



## Insta-Therm 16000 Series

### Service, Installation and Operation Manual

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Please read this manual completely before attempting to install or operate this equipment!

Notify carrier of damage!

Inspect all components immediately.



**Important Information  
Read Before Use  
Please Save These Instructions!**

December 2013



## Important Warning And Safety Information



WARNING

Read This Manual Thoroughly Before Operating, Installing, Or Performing Maintenance On The Equipment.



WARNING

Failure To Follow Instructions In This Manual Can Cause Property Damage, Injury Or Death.



WARNING

Do Not Store Or Use Gasoline Or Other Flammable Vapors Or Liquids In The Vicinity Of This Or Any Other Appliance.



WARNING

Unless All Cover And Access Panels Are In Place And Properly Secured, Do Not Operate This Equipment.



WARNING

This Appliance Is Not Intended For Use By Persons Who Lack Experience Or Knowledge, Unless They Have Been Given Supervision Or Instruction Concerning Use Of The Appliance By A Person Responsible For Their Safety.



WARNING

This Appliance Is Not To Be Played With.



WARNING

Do Not Clean With Water Jet.



WARNING

Do Not Use Electrical Appliances Inside The Food Storage Compartment Of This Appliance.



CAUTION

Observe the following:

- Minimum clearances must be maintained from all walls and combustible materials.
- Keep the equipment area free and clear of combustible material.
- Allow adequate clearance for air openings.
- Operate equipment only on the type of electricity indicated on the specification plate.
- Unplug the unit before making any repairs.
- Retain this manual for future reference.

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## Receiving And Inspecting The Equipment

Care should be taken during unloading so the equipment is not damaged while being moved into the building.

1. Visually inspect the exterior of the package and skid or container. Any damage should be noted and reported to the delivering carrier immediately.
2. If damaged, open and inspect the contents with the carrier.
3. In the event that the exterior is not damaged, yet upon opening, there is concealed damage to the equipment notify the carrier. Notification should be made verbally as well as in written form.
4. Request an inspection by the shipping company of the damaged equipment. This should be done within 10 days from receipt of the equipment.
5. Check the lower portion of the unit to be sure legs are not bent.
6. Freight carriers can supply the necessary damage forms upon request.
7. Retain all packaging material until an inspection has been made or waived.

## Serial Number Information

Insta-Therm serial numbers are located on the data plate that also includes the model number. The data plate is located on the rear of the unit.

**Always have the serial number of your unit available when calling for parts or service.**

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## Warranty Information

Visit [http://www.mercoproducts.com/minisite/service/warranty\\_info](http://www.mercoproducts.com/minisite/service/warranty_info) to:

- Register your product for warranty.
- Verify warranty information.
- View and download a copy of your warranty.

## Regulatory Certifications

208V Models are certified by:



**Underwriters Laboratories Sanitation**



**Underwriters Laboratories (UL)  
Underwriters Laboratories of Canada (ULC)**

230V Models are certified by:



