

## Instructions for Converting Range to Operate on Liquefied Petroleum Gas

**INSTALLATION AND SERVICES MUST BE PERFORMED BY A QUALIFIED INSTALLER**

**IMPORTANT: SAVE INSTRUCTION MANUAL FOR THE LOCAL INSPECTOR'S USE.**

**READ AND SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE**



**WARNING** This conversion kit must be installed by a qualified service technician in accordance with the manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction. Failure to follow instructions may result in fire, explosion or production of carbon monoxide 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 this kit.



**WARNING** Before proceeding with the conversion, shut off the gas supply before disconnecting electrical power to the range. Be sure power supplies are off before installing the conversion kit. Failure to do so could cause serious bodily injury.

Determine the combination of top burners that are featured on your range. Identify the parts you need from this kit to complete the L.P. conversion. When burners are converted from natural to L.P. the BTU ratings are as follows: Note: For operation at elevations above 2000ft., appliance rating shall be reduced at the rate of 4% for each 1000 ft. above sea level.

	Top Burner					Simmer burner	Griddle Burner	Oven Burner		Broil Burner		Bypass Jet
	18000	15000	12000	9000	6000			22000	14000	16500	13000	
BTU	18000	15000	12000	9000	6000		15000	22000	14000	16500	13000	
Orifice Size	1.22mm/ 1.24mm	1.07mm/ 1.10mm	1.0m m	0.8m m	0.72 mm	0.34m m	1.16mm/ 1.22mm	1.32m m	1.10m m	1.18m m	1.05m m	
HRG3078U	NA	1	2	1	NA	1	NA	1	NA	NA	1	5
HRG3080U	1	1	2	NA	NA	1	NA	1	NA	NA	1	5
HRG3031U	NA	2	2	NA	NA	2	NA	1	NA	1	NA	6
HRG3026U	2	2	NA	NA	NA	2	NA	1	NA	1	NA	6
HRG3609U	NA	2	2	NA	NA	2	1	1	NA	1	NA	6
HRG3617U	2	2	NA	NA	NA	2	1	1	NA	1	NA	6
HRG3603U	NA	2	2	2	NA	2	NA	1	NA	1	NA	8
HRG3618U	1	2	3	NA	NA	2	NA	1	NA	1	NA	8
HRG4804U	NA	3	3	NA	NA	3	1	1	1	1	NA	9
HRG4808U	3	3	NA	NA	NA	3	1	1	1	1	NA	9
<b>HRD3088U</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>NA</b>	<b>NA</b>	<b>1</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>5</b>
HRD3606U	3	2	1	NA	NA	2	NA	NA	NA	NA	NA	8
HRG4803U	2	2	2	NA	NA	2	1	NA	NA	NA	NA	8
HRT3003U	2	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
HRT3618U	1	2	3	NA	NA	2	NA	NA	NA	NA	NA	8

## Instructions for Converting Range to Operate on Liquefied Petroleum Gas

IMPORTANT: After replacing the natural gas to LP orifices, be sure to keep the original factory installed natural gas orifices for future range conversion back to natural gas.

The factory orifices are marked with the following:

Top Burners 1.88mm 18000BTU

Top Burners 1.65mm 15000BTU

Top Burners 1.5mm 12000BTU

Main Burner Bypass Jet 0.88mm

18000 BTU Single Burner Orifice 1.85mm/1.88mm

Griddle Burner Orifice 1.94mm/1.70mm

Simmer Bypass Jet 0.46/0.42mm

Tools Required for L.P. Conversion:

10mm,14mm,17mm Open End Wrench

1/8" Wide Flat Blade Screwdriver

Philips Screwdriver

7mm Nut Driver (for dual burner main orifice)

6mm Nut Driver (for dual burner simmer orifice)

