



# H43 Series BASO® Automatic Pilot Valve with Manual Shutoff

## Applications

The H43 Series BASO valve is a combination "A" valve and automatic pilot valve. A manual valve handle with On, Off, and Pilot positions allows operation of the valve without a thermostat. Applications include room heaters, wall furnaces, and commercial cooking.

## Installation

**IMPORTANT:** Only qualified personnel should install or service BASO® Gas Products. These instructions are a guide for such personnel. Carefully follow all instructions in this document and all instructions for the appliance.

**IMPORTANT:** Make all gas installations in accordance with applicable local, national, and regional regulations.

 **CAUTION: Risk of Electric Shock.**  
Disconnect power supply before making electrical connections to avoid electric shock.

**Note:** In applications that do not require electrical power, disregard the previous caution.

 **WARNING: Risk of Explosion or Fire.**  
Shut off the gas supply at the main manual shutoff valve before installing or servicing the H43. Failure to shut off the gas supply can result in the release of gas during installation or servicing, which can lead to an explosion or fire, and may result in severe personal injury or death.

**IMPORTANT:** Verify that the valve is installed only in applications where the specified maximum ambient (surface) temperature and maximum operating pressure do not exceed the limits in the *Technical Specifications* section.

To install the H43 valve:

1. Shut off power to the appliance (if applicable).
2. Shut off the gas at the main manual shutoff valve.
3. Ensure that the gas flows through the valve body in the direction indicated by the "OUT" printed on the valve body. If the valve is installed with the gas flow in the opposite direction of "OUT" leakage can occur.

**IMPORTANT:** **Do not** use a wrench on any surface other than the casting flats provided at the inlet and outlet ends of the valve body. The H43 may be damaged in the mounting process if a wrench is used on any other surface. Using a wrench incorrectly may void the warranty.

4. Mount the valve to the pipework. Mount the H43 valve in any convenient position with the reset button and manual valve handle accessible. Use an approved pipe joint sealing compound on the male threads before assembly. Remove excess compound after mounting the valve to the pipework. Threads of the pipe and nipples must be smooth and free of tears and burrs. Steam clean all piping to remove foreign substances such as cutting oil or thread chips. A sediment trap needs to be installed in accordance with the National Fuel Gas Code NFPA 54 (Figure 1).

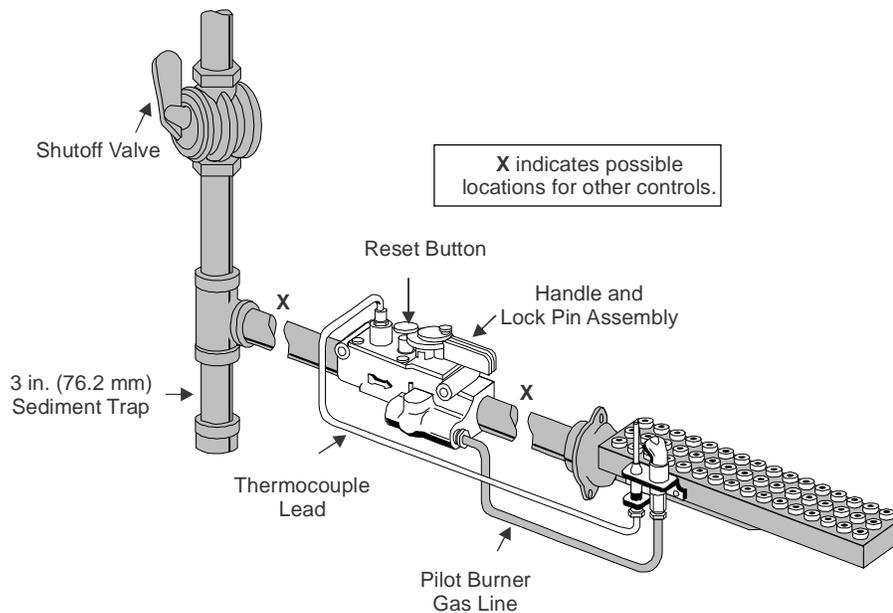
5. Attach the thermocouple securely to the pilot burner, and screw the terminal end to the BASO® power unit terminal on the valve. Make sure this connection is clean. Tighten the thermocouple lead nut finger tight, plus a maximum of 1/8 turn. Do not overtighten.
6. Attach the pilot gas line to the pilot burner fitting and the pilot gas connection of the H43 valve.

