



GM-7000 Series CE Approved Gas Control Valve

Installation

IMPORTANT: These instructions are intended as a guide for qualified personnel installing or servicing BASO Gas Products. Carefully follow all instructions in this bulletin and all instructions on the appliance. Limit repairs, adjustments, and servicing to the operations listed in this bulletin or on the appliance.



WARNING: Fire or Explosion Hazard.

The system must meet all applicable local, national, and regional regulations. Improper installation may cause gas leaks, explosions, property damage, and injuries.



WARNING: Fire or Explosion Hazard.

To prevent leakage of upstream gas, shut off the gas supply at the main manual shutoff valve before installing or servicing the GM-7000 valve. 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.

Mounting

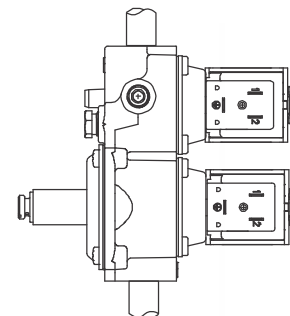
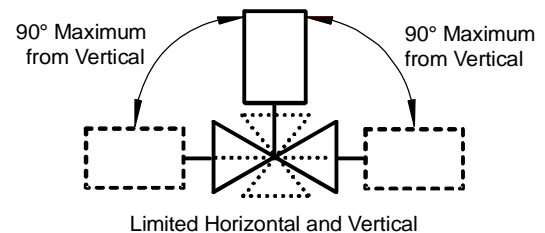


CAUTION: Equipment Damage Hazard.

To prevent damage to the valve when mounting to pipework, do not use a wrench on any surface other than the casting flats provided at the inlet and outlet ends of the valve body.

To install the GM-7000 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. Compare the voltage on the valve with the power source voltage to ensure the correct unit is being installed.
5. Mount the valve. The GM-7000 valve may be mounted on a horizontal manifold with the magnetic operators (solenoid coils) pointed up (vertical) or in any position not exceeding 90° from the vertical (Figure 1). The valve may also be mounted on a vertical manifold in any position around its axis. **Do not** install the solenoid coils upside down. Install vertically wherever possible.



Vertical mounting may be 360° around its axis with the gas flow either up or down, but always in the direction of the arrow.

Figure 1: GM-7000 Mounting Positions

6. 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.

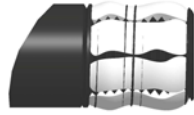
Table 1: NPT Pipe Thread Length into Valve

Pipe Size (NPT)	Thread Pipe Amount (in.)	Maximum Depth Pipe (in.)
3/8	1/2	3/8
1/2	3/4	1/2

7. For any threaded connections, threads of pipe and nipples must be smooth and free of tears and burrs. Steam clean all piping inside diameter to remove foreign substances such as cutting oil or thread chips before installing into the valve. Apply a moderate amount of good quality pipe compound (do not use Teflon tape) to pipe only, leaving two end threads bare (see Figure 2). On LP installation, use compound resistant to LP gas.

CORRECT

WRONG



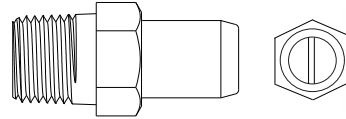
APPLY A MODERATE AMOUNT OF PIPE COMPOUND TO PIPE ONLY (LEAVE TWO END THREADS BARE).

CAUTION: EXCESSIVE COMPOUND MAY BLOCK DISC OFF VALVE SEAT CAUSING LEAKS.

Figure 2: Use a Moderate Amount of Pipe Compound

8. Ensure the gas flows through the valve body in the direction indicated by the arrow on the body. If the valve is installed with the gas flow in the opposite direction of the arrow, leakage can occur. 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** (see Figure 7). **Do not use the solenoids as leverage.**
9. Connect the pilot tubing (when necessary) to the threaded pilot connection on the underside of the valve body (see Figure 4) and run the tube to the pilot burner within the appliance. Connect the pilot tube to the valve with an optional compression fitting.

10. If you desire to measure the outlet pressure, use the (optional) bottom cast pressure test fitting (see Figure 4) or use the (optional) Y99AX pressure test fitting (see Figure 3) located on the side of the valve using an approved pipe joint compound on the male threads and replace the marked pressure tap plug, which is optional on the inlet or outlet of the valve body. Screw the fitting into threaded port of the valve, which replaces the pressure tap plug.



