

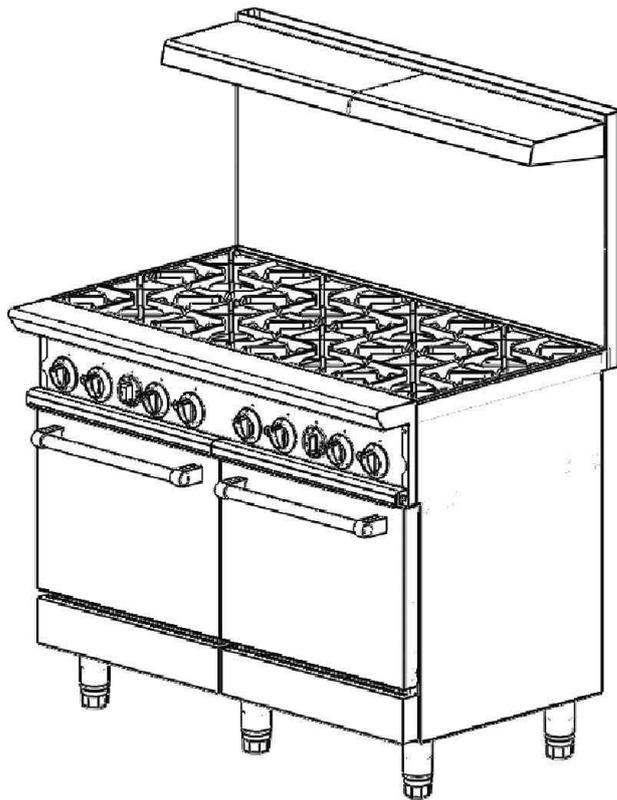
# Flamaster

## INSTALLATION & OPERATION MANUAL GAS RESTAURANT RANGES

**Models:** FLM-R24 FLM-R36 FLM-R48 FLM-R60

FLM-R36-24MG FLM-R60-24MG

**FLM-R48-24MG**



**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.

## **FOR YOUR SAFETY**

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

### **IMPORTANT FOR YOUR SAFETY**

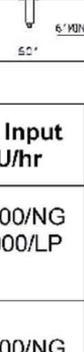
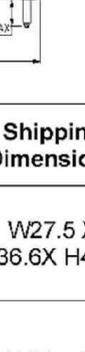
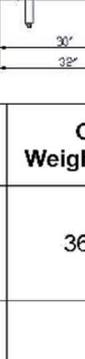
THIS MANUAL HAS BEEN PREPARED FOR PERSONNEL QUALIFIED TO INSTALL GAS EQUIPMENT, WHO SHOULD PERFORM THE INITIAL FIELD START-UP AND ADJUSTMENTS OF THE EQUIPMENT COVERED BY THIS MANUAL.

POST IN A PROMINENT LOCATION THE INSTRUCTIONS TO BE FOLLOWED IN THE EVENT THE SMELL OF GAS IS DETECTED. THIS INFORMATION CAN BE OBTAINED FROM THE LOCAL GAS SUPPLIER.

## **IMPORTANT**

**IN THE EVENT A GAS ODOR IS DETECTED, SHUT DOWN UNITS AT MAIN SHUTOFF VALVE AND CONTACT THE LOCAL GAS COMPANY OR GAS SUPPLIER FOR SERVICE.**

### Model List view

Model No.	Description	View	Width	Total Input BTU/hr	Shipping Dimensions	Crated Weight Lbs/Kgs
R24	4 top burner range, one 24" oven		24"	153,000/NG 136,000/LP	W27.5 X D36.6X H42.3	366 / 166
R36	6 top burner range, one 36" oven		36"	213,000/NG 190,000/LP	W39.5 X D36.6X H42.3	471 / 214
R60	0 top burner range, two 36" oven		60"	366,000/NG 326,000/LP	W63.5 X D36.6X H42.3	764 / 347
R60-24MG	6 top burner range, one 24" top griddle, two 36" oven		60"	306,000/NG 272,000/LP	W63.5 X D36.6X H42.3	817 / 371
R60-24TG	6 top burner range, one 24" top thermostat griddle, two 36" oven		60"	306,000/NG 272,000/LP	W63.5 X D36.6X H42.3	864 / 392
R60-24CB	6 top burner range, one 24" top charbroiler two 36" oven		60"	316,000/NG 288,000/LP	W63.5 X D36.6X H42.3	787 / 357

