

Pressure Control Valves

Pressure Reducing Control Valve

FDV-R-PN2

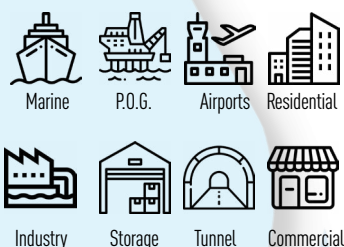
The FDV-R-PN2 Pressure reducing valve is an automatic hydraulic control service valve, designed to operate in fixed fire protection system.

The FDV-R-PN2 pilot controlled hydraulic valve is activated by line pressure. The pilot valve has a spring-loaded membrane which is sensitive to downstream pressure. The pilot's spring is pre-set to a desired reduced pressure. The pilot valve maintains a constant downstream pressure by gradually opening or closing of the main valve, reducing the inlet water pressure to a pre-set desired outlet pressure. The outlet pressure is maintained constant, regardless of fluctuations in flow rate and changes in main pipeline pressure.

Designed for vertical or horizontal installation, the line pressure operated FDV-R-PN2 Pressure reducing valve features a direct elastomeric diaphragm seal, with no balancing spring or internal metallic wet components in the valve body. The hydrodynamic pattern design, ensures high flow rates with minimum head loss.



MARKETS



TECHNICAL DATA

FLUID:

Water, Brackish water, Sea water, Foam

SIZE RANGE:

FDV-R valve (globe) - 40mm to 400mm (1½" to 16")

FDV-Ra valve (angled) - 50mm to 200mm (2" to 8")

AVAILABLE CONNECTIONS ENDS:

Flange*Flange, Groove*Groove, Thread*Thread

PRESSURE NOMINAL:

250 psi (17.2 bar)

REGULATION RATIO: 5:1

SENSITIVITY: 1.45 psi (0.1 Bar)

ADVANTAGES

- Only three parts: body, diaphragm & cover plate, no wet metal spring inside the control chamber
- Low maintenance cost: the valve is serviced in-line and only one replaceable part - the long-life elastomeric diaphragm
- Conforms with inspection, Testing and Maintenance Standard of water-based Fire Protection Systems, NFPA 25
- Reduces inlet pressure to a predetermined fixed and constant outlet pressure, regardless of fluctuations or changes in main pipeline pressure and flow rate

CHARACTERISTICS

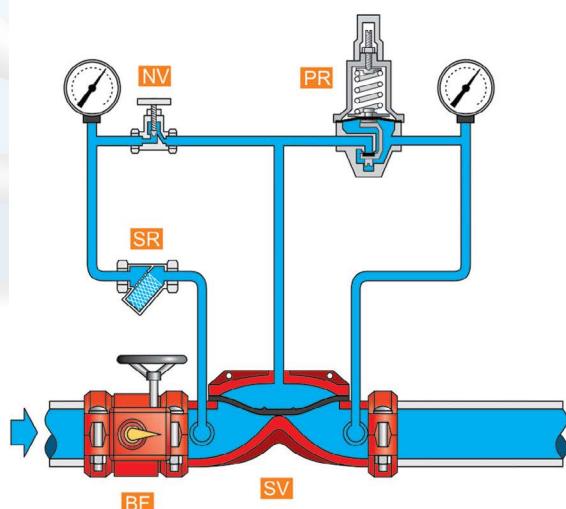
- Hydro-dynamic pattern design ensures high flowrates with minimum head loss
- Simple and reliable design
- Quick respond to downstream pressure changes
- Pressure reducing to a predetermined set of outlet pressure

APPROVALS

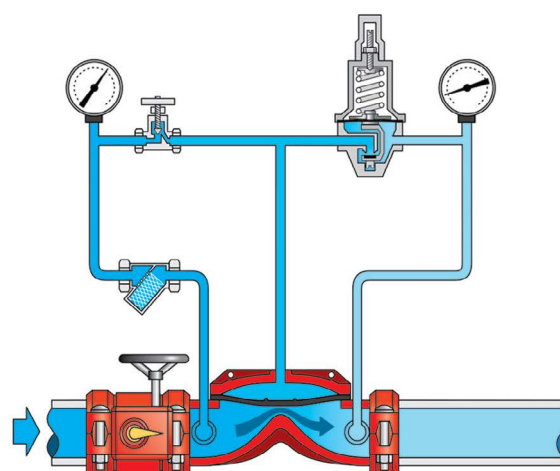


Schematic drawing

Set position



Fire position



PR - PRPV – Pressure Reducing
Pilot Valve

NV - Needle valve

SR - strainer

SV - FDV-R service valve

BF - Butterfly valve

SET Position:

When a fire protection system is in a SET position, there is no flow at the system's piping and the water pressure is at the FDV-R-PN2 Pilot's SET pressure.

