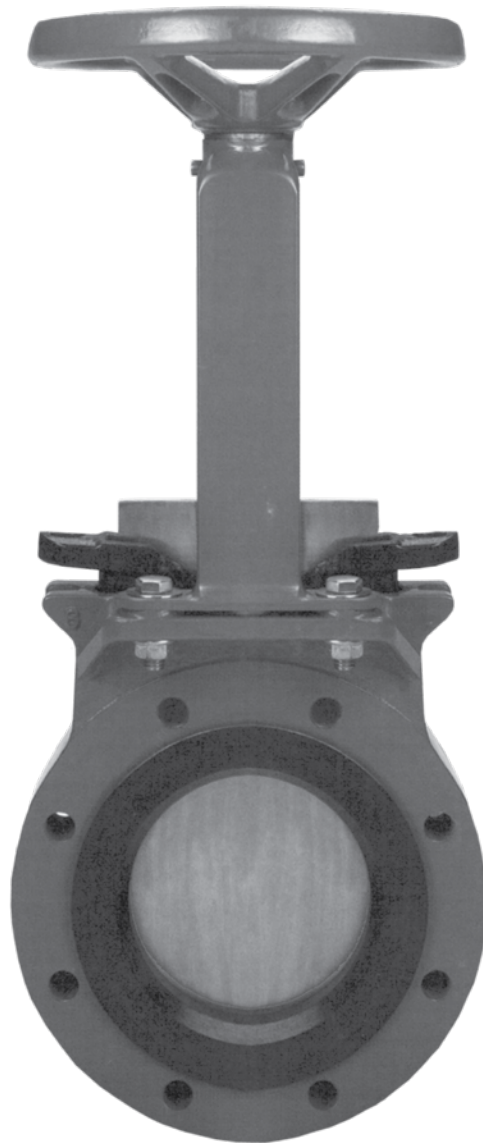




URETHANE KNIFE GATE VALVES TECHNICAL SPECIFICATIONS

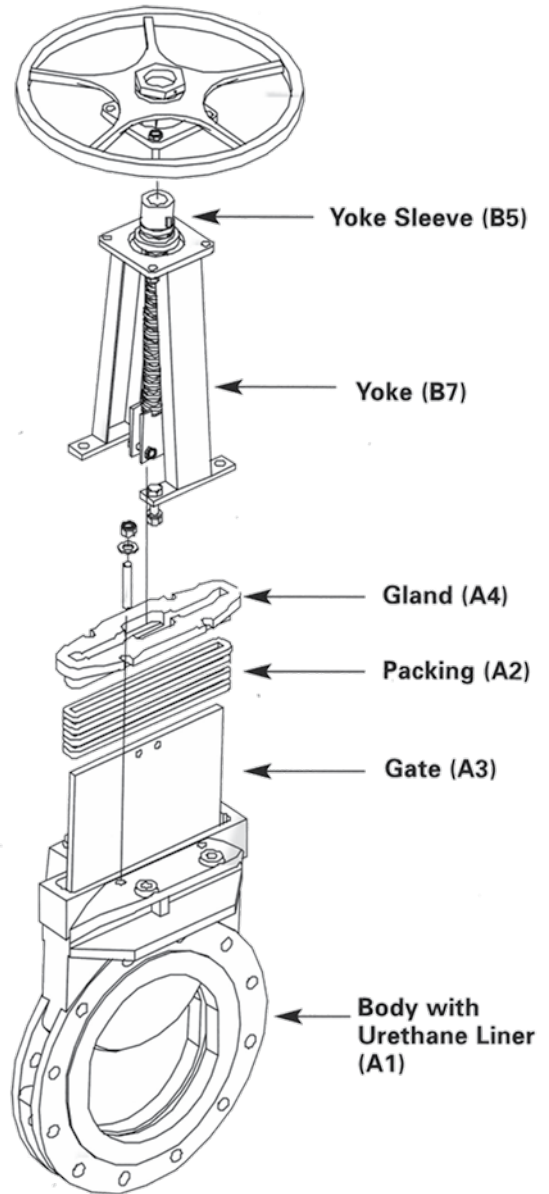


KGU Urethane Knife Gate Valves

One-piece cast-in-place urethane liner designed especially for handling abrasive slurries and dry materials in the mining industry. Rugged stainless steel gate, long-life packing, stainless steel stem, corrosion resistant yoke sleeve, and heavy duty superstructure

