

Electro-Hydraulic Swing Type Quick Acting Line Blind Valve

Manual Book



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I. Product Overview

This series of electro-hydraulic swing type line blind valves is designed for use in gas pipeline systems in industries such as metallurgy, municipal environmental protection, and general industrial applications. It provides reliable shut-off for gas media, and is especially suitable for the absolute isolation of harmful, toxic, or flammable gases. It can also be used to blind off the end of a pipeline, reducing maintenance time or facilitating the connection of a new piping system.

II. Structural Features

The valve consists of a left valve body, right valve body, sector-shaped valve plate, lead screw and nut assembly, stainless steel compensator, and two electro-hydraulic actuators. The three lead screws form a single assembly that connects and secures the two valve bodies to the base, forming a rigid structure.

The right valve body is connected to a stainless steel compensator. The left and right valve bodies are connected by three lead screws, each threaded with left-hand and right-hand trapezoidal threads on opposite ends. When the three lead screws rotate in the same direction (forward or reverse), they cause the valve bodies to either press together or separate.

The upper lead screw is equipped with a blind plate at its center, which rotates around the screw's axis. The two lower lead screws are fitted with guide blocks to position the blind plate, preventing it from shifting during rotation and protecting the sealing ring from damage.

III. Working Principle and Operation Method

During operation, the loosening mechanism is first activated, causing the valve bodies and valve plate to fully separate via the lead screws and left/right-hand threaded nuts. Then, the valve plate rotation mechanism is engaged, allowing the



plate to rotate around its axis—from a blind (closed) position to an open-through position—thereby opening the valve.

After the valve plate is in the open position, the clamping mechanism is reengaged to press the valve bodies tightly against the valve plate, ensuring a complete seal.

The actuation of the clamping/loosening and valve plate rotation should be controlled via a control panel. These two operations (loosening/clamping and rotating) must be interlocked to ensure safe operation of the equipment.

To close the valve, the same steps are repeated in reverse.

IV. Standards and Specifications

Design Standard	GB/T24917-2010
Face-to-Face Standard	GB/T12221
Flange Ends Standard	GB/T9115
Inspection and Test Standard	GB/T 13927-92

V. Applicable Service Conditions

Sizes Available	DN1400/DN1300/DN1200/DN800
Model	F743X-150LB
Operation Method	Electro-Hydraulic
Operating Angle	0-120°
Feedback Signal	Open/Close signal



Working Medium	Gas, Steam
Design Temperature	≤300°C
Design Pressure	0.3 Мра
Structure Type	Sector-Shaped
Connection Type	Flanged
Sealing Material	FKM (Fluororubber)
Leakage Rate	Zero Leakage
Applicable Medium	Clean Coal Gas
Protection Class	IP55
Voltage	380V 50Hz

VI. Main Component Materials

Component	Material
Valve Body	316L
Valve Plate	316L
Valve Stem	316L
Bellows	316L+254Mo
Flow Guide Tube	316L
Sealing Surface	316L
Seal Ring	High Temperature FKM
Nuts	QT450



VII. Installation Notes

When the blind valve is opened, the left and right valve bodies must allow an axial displacement of 16–20 mm. Therefore, the pipeline must be capable of elastic deformation or have enough clearance to accommodate this displacement during opening and closing. It is recommended to install the valve according to the suggested configuration.

There is no specific restriction on the installation position, provided that no external forces from the pipeline act on the valve. The valve must not bear pushing, pulling, or twisting forces caused by thermal expansion, contraction, or other external loads. Long-type expansion joints are designed only to accommodate valve movement during operation and **must not replace** the necessary bellows-type expansion joints required in the pipeline. Any external force caused by pipeline conditions **must not be transferred** to the expansion joint of the valve.

VIII. Installation and Maintenance Guidelines

1. This valve must be installed in a vertical position. After installation, the base should be fixed with a support structure so that operational forces are borne by the support.

2. Clean the valve cavity and sealing surfaces before installation to ensure no debris affects sealing. Regular cleaning of the sealing surface and lubrication of the lead screw is recommended.

3. Do not use the actuator, crank, or lead screws for lifting. Always lift using the lifting eye located at the top of the valve.

4. Clean the pipeline where the valve will be installed to remove any impurities that may damage the sealing surface during operation.



5. The valve should be controlled exclusively via the control cabinet.

6. If the valve is not in use, store it in a dry indoor area. Both ends should be sealed to prevent contamination. Do not stack the valve arbitrarily to avoid damage to its components.

Note:

If you have any questions just feel free to contact THINKTANK's experts.