



# Instructions for Williams Gas Appliance Conversion Kits 7728, 7730, 7732 Natural Gas To L. P. Gas

THIS KIT CONTAINS:  
(1) PRESSURE REGULATOR KIT  
(1) PILOT ORIFICE (L.P. GAS)  
(1) BURNER ORIFICE (L.P. GAS)  
(1) CONVERSION LABEL  
(1) L.P.G TAG

**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 the 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 this kit.

**WARNING:** If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

**CAUTION:** The gas supply shall be shutoff prior to disconnecting the electrical power and before proceeding with the conversion.

This kit is for use with model numbers: 4007332, 4007732, 5507332 and 6007732.

THIS CONVERSION KIT IS TO BE USED ON MODELS: 4007332, 4007732, 5507332 AND 6007732 MANUFACTURED FOR USE WITH NATURAL GAS AND EQUIPPED WITH GAS VALVE PART NUMBER-

P323209 (STANDING PILOT MODELS)


P323210 (ELECTRONIC IGNITION MODELS)

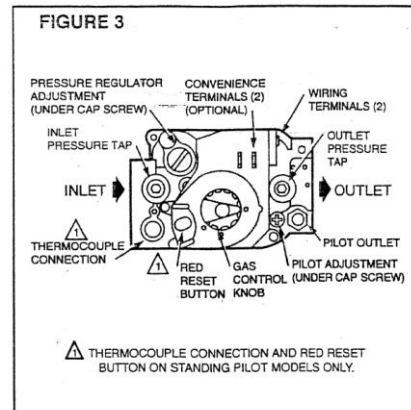
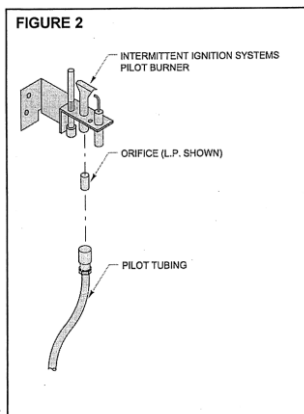
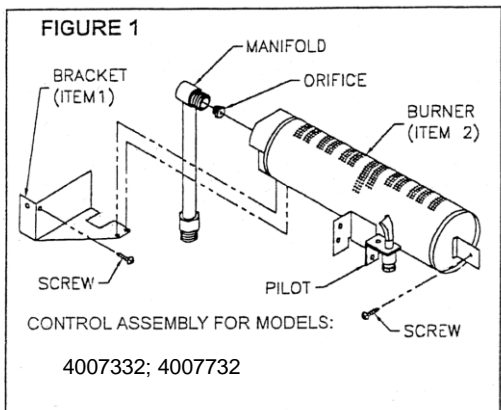
**WARNING:** The Williams conversion kit numbers 7728, 7730 and 7732 may only be used on models 4007332, 4007732, 5507332, 6007732 and gas valve P323209 and P323210. And must never be used on any other brand of gas valve. If you are unable to determine that gas valve model number, do not convert your furnace.

## CONVERSION INSTRUCTIONS - NATURAL GAS TO L.P. GAS

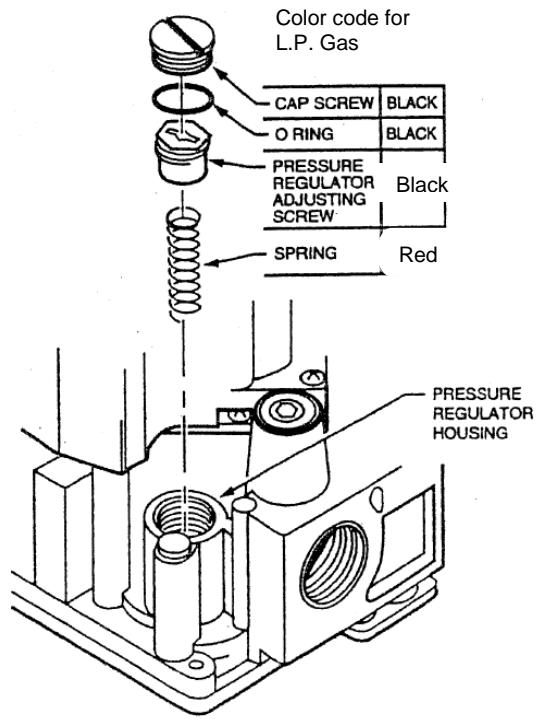
1. Shut off the gas to the furnace.
2. Shut off electric power to the furnace.
3. Remove the face panel from the furnace.
4. Disconnect the gas supply line from the control valve.