Materials of Construction

Item	Size Range	Characteristic/Material
A1 Body	All Sizes	Cast iron ASTM A 126, Class B with urethane liner
A2 Packing	All Sizes	C, Square braided PTFE impregnated synthetic fiber
A3	All Sizes	304 stainless steel, ASTM A 240, Type 304
		316 stainless steel, ASTM A 240, Type 316
A4 Packing Gland	4" (100 mm)	316 stainless steel, ASTM A 743, Grade CF-8M
	6-24" (150-600 mm)	Ductile iron, ASTM A 536 with P006 plastic coating
A10 Seat Material	All Sizes	Urethane
B5 Yoke Sleeve	4-12" (100-300 mm)	Aluminum bronze, ASTM B 148 Alloy C95200
	14-24" (350-600 mm)	Ductile iron, ASTM A 536, electroless nickel coated
B7 Yoke (Superstructure)	All Sizes	Carbon steel, ASTM A 36



Valve Selection

Cv/Kv Valves, K Factors, Area of Opening

Valve Sizes	Metal Seated, Round Port		
	Cv* Kv* 100% Open	K Factor **	Area of Opening (in ² /cm ²)
4" 100 mm	880 761	0.30	11 28
6" 150 mm	2190 1890	0.25	26 66
8" 200 mm	4190 3620	0.21	47 119
10" 250 mm	5760 4980	0.27	64 163
12" 300 mm	8760 7580	0.24	95 241
14" 350 mm	11600 10000	0.21	123 312
16" 400 mm	15400 13300	0.20	162 411
18" 450 mm	19300 16700	0.21	205 521
20" 500 mm	24600 21300	0.20	255 648
24" 600 mm	36100 31200	0.20	374 950

*Cv = Flow in GPM of water at 1 psi pressure drop.

Kv = Flow in m³/hr. of water at 100 kPa pressure drop.

**The equivalent length of pipe may be calculated according to the following formula:

$$L = \frac{K \times D}{f}$$

Where: L = Equivalent length of pipe in feet
K = K factor - Resistance coefficient of valve
D = Pipe diameter in feet
f = Friction factor, relating to type of pipe

Shutoff Capabilities

Urethane Seats	Leak tight/zero leakage
----------------	-------------------------

Pressure Rating

Valve Size	Direct Pressure	Reverse Pressure
4-12" 100-300 mm	150 psi C.W.P. 1030 kPa C.W.P.	150 psi C.W.P. 1030 kPa C.W.P.
14-24" 350-600mm	50 psi C.W.P. 350 kPa C.W.P.	75 psi C.W.P. 520 kPa C.W.P.

Applicable Standards

DeZURIK KGU Urethane Knife Gate Valves are designed and/or tested to meet the following standards:

ANSI B16.1 (ASA B16.1) 8-24" (200 mm-600 mm)	Cast Iron Pipe Flanges and Flanged Fittings, 125 lbs. Conforms to related flange drilling dimensions
ANSI B16.5 2-6" (50-150 mm)	Carbon Steel Flanges and Flanged Fittings, 150 lb. Conforms to related flange drilling dimensions
International Standards	Conforms to flanged bolt guides and pressure ratings-JIS 10; DIN 10 and DIN 16; ISO 7005-1/PN 10 and 7005-2/PN 16; BS 4504/ PN16; AS 2129 table D and E

Valve Weights With Handwheel

Valve Sizes	Weight lbs./kg.
4" 100 mm	40 18
6" 150 mm	63 29
8" 200 mm	100 45
10" 250 mm	163 74
12" 300 mm	227 103
14" 350 mm	287 130
16" 400 mm	374 170
18" 450 mm	443 170
20" 500 mm	574 260
24" 600 mm	740 336

Cylinder Weights

Cylinder Sizes	Weight lbs./kg.
CY-PC4	40 18
CY-PC6	63 29
CY-PC8	100 45
CY-PC10	163 74
CY-PC12	227 103

Add these weights to valve and handwheel weights.

Ordering

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

Valve Style

Give valve style code as follows:

KGU = Urethane Knife Gate Valves
Note: Temperature limits of Urethane are -40° to 180° F (-40° to 82°C)

Valve Size

Give valve size code as follows:

4	=	4"	(100 mm)
6	=	6"	(150 mm)
8	=	8"	(200 mm)
10	=	10"	(250 mm)
12	=	12"	(300 mm)
14	=	14"	(350 mm)
16	=	16"	(400 mm)
18	=	18"	(450 mm)
20	=	20"	(500 mm)
24	=	24"	(600 mm)

End Connection

Give end connection code as follows:

W1	=	Wafer, ANSI 150
W110	=	Wafer, ISO 7005-/PN10 and 7500-2/PN16, DIN 10 or BS4504/PN10
W116	=	Wafer, ISO 7005-/PN10 and 7500-2/PN16, DIN 16 or BS4504/PN16 Not available on 8, 18, 20 and 24" (200, 450, 500 and 600 mm valves)
W1J1	=	Wafer, JIS10 (Not available on 8" (200 mm))
W1DA	=	Wafer, AS2129 Table D
W1EA	=	Wafer, AS2129 Table E
W1T	=	Wafer, ANSI 150 with through bolting flange

