



# Technical Data Sheet

## Stowe 8323 NG Conversion Kit

Assembly 93-56230

### KIT CONTENTS:

- 1 - main burner orifice, #43 (U.S.)
- 1 - valve orifice, adjustable
- 1 - valve conversion key
- 1 - conversion label 3300-589
- 1 - conversion label 3300-583
- 1 - warning label 3300-587
- 1 - installation manual

### TOOLS REQUIRED:

- 5/32" (4mm) hex key
- Flat-head screwdriver, 5/16" bit
- Flat-head screwdriver, 3/32" bit
- #2 Phillips screwdriver
- 7/16" wrench
- 1/4" wrench
- Socket wrench w/6" extension
- 1/2" Socket, deep
- Manometer

#### **WARNING**

*This conversion kit must 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*

**CAUTION: FUEL CONVERSION PROCEDURE REQUIRES THE USE OF A MANOMETER DUE TO CONTROLLED PRESSURE ADJUSTMENTS. DO NOT ATTEMPT CONVERSION WITHOUT A MANOMETER.**

This Natural Gas (NG) fuel conversion kit is for use with the Hearthstone Stowe 8323 only. This kit is suitable for installations at elevations up to 2000 feet above sea level. For installations at elevations between 2000 and 4500 feet, use high-altitude NG conversion kit 93-56232 to de-rate stove.

**Table is provided for reference during NG conversion procedure only. For full specifications, refer to main manual.**

Specification	NG	LP
INPUT RATING (Btu/hr) 0-2000 ft	22,400	22,400
INPUT RATING (Btu/hr) 2000-4500 ft	21,000	22,400
ORIFICE SIZE (DMS) 0-2000 ft	43	55
ORIFICE SIZE (DMS) 2000-4500 ft	44	55
MANIFOLD PRESSURE - LO SETTING (in.w.c./kPa)	1.2/0.30	4.1/1.02
MANIFOLD PRESSURE - HI SETTING (in.w.c./kPa)	3.4/0.85	10.4/2.59
INLET PRESSURE - MINIMUM (in.w.c./kPa)	5.0/1.25	12.0/2.99
INLET PRESSURE - MAXIMUM (in.w.c./kPa)	11.0/2.74	13.8/3.45
MINIMUM INPUT RATING LO SETTING (Btu/hr)	13,000	14,000

**CAUTION: THE GAS SUPPLY SHALL BE SHUT OFF PRIOR TO DISCONNECTING THE ELECTRICAL POWER, BEFORE PROCEEDING WITH THE CONVERSION.**

## **Instructions**

NG conversion orifice is identified by size stamped on side of part. Ensure that orifice size is correct before installation.

*Note: Do NOT adjust and/or alter any components marked with tamper-indicating paint unless explicitly instructed to do so.*



**Figure 1 – Orifice Marking Location**

### **To Switch Pilot to NG Operation:**

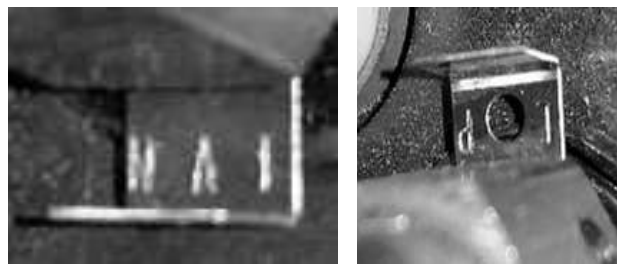
The pilot assembly in the Stowe 8323 is a slide convertible unit, requiring only a 7/16" open-end wrench for conversion. To convert pilot from LP to NG:

1. Open firebox and remove logs, burner, and pilot shield. Refer to Stowe 8323 main product manual for guidance.
2. Using the 7/16" wrench, grasp the pilot tower and turn counter-clockwise about 1/4 turn.



**Figure 2 – Loosening Pilot Tower**

3. Look at the front edge of the base of the pilot tower. You will see the NG/LP Pilot Orifice Gate protruding toward the rear of the pilot tower and the letters the letters "LP" will be visible on the upper horizontal surface, separated by a punched hole. Slide the gate forward in the Pilot Tower by pushing on the upturned edge by the "LP" lettering until the upturned edge is flush with the Pilot Tower surface. You will see the NG/LP Pilot Gate protruding from the front edge of the Pilot Tower and the letters "NAT" will be visible.



