

Reliable®

Model PRV Pressure Regulating Valve

2-1/2" (65mm), 76mm, 3" (80mm),
4" (100mm), 6" (150mm), 165mm

FM Approved

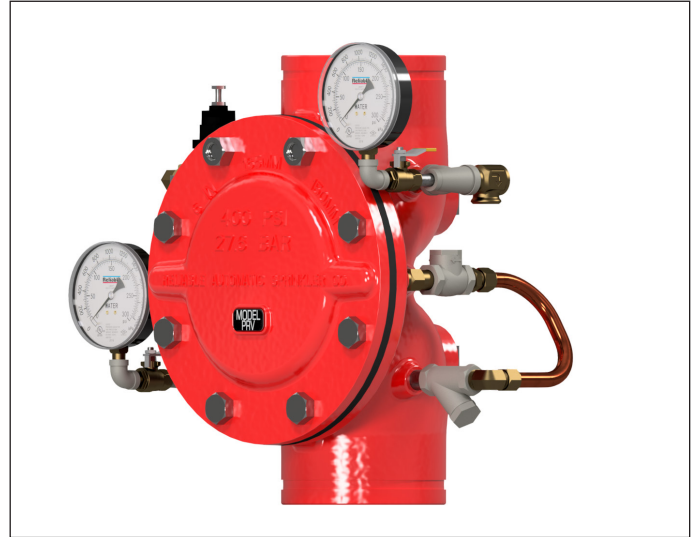
Features

- 400 psi (27.6 bar) rated pressure
- Compact trim
- No trim connections to valve cover
- Pressure relief valve included with trim

Product Description

The Model PRV Pressure Regulating valve is an FM Approved diaphragm-type valve available in 2-1/2" (65mm), 76mm, 3" (80mm), 4" (100mm), 6" (150mm), and 165mm nominal sizes with multiple end configurations (see Table A).

The valve diaphragm seals against a seat machined in the valve body. Water pressure in the chamber between the diaphragm and the cover presses the diaphragm against the seat to prevent water flow through the valve. The release of water pressure from the chamber allows the diaphragm to deform away from the seat allowing water to flow through the valve. A pressure regulator included in the trim allows the Model PRV valve to regulate the water pressure downstream of the valve.



Maintenance of the valve is simplified because all trim is connected to the valve body, and the diaphragm can be removed without disassembling the trim.

End Configuration Options

Table A

GR x GR (ANSI/AWWA C606)	Class 150 FLG x FLG (ASME B16.5)	Class 300 FLG x FLG (ASME B16.5)	PN16 FLG x FLG (ISO 7005-2)	BS-E FLG x FLG (BS 10)	NPT THD x THD (ANSI/AMSE B1.20.1)	ISO 7/1 THD x THD
All Sizes	All Sizes (exc. 76 & 165mm)	All Sizes (exc. 76 & 165mm)	All Sizes (exc. 76 & 165mm)	All Sizes (exc. 76 & 165mm)	2-1/2" & 3" (65 & 80mm)	2-1/2" & 3" (65 & 80mm)

Trim Options and Approvals

Table B

Valve Size	Maximum Flow gpm (L/min)	Rated Pressure psi (bar)	Valve Output Range psi (bar)	Approvals
2-1/2" (65mm)	400 (1514)	400 (27.5)	50 - 200 (3.4 - 13.7)	FM
76mm, 3" (80mm)	400 (1514)			
4" (100mm)	1340 (5072)			
6" (150mm), 165mm	3000 (11350)			

Notes:

1. For supply pressures up to 300 psi (20.7 bar), a maximum regulated outlet pressure of 50 to 200 psi (3.4 to 13.8 bar) can be maintained within +/- 10% for inlet pressures that are at least 35 psi (2.4 bar) greater than the outlet pressure where the nominal water velocity is up to 1,000 feet per minute (5m/s).
2. For supply pressures more than 300 psi (20.7 bar) and up to 400 psi (27.6 bar), a maximum regulated outlet pressure of 100 to 200 psi (6.7 to 13.8 bar) can be maintained within a +/- 10% for inlet pressures that are at least 50 psi (3.4 bar) greater than the outlet pressure where the nominal water velocity is up to 1,000 feet per minute (5m/s).

Model PRV Pressure Regulating Valve

Technical Specifications

Pressure Rating:
400 psi (27.5 bar)

Material Specifications

Body & Cover: Ductile Iron with Red Oxide Epoxy coating and Urethane external coating
Diaphragm: Fabric reinforced EPDM

