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# **INSTALLATION INSTRUCTIONS & REPLACEMENT PARTS LIST**

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## **COUNTERFLOW HEATER ACCESSORY**

### Models:

GTCFHK1-A10	10 KW Counterflow Heater Accessory
GTCFHK1-A20	20 KW Counterflow Heater Accessory

**This accessory heater is only to be applied along with GTA\_\_\_UD1-A Coil + GTB1-A Blower Section + GTC\_\_S2-AD\_X Compressor Section as an add-on counterflow heater.**

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## ANSI Z535.5 Definitions:

**DANGER:** Indicate[s] a hazardous situation which, if not avoided, will result in death or serious injury. The signal word “DANGER” is to be limited to the most extreme situations. DANGER [signs] should not be used for property damage hazards unless personal injury risk appropriate to these levels is also involved.

**WARNING:** Indicate[s] a hazardous situation which, if not avoided, could result in death or serious injury. WARNING [signs] should not be used for property damage hazards unless personal injury risk appropriate to this level is also involved.

**CAUTION:** Indicate[s] a hazardous situation which, if not avoided, could result in minor or moderate injury. CAUTION [signs] without a safety alert symbol may be used to alert against unsafe practices that can result in property damage only.

**NOTICE:** [this header is] preferred to address practices not related to personal injury. The safety alert symbol shall not be used with this signal word. As an alternative to “NOTICE” the word “CAUTION” without the safety alert symbol may be used to indicate a message not related to personal injury.



**CAUTION**

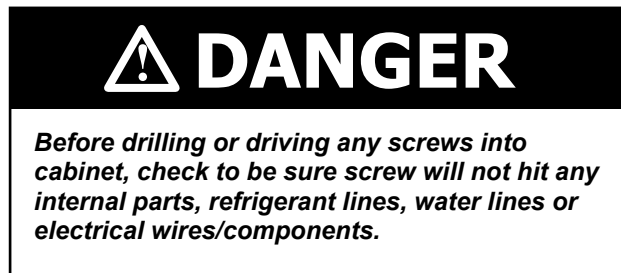
*All geothermal equipment is designed for indoor installation only. Do not install or store unit in a corrosive environment or in a location where temperature and humidity are subject to extremes. Equipment is not certified for outdoor applications. Such installation will void all warranties.*



**WARNING**

*Use care and wear appropriate protective clothing, safety glasses and protective gloves when servicing unit and handling parts.*

*Failure to follow this warning may result in personal injury.*



**DANGER**

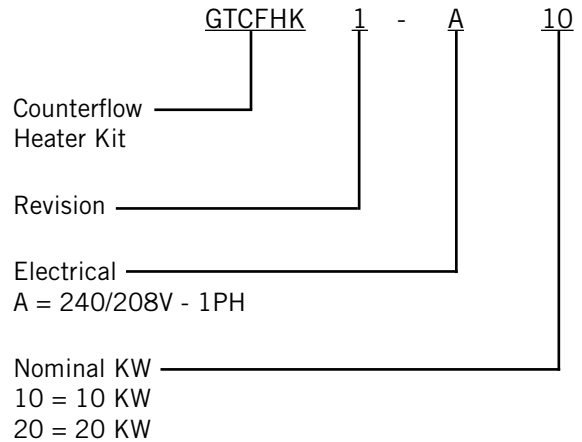
*Before drilling or driving any screws into cabinet, check to be sure screw will not hit any internal parts, refrigerant lines, water lines or electrical wires/components.*



## DESCRIPTION OF EQUIPMENT

The GTCFHK1-A\*\* Counterflow Electric Heater Assembly is only to be applied along with the GTA\_\_\_\_ UD1-A Coil + GTB1-A Blower + GTC\_\_S2-AD\_X Compressor Section models as an add-on counterflow heater. It is a self-contained package that includes the entire electric heat workings, along with the circuit breaker(s), installation instructions and wiring diagrams.

## NOMENCLATURE



## EQUIPMENT THIS HEATER PACKAGE IS TO BE INSTALLED IN COMBINATION WITH:

**INDOOR COIL** + **BLOWER SECTION** + **COMPRESSOR SECTION**  
 GTA3600UD1-A + GTB1-A + GTC36S2-AD\*X  
 GTA4860UD1-A + GTC48S2-AD\*X  
 GTC60S2-AD\*X

