

## Pressure Regulating Hydrant Valve

Model: FP 420-HY



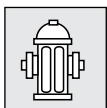
### Description

This valve serves as a pressure reducing valve connection between a high pressure water supply and fire hoses. It meets NFPA-14 regulations, limiting outlet pressure to 100 psi (6.9 bar), regardless of varying pressure and/or flow.

### Typical Applications



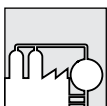
High pressure reduction to fire hose



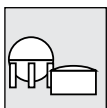
Industrial fire fighting hydrant



Aviation & airports fire fighting hydrant



Petrochemical plant fire fighting hydrant



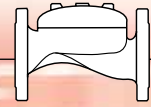
Oil & gas storage and fire fighting hydrant

### Features and Benefits

- **Factory preset for maximum outlet pressure** – Protects fire fighter from excess pressure
- **Hydraulically balanced** – In open and closed positions
- **Opening-speed control** – With intermediate lock position
- **In-line, quick cover removal** – Minimal downtime
- **One-piece molded elastomeric moving part** – No maintenance required
- **Easily adjustable outlet pressure**

### Optional Features

- **Manual override for full opening** (code: Z)
- **Mechanical closure**
- **Storz quick-coupling connector**
- **Check-lock** (code: II)
- **Valve Position Single/Double Limit Switches**



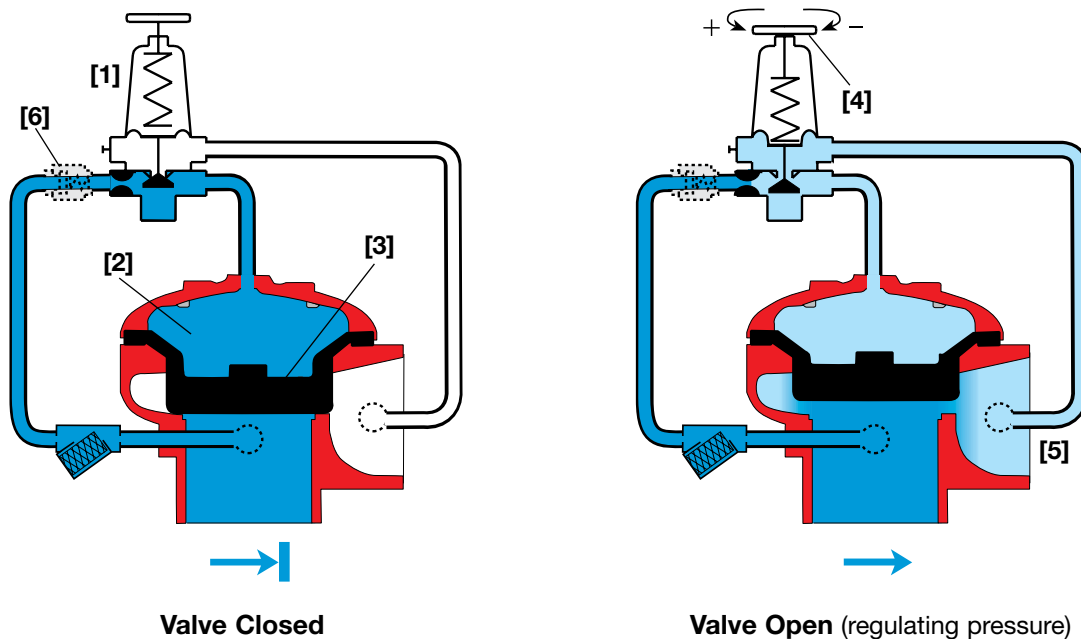
## Operation

The BERMAD Model FP 420-HY serves as a high pressure reducing hydrant valve suited for hose connections and for fire hoses.

In the closed position, the Model FP 420-HY is held closed by line-pressure supplied through the Pressure Reducing Pilot valve [1] to the main valve's control chamber [2]. The pressure, multiplied by the surface area of the diaphragm [3], creates a differential closing force resulting in the valve remaining sealed, keeping the downstream piping dry. As the hand wheel [4] of the Pressure Reducing Pilot valve is turned counter-clockwise, pressure is released from the valve's control chamber to the downstream allowing the valve to open. The outlet water pressure [5] rises in proportion to the amount that the hand wheel is turned. When the hand wheel is fully opened, the outlet water pressure rises to the factory preset maximum pressure.

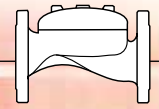
In case of emergency, connect a flexible fire hose to the valve, and gradually turn the hand wheel counter-clockwise to open.

The Check-Valve option [6] (ordering code 11) traps high pressure peaks ensuring that the valve remains locked in the closed position to maintain drip tight sealing.



