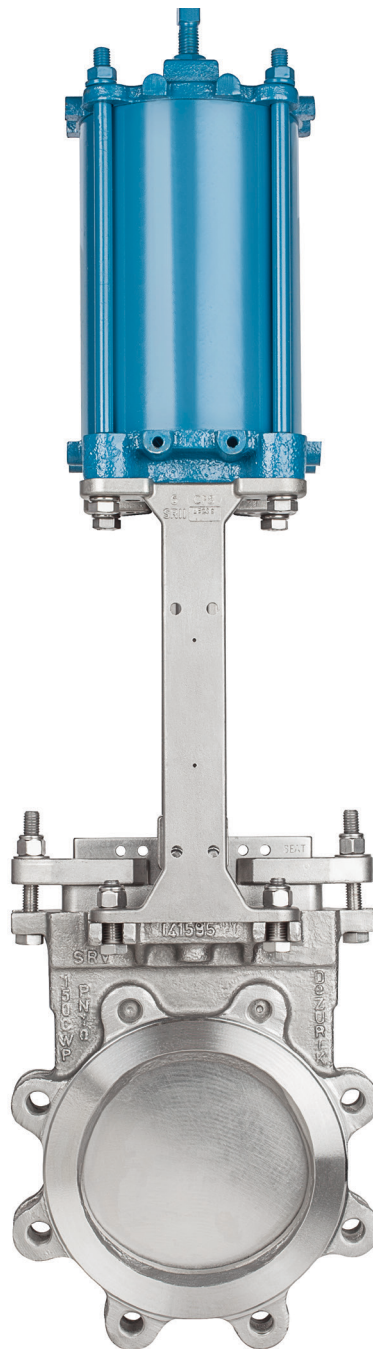


# **DeZURIK KGC-BD BI-DIRECTIONAL CAST STAINLESS STEEL KNIFE GATE VALVE**



## 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:

2-24" (50-600mm) 150 psig CWP (1030 kPa)

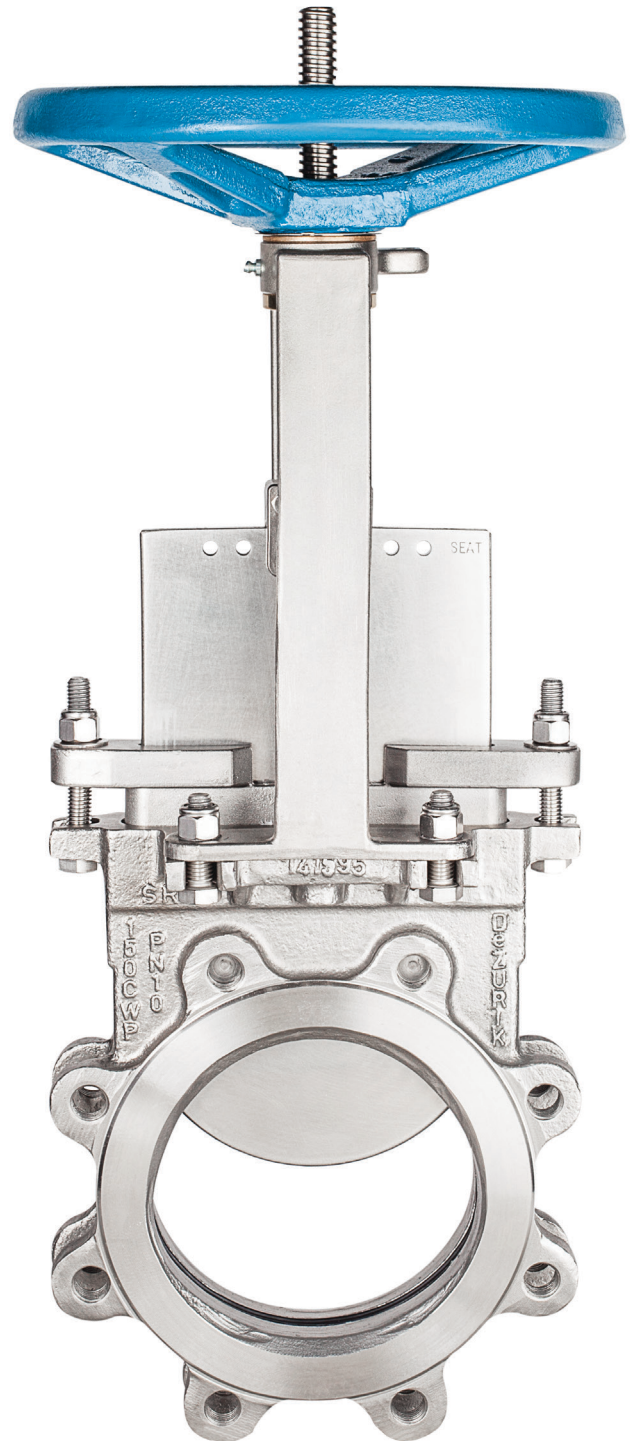
30-36" (750-900mm) 100 psig CWP (690 kPa)

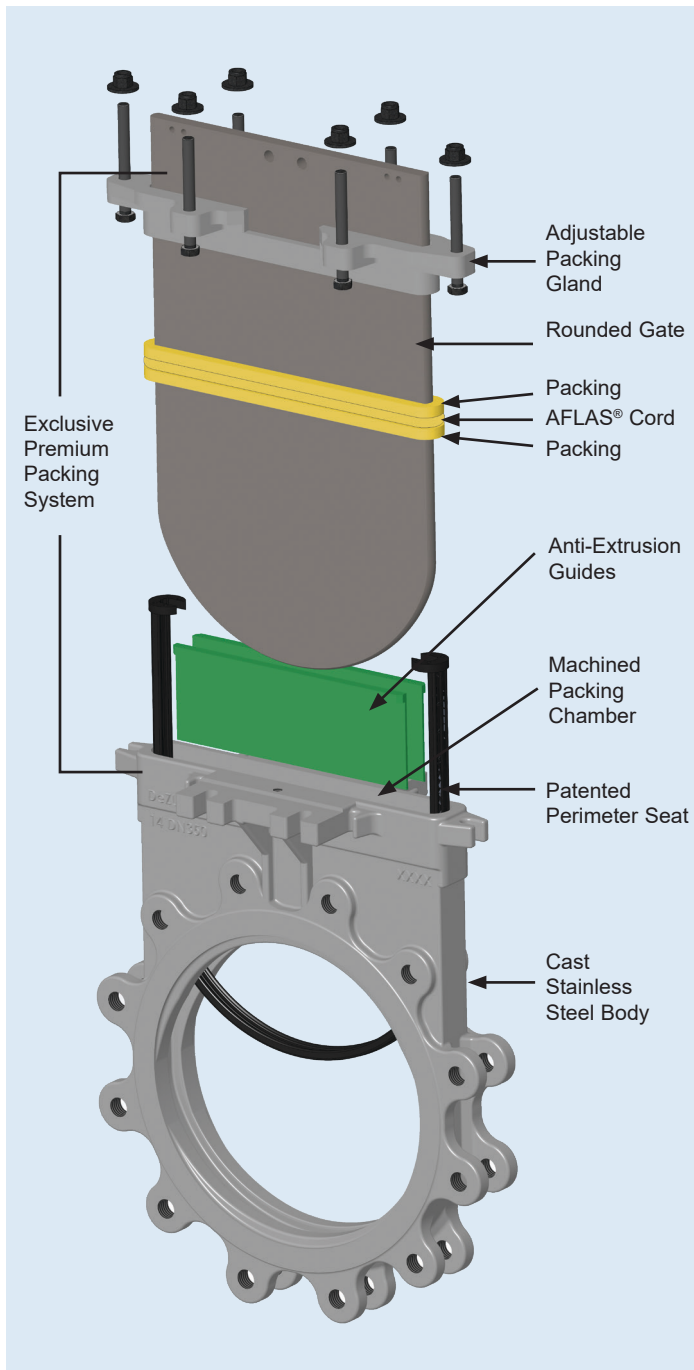
## Choice of Materials

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.



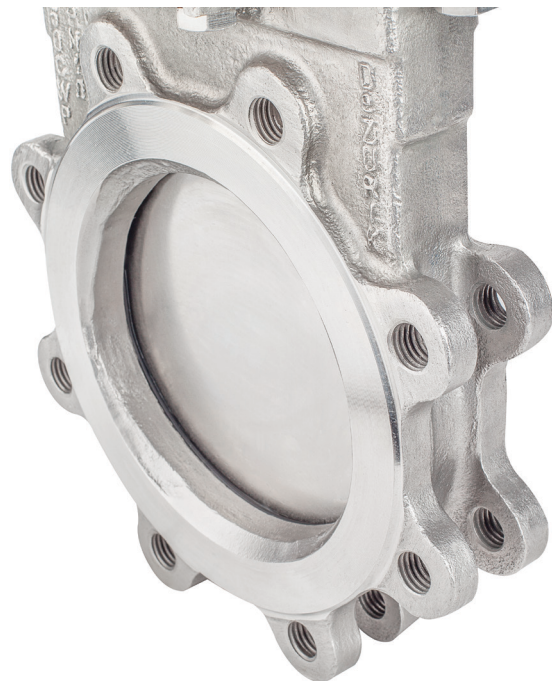


## Bubble-Tight, Bi-Directional Shutoff

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.

