KHAGT0101KIT
Geothermal Energy Tracking Kit
for Geothermal Heat Pump Models GC & GZ

Installation Instructions

NOTE: Read the entire instruction manual before starting the installation.

SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause death, personal injury, or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit.. Consult local building codes and current editions of the National Electrical Code (NEC) NFPA 70. In Canada, refer to current editions of the Canadian electrical code CSA 22.1.

Recognize safety information. This is the safety-alert symbol ⚠. When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in unit damage.

This kit is designed for installation in the heat pump model published in this document. Do not install in a heat pump not specified in this manual.

⚠ CAUTION

CUT HAZARD

Failure to follow this caution may result in personal injury.

Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing and gloves when handling parts.

INTRODUCTION

This kit is designed to enable the energy tracking feature for geothermal heat pump models GC and GZ that use the communicating wall control v14 or later. Energy tracking calculations are based on entering water (loop) temperature, run time of the unit and loop pump watts.

NOTE: The energy usage displayed on the wall control is an ESTIMATE and may vary from actual usage. This kit does not enable tracking of energy used for a well pump when the geothermal unit is used in an open loop / well water application.

To set-up this feature on the wall control, it is necessary to know the GPM. If the Magna Geo 32-140 variable speed pump is used, it is also necessary to know the pressure drop of the system. If pressure drop is unknown, use the pressure drop calculator found at: www.geo-flo.com.

PRE-INSTALLATION

Unpacking and Inspection

1. Unpack the kit and inspect contents and condition. If any part or the kit appears damaged or missing, do not attempt to install the kit. Contact your local distributor for further help.
2. Ensure that the kit package includes all the listed components. Contact your local distributor for further help.

Kit Contents	
Quantity	**Description**
1	10k NTC Thermistor with 1.125” clip
1	Instructions
1	0.875” clip (loose)

Required Tools:

- Diagonal cutter (or similar)
- Wire stripper
- Wire crimper
- All purpose cleaner, rag

Field-supplied Items

- Thermal paste
- Insulating tape
- ¼” male 22-18 gauge quick connects (2)
- Wire ties

INSTALLATION

Adding the Energy Tracking kit to GC and GZ geothermal units:

1. Verify that v14 software or later is installed on the wall control.
2. Disconnect power to the unit.

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before beginning any installation or modification, be sure the main electrical disconnect switch is in the OFF position. TAG THE DISCONNECT SWITCH WITH A SUITABLE WARNING LABEL

Unit contains two power supplies - make sure BOTH are off before servicing.

3. Locate the entering water coax piping in the cabinet. Remove the access panel(s) required to install thermistor on entering water pipe.
4. Cut a piece of insulating tape* to approximately 6" in length. (to be used in Step 9).
5. Temporarily remove a section of the insulation covering the entering water line, exposing the copper pipe.
6. Clean the exposed copper pipe, removing any dirt or glue residue with a rag and all-purpose cleaner.
7. Two sizes of clips are contained in the KHAGT0101KIT bag. Verify the correct size is used to ensure proper contact to the pipe. The loose small clip included in the kit is for unit size 024 only. Coat the body/sensing portion of the thermistor with thermal paste*.
8. Place the sensor on the pipe by securing the clip around the pipe. The thermistor clip should securely fasten the thermistor body to the outer pipe surface.
9. Wrap the insulating tape around the pipe and thermistor while making sure the thermistor is still in contact with the pipe surface.
10. Re-install the insulation that was moved in Step 5 above to its original location. Ensure that the pipe and sensor are fully covered with insulation. Otherwise, inaccurate readings and/or condensation could occur. Route the female thermistor connections through the rolled edge of the control box, ensuring wires are not nicked or damaged.
11. Cut the wire loop located in the PL6-4 and PL6-5 "OPT" location of the compressor control. Strip approximately ¼" of insulation from each side of the wire loop.
    If there is no wire loop at this location, locate the white "EWT" labeled wires and remove the jumper to expose the male spade connections.
12. If there are no factory installed connections, crimp on ¼" insulated male spade terminals* to the 2 cut PL6-4 and PL6-5 loop wires. Connect spade terminals to the kit thermistor.
13. Secure thermistor wire to adjacent wires, and bundle excess using wire ties*. Verify that the thermistor wire is not in contact with compressor discharge lines.
14. Re-install access panel(s) and re-connect power.
15. Energy Tracking should no longer be grayed-out on the wall controller, and should work as intended if v14 or later software is installed on the wall controller. Follow the wall controller instructions below for Geothermal Energy Tracking loop pump watts setup.

