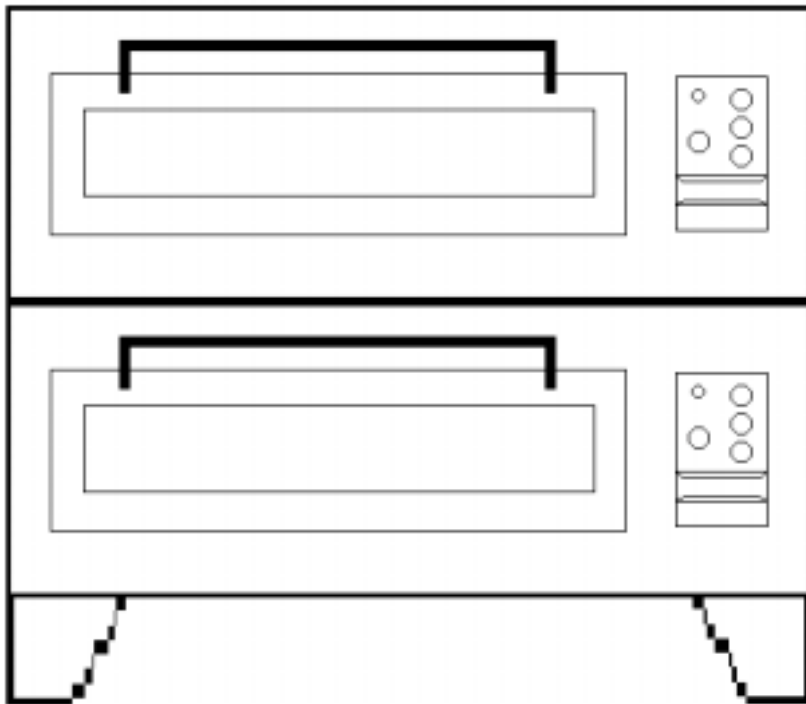


# **Lang**



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

**S13827B, S23827B, S33827B**

**S13827R, S23827R, S33827R**

# TABLE OF CONTENTS

<b><u>CHAPTER</u></b>	<b><u>PAGE</u></b>
1. TABLE OF CONTENTS.....	1
2. READ FIRST .....	2
3. EQUIPMENT DESCRIPTION.....	4
4. INSTALLATION .....	5
5. START-UP.....	7
6. GENERAL OPERATION .....	8
7. SEQUENCE OF OPERATION.....	10
8. TROUBLESHOOTING.....	11
9. TECHNICAL DATA.....	12
10. WIRING DIAGRAMS .....	13
11. PARTS LIST .....	15

**CAUTION:** EACH UNIT IS EXTREMELY 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 OVEN WILL BE LOCATED MUST BE DESIGNED TO SUPPORT THE WEIGHT OF THE OVEN.



**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 behind circuit breaker door on oven. The 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 or out of the oven, and a faint odor from the smoke. This is normal for a new oven 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

## **EXTERIOR**

### **Bake oven**

- The oven dimensions are 20" (50.8cm) High, 36" (91.5cm) Deep, and 54" (137cm) Wide.
- The Sides, Bottom, and Rear wall are constructed stainless steel.
- The Bake oven has an 8" opening.

### **Roast oven**

- The oven dimensions are 20" (50.8cm) High, 36" (91.5cm) Deep, and 54" (137cm) Wide.
- The Sides, Bottom, and Rear wall are constructed stainless steel.
- The Bake oven has an 8" opening.

## **INTERIOR**

### **Bake oven**

- The interior dimensions are 8" (20.3 cm) High, 30" (76.2 cm) Deep, and 38" (96.5 cm).
- The interior is designed for baking on the rack or directly on the bottom surface of the oven.

### **Roast oven**

- The interior dimensions are 12" (30.5 cm) High, 30" (76.2 cm) Deep, and 38" (96.5 cm).
- The interior is designed for baking on the rack or directly on the bottom surface of the oven.

## **CONTROLS**

- The oven is provided with both an upper and a bottom-heating element. The upper element is visible in the top of the oven the lower oven element is under the bottom deck of the oven.
- Both of these oven elements can be regulated with independently controlled three heat switches. These switches provide to proper ratio of top and bottom heat.
- The oven is also provided with an adjustable thermostat that controls the overall average of the oven.

