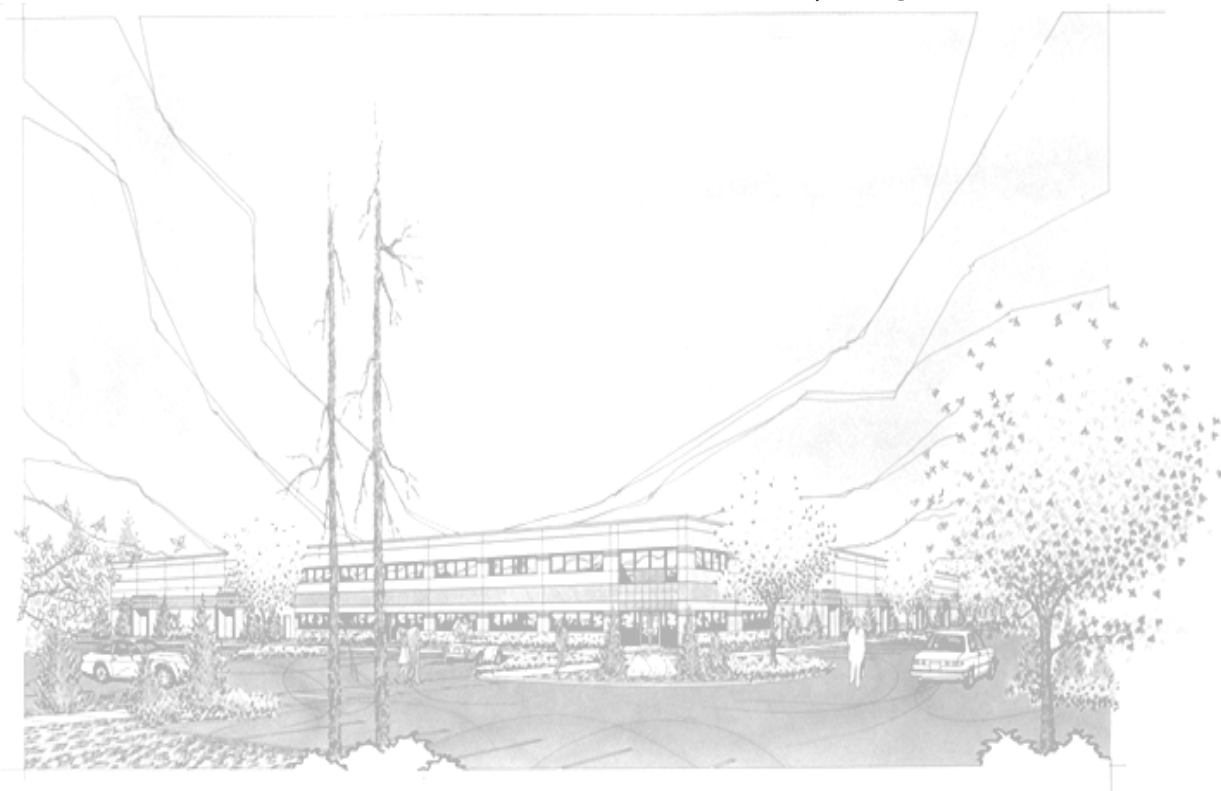








**Installation, Operation, Maintenance, & Troubleshooting**  
**Model: RF21CT-AM-U, Range**



**THIS MANUAL MUST BE RETAINED FOR FUTURE REFERENCE. READ, UNDERSTAND AND FOLLOW THE INSTRUCTIONS AND WARNINGS CONTAINED IN THIS MANUAL.**

**THE INFORMATION IN THIS MANUAL IS CRUCIAL AND MUST BE RETAINED FOR FUTURE REFERENCE. READ, UNDERSTAND AND FOLLOW THE INSTRUCTIONS AND WARNINGS CONTAINED IN THIS MANUAL.**

<b>DANGER</b>	POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH.	
<b>WARNING</b>	POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.	
<b>CAUTION</b>	POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE INJURY.	
<b>NOTICE</b>	Helpful operation and installation instructions and tips are present.	

