

INSTALLATION AND MAINTENANCE



MKT-SS Series Toe Space Heater

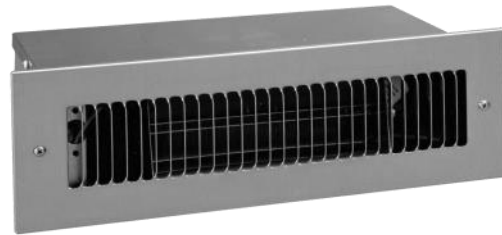


Figure 1

Covers MKT models



WARNING

Read Carefully - These instructions are written in an effort to prevent potential difficulties that might arise during installation. Studying the instructions first may save you considerable time and money later. Observing the following procedures will keep installation time to a minimum.

IMPORTANT INSTRUCTIONS

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

1. **Read all instructions before wiring or using this heater.**
2. **WARNING:** This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. Keep combustible materials, such as furniture, pillows, bedding, papers, clothes, boxes, etc., and curtains at least 3 ft (.9 m) from the front of the heater and keep them away from the sides and rear.
3. **CAUTION:** Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.
4. Do not operate any heater after it malfunctions. Disconnect power at service panel and have heater inspected by qualified electrician for repair before reusing.
5. Do not use outdoors.
6. **WARNING:** To disconnect heater, turn controls to OFF, and turn OFF power to heater circuit at main disconnect panel.
7. **WARNING:** Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock, fire, or damage to the heater.
8. To prevent a possible of fire, do not block air intakes or exhaust in any manner.
9. A heater has hot and arching or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable vapors or liquids are used or stored.
10. **WARNING:** Use this heater only as described in this manual. Any other use is not recommended by the manufacturer and may cause fire, electric shock, explosion or injury to people and or property.
11. Heater is not intended for use in bathrooms, laundry areas or similar indoor locations. Never locate heater where it may fall into a bathtub or other water container.

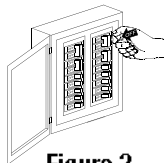


Figure 2

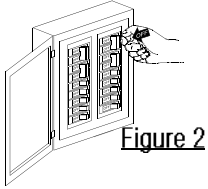
VISUAL ALARM

This heater may include a visual alarm to warn that parts of the heater are getting excessively hot. If the alarm 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 ILLUMINATING.



MKT INSTALLATION INSTRUCTIONS



CAUTION!
Turn OFF all electrical power to install heater

Rating Label Location

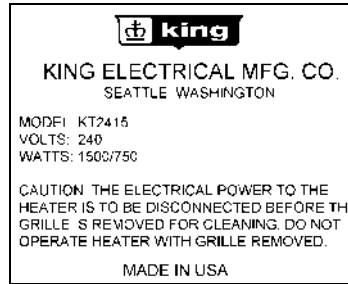


Figure 4



Figure 3

Selecting A Location For Your Heater:

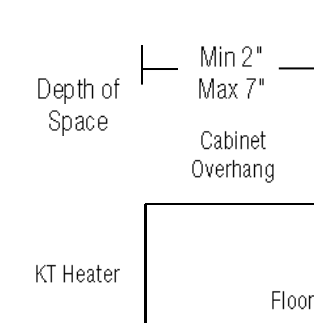
This heater has been designed to allow it to be recessed at floor level in the toe space of cabinets or under counters or at the base of walls. When selecting the location, be sure the materials that will be located in the air heated by this heater (such as floor coverings) will not distort or discolor at temperatures above 139°F (60°C). DO NOT select a location directly beneath sinks or other work areas where people are likely to stand for extended periods of time. DO NOT install less than 6" (15cm) from vertical side walls or open edge of door. This heater must have an unrestricted airflow. DO NOT select a location where it is likely to be blocked by furniture, throw rugs, etc. Be sure the location selected allows sufficient space for the heater as shown by Table 2. DO NOT locate this heater in an area where combustible vapors, gases liquids, or excessive lint, dust or moisture is present.

Table 1 The heater is intended for a toe space installation. Other grilles are available for a flush surface mount installation that will trim out the wall can.

Minimum Clearances

when placed in toe space of a cabinet

Front	Top	Bottom	Sides
9 in	0 in	0 in	6 in
23 cm	0 cm	0 cm	15 cm



The heater is designed to be installed in the toe-space of a cabinet with a minimum of 2" overhang to maximum 7" of overhang. Shorter overhangs may overheat the floor where longer than 7" overhangs may overheat the cabinet door area.

The wire and breaker sizing chart will give a general rule of installation size. Consult an electrician if you are not knowledgeable about wiring codes.

