



**DeZURIK KGC-BD  
BI-DIRECTIONAL CAST  
STAINLESS STEEL  
KNIFE GATE VALVE**



## Design and Construction

The DeZURIK KGC-BD Bi-Directional Resilient Seated Knife Gate Valve features a unique, patented perimeter seat design that provides bubble-tight shutoff in either direction, even on dead end service. The valve is designed for isolation – on/off applications in the paper, chemical, mining, wastewater and power industries. It is designed to handle clean, dirty, viscous and corrosive liquids; sludge; fibrous slurries; clean and corrosive gases.

Available in sizes 2-36" (50-900mm), the KGC Bi-Directional valve features a rounded cast packing chamber, rounded gate edge and packing options to meet the demands of your specific application. All of these features combine to provide improved sealing, extended packing life and reduced maintenance.

## Size Range and Pressure

The DeZURIK KGC-BD Bi-Directional Knife Gate Valve comes in sizes 2-36" (50-900mm) with the following Cold Working Pressure (CWP) ratings:

2-28" (50-700mm) 150 psig CWP (1030 kPa)

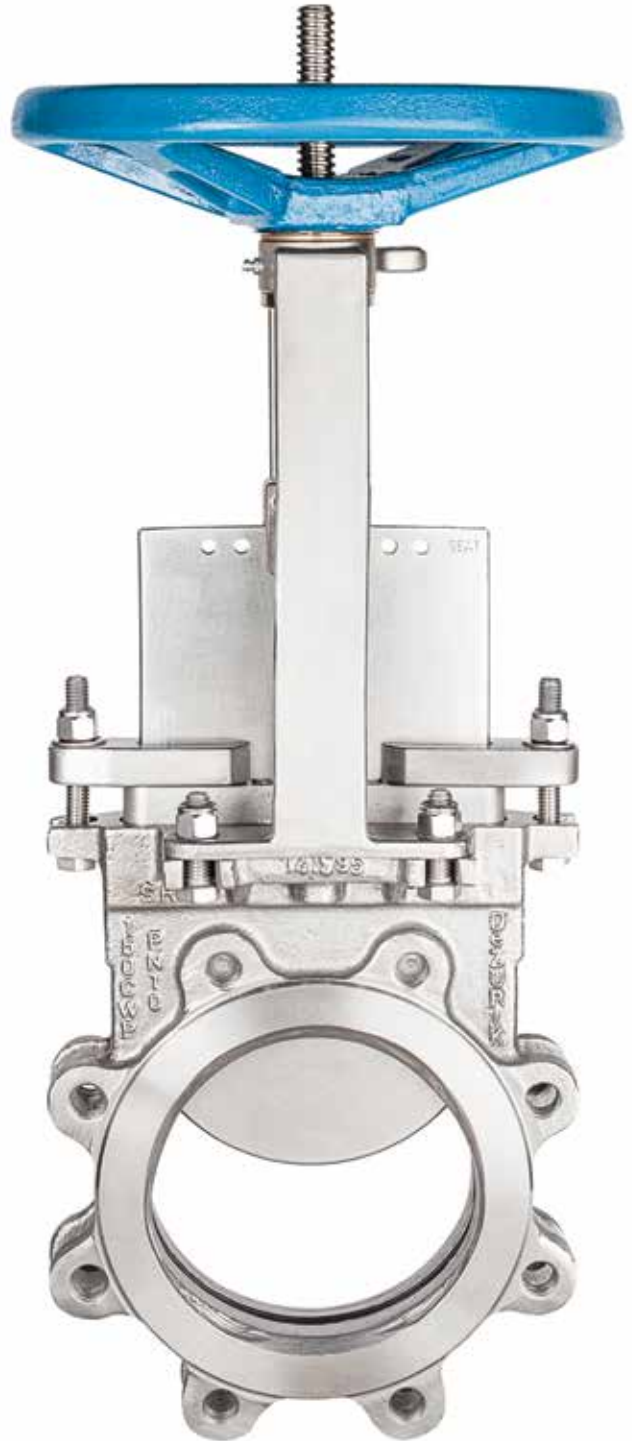
30-36" (750-900mm) 100 psig CWP (690 kPa)

