

Conversion Manual for the



RHFE-750ETR

Direct Vent Fireplace



- ⇒ for the conversion from
Natural Gas (NG) to Liquid Propane Gas (LPG)

- ⇒ for the conversion from
Liquid Propane Gas (LPG) to Natural Gas (NG)

- ⇒ for adjustments at high altitude -
necessary for liquid propane gas at
altitudes 7800-10200 ft (2377-3109 m)

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Rinnai[®]

⚠ 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, 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.

The conversion shall be carried out by a manufacturer's authorized representative, in accordance with the requirements of the manufacturer, provincial or territorial authorities having jurisdiction and in accordance with the requirements of CAN/CGA-B149.1 or CAN/CGA-B149 installation codes.

Safety Symbols



This is the safety alert symbol. This symbol alerts you to potential hazards that can kill or hurt you and others.



Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also be used to alert against unsafe practices.

Technical Data

Gas Supply Pressure

	Maximum	Minimum
Natural Gas	10.5 in (267 mm) W.C.	4.3 in (109 mm) W.C.
Propane Gas	13.0 in (330 mm) W.C.	9.8 in (249 mm) W.C.

	Pilot Pressure	Manifold Differential Pressure			
	pilot only	PL (front burner lowest setting)	PF (front burner highest setting)	PA (all burners lowest setting)	PH (all burners highest setting)
Natural Gas	3.93	1.65	2.67	1.18	2.99
Propane Gas	7.87 [1]	5.11	8.30	3.38	8.34

[1] pilot pressure for propane gas at altitudes 7800-10200 ft is 3.15 W.C.

	BTU/hour Input		BTU/hour Output	
	High	Low	High	Low
Natural Gas	29000	11000	21900	7850
Propane Gas	28000	11000	21840	8050

The input rate can be verified by following the procedure in the National Fuel Gas Code (NFPA54 / ANSI Z223.1, 2006 or latest edition).

High Altitude Installation

NATURAL GAS: No changes are necessary when using natural gas up to 10200 ft (3109 m).

PROPANE GAS: When using propane gas at altitudes 7800-10200 ft (2377-3109 m), follow all the steps in the Conversion Procedure unless otherwise noted. The following parts will be replaced: pilot injector and pilot regulator spring. Attach the label onto the rating plate in the area marked for conversion label. For high altitude conversion use Kit R1971. No changes are necessary when using propane gas up to 7800 ft (2377 m).

