Purchase Specification

Model No. 100-03
POWERCHECK VALVE

Sizes:
Globe: 1 1/4” - 16”
Angle: 1 1/2” - 16”

Function

The valve shall be hydraulically operated, single diaphragm actuated, globe or angle pattern. The valve shall consist of four major components: The body with seat installed, the cover with bearing installed, the intermediate body with bearing installed, and the diaphragm assembly. The diaphragm assembly shall be the only moving part and shall form a seal between the cover chamber and intermediate chamber. An O-ring seal in the intermediate chamber separates operating pressure from line pressure. Packing glands and/or stuffing boxes are not permitted and there shall be no pistons operating the main valve. The valve body, power unit body and cover shall be of cast material manufactured in North America. Ductile Iron is standard, other materials shall be available. No fabrication or welding shall be used in the manufacturing process.

"Tying" of equipment into packages for the purpose of thwarting competition shall be considered to be in non-compliance with these specifications. Manufacturers shall price items under different subsections or sections separately.

Description

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. The disc retainer shall be of a one-piece design capable of withstanding opening and closing shocks. No hourglass-shaped disc retainers shall be used. The disc guide shall be of the contoured type to permit smooth transition of flow and shall hold the disc firmly in place. No slotted type disc guides shall be used. The diaphragm assembly shall contain a non-magnetic stainless steel stem of sufficient diameter to withstand high hydraulic pressures. The diaphragm assembly shall be fully guided through its complete stroke by a removable bearing in the valve cover and a removable bearing in the intermediate body. The valve shall be capable of modulating between a fully open and tightly closed position unless a static condition or pressure reversal occurs, in which case the valve shall close to prevent reverse flow regardless of the diaphragm position. The upper 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 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 not be used as the seating surface. The diaphragm shall be fully supported in the intermediate 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 valve seat in six inch and smaller size valves shall be threaded into the body. The valve seat in eight inch and larger size valves shall be retained by flat head machine screws for ease of maintenance. The seat shall be of the solid one-piece design and shall have a minimum of a five degree taper on the seating surface for a positive drip tight shut-off. Pressed-in bearings and/or dual piece seats shall not be permitted.

To insure proper alignment of the valve stem, the valve body and cover shall be machined with a locating lip. No “pinned” covers or bodies 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.

The valve manufacturer shall warrant 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

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all applicable instructions. The valve manufacturer shall be able to supply a complete line of equipment from 1 1/4” through 16” sizes and a complete selection of complementary equipment. The valve manufacturer shall also provide a computerized cavitation analysis which shows flow rate, differential pressure, percentage of valve opening, Cv, system velocity, and the incidence of cavitation damage.

Material Specification

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

This valve shall be a Cla-Val Co. Model No. 100-03 Powercheck Valve.