Gate Material

Give gate material code as follows:

S1	=	304 Stainless Steel
S2	=	316 Stainless Steel

Packing Material

Give packing material code as follows:

C	=	Square braided PTFE Impregnated Synthetic Fiber to 500°F (260°C)
---	---	--

Order Example:

KGU, 4, W1, S2, C*MN-HD8

Manual Actuators

Lever Actuators

Lever actuators can be furnished on 4" (100 mm) valves for applications where rapid valve operation is required or where space prevents use of a standard handwheel or bevel gear actuator. Maximum pressure differential required for valves with lever actuators should not exceed the limit listed. Maximum is based on the operating force for the valve size. To order, add the lever actuator code to the basic valve order code.

Valve Size	Order Code	Max. Pressure Differential psi/kPa
<u>4"</u> 100 mm	MN-LV	<u>75</u> 520

Order Example:

KGU, 4, W1, S2, C*MN-LV

Handwheel & Chainwheel Actuators

All 4-24" (100-600 mm) valves can be furnished with handwheel or bevel gear actuators. To order rotary handwheel add the appropriate order code the basic valve order code. Refer to information on bevel gear actuators when pressure exceeds limits shown.

Valve Size	Order Code	Max. Pressure Differential psi/kPa
<u>4"</u> 100 mm	MN-HD8	<u>150</u> 1030
<u>6"</u> 150 mm	MN-HD10	<u>150</u> 1030
<u>8"</u> 200 mm	MN-HD12	<u>150</u> 1030
<u>10" & 12"</u> 250-300 mm	MN-HD16	<u>150</u> 1030
<u>14"</u> 350 mm	MN-HD20	<u>75</u> 520
<u>16"</u> 400 mm	MN-HD20	<u>75</u> 520
<u>18"</u> 450 mm	MN-HD20	<u>75</u> 520*
<u>20"</u> 500 mm	MN-HD20	<u>50*</u> 340*
<u>24"</u> 600 mm	MN-HD20	<u>25*</u> 170*

* Bevel gear actuators are recommended when pressure exceeds limits shown.

Bevel Gear Actuators

Bevel gear actuators provide vertical mounting of the handwheel or chainwheel, or can be used where space limitations prohibit the use of standard handwheel. A mechanical advantage makes large valve operation easier and faster.

Actuator Mounting

Bevel gears on 4-12" (100-300 mm) can be mounted at standard 90, 180, 270 degree mounting. Specify as second line information. On valve sizes 14-24" (350-600 mm), use the appropriate order code from the chart for standard or 180 mounting, or 90 or 270 mounting. Specify which position as second line information.

Actuator Sizing

Bevel Gear Handwheel Actuator, 4-12" (100-300 mm)

Valve Size	Order Code	Max. Pressure Differential psi/kPa
4" 100 mm	MNB-HD8	150 1030
6" 150 mm	MNB-HD10	150 1030
8" 200 mm	MNB-HD12	150 1030
10" & 12" 250-300 mm	MNB-HD16	150 1030

Bevel Gear Handwheel Actuator, 14-24" (350-600 mm)

Valve Size	Order Code		Max. Pressure Differential psi/kPa
	Std./180 Mounting	90/270 Mounting	
14-18" 350-450 mm	MN-HD12	MN-HD12, A	75 526
20-24" 500-600 mm	MN-HD16	MN-HD16, A	75 520

Ordering Example:

KGU, 14, W1, S2, C*MNB-HD12, A
Actuator mounted 90 from standard

Accessories-Manual Actuators

Handwheel Extension

This accessory provides extension of the handwheel to allow remote operation-normally from above. The extension includes fittings and extension pipe with handwheel mounted. To order, specify description and extension length from center line of valve to handwheel.

Ordering Example:

KGU, 14, W1, S2, C*MNB-HD20

Except with handwheel extension. Center line of valve to handwheel 72" (1829 mm)

Locking Device

Available on 14-24" (350-600 mm) bevel gear handwheel operated valves only. To order, add a comma and the order code "LK" after the actuator code.

Ordering Example:

KGU,14, W1, S2, C*MNB-HD20, 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:

KGU,14, W1, S2, C*MNB-HD20

Except with floorstand. Center line of valve to base of floorstand 72" (1829 mm)

Cylinder Actuators

On-Off Cylinder Actuators

DeZURIK cylinder actuators are available with double-acting pneumatic for on-off or positioning service, or hydraulic cylinders for on-off service. Supply pressure is 50 or 80 psi (340 or 550 kPa). To order, add the proper code from the on-off column of the table to the valve order code. Specify hydraulic media if other than oil.