Adjustable wrench

**\*\*IMPORTANT\*\***

15000 BTU Dual Burner

Main Burner Orifice 1.07mm/1.10mm

Simmer Orifice for LP 0.38mm/0.34mm

18000 BTU Single Burner

Burner Orifice for LP 1.24mm/1.22mm

12000 BTU Single Burner

Burner Orifice for LP 1.00m

## Instructions for Converting Range to Operate on Liquefied Petroleum Gas

### 1. Convert the Pressure Regulator

For all Thor Kitchen Dual Fuel Range Design (HRD3088U/HRD3606U/HRD4803U), please follow the below steps:

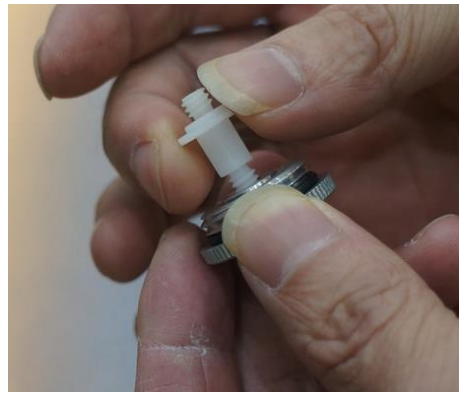
Screw out the screws on the kick panel, the regulator part is located on the bottom right of the kick panel.

a. Electrical shock hazard can occur and result in injury or death. Disconnect electrical power to the range before servicing. Do not remove regulator or allow it to turn during servicing.

b. Unscrew the cap from the regulator. Do not remove the spring from the regulator. c. Unscrew the plastic insert from the cap and turn it over so the longer stem is facing the cap.



Positon for NG



Positon for LP

**\*\*IMPORTANT\*\*** Pay attention that the NG and LP are in different direction. All the gas ranges are initially designed with NG position, please have it changed in to LP position.

### 2. Convert Top Burner for LP/ Propane Gas

Save the natural gas orifices removed from the appliance for possible future conversions to natural gas. **You should refer to the following process also to covert unit back to Nature gas.** Take extra care when handling steel parts.

a. Remove top grates, burner caps and inner burner rings.

## Instructions for Converting Range to Operate on Liquefied Petroleum Gas

b. Lift off outer burner heads and burner bases.

c. Remove the factory installed natural gas orifices from the center of the orifice holders using a 7mm nut driver (green screw driver)

Remember to keep the original natural gas orifices for future conversions back to natural gas.

“IMPORTANT” to identify their markings.

c.1. Replace the main orifice For dual burner 15000BTU with orifice size 1.07mm/1.10mm (they are both working fine with the LP 15000BTU burner main orifice).

c.2. Replace the 18000BTU burner orifice in each with orifice size 1.22/1.24mm (they are both working fine with the LP 18000BTU burner).

c.3 Replace the 12000BTU burner orifice in each with orifice size 1.0mm. Please remember not to over tighten the orifice and keep the orifice clean.



HRD3088U Design

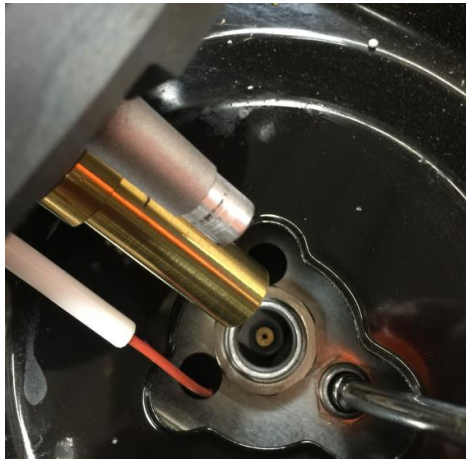
Front left 18000 Btu Single Burner; Front right 15000 Btu Dual Burner;

Rear left 12000 Btu Single Burner; Rear right 12000 Btu Single Burner;

## Instructions for Converting Range to Operate on Liquefied Petroleum Gas

d. Use a 6mm nut driver to replace the simmer (yellow screw driver), the simmer orifice size is 0.34mm.  
**\*\* A small folded piece of scotch tape (sticky side out) inserted in to the socket will help hold the orifice in place\*\*.**

Replace the outer burner heads back to the main burner bases. Replace the inner burner rings, burner caps and grates.