## Orifice size & BTU

Description	Pressure	BTU per burner	Orifice size
Top burner	5"(NAT)-24"36" / 6"(NAT)-60"	30,000	#41
	10"(LP)	27,000	#53
Oven	5"(NAT)-24"36" / 6"(NAT)-60"	33,000	#38
	10"(LP)	28,000	#53
Top griddle	5"(NAT)-24"36" / 6"(NAT)-60"	30,000	#39
	10"(LP)	27,000	#50
Top thermostat griddle	5"(NAT)-24"36" / 6"(NAT)-60"	30,000	#34
	10"(LP)	27,000	#52
Top char broiler	5"(NAT)-24"36" / 6"(NAT)-60"	35,000	#36
	10"(LP)	35,000	#49

### Installation, Operation and Care:

PLEASE KEEP THIS MANUAL FOR FUTURE REFERENCE

#### GENERAL

Ranges are produced with quality workmanship and material. Proper installation, usage and maintenance of your range will result in many years of satisfactory performance.

suggests that you thoroughly read this entire manual and carefully follow all of the instructions provided.

#### **▲WARNING**

THIS APPLIANCE IS EQUIPPED FOR NATURAL GAS, for conversion to LP gas please see gas conversion instruction manual attached. Orifices necessary for LP (propane) (natural) conversion are provided. Please refer to page 3 the orifice size list when you do gas conversion

## **INSTALLATION**

### **UNCRATING**

This range was inspected before leaving the factory. The transportation company assumes full responsibility for safe delivery upon acceptance of the shipment. Immediately after unpacking, check for possible shipping damage. If the range is found to be damaged, save the packaging material and contact the carrier within 15 days of delivery.

Uncrate unit carefully and place in a work-accessible area as near to its final installed position as possible. Remove all shipping wire and wood blocking. Before installing, check the type of gas supply (natural or propane) to make sure they agree with the specifications on the rating plate located on the inside of the lower kick panel. If the supply and equipment requirements do not agree, do not proceed with the installation. Contact your dealer or company immediately.

### **LOCATION**

The appliance must be installed under a ventilation hood.

The equipment area must be kept free and clear of combustible substances.

The range, when installed, must have a minimum clearance from combustible construction of 12" (304 mm) at the sides and 10" (253 mm) at the rear. Clearance from non-combustible construction is 0" at the sides and 6" (152 mm) at the rear.

The installation location must allow adequate clearances for servicing and proper operation. A minimum front clearance of 40" (1016 mm) is required.

The range must be installed so that the flow of combustion and ventilation air will not be obstructed. Adequate clearance for air openings into the combustion chamber must be provided. Make sure there is an adequate supply of air in the room to allow for combustion of the gas at the burners.

## **INSTALLATION CODES AND STANDARDS**

Ranges must be installed in accordance with:

### **In the United States of America:**

1. State and local codes.
2. National Fuel Gas Code, ANSI/Z223.1 (latest edition). Copies may be obtained from The American Gas Association, Inc., 1515 Wilson Blvd., Arlington, VA22209.

### **In Canada:**

1. Local codes.
2. CSA B149.1 Natural Gas and Propane Installation Code.
3. CSA C22.1 Canadian Electric Code.
4. CSA C22.2 Canadian Electric Code.

The above are available from the Canadian Standard Association, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6.

### **ASSEMBLY: Ranges Mounted on Casters**

Ranges mounted on casters must use a flexible connector (not supplied by CHEF N'SAVE) that complies with the Standard for Connectors for Movable Gas Appliances, ANSI-Z21.69 • CSA 6.16 and a quick-disconnect device that complies with the Standard for Quick-Disconnect Devices for Use With Gas Fuel, ANSI-Z21.41 • CSA 6.9. In addition, adequate means must be provided to limit movement of the appliance without depending on the connector and the quick-disconnect device or its associated piping to limit appliance movement. Attach the restraining device at the rear of the range as shown in Fig. 1.

Remove two screws from the rear of the range and install the tie-down strap shipped with the casters using these screws (Fig. 1). Attach the gas line strain relief to the tie-down strap at the rear of the range (Fig. 1).

