SAVE THESE INSTRUCTIONS

# INSTALLATION AND MAINTENANCE

## KT-MW Series Toe Space Heater

Figure 1

Covers all KT-MW models

**DANGER**

**ELECTRIC SHOCK OR FIRE HAZARD**

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

## ⚠ 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. **Save these instructions for future use**.

## 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.

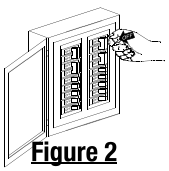


**Figure 2**

8. ⚠ CAUTION - High temperature. Risk of fire, keep electrical cords, drapery, furnishings, & 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 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.

MADE IN USA

SAVE THESE INSTRUCTIONS

# KT & MKT INSTALLATION INSTRUCTIONS

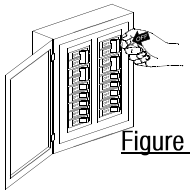


Figure 2

**CAUTION!**
**Turn OFF all electrical power to install heater**

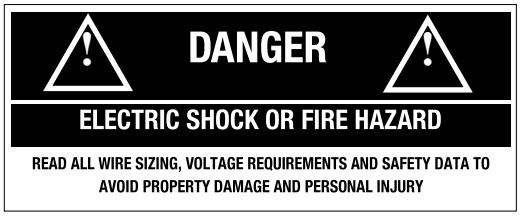
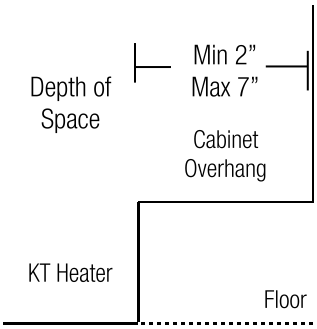



Figure 3

**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. 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 (60ºC). 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
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 intended for a toe space installation. Other grilles are available for a flush surface mount installation that will trim out the wall can.

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.

Rating Label Location


Figure 4

**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 |

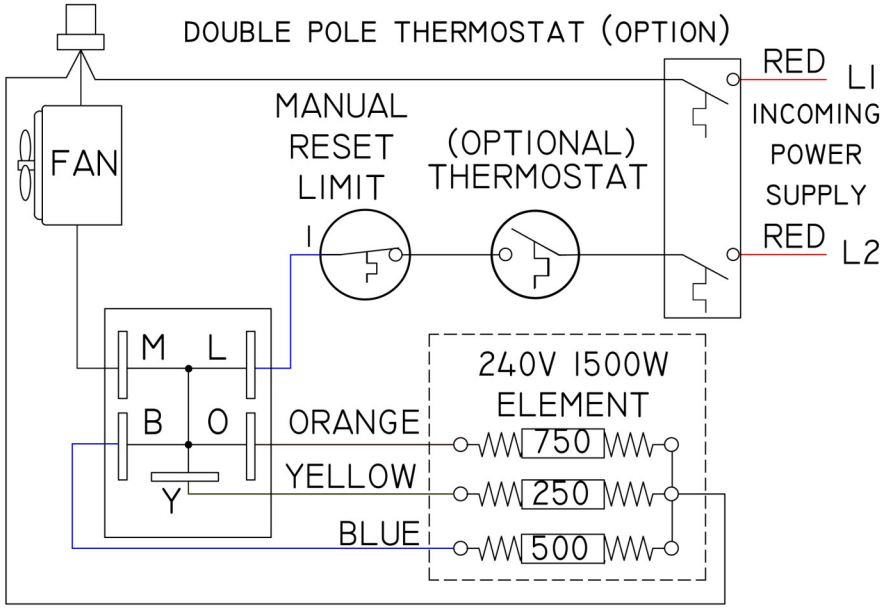
**WIRING: Branch Circuit Connection**

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 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.

