



DeZURIK BHP HIGH PERFORMANCE BUTTERFLY VALVES



Time-Tested, Exceptional Performance

DeZURIK BHP High Performance Butterfly Valves are specially designed for applications in the chemical, hydrocarbon processing, pulp & paper, water & wastewater and HVAC industries worldwide. The valve was designed with an understanding that process industries need products that provide exceptional performance while reducing the total cost of ownership.

BHP butterfly valves have been rigorously tested to meet industry performance requirements. A fully supported one-piece shaft and heavy-duty bearings ensure perfect alignment of seat and disc leading to long life and trouble-free performance.

DeZURIK offers a wide variety of seat options including PTFE seat, reinforced PTFE seat, flexible metal seat and a dual seat.

DeZURIK BHP Butterfly Valves combine extreme service capabilities with features which have been time-tested for over 30 years.

Wafer or Lugged Body Styles

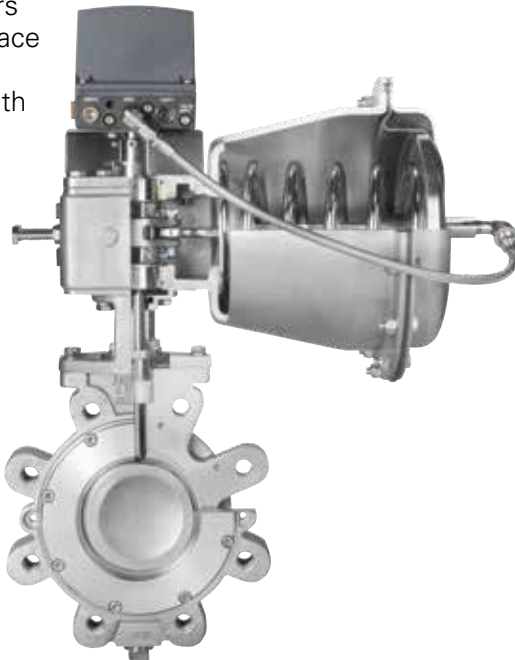
BHP butterfly valves are available in both lugged and wafer bodies in sizes 2–60" (50–1500mm). Body materials include Carbon Steel, 316 stainless steel, 317 stainless steel and higher alloys. In addition, DeZURIK regularly supplies valves in materials such as Hastelloy C, Monel, Alloy 20, and Titanium.

Material Certification

Materials chosen for the construction of the BHP butterfly valve are certified per ASME B16.34.

Face-To-Face Options

DeZURIK offers valve face-to-face dimensions in compliance with API 609, MSS SP-68 and ASME B16.1.



Flange Drilling Options

Flange drilling conformance to ASME 150, PN10/16 (ISO, DIN, BS, JIS) and ASME 300, PN25/40 (ISO, DIN, BS, JIS).

Full Bi-Directional Seating

Dual Seat, PTFE, and reinforced PTFE seats provide full bi-directional seating.

Dead-End Service

BHP lugged body style allows installation in dead-end service to the full pressure rating of the valve.

Flange Gasket Compatibility

Standard construction provides effective sealing with ASME B16.20 gaskets (formerly API 601). The standard seat retainer is drilled to meet the requirements of API 609 standard. As an option, an undrilled seat retainer is available to provide full gasket seal area contact. The seat retaining ring is nested in the valve body, providing support and protection for the seat and a captured blow-out resistant body-to-retainer seal.

Recommended for Critical Applications

BHP butterfly valves are designed to handle everything from general applications to viscous and corrosive liquids; corrosive gases; and steam. They have been successfully applied in extreme services, including:

- high temperature services
- cryogenic applications
- throttling steam control
- polymerizing media
- liquor service with entrained solids
- high cycle industrial gas
- process gas-off applications
- paper stock isolation
- vacuum pump isolation
- corrosive chemical service (titanium construction)
- fire-safe refinery & chemical service
- heat transfer service
- throttling hydrocarbon service

Proven Performance & Reliability

To ensure accurate and reliable performance, BHP butterfly valves have been tested to the most demanding industry specifications:

- Performance tested in up to 5% consistency pulp stock isolation.
- Tested for over 1 million cycles in oxygen manufacturing service with zero leakage.
- Fire tested to API 607, 6th edition.
- Tested in hydrogen peroxide service for over 75,000 cycles with zero leakage.
- Accuracy to repeat signal changes as small as 0.5% of total signal.