**FOR YOUR SAFETY**

**DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.**















**WARNING: IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH. READ THE INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS THOROUGHLY BEFORE INSTALLING OR SERVICING THIS EQUIPMENT.**

<b>Model #:</b>	<b>Purchased From:</b>
<b>Serial #:</b>	<b>Location:</b>
<b>Date Purchased:</b>	<b>Date Installed:</b>
<b>Purchase Order #:</b>	<b>For Service, Call:</b>

# TABLE OF CONTENTS

<b><u>CHAPTER</u></b>	<b><u>PAGE</u></b>
1. TABLE OF CONTENTS.....	3
2. READ FIRST.....	4
3. EQUIPMENT DESCRIPTION .....	6
4. UNPACKING.....	7
5. INSTALLATION .....	8
6. INITIAL START-UP .....	9
7. OPERATION.....	10
8. MAINTENANCE & CLEANING .....	11
9. PARTS LIST .....	14
10. WIRING DIAGRAM.....	15
11. WARRANTY .....	16

**IMPORTANT****READ FIRST****IMPORTANT**

<b>CAUTION</b>	<b>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.</b>	
<b>CAUTION</b>	<b>ANY STAND, COUNTER OR OTHER DEVICE ON WHICH RANGE WILL BE LOCATED MUST BE DESIGNED TO SUPPORT THE WEIGHT OF THE RANGE.</b>	
<b>CAUTION</b>	<b>SHIPPING STRAPS ARE UNDER TENSION AND CAN SNAP BACK WHEN CUT.</b>	
<b>DANGER</b>	<b>THIS APPLIANCE MUST BE GROUNDED AT THE TERMINAL PROVIDED. FAILURE TO GROUND THE APPLIANCE COULD RESULT IN ELECTROCUTION AND DEATH.</b>	
<b>WARNING</b>	<b>INSTALLATION OF THE UNIT MUST BE DONE BY PERSONNEL QUALIFIED TO WORK WITH ELECTRICITY AND PLUMBING. IMPROPER INSTALLATION CAN CAUSE INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT. UNIT MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES.</b>	
<b>NOTICE</b>	<b>The data plate is located behind the front access panel. The range 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.</b>	
<b>NOTICE</b>	<b>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.</b>	
<b>CAUTION</b>	<b>BE SURE THE POWER SUPPLY VOLTAGE MATCHES THE VOLTAGE SPECIFIED ON THE NAMEPLATE LOCATED ON THE FRONT OF THE RANGE.</b>	
<b>NOTICE</b>	<b>During the first few hours of operation you may notice a small amount of smoke coming off the range, or out of the oven, and a faint odor from the smoke. This is normal for a new range and will disappear after the first few hours of use.</b>	
<b>CAUTION</b>	<b>ALWAYS KEEP THE AREA NEAR THE APPLIANCE FREE FROM COMBUSTIBLE MATERIALS.</b>	
<b>CAUTION</b>	<b>KEEP FLOOR IN FRONT OF EQUIPMENT CLEAN AND DRY. IF SPILLS OCCUR, CLEAN IMMEDIATELY, TO AVOID THE DANGER OF SLIPS OR FALLS.</b>	
<b>WARNING</b>	<b>KEEP WATER AND SOLUTIONS OUT OF CONTROLS. NEVER SPRAY OR HOSE CONTROL CONSOLE, ELECTRICAL CONNECTIONS, ETC.</b>	
<b>CAUTION</b>	<b>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.</b>	
<b>NOTICE</b>	<b>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.</b>	

**IMPORTANT**

**READ FIRST**

**IMPORTANT**

**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.**



**WARNING**

**MAKE SURE THE RANGE HAS BEEN PROPERLY SECURED FROM POWER BEFORE REMOVING ANY COMPONENTS.**



# EQUIPMENT DESCRIPTION

## ELECTRIC RANGE EXTERIOR

- The Range dimensions are 10” (25.4cm) High (without legs), 38” (96.5cm) Deep, and 36” (91.5cm) Wide.
- The Sides, Bottom, and Rear wall are constructed stainless steel.
- The Range surface comes with a 24” griddle and two 9” in diameter French Plates.

