

Installer's Guide

18-CH79D1-5A-EN



BAYLPSS400C

Propane Conversion Kit for S-Series, Ameristar and RunTru Furnaces

40 – 120K Models Only

ALL phases of this installation must comply with NATIONAL, STATE AND LOCAL CODES

IMPORTANT — This Document is **customer property** and is to remain with this unit. Please return to service information pack upon completion of work.

WARNING

This conversion kit shall be installed by a qualified service agency in accordance with 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 the kit. The installation is not proper and complete until the operation of the converted furnace is checked as specified in the manufacturer's instructions supplied with the kit.

WARNING

EXPLOSION HAZARD

Failure to follow this warning could result in serious personal injury, property damage, or death. Propane gas is heavier than air and may collect in any low areas or confined spaces. In addition, odorant fade may make the gas undetectable except with a warning device. If the gas furnace is installed in a basement, an excavated area, or confined space, it is strongly recommended to contact a gas supplier to install a gas detecting warning device in case of a leak. The manufacturer of your furnace does not test any detectors and makes no representations regarding any brand of detector.

A. GENERAL

These instructions describe converting gas furnaces from natural gas to propane gas.

Conversion from natural gas to propane gas is a critical procedure, therefore, these INSTRUCTIONS MUST BE FOLLOWED CLOSELY.

PROPANE ORIFICE		
MODELS IN 1000's BTUH	QUANTITY OF ORIFICE	ORIFICE SIZE
40	2	56
60	3	56
80	4	56
100	5	56
120	6	56

EACH KIT CONTAINS:

Qty	Description	Part Number
6	Stainless Steel Burner	D345196P02
1	Installer's Guide	18-CH79D1-5A-EN
6	Orifice main burner #56	B138253P33
1	Propane Label	B342003P12
1	Conversion Responsibility Label	B342003P12
1	Kit Spring Conversion (2 springs included)	A729800P01
1	Pressure Tap Adapter Kit (KIT07611)	A342055P01

WARNING

This product can expose you to chemicals, including lead, which are known to the State of California to cause cancer and birth defects of other reproductive harm. For more information go to www.p65Warnings.ca.gov.

B. INSPECTION

1. Unpack all components of the propane conversion kit.
2. Check carefully for any shipping damage. If any damage is found, this must be reported immediately and a claim made against the transportation company.
3. Check to be sure all components are in the package. Any missing components should be reported to your supplier at once and replaced with authorized components only.

WARNING

Replace and/or tighten all plugs removed or loosened when adjusting gas pressure. Leak check the fittings before placing the furnace into regular service. Failure to follow this warning could result in fire, explosion or property damage.

C. CONVERSION INSTRUCTIONS:

S-Series Furnaces

WARNING

INSTALLATION WARNING – HIGH VOLTAGE MOVING PARTS
Bodily injury can result from high voltage electrical components, fast moving fans, and combustible gas. For protection from these inherent hazards during installation and servicing, the main gas valve must be turned off and the electrical supply must be disconnected. If operating checks must be performed with the unit operating, it is the technician's responsibility to recognize these hazards and proceed safely.

Failure to follow this Warning could result in property damage, severe personal injury, or death.

CAUTION

The gas supply shall be shut off prior to disconnecting the electrical power, before proceeding with the conversion.

1. Turn off the gas supply and electrical power. Set the thermostat to off position.
2. Remove the electrical connector from the gas valve.
Note: Failure to disconnect the connector could lead to premature failure of the gas valve due to damage to the connection terminals.
3. Remove screws and detach manifold pipe (item 1) from burner box. See Figure 1 for references.
4. Remove screws and detach burner plate (item 2) from burner box.