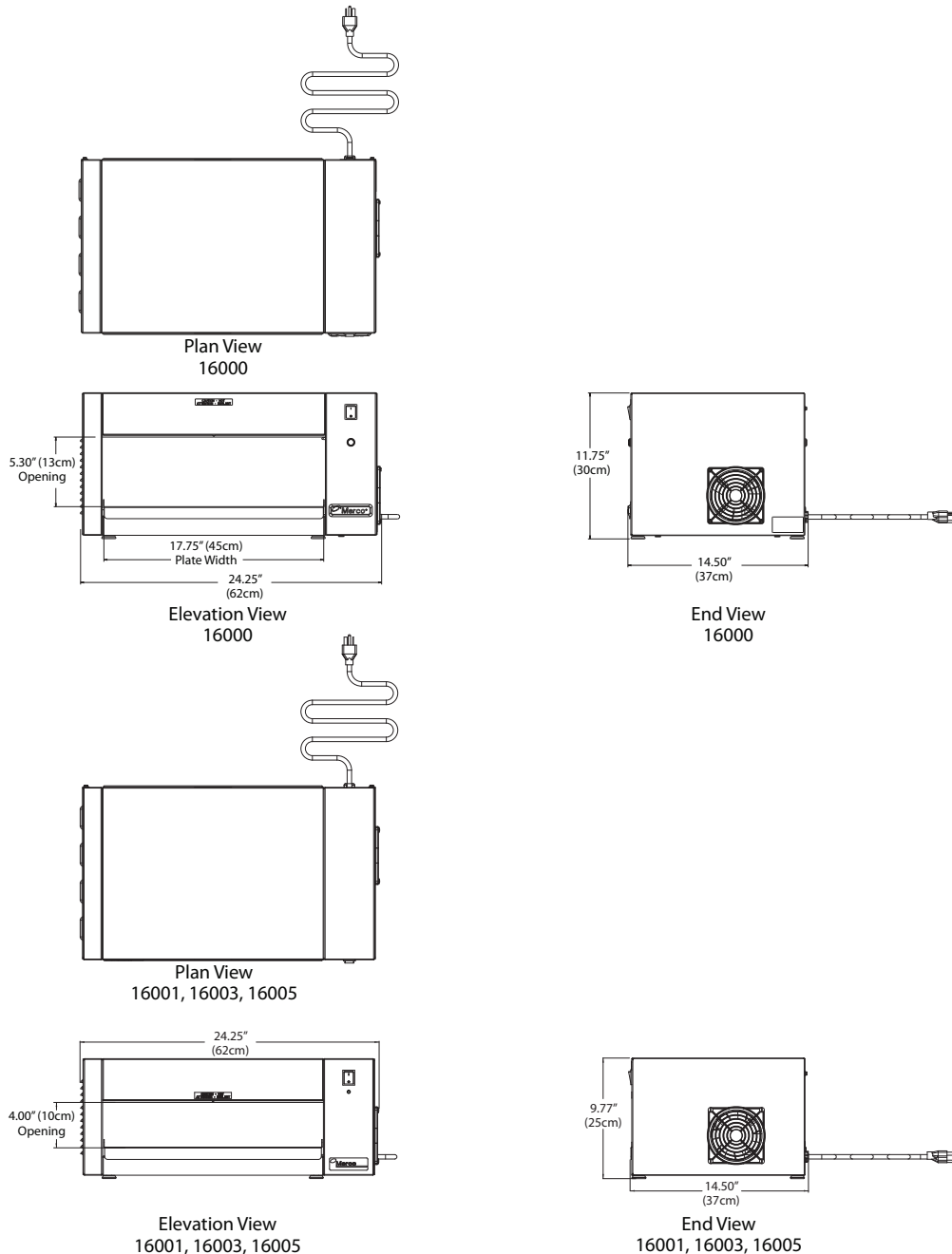
**Underwriters Laboratories Sanitation**



**European Conformity  
Technical Inspection Association**

## Specifications

Item/Sku	Model/Description	V-Hz-Ph	Amps	Watts	# Top Heating Elements	Plug Type	Ship Weight
16000	IT-18 5¼" product opening	208-60-1	15.0	3100	4	NEMA 6-20P	47lbs/21kg
16001	IT-18 energy saving mode	208-60-1	11.25	2340	3	NEMA 6-20P	47lbs/21kg
16003	IT-18 CE	230-50-1	10.0	2280	3	CEE 7/7	47lbs/21kg
16005	IT-18	208-60-1	11.25	2340	3	NEMA 6-20P	47lbs/21kg



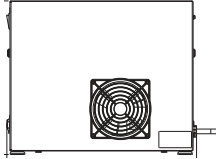
## Installation

### Site Preparation



**Keep this unit free and clear of combustible materials. Do not place this unit on a combustible surface!**

Choose a well-ventilated location. The side with the fan needs 2" of clearance. Place the unit on a non-combustible table or counter capable of supporting the weight of the unit. The power supply must be in accordance with the specifications on the data plate located on the rear of the unit. It should be installed on a dedicated service line with no other equipment on the circuit. The unit must be positioned so that the units' plug is accessible. (For CE units only, if the power cord is damaged it should only be replaced by the manufacturer or an Authorized Service Agent during the warranty period.)



### Installation

1. Insure the electrical circuit used to supply electricity to the unit has the same voltage rating as indicated on the data plate.
2. Place unit on an appropriate bench or table.
3. Plug cordset into receptacle.

## Operation

Plug unit into appropriate electrical outlet and turn unit on. Place food item in the heating chamber. The weight sensitive base will activate the heating elements and begin heating food. Watch food and remove when desired. **Note: Do Not** leave food unattended while it is in heating chamber as elements will continue to heat and could burn food items. **Use Extreme Caution When Removing Items From Heating Chamber As They Will Be Extremely Hot!** It is recommended that a heat pad or paddle be used when removing items from heating chamber.