\* C = Copper Coaxial Coil  
 N = Cupro Nickel Coaxial Coil



# WARNING

**Fire hazard.**

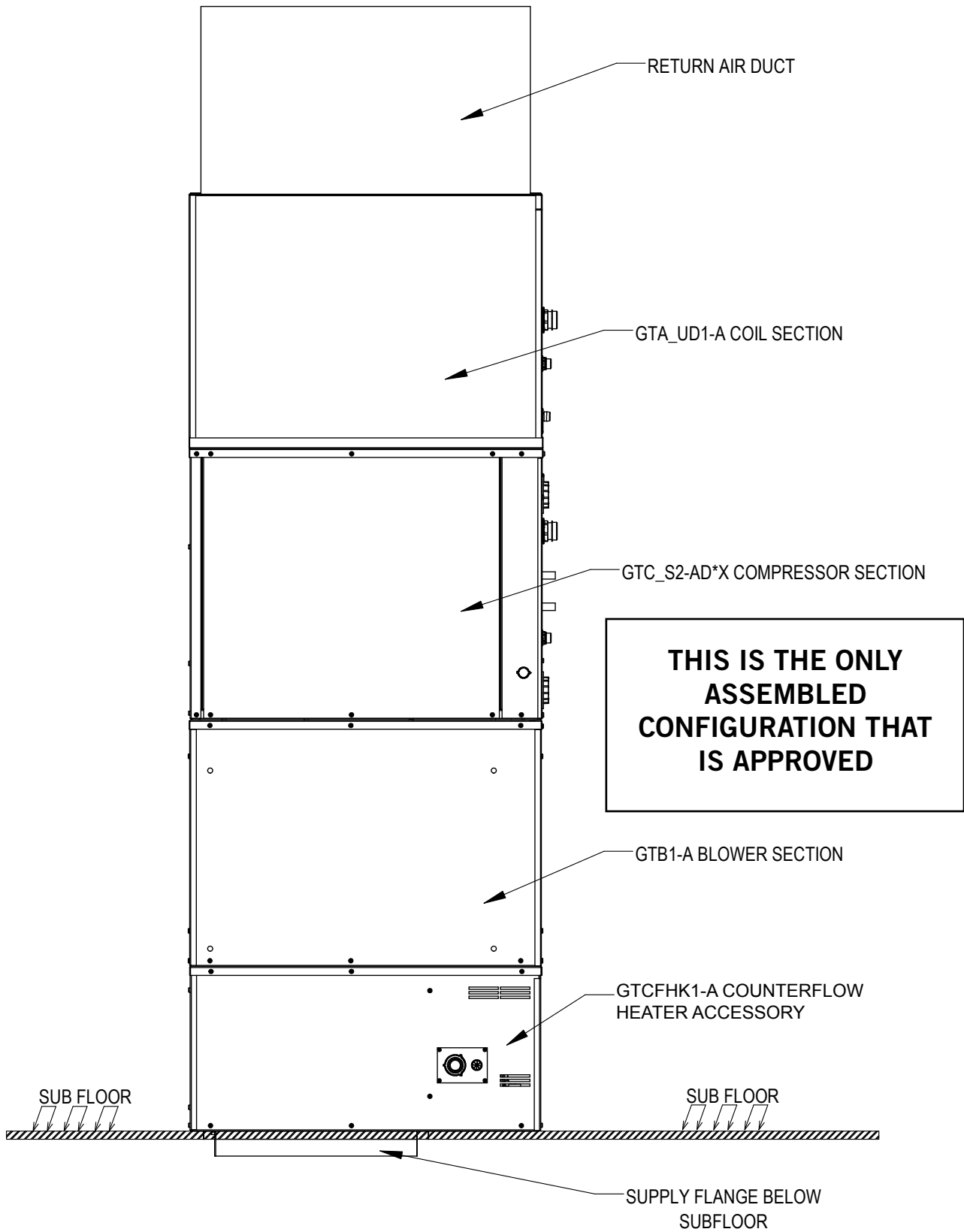
**Install this heater only in combination with the equipment listed above.**

**Installing this heater in any combination other than what is listed above could result in fire causing damage, injury or death.**

SINGLE HIGH VOLTAGE CIRCUIT APPLICATIONS								
Heater Package Model	Heater Package Volts/Hertz/Phase	Heater Amps @ 240/208	Heater KW @ 240/208	Heater Btuh @ 240/208	Minimum Circuit Ampacity 240/208 Volts	Maximum Circuit Breaker	Field Wire Size	Ground Wire Size
GTCFHK1-A10	240/208-60-1	40/34.6	9.6/7.2	32,765/24,575	50/45	50/50	#6	#10
GTCFHK1-A20	240/208-60-1	80/69.2	19.2/14.4	65,530/49,150	100/100	100/100	#2	#6