If disconnection of the restraint is necessary, turn off the gas supply before disconnection. Reconnect this restraint prior to turning the gas supply on and returning the range to its installation position.

Separate instructions for installing casters to the range are included with the casters.

Note: If the range is installed on casters and is moved for any reason, it is recommended that the range be leveled front to back and side to side.

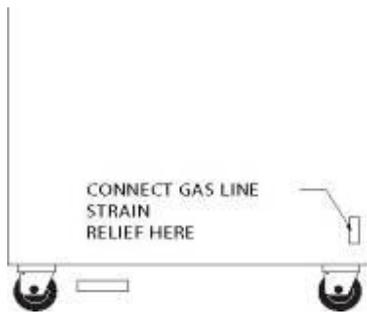


Fig. 1

### **Backsplash**

The standard Restaurant Range is equipped with a 23" (584 mm) high backsplash and shelf.

1. Remove the backsplash components from the crating materials.
2. Assemble the required components as shown in Fig's. 2 and 3 and 4.



**Fig. 2**

3. Tighten the four screws to secure the shelf.



**Fig. 3**



**Fig. 4**

- 4 Lift the assembly up, sliding the channels into the space provided at the rear of the range.(Fig's. 5).



**Fig. 5**

5. Install four #10 sheet metal screws (2 to each channel leg) (Fig. 6).



**Fig.6**

## LEVELING

Check the leveling of the range. Place a level inside the oven cavity across the oven rack(s). Level front-to-back and side-to-side.

To adjust the leveling, tilt the range to one side and, using channel locks, unscrew the adjustable leg insert as required. Repeat this procedure as necessary for each leg.

Optional casters for this range are of the non-adjustable type. Therefore, the floor must be level. If floor surface is not level, the range will experience cooking problems.

## GAS CONNECTIONS

**CAUTION: All gas supply connections and any pipe joint compound used must be resistant to the action of propane gases.**

Each range is factory-equipped for the type gas specified on the rating plate. The installation gas connection is a  $\frac{3}{4}$ " (19 mm) 14 FPT ANSI schedule #40 standard pipe. Connect gas supply. Make sure the pipes are clean and free of obstructions. Codes require that a gas shutoff valve be installed in the gas line ahead of the range. Standard ranges are equipped with fixed burner orifices which coincide with installation elevation.

Install the gas pressure regulator.

Before installing, ensure that regulator supplied agrees with rating plate gas supply.

The gas pressure regulator is **NOT** factory installed. The regulator for this gas type is sealed within a plastic bag attached to the oven rack inside the oven cavity. This regulator must be field installed by a qualified installer.

Natural gas regulators are preset for 5" W.C. (Water Column) (.99 kPa);

propane gas regulators for 10.0" W.C. (2.5 kPa)

1. Locate  $\frac{3}{4}$ " (19 mm) gas connection pipe extending from rear of range.
2. Cover pipe threads with leak sealant.
3. Screw regulator hand-tight onto pipe with regulator arrow pointing towards range body back (Fig. 7).
4. Using pipe wrench, tighten regulator securely in an upright position (Fig. 7).



Fig. 7

The arrow on the regulator shows the direction of the gas flow. The pressure regulator must be mounted horizontally to ensure proper preset outlet pressure. If the regulator is installed in any other position, the outlet pressure must be reset for proper operation.

A leak limiter is supplied with every regulator to allow excess gas pressure to escape. Do not obstruct leak limiter on gas pressure regulator, as obstruction may cause regulator to malfunction.

**WARNING:** PRIOR TO LIGHTING, CHECK ALL JOINTS IN THE GAS SUPPLY LINE FOR LEAKS. USE SOAP AND WATER SOLUTION. DO NOT USE AN OPEN FLAME.

After piping has been checked for leaks, all piping receiving gas should be fully purged to remove air.

Before operation, verify thermocouple is securely seated in the safety valve. The thermocouple should be tightened a  $\frac{1}{4}$  turn past finger tight. **DO NOT OVERTIGHTEN.** Over-tightening may damage the thermocouple or safety magnet.

## **TESTING THE GAS SUPPLY SYSTEM**

When gas supply pressure exceeds  $\frac{1}{2}$  psig (3.45 kPa), the range and its individual shutoff valve must be disconnected from the gas supply piping system.

