



Document 16-416



ThermaZone[®]

COMFORT HEATERS

BBC Industries, Inc.

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IMPORTANT INSTRUCTIONS:

Read all these instructions before installing or using this heater.

BBC Industries, Inc. is interested in the safe operation of its equipment. All wiring to this equipment must be connected to the electrical source in strict accordance with *National Electrical Code (N. E. C.)* and local codes having jurisdiction.

Before installing this equipment, the user must be aware of the safety requirements as specified by the *National Board of Fire Underwriters*.

Do not "Box" in or further insulate the back of the section which might cause a heat buildup in the wiring raceway. The back surface of the raceway should be at least 4 inches from combustible material.



CAUTION: Puncture of the element face may result in a shock hazard.

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, etc. and curtains at least 3 feet from the front of the heater and keep them away from the sides and rear.

Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.

Do not operate any heater after it malfunctions. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.

To disconnect heater, turn off power to heater circuit at main disconnect panel.

Do not insert or allow foreign objects to enter any ventilation opening as this may cause an electric shock or fire, or damage to the heater.

A heater has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable vapors or liquids are used or stored.

Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.

SAVE THESE INSTRUCTIONS

INSTALLATION:

All wiring to this equipment must be connected to the electrical source in strict accordance with *National Electrical Code (N. E. C.)* and local codes having jurisdiction.

Before installing this equipment, the user must be aware of the safety requirements as specified by the *National Board of Fire Underwriters*.



Do not install the section closer than:

- 4 inches to a horizontal surface
- 12 inches to a vertical surface
- 36 inches to another heater
- 6 feet from the floor

For wall mounting (above 6 feet from floor), outlet box and wiring raceway should always face adjacent vertical wall mounting surface.

For angle positioning, the heater should not be directed toward any vertical surface closer than 6 feet.

IMPORTANT: When using the mounting brackets, a minimum of **4 inches** should be left between the corners of the heating section and any horizontal or vertical surface. See drawing below.

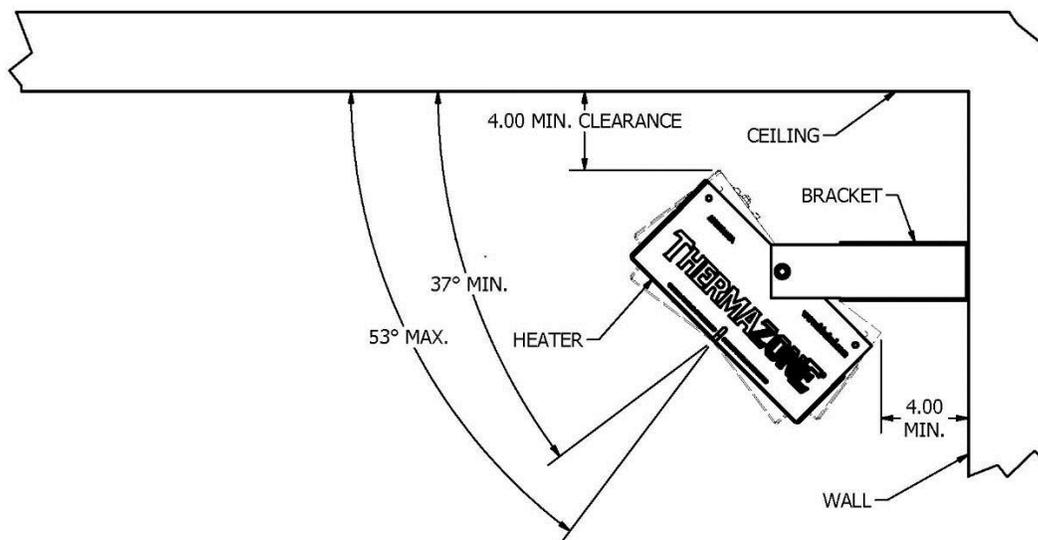


Fig. 1 – WALL MOUNTING

Once the heater is mounted to the wall, position the heater to the desired angle between 37° and 53° downward from the horizontal, limited by the slot length. Tighten the two bolts to secure the heater.



WARNING! Risk of fire. Do not position any heater at an angle not allowed by the slotted hole (37°-53°).

Do not install the section closer than:

FOR CEILING MOUNTING:

- 36 inches to a vertical surface for vertical mounting
- 4 inches to a vertical surface for angled ceiling mounting
- 4 inches to a horizontal surface for wall mounting
- 12 inches to an adjacent vertical surface
- 36 inches to another heater
- 6 feet from the floor

