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.

INTRODUCTION
The Electric Heater Kit is a field installable electric resistance heater kit designed for the GC series heat pumps.

The heater kit requires separate electrical service connection, independent from the heat pump’s power supply. Installation of this Heater Kit will convert the heat pump into a two point power connection. The Heater Kit is available in several kW capacities. Unit tonnage vs Heater Kit capacity compatibility table is below. The Heater Kit can be installed on vertical (VT), horizontal (HZ) and counter-flow (CF) units.

NOTE: Electric Heat Kits are not available for any side discharge models at this time. Communicating Duct Heaters are being designed for future release.

<table>
<thead>
<tr>
<th>GHP Model</th>
<th>5 Kw</th>
<th>10 Kw</th>
<th>15 Kw</th>
<th>20 Kw</th>
</tr>
</thead>
<tbody>
<tr>
<td>GC024</td>
<td>•</td>
<td>•</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>GC036</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>GC048</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>GC060</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>GC072</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

* = Heater Kit compatible / — = Heater Kit NOT compatible

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECTRICAL SHOCK HAZARD</td>
</tr>
<tr>
<td>Failure to follow this warning could result in personal injury or death.</td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td>Unit contains two power supplies - make sure BOTH are off before servicing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIT DAMAGE HAZARD</td>
</tr>
<tr>
<td>Failure to follow this caution may result in compressor damage.</td>
</tr>
<tr>
<td>NEVER turn unit on its top or side to install support feet.</td>
</tr>
</tbody>
</table>
AUXILIARY HEATER KIT NOMENCLATURE

<table>
<thead>
<tr>
<th>Kit</th>
<th>Usage</th>
<th>Series</th>
<th>Type</th>
<th>Heater Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W</td>
<td>C</td>
<td>EH</td>
<td>01</td>
</tr>
<tr>
<td></td>
<td>W = Water Source / Geothermal</td>
<td>01 = Current</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KW</th>
<th>05 Kw</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Kw</td>
<td></td>
</tr>
<tr>
<td>15 Kw</td>
<td></td>
</tr>
<tr>
<td>20 Kw</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Circuit Protection</th>
<th>Pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>B = Breaker</td>
<td>01 = Single</td>
</tr>
</tbody>
</table>

PRE-INSTALLATION

⚠️ CAUTION

UNIT DAMAGE HAZARD
Failure to follow this caution may result in unit damage.
DO NOT wire the heater elements into the same circuit as the compressor.

IMPORTANT: Electric Heater Kit can only be installed on single phase units.
IMPORTANT: A heater collar is installed in the geothermal heat pumps so there is no need to order a collar separately (not available on side discharge units).
IMPORTANT: Electric Heat is NOT available for any side-discharge models. Duct heaters should be used if electric heat is desired for side discharge units. Check with your local distributor for available duct heaters per your duct design.

Unpacking and Inspection
1. Unpack the heater kit and inspect contents and condition. If any part or the kit appears damaged (i.e.: broken heater elements, damage relays) or missing, do not attempt to install the kit. Contact your local distributor for further help.
2. Ensure that the heater kit package includes all the listed components. Contact your local distributor for further help.

EH Kit Components List:
- (1) One-piece heater including elements, breakers, cover and low voltage wiring harness
- Installation manual
- Wire schematic label (self-adhesive)
- MCA/MOP data label (self-adhesive)
- (4) #10-16 X .500” lg. Screws
- (2) wire ties

Required Tools:
- Small flat head screwdriver
- 5/16” Socket
- 1/4” Socket

ELECTRIC HEAT KIT
The field-installed Electric Heater Kit is a one piece design that allows the heater elements to be slipped into the blower electric heater collar located in the blower compartment. (See Fig. 1-2.)
1. At thermostat, turn system to “OFF”
2. Turn the main power to the heat pump to “OFF” at the unit’s disconnect switch or breaker panel.

**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. Remove the access panel(s) from the unit exposing the blower section and compressor section of the packaged heat pump unit.

4. Remove the heater collar cover plate(s) using a 5/16” socket (see Fig. 3).

   **NOTE:** 5 and 10kW heater kits only need the bottom plate (closest to the blower) removed. 15 and 20kW heater kits require both plates be removed.