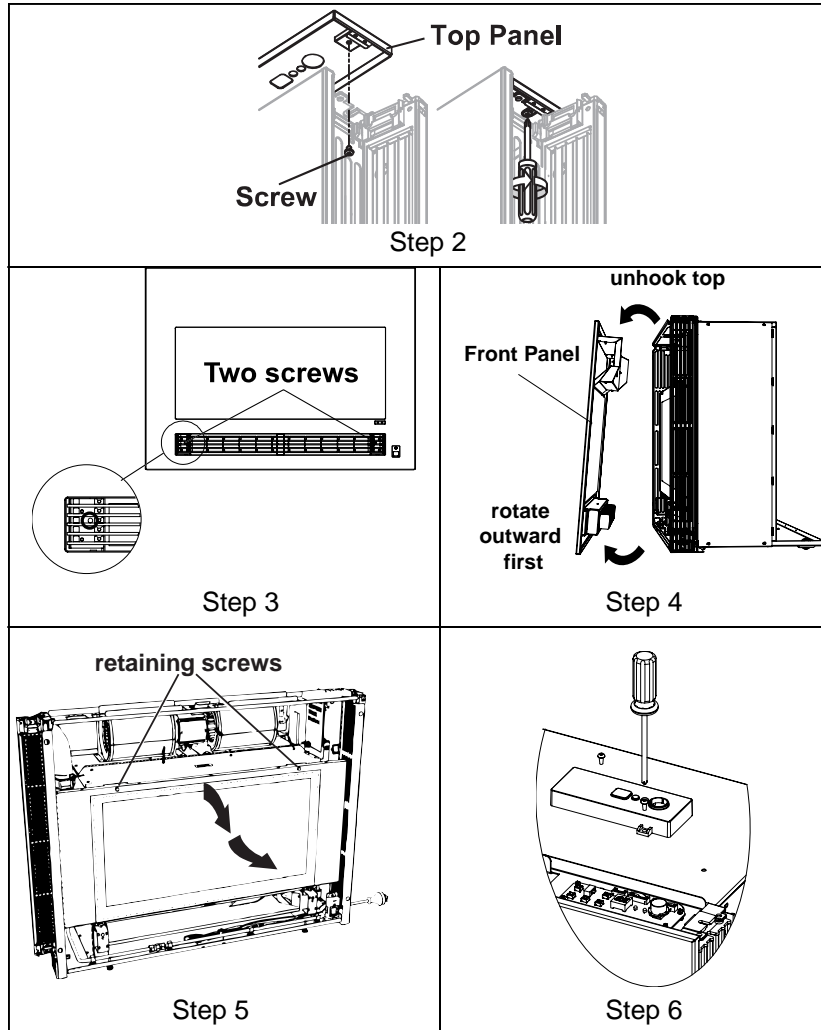
Conversion Procedure

CAUTION The gas supply shall be shut off prior to disconnecting the electrical power, before proceeding with the conversion.

Confirm that the inlet gas pressure is between the minimum and maximum pressures allowed for this appliance.

Gain Access

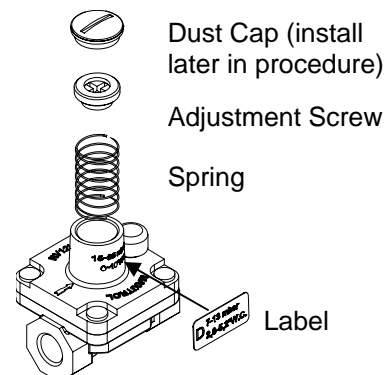
1. Turn off the gas and power supply.
2. Open the side louvers and on each side remove one screw attaching the top panel. (Side louvers are opened by pushing in and releasing.)
3. Remove two screws attaching the front panel to the appliance.
4. Remove the front panel by rotating the bottom away from the appliance and lifting upwards to unhook the panel from the top of the appliance.
5. Remove two retaining screws that secure the combustion chamber glass panel. Rotate and lift the combustion chamber glass and place in a safe location.
6. Remove two screws attaching the cover over the control panel. Remove the cover.
7. Remove the ceramic logs taking care not to damage them.



Replace Components

1. Refer to the table below and replace the spring and label on the pilot regulator that is located to the right of the combustion chamber and below the gas control. When assembling the regulator, screw the adjusting screw down about 5 full turns to ensure full ignition.

	Natural Gas	LP Gas
0-7800 ft	7-13 mbar, 2.8-5.2 " W.C. (unpainted spring)	15-25 mbar, 6-10" W.C. (red spring)
7800-10200 ft	7-13 mbar, 2.8-5.2 " W.C. (unpainted spring)	7-13 mbar, 2.8-5.2 " W.C. (unpainted spring)