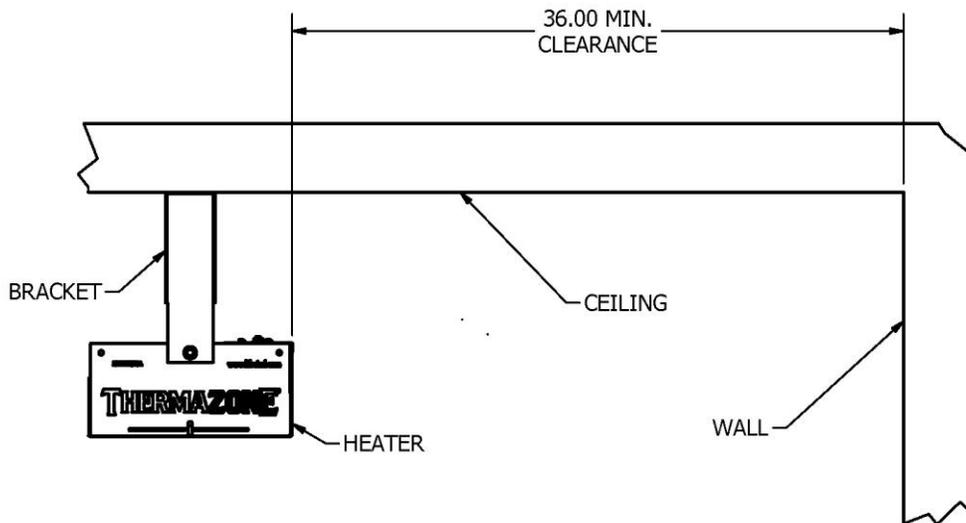


Fig. 2 – CEILING MOUNTING VERTICAL

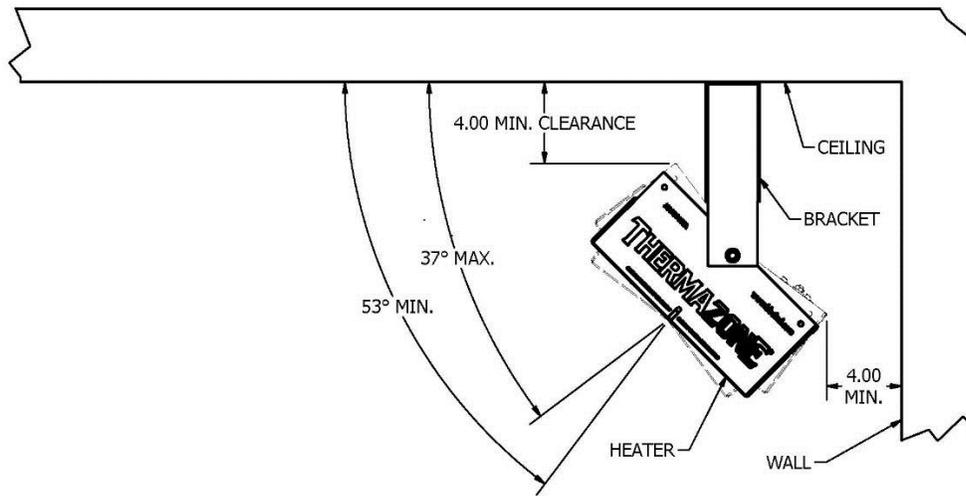


Fig. 3 – CEILING MOUNTING ANGLED AWAY FROM VERTICAL SURFACE

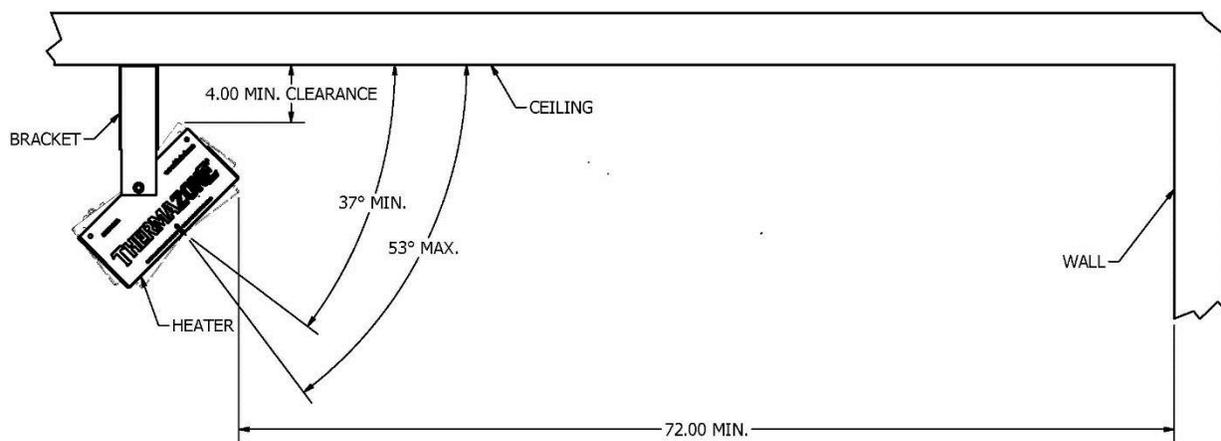


Fig. 4 – CEILING MOUNTING ANGLED TOWARDS VERTICAL SURFACE

PROTECTED AREA MOUNTING:

A *Protected Area* is defined as “Located in an area that is partially protected from the effects of weathering.” Typical *protected areas* would be the underside of a pavilion with a roof, garage port, and the like.

FOR PROTECTED AREA WALL MOUNTING:

Adhere to all requirement for mounting listed above. Additionally:



Do not install the section closer than 18 inches to edge of overhang of roof and no more than 7.25 inches (to top of bracket) below the edge.

The heater needs to be installed in a position such that it is protected from rain, snow, and similar outdoor wet areas.

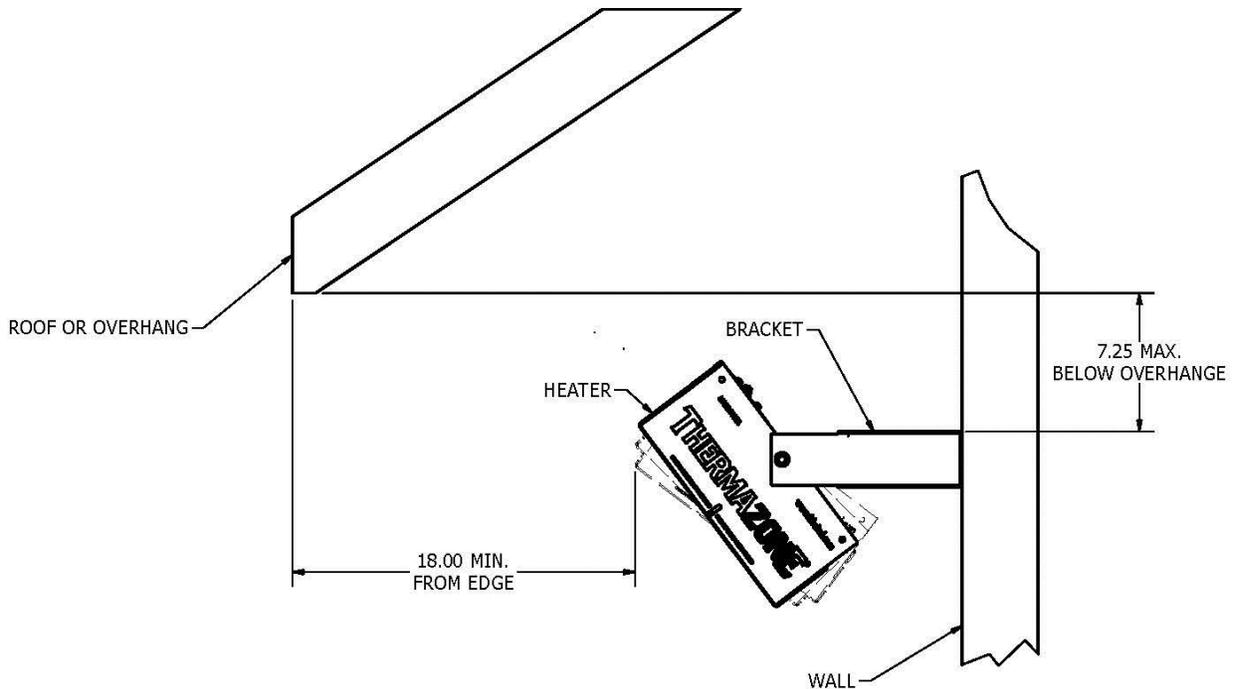


Fig. 5 – PROTECTED AREA MOUNTING

FOR PROTECTED AREA CEILING MOUNTING:

Adhere to all requirement for Ceiling Mounting listed above. Additionally:



Do not install the section closer than 18 inches to edge of overhang of roof.