**Do Not Place Hands Inside The Heating Chamber While Unit Is In Operation. Failure To Follow These Instructions Could Result In Serious Injury!**



## Maintenance



Allow unit to cool sufficiently to the touch before attempting any cleaning procedures.



Heater elements must not be handled with bare hands. Oil or grease residue on the quartz tube may result in premature failure of the element. Gloves or some other means of protecting the elements must be used during handling.



The following cleaning instructions must be carried out to insure the satisfactory performance of the unit. Neglecting to follow these procedures may result in reduced reliability and may void the warranty.

### Daily Cleaning

1. Upon completion of daily use, unplug the unit from its power source.
2. Use a soft cloth or sponge, dampened with warm soapy water, to wash the inside and outside of the appliance. Airflow openings should be inspected and any blockage should be removed.  
**Note: Do Not Flood The Unit With Cleaning Fluid Or Water!**



Do not allow cleaning solution or water to touch the heating elements located inside the upper portion of the heating chamber! Heating elements do not need cleaning!

3. Rinse using a cloth dampened with clean water, then dry.

### Stainless Steel Care and Cleaning

To prevent discoloration or rust on stainless steel several important steps need to be taken. First, we need to understand the properties of stainless steel. Stainless steel contains 70-80% iron, which will rust. It also contains 12-30% chromium, which forms an invisible passive film over the steel's surface, which acts as a shield against corrosion. As long as the protective layer is intact, the metal is still stainless. If the film is broken or contaminated, outside elements can begin to breakdown the steel and begin to form discoloration or rust. Proper cleaning of stainless steel requires soft cloths or plastic scouring pads.

#### NEVER USE STEEL PADS, WIRE BRUSHES OR SCRAPERS!

Cleaning solutions need to be alkaline based or non-chloride cleaners. Any cleaner containing chlorides will damage the protective film of the stainless steel. Chlorides are also commonly found in hard water, salts, and household and industrial cleaners. If cleaners containing chlorides are used be sure to rinse repeatedly and dry thoroughly. Routine cleaning of stainless steel can be done with soap and water. Extreme stains or grease should be cleaned with a non-abrasive cleaner and plastic scrub pad. Always rub with the grain of the steel. There are stainless steel cleaners available which can restore and preserve the finish of the steels protective layer. Early signs of stainless steel breakdown are small pits and cracks. If this has begun, clean thoroughly and start to apply stainless steel cleaners in attempt to restore the passivity of the steel.



Never use an acid based cleaning solution! Many food products have an acidic content, which can deteriorate the finish. Be sure to clean the stainless steel surfaces of ALL food products. Common items include, tomatoes, peppers and other vegetables.