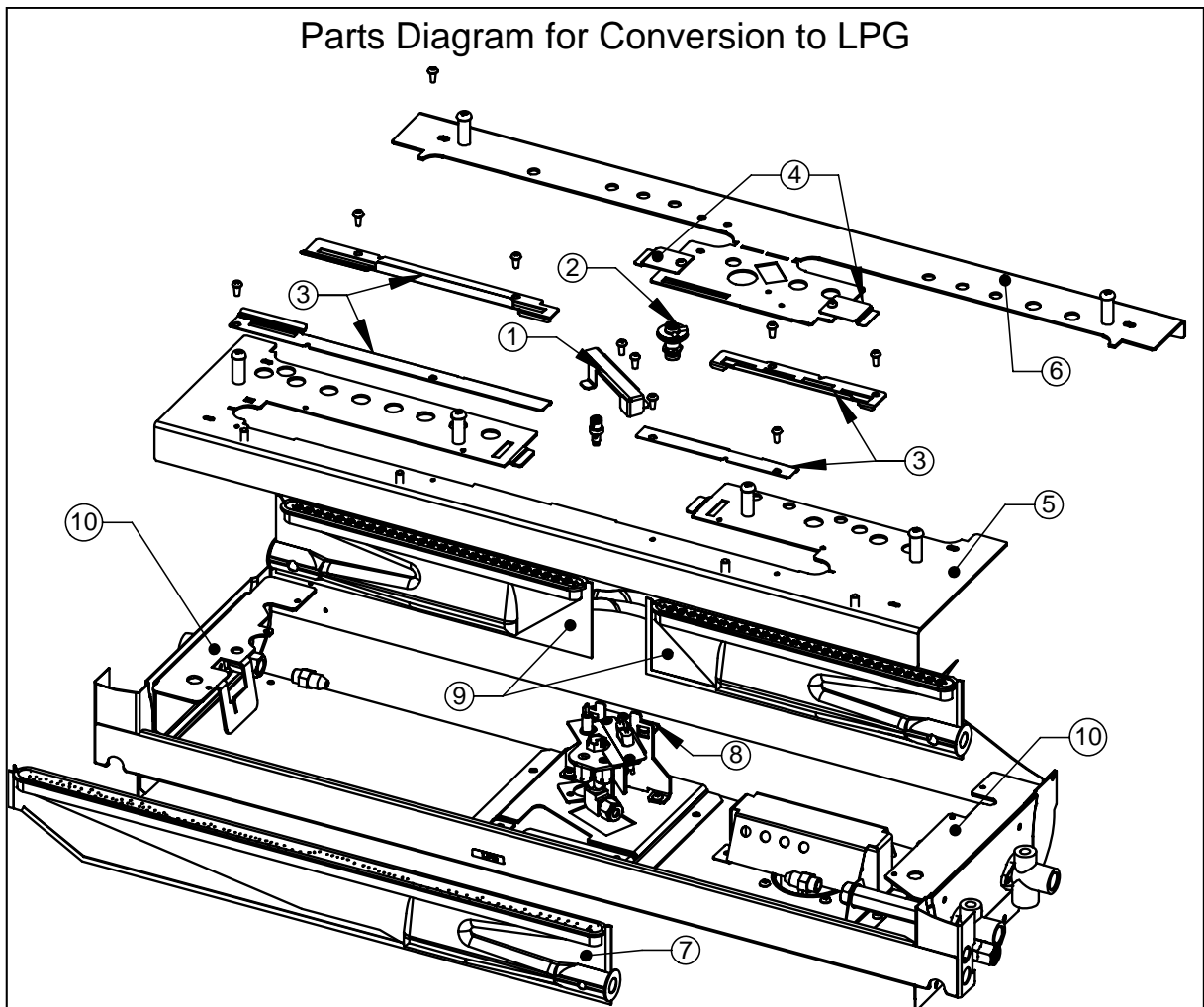


Replace Components

2. Remove the cross lighting bracket (1)
3. Remove the pilot top (2) and replace the pilot injector.
For natural gas confirm the injector is stamped "62".
For propane gas at altitudes less than 7800 ft, use the injector stamped "35".
For propane gas at altitudes 7800-10200 ft, use the injector stamped "51".
(The number stamped on the injector represents the actual equivalent flow through the injector.)
4. Remove the 4 aeration plates (3)
5. Remove the 2 screws holding the 2 expansion plates (4) and remove the plates.
6. Remove the 6 screws holding the front (5) and rear (6) burner panels. Lift the rear burner panel up and remove from the combustion chamber.
7. Carefully lift the right hand end of the front burner panel up and swing outwards. Slide the panel out from under the left hand flame rod. Take care not to scratch the inside of the combustion chamber or damage the flame rod.
8. Remove the front burner (7) by lifting up and tilting the left hand end to the rear of the chamber and then sliding to the left to remove from the injector.
9. Loosen the screw holding the rear burner clamp (8) in place and push the clamp towards the back of the chamber.
10. Remove the front burner clamp (9) and push the clamp towards the back of the chamber.