End Connections

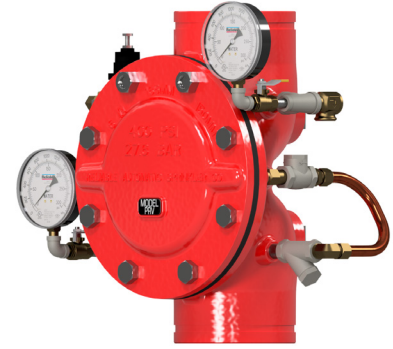
See Table A

Installation Orientation

No restrictions

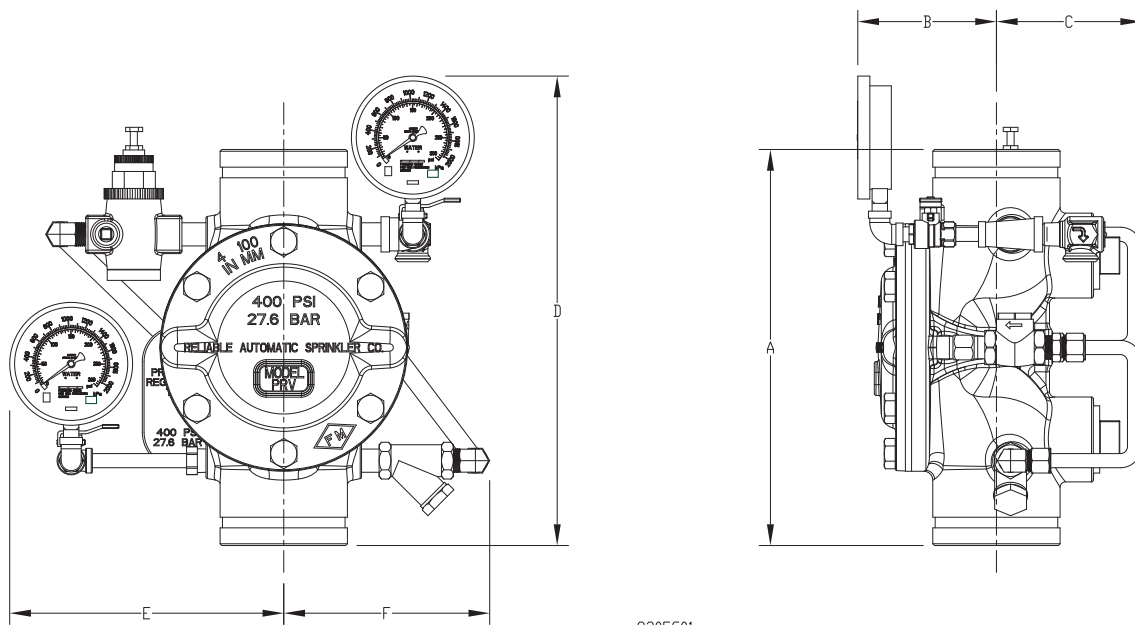
Approvals

FM Approved



Model PRV Pressure Regulating Valve Components and Dimensions

Figure 1



Model PRV Pressure Regulating Valve Dimensions - in. (mm)

Table C

Valve Size	A	B	C	D	E	F
2-1/2" (65mm), 3" (80mm), & 76mm	11 (279)	6-1/4 (159)	5-1/2 (140)	13-1/4 (337)	8 (203)	7 (178)
4" (100mm)	14 (356)	4-3/4 (121)	5-1/4 (133)	16-1/2 (419)	8-1/2 (216)	7-1/2 (191)
6" (150mm), 165mm	18 (457)	6-1/2 (165)	5-1/4 (133)	18-1/2 (470)	10 (254)	9 (229)

General Operation

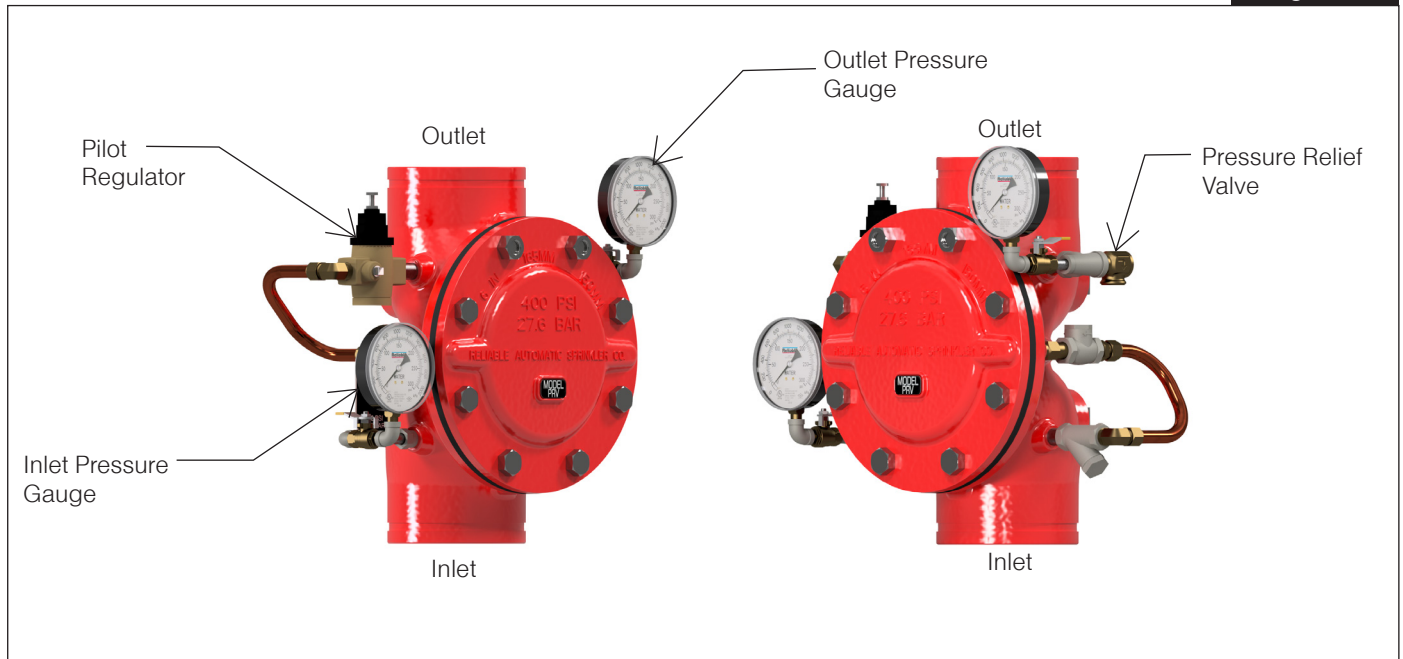
The Model PRV Pressure Regulating Valve is designed to control pressure in both flowing and non-flowing conditions. In a non-flowing condition, water pressure on the downstream side of the diaphragm reaches the preset level of the regulator, which then closes and allows pressure in the diaphragm chamber to build, forcing the diaphragm to seal against the seat. When pressure on the downstream side of the valve decreases, the pressure regulator senses the lower pressure and begins to open and relieve pressure from the diaphragm chamber. This in turn allows the diaphragm to move away from the seat and water to pass through the valve. The pressure regulator continues to sense the water pressure on the downstream side of the valve and adjusts to any increase or decrease in pressure to maintain close control of the flowing water pressure.

