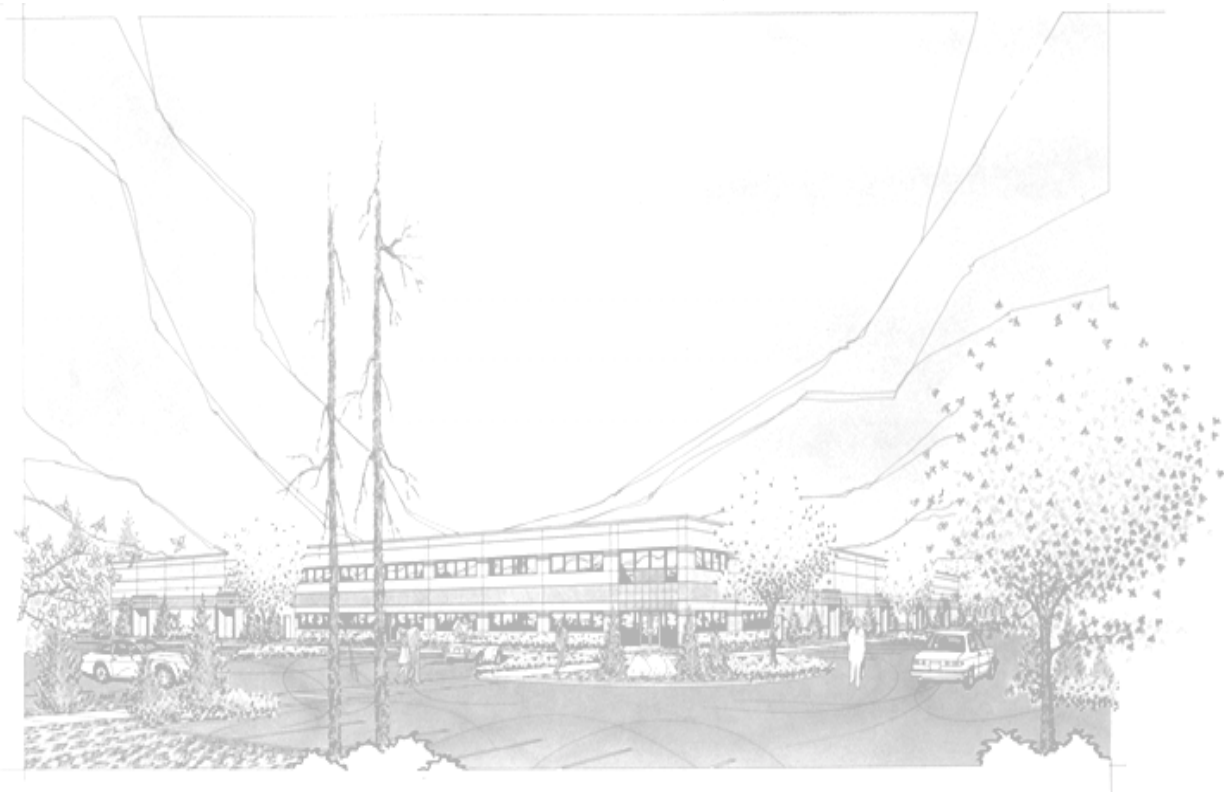




**Installation, Operation, Maintenance, & Troubleshooting**  
**Model: RF-21S, Range**



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

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

**POST IN A PROMINENT LOCATION**  
**INSTRUCTIONS TO BE FOLLOWED IN THE EVENT USER SMELLS GAS. THIS INFORMATION SHALL BE OBTAINED BY CONSULTING YOUR LOCAL GAS SUPPLIER. AS A MINIMUM, TURN OFF THE GAS AND CALL YOUR GAS COMPANY AND YOUR AUTHORIZED SERVICE AGENT. EVACUATE ALL PERSONNEL FROM THE AREA.**

**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>

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**CAUTION:** THE RANGE WEIGHS 410 LBS. (186 KILOGRAMS). 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 RANGE WILL BE LOCATED MUST BE DESIGNED TO SUPPORT THE WEIGHT OF THE RANGE (410 LBS.).



**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 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 right of Range top controls. 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.