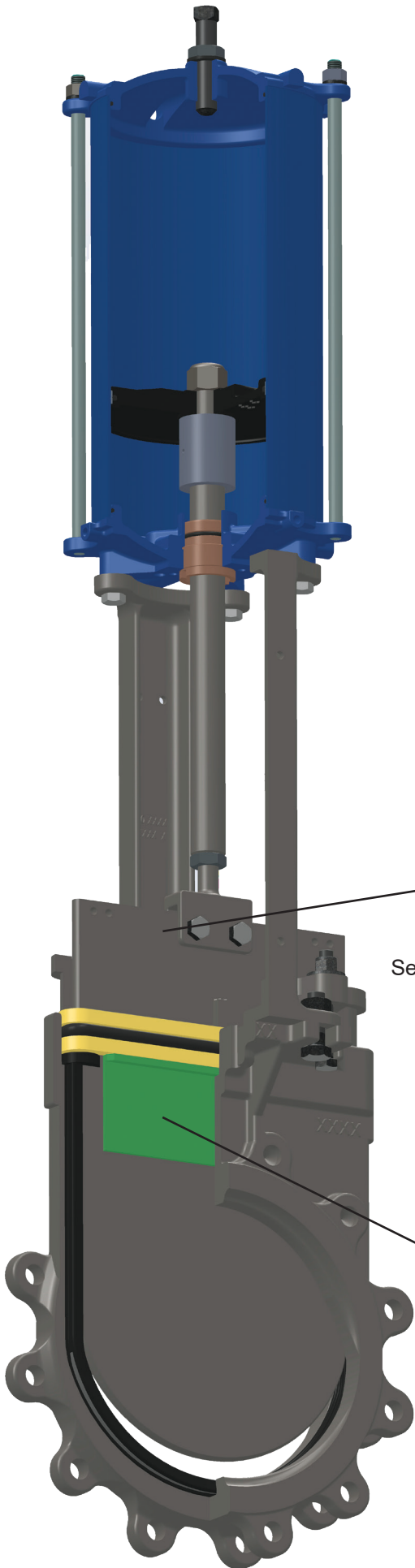


## Maximum Flow Capacity

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

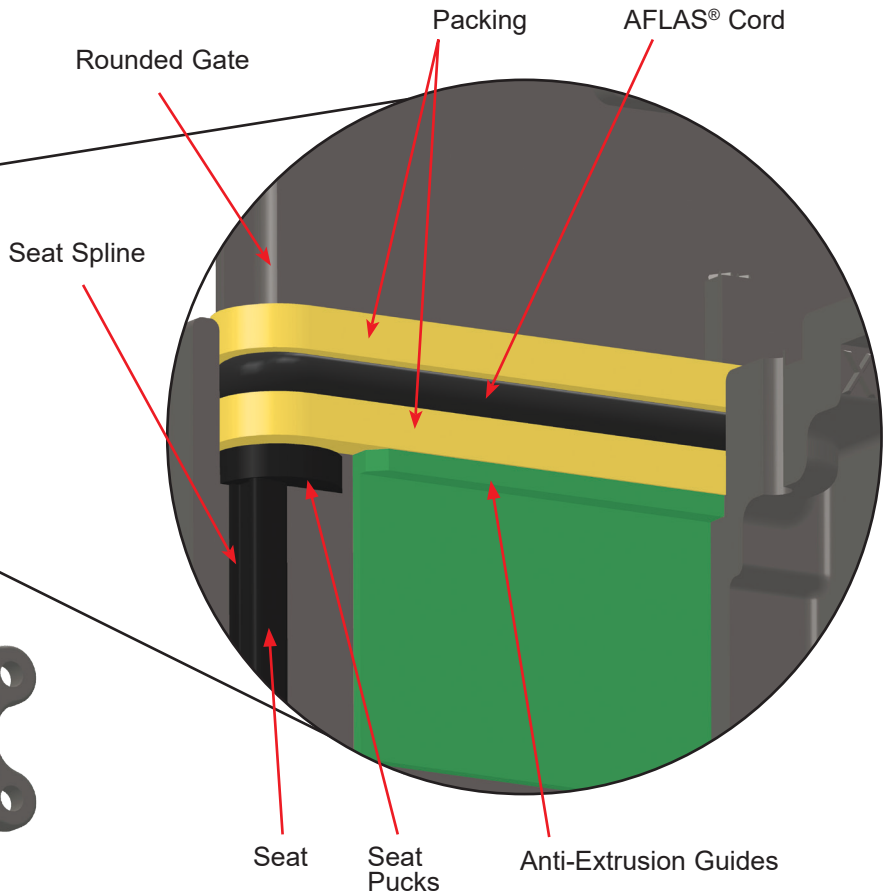
For maximum gasket sealing, the KGC-BD end connections conform to ASME B16.20 dimensions for spiral-wound gaskets.



### Patented Seat Design

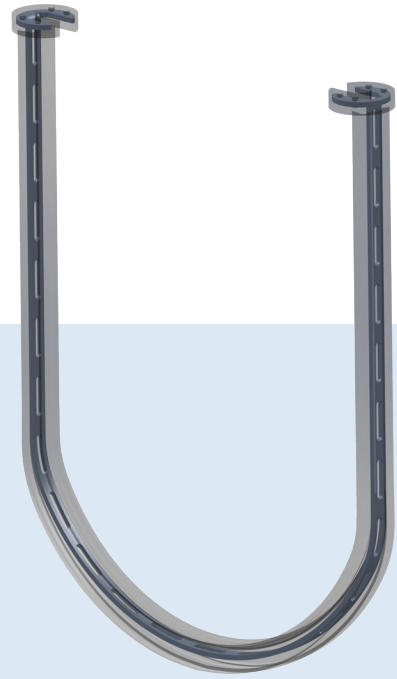
The KGC-BD Bi-Directional Knife Gate Valve combines a patented design, one-piece rubber molded seat with encapsulated full 316 stainless steel metal reinforcement insert, a spline and puck that work together to lock the seat securely into the valve body. This unique seat design prevents buckling or dislodgement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



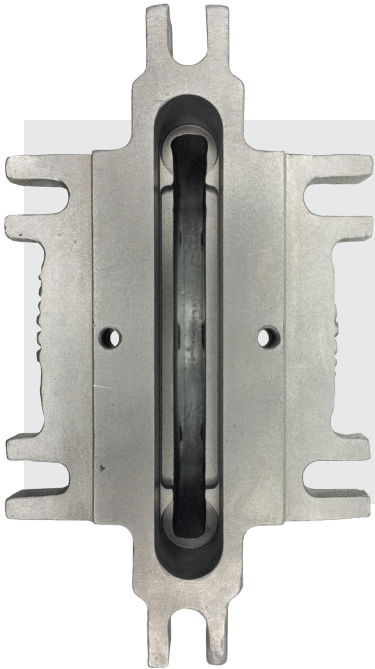
## Unique Perimeter Seat Design

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.

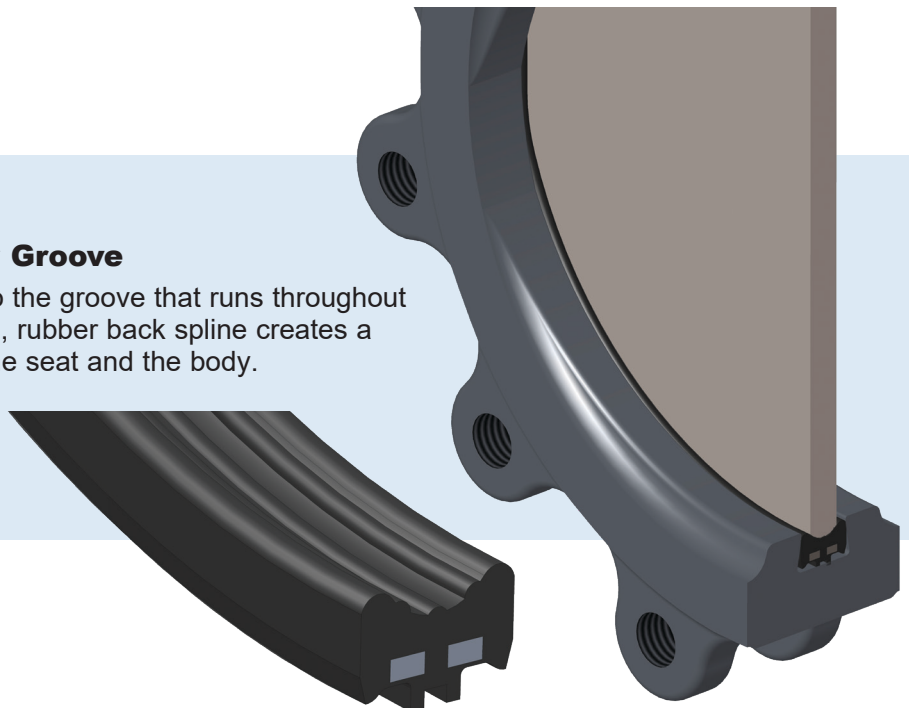


### 2. Seat Pucks Securely Locked Into Packing Chamber

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. Seat Locked Into Body Groove

The perimeter seat is locked into the 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.