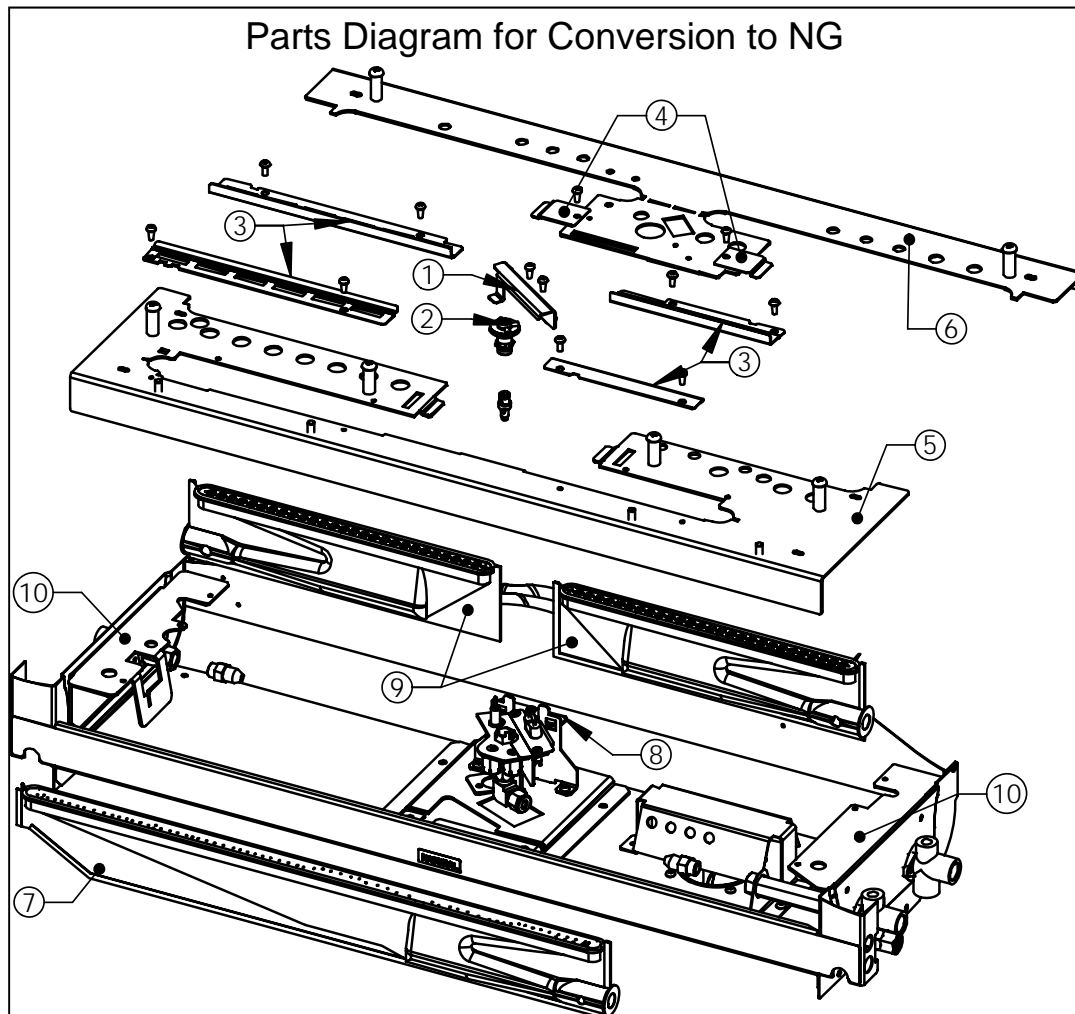
NOTICE

If you are not converting the gas type and only converting for high altitude, then attach the pilot top (2) and the cross lighting bracket (1) and proceed to *Assemble Appliance*.



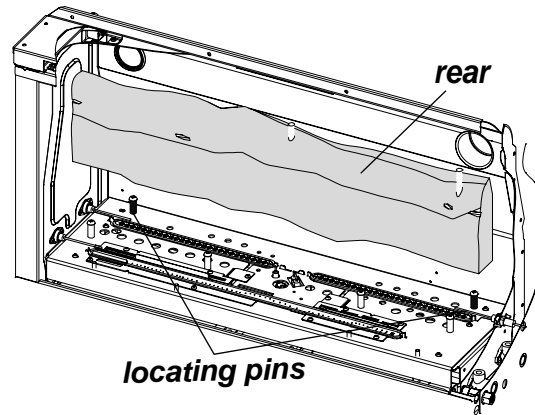
Replace Components

10. Remove the left and right burners (9) by sliding each toward the center of the chamber while lifting the center end.
11. Replace the 3 main injectors, 2 at the rear and 1 at the front.
12. Insert the new rear burners (9) pushing the burners against the injectors and pulling the clamp plate forward. Tighten the clamp plate screw just enough to prevent movement of the clamp. Push both rear burners (9) toward the middle of the chamber until they are directly against the clamp. Fully tighten the clamp.
13. Insert the front burner (7) into the locating slot by pushing the burner against the injector and rotating the burner towards the front of the combustion chamber.
14. Replace the front and then the rear burner panels. Ensure that both sit on the end support brackets (10) and do not overlap each other.
15. Attach the expansion plates (4).
16. Place the new aeration plates (3) on top of the burner panels. Except for the front right plate, the plates will only fit one way in their correct location. Place the right front plate with the folds facing downward. The aeration plates (3) should be flat on the burner panels. Attach with screws.
17. Attach the pilot top (2).
18. Attach the new cross lighting bracket (1).

