



## H19 Series BASO® Automatic Shutoff Pilot Gas Valve

### Application

The H19 Series pilot valves provide safe lighting and complete shutoff of main burner gas and pilot gas in the event that the flame heating the thermocouple is extinguished (H19A\_ applications only). Applications include heaters, commercial cooking equipment and similar applications. The H19ME/H19PE valves are for use only on catalytic heater applications.

### Installation

**IMPORTANT:** Only qualified personnel should install or service BASO® Gas Products 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 installation 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 H19. 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 pressures do not exceed the limits in the *Technical Specifications* section.

To install the H19 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 arrow on the valve body. If the valve is installed with the gas flow in the opposite direction of the arrow, 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 H19 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. The H19 valve may be mounted in any convenient position. Use an approved pipe joint sealing compound on male threads before assembling. 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 should also be installed in accordance with the National Fuel Gas Code (Z223.1/NFPA 54). See Figure 1 and Figure 2.

5. Attach the thermocouple securely to the pilot burner (H19A\_ valves only). Connect the thermocouple lead nut to the power unit terminal. Tighten the thermocouple lead nut finger tight plus an additional maximum of 1/8 turn. **Do not overtighten.**
6. Attach the pilot gas line to the pilot burner fitting and to the pilot gas outlet of the H19 valve (H19A\_ valves only).



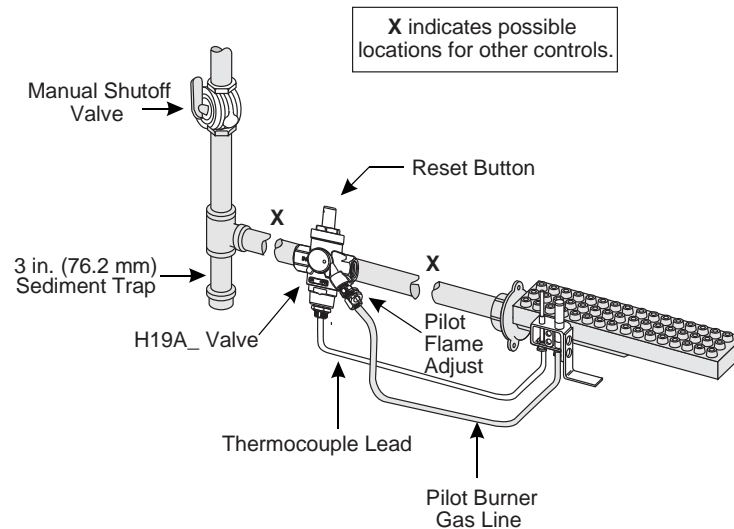
**WARNING: Risk of Explosion or Fire.**

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.

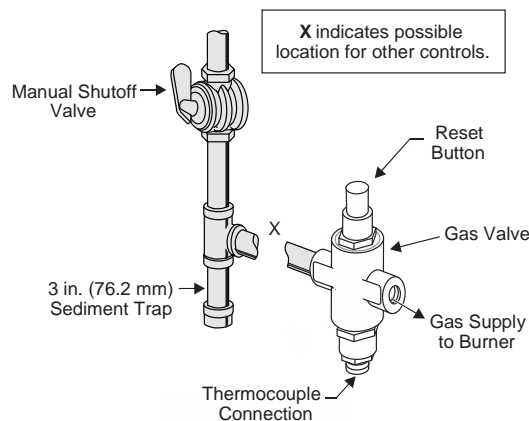
7. Check for leakage:
  - a. Shut off the gas at the main manual shutoff valve and open the pressure connection between the manual shutoff valve and the H19 valve.
  - b. Connect air tubing with a maximum pressure of 1-1/2 times the valve's maximum operating pressure (as indicated on the valve) to the 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 H19A\_ Installation**



**Figure 2: Typical H19ME/H19PE Installation**

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## Setup and Adjustments

### Checkout

Make sure all components are functioning properly by performing the following procedure.

#### Checkout for H19A\_ Valves



#### **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.

1. Test all joints and connections for leaks with a rich soap and water solution. If leaks occur, see Step 7 in the *Installation* section.
2. Close the manual shutoff valve and pilot valve and wait at least 5 minutes for unburned gas to escape from the appliance, then reopen the valves.
3. Push the reset button of the BASO® power unit and light the pilot burner. Continue to hold the reset button for 30 to 45 seconds or until the pilot remains burning when the reset button is released.
4. Set the thermostat to the highest setting. The main burner ignites from the pilot burner.
5. Set the thermostat to the lowest setting. The main burner extinguishes.
6. Extinguish all flames by closing the manual shutoff valve. Verify that the main valve drops out within 90 seconds. Reopen the valve.
7. Relight the pilot burner.
8. Check the millivoltage (mV) output of the thermocouple and milliamperage (mA) dropout range at the BASO power unit terminal to be sure that they meet the values in Note: **BASO recommends only BASO thermocouples that come from the original equipment manufacturer to provide optimum performance for your safety shutoff device.**
9. Table 1 and Table 2. Step-by-step procedures for these checks are included with the Y99AB-4 BASO Test Kit Application Note (Part No. 24-8711-838).
10. Observe at least three complete operating cycles to make sure that all components are functioning correctly.
11. Return the thermostat to a normal temperature setting before leaving the installation.

**Note:** BASO recommends only BASO thermocouples that come from the original equipment manufacturer to provide optimum performance for your safety shutoff device.