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



## Lang Model: RF21S Electric Range

### Exterior

- The Range dimensions are 8" (20.3 cm) High, 38" (96.5cm) Deep, and 36" (91.5cm) Wide.
- The Sides, Bottom, and Rear wall are constructed stainless steel.  
The Range surface can come in 5 different configurations.

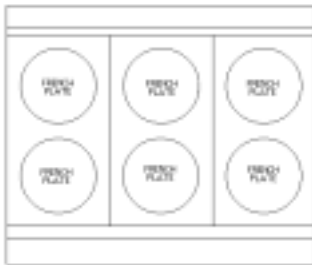
### Controls

The RF21 Series Rang is available with various controls depending upon model number. Shown below is a layout of each top configuration with its proper model number and a brief description of the controls.

The RF21S Ranges can come with a either a standard bake oven, convection oven, or just as a range top.

#### **RF21S-H or 36S-20**

Six French plates controlled by six 6-heat switches.



#### **RF21S-C or 36S-2**

Three Hot Tops controlled by three 850° thermostats.



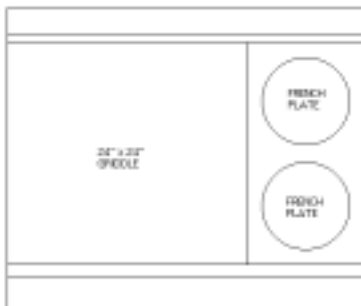
#### **RF21S-G or 36S-10**

One 36"x24" Griddle controlled by one 450° thermostat.



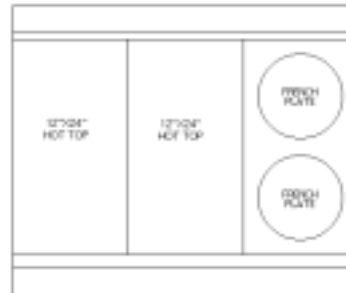
#### **RF21S-A or 36S-0**

One 24"x24" griddle controlled by Two 450° thermostats and Two French plates controlled by two 6-heat switches.



#### **RF21S-D or 36S-3A**

Two 12"x24" Hot tops controlled by two 850° thermostats and two French plates controlled by two 6-heat switches.



## 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 completely assembled 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.**

**CAUTION:** RANGE WEIGHS 410 LBS (186 kilograms). 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 RANGE WILL BE LOCATED MUST BE DESIGNED TO SUPPORT THE WEIGHT OF THE OVEN (410 LBS.).



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



Remove range from skid and place in intended location.

## INSTALLING THE LEGS

Legs or Casters are available and must be specified upon ordering.

To install the 6-inch legs, remove the legs from the range packing, place some cardboard on the floor and gently tip the range onto its back. Fasten the legs into the threaded holes provided and then gently flip the oven onto its legs.

To install the 6-inch casters, remove the casters from the oven cavity, place some cardboard on the floor and gently tip the range onto its back. Attach the casters to the adapter plates. Install the four adapter plates (one in each corner with the flange pointed toward the oven). Gently tip the oven onto its casters.

**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 right of range top controls. The oven 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

The electrical connection must be made in accordance with local codes or in the absence of local codes with **NFPA No. 70** latest edition (in Canada use: **CSA STD. C22.1**).

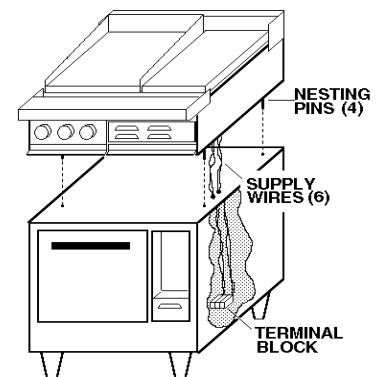
Place spacers, (ie. 2 x 4 wood block not supplied) at the front and rear of the oven top.

Place the range top on the spacers that are located on top of the oven.

The six wire leads to supply electricity to the cook top are bundled under the front bottom of the top. Route these wires through the bushing provided in the oven top.

Align the four locating pins in the bottom corner of the top with the four holes in each corner of the oven top.

Remove the spacers and lower the top onto the oven.