The heater needs to be installed in a position such that it is protected from rain, snow, and similar outdoor wet areas.

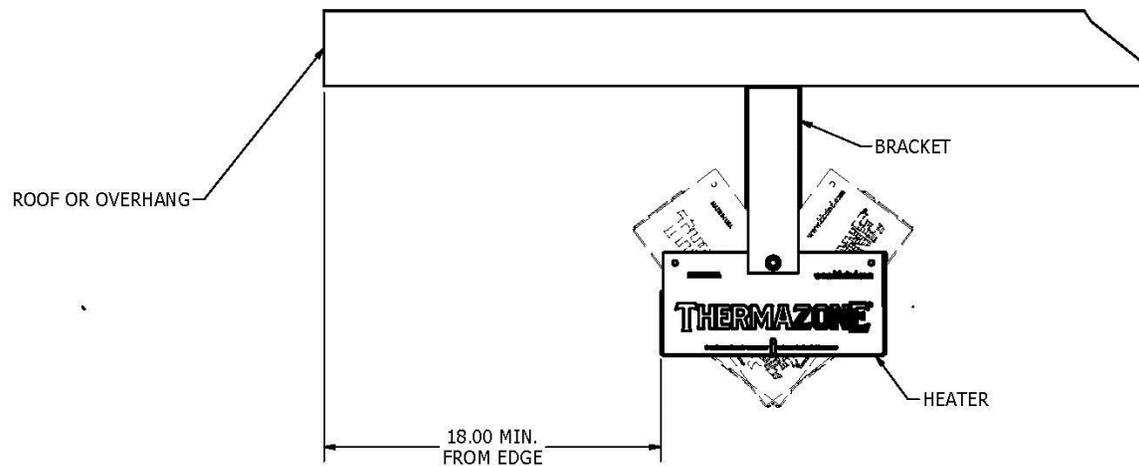


Fig. – PROTECTED AREA CEILING MOUNTING

For supply connections use the wire size (or larger) as directed by the chart below. All wires must be suitable for at least 75°C (167°F).

SINGLE PHASE SECTIONS				
MODEL NUMBER	120 VOLT AWG. WIRE SIZE	208 / 240 VOLT AWG. WIRE SIZE	277 VOLT AWG. WIRE SIZE	480 VOLT AWG. WIRE SIZE
11-450U 11-600U 11-800U 11-1000U	14	-	-	-
11-1200U 11-1500U	12	-	-	-
11-1500U-240	-	14		
21-900U 21-1200U	14	-	-	-
21-1500U 21-1600U	12	-	-	-
21-2000U 21-2400U	10	-	-	-
21-3000U	8	-	-	-
21-900U-208/240V 21-1200U-208/240V 21-1600U-208/240V 21-2000U-208/240V 21-2400U-208/240V	-	14	-	-
21-3000U-208/240V	-	12	-	-
41-1800U 41-2000U 41-2400U	-	14	-	-
41-3200U	-	12	-	-
41-4000U 41-4800U	-	10	-	-
41-6000U	-	8	-	-
41-1800U-DV 41-2000U-DV 41-2400U-DV	-	14	-	14
41-3200U-DV	-	12	-	14
41-4000U-DV 41-4800U-DV	-	10	-	14
41-6000U-DV	-	8	-	12
41-4000U-277V	-	-	12	-
41-4800U-277V 41-6000U-277V	-	-	10	-

3-PHASE SECTIONS				
MODEL NUMBER	120 VOLT AWG. WIRE SIZE	208 / 240 VOLT AWG. WIRE SIZE	277 VOLT AWG. WIRE SIZE	480 VOLT AWG. WIRE SIZE
23-2000U-240V 23-2400U-240V 23-3000U-240V	-	14	-	-
43-4000U-240V	-	14	-	-
43-4800U-240V 43-6000U-240V	-	12	-	-
43-4000U-480V 43-4800U-480V 43-6000U-480V	-	-	-	14

To reduce the risk of fire, do not store or use gasoline other flammable vapors and liquids in the vicinity of the heater.



CAUTION – High temperature, risk of fire, keep electrical cords, drapery, furnishings, and other combustibles at least 6 feet (0.9 m) from the front of the heater and away from the side and rear.

WIRING DIAGRAMS

FIG. 2 - 12" x 12" SECTIONS
120 / 208 / 240 VOLT - SINGLE PHASE

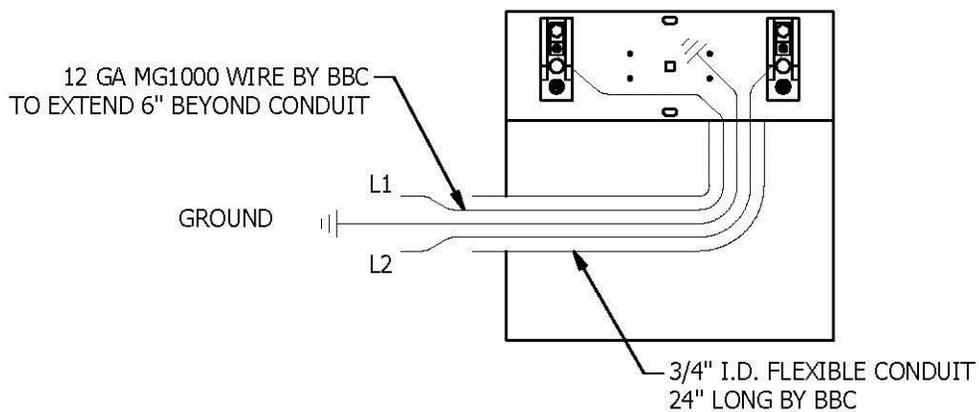
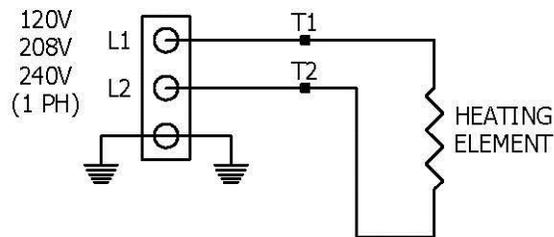
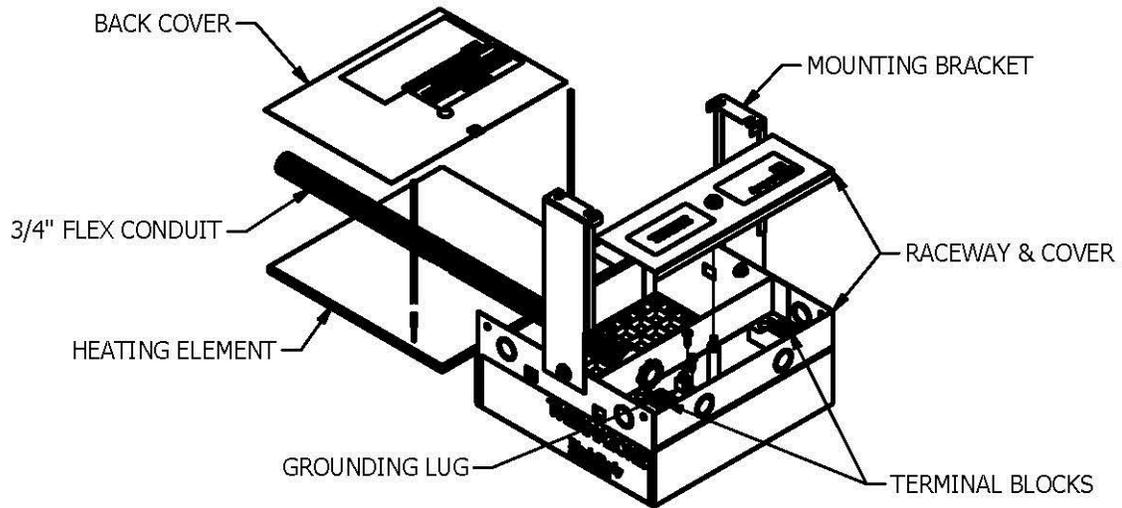