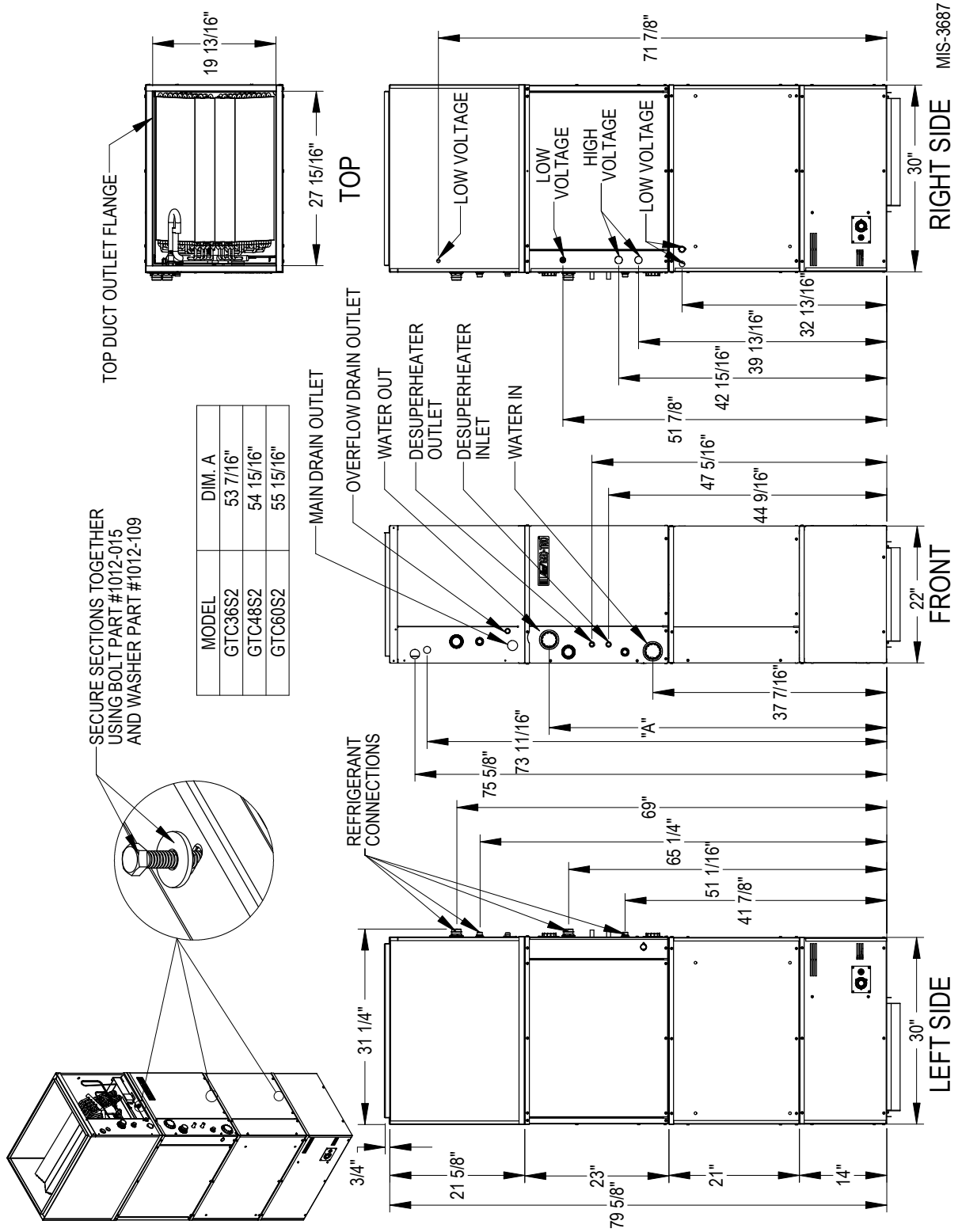
DUAL HIGH VOLTAGE CIRCUIT APPLICATIONS (two separate supplied power circuits)								
Heater Package Model	Heater Package Volts/Hertz/Phase	Heater Amps @ 240/208	Heater KW @ 240/208	Heater Btuh @ 240/208	Minimum Circuit Ampacity 240/208 Volts	Maximum Circuit Breaker	Field Wire Size	Ground Wire Size
GTCFHK1-A20	240/208-60-1	40/34.6	9.6/7.2	32,765/24,575	50/45	50/50	#6	#10

**FIGURE 1**  
**Assembled System with Counterflow Heat**



MIS-3690

**FIGURE 2**  
Assembled Dimensions



# GENERAL INFORMATION

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## GENERAL

Each unit is shipped internally wired, requiring line power and 24V thermostat inputs.

These instructions and any instructions packaged with any separate equipment required to make up the entire heat pump system should be carefully read before beginning the installation. Note particularly any tags and/or labels attached to the equipment.

While these instructions are intended as a general recommended guide, they do not in any way supercede any national and/or local codes. Authorities having jurisdiction should be consulted before the installation is made.

## SHIPPING DAMAGE

Upon receipt of equipment, the carton should be checked for external signs of shipping damage. If damage is found, the receiving party must contact the last carrier immediately, preferably in writing, requesting inspection by the carrier's agent.

## APPLICATION

Capacity of the unit for a proposed installation should be based on heat loss calculations made in accordance with methods of Air Conditioning Contractors of America. The piping and electrical systems should be installed in accordance all local, state and federal requirements.

## LOCATION

The complete assembled unit may be installed in a closet or utility room provided adequate service access is ensured, and equipment won't freeze.

These units are not approved for outdoor installation and therefore must be installed inside structure being conditioned. ***Do not locate in areas subject to freezing in the winter or sweating in the summer.***

Prior to setting the assembled unit, consider ease of piping and electrical connections for the unit. For units which will be used with a desuperheater, consider the proximity of the unit to the water heater or storage tank. Place the unit on a solid base to minimize undesirable noise and vibration.