When gas supply pressure is  $\frac{1}{2}$  psig(3.45kPa) or less, the range should be isolated from the gas supply system by closing its individual manual shutoff valve until the range is ready for start-up.

**FLUE CONNECTIONS** DO NOT obstruct the flow of flue gases from the flue located on the rear of the range. It is recommended that the flue gases be ventilated to the outside of the building through a ventilation system installed by qualified personnel.

From the termination of the flue to the filters of the hood venting system, a minimum clearance of 18" (457 mm) must be maintained.

Information on the construction and installation of ventilating hoods may be obtained from the standard for the "Removal of Vapors from Commercial Cooking Equipment", NFPA No. 96 (latest edition), available from The National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

## **OPERATION**

**WARNING:** THE RANGE AND ITS PARTS ARE HOT. BE VERY CAREFUL WHEN OPERATING, CLEANING OR SERVICING THE RANGE.

### **CONTROLS**

#### **THERMOSTAT DIAL**

Allows operator to regulate oven temperature from low to 500° F (260° C)

#### **(OPTIONAL) GRIDDLE BURNER KNOB**

Regulates gas flow to the griddle. To increase heat, turn knob counterclockwise, to decrease heat, turn knob clockwise.

### **BEFORE FIRST USE**

#### **Griddle Seasoning (*optional models*)**

**CAUTION:** This griddle plate is steel, but the surface is relatively soft and can be scored or dented by the careless use of a spatula or scraper. Be careful not to dent, scratch, or gouge the plate surface. Do not try to knock off loose food that may be on the spatula by tapping the corner edge of the spatula on the griddle surface.

A new griddle surface must be seasoned to do a good cooking job. The metal surface of the griddle is porous. Food tends to get trapped in these pores and stick; therefore, it is important to “season” or “fill up” these pores with cooking oil before cooking. Seasoning gives the surface a slick, hard finish from which the food will release easily.

To season, heat griddle top section at a low burner setting. Pour one ounce of cooking oil per square foot of surface over the griddle top section. With an insulated cloth, spread the oil over the entire griddle surface to create a thin film. Wipe off any excess oil with an insulated cloth.

Repeat this procedure 2 to 3 times until the griddle has a slick surface.

## LIGHTING AND SHUTTING DOWN PILOTS

All adjustment procedures associated with pilot lighting must be performed **by an authorized vender installation or service person.**

### Manual GRIDDLE

1. Turn main gas supply ON.
2. Wait 30 seconds and, using a long lighter, light the hot top or griddle top pilot



3. If pilot fails to light, turn main gas supply OFF. Wait 5 minutes and repeat the above procedures.
4. Turn one hot top or griddle top burner valve ON to remove air from the gas line. Turn burner valve OFF when gas begins to flow.

### Nightly Shutdown

1. Turn burner valve OFF; pilot will remain lit.

### Complete Shutdown

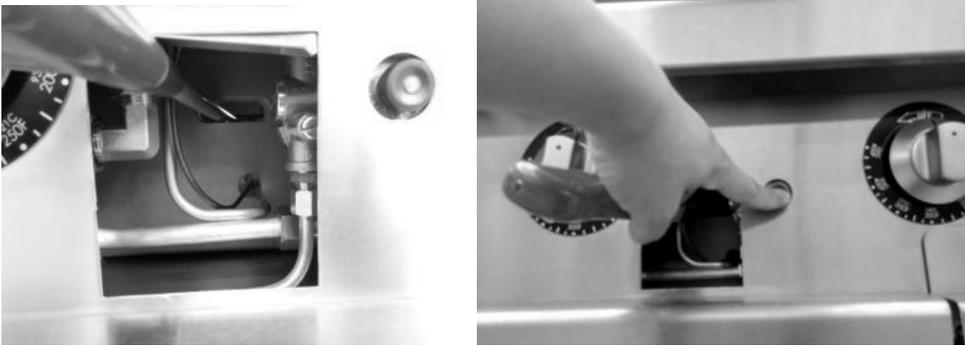
1. Turn burner valve OFF; pilot will remain lit.
2. Turn main gas supply OFF.