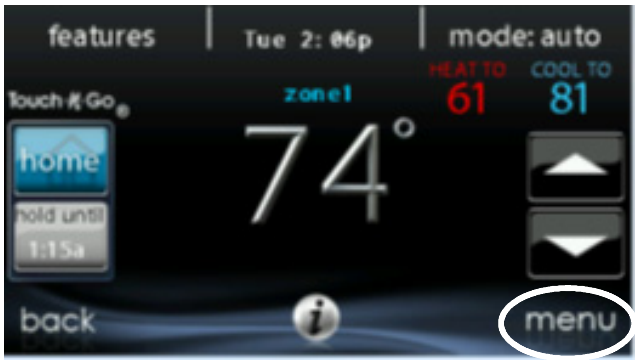
*Field supplied item, not included in kit

ADDING ENERGY TRACKING FUNCTION TO THE WALL CONTROL

PUMP WATT SETUP

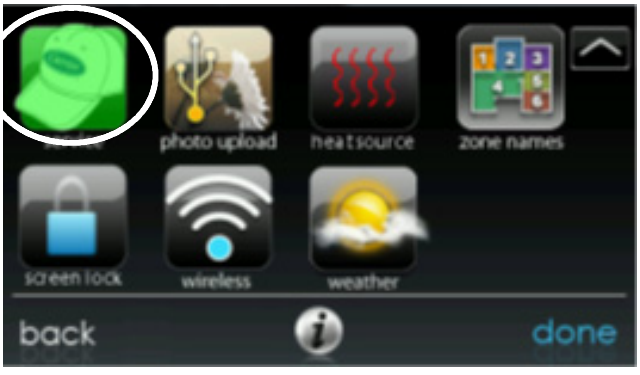
STEP 1 —Touch anywhere on Home screen

STEP 2 —Select Menu

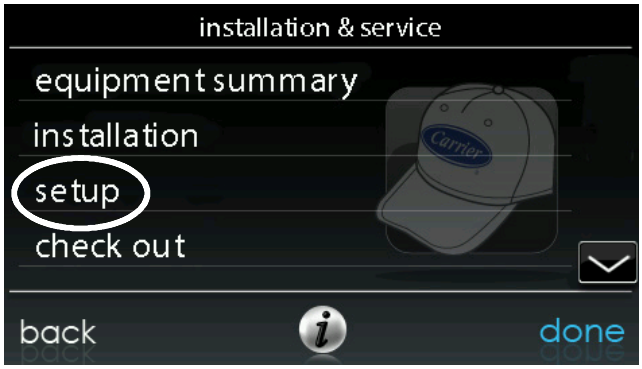


STEP 3 —Press down arrow to select second screen

STEP 4 —Press and hold SERVICE icon for 10 seconds until it turns green.

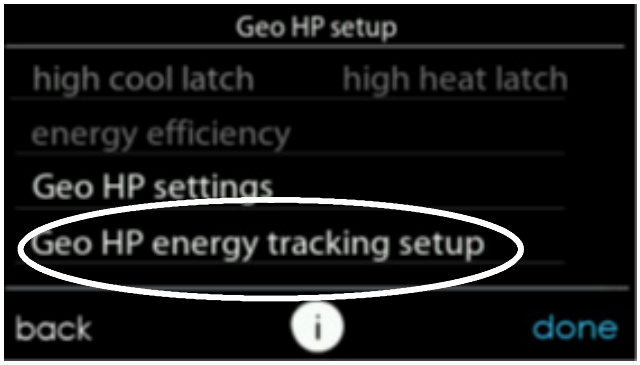


STEP 5 —Select Setup



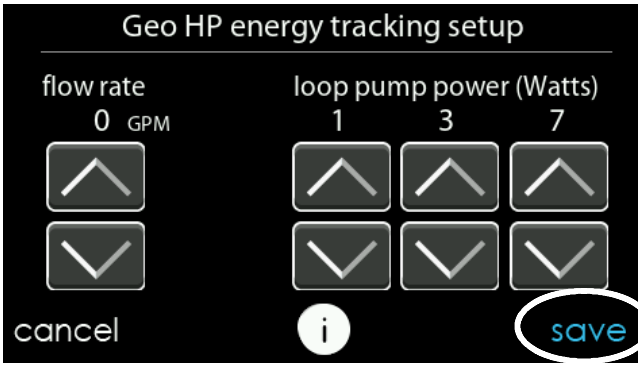
STEP 6 —Select GeoHP

STEP 7 —Select GeoHP Energy Tracking Setup



STEP 8 —Using the arrow keys, select FLOW RATE. Select LOOP PUMP POWER (Watts) using data from tables 1 - 3 below based on flow rate and pump selection.

