



KBD BI-DIRECTIONAL KNIFE GATE VALVES



Design and Construction

The DeZURIK Bi-Directional Knife Gate Valve provides a unique, two-stage seat allowing bubble tight shutoff in either direction, even on dead-end service. Unlike any other design, the Bi-Directional Knife Gate Valve provides a combination face and perimeter seal.

The valve is designed for isolation and on-off applications in the paper, chemical and power industries. It is designed to handle clean, dirty, viscous and corrosive liquids; sludge; fibrous slurries; clean and corrosive gases; dry materials.

Bi-Directional Shutoff

The Bi-Directional Knife Gate Valve provides bubble tight shutoff in both directions up to the full 150 pressure rating. There is no recommended flow direction—and it doesn't require line pressure to seal. The interference fit between the gate and seats provides bubble tight shutoff, even under the lowest pressure. The Bi-Directional Knife Gate Valve can be used in either direction on dead-end service.

Maximum Flow Capacity

The full, round port area provides maximum flow capacity and minimum head loss.

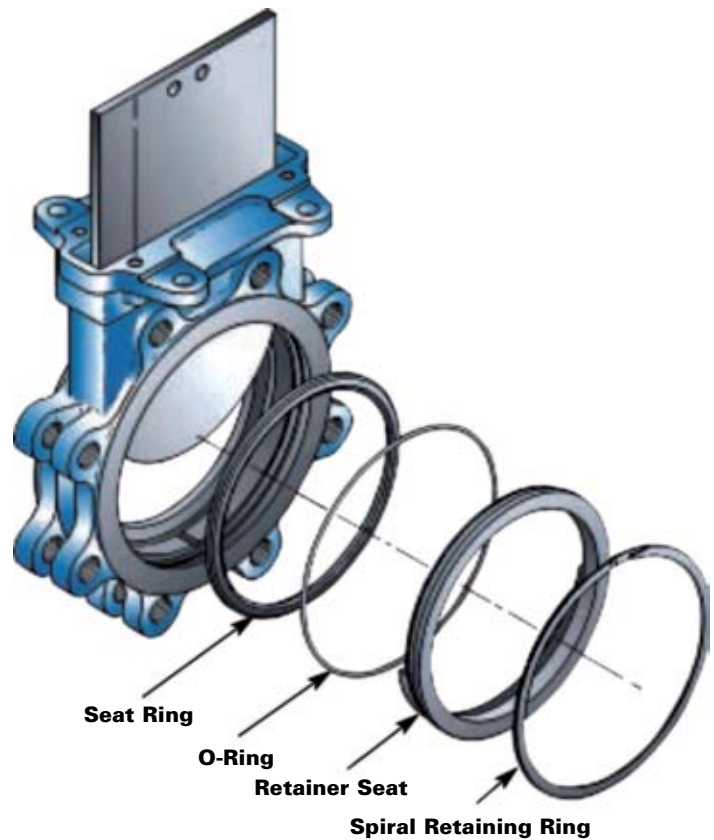
Unique Seat Design

The seat is a unique, two-stage design. The first stage consists of a resilient face seal on both sides of the gate for the upper two-thirds of the valve port, which supports and guides the gate and provides tight sealing in both directions. The second stage is the perimeter seal. The resilient seat is crescent shaped at the bottom third of the port which seals off the perimeter of the gate and eliminates pockets where material can collect.



Combination Face and Perimeter Seal

The flat bottom gate provides full perimeter seating against the lower portion of the seat, eliminating pockets in the bottom of the seat that can trap process media and prevent the valve from fully closing. The upper portion of the seats are designed



to provide a face seal against the gate without overstressing the rubber or disturbing the pocket seal. This unique design provides bubble tight shutoff in either direction.

Seat Locked Into Valve Body

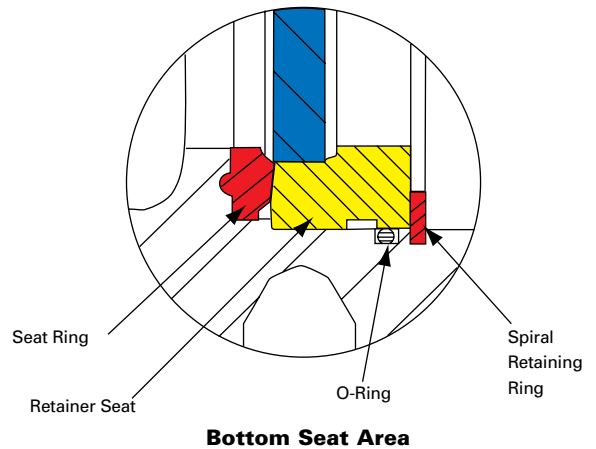
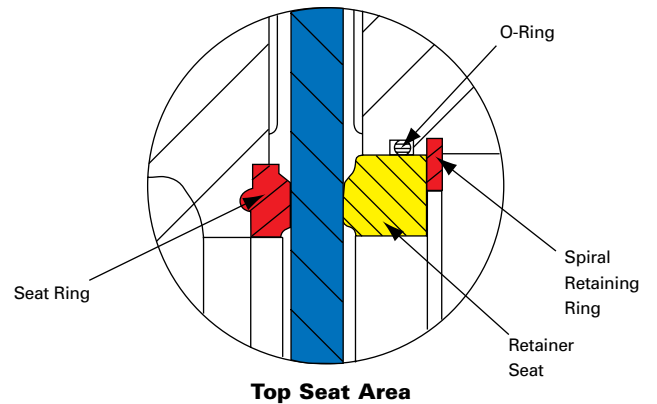
Both the retainer side and the body side seats are locked into the valve body. A raised lug on the bottom of the retainer side seat locks it into the valve body, eliminating any possibility for the ring to rotate out of position. The body side seat has a rib molded into the seat ring which locks into a groove in the valve body. The body prevents the seats from being pulled up and down as the valve is operated. Seats can't rotate or become dislodged.

Seat Guided Gate

The face seals provide constant guiding throughout the valve stroke, maintaining continuous contact with the gate. There is no metal-to-metal contact therefore gate galling is impossible. The seat and packing functions are separated and totally independent of each other. The design doesn't rely on the packing to position the gate, making packing replacement easier.

Choice of Materials

The heavy-duty cast body is available in 304, 316 or 317 stainless steel. The gate, stem and seat rings are also stainless steel. Five options for resilient seat materials and five packing options are available. The standard superstructure is carbon steel with 304 stainless steel available as an option. Corrosion resistant cylinder construction is also available as an option.



Choice of Actuators and Accessories

DeZURIK Bi-Directional Knife Gate Valves may be equipped with handwheel, chainwheel, bevel gear, cylinder or electric motor actuators. A full complement of accessories is available.

Easily Replaceable Seats

The seat is field replaceable without any special tools or equipment. A screwdriver is used to remove the spiral seat retainer ring from its groove. The seats and O-ring lift out of the body.



Sales and Service

For information about our worldwide locations, approvals, certifications and local representative:

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DeZURIK reserves the right to incorporate our latest design and material changes without notice or obligation. Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing by DeZURIK. Certified drawings are available upon request.