BE58 Series Explosion Proof BASO® Remote Automatic Shutoff Gas Valve

Patented

A new product to meet the rugged elements of the environment**.**

Application

The BE58 Series remote valve provides safe lighting and complete shutoff of main burner gas. The remote solenoid valve is designed to operate intermittently to open the valve once the catalytic reaction creates enough heat to keep the valve open. This BE58 remote valve eliminates having a person manually hold the reset button down during the catalytic reaction waiting for the heat transfer through the thermocouple to hold the valve open.

When the thermocouple is extinguished and power is removed from the solenoid, the valve will completely shut off.

Note: Solenoid should only be operated with a momentary switch.

Typical applications are catalytic heaters where remote locations or in buildings where valves are difficult to get to for re-ignition.

Installation

The BE58 remote valve is supplied with a conduit connector 1/2 NPT and three wires with stripped ends. The green wire is the earth ground connection wire. The two black wires are non-polarity sensitive line and neutral connections.

WARNING: Risk of Explosion or Fire.
To prevent ignition of hazardous atmospheres, conduit runs must have a **sealing fitting** connected within 18 inches of the enclosure. “Only required if the device is marked for Class I, Division I.”

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.

WARNING: Risk of Explosion or Fire.
Shut off the gas supply at the main manual shutoff valve before installing or servicing. 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. Coil is not designed for continuous duty. If the coil is left on, with the gas connected and left on, this can lead to an explosion or fire, and may result in severe personal injury or death. Solenoid to be operated with a momentary switch.

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 BE58 valve:

1. Shut off power to the appliance.
2. Shut off the gas at the main manual shutoff valve.
3. Label each wire with the correct terminal designation prior to disconnection.
4. Verify the voltage on the valve label to the power source voltage to ensure the correct unit is being installed.
5. Ensure that the gas flows through the valve body in the direction indicated by the arrow → or "IN" on the valve body. If the valve is installed with the gas flow in the opposite direction of the arrow → or "IN", 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 valve may be damaged in the mounting process if a wrench is used on any other surface. Using a wrench incorrectly may void the warranty.

6. Mount the valve to the pipework. The BE58 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 3.
7. 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**.

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.

8. Thread pipe (the amount shown in Table 1) for insertion into the control. Do not thread the pipe too far. Valve distortion or malfunction may result if the pipe is inserted too deeply.

Table 1: NPT Pipe Thread Length into Valve

Pipe Size (NPT) or BSPT	Thread Pipe Amount (in.)	Maximum Depth Pipe (in.)
3/8	1/2	3/8

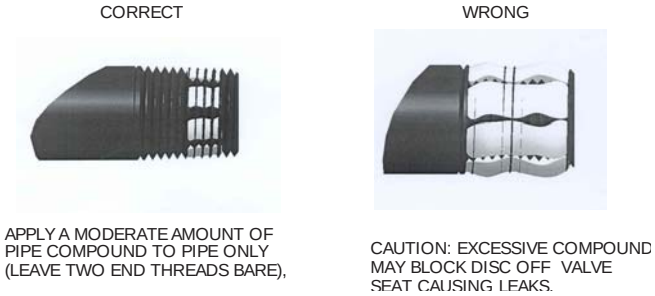

Figure 1: Use a Moderate Amount of Pipe Compound

9. Connect pipe to gas controls inlet and outlet. Use a wrench on the square ends of the control. If a flange is used, place the wrench on the flange rather than on the controls. This process should be used for both the install and removal of the valve in a gas system.

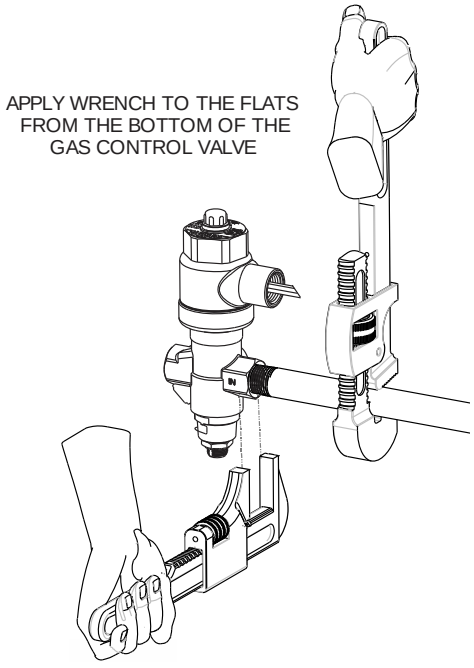

Figure 2: Proper Use of Wrench on Gas Control

10. 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 BE58 remote 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.
11. Perform the *Checkout* section before leaving the installation.

