

# *Lang*



## **Service Manual for the Lang Models:**

**MM-24, MM-36, MM-48**

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**CAUTION:** EACH UNIT IS HEAVY. FOR SAFE HANDLING, INSTALLER SHOULD OBTAIN HELP AS NEEDED, OR EMPLOY APPROPRIATE MATERIALS HANDLING EQUIPMENT (SUCH AS A FORKLIFT, DOLLY, OR PALLET JACK) TO REMOVE THE UNIT FROM THE SKID AND MOVE IT TO THE PLACE OF INSTALLATION.



**CAUTION:** ANY STAND, COUNTER OR OTHER DEVICE ON WHICH MELTER WILL BE LOCATED MUST BE DESIGNED TO SUPPORT THE WEIGHT OF THE MELTER.



**CAUTION:** SHIPPING STRAPS ARE UNDER TENSION AND CAN SNAP BACK WHEN CUT.



**DANGER:** THIS APPLIANCE MUST BE GROUNDED AT THE TERMINAL PROVIDED. FAILURE TO GROUND THE APPLIANCE COULD RESULT IN ELECTROCUTION AND DEATH.



**WARNING:** INSTALLATION OF THE UNIT MUST BE DONE BY PERSONNEL QUALIFIED TO WORK WITH ELECTRICITY. IMPROPER INSTALLATION CAN CAUSE INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT. UNIT MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES.



**NOTICE:** The data plate is located at the lower front of the left side of unit. The melter voltage, wattage, serial number, wire size, and clearance specifications are on the data plate. This information should be carefully read and understood before proceeding with the installation.



**NOTICE:** The installation of any components such as a vent hood, grease extractors, fire extinguisher systems, must conform to their applicable National, State and locally recognized installation standards.



**NOTICE:** During the first few hours of operation you may notice a small amount of smoke coming off the melter, and a faint odor from the smoke. This is normal for a new melter and will disappear after the first few hours of use.



**CAUTION:** ALWAYS KEEP THE AREA NEAR THE APPLIANCE FREE FROM COMBUSTIBLE MATERIALS.



**CAUTION:** KEEP FLOOR IN FRONT OF EQUIPMENT CLEAN AND DRY. IF SPILLS OCCUR, CLEAN IMMEDIATELY, TO AVOID THE DANGER OF SLIPS OR FALLS.



**WARNING:** KEEP WATER AND SOLUTIONS OUT OF CONTROLS. NEVER SPRAY OR HOSE CONTROL CONSOLE, ELECTRICAL CONNECTIONS, ETC.



**CAUTION:** MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN TO WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD AND PROTECTIVE CLOTHING. CAREFULLY READ THE WARNING AND FOLLOW THE DIRECTIONS ON THE LABEL OF THE CLEANER TO BE USED.



**NOTICE:** Service on this, or any other, LANG appliance must be performed by qualified personnel only. Consult your authorized service station directory or call the factory at 1-800-224-LANG (5264), or WWW.LANGWORLD.COM for the service station nearest you.



**WARNING:** BOTH HIGH AND LOW VOLTAGES ARE PRESENT INSIDE THIS APPLIANCE WHEN THE UNIT IS PLUGGED/WIRED INTO A LIVE RECEPTACLE. BEFORE REPLACING ANY PARTS, DISCONNECT THE UNIT FROM THE ELECTRIC POWER SUPPLY.



**CAUTION:** USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY LANG OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE BODILY INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.



## EQUIPMENT DESCRIPTION

### ELECTRIC CHEESE MELTER

#### EXTERIOR

- The melter dimensions are 19.5" (49.5cm) High, 16.5" (42cm) Deep, 24", 36", 48" (61cm, 91cm, 122cm) wide dependent on the actual model number.
- The Sides, Bottom, and Rear wall are constructed stainless steel.
- The melter cavity is insulated with high temperature insulation for efficiency and reduced heat loss.

#### INTERIOR

- The interior dimension are 9.5" (24cm) High, 14.5" (37cm) Deep, 21.25", 32", 45.25" (54cm, 81.25cm, 115cm) wide dependent on the actual model number.
- The interior of the melter has one rack that can be placed in 4 different positions.
- The interior of the melter has a rack sensitive micro-switch for quick and easy activation.

