

PRESSURE REDUCING VALVE

Model FP-420-00

The Model FP 420-00 Pressure Reducing Valve is an elastomeric, hydraulic, line pressure driven and diaphragm actuated control valve that reduces high, unstable upstream pressure to maintain precise stable downstream pressure, regardless of fluctuating demand or varying upstream pressure. Ideal for control of fire pump discharge, this valve is also well suited to prevent over-pressure in sprinkler systems, hose stations and other discharge devices.



Features & Benefits

- Safety and reliability
 - Time proven, simple Fail Open design
 - Single piece rugged elastomer, VRSD technology
 - Obstacle-free, uninterrupted flow path
 - Main valve with no mechanical moving parts
- High performance
 - Fast, smooth stabilizing response to pressure fluctuations
 - Quiet and Smooth operation
 - Ensures precise, stable downstream water pressure
- Quick and easy maintenance
 - Fast and easy cover removal
 - In-line serviceable
 - Compact space saving dimensions

Typical Applications

- Sprinkler feed systems
- Fire pump discharge control
- Hose station supply
- Fire hydrant supply
- Zonal Pressure Control

Approvals



ABS
American Bureau of Shipping
Type Approval

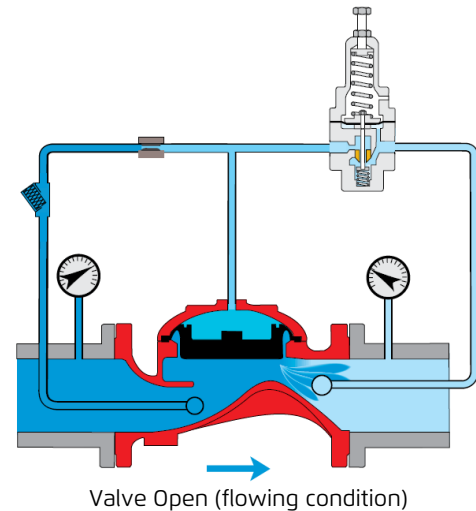
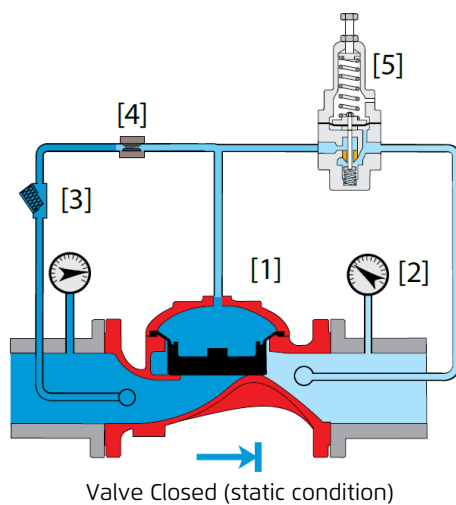


Lloyd's Register
Type Approval

Additional Features

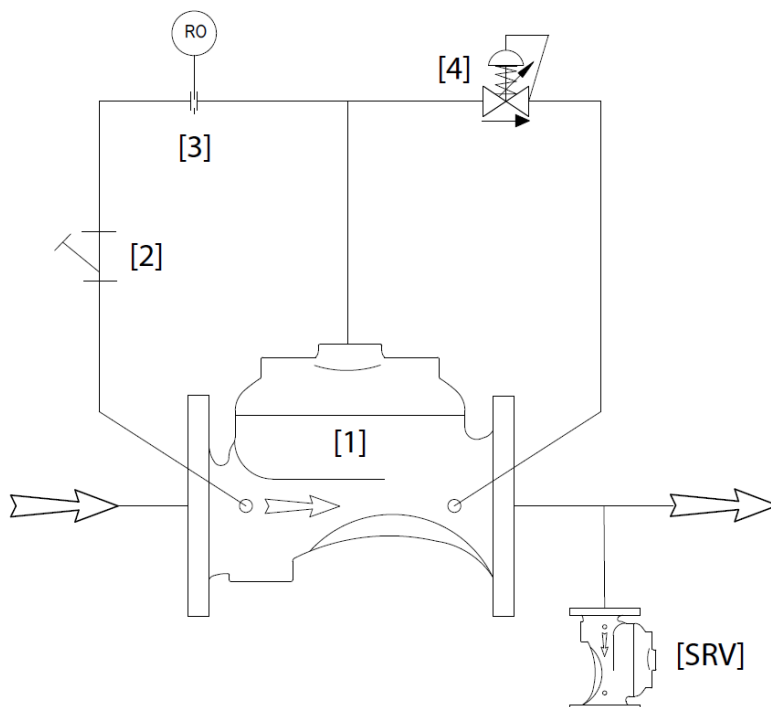
- Valve Position Indicator
- Large control filter
- Valve position limit switches
- Seawater compatibility
- Corrosion resistant zinc based high build epoxy coating