## Engineer Specifications

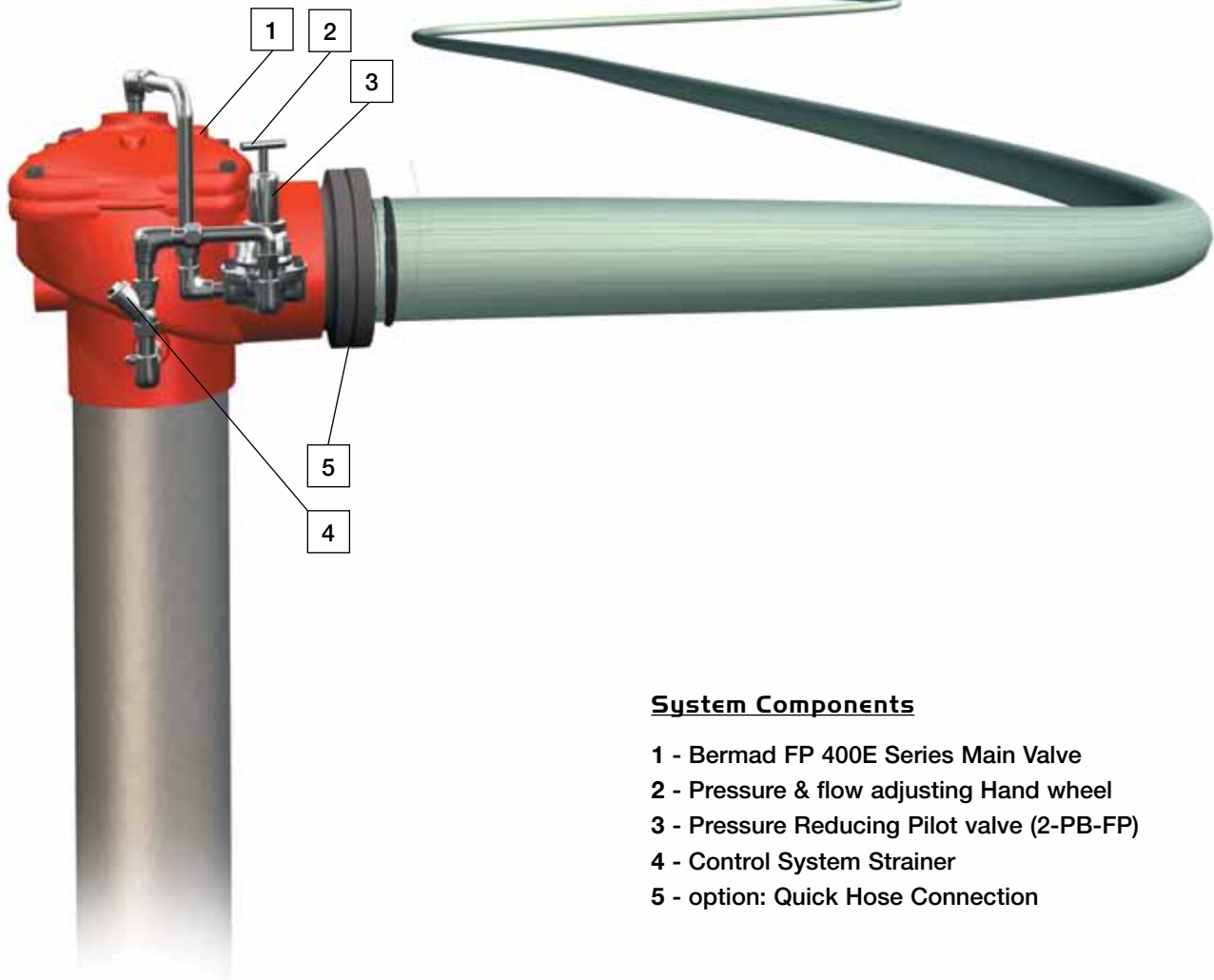
- The valve shall be a self actuated pressure reducing, elastomeric type globe valve with a **rolling-diaphragm**.
- The valve shall have an **unobstructed flow path** with no **supporting ribs**.
- Valve actuation shall be accomplished by a fully peripherally supported, one-piece balanced rolling-diaphragm, vulcanized with a rugged radial seal disk. The diaphragm assembly shall be the only moving part.
- The diaphragm assembly shall be peripherally guided and shall form a sealed chamber in the upper portion of the valve.
- The valve cover shall be removable for in-line service enabling all necessary inspection and servicing.
- The control pilot system, including direct acting, flow and pressure adjusting hand wheel, shall be integrated into the main valve, hydraulically tested, and supplied as an assembly.
- The control trim shall be pre-assembled and hydraulically tested at an ISO 9000 and 9001 certified factory.



