Installer's Guide

18-CH94D1-1C-EN

High Altitude Conversion Kit

For S9V2-VS Furnace Models

Models:

BAYHALT250, BAYHALT251, BAYHALT252, BAYHALT253, BAYHALT254, BAYHALT255, BAYHALT256, BAYHALT257, BAYHALT258, BAYHALT259

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 the furnace 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, an 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 furnace manufacturer's instructions supplied with the kit.

A. GENERAL

These high altitude conversion kits are to be used only with S9V2-VS furnace models. Conversion kit is for use with natural or propane gas furnaces.

These instructions describe the conversion of these furnaces for installations exceeding an altitude of 4000 feet above sea level.

Due to the lower density of air at higher altitudes, there would be insufficient negative pressure developed by the induced draft blower to maintain normal operation. Therefore, to compensate for the less dense air, pressure switches must be changed to prevent nuisance lockouts and/or cycling of the induced draft blower on high speed. Please note that with the reduced firing input rates required for high altitude installations, the induced draft blower has ample capacity to provide sufficient combustion air for proper and safe operation. ***Refer to the National Fuel Gas Code, Section 11.1.2 and Annex E, for information regarding the correct procedure to derate the furnace's input.*** The following instructions must be followed to convert these furnaces for high altitude applications.

⚠ WARNING

This product can expose you to chemicals including lead, which are known to the State of California to case cancer and birth defects or other reproductive harm. For more information go to www. P65Warnings.ca.gov

⚠ CAUTION

Before proceeding with the conversion, the gas supply must be shut off prior to disconnecting the electrical power.

B. CONVERSION

These instructions below apply to S9V2-VS furnaces only.

1. Check for damage to kit contents, and check for all items listed in Table 1 on page 2.
2. Turn off gas supply to the furnace.
3. Disconnect electrical power to the furnace.
4. Remove the wiring connections from the pressure switch(es) in the furnace. Mark the wires if needed to properly identify the replacement.
5. Remove the pressure switch(es) sample tube from the switch assembly.
6. Remove the pressure switch(es) from the furnace.
7. Install the new pressure switch in the same location and manner as the old pressure switch.
8. Connect the pressure switch sample tube and electrical connections.
9. Reconnect the electrical supply to the furnace.
10. Turn on gas supply to the furnace.
11. Reconnect the electrical supply to the furnace.

C. CHECKOUT

Adjust input rate, manifold pressure, and install correct main burner gas orifice according to the furnace Installer's Guide. Fill out the information on the conversion label (part number A343079P01) and attach the label to the exterior of the furnace door. Once the furnace has been correctly rated for the high altitude installation, and the pressure switch has been changed, the furnace installation shall be checked for proper installation and performance. Refer to the furnace Installer's Guide for checkout procedure.

D. NOTES

1. The use of high altitude calibrated pressure switches in sea level applications is not permitted.
2. The high altitude pressure switches are factory calibrated and sealed. Field adjustment is not permitted. If the factory seal is broken, the product warranty may be voided.

Table 1. Kit Contents

Part number	Qty	Description
Varies by kit	2	Pressure Switch
18-CH94D1-1C-EN	1	Installer's Guide
A343079P01	1	Conversion Label

Table 2. Kit Matches and Settings

Kit Model No.	Furnace Models	PS Set Points	
		Inducer (PS1)	Cold Header (PS2)
BAYHALT250	S9V2B040U3VSBA and Earlier	-0.50	-0.70
BAYHALT251	S9V2B060U3VSBA and Earlier	-0.40	-0.90
BAYHALT252	S9V2B080U3VSBA and Earlier S9V2B080U4VSBA and Earlier S9V2B080D3VSBA and Earlier S9V2B080D4VSBA and Earlier S9V2C100D4VSBA and Earlier	-0.40	-1.20
BAYHALT253	S9V2C100U4VSBA and Earlier	-0.45	-1.20
BAYHALT254	S9V2D120U5VSBA and Earlier	-0.45	-1.30
BAYHALT255	S9V2B060D3VSB and Later	-0.30	-0.70
BAYHALT256	S9V2B040U3VSBB and Later S9V2B040D3VSBB and Later	-0.40	-0.50
BAYHALT257	S9V2B080D4VSBB and Later	-0.30	-0.90
BAYHALT258	S9V2B080U4VSBB and Later S9V2C100U5VSBB and Later S9V2D120D5VSBB and Later S9V2D120D5VSBB and Later	-0.35	-0.85
BAYHALT259	S9V2B060U4VSBB and Later S9V2C080U5VSBB and Later S9V2C100D5VSBB and Later	-0.35	-0.70