The FDV-R-PN2 valve's control chamber is pressurized by the inlet flow, calibrated by the Needle valve **[NV]** forcing the diaphragm against its seat maintaining the valve close.

OPERATION

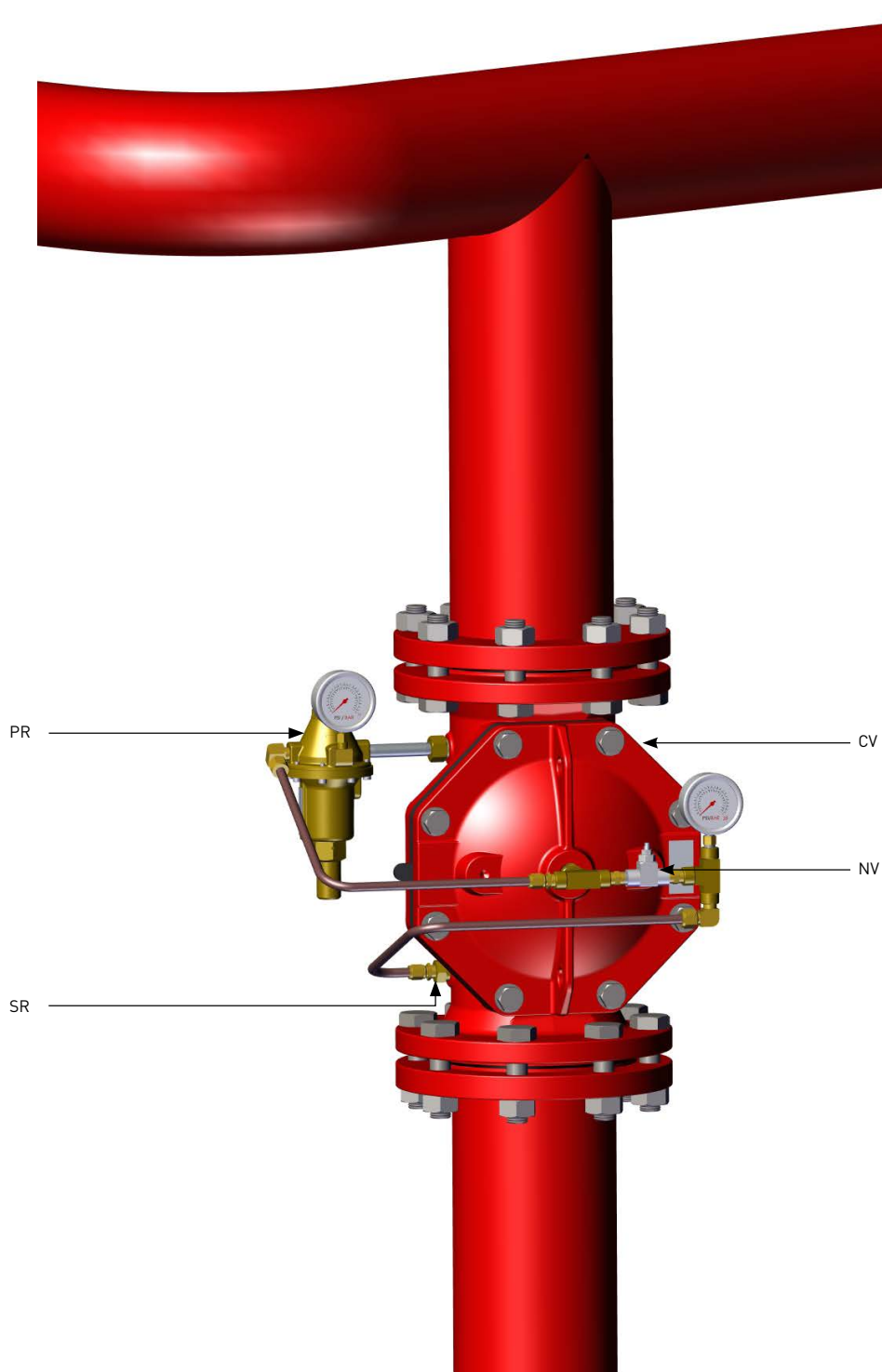
The FDV-R's control chamber is pressurized by a calibrated inlet flow passing through a needle valve **[NV]**, and de-pressurized by the PRPV pressure reducing pilot valve **[PR]**.

