



# Technical Data Sheet

## Waitsfield 8770 LP Conversion Kit

Assembly 97-56701

### KIT CONTENTS:

- 1 - main burner orifice, #53 (U.S.)
- 1 - main burner orifice, #57 (U.S.)
- 1 - valve orifice, #230 (metric)
- 1 - valve conversion key
- 1 - conversion label 3300-656
- 1 - conversion label 3300-583
- 1 - warning label 3300-585
- 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
- 1/2" wrench
- 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 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.*

This Liquid Propane (LP) fuel conversion kit is for use with the Hearthstone Waitsfield 8770 only. This kit is suitable for installations at elevations up to 4500 feet above sea level. It is not necessary to de-rate the Waitsfield 8770 at elevations above 2000 feet.

Specification	NG	LP
INPUT RATING (Btu/hr) 0-2000 ft	37,000	37,000
INPUT RATING (Btu/hr) 2000-4500 ft	37,000	37,000
ORIFICE SIZE (DMS) 0-2000 ft	45F/45R	53F/57R
ORIFICE SIZE (DMS) 2000-4500 ft	45F/45R	53F/57R
MANIFOLD PRESSURE - LO SETTING* (in.w.c./kPa)		
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)	18,000	16,000

\*Rear burner only, minimum pressure setting.

### Instructions

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

LP conversion orifices are identified by size stamped on side of part. Ensure that orifice sizes are correct before installation.

*Note: Do NOT adjust and/or alter any components marked with tamper-indicating paint.*



Figure 1 – Orifices, Marking Locations

**To Convert the Valve to LP Operation:**

- 1) Remove the stove front access panel to expose valve system.
- 2) Locate the outlet pressure screw (see Figure 2).

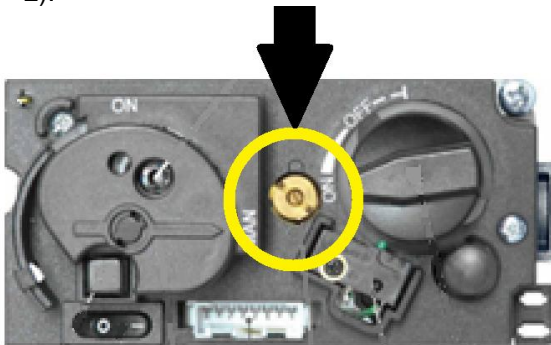


Figure 2 – Outlet Pressure Screw

- 3) Select a new, square bladed flat tip screwdriver large enough to span the entire head of the outlet pressure screw (see Figures 3 and 4).

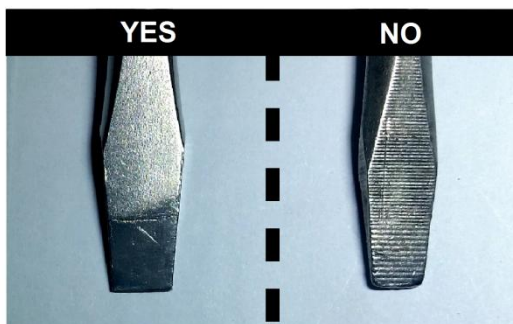


Figure 3 – Appropriate Bit Shape

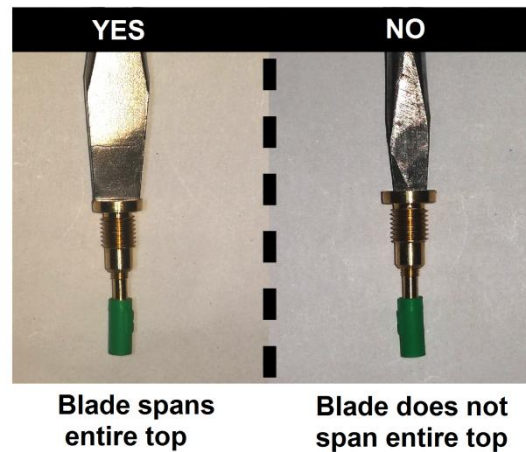


Figure 4 – Selecting Proper Driver Size

- 4) Turn the turn the outlet pressure screw housing counter-clockwise to remove (see Figure 5). **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.

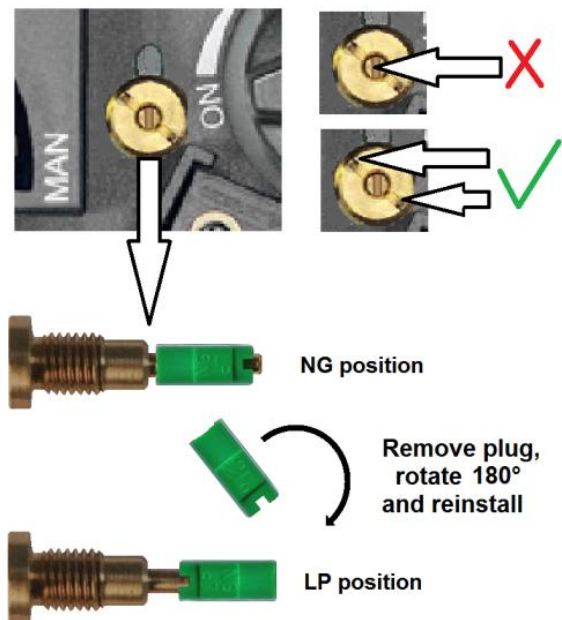


Figure 5 – Outlet Pressure Screw

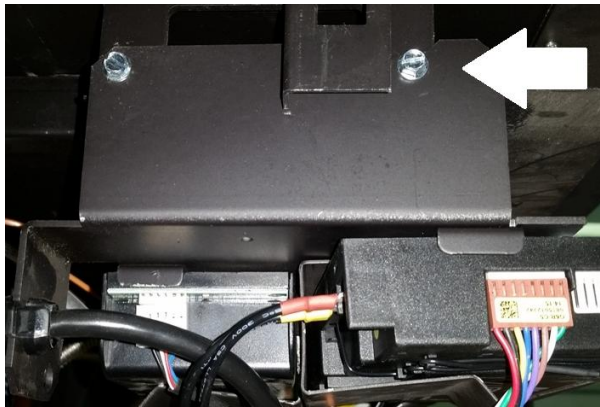
- 5) With the screw assembly removed from the valve, grasp the plastic spacer on the screw end and gently pull to remove (use caution to not rotate the shaft to which the spacer is mounted). See Figure 5.
- 6) Rotate the spacer 180° and then slide it back

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.

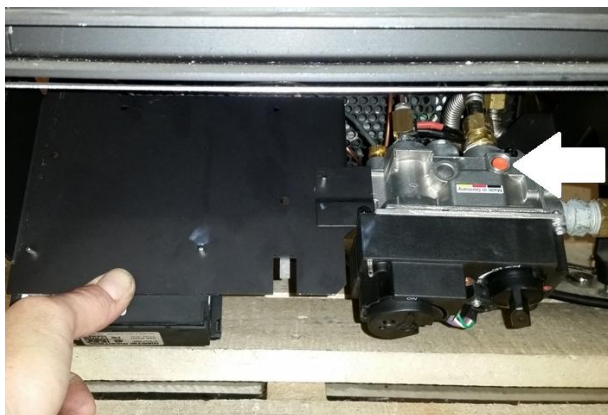
- 7) With spacer in correct position for the desired fuel type, reinstall the conversion plug by screwing it clockwise until snug. Be careful not to over tighten.

**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 6).
- 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 5).



**Figure 6 – Front Valve Mounting Bracket Screw (from left side of stove)**

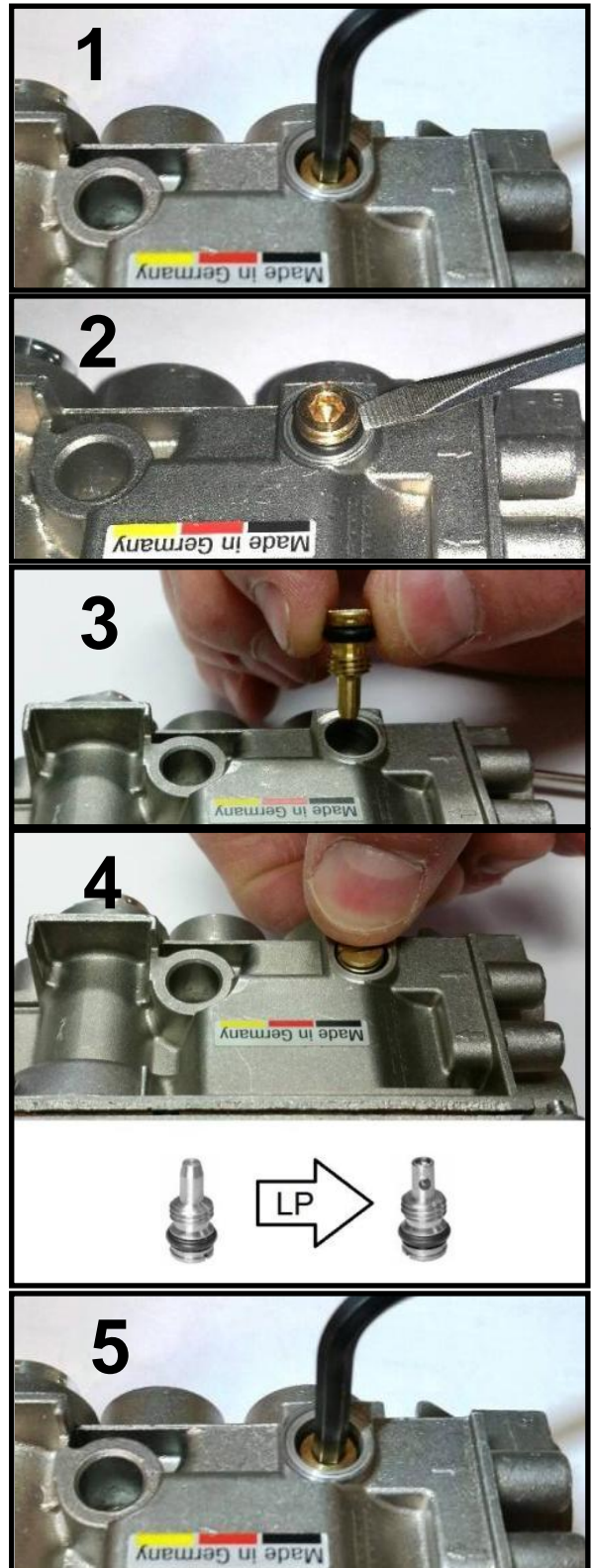


**Figure 7 – Low Pressure Orifice Access, Valve System Tilted Down.**

- 3) Remove the orifice using either the included flat blade conversion tool (first 500 stoves) 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 orifice mounted to its top.

- 4) Insert the new LP low flow orifice into the valve body and gently press the o-ring past the valve surface.
- 5) Tighten clockwise until seated and snug the new orifice in the valve using the hex wrench.



- 6) 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 LP use.

**To Switch Pilot to LP Operation:**

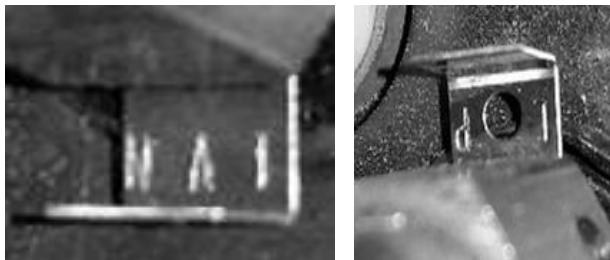
The pilot assembly in the Waitsfield 8770 is a slide convertible unit, requiring only a 7/16" open-end wrench for conversion. To convert pilot from NG to LP:

1. Open firebox and remove logs, burner, and pilot shield. Refer to Waitsfield 8770 main product manual for guidance.
2. Using the 7/16" wrench, grasp the pilot tower and turn counter-clockwise about 1/4 turn.



**Figure 8 – 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 front of the pilot tower and the letters "NAT" should be visible on the upper horizontal surface. Slide the gate backward in the Pilot Tower by pushing on the upturned edge by the "NAT" lettering until the upturned edge is flush with the Pilot Tower surface. You will see the NG/LP Pilot Gate protruding from the back edge of the Pilot Tower and the letters "LP" will be visible, separated by a punched hole.



**Figure 9 – Low Pressure Orifice Conversion**

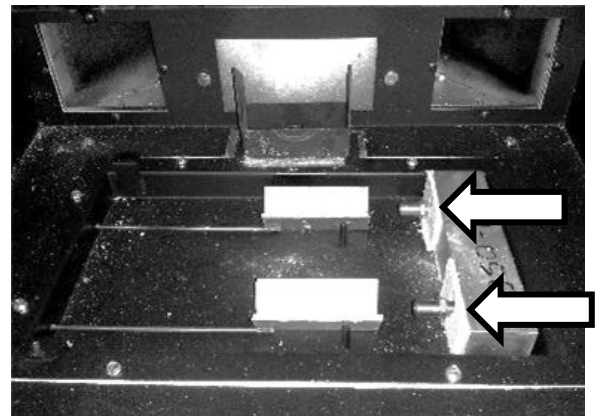
4. While holding the NG/LP Pilot Gate in the LP visible position, grasp the Pilot Tower with the 7/16" wrench and turn clockwise until the tower is snug. The Pilot Hood should be oriented such that one pilot flame is directed at the thermocouple and the other is facing the main burner (see Figure 10).



**Figure 10 – Correct Pilot Hood Orientation**

**To replace main burner orifice:**

Using a 1/2" socket or wrench, grasp orifice hoods and turn counter-clockwise until loose and remove. Replace with #53 orifice in front and #57 orifice in rear, turning clockwise until snug.



**Figure 11 – Main Orifice Location**

Reinstall burner, pilot shield, and logs. Ensure that pilot, pilot shield and burner are properly positioned (see Figure 12). Reinstall front glass, and front and top cast.



**Figure 12 – Pilot, Shield, and Burner Position**

**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 Waitsfield may be checked as follows:

1. Ensure that no other gas appliances are in

operation.

2. Place Waitsfield in operation on high, and allow to burn for 15 minutes.
3. Using residential gas meter, measure the time in seconds required for the Waitsfield to consume 1 cubic foot of gas.
4. The gas consumption of the Waitsfield 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:** Waitsfield may operate safely up to 105% of its rated input, or 38,850 BTU per hour. If Waitsfield 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.

**Checking gas pressures:**

When installation is complete, verify that inlet and manifold pressures are correct. 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.

To verify manifold pressure, with stove in operation, loosen threaded plug of manifold pressure tap and connect manometer. Verify manifold pressures at both high and low settings. Retighten plug when finished.

**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.

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

1. Connect a manometer to the valve outlet pressure tap. Pressure tap is opened by turning the screw counter-clockwise .
2. Light stove and place main burner in

operation on high.

3. Turn the small, central pressure regulator adjustment screw (see Figure 2) to set required burner pressure. Pressure is increased by turning clockwise (pressure regulator models), or decreased by turning counter-clockwise.

**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.

4. Verify that manifold pressure is correct (see table, page 1). If necessary, verify input rate.
5. If no other adjustments are required, remove manometer and close pressure tap(s) by turning the screw(s) fully clockwise until snug. Check all connections/pressure tap(s) for leaks.
6. If the desired outlet pressure or flow cannot be achieved by adjusting the gas valve, check the gas valve inlet pressure using a manometer at the valve inlet pressure tap. If the inlet pressure is in the normal range, replace the gas valve; otherwise, take necessary steps to assure proper gas pressure to the valve.

#### To adjust manifold low pressure:

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

1. Connect a manometer to the valve outlet pressure tap. Pressure tap is opened by turning the screw counter-clockwise.
2. Light stove and place main burner in operation on low.
3. For LP, the low rate is set by installing a calibrated low pressure orifice, included with this kit. Once the Waitsfield has been converted to LP with the fixed rate low flow orifice, the low rate is not adjustable. If LP minimum pressure is not within  $\pm 0.1$  i.w.c. of specified minimum pressure, ensure that low pressure orifice is properly seated in valve.

#### 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 3300-656 (number in lower right corner) and place over field provided on stove lighting instruction tag (see Figure 13).



Figure 13 – Rating Plate Conversion Label Location

Fill out all fields on smaller ash lip conversion label 3300-593 and place on inside surface of ash lip (see Figure 14).



Figure 14 – Rating Plate Conversion Label Location

Place small valve warning label 3300-585 on or near valve body (see Figure 15).



Figure 15 – Valve Warning Label Location