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

Approvals

ABS
American Bureau of Shipping
Type Approval

Lloyd's Register
Type Approval

Typical Applications

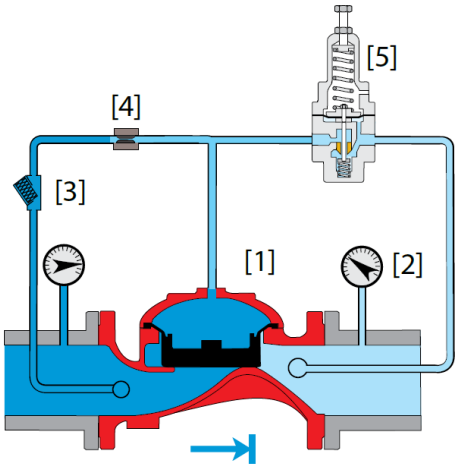
- Sprinkler feed systems
- Fire pump discharge control
- Hose station supply
- Fire hydrant supply
- Zonal Pressure Control

Optional Features

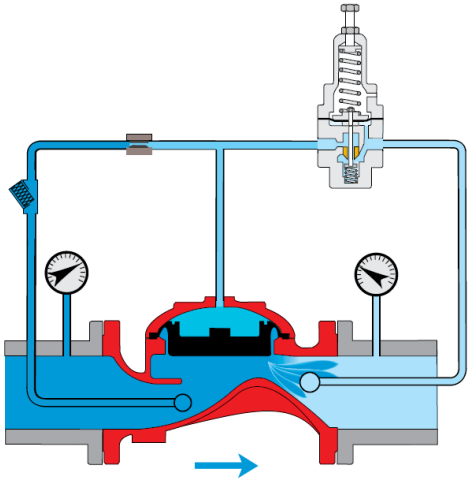
- Valve Position Indicator
- Large control filter
- Valve position limit switches
- Seawater compatibility
- Corrosion resistant zinc based high build epoxy coating

All images in this catalog are for illustration only

Operation

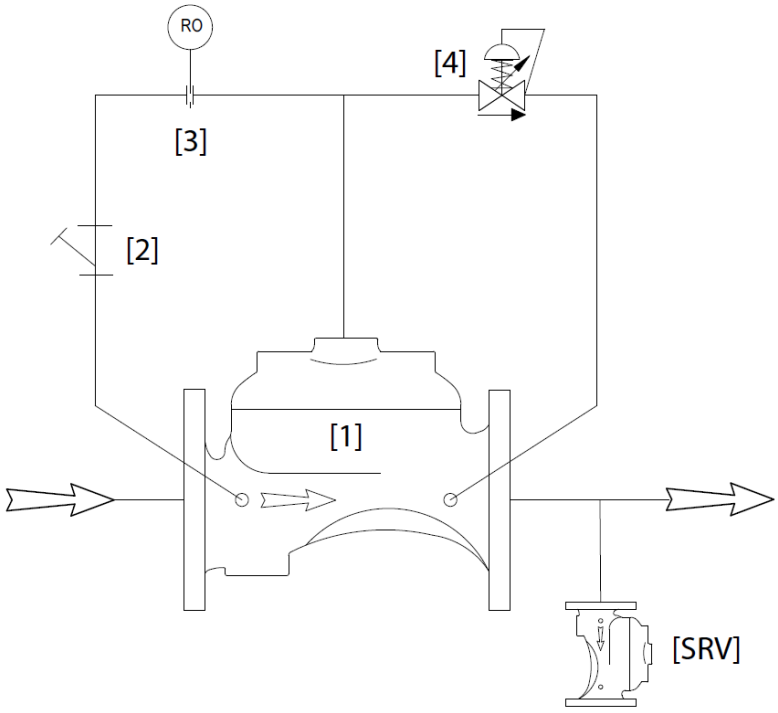


Valve Closed (static condition)


Valve Open (flowing condition)

