



G196 Series BASOTROL® Redundant Combination Gas Valve with Manual Shutoff Valve

The G196 Series valves use the reliable valve body and magnetic operators from the G96 gas valve along with a manual **A** valve. The manual **A** valve, tested to commercial cooking standards, carries the $\triangle C$ approval for commercial cooking applications. This combination demonstrates the reliability and long operating life offered by the G196.

The magnetic operators are of bipolar design, closing the valves quickly when the power supply is interrupted.

Typical applications of the G196 valves include electronic ignition systems on residential furnaces, boilers, unit heaters, rooftop equipment, agricultural heaters, commercial cooking equipment, and other types of light commercial and residential heating units.



Figure 1: G196 Redundant Gas Valve

Features and Benefits	
<input type="checkbox"/> Built-in A Valve	Lowers installation costs, material, and labor
<input type="checkbox"/> 3/4 inch Outlet Available	Eliminates costly bushing for manifolds
<input type="checkbox"/> Selectable pilot Tap Position	Minimizes pilot tube length
<input type="checkbox"/> Top or Bottom Regulator Adjustment	Provides application flexibility

Product Overview

Application

The G196 valves can use natural gas, Liquefied Petroleum (LP) gas, or LP gas-air mixtures at pressures up to 0.5 psi (35 mbar). Valves with nitrile diaphragms are suitable for operation over a temperature range of -20 to 175°F (-29 to 79°C). Valves with silicone diaphragms are suitable for operation over a temperature range of -40 to 175°F (-40 to 79°C).

Note: This unit should be used only in applications that are within the limitations and provisions of the applicable American National and/or Underwriters Laboratories® (UL) Inc. standards.

Valve Operation

The G196 is a redundant automatic gas valve that controls the pilot gas and the main burner gas on electronic intermittent proven pilot ignition systems. It can also control only main burner gas on direct ignition systems. In either application, main gas flows through both valve seats (redundancy).

The manual **A** valve is a tapered plug design with positive shutoff. When the manual **A** valve is off, gas does not enter the valve body. When the manual **A** valve is on, gas flow through the valve depends on the type of ignition system used.

Intermittent pilot ignition systems energize the pilot valve first, and gas flows through the pilot outlet connection to the pilot burner. When the pilot flame is proven, the ignition control energizes the main valve, supplying gas to the main burner.

Direct ignition systems energize both valve operators simultaneously so that gas flows through the valve to the main burner for ignition.

In either intermittent pilot or direct ignition systems, the G196 offers redundant main gas shutoff because the valve seats are in series. Refer to Figure 3 for wiring diagrams of each ignition system.

Valve Constructions

The G196 Series is available with 1/2 x 1/2 in., 1/2 x 3/8 in., or 1/2 x 3/4 in. body connections with a 25 VAC 2-wire magnetic operator. Refer to the *Ordering Information* section for more information.

Magnetic Operator Cover Styles

An aluminum magnetic operator cover with conduit hub and 30 in. (762 mm), 18 AWG stranded lead wire is supplied as standard on all line-voltage models. The leads and hub position may be located at the top, over the inlet, on the right side, or on the left side of the valve. Lead wires with 1/4 in. (6.35 mm) quick-connect terminals are also available.

The UL Listed steel operator cover is available with a top conduit hub only.

A plastic magnetic operator cover with 1/4 in. (6.35 mm) quick-connect male terminals is supplied as standard on all low-voltage models. However, an aluminum or steel operator cover with conduit hub is available.

Contact BASO Gas Products for details and ordering of magnetic operator cover style and wiring requirements.

Regulator/Pilot Tap Options

The G196 is designed for various configurations. The lever-acting or direct-acting regulator and right- or left-hand pilot tap options take advantage of space or access limitations. The small swing radius makes installation easy.

