Hot Gas Re-Heat
Hot Gas Bypass
DDC Controls
Compressor Sound Blanket
Quiet Package
Internally Mounted 2-way Motorized Water Valve
Externally Mounted Pump Package
Internal Auto-Flow Regulator
Phase Protection Module (3-phase units)
Water Side Economizer
2" 4 Sided Filter Rack w/MERV 8 or MERV 13
Closed-Cell Foam Insulation
10-Year Parts and Labor Allowance Warranty

HT Standard Features:

G90 Galvanized Steel Cabinet
Ultra Tech™ 2-Stage Compressor
Floating Compressor Base Pan
All Sizes Meet Energy Star Tax Credit Requirements - Including HT122
Standard Residential Warranty

HT Options:

Cupro-Nickel Heat Exchanger
Solid State Water to Water Unit Control
DDC Controls
Double Wall Heat Exchanger
Factory Installed Desuperheater
Compressor Sound Blanket
Unit Protection Module
10-Year Parts and Labor Allowance Warranty

RD Large Standard Features:

G90 Galvanized Steel Cabinet
PSC Blower Motor
Stainless Steel Drain Pan
Unit Protection Module
4-Way Reversing Valve
Dual Refrigeration Circuits
Standard Commercial Warranty

RD Large Options:

Tin-Plated Air Coil
Extended Range
Cupro-Nickel Heat Exchanger
Hot Gas Re-Heat
Hot Gas Bypass
DDC Controls
Compressor Sound Blanket
Quiet Package
Phase Protection Monitor
Water Side Economizer
Four Sided Filter Rack

CU Standard Features

Stainless Steel Drain Pan
PSC Motor
Coated Air Coil
Rotary Compressor
4-Way Reversing Valve
Standard Commercial Warranty

CU Options:

Cupro-Nickel Heat Exchanger
CUC Solid State Console Unit Controller
DDC Controls
Extended Cabinet Length

HW Standard Features:

G90 Galvanized Steel Cabinet
2-Stage Compressor on Larger Units
Standard Commercial Warranty
Unit Protection Module

HW Options:

Cupro-Nickel Heat Exchanger
Solid State Water to Water Unit Control
DDC Controls
Compressor Sound Blanket

Geothermal Advantages

Safe, Clean Operation, Environment Friendly

No flue, no flame, no dangerous carbon monoxide and a factory-sealed R410a refrigerant circuit make Geothermal technology an attractive alternative for safe, clean and environmentally friendly comfort for your home.

Energy Efficient

Geothermal units operate more efficiently than ordinary heating and cooling systems, saving you up to 70% and providing virtually free hot water.

Durable Design

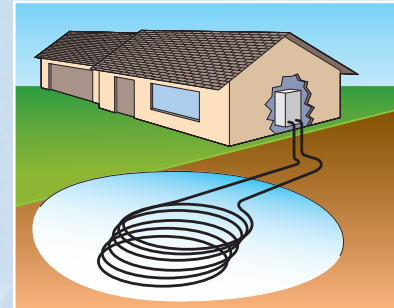
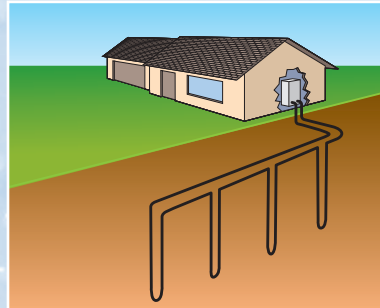
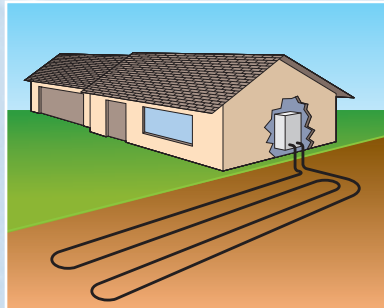
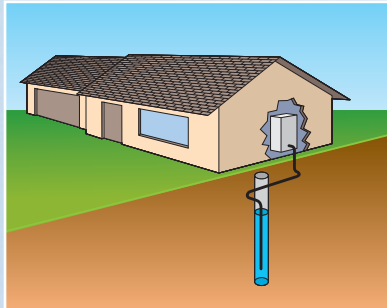
Geothermal heat pumps last longer because they are housed indoors and protected from harsh weather conditions. No defrost cycles are needed, which means less stress on critical components and no loss of operating efficiency.

Better Comfort

Geothermal systems provide constant, even temperatures. Gone are the uneven temperatures experienced with ordinary furnaces and poor dehumidification you get from standard central air units.

Geothermal Loop Types

Enjoy all these benefits by simply tapping into the energy already present in your backyard



Ground Water System

Ground Water Systems (Open Loop) have been utilizing the earth's natural heat source/heat sink ability for over 40 years. Ground Water Systems draw water from an aquifer via a supply well, pass through the Geothermal heat pump's heat exchanger where heat is exchanged with the refrigerant inside your GeoExcel unit, then returned to the aquifer per local code.

