

Pressure Reducing Valve

Model: FP 420-00



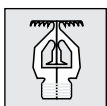
Description

The Model FP 420-00 Pressure Reducing Valve is a hydraulically self operated, diaphragm actuated control valve that reduces high, unstable upstream pressure to maintain precise stable downstream pressure, regardless of fluctuating demand or varying upstream pressure.

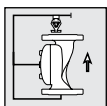
Typical Applications



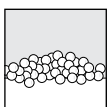
Hose station feeds



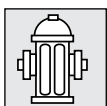
Sprinkler systems with over pressure



Deluge systems with over pressure



Foam systems



Fire hydrant water supply

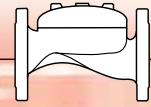
Features and Benefits

- **Advanced Elastomeric Globe type** – Low pressure loss
- **One-piece molded elastomeric moving part** – No maintenance required
- **Simple design** – Cost effective
- **Factory pre-assembled trim** – Out-of-Box Quality
- **In-line serviceable** – Minimal down time

Optional Features

- **Large control filter** (code: F)
- **Seawater service**
- **Valve Position Single/Double Limit Switches**

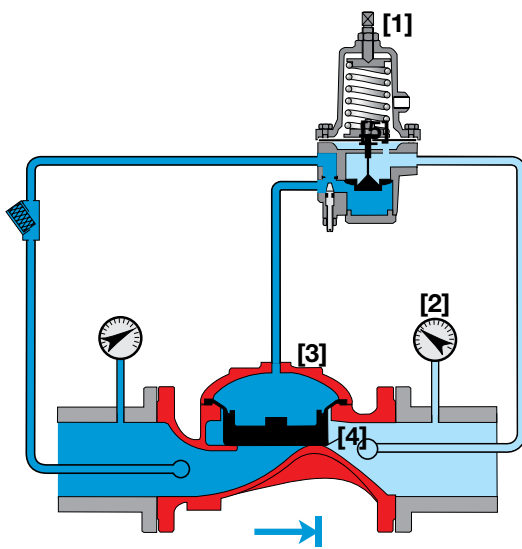
Note: Optional features can be mixed and matched. Consult your Bermad representative for full details



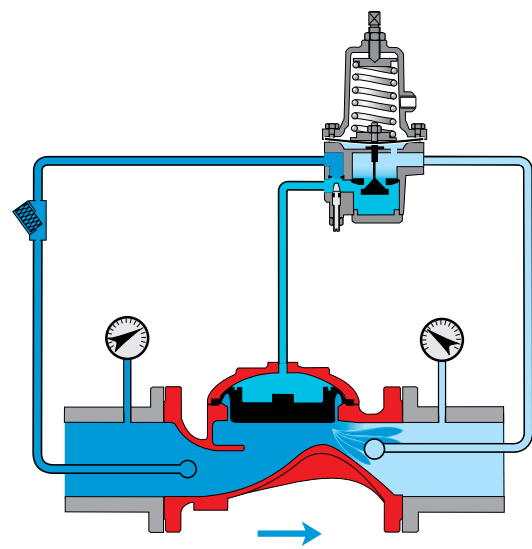
Operation

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. The Pressure Reducing Pilot [1] senses downstream pressure [2] and in real time modulates the main valve [3] 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 [4] to maintain the allowable downstream pressure.



Valve Closed (static condition)



Valve Open (flowing condition)

Engineer Specifications

The pressure reducing valve shall eliminate downstream over-pressure, maintaining a constant downstream delivery pressure, regardless of varying pressures and/or flows.

The main valve shall be an elastomeric type globe valve with a rolling-diaphragm.

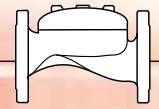
Valve actuation shall be accomplished by a fully peripherally supported, one-piece balanced rolling-diaphragm, vulcanized with a rugged radial seal disk. The diaphragm assembly shall be the only moving part.

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

The valve shall have a removable cover for quick in-line service enabling all necessary inspection and servicing.

The control trim shall be supplied as an assembly, pre-assembled and hydraulically tested at an

ISO 9000 and 9001 certified factory.