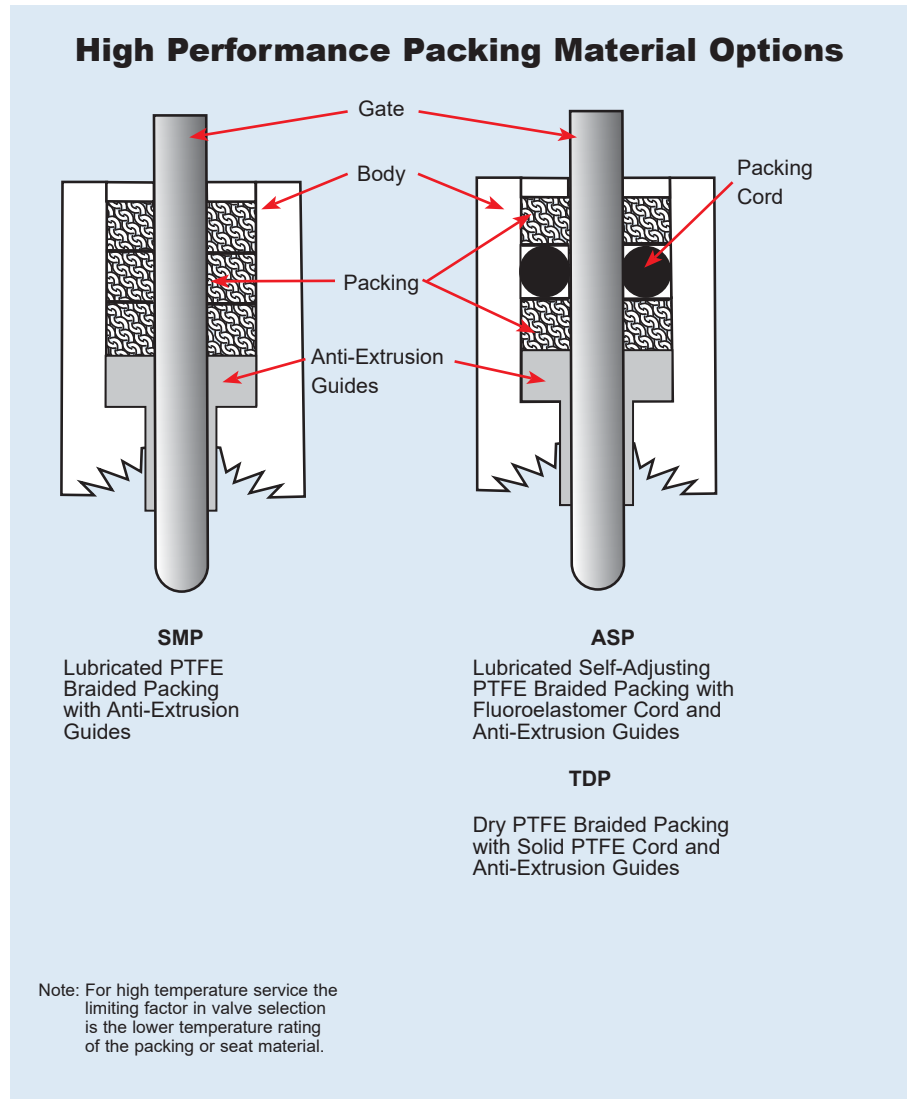
### Putting “The Premium Packing System” To Work

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

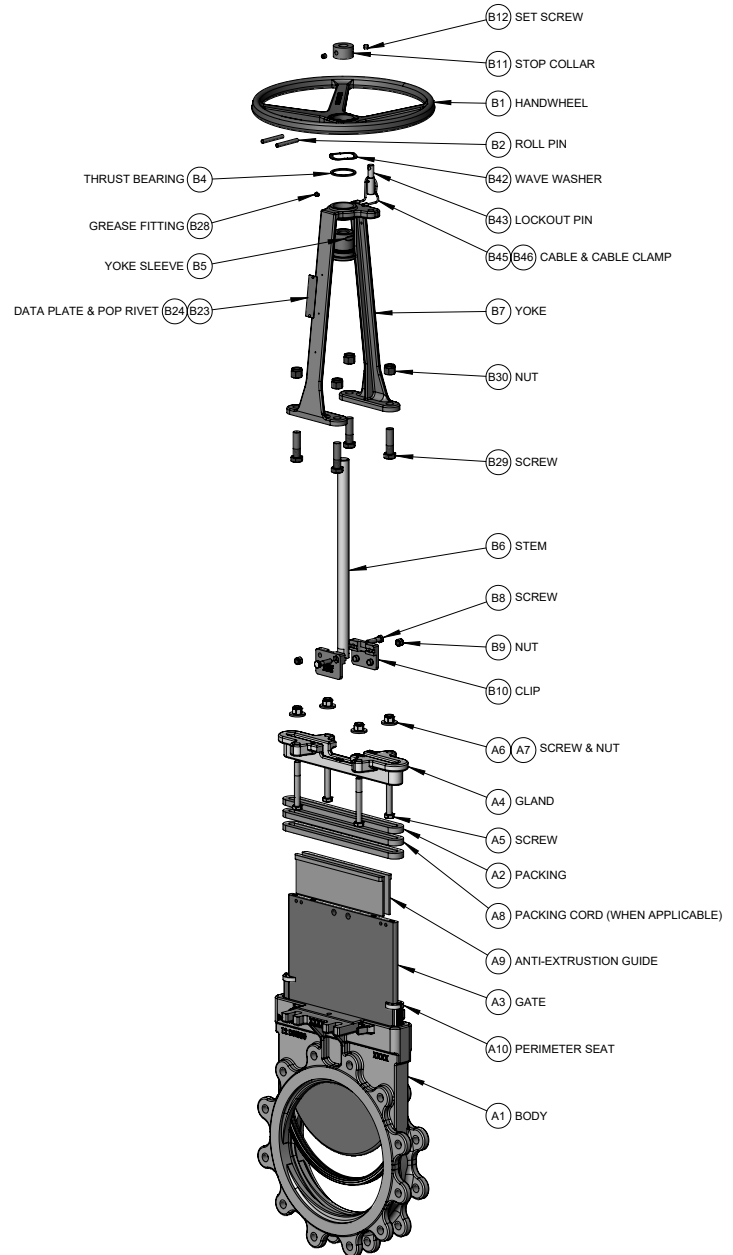
- Compatibility with process media
  - Clean, dirty or slurry application
  - Temperature
  - pH Acid-Base level
  - Life cycle stroke frequency
  - Scaling or crystallization on gate
- Sealing
  - ASP packing with energized resilient cord will keep pressure on the packing material to maximize seal
  - 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

# Materials of Construction

Item	Description	Material
A1	Body	304 Stainless Steel, ASTM A351 CF8
		316 Stainless Steel, ASTM A351 CF8M
		317 Stainless Steel, ASTM A351 CG8M
		254-SMO Stainless Steel, ASTM A351 CK3MCuN
		2205 Duplex Stainless Steel, ASTM A995 CD3MN
A2	Packing	Hastelloy C 276, ASTM A494 CW12MW
		SMP - PTFE Braided Packing to 500°F (260°C) (pH Range 0-14)
A3	Gate	ASP - Self-Adjusting PTFE Braided Packing to 400°F (205°C) (pH Range 0-14)
		TDP - Dry Service, Dry PTFE Braided Packing to 500°F (260°C) (pH Range: 0-14)
		304 Stainless Steel, ASTM A240
		316 Stainless Steel, ASTM A240
		317 Stainless Steel, ASTM A240
A4	Gland	17-4 Stainless Steel H900 Heat Treated, ASTM A564
		254 - SMO Stainless Steel, ASTM A240
		2205 Duplex Stainless Steel, ASTM A276
		Hastelloy C 276, ASTM B574
		410 Stainless Steel, ASTM A240
A5	Screw	304 Stainless Steel
A6	Washer	304 Stainless Steel
A7	Nut	304 Stainless Steel
A8	Packing Cord	Fluoroelastomer Cord to 400°F (205°C) (pH Range 0-14). Used with ASP packing
		Solid PTFE Cord to 500°F (260°C) (pH Range: 0-14). Used with TDP packing
A9	Anti-Extrusion Guide	Glass Filled PTFE
A10	Perimeter Seat*	CR - Chloroprene to 180°F (83°C)
		NBR - Acrylonitrile-Butadiene to 180°F (83°C)
		EPDM - Terpolymer of Ethylene, Propylene and a Diene to 250°F (122°C)
		FKM - Fluoro Rubber to 400°F (204°C)
		CRW - Chloroprene, Off White to 140°F (60°C)
B1	Handwheel	Painted, Cast Iron, ASTM A126 Class B
B2	Roll Pin	Carbon Steel or 420 Stainless Steel
B4	Thrust Bearing	Oil Impregnated Bronze
B5	Yoke Sleeve	Aluminum Bronze
B6	Stem	304 Stainless Steel
B7	Yoke	Carbon Steel, ASTM A216 Type WCB
		304 Stainless Steel, ASTM A351 CF8
B8	Screw	Zinc Plated Steel or 18-8 Stainless Steel
B9	Nut	Zinc Plated Steel or 18-8 Stainless Steel
B10	Clip	304 Stainless Steel
B11	Stop Collar	304 Stainless Steel
B12	Set Screw	Zinc Plated Steel or 18-8 Stainless Steel
B23	Data Plate	316 Stainless Steel
B24	Pop Rivet	18-8 Stainless Steel
B28	Grease Fitting	Zinc Plated Steel
B29	Screw	Zinc Plated Steel or 18-8 Stainless Steel
B30	Nut	Zinc Plated Steel or 18-8 Stainless Steel
B42	Wave Washer	304 Stainless Steel
B43	Lockout Pin	304 Stainless Steel
B45	Cable	316 Stainless Steel
B46	Cable Clamp	316 Stainless Steel



\*Seat ring is molded with fully encapsulated 316 Stainless Steel reinforcement insert.

