

INSTALLATION AND MAINTENANCE



SKB Series Compact Heavy Duty Unit Heater



DANGER

ELECTRIC SHOCK OR FIRE HAZARD

READ ALL WIRE SIZING, VOLTAGE REQUIREMENTS AND SAFETY DATA TO

DO NOT RETURN TO STORE

If you experience any difficulties installing or operating this product.
 Call us Toll Free at: 1-800-603-5464 (Select Option 2 from the Menu) / 7:00am to 3:30pm PST Mon-Fri
 Support at king-electric.com or email us at info@king-electric.com

⚠ 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** Verify power supply and control voltages coming to the heater match the ratings printed on the heater nameplate before energizing.
- ⚠ 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.
- ⚠ 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



SKB INSTALLATION INSTRUCTIONS

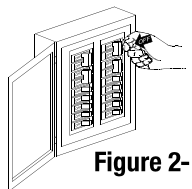


Figure 2-

CAUTION!

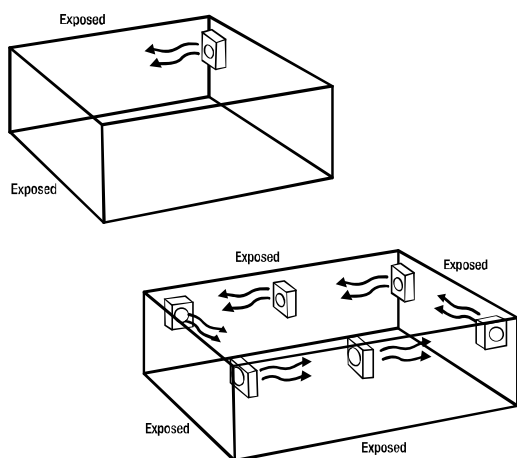
Turn OFF all electrical power to install heater



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, etc., and the air flow should wipe exposed walls rather than blowing directly at them. 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.

Hardware Needed

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 6 feet from vertical side walls and 6 feet above floor (8 feet above floor for Canada). Mounting heights depend upon building utilization and heater kW capacity.

Distance From Walls

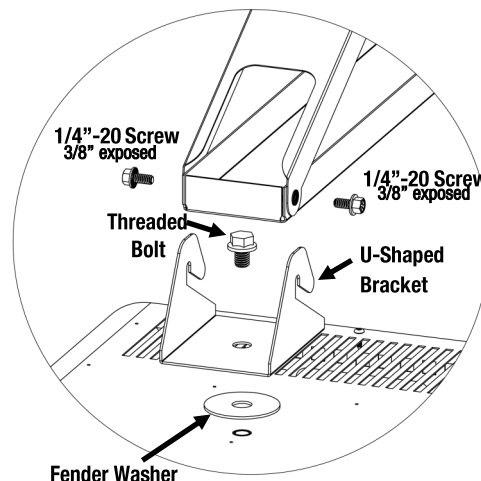
Be sure to maintain 8" minimum clearance to walls and ceilings.

Installing U-Mounting Bracket Hook

The SKB Heater comes with U-Shaped bracket for installing the heater to the Ceiling/Wall bracket, allowing the heater to be quickly and easily installed.

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).

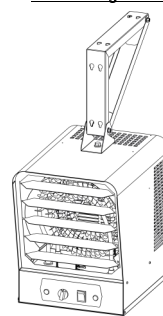
Figure 1



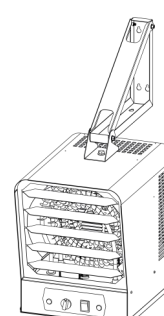
Installing the Ceiling/Wall Mounting Bracket

Locate a stud in ceiling or wall and securely fasten bracket to supporting surface with 2 fasteners (appropriate for application and strong enough to hold unit) at least 1-1/4" in length.