**Figure 3: Y99AX-1 (1/8-27 NPT) Pressure Test Fitting
Y99AX-2 (1/8-28 BSPT) Pressure Test Fitting**

11. Check for leakage before making any valve adjustments.
 - a. Shut off the gas at the main manual shutoff valve and open the pressure connection between the manual shutoff valve and the GM-7000 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.
12. Make wiring connections. See the *Wiring* section for specific wiring instructions.
13. If installing a valve with a pressure regulator, set the valve to the desired outlet pressure. See the Regulator Adjustment section for specific adjustment procedures. After setting the valve outlet pressure, ensure that the leak-limiting seal cap is replaced (see Figure 4).
14. Check for leakage at the pressure test nipple. Paint the bleed hole with a rich soap and water solution (or use acceptable gas leak detection equipment). If bubble occur, this is an indication of a gas leak. To stop a leak, tighten the needle screw. Replace the valve if the leak cannot be stopped.
15. Observe at least three complete operating cycles to ensure that all components are functioning correctly before leaving the installation.

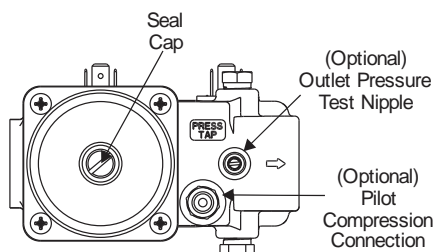


Figure 4: Underside of the Valve with Direct-Acting Regulator

Wiring



CAUTION: Risk of Electric Shock.

Disconnect power supply before making electrical connection to avoid electric shock or equipment damage. Ensure that the operating voltage is identical to the information on the product identification label.

The GM7000 valve is supplied with 2-tab or 3-tab electrical connections. The solenoid coils are male tabs and electrical connections should be made using 6.35 x 0.8 mm (1/4 in.) female, fully insulated push-on terminals. The earth ground is clearly labeled on the face of the solenoid.

The electrical wiring to a twin solenoid valve from an electronic intermittent proven pilot ignition system is comprised of two lines; a common and an independent earth ground. Wiring can be done using a single 4-wire cable. The wiring connections for a 4-wire cable are shown in Figure 8.

Route the electrical cable for the valve solenoid actuators from the burner sequence control to the valve and make wiring connections in accordance with (see Figure 8).

Note: Electrical connections can also be made using pre-wired electrical plugs (DIN 43650 Form B [ISO 4400]). See Figures 5 and 6.

Note: All wiring must be in accordance with national and local electrical codes and regulations.

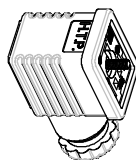


Figure 5: SVC200 Wire Connect Strain Relief DIN Type Connector

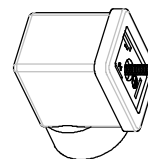


Figure 6: SVC210 Conduit 1/2 NPT DIN Type Connector

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:

1. Test all joints and connections for leaks with a soap solution.
2. Close the main upstream shutoff valve and wait at least 5 minutes for unburned gas to escape from the appliance, and then reopen the shutoff valve.
3. Turn on the main electrical power switch and close the thermostat contacts. The appliance should operate in accordance with the manufacturer's specified sequence of operation.
4. Turn the thermostat to a low dial setting to open the contacts. All burner flames should be extinguished. Repeat Steps 3 and 4 at least three times.
5. Return the thermostat to a normal setting before leaving the installation.

Regulator Adjustment

IMPORTANT: All adjustments must be made in conjunction with the gas appliance and in accordance with the appliance manufacturer's instructions. Only authorized personnel should make adjustments.



WARNING: Risk of Explosion or Fire.

The minimum flow rate of the valve must not be adjusted below the minimum safe working rate of the appliance. This may cause gas leaks, which can lead to an explosion or fire and may result in severe personal injury or death.

The GM-753_ model has a bottom adjust pressure regulator. To adjust the regulator, remove the leak-limiting seal cap to expose the adjusting screw (see Figure 4). Turn the adjusting screw to determine the compression of the regulator spring against the regulator diaphragm.

To adjust the outlet pressure, remove the leak-limiting seal cap to expose the adjusting screw (see Figure 4). Turn the screw (using a suitable flat-blade screwdriver) in a clockwise direction to increase or in a counterclockwise direction to decrease the outlet pressure of the valve.

Repairs and Replacement

Table 1: Replacement Solenoid Coil

Part Number	Description
RSDA95A-25	25 VAC; 50/60 Hz; 3-tab 10.5 VA Coil
RSDA95A-25A	25 VAC; 50/60 Hz; 2-tab 10.5 VA Coil

Do not make field repairs except for the replacement of the solenoid coil.

