

### IMPORTANT SAFETY NOTES:

There are a number of (live) tests that are required to be done in fault finding. Extreme care should be used at all times. You **must** be a qualified service person before using these test instructions. Before checking resistance readings, turn off power switch and then isolate items to be checked from circuit (disconnect it).

#### (AC IN) CONNECTOR C

(C)Blue-Brown	N/A	120 VAC	Pin # 1-2
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#### Transformer: (Connector D and G)

Read voltage across:	Read resistance	Read Voltages	Pin Numbers
(D)Blue-Brown	10-20Ω	105-135 VAC	1-2
(D)White-Black	10-20Ω	105-135 VAC	3-4
(G)Orange-Orange	0.1-3Ω	18-28 VAC	2-5
(G)Yellow-Grey	250-270Ω	185-225VAC	1-3
(G)Grey-Purple	0.1-3Ω	10-20VAC	3-6

#### (E) Spark Module (Connector E)

(E) Red-Blue	105-135VAC		5-6
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#### (L) Spark Sensor

(L) Orange-Grey	4-6VDC then 0 VDC sparking		1-2
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#### (E) Gas Valve Solenoids (SV1, SV2, SV3, SV 4) Connector E

(E) Black 1-Yellow	*1.1-1.7KΩ	98-118 VDC	1-4
(E) Black 2-Yellow	*2.6-3.2KΩ	98-118VDC	2-4
(E) Black 3- Yellow	*2.6-3.2KΩ	98-115VDC	3-4
(E) Black 3- Br&Pk	*2.6-3.2KΩ	98-115VDC	3-Br/Pk wires

\*If the values are not as noted, then isolate and check each solenoid for 1.1-1.7k Ω on the solenoid terminals. The coil without Ω is the one that is bad. Replace gas valve assembly.

#### (H) Modulating Gas Valve Solenoid (POV) Connector H

(H) Grey-Grey	75-95Ω	6-16 VDC	4-5
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#### (A) BL Blower Motor (Inducer) Connector A

(A) White-Black	40-80Ω	86-95 VAC	1-2
(A) White-Red	50-90Ω	105-135 VAC	1-3
(A) White-Blue	60-100Ω	105-160 VAC	1-4

(B) FM Convection Fan Motor Connector B

(B) White-Blue	180-220Ω	105-135VAC	1-2
(B) White-Yellow	200-240Ω	105-135VAC	1-3
(B) White-Red	270-310Ω	105-135VAC	1-4

(K) PS Pressure Sensor (Rated at 5VDC)

Omron Pressure Sw.	<b>125V.1A @8mmWC ON</b>	<b>125V.1A @2.8mmWC OFF</b>
Note: Check hoses	Black hose +, Clear hose neg.	Insure no crimps or blockage
See reset procedure	To program "0F" function	from new switch or pcb board

(J) R.TH Room Thermistor (Negative Co-efficient)

Disconnect the thermistor from the PCB @ Connector J. Measure the resistance on the wiring harness where Pin #1 to Pin #2 were connected to the PCB with your voltmeter set on the 200K Ω scale. Apply ice to the thermistor black bulb and the resistances will increase. Apply heat and the resistances will decrease. At 50°F the Ω reading will be between 59k-71k. At 68°F the Ω reading will be between 36k-41k. The thermistor is accurate to within 0.5°F. It is important to seal any cold drafts from adversely affecting its operations causing overheating. It is also important to not obstruct the air flow as that will cause the temperature to be elevated directly at the unit and not reflect room conditions.

**SAFETY CIRCUIT**

(J) OH. TH#1 (Overheat Thermistor #1) (192.2°F, 89°C )

(O)OH. TH #2 (Overheat Thermistor #2) (192.2°F, 89°C )

(H) Thermal Fuse (One Shot Fuse) (370.4°F, 188°C) MUST find cause of open fuse!

(J) OH. TH#1	W-W Continuity	N/A	Connector J pin 3-4
(O) OH. TH#2	BK-BK Ω≥23kΩ	N/A	Connector O pin 1-2
(H) Thermal Fuse	Continuity check	N/A	Connector H pin 4-5

(F) Flame Rods (FR1-PB, FR2-FB, FR3-RRB, FR4-LRB) at Connector F

FR1=Pilot Burner, FR2=Front Burner, FR3=Right Rear Burner, FR4=Left Rear Burner

FR1 Pilot Burner Ω must be greater than 0.7Ω. Series meter pin 1 to harness. (Black)  
 FR2 Front Burner Ω must be greater than 0.7Ω. Series meter pin 2 to harness. (Yellow)  
 FR3 Right Rear Burner Ω must be greater than 0.7Ω. Series meter pin 3 to harness. (Wh)  
 FR4 Left Rear Burner Ω must be greater than 0.7Ω. Series meter pin 4 to harness ( Blue)

\*Note- Flame rods must proof flame in the orderly procedure as call for heat is established. Improperly set up units can lead to carbon build up on the flame rods. Always check for the reason the build up occurred. Clean rods and burners.

