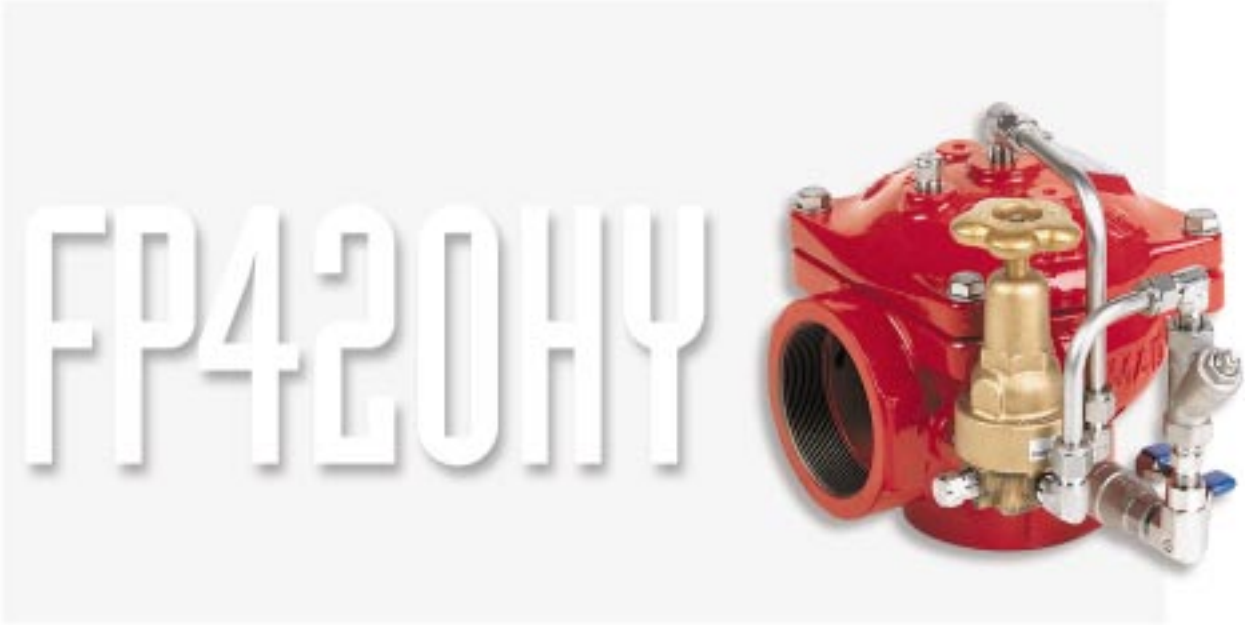
Pressure-Regulating Hydrant

FP420HY



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 down-time
- **One piece vulcanized diaphragm** – reliability
- **Easily adjustable outlet pressure**

Optional Features

- Manual override for full opening
- Mechanical closure
- Visual position-indicator
- Storz quick-coupling connector
- Check-lock

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Operation

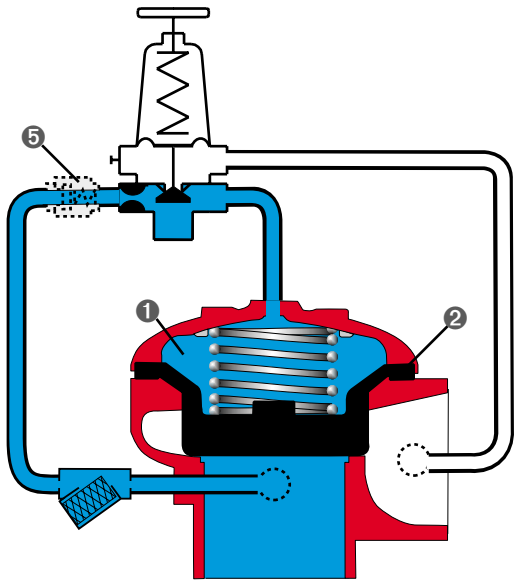
The BERMAD Model 420-HY serves as a high-pressure reducing hydrant valve suited for hose connections and fire-hoses.

In the closed condition, the 420-HY is held closed by line pressure applied through the pilot valve and trapped in the control-chamber ❶. The water pressure, multiplied by the surface area of the diaphragm ❷, creates a differential closing force resulting in the valve remaining sealed. The closed valve prevents the water from flowing.