#### CONTROLS

##### ◆ AUTOMATIC

- Front two elements will only glow red when the rack sensitive micro-switch is activated. If there is nothing on the rack the melter is in a standby mode with all three elements warm.

**Note:** With food on the rack the rear element should never turn red or get hot.

##### ◆ CONTINUOUS

- Front two elements are on all the time.

**Note:** The Rear element should never turn red or get hot.

# INSTALLATION

## **RECEIVING THE MELTER**

Upon receipt, check for freight damage, both visible and concealed. Visible damage should be noted on the freight bill at the time of delivery and signed by the carrier's agent. Concealed loss or damage means loss or damage, which does not become apparent until the merchandise has been unpacked.

If concealed loss or damage is discovered upon unpacking, make a written request for inspection by the carrier's agent within 15 days of delivery. All packing material should be kept for inspection.

Do not return damaged merchandise to Lang Manufacturing Company. File your claim with the carrier.

Prior to un-crating, move the melter as near its intended location as practical. The crating will help protect the unit from the physical damage normally associated with moving it through hallways and doorways.

## **ELECTRICAL**

Electrical service routing may be made through either of two 1 1/4 inch knockouts provided. One may be found along the bottom edge of the back panel. The second knockout is located on the bottom of the unit.

Reference the Data Plate on the left side of the unit for amperage, voltage and phase requirements. Insure that the power supply is sufficient to meet the units power needs.

Check your local or national electrical code for fuse or circuit breaker requirements.

## **PHASING**

All model numbers MM-24 and MM-36 are shipped single phase.

MM-48 is shipped three phase and can be swapped to single phase by moving wire #3 to L1.

## **ELEMENT INSTALLATION**

Elements for all electric model MM Cheesemelters are shipped, packaged separately, within the equipment shipping crate.

These should be inspected upon opening of the shipping carton. If an element is found damaged or broken, notify the Freight Company immediately. Reference manual section entitled "Receiving - Inspection and Claims," request an inspection and file a hidden damage claims with the carrier.

Contact Lang Manufacturing Company to order replacement elements. An invoice will be required by the Freight Company to support the freight claim and reimbursement of costs related to the claim.

Installation of the elements is not warrantable expense. The installer or a qualified service company should complete installation. Damage to elements or equipment resulting from incorrect or improper installation will be the responsibility of the equipment owner or individual installing elements.

Elements installed in new equipment are warranted free of defects in material and workmanship, for a period of 90 days from installation of the equipment. Replacement elements are warranted for a period of 90 days from installation.

### **WALL MOUNT UNITS**

Split the back into two pieces; note the pre-drilled holes in one panel. This is the wall mounting bracket.

Fasten the wall mounting bracket to the wall using pre-drilled holes. Use suitable lag screws or anchor fasteners to secure panel to the wall with the off-set at the top. Make certain that the mounting bracket is level.

Remove the screws from the rear of the cheesemelter; screw the stainless steel portion of the back to the cheesemelter with the off-set at the top.

Lift the cheesemelter and hang it on the wall mounted bracket.

Replace the screws around the edge of the back.

Observe minimum clearances at all times.

Must be mounted with 12 to 22 inches above the cooking surface.

Install the Heat Shield on the bottom of the unit.

This unit cannot be mounted above a broiler.

### **COUNTER TOP**

Split the back into two pieces.

Remove the screws from the rear of the cheesemelter; screw the stainless steel portion of the back to the cheesemelter with the off-set at the top.

Reinstall the two back halves together and replace the screws around the edge.

When installing on a counter the legs must be installed before using the unit, as they will provide the required clearance for the bottom of the unit.

Place the unit in location, and level using leg adjustments.

Observe minimum clearances at all times.