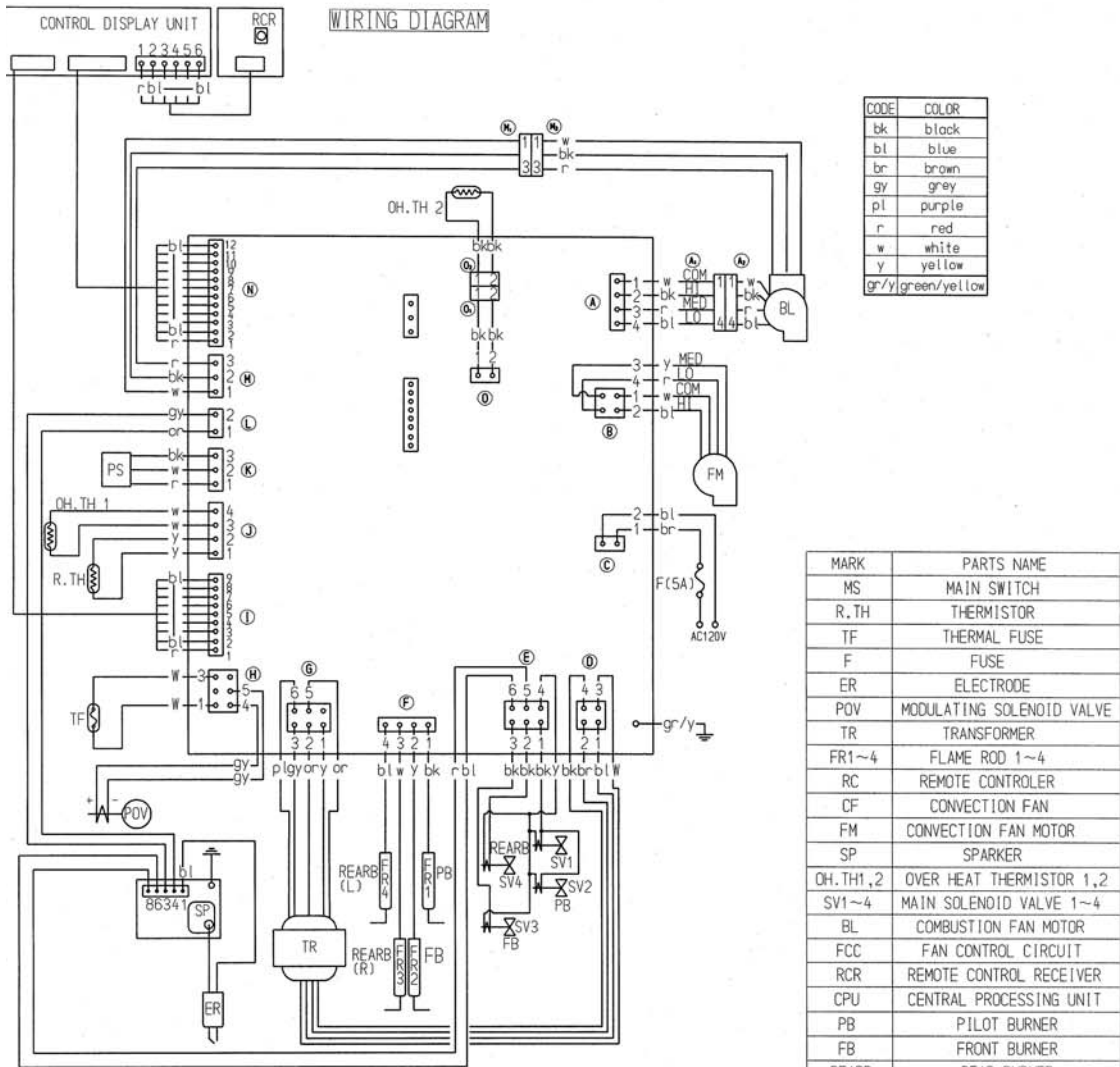
**IMPORTANT INFORMATION CONCERNING HARD LOCK OUTS**

Other items that can cause hard lock outs are: Improperly sized gas lines, low gas pressures or pressure drops due to other appliances on the gas system, spider webs in the burner and air intake of vent system, improper ground or no ground at receptacle or breaker, supply regulators freezing up or defective, voltage drops or bad receptacles, winds in excess of 40 mph causing turbulence inside the vent terminals, dirty pilots, etc.

