

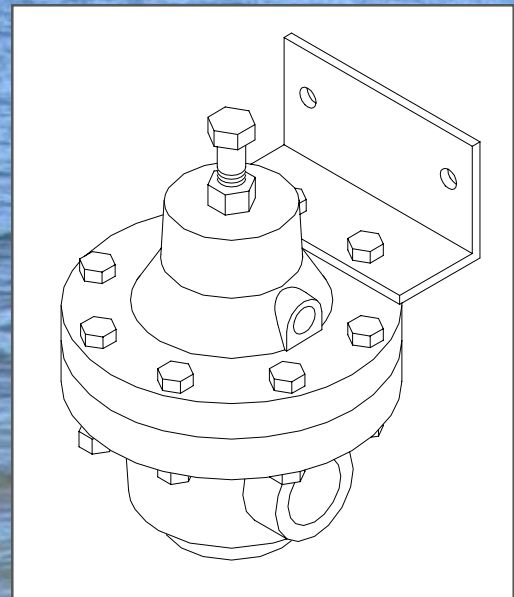
CAPITAL CONTROLS

ADVANCE® Series PRV861 Gas Pressure Reducing Valve (PRV) is a diaphragm-operated valve designed for chlorine, sulfur dioxide and ammonia gas service.

The Series PRV861 pressure reducing valve is a normally closed valve, actuated by either manual or automatic operation (electric or pneumatic). The function of the Series PRV861 is to reduce and control gas pressure down stream of the valve. This is achieved by compressing a spring to a height which will control the down stream pressure to the desired level. The conical valve and kynar seat assure tight short term shut-off.

The valve is designed to handle dry gas. A tantalum diaphragm is provided for maximum gas protection. In the event moist gas attacks the diaphragm, the gas will vent to a safe area. All materials in contact with the gas are specially suited for the gas being handled. The valve plug and seat are housed in a capsule which is completely removable for cleaning or capacity changes.

ADVANCE™ Gas Pressure Reducing Valve Series PRV861



- ◆ Fail safe design
- ◆ Replaceable inlet capsule
- ◆ Exceeds Chlorine Institute and ASME recommendations
- ◆ Reliquefaction prevention
- ◆ manual and automatic operation
- ◆ Capacities to 10,000 PPD (200 kg/h)
- ◆ For chlorine, sulfur dioxide and ammonia

Applications

Mainly used in vaporizer systems, the Series PRV 861 is designed to open above the vaporizer low water temperature alarm set point and closed below the set point.

Vaporizer applications include:

- ◆ **Disinfection of potable water and municipal wastewater**
- ◆ **Cooling water**
- ◆ **Dechlorination**
- ◆ **Bleaching**
- ◆ **Metal finishing**
- ◆ **Chloramination**

Pressure reducing valves can be used in any gas pressure piping where a pressure drop is desired to aid in reliquefaction prevention.

Design Features

- ◆ **Rugged construction:** body of cast, ductile iron (ASTM, A-395) as recommended by the Chlorine Institute and ASME. The valve is rated for gas pressure service to 300 psig (21 bar) and temperatures to 225°F (107°C).
- ◆ **Tantalum diaphragm:** Special tantalum diaphragm, inert to effects of chlorine, sulfur dioxide or ammonia gas
- ◆ **Serviceability:** Threaded capsule containing valve plug and seat are field removable for cleaning or ease of replacement
- ◆ **Safety:** External lead compression seals and internal o-rings assure positive short term shut-off. Fail safe design closes upon loss of air or electricity
- ◆ **Adaptability:** Wall mounting bracket provided or the Series PRV861 can be direct pipeline mounted.

Principle of Operation

Gas enters the valve body and flows through the capsule assembly containing the valve plug and seat. Its pressure is regulated inside the valve by a spring-opposed or pilot-operated diaphragm located above the capsule. As the inlet gas pressure varies, the diaphragm position will move to vary the orifice size and balance the supply pressure. This action maintains constant gas discharge pressure. The gas then exits through the valve outlet. (See Figure 1)

The desired downstream control pressure should be determined by the type of valve being used: manual, pneumatic, hydraulic or electric. Should the downstream pressure exceed the control pressure setting, the diaphragm will move to close the valve, shutting off the gas flow.

Automatic shut-off is accomplished through the action of a 3-way solenoid valve to bleed the pilot medium or through the de-energizing of the electric valve operator.

Model Information Code

Model P R V 8 6 1 _ _ 01 _

Gas

- A - Ammonia
- C - Chlorine
- S - Sulfur Dioxide

Actuator

- 1 - Electric
- 2 - Pneumatic
- 3 - Manual

Capacity

- 01 - 500 PPD (10 kg/h)
- 02 - 2,000 PPD (40 kg/h)
- 03 - 10,000 PPD (200 kg/h)

Technical Data

Pressure Reducing Valve

GENERAL

Operating Pressure:

Maximum Inlet Pressure: 300 psig(21 bar)

Minimum Inlet Pressure:

Chlorine: 45 psig (3.1 bar)

Sulfur Dioxide: 25 psig (1.7 bar)

Ammonia: 45 psig (3.1 bar)

Operating Temperature:

Maximum: 225°F (107°C)

Minimum: -15°F (-26°C)

Utilities Required:

Manual: None

Pneumatic: Filtered regulated air at 40 psig (3 bar) minimum, ac or dc power supply for 3-way solenoid (20 watt)

Electric: 120 Vac, 50/60 Hz, single phase or 240 Vac, 50/60 Hz, single phase

Connections:

Gas Inlet and Outlet: 1" (25 mm) NPT, female

Vent: 1/4" (6 mm) NPT, female

Air Inlet (pneumatic only): 1/4" (6 mm) NPT, female

Mounting: Wall mounting bracket standard, can be pipeline mounted

Optional Accessories:

Isolating and by-pass valves **

Ammonia flange connections **

Pneumatic operation:

3-way solenoid valve *

Air pressure regulator and filter

Air pressure gauge

Electric operation:

Control switch *

NEMA1, 4 or 7 ratings

Gas pressure gauges **

Gas strainer **

* Required

** Recommended

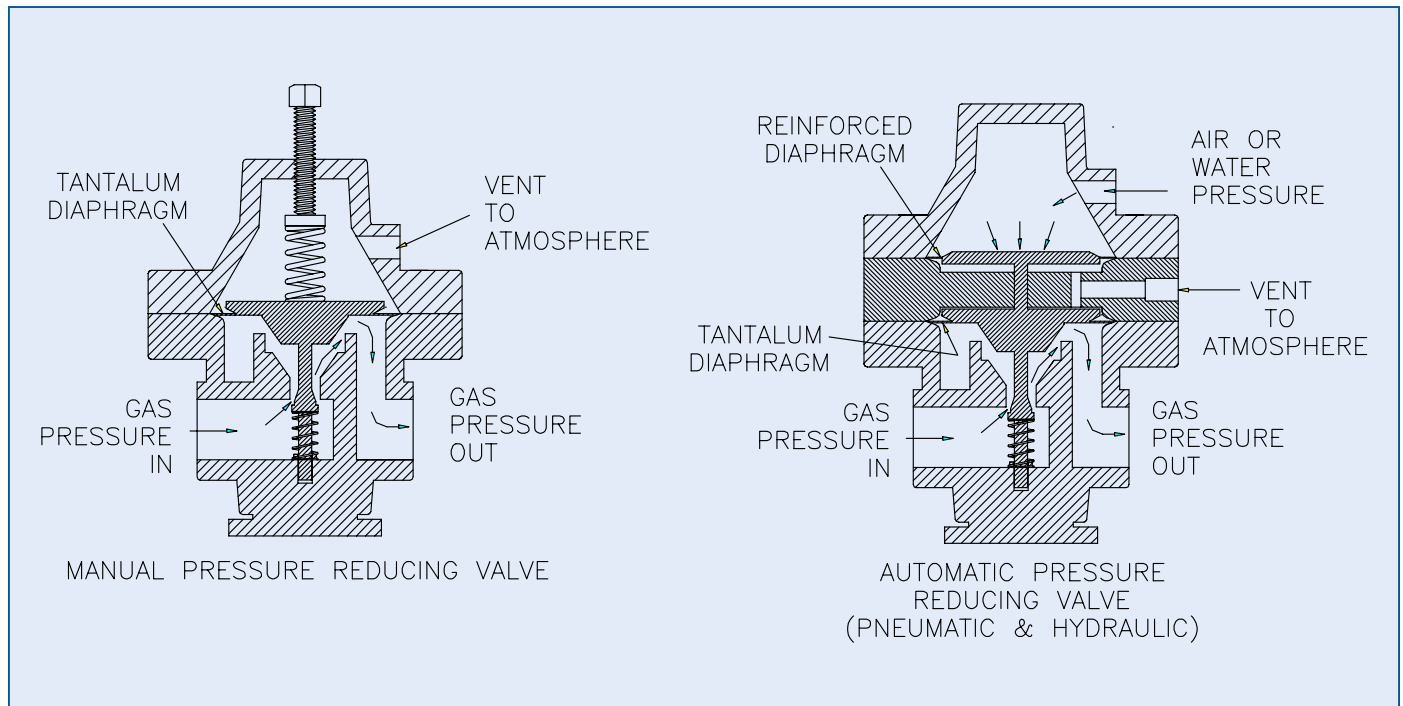


Figure 1 - Flow Diagram

Warranty and Capability

Capital Controls offers a one (1) year limited warranty on all ADVANCE® pressure reducing valves.

Capital Controls is ISO 9001 certified to provide quality and precision materials. Disinfection technologies, water quality monitors and instrumentation for water and wastewater are areas of specialization. Over 35 years of industrial and municipal application experience in the water and wastewater industries is incorporated into the equipment design to provide high quality comprehensive solutions for the global market.

Brief Specification

The gas pressure reducing valve shall be (electric) (pneumatic) (self) actuated and spring-loaded operated to automatically reduce the gas pressure to a constant value. For pneumatic and electric actuated units, the valve shall also provide intermittent shut-off of gas flow on a contact closure. The capacity shall be (500 PPD [10 kg/h]) (2000 PPD [40 kg/h]) (10,000 PPD [200 kg/h]) of (chlorine) (sulfur dioxide) (ammonia) gas.

The valve shall be constructed of cast ductile iron (ASTM, A-395), as recommended by the Chlorine Institute and ASME. The valve shall be rated for gas pressure service to 300 psig (21 bar) and a maximum temperature of 225°F (107°C).

The valve diaphragm shall be tantalum. The valve plug and seat shall be housed in a capsule for ease of field removal and cleaning.

The valve shall be (wall) (pipeline) mounted and provided with a vent in the event of diaphragm failure.

The gas pressure reducing valve shall be Capital Controls Model PRV861__.

Design improvements may be made without notice.

Represented by:



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