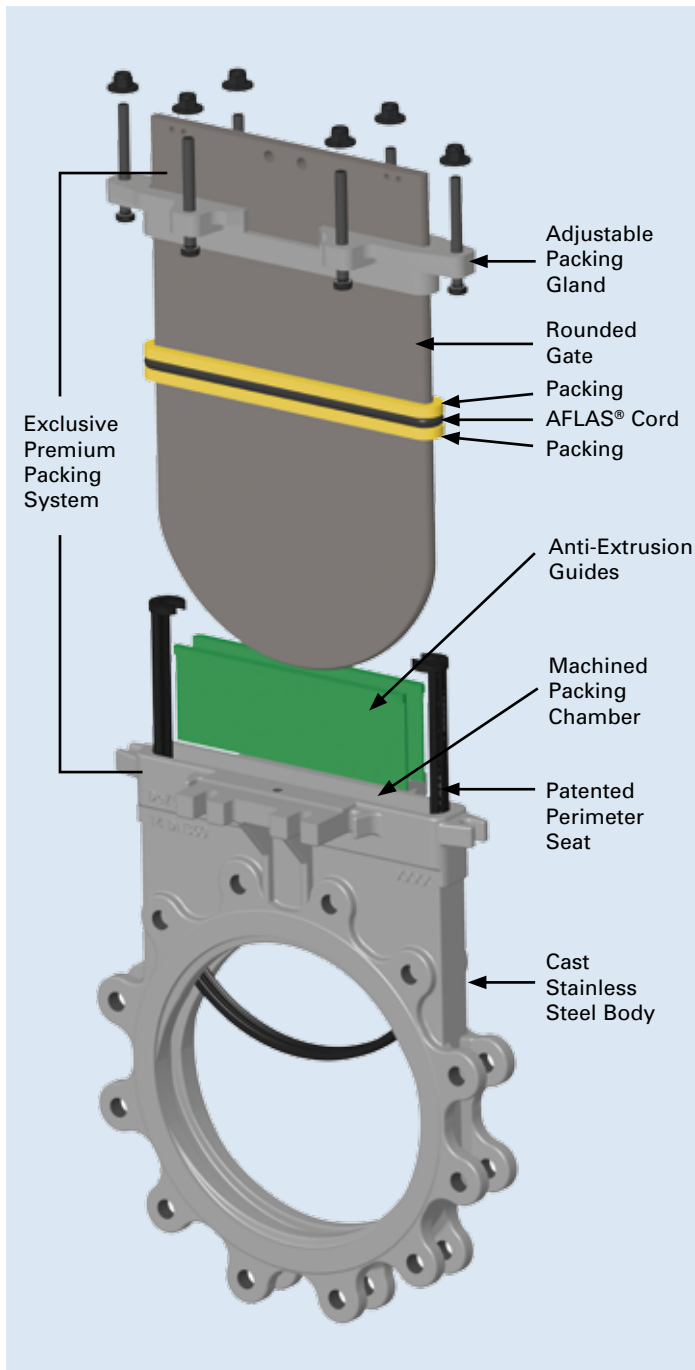
## Choice of Materials

The heavy duty cast body is available in 304, 316 or 317 stainless steel (other alloys on application). The finish ground gate is also stainless steel. Five options for resilient seat materials (Chloroprene CR; Off-White Chloroprene CRW; Terpolymer of Ethylene, Propylene and a Diene EPDM; Acrylonitrile-Butadiene NBR; and Fluoro Rubber FKM) and three packing options are available to match your application requirements. The standard super structure is carbon steel or 304 stainless. Corrosion resistant stainless steel cylinder construction is also available as an option.

## Rounded Stainless Steel Gate

Gates are available in 304, 316, 317, 17-4, 254-SMO, 410, 2205 Duplex Stainless Steel or Hastelloy C for corrosion resistance. The gate has a precision ground finish on both sides to prevent packing and seat damage.