FIG. 3 - 24" x 12" SECTIONS (DUAL ELEMENT)
120 VOLT - SINGLE PHASE

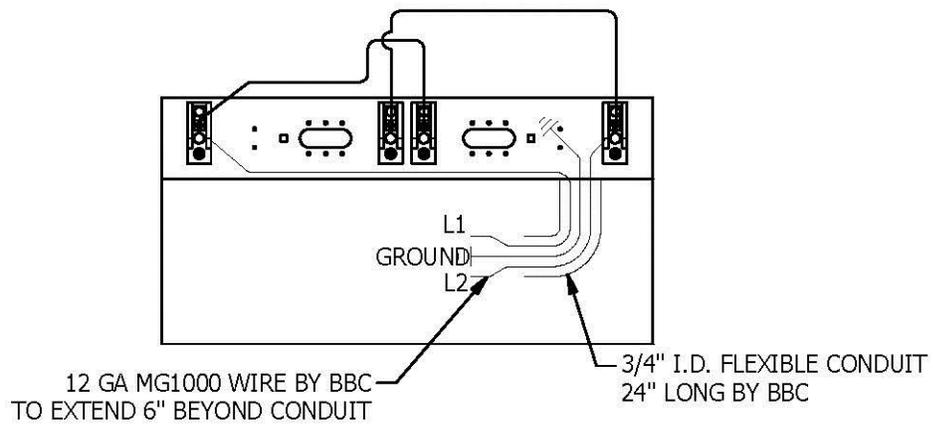
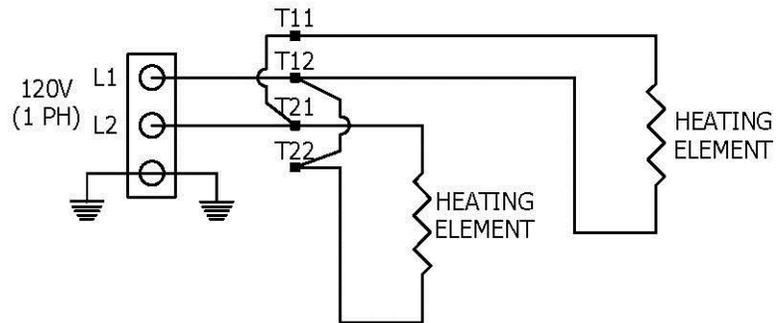
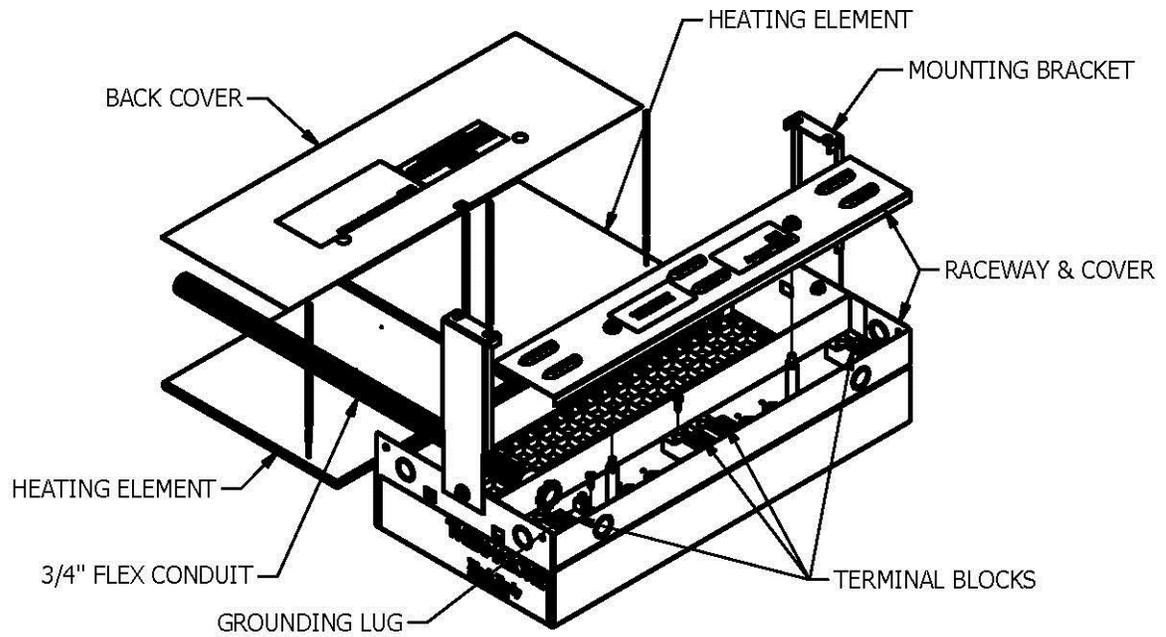