## ITEMS

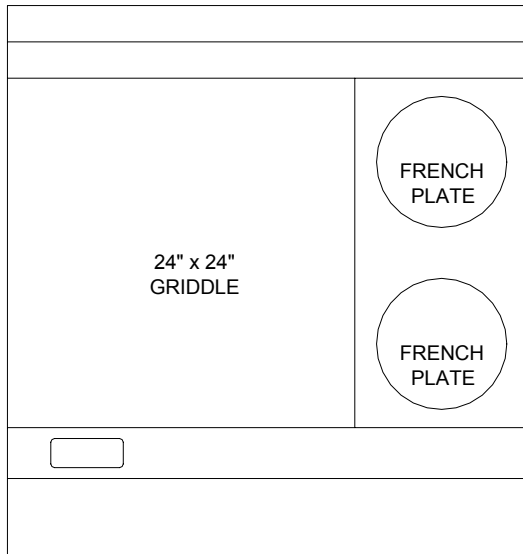
- 1 ea. RF21-AM-U (Range Top)
- 4 ea. 4-inch legs
- 1 ea. Operation Manuals
- 1 ea. Marine Handle
  - 4 ea. ¼-20x½” HXD bolt S/S.
  - 4 ea. Lock Washer, S/S

## RANGE TOP CONTROLS

The RF21SM-A Series Range comes with one 24”x24” Griddle that has a temperature range of 100°F -450°F and two French Plates that have a temperature range of 200°F-750°F. Each section of the grill is controlled by a 450°F thermostat and each French Plate is controlled by a 6-heat switch. Below is a layout of the top configuration.




### RF21CT-AM-U

One 24”x24” Griddle controlled by two 450°F thermostats and two French Plates controlled by two 6-heat switches.



**RANGE TOP CONFIGURATION**

# UNPACKING

<b>CAUTION</b>	<b>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.</b>	
<b>CAUTION</b>	<b>ANY STAND, COUNTER OR OTHER DEVICE ON WHICH RANGE WILL BE LOCATED MUST BE DESIGNED TO SUPPORT THE WEIGHT OF THE RANGE.</b>	
<b>CAUTION</b>	<b>SHIPPING STRAPS ARE UNDER TENSION AND CAN SNAP BACK WHEN CUT.</b>	

## RECEIVING THE RANGE

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.

## LOCATION

Prior to un-crating, move the range 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.

## UN-CRATING

The range will arrive in two packages, each inside a wood frame covered by cardboard box and strapped to a skid. **Remove the cardboard cover, cut the straps and remove the wood frame.** The oven may now be removed from the skid.

## INSTALLING THE LEGS

To install the legs, place some cardboard on the floor and gently tip the range onto its back. A 3/8-16 threaded weld nut is provided in each of the four corners of the range. Thread each leg into the threaded weld nuts and lift range back onto the legs.

# INSTALLATION

## 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 AND PLUMBING. 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 the front access panel. The range 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.



## ELECTRICAL CONNECTION

A junction box is located on the right hand side underneath the range. Connection can be made through a knock out located on the junction box.

The electrical connection must be made in accordance with local codes or in the absence of local codes with **National Electrical Code** latest edition (in Canada use: **CSA STD. C22.1**).

The range can now be connected to power.

## CAUTION

**BE SURE THE POWER SUPPLY VOLTAGE MATCHES THE VOLTAGE SPECIFIED ON THE NAMEPLATE LOCATED ON THE FRONT OF THE RANGE.**





## INITIAL PREHEAT

Prior to putting any range into full time operation at normal cooking temperatures, it must be thoroughly dried out. Moisture absorption in the closed spaces, in the insulation, and even inside the heating elements can cause future trouble if not properly treated.

## Griddles

To “dry out” the griddle, set the thermostat to 250°F. Allow the unit to operate at least 15 minutes at this heat level. Set the thermostat to 350°F and allow another 15 minutes to elapse. Set the thermostat to 450°F and allow the unit to maintain the temperature for a minimum of 4 hours. More time may be required if the unit has to operate in a moist environment.