**! WARNING: Risk of Explosion or Fire.**  
 Verify that there are no gas leaks by testing with appropriate equipment. Never use a match or lighter to test for the presence of gas. Failure to test properly can lead to an explosion or fire and may result in severe personal injury or death.

7. Check for leakage:
  - a. Shut off the gas at the main manual shutoff valve and open the pressure connection between the manual shutoff valve and the H43 valve.
  - b. Connect air tubing with a maximum pressure of 1-1/2 times the valve's maximum operating pressure (as indicated on the valve) to the opened pressure connection.
  - c. Paint all valve body connections with a rich soap and water solution.

If bubbles occur, this is an indication of a leak. To stop a leak, tighten joints and connections. Replace the part if the leak cannot be stopped.

If bubbles do not occur, remove the air tubing and close the pressure connection.
8. Perform the *Checkout* section before leaving the installation.



**Figure 1: Typical H43 Installation**

## Setup and Adjustments

### Checkout



#### **WARNING: Risk of Explosion or Fire.**

Follow this or an equivalent checkout procedure after installation. Before leaving the installation, verify that the gas valve functions properly and that the system has no gas leaks. Gas leaks can lead to an explosion or fire, and may result in severe personal injury or death.

Make sure all components are functioning properly by performing the following test using gas.

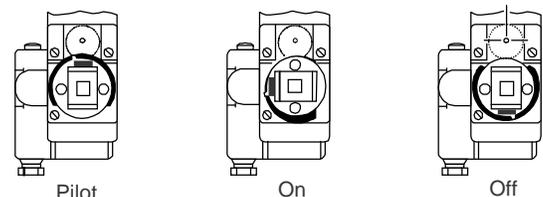
#### **H43A\_ and H43B\_**

1. Test all joints and connections for leaks with a soap solution.
2. For models H43A\_ and H43B\_, close the shutoff valve by pulling the lock pin up and rotating the handle clockwise to "OFF". In the "OFF:" position, the valve shuts both the pilot and main burner off. Wait at least 5 minutes for unburned gas to escape from the appliance. Reopen the shutoff valve to "ON" by rotating the handle counter clockwise until "ON" is adjacent to "RESET BUTTON".
3. Turn the handle to the pilot position by rotating the handle counter clockwise so that the "PILOT" is adjacent to the "RESET BUTTON".
4. Push the reset button down and light the pilot burner. Continue to hold down the reset button for 30 to 45 seconds or until the pilot remains burning when the reset button or handle is released.
5. Turn the handle to the "ON" position by rotating the handle clockwise to "ON" so that the "ON" is adjacent to the "RESET BUTTON". The main burner should be ignited by the pilot burner.
6. Throttle between "ON" and "PILOT" position only (if the H43 manual valve is used to throttle the main burner).
7. Adjust the pilot flame (on valves that provide pilot adjustment) by removing the slotted pipe plug and turning the inner screw to the right to decrease, or to the left to increase, the pilot burner gas. Replace the slotted pipe plug and tighten it securely to avoid any gas leakage.

8. Check the millivoltage (mV) output of the thermocouple and the milliampere (mA) dropout range of the BASO power unit to be sure they meet the values in Tables 1 and 2. Step-by-step procedures for these checks are included with the *Y99AB-4 BASO Test Kit Application Note*.
9. Observe at least three complete operating cycles to make sure that all components are functioning properly.
10. Reset the thermostat to the desired setting before leaving the installation.

#### **H43G**

1. Test all joints and connections for leaks with a soap solution.
2. For Model H43G\_, pilot and the main burner gas are shut off when the valve is in the "OFF" position. To turn the valve off, push in the handle, compressing the spring completely and turn it counter clockwise to the "OFF" position (see Figure 2 for handle positions). The H43G model does not have a lock button. Wait at least 5 minutes for unburned gas to escape from the appliance. To go to the "PILOT" position from the "OFF" position, rotate the handle counter clockwise 180°. Do not push down while doing so. To reset the power unit, push down on the reset button for 30 to 45 seconds until pilot remains burning. Rotate the handle counter clockwise 90° to open gas to the main burner.