### Thermostat GRIDDLE

1. Turn main gas supply ON.
2. Locate Pilot lighting door on front of unit to left of red pilot lighting button.



3. Open door and Insert long lighter.



4. Press and hold red pilot button while lighting pilot. Once pilot is lit hold button for 30 seconds.
5. Release button. Pilot should remain on.
6. Close door.
7. If pilot fails to light, turn main gas supply OFF. Wait 5 minutes and repeat the above procedures.
8. Turn one hot top or griddle top burner valve ON to remove air from the gas line. Turn burner valve OFF when gas begins to flow.
9. **Nightly Shutdown**
10. Turn burner valve OFF; pilot will remain lit.
11. **Complete Shutdown**
12. Turn burner valve OFF; pilot will remain lit.
13. Turn main gas supply OFF.

**OPEN TOP BURNERS**

1. Turn main gas supply ON.
2. Wait 30 seconds and, using a taper, light the open top pilot
3. If pilot fails to light, turn main gas supply OFF. Wait 5 minutes and repeat the above procedures.
4. Turn one open top burner valve ON to remove air from the gas line. Turn burner OFF when gas begins to flow.

**Nightly Shutdown**

1. Turn burner valve OFF; pilot will remain lit.

**Complete Shutdown**

1. Turn burner valve OFF; pilot will remain lit.
2. Turn main gas supply OFF.

**GRIDDLE (optional models)**

1. Turn main gas supply ON. Wait 30 seconds and, using a taper, light broiler/griddle pilot.
2. If pilot fails to light, turn main gas supply OFF. Wait 5 minutes and repeat Steps 1 and 2.
3. Turn burner valve ON to purge air from the lines. Turn burner valve OFF when gas begins to flow.

**Nightly Shutdown**

1. Turn burner valve OFF; pilot will remain lit.

**Complete Shutdown**

1. Turn burner valve OFF; pilot will remain lit.
2. Turn main gas supply OFF.

**STANDARD OVEN LIGHTING AND SHUTDOWN INSTRUCTIONS NOTE:****Light open top/griddle pilots before lighting oven pilot.**

1. Turn thermostat to the **"OFF" POSITION**.
2. Remove the lower panel.
3. Depress the red button on the safety valve and light the pilot through the observation area.
4. Hold down the red button for at least 30 seconds.
5. When button is released, pilot should remain lit.
6. Replace lower panel.
7. Turn thermostat to desired temperature.
8. If the pilot becomes extinguished, Wait 5 Minutes, then repeat the above procedure.

**Nightly Shutdown**

1. Turn oven thermostat OFF.

**Complete Shutdown**

1. Turn oven thermostat OFF.
2. Turn main gas supply OFF.

### **RACK ARRANGEMENT -STANDARD OVEN**

The standard oven has three rack positions and is supplied with ~~one~~ two oven racks. Additional racks may be obtained through a vender parts depot.

### **INSERTING AND REMOVING RACK**

The oven rack has a stop to keep the rack from being pulled all the way out when unloading product. To install rack, place rack alongside of top of side liner runners and slide rack completely to the rear of the oven compartment until rack drops into place

To remove rack, reverse the procedure above by raising rear of oven rack stop above runner and pulling rack forward.

### **PREHEATING**

**Standard Oven** Turn thermostat control to the desired cooking temperature and preheat oven for 25 minutes. To save on gas consumption, do not operate oven at maximum heat when it is not necessary. Turn thermostat down to 250°F (121°C) or OFF when oven is not in use or during idle cooking periods.

### **Griddle (*optional models*)**

Turn the three manual gas valve knobs to full ON. After preheating for 5 minutes, turn valves down until desired flame or heating level is achieved. Position the removable broiler grid into one of the two slide positions, depending on which will achieve the proper product results.

### **CLEANING**

Do not use scouring powder or abrasives anywhere on this range  
Clean only using a soft cloth and mild detergent solution.

## **MAINTENANCE**

**WARNING:** THE RANGE AND ITS PARTS ARE HOT. BE VERY CAREFUL WHEN OPERATING, CLEANING OR SERVICING THE RANGE.

## **VENT**

When cool, the vent should be checked every six months for obstructions.

## **SERVICE AND PARTS INFORMATION**

To obtain repairs, service and parts information concerning this model, contact supplier. When calling for service, the following information must be available: model number, serial number, manufacture date (MD) and voltage (optional models).