FIG. 4 - 24" x 12" SECTIONS (SINGLE ELEMENT)
120 / 208 / 240 VOLT - SINGLE PHASE

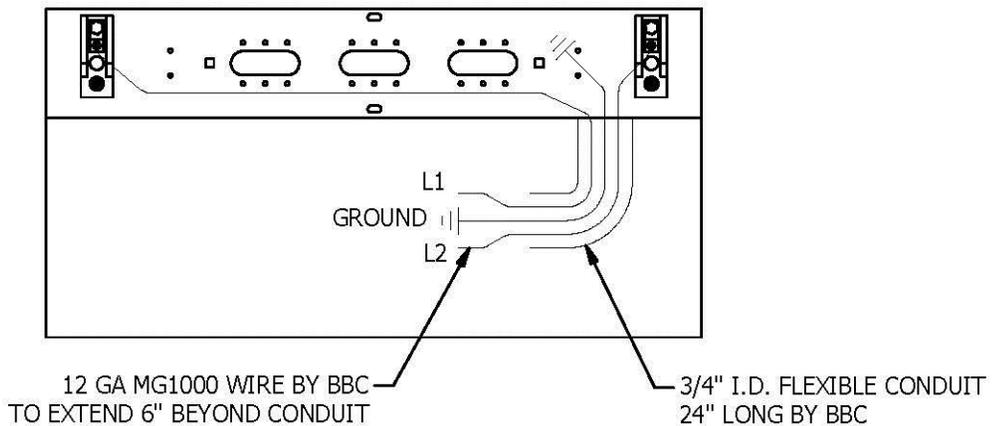
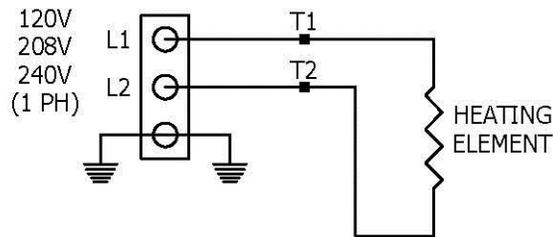
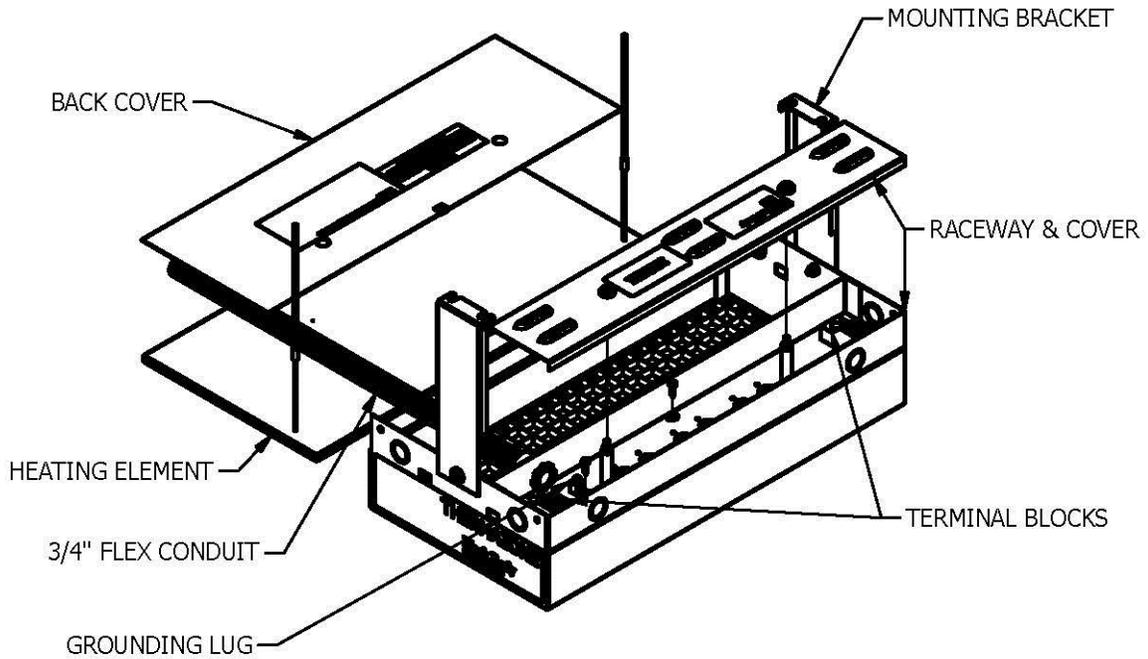
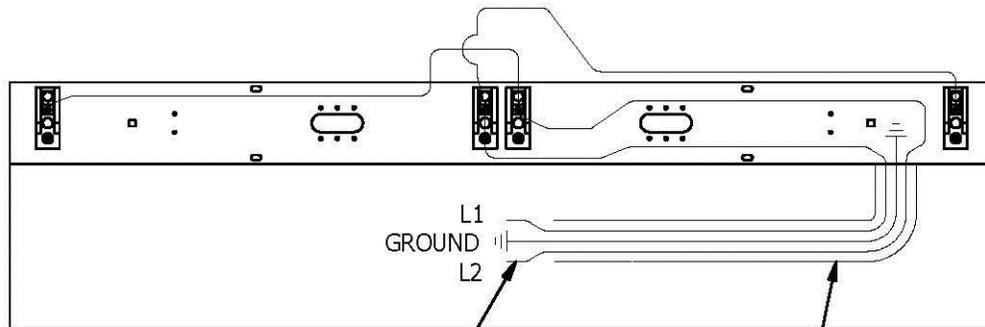
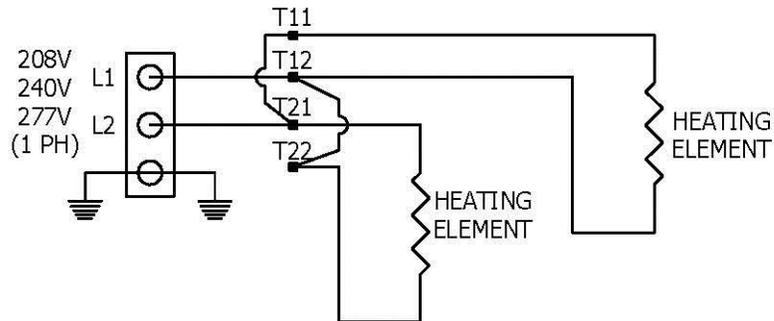
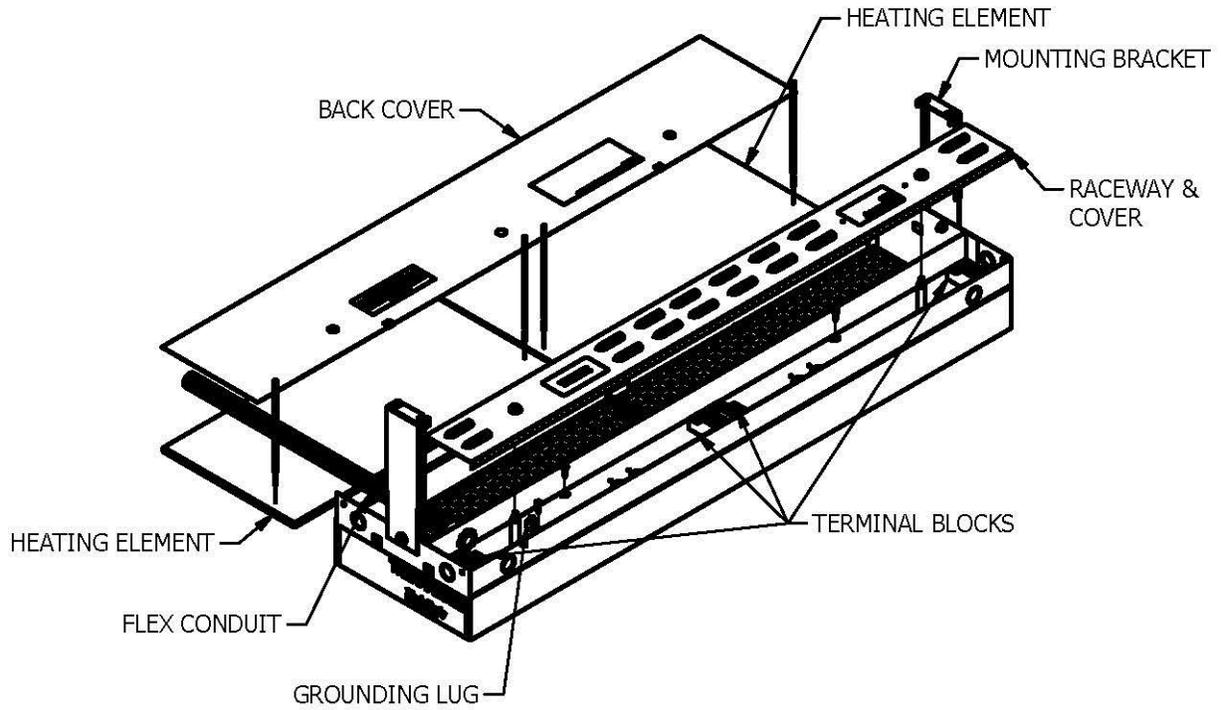