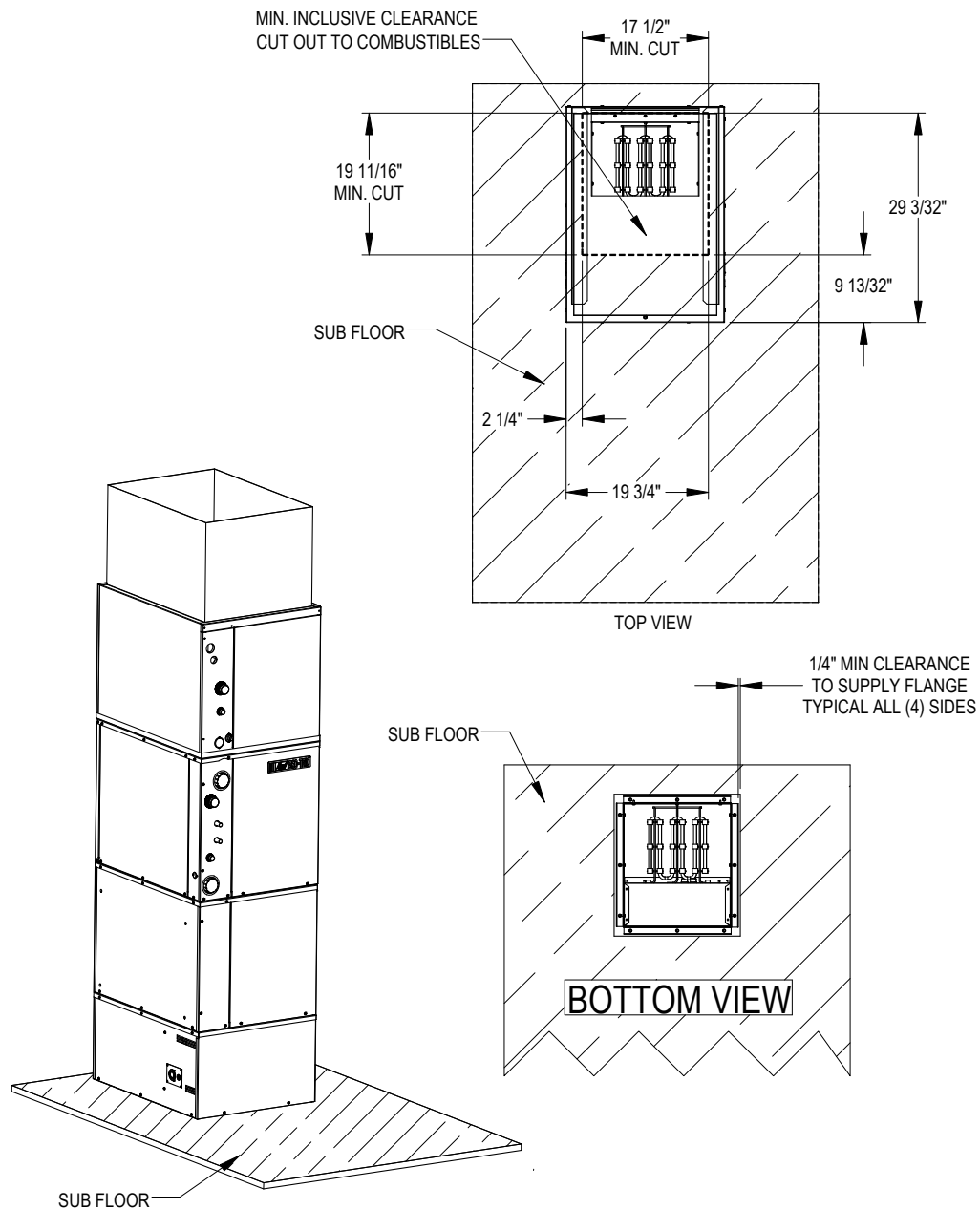
Note that the GTCFHK1-A\*\* models have a spacer to force a 1" clearance to the combustible subfloor, but is compensated in the detailed application drawings included with this installation instruction (see Figure 3).

## LOCKING CABINET SECTIONS TOGETHER

When stacking unit sections together, initially stack the sections aligning the sides of the units. Then slide the top section backwards (away from the front) until the section drops down flush with the section below it. Then pull the upper section forward to engage the

section below (will lock into the back). Next, insert the 1/4" bolt and washer (included with the literature assembly) in the front center of each section to secure the sections together. See Figure 2 for bolt detail.