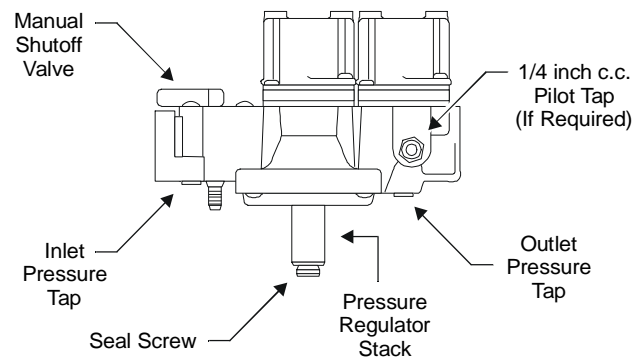


Figure 2: Component Identification

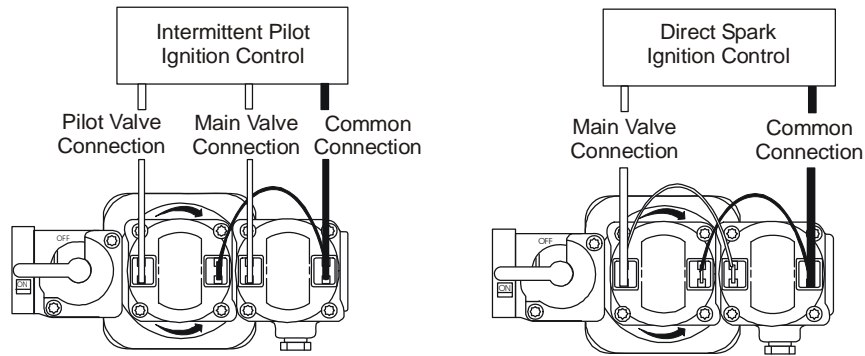
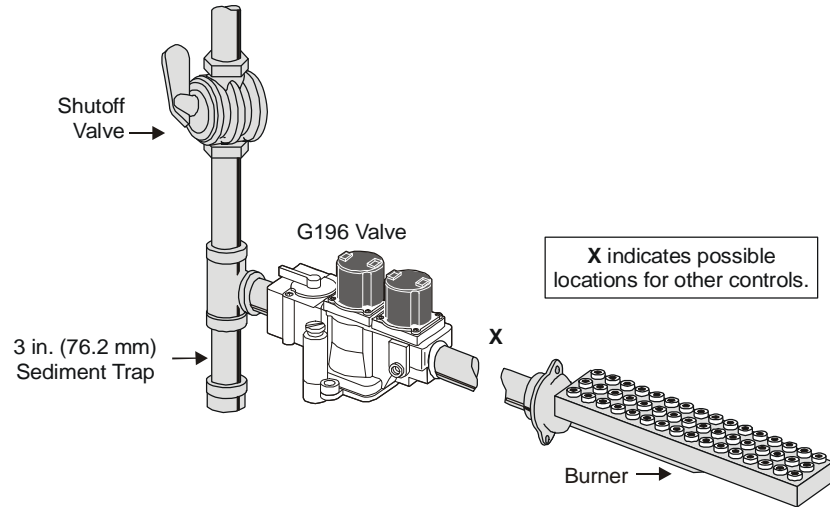


Figure 3: Typical G196 Gas Valve Installation and Wiring

Mounting

The G196 may be mounted on a horizontal manifold with the magnetic operators pointed up (vertical) or in a position not exceeding 90 degrees from vertical. The valve may also be mounted on a vertical manifold in any position around its axis as shown in Figure 4.