### 3. Convert Griddle Orifice for LP/Propane (For HRD4803U dual fuel range with Griddle)

- a. Remove back guard and back cover;
- b. Remove the oven burner venturi cover for better access;
- c. Using a 14mm open wrench, fix the orifice holder and using a 17mm wrench to remove the nut. Using a 10mm wrench to remove the orifice from the orifice holder. Replace with griddle orifice size 1.22/1.16mm (Both working fine for the Griddle Design);
- d. Re-connect the gas line and venturi cover.

## Instructions for Converting Range to Operate on Liquefied Petroleum Gas



### 4. Convert Gas Valves for LP/Propane Gas

- Screw out the 2 pcs top screws on the left/right oven frame side panel;
- Screw out the 1 pc bottom screw on the left/right oven frame side panel;
- Take out the left/right oven frame side panel;

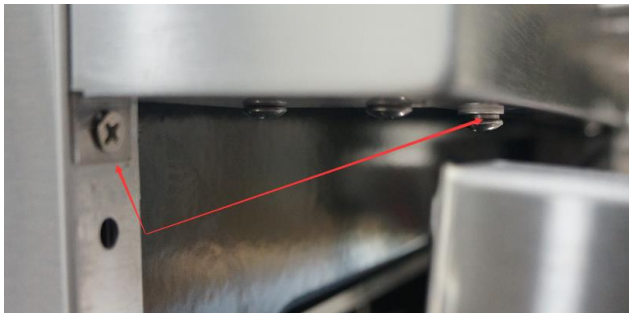


- Take out the burner knobs

## Instructions for Converting Range to Operate on Liquefied Petroleum Gas



e. Screw out the screws on bottom left and right of the control panel support



f. Screw out the 5 screws from the top of the control panel support;



g. For Dual Fuel Range, the control panel and control panel support is an integrated part. Please pay attention to hold the shelf during the conversion. Since the light cable relates to the control panel support, please check the wires' condition so that they don't get damaged.

## Instructions for Converting Range to Operate on Liquefied Petroleum Gas



h. Using a flat screwdriver, replace gas valve bypass jets with bypass jets for LP;

i. Save the main bypass jets, in the plastic bag labeled main jets and simmer bypass jets in the bag for simmer jets.

When you are using your top burners, if the flame needs to be adjusted accordingly to fit your need, please adjust the bypass orifices on the burner valve.

[How to adjust the bypass orifices on HRG gas range models]

- Screw out NG bypass orifices;
- Screw in LP bypass orifices. All LP bypass orifices are the same. Don't screw in LP bypass to bottom (tightest), make sure it's one cycle before the bottom. Put the knob back and open the burner to simmer function and adjust the position of bypass orifice one more time to get the best flame.