If the unit is out of use for three or more days, a one-hour preheat schedule should be used, especially when exposed to high humidity and/or cool temperatures.

Before any griddle plate can be put into full operation it will need to be properly seasoned. To do this, turn the griddle to 200°F and wait for the red heat indicator lamp to shut off. Once the indicator lamp has shut off, apply a thin coat of high-grade, non-salted vegetable oil to the griddle surface with a metal spatula or towel. Wait approximately five minutes and re-coat any dry spots. Repeat this procedure at 300°F and at 400°F.

## French Plates

To “dry out” the French plates, set the 6-heat switch to position three. Allow the unit to operate at least 15 minutes at this heat level. Set the 6-heat switch to position four and allow another 15 minutes to elapse. Set the 6-heat to position six and allow the unit to maintain the temperature for a minimum of 4 hours. More time may be required if the unit has to operate in a moist environment.

If the unit is out of use for three or more days, a one-hour preheat schedule should be used, especially when exposed to high humidity and/or cool temperatures.

## NOTICE

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



## Griddle

Thermostats control 24" x 24" grill plate.

Temperature ranges from 100°-450°F.

Recommended: All heavy and light frying.

Set the thermostat dial at the desired temperature and allow for a thirty-minute preheat time.

The red indicator light will be on until the desired temperature is reached and then shut off.

The pilot light will cycle on and off as the elements cycle on and off.

## French Plate

6-heat switch controls one, French Plate.

Temperature settings range from 1(low) to 6(high).

Recommended: Light duty sauce pans and small stockpots.

Not Recommended: Heavy stock pots, or heavy urns, or kettles.

Set the 6-heat dial to the desired setting and allow for a thirty-minute preheat time.

## MAINTENANCE & CLEANING

<b>CAUTION</b>	<b>ALWAYS KEEP THE AREA NEAR THE APPLIANCE FREE FROM COMBUSTIBLE MATERIALS.</b>
<b>CAUTION</b>	<b>KEEP FLOOR IN FRONT OF EQUIPMENT CLEAN AND DRY. IF SPILLS OCCUR, CLEAN IMMEDIATELY, TO AVOID THE DANGER OF SLIPS OR FALLS.</b>
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### CLEANING

- Always start with a cold range.
- The stainless exterior can easily be cleaned using Lang Mfg. Prime Shine (72804-41) cleaner.
- Always follow the cleaner manufacturer's instructions when using any cleaner.
- Care should be taken to prevent caustic cleaning compounds from coming in contact with the aluminized blower wheel and aluminized inside of the oven.
- Discoloration or heat tint may be removed using Lang Mfg. Carbon Release (72804-32) oven cleaner.
- Always apply these cleaners when the range is cold and rub in the direction of the metal's grain
- The range 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 drip pans under range top plates clean.
- Keep hot plate surfaces clean.
- Outside of range and top should be kept clean.
- Electric equipment is inherently clean and sanitary, but may become unsanitary if grease 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.

### EMERGENCY LOCKOUT

Locate power disconnect at source and remove power from range.

### LONG TERM STORAGE

Secure range from power.

Apply a generous amount of Lang Mfg. Prima Shine (72804-41) to the stainless steel.

Apply a generous amount of Lang Mfg. Shipping Preservative Grease (72804-08) to the hop plate surface.

## MAINTENANCE & CLEANING Cont'd

### NOTICE

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### 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

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## TROUBLE SHOOTING

### Griddle

#### GRIDDLE WILL NOT HEAT

PROBABLE CAUSE	CORRECTIVE ACTION
Incorrect wiring	Confirm that oven is getting proper voltage. Confirm that range is phased correctly.
Oven circuit breaker not on	Cycle breaker to the "ON" position.
Defective Thermostat	Confirm that thermostat is getting correct voltage. Confirm that thermostat is operating properly.
Defective Element	Confirm that element is getting correct voltage Check element for normal operation (Inside 5.7 Amps, Outside 3.5 Amps).