5. Using tin snips, snip off the thin 18 gauge metal strip between the two element slots to allow the 15-20 kW heater elements to slip in as one piece (see Fig. 4).

   **DO NOT SNIP OFF METAL FOR 5-10 kW heaters.**

6. Carefully file the sharp edges if step 5 above was accomplished.

**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.

**UNIT DAMAGE HAZARD**
Failure to follow this caution may result in unit damage.
Proper thermal overloads (cut-outs) orientation is required for safe unit operation.

7. To ease installation, using a 1/4” socket, remove the 4 screws holding the heater cover. Remove the cover, set aside screws and cover. See Fig. 6.

8. Insert heating element(s) into collar. Secure heater kit by using the screws removed in Step 4.

   **NOTE:** Be careful not to damage the heater coils while inserting.
INSTALLATION - WIRING

**CAUTION**

PERSONAL INJURY AND/OR UNIT DAMAGE HAZARD

Failure to follow this caution may result in personal injury and/or unit damage.

When routing wiring, avoid sharp edges as these can chafe wiring insulation, exposing the conductor which can result in equipment damage and personal injury.

Electric heater relays and staging are factory pre-wired. The field connections are 2 simple steps:

1. Control wiring
2. Site Line Voltage Connection

**Control Wiring:**

Connect the male 12 pin connector from the heater harness to the female 12 pin connector on the existing blower motor harness.

**Site Line Voltage Connection:**

Routing new line voltage wires from circuit breaker panel to heater kit main power lugs:

1. Select the proper wire size based upon the electrical load required by the electric heater element(s). Refer to the data tag label that is included in the heater kit or to Table 2 - Electric Heater Electrical Data. Ensure that all national and local electrical codes are followed for installation, wire sizing, and breaker sizing.
2. Select the proper breaker size required by the heater electrical load for the heat pump. Refer to Table 2 - Electric Heater Electrical Data.
3. Route the new line voltage wiring and the ground wire from the circuit breaker panel to the heat pump.
4. Use the knockout provided in the heat pump corner post as the entry for the electrical service wiring.
5. Access the heater kit breaker power lugs by removing the heater kit cover. Remove 4 screws using 1/4” socket and the cover. Set aside parts.
6. Connect line voltage to heater breaker power lugs:
   - “L1” and “L2” terminal connection for single circuit electric heat or,
   - “L1” and “L2” in CB1 and “L1” and “L2” in CB2 for dual circuit electric heat. (See Fig. 8)
7. Use ground lug provided in the heater control box to connect the field ground from the power supply.
8. Install the cover and screws removed in Step 5.

**Label Placement**

1. Secure the self-adhesive heater wiring label next to the unit wiring label on the heat pump inside panel.
2. Place the adhesive backed heater data label next to the knockout in the post where the new electrical service for the fan motor and heater elements is entering the cabinet.
THERMOSTAT WIRE CONNECTIONS

These kits are designed to be used only with the GC units and communicating thermostats. When the unit is powered up and runs through initial set up, the user interface will identify the heater kit automatically.

Follow the Installation Instructions of the communicating thermostat for further details.

NOTE: A non-communicating option for the GC units is planned to be released soon and further updates to this manual will address wiring for the non-communicating thermostats at that time.

NOTE: It may be necessary to run a new system set-up if installing heater kit after a prior initial install.

UNIT START-UP

1. Turn the disconnect switch or breaker switch to the “ON” position for the heat pump.
2. Energize the breaker(s) for the electric heat kit.
3. Turn the disconnect switch or breaker switch to the “ON” position for the compressor and for the new separate circuit servicing the heating elements.
4. Ensure the heater kit breakers are on the ON position.
5. Run system set up to ensure the user interface identifies the heater kit.
6. Run the unit in Emergency mode with the heating elements engaged for at least 10 minutes to ensure the unit does not shut down due to any temperature limiting device.
7. Test staging of the heaters and confirm heater works per Table 1.