**START-UPS**

**MM-24 / MM-36 / MM-48**

**Electric Cheese Melter Start-Up**

- 1. Verify that elements are correctly wired.
- 2. Verify connections at plug and terminal block.
- 3. Verify that on Wall-mount units that heat shield is in place and there is a minimum of 22" between melter and cooking surface.
- 4. Incoming Voltage:       Single Phase L1-L2\_\_\_\_\_   
                                  Three Phase L1-L2\_\_\_\_\_ L2-L3\_\_\_\_\_ L3-L1\_\_\_\_\_
- 5. Verify amperage in Auto and Standby. L1\_\_\_\_\_ L2\_\_\_\_\_ L3\_\_\_\_\_
- 6. Verify amperage in Constant mode. L1\_\_\_\_\_ L2\_\_\_\_\_ L3\_\_\_\_\_

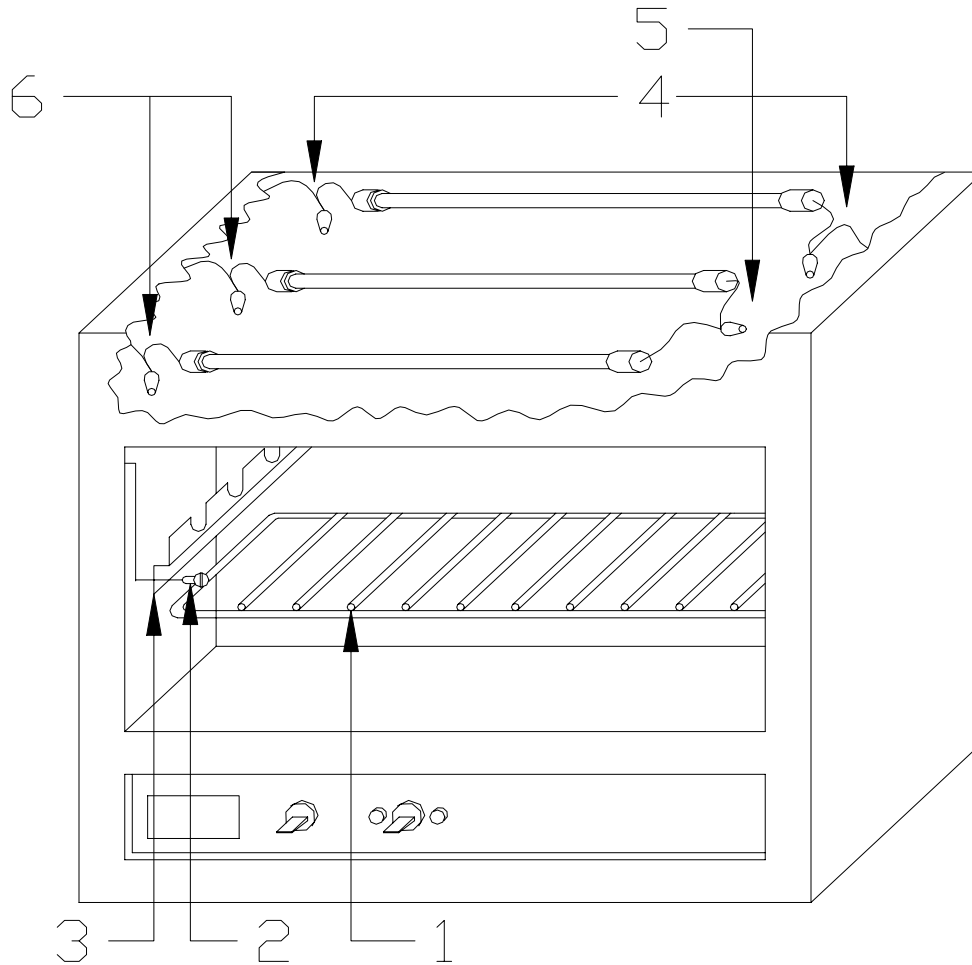
Model # \_\_\_\_\_ Date \_\_\_\_\_ Serial # \_\_\_\_\_

Store # \_\_\_\_\_ Tech Name \_\_\_\_\_  
Contact \_\_\_\_\_ Company \_\_\_\_\_  
Store Phone # \_\_\_\_\_ Service Company Phone # \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