Positioning Cylinder Actuators

DeZURIK cylinder actuators are available with pneumatic or electronic positioners for throttling control. Positioners are enclosed and mounted on the superstructure.

Actuator Sizing

50 psi (340 kPa) Air Supply

Valve Size	Order Code	Max. Pressure Differential psi/kPa	
		On-Off	Positioning
4" 100 mm	CY-PC4	75 520	-
	CY-PC6	-	75 520
6" 150 mm	CY-PC6	75 520	-
	CY-PC8	-	75 520
8" 200 mm	CY-PC8	75 520	75 520
10" 250 mm	CY-PC10	75 520	-
	CY-PC12	-	75 520
12" 300mm	CY-PC12	75 520	75 520
14" 350 mm	CY-PC12	75 520	75 520
16" 400 mm	CY-PC12	75 520	-
	CY-PC14	-	75 520
18" 450 mm	CY-PC12	75 520	-
	CY-PC14	-	75 520
20" 500 mm	CY-PC14	75 520	-
	CY-PC16	-	75 520
24" 600 mm	CY-PC16	75 520	-
	CY-PC18	-	75 520

Actuator Sizing

80 psi (550 kPa) Air Supply

Valve Size	Order Code	Max. Pressure Differential psi/kPa	
		On-Off	Positioning
4" 100 mm	CY-PC4	75 520	-
	CY-PC6	-	75 520
6" 150 mm	CY-PC6	75 520	-
	CY-PC8	-	75 520
8" 200 mm	CY-PC6	75 520	-
	CY-PC8	-	75 520
10" 250 mm	CY-PC8	75 520	-
	CY-PC12	-	75 520
12" 300mm	CY-PC8	75 520	-
	CY-PC12	-	75 520
14" 350 mm	CY-PC10	75 520	-
	CY-PC12	-	75 520
16" 400 mm	CY-PC10	75 520	-
	CY-PC14	-	75 520
18" 450 mm	CY-PC10	75 520	-
	CY-PC14	-	75 520
20" 500 mm	CY-PC12	75 520	-
	CY-PC16	-	75 520
24" 600 mm	CY-PC16	75 520	-
	CY-PC18	-	75 520

Electric Motor Actuators

DeZURIK KGU Urethane Knife Gate Valves can be furnished with electric motor actuators including Limitorque Auma, Rotork, E.I.M. and others. They may be specified with cast iron, ductile iron or aluminum housing and in a variety of electrical characteristics.

Ordering

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

Accessories

Positioners

DeZURIK cylinder actuators are available with pneumatic or electronic positioners for throttling control. Positioners are enclosed and mounted on the superstructure.

Air Filter Regulator

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

Manual Loading Station Control Panel

For all positioning pneumatic actuators. Output is 0-15 psi (0-100 kPa). It includes signal output gauge and pressure reducing valve. Order as a separate item by giving code ACC*CNP025.

Ordering Example:

ACC*CNP025

Four-Way Manual Control Valve

Four-Way Manual Control Valves are for all pneumatic or hydraulic double-acting cylinder actuators. It is available mounted or as a separate item. To order mounted as part of a complete valve and actuator assembly, add code from table below to valve and actuator order code. To order separately, enter code ACC* followed by code from table below.

Valve Size	NTP Size (Inches)	Code
4-24" 100-600 mm	1/4"	CV201
4-10" 100-250 mm	3/8"	CV202
12-24" 300-600 mm	1/2"	CV203

Ordering Example:

KGU, 4, W1, S2, C*CY-PC6, CV201

Ordering Example (Separate Item):

ACC*CV201

Four-Way Diaphragm Pilot Valves

Four-Way Diaphragm Pilot Valves are for use on all double-acting pneumatic cylinder actuators. They are available mounted and piped or as a separate item. To order mounted, enter code 4VD after the valve and actuator order code. To order as a separate item, enter code ACC*4VD.

Ordering Example:

KGU, 4, W1, S2, C*CY-PC6, 4VD

Ordering Example (Separate Item):

ACC*4VD

Air Switch

Air switches are used with Four-Way Diaphragm Pilot Valves. They supply on-off action. Not available mounted. To order, specify code ACC*SA025.

Ordering Example:

ACC*SA025

Accessories

Four-Way Solenoid Valves

Solenoid valves may be ordered mounted and piped as part of a complete valve/actuator assembly or they can be ordered 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. To order mounted, add the appropriate code to the valve and actuator order code.