## Label Definitions



Caution Hot Surfaces



Protective Earth Ground



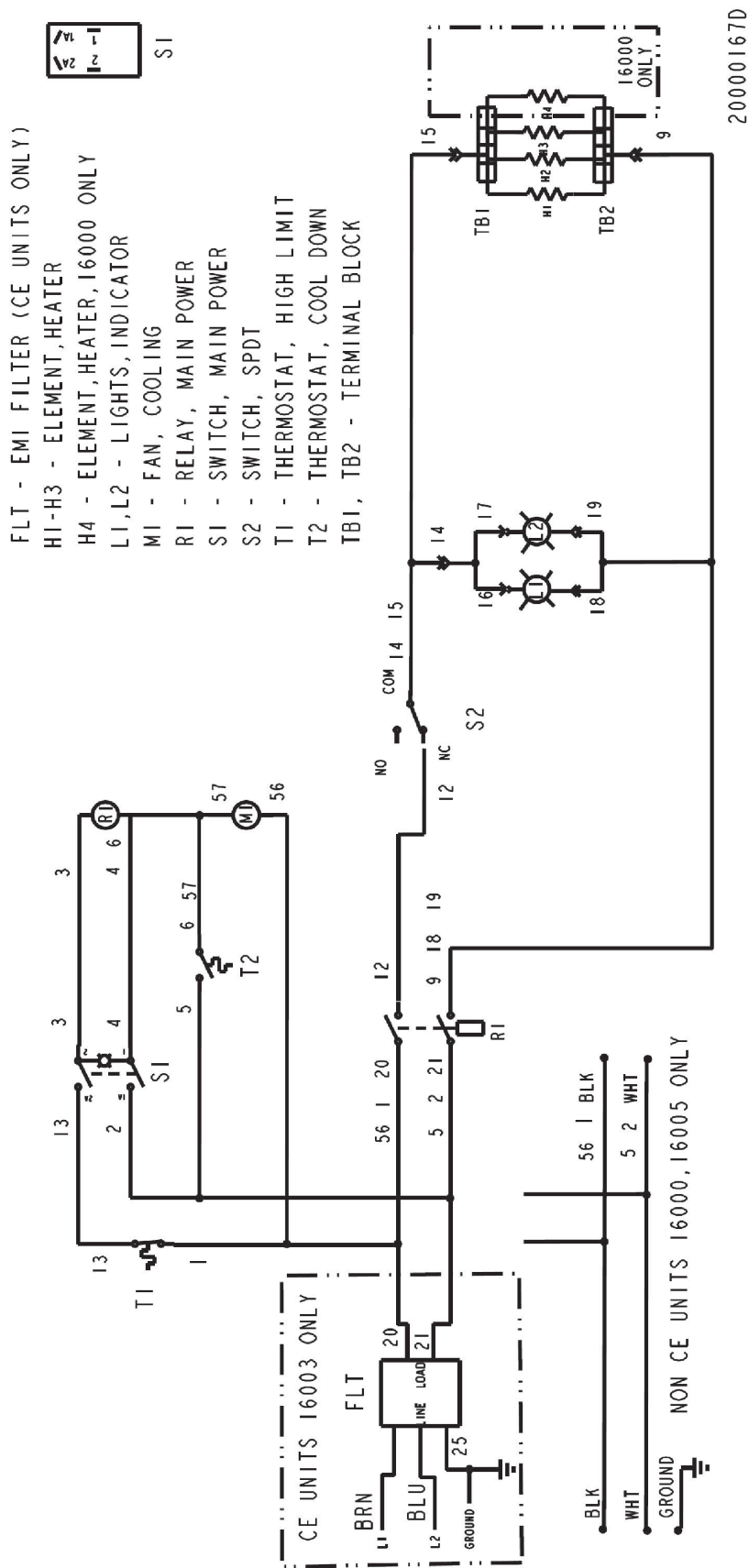
Equipotentiality Ground



Earth Ground



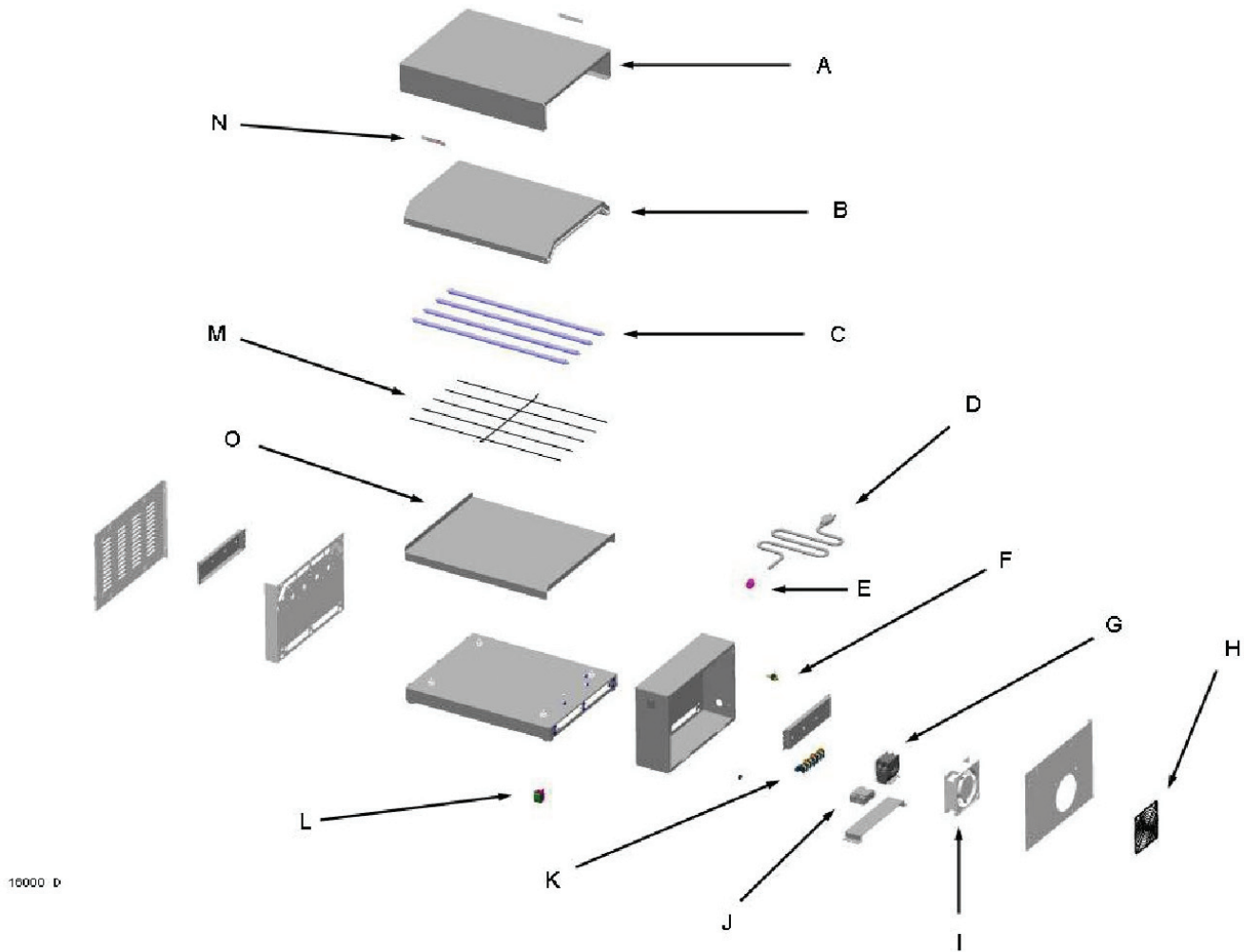
**Wiring Diagram, 16000, 16003 & 16005**