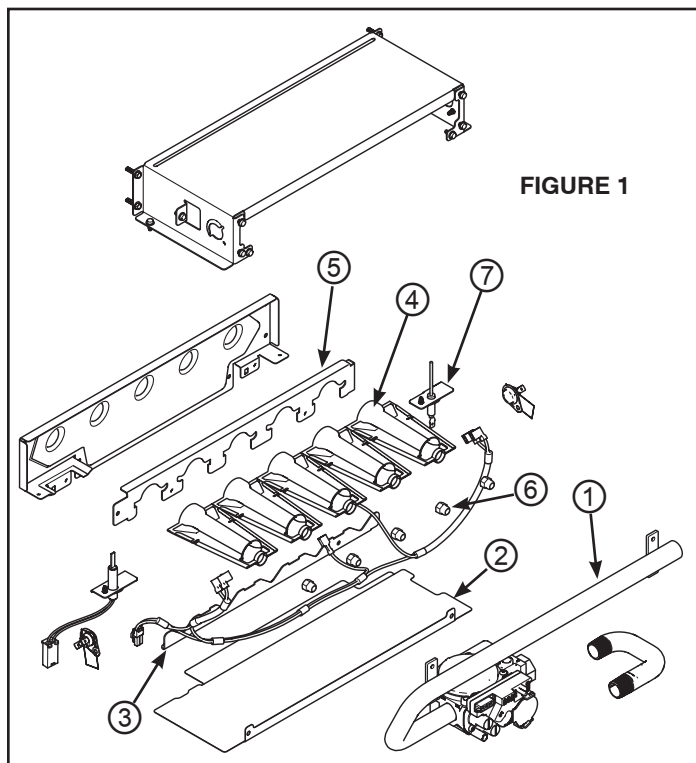


FIGURE 1

5. Remove screws and detach burner clamp (item 3) from burner box.

CAUTION

When removing extreme right and left burners, use caution not to break the ignitor assemblies and flame sensors.

6. Remove all burners (item 4) from the burner holder (item 5). Discard burners.
7. Record the orifice depth prior to removing all the main burner natural gas orifices(s) (item 6). Remove & discard the natural gas orifices.
8. Re-install the #56 propane orifices to the same depth as the orifices supplied with the equipment.

CAUTION

Check the ignitor and flame sensor alignments when replacing extreme right and left burners, use caution not to break the ignitor assemblies.

9. Install stainless steel burners supplied with kit.
10. Re-install burner clamp to burner box.
11. Re-install burner plate to burner box.
12. Re-install manifold pipe to burner box.

Models using the 36J single-stage gas valve:

See Figures 2 and 4.

13. Remove the natural gas regulator spring from the gas valve and replace with one of the LP springs in the conversion kit. Leave the additional LP spring inside the unit for possible replacement in the future. Apply labels to the gas valve per instructions with the spring. Go to Step 15.

FIGURE 2
SINGLE STAGE GAS VALVE ONLY

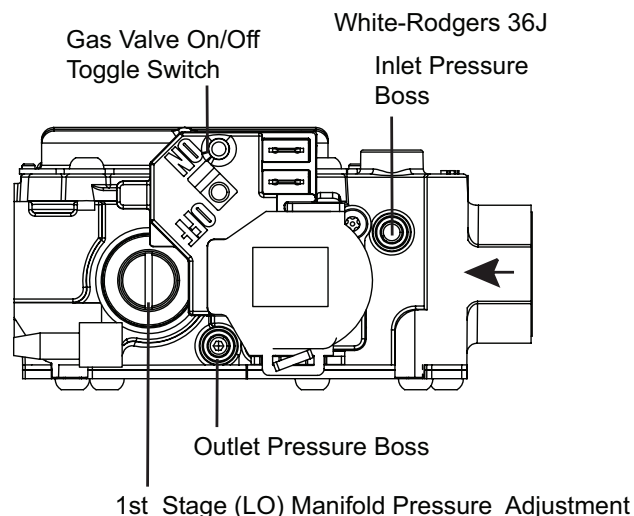
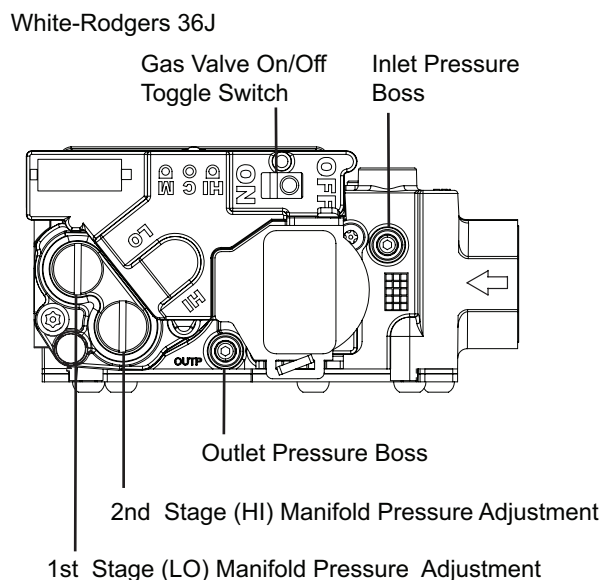