Speed Control	Order Code
Two speed control	SP
One control to close	SPC
One control to open	SPO

Ordering Example:

KGU, 4, W1, S2, C*CY-PC6, SP

Position Indicating Switches

Position Indicating Switches are available for use on double-acting cylinder actuators. Order as a part of a complete valve/actuator assembly by adding the appropriate code from the table below to the valve and actuator order code. Two switches will automatically be set to indicate full open and full closed positions.

Two Switches-Open/Closed

Description	Switch Type	Rating	Order Code
2 SPDT	Mechanical	Nema 1,3,4,6,13	SE649
2 DPDT	Mechanical	Nema 1,3,4,6,13	SE524
2 SPDT	Mechanical	Nema 1,3,4,6,7,9,13	SEH95
2 DPDT	Mechanical	Nema 1,3,4,6,7,9,13	SEH96
2 SPDT, Brass Housing	Proximity	No Approval	SEH93
2 SPDT, SST Housing	Proximity	UL, CSA, FA*	SEH94

* Class 1, Div. 1, Group A, B, C, D Call II, Group E, F, G

One Switches-Open

Description	Switch Type	Rating	Order Code
1 SPDT	Mechanical	Nema 1,3,4,6,13	SEJ40
1 DPDT	Mechanical	Nema 1,3,4,6,13	SEJ42
1 SPDT	Mechanical	Nema 1,3,4,6,7,9,13	SEJ46
1 DPDT	Mechanical	Nema 1,3,4,6,7,9,13	SEJ44
1 SPDT, Brass Housing	Proximity	No Approval	SEJ36
1 SPDT, SST Housing	Proximity	UL, CSA, FA*	SEJ38

One Switches-Closed

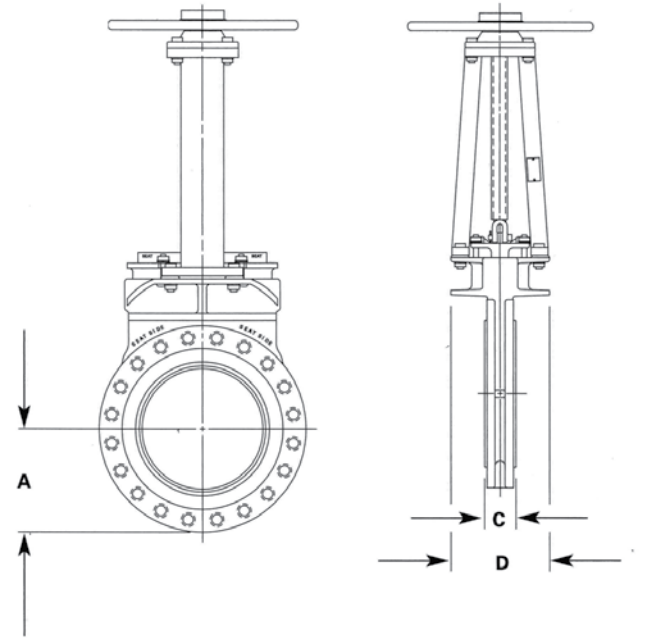
Description	Switch Type	Rating	Order Code
1 SPDT	Mechanical	Nema 1,3,4,6,13	SEJ41
1 DPDT	Mechanical	Nema 1,3,4,6,13	SEJ43
1 SPDT	Mechanical	Nema 1,3,4,6,7,9,13	SEJ47
1 DPDT	Mechanical	Nema 1,3,4,6,7,9,13	SEJ45
1 SPDT, Brass Housing	Proximity	No Approval	SEJ37
1 SPDT, SST Housing	Proximity	UL, CSA, FA*	SEJ39

Ordering Example:

KGU, 4, W1, S2, C*CY-PC6, SEH96

Dimensions Flanged Ends

Valve Size	Dimensions		
	A	C	D
4" 100 mm	4.50 114	2.00 51	5.00 127
6" 150 mm	5.50 140	2.25 57	5.75 146
8" 200 mm	6.75 171	2.75 70	6.38 162
10" 250 mm	8.00 203	2.75 70	8.25 210
12" 300 mm	9.50 241	3.00 76	8.25 210
14" 350 mm	10.50 267	3.00 76	9.12 232
16" 400 mm	11.75 298	3.50 89	9.12 232
18" 450 mm	12.50 318	3.50 89	10.12 257
20" 500 mm	13.75 349	4.50 114	10.12 257
24" 600 mm	16.00 406	4.50 114	10.12 257