<b>Troubleshooting</b>		
<i>Symptom</i>	<i>Possible Cause</i>	<i>Evaluation</i>
Unit Will Not Turn On	Incoming Power Supply	Check breakers, reset if required. Check power plug to be sure it's firmly in receptacle. Measure incoming power 208v.
	Hi Limit Thermostat	Terminals are normally closed, if open push in reset button. If button will not reset replace hi limit. Hi limit opens at 60C.
	On – Off Switch	Check continuity between switch terminals. Replace switch as needed.
No Stand By Heat	Contactors	Check for supply voltage to contactor contacts, if no voltage present trace back to on-off switch. If voltage is present, check to insure contacts are closing, replace as needed.
	Solid State Relay (Current limiting)	Check for supply voltage to relay contact, if no voltage present trace back to contactor. Check for output voltage, if no output voltage check percentage dial on relay is set to 50%. If no output voltage present replace as needed.
	Elements	Check the amp draw on each element for proper load. Check specification plate for rating information. Check individual elements for opens, shorts and proper resistance 56ohms.
No Full Power	Micro Switch	Check continuity of the NC held open switch with sufficient weight on surface, if no continuity, replace switch.
	Solid State Relay (Current limiting)	Check for supply voltage to relay coil (this will be indicated by two lamps on the unit) if no voltage present trace back to contactor and/or the micro switch. Check for output voltage, if no output voltage check percentage dial on relay is set to 50%. If voltage is present at coil check contacts are closing, replace as needed.
	Elements	Check the amp draw on each power leg for proper load. Check specification plate for rating information. Check individual elements for opens, shorts and proper resistance 56ohms.
Hi Limit Trips	Cooling Fan Motor	Check to see cooling fan is operational, if not check for voltage to motor, if no voltage present trace back to on – off switch, if voltage is present replace motor.

<b>Sequence Of Operation</b>	
Power Supply	Electrical power is supplied to the unit by a 3 conductor service for single phase. Black conductor is hot. White conductor is neutral. Green and Yellow conductor is ground. Power is permanently supplied to the power switch through the high limit thermostat, also to the open contacts of the main power relay.
Heating Circuit	Closing the main power switch feeds power to the cooling fan and the coil of the main power relay. Its contacts now close supplying 50% power to the 4 heaters through the current limiting solid state relay. When product is placed on the shelf, the normally open contact (S2) closes to supply full power through the current limiting solid state relay and two indicator lamps to the heaters.