**CAUTION:** Label all wires prior to disconnection for proper reconnection.

5. Remove electronic ignition module (if equipped).
6. Disconnect the thermostat wires from the control valve.
7. Remove screws to release burner pan.
8. Separate burner pan and gasket from upper combustion chamber. Note: Gasket (P101600) between upper combustion chamber support and burner pan may need to be replaced.
9. Pull burner pan forward as far as possible.
10. Front edge of upper combustion chamber base and face area of burner must come together to create a pivot point.
11. Keeping two points together, rotate burner pan upward and remove. Once removed, all work can be performed on work bench.
12. Use a 7/16" boxed end wrench and remove the main burner orifice (1) from the manifold and replace it with the orifice provided in this kit. See Figure 1.
13. Remove pilot orifice from pilot and replace with orifice provided in this kit. See Figure 2.
14. Replace the pressure regulator on the gas valve. Refer to Figure 4.
  - a. Remove regulator cap screw and pressure regulating adjusting screw.
  - b. Remove the existing spring.
  - c. Insert the replacement red spring.
  - d. Install the new plastic pressure regulator adjustment screw. Assure that the screw top is flush with the regulator top.
  - e. Turn the pressure regulator adjustment screw clockwise  six complete turns. This provides a preliminary pressure setting of about 10" w.c. for LP Gas regulator and 4.0" w.c. for Natural Gas regulator.
  - f. Check the regulator setting either with a manometer or by clocking the gas meter.
  - g. Install the new cap screw and O ring.
  - h. Mount conversion label on control.
15. Reassemble the furnace by following the steps above in reverse order. During reassembly of burner pan, be sure pins on the rear of the burner pan are inserted into combustion chamber rear support.
16. Use information from chart on page 3 to fill in blanks on supplement data label. Attach label permanently adjacent to the rating plate on a clear surface area.



**FIGURE 4**



KIT NO	MODEL NO. ON RATING PLATING	TO BE USED ON CONVERSION LABEL			
		NEW MODEL NO.	NEW INPUT Btu/hr.	NEW HEATING CAPACITY Btu/hr.	NEW ORIFICE SIZE
7728	4007332	4007331	40,000	32,356	#48
7728	4007732	4007731	40,000	32,275	#48
7730	5507332	5507331	55,000	44,589	#52
7732	6007732	6007731	60,000	47,167	.064"

## IMPORTANT: LABEL PLACEMENT

After the conversion is completed, the large conversion label provided in this kit must be filled out completely (using chart information). Attach the small conversion label to the gas valve, and attach the large data conversion label to the inside of the casing door next to the rating plate. Remove the "Natural Gas" tag from the burner and replace it with the "L.P. Gas" tag provided with this kit. This is necessary to provide information for future servicing. Failure to do so could result in property damage, personal injury or death.

Refer to the Lighting and Operating Instruction Plate located in the control area of the furnace for instructions on lighting the burner.


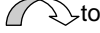
**WARNING:** Any adjustments must be performed by a qualified service technician only. Improper adjustments could result in property damage, personal injury or death. The following information is provided for use by a qualified service technician.

With the main burner in operation, check all pipe connections, pilot gas tubing and around the pressure regulator for gas leaks with a rich soap and water solution. Bubbles indicate a gas leakage. Never use a match or open flame to test for leaks. Correct even the slightest leak immediately before using furnace.

## ADJUST PILOT BURNER

NOTE: Pilot gas may need adjustment depending on inlet pressure, increase or decrease to obtain the proper setting.

The pilot flame should surround the generator tip 3/8- inch to 1/2 - inch. To adjust see below.

1. Insert a small screwdriver. Adjust the flame as needed. Turn screw counterclockwise  to increase the flame or clockwise  to decrease the flame.
2. Turn the thermostat to the highest setting. The main burner should light quickly and smoothly. Turn the thermostat to the lowest setting. The main burner should go out. The pilot will remain lit.