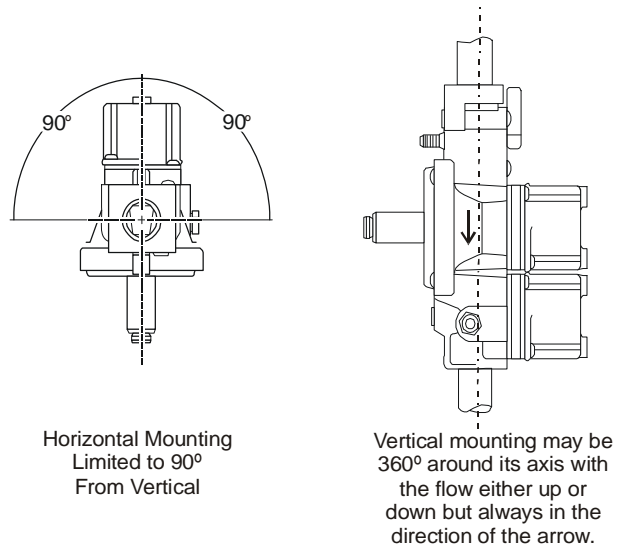


Figure 4: Mounting Positions

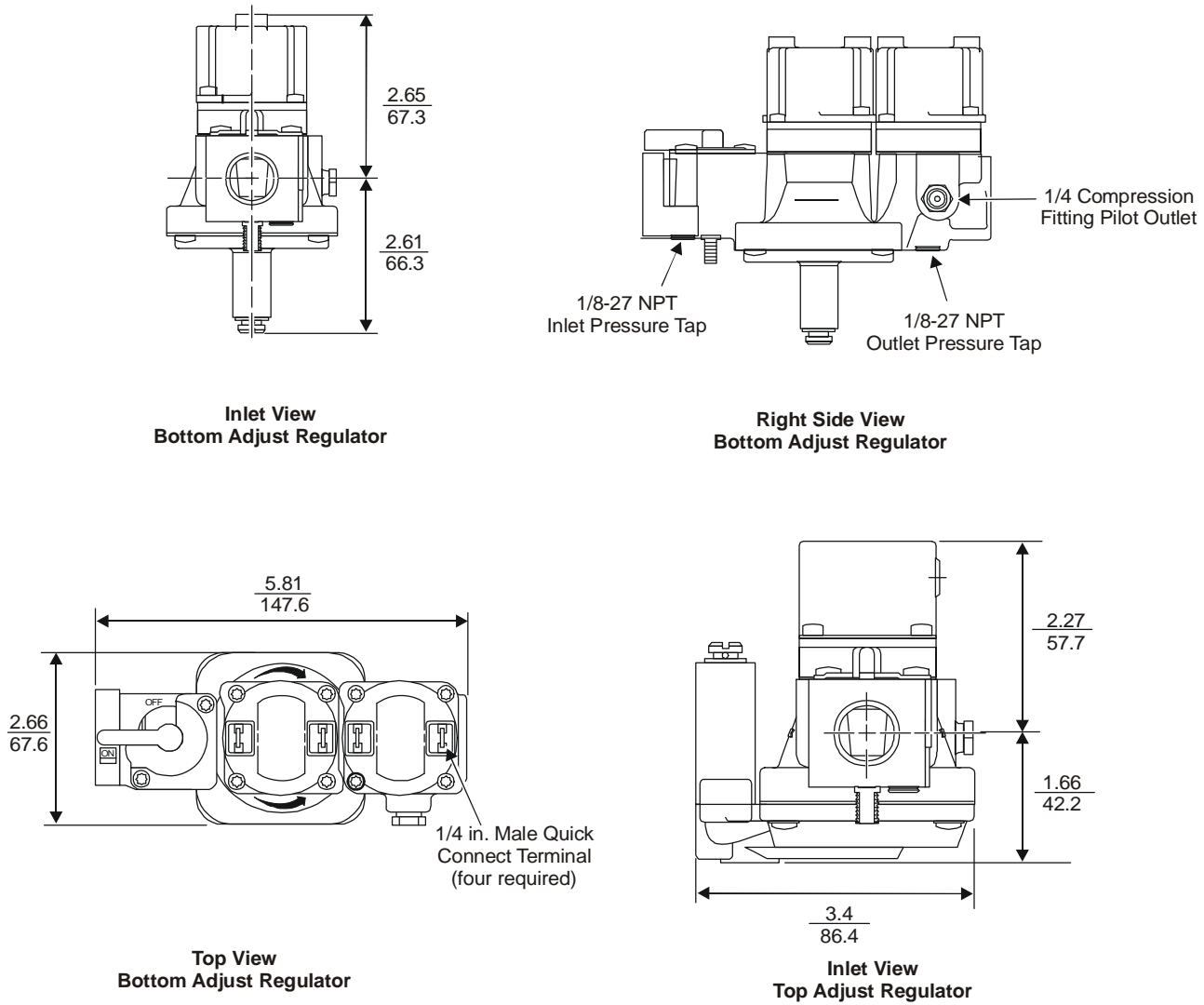


Figure 5: Dimensions, mm (in.)