## Replacement Parts



16000 D

Key	Part Number	Description
A	MER340029	Top Cover
B	MER340030	Reflector Assembly
C	MER340031	Element, Heater, Quartz, 760W, 208V
	MER10004064	Element, Heater, Quartz, 760W, 230V
D	MER340180	Cordset, 240V, 20A, w/ sleeve & sp
	MER4020071	Cordset, 230V, 16A, 250VAC
E	MER340032	Bushing, Heyco
F	MER340117	Hi Limit
G	MER340033	Contact Coil
H	MER369331	Finger Guard
I	MER369378	Fan Motor

Key	Part Number	Description
J	MER340036	Solid State Relay
K	MER340037	Terminal Block, X3
L	MER340038	Switch, Rocker, Lighted
M	MER10004115	Wire Guard
N	MER340039	Merco Logo
O	MER340132	Shelf
-	MER000891	Indicator Light, Red
-	MER34011	Leg
-	MER19378SP	Micro Switch
-	MER369507	Thermostat Bi-Metal (cooldown)

## Heater Installation Instructions



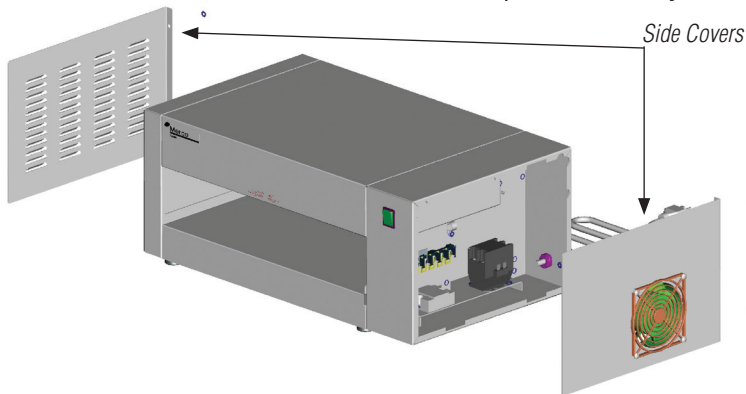
Disconnect power supply before servicing or cleaning this toaster. Safeguard power so it cannot be accidentally restored. Failure to do so could result in serious injury.



Heater elements must not be handled with bare hands. Oil or grease residue on the quartz tube may result in premature failure of the element. Gloves or some other means of protecting the elements must be used during handling.

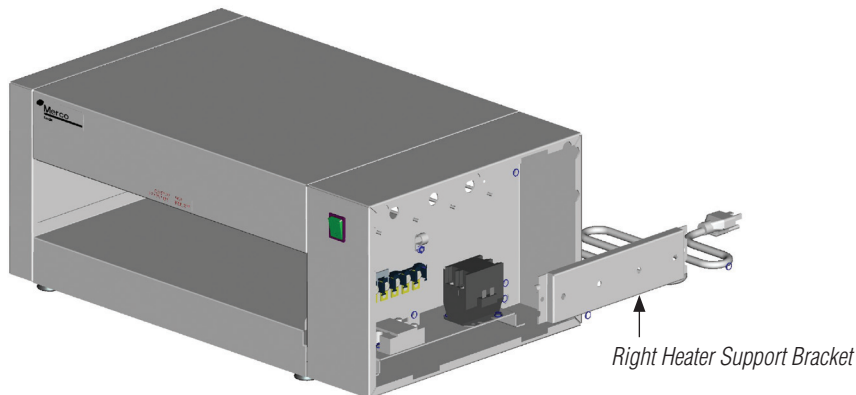
### Step 1. Cover Removal

Remove the screws holding each of the side covers in place, slide the covers to the rear approximately 1" and pull them off. Retain the screws for reinstallation. The fan power cable may also be disconnected from the fan, if needed.



### Step 2. Heater Support Bracket Removal

Remove the two screws holding the right heater support bracket in place and remove the bracket. Retain the screws for later reinstallation.



