

INSTALLATION AND MAINTENANCE



KB Series Unit Heater



DANGER

ELECTRIC SHOCK OR FIRE HAZARD

READ ALL WIRE SIZING, VOLTAGE REQUIREMENTS AND SAFETY DATA TO
AVOID PROPERTY DAMAGE AND PERSONAL INJURY

Congratulations on the purchase of your new KING ELECTRICAL UNIT HEATER, made with the highest standards in electrical design and quality components to ensure your satisfaction in durability and performance. The steel fin tube element which has a 5 year warranty is backed by a heavy-duty fan directing a strong flow of warm air to any desired area through adjustable louvers. The rugged, totally enclosed, service-free motor is combined with our fan design to maintain the correct relationship of air volume to final air temperature. Also included is a quick access panel for wiring and universal bracket for ceiling or wall mount applications.

WARNING

READ CAREFULLY - Use the heater only as described in this manual. Any other use is not recommended and could result in fire, electric shock, and personal injury. Following these instructions will prevent difficulties that might occur during the installation and use of the heater. Please study the instructions first, as they may save considerable time and trouble during use addition to providing important safety information. Make sure to save these instructions for future use.

- WARNING** To prevent a possible electrical shock, disconnect all power coming to heater at main service panel before wiring or servicing.
- WARNING** All wiring must be in accordance with the National Electrical Code (Canadian Electrical Code in Canada) and all applicable local codes. The heater must be grounded as a precaution against electrical shock. Supply wiring must be copper and suitable for at least 75° C.
- WARNING** Verify power supply and control voltages coming to the heater match the ratings printed on the heater nameplate before energizing.
- WARNING** Heater must be installed so the minimum clearances shown in Specifications table are maintained.
- WARNING** This heater is NOT suitable for use in hazardous locations as described by the National Fire Protection Association (NFPA). this heater has hot and arcing or sparking parts inside. DO NOT use in areas where gasoline, paint or other flammable liquids are used or stored.
- WARNING** The mounting structure and anchoring hardware MUST BE capable of reliably supporting the weight of the heater plus mounting bracket if used. Refer to specifications table for heater weight.
- WARNING** Heater air flow MUST be directed parallel to or away from adjacent walls.
- WARNING** To prevent a possible fire, DO NOT block air intakes or exhaust openings in any manner. DO NOT allow foreign objects to enter grill openings as this may cause electric shock, fire or damage to heater.
- WARNING** Louver adjustment (Do not attempt to adjust while heater is operational): The Louvers are opened during testing at factory, but may have shifted during shipping, make sure the louvers are rotated less than 45 degrees from horizontal before operation. To adjust the opening angle, grasp the left and right end of louver and twist with two hands to the desired position. CAUTION: Increasing the angle beyond 45° degrees from horizontal may restrict air flow causing the over temperature limit to activate and shut off the heater.



**CAUTION—RISK OF ELECTRIC SHOCK
DO NOT OPEN HEATER SHELL**



KB INSTALLATION

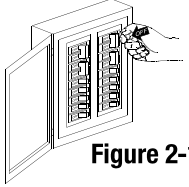


Figure 2-1

CAUTION!

Turn OFF all electrical power to install heater

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Selecting A Location For Your Heater:

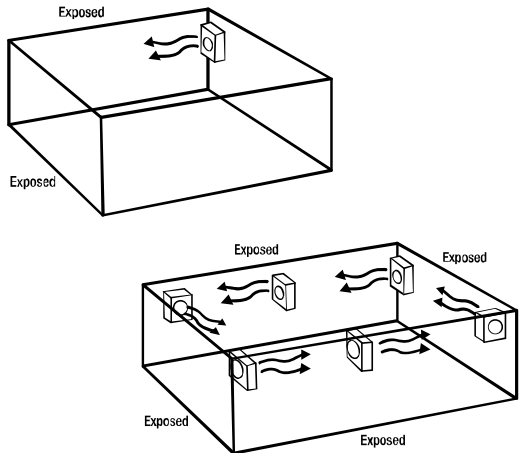
The heater should be installed out of the reach of persons. The direction of air flow should not be restricted by machinery, beams, columns or partitions, etc., and the air flow should wipe exposed walls rather than blowing directly at them.