FIGURE 3
TWO STAGE GAS VALVE ONLY



Models using the 36J two-stage gas valve:

See Figures 3 and 5.

14. Perform the following steps to install the LP Springs:
 - a. Remove the high (HI) regulator screw cap. Retain the screw cap for reassembly.
 - b. Turn the plastic adjustment screw counter-clockwise until the screw can be easily removed.
 - c. Carefully remove the natural gas spring with piece of thermostat wire or similar material.

⚠ CAUTION

Be careful not to damage the engagement threads of the spring cavity.

- d. Discard the natural gas spring and insert one of the "white colored" LP springs. Center the spring within the cavity to avoid damaging the spring or cross threading the adjustment screw.
 - e. Re-install the plastic adjustment screw turning it clockwise approximately 4-5 turns.
 - f. Repeat steps a-e to install the LO stage LP spring.
15. Reconnect the electrical connector to the gas valve.
16. Apply "PROPANE" label to the rating plate of the furnace.
17. Apply conversion label to the front of the furnace.
18. Fill out the Conversion Responsibility Label and apply to the inside of the furnace door.
19. Turn on gas supply and electrical power.
20. For complete detailed sequence of operation, refer to the installation instructions or Service Facts with the furnace.
21. Set the thermostat to call for operation.
22. Check the complete operation of the unit. Check the manifold gas pressure **as specified in the installation instructions of the furnace Installer's Guide.**

NOTE: Since the low fire manifold pressure for propane is higher than the high fire manifold pressure for natural gas, it is necessary to adjust the high fire setting to maximum rate on propane before setting the low fire manifold pressure on propane.

D. GAS VALVE ADJUSTMENT

Changes can be made by adjusting the manifold pressure, or changing orifices (orifice change may not always be required). To adjust the manifold pressure:

1. Turn off all electrical power to the system.
2. Loosen (Do Not remove) the pressure tap test set screw one turn with 3/32" hex wrench.

Note: The pressure tap adjustment kit (KIT07611) contains a 3/32" hex wrench, a 5/16" hose and a connector and can be ordered through Global Parts.
3. Attach a manifold pressure gauge with flexible tubing to the outlet pressure boss marked "OUT P" on White- Rodgers gas valve model 36J.

NOTE: For single stage furnaces, follow the steps for 2nd stage adjustment. Complete steps 6 - 12.

FIGURE 4

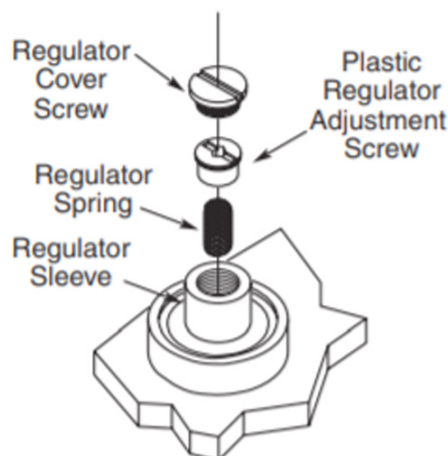
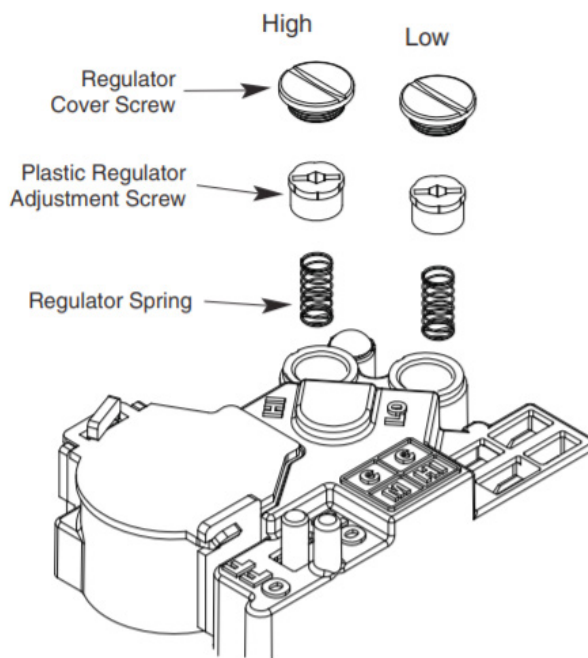