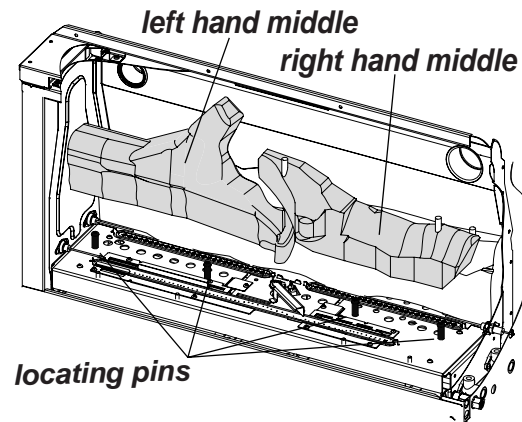


Assemble Appliance

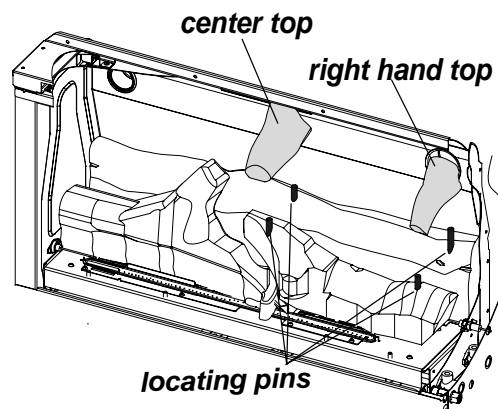
1. Seat the rear log into the combustion chamber onto its location pins.
2. Seat the left hand middle log onto its location pins.
3. Seat the right hand middle log onto its location pins.
4. Seat the center top log onto the location pins.
5. Seat the right hand top log onto the location pins.
6. Place the left hand front log and the right hand front log on the pins.
7. Attach the positive pressure hose on the manometer to the gas inlet test point (3).
8. Install the combustion chamber glass panel with two retainer screws at the top of the panel.



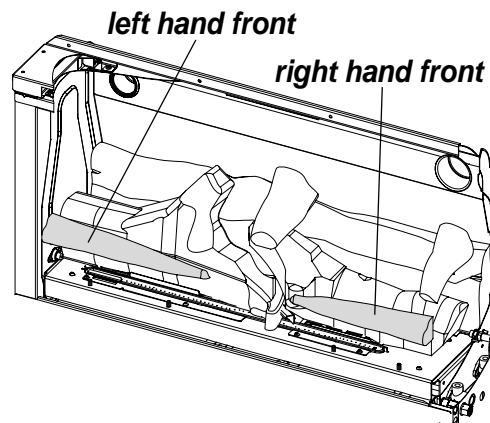
Step 1



Steps 2 & 3



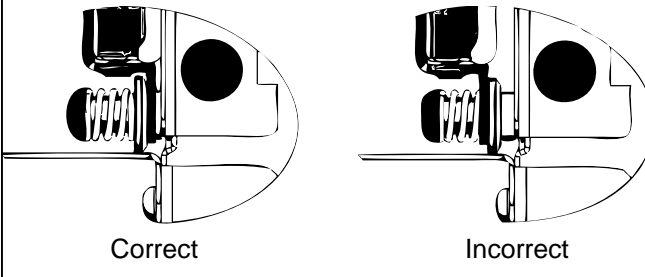
Steps 4 & 5



Step 6

WARNING Installing Glass Panel

Ensure that the lower slots are properly positioned against the combustion chamber. The slot should be between the tapered washer and the appliance; it should not be between the tapered washer and the spring.



Ensure that the sealing material completely covers the perimeter of the glass. Squeeze the sealing material so that it is no longer flat. This will allow it to flatten correctly when installed.



Adjust Gas Pressure Settings

1. Turn on the gas and power supply.
2. With the appliance off, press and hold the Test Switch on the control panel for about one second. Press the up and down buttons to obtain the North America code, "US" on the display. Press the set button to lock in the code.
3. Press the up and down buttons to obtain the gas code for your unit. The code for natural gas is "A1". The code for LP gas is "L1". Press the set button to lock in the code.
4. Press the On/Off button to turn the appliance on.