\*Patent Pending seat design

# Valve Selection

## Shut-Off Capabilities

All Resilient Seats	Bubble Tight to Full Valve Rating
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## Pressure Ratings

2-24" (50-600mm)	150 psi C.W.P. (1030 kPa)
30-36" (750-900mm)	100 psi C.W.P. (690 kPa)

Note: Valves with Chloroprene Off-White seats (CRW) are limited to 50 psi (350 kPa). Contact DeZURIK with service conditions.

## Applicable Standards

DeZURIK KGC-BD Knife Gate Valves are designed and/or tested to meet the following standards:	
ASME B16.5 2-24" (50-600mm)	Flanges and Flanged Fittings, ASME 150 Conforms to related drilling dimensions
ASME 16.47 30-36" (750-900mm)	Large diameter Steel Flanges. Series A. Conforms to related dimensions
International Standards	Conforms to flanged bolt guides — JIS 10; DIN 10 and DIN 16; ISO 7005-1/PN10 and 7005-2/PN16; BS 4504/PN10 and BS 4504/PN16; and AS 2129 Tables D and E; SANS 1123-1000 and SANS 1123-1600
MSS SP-81	Recommendations for Stainless Steel, Bonnetless, Flanged, Wafer Knife Gate Valves.
ASME B16.20 2-36" (50-900mm)	Metallic Gaskets for Pipe Flanges. Conforms to spiral-wound gasket dimensions.

## Flow Parameters

Valve Size	Cv* Kv* 100% Open	K** (resistance)	Port Area (in <sup>2</sup> /cm <sup>2</sup> )
2" 50mm	330 287	0.16	3.8 25
3" 80mm	755 655	0.16	8.3 54
4" 100mm	1275 1100	0.16	13.5 87
5" 125mm	2020 1745	0.16	21.1 136
6" 150mm	2750 2380	0.16	29.4 190
8" 200mm	5055 4420	0.16	52.7 340
10" 250mm	7880 6830	0.16	82.9 535
12" 300mm	11180 9630	0.16	117 755
14" 350mm	13800 11920	0.16	144 930
16" 400mm	18300 15870	0.16	192 1239
18" 450mm	23450 20300	0.16	246 1585
20" 500mm	29000 25000	0.16	304 1959
24" 600mm	42180 36450	0.16	442 2854
30" 750mm	66010 57100	0.16	693 4472
36" 900mm	94980 82100	0.16	997 6430

\*Cv = Flow in GPM of water at 1 psi pressure drop.  
Kv = Flow in m<sup>3</sup>/hr. of water at 100 kPa pressure drop.  
\*\* K = The resistance coefficient of the valve. The constant (K) can be used to determine the equivalent length of pipe.

$L = \frac{K \times D}{f}$  Where  
L = Equivalent length of pipe in feet  
K = Resistance coefficient  
D = Pipe diameter in feet  
f = Friction factor, related to type of pipe

## Valve and Actuator Weights

Valve Size	Basic Valve	With Handwheel	With Chainwheel	With Bevel Gear	With Cylinder		
					Size	lbs.	Kg.
2" 50mm	10 5	20 9	32 15	—	4"	29	13
	3" 80mm	17 8	28 13	40 18	89 40	4"	38
4" 100mm		24 11	36 16	48 22	96 44	4"	45
	5" 125mm	33 15	52 24	67 30	109 49	6"	63
6" 150mm		39 18	58 26	76 34	114 52	4"	59
	8" 200mm	65 29	86 39	101 46	144 65	6"	77
10" 250mm		106 48	144 65	182 83	194 88	8"	89
	12" 300mm	151 68	190 86	230 104	244 111	4"	64
14" 350mm		195 88	261 118	280 127	299 136	6"	82
	16" 400mm	281 127	350 159	367 166	387 176	8"	94
18" 450mm		382 173	454 206	470 213	494 224	6"	112
	20" 500mm	511 232	586 266	647 293	630 286	8"	124
24" 600mm		730 331	N/A	N/A	877 398	8"	177
	30" 750mm	1348 611	N/A	N/A	1496 679	10"	223
36" 900mm		2265 1027	N/A	N/A	2427 1101	8"	228
						10"	273
					12"	312	142
					10"	336	152
					12"	376	171
					10"	418	190
					12"	458	208
					14"	504	229
					12"	572	259
					14"	622	282
					12"	719	326
					14"	767	348
					16"	989	449
					12"	952	432
					14"	1006	456
					16"	1224	555
					14"	1670	757
					16"	1887	856
					18"	2107	956
					14"	2612	1185
					16"	2816	1277
					18"	3048	1383
					20"	3211	1456

Note: Weights are approximate and do not include crating.

Pounds  
Kilograms



# Ordering

To order, simply complete the valve order code from information shown. An ordering example is shown for your reference.

<b>Valve Style</b>	
Give valve style code as follows:	
KGC	= Cast Stainless Steel Knife Gate Valve

<b>Valve Size</b>			
Give valve size code as follows:			
2	=	2"	(50mm)
3	=	3"	(80mm)
4	=	4"	(100mm)
5	=	5"	(125mm)
6	=	6"	(150mm)
8	=	8"	(200mm)
10	=	10"	(250mm)
12	=	12"	(300mm)
14	=	14"	(350mm)
16	=	16"	(400mm)
18	=	18"	(450mm)
20	=	20"	(500mm)
24	=	24"	(600mm)
30	=	30"	(750mm)
36	=	36"	(900mm)

<b>Body Style</b>	
Give body style code as follows:	
BD	= Bi-Directional with DeZURIK Exclusive Premium Packing System

<b>End Connection</b>	
Give end connection code as follows:	
F1	= ASME 150 UNC Tapping for Threads
F110	= ISO 7005/PN10 Drilling
F116	= ISO 7005/PN16 Drilling
F1DA	= AS2129 Table D Drilling
F1EA	= AS2129 Table E Drilling
F1UN <sup>(1)</sup>	= ASME 150 UN-8 Tapping for Threads
F1S10	= SANS 1123-1000
F1S16	= SANS 1123-1600
F1T	= ASME 150 Through Bolting
F1J1	= JIS 10 Drilling
<b>On Application</b>	
Other end connections available on application.	

<b>Body Material</b>	
Give body material code as follows:	
S1	= 304 Stainless Steel
S2	= 316 Stainless Steel
S3	= 317 Stainless Steel
<b>On Application</b>	
HC	= Hastelloy C
S6	= 254 Stainless Steel
S10	= 2205 Duplex Stainless Steel

<b>Packing Material</b>	
Give packing material code as follows:	
SMP	= PTFE Braided Packing to 500°F (260°C) (pH Range 0-14)
ASP	= Self-Adjusting PTFE Braided Packing with AFLAS® Fluoroelastomer Cord to 400°F (205°C) (pH Range 0-14)
TDP	= Dry PTFE Braided Packing with Solid PTFE Cord to 500°F (260°C) (pH Range: 0-14)

<b>Gate Material <sup>(3)</sup></b>	
Give gate material code as follows:	
S1	= 304 Stainless Steel (Standard for S1 body material)
S2	= 316 Stainless Steel (Standard for S2 body material)
S3	= 317 Stainless Steel (Standard for S3 body material)
<b>On Application</b>	
S5	= 17-4 Stainless Steel H900 Heat Treated (Used with S1, S2, & S3 body materials)
S6	= 254-SMO Stainless Steel (Used with S6 body material)
S8	= 410 Stainless Steel (Used with S1, S2 & S3 body materials)
S10	= 2205 Duplex Stainless Steel (Used with S2, S3 OR S10 body materials)
HC	= Hastelloy C (Used with HC body materials)

<b>Seat Material <sup>(2)</sup></b>	
Give seat material code as follows:	
CR	= Chloroprene to 180°F (83°C)
NBR	= Acrylonitrile-Butadiene to 180°F (83°C)
EPDM	= Terpolymer of Ethylene, Propylene and a Diene to 250°F (122°C)
FKM	= Fluoro Rubber to 400°F (204°C)
CRW	= Chloroprene, Off White to 140°F (60°C)

<b>Standard Options</b>	
Give option code as follows:	
CMC	= Certificate of Material Conformance
CRT	= Certified Physical and Chemical Test Reports
DTR	= DeZURIK Standard Certified Hydrostatic and Seat Test Report
—	= Optional Coating

Notes:  
 (1) Applies to valves 18" (450mm) and larger. Flange bolt hole threads are 8 threads per inch in accordance with ASME, API and MSS standards.  
 (2) For high temperature service, the limiting factor in valve selection is the lowest temperature of the packing or seat.  
 (3) Gate material limitations by body material in parentheses.