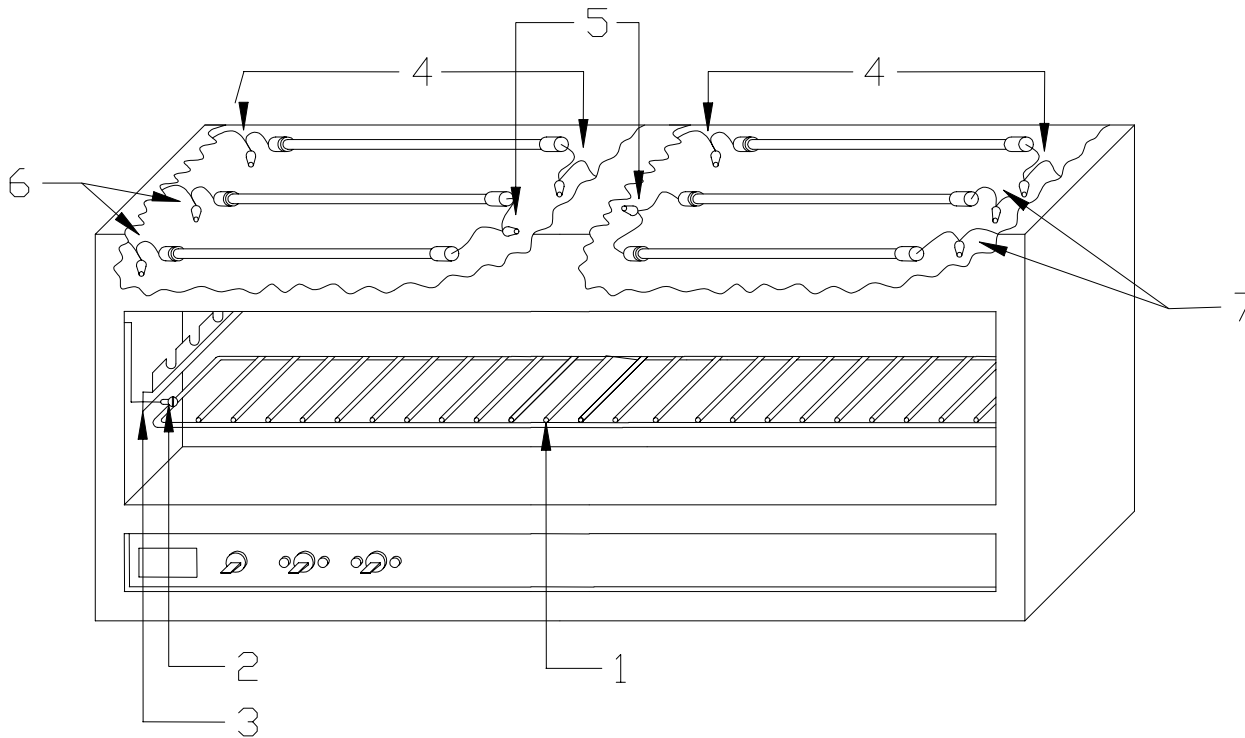


## START-UPS MM24 / 36 ELEMENT INSTALLATION



1. Remove Shelf
2. Remove three screws from each heater bracket.
3. Remove brackets.
4. Install the rear quartz heater (white end caps) to the power leads on both rear sides of the unit using the ceramic wire nuts provided.
5. The middle and front quartz heaters (red or brown end caps) are wired together (in series) using the ceramic wire nuts provided.
6. The middle and front quartz heaters are each connected to a power lead using the ceramic wire nuts provided.
7. Replace brackets removed in step 3.
8. Replace shelf removed in step 1.
9. Turn Power on and check for proper operation.

## START-UPS MM48 ELEMENT INSTALLATION



1. Remove Shelf
2. Remove three screws from each heater bracket.
3. Remove brackets.
4. Install the rear quartz heaters (white end caps) to the power leads on both rear sides of the unit using the ceramic wire nuts provided.
5. The middle and front quartz heaters (red or brown end caps) are wired together (in series) using the ceramic wire nuts provided.
6. The middle and front quartz heaters (on the left side) are each connected to a power lead on the left side using the ceramic wire nuts provided.
7. The middle and front quartz heaters (on the right side) are each connected to a power lead on the right side using the ceramic wire nuts provided.
8. Replace brackets removed in step 3.
9. Replace shelf removed in step 1.
10. Turn Power on and check for proper operation.