### FRENCH PLATE

#### FRENCH PLATE WILL NOT HEAT

PROBABLE CAUSE	CORRECTIVE ACTION
Incorrect wiring	Confirm the French Plate is wired correctly. Confirm that range is phased correctly.
Defective 6-Heat switch	Confirm that switch is wired correctly. Confirm that switch is operating correctly.
Defective French Plate	Confirm that French Plate is getting correct voltage. Confirm that French Plate is operating correctly. (See Technical Data)

## CALIBRATION

### Calibration Check

Place thermometer or thermocouple in the center of grill section.  
Set thermostat to 350°F.  
Allow the grill to preheat for at least half an hour.  
Note cycle on temperatures and cycle off temperatures for 3 cycles.  
After 3 cycles average the temperature, (Add all six temperatures and divide by 6).  
The temperature should be +/- 15°F.

### 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°F.  
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 screw. Counter clockwise to increase and clockwise to decrease (1/8 of a turn will move the temperature 5-7 °F in either direction).  
Reinstall the oven knob and recheck the oven temperature.

**WARNING** MAKE SURE THE RANGE HAS BEEN PROPERLY SECURED FROM POWER BEFORE REMOVING ANY COMPONENTS.



## RANGE TOP

### Thermostat

Secure range top from power. Open front control panel and feed capillary tube up towards grill plate. Using two 9" braces, lift the griddle plate up and secure with the two 9" braces. Remove capillary tube holders from the center of the element pan assembly and gently remove from griddle area. Remove two sheet metal screws holding control panel to range top and remove control panel. Remove the thermostat knob and two screws holding the thermostat to the control panel. Discard old thermostat. Reverse removal instructions to install new thermostat.

### Elements

Secure range top from power. Using two 9" braces, lift the griddle plate up and secure with the two 9" braces. Remove capillary tube holders from the center of the element pan assembly and gently remove from griddle area. Remove wires from element terminals, noting the wire locations. Remove the five nuts holding the element pan assembly to the bottom of the griddle. Remove defective element from the element pan and discard defective element. To install reverse removal instructions.

### 6-Heat Switch

Secure range top from power. Remove two sheet metal screws holding control panel to range top and remove control panel. Remove the 6-heat switch knob and two screws holding the 6-heat switch to the control panel. Remove wires from the 6-heat switch terminals noting the wire locations. Discard old 6-heat switch. Reverse removal instructions.