**FIGURE 3**  
**Supply Duct Floor Penetration**

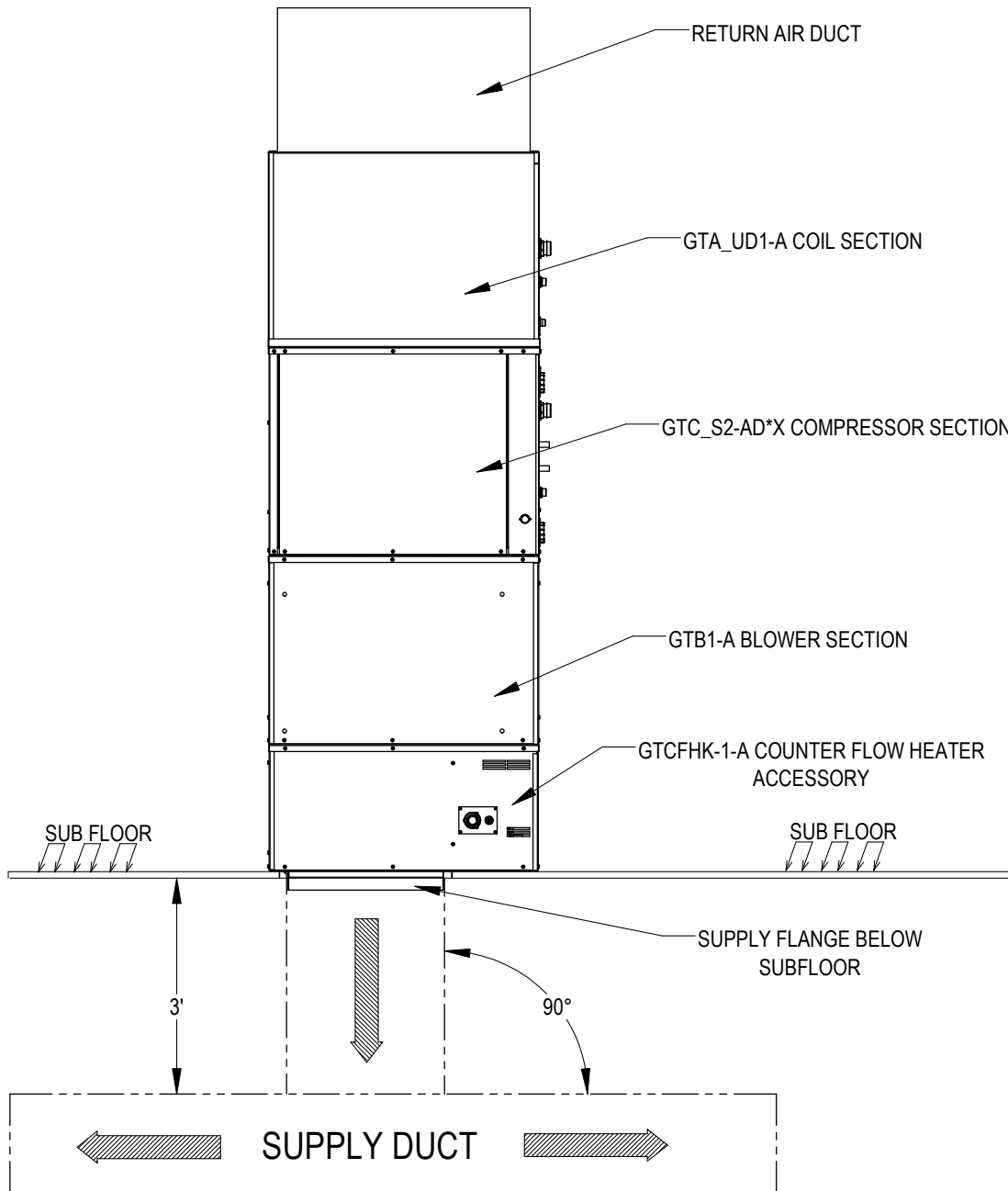


MIS-3691

## SUPPLY DUCT REQUIREMENTS

Note that the supply air duct **MUST** make a 90° turn within the first 3' of vertical run (see Figure 4).

**FIGURE 4**  
Supply Duct Turn Requirements



**NOTE: DUCT MUST MAKE A 90° TURN (IN ANY DIRECTION) WITHIN THE FIRST 3' OF VERTICAL RUN.**

MIS-3788



## POWER AND CONTROL WIRING

### High Voltage Line Supply

This accessory item requires a separate line power circuit from the main unit. The minimum circuit ampacity and maximum overcurrent protection ratings are listed on the heater serial plate.

A high voltage line supply entrance is available on both sides of the heater box (a triple knockout). Route the properly sized conduit and wire sizes through whichever side best fits the application, and route wiring internal of the box behind the contactors and land on the circuit breakers on the left hand side of the compartment.

### Removal of Jumper Bar on Model GTCFHK1-A20 for Dual Circuit Application

Back out phillips head screw from circuit breaker entrance cover. Back out slotted circuit breaker screws to release jumper bar. Individual circuit wires will then directly land on entrance side of circuit breakers. Two ground lugs are also provided when two separate circuits are utilized.