**Figure 2: Model H43G Handle Positions**

3. Throttle between "ON" and "PILOT" position only (if the H43 manual valve is used to throttle the main burner).

4. Check the millivoltage (mV) output of the thermocouple and the milliampere (mA) dropout range of the BASO power unit to be sure they meet the values in Tables 1 and 2. Step-by-step procedures for these checks are included with the *Y99AB-4 BASO Test Kit Application Note*.
5. Observe at least three complete operating cycles to make sure that all components are functioning properly.
6. Reset the thermostat to the desired setting before leaving the installation.

**Table 1: Thermocouple Output**

Thermocouple		mV Range	
Lead Type	Turn Down	Normal	Not Less Than
K15	4 mV	20-28	15
K16	4 mV	25-35	17
K17	4 mV	30-40	25
K19	4 mV	25-35	17

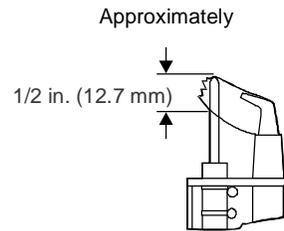
**Table 2: Power Unit Dropout Range**

Series Number	mA Range	
	Low	High
H43AA, H43BA, H43GA	100	300
H43AB, H43BB	50	165

### Pilot Servicing

If pilot flame problems occur, check the following:

- If the pilot flame burns yellow, it may be due to dirt or lint covering the lower portion of the pilot burner. Remove this using a soft brush or a vacuum.
- A flame approximately 1/2 in. (12.7 mm) high must surround the thermocouple tip (Figure 3).
- Because this is an electrical connection, the thermocouple lead connection to the BASO power unit must be clean and free of grease.



**Figure 3: Flame Position**

### Repairs and Replacement



**WARNING: Risk of Explosion or Fire.**

Shut off the gas supply at the main manual shutoff valve before installing or servicing the H43. Failure to shut off the gas supply can result in the release of gas during installation or servicing, which can lead to an explosion or fire, and may result in severe personal injury or death.

Field repairs must not be made to the H43 valve. If the thermocouple meets the output listed in and the valve does not function, replace the entire valve. Any attempt to repair this assembly voids the manufacturer's warranty. For a replacement valve, contact the original equipment manufacturer or the nearest BASO Gas Products distributor.

## Technical Specifications

<b>Product</b>	H43 Series BASO Automatic Pilot Valve with Manual Shutoff
<b>Maximum Operating Pressure</b>	0.5 psi (35 mbar)
<b>Valve Body</b>	Aluminum
<b>Permissible Ambient (Surface) Temperature</b>	32 to 175°F (0 to 79°C) H43_A models 32 to 250°F (0 to 121°C) H43_B models
<b>Recommended Thermocouple Lead Lengths</b>	K15: 12 to 48 in. (305 to 1,220 mm) K16: 12 to 72 in. (305 to 1,830 mm) K17: 18 to 72 in. (457 to 1,830 mm) K19: 18 to 72 in. (457 to 1,830 mm)
<b>Inlet and Outlet Body Connections</b>	3/8 or 1/2-in. NPT
<b>Types of Gas</b>	Natural, Liquefied Petroleum (LP), or LP gas-air mixtures
<b>Packaging</b>	Bulk pack supplied to original equipment manufacturer (individual pack optional)
<b>Bulk Pack Quantity</b>	60
<b>Bulk Pack Weight</b>	51 lb (23 kg)
<b>Agency Listing</b>	CSA (AGA/CGA) Certificate Number 229521-1656111 UL File Number MH2926 (H43AA and BA models only)
<b>Specification Standards</b>	ANSI Z21.78, CSA 6.20 UL Standard 372

*Performance specifications are nominal and conform to acceptable industry standards. All agency certification of BASO products is performed under dry and controlled indoor environmental conditions. Use of BASO products beyond these conditions is not recommended and may void the warranty. Product must be protected if exposed to water (dripping, spraying, rain, etc.) or other harsh environments. The original equipment manufacturer or end user is responsible for the correct application of BASO products. Consult BASO Gas Products LLC for questionable applications. BASO Gas Products LLC shall not be liable for damages or product malfunctions resulting from misapplication or misuse of its products.*

Refer to the *H43 Series BASO Automatic Pilot Valve with Manual Shutoff Product Bulletin (BASO-PB-H43)* for necessary information on operating and performance specifications for this product.



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