# **GAS RESTAURANT RANGES**

We all recognize, however, that replacement parts and occasional professional service may be necessary to extend the useful life of this unit. When service is needed, contact a RANGE Authorized Service Agency, or your dealer. To avoid confusion, always refer to the model number, serial number, and type of your unit.



# TROUBLESHOOTING GUIDE

## STANDARD OVEN RESTAURANT RANGE

### OVEN

PROBLEM	CAUSES
1. Too much bottom heat 1a. Too low temperature 1b. Side burning 1c. Too much top heat	a) Insufficient ventilation b) Improper fluing c) Improper thermostat bypass setting d) Thermostat out of calibration e) Fluctuating gas pressure
2. Uneven bake side to side	a) Not level side to side b) Oven burner, bottom or baffles improperly installed c) Warped pans
3. Uneven bake front to rear	a) Overactive flue b) Not level front to back; check casters and legs c) Door not closing properly
4. Dried out products	a) Too low temperature (overcooking) b) Too long baking time c) Thermostat calibration
5. Pilot outage	a) Pilot flame to low b) Restriction in pilot orifice c) Problem with shutoff valve d) Possible fluing problems e) Low pressure f) Improper gas line sizing g) Burner box cover not properly installed h) Oven cavity requires resealing

### TOP BURNER OPERATION

1. Improper burner combustion Excessive valve handle temperatures Sticking top burner valves	a) Improper ventilation b) Poor door fit c) Oven door left open d) improper use of excessively large pans or pots
2. Poor ignition	a) Insufficient input b) Poor air-gas adjustment c) Restriction in pilot orifice d) Restriction in main burner ignition port

## Limited Warranty

Products warrants to the original owner/user that any unit manufactured by Products ("the products") shall be free of defects in material or workmanship under normal and proper use and maintenance service as specified by Products and upon proper installation (not to exceed 120 days from date of original shipment) and start-up in accordance with the instruction manual supplied with the Product.

**The obligation of Products and the rights and remedies of the owner/user under this warranty are exclusively limited to (1) the repair or replacement, including labor charges, of parts or assemblies that in Products opinion are defective within one year after the original date of installation;** The labor warranty shall include standard straight time labor charges at the product location only and shall exclude charges for travel time, mileage or other premium charges. Any labor service required to fulfill the warranty obligation must be performed by a service company qualified and accepted by BLUE FLAME Products.

This warranty does not include parts or labor coverage for component failure or other damage resulting from:

- External electrical power failure or miss wiring to Product for any reason.
- Adverse operating conditions as set forth in the owner/user manual for the Product.
- Failure to clean and/or maintain Product as set forth in the owner/ user manual for the Product.

All claims for labor or parts must be made through Products. The defective part, for which labor reimbursement is claimed, together with the service invoice, must be returned to the Products within fifteen days from the date of service to be eligible for labor and parts warranty coverage. All replacement parts must be approved Products parts. Incidents of failure that do not require replacement of a part shall be explained in sufficient detail on the service invoice to identify the failure. All claims shall include the product model number, serial number, original date of installation and customer identification.

The foregoing warranty shall not apply to (1) any part or assembly (a) that has been altered, modified, or changed, (b) that has been subjected to misuse, abuse, neglect or accidents, or (c) any Product on which the serial or model number has been removed or altered, or (2) any Product that has been installed and /or maintained inconsistent with Product's technical publications, or (3) any Product that has been installed or is located outside the standard warranty coverage area. Warranty valid in Continental United States only.

### **"LIMITATION OF LIABILITY AND OTHER WARRANTIES"**

Products assumes no liability for misuse or inadequate maintenance of the Product. **In no event shall the user be entitled to recover incidental or consequential damages, including but not limited to, damages for inconvenience, food loss, rental or replacement equipment, loss of profits, or other commercial loss.**

Warranties stated above are the only warranties made in connection with the sale and distribution of the Products. ANY AND ALL OTHER EXPRESSED, STATUTORY AND IMPLIED WARRANTIES APPLICABLE TO THE PRODUCT INCLUDING, WITHOUT LIMITATION, ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE EXPRESSLY DISCLAIMED.