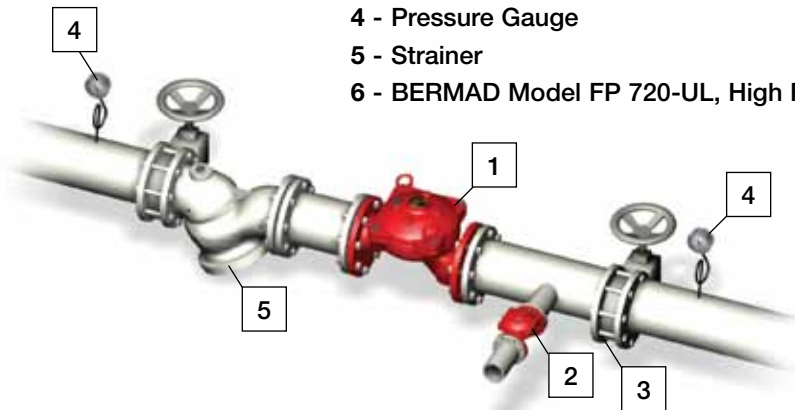


Typical Installations

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



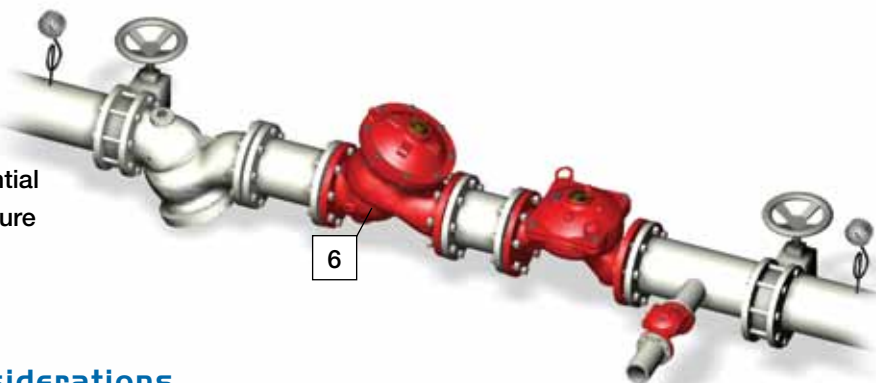
Parallel Pressure Reducing System

- Wide flow range
- Redundant safety
- Serviceable with zero down time



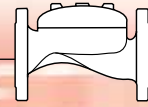
Two-Stage Pressure Reducing System

- High pressure differential
- Added reduced pressure zone protection

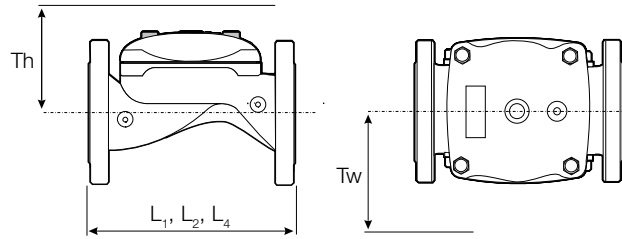


Installation Considerations

- Allow enough room around the valve assembly for any future maintenance.
- Install isolating valves upstream and downstream of the system.
- Install the valve horizontally with the cover facing up (consult Bermad for other configurations).
- Install a relief valve (recommended: BERMAD Model FP 430-UF) of the appropriate size on the downstream side of the FP 420-00, as required by NFPA-20 standard.
- Install a pressure gauge on each side of the system.



Technical Data



Size	2"		2½"		3"		4"		6"		8"		10"		12"		
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
Dimensions	L ₁ ⁽¹⁾	205	8½	205	8½	257	10⅛	320	12 ⁹ / ₁₆	415	16 ⁵ / ₁₆	500	19 ¹¹ / ₁₆	605	23 ¹³ / ₁₆	725	28½
	L ₂ ⁽²⁾	180	7 ¹ / ₁₆	210	8¼	255	10 ¹ / ₁₆	N/A	N/A	N/A	N/A	500	19 ¹¹ / ₁₆	N/A	N/A	N/A	N/A
	L ₄ ⁽²⁾	180	7 ¹ / ₁₆	210	8¼	255	10 ¹ / ₁₆	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Tw	284	11 ³ / ₁₆	284	11 ³ / ₁₆	300	11 ³ / ₁₆	313	12 ⁵ / ₁₆	341	13 ⁷ / ₁₆	415	16 ⁵ / ₁₆	443	17 ⁷ / ₁₆	481	18 ¹⁵ / ₁₆
	Th	210	8¼	210	8¼	215	8 ⁷ / ₁₆	243	9 ⁹ / ₁₆	315	12 ³ / ₈	350	13¾	382	15	430	6 ¹⁵ / ₁₆

Notes:

- L₁ is for flanged valves.
- L₂ is for threaded NPT or ISO-7-Rp.
- L₄ is for grooved end connections (Ductile Iron Only).
- Tw & Th are max. for pilot system.
- Data is for envelope dimensions, component positioning may vary.
- Provide space around valve for maintenance.

Connection Standard

- Flanged: ANSI B16.42 (Ductile Iron), B16.5 (Steel & Stainless Steel), B16.24 (Bronze)
- ISO PN16
- Threaded: NPT or ISO-7-Rp for 2, 2½ & 3"
- Grooved: ANSI/AWWA C606 for 2, 3, 4, 6 & 8"

Water Temperature

- 0.5 – 50°C (33 – 122°F)

Available Sizes

- Globe: 2, 2½, 3, 4, 6, 8, 10 & 12"

Pressure Rating

- Max. inlet: 250 psi (17 bar)
- Set: 30 - 165 psi (2 - 11.5 bar)
- Test : 365 psi (25 bar)

Approvals

- ABS
- Lloyd's Registered

Manufacturers Standard Materials

Main valve body and cover

- Ductile Iron ASTM A-536

Main valve internals

- Stainless Steel & Elastomer

Control Trim System

- Brass control components/accessories
- Stainless Steel 316 tubing & fittings

Elastomers

- Polyamide fabric reinforced Polyisoprene, NR

Coating

- Electrostatic Powder Coating Polyester, Red (RAL 3002)

Optional Materials

Main valve body

- Carbon Steel ASTM A-216 WCB
- Stainless Steel 316
- Ni-Al-Bronze ASTM B-148

Control Trim

- Stainless Steel 316
- Monel® and Al-Bronze
- Hastelloy C-276

Elastomers

- NBR
- EPDM

Coating

- High Build Epoxy Fusion-Bonded with UV Protection, Anti-Corrosion



Trädgårdsteknik AB
Helsingborgsvägen 578
262 96 ÄNGELHOLM
Telefon: 0431-222 90
Telefax: 0431-222 70
info@tradgardsteknik.se
www.tradgardsteknik.se