Heaters should be directed away from room occupants in comfort heating and are directed along the windward side when installed in a building exposed to a prevailing wind.

Small rooms can be heated by one unit heater. Large rooms require multi-unit installations. Number and capacity of units will be determined by volume of building and square feet of floor area to be heated.

When more than one heater is used in an area the heaters should be arranged so that the air discharge of each heater supports the air flow of the others to provide best circulation of warm air.

(see air flow chart)



Unpack & Inspect Your New Heater

Remove heater from the box and inspect it for any damage. Verify you have received the universal wall/ceiling mounting bracket.

Tools Needed

You will need the following tools to install your unit heater:

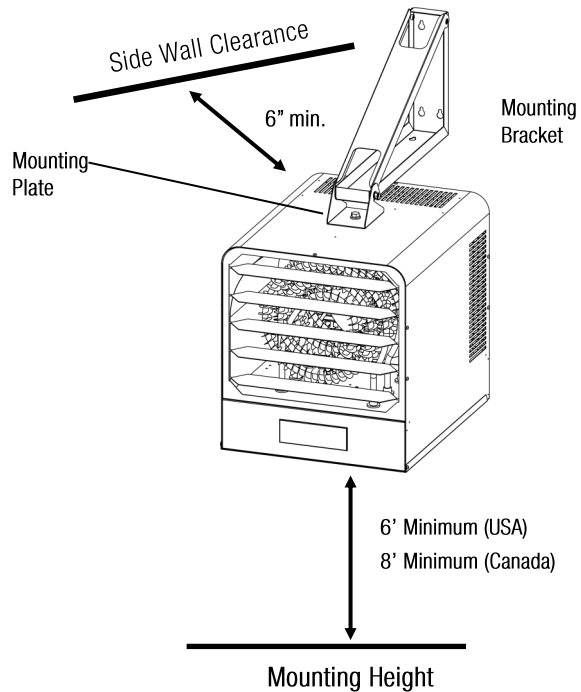
- Screwdriver - (Phillips head & slotted)
- Wire Cutters
- Pliers
- Adjustable Wrench
- Electric Drill

Hardware Needed For Installation

You will also need the following hardware, which can be purchased from your local hardware store or electrical supply house:

- adequate gauge and length of wire for your application
- proper size fuses or breakers to handle amperage
- proper wire connectors for your application
- fasteners appropriate for application that are strong enough to hold unit

For certain applications conduit may be required. Check local electrical codes. Also, if you run the wiring in conduit and wish to be able to turn the heater, be sure to purchase enough flexible conduit to allow the heater to be turned.



Mounting Height

When the airflow of the heater is directed vertically or horizontally the minimum mounting height of 6 feet above floor (8 feet above floor for Canada).

Mounting heights depend upon building utilization and heater kW capacity.

Distance From Vertical Side Walls

Be sure to maintain 6" minimum clearance to walls and ceilings.

KB INSTALLATION

Installing the Ceiling/Wall Mounting Bracket

Heater can be installed in either a Ceiling Mount or Wall Mount orientation. Locate a stud in ceiling or wall and securely fasten L-shaped mounting bracket to supporting surface with at least 2 fasteners strong enough to hold unit at least 1-1/4" in length.