Any attempt to repair this assembly voids the manufacturer's warranty. For a replacement coil or gas 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 manufacturer's warranty. In all cases, use an authorized licensed gas contractor for any gas control replacement.

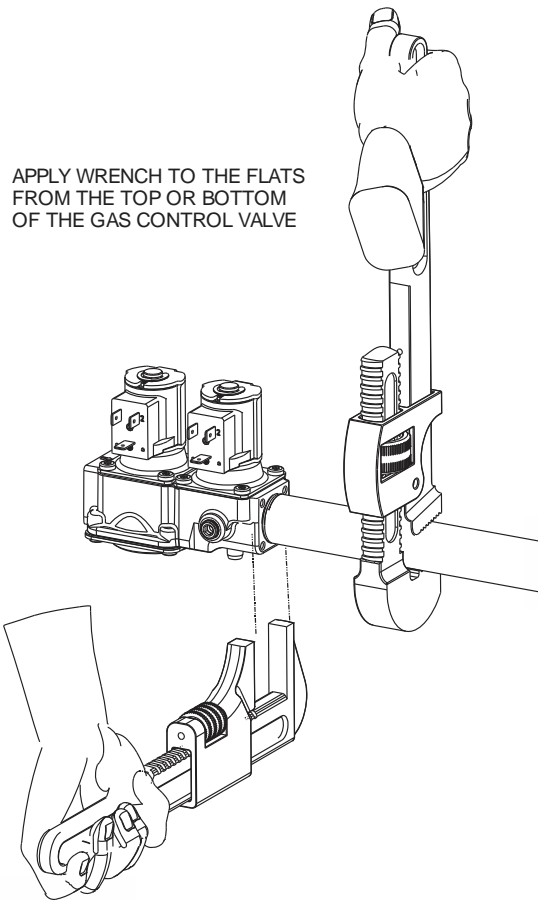
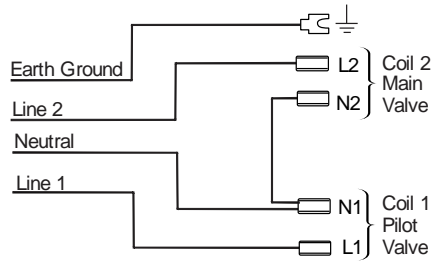