## **GENERAL**

The Lang Electric Cheesemelter can be used to poach, sauté and brown. In addition to melting cheese on sandwiches, French onion soup, hot apple pie and casseroles, it may be used for finishing Italian, Mexican and au gratin dishes utilizing less energy than conventional broilers.

The product is heated with infrared energy provided by quartz heaters. The rack is counterbalanced so that maximum heat is supplied only when the product is placed in the rack.

Although the heating elements are not directly controlled to regulate heat, the exposure of the product to heat is adjustable. Heat adjustment may be obtained by raising and lowering the rack position. The shelf positions provide a choice of cooking positions for a variety of applications. The top position is very hot, and can be used for quick browning and toasting, with the heat decreasing at each lower position.

In order to change positions, simply slide the rack in and out of the slots provided. Make sure that the end of the rack engages the sliding mechanism located on the right front corner.

## **CONTROLS**

Controls are located on the front panel and consist of the following items:

**Power Switch** - a toggle switch used to turn the unit on and off.

**Heat Switch** - this toggle switch allows the unit to be operated in either automatic or constant modes.

**Automatic:** when selected with no product on the rack, the unit is in an idle condition. Placing a product on the rack will energize the elements providing heat to the product.

**Constant:** when this mode is selected the elements are energized at all times whether or not a product has been placed on the rack. This mode should be used during peak times only, as it will shorten the life span of the elements.

**Side Switch** - Allows the use of the **Left** side only, or **Both** sides. This switch is found on Lang Model **MM48** Cheesemelters only.

## **OPERATING DO's and DON'Ts**

### **DO:**

Insure all dishes placed in the cheesemelter are oven safe.

Pre-heat pans in the cheesemelter or on a stove.

Turn products halfway through cooking, as needed.

Use the unit in Automatic as much as possible, use Constant during peak periods.

### **DON'T:**

Do not use the cheesemelter as a cooking or baking device, it is best suited for finishing dishes immediately prior to serving.

Do not use the unit to heat or thaw chilled or frozen product.

Do not place aluminum foil on the rack or bottom shelf. This will reflect heat and expose components to unnecessary high temperatures.

Do not move rack from one position to another without hand protection.

## SEQUENCE OF OPERATION

### **AUTOMATIC MODE**

**Power switch to “ON” position.**

208/240 VAC to Primary heater contactor coil.

**Contactor energizes.**

208/240 VAC to all three, Elements.

**Elements warm up.**

208/240 VAC to Rack sensitive micro switch.

**Food is placed on rack.**

Rack sensitive micro switch is closed.

208/240 VAC to Secondary heater contactor coil.

**Contactor energizes.**

208/240 VAC to Front two Elements only.

**Front two elements heat up.**

### **CONSTANT MODE**

**Power switch turned to on:**

208/240 VAC to Primary heater contactor coil.

208/240 VAC to Secondary heater contactor coil.

**Contactors energize.**

208/240 VAC to Front two Elements.

**Front two elements heat up.**

# TROUBLESHOOTING

## Will not heat

PROBABLE CAUSE	CORRECTIVE ACTION
<b>Incorrect voltage</b>	<ul style="list-style-type: none"><li>➤ Confirm that correct voltage is coming to unit.</li><li>➤ Confirm that unit is phased correctly.</li></ul>
<b>Defective Power Switch</b>	<ul style="list-style-type: none"><li>➤ Confirm that switch has 208/240 VAC to it.</li><li>➤ Check switch for proper operation.</li></ul>
<b>Defective Contactor</b>	<ul style="list-style-type: none"><li>➤ Confirm that contactor has 208/240 VAC to it.</li><li>➤ Check contactor for proper operation. (1023 <math>\Omega</math>)</li></ul>
<b>Defective Selector switch</b>	<ul style="list-style-type: none"><li>➤ Check switch for normal operation.</li></ul>
<b>Defective Element</b>	<ul style="list-style-type: none"><li>➤ Confirm that elements are wired correctly.</li><li>➤ Confirm that element has 208/240 VAC to it.</li><li>➤ Check Element for continuity.</li></ul>
<b>Defective Rack Switch</b>	<ul style="list-style-type: none"><li>➤ Confirm that plunger rod can move up and down easily.</li><li>➤ Confirm that switch has 208/240 VAC to it.</li><li>➤ Check Switch for normal operation.</li></ul>