### **Bubble-Tight, Bi-Directional Shutoff**

The KGC-BD Bi-Directional Knife Gate Valve provides bubble-tight shutoff in both directions up to the full rating of the valve. There is no recommended flow direction—and the valve does not require line pressure to seal. The interference fit between the gate and seat provides bubble tight shutoff throughout the pressure range. The valve can be used in either direction on dead end service without a mating flange.

### **Perimeter Seat Seal**

The rounded gate provides full perimeter sealing against the seat, eliminating a pocket in the seat that could potentially trap process media and prevent the valve from fully closing.

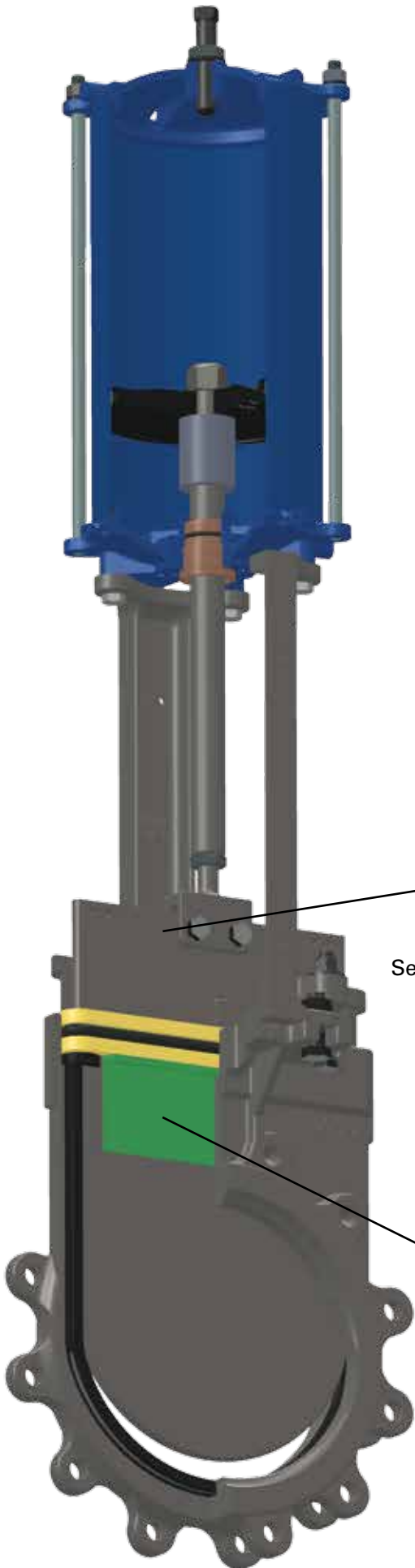


### **Maximum Flow Capacity**

The 100% full port area is equal to ASME B36.10 standard pipe, and provides maximum flow capacity and minimum pressure drop.

### **Full Gasket Sealing**

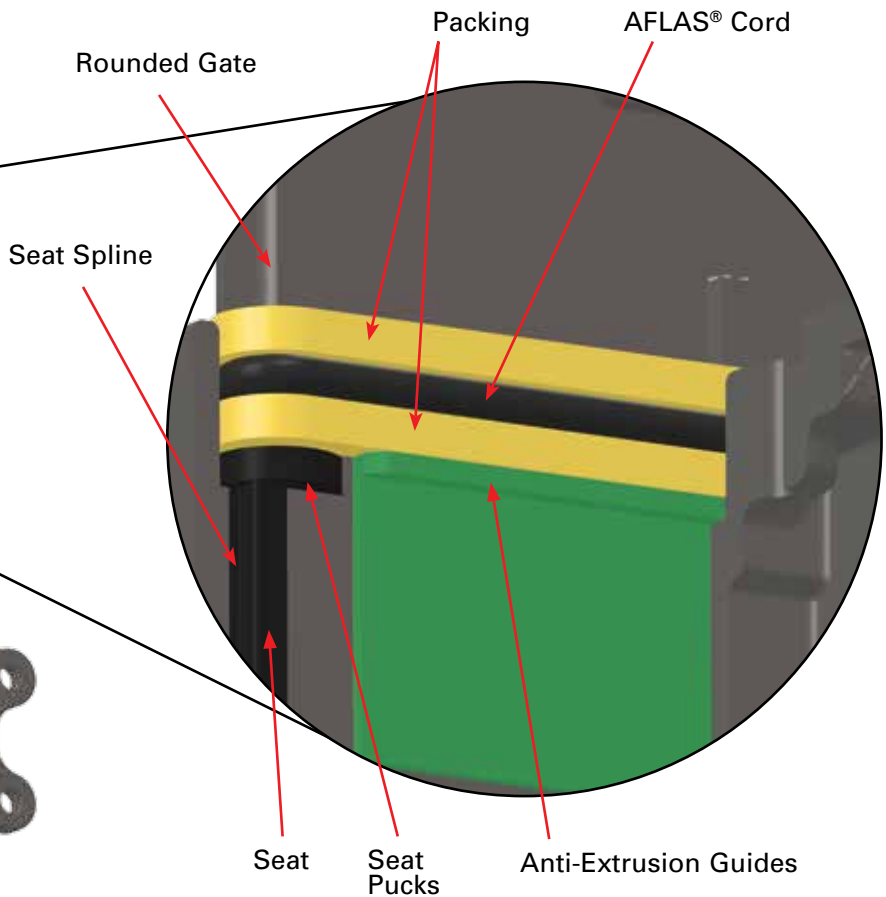
For maximum gasket sealing, the KGC-BD end connections conform to ASME B16.20 dimensions for spiral-wound gaskets.