Offset Disc Design

The offset disc design provides uninterrupted 360° sealing surface. The offset disc also minimizes the amount of seat-to-disc interference, lowering operating torque, increasing cycle life, and reducing the size of actuators required. Smaller actuators reduce initial purchase price and use less energy over time.

One-Piece Stainless Steel Shaft

The solid one-piece stainless steel shaft provides superior strength and disc support. The extra support provided by the one-piece shaft enhances alignment, ensuring a proper seal.



Solid Disc-To-Shaft Pinning

DeZURIK uses a reliable method for disc-to-shaft pinning. The 2–12" (50–300mm) valves utilize a wedge-shaped, tangential pin with a locking taper to ensure a tight connection between disc and shaft. On 14" (350mm) and larger, two pins mounted in compression offer a non-shear method of locking. Both connections place the pin, shaft and disc in compression load providing a much stronger connection. This solid pinning ensures no lost motion between shaft and disc, an essential feature for a control valve. Set screws and pins are securely locked in place, but can be removed if repairs are necessary.

Disc Centered In Body/Seat

Close-tolerance machined surfaces between the body and disc hubs ensure proper alignment and seating.

Multiple Shaft Bearings

The valve shaft is fully supported with bearings for high cycle capability. Bearing options include PTFE backed with 317 stainless steel or Hastelloy C and solid metal (nickel stainless steel, 316 stainless steel). The bearings also provide a large area of radial support, greatly reducing any possibility of shaft fatigue and breakage. The bearing has a low coefficient of friction, minimizing operating torque.

NACE Trim

BHP butterfly valves meet the requirements of ASME/NACE MR0175/ISO 15156. NACE trim (NT) is optional when "NS" bearing material is ordered and standard on all other combinations. When ordered with the "NT" option, the bearing material is 316 stainless steel nickel-plated and heat-treated.

Ease of Maintenance

DeZURIK BHP valves are easily repairable. In the unlikely event that a seat, disc or bearing needs to be replaced, the valve can be easily disassembled. Internal valve components can be replaced or repaired in minutes, not hours. There are no welds to remove or pins to drill out, and all fasteners are common sizes. All that is required is to remove the screws fastening the retainer to the body and the screw that locks the disc-to-shaft pin.



Features For Extended Service Life

Extended service life is an important attribute when considering a valve for a given application. DeZURIK realizes installation and replacement costs, combined with the costs of a process shutdown, are expensive. That's why DeZURIK has always been dedicated to designing and manufacturing valves that last longer and perform better.

Metal Seated Valves Incorporate an Independent Static Seal

DeZURIK's Class IV and Class V metal seated valves have a gasket between the valve body, seat and seat retainer which provides an independent static seal. Without this seal, corrosion or pitting on the body or seat retainer could cause leakage around the seat. This is of particular concern in valves of carbon steel construction, or in applications where stainless steel is prone to pitting due to corrosive precipitation.