# TECHNICAL DATA

## ELEMENT RESISTANCE

MM-24, MM-48			MM-36		
Part #	Voltage	Amps	Part #	Voltage	Amps
➤ 11160-15	208V / 33 Ohms	5.7	➤ 11160-17	208 Volts	8.6
➤ 11160-19	104V / 08 Ohms	11.5	➤ 11160-21	104 Volts	17.3
➤ 11160-16	240 Volts	5	➤ 11160-18	240 Volts	7.5
➤ 11160-20	120 Volts	10	➤ 11160-22	120 Volts	15

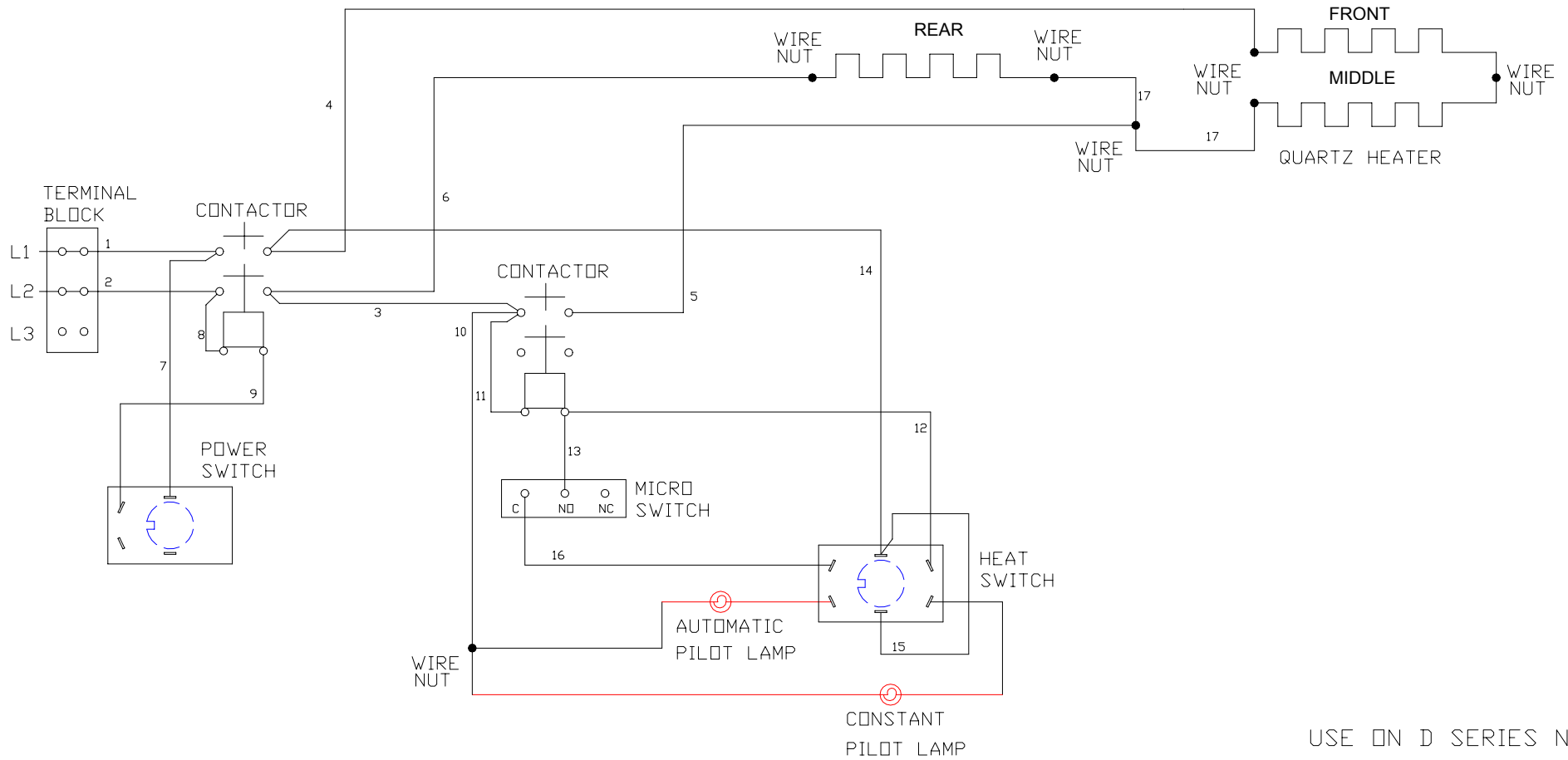
## CONTACTOR RESISTANCE

CONTACTOR	Part #	Coil
➤ 2 Pole 208/240 Volt coil	30701-02	1023 Ω

## MELTER LINE AMPERAGE, AND WATTAGE

ELECTRICAL DATA														
MODEL NUMBER	THREE PHASE LOADING			TOTAL K.W.	NOMINAL AMPS PER LING									
	K.W. PER PHASE				THREE PHASE						SINGLE PHASE			
					208 VOLT			240 VOLT			208V	240V		
	L1-L2	L2-L3	L3-L1		L1	L2	L3	L1	L2	L3				
MM-24	SINGLE PHASE ONLY			2.4	SINGLE PHASE ONLY								11.5	10.0
MM-35	SINGLE PHASE ONLY			3.6	SINGLE PHASE ONLY								17.3	15.0
MM-48	2.4	2.4	0.0	4.8	11.5	20.0	11.5	10.0	17.3	10.0	23.1	20.0		

# WIRING DIAGRAM MM-24 / MM-36



USE ON D SERIES NO.

ELECTRICAL DATA			
MODEL	KW	AMPERES	
		208V	240V
MM24	2.4	11.5	10.0
MM36	3.6	17.3	15.0





**MM-24, MM-36, MM-48****ELECTRIC CHEESE MELTER**

<b>DESCRIPTION</b>	<b>PART NO.</b>
Quartz Heater 208V 1200 Watts 2ft MM-24, 48	11160-15
Quartz Heater 240V 1200 Watts 2ft MM-24, 48	11160-16