Low Ceiling Mount



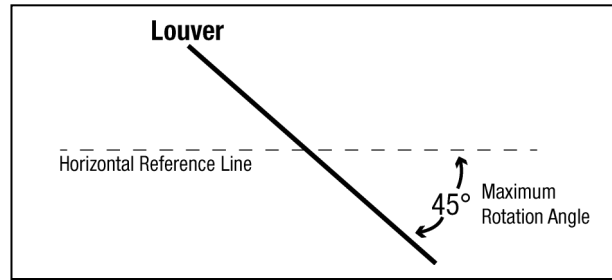
Wall Mount



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



WIRING INSTRUCTIONS

Model Wiring SKB2005-1-T-B/

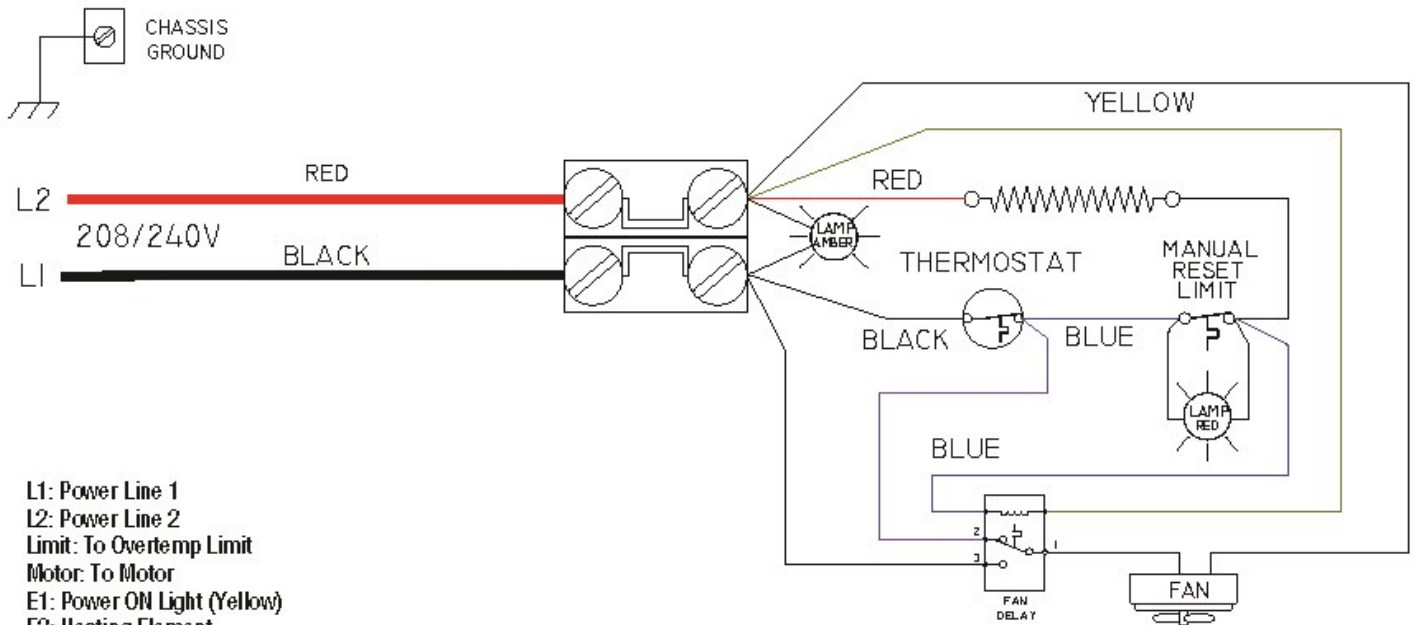
SKB2405-1-T-B

WARNING

Before proceeding further with the installation of this heater, turn off the power and lock to the supply line for the heater at the main service box.

Power Supply Connection

Connect the power supply wires to the lugs on the terminal board marked L1 and L2. Torque lugs to 35 in-lbs. Connect the power supply ground wire to the equipment ground in the case (green wire, lug or screw).



- L1: Power Line 1
- L2: Power Line 2
- Limit: To Overtemp Limit
- Motor: To Motor
- E1: Power ON Light (Yellow)
- E2: Heating Element
- Stat: To Built-In Stat
- Light: Overtemp Light (Red)

104817

Volts	Watts	Amps	Wire Size	Circuit Protection
208V	5,000	24	#10/2	30/2
240V	5,000	21	#10/2	30/2