STEP 9 —Select SAVE



Note for Open Loop / Well Water Applications:

When the GHP is used in an open loop application, set Loop Pump Power Watts to 0. A. Well water pump will not run at the same time as the GHP, so inputting watts for a well pump will yield erroneous results.

Table 1—Watts Used by UPS26-99 & UP26-116 Loop Pump(s)

GPM	UPS26–99 (Qty 1)			UPS26–99 (Qty 2)			UP26–116	
Max	High Spd	Medium Spd	Low Spd	High Spd	Medium Spd	Low Spd	Qty. 1	Qty. 2
4	148	127	116	296	254	232	202	404
5	152	132	121	304	264	242	210	420
6	156	137	126	312	274	252	218	436
7	159	141	130	318	282	260	226	452
8	163	146	134	326	292	268	235	470
9	166	151	137	332	302	274	243	486
10	169	155	140	338	310	280	252	504
11	172	159	143	344	318	286	261	522
12	175	163	144	350	326	288	269	538
13	178	166	146	356	332	292	278	556
14	180	169	147	360	338	294	286	572
15	183	172	147	366	344	294	294	588
16	185	175	147	370	350	294	302	604
17	187	177	146	374	354	292	310	620
18	189	179	145	378	358	290	317	634
19	190	180		380	360		324	648
20	192	181		384	362		330	660
21	193	181		386	362		336	672
22	194	182		388	364		341	682
23	194	181		388	362		346	692
24	194	180		388	360		350	700
25	195	179		390	358		354	708
26	194	177		388	354		357	714
27	194			388			359	718
28	193			386			360	720
29	192			384			360	720
30	191			382			359	718
31							358	716
32							355	710
33							351	702
34							346	692
35							340	680
36							333	666

Table 2—Watts Used by 1 Magna Geo32-140 Variable Speed Pump Used with Controller

GPM	Total Ft. of Head (including unit, inside piping, exterior piping)										
	10	15	20	25	30	35	40	45	50	55	60
5	33	45	78	103	103	153	189	211			
6	35	48	83	109	109	162	197	216			
7	37	51	87	114	114	170	204	221			
8	39	54	91	120	120	178	224				
9	41	57	96	126	126	184	227				
10	43	59	100	132	132	191	230				
11	44	70	104	138	138	197	230				
12	46	73	108	144	168	202	230				
13	48	76	112	150	173	230	230	GPM not attainable			
14	54	79	116	156	179	230					
15	59	82	120	162	184	230					
16	61	84	124	168	189	230					
17	63	89	128	173	222	230					
18	65	107	132	178	225						
19	68	109	135	183	228						
20	70	112	151	188	230						

Table 3—Watts Used by 1 Magna Geo32-140 Variable Speed Pump Used with Controller PLUS 1 UPS26-99 Pump

GPM	Total Ft. of Head (including unit, inside piping, exterior piping)										
	10	15	20	25	30	35	40	45	50	55	60
5	2 pumps not required			158	173	185	214	230	255	255	305
6				162	178	191	222	239	265	265	318
7				170	183	210	229	249	273	329	356
8				181	202	217	237	254	238	333	367
9				185	207	223	262	292	286	344	390
10			176	196	212	250	269	301	295	353	396
11			185	201	234	256	276	310	304	402	399
12			188	205	238	263	283	313	372	405	
13			200	226	242	290	290	322	380	408	
14		187	211	230	247	296	336	330	410		
15		197	215	254	277	303	339	395	413		
16		199	218	259	283	309	347	415			
17		210	241	263	315	315	355	417	GPM not attainable		
18		223	244	267	321	367	411	419			
19	204	225	270	299	325	368	420				
20	206	250	272	304	330	375	422				

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