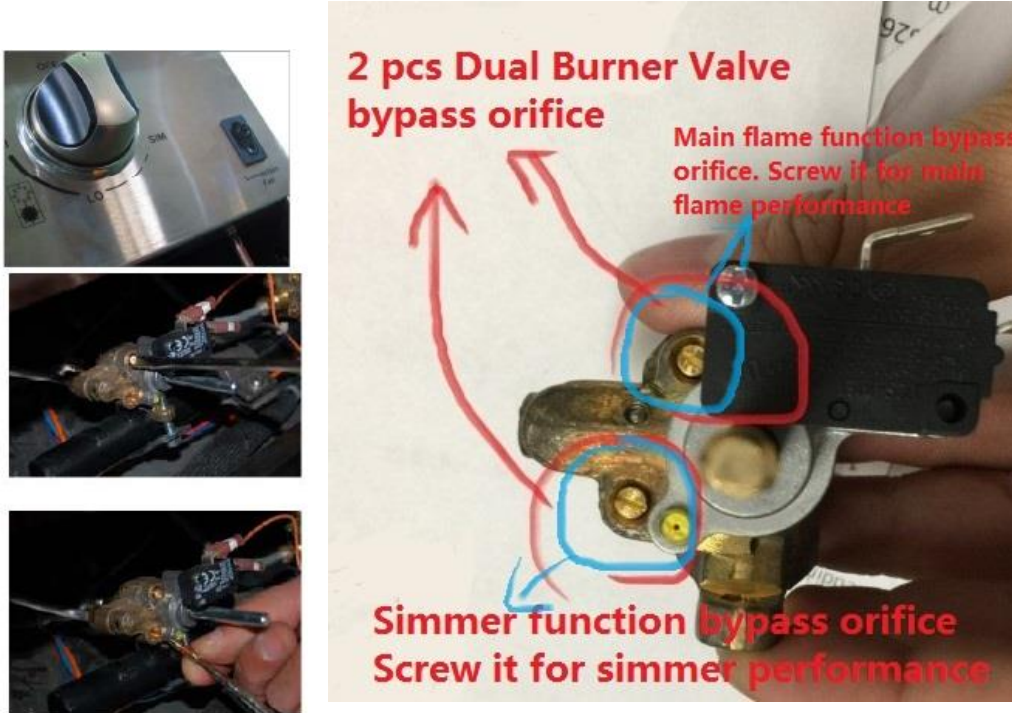
NG bypass orifice has a number on the side; LP bypass has nothing on the side.



## Instructions for Converting Range to Operate on Liquefied Petroleum Gas

Put back the knob on and adjust the flame by rotating the bypass via a small flat screw driver. Check the flame's condition to get the best performance.

For single valve, it has one bypass orifice; For Dual valve, it has two bypass orifices: left bottom one for simmer adjustment and right front one for main burner adjustment.



### 5. Reconnect Gas and Electrical Supply to Range.

Leak testing of the appliance shall be conducted per the installation instructions provided with the range.

#### Checking for Manifold Gas Pressure

If it is necessary to check the manifold gas pressure, remove the burner cap, inner ring, outer burner head and burner base of the right front top burner and connect a manometer (water gauge) or another pressure test device to the burner orifice. Use a rubber hose with inside diameter of approximately  $\frac{1}{4}$ " and hold the end of the tube tight over the orifice. Turn the gas valve on. For a more accurate pressure check, have at least two other top burners burning. Be sure that the gas supply (inlet) pressure is at least one inch above the specified manifold pressure. The gas supply pressure should never be over 14" water column. When properly adjusted the manifold water column pressure is 10" for LP/Propane gas or 5" for Natural Gas.

### 6. Air Shutter Oven Burner

The air shutter for the oven burner may need adjustment, especially if the unit has been converted for use with LP/Propane gas.

The approximate flame length of the oven burner is one inch (distinct inner blue flame).

## Instructions for Converting Range to Operate on Liquefied Petroleum Gas

To Determine if the oven burner flame is proper:

- a. With the toe tick removed, set the oven to bake at 350°F and observe the flame. If the flame is yellow in color, increase the air shutter opening size. If the flame is blue lifting away from the burner, reduce the air shutter opening size.
- b. Turn off oven and allow it to cool before adjusting the air shutter. To adjust, loosen the lock screw, reposition the air shutter and tighten the lock screw. Retest the burner by repeating the steps above. When the burner flame is a distinct blue color burning steadily, the air shutter is adjusted correctly.

### 9. Installation of New LP / Propane Rating / Serial Plate

Record the model and serial number on the LP / Propane Rating serial plate provided in this kit. The information can be obtained from the existing Rating / Serial plate. Place the new plate as close as possible to the existing Rating / Serial plate on the range.



Do not use a flame to check for gas leaks

- a. Disconnect the range and its individual shut-off valve from the gas supply piping system during any pressure of that system at test pressures greater than 14" of water column pressure (approximately ½" psig)
- b. The appliance must be isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the supply system at test pressure equal to or less than 14" water column pressure (approximately ½" psig)