Figure 7: Proper Use of Wrench on Gas Control



Twin Solenoid Wiring Using 4-Wire Cable

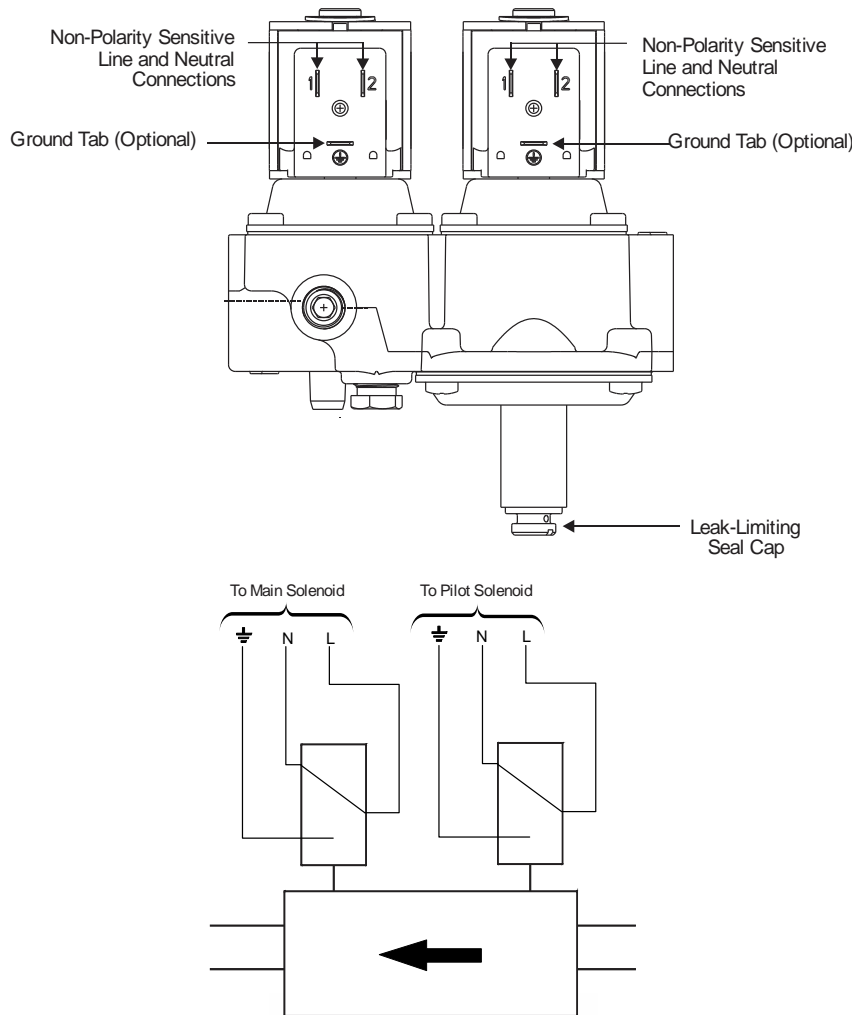


Figure 8: GM-7532 Model with Bottom Adjust Regulator

Technical Specifications

Product	GM-7000 Series CE Approved Gas Control Valve		
Types of Gas	Natural, Liquefied Petroleum (LP), and LP gas-air mixtures		
Rated Inlet Pressure	North America:	1/2 psi	
	Europe:	35 mbar	
	Australia:	3.5 kPa	
Maximum Working Pressure (CE)	50 mbar		
Maximum Differential Pressure	20 mbar (2 kPa [8 in. W.C.])		
Reverse Pressure Rating	50 mbar (5 kPa [20 in. W.C.]) Class B (EN 126 and 161); Class 2 (AS 4624 and AS 4629)		
Regulator Classification	Class C (EN 126); Adjustable, Class 2, Grade 20 (AS 4624)		
Direct-Acting Regulator Pressure Range	Natural Gas:	7.5 to 12.5 mbar (0.15 to 1.25 kPa [3 to 5 in. W.C.])	
	LP Gas:	22.5 to 30 mbar (2.25 to 3 kPa [9 to 12 in. W.C.])	
Permissible Ambient Temperature (Min./Max.)	0 to 70°C (32 to 158°F)		
Body Connections	1/2 NPT, 1/2 BSPP (Thread ISO 7-Rp) or 1/2 BSPT (Thread ISO 7-Rc) with Flange Connection Holes (M4 x 0.7 mm pitch x 6 mm deep)		
Valve Torsion Group	Group 2 (EN 126 and 161)		
Pressure Taps	M5 x 0.8 Thread		
Pilot Connection	1/4 in. cc Blank Plug		
Materials	Body:	Die-Cast Aluminum	
	Diaphragms and Seals:	Nitrile Rubber	
Dirt Strainer	0.9 mm (0.036 in.) mesh (CE only or upon request)		
Operating Time Rating	100% Continuous		
Valve Timings	Closing Time:	≤ 1 Second	
	Opening Time:	≤ 1 Second	
	Dead Time:	< 1 Second	
Power Rating	10.5 VA per Coil		
Electrical Rating	25 VAC, 50/60 Hz, 0.42A		
Electrical Connection	2-Tab Solenoid Coil: 2 x 6.35 mm (1/4 in.) 3-Tab Solenoid Coil: 2 x 6.35 mm (1/4 in.) + 6.35 mm (1/4 in.) Earth Ground		
Coil Insulation Class	Class F		
Packaging	Bulk pack supplied to original equipment manufacturers (Individual pack optional)		
Bulk Pack Quantity	20 per carton		
Bulk Pack Weight	36 lb. (16 kg) per carton		
Accessories	Conversion Kits	Natural gas to LP gas:	GM-70-CLP
		LP gas to Natural gas:	GM-70-CNG
		Regulated to non-regulated:	GM-70-CBP

Technical Specifications (continued)

Agency Listings	CSA (AGA/CGA) Certificate Number 229521-1656041 EC Certificate Number EC-86/11/041 Australian Gas Certificate Number 7934 GAR Certificate Number CE692401
Specification Standards	EN 126 and 161 Standards Complying with the Directive Standards Complying with the Low Voltage Directive Australian Standards AS 4624 and AS 4629 Canadian Standard CSA 6.5 and 6.20 ANSI Standards Z21.21 and Z21.78

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 *GM-7000 Series CE Approved Gas Control Valve Product Bulletin (BASO-PB-GM7000)* for necessary information on operating and performance specifications for this product.



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