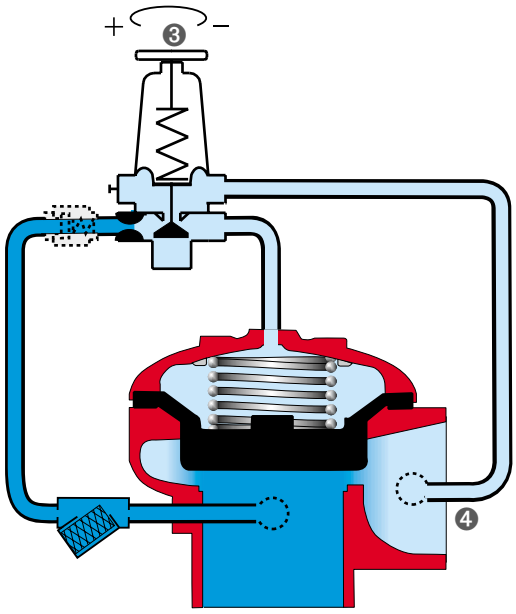
As the hand-wheel ❸ of the pilot valve is turned counter-clockwise, the outlet water pressure ❹ rises in proportion to the amount that the hand-wheel is turned. When the hand-wheel is fully opened, the outlet water pressure rises to the factory preset maximum pressure.

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

The Check-lock option ❺ (ordering code "11") traps the last high pressure and ensures that the valve remains locked in the closed position to maintain drip-tight sealing.



Valve Closed



Valve Open
(Regulating pressure)

Tender Specifications

The valve shall be a direct diaphragm actuated, angle or globe pattern, self actuated hydraulic valve.

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

Valve actuation shall be accomplished by a one piece, balanced diaphragm, with vulcanized seal.

The diaphragm assembly shall be peripherally guided and shall form a sealed chamber in the upper portion of the valve.

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

The control pilot system, including direct acting, flow and pressure adjusting hand-wheel, shall be integrated to the main valve, hydraulically-tested, and supplied as an assembly.

The manufacturer shall be QA certified according to ISO 9001 standards.

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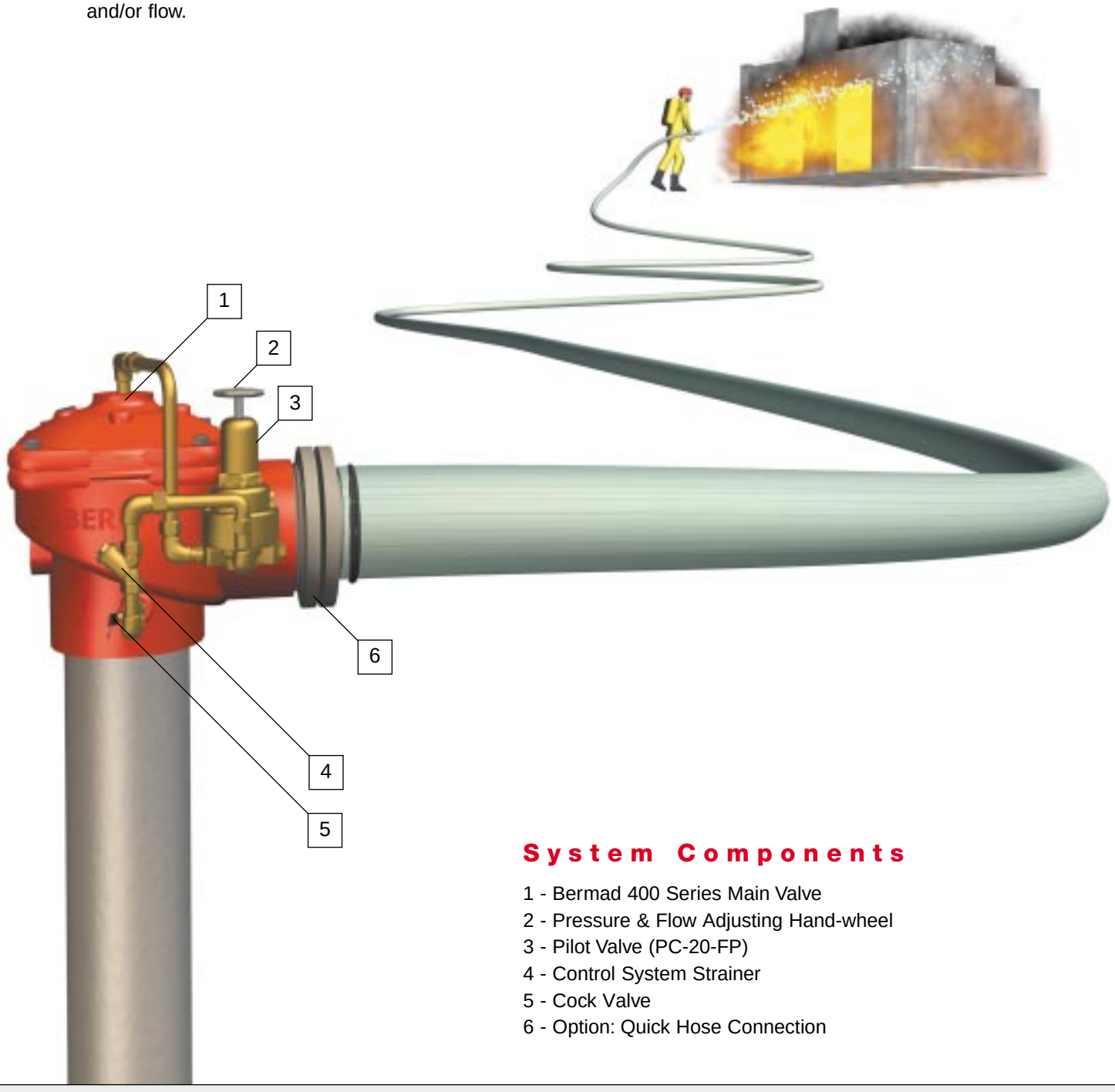
FP420HY

Typical Installation

The Model 420HY 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.