**Ordering Example:**  
 KGC,6,BD,F1,S2,ASP,S2-CR\*Actuator

# Manual Actuators

## Handwheel and Chainwheel Actuators

All 2-20" (50-500mm) valves can be furnished with handwheel actuators or chainwheel actuators. To order handwheel or chainwheel actuators, add the appropriate order code to the basic valve order code. Refer to information on bevel gear actuators for use on paper stock, slurries or when pressure exceeds limits shown. Order chain for chainwheel actuators as a separate item.

### Handwheel Actuator

Valve Size	Order Code	Order Code	Maximum Pressure Differential psi/kPa
	Carbon Steel (CS) Yoke	304 SST (S1) Yoke	
2-4" 50-100mm	MN-HD8-CS	MN-HD8-S1	150 1030
5-8" 125-200mm	MN-HD12-CS	MN-HD12-S1	150 1030
10-12" 250-300mm	MN-HD16-CS	MN-HD16-S1	150 1030
14" 350mm	MN-HD20-CS*	MN-HD20-S1*	100 690
16" 400mm	MN-HD20-CS*	MN-HD20-S1*	75 515
18" 450mm	MN-HD20-CS*	MN-HD20-S1*	50 340
20" 500mm	MN-HD20-CS*	MN-HD20-S1*	25 170

\*Bevel gear actuators recommended for paper stocks, slurries, or when pressure exceeds limits shown.

#### Ordering Example:

KGC,6,BD,F1,S2,SMP,S2-CR\*MN-HD12-CS

### Bevel Gear Actuators

Bevel gear actuators are available on 3-36" (80-900mm) valves with handwheel or chainwheel actuators. Bevel gear actuators provide vertical mounting of the handwheel or chainwheel, or can be used where space limitations prohibit the use of a standard handwheel or chainwheel. A mechanical advantage makes large valve operation easier and faster.

### Bevel Gear Handwheel Actuators

Valve Size	Order Code	Order Code	Maximum Pressure Differential psi/kPa
	Carbon Steel (CS) Yoke	304 SST (S1) Yoke	
3-10" 80-250mm	MNB-HD12-CS	MNB-HD12-S1	150 1030
12-16" 300-400mm	MNB-HD16-CS	MNB-HD16-S1	150 1030
18-24" 450-600mm	MNB-HD24-CS	MNB-HD24-S1	150 1030
30-36" 750-900mm	MNB-HD30-CS	MNB-HD30-S1	100 690

#### Ordering Example:

KGC,14,BD,F1,S2,SMP,S2-CR\*MNB-HD16-CS

Note: For alternate mounting of bevel gear actuators, add -90, -180 or -270 after the actuator code and as 2nd line information on the order.

### Chainwheel Actuator

Valve Size	Order Code	Order Code	Maximum Pressure Differential psi/kPa
	Carbon Steel (CS) Yoke	304 SST (S1) Yoke	
2-4" 50-100mm	MN-CW8-CS	MN-CW8-S1	150 1030
5-8" 125-200mm	MN-CW12-CS	MN-CW12-S1	150 1030
10-12" 250-300mm	MN-CW20-CS	MN-CW20-S1	150 1030
14" 350mm	MN-CW20-CS*	MN-CW20-S1*	100 690
16" 400mm	MN-CW20-CS*	MN-CW20-S1*	75 515
18" 450mm	MN-CW20-CS*	MN-CW20-S1*	50 340
20" 500mm	MN-CW30-CS*	MN-CW30-S1*	75 515

\*Bevel gear actuators recommended for paper stocks, slurries, or when pressure exceeds limits shown.

#### Ordering Example:

KGC,4,BD,F1,S2,SMP,S2-CR\*MN-CW8-S1

### Bevel Gear Chainwheel Actuators

Valve Size	Order Code	Order Code	Maximum Pressure Differential psi/kPa
	Carbon Steel (CS) Yoke	304 SST (S1) Yoke	
3-10" 80-250mm	MNB-CW12-CS	MNB-CW12-S1	150 1030
12-20" 300-500mm	MNB-CW20-CS	MNB-CW20-S1	150 1030
24-36" 600-900mm	MNB-CW30-CS	MNB-CW30-S1	100 690

#### Ordering Example:

KGC,14,BD,F1,S2,SMP,S2-CR\*MNB-CW20-CS-90  
Actuator mounted at 90 degrees

# Manual Actuator Accessories

## Chain for Chainwheel Actuators

Order as a separate item by giving the correct code and specify required length of chain as second line information. One closing link is supplied with the Chainwheel Actuator.

Order Code	Description
ACC*CN102	Steel, Zinc Plated 3/16
ACC*CN103	Galvanized 3/16
ACC*CN106	316 Stainless Steel 3/16

### Ordering Example:

ACC\*CN102

Chain 12 feet long (366cm)

## Extension for Handwheel

Provides extension of the handwheel or nut to allow remote operation – normally from above. The extension includes fittings and extension pipe with handwheel or nut mounted. To order, specify description and extension length from center line of valve to top of handwheel.

Order Code	Description
ENHD	Extension for Handwheel

### Ordering Example:

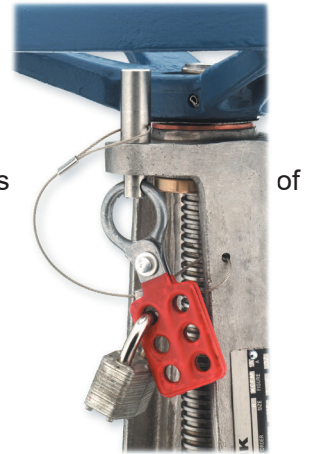
Handwheel: KGC,14,BD,F1,S2,SMP,S2-CR\*MN-HD20-CS,ENHD  
Center line of valve to top of handwheel 72 inches (1829mm).

## Lockout Device

Lockouts are fully rated to withstand the maximum output of the actuator. Available on all sizes handwheel and bevel gear handwheel actuated valves. To order, add a comma and the order code “LK” after the actuator code.

### Ordering Example:

KGC,14,BD,F1,S2,SMP,S2-CR\*MNB-HD12-CS,LK



## Floorstand

A floorstand for handwheel actuated valves allows operation from above. Includes floorstand with gate position indicator, handwheel, fittings and extension. To order, specify length from center line of valve to base of floorstand. This dimension must be at least twice the dimension from center line to handwheel.

### Ordering Example:

KGC,14,BD,F1,S2,SMP,S2-CR\*MN-HD20-CS  
Except with floorstand. Center line of valve to base of floorstand 72 inches (1829mm).

# Cylinder Actuators

## On-Off Cylinder Actuators

DeZURIK cylinder actuators are available with double-acting pneumatic or hydraulic cylinders for on/off service. Supply pressure is 60 or 80 psi (410 or 550 kPa). To order, add the proper code from the table to the valve order code. Specify hydraulic media if other than oil.

## Actuator Sizing

### 60 psi (410 kPa) Air Supply

Valve Size	Order Code	Order Code	Maximum Pressure Differential psi/kPa	
			On/Off	
			Slurries, Paper Stock	Liquids & Gases
2 & 3" 50 & 80mm	CY-PC4-CS	CY-PC4-S1	150 1030	150 1030
	CY-PC6-CS	CY-PC6-S1	100 690	150 1030
4" 100mm	CY-PC4-CS	CY-PC4-S1	150 1030	N/R
	CY-PC6-CS	CY-PC6-S1	150 1030	N/R
	CY-PC8-CS	CY-PC8-S1	150 1030	N/R
5 & 6" 125 & 150mm	CY-PC4-CS	CY-PC4-S1	N/A	50 340
	CY-PC6-CS	CY-PC6-S1	125 860	150 1030
	CY-PC8-CS	CY-PC8-S1	150 1030	N/R
8" 200mm	CY-PC6-CS	CY-PC6-S1	75 515	125 860
	CY-PC8-CS	CY-PC8-S1	150 1030	150 1030
10" 250mm	CY-PC8-CS	CY-PC8-S1	100 690	150 1030
	CY-PC10-CS	CY-PC10-S1	150 1030	N/R