FIG. 5 - 48" x 12" SECTIONS
 208 / 240 / 277 VOLT - SINGLE PHASE



12 GA MG1000 WIRE BY BBC
 TO EXTEND 6" BEYOND CONDUIT

3/4" I.D. FLEXIBLE CONDUIT
 24" LONG BY BBC

FIG. 6 - 48" x 12" SECTIONS
 277 / DV (480 VOLT WIRING) - SINGLE PHASE

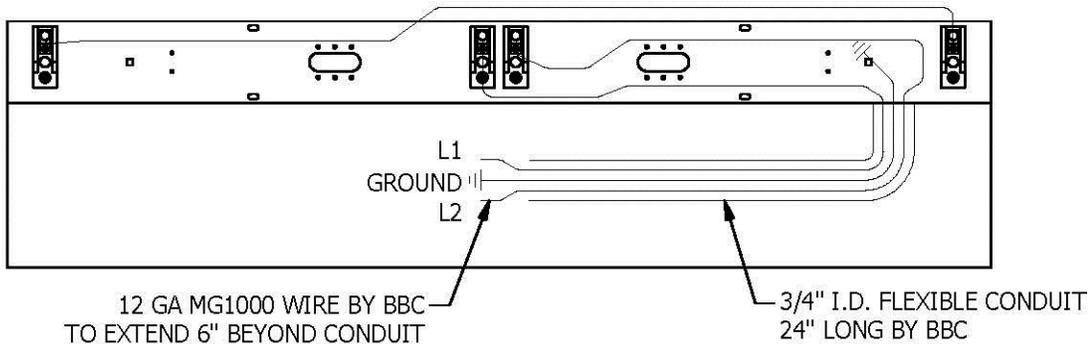
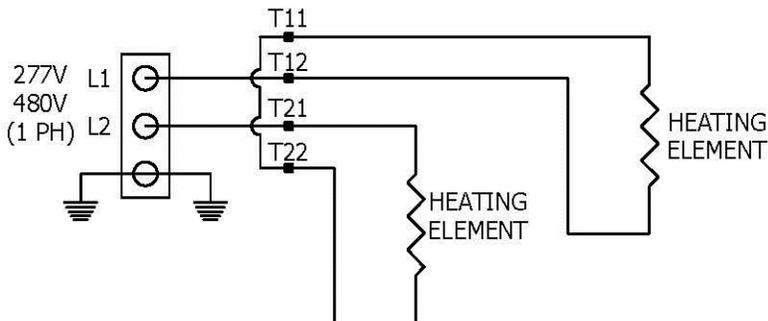
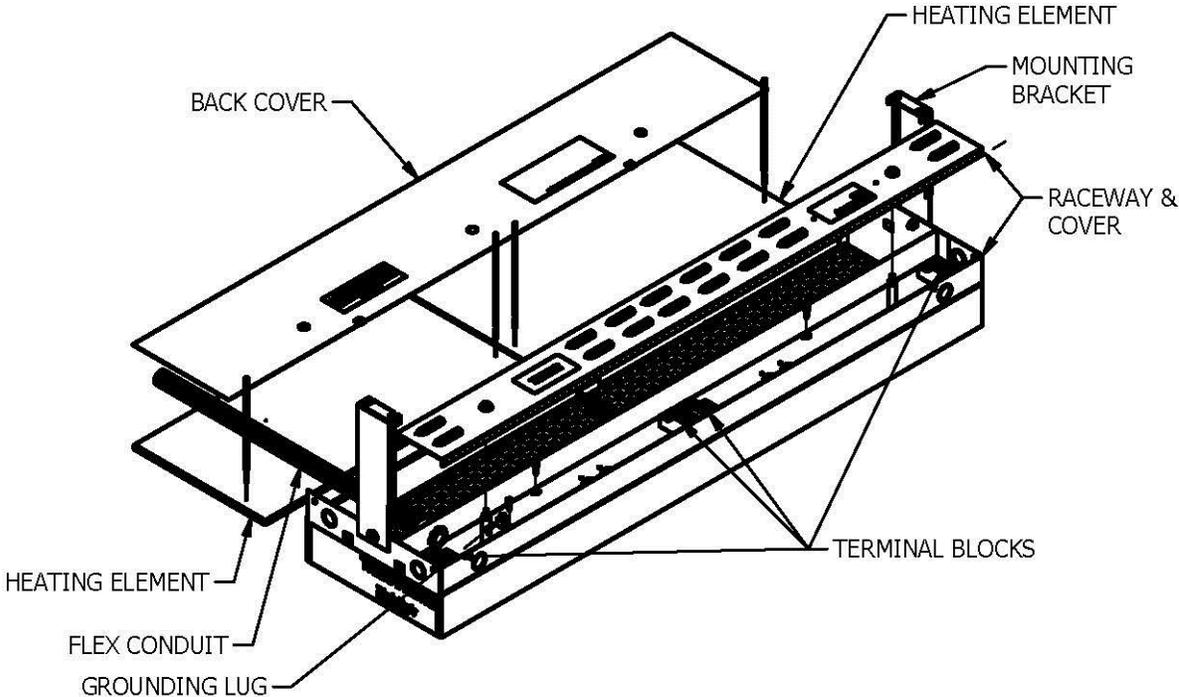