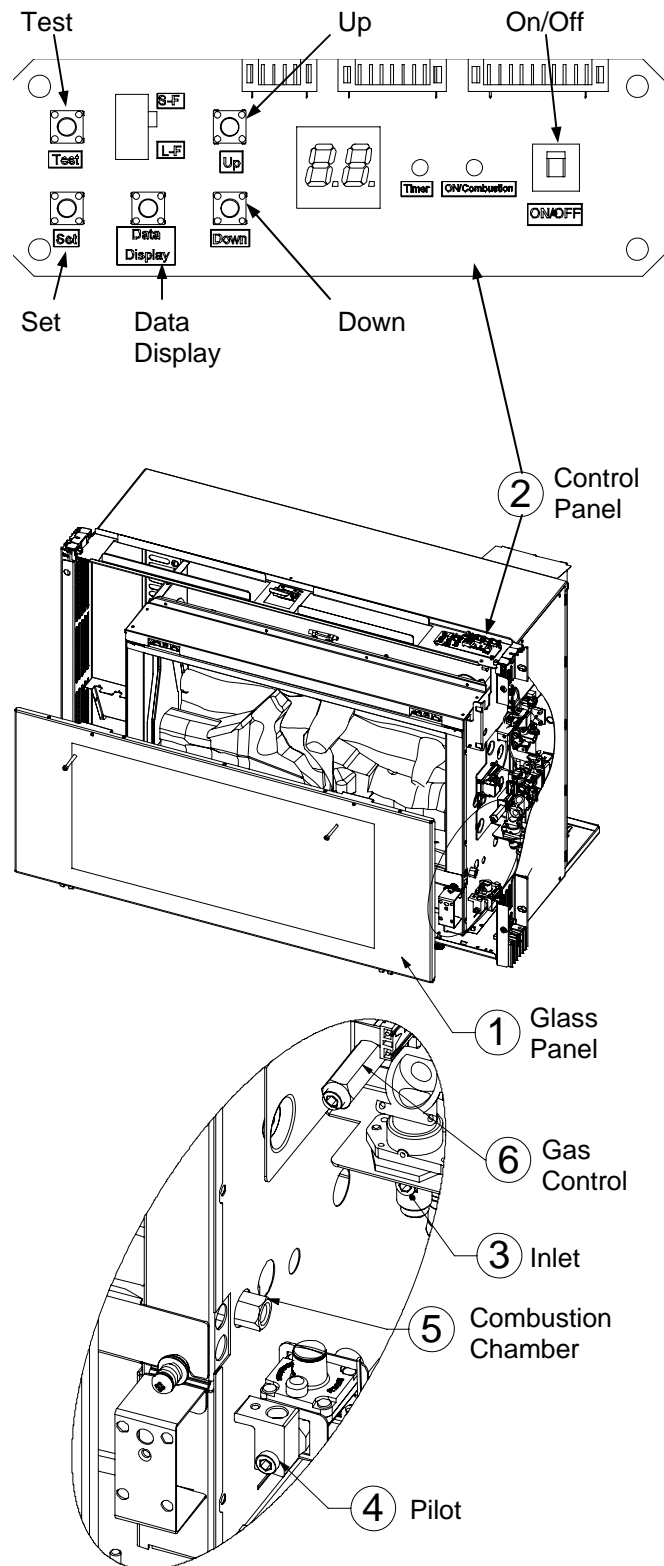
CAUTION

Do not touch the areas at or near the glass panel or exhaust. These areas become very hot and could cause burns.

CAUTION

Do not insert hands or objects into the circulation fans while they are running. Injury or mechanical malfunction may occur.

5. Confirm that the inlet pressure with all the burners operating is within limits.
6. Press the On/Off button to turn the appliance off.
7. Remove the combustion chamber glass panel. Attach the positive pressure hose on the manometer to the pilot test point (4). Install the screw at the gas inlet test point (3). Install the combustion chamber glass. Turn the appliance on. Adjust the pilot pressure using the regulator adjustment screw. Install the dust cap.
8. Turn the appliance off and remove the combustion chamber glass panel. Attach the negative pressure manometer hose to the combustion chamber test point (5) and the positive pressure hose to the gas control test point (6) to obtain a differential reading.
9. Install the glass panel and turn the appliance on.
10. Press the test button twice. The heater will change to the front burner on its lowest setting (no rear burners) and the display will show "PL".
11. Press the up and down buttons to adjust the burner pressure to the value shown on the rating plate. Press the set button to lock in the pressure setting.
12. The display will show "PF" and the front burner will change to its highest setting.



Adjust Gas Pressure Settings

13. Press the up and down buttons to adjust the burner pressure to the value shown on the rating plate. Press the set button to lock in the pressure setting.
14. The display will show "PA" and all burners will be on the lowest setting.
15. Press the up and down buttons to adjust the burner pressure to the value shown on the rating plate. Press the set button to lock in the pressure setting.
16. The display will show "PH" and all burners will be on the highest setting.
17. Press the up and down buttons to adjust the burner pressure to the value shown on the rating plate. Press the set button to lock in the pressure setting.
18. The display will show "70" indicating that the gas pressure setting procedure was successful. If the display does not show "70" then repeat the setting procedure again.
19. Press the On/Off button to turn the appliance off.
20. Remove the manometer and replace the test point screws. Attach the plastic control panel cover.

Final Assembly

1. Install the cover over the control panel.
2. Install the front panel.
3. Install the top panel and attach with one screw on each side of the louvers.
4. Place the new small and large gas type labels over the old ones.
5. Place the new rating plate overlays over the existing data on the rating plate which is attached with a cable and stored underneath the appliance.
6. Fill in the information on the conversion label and place on the panel in front of the convection fan.