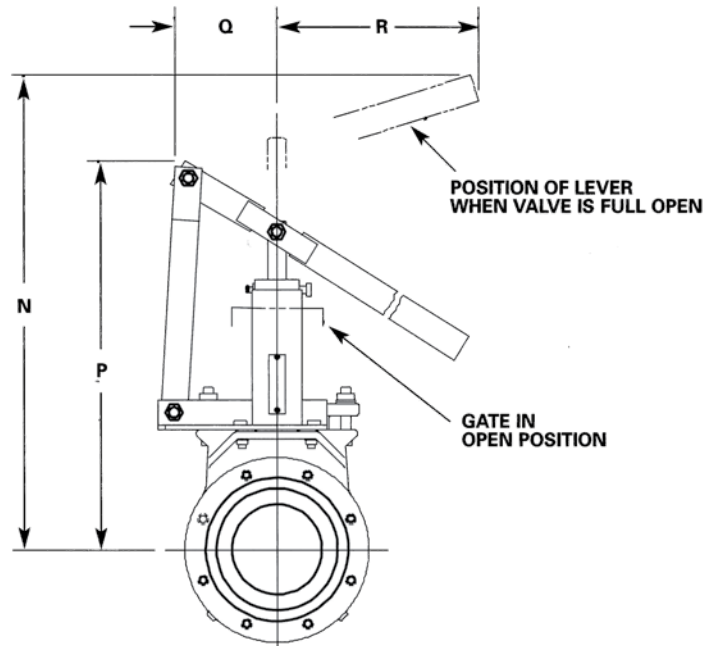


Lever

Valve Size	Dimensions			
	N	P	Q	R
4" 100 mm	25.62 651	20.88 530	6.19 157	24.50 622

Inch
Millimeter

Note: Dimensions are subject to change without notice.
For piping layouts, request certified drawings

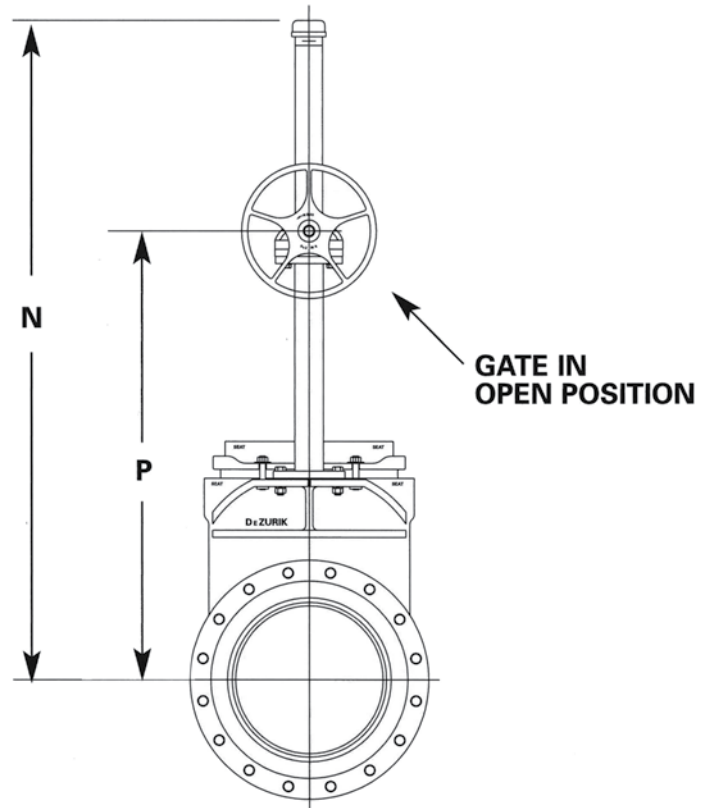


Dimensions

Bevel Gear Actuator, 4-12" (100-300 mm)

Valve Size	Dimensions			
	N	P	Q	R
4" 100 mm	<u>19.00</u> 483	<u>15.94</u> 405	<u>8.00</u> 203	<u>10.00</u> 254
6" 150 mm	<u>24.31</u> 618	<u>19.31</u> 491	<u>10.00</u> 254	<u>10.25</u> 260
8" 200 mm	<u>30.25</u> 768	<u>23.25</u> 591	<u>12.00</u> 305	<u>10.25</u> 260
10" 250 mm	<u>36.62</u> 930	<u>27.69</u> 703	<u>16.00</u> 406	<u>10.31</u> 262
12" 300 mm	<u>42.50</u> 1080	<u>31.50</u> 800	<u>16.00</u> 406	<u>10.31</u> 262