The pilot's drain flow volume is controlled by the downstream pressure passing through a sense pipe and manipulating the pilot's diaphragm and the seal mechanism.

Any change at the downstream pressure reflects the ratio between the volume of the control chamber's inlet and outlet flows. Consequently, the FDV-R valve's diaphragm position changes, maintaining the downstream at the pilot's set pressure.

FDV-R- PN2

Typical installation



PR - PRPV – Pressure Reducing Pilot Valve

NV - Needle valve

SR - Strainer

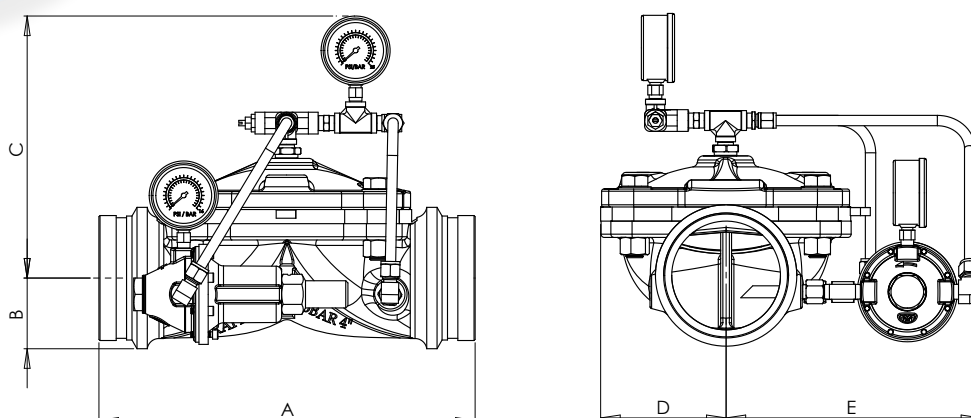
CV - FDV-R Control Valve

BF - Butterfly valve

Dimensions Table

Size	1.5"-2"		3"		4"		6"		8"		10"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	190	7.5	283	11.1	305	12	470	18.5	406	16	635	25
B	57.5	2.3	100	3.9	109	4.3	160	6.3	142	5.6	198	7.8
C	268.5	10.6	306	12	177	7	308	12.1	195	7.7	317	12.5
D	111.5	4.4	111	4.4	115	4.5	177	7	150	5.9	233	9.2
E	166	6.5	182	7.2	261	10.3	304	13.4	307	12.1	237	10.7
Kg/lb	10.4	22.9	19.3	42.5	25.6	56.4	50.2	110.7	67.6	149	109.5	241.4

Note: In addition to the valve diameters shown at the table, all FP applications based on FDV-R valves can be supplied also in the following diameters: 10" ; 12" ; 14" ; 16"



Factory Standard

MAIN VALVE:

BODY & COVER

- Ductile iron
- Cast Steel WCB
- Stainless Steel CF8
- Stainless Steel CF8M
- Nickel Aluminum Bronze

ELASTOMERS:

- NR, fabric reinforced Natural Rubber
- EPDM, fabric reinforced
- NBR, fabric reinforced Nitrile Rubber

COATING:

- Base layer – high built Epoxy FBE
Top layer – electrostatic Polyester powder RAL 3000
- Rilsan Polyamide based (Nylon 11)
Internal – vitreous Enamel
External – Epoxy/Polyester powder RAL 3000

TRIM

PIPING & TUBING:

- Stainless Steel 316
- Copper/Brass
- Cupro-Nickel
- Monel®

FITTINGS:

- Stainless Steel 316
- Brass
- Super Duplex
- Cupro-Nickel
- Monel®

ACCESSORIES:

- Stainless steel CF8M / 316
- Brass
- Nickel Aluminum Bronze
- SMQ-245
- Monel®

PLEASE SPECIFY

- Working Media
- Ambient conditions
- Min/Max operating flow
- Min/Max operating pressure
- Downstream set pressure
- Additional accessories needed

For more detailed technical information, please refer to chapter Engineering Data.