

PRESSURE REDUCING VALVE

Model: 420

The Model 420 Pressure Reducing Valve is a hydraulically operated, diaphragm actuated control valve that reduces higher upstream pressure to lower constant downstream pressure regardless of fluctuating demand or varying upstream pressure.

- Flow and leakage reduction
- Cavitation damage protection
- Throttling noise reduction
- Burst protection
- System maintenance savings

Features and Benefits

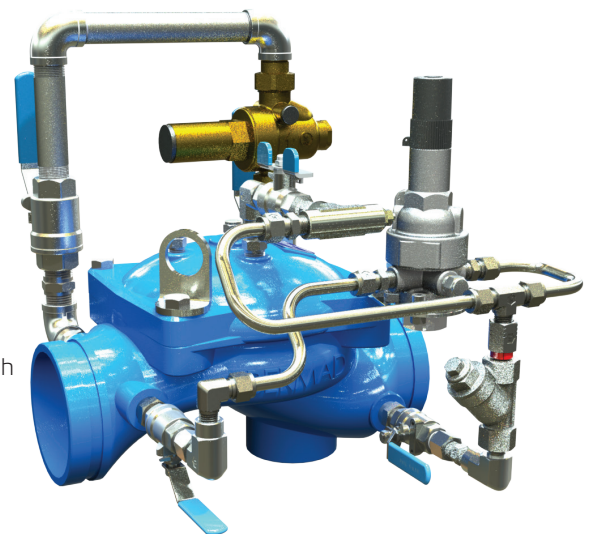
- Line pressure driven – Independent operation
- Flexible design – Easy addition of features
- Advanced globe or angle hydro-efficient design
 - Unobstructed flow path
 - Single moving part
 - Non-turbulent flow
 - High flow capacity
- Fully supported & balanced diaphragm
 - Low actuation pressure
 - Excellent low flow regulation performance
 - Progressively restrains valve closing
 - Prevents diaphragm distortion
- In-line serviceable
 - Easy maintenance
 - Minimal down time



Major Additional Features

- Small flow bypass – 420-2B
- Solenoid control – 420-55
- Automatic regulation override – 420-09
- High sensitivity pilot – 420-12
- Downstream over pressure guard – 420-48
- Electrically selected multi-level setting – 420-45
- Electronic multi-level setting, Type 4T – 420-4T
- Electronic pressure reducing valve – 428-03

See relevant BERMAD publications.



Model 420-2B with small flow bypass

Operation

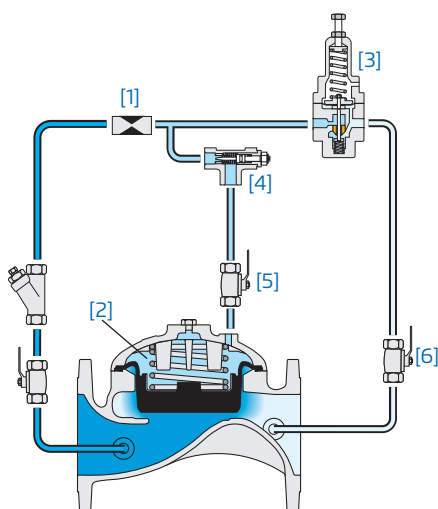
The Model 420 is a pilot controlled valve equipped with an adjustable, 2-Way pressure reducing pilot.

The flow restriction [1] continuously allows flow from the valve inlet into the control chamber [2]. The pilot [3] senses downstream pressure.

Should this pressure rise above pilot setting, the pilot throttles, enabling pressure in the control chamber to accumulate, causing the main valve to throttle closed, decreasing downstream pressure to pilot setting.

Should downstream pressure fall below pilot setting, the pilot releases accumulated pressure, and the main valve modulates open.

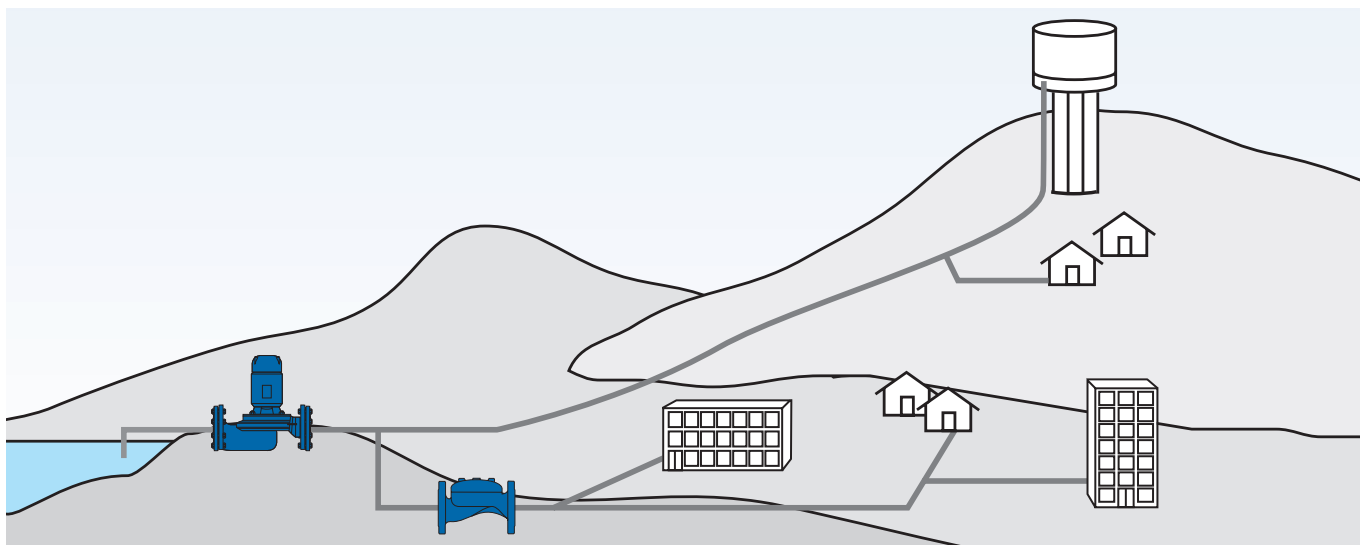
The one-way flow control needle valve [4] stabilizes valve reaction by restricting the flow out of the control chamber. Closing cock valve [5] freezes valve opening rate. Downstream cock valve [6] enables manual closing.



Typical Applications

Pressure Reducing System for Municipal Networks

Network design requires establishing various pressure zones due to topography, distances, demands, energy costs, reservoir availability, etc.



The pump supplies water to the network and to the reservoir. System pressure is too high for the residential neighborhood, requiring a pressure reducing system.

For detailed Engineering & Specification data, IOM and CAD Drawings, visit the Model Page on the [BERMAD](https://www.bermad.com) website.