Booster Pump Control Valve

Quick Active Check Valve

Model MN-740

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

The valve's hydrodynamic body is designed for unobstructed flow path and provides high flow capabilities.

The valves are available in the standard configuration or with an independent flow check (code "2S"). They are made of the highest quality materials, suitable for different mining applications.

Features and Benefits

- Self-operated valves that can work without an external source of power, just a command is needed
- Electric controlled
  - 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
  - Full powered opening and closing (option "B")
  - Protected diaphragm
  - 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 - **740 - B**
- Independent flow check - **740Q - 2S**
- Pressure sustaining - **743**
- Pressure reducing - **742**
- Flow control - **747 - U**
- Pump circulation control - **748**
- Electronic control - **740 - 18**

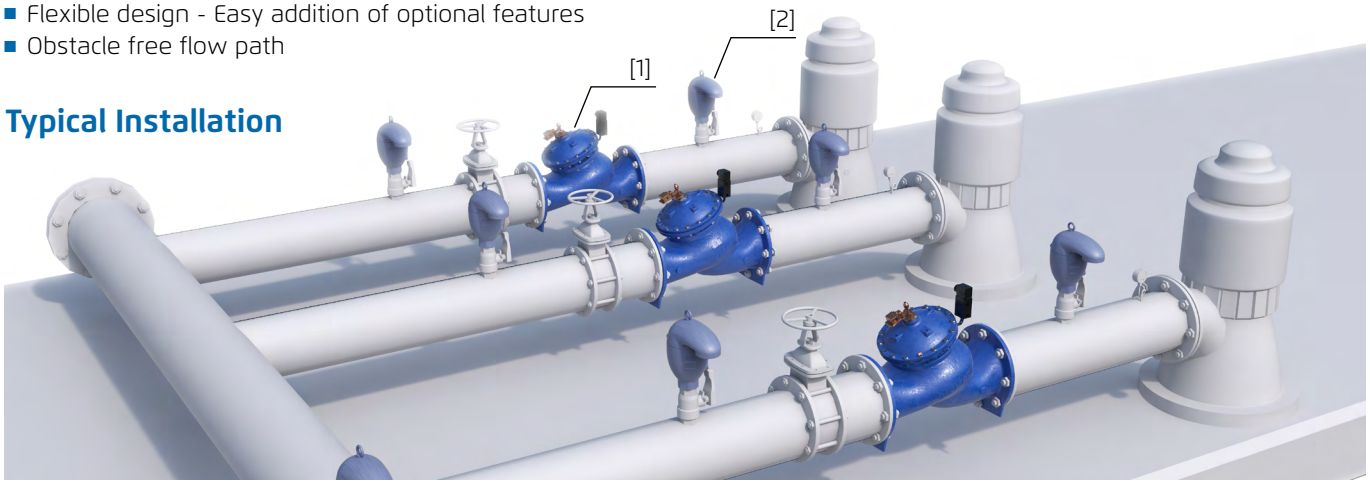
See relevant BERMAD publications

List of Components:

[1] Pump Control Valve 740

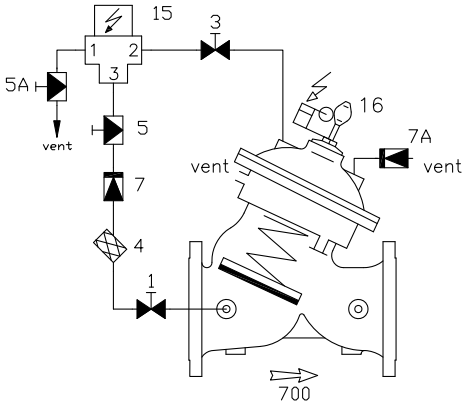
[2] Combination Air Valve C70

Typical Installation



All images in this catalog are for illustration only

Control Schematic (*)



Standard Configuration

1/3	2W Isolation Valve
4	Control Filter
5	Closing Needle Valve
5A	Opening Needle Valve
7/7A	Check Valve
15	Solenoid / Motorized Ball Valve
16	Limit Switch

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 & End Connections

	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
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:
• Pump 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: 0.7 bar / 10 PSI. For lower pressure requirements consult factory.