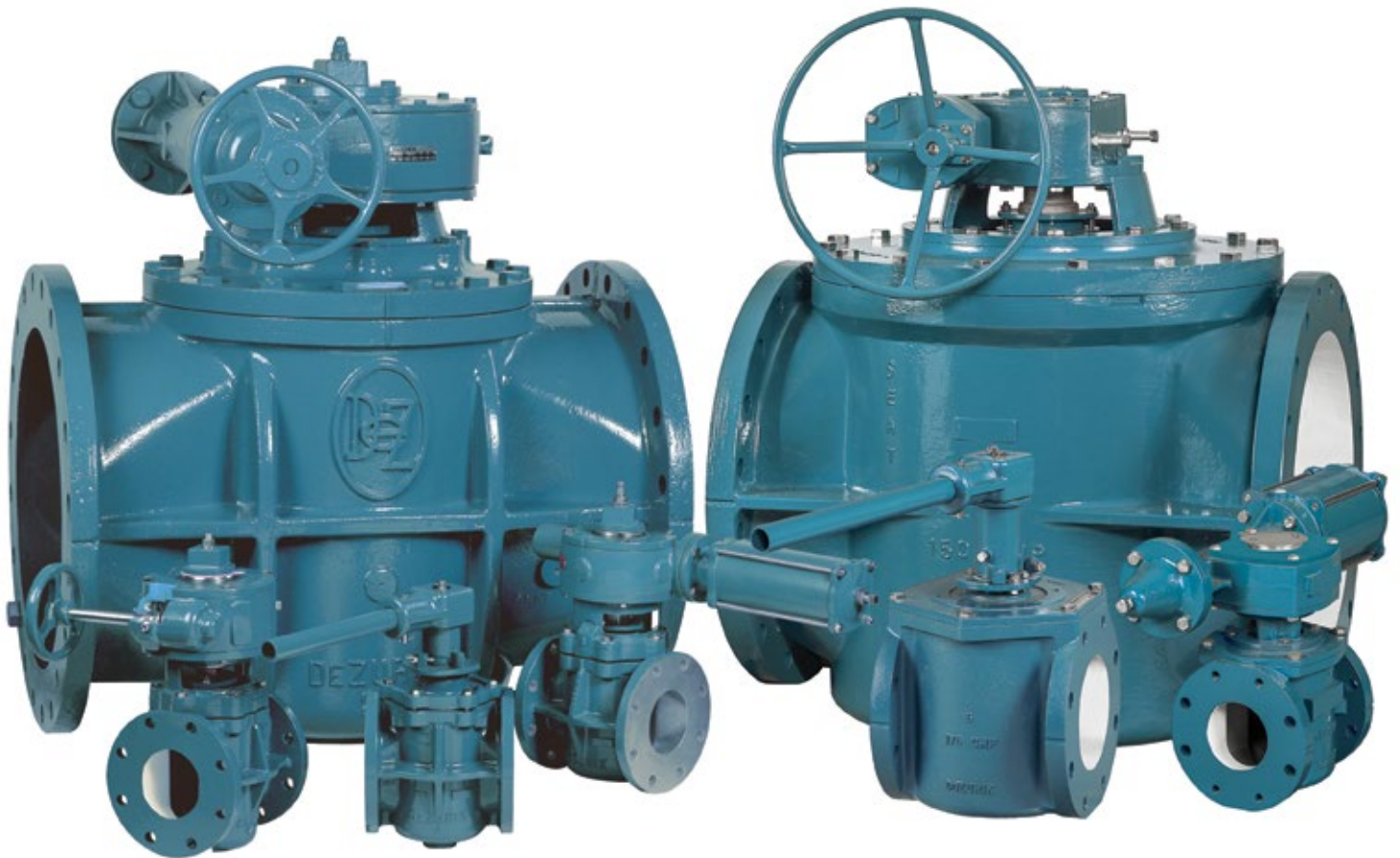


## **DeZURIK 3" (75MM) & LARGER ECCENTRIC PLUG VALVES**



# The DeZURIK Eccentric Plug Valve

In thousands of installations worldwide, DeZURIK Eccentric Plug Valves have a proven record of long-term reliability. A wide variety of value-added design features and lowest total cost of ownership have made it the preferred choice of engineering, operations and maintenance personnel. DeZURIK Eccentric Plug Valves are currently present in most U.S. water/wastewater treatment plants and on a wide range of industrial applications worldwide.