FIG. 7 - 24" x 12" SECTIONS
240 VOLTS - THREE PHASE

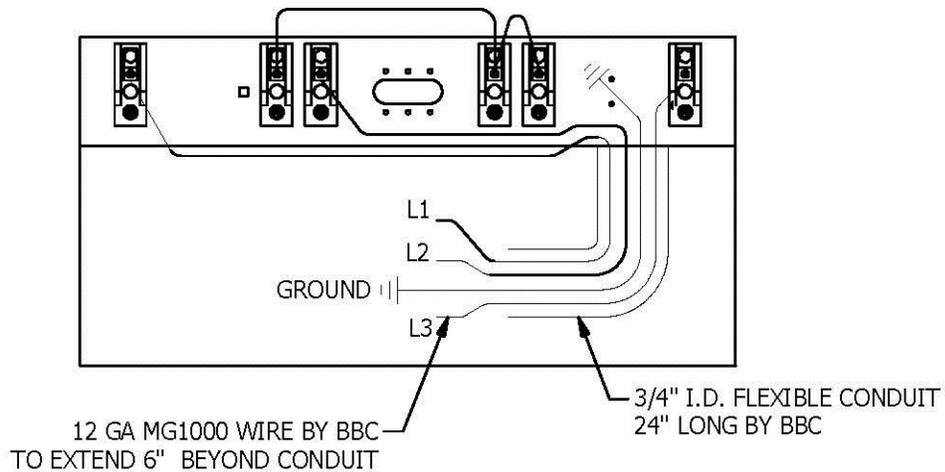
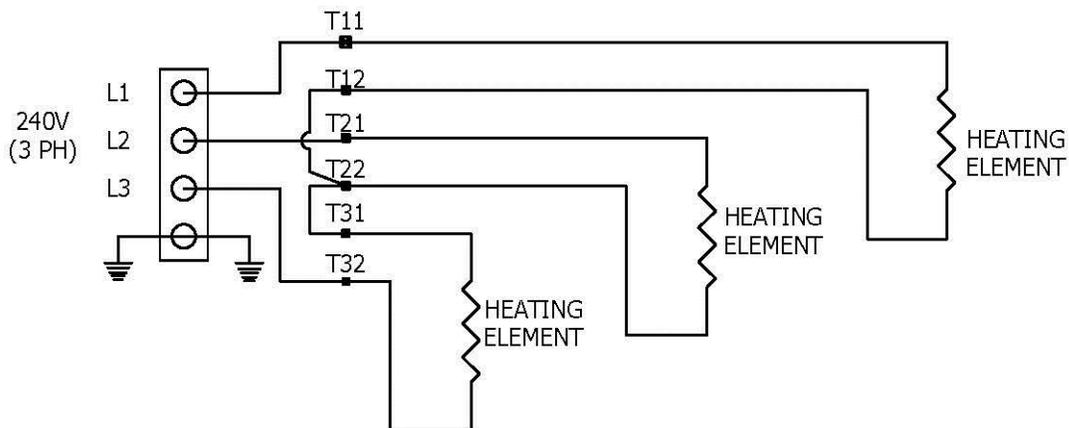
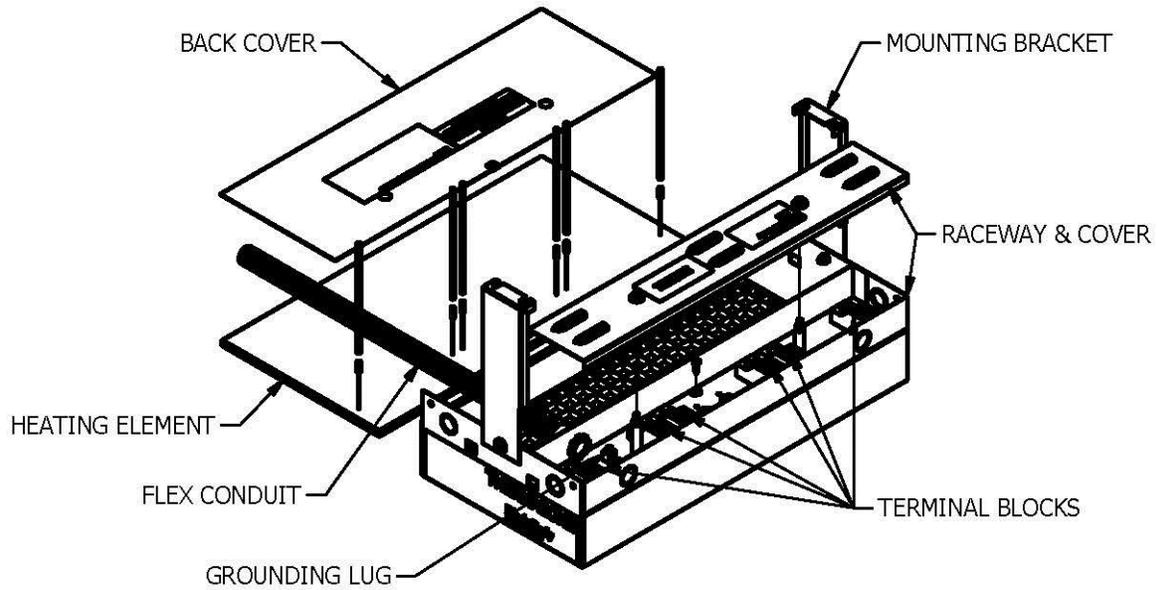
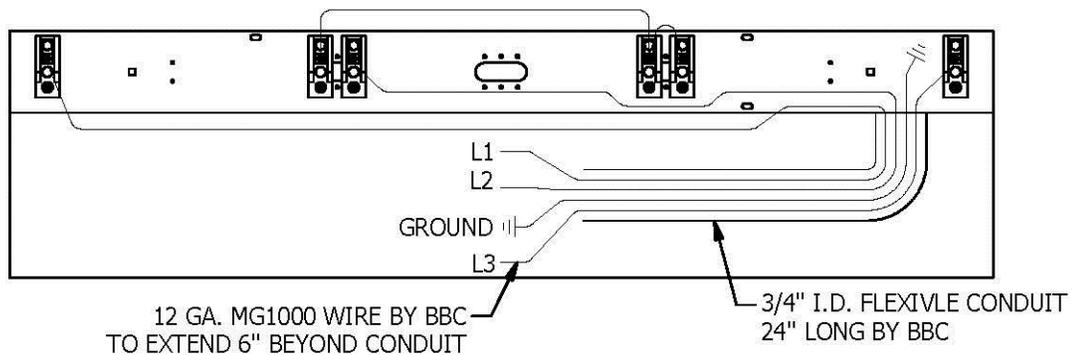
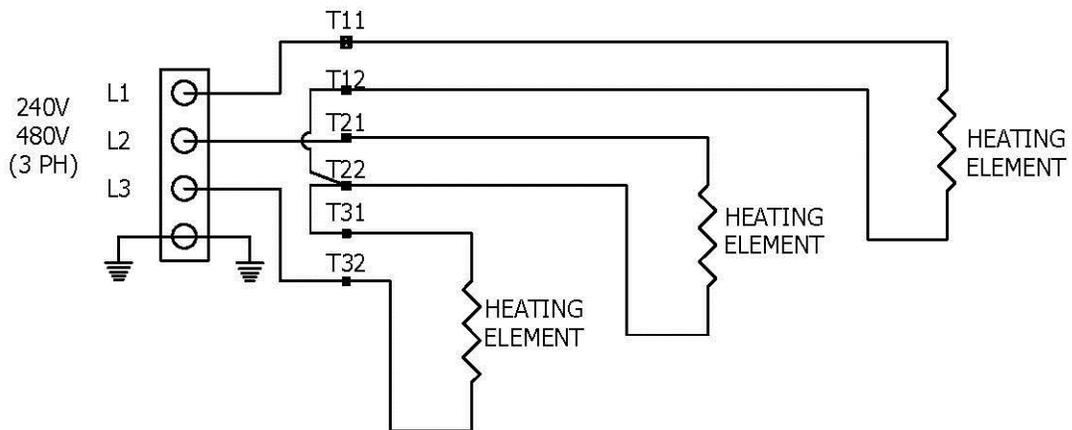
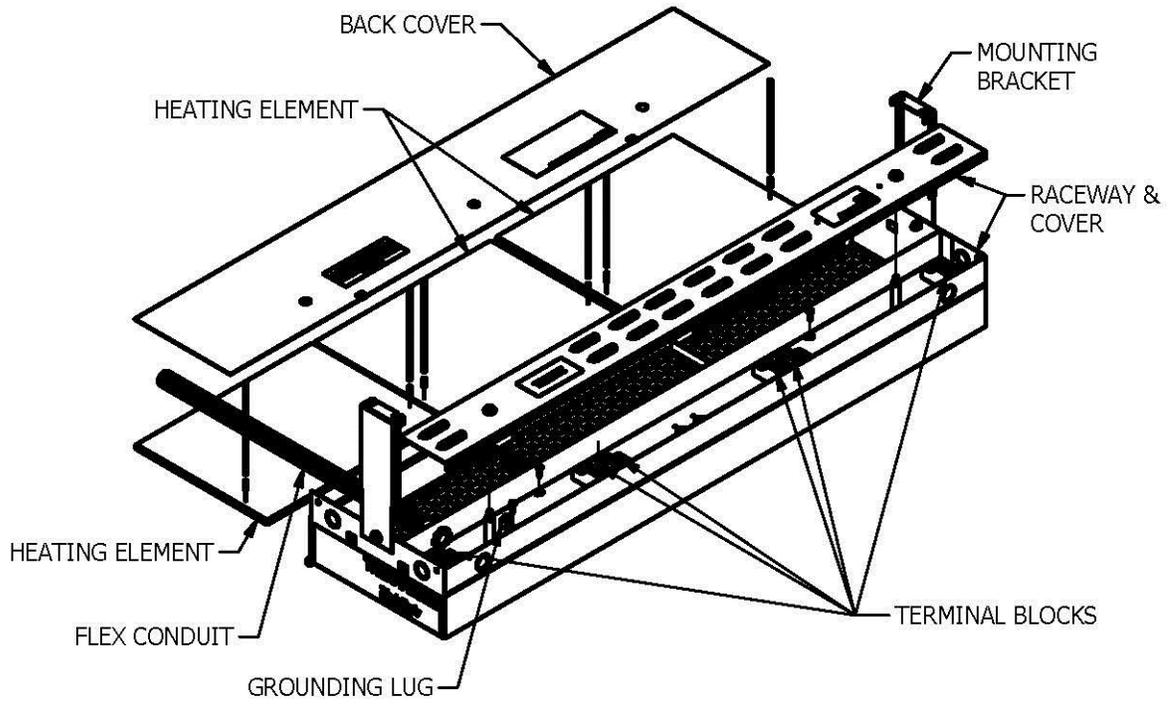