# Cylinder Actuators

## Actuator Sizing (Continued)

60 psi (410 kPa) Air Supply

Valve Size	Order Code	Order Code	Maximum Pressure Differential psi/kPa	
			On/Off	
	Carbon Steel (CS) Yoke	304 SST (S1) Yoke	Slurries, Paper Stock	Liquids & Gases
12" 300mm	CY-PC8-CS	CY-PC8-S1	75 515	125 860
	CY-PC10-CS	CY-PC10-S1	125 860	150 1030
	CY-PC12-CS	CY-PC12-S1	150 1030	N/R
14" 350mm	CY-PC10-CS	CY-PC10-S1	100 690	150 1030
	CY-PC12-CS	CY-PC12-S1	150 1030	N/R
16" 400mm	CY-PC10-CS	CY-PC10-S1	75 515	125 860
	CY-PC12-CS	CY-PC12-S1	125 860	150 1030
	CY-PC14-CS	CY-PC14-S1	150 1030	N/R
18" 450mm	CY-PC12-CS	CY-PC12-S1	100 690	150 1030
	CY-PC14-CS	CY-PC14-S1	150 1030	N/R
20" 500mm	CY-PC12-CS	CY-PC12-S1	50 340	125 860
	CY-PC14-CS	CY-PC14-S1	125 860	150 1030
	CY-PC16-CS	CY-PC16-S1	150 1030	N/R
24" 600mm	CY-PC12-CS	CY-PC12-S1	25 170	75 515
	CY-PC14-CS	CY-PC14-S1	75 515	100 690
	CY-PC16-CS	CY-PC16-S1	150 1030	N/R
30" 750mm	CY-PC14-CS	CY-PC14-S1	25 170	75 515
	CY-PC16-CS	CY-PC16-S1	75 515	100 690
	CY-PC18-CS	CY-PC18-S1	100 690	N/R
36" 900mm	CY-PC14-CS	CY-PC14-S1	N/A	50 340
	CY-PC16-CS	CY-PC16-S1	25 170	75 515
	CY-PC18-CS	CY-PC18-S1	75 515	100 690
	CY-PC20-CS	CY-PC20-S1	100 690	N/R

N/R = Not required. Use next smaller actuator.  
N/A = Not available. Use larger actuator or contact DeZURIK.

80 psi (550 kPa) Air Supply

Valve Size	Order Code	Order Code	Maximum Pressure Differential psi/kPa	
			On/Off	
	Carbon Steel (CS) Yoke	304 SST (S1) Yoke	Slurries, Paper Stock	Liquids & Gases
2 & 3" 50 & 80mm	CY-PC4-CS	CY-PC4-S1	150 1030	150 1030
	CY-PC4-CS	CY-PC4-S1	150 1030	150 1030
4" 100mm	CY-PC4-CS	CY-PC4-S1	150 1030	150 1030
	CY-PC4-CS	CY-PC4-S1	50 340	75 515
5 & 6" 125 & 150mm	CY-PC4-CS	CY-PC4-S1	150 1030	150 1030
	CY-PC6-CS	CY-PC6-S1	150 1030	150 1030
8" 200mm	CY-PC6-CS	CY-PC6-S1	100 690	150 1030
	CY-PC8-CS	CY-PC8-S1	150 1030	N/R
10" 250mm	CY-PC8-CS	CY-PC8-S1	150 1030	150 1030
	CY-PC8-CS	CY-PC8-S1	100 690	150 1030
12" 300mm	CY-PC8-CS	CY-PC8-S1	100 690	150 1030
	CY-PC10-CS	CY-PC10-S1	150 1030	N/R
14" 350mm	CY-PC10-CS	CY-PC10-S1	125 860	150 1030
	CY-PC12-CS	CY-PC12-S1	150 1030	N/R
16" 400mm	CY-PC10-CS	CY-PC10-S1	100 690	150 1030
	CY-PC12-CS	CY-PC12-S1	150 1030	N/R
18" 450mm	CY-PC12-CS	CY-PC12-S1	150 1030	150 1030
	CY-PC12-CS	CY-PC12-S1	125 860	150 1030
20" 500mm	CY-PC12-CS	CY-PC12-S1	125 860	150 1030
	CY-PC14-CS	CY-PC14-S1	150 1030	N/R
24" 600mm	CY-PC12-CS	CY-PC12-S1	75 515	150 1030
	CY-PC14-CS	CY-PC14-S1	150 1030	N/R
30" 750mm	CY-PC14-CS	CY-PC14-S1	75 515	100 690
	CY-PC16-CS	CY-PC16-S1	100 690	N/R
36" 900mm	CY-PC14-CS	CY-PC14-S1	25 170	75 515
	CY-PC16-CS	CY-PC16-S1	75 515	100 690
	CY-PC18-CS	CY-PC18-S1	100 690	N/R

N/R = Not required. Use next smaller actuator.  
N/A = Not available. Use larger actuator or contact DeZURIK.

# Cylinder Actuator Accessories

## Air Filter Regulator

The DeZURIK Air Filter Regulator is designed to provide clean, accurate air pressure to actuators and positioners.

## Four-Way Solenoid Valves

Solenoid valves may be ordered mounted and piped as part of a complete valve/actuator assembly or as a separate item.

## Speed Control Valves

Speed Control Valves are available for controlling valve opening or closing speed with pneumatic actuators. The speed of operation is adjustable.

## Position Indicating Switches

Mechanical or Proximity Position Indicating Switches are available for use on double-acting cylinder actuators. One switch can be set to indicate open or closed position. Two switches will automatically be set to indicate full open and full closed positions.

## High-Strength Actuator Legs

For unsupported horizontal mounting of 3-12" (80-300mm) valve sizes, High-Strength Actuator Legs are available as part of a complete valve and actuator assembly. To order, add the SAL code after the actuator code.

**Ordering Example (complete valve):**

KGC,6,BD,F1,S1,SMP,S1-CR\*CY-PC6-S1,SAL

## Stem Cover Bellows

To protect valve stem from environmental debris, the Stem Cover Bellows may be ordered as part of a complete valve and actuator assembly. To order, add the SCB code to the valve and actuator code.

**Ordering Example (complete valve):**

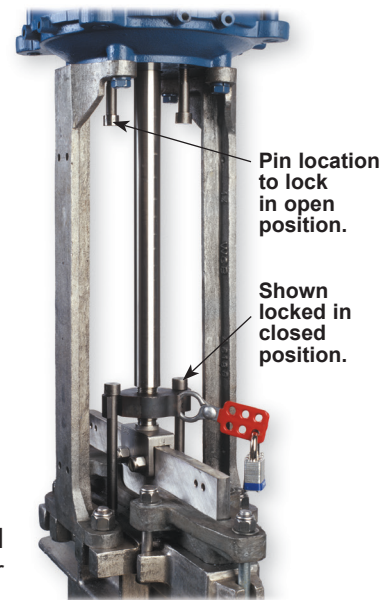
KGC,6,BD,F1,S1,SMP,S1-CR\*CY-PC6-S1,SCB

## Lockout Device

KGC-BD provides the latest in lockout design technology to protect both people and the environment. 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. Available on all sizes of cylinder actuated valves. To order, add a comma and the order code "LK" after the actuator code.

**Ordering Example:**

KGC,14,BD,F1,S2,SMP,  
S2-CR\*CY-PC12-CS,LK



Cylinder Lockout Position

# Electric Motor Actuators

DeZURIK Knife Gate Valves can be furnished with electric motor actuators including Limatorque, Auma, Rotork, E.I.M. and others.

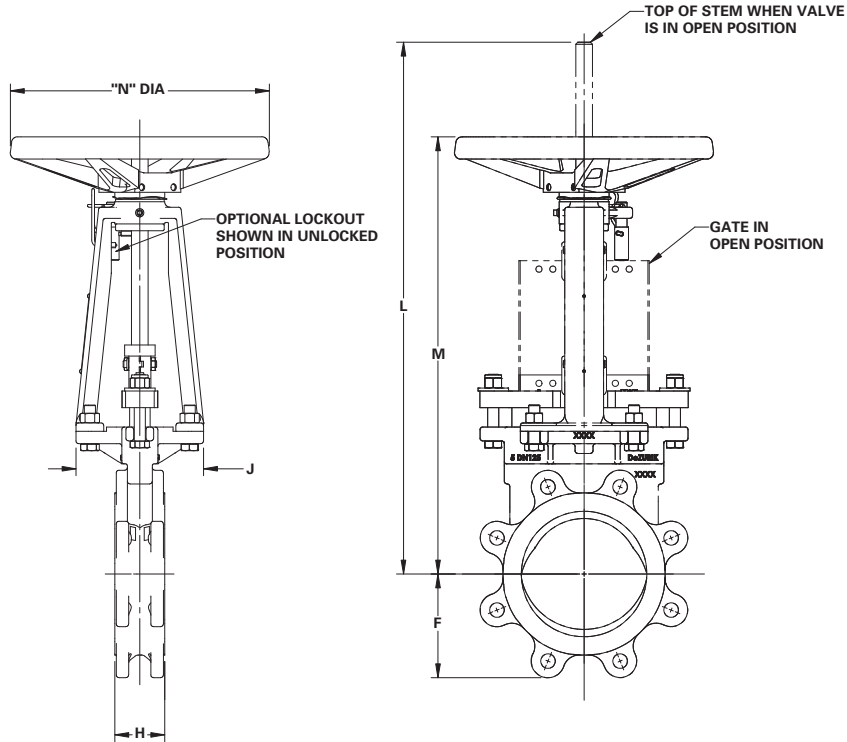
When ordering electric motor actuators, specify valve order code, shutoff pressure, service conditions (flowing media and installation direction); type of application (on/off); speed of operation; NEMA rating (4, 7, submersible, etc.); electrical characteristics (voltage and phase); actuator accessories and controls as per specification requirements.