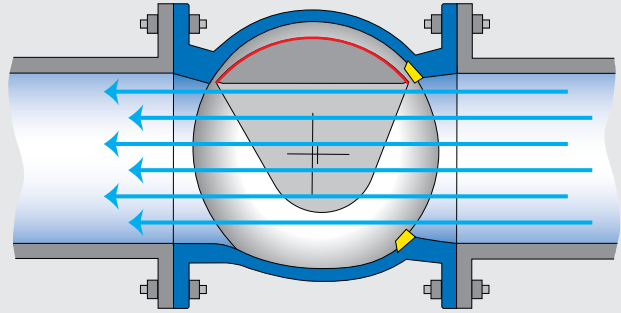
Originally, the Eccentric Plug Valve was developed by Matt DeZURIK in 1928. Since then, DeZURIK has advanced valve reliability and application technology with the design enhancements delivered in the latest Eccentric Plug Valve.

DeZURIK's product dependability, long service life and unmatched quality have set the standard for Eccentric Plug Valves. DeZURIK is committed to providing the best in product design as measured by installed performance.



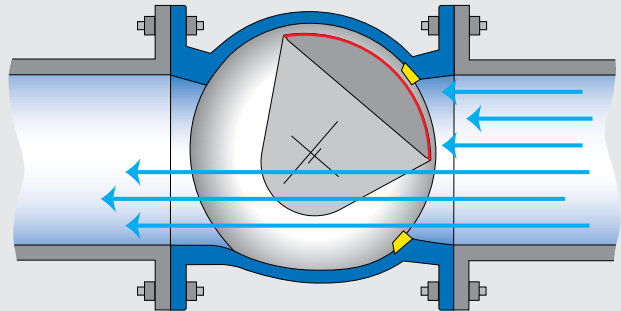
## Eccentric Action/Rectangular Port

Quarter turn eccentric action and resilient plug facings ensure lasting bubble-tight shutoff. As the eccentric plug rotates from open to closed, it moves into a raised eccentric seat.



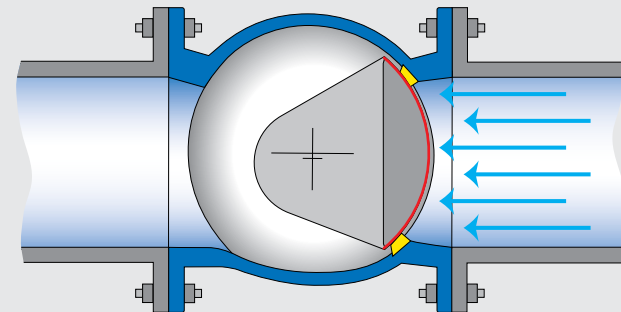
### Open

In the open position, the plug is out of the flow path.



### Closing

As the plug closes, it moves eccentrically toward the seat without scraping the seat or body walls, so there is no plug binding or wear.



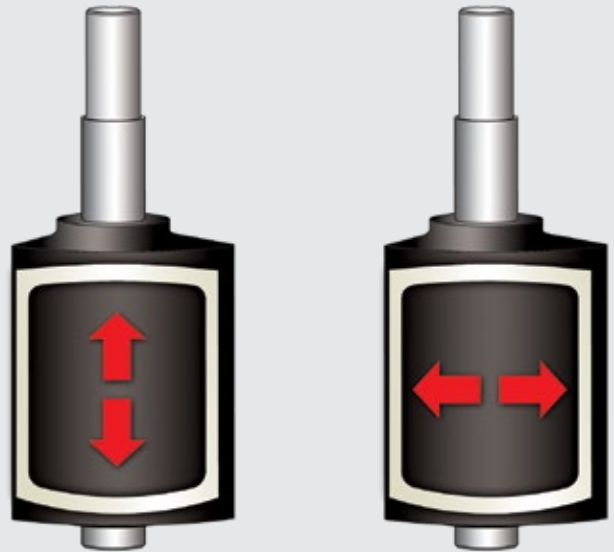
### Closed

The resilient plug face makes full, uniform, firm contact with the seat for bubble-tight shutoff.

## Rectangular Port for Improved Shutoff

The rectangular area port of the DeZURIK Eccentric Plug Valve avoids the wear and other problems associated with point-to-point seating in valves utilizing a segmented ball design.

With the cylindrical plug and rectangular port of the DeZURIK Eccentric Plug Valve, exact plug-to-seat alignment is not required. Axial alignment is not an issue, as it does not affect seat contact. Rotational alignment is provided by the eccentric action of the plug as it moves into the seat making uniform, full contact. Without the need for exact alignment, the plug shutoff position has much wider tolerances and provides more reliable shutoff.



