ELECTRIC UNIT HEATER
UH SERIES
20KW THRU 48KW
NOT FOR RESIDENTIAL USE

INSTALLATION INSTRUCTIONS

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MODEL DESIGNATION SYSTEM

EXAMPLE: H 1 H UH 15 C A 1 000

- H — Volts
- 1 — Phase
- H — Motor Voltage
- UH — Model Series
- 15 — Heater Wattage
- C — Control System
- A — Control Transformer
- 1 — Control Volts
- 000 — Mfg. Code

MODEL NUMBER CODE:
Volts: F=208, H=240, HF=240/208, P=480
Phase: 1=Single Phase, 2=Single or Three Phase, 3=Three Phase
Motor Voltage: F=208, HF=240/208, P=480
Model Series: UH Series
Heater Wattage: 20=20KW, 25=25KW, 30=30KW, 40=40W, 48=48KW
Control System: C=Built in contactor, O=No contactor, R=Time Delay Relay
Control Transformer: O-none, A=Included
Control Volts: 1=24, 2=120, 3=Line Voltage
Mfg. Code: May include up to three letters or digits to identify various listed options or alternate components.

20KW THRU 48KW
ELECTRIC UNIT HEATER

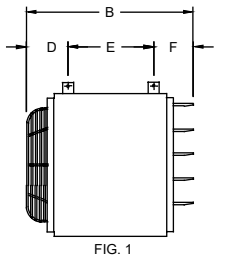

FIG. 1

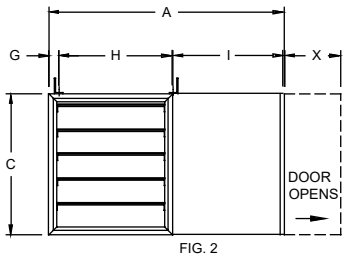

FIG. 2

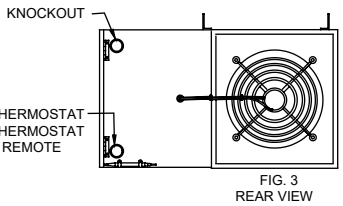

FIG. 3
REAR VIEW

NOTE: FIG. 2 SHOWN WITH CONTROL COMPARTMENT ON THE RIGHT SIDE. HEATER MAY BE MOUNTED WITH CONTROL COMPARTMENT ON LEFT (VIEWED FROM OUTLET) EXCEPT BUILT-IN STAT SHOULD NOT BE USED.

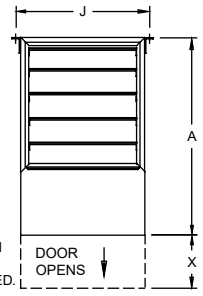

FIG. 4
FRONT WIEW
ALTERNATE MOUNTING
POSITON WITH CONTROL
COMPARTMENT ON BOTTOM

Heater Size	A	B	C	D	E	F	G	H	J	X
20,25,30kW	24	28 1/2	17	9 7/8	14 1/2	4 1/8	1 1/4	16	17 3/4	19
40,48kW	26	34 1/2	19	9 7/8	20 1/2	4 1/8	1 1/4	18	19 3/4	25

Air Flow Characteristics					
Velocity of Air Movement (FPM)					
Heater KW	Distance From Heater			Throw Distance	Approx. Weight
	6 ft.	12 ft.	24 ft.		
20,25,30	750 fpm	450 fpm	300 fpm	55 ft.	95 lbs.
40,48	900 fpm	500 fpm	350 fpm	65 ft.	125 lbs.

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IMPORTANT INSTRUCTIONS

When using electrical appliances, basic precautions should always be followed to reduce the risk of fire, electrical shock, and injury to persons, including the following:

1. Read all instructions before using this heater.
2. This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. Keep combustible material such as furniture, pillows, bedding, papers, clothes, etc. and curtains at least 3 feet (.91m) from the front of the heater and keep them away at least 6 inches(153mm) from the sides and rear.
3. **CAUTION:**High temperatures. Keep cords and all other combustible material, such as furniture, papers, clothes and curtains away from the heater. For safe and efficient operation, keep an open space around heater of three feet in front and 6 inches at ends and rear.
4. Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.
5. Do not operate any heater after it malfunctions, has been dropped or damaged in any manner. Return heater to authorized service facility for examination, electrical or mechanical adjustment, or repair.
6. Do not use outdoors.
7. To disconnect heater, turn controls to off, and turn off power to heater circuit at main disconnect panel (or operate internal disconnect switch if provided).
8. Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric chock or fire, or damage the heater.
9. To prevent a possible fire, do not block air intakes or exhaust in any manner.
10. A heater has hot and arcing or sparking parts inside. Do not use it in area where gasoline, paint, or flammable liquids are used or stored.
11. Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.
12. This heater may include an audible or visual alarm to warn that parts of the heater are getting excessively, hot If the alarm sounds (or illuminates), immediately turn the heater off and inspect for any objects on or adjacent to the heater that may have blocked the airflow or otherwise caused high temperatures to have occurred. **DO NOT OPERATE THE HEATER WITH THE ALARM SOUNDING (OR ILLUMINATING).**
13. **SAVE THESE INSTRUCTIONS**

WARNING: RISK OF ELECTRICAL SHOCK, CAN CAUSE INJURY OR DEATH: DISCONNECT ALL REMOTE ELECTRIC POWER SUPPLIES BEFORE SERVICING.

MAINTENANCE

CAUTION: **DISCONNECT POWER** before attempting to service or disassemble any component. If the power disconnect is out of the line of sight, lock it in the OPEN position and tag to prevent the application of power. Make sure the heater has cooled enough to safely handle.

