

Pressure Reducing and Sustaining Valve

Model MN-723

Hydraulically operated, Pressure Reducing and Sustaining control valve with two independent functions. It sustains minimum pre-set upstream pressure regardless of fluctuating flow or varying downstream pressure, and it prevents downstream pressure from rising above maximum pre-set regardless of fluctuating flow or excessive upstream pressure.

Bermad 700 Series valves are hydraulic, pilot operated, oblique pattern, globe valves with a seat assembly and double chamber unitized actuator that can be disassembled from the body as a separate integral unit.

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

The 700 Series operate under difficult operation conditions with minimal cavitation and noise. They are made of the highest quality materials suitable for different mining applications.



Features and Benefits

- 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
 - Protected diaphragm
 - 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

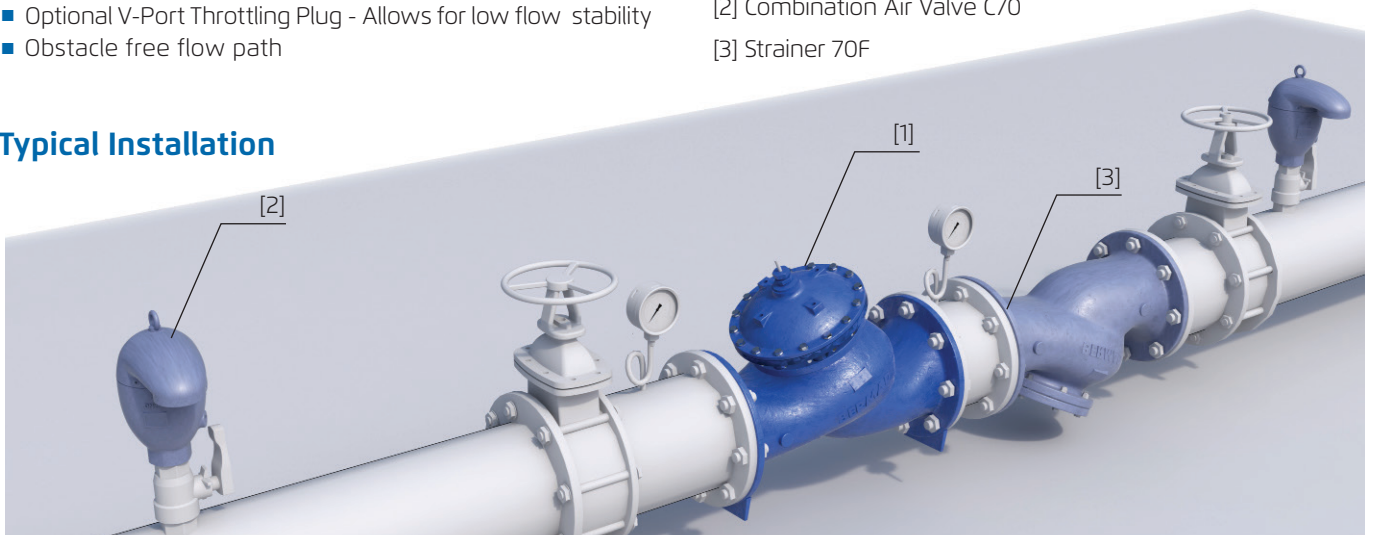
- Solenoid control – **723-55**
- Check feature – **723-20**
- High sensitivity pilots – **723-12**
- Solenoid control & check feature – **723-25**
- Downstream over pressure guard – **723-48**
- Proportional – **723-PD**

See relevant BERMAD publications

List of Components:

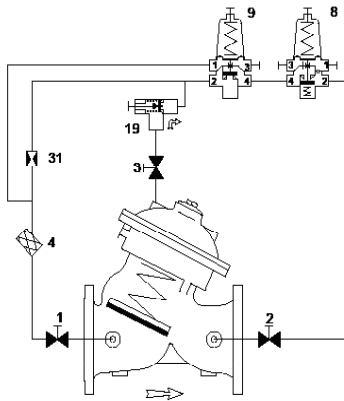
- [1] Pressure Reducing and Sustaining Valve MN-723
- [2] Combination Air Valve C70
- [3] Strainer 70F

Typical Installation





Control Schematic (*)



Standard Configuration

- 1 2W Isolation Valve
- 2 2W Isolation Valve
- 3 2W Isolation Valve
- 4 Control Filter
- 8 Pressure Reducing Pilot
- 9 Pressure Sustaining Pilot
- 19 Needle Valve, Opening Speed Control
- 31 Restriction Orifice

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
- U Orifice Plate

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

Operation

- The Model 723 is a pilot controlled valve equipped with two adjustable, 2-Way pilots, pressure sustaining [PS] and pressure reducing [PR], operating independently in series.
- The orifice [31] continuously allows flow from the valve inlet into the upper control chamber.
- The PS pilot [9] and the PR pilot [8] together control outflow from the upper control chamber.
- Should upstream pressure fall below PS pilot setting, the pilot closes causing pressure to accumulate in the upper control chamber. The main valve throttles closed sustaining upstream pressure at the pilot setting.
- Should upstream pressure rise above PS pilot setting, the pilot releases accumulated pressure from the upper control chamber to the main valve outlet through the held open PR pilot, opening the main valve.
- Should opening the main valve cause downstream pressure to rise above PR pilot setting, the pilot closes, causing the main valve to throttle closed reducing downstream pressure to PR pilot setting.
- The needle valve controls the opening speed.

Pilot Options

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



	PSI	Bar
Adjustment Ranges	11-150	0.7-10
	15-230	1-16
	30-430	2-30

Pressure Rating

	Class 150			Class 300		
Max. Recommended Pressure	250 PSI			400 PSI		
Available End Connection	Flanged ANSI#150	Grooved ANSI/AWWA C606	Threaded	Flanged ANSI#300	Grooved ANSI/AWWA C606	Threaded

Materials

Components	Water Applications	Thermal Shock Applications	Base Solutions Applications	Acid Solutions Applications (**)	
Main Valve	Body & Cover	Ductile Iron	Carbon Steel	Ductile Iron	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	Brass/Bronze	Stainless Steel 316	Stainless Steel 316
	Internals	Stainless Steel	Stainless Steel	Stainless Steel 316	Stainless Steel 316
		Brass	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, SMO-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: 0.7 bar / 10 PSI. For lower pressure requirements consult factory.

