

# Pressure Reducing Valve

## Model MN-820 (For High Pressure Applications)

Hydraulically operated, pressure reducing control valve that reduces higher upstream pressure to lower constant downstream pressure, regardless of fluctuating demand or varying upstream pressure.

Bermad 800 Series valves are hydraulic, pilot operated, piston actuated, oblique pattern, globe valves with a seat assembly and double chamber unitized actuator.

The valve's hydrodynamic body is designed for unobstructed flow path and provides excellent and highly effective modulation capacity for high differential pressure applications.

The 800 Series operate under difficult operating conditions with minimal cavitation and noise. They are made of the highest quality materials, suitable for different mining applications.



### Features and Benefits

- Robust structure, piston actuated
  - High pressure service
- Designed to stand up to the toughest conditions
  - Tamper resistant
  - Excellent anti-cavitation properties
  - Wide flow range
  - High stability and accuracy
  - Drip tight sealing
- Double chamber actuator design
  - Provide rapid response to sudden changes in system conditions
  - Simplified maintenance as it can be removed as a single unit. In-line serviceable
- Flexible design - Easy addition of features
- Optional V-Port Throttling Plug - Allows for low flow stability
- Obstacle free flow path

### Major Additional Features

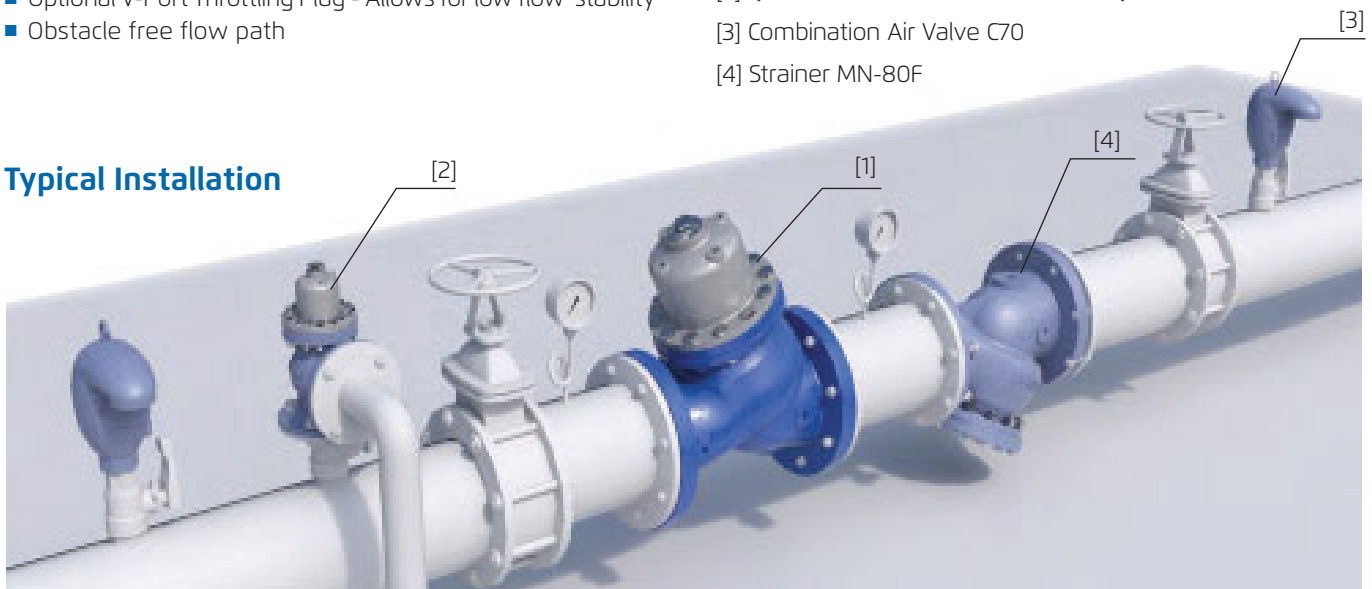
- Fixed Proportion PRV - **820 - PD**
- 3 - Way control - **820 - X**
- Independent flow check - **820 - 2S**
- Hydraulic check valve - **820 - 20**
- ON/OFF Solenoid Control - **820 - 55**
- Electrically selected multi-level setting - **820 - 45**
- Downstream over pressure guard - **820 - 48**