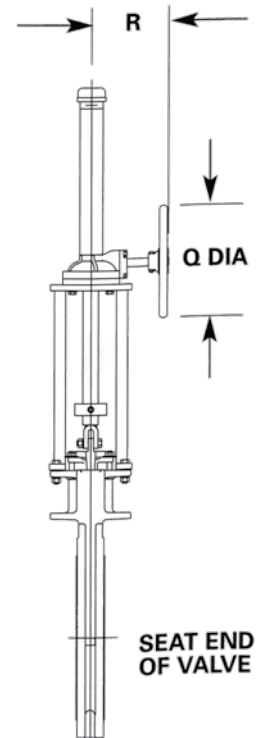
Inch
Millimeter



Bevel Gear Actuator, 14-24" (350-600 mm)

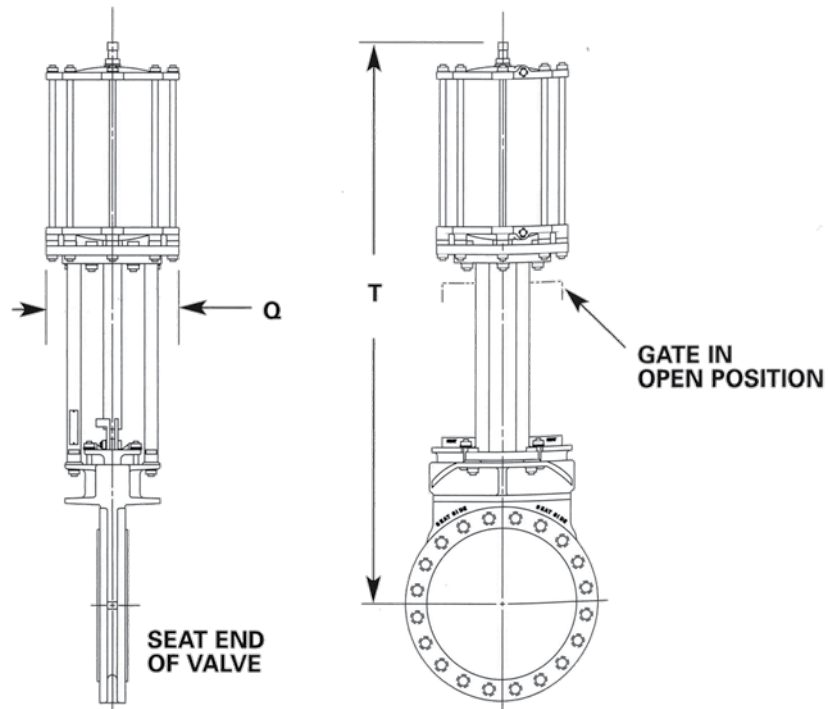
Valve Size	Dimensions					
	N		P		Q	R
	Std. & 180	90 & 270	Std. & 180	90 & 270		
14" 350 mm	<u>53.00</u> 1402	<u>56.65</u> 1439	<u>36.25</u> 972	<u>39.75</u> 1010	<u>12.00</u> 305	<u>9.62</u> 244
16" 400 mm	<u>57.25</u> 1491	<u>60.78</u> 1544	<u>40.38</u> 1061	<u>43.88</u> 1115	<u>12.00</u> 305	<u>9.62</u> 244
18" 450 mm	<u>68.81</u> 1715	<u>71.38</u> 1813	<u>46.90</u> 1159	<u>49.40</u> 1255	<u>12.00</u> 305	<u>9.62</u> 244
20" 500 mm	<u>72.72</u> 1948	<u>75.83</u> 1926	<u>50.81</u> 1391	<u>54.06</u> 1373	<u>16.00</u> 406	<u>9.62</u> 244
24" 600 mm	<u>83.96</u> 2146	<u>87.25</u> 2216	<u>59.03</u> 1512	<u>62.28</u> 1582	<u>16.00</u> 406	<u>9.62</u> 244