# 120V or 240V Wiring Diagram– 1500W Max

This heater is factory wired to 1500 Watts at 120V or 240 Volts. To reduce wattage unplug (disconnect) an insulated push on terminal per the color coding chart below. Choose total wattage of 250W, 500W, 750W, 1000W, 1250W or 1500W option.

| | | |
|---|---|---|
| **A** | **Yellow** | Disconnects the 250 Watt element |
| **B** | **Blue** | Disconnects the 500 Watt element |
| **C** | **Orange** | Disconnects the 750 Watt element |
| **D** | **Black** | DO NOT DISCONNECT (Common) |




# 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.

## ⚠ 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.

# MAINTENANCE AND CLEANING

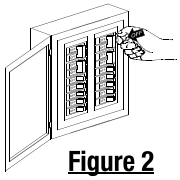


Figure 2

Basic maintenance is listed below. 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 preformed annually.

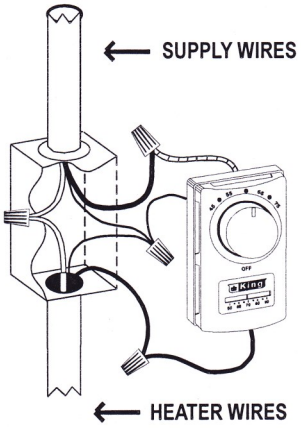
**DANGER: Turn the electrical power OFF at the electrical panel board (circuit breaker or fuse box) and lock or tag this panel board door to prevent someone from turning on power while you are working on this heater. Failure to do so could result in serious electrical shock, burns, or possible death.**

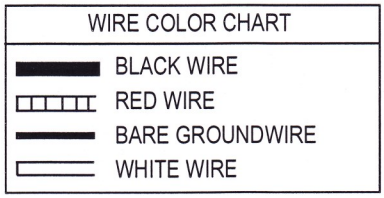
1. Remove screws and take off grill. Wash grille with hot soapy water and dry immediately
2. Using a hair dryer or vacuum on blow cycle, blow debris back through the element. Do not touch element. Vacuum or use a soft brush and remove lose debris without touching the elements. The fan motor does not require lubrication.
3. Re-attach grill and secure with screws.
4. Turn thermostat to desired setting.
5. Turn power back ON at the electrical panel board.

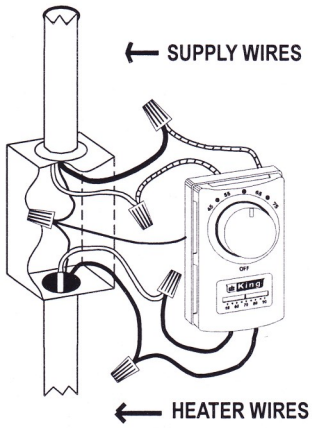
**WARNING**: All other servicing should be performed by an authorized service personnel.

# REMOTE WALL THERMOSTAT

**Figure 6**




**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.

# TROUBLESHOOTING

| SYMPTOM | PROBLEM | SOLUTION |
|---|---|---|
| Breaker Trips | 1. Short Circuit<br>2. Overloaded Circuit<br>3. Improper Voltage | 1. Find source of short. Trace heater circuit and verify the heater is wire properly.<br>2. Reduce wattage in circuit. Refer to circuit sizing table for maximum wattage.<br>3. Verify the heater voltage matches the supply voltage. |
| Heater not working | 1. No Power<br>2. Loose Connections<br>3. Defective Limit | 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.<br>2. Tighten wire connections.<br>3. By-pass the limit to test. If heater works, replace the limit. |
| Heater Smokes | 1. Oil on Element<br>2. Needs Cleaning | 1. It is normal for the element to burn off some light finishing oil used in the manufacturing process when first energized. Allow room to vent until it stops, usually within a few minutes.<br>2. Remove any dust or dirt accumulations. |
| Room Temperature does not match thermostat setting | 1. Thermostat affected by another heat source.<br>2. Improper calibration | 3. Sunlight or other heat sources can affect the thermostat. Move the thermostat to another location or remove the heat source.<br>2. Remove cover and adjust calibration screw. |
| Temperature swings from too hot to too cold | 1. Defective or low quality thermostat | 2. Replace with a better quality thermostat. Anticipated thermostats are fairly accurate; an electronic thermostat is best. |