Axial plug movement is not critical to plug/seat alignment or shutoff.

Plug rotation up to 95° assures bubble-tight shutoff at all pressures and compensates for normal wear.



## Reliable, Multiple Ring Packing

Multiple V-Ring packing in a machined packing chamber and an adjustable gland provide the best technology in packing design. The multiple packing rings are compressed to provide self-compensation for wear.

## Easy Inspection and Maintenance

The gland is very easily accessible for inspection or adjustment to further extend packing life. And most importantly, packing can be inspected, adjusted or replaced under pressure without removing the valve from service. Actuator removal and valve disassembly is not necessary.

## Corrosion Resistant Bearings

Heavy-duty corrosion resistant bearings prevent binding and ensure lasting easy valve operation without lubrication. These rugged stainless steel bearings are furnished in the top and bottom journals of all valves.

## Grit Excluders at Plug Journals

Grit excluders prevent the entry of grit and foreign solids into the bearing area to assure lasting ease of operation.

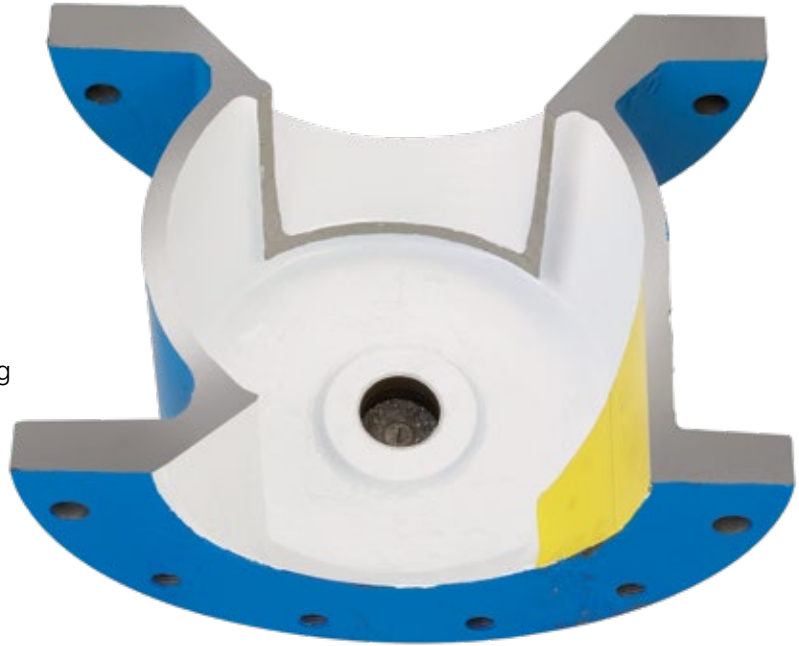
# Reliable Design for Long Life & Low Maintenance

## Heavy Duty Construction

Robust construction and application-based design features maximize valve performance and extend service life to provide reliability at the lowest possible installed usage cost.

## Welded Nickel Seat for Corrosion Resistance

The welded nickel seat provides the best protection against seat corrosion that can cause plug face damage and leakage. Welded with 95% pure nickel, the raised seat is 1/2" wide and 1/8" thick. The raised seat provides an area for solids to be pushed away, ensuring positive closure.



## Resilient Plug Facings for Long Service Life

Eccentric Plug valves are available with a variety of resilient plug facings. Even if small solids are trapped between the plug and seat, the resilient faced plug seals tightly, preventing seat damage.