## **RECEIVING THE OVEN**

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 oven 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.

## **LEG INSTALLATION**

Legs are available for the single, double, and triple deck installations. Single deck installations require a 27-inch leg. Double deck installations require a 16-inch and triple deck installations require a 6-inch leg.

To install the 27-inch legs, place some cardboard on the floor and gently tip the oven onto its back. Fasten two legs to the oven front corners using the four 5/16 inch bolts provided in the leg kit. Lift the oven onto its front legs and block the back up using one of the 27-inch legs set upside down in the center rear of the oven body. Install the last 27-inch leg onto the oven body on the control side rear. Gently lift the oven rear, remove the leg set to support the oven center and install it on the last rear corner.

To install the 16-inch legs follow the same directions for the 27-inch legs before stacking the second deck onto the bottom deck.

To install the 6-inch legs follow the same directions for the 27-inch legs before stacking the second deck onto the bottom deck.

## **ELECTRICAL CONNECTION**

### **Single Deck**

Install the legs to the oven.

Electrical service connections can be made through an 1 1/4 knockout in the bottom of the oven.

Remove the cover attached to the oven circuit breakers for access.

Power connections can be made at the bottom of the circuit breakers.

### **Multiple Decks**

Perform installation of single deck.

Remove the plug button from the top panel of the lower deck, and install the insulating bushing in the same hole.

Remove the vent cover stack from the lower deck by removing the screws that secure the cover.

Place the upper deck on top of the lower deck. Screw heads and vent stack of the lower deck will line up with the recesses in the bottom of the second deck.

Wire is supplied for making the electrical connections between the circuit breakers of the upper deck and the incoming supply wires of the bottom deck. Connect 44-inch wires to the bottom of the circuit breakers on the upper deck and identify these as wires 3 and 4.

Route wires 3 and 4 to the bottom deck. Connect these wires to the supply side of the bottom deck circuit breakers. Refer to PHASING for correct phasing.

To install additional deck repeat same steps above using appropriate wire lengths and identifying them as wires 5 and 6.

**PHASING**

POWER SUPPLY	TERMINAL BLOCK	SINGLE DECK	DOUBLE DECK	TRIPLE DECK
SINGLE PHASE	L1	1	3	5
	L2	2	4	6
THREE PHASE	L1	1	4	
	L2	2		5
	L3		3	6

**START-UPS**

**3827 Baking / Roasting Oven**

1) Verify connections at plug and terminal block

2) Incoming Volt - Single Phase L1-L2 \_\_\_\_\_  
Three Phase L1-L2 \_\_\_\_\_ L2-L3 \_\_\_\_\_ L3-L1 \_\_\_\_\_

3) Amp draw L1 \_\_\_\_\_  
L2 \_\_\_\_\_  
L3 \_\_\_\_\_

4) Verify actual oven temperature at 350 °F \_\_\_\_\_ °F.

Note: Install thermocouple wire in center of oven and set Top 3-heat switch for HI and the Bottom 3-heat switch for LOW and let oven cycle for a minimum of three times.

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

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

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



**GENERAL**

The oven is designed to give, well regulated, uniform heat throughout the oven.

The oven should be thoroughly preheated before being used. It is advantageous from an operating cost stand point to operate with the switches and/or thermostats set at the lowest position that will satisfactorily perform the cooking being done.

**INITIAL PREHEAT**

Before the initial use the oven must be thoroughly allowed to dry itself out. This is done by setting the top and bottom oven switches to the "low" position, and setting the thermostat to 350 degrees. Allow the oven to saturate until all vapor and condensation has been eliminated. For best operating results allow the oven to thoroughly dry out. Allow 8 to 12 hours for this process.

**OPERATION**

The oven must be thoroughly, preheated before satisfactory baking can be done. The oven will not bake uniformly if not sufficiently preheated.

To compensate for temperature drop when loading the oven, set the thermostat up 50 degrees over the desired temperature. Reset thermostat after the oven is loaded.

The oven may, of course, be preheated with the 3 heat switches set at a lower position than "High", but the time required will be proportionally longer. After preheating, set the two 3 heat switches for proper ratio of "top" and "bottom" heat to suit the product to be baked or roasted.