### Patented Seat Design

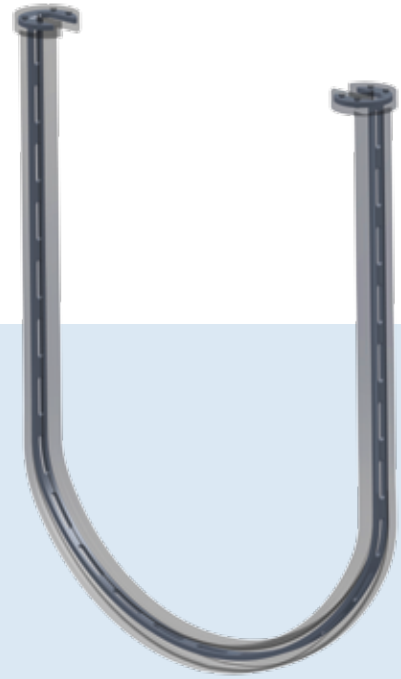
The KGC-BD Bi-Directional Knife Gate Valve combines a patented design, one-piece rubber molded seat with encapsulated full 316 stainless steel metal reinforcement insert, a spline and puck that work together to lock the seat securely into the valve body. This unique seat design prevents buckling or dislodgement that can occur with other perimeter seat designs.

In addition, the KGC-BD features the exclusive premium packing system that includes high performance packing material options and anti-extrusion guides. When specified, an energized AFLAS® fluoroelastomer cord keeps pressure on the packing to maximize sealing.



## Unique Perimeter Seat Design

The superior design of the KGC-BD perimeter seat has three distinct features that prevent buckling or dislodgment during operation. These patented features combine to give the KGC-BD outstanding installed performance.



### 1. One-Piece Rubber Molded Seat with Full Metal Insert

The one-piece, resilient seat has a full 316 stainless steel reinforcement insert encapsulated in the seat molding that provides rigidity to the seat. This special design was developed specifically to address the problems associated with seat pull-out that can occur with other perimeter seat designs when the valve is stroked.