Pressure Adjustment

1. Loosen the lock nut on the adjustment screw.
2. Initiate water flow on the piping or system that is being regulated by the Model PRV Pressure Regulating Valve.
3. Turn the adjustment screw clockwise to increase downstream pressure, or counterclockwise to decrease downstream pressure of the Model PRV valve.
4. Adjust in 1/2 turns and allow time for the valve to stabilize at the new set point.
5. When the desired downstream pressure is reached, tighten the lock nut.
6. Cause the water flow to stop, and verify that downstream pressure on the system is within the design limits. Note: The Model PRV Pressure Regulating Valve is designed to close slowly to prevent water hammer. During this time, higher than expected pressures may develop downstream of the valve. A pressure relief valve is provided to limit the downstream pressure.

Model PRV Pressure Regulating Valve and Components

Figure 2



Installation

The Model PRV valve should be installed in accordance with NFPA 13, "Standard for the Installation of Sprinkler Systems," as well as the requirements of any authorities having jurisdiction. Failure to follow installation instructions and/or revisions to the trim arrangement of the valve may void the warranty and/or listing of the valve. Verify compatibility of the Model PRV valve materials with the water supply and the environment where the valve will be installed prior to installation. Do not apply lubricants, sealants, or other chemicals to the diaphragm or seat. The Model PRV valve must be installed in a location where the temperature is maintained at a minimum of 40°F (4°C). Heat tracing of the valve and/or trim is not permitted.

Maintenance

The owner is responsible for maintaining the fire protection system in proper operating condition. Any system maintenance or testing that involves placing a control valve or detection/control system out of service may eliminate the fire protection that is provided by the fire protection system.

The Reliable Model PRV valve and associated equipment shall periodically be given a thorough inspection and test. NFPA 25, "Inspection, Testing and Maintenance of Water Based Fire Protection Systems," provides minimum maintenance requirements. System components shall be tested, operated, cleaned, and inspected at least annually, and parts replaced as required.

Guarantee

For Reliable Automatic Sprinkler Co., Inc. guarantee, terms, and conditions, visit www.reliablesprinkler.com.

Ordering Information

Specify the following when ordering:

Valve Model

- PRV

Valve Size

- 2-1/2" (65mm)
- 76mm
- 3" (80mm)
- 4" (100mm)
- 6" (150mm)
- 165mm

End Configuration

- Grooved, flanged, or threaded (reference Table A)

Pressure Relief Valve

- 185 psi (12.8 bar)
- 260 psi (17.9 bar)

Model PRV Ordering Information

Part Number

Figure 3

6507 V W 8 00 X

End Connections V	Valve Size W	Relief Valve X
0 = Red, Groove/Groove	1 = 2-1/2" Valve	0 = 185 psi Relief Valve w/ 300 psi gauges
1 = Red, Flange/Flange Class 150	7 = 76mm Valve	1 = 260 psi Relief Valve w/ 300 psi gauges
2 = Red, Flange/Flange Class 300	3 = 3" Valve	2 = 185 psi Relief Valve w/ 600 psi gauges
3 = Red, Flange/Flange PNIG	4 = 4" Valve	3 = 260 psi Relief Valve w/ 600 psi gauges
4 = Red, Flange/Flange BS-E	6 = 6" Valve	
5 = Red, Thread/Thread NPT	5 = 165mm Valve	
6 = Red, Thread/Thread ISO 7/1		