**Figure 3 – Pilot Orifice Gate, NG and LP**

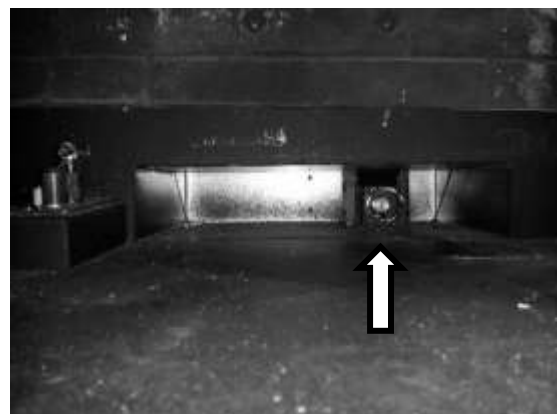
4. While holding the NG/LP Pilot Gate in the NG visible position, grasp the Pilot Tower with the 7/16" wrench and turn clockwise until the tower is snug. The Pilot Hood should be oriented such that one pilot flame is directed at the thermocouple and the other is facing the main burner (see Figure 4).



**Figure 4 – Correct Pilot Hood Orientation**

### **To Replace Main Burner Orifice:**

Locate the orifice mounting location at the rear of the firebox (see Figure 5). Using a 1/2" socket and extension, grasp orifice spud and turn counter-clockwise until loose. Remove and replace with #43 NG orifice spud, turning clockwise until snug.



**Figure 5 – Main Orifice Location**

Reinstall burner, pilot shield, and logs. Ensure that pilot, pilot shield and burner are properly positioned (see Figure 6). Reinstall front glass, and front and top cast.



Figure 6 – Pilot, Shield, and Burner Position

#### To Convert the Valve to NG Operation:

- 1) Perform all other conversion procedures (pilot and burner orifices) **first**, before proceeding with valve conversion.
- 2) Remove the stove front access panel to expose valve system.
- 3) Locate the outlet pressure screw on front of valve (see figure 7)

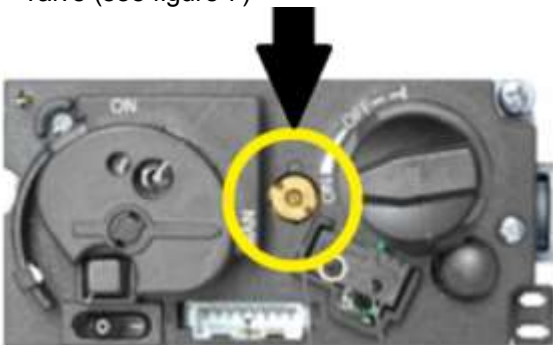


Figure 7 – Outlet Pressure Screw

- 4) Select a new, square bladed flat tip screwdriver large enough to span the entire head of the outlet pressure screw (see Figures 8 and 9).

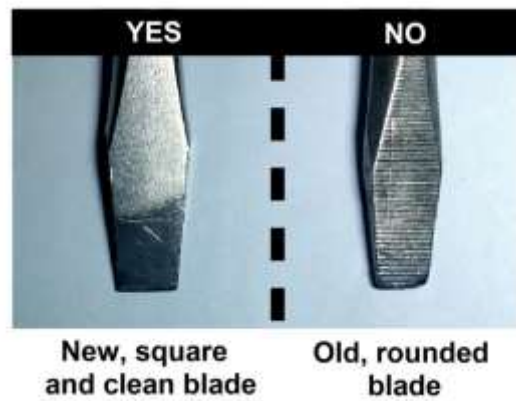


Figure 8 – Appropriate Bit Shape

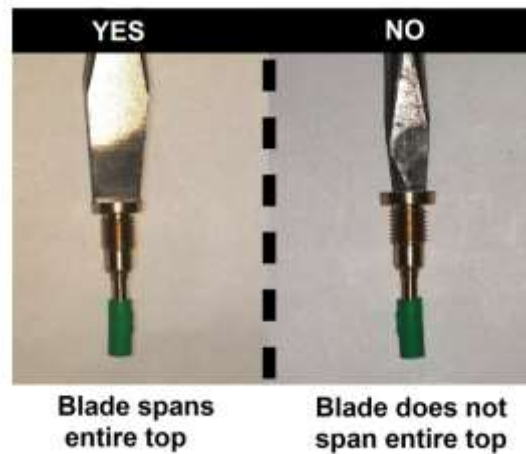


Figure 9 – Selecting Proper Driver Size

- 4) Turn the turn the outlet pressure screw housing counter-clockwise to remove (see Figure 10). **Be careful not to engage the small flat slot in the center of the screw itself but use only the larger slot of the screw housing to remove the unit. Do not strip the shoulders!**

Do not remove using small, center screw head. USE ONLY THE OUTER SLOTS.

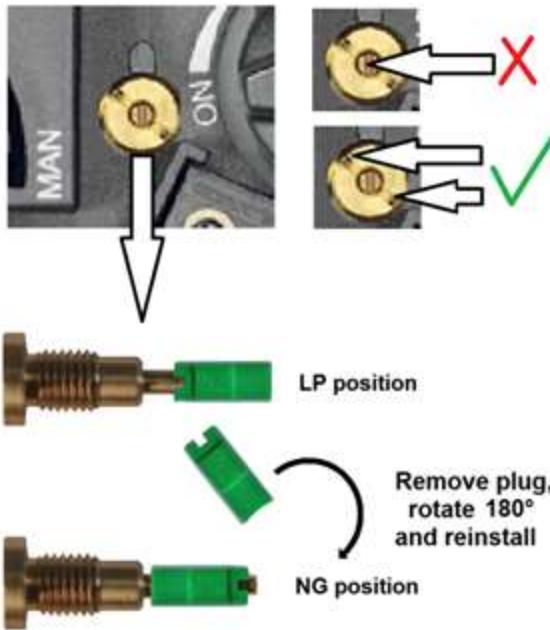


Figure 10 – Outlet Pressure Screw

- 5) With the screw assembly removed from the valve, grasp the plastic spacer on the screw end and gently pull to remove (use caution to not rotate the shaft to which the spacer is mounted). See Figure 10.
- 6) Rotate the spacer 180° and then slide it back onto the conversion plug until it snaps into place. The spacer is marked 'NG' at one end and 'LP' at the other. In NG configuration, 'NG' marking is closest to threads, and brass pin of conversion plug extends through spacer. In LP configuration, 'LP' marking is closest to threads, and spacer extends beyond end of conversion plug.
- 7) With spacer in correct position for the desired fuel type, reinstall the conversion plug by screwing it clockwise only until snug. Do not over-tighten.

**The low pressure orifice must also be changed following the steps below.**

- 1) Loosen the front valve bracket screws with a 1/4" wrench, one per side (Figure 11).
- 2) By pushing down on the front of the valve and control system assembly, swing the system down to expose the low pressure orifice (Figure 12).



Figure 11 – Front Valve Mounting Bracket Screw (from left side of stove)



Figure 12 – Low Pressure Orifice Access, Valve System Tilted Down.

- 3) Remove the orifice using either the included flat blade conversion tool or a 5/32" (8mm) hex wrench. It may be necessary to lightly pry the orifice out of the valve body after fully loosening due to the o-ring mounted to its top (see Figures 13 and 14).
- 4) Insert adjustable low pressure orifice, pressing firmly with finger to compress o-ring and engage threads, and tighten halfway using hex wrench (see Figures 15, 16, and 17). **Do not fully tighten.**
- 5) Confirm that all other conversion procedures are complete, then **adjust valve pressure (see page 5).**

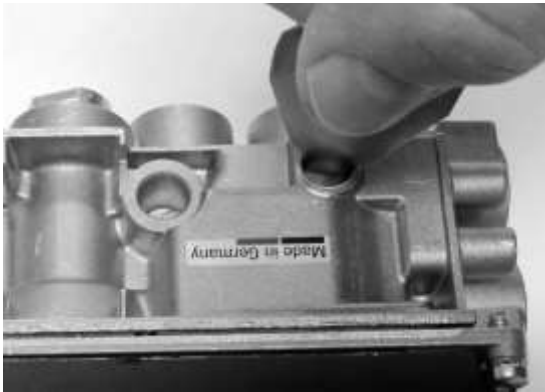


Figure 13 – Loosening Low Pressure Orifice



Figure 17 – Tighten NG Low Pressure Orifice



Figure 14 – Prying O-Ring



Figure 15 – NG Low Pressure Screw Insertion



Figure 16 – Press to Compress O-ring

- 6) ***When conversion is complete and pressures have been set***, grasp the underside of the valve system mounting bracket and swing it back up into original position.
- 7) Fully tighten the front valve bracket screws loosened in Step 1 and the valve is fully converted for NG use.

#### Adjusting Gas Pressures:

Verify that inlet pressures are correct before adjusting valve pressures. Pressure taps are located on the side of the valve body as shown in the Owner's Manual.

To verify inlet pressure, with stove in operation, loosen threaded plug of inlet pressure tap and connect manometer. Retighten plug when finished. If inlet pressure is not within the acceptable range (see table, page 1), take steps to correct inlet pressure before proceeding with valve adjustments.