# Dimensions

## Basic Valve with Handwheel Actuator

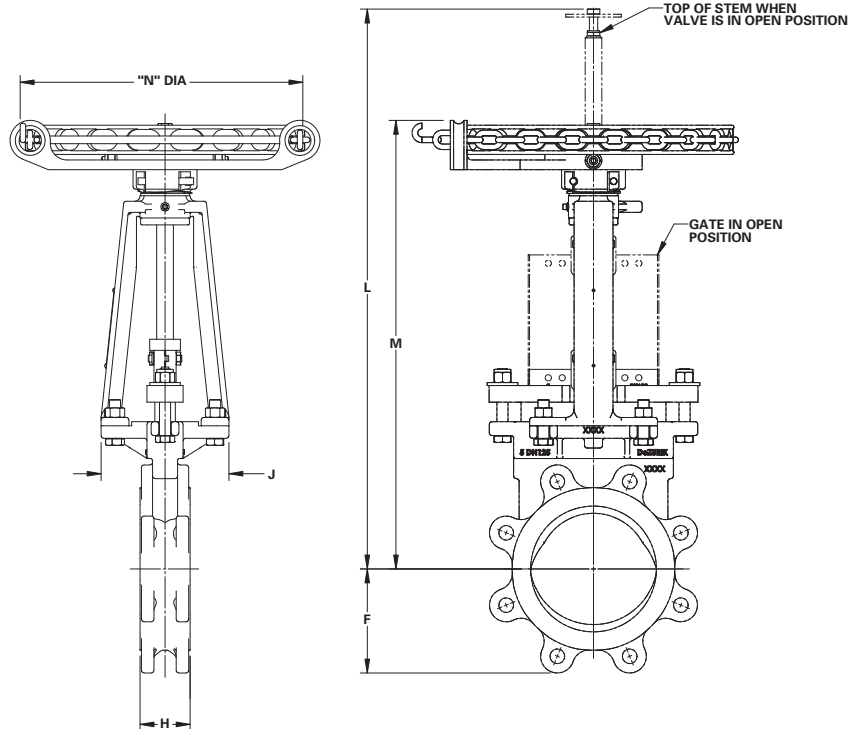
Valve Size	Dimensions					
	F	H	J	L	M	N
2" 50mm	3.00 76	1.88 48	4.00 102	14.73 374	12.90 328	8.00 203
3" 80mm	3.75 95	2.00 51	4.75 121	17.50 445	14.62 371	8.00 203
4" 100mm	4.50 114	2.00 51	5.00 127	22.77 578	16.90 429	8.00 203
5" 125mm	5.00 127	2.25 57	5.75 146	24.19 614	19.56 497	12.00 305
6" 150mm	5.50 140	2.25 57	5.75 146	27.10 688	21.07 535	12.00 305
8" 200mm	6.75 171	2.75 70	6.38 162	33.60 853	24.65 626	12.00 305
10" 250mm	8.00 203	2.75 70	8.25 210	41.06 1043	30.00 762	16.00 406
12" 300mm	9.50 241	3.00 76	8.25 210	46.59 1183	33.63 854	16.00 406
14" 350mm	10.50 267	3.00 76	8.25 210	54.57 1386	40.82 1037	20.00 508
16" 400mm	11.75 298	3.50 89	8.69 221	57.97 1472	42.38 1076	20.00 508
18" 450mm	12.50 318	3.50 89	9.06 230	67.37 1711	49.69 1262	20.00 508
20" 500mm	13.75 349	4.50 114	9.19 233	71.00 1803	51.25 1302	20.00 508

Inches  
Millimeters



## Basic Valve with Chainwheel Actuator

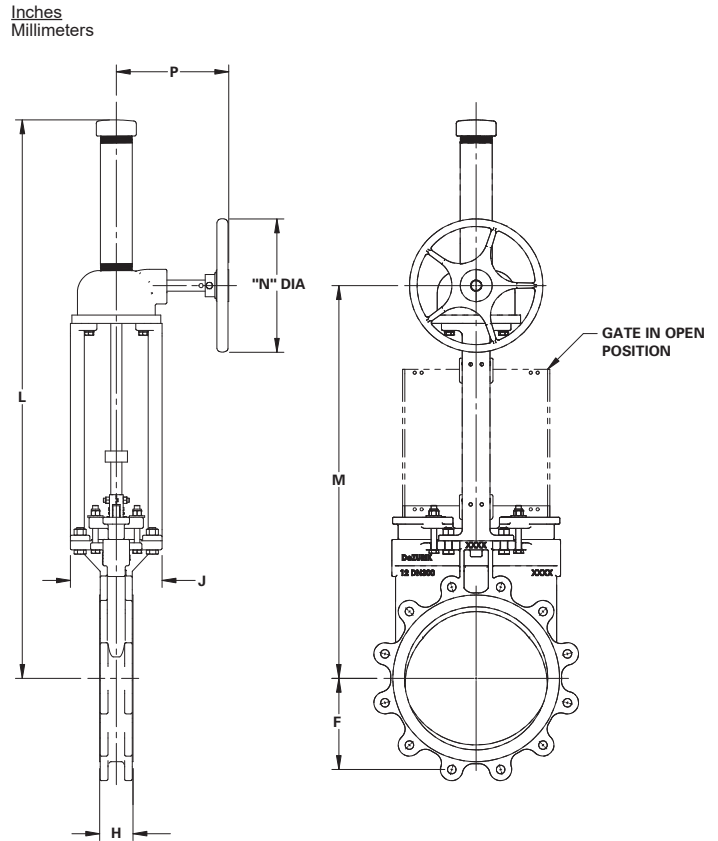
Valve Size	Dimensions					
	F	H	J	L	M	N
2" 50mm	3.00 76	1.88 48	4.00 102	15.81 402	13.62 346	9.19 233
3" 80mm	3.75 95	2.00 51	4.75 121	18.56 471	15.37 390	9.19 233
4" 100mm	4.50 114	2.00 51	5.00 127	22.74 578	17.62 448	9.19 233
5" 125mm	5.00 127	2.25 57	5.75 146	25.18 640	20.00 508	12.75 324
6" 150mm	5.50 140	2.25 57	5.75 146	26.83 681	21.57 548	12.75 324
8" 200mm	6.75 171	2.75 70	6.38 162	34.58 878	25.12 638	12.75 324
10" 250mm	8.00 203	2.75 70	8.25 210	41.56 1056	30.76 781	20.00 508
12" 300mm	9.50 241	3.00 76	8.25 210	47.29 1201	34.35 872	20.00 508
14" 350mm	10.50 267	3.00 76	8.25 210	54.57 1386	40.82 1037	20.00 508
16" 400mm	11.75 298	3.50 89	8.69 221	61.97 1574	42.38 1076	20.00 508
18" 450mm	12.50 318	3.50 89	9.06 230	67.37 1711	49.69 1262	20.00 508
20" 500mm	13.75 349	4.50 114	9.19 233	75.00 1905	51.25 1302	30.00 762