### Low Voltage Control Wires

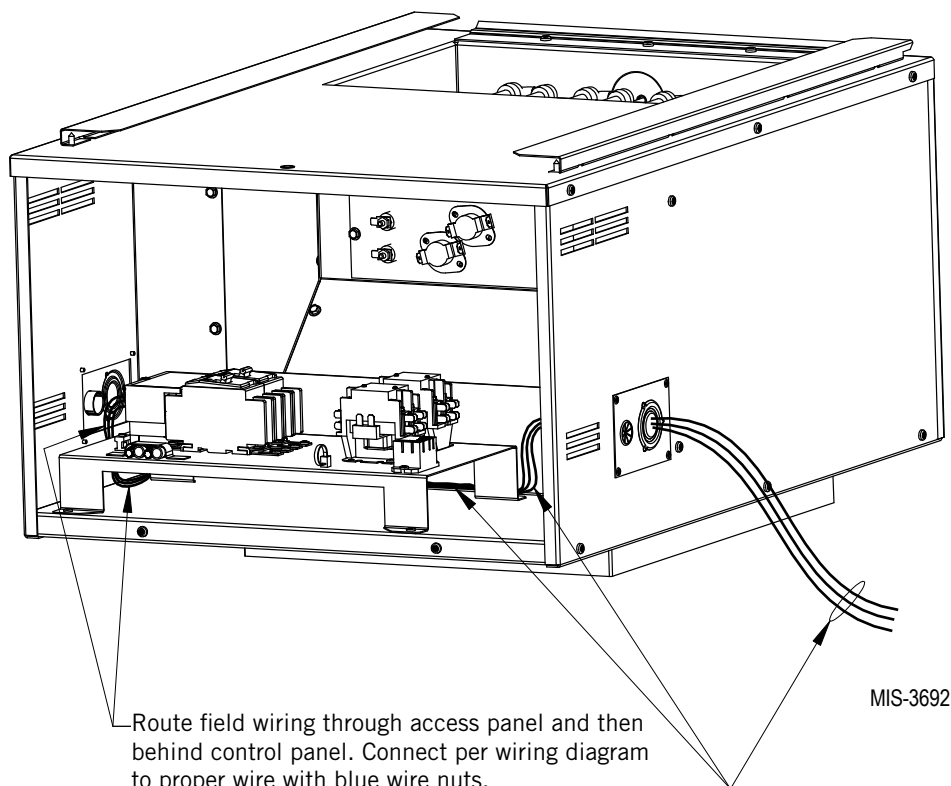
A junction point for low voltage connections is supplied with this accessory. A short piece of thermostat wire will need to be supplied and conjoined with low voltage wires using supplied blue wire nuts.

A low voltage entrance is available on both sides of the heater box (a finger grommet). Route the field-supplied thermostat wire through whichever side best fits the application. Route the thermostat wire to the front side of the control platform and connect to supplied wires with supplied blue wire nuts (see Figure 5).

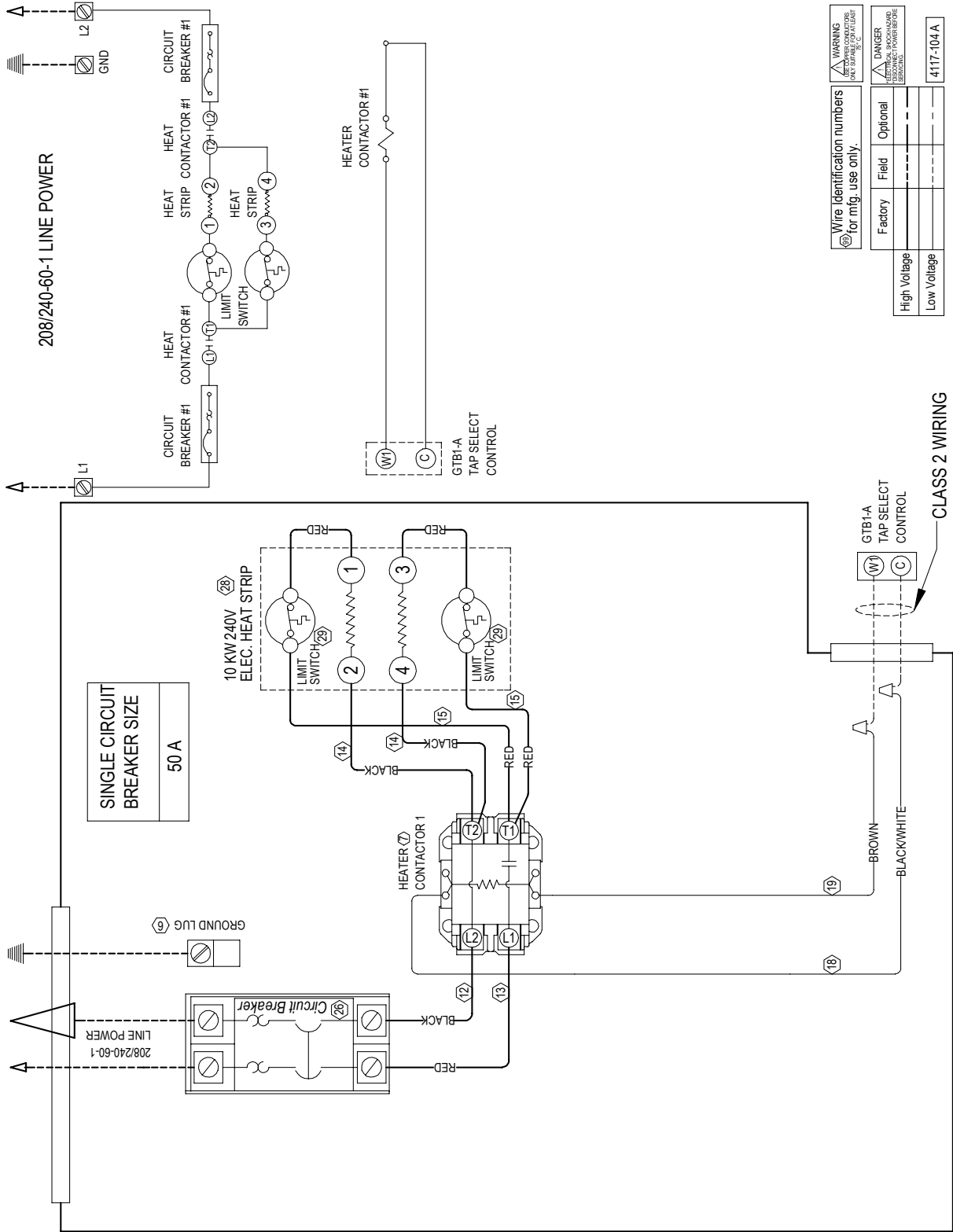
Model GTCFHK1-A10 requires a 2-conductor thermostat wire that will run between the GTH1 heater accessory and the GTB1-A blower section for low voltage connections. Land the low voltage wires in the GTB1-A blower section on the blower control board screw terminals in the designated location/signal (see Figure 6 on page 10).

