INSTALLATION INSTRUCTIONS
FOR
AUXILIARY ELECTRIC HEATER KITS

⚠ Recognize this symbol as an indication of Important Safety Information!

IMPORTANT: TO ENSURE PROPER INSTALLATION AND OPERATION, PLEASE READ ALL INSTRUCTIONS PRIOR TO ASSEMBLY, INSTALLATION, OPERATION, MAINTENANCE OR REPAIR OF THIS PRODUCT. AFTER UNPACKING THE HEATER KIT, INSPECT ALL PARTS FOR DAMAGE PRIOR TO INSTALLATION AND START UP.

INTRODUCTION

The information contained in these instructions has been prepared to assist in the proper installation and operation of the auxiliary electric heaters. Improper installation can result in unsatisfactory operation or dangerous conditions not covered by the unit warranty and may invalidate the Underwriters Laboratories recognition.

CHECKING PRODUCT RECEIVED

Upon receiving the heater kit, inspect it for any shipping damage. Claims for damage should be filed immediately with the shipping company.
Check heater kit model number to determine that it is the correct series for the unit, as shown on the unit rating plate, and is of the desired voltage and KW size.

APPLICATION

These auxiliary electric resistance heater kits are designed for installation in the discharge air compartment of the indoor blower. Improper usage can cause results which may be dangerous. Do not use heater kits other than those referenced on the unit rating plate.

Clearance to combustible material for the unit and first three (3) feet of duct is "0" inches.

OPERATION

The heater elements are wired through controllers operated by the 24 volt thermostat circuit. To ensure indoor blower operation, the blower motor is also controlled by the the first-stage heater controller. The heater controllers will turn the blower and first-stage heater "on" first and "off" last in response to thermostat demand.

TOOLS NEEDED

The following tools can be helpful in installing the kits:

1. Slotted screwdrivers and 5/16" nut driver.
2. Some kits may require the use of allen wrenches.
3. Needle-nose pliers.
4. Wire cutters and strippers.

INDOOR BLOWER SPEED

Refer to the blower airflow tables in the unit installation instructions to set the proper blower speed for your airflow and static pressure requirements.

⚠ WARNING

DISCONNECT ALL POWER BEFORE STARTING HEATER KIT INSTALLATION. FAILURE TO DO SO CAN RESULT IN SEVER ELECTRICAL SHOCK OR DEATH.

ELECTRICAL WIRING

Field wiring must comply with the National Electrical Code (CEC in Canada) and any local ordinances that may apply.

POWER WIRING

1. If the unit has been in operation without an electric heater kit installed, it may be necessary to change the field installed power wiring. The added current of the electric heater kit may require larger gauge wiring than that required for the unit alone. Refer to the unit rating plate or installation instructions for the required supply circuit size and overcurrent protection. A wire sizing table follows for reference

2. It is important that proper electrical power is available at the heater kit terminals. Voltage should not vary more than 10% from that marked on the unit rating plate. Phase voltages must be balanced within 3%.

3. A properly sized disconnect switch shall be located within sight of the unit or as required by local codes.

4. Power wiring must be run in grounded, rain-tight conduit.

5. Refer to the unit installation instructions for power entry location. The high voltage field installed power supply circuit should be connected to the line side of the terminal block located on the heater kit. Consult the heater kit wiring diagram.

INSTALLATION

For field installation of an electric heater kit, follow the instructions below. Refer to the unit Installation and Operating Instructions as required.

a. Removing screws as required, open heater access door and detach adjacent power entry panel.

b. Remove unit contactor wires (1L1, 1L2, 1L3) from the unit terminal block on the left side of the electric heat compartment. Remove and discard the terminal block and the adjacent ground lug.

c. Remove the heater kit block-off panel and install the heater kit in its place using the screws previously removed.

d. Connect the unit contactor wires (1L1, 1L2, 1L3) to the compressor fuse block on the heater kit.

e. Re-install the power entry panel & run conduit and the proper size field wiring through the opening in the panel.

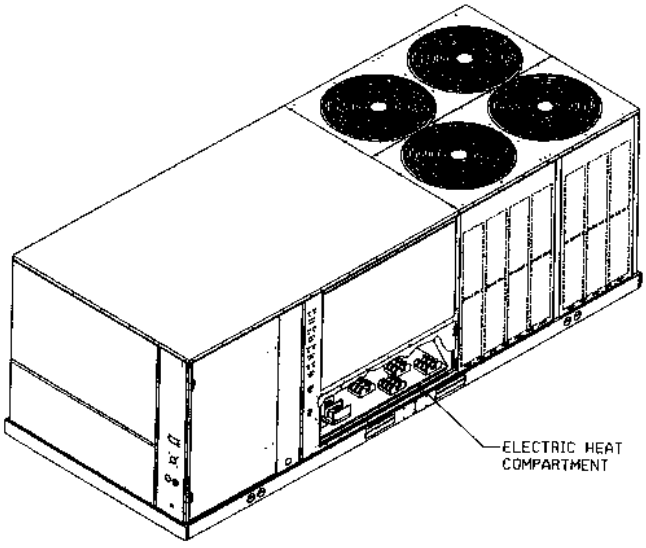
f. Connect field wiring to the power terminal block located on the electric heater kit. Connect ground wire to the adjacent ground lug.

g. Connect heater kit control plug to the receptacle on the control wiring harness.

h. Check all electrical connections including factory wiring within the unit and make sure all connections are tight and properly located.

I. Close heater access door and secure with the screws previously removed.

j. Affix heater kit wiring diagram to inside of control / filter access door.



CONTROL WIRING

1. All low voltage wiring must be routed into the low voltage connection area and not into the power wiring or heater control area.

2. For thermostat low voltage connections, see unit installation instructions.

3. Thermostat heat anticipator should be adjustable for a minimum range of .10 - 1.20. Typical settings are as follows:

THERMOSTAT HEAT ANTICIPATOR SETTING*

	NUMBER OF STAGES	
	1	2
SETTING	.7	.7 & .4

***NOTES**

1. Normally, the first stage heat has a fixed setting.
2. Some thermostats have no adjustable second stage heat anticipator setting indicator. Follow the instructions in these specific thermostats to get proper operation.
3. Replace the control box cover and control compartment access panel after all wiring is completed.
4. Check unit for proper operation.

WIRE SIZE - 75°C INSULATION FOR 1% VOLTAGE DROP

SUPPLY CIRCUIT AMPACITY	COPPER WIRE- AWG/MCM				
	SUPPLY WIRE LENGTH FEET				
	100	150	200	250	300
15	10	8	6	6	6
20	8	6	4	4	4
25	8	6	4	4	3
30	6	4	4	3	2
35	6	4	3	2	1
40	6	4	3	2	1
45	4	3	2	1	1/0
50	4	3	2	1	1/0
60	4	2	1	1/0	2/0
70	3	2	1/0	2/0	3/0
80	3	1	1/0	2/0	3/0
90	2	1/0	2/0	3/0	4/0
100	2	1/0	2/0	3/0	4/0
110	1	2/0	3/0	4/0	250
125	1	2/0	3/0	4/0	250
150	1/0	3/0	4/0	250	300
175	2/0	4/0	250	300	350
200	3/0	4/0	300	350	400
225	4/0	250	350	450	500