Test and Verify

Visual Inspection of Flame

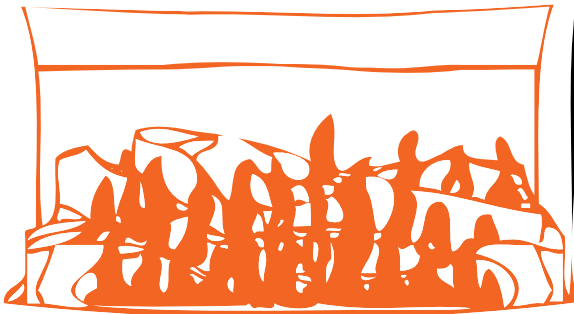
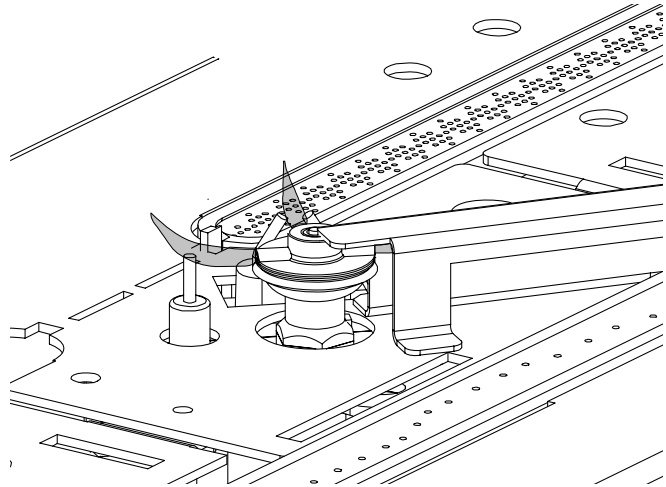
Check that the pilot and burner flames are operating normally.

If flames appear either very short or very long and streaky or are producing smoke or soot deposits then there may be a problem with the appliance or gas supply.

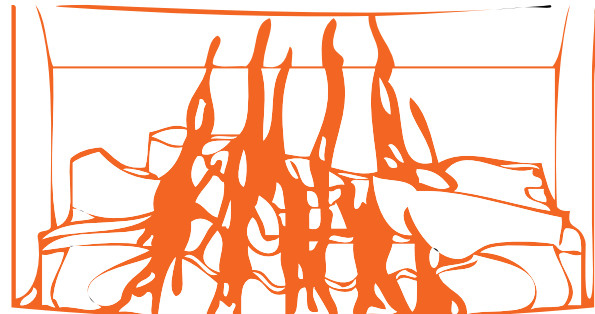
The burners are designed to produce two rows of yellow flame but not smoke or soot.

The pilot flame should be blue and extend over the flame rod from half to three-fourths of its length. It should not be long, streaky or yellow.

CORRECT PILOT FLAME APPEARANCE



NORMAL



ABNORMAL

Normal Operating Sequence

Confirm that the normal operating sequence of the ignition system is as follows:

1. When the ON/OFF or the STANDBY/ON button is pressed the Operation Indicator LED will glow red and the combustion fan will rotate to purge the combustion chamber.
2. Electric ignitor operates.
3. Gas is allowed to flow to the pilot when a spark is sensed.

4. When the pilot flame is established gas will flow to the front burners and then to the rear burners.
5. When all burners are established the appliance will automatically maintain the temperature setting.

NOTE: The appliance will wait until the heat exchanger is warmed up before discharging air. This ensures that any discharge air will be warm and not cold.

Leak Test

Leak test the testing ports. If using a soapy solution do not allow the soapy solution to contact electrical components. Remove any residue.

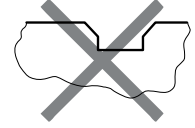
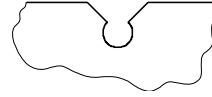
Parts List (Natural Gas to LP Gas) Kit R1962

NOTICE

Confirm that the conversion kit, R1962, for converting this appliance to use LP gas contains these parts.

NOTICE

Confirm that the aeration plates have the LP gas identification notch and not the natural gas notch. The LP gas identification mark is a small round hole with chamfered corners on the outer edge of the part.