FIGURE 5



4. Turn on system power with NO call for heat.
NOTE: 2nd stage manifold pressure should be adjusted first. To shorten the amount of time it takes for 2nd stage to be energized, set the ISD (Interstage Delay) to zero (000) using the Menu and Option buttons on the IFC. This will energize 2nd stage heating immediately after after the blower on delay from 1st stage is complete. This is ~30 seconds after 1st stage flame has been sensed.

5. Make a call for 2nd stage heating. The LED will read HT2, although the furnace will light in 1st stage and then transition to 2nd stage depending on the Inter-Stage Delay settings. Insure that the unit is in second stage heating by verifying 24VAC is measured between C and HI on the gas valve.

6. Adjust 2nd stage gas heat by removing the high (HI) adjustment regulator cover screw.

- a. To increase outlet pressure, turn the regulator adjust screw clockwise.
- b. To decrease outlet pressure, turn the regulator adjust screw counterclockwise.
- c. Adjust regulator until pressure shown on manometer matches the pressure specified in the table.

Note: Maximum pressure to the gas valve for natural gas is 13.8" W.C. Minimum pressure is 5.0" W.C. Maximum pressure to the gas valve for propane is 13.8" W.C. Minimum pressure is 11.0" W.C.

The input of no more than nameplate rating and no less than 93% of the nameplate rating, unless the unit is derated for high altitude. See high altitude kit for de-rating instructions when installing above 2000 ft.

Fuel Manifold Pressure Settings (inches w.c.)			
Models	Fuel	2nd Stage Max.	1st Stage Max.
S9	Natural Gas	3.5" W.C.	1.7" W.C.
	Propane Gas	10.0" W.C.	6.0" W.C.
S8 (all except D120)	Natural Gas	3.5" W.C.	1.6" W.C.
	Propane Gas	10.0" W.C.	6.0" W.C.
S8-D120	Natural Gas	3.5" W.C.	1.8" W.C.
	Propane Gas	10.0" W.C.	7.5" W.C.

- d. Replace and tighten the regulator cover screw securely.
- e. Remove the call for second stage heat. First stage heat is now running.
7. Adjust 1st stage gas heat by removing the low (LO) adjustment regulator cover screw.
 - a. To increase outlet pressure, turn the regulator adjust screw clockwise.
 - b. To decrease outlet pressure, turn the regulator adjust screw counterclockwise.
 - c. Adjust regulator until pressure shown on manometer matches the pressure specified in the table.
Note: Maximum pressure to the gas valve for natural gas is 13.8" W.C. Minimum pressure is 5.0" W.C. Maximum pressure to the gas valve for propane is 13.8" W.C. Minimum pressure is 11.0" W.C.
The input of no more than nameplate rating and no less than 93% of the nameplate rating, unless the unit is derated for high altitude. See high altitude kit for de-rating instructions when installing above 2000 ft.
 - d. Replace and tighten the regulator cover screw securely.
8. Cycle the valve several times to verify regulator setting.
 - a. Repeat steps 6-8 if needed.
9. Turn off all electrical power to the system.
10. Remove the manometer and flexible tubing and tighten the pressure tap screw.
11. Using a leak detection solution or soap suds, check for leaks at the pressure outlet boss and pressure tap test screw.
12. Turn on system power and check operation of the unit.

E. AIRFLOW ADJUSTMENT

1. Check inlet and outlet air temperatures to make sure they are within the ranges specified on the furnace rating nameplate.
If the airflow needs to be increased or decreased, see the Installer's Guide for information on changing the speed of the blower motor.

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