



WALLACE & TIERNAN® SERIES 50-185

GAS PRESSURE REDUCING VALVE FOR Cl_2 , SO_2 AND NH_3

Introduction

The Series 50-185 Gas Pressure Reducing Valve (GPRV) is a spring-loaded, diaphragm operated valve used in gas-handling systems. It reduces varying gas pressure to a desired regulated pressure and maintains this pressure within close limits. When used in supply feed lines, the valve reduces the possibility of reliquefaction and improves gas regulation. For automatic operation, optional electric control components give reliable automatic shut-off.

Valve arrangements are: 1) a manual spring adjustment for pressure regulation, or 2) an electric operator for setting the regulated output and automatic shut-off.

Features

- Design simplicity and few operating parts mean a small, compact valve that is easy to install directly in a pipeline. Optional wall-mounting brackets are available for use with flexible connections.
- One valve body accommodates several seat-and-stem sizes for different capacities. The valve gives excellent regulation of discharge pressure over a flow range of 100 to 1 and a wide range of inlet pressures.
- Removable cartridges containing the seat-and-stem assemblies facilitate changing capacities and maintenance.
- Regulated gas pressure is easily set by adjusting spring load.
- All valve arrangements can handle inlet pressures to 560 psi (38.5 bar) and temperatures to 180 °F (82°C). Kynar® (vinylidene fluoride resin) for chlorine or sulphur dioxide or FEP (for ammonia) diaphragms and lead gaskets minimize the possibility of leaks. All electric operator arrangements shut off automatically if power supply fails.
- All valve body arrangements are weather-resistant for outdoor installation. The electric operator is a general purpose type and is UL listed.

Benefits

- Easy to install and maintain
- Excellent regulation of both discharge and inlet pressure
- Readily adaptable to capacity changes
- Gas pressure is easy to set
- Capacities to 12,000 PPD (chlorine), pressures to 560 PSI (38 bar) and temperatures to 180°F (82°C)
- Optional electric actuator for automatic closure of the valve
- Weather-resistant for outdoor installation



SERIES 50-185 VALVE WITH ELECTRIC OPERATOR FOR AUTOMATIC SHUT-OFF. VALVE BODY IS WEATHER-RESISTANT. OPERATOR IS UL LISTED.

Operation

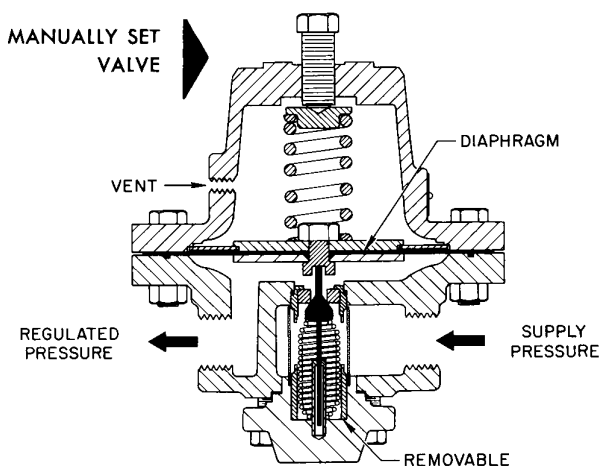
Regulated gas pressure is achieved by a balanced-diaphragm system. As supply pressure increases, pressure against a diaphragm builds up. When this pressure overcomes the spring compression opposing it, the diaphragm moves.

Diaphragm movement positions the stem assembly closer to the seat, throttling the supply pressure until it balances the spring compression. When the discharge pressure balances the spring compression, the desired regulated pressure results.

The desired control pressure, thus regulated pressure, is set by manually adjusting the compression of the spring, or by manually adjusting a mechanical stop, which limits actuator-ram travel in the electrically operated version. Automatic shut-off is achieved by de-energizing the electric valve operator.

Construction

The Series 50-185 Gas Pressure Reducing Valve consists of a main housing, convenient inlet and outlet connections, spring-loaded stem assembly, seat, and reinforced power diaphragm. For manually set and electrically operated models, the operator housing contains an adjustable spring.



TECHNICAL DATA

Use	To reduce the pressure of chlorine, ammonia or sulphur dioxide in piping systems.	
Capacity*	Cartridge-type seat-and-stem assemblies available for 2,000 (908 kg) and 12,000 lbs (5,443 kg) of chlorine, 975 (442 kg) and 5,760 lbs (2,613 kg) of ammonia, 1,900 (862 kg) and 9,500 lbs (4,309 kg) of sulphur dioxide per 24 hrs.	
Electrical requirements	For electric shut-off: 120 volt, 50/60 Hz, single phase. Opening: 1.25 A; holding: 0.07 A; closing: none	
Auxiliary switch	Rating, 22 amps at 120/240 volts	
Operating range	100 to 1	
Inlet pressure	560 psi (38.5 bar) maximum	
Regulated output	5-60 psi (0.3 - 4 bar) for manual type; 5 to 35 psi (0.3 - 2.5 bar) for electric operator arrangement	
Materials	Cast nodular iron body with corrosion-resistant finish. Other parts exposed to gas: Monel®, Hastelloy® C, Kynar®, FEP, tantalum, TFE	
Connection sizes	Similar systems measure gas flow through Series V-2000 Sulfonators, ammoniators, and carbon dioxide feeders	
Installation	Can be mounted directly in pipe line or with optional wall mounting brackets. All arrangements of the valve may be installed at any angle up to 90 degrees from the normal vertical. Operation will remain satisfactory and reliable, but the frequency of cleaning increases as the installation angle departs from the normal vertical.	
Equipment furnished:	Items such as piping and wiring are included with the valve only as specifically listed in a quotation.	
Weight	NET	SHIPPING
Manual	32 lbs (14.5 kg)	40 lbs (18 kg)
Electric	56 lbs (25 kg)	65 lbs (30 kg)

* HIGHER CAPACITY FEEDS ARE ACHIEVABLE ONLY IF TEMPERATURE OF LIQUID IS MAINTAINED AT 70°C (100 PSIG) AND GPRV OUTLET PRESSURE SET TO 35 - 45 PSIG.



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