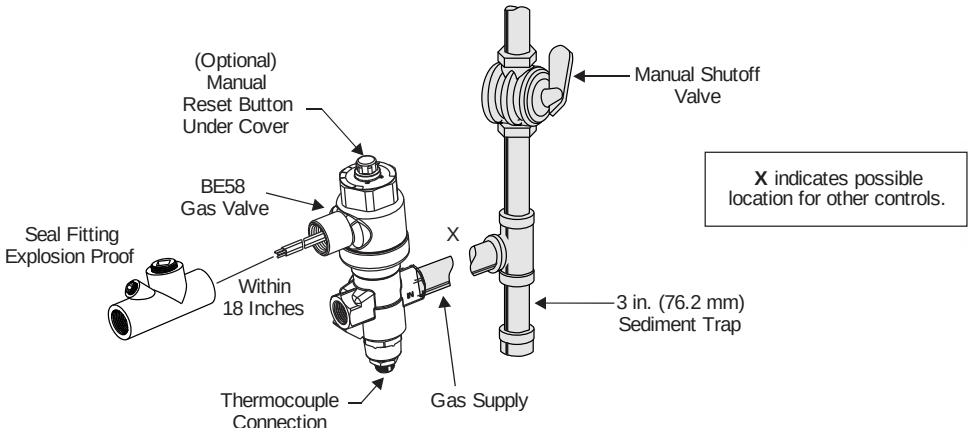

Figure 3: Typical BE58 Installation

Wiring

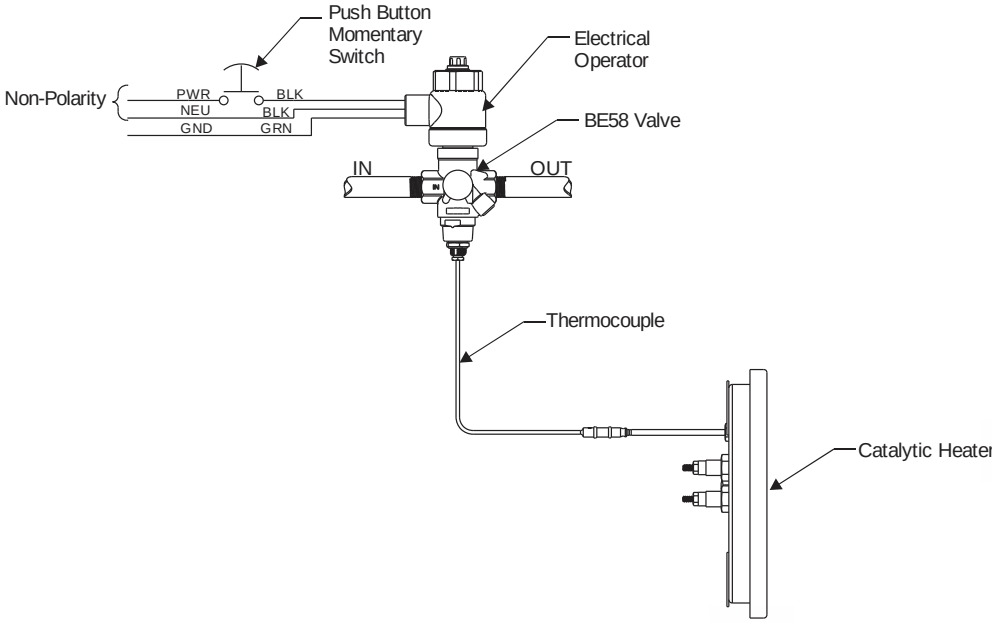

Figure 4: BE58 Wiring

Setup and Adjustments

Checkout for 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. Turn ON the power to the electrical elements.

   a. Wait 15 minutes. BE58 models, energize using a momentary switch solenoid depending on your voltage (12 VDC or 24 VDC) to activate the power unit, allowing power to stay on for 30 – 45 seconds. After turning off power to the solenoid, the internal seat will remain open, 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.

   b. If power is lost to the solenoid, wait 15 minutes. Use manual override button (optional) on some BE58 models by depressing the reset (see Figure 5) if there is no power to the solenoid. Releasing pressure on the manual reset allows the button to return to its original position and internally open the valve, allowing gas to flow to the heater.