Operation



The BERMAD Model FP 420-00, pilot operated pressure reducing valve automatically and accurately reduces upstream water pressure to a specific, adjustable value. The FP 420-00 operates under both flowing and non-flowing (static) conditions. Assisted by the Y strainer [3] and the restriction orifice [4] the Pressure Reducing Pilot [5] senses downstream pressure [2] and in real time modulates the main valve [1] to maintain the constant downstream pressure. In no-flow static conditions, should the downstream pressure start rising above pilot setting, the pilot closes, shutting the main valve drip-tight to maintain the allowable downstream pressure.

System P&ID



Components	
1	BERMAD 400 Series valve
2	Y strainer
3	Restriction orifice
4	Control pilot
5	System pressure relief valve

System Installation

Standard Pressure Reducing System

- Reduces a high, unstable pressure supply to a preset, stable system pressure
- Sets the sprinkler pressure to suit the system design
- For zonal pressure control

Parallel / Redundancy Pressure Reduction

- Recommended for a wide variation of flow rates. This arrangement enables high and low flow rates as well as providing a full pressure supply redundancy and serviceability with zero down time.

Back-Up / Two-Stage Pressure Reduction

- Backup pressure reducing valve in-line to a master valve to secure pressure zone rating at all times. When in doubt consult BERMAD.

Suggested Specifications

The pressure control valve shall be 250 psi/17.2 bar rated.

The valve shall have an unobstructed flow path, with no stem guide or supporting ribs.

The valve shall have no mechanical moving parts, and the actuation shall utilize a single-piece diaphragm assembly of VRSD technology.

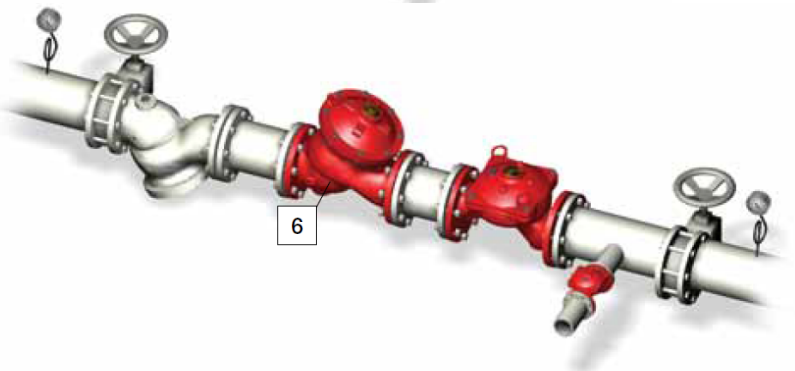
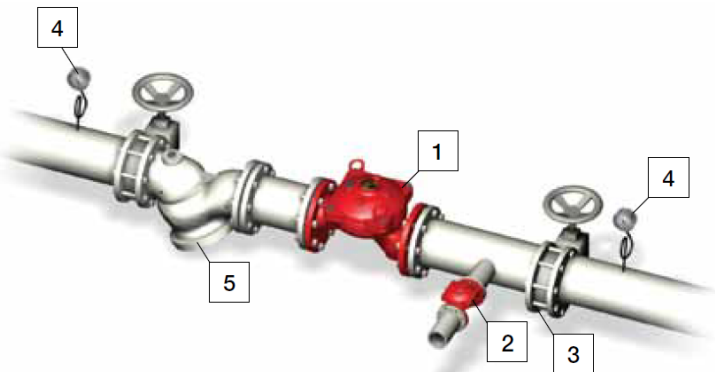
The valve shall be coated internally and externally with UV protection. Optional: C5-VH grade of ISO-12944 standard against corrosive conditions.