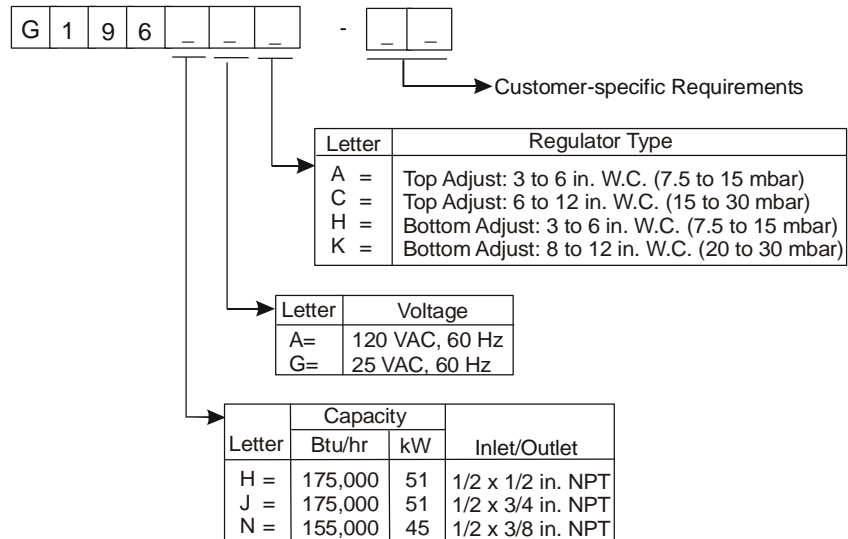
Range of Regulation

Table 1: Range of Regulation

Inlet/Outlet in. NPT	Q _{MINIMUM}		Q _{MAXIMUM}	
	cf/h	m ³ /h	cf/h	m ³ /h
1/2 x 1/2	20	0.57	175	4.96
1/2 x 3/8	20	0.57	155	4.39
1/2 x 3/4	20	0.57	175	4.96

Ordering Information


- Define the G196 model number using the ordering matrix shown in Figure 7. When ordering, include information regarding the following specifications:
- regulator setting (in. W.C. [mbar] at specific flow)
- type of gas (natural or LP)
- type of ignition system (intermittent pilot or direct)
- optional features



The presence of a particular construction in this information does not guarantee its availability. Consult Johnson Controls for available constructions.

Figure 7: Ordering Matrix

Technical Specifications

Product	G196 Series BASOTROL Redundant Combination Gas Valve with Manual Shutoff Valve		
Maximum Operating Pressure	0.5 psi (35 mbar)		
Valve Body	Aluminum		
Ambient Operating Conditions	-20 to 175°F (-29 to 79°C) nitrile diaphragm -40 to 175°F (-40 to 79°C) silicone diaphragm		
Available Magnetic Operator Cover Styles	Aluminum side conduit hub Aluminum top conduit hub Aluminum top without conduit hub Aluminum side outlet with eyelet Steel top conduit hub Plastic with 1/4 in. (6.35 mm) male quick-connect terminals		
Electrical Rating	25 VAC, 60 Hz, 0.3 ampere draw for each operator 120 VAC, 60 Hz, 0.05 ampere draw for each operator		
Regulator Adjustment Range	3 to 6 in. W.C. (7.5 to 15 mbar), top adjust and bottom adjust regulator, natural gas 6 to 12 in. W.C. (15 to 30 mbar), top adjust regulator, LP gas 8 to 12 in. W.C. (20 to 30 mbar), bottom adjust regulator, LP gas		
Typical Inlet Pressure	7 in. W.C. (17.5 mbar) natural gas 14 in. W.C. (35 mbar) LP gas		
Wiring Connections	1/4 in. quick-connect or 30 in. (762 mm) lead wires (other lengths are optional)		
Inlet Pipe Size	1/2 in. NPT		
Outlet Pipe Size	1/2, 3/8, or 3/4 in. NPT		
Pilot Outlet	1/8-27 in. NPT, left or right, 1/4 in. cc also available		
Pressure Taps	1/8-27 in. NPT plugged inlet and outlet		
Types of Gas	Natural, Liquefied Petroleum (LP), manufactured, mixed, or LP gas-air mixture		
Accessories	Conversion Kits:	Natural gas to LP gas:	top adjust regulator Y71GF-4 bottom adjust regulator Y71GF-3 LP gas to natural gas: top adjust regulator Y71QH-2 bottom adjust regulator Y71QH-3 Non-Regulation top or bottom adjust regulator Y71AA-5
Options	Inlet screen, Outlet screen, Auxiliary A valve handle, Ignition control bracket		
Packaging	Bulk pack supplied to original equipment manufacturer (individual pack optional)		
Bulk Pack Quantity	18		
Bulk Pack Weight	39 lb (18 kg)		
Agency Listings	CSA Certificate Number 229521-1656041  Australian Gas Association Certificate Number 3495 AGA Regulation Type B, Class 2, Grade B; Automatic Class 3		
Specification Standards	ANSI Z21.78, CSA 6.20 AG 209		

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 G196 Series BASOTROL Redundant Combination Gas Valve with Manual Shutoff Valve Installation Instruction (Part No. BASO-INS-G196) for necessary information on the installation, use, and servicing of this product.

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