Ground water temperatures remain very constant (usually within a degree) throughout the year despite wide variations in outside air temperature, therefore your GeoExcel unit will maintain it's super high efficiency no matter how hot or cold it is outside. Ground Water Systems are ideally suited for homes that have existing water wells available or a good potential source for well water. When ground water is available this system usually has the lowest installed cost.

Horizontal and Vertical systems

Horizontal and Vertical Systems (Closed Loop) also utilize the Earth's plentiful and renewable thermal characteristics. Horizontal Systems circulate water or an antifreeze solution through a closed loop network of sealed and pressurized pipe that is buried or bored into the ground.

The Horizontal System is pipe installed in a horizontal trench typically 4 to 6 feet deep and at a length of 75-125' per ton. Vertical Closed Loop Systems are typically drilled into the ground at a depth of 100-200'. Generally one bore hole per ton is used. Recent innovations in Horizontal and Vertical Closed Loop Systems have made these systems particularly attractive in first cost as well as operating efficiency. Typically a little more land is required to install a Horizontal System. The same energy saving characteristics are enjoyed with the GeoExcel Horizontal and Vertical Systems as with the Ground Water Systems.

Pond/Lake Systems

Pond or Lake Systems (Closed Loop) may be the most economical closed loop system to install and has many advantages for producing energy savings. This system utilizes a nearby body of water such as a lake or a pond.

As with the Horizontal Systems it is a closed loop of sealed and pressurized pipe and water or a fluid solution. Instead of laying the pipe in a horizontal trench the pipe is submerged into a body of water (pond or lake) where it can utilize the consistent temperature and outstanding heat transfer characteristics of the water. No wells and very little trenching are required cutting installation costs. Once again the GeoExcel Pond or Lake System is not subject to the cruel outside air temperatures that all air-to-air heat pumps are subject to year after year.



GEOEXCEL: ULTIMATE PERFORMANCE AND RELIABILITY



GeoExcel is a superior line of geothermal equipment with ultimate performance and reliability as the standard. This product line is unmatched in overall efficiency and dependable service with system simplicity as the cornerstone in product design.

GeoExcel has an extensive line of single and two-speed geothermal heating, cooling, and water heating units available for residential and commercial applications. GeoExcel is manufactured under strict quality control guidelines, and all products are safety listed by Intertek (ETL) and performance certified by the Air Conditioning and Refrigeration Institute (AHRI) for your peace of mind.

GeoExcel models are available in a wide range of equipment sizes, cabinet configurations, and factory installed options that provide the versatility to meet your needs. GeoExcel "RZ" and "ES" series models feature two-stage scroll compressors with shift-on-the-fly technology. These systems will provide you with many years of comfort and energy savings.

Dependable Solid State Controls At An Affordable Price

The CCM Solid State controller is designed to enhance the operation and add to the features of traditional electromechanical controls. The CCM controller incorporates the standard functions of the electromechanical controls while adding several useful features commonly needed in water source and geothermal heat pump applications.

- **Random Start** - Each controller has a unique random start feature programmed into its microprocessor ranging from 30 - 60 seconds.
- **Anti-Short Cycle Timer** - 5 minute delay on break timer to prevent compressor short cycling.
- **Low Pressure Bypass Timer** - Bypasses the low pressure switch for 90 seconds to avoid nuisance lockouts during cold start up.
- **High Pressure Switch Delay** - One (1) second delay provides switch stabilization on start up to prevent nuisance lockouts.
- **Brownout/Surge/Power Interruption Protection** - A 20 millisecond window is monitored for the above condition. After the condition is detected the 5-minute delay on break timer is initiated in conjunction with the random start timer before a restart is allowed. This allows for the water pumps to restart and establish water flow to prevent nuisance lockouts during brief power interruptions.
- **Malfunction Output** - The controller has a set of wet contacts for remote fault indication.
- **Test/Service PIN** - A jumper PIN is provided to reduce all time delay settings to 6 seconds during troubleshooting or operation verification.
- **L.E.D. Indicators** - Two L.E.D. Indicators are provided as follows: Green: Power L.E.D. indicates voltage is present at the board. Red: Fault indicator will blink code.
- **Intelligent Reset** - If a fault condition is initiated the 5 - minute delay on break time period and the random start timer are initiated and the unit will restart after the delays expire. If the same fault condition is initiated a second time, the unit will be locked out and require a lockout reset.
- **Lockout Reset** - Power must be removed from the controller then reapplied for the reset. This can be achieved via the thermostat or by the unit disconnect.

For more information and to download literature visit www.geoexcel.com or contact: