

**Push Through (Positive Pressure) Tube Heater Models****DESCRIPTION**

These kits are designed to convert from one gas type to another (eg. from **NATURAL** to **PROPANE** or from **PROPANE** to **NATURAL**) when equipped with **White-Rodgers** DSI gas valves number **36J23** or **36J58**.

⚠ WARNING

This conversion kit is to be installed by an authorized distributor or other qualified agency in accordance with the manufacturer's instructions and all codes and requirements of the authority having jurisdiction. Failure to follow instructions could result in serious injury, property damage or death. The qualified agency performing this work assumes responsibility for this conversion.

⚠ WARNING

FIRE OR EXPLOSION HAZARD CAN CAUSE PROPERTY DAMAGE, SEVERE INJURY, OR DEATH

Follow these warnings exactly.

1. Disconnect power supply (if equipped) to prevent electrical shock or equipment damage.
2. To avoid dangerous accumulation of fuel gas, turn off gas supply at service valve before starting conversion and perform **Gas Leak Test** after completion of conversion.

COMPLETE KIT NUMBERS – GAS CONVERSIONS

KIT PART NUMBERS	MODELS USED ON	CONVERTS From	CONVERTS TO
44503010	40,000	Natural Gas	Propane Gas
44503030	50,000	Natural Gas	Propane Gas
44503050	75,000	Natural Gas	Propane Gas
44503070	100,000	Natural Gas	Propane Gas
44503090	125,000	Natural Gas	Propane Gas
44503110	150,000	Natural Gas	Propane Gas
44503130	175,000	Natural Gas	Propane Gas
44503150	200,000	Natural Gas	Propane Gas

KIT PART NUMBERS	MODELS USED ON	CONVERTS From	CONVERTS TO
44503020	40,000	Propane Gas	Natural Gas
44503040	50,000	Propane Gas	Natural Gas
44503060	75,000	Propane Gas	Natural Gas
44503080	100,000	Propane Gas	Natural Gas
44503100	125,000	Propane Gas	Natural Gas
44503120	150,000	Propane Gas	Natural Gas
44503140	175,000	Propane Gas	Natural Gas
44503160	200,000	Propane Gas	Natural Gas

Mestek, Inc.

260 North Elm St. • Westfield, MA 01085

Telephone (413) 568-9571 • Fax (413) 562-8437 • www.mestek.com

Gas Conversion Kits

Push Through (Positive Pressure) Tube Heater Models

REPLACING MAIN BURNER ORIFICE

1. Loosen set screw of main burner (see **Figure 1**).
2. Push the main burner slightly to the left (see **Figure 2**) until the orifice can be reached. Remove the orifice with a 1/2" open end or box type wrench.
3. Replace the orifice with the one supplied in the kit. The orifice size is indicated on the parts list of the kit as well as on the face of the orifice for identification.
4. Reverse steps 1 and 2 above to reattach the main burner.

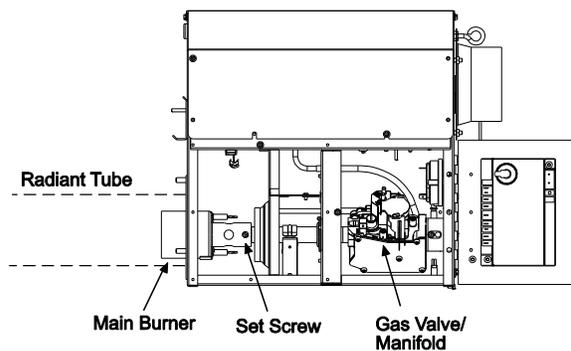


Figure 1

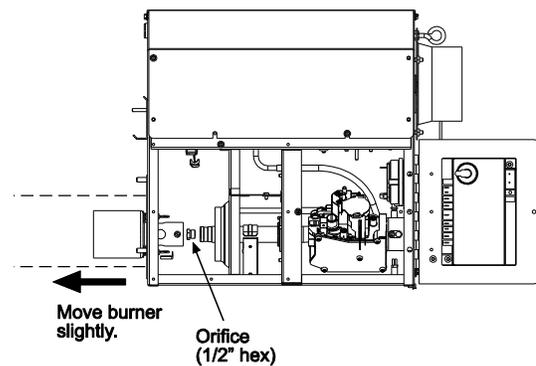


Figure 2

REPLACING REGULATOR SPRING

See separate instructions included in the regulator spring kit.

OUTLET GAS PRESSURE CHECK AND ADJUSTMENTS

Gauges that measure pressure in pounds per square inch are not accurate enough to measure or set the manifold pressure. All measurements **MUST BE** made when the heater and all other gas burning equipment that is connected to the gas supply system are operating at maximum capacity. The combination gas valve is factory set and should not need adjustment. If gas pressure adjustment is required, follow the instructions.

1. Turn off all electrical power to the system prior to connecting manometer hoses.
2. Turn the outlet pressure boss test screw (3/32" Hex allen wrench plug) in the center of the boss **not more than one turn counterclockwise**. Attach a 5/16" hose and manometer over the tapered outlet pressure boss on the valve (see **Figures 3 and 4** below). If regulator needs to be adjusted, see instructions below.

Gas Conversion Kits

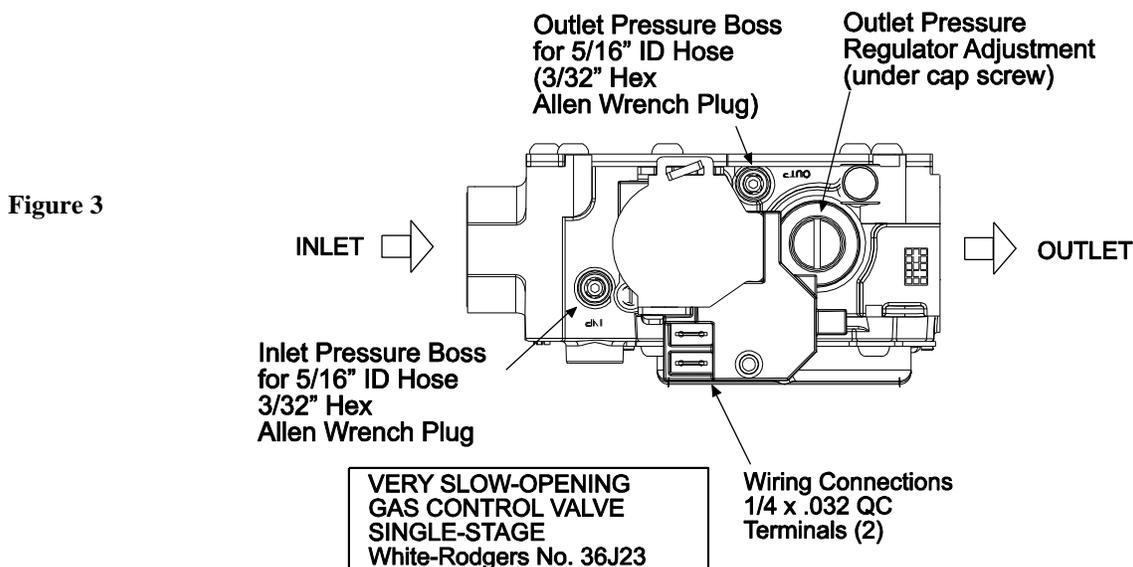
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To Adjust Regulator (1-stage gas valves):

1. Turn on power and energize the main gas valve. Remove regulator cover screw (see **Figure 3** below). Turn regulator adjustment screw **clockwise** ⤵ to **increase pressure**, or **counterclockwise** ⤴ to decrease pressure. Replace regulator cover screw and tighten securely.

DO NOT EXCEED THE PRESSURES SHOWN IN THE GAS PRESSURE TABLE.

2. After testing pressure and adjusting the regulator, turn off all electrical power to the system, remove manometer hoses, turn outlet test screw (3/32" Hex) clockwise to seal pressure port. Tighten to 7 in lb minimum. Turn on system power.



To Adjust Regulator (2-stage gas valves):

1. Turn on power and energize main gas valve solenoid. Do not energize the **HI** solenoid.
2. Remove regulator cover screw from the **low fire** outlet pressure regulator adjustment (see **Figure 4** below) and turn screw clockwise ⤵ to increase pressure, or counterclockwise ⤴ to decrease pressure. Replace regulator cover screw and tighten securely.
3. Energize main gas valve solenoid as well as the **HI** terminal.
4. Remove regulator cover screw from the **high fire** outlet pressure regulator adjustment (see **Figure 4** below) and turn screw clockwise ⤵ to increase pressure, or counterclockwise ⤴ to decrease pressure. Replace regulator cover screw and tighten securely.

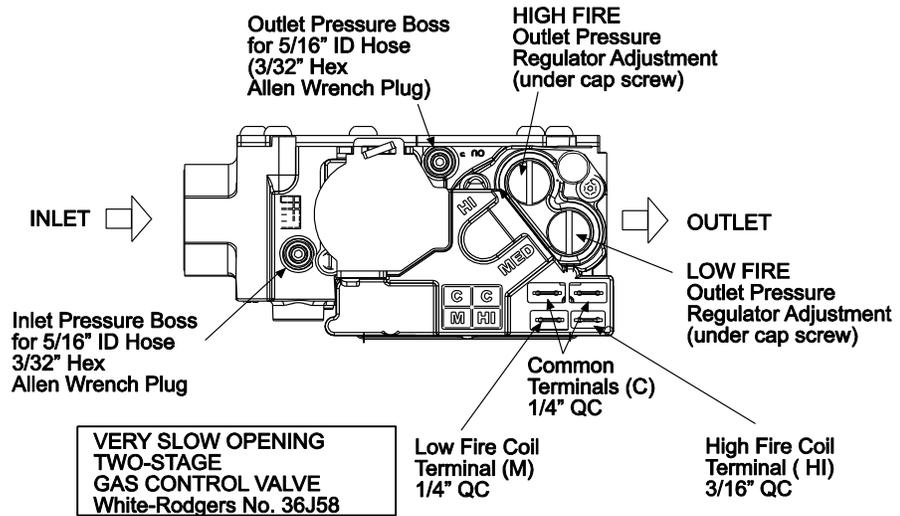
DO NOT EXCEED THE PRESSURES SHOWN IN THE GAS PRESSURE TABLE.

5. After testing pressure and adjusting the regulator, turn off all electrical power to the system, remove manometer hoses, turn outlet test screw (3/32" Hex) clockwise to seal pressure port. Tighten to 7 in lb minimum. Turn on system power.

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Figure 4



GAS PRESSURE TABLE				
GAS TYPE	MANIFOLD PRESSURE		SUPPLY PRESSURE	
	High	Low (2-stage only)	Minimum*	Maximum
Natural Gas	3.5" W.C.	1.4" W.C.	5" W.C.	14" W.C.
Propane Gas	10.0" W.C.	4.0" W.C.	11" W.C.	14" W.C.

*Minimum permissible gas supply pressure for purpose of input adjustment.

GAS LEAK TEST

Perform the gas leak test using a leak detection solution or soapsuds solution at the orifices, pipe nipples and pressure boss screws or check by one of the methods listed in Appendix D of the National Fuel Gas Code, ANSI 2223.1-(latest edition). Bubbles forming indicate a gas leak. **SHUT OFF GAS AND FIX ALL LEAKS IMMEDIATELY.**

⚠ WARNING

DO NOT OMIT THE GAS LEAK TEST. DO NOT USE AN OPEN FLAME OF ANY KIND TO TEST FOR LEAKS!

MARKINGS:

1. After conversion is complete, attach conversion gas decal on nameplate or gas valve for future reference.

Gas Conversion Kits

Push Through (Positive Pressure) Tube Heater Models

TUBE HEATER GAS CONVERSION CHART (NATURAL TO PROPANE)

BTU/Hr Input	Conversion Kit No.	Propane Gas	
		Orifice Part No.	Orifice Size
40,000	44503010	03259490	#49 (.073)
50,000	44503030	03259460	#46 (.081)
75,000	44503050	03259811	2.5mm (.098)
100,000	44503070	03259320	#32 (.116)
125,000	44503090	03259300	#30 (.129)
150,000	44503110	03259270	#27 (.144)
175,000	44503130	03259230	#23 (.154)
200,000	44503150	03259812	4.1mm (.161)

Gas Conversion (Natural to Propane)

(see chart for kit numbers)

Components

30755990	Spring Kit - LP #F92-0659
see chart	Orifice
41231020	Conversion Gas Decal - Propane Gas
44159080	Instruction Sheet

TUBE HEATER GAS CONVERSION CHART (PROPANE TO NATURAL)

BTU/Hr Input	Conversion Kit No.	Natural Gas	
		Orifice Part No.	Orifice Size
40,000	44503020	03259320	#32 (.116)
50,000	44503040	03259920	3.5mm (.138)
75,000	44503060	03259210	#21 (.159)
100,000	44503080	03259120	#12 (.189)
125,000	44503100	03259040	#4 (.209)
150,000	44503120	03259820	"A" (.234)
175,000	44503140	03259810	"E" (.250)
200,000	44503160	03259813	6.9mm (.272)

Gas Conversion (Propane to Natural)

(see chart for kit numbers)

Components

30755980	Spring Kit - Natural #F92-0656
see chart	Orifice
41231010	Conversion Gas Decal - Natural Gas
44159080	Instruction Sheet