# Dimensions

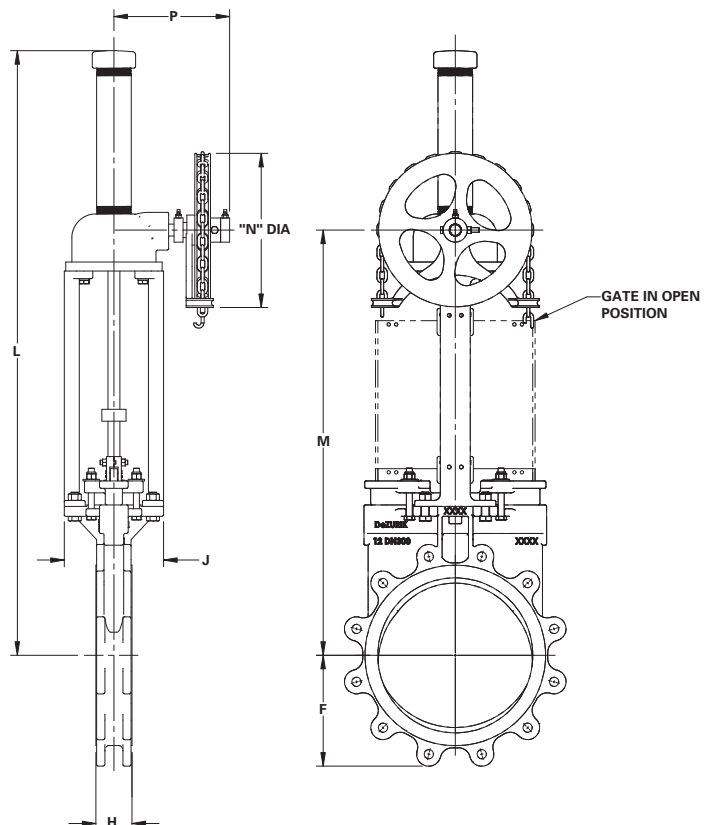
## Bevel Gear Handwheel Actuator

Valve Size	Dimensions						P	
	F	H	J	L	M	N	Standard & 180°	90° & 270°
3" 80mm	3.75 95	2.00 51	4.75 121	22.10 561	16.09 409	12.00 305	10.12 257	10.12 257
4" 100mm	4.50 114	2.00 51	5.00 127	26.38 670	18.37 467	12.00 305	10.12 257	10.12 257
5" 125mm	5.00 127	2.25 57	5.75 146	28.82 732	20.76 527	12.00 305	10.12 257	10.12 257
6" 150mm	5.50 140	2.25 57	5.75 146	32.38 822	22.29 566	12.00 305	10.12 257	10.12 257
8" 200mm	6.75 171	2.75 70	6.38 162	40.88 1038	25.84 656	12.00 305	10.12 257	10.12 257
10" 250mm	8.00 203	2.75 70	8.25 210	46.57 1183	31.54 801	12.00 305	10.12 257	10.12 257
12" 300mm	9.50 241	3.00 76	8.25 210	50.26 1277	35.16 893	12.00 305	10.12 257	10.12 257
14" 350mm	10.50 267	3.00 76	8.25 210	56.82 1443	37.78 960	12.00 305	10.12 257	24.13 613
16" 400mm	11.75 298	3.50 89	8.69 221	62.51 1588	41.47 1053	12.00 305	10.12 257	24.13 613
18" 450mm	12.50 318	3.50 89	9.06 230	69.95 1777	47.03 1195	12.00 305	10.12 257	24.13 613
20" 500mm	13.75 349	4.50 114	9.19 233	73.63 1870	50.59 1285	16.00 406	10.12 257	24.13 613
24" 600mm	16.00 406	4.50 114	9.19 233	85.60 2174	58.57 1488	16.00 406	10.12 257	24.13 613
30" 750mm	19.38 492	4.63 118	11.25 286	109.48 2781	73.09 1856	30.00 762	10.43 265	24.05 24
36" 900mm	23.00 584	4.63 118	11.25 286	123.58 3139	84.59 2149	30.00 762	10.43 265	124.05 265



## Bevel Gear Chainwheel Actuator

Valve Size	Dimensions						P	
	F	H	J	L	M	N	Standard & 180°	90° & 270°
3" 80mm	3.75 95	2.00 51	4.75 121	22.10 561	16.09 409	12.00 305	9.62 244	10.12 257
4" 100mm	4.50 114	2.00 51	5.00 127	26.38 670	18.37 467	12.00 305	9.62 244	10.12 257
5" 125mm	5.00 127	2.25 57	5.75 146	28.82 732	20.76 527	12.00 305	9.62 244	10.12 257
6" 150mm	5.50 140	2.25 57	5.75 146	32.38 822	22.29 566	12.00 305	9.62 244	10.12 257
8" 200mm	6.75 171	2.75 70	6.38 162	40.88 1038	25.84 656	12.00 305	9.62 244	10.12 257
10" 250mm	8.00 203	2.75 70	8.25 210	46.57 1183	31.54 801	12.00 305	9.62 244	10.12 257
12" 300mm	9.50 241	3.00 76	8.25 210	50.26 1277	35.16 893	12.00 305	9.62 244	10.12 257
14" 350mm	10.50 267	3.00 76	8.25 210	56.82 1443	37.78 960	12.00 305	9.62 244	24.13 613
16" 400mm	11.75 298	3.50 89	8.69 221	62.51 1588	41.47 1053	12.00 305	9.62 244	24.13 613
18" 450mm	12.50 318	3.50 89	9.06 230	69.95 1777	47.03 1195	12.00 305	9.62 244	24.13 613
20" 500mm	13.75 349	4.50 114	9.19 233	73.63 1870	50.59 1285	20.00* 508	9.62 244	24.13 613
24" 600mm	16.00 406	4.50 114	9.19 233	85.60 2174	58.57 1488	20.00* 508	9.62 244	24.13 613
30" 750mm	19.38 492	4.63 118	11.25 286	109.48 2781	73.09 1856	30.00 762	9.59 244	24.09 612
36" 900mm	23.00 584	4.63 118	12.00 305	123.58 3139	84.59 2149	30.00 762	9.59 244	24.09 612



\*Note: "N" dimension on 20" & 24" (500 & 600mm) valves is 16.00 when actuator is mounted at 90° or 270° 406

# Dimensions

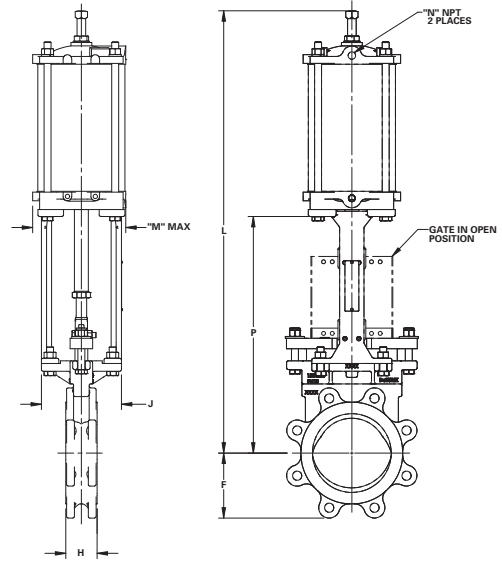
## Basic Valve with Cylinder Actuator

Valve Size	Dimensions			
	F	H	J	P
2" 50mm	3.00 76	1.88 48	4.00 102	10.56 268
3" 80mm	3.75 95	2.00 51	4.75 121	12.28 312
4" 100mm	4.50 114	2.00 51	5.00 127	14.56 370
5" 125mm	5.00 127	2.25 57	5.75 146	17.00 432
6" 150mm	5.50 140	2.25 57	5.75 146	18.56 471
8" 200mm	6.75 171	2.75 70	6.38 162	22.06 560
10" 250mm	8.00 203	2.75 70	8.25 210	27.50 699
12" 300mm	9.50 241	3.00 76	8.25 210	31.13 791
14" 350mm	10.50 267	3.00 76	8.25 210	33.75 857
16" 400mm	11.75 298	3.50 89	8.69 221	37.44 951
18" 450mm	12.50 318	3.50 89	9.06 230	43.00* 1092
20" 500mm	13.75 349	4.50 114	9.19 233	46.66* 1185
24" 600mm	16.00 406	4.50 114	9.19 233	54.54* 1385
30" 750mm	19.38 492	4.63 118	11.25 286	69.69 1770
36" 900mm	23.00 584	4.63 118	12.00 305	81.19 2062

Inches  
Millimeters

\*Note: See chart below for 18", 20" and 24" valves with CY-PC16 Cylinder sizes.

Valve Size	Dimensions	
	P	
20" 500mm	47.31 1202	
22" 550mm	50.75 1289	
24" 600mm	55.28 1404	



## 2-16" (50-400mm) Valves

Actuator Order Code	Dimensions										M	N
	L											
	2" 50mm	3" 80mm	4" 100mm	5" 125mm	6" 150mm	8" 200mm	10" 250mm	12" 300mm	14" 350mm	16" 400mm		
CY-PC4	22.26 565	23.98 609	26.26 667	30.64 778	32.18 817	—	—	—	—	—	5.38 137	1/4
CY-PC6	—	—	27.61 701	32.00 813	33.56 852	39.11 993	—	—	—	—	7.88 200	1/4
CY-PC8	—	—	—	32.38 822	33.94 862	39.49 1003	49.57 1259	53.19 1351	—	—	10.50 267	1/2
CY-PC10	—	—	—	—	—	50.97 1295	54.59 1387	60.35 1533	64.03 1626	—	13.00 330	1/2
CY-PC12	—	—	—	—	—	—	54.56 1386	60.70 1542	64.38 1635	—	15.00 381	1/2
CY-PC14	—	—	—	—	—	—	—	—	63.68 1617	—	17.00 432	1/2

Inches  
Millimeters

## 18-36" (450-900mm) Valves

Actuator Order Code	Dimensions						M	N
	L							
	18" 450mm	20" 500mm	24" 600mm	30" 750mm	36" 900mm			
CY-PC12	73.94 1878	77.50 1968	89.48 2273	—	—	15.00 381	1/2	
CY-PC14	73.24 1860	76.81 1951	88.78 2255	108.19 2748	125.69 3193	17.00* 432	1/2	
CY-PC16	—	75.94 1929	87.91 2233	108.31 2751	125.81 3196	17.00 432	1/2	
CY-PC18	—	—	—	108.56 2757	126.06 3202	19.00 483	3/4	
CY-PC20	—	—	—	—	126.31 3208	21.00 533	3/4	

\* M dimension on 30" (750mm) is 14.75" (375mm)

## Sales and Service

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

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



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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.