Quartz Heater 208V 1800 Watts 3ft MM36	11160-17
Quartz Heater 240V 1800 Watts 3ft MM36	11160-18
Quartz Heater 104V 1200 Watts 2ft MM-24, 48 (Front 2 Only) (After D-30000)	11160-19
Quartz Heater 120V 1200 Watts 2ft MM-24, 48 (Front 2 Only) (After D-30000)	11160-20
Quartz Heater 104V 1800 Watts 3ft MM36 (Front 2 Only) (After D-30000)	11160-21
Quartz Heater 120V 1800 Watts 3ft MM36 (Front 2 Only) (After D-30000)	11160-22
Switch Toggle On-Off	30303-06
Terminal Block 3 Pole (After D-30000)	30500-09
Relay 240 VAC (Before C-29999)	30600-02
Contactor 3 Pole 208/240 VAC	30700-05
Contactor 2 Pole 208/240 VAC	30701-02
Starter Control Panel Lamp (Before C-29999)	31600-03
Ballast Control Panel Lamp (Before C-29999)	31600-04
Lamp Fluorescent 12" Control Panel (Before C-29999)	31600-06
Pilot Light 208/240V 6" Lead Black Body	31601-01
Rack for MM-24	50200-13
Rack for MM-36	50200-14
Rack for MM-48	50200-15
Tube Guard Quartz Heaters MM-24, 48	50201-03
Tube Guard Quartz Heaters MM-36	50201-04
Micro Switch Assembly	51100-12
Push Button to Toggle Switch Mod. Kit (Before C-29999)	60101-08
Control Panel Label MM-24	60700-02
Control Panel Label MM-36	60700-03
Control Panel Label MM-48	60700-04
Reflector MM-24, 48	60102-30
Reflector MM-36	60102-04