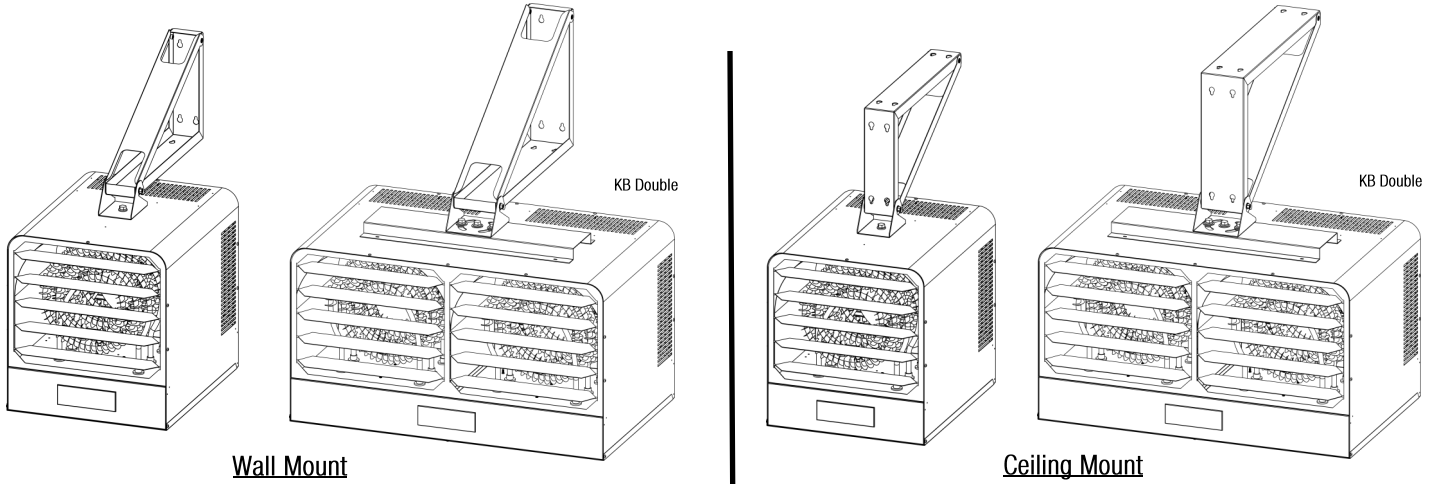
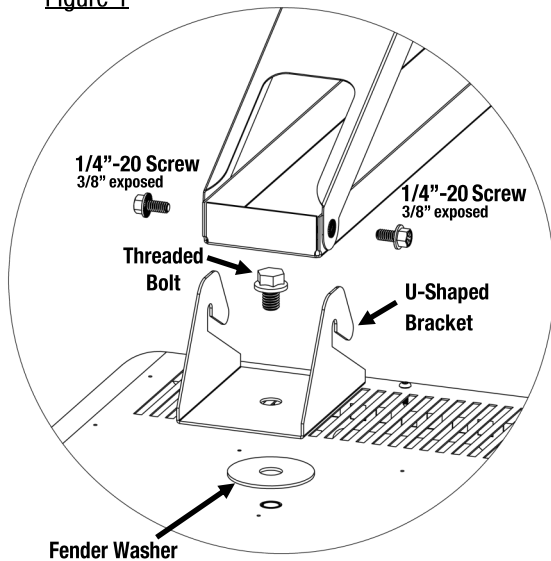


Figure 1



Installing U-Mounting Bracket Hook

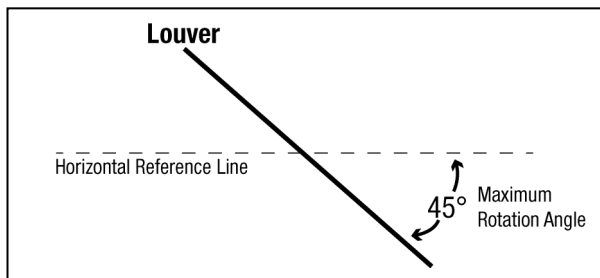
The Platinum Heater comes with U-Shaped bracket for installing the heater to the Ceiling/Wall bracket, allowing the heater to be quickly and easily installed. KB Platinum Double Units require 2 Ceiling/Wall brackets.

1. Attached the U-shaped bracket to the heater by placing the large fender washer between the bracket and the heater so that it can rotate and then fasten it tightly using the threaded bolt provided in the hardware package.
2. Install the 2 pcs 1/4"-20 machine screws into the Ceiling/Wall Bracket leaving them loose and leaving least 3/8" of the shaft exposed.
3. Insert the hooks of the U-shaped bracket onto the exposed 1/4"-20 machine screws. This will hold the heater in place while the screws are being tighten. This two piece bracket design makes it quick and easy for one person to install and hang the heater. (Refer to Figure 1).