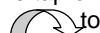

### **WARNING: DANGER OF PROPERTY DAMAGE, BODILY INJURY OR DEATH.**

Liquid petroleum (L.P.) is heavier than air and it will settle in any low area, including open depressions, and it will remain there unless the area is ventilated. Never attempt startup of the unit before thoroughly ventilating the area.

**WARNING:** The surface of the furnace is hot during operation. Keep children, clothing, furniture and flammable material away from it. Do not store or use gasoline or other flammable liquids or vapors near the furnace.

## CHECK GAS PRESSURE

The minimum inlet pressure in the gas supply should be 11.0" w.c for L.P. Gas. The maximum inlet pressure should never exceed 13.0" w.c. This should be checked at the 1/8" inch N.P.T. plugged tapping in the supply line with a manometer.

The manifold pressure for this appliance is 10.0" w.c. for L.P. Gas. Check with a manometer at the pressure tap on the control valve. To adjust the pressure, remove the cap from the regulator and turn the regulator adjustment screw clockwise  to increase and counter clockwise  to decrease the pressure.

## RATE VERIFICATION



Refer to the Lighting and Operating Instruction Plate located in control area of furnace for instructions on lighting the burner.

1. Make certain there is no gas flow through the meter other than to the appliance being checked. Other appliances must remain off and the pilots extinguished (or their consumption deducted from the meter reading).
2. With the gas control knob in the "ON" position, cycle the main burner on and off several times by means of the thermostat to stabilize the pressure regulator valve (PRV) diaphragm.
3. With a watch, carefully clock the gas meter to determine the exact rate of gas flow to the main burner in cubic feet per hour (see CONVERSION TABLE below).
4. Compare actual input with the manufacturer's recommended hourly input stamped on the rating plate. Convert the Btu/hr. input rating to cubic feet of gas per hour (cfh) by using the following formula.

Where as:

$$\text{PRV} = \text{Pressure Regulator Valve} \quad \frac{\text{Input Rating in Btu/hr.}}{\text{BTU Content of Gas per cu ft}} = \text{Cubic Feet of Gas per Hour}$$

$$\begin{aligned} \text{MJ} &= \text{Megajoule} & \frac{\text{Input Rating in MJ/hr}}{\text{MJ of Gas per m3}} &= \text{m3/hr} \\ \text{m3} &= \text{Metric Cube} \end{aligned}$$

5. If the actual gas flow (cfh) does not conform to the manufacturer's recommended input rating (cfh or BTU converted to cfh), a limited adjustment of the PRV may be made. Turn the PRV adjusting screw clockwise  to increase or counterclockwise  to decrease gas flow. Burner input must not exceed the nameplate rating.
6. Replace the cap screw in the PRV adjustment stack. Turn the gas supply to other appliances back on and relight all pilots.
7. Place the furnace in operation and observe through at least one complete cycle to be sure all the controls are operating satisfactorily.

### CONVERSION TABLE

This table shows the gas flow rate for measured time per revolution for a ONE CUBIC FOOT DIAL in cubic feet per hour (cfh) and m3/hr.

TIME sec	FLOW cfh	FLOW m3/hr	TIME sec	FLOW cfh	FLOW m3/hr	TIME sec	FLOW cfh	FLOW m3/hr
40	90	2.55	56	64	1.81	88	41	1.16
41	88	2.50	57	63	1.78	92	39	1.10
42	86	2.44	58	62	1.76	96	38	1.08
43	84	2.38	59	61	1.73	100	36	1.02
44	82	2.32	60	60	1.70	105	34	0.96
45	80	2.27	62	58	1.64	110	33	0.93
46	78	2.21	64	56	1.59	115	31	0.88
47	77	2.18	66	54	1.53	120	30	0.85
48	75	2.12	68	53	1.50	125	29	0.82
49	73	2.07	70	51	1.44	130	28	0.79
50	72	2.04	72	50	1.42	135	27	0.76
51	71	2.01	74	49	1.39	140	26	0.74
52	69	1.95	76	47	1.33	150	24	0.68
53	68	1.93	78	46	1.30	160	23	0.65
54	67	1.90	80	45	1.27	170	21	0.59
55	65	1.84	84	43	1.22	180	20	0.57

For 1/2 cu. ft. per revolution of meter dial, multiply flow rate by 2.

For 2 cu. ft. per revolution of meter dial, divide flow rate by 2.

**IMPORTANT:** Leave these instructions with the homeowner.



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