

ELECTRIC UNIT HEATER

UH SERIES

3KW THRU 15KW

INSTALLATION INSTRUCTIONS

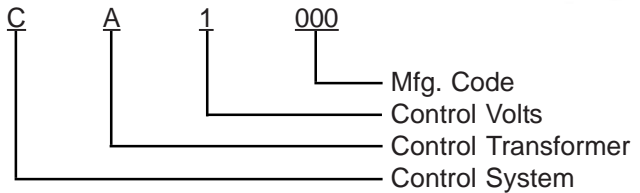
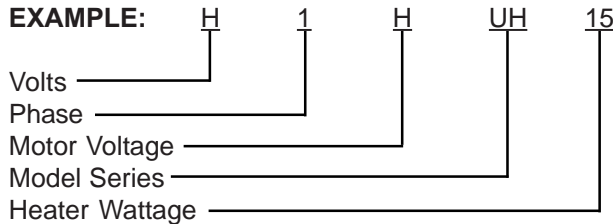


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America's Comfort Conditioning Company

MODEL DESIGNATION SYSTEM

EXAMPLE:



MODEL NUMBER CODE:

Volts: F=208, H=240, HF=240/208, G=277, P=480

Phase: 1=Single Phase, 2=Single or Three Phase, 3=Three Phase

Motor Voltage: F=208, HF=240/208, G=277, P=480

Model Series: UH Series

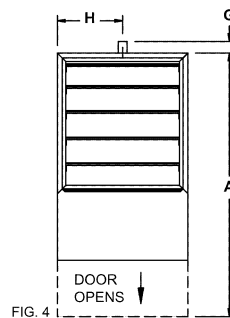
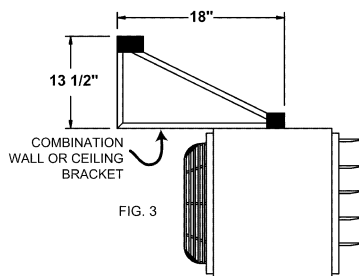
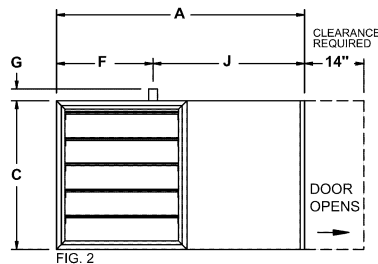
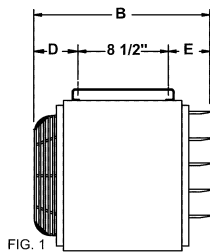
Heater Wattage: 03=3.3KW, 05=5KW, 07=7.5KW, 10=10KW, 12=12KW, 15=15KW

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.



Heater Size	A	B	C	D	E	F	G	H	I
3.5, 7.5, 10KW	20	18 3/4	13	5 7/8	4 3/4	9	1 5/8	6 1/2	11
12.5 & 15 KW	22	21 1/4	15	8 3/8	4 3/4	10	1 5/8	7 1/2	12

Air Flow Characteristics					
Velocity of Air Movement (FPM)					
Heater KW	Distance From Heater			Throw Distance	Approx. Weight
	6 ft.	12 ft.	24 ft.		
3 & 5	105 fpm	45 fpm	17 fpm	28 ft.	45 lbs.
7.5 & 10	210 fpm	80 fpm	25 fpm	36 ft.	50 lbs.
12.5 & 15	270 fpm	95 fpm	45 fpm	46 ft.	55 lbs.

IMPORTANT: OWNER SHOULD RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE

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 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 14" clearance for opening.

The mounting handle is shipped disassembled. It is to be mounted to the appropriate side of the cabinet, as shown in figures 2 or 4, using the screws provided which are to be threaded into weld nuts on the cabinet. The heater then may be mounted using the optional accessory wall bracket or supported from the ceiling using bolts or chains attached through 2 holes provided in the handle. 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.

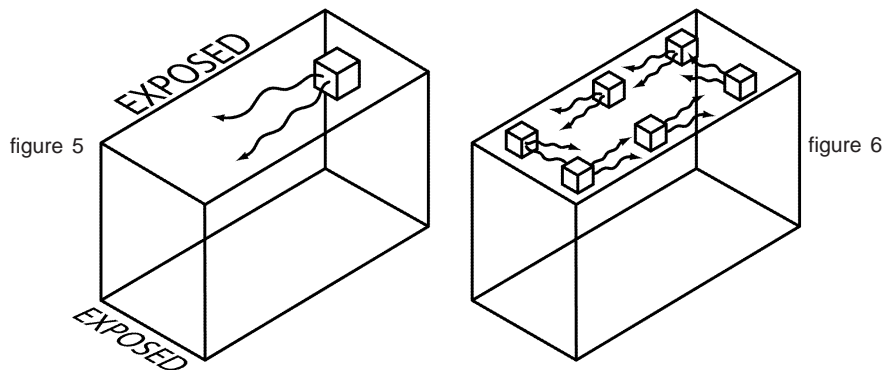
ELECTRICAL GROUND:

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.