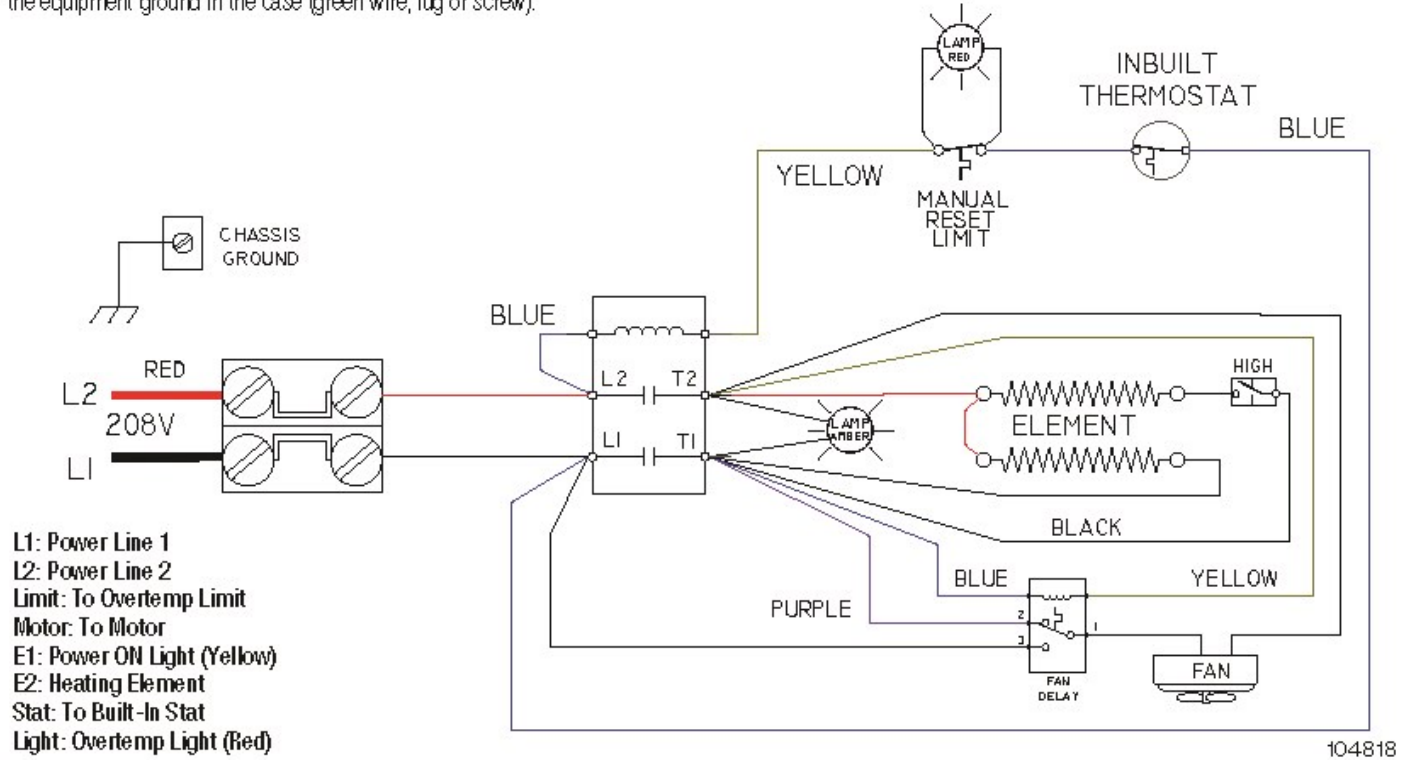
NOTE: *240V heater will operate at 208V producing 25% less wattage and will draw 13% less amperage

WIRING INSTRUCTIONS

Model Wiring SKB2407-1-T-B/ SKB2410-1-T-B

Power Supply Connection

Connect the power supply wires to the lugs on the terminal board marked L1 and L2. Torque lugs to 35 in-lbs. Connect the power supply ground wire to the equipment ground in the case (green wire, lug or screw).



104818

Volts	Watts	Amps	Wire Size	Circuit Protection
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208V	7,500	36	#8/2	50/2
208V	9,200	44.2	#6/2	60/2
*240V	7,500	31.2	#8/2	40/2
*240V	10,000	41.6	#6/2	60/2

NOTE: *240V heater will operate at 208V producing 25% less wattage and will draw 13% less amperage

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

With proper care your electric heater should last a lifetime, however, seasonal cleaning is recommended to maintain the efficiency of the heater. Keep heating element, fan and motor free of debris. Use compressed air to blow out any debris.