FIG. 8 - 48" x 12" SECTIONS 240 / 480 VOLTS - THREE PHASE



OPERATION:



**IMPORTANT
NOTICE**

Heaters must be properly installed before use.

Do not operate heaters without all covers in place.

No user maintenance is needed for heaters. Any other servicing should be performed by authorized service personnel.

During production, the heating element of this unit may have absorbed moisture. The first time your heater is turned ON, it may smoke/steam while the moisture is released. This smoke/steam is NORMAL and not harmful. It will stop after 10-15 minutes of operation and not occur after first use.

WARRANTY

BBC Industries, Inc. warrants their products to be free from defects in workmanship at the time of shipment.

The obligation under the above warranty shall be limited to the repair or replacement of any part or parts manufactured by BBC Industries, Inc. without charge F.O.B. factory that may prove defective within 12 months from the date of shipment, which are returned to BBC Industries, Inc.

The above warranties are the only warranties made with respect to the equipment. There is no implied warranty of merchantability or of fitness.

EXCLUSIONS:

There is no warranty on parts not manufactured by BBC Industries, Inc., other than the respective manufacturer's warranty, if any.

The warranty against defects shall not extend to damage caused from any of the following:

- Transport by carrier
- Corrosion
- Operation or use in a manner inconsistent with specifications and/or operating instructions
- Ordinary wear, accident, improper installation, or maintenance
- Alterations made to equipment in any way

BBC Industries, Inc. shall not be liable for any losses or damages, including but not limited to incidental or consequential damages, suffered or incurred because the equipment proves to be defective either upon installation or during its operation or use.

Shipment of defective parts to BBC Industries, Inc. and the return shipment of any repaired or replacement parts from BBC Industries, Inc. shall be the purchaser's/user's expense.