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.

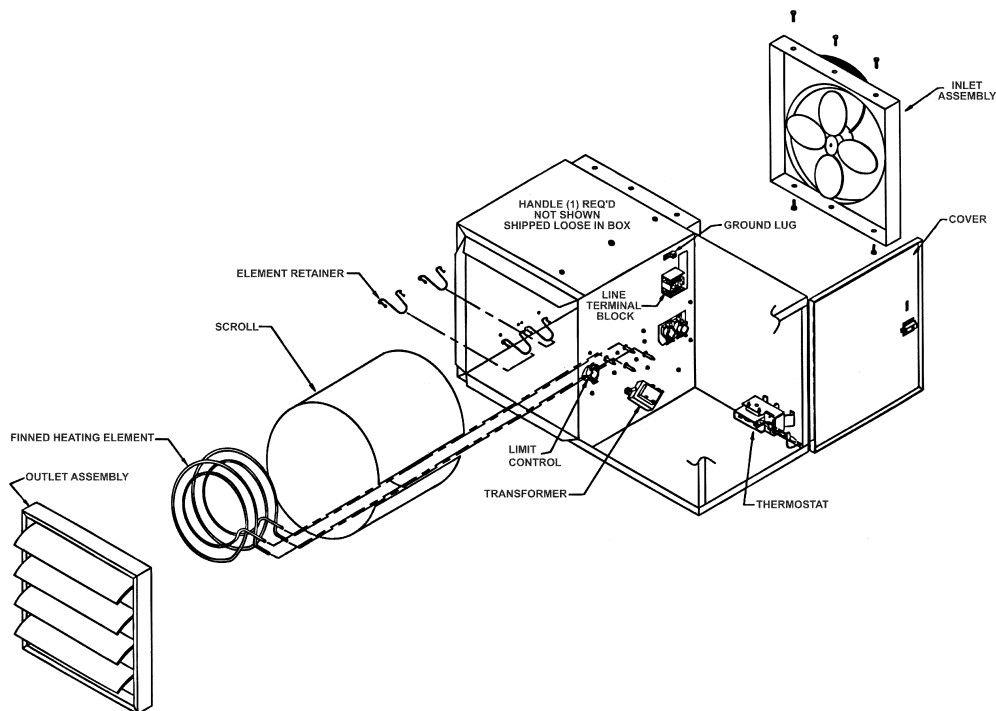
II. SERVICING THE MOTOR AND FAN

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

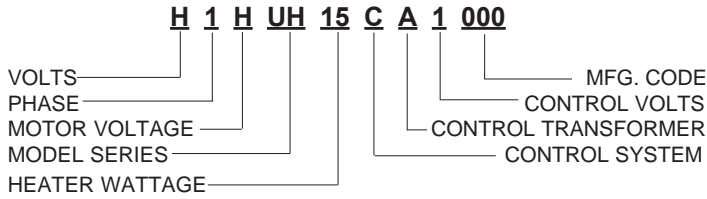
Reverse the steps under removing the motor and fan. Be sure to reconnect the grounding lead as it provides the grounding for the motor to the cabinet. Replace the motor only with an identical part. Contact the factory for information regarding alternate motors. To prevent overheating and maintain the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



ELECTRIC UNIT HEATER 20KW THRU 48KW INSTALLATION AND OPERATING INSTRUCTION

MODEL DESIGNATION SYSTEM

EXAMPLE:



MODEL NUMBER CODE:

VOLTS: F = 208, H = 240, HF = 240 /208, G = 277, P = 480

PHASE: 1 = SINGLE PHASE, 2 = SINGLE OR THREE PHASE, 3 = THREE PHASE

MOTOR VOLTAGE: F = 208, HF = 240 /208, G = 277, P = 480

MODEL SERIES: UH SERIES

HEATER WATTAGE: 20 = 20KW, 25 = 25KW, 30 = 30KW, 40 = 40KW, 48 = 48KW

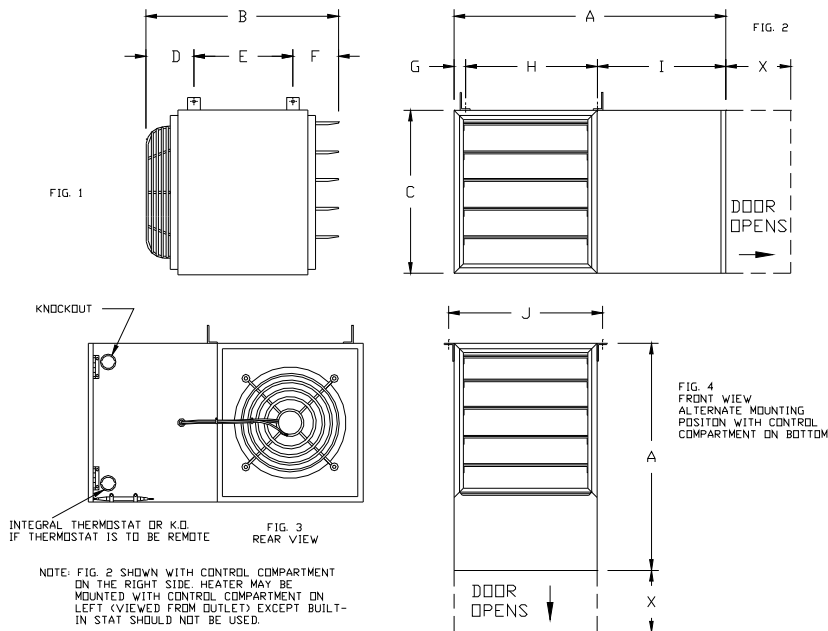
CONTROL SYSTEM: C = BUILT IN CONTACTOR, O = NO CONTACTOR, R = TIME DELAY RELAY

CONTROL TRANSFORMER: 0 = 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.

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
35, 40, 48KW	26	34 1/2	19	9 7/8	20 1/2	4 1/8	1 1/4	18	19 3/4	25



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.

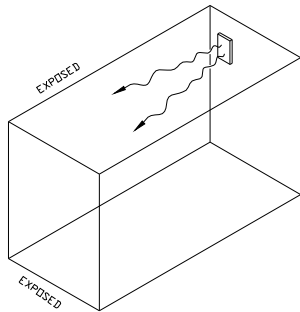
MOUNTING

The 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 14" clearance for opening.

The mounting handle is shipped disassembled. It is to be mounted to the appropriate side of the cabinet, as shown in figures 2 or 4, using the screws provided which thread into weld nuts on the cabinet. The heater then may be mounted using the optional accessory wall bracket or supported from the ceiling using bolts or chains attached through 2 holes provided in the handle. 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.



Where one or two walls are exposed to outside environment in smaller building areas, a single unit placed like this may be sufficient.

The NEC requires that overcurrent protection and supply wiring for electric 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).

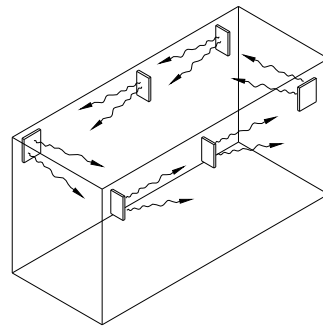
Make sure all field wiring connections are properly made and are tight.

ELECTRICAL GROUND

This heater must be grounded before operating as required by the National Electric Code 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.



Larger building areas may require multiple units installed like this, especially where three or more walls are exposed to outside environment. Units should be arranged for providing perimeter air circulation where the air stream of one supports that of another.

SERVICE INSTRUCTIONS

UH SERIES UNIT HEATER 20-48KW

I. SERVICING THE ELEMENTS

The element 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

- Step 1. Open all electric power supply disconnects to the heater.
- Step 2. Disconnect all necessary wiring at element terminals.
- Step 3. Remove the outlet louver assembly by first removing the three (3) screws holding the assembly to the cabinet.
- Step 4. Remove the two screws securing the element to the bottom of the control panel.
- Step 5. Remove wire straps retaining the element to the scroll.
- Step 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.
- Step 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. The outer (longer) restraining angle must be reinstalled with the notched end toward the fan (opposite the limit control end). Each of the element spacers must interlock in the slots of both the inner and outer angles of the restraining assembly.

II. SERVICING THE MOTOR AND FAN

A. REMOVING THE MOTOR AND FAN

- Step 1. Open all electric power supply disconnects to the heater.
- Step 2. Disconnect the motor wiring inside the control box.
- Step 3. Remove the strain relief from the cabinet and pull the motor wiring out of the control box.
- Step 4. Remove all the screws holding the inlet assembly to the cabinet. Support the weight of the motor as the last screws are mounted.
- Step 5. Slip the inlet assembly (shroud, motor, fan and fan guard) off of the cabinet.
- Step 6. Remove the fan blade from the motor shaft.
- Step 7. Snip the wire ties securing the motor lead to the fan guard.
- Step 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 bounding lead as it provides the bounding for the motor to the cabinet. Replace the motor only with an identical part. Contact the factory for information regarding alternate motors. To prevent overheating and maintain the design performance, a replacement fan blade must be identical to the original blade.