<table>
<thead>
<tr>
<th>KWCEH0101B</th>
<th>STAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>5kW</td>
<td>1 stage (single stage heater)</td>
</tr>
<tr>
<td>10kW</td>
<td>1 stage (single stage heater)</td>
</tr>
<tr>
<td>15kW</td>
<td>3 stages</td>
</tr>
<tr>
<td>15kW</td>
<td>1st stage: 5kW (heater 1)</td>
</tr>
<tr>
<td>15kW</td>
<td>2nd stage: 10kW (heater 2)</td>
</tr>
<tr>
<td>15kW</td>
<td>3rd stage: 15kW (heater 1 + heater 2)</td>
</tr>
<tr>
<td>20kW</td>
<td>3 stages</td>
</tr>
<tr>
<td>20kW</td>
<td>1st stage: 5kW (heater 1)</td>
</tr>
<tr>
<td>20kW</td>
<td>2nd stage: 15kW (heater 2)</td>
</tr>
<tr>
<td>20kW</td>
<td>3rd stage: 20kW (heater 1 + heater 2)</td>
</tr>
</tbody>
</table>

Table 1—Staging Table

Table 2—Electric Heater Electrical Data

<table>
<thead>
<tr>
<th>Heater Model</th>
<th>Nom. KW @ 240V / 208V</th>
<th>Circuit 1*</th>
<th>Circuit 2*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MCA</td>
<td>MOP</td>
<td>MCA</td>
</tr>
<tr>
<td>KWCEH0101B05</td>
<td>4.8 / 3.6</td>
<td>25.0 / 21.6</td>
<td>25 / 25</td>
</tr>
<tr>
<td>KWCEH0101B10</td>
<td>9.6 / 7.2</td>
<td>50.0 / 37.5</td>
<td>50 / 40</td>
</tr>
<tr>
<td>KWCEH0101B15</td>
<td>14.4 / 10.8</td>
<td>50.0 / 37.5</td>
<td>50 / 40</td>
</tr>
<tr>
<td>KWCEH0101B20</td>
<td>19.2 / 14.4</td>
<td>50.0 / 37.5</td>
<td>50 / 40</td>
</tr>
</tbody>
</table>

* Calculations are for Heater Only. For heat pump electrical information, refer to the unit Product Data.
Fig. 9 — Electric Heater Wiring Diagram
4.75kW 240v

NOTES:
1. USE COPPER WIRE (75°C MIN) ONLY BETWEEN DISCONNECT SWITCH AND UNIT.
2. TO BE WIRING IN ACCORDANCE WITH NEC AND LOCAL CODES.
3. ANY REPLACEMENT WIRE AS SUPPLIED, MUST BE REPLACED, USE THE SAME OR EQUIVALENT TYPE WIRE.
Fig. 10 — Electric Heater Wiring Diagram

9.5kW 240v

NOTES:
1. USE COPPER WIRE (75°C MIN) ONLY BETWEEN DISCONNECT SWITCH AND UNIT.
2. TO BE WIRED IN ACCORDANCE WITH NEC AND LOCAL CODES.
3. IF ANY OF THE ORIGINAL WIRE, AS SUPPLIED, MUST BE REPLACED, USE THE SAME OR EQUIVALENT TYPE WIRE.
Fig. 11 — Electric Heater Wiring Diagram

14.25kW 240v

NOTES:
1. USE COPPER WIRE (75°c MIN) ONLY BETWEEN DISCONNECT SWITCH AND UNIT.
2. TO BE WIRED IN ACCORDANCE WITH NEC AND LOCAL CODES.
3. IF ANY OF THE ORIGINAL WIRE, AS SUPPLIED, MUST BE REPLACED, USE THE SAME OR EQUIVALENT TYPE WIRE.

WIRING DIAGRAMS - CONTINUED
NOTES:
1. USE COPPER WIRE (75°C MIN) ONLY BETWEEN DISCONNECT SWITCH AND UNIT.
2. TO BE WIRING IN ACCORDANCE WITH NEC AND LOCAL CODES.
3. IF ANY OF THE ORIGINAL WIRE, AS SUPPLIED, MUST BE REPLACED, USE THE SAME OR EQUIVALENT TYPE WIRE.
10

WIRING DIAGRAMS - CONTINUED

Fig. 13 — Connection Diagram - GC Series
1 Stage - 1 Phase