Wire and Breaker Sizing:

Table 2

Total Amps	Minimum AWG. Wire Size (Copper)	Circuit Breaker or Fuse Size
0 thru 12	#14	15 amp
12.1 thru 16	#12	20 amp
16.1 thru 24	#10	30 amp

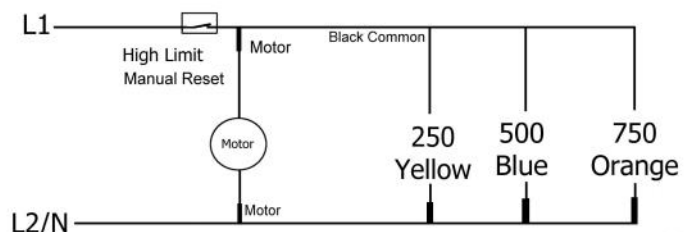
WIRING: Branch Circuit Connection

1. Connect heater only to the voltage, amperage and frequency specified on the nameplate.
2. Wiring procedures and connections shall be in accordance with all National and local codes having jurisdiction.
3. Remove the two screws holding the grille in place & set grille aside retaining the screws.
4. Removing the two screws holding the cover in place on each side of the heater will allow you access to the wiring compartment.
5. A knockout of 1/2 inch conduit size (7/8 inch / 2.2cm) is provided in the back and side of the heater for power to enter. Provide proper conduit connectors for your flexible connections.
6. Attach ground to the green wire attached to wall case with a wire nut.
7. Assemble all covers on electrical and apply power. Test unit by turning thermostat up past room temperature. You will see a puff of smoke as the elements are energized and the fan turns on. This is a normal burn off of manufacturing lubricants and will dissipate in 5 minutes.
8. Heater will continue to run until the room temperature you set is reached and then turn itself off until the temperature drops again.

CAUTION - High temperature. Risk of fire, keep electrical cords, drapery, furnishings, and other combustibles at least 3 feet (0.9 m) from the front of the heater as well as away from the side and rear. To reduce the risk of fire, do not store or use gasoline or other flammable vapors and liquids in the vicinity of the heater.

Wiring Diagram

Figure 5



SAVE THESE INSTRUCTIONS

OPERATING INSTRUCTIONS



This heater is equipped with a thermal overload called Smart Limit Protection. It disconnects elements and motor in the event normal operating temperatures are exceeded. If the thermal overload trips due to abnormal operating temperatures, the thermal overload will 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 10 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.

General information and Guidelines:

This heater must be properly installed before it is used. DO NOT tamper with or change the operating of this heater. All service should be preformed by a authorized service representative. Only replace components with King approved replacement parts.



WARNING

Clean Heater annually. Turn off and wait for heater to cool before removing grill. Use only a soft brush or vacuum on blow to clean heater. Re-attach grill before re-applying power.

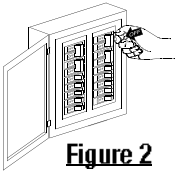
Operation:

1. This heater must be properly installed in accordance with the National Electrical Codes (NEC) & local electrical codes before it is used.
2. After the electric heater has been completely installed, all thermostats should be turned to LOW or NO HEAT. Turn ON breakers, wait 3 to 5 minutes and check to see that the heaters are not operating. If operating, disconnect power and check for improper wiring. If none are operating then turn thermostats to highest position and wait 3 to 5 minutes. Check to see that all heaters are operating. Should any not be operating, disconnect power and check wiring.
3. Allow entire system to operate steadily for 1/2 hour. This should remove oily residue from manufacturing. (Some smoking may occur).
4. Select the setting for comfort on all thermostats.
5. A safety limit control is provided to turn off the heater automatically if it is blocked or otherwise overheats due to an abnormal condition. DO NOT bypass or remove this safety device from the electrical circuit-see Warning Figure 3 on page 2. During normal use, this safety control should not operate. If you find that this control is operating, make sure the heater is not being blocked. If it continues to cycle the heater off, disconnect power to heater and have it checked and repaired by a qualified electrician.