The "Roasting and Baking" oven is equipped with a removable rack. For baking pies, bread, or for roasting operations, the rack may be placed directly on the metal deck and the pans placed on the rack. For baking cakes or pastries the rack should be located in the lower position provided by the rack supports at the sides of the range and the pans placed on the rack in this lower position.

The following temperature, time, switch setting and rack positions are suggested as a guide in baking various classes of products:

General Class of Product	Average Range Temperature	Time (Min.)	Heat Switch Settings		Rack Position	
			Top	Bottom	8-inch oven	12-inch oven
Pies	375-425	35-60	Low	Medium	Deck	Rack on Deck
Rolls	375-400	15-30	Low	High	Deck	Rack Support
Cake	350-400	20-45	Low	High	Deck	Rack Support
Pastries	325-375	8-20	Low	High	Deck	Rack Support
Bread	425-450	25-45	Low	Medium	Deck	Rack on Deck
Roast Beef	300-325		Low	High or Medium	Deck	Rack on Deck

## **CARE AND CLEANING**

The oven should be thoroughly cleaned at least once a week in addition to the normal daily cleaning to insure against the accumulation of foreign material. Keep inside of oven and metal deck clean, particularly around door opening, door edges and at bottom of door opening so that the door may close tightly.

CAUTION: ANY OVEN CLEANER USED SHOULD BE MARKED: "SAFE ON ALUMINUM".

Electric equipment is inherently clean and sanitary, but may become unsanitary if dirt is allowed to accumulate on it. Take advantage of the clean, sanitary features of electric equipment, give it the regular attention that it deserves the same as any other highly perfected machinery, to insure best results and continued high operating efficiency.

## **CALIBRATION**

### **Calibration Check**

- Place thermometer or thermocouple in the center of oven cavity.
- Set thermostat to 350° and place both 3-heat switches in the "HIGH" position.
- Allow the oven to Preheat for at least half an hour.
- Note cycle on temperatures and cycle off temperatures for 3 cycles (Red indicator light indicates when oven is calling for heat).
- After 3 cycles average the temperature (Add all six temperatures and divide by 6).

### **Calibration Adjustment**

- A 1/16" flat blade screwdriver with a 2" shaft is required to make adjustments on the thermostat.
- Maintain the oven temperature at 350°.
- Without turning the thermostat, remove the knob.
- Locate the adjustment screw at the base of the shaft and insert the screwdriver.
- Grasp the shaft and turn the screwdriver. Counter clockwise to increase and clockwise to decrease. (1/8 of a turn will move the temperature 5-7 ° in either direction.)
- Reinstall the oven knob and recheck the oven temperature.

## SEQUENCE OF OPERATION

### **OVEN**

208/ 240 VAC to Thermostat.

#### **Thermostat turned on.**

208/ 240 VAC 3-Heat Switch.

#### **3-Heat switch turned on.**

208/ 240 VAC to elements.

# TROUBLESHOOTING

## OVEN

### OVEN WILL NOT HEAT

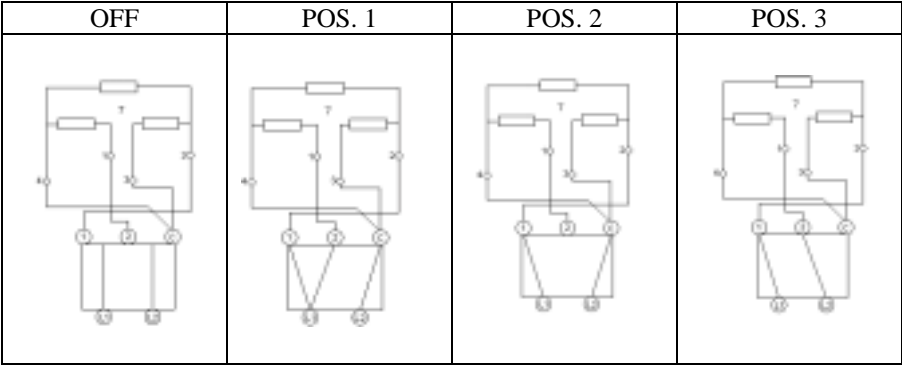
PROBABLE CAUSE	CORRECTIVE ACTION
<b>Incorrect wiring</b>	<ul style="list-style-type: none"><li>➤ Confirm that oven is getting proper voltage.</li><li>➤ Confirm that range is phased correctly.</li></ul>
<b>Defective Thermostat</b>	<ul style="list-style-type: none"><li>➤ Confirm that thermostat is getting correct voltage.</li><li>➤ Confirm that thermostat was operating properly.</li></ul>
<b>Defective 3-heat switch</b>	<ul style="list-style-type: none"><li>➤ Confirm that 3-heat switch is getting correct voltage.</li><li>➤ Confirm that 3-heat switch is operating properly.</li></ul>
<b>Defective Element</b>	<ul style="list-style-type: none"><li>➤ Check element for normal operation (See Technical Data).</li></ul>