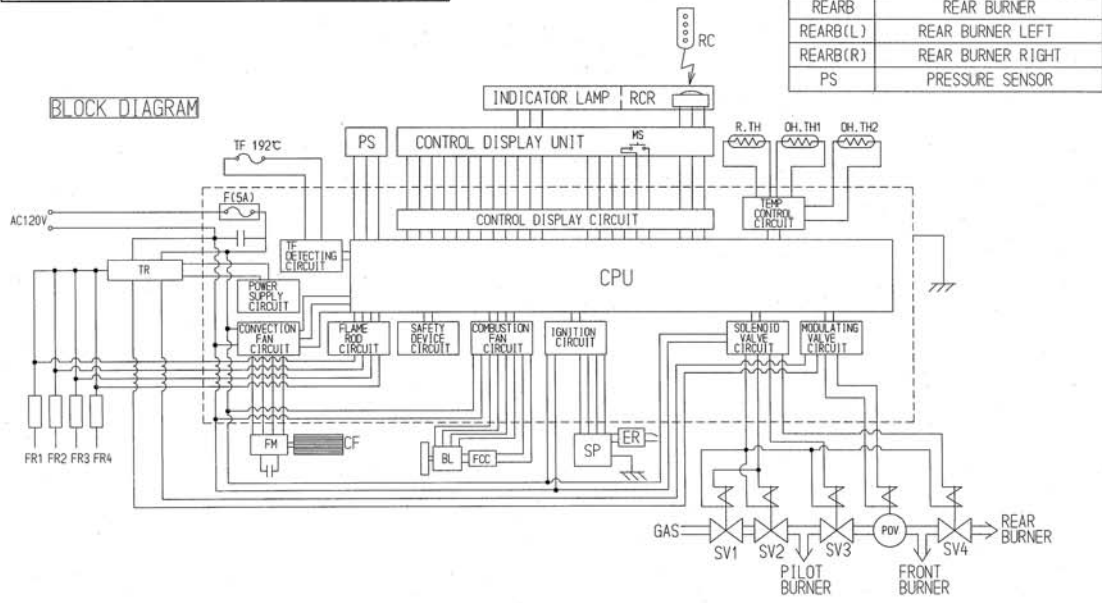
**REMOTE CONTROL**

The Remote uses two 1.5V AAA batteries. Some fluorescent lights may interfere with the transmission. Check battery condition is displayed on control. Observe polarity when replacing batteries. There is a

# Wiring and Schematic Diagrams



**CAUTION**  
 Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.



If any of the original wire as supplied with the appliance must be replaced, it must be replaced with type 18 AWG wire or its equivalent.

# GAS PRESSURE SETTING PROCEDURE RHFE 750 ETR FIREPLACES

## Tools Required



- Manometer - The use of a dual port manometer is necessary in order to measure the differential gas manifold pressures. Make sure the manometer is properly calibrated.
- 2 hoses and 2 taps 1/8 NPT / barbs
- Allen wrench 3/16<sup>th</sup>
- flat blade screwdriver
- Phillips head #2 screwdriver
- leak detector solution for testing for leaks after completion of the task
- Refer to the rating plate on the side of the unit and record the model number, serial number, and the gas type.

## Technical Data

Ensure the gas type on the rating plate is in fact the gas type supply to the unit. Ensure the supply pressure is as specified.

### 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).

# Conversion Manual

The conversion manual provides complete instructions for converting gas type and for installation at high altitudes.

## High Altitude Summary:

**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).

## Definitions of Codes used during the Gas Pressure Setting procedure:

A1= NG at normal altitude	A2=NG at high altitude	US= United States
L1= LP at normal altitude	L2= LP at high altitude	AU= Australia
		NZ= New Zealand

PL= Pressure Low (front burner lowest setting)  
 PF= Pressure Front (front burner highest setting)  
 PA= Pressure All (all burners lowest setting)  
 PH= Pressure High (all burners highest setting)