Troubleshooting Table

SYMPTOM	PROBLEM	SOLUTION
Breaker Trips	<ol style="list-style-type: none"> 1. Short Circuit 2. Overloaded Circuit 3. Improper Voltage 	<ol style="list-style-type: none"> 1. Find source of short. Trace heater circuit and verify the heater is wire properly. 2. Reduce wattage in circuit. Refer to circuit sizing table for maximum wattage. 3. Verify the heater voltage matches the supply voltage.
Heater not working	<ol style="list-style-type: none"> 1. No Power 2. Loose Connections 3. Defective Limit 	<ol style="list-style-type: none"> 1. Turn Breaker ON, turn thermostat ON, check that the breaker is position properly on panel bus-bar. A 2-Pole breaker must be connected to both bus-bars (A&B phase) to produce 240V power. 2. Tighten wire connections. 3. By-pass the limit to test. If heater works, replace the limit.
Heater Smokes	<ol style="list-style-type: none"> 1. Oil on Element 2. Needs Cleaning 	<ol style="list-style-type: none"> 1. It is normal for the element to burn off some light finishing oil used in the manufacturing process when first energized. Open windows and allow room to vent until it stops, usually within a few minutes. 2. Remove any dust or dirt accumulations.
Room Temperature does not match thermostat setting	<ol style="list-style-type: none"> 1. Thermostat affected by another heat source. 2. Improper calibration 	<ol style="list-style-type: none"> 3. Sunlight or other heat sources can affect the thermostat. Move the thermostat to another location or remove the heat source. 2. Remove cover and adjust calibration screw.
Room Temperature swings from too hot to too cold	<ol style="list-style-type: none"> 1. Defective or low quality thermostat 	<ol style="list-style-type: none"> 2. Replace with a better quality thermostat. Anticipated thermostats are fairly accurate; an electronic thermostat is best.

Maintenance & Cleaning



Basic maintenance is listed below. All other servicing should be performed by qualified service personnel. Your heater will give you years of service and comfort with only minimum care. To assure efficient operation clean the unit via the simple instructions below. Cleaning should be performed annually.

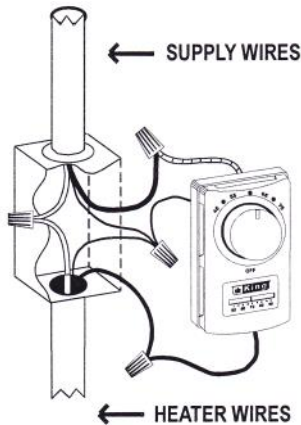
⚠ DANGER: Turn the electrical power OFF at the electrical panel board (circuit breaker or fuse box) and lock or tag this panel board door to prevent someone from turning on power while you are working on this heater. Failure to do so could result in serious electrical shock, burns, or possible death.





1. Before removing grill, turn the electrical power OFF and elements to cool. Circuit breakers are often not marked correctly and turning the wrong breaker off could mean electricity is flowing to the heater, even if the heater does not appear to be working. If you are uncomfortable working with electrical appliances, unable to follow these guidelines, or do not have the necessary equipment, consult a qualified electrician. Once you verify the power is off completely and element is cool, proceed to the next step.
2. Remove screws and take off grill. Wash grille with hot soapy water and dry immediately
3. Using a hair dryer or vacuum on blow cycle, blow debris back through the element. Do not touch element. Vacuum or use a softbrush and remove loose debris without touching the elements. The fan motor does not require lubrication.
4. Re-attach grill and secure with screws.
5. Turn thermostat to desired setting.
6. Turn power back ON at the electrical panel board.

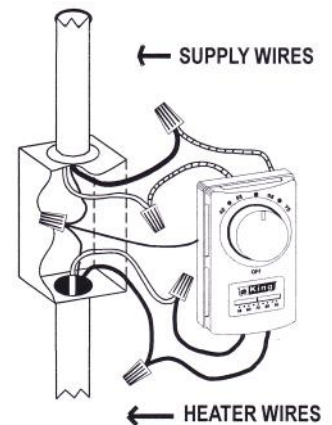
⚠ WARNING: All other servicing should be performed by an authorized service personnel.

Remote Wall Thermostat

Figure 6



WIRE COLOR CHART	
	BLACK WIRE
	RED WIRE
	BARE GROUNDWIRE
	WHITE WIRE



Connection Diagram for Wall Mounted Single Pole Thermostat

1. Red thermostat wire to black power supply wire.
2. Black thermostat wire to black heater wire.
3. White power supply wire to white heater wire.
4. Connect all bare ground wires together.

Connection Diagram for Wall Mounted Double Pole Thermostat

1. Connect the two red thermostat wires to the black and white power supply wires.
2. Connect the two black thermostat wires to the black and white heater wires. Connect all the bare ground wires together.

Warranty Information

King Electrical Manufacturing Company will repair or replace, without charge to the original owner, any KT Series Toe Space heater found to be defective or malfunctioning within 1 year of installation. If the product becomes defective, contact King at 206-762-0400 for instructions on how to replace heater. Do not return the heater to the store. All returned goods require a Returned Goods Authorization. This warranty requires the owner or his agent install the heater in accordance with these instruction, the National Electrical Code and any other applicable heating or electrical codes. It further requires that reasonable and necessary maintenance be performed on the unit. The company is not liable for abuse or misuse of product. King Electrical Manufacturing Company is not responsible for replacement of discolored flooring material due to hot air from this heater. Suitable installation and placement selection for this heater is the responsibility of the installer and the end user.