# TECHNICAL DATA

### OVEN ELEMENT RESISTANCE

VOLTS	PART #	RESISTANCE	AMPS
➤ 208 Volt I/S	11070-09	32 Ω	6.5
➤ 208 Volt O/S	11070-10	26 Ω	8.0
➤ 240 Volt I/S	11070-15	42 Ω	5.6
➤ 240 Volt O/S	11070-16	35 Ω	7.0
➤ 480 Volt I/S	11070-19	170 Ω	3.0
➤ 480 Volt O/S	11070-20	140 Ω	3.5

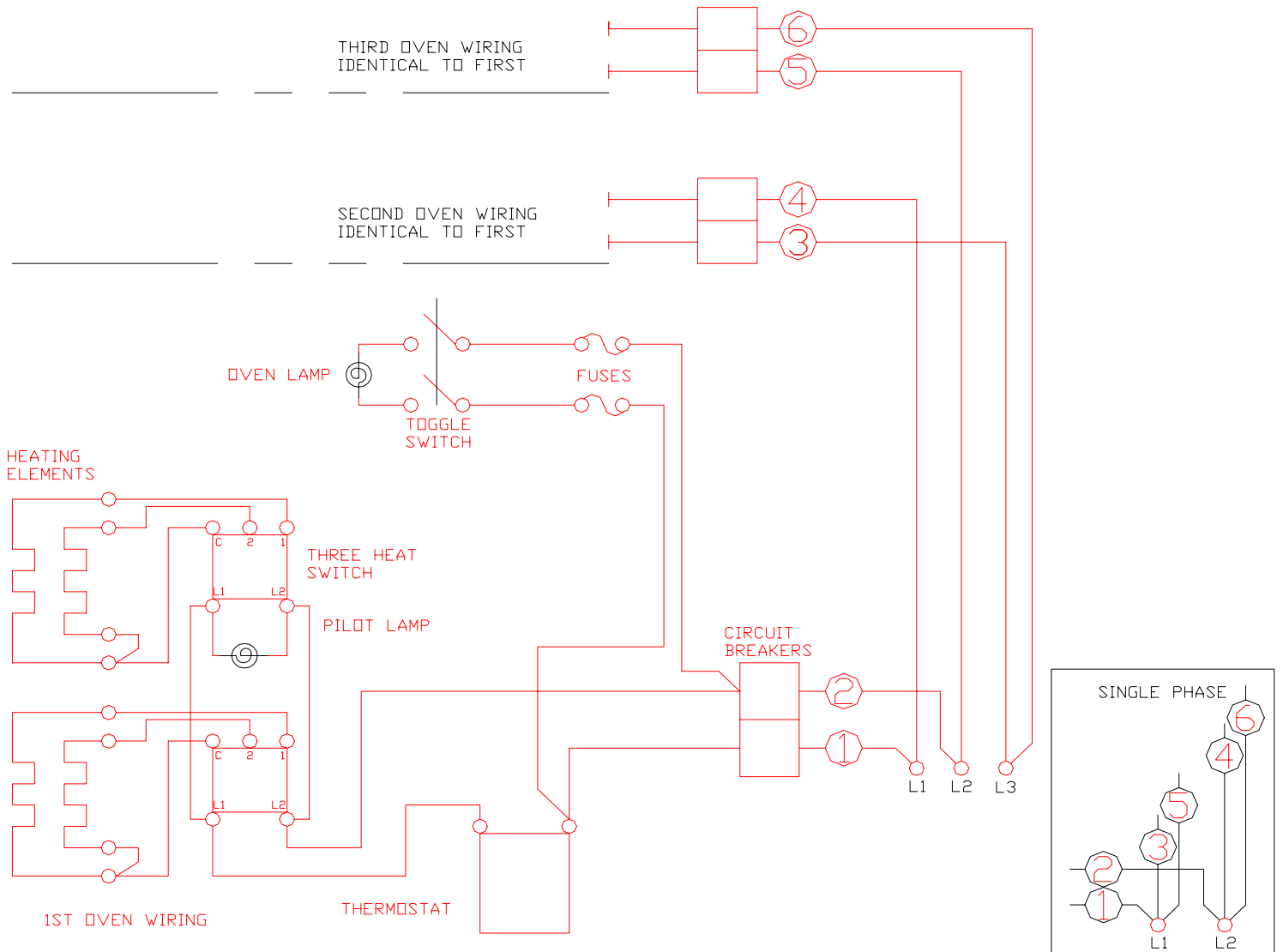
### 3-HEAT SWITCH WIRING



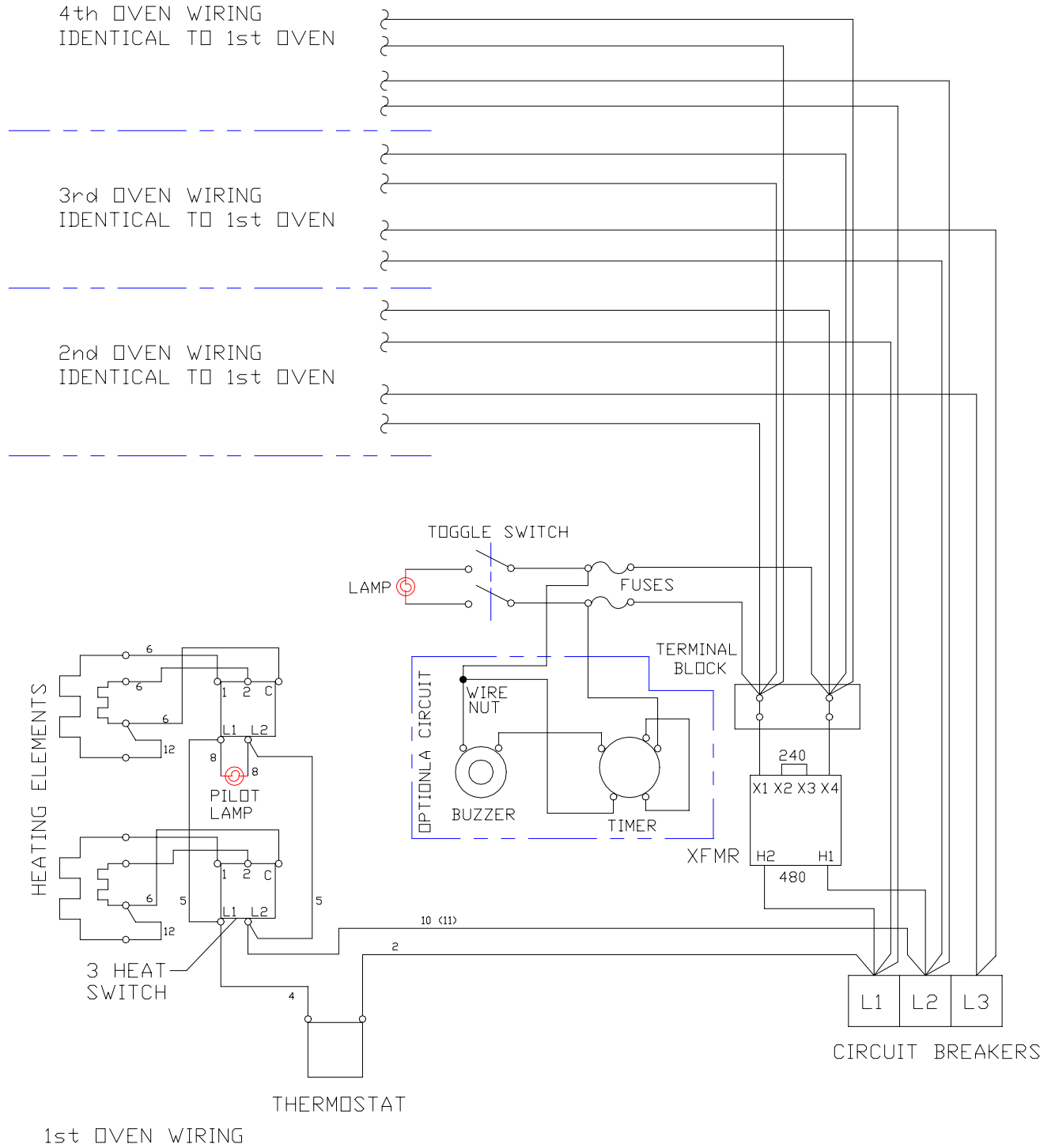
### OVEN LINE AMPERAGE, AND WATTAGE

Model Number	Total K.W. Per Conn.	Nominal Amps Per Line at Each Connection										
		Three Phase									Single Phase	
		208 Volts			240 Volts			480 Volts			208V	240V
		L1	L2	L3	L1	L2	L3	L1	L2	L3		
13827B or R	6.0	28.8	28.8	0.0	25.0	25.0	0.0	12.5	12.5	0.0	28.8	25.0
23827B or R	12.0	50.0	28.8	28.8	43.3	25.0	25.0	21.7	12.5	12.5	57.7	50.0
33827B or R	18.0	50.0	50.0	50.0	43.3	43.3	43.3	21.7	21.7	21.7	86.5	75.0

# 3827 208/240 VAC WIRING DIAGRAM



# 3827 480 WIRING DIAGRAM



**3827S****DECK OVEN**

<b>DESCRIPTION</b>	<b>PART NO.</b>
Element 3827 208 Volt I/S 1350 Watts	11070-09
