

Booster Pump Control Valve

Quick Active Check Valve

Model MN-840 (For High Pressure Applications)

Hydraulic active check pump control valve that opens fully or shuts off in response to electric signals. The valve isolates the pump from the system during pump startup and shutdown, thereby preventing pipeline surges.

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

The valve's hydrodynamic body is designed for unobstructed flow path and provides high flow capabilities. They are made of the highest quality materials suitable for different mining applications.



Features and Benefits

- Robust structure, piston actuated
 - High pressure service
- Self-operated valves that can work without an external source of power, just a command is needed:
 - Low power consumption
 - Normally Open or Normally Closed main valve
- Hydrodynamic wide globe valve body provides:
 - Higher flow (Kv/Cv) than standard globe valves
- Check feature (spring loaded type)
 - Replaces line sized check valve
 - Fail-safe mechanical closure
- Designed to stand up to the toughest conditions
 - Tamper resistant
 - Drip tight sealing
- Double chamber actuator design:
 - Non-slam opening and closing characteristics
 - Full powered opening and closing (option "B")
 - Simplified maintenance as it can be removed as a single unit. In-Line serviceable
- Flexible design - Easy addition of optional features
- Obstacle free flow path

Major Additional Features

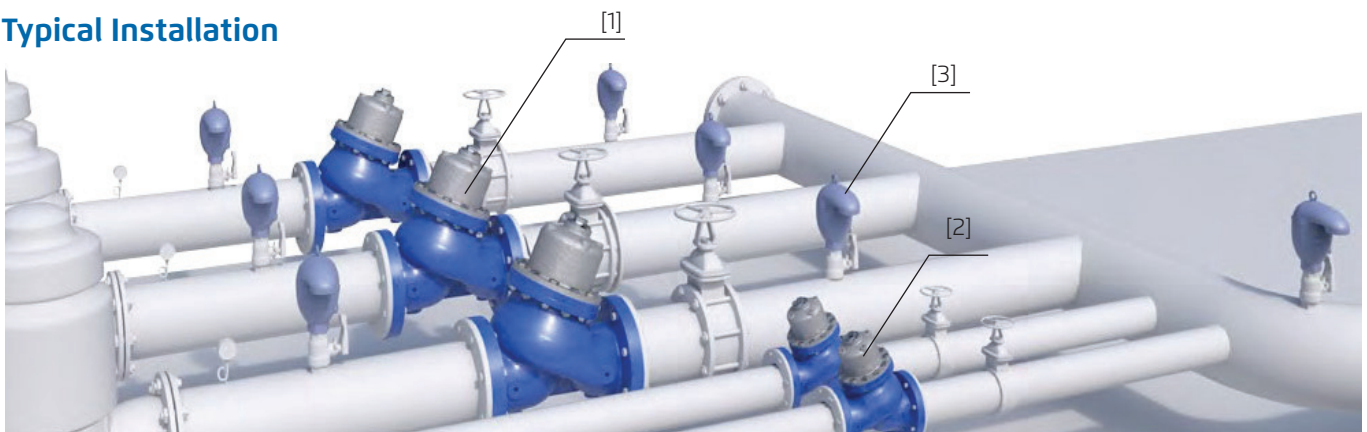
- Full powered opening & closing - **840 - B**
- Pressure Reducing - **842**
- Pressure Sustaining - **843**
- Pressure Sustaining & Reducing - **843 - 2Q**
- Flow control - **847 - U**
- Pump circulation control - **848**
- Electronic control - **840 - 18**

See relevant BERMAD publications

List of Components:

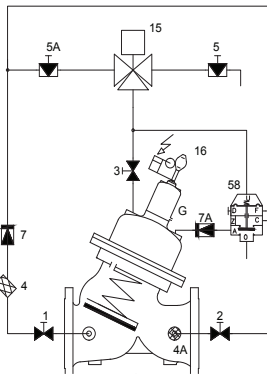
- [1] Pump Control Valve MN-840
- [2] Surge Anticipating Valve MN-835-M
- [3] Combination Air Valve C70

Typical Installation





Control Schematic (*)



Standard Configuration

- 1/2/3 2W Isolation Valve
- 4 Control Filter
- 5/5A Needle Valve
- 7/7A Check Valve
- 15 Solenoid / Motorized Ball Valve
- 16 Limit Switch
- 58 3W D/Chamber Hydraulic Relay
- G Top Guide

Additional features (OPTIONAL)

- F Large Control Filter
- F1 Extra Large Control Filter

(*) As a reference only. Components may vary based on valve's size and class. For poor quality fluids, motorized ball valve option is highly recommended

Sequence of Operation

Pump Starting Procedure

- When pump starts, valve upstream pressure rises above the system static pressure, allowing the valve to open gradually.

Pump Stopping Procedure

- While the pump is still working, and the shut-down command is issued, first, the solenoid - or the motorized ball valve MVB - applies pumped pressure to the upper control chamber. Then, the main valve starts to close isolating the running pump from the system.
- When valve is almost closed, its limit switch is activated and it shuts down the pump.

Power Failure

- If electric power fails during pumping, valve works immediately as a check valve, closing before the flow can change direction.

Electrical Data

Solenoid Data:

Voltages: (AC): 24, 110, 220
(DC): 12, 24, 110, 220

Power Consumption:

(AC): 30VA, inrush; 15VA (8W) holding
(DC): 8W

Motorized Ball Valve Data:

Voltages: (AC): 24, 110, 220
(DC): 24

Power Consumption:

(AC/DC): 45W

Limit Switch Data:

Switch Type: SPDT
Electrical Rating: 10A, type gl or gG
Enclosure Rating: IP66



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	
Solenoid	Body	Brass	Brass	Stainless Steel 316	Stainless Steel 316
	Internals	Stainless Steel	Stainless Steel	Stainless Steel 316	Stainless Steel 316
	Elastomers	Synthetic rubber	Synthetic rubber	Synthetic rubber	Viton
Motorized Ball Valve	Body/Internals	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316
	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 and flow rate are required for optimal sizing.
- Maximum recommended flow velocity: 6m/sec; 18ft/sec. Intermittent: 7.5m/sec; 21ft/sec.
- Minimum operating pressure: 2 bar / 30 PSI.