#### To Adjust Valve Low Pressure:

***NOTE: THE MANIFOLD LOW PRESSURE MUST BE SET AT TIME OF CONVERSION.***

**CAUTION: OUTLET PRESSURE ADJUSTMENT REQUIRES THE USE OF A MANOMETER. DO NOT ATTEMPT TO ADJUST OUTLET PRESSURE WITHOUT A MANOMETER.**

**CAUTION: MANIFOLD PRESSURE SHOULD ONLY BE ADJUSTED BY AN AUTHORIZED SERVICE TECHNICIAN.**

1. Connect a manometer to the valve outlet pressure tap.
2. Light stove and place burner in operation on low (fully turned down, minimum manifold pressure).
3. With hex wrench, tighten or loosen low pressure orifice to set minimum manifold pressure to **1.2 iwc (0.30 kPa)**.



### To Adjust Manifold High Pressure:

CAUTION: THE VALVE MAXIMUM OUTLET PRESSURE SHOULD ONLY BE ADJUSTED BY AN AUTHORIZED SERVICE TECHNICIAN AND IS PRE-SET AT THE FACTORY.

1. Light stove and place burner in operation on high (fully turned up, maximum manifold pressure).
2. Confirm that maximum manifold pressure is **3.4 iwc (0.87 kPa)**. If pressure is correct, no further adjustment is required.
3. If adjustment is necessary, use 3/32" screwdriver to turn the small, central pressure regulator adjustment screw (see Figure 10) to adjust maximum manifold pressure.

**Note:** *Pressure regulator adjustment screw is marked with tamper-indicating paint. Pressure regulator adjustment screw must be adjusted by an authorized service technician. Do not adjust unless necessary.*

When adjustments are complete, remove manometer and close pressure tap(s) by turning the screw(s) fully clockwise until snug. Check all connections/pressure tap(s) for leaks.

### Checking for leaks:

#### To perform initial gas leak test:

1. Check carefully for gas leaks immediately after the conversion has been performed. **Do this before attempting to operate the appliance or other gas burning device.**
2. Use an approved non-corrosive leak detection fluid, or other approved leak detection method, around the diaphragm flanges, pipe connections, seal cap, and all other joints. Bubbles indicate a leak.
3. If no leakage is detected, proceed with the instructions listed below to light the main burner and perform a secondary leak check of the appliance gas supply system.
4. If a leak is detected, tighten pipe connections (including adapters) and retest.

#### To perform secondary leak test:

1. Light stove. With the main burner in operation, apply an approved leak test solution to all tubing, pipe connections, and adapters, and the valve inlet and outlet. Bubbles indicate a leak.
2. If no leak is detected, appliance is safe to use.
3. If a leak is detected, tighten pipe connections (including adapters) and retest.

### **WARNING**

Absolutely no leakage should occur, otherwise there is a danger of fire or explosion depending upon conditions. Never use if leakage is detected.

**If pilot adjustment is necessary, refer to the appropriate section of the Owner's Manual**

### To verify input rate:

The approximate input rate of the converted Stowe may be checked as follows:

1. Ensure that no other gas appliances are in operation.
2. Place Stowe in operation on high, and allow to burn for 15 minutes.
3. Using residential gas meter, measure the time in seconds required for the Stowe to consume 1 cubic foot of gas.
4. The gas consumption of the Stowe in BTU per hour may be calculated as (3,600 x heating value of gas) ÷ seconds to consume 1 cubic foot. Use local gas supplier's heating value, or use 2,500 for LP or 1,012 for NG.

EXAMPLE: Using LP with a heating value of 2,500, and a time of 392 seconds (6 minutes 32 seconds):

$$(3,600 \times 2,500) \div 392 = 9,000,000 \div 392 = 22,959 \text{ BTU per hour}$$

**Note:** *Stowe may operate safely up to 105% of its rated input, or 25,520 BTU per hour. If Stowe input is incorrect, it is necessary to adjust the gas supply pressure. Supply line/manifold gas line pressure adjustments must be performed by qualified service personnel. Do not attempt to complete any part of the installation or adjustment of this unit unless technically qualified to do so.*

**Conversion label placement:**

When fuel conversion is complete, fill out and apply included marking labels to the appliance as shown.

Fill out all fields on large rating plate conversion label 3300-589 (number in lower right corner) and place over field provided on stove lighting instruction tag (see Figure 18).



**Figure 18 – Rating Plate Conversion Label Location**

Fill out all fields on smaller ash lip conversion label 3300-583 and place on inside surface of ash lip (see Figure 19).



**Figure 19 – Rating Plate Conversion Label Location**

Place small valve warning label 3300-587 on or near valve body (see Figure 20).



**Figure 20 – Valve Warning Label Location**