Inch
Millimeter



Dimensions
Cylinder Actuators

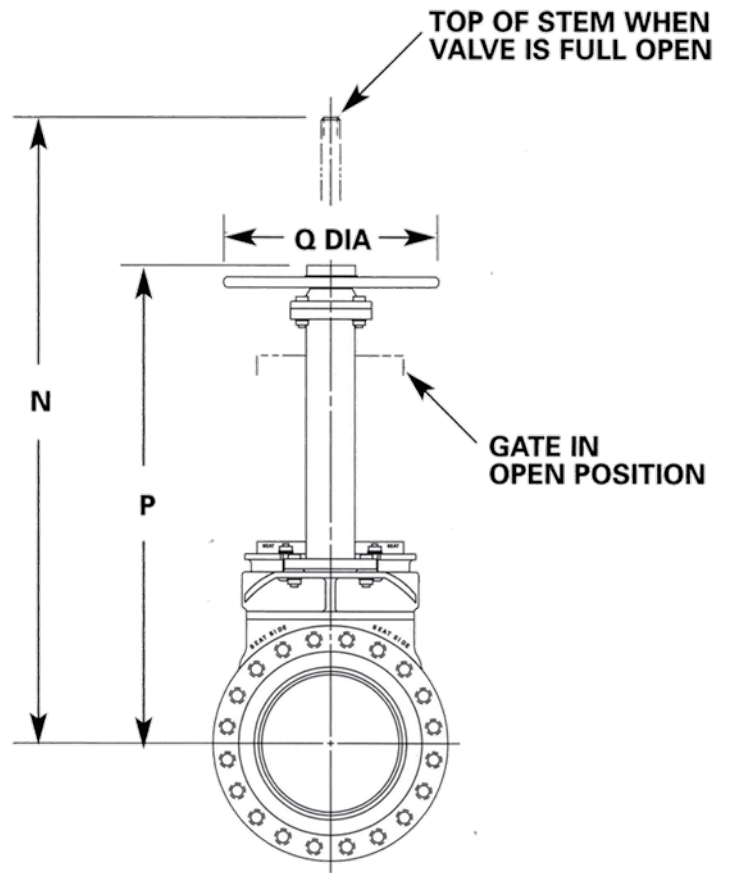
Valve Size	Actuator Code	Dimension
		Q
4-8" 100-200 mm	CY-PC4	<u>8.38</u> 213
4-8" 100-200 mm	CY-PC6	<u>8.38</u> 213
6-12" 150-300 mm	CY-PC8	<u>10.25</u> 260
10-12" 250-300 mm	CY-PC10	<u>14.00</u> 356
14-20" 350-500 mm		<u>12.31</u> 313
10-12" 250-300 mm	CY-PC12	<u>14.00</u> 356
14-24" 350-600 mm		<u>14.88</u> 378
16-24" 400-600 mm	CY-PC14	<u>14.75</u> 375
18-24" 450-600 mm	CY-PC16	<u>17.00</u> 432
24" 600 mm	CY-PC18	<u>19.00</u> 483



Valve Size	Dimension							
	CY-PC4	CY-PC6	CY-PC8	CY-PC10	CY-PC12	CY-PC14	CY-PC16	CY-PC18
4" 100 mm	<u>23.12</u> 587	<u>24.25</u> 616	-	-	-	-	-	-
6" 150 mm	-	<u>29.69</u> 754	<u>30.50</u> 775	-	-	-	-	-
8" 200 mm	-	<u>35.50</u> 902	<u>36.56</u> 929	-	-	-	-	-
10" 250 mm	-	-	<u>43.62</u> 1108	<u>43.56</u> 1107	<u>45.44</u> 1154	-	-	-
12" 300 mm	-	-	<u>49.31</u> 1253	<u>49.12</u> 1248	<u>50.81</u> 1291	-	-	-
14" 350 mm	-	-	-	<u>56.62</u> 1438	<u>58.44</u> 1484	-	-	-
16" 400 mm	-	-	-	<u>62.56</u> 1589	<u>64.38</u> 1635	<u>69.19</u> 1732	-	-
18" 450 mm	-	-	-	<u>70.69</u> 1796	<u>72.50</u> 1842	<u>76.69</u> 1948	<u>77.06</u> 1957	-
20" 500 mm	-	-	-	-	<u>78.25</u> 1988	<u>82.62</u> 2099	<u>83.00</u> 2108	-
24" 600 mm	-	-	-	-	<u>89.75</u> 2280	<u>94.94</u> 2412	<u>95.31</u> 2421	<u>95.81</u> 2434

Dimensions
Handwheel Actuators

Valve Size	Dimensions		
	N	P	Q
4" 100 mm	<u>19.00</u> 483	<u>16.25</u> 413	<u>8.00</u> 203
6" 150 mm	<u>24.31</u> 618	<u>19.75</u> 502	<u>10.00</u> 254
8" 200 mm	<u>30.25</u> 768	<u>23.69</u> 602	<u>12.00</u> 305
10" 250 mm	<u>36.62</u> 930	<u>28.00</u> 711	<u>16.00</u> 406
12" 300 mm	<u>42.50</u> 1080	<u>31.88</u> 810	<u>16.00</u> 406
14" 350 mm	<u>51.50</u> 1308	<u>38.25</u> 972	<u>20.00</u> 508
16" 400 mm	<u>55.50</u> 1410	<u>40.31</u> 1024	<u>20.00</u> 508
18" 450 mm	<u>66.00</u> 1676	<u>48.62</u> 1235	<u>20.00</u> 508
20" 500 mm	<u>69.75</u> 1772	<u>50.62</u> 1286	<u>20.00</u> 508
24" 600 mm	<u>81.75</u> 2076	<u>58.50</u> 1486	<u>20.00</u> 508



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

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.