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



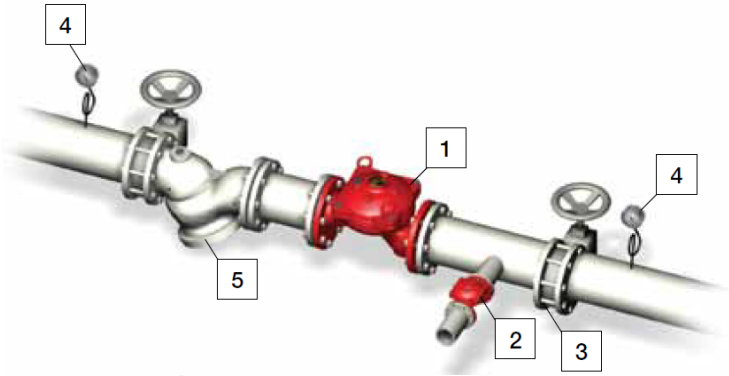
	Components
1	BERMAD 400 Series valve
2	Y strainer
3	Restriction orifice
4	Control pilot
5	System pressure relief valve

System 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

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



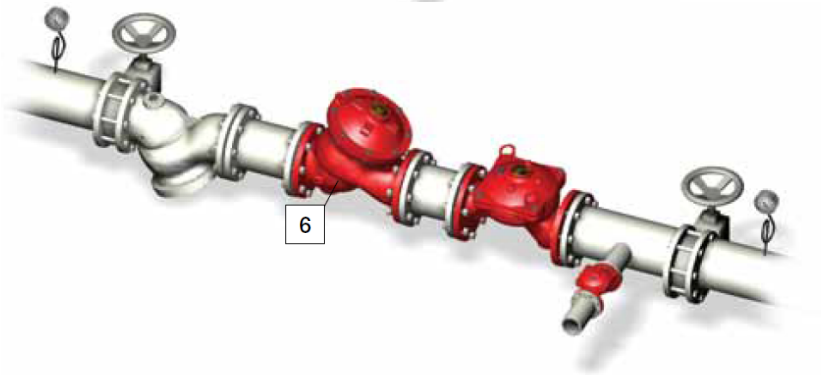
Parallel / Redundancy Pressure Reduction

- Recommended for a wide variation of flow rates. This arrangements 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.

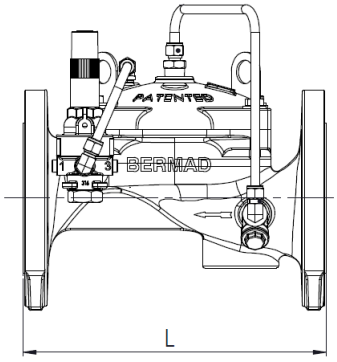
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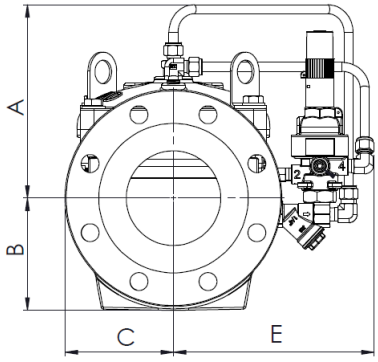
Technical Data

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	⌀D 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

FP | 6" | 420 | 03 | V | C | A5 | ER | NN | N6n

Category	Code
Standard	FP
Seawater	FS
Foam	FC

Valve Size	
1½"	40 mm
2"	50 mm
2½"	60 mm
3"	80 mm
4"	100 mm
6"	150 mm
8"	200 mm
10"	250 mm
12"	300 mm

Notes:
(1) Other materials available see engineering data
(2) Coated internally and externally
(3) Supplied loose
(4) Consult BERMAD for availability
(5) For valves up to and including 10"

Additional Feature	Code
Closing Speed Control	01
Opening Speed	02
Opening & Closing Speed Control	03
None	-

Installation	Code
Vertical	V
Horizontal	H

Material Body & Cover (1)	Code
Ductile Iron A356 (2)	C
Steel ASTM A216 WCB (2)	S
Stainless Steel 316	N
Nickel Al Bronze C95800	U
Super Duplex Grade 5A	D

End Connections	Code
ANSI#150RF	A5
ANSI#150FF	a5
ISO PN16	16
Grooved ANSI C606	VI

Coating	Code
High Build Epoxy	ER
Zinc Based High Build Epoxy (5)	ZR
Uncoated	UC

Tubing &	Code
Stainless	NN
Monel 400	MM
Super Duplex	DD

Factory Supplied Additional Items	Code
Pressure Gauge Assembly (3)	6
S.S Glycerin Pressure Gauge Assembly (3)	6n
Monel Pressure Gauge Assembly (3)	6m
Special Elastomer (4)	E
Large Control Filter	F
S.S 316 Trim Accessories	N
Pressure Transmitter (3)	Q

*More options available – consult BERMAD

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