**Table 1: Thermocouple Output**

| Thermocouple |           | mV Range |               |
|--------------|-----------|----------|---------------|
| Lead Type    | Turn Down | Normal   | Not Less Than |
| K14          | 4 mV      | 20-28    | 15            |
| 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: Dropout Range**

| Series Number | mA Range of Power Unit Assembly |      |
|---------------|---------------------------------|------|
|               | Low                             | High |
| H19A_         | 100                             | 300  |
| H19ME         | 45                              | 165  |
| H19PE         | 45                              | 165  |

#### Checkout for H19ME/PE Valves (Catalytic Heater Application)



#### **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.

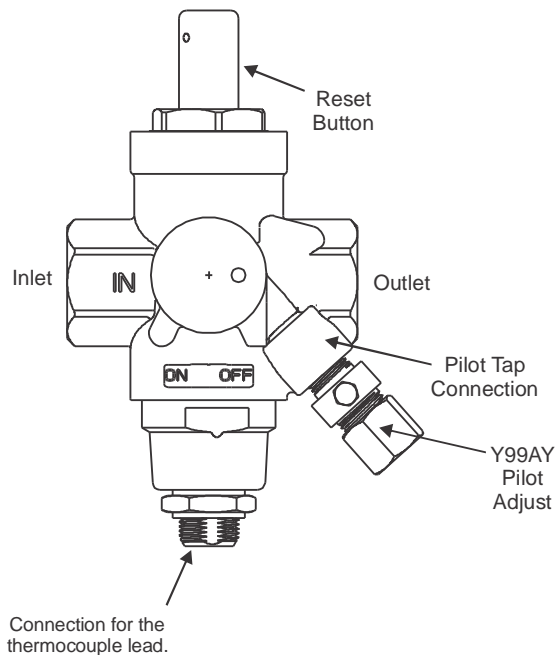
1. Turn on the main gas supply to the system.
2. If the heater is equipped with a thermostat, set the thermostat to the highest setting.
3. Turn on the power to the electrical elements.
4. Wait 15 minutes. Depress the reset button of the BASO power unit. The button should return to the original position and internally open the valve allowing gas to flow to the heater.

**Note:** If the valve does not stay open when the reset button is released, it may be necessary to wait an additional few minutes and then depress the reset button again.
5. When the catalytic reaction is well established, turn off the power to the electrical elements.

6. Check the millivoltage output of the thermocouple and milliampere dropout range at the BASO power unit terminal to be sure that they meet the values in Note: **BASO recommends only BASO thermocouples that come from the original equipment manufacturer to provide optimum performance for your safety shutoff device.**
7. Table 1 and Table 2. Step-by-step procedures for these checks are included with the Y99AB-4 BASO Test Kit Application Note (Part No. 24-8711-838).
8. If the heater is equipped with a thermostat, return it to the desired setting after the catalytic reaction has been established for at least one hour.

### Pilot Gas Adjustment

A Y99AY pilot adjust valve is provided on certain models to manually adjust pilot flame size. Off and On positions are indicated on the valve. By slowly turning the adjustment knob, a desirable flame can be obtained.

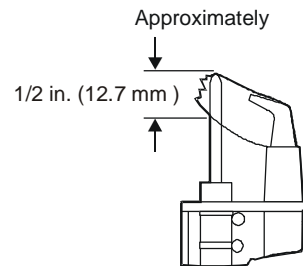


**Figure 3: Typical H19 Valve with Manual Pilot Adjust**

### 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 4).
- Because this is an electrical connection, the thermocouple lead connection to the BASO power unit must be clean and free of grease.



**Figure 4: 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 H19. 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 H19 valve. If the thermocouple meets the output in Note: **BASO recommends only BASO thermocouples that come from the original equipment manufacturer to provide optimum performance for your safety shutoff device.**

Table 1 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>                                     | H19 Series BASO Automatic Shutoff Pilot Gas Valve   |
| <b>Maximum Operating Pressure</b>                  | 0.5 psi (35 mbar)   |
| <b>Valve Body</b>                                  | Aluminum  |
| <b>Permissible Ambient Temperature (Min./Max.)</b> | H19A_ 32 to 150°F (0 to 66°C)<br>H19ME/H19PE -40 to 150°F (-40 to 66°C)   |
| <b>Recommended Thermocouple Lead Length</b>        | K14: 36 or 72 in. (914 or 1,829 mm)<br>K15: 12 to 48 in. (305 to 1,220 mm)<br>K16: 12 to 72 in. (305 to 1,830 mm)<br>K17: 18 to 72 in. (457 to 1,830 mm)<br>K19: 18 to 72 in. (457 to 1,830 mm) |
| <b>Inlet and Outlet Pipe Size</b>                  | 3/8 x 3/8 in. NPT (H19PE 1/4 x 1/4 NPT)   |
| <b>Types of Gas</b>                                | Natural, Liquefied Petroleum (LP), and 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>                            | 30 lb (14 kg)   |
| <b>Agency Listings</b>                             | CSA (AGA/CGA) Certificate Number 229521-1656106<br>UL Recognized File Number MH2926 (excludes H19PE)  |
| <b>Specification Standards</b>                     | ANSI Z21.78, CSA 6.20<br>ANSI Z21.21, CSA 6.5<br>ANSI Z21.20<br>CAN1-6.4)<br>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 *H19 Series BASO Automatic Shutoff Pilot Gas Valve Product Bulletin (BASO-PB-H19)* for necessary information on operating and performance specifications of this product.



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