Model GTCFHK1-A20 requires a 4-conductor thermostat wire that will run between the GTH1 heater accessory and the GTB1-A blower section for low voltage connections. Land the low voltage wires in the GTB1-A blower section on the blower control board screw terminals in the designated location/signal (see Figure 7 on page 11).

**FIGURE 5**  
Field Wire Entry and Routing



**FIGURE 6**  
**GTCFHK1-A10 Wiring Diagram**



**WARNING**  
NEVER OPEN ELECTRICAL PANELS OR ENCLOSURES WHILE THE UNIT IS ON. ELECTRICAL SHOCK/HAZARD EXISTING. ALWAYS USE PROPER LOCKOUT/TAGOUT PROCEDURES.

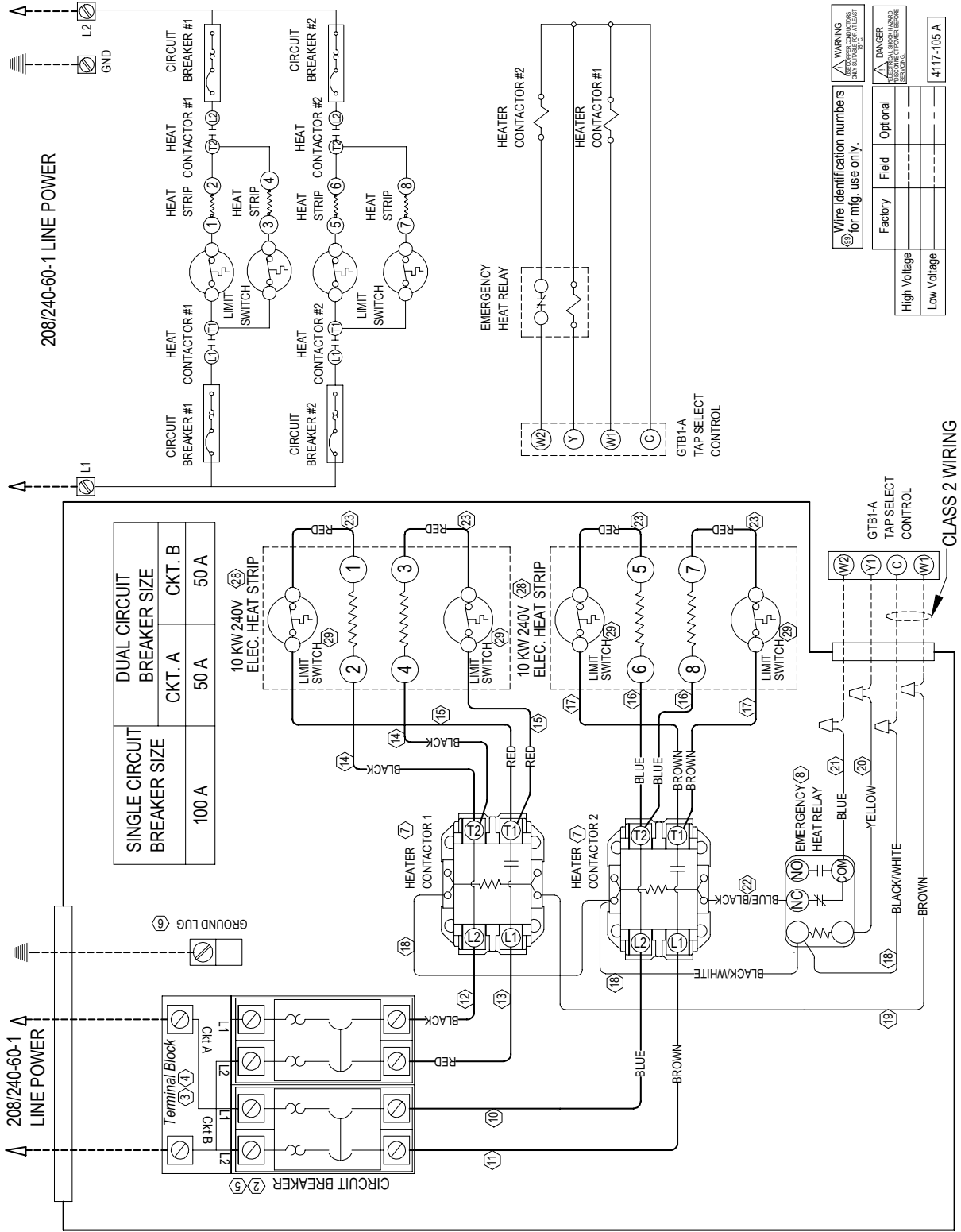
**DANGER**  
ELECTRICAL SHOCK/HAZARD EXISTING. ALWAYS USE PROPER LOCKOUT/TAGOUT PROCEDURES.