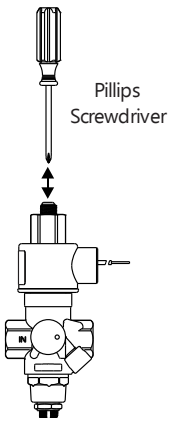

Figure 5: Manual Override Operation

   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 or activate again.

3. When the catalytic reaction is well established, make sure power is off to the electrical coil.

   Note: This coil is not designed for continuous duty.

4. 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 Table 2. Step-by-step procedures for these checks are included with the *Y99AB-4 BASO Test Kit Application Note (Part No. BASO-AN-Y99AB).*

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

Table 2: NPT Pipe Thread Length into Valve

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

Table 3: Dropout Range

Series Number	mA Range of Power Unit Assembly	
	Low	**High**
BE58	45	165

Repairs and Replacement

WARNING: Risk of Explosion or Fire.
Shut off the gas supply at the main manual shutoff valve before installing or servicing. 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. Coil is not designed for continuous duty. If the coil is left on, with the gas connected and left on, this can lead to an explosion or fire, and may result in severe personal injury or death.

Field repairs **must not** be made to the BE58 remote 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.

Maintenance Schedule

Preventive maintenance programs are an important part of maintaining optimum and safe function of your BASO products. Commercial cooking and other heating equipment can be a heavy cycling demand on gas safety controls.

The maintenance programs should include frequent checkout of the gas controls. Review the procedure as described in the setup and adjustments and check for leakage section of the instructions.

Exposure to water, chemicals, dirt, heat and grease can all contribute to premature shut down of the gas controls.

The frequency of the maintenance must be determined by the appliance manufacturer where the controls are installed and the end user for each individual application.

Things to consider when determining a preventive maintenance program:

- Number of cycles a gas control will see annually (more than 20,000 cycles). The gas control should be checked monthly.
- Gas controls used less than 20,000 cycles should be checked before every shutdown and restart process.
- Heavy grease, high heat, wash down exposure, corrosive environment areas should be checked with a higher frequency to prevent premature shutdown from rapid deterioration.

Simply doing a scheduled maintenance program will help remove the chances of a costly unexpected shutdown.

Never try to repair or replace a gas control unless you are an authorized licensed gas contractor as this will void the manufactures warranty. In all cases, use an authorized licensed gas contractor for any gas control replacement.

Technical Specifications

Product	BE58 Series Explosion Proof BASO Remote Automatic Electrically Operated Gas Valve for Hazardous Locations
Rated Inlet Pressure	0.5 psi (35 mbar) North America
Maximum Operating Temperature or T-Code T6	167°F (75°C)
Valve Body	Aluminium
Permissible Ambient Temperature (Min./Max.)	-40 to 149°F (-40 to 65°C)
Inlet and Outlet Pipe Size	1/4 or 3/8 NPT, 1/4 or 3/8 BSPP (Thread ISO 7-Rp) or 1/4 or 3/8 BSPT (Thread ISO 7-Rc)
Conduit Connection	1/2 NPT
Voltage	12 VDC, 9.5 VA; 24 VDC, 9.5 VA (coil is not continuous duty)
Types of Gas	Natural, Liquefied Petroleum (LP) or LP gas-air mixtures
Packaging	Bulk pack supplied to original equipment manufacturer (individual pack optional)
Bulk Pack Quantity	30
Bulk Pack Weight	45 lb (20 kg)
Hazardous Locations	Class I, Div 1, Groups C and D – Class II, Div II, Groups E, F and G
Agency Listings	UL Recognized File Number MH2926
Coil Classification	Class F
Specification Standards	UL 429, UL 1203 ANSI Z21.20, CAN1-6.4, CSA C22.2 No. 139-1982, 30M-1986, 25-1966

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.

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