The warranty information set forth above shall be governed by and construed in accordance with the laws of the State of North Carolina and, if applicable, the laws of the United States of America. The warranty, as stated, is extended only to the original owner/user and is not assignable.

## Conversion Kit Instructions for the Gas restaurant ranges

### WARNING

This conversion kit shall be installed by a qualified service agency in accordance with the manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction. If the information in these instructions is not followed exactly, a fire, an explosion or production of carbon monoxide may result causing property damage, personal injury or loss of life. The qualified service agency is responsible for the proper installation of this kit. The Installation is not proper and complete until the operation of the converted appliance is checked as specified in the manufacturer's instructions supplied with the kit."

## Range Conversion Kit Instructions



**WARNING** Do not attempt gas conversion by yourself. Gas conversion of your unit is to be made by a certified/licensed technician.

### CONVERSION

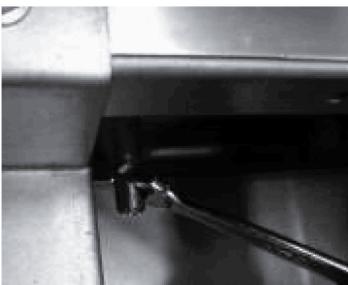
Instructions are for conversion from Natural Gas to Propane (L.P.) on MR-4-G & MR-6-G models. The conversion should be done before connecting the unit to the gas supply. Units are shipped from the factory equipped for use on natural gas. Parts necessary for L.P. (liquid propane) are provided with the unit. Please refer to page 5 the orifice size list when you do gas conversion..

**Turn off the main gas supply before doing any maintenance.**

1. Remove the grate
2. Remove the top burner.



- 3, Screw out top burner air shutter screw
- 5, Remove orifice.



- 4, Adjust air shutter from half open to full open, then screw in, ensure fix well



6. Replace the orifice, burner and grate

**Note:** Unit Number on side of orifice fittings

7. Remove the drop pan, unscrew nut of oven burner

8. Incline the burner, expose orifice of oven



9. Replace the orifice fittings into the valve.

10. Screw out oven burner air shutter screw



11. Adjust oven burner air shutter from half open to full open. then screw in, ensure fix well

12. Replace orifice and oven burner

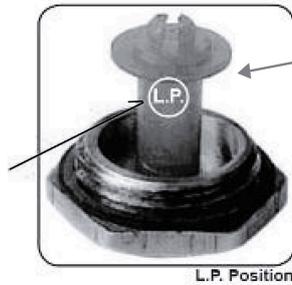
**13.1, Regulator convert for 24"range &36"range and 48"range series only**

Before installing the included convertible regulator, unscrew the octagon cap. You can read (NAT) on the plastic insert attached to the head of the cap; flip it over and snap back in place.



Convertible regulator with octagon cap. Unscrew from regulator.

L.P. Position of insert. Regulator is now converted to L.P.

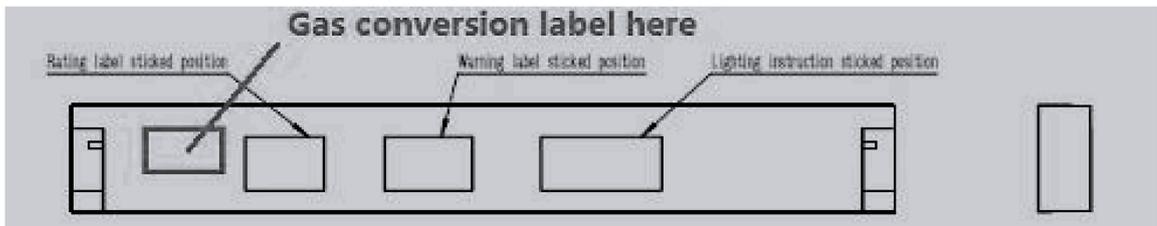


Pictured is the plastic insert. Pull off insert from octagon cap and reverse the plastic insert position so that the L.P. position is attached to the octagon cap head.

14. Continue with installation.
15. Attach gas conversion label on appliance, the position below.  
Gas conversion label

This appliance was converted on ..... (day-month-year) to gas with Kit No. by ..... (name and address of organization making this conversion), which accepts the responsibility that this conversion has been properly

The position for gas conversion



16. Completed gas conversion.