Louver Adjustment: (Do not adjust while heater is operational):

The Heater is shipped with louvers in the closed position and must be opened prior to use. Confirm louvers are rotated less than 45 degrees from horizontal before operation. To adjust the opening angle, grasp the left and right end of louver and twist with two hands to the desired position. CAUTION: Increasing angle beyond 45° degrees from horizontal may restrict air flow causing over temperature limit to activate & shut off the heater.

Louver Adjustment

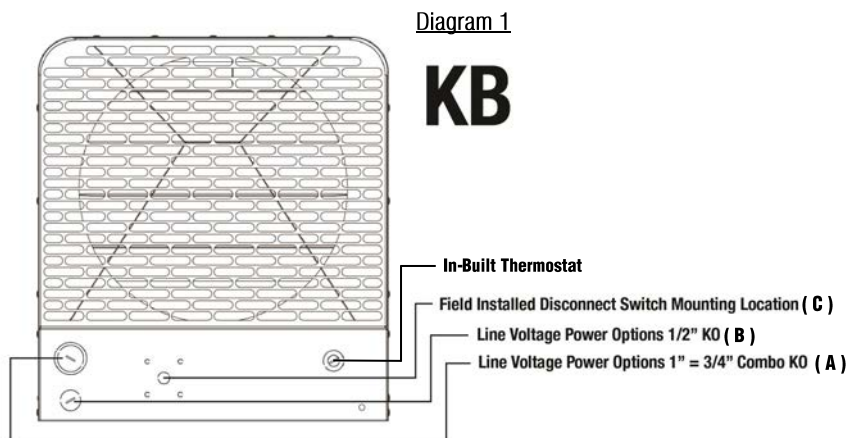


KB WIRING INSTRUCTIONS

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LINE VOLTAGE IS PRESENT ON SOME OF THE TERMINALS ON THE CONTROL TERMINAL BOARD. ALWAYS DISCONNECT THE POWER FROM THE HEATER BEFORE MAKING ANY CONNECTIONS TO THE CONTROL BOARD TO PREVENT ELECTRIC SHOCK HAZARD.



1. Connect heater to the voltage, and frequency specified on the nameplate.
2. Field wiring must be properly sized to carry the amperage of the heater in accordance with the NEC.
3. The electrical wiring compartment access door is hinged and has a screw on the bottom. Remove the screw to gain access.
4. Electrical knockouts (A and B) are provided on the back of the heater close to the power contactor. Use the diameter that fits the required conduit fitting size. See diagram 1 for more details.
5. A ground terminal is provided. The ground wire should be connected before other connections are made.
6. The power contactor is equipped with lugs to accept the power supply wire. Copper wire must be rated at 600 V and 60° C for the heater branch circuit.
7. Each heater has a wiring diagram affixed to the inside of the access door. Consult diagram before making any field connections.
8. Single or three-phase power connections may be used with heater models marked -3MP. These units are factory wired for single phase operation. If these heaters are for use with three-phased power, reconnect the wires as indicated in the wiring diagram attached to the heater.
9. Adjust the louvers to the desired position before operation.
10. Exhaust Louvers Must Be Opened No Less Than 45° From Horizontal To Not Restrict Air Flow.

Note: The mounting location for an optional field-installed disconnect switch (order separately) is shown above (C).

SMART LIMIT PROTECTION AND MAINTENANCE

Heater Safety Limit Tripped?



This heater is equipped with a thermal overload Smart Limit Protection which disconnects elements and motor in the event normal operating temperatures are exceeded. If thermal overload trips due to abnormal operating temperatures, thermal overload shall remain open until manually reset by turning the heater OFF for fifteen minutes. Inspect for any objects on or adjacent to the heater that may cause high temperatures. After inspecting the heater, keep the power to the heater off for 15 minutes to reset the SLP thermal protector. If the SLP thermal protector shuts the heater off again, immediately turn the heater OFF at the circuit breaker and inspect the heater for possible fan motor failure or dirt and lint on the heating element. Repeat the starting procedure. **DO NOT TAMPER OR REMOVE THIS THIS DEVICE**

Maintenance

We're Here to Help!

For any difficulties installing or operating this product

Call Us Toll Free at:

1-800-603-5464 Option 2

7:00 am -3:30 pm PST Mon-Fri

Visit king-electric.com

or email us at tech@king-electric.com