Element 3827 208 Volt O/S 1650 Watts	11070-10
Element 3827 240 Volt I/S 1350 Watts	11070-15
Element 3827 240 Volt O/S 1650 Watts	11070-16
Element 3827 480 Volt I/S 1350 Watts	11070-19
Element 3827 480 Volt O/S 1650 Watts	11070-20
Element 3827 380 Volt I/S 1350 Watts (Marine Units Only)	11070-21
Element 3827 380 Volt O/S 1650 Watts (Marine Units Only)	11070-22
Switch Toggle On-Off	30303-06
Switch Rotating 3 Heat	30304-06
Thermostat 550°F Oven (After D-69655)	30402-07
Thermostat 550°F Oven (Before D-69655)	30402-09
Terminal Block 3 Pole (Not on Marine Units)	30500-07
Timer Mechanical Long Ring	30801-01
Fuse 15 Amp (After D-69655)	30900-01
Fuse 30 Amp 480 Volt Units (Before D-69655)	30900-06
Fuse 50 Amp 208/240 Volt Units (Before D-69655)	30900-09
Fuse Holder 15 Amp (After D-69655)	30901-02
Fuse Block 2 Pole 30 Amp 480 Volt Units (Before D-69655)	30901-05
Fuse Block 2 Pole 60 Amp 208/240 Volt Units (Before D-69655)	30901-06
Transformer 480/240 VAC (After D-69655)	31400-04