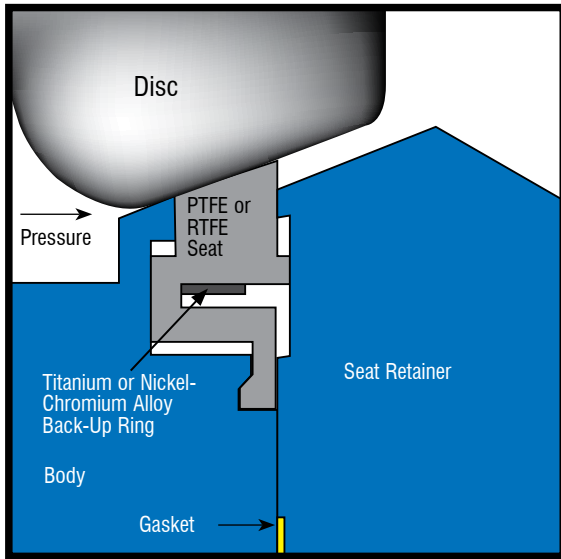
Compatible with Standard Actuators

High Performance Butterfly Valves are compatible with all DeZURIK standard actuators including levers, handwheels, chainwheels, PowerRac® cylinder, spring diaphragm, and Compak actuators.

Full Line of Accessories

Also available is a full line of accessories integrated with the actuator system including positioners, solenoids, switches, and speed controls.

Seat Designs



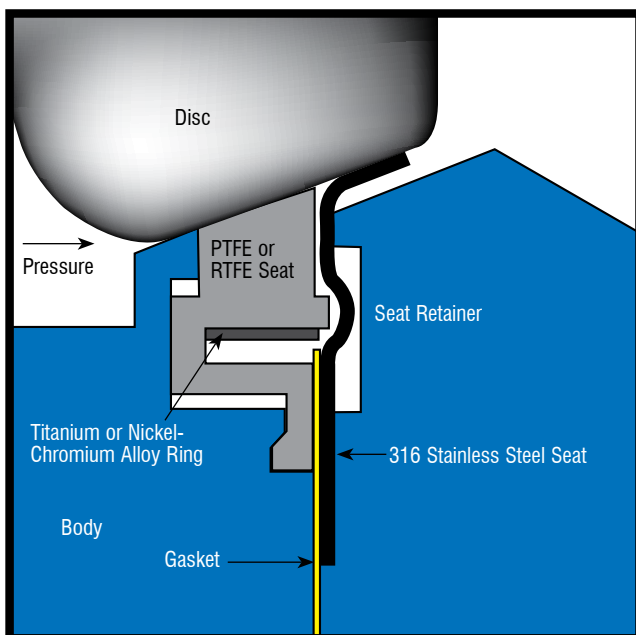
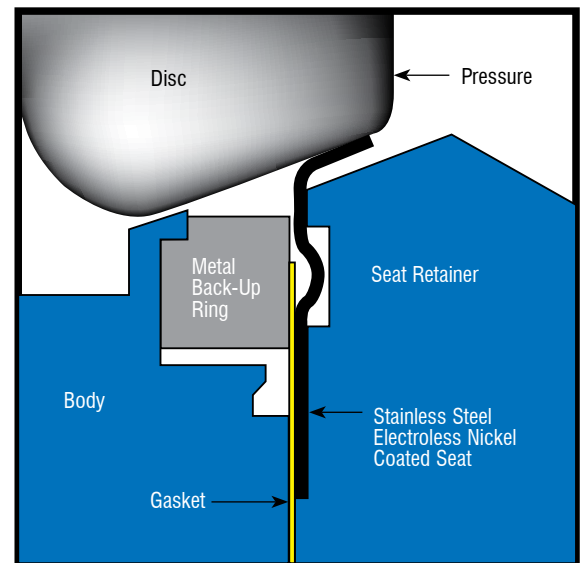
Spring & Pressure Assisted Soft Seats

Pressure assisted soft seats, in either PTFE and reinforced PTFE, offer bi-directional bubble tight shutoff. Soft seat options include either a titanium or nickel-chromium alloy back-up ring which utilizes hoop stress to provide memory for the seat.

The unique PTFE / RTFE design seals as well at low pressures as it does at high pressures. The soft seats also provide tight shutoff in vacuum service applications.

High-Temperature & Low-Temperature Metal Seats

For high-temperature applications to 700°F (370°C) as standard and to over 1000°F (538°C), a metal seat of 316 stainless steel provides ANSI/FCI 70-2 Class IV or V shutoff even at elevated temperatures. For increased economy in applications to 450°F (232°C), the metal seat can be specified with lower temperature bearings, packing and paint. The metal seat is electroless nickel coated and heat treated for superior service without the use of costly, exotic seating materials.