**CAUTION:** MAKE SURE THE SIX WIRE LEADS TO SUPPLY ELECTRICITY TO THE COOK TOP ARE NOT CRIMPED BETWEEN THE OVEN AND RANGE TOP.

**WARNING:** MAKE SURE THE MAIN POWER SUPPLY TO THE RANGE IS TURNED OFF AT THE SOURCE PRIOR TO CONNECTING POWER TO THE RANGE.



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.



Use the wiring diagram provided in this manual for determining the connections of the cook top wires to the oven terminal block.

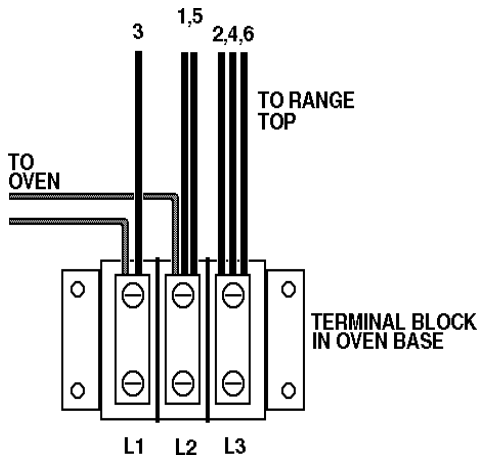


# INSTALLATION CONT'D

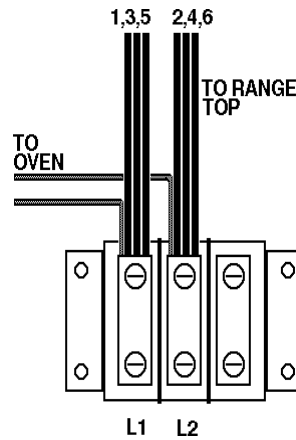
Range style	Total K.W. Conn	Three Phase									Single Phase	
		208 Volt			240 Volt			480 Volt			208 V	240 V
		L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2
Top Only	<b>15.0</b>	41.7	41.7	41.7	36.1	36.1	36.1	18.1	18.1	18.1	72.1	62.5
Convection Oven	<b>21.6</b>	48.3	69.2	62.5	41.9	59.9	54.2	20.5	29.5	27.7	103.8	90.0
Bake Oven	<b>21.0</b>	45.8	66.7	62.5	39.7	57.8	54.2	19.9	28.9	27.1	101.0	87.5

## Phasing

**Three Phase**



**Single Phase**



## **Hot Plates**

To "dry out" the Hot Plate, set the thermostat dial at 250°F and turn on the power switch. Allow unit to cycle at least 15 minutes at this heat level. Reset the thermostat to 350°F allowing the same time. Then reset the thermostat to 450°F allowing the same time. Continue doing this until you reach 850° then allow the unit to maintain this 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.

## **French Plates**

To "dry out" the French Plate, set the six-heat switch to the first setting and turn on the power switch. Allow unit to cycle at least 15 minutes at this heat level. Reset the six-heat switch to position 2 and allow the same time. Reset the six-heat switch to position 3 and allow the same time. Continue doing this until you reach position 6 then 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.

## **Griddles**

To "dry out" the Griddle, set the thermostat to 250° and turn on the power switch. Allow the unit to cycle at least 15 minutes at this heat level. Reset the thermostat to 350° allow the same time. Reset the thermostat to 450° 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 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, and a faint odor from the smoke. This is normal for a new range 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.



## **RANGE TOP**

Consists of the various top arrangements, depending on specific model purchased:

12" x 24" hot plate controlled by high temperature thermostats. Temperature ranges from 0°-850°. Recommended: Stock pots and heavy kettle work.

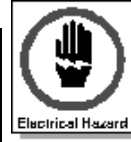
Round French Plates, controlled by indicating type 6-heat switch. Temperature ranges from 0°-750°. Recommended: Light duty sauce pans and small stockpots. Not Recommended: Heavy stock pots, or heavy urns, or kettles.

36" x 24" or 24" x 24" grill plates, controlled by thermostats. Temperature ranges from 0°-450°. Recommended: All heavy and light frying. Set the thermostat dial at the desired temperature. The red pilot light will be on until the desired temperature is reached. The pilot light indicates when the plate is heating.