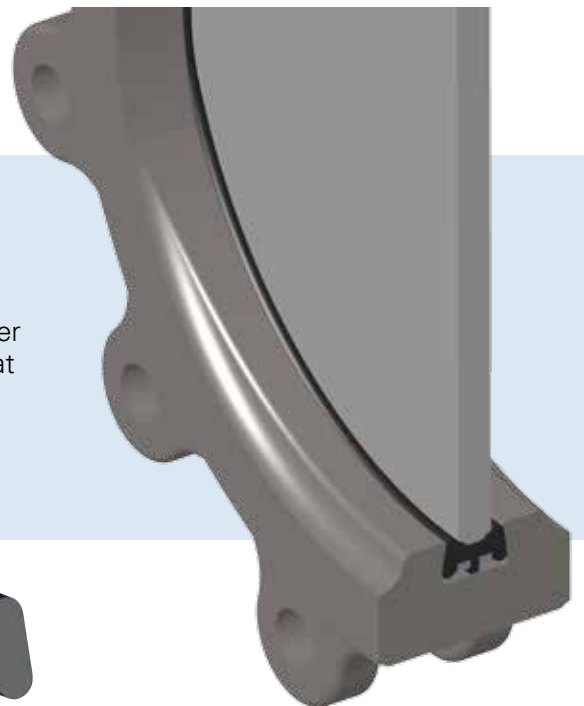


### 2. Seat Pucks Securely Locked Into Packing Chamber

The seat pucks at the top of the rubber-molded seat sit securely in machined pockets in the bottom of the packing chamber. This mechanically retains the seat and keeps it firmly in place, even in the most demanding applications. And because the pocket is recessed into the valve body, there is no interference with the integrity of the packing.

### 3. Dove Tail Seat Locked Into Body Groove

The perimeter seat is locked into the body dove tail groove that runs throughout the valve body. The fully molded, rubber back spline creates a tight seal between the back of the seat and the body.



## DeZURIK Exclusive Premium Packing System

Because the pucks sit in machined pockets in the packing chamber, there is no intrusion into the packing chamber. The KGC-BD valve has the DeZURIK Exclusive Premium Packing System that includes a fully machined rounded cast packing chamber, rounded gate edge, anti-extrusion guides and a variety of packing material options.

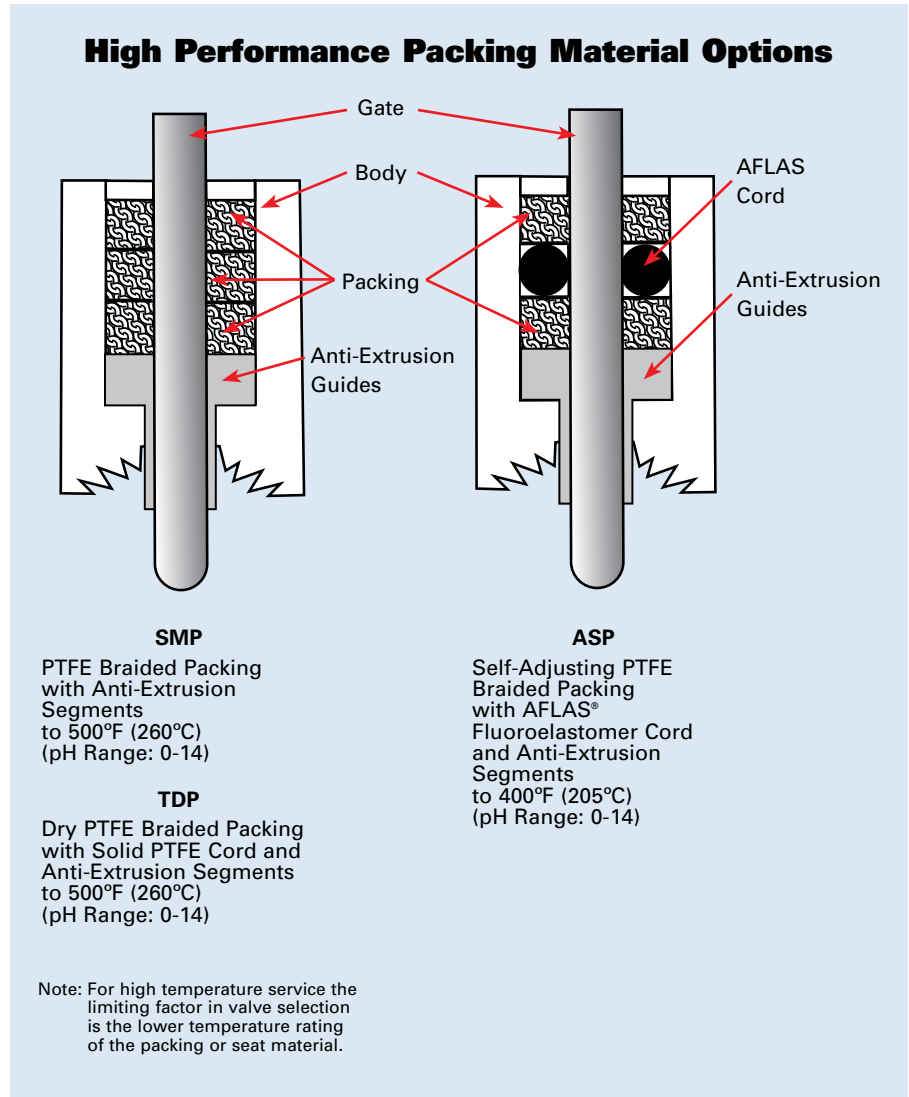
### Putting "The Premium Packing System" To Work