## Bond Strength Integrity

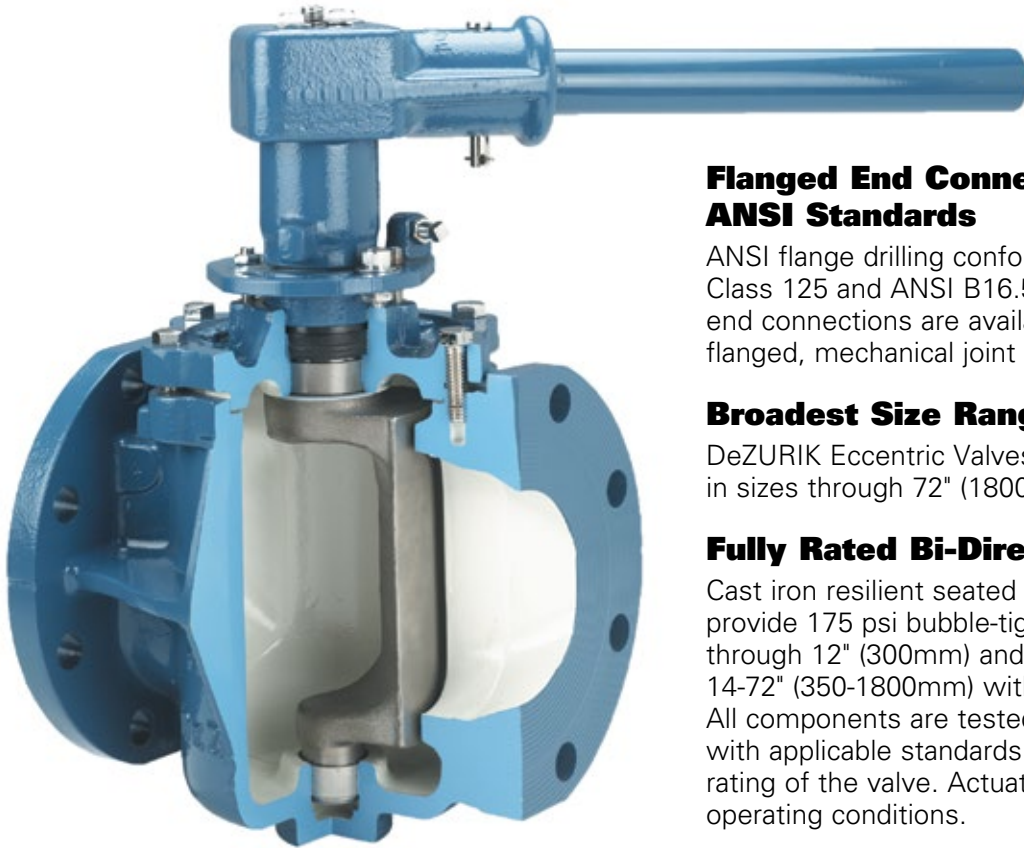
DeZURIK resilient plug facings are vulcanized to the iron plug to achieve superior bond strength. The vulcanizing process produces a resilient faced plug that provides the greatest reliability and longest service life. The resilient face plugs are in full compliance with the AWWA standard C517 and tested per ASTM standard D429 "Test Methods for Rubber Property – Adhesion to Rubber Substrates," Method A (pull test) with minimum strength of 250 psi (1,725 kPa) and Method B (90° Stripping Test) with minimum strength of 75 pounds per inch (13.2 N/mm).

## One-Piece Plug

A one-piece trunnion mounted plug provides the highest rigidity and journal alignment. The plug's cylindrical seating surface is eccentrically offset and does not contact the seat before 90° closed, ensuring long plug life.

## **Compliance With All Applicable Standards**

DeZURIK Eccentric Plug Valves conform to AWWA C517, AWWA C111, ANSI B16.1 and/or ANSI B16.5 as appropriate for Eccentric Plug Valves.



## **Flanged End Connections per ANSI Standards**

ANSI flange drilling conforms to ANSI B16.1, Class 125 and ANSI B16.5 Class 150. Numerous end connections are available including threaded, flanged, mechanical joint and others.

## **Broadest Size Range**

DeZURIK Eccentric Valves are available in sizes through 72" (1800mm).

## **Fully Rated Bi-Directional Shutoff**

Cast iron resilient seated Eccentric Plug Valves provide 175 psi bubble-tight shutoff in sizes through 12" (300mm) and 150 psi in sizes 14-72" (350-1800mm) with flow in either direction. All components are tested and rated in compliance with applicable standards and to the full pressure rating of the valve. Actuators are sized for actual operating conditions.

## **Wide Application Range**

Application-based construction features meet the requirements of a wide range of service conditions requiring robust construction, economy and dependability. DeZURIK Eccentric Plug Valves are designed for applications throughout water and wastewater treatment plants, pump stations and dirty water collection systems. The Eccentric Plug Valve can handle a variety of liquids, gasses and solids including air, water, slurries, hydrocarbons and chemicals.

## **Outstanding Control Characteristics**

DeZURIK Eccentric Plug Valves are ideal for control applications. They have an inherent modified equal percent flow characteristic for predictable and reliable control response. Their high critical factors also make them highly resistant to cavitation and associated damage.