## MAINTENANCE & CLEANING

### Cleaning

**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.



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.

**CAUTION:** Any oven cleaner used should be marked: “Safe On Aluminum”.

Keep-drip pans under range top plates clean.

Keep hotplate and griddle surfaces clean.

Outside of range and top should be kept clean.

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.

## Symptoms

What follows is a chart of Symptoms, Possible Causes, and Remedy's to aid in diagnosing faults with the range.

Refer to the Symptoms column to locate the type of failure then to the Possible Cause for the items to be checked and the Remedy to column for possible solutions.

SYMPTOM	POSSIBLE CAUSE
Hotplate will not heat	<ul style="list-style-type: none"> <li>• No power to Unit</li> <li>• Defective Thermostat</li> <li>• Defective element</li> </ul>
French plate will not heat	<ul style="list-style-type: none"> <li>• No power to Unit</li> <li>• Failed 6-heat switch</li> <li>• Failed element</li> </ul>
Griddle plate will not heat	<ul style="list-style-type: none"> <li>• No power to Unit</li> <li>• Failed Thermostat</li> <li>• Failed element</li> </ul>

## TESTS

### 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.**



If an item on the list is followed by an asterisk (\*), the work should be done by a factory authorized service representative.

Possible Cause	TEST
Failed thermostat	<ul style="list-style-type: none"> <li>• Verify calibration</li> </ul>
Failed element	<ul style="list-style-type: none"> <li>• Remove the wires and check for continuity across the element*</li> </ul>
Failed 6-heat switch	<ul style="list-style-type: none"> <li>• Call factory or consult service manual for proper tests</li> </ul>

### CAUTION:

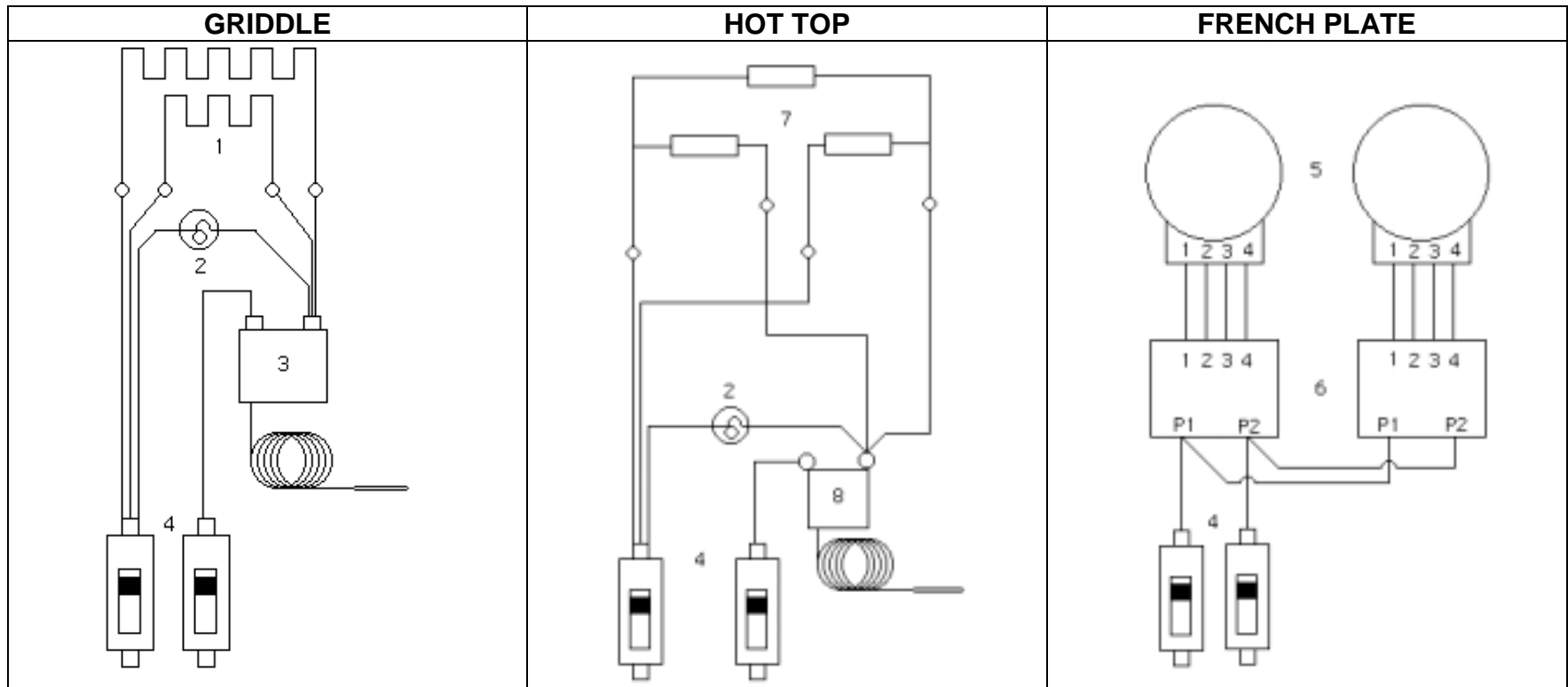
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## PARTS LIST