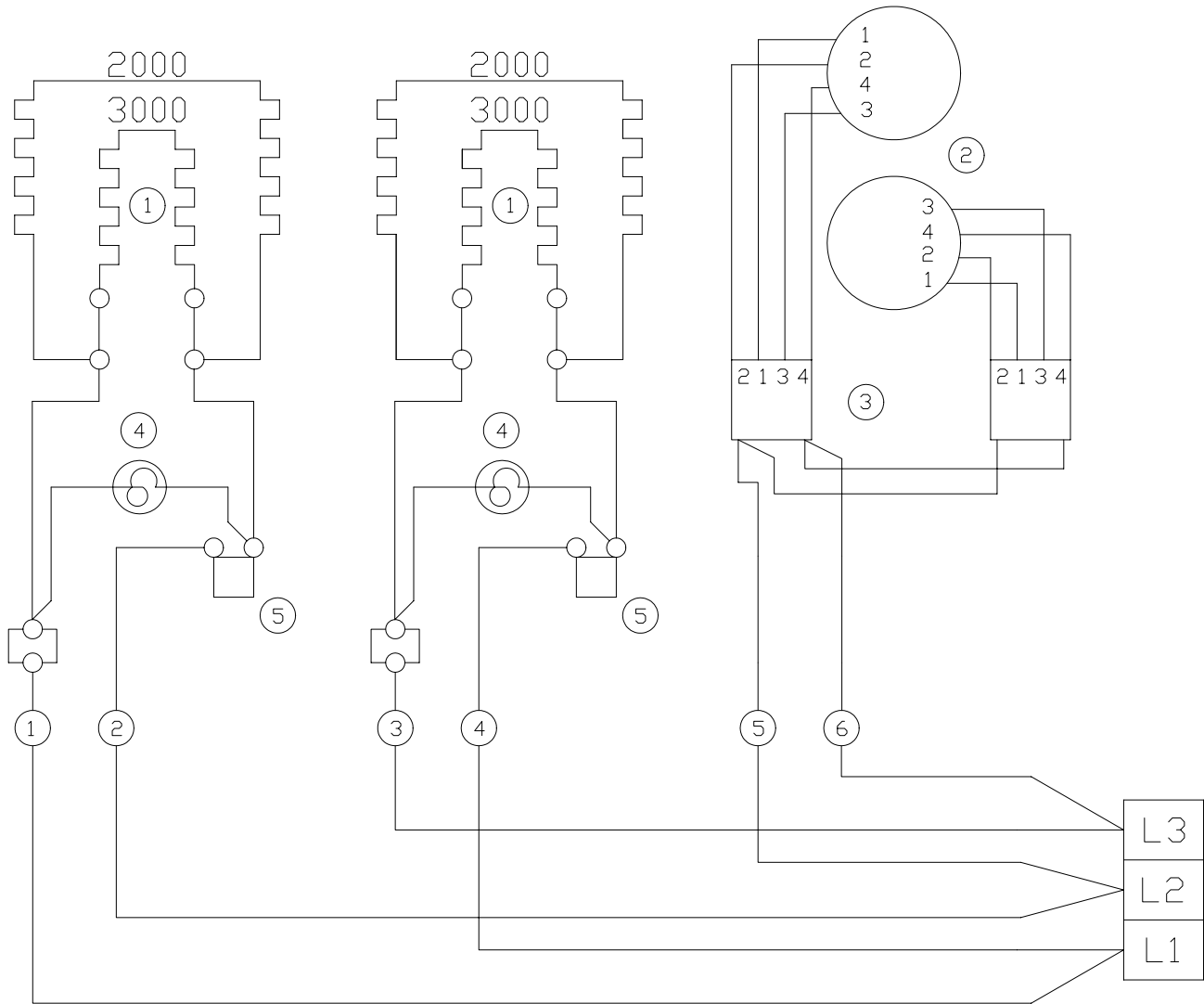
### French Plate

Secure range top from power. Using two 9" braces, lift the French plate frame assembly up and secure with the two 9" braces. Remove wires from the element terminals, noting the wire locations. Remove defective French plate assembly from the range. To install reverse removal instructions.

## PARTS LIST

Description	Lang Part #
Range Plate Assembly 1/2" x 3ft	50401-03
Element (Griddle) 440V I/S 3000 Watts	11010-24
Element (Griddle) 440V O/S 2000 Watts	11010-23
Element Pan Assembly w/ Snout	50300-20
Wire Bracket	50306-25
Thermostat Capillary Tube Holder	60102-17
Element Terminal Guard	50306-33
Indicator Light 440V	31601-02
Knob Thermostat 450°F Griddle	70701-16
Terminal Block 3 Pole	30500-07
Thermostat 450°F Griddle	30402-08
French Plate Assembly, 480V, 2600 Watt	11120-14
6-Heat Switch	30304-09
Thermostat 850°F	30402-23
French Plate Frame Assembly	50300-82
Ship Rail 90° 13"	50900-01
Ship Rail Hooked 11 <sup>3</sup> / <sub>8</sub> "	50901-01
Ship Rail Hooked 32 <sup>1</sup> / <sub>4</sub> "	50901-04
Ship Rail Socket	50902-03
Ship Rail Socket	50902-05
Knob 6-heat switch	70701-41
Range Top Control Panel Front	RF21-306-1
Range Top Front	RF21-711
Pan / Grease Drawer	RF21-705
Grab Bar Assembly 36" Long	50300-44
Marine Pan Latch Assembly	60102-93
Range Top Left Hand Assembly	RF21-710
Range Top Center Channel	RF21-704
Range Top Right Hand Assembly	RF21-709
Range Top Rear Assembly	RF21-703

# WIRING DIAGRAM



- |   |                  |
|---|------------------|
| ① | GRIDDLE ELEMENTS |
| ② | FRENCH PLATES    |
| ③ | SIX HEAT SWITCH  |
| ④ | PILOT LAMP       |
| ⑤ | THERMOSTAT       |