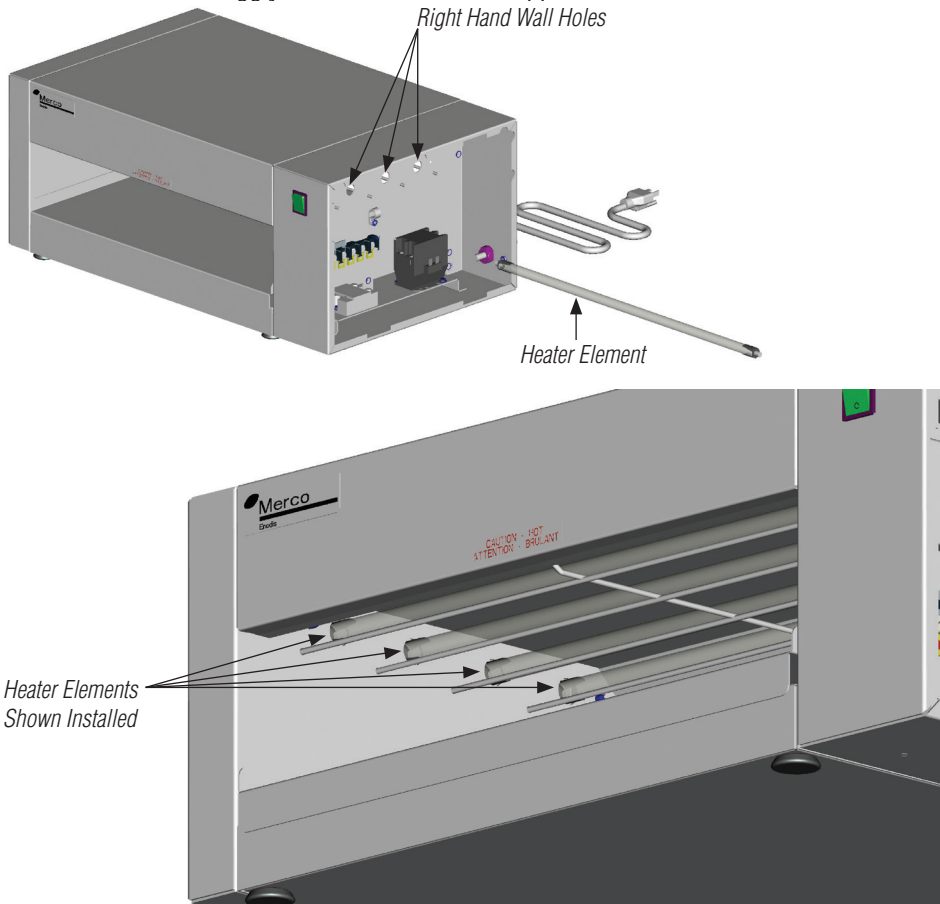
## Heater Installation Instructions, continued

### Step 3. Installing Heater Elements



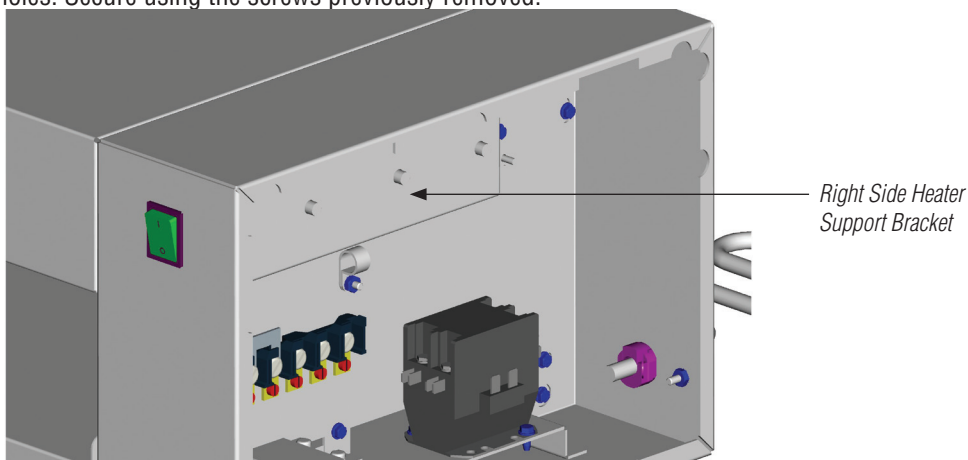
**Do Not Touch Quartz Heat Tubes With Bare Hands. Use Gloves While Handling Tubes.**

Slide the heater elements (quartz tubes) through the holes in the right hand wall of the unit, feeding the lead wires through the hole in the left hand wall and heater support bracket. The small diameter of the ceramic end caps on the element should fit snugly into the holes in the support bracket.



### Step 4. Reinstallation Of Heater Support Bracket

Reposition the right side heater support bracket over the ends of the heater element, feeding the lead wires through the holes. Secure using the screws previously removed.