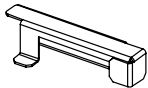
PILOT INJECTOR LPG 35
x 1



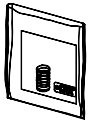
INJECTOR 0.90
x 2 REAR



INJECTOR 1.05
x 1 FRONT



CROSS LIGHTING
BRACKET LPG
x 1



REGULATOR SPRING KIT
6-10"W.C.
x 1



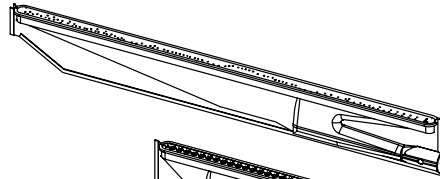
RATING PLATE
LPG OVERLAYS
1 X ENGLISH (PN 10573)
1 X FRENCH (PN 10574)



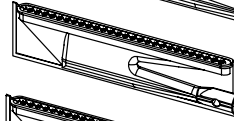
LABEL "LPG" SMALL
x 1



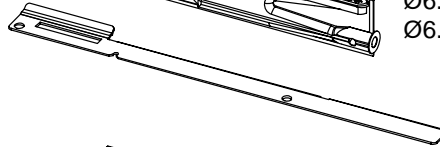
LABEL "L.P. GAS"
LARGE
x 1



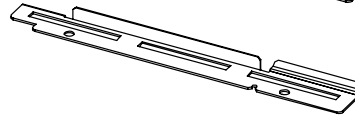
FRONT BURNER LPG
(AERATION HOLE Ø5.0)
x 1



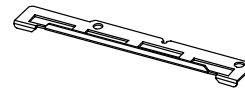
REAR BURNER LPG
AERATION HOLES:
Ø6.0mm LEFT BURNER x 1
Ø6.5mm RIGHT BURNER x 1



AERATION PLATE LPG
LEFT FRONT
x 1



AERATION PLATE LPG
LEFT REAR
x 1



AERATION PLATE LPG
RIGHT REAR
x 1



AERATION PLATE LPG
RIGHT FRONT
x 1

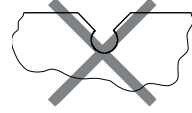
Parts List (LP Gas to Natural Gas) Kit R1964





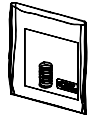



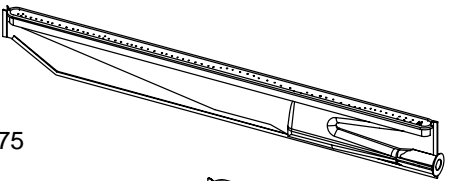
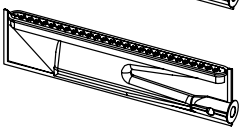
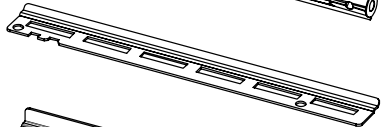
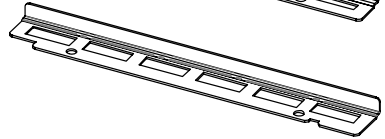
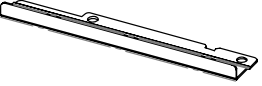
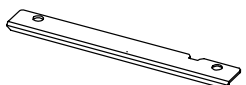
NOTICE

Confirm that the conversion kit, R1964, for converting this appliance to use natural gas contains these parts.

NOTICE

Confirm that the aeration plates have the natural gas identification notch and not the LP gas notch. The natural gas identification mark is a small square with chamfered corners on the outer edge of the part.

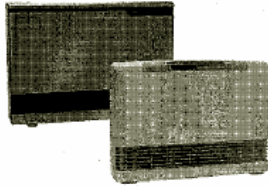


- 
PILOT INJECTOR NG 62
 x 1
- 
INJECTOR 1.45
 x 2 REAR
- 
INJECTOR 1.75
 x 1 FRONT
- 
CROSS LIGHTING BRACKET NG
 x 1
- 
REGULATOR SPRING KIT
 2.8-5.2"W.C.
 x 1
- 
RATING PLATE NG OVERLAYS
 1 X ENGLISH (PN 10575)
 1 X FRENCH (PN 10576)
- 
LABEL "NATURAL" SMALL
 x 1
- 
LABEL "NATURAL GAS" LARGE
 x 1
- 
FRONT BURNER NG (NO AERATION HOLE)
 x 1
- 
REAR BURNER NG (AERATION HOLES Ø3.5mm)
 x 2
- 
AERATION PLATE NG LEFT FRONT
 x 1
- 
AERATION PLATE NG LEFT REAR
 x 1
- 
AERATION PLATE NG RIGHT REAR
 x 1
- 
AERATION PLATE NG RIGHT FRONT
 x 1

Ask about

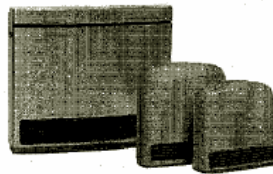
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10595 (Issue B)