4117-104 A

Wire Identification numbers for mfg. use only.

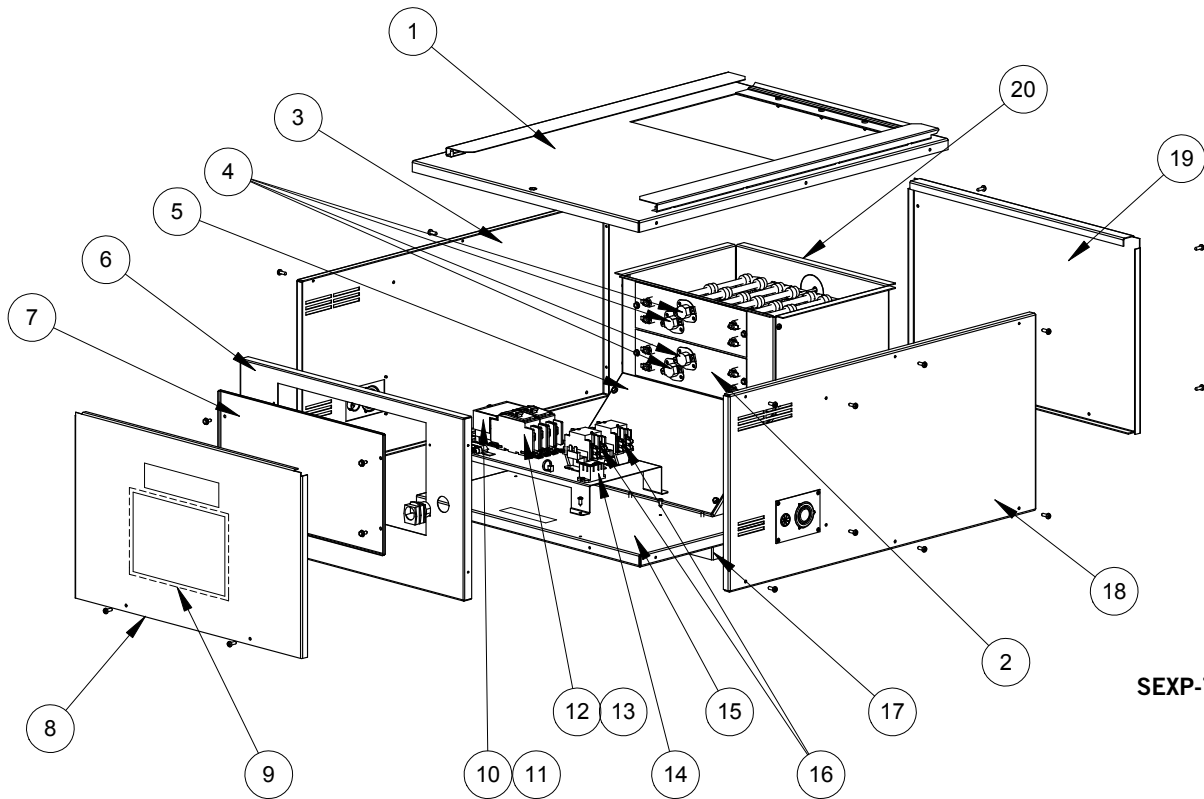
Factory	Field	Optional
High Voltage		
Low Voltage		

**FIGURE 7**  
**GTCFHK1-A20 Wiring Diagram**



<b>Wire identification numbers for mfg. use only.</b>	
Factory	Field
High Voltage	Optional
Low Voltage	
	4117-105-A

# REPLACEMENT PARTS



SEXP-773

Drawing No.	Part No.	Description	GTCFHK1-A10	GTCFHK1-A20
1	S507-299-1	Top Assembly	1	1
2	8604-104	Heat Strip 9.6KW	1	2
2	136-360	Zero KW Blank Off Plate	1	0
3	S501-745-1	Left Side	1	1
4	8402-188	Limit Control 150-105 Line Break	2	4
5	515-262	Heater Box Front	1	1
6	533-244	Control Partition	1	1
7	553-574	Heater Access Cover	1	1
8	S153-565-1	Front Service Door	1	1
9	4117-104	Wiring Diagram	1	0
9	4117-105	Wiring Diagram	0	1
10	8615-047	Jumper Bar Base 4 Pole	0	1
11	8615-049	Jumper Bar Cover 4 Pole	0	1
12	8615-057	Circuit Breaker Mounting Foot	1	2
13	8615-040	Circuit Breaker, 50A, 2 Pole	1	2
14	8201-130	Relay, SPDT, Pilot Duty	0	1
15	527-446	Base	1	1
16	8401-025	Contactors 2 Pole 50 Amp Resistive	1	2
17	111-213	Duct Flange	2	2
18	S501-744-1	Right Side	1	1
19	509-287-1	Back	1	1
20	117-344	Heater Box Wrapper	1	1