## Adjust Gas Pressure Settings

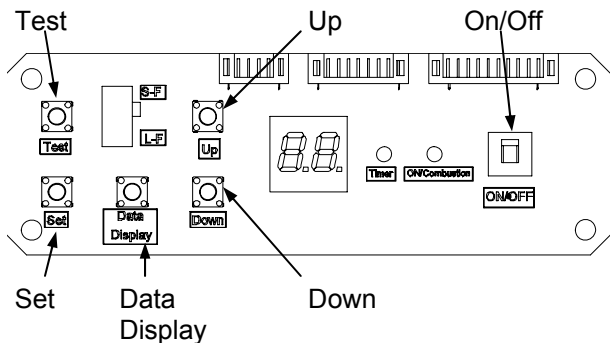
1. Turn on the gas and power supply.
2. With the appliance off, press and hold the Test Switch on the control panel for about one second. Press the up and down buttons to obtain the North America code, "US" on the display. Press the set button to lock in the code.
3. Press the up and down buttons to 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.
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.

**CAUTION**

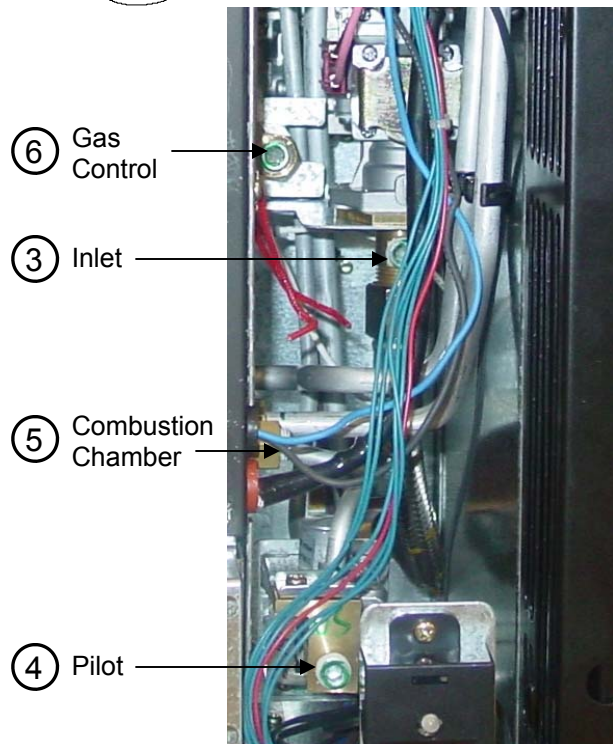
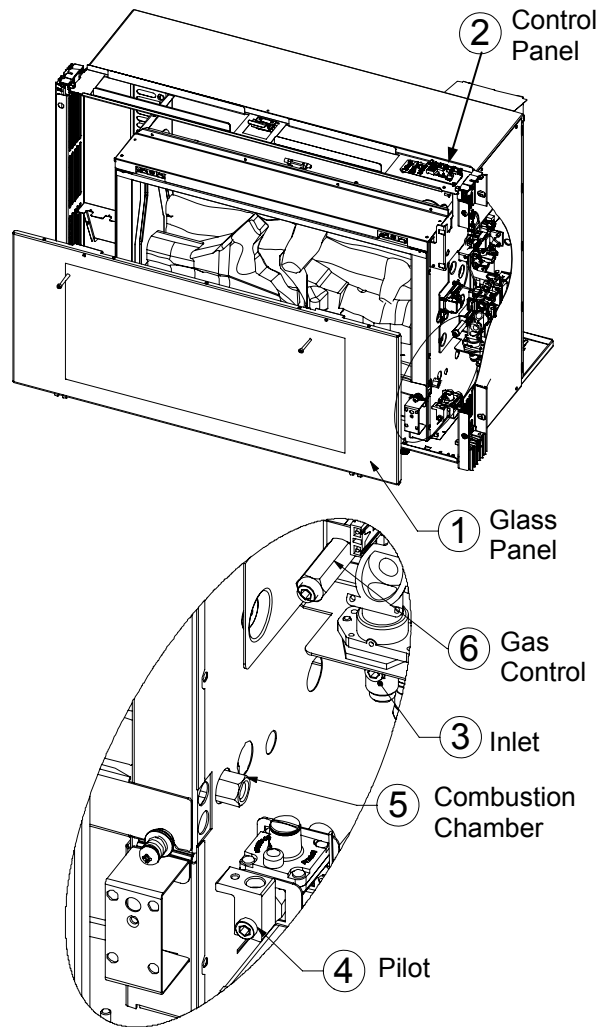
Do not touch the areas at or near the heat exchanger or burner. These areas become very hot and could cause burns.

**CAUTION**

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



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.
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.





## Check Pilot Regulator Spring

Ensure that the correct spring is installed for the type gas in the pilot regulator and the pressure is as specified in the chart below.

	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)