Dual Seat Design

The dual seat design is ideal for applications in which scaling media can solidify on the disc edge. The secondary metal seat wipes the disc edge, protecting the PTFE or RTFE seat. For services requiring a fire-tested valve, the Fyre-Block® option with dual seat combines a primary PTFE soft seat with a secondary 316 stainless steel metal seat. This dual, bi-directional seat design provides positive sealing even when the resilient seat has been destroyed by fire. The Fyre-Block® option with dual seat design meets the API 607 standard, 6th Edition.

Special Construction Options

Fugitive Emissions Packing Systems

To enable manufacturers to meet clean air regulations, DeZURIK offers options for fugitive emissions control including live loaded and dual packing sets. Dual packing options feature a primary and secondary packing set, lantern ring and emissions sniffing port. When required, the packing gland can be live loaded with spring washers to maintain compression, even through extreme thermal cycling. Live loaded and dual packing options have been cycle tested per EPA method 21 and have been proven to provide long service life with emissions control well below Clean Air Act regulations of 500 parts per million. Live loaded packing and dual packing sets are available in the BHP butterfly valve with a bolt-on packing chamber.



NSF/ANSI 61, 372 Certified for Drinking Water

DeZURIK BHP High Performance Butterfly Valves are specially designed for critical applications in the water industry, where high pressures, high velocity flows and stainless steel construction are required. When specified, DeZURIK BHP Valves are certified to meet the NSF/ANSI-61, 372 standard *Drinking Water Systems Components – Lead Content* which provides recognized safety in municipal water service.

Typical Water Applications

High Service Pumps:

- Transmission lines requiring NSF 61, 372 approval
- Pressures over 250 psi (1720 kPa)
- Pump isolation at pressures in excess of 250 psi (1720 kPa)
- Control Check service at pressures in excess of 300 psi (2070 kPa)

Typical Wastewater Applications

- Aeration lines in filter systems
- Oxygen and Ozone service



Fire-Tested Per API 607 Standard

The High Performance Butterfly Valve with Fyre-Block® FB construction and manual actuators are certified to API 607, 6th edition fire tests. Fyre-Block® valves offer a seat and seal design that provides positive sealing, even when the resilient material has been burned away. It is also certified to ISO 10497:2010.



BTG Tail Gas Butterfly Valves

DeZURIK has specially designed the Tail Gas High Performance Butterfly Valve to meet the rigorous requirements of services where polymerization or solidification of media can prevent valve operation, including: Tail gas service in refinery sulfur recovery units, polymer processing or adhesive manufacturing.

DeZURIK standard High Performance Butterfly Valves are available with standard steam jackets for less rigorous requirements, but Tail Gas Valves include unique features which keep the valve at process temperature and protect critical bearing and seat areas. In addition to steam jacketing the body, internal steam passage ports are located near the upper and lower body bearings. These features prevent hydrogen sulfide and other media from solidifying, freezing the bearings, damaging the seat and preventing tight shutoff. NACE trim is standard (NACE MR0175) with 316 stainless steel bearing.



Critical Service Valve Cleaning & Packaging

Meeting the highest standards for special valve cleaning and packaging services is of paramount importance for DeZURIK. In order to ensure proper cleaning procedures are performed on BHP High Performance Butterfly valves intended for oxygen, ozone, chlorine, hydrogen peroxide, isocyanate and other applications, DeZURIK has constructed a dedicated clean room within its Sartell manufacturing plant. Our professional, skilled and trained cleaning technicians maintain a safe environment for a wide variety of cleaning services.



Sales and Service

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

Web Site: www.dezurik.com E-Mail: info@dezurik.com



250 Riverside Ave. N. Sartell, Minnesota 56377 • Phone: 320-259-2000 • Fax: 320-259-2227

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