The KGC-BD packing system includes a number of features that:

- Extend service life
- Require fewer packing adjustments
- Reduce external leakage
- Ensure alignment of the gate
- Minimize friction and actuator thrust required
- Allow field replacement of packing

### Application Factors That Affect Your Packing Selection For Optimal Sealing

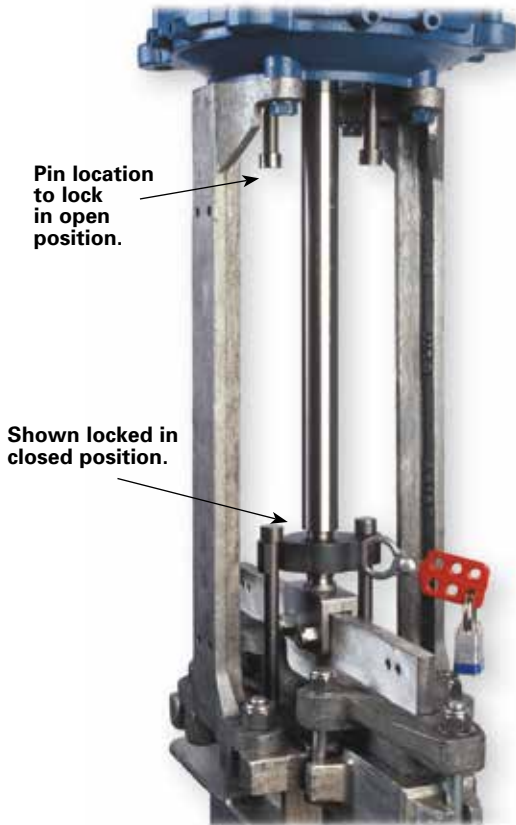
- Compatibility with process media
  - Clean, dirty or slurry application
  - Temperature
  - pH Acid-Base level
  - Life cycle stroke frequency
  - Scaling or crystallization on gate
- Sealing
  - Energized AFLAS® Fluoroelastomer Cord in ASP Packing will keep pressure on the packing material to maximize seal.
  - Adjustable Packing Gland will renew the seal by increasing the compression of the packing to seal the valve



- Scraping
  - Anti-Extrusion Guides functions as a gate scraper, designed to prevent process media from entering packing chamber.
- Supporting
  - Anti-Extrusion Guides support packing, keep packing from extruding between body and gate, and also maintain gate alignment to maximize sealing performance.

## Lockout Option

KGC-BD provides the latest in lockout design technology to protect both people and the environment. Unique designs for manual and automated models are available. The lockout collar for the automated models allows fine adjustment to ensure tight shutoff and maximum opening position. Lockouts are fully rated to withstand the maximum output of the actuator.



Cylinder Lockout Position



Handwheel Lockout Option

## Actuators

- Handwheels
- Chainwheels
- Bevel Gears
- Pneumatic Cylinders
- Hydraulic Cylinders
- Electric Motors

## Accessories

A variety of accessories are offered as standard, including handwheel extensions, floorstands and a variety of cylinder actuator accessories for customizing the valve/actuator package to meet specific application requirements.

## Options

DeZURIK Cast Knife Gate Valves may be ordered with the following options to meet your application requirements:

- Corrosion resistant cylinder actuator materials
- Lockouts
- Hardened gates
- Bonnets

## **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)**



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