## Typical Installation

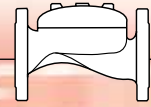
The Model FP 420-HY meets the standards of advanced fire protection systems and protects those systems against excess pressure by limiting outlet pressure to a preset maximum.

It meets NFPA-14 regulations, limiting outlet pressure to 100 psi (6.9 bar), regardless of varying pressure and/or flow.

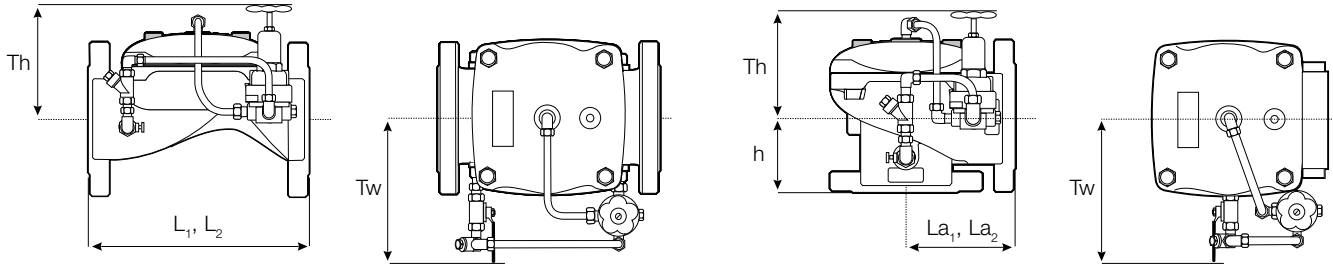


### System Components

- 1 - BERMAD FP 400E Series Main Valve
- 2 - Pressure & flow adjusting Hand wheel
- 3 - Pressure Reducing Pilot valve (2-PB-FP)
- 4 - Control System Strainer
- 5 - option: Quick Hose Connection



## Technical Data



Size	1½", 2"		2½"		3"		4"		6"		
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
Dimensions	L <sub>1</sub> <sup>(1)</sup>	205	8½	205	8½	257	10⅞	320	12 <sup>9</sup> / <sub>16</sub>	415	16 <sup>5</sup> / <sub>16</sub>
	L <sub>2</sub> <sup>(2)</sup>	180	7 <sup>1</sup> / <sub>16</sub>	210	8¼	255	10 <sup>1</sup> / <sub>16</sub>	N/A	N/A	N/A	N/A
	La <sub>1</sub> <sup>(1)</sup>	121	3¾	N/A	N/A	153	6	160	6 <sup>5</sup> / <sub>16</sub>	N/A	N/A
	La <sub>2</sub> <sup>(2)</sup>	284	11 <sup>3</sup> / <sub>16</sub>	N/A	N/A	300	11 <sup>3</sup> / <sub>16</sub>	313	12 <sup>5</sup> / <sub>16</sub>	341	13 <sup>7</sup> / <sub>16</sub>
	Tw	284	11 <sup>3</sup> / <sub>16</sub>	284	11 <sup>3</sup> / <sub>16</sub>	300	11 <sup>3</sup> / <sub>16</sub>	313	12 <sup>5</sup> / <sub>16</sub>	341	13 <sup>7</sup> / <sub>16</sub>
	Th	210	8¼	210	8¼	215	8 <sup>7</sup> / <sub>16</sub>	243	9 <sup>9</sup> / <sub>16</sub>	315	12 <sup>3</sup> / <sub>8</sub>
	h	83	3¼	N/A	N/A	101	4	112	4 <sup>7</sup> / <sub>16</sub>	N/A	N/A

### Notes:

1. L<sub>1</sub> & La<sub>1</sub> are for flanged ANSI #125 / #150 and ISO PN16.
2. L<sub>2</sub> & La<sub>2</sub> are for threaded female, NPT or ISO-7-Rp.
3. Data is for maximum envelope dimensions, component positioning may vary.
4. Provide adequate 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: 1½, 2, 2½, 3, 4 & 6"
- Angle: 2, 3 & 4"

### Pressure Rating

- Max inlet: 250 psi (17 bar)
- Set: Standard limit, 100 psi (7 bar)

### Approvals

- ABS
- Lloyd's Registered

### Manufacturers Standard Materials

#### Main valve body and cover

- Ductile Iron ASTM A-536

#### Main valve internals

- Stainless Steel 304 & Cast Iron

#### Control Trim System

- Brass control components/accessories
- Forged Brass fittings & Copper tubing

#### Elastomers

- Nylon 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
- Hastalloy C-276

#### Elastomers

- NBR
- EPDM

#### Coating

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



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