# Eccentric Plug Valves Handle Challenging Applications

## Abrasive Slurries / Grit

The DeZURIK Soft Rubber Lined Eccentric Plug Valve has proven to be an excellent valve for on-off corrosive and abrasive slurry service. The raised seat and eccentric action pushes solids away to provide positive closure. DeZURIK soft rubber lined valves are used in grit, ash handling systems, scrubber circulating and effluent discharge, thickener feed and under-flow, ball and rod mill feeds, classifier feeds, reclaimed water, and tailing systems.



## Digester Gas

The DeZURIK Eccentric Plug Valve provides solutions for all digester gas systems. Straight through port has low friction losses. Eccentric action and XNBR (Carboxylated Nitrile Butadiene) rubber faced plugs provide bubble-tight shutoff even with dirty solids and slimy deposits in the flow. The stainless steel bearings resist corrosion, prevent binding and assure lasting, easy valve operation. Worm Gear actuators assure tight shutoff to prevent methane gas leakage.

No matter what the digester gas composition, DeZURIK has a material combination to meet your needs.

- Aluminum body and plug combination is used where moderate H<sub>2</sub>S (Hydrogen Sulfide) and moisture are carried in the piping system.
- Aluminum body and stainless steel plug combination is used where corrosive moisture might enter the plug journals.
- Soft rubber-lined body and stainless steel plug combination provides protection against most other digester gas applications.
- Cast iron body and stainless steel plug combination is used where systems are moderately dry and economics dictate the use of cast iron.



### **Struvite**

Struvite, a common mineral in wastewater treatment plants, is magnesium ammonium phosphate. Struvite's crystalline structure tends to quickly buildup in valves, piping and equipment, severely restricting flow and reducing pressure. Glass-lined DeZURIK Eccentric Plug Valves provide a smooth, non-stick surface which inhibits Struvite adhesion and alleviates the risk of crystal building up, breaking off and interfering with downstream equipment.

### **Pump Check**

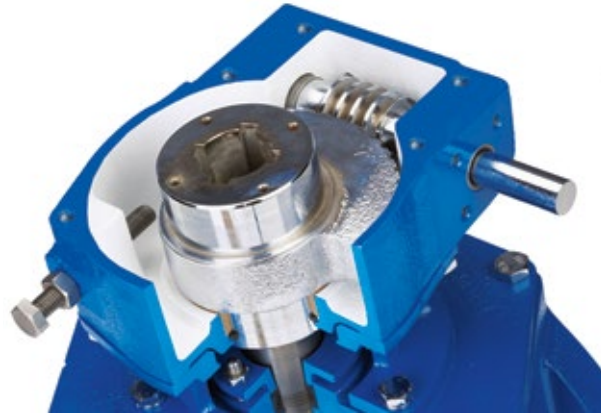
Water Hammer. Reverse Flow. Pump Backspin. Any number of conditions can cause expensive damage to pumps and piping systems. DeZURIK has been in the business of providing solutions to your pump system regulation needs since 1932. We can provide custom-designed and engineered valves for pump flow control applications. Powered Pump Check Valves offer significant advantages over gravity or spring-operated valves.



# Rugged Actuators Match Valve Performance

## Manual Actuators

DeZURIK manual actuators are constructed for quality and performance, per AWWA standard C517. Handwheel actuators feature enclosed and sealed construction, protecting moving parts from damage or corrosion. Continual lubrication is not required for operation ease. Heavy-duty, corrosion-resistant actuator bearings provide lasting, easy valve operation and overall reliability. Rugged actuator castings, gears and shafts also add to reliability by ensuring permanent alignment of moving parts for smooth operation.



## Cylinder Actuators

DeZURIK cylinder actuators have demonstrated reliability and performance to match. These actuators utilize a rack and pinion design for long lasting efficient operation. DeZURIK's unique triple wiper PTFE piston seals have very low friction for long life and precise control.

Cylinder actuators provide long life and reliability to meet the requirements of a wide range of shut off and control applications. They feature heavy-duty construction of gears, pistons and piston rods, ensuring smooth operation for better control. Enclosed and sealed construction protects internal actuator parts from dirt and corrosion.



## Accessories

We offer a full line of extensions and accessories, including enclosed neck extensions, extended operating nuts, floorstands, valve boxes, floor boxes, solenoid valves, switches, speed control valves, positioners and electric motor operators.

## Sales and Service

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

**Web Site:** [www.dezurik.com](http://www.dezurik.com) **E-Mail:** [info@dezurik.com](mailto:info@dezurik.com)



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

*DeZURIK, Inc. 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, Inc. Certified drawings are available upon request.*