Table 3. Maximum Vent Length

Model	Maximum Total Equivalent Length in Feet for Vent and Inlet Air (See Notes)	
	2 inch or 2.5 inch Pipe	3 inch or 4 inch Pipe
Altitude 0-2,000 Feet		
S9V2B040U, S9V2B060U, S9V2B060D	200	200
S9V2B080U, S9V2B080D	100	200
S9V2C100U, S9V2C100D	50	200
S9V2D120U	Note 1	200
Altitude 2,001-5,400 Feet		
S9V2B040U, S9V2B060U, S9V2B060D	200	200
S9V2B080U, S9V2B080D	80	120
S9V2C100U, S9V2C100D	50	150
S9V2D120U	Note 1	200
Altitude 5,401-7,800 Feet		
S9V2B040U, S9V2B060U3, S9V2B060D	100	150
S9V2B080U3, S9V2B080D	50	70
S9V2C100U, S9V2C100D	Note 1	100
S9V2D120U	Note 1	100
Altitude 7,801-10,100 Feet		
S9V2B040U, S9V2B060U, S9V2B060D	50	90
S9V2B080U, S9V2B080D	Note 1	50
S9V2C100U, S9V2C100D	Note 1	50
S9V2D120U	Note 1	50

NOTES:
1. Not allowed
2. FOR DURAVENT MANUFACTURED MODULAR VENTING SYSTEMS THAT ARE IN THE APPROVED VENT PIPE MATERIAL TABLE, EQUIVALENT VENT LENGTHS MAY BE DIFFERENT FROM WHAT IS SHOWN ABOVE. REFER TO THE VENTING SYSTEM MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR APPROPRIATE VENTING DIAMETERS AND EQUIVALENT LENGTHS.
3. Minimum vent length for all models: 15' equivalent.
4. DO NOT MIX PIPE DIAMETERS IN THE SAME LENGTH OF PIPE OUTSIDE THE FURNACE CABINET (Except adapters at the top of the furnace). If different inlet and vent pipe sizes are used, the vent pipe must adhere to the maximum length limit shown in the table above (See note 7 below for exception). The inlet pipe can be of a larger diameter, but never smaller than the vent pipe.
5. MAXIMUM PIPE LENGTHS MUST NOT BE EXCEEDED! THE LENGTH SHOWN IS NOT A COMBINED TOTAL, IT IS THE MAXIMUM LENGTH OF EACH (Vent or Inlet air pipes).
6. One SHORT radius 90° elbow is equivalent to 10' of 4" pipe, 10' of 3" pipe, or 8' of 2" pipe. One LONG radius elbow is equivalent to 6' of 4" pipe, 7' of 3" pipe, or 5' of 2" pipe. Two 45° elbows equal one 90° LONG elbow. One MITERED elbow is equivalent to 12' of 3" pipe or 12' of 2" pipe.
7. The termination tee or bend must be included in the total number of elbows. If the BAYAIR30AVENTA or BAYAIR30CNVENT termination kit is used, the equivalent length of pipe is 5 feet. For BAYVENT200B and BAYVENTCN200B the equivalent length is 0 feet.
8. For Canadian applications, venting systems must meet ULC-S636 requirements.
9. The INLET AIR of one pipe systems require the installation of a minimum of one 90° elbow (to prevent dust and debris from falling straight into the furnace).

About Trane and American Standard Heating and Air Conditioning

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