



Purchase Specification

Model No. 60-73/660-73 BOOSTER PUMP CONTROL VALVE

Sizes: 2 1/2" - 8"

Function

The booster pump control valve is designed for installation on the discharge of booster pumps to eliminate starting and stopping surges caused by the pump. The valve shall be equipped with a built-in lift type check feature to prevent reverse flow, operating independently of the solenoid control.

Main Valve

The valve shall be hydraulically operated, single diaphragm actuated, globe or angle pattern. A resilient synthetic rubber disc shall have a rectangular cross section and shall be retained on three and one-half sides to assure proper gripping under extreme hydraulic conditions. The two piece stainless steel valve stem shall be guided by three bearings located in the cover, intermediate body, and seat.

The main valve shall consist of two distinct operating chambers that are detachable and completely independent of the flow through the main valve body.

Main Valve Body

The valve shall consist of four components: the body with seat installed, the intermediate body with bearing installed, the cover with bearing installed, and the diaphragm assembly. The valve body, power unit body and cover shall be of cast material. Ductile Iron is standard and other materials shall be available. No fabrication or welding shall be used in the manufacturing process. The diaphragm assembly shall be the only moving part and shall form a seal between the two operating chambers. Packing glands and/or stuffing boxes are not permitted. There shall be no pistons operating the main valve or pilot controls. The valve shall contain a resilient, synthetic rubber disc with a rectangular cross-section contained on three and one-half sides by a disc retainer and forming a tight seal against a single removable seat insert. No O-ring type discs (circular, square, or quad type) shall be permitted as the seating surface. The disc guide shall be of the contoured type to permit smooth transition of flow and shall hold the disc firmly in place. The disc retainer shall be of a sturdy one piece design capable of withstanding line shocks due to abnormal pump stoppage. No hourglass-shaped disc retainers shall be permitted and no V-type disc guides shall be used.

The diaphragm assembly containing a non-magnetic two piece stainless steel stem of sufficient diameter to withstand high hydraulic pressures shall be fully guided by three bearings; in the valve cover, the power unit body, and an integral bearing in the valve seat. The built-in lift type check is designed to prevent pressure reversal caused by power failure. The stem shall be drilled and tapped in the cover end to receive and affix such accessories as may be deemed necessary.

The flexible, non-wicking, FDA approved diaphragm shall consist of nylon fabric bonded with synthetic rubber compatible with the operating fluid. The center hole for the main valve stem must be sealed by the vulcanized process or a rubber grommet sealing the center stem hole from the operating pressure. The diaphragm must withstand a Mullins Burst Test of a minimum of 600 psi per layer of nylon fabric and shall be cycle tested 100,000 times to insure longevity.

The diaphragm shall be fully supported in the valve body and cover by machined surfaces which support no less than one half of the total surface area of the diaphragm in either the fully open or fully closed position.

The main valve seat, the power unit body and the stem bearing in the valve cover shall be removable. The cover bearing and seat in 6" and smaller size valves shall be threaded into the cover and body. The valve seat in 8" and larger size valves shall be retained by flat head machine screws for ease of



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maintenance. The lower bearing of the valve stem shall be contained concentrically within the seat and shall be exposed to the flow on all sides to avoid deposits. To insure proper alignment of the valve stem, the valve body and cover shall be machined with a locating lip. No "pinned" covers to the valve body shall be permitted. All necessary repairs and/or modifications other than replacement of the main valve body shall be possible without removing the valve from the pipeline. Components, including cast material shall be of North American manufacture.

The valve manufacturer shall warranty the valve to be free of defects in material and workmanship for a period of three years from date of shipment provided the valve is installed and used in accordance with all applicable instructions. Electrical components shall have a one year warranty.

The valve manufacturer shall be able to supply a complete line of equipment from 2 1/2" through 8" sizes and a complete selection of complementary equipment.

Material Specification

Valve Size:
Main Valve Body and Cover:
Main Valve Trim:
End Detail:
Pressure Rating:
Temperature Range:
Rubber Material:
Coating:
Desired Options:

Pilot Control System

The valve operation shall be controlled by an externally mounted pilot control system with a four-way solenoid operated pilot. The solenoid shall be designed to operate on either AC or DC current and have a manual operator installed. Pilot system includes: four-way solenoid pilot valve, opening and closing speed controls, shut off valves, strainers and CVS-1 shuttle valve to provide the highest available operating pressure to the pilot system.

Limit Switch

An adjustable limit switch assembly shall be mounted on the main valve, connected to the main valve stem. It shall be actuated by opening or closing of the valve and easily adjusted to operate at any point of the valve's travel. The limit switch will be used to complete the pump off cycle. The actuating point of the limit switch shall be adjustable.

A direct factory representative shall be made available for start-up service, inspection and necessary adjustments.

Material Specification for Pilot Control:

Pressure Rating:
Trim:
Rubber Material:
Tubing and Fittings:
Operating Fluids:
Solenoid Voltage:
Solenoid Enclosure Type:
Desired Options:

The valve shall be a Cla-Val Co. Model No. 60-73/660-73 Booster Pump Control Valve as manufactured by Cla-Val Company, Newport Beach, California, 92659-0325.