Removing the valve cover for full inspection and maintenance shall be in-line, and not require removal of the valve from the pipeline.

The valve and control trim shall be pre-assembled and hydraulically tested by a UL/FM and ISO 9000, 9001 certified factory.

System Components

- 1 - BERMAD Model FP 420-00
- 2 - BERMAD Model FP-430-UF Pressure Relief Valve
- 3 - Isolating Valve
- 4 - Pressure Gauge
- 5 - Strainer
- 6 - BERMAD Model FP 720-UL, High Pressure Reducing Valve



Technical Data

Available Sizes:

Flanged- 2, 2½, 3, 4, 6, 8, 10 & 12"

Grooved- 2, 3, 4, 6 & 8"

Pressure Rating:

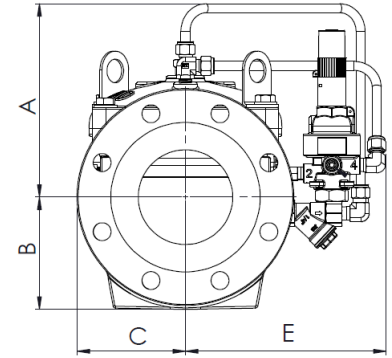
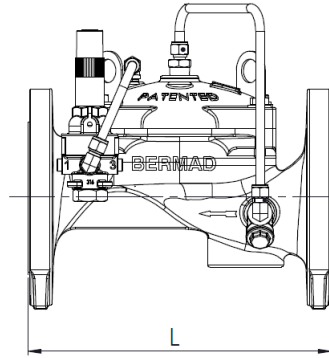
ANSI#150 - 17.2 bar | 250 psi

Setting range: 2 - 16 bar | 30 - 235 psi

Elastomer:

HTNR - Fabric Reinforced High Temperature

Compound - See engineering data



Valve Size	L #150 mm in	L Grooved mm in	L #300 mm in	A mm in	B mm in	C mm in	ØD in	E mm in	F mm in	G mm in	Weight #150 kg lb	Weight #300 kg lb
DN40 1½"	205 8.1	-	-	159 6.2	64 2.5	64 2.5	-	168 6.6	-	-	11 25	-
DN50 2"	205 8.1	205 8.1	-	159 6.3	78 3.1	78 3.1	-	168 6.6	-	-	12 27	-
DN65 2½"	205 8.1	-	-	158 6.2	92 3.6	89 3.5	-	195 7.7	-	-	14 31	-
DN80 3"	257 10.1	250 9.8	-	177 7	97 3.8	96 3.8	-	200 7.9	-	-	23 51	-
DN100 4"	320 12.6	320 12.6	-	328 12.9	119 4.7	115 4.5	-	212 8.3	-	-	33 73	-
DN150 6"	415 16.3	415 16.3	-	276 10.8	145 5.7	145 5.7	-	238 9.4	-	-	77 170	-
DN200 8"	500 19.7	500 19.7	-	327 12.9	174 6.9	187 7.4	-	272 10.7	-	-	139 306	-
DN250 10"	605 23.8	-	-	324 12.8	210 8.3	204 8	-	285 11.2	-	-	156 343	-
DN300 12"	725 28.5	-	-	440 17.3	248 9.8	304 12	-	380 15	-	-	250 550	-

IMPORTANT: Dimensions for the trim envelope or extents refer to a horizontal orientation and may vary with specific component positioning - Apart from the "L" dimension, allow a tolerance of at least ±15%

Valve Code Designations