See relevant BERMAD publications

### List of Components:

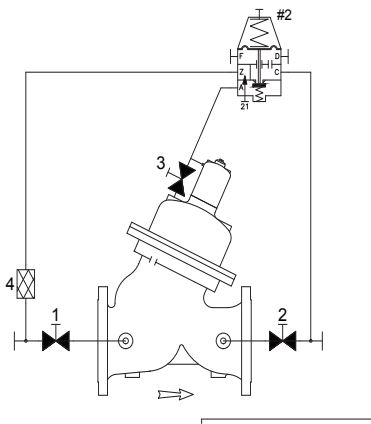
- [1] Pressure Reducing Valve MN-820
- [2] Quick Pressure Relief Valve MN-83Q
- [3] Combination Air Valve C70
- [4] Strainer MN-80F

### Typical Installation





### Control Schematic (\*)



#### Standard Configuration

- 1 2W Isolation Valve
- 2 2W Isolation Valve
- 3 2W Isolation Valve
- 4 Control Filter
- 21 Needle Valve
- #2 2W Pressure Reducing Pilot

#### Additional features (OPTIONAL)

- V V-Port Plug
- F Large Control Filter
- F1 Extra Large Control Filter
- 6 Pressure Gauge
- I Visual Position Indicator
- S Electric Limit Switch
- Q Position Transmitter 4-20 mA

(\*) As a reference only. Components may vary based on valve's size and class.

### Operation

- Model MN-820 is equipped with an adjustable pressure reducing pilot, which senses downstream pressure.
- Should this pressure rise above the pilot setting, pilot throttles, enabling pressure in the control chamber to accumulate; thereby, causing the main valve to throttle closed, decreasing downstream pressure to pilot setting.
- Should the downstream pressure falls below the pilot setting, the pilot releases accumulated pressure, and the main valve modulates open.
- Opening and/or closing speed can be set hydraulically using an opening and/or closing needle valve (optional)

### Pilot Options

Various pilots and calibration springs are available. Select according to valve size and operation conditions. For more details check pressure reducing pilots product page.



Adjustment Ranges	PSI	Bar
	30-430	2-30
	30-650	2-45

### Pressure Rating

	Class 300		
Max. Recommended Pressure	600 PSI		
Available End Connection	Flanged ANSI#300	Grooved ANSI/AWWA C606	Threaded

### Materials

Components		Water Applications	Thermal Shock Applications	Base Solutions Applications	Acid Solutions Applications (**)
Main Valve	Body	Ductile Iron	Carbon Steel	Ductile Iron	Stainless Steel 316
	Cover	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316
	Internals	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel 316
		Brass/Coated Steel	Brass/Coated Steel	Coated Steel	
	Elastomers	Synthetic rubber	Synthetic rubber	Synthetic rubber	Viton
Coating	Fusion Bonded Epoxy	Fusion Bonded Epoxy	Fusion Bonded Epoxy	Uncoated	
Pilot	Body	Brass/Bronze	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316
	Internals	Stainless Steel	Stainless Steel	Stainless Steel 316	Stainless Steel 316
		Brass			
Elastomers	Synthetic rubber	Synthetic rubber	Synthetic rubber	Viton	
Control Loop Accessories	Accessories	Brass/Bronze	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316
	Tubing & Fittings	Brass	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316

(\*\*) For highly aggressive acid solutions: Super Duplex, Hastelloy C-276, SM0-254 6-MO. Others by request.

#### Notes:

- Inlet pressure, outlet pressure and flow rate are required for optimal sizing and cavitation analysis.
- Recommended average flow velocity: 0.1-3.5m/sec; 0.3-11ft/sec. Intermittent flow velocity: 7.5m/sec-23ft/sec
- Minimum operating pressure: 2 bar / 30 PSI.