ELECTRICAL

Once a year inspect the control panel wiring to make certain insulation is intact and all connections are tight. Inspect all heater and relay contacts. If the contacts appear badly pitted or burned, replace the contactor / relay.

CLEANING

Clean the unit casing, fan and motor once a year. A dirty motor will tend to run ot and eventually will be damaged internally. Any rust spots on the casing should be cleaned and repainted.

LUBRICATION

All units have fan motors that are permanently lubricated so that only occasional cleaning is required.

WARNING:

Any other required servicing should be performed by an authorized service representative.

GENERAL INSTRUCTIONS:

This heater has been designed, tested and manufactured to give the most reliable performance practical. Each unit is given a final check before shipping to assure that every component is correctly wired and operating properly. The safe and dependable operation of the heater depends upon proper installation, therefore the manufacturer will not assume responsibility for equipment installed in violation of any code or standard.

MOUNTING:

The UH heater can be mounted in either of two positions as shown in figures 2 and 4 and as designed for control box accessibility, mounting space, etc. The control compartment cover requires 19 OR 25 inches of clearance for opening. The heater may be mounted using the optional accessory wall bracket or supported from the ceiling using bolts or chains attached through brackets provided in the top or side. If the heater is to be mounted as shown in figure 4, the louver assembly may be repositioned to direct the air stream as desired by removing the 3 attachment screws, pulling the assembly off, and reinstalling the desired position.

ELECTRICAL WIRING:

See diagram posted inside control compartment. The amperage load and the minimum recommended wire size is listed at the field wiring terminal for each power supply circuit. The NEC requires that overcurrent protection and supply wiring for electrical heating equipment be rated at least 125% of the full amp-load of the circuit. All supply wiring shall conform to the latest edition of the NEC and to local codes having jurisdiction. Conduit openings are provided in the back of the wiring compartment (see figure 3). Make sure all field wiring connections are properly made and are tight.

ELECTRICAL GROUND:

This heater must be grounded before operating as required by the NEC and by applicable local codes. Use a conductor of the appropriate size, secured to the ground lug in the heater and to a grounded connection in the service panel.

THERMOSTAT:

The thermostat should be located where it will sense the free air movement within the structure. It should not be positioned or located in direct sunlight or where it will be affected by a localized heat source such as lighting or other heaters. If wall mounted thermostat is used, it should normally be mounted 5 feet above the floor. It should be connected to the control terminal block in the heater as shown on the wiring diagram and per instructions packed with the thermostat. All control circuitry must be per NEC class 1 wiring.

Where one or two walls are exposed to outside environment in smaller building areas, a single unit placed as figure 5 may be sufficient. Larger building areas may require multiple units installed such as figure 6, especially where three or more wall are exposed to outside environment. Unit should be arranged for providing perimeter air circulation where the air stream of one supports that of another.

FIG. 5

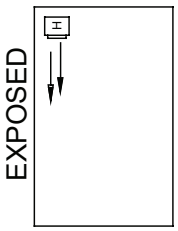
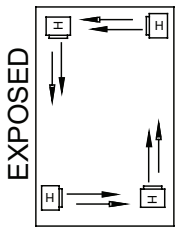


FIG. 6



OPERATION:

Upon a call for heat from the floor level or unit mounted optional accessory thermostat (TUH1), the unit fan motor and heating elements shall be energized and remain ON until temperature reaches setting of thermostat; at which time the heating elements and fan motor shall be deenergized.

With the optional HEAT PURGE FAN DELAY

The fan motor shall continue to run and purge heater casing of residual heat until setting of fan override is reached, then the fan motor shall be deenergized. With the optional SUMMER FAN SWITCH The fan can be operated indepently, allowing air circulation without heat.

The UH/UHE series unit heaters are supplied with an automatic reset safety high limit to deenergize the heating elements should the temperature exceed the setting of this device. **WARNING: Tampering of this device may render the heater inoperable or create a hazardous situation.**

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I. SERVICING THE ELEMENTS

The elements assembly, which includes the elements, the element mounting bracket, the automatic limit control and the element restraining assembly, is designed to be removed as a unit to facilitate element replacement using standard hand tools.

A. Removing an element

1. Open all electric power supply disconnects to the heater.
2. Disconnect all necessary wiring at element terminals.
3. Remove the outlet louver assembly by first removing the three (3) screws holding the assembly to the cabinet.
4. Remove the two screws securing the element to the bottom of the control panel.
5. Remove wire straps retaining the element to the scroll.
6. Pull the bottom of the element outward allowing the top of the element to slide out of the clearance holes in the control panel.
7. Repeat steps 4, 5, and 6 to reach desired element.

B. Installing a new element

Be sure the replacement element matches the original part in voltage and wattage ratings as well as in physical size and shape. Reverse the steps under removing an element. All elements must be installed in the same orientation.

II. SERVICING THE MOTOR AND FAN

A. Removing the motor and fan

1. Open all electric power supply disconnects to the heater.
2. Disconnect the motor wiring inside the control box.
3. Remove the strain relief from the cabinet and pull the motor wiring out of the control box.
4. Remove all the screws holding the inlet assembly to the cabinet. Support the weight of the motor as the last screws are mounted.
5. Slip the inlet assembly (shroud, motor, fan and fan guard) off of the cabinet.
6. Remove the fan blade from the motor shaft.
7. Snip the wire ties securing the motor lead to the fan guard.
8. Remove the screws securing the motor to the fan guard.

B. Installing the motor and fan

Reverse the steps under removing the motor and fan. Be sure to reconnect the grounding lead as it provides the grounding for the motor to the cabinet. Replace the motor only with an indentical part. Contact the factory for information regarding alternate motors. To prevent overheating and maintain the design performance, a replacement fan blade must be indentical to the original blade.