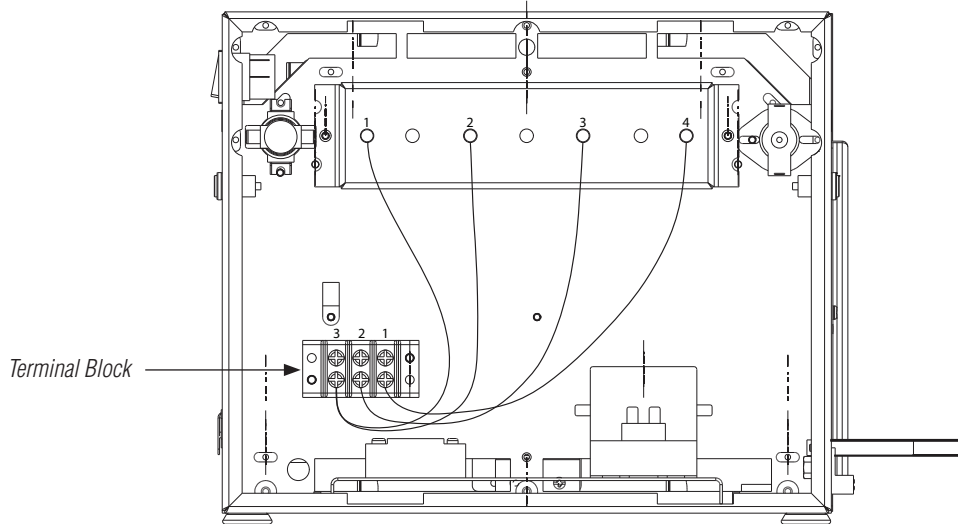


## Heater Installation Instructions, continued

### Step 5. Connect The Left Side Heater Wires

Connect all four (4) heater wires on the left side to the terminal block as shown. If you have only three (3) heater wires, skip the instruction referencing heater wire #4.

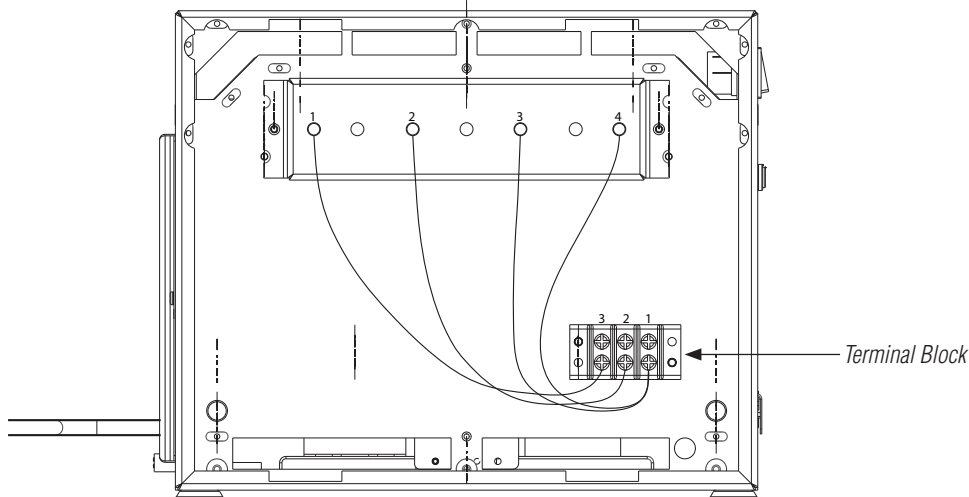
- Heater wire #1 and #2 are connected to terminal block position #3
- Heater wire #3 to terminal block position #2
- Heater wire #4 to terminal block position #1



### Step 6. Connecting Right Side Heater Wires

Connect the four (4) heater wires on the right side to the terminal block as shown. If you have only three (3) heater wires, skip the instruction referencing heater wire #4.

- Heater wire #1 and #2 are connected to terminal block position #3
- Heater wire #3 to terminal block position #2
- Heater wire #4 to terminal block position #1



### Step 7. Reinstallation Of Side Covers

Reconnect the fan power cord (if disconnected) and reinstall the side covers with the previously removed screws.

# Notes





*Thank you for choosing Merco!*

Help is a phone call away. Help our team of professional, courteous customer service reps by having your model number and serial number available at the time of your call (800) 733-8829.

Model: \_\_\_\_\_ S/N: \_\_\_\_\_

Installation Date: \_\_\_\_\_



For a list of Merco's authorized parts depots, visit our website at [www.mercoproducts.com](http://www.mercoproducts.com)

Register your Merco warranty online.  
Go to [www.mercoproducts.com](http://www.mercoproducts.com)  
under the service tab to complete.



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