DESCRIPTION	PART NO.
Element Top Plate 208V O/S 2000 Watts	11010-09
Element Top Plate 208V I/S 3000 Watts	11010-10
Element Top Plate 240V O/S 2000 Watts	11010-21
Element Top Plate 240V I/S 3000 Watts	11010-22
Element Top Plate 480V O/S 2000 Watts	11010-23
Element Top Plate 480V I/S 3000 Watts	11010-24
Element Top Plate 380V O/S 2000 Watts (Marine Units Only)	11010-25
Element Top Plate 380V I/S 3000 Watts (Marine Units Only)	11010-26
Hot Plate Cast Assy. w/ Elements 208V 5000 Watts	11010-341
Hot Plate Cast Assy. w/ Elements 240V 5000 Watts	11010-351
Hot Plate Cast Assy. w/ Elements 480V 5000 Watts	11010-361
Element French Plate 208 Volt 2600 Watts	11120-12
Element French Plate 240 Volt 2600 Watts	11120-13
Element French Plate 480 Volt 2600 Watts	11120-14
Element French Plate 380 Volt 2000 Watts (Marine Units Only)	11120-18
Thumb Screws 1/2-20 x 3/4" (Marine Units Only)	20112-01
Switch Rotating 3 Heat	30304-06
Switch Rotating 6 Heat + Off	30304-09
Thermostat 850°F Hot Top	30402-23
Pilot Light 208/240V 6" Lead Black Body	31601-01
Pilot Light 480V 6" Lead Black Body	31601-02
Element Pan Assembly w/ Snout	50300-20
Grab Bar Assembly 36" Long (Cruise Line Only)	50300-32
Grab Bar Assembly 36" Long (Marine Units Only)	50300-44
Pan Latch Assembly (Marine Units Only)	50300-63
Door Striker Plate (Marine Units Only)	50300-68
French Plate Frame Assembly	50300-82
Door Stop & Slide (Marine Units Only)	50301-50
Range Plate Assembly 1/2" x 1ft	50401-01
Range Plate Assembly 1/2" x 2ft	50401-02
Range Plate Assembly 1/2" x 3ft	50401-03
Ship Rail 13" (Marine Units Only)	50900-01
Ship Rail 24" (Marine Units Only)	50900-02
Ship Rail 35 3/8" (Marine Units Only)	50900-04
Ship Rail Hooked 11 3/8" (Marine Units Only)	50901-01
Ship Rail Hooked 32 1/4" (Marine Units Only)	50901-04
Ship Rail Socket Front (Marine Units Only)	60102-981
Ship Rail Socket Rear (Marine Units Only)	60102-982
Pan/Grease Drawer	60102-29
Knob Thermostat 850°F Hot Top	70701-35
Knob 6 Heat Switch	70701-41
Blower Wheel	71500-03

## RANGE TOP WIRING



1. Griddle and Top Plate Element
2. Pilot Light
3. 450° Griddle thermostat
4. Circuit breakers
5. French plate
6. 6-Heat switch
7. Hot Top
8. 850° Hot Top thermostat.