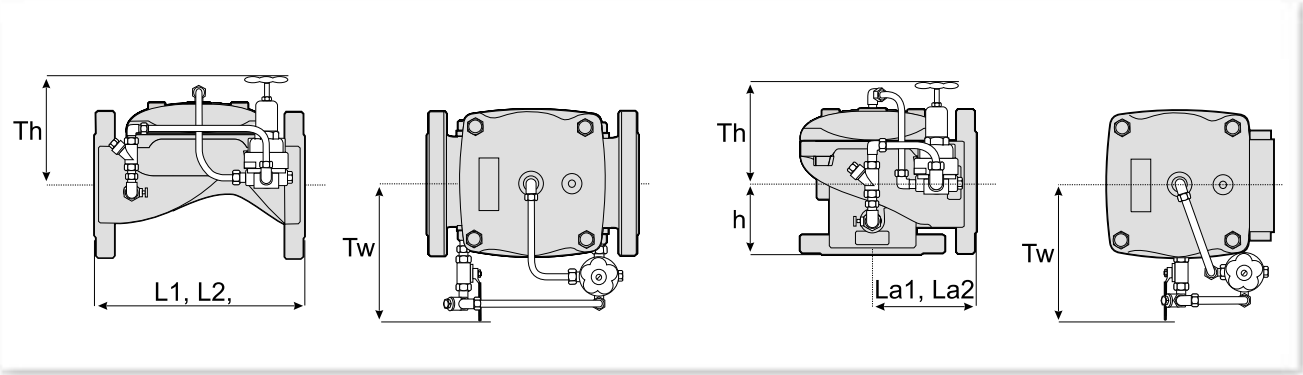


System Components

1 - Bermad 400 Series Main Valve
2 - Pressure & Flow Adjusting Hand-wheel
3 - Pilot Valve (PC-20-FP)
4 - Control System Strainer
5 - Cock Valve
6 - Option: Quick Hose Connection

FP420HY Pressure-Regulating Hydrant

Specifications



Valve Size		2”		2½”		3”		4”		6”	
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
Dimensions	(1)L1	205	8 1/2	205	8 1/2	250	9 13/16	320	12 9/16	415	16 5/16
	(2)L2	180	7 1/16	210	8 1/4	255	10 1/16	N/A	N/A	N/A	N/A
	(1)La1	121	3 3/4	N/A	N/A	153	6	160	6 5/16	N/A	N/A
	(2)La2	284	11 3/16	N/A	N/A	300	11 3/16	313	12 5/16	341	13 7/16
	Tw	284	11 3/16	284	11 3/16	300	11 3/16	313	12 5/16	341	13 7/16
	Th	210	8 1/4	210	8 1/4	215	8 7/16	243	9 9/16	315	12 3/8
	h	83	3 1/4	N/A	N/A	101	4	112	4 7/16	N/A	N/A

Notes:
1. L1 & La1 are for flanged ANSI #125 / #150 and ISO PN16.
2. L2 & La2 are for threaded female, NPT or BSP.
3. Tw is maximum trim width for both globe & angle patterns.
4. Data is for maximum envelope dimensions, component positioning may vary.
5. Provide adequate space around valve for maintenance.

Connection Standard
- Flanged: ANSI B16.1 (Cast iron) B16.42 (Ductile iron), B16.5 (Steel & Stainless), B16.24 (Bronze) ISO PN16
- Threaded: NPT or BSP 2, 2 1/2 & 3"

Water Temperature
- 0.5 - 50°C (33 - 122°F)

Available Sizes
- Globe: 2, 2 1/2, 3, 4 & 6”
- Angle: 2, 3 & 4"

Working Pressure
- Max inlet: 235 psi (16 bar)
- Standard outlet pressure limit: 100 psi (7 bar) Optional pressure limit: 70 or 165 psi (5 or 11.5 bar)

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

Coating
- Electrostatic Power Coating Poleyester
- Red (RAL 3000)

Optional Materials

Main valve body
- Carbon steel ASTM A-216-WCB
- Stainless steel 316
- Ni-Al bronze
- Marine bronze

Control Trim
- Stainless steel 316
- Monel®
- Hastalloy C-276

Coating
- High Built Epoxy Fusion-Bonded with UV Protection (for Corrosive Materials)

Optional elastomers
- NBR
- EPDM

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