Pilot Light 208/240V 6" Lead Black Body	31601-01
Pilot Light 480V 6" Lead Black Body	31601-02
Lamp Socket	31602-04
Lamp Incandescent 250 Volt Clear	31603-04
Oven Lamp Lens ( Watch Glass)	31604-01
Oven Lamp Gasket	31604-02
Circuit Breaker 208/240 Volt 1 Pole	31800-01
Circuit Breaker 480 Volt 3 Pole	31800-04
Circuit Breaker 480 Volt 2/10 Amp 2 Pole (Marine Units Only)	31800-07
Handle Channel (Marine Units Only)	50300-14
Handle Assembly (Marine Units Only)	50300-38
Element Bushing Metal	50301-11
Light Ring	50301-21
Tension Disc Oven Door	50800-07
Spring Left Side 7 1/2" Long – Oven Door	51001-01
Spring Right Side 7 1/2" Long – Oven Door	51001-02
Catch Door 1/4" Bullet (Marine Units Only)	70602-01
Handle Assembly Oven Door	70603-05
Knob Manual Timer	70701-09
Knob 3 Heat Switch	70701-10
Knob Thermostat 550°F Oven (Before D-69655)	70701-12
Knob Thermostat 550°F Oven (After D-69655)	70701-15
Knob Damper Black	70701-25
Window Assembly 7" x 21" Oven Door	71301-01