



KGN CAST STAINLESS STEEL KNIFE GATE VALVES



Design & Construction

DeZURIK Stainless Steel Knife Gate Valves are designed for on-off applications. They feature a cast corrosion resistant body in 304 or 316 stainless steel. The stem and packing gland are also stainless steel for corrosion protection.

Stainless Steel Knife Gate Valves are available in sizes 2-24" with metal seats.

A variety of actuator options are available including handwheels, chainwheels, bevel gears and cylinders. A full complement of accessories are also offered.

Stainless Steel Stem

All valves are furnished with a stainless steel stem that assures easy operation and dependable service.

One Piece Cast, Corrosion Resistant Body

The heavy duty, cast 304, 316 stainless steel body provides corrosion and abrasion resistance on the toughest liquid slurry and dry material handling applications. The all stainless body, chest, and packing chamber provide durability and integrity for all wetted parts. The integral metal seat provides shutoff that exceeds MSS-SP-81 standards.

Rugged Gate Guides and Jams

Gate guides provide support for the moving gate. Gate jams at the bottom of the body hold the gate securely against the seat to assure positive shutoff.

Integral Lug Body

Raised face body has drilled and tapped lugs in accordance with ANSI B16.5 150 Lb. drilling dimensions.

Long Life Packing

A variety of packing materials are offered to assure a tight seal with minimum packing gland pressure. Maximum temperature varies from 500°F to 1000°F dependant on material type.

Corrosion Resistant Packing Gland

The packing gland is stainless steel for corrosion resistance. Packing gland bolts are easily accessible for adjustments.

High Flow Capacity

Round port design per MSS-SP-81 requirements allows high flow capacity and minimum pressure drop. A stepped transition port eliminates the cavity (where material can accumulate).

Rugged Stainless Steel Gate

Gates are available in 304 or 316 stainless steel for corrosion resistance. They feature a precision ground finish on both sides to prevent packing and seat damage. The beveled knife like edge pushes aside or cuts through solids in the flow stream.

Accessories

A variety of accessories are offered as standard. Including cylinder actuator accessories for customizing the valve/ actuator package to meet your specific application requirements.

General Specifications

Valve Size: 2 – 24"

Body Style: Knife Gate, Lugged

Pressure Rating: 150 psi CWP (Cold Working Pressure)

Shutoff: Exceeds MSS-SP-81

Materials of Construction

Body: 304 or 316 Stainless Steel with integral metal seat

Gate: 304 or 316 Stainless Steel

Packing Gland: 316 Stainless Steel

Packing Gland Hardware: Carbon Steel

Bolting/Hardware: Carbon Steel

Yoke Sleeve: Aluminum Bronze

Stem and Clip: 304 Stainless Steel

Handwheel and Superstructure: Carbon Steel

Actuators: Mild Steel or Cast Iron construction

Accessory Brackets/Fasteners: Carbon Steel

Valve Selection Cv/Kv Values

Valve Size (Inches/mm)	Metal Seated	
	C_v^* K_v^*	Area of Opening (In ² /cm ²)
<u>2</u> 50mm	<u>232</u> 199	<u>3.04</u> 19.6
<u>3</u> 80mm	<u>505</u> 433	<u>6.31</u> 40.7
<u>4</u> 100mm	<u>890</u> 763	<u>10.76</u> 69.4
<u>6</u> 150mm	<u>2050</u> 1757	<u>24.20</u> 156.1
<u>8</u> 200mm	<u>3695</u> 3166	<u>41.66</u> 268.8
<u>10</u> 250mm	<u>5935</u> 5086	<u>65.53</u> 422.8
<u>12</u> 300mm	<u>8545</u> 7322	<u>92.73</u> 598.3
<u>14</u> 350mm	<u>10505</u> 9002	<u>111.76</u> 721.0
<u>16</u> 400mm	<u>14030</u> 12022	<u>147.93</u> 954.4
<u>18</u> 450mm	<u>17900</u> 15339	<u>189.94</u> 1225.5
<u>24</u> 600mm	<u>33280</u> 28518	<u>344.55</u> 2222.9

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

K_v =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



Ordering

To order give the complete valve and actuator identification by specifying the order code for each item as shown. An example is shown for your reference.

Valve Style

Give valve style code as follows:

KGN = Cast Knife Gate Valves

Valve Size ⁽¹⁾

Give valve size code as follows:

2 = 2" 50mm	12 = 12" 300mm
3 = 3" 80mm	14 = 14" 350mm
4 = 4" 100mm	16 = 16" 400mm
6 = 6" 150mm	18 = 18" 450mm
8 = 8" 200mm	20 = 20" 500mm
10 = 10" 250mm	24 = 24" 600mm

Body Style

Give body style code as follows:

MSU = Metal Seated, Uni-Directional

End Connection

Give end connection code as follows:

F1 = ANSI B16.5 150 Lb. drilling

Note 1: Gate roller supports are required on 24" valves when not mounted in the upright position. Contact DeZURIK for ordering information.

Ordering Example

KGN,6,MSU,F1,S2,MSP,S2-M*Actuator

Body Material

Give body material code as follows:

S1 = 304 Stainless Steel
S2 = 316 Stainless Steel

Packing Material

Give packing material code as follows:

Standard Packing:

MSP = Standard Packing Fiber to 500°F (260°C) (pH Range 4-10)

Special Packing (Refer to Price Adders):

CWP = High Temperature Braided Packing with one ring copper wire braided Scraper to 500°F (260°C) (pH Range 4-10)

TDP = Dry Service with Teflon Cord to 500° F (260°C) (pH Range 0-14)

HBP = High Temperature Braided Packing to 1000°F (540°C) (pH Range 4-10)

Gate Material

Give gate material code as follows:

S1 = 304 Stainless Steel
S2 = 316 Stainless Steel

Seat Material

Give seat material code as follows:

M = Metal Seated, to 1000°F (537°C)

Actuator Sizing

Handwheel Actuators

Valve Size	Order Code	Max. Pressure Differential (psi/kPa)
<u>2"</u> 50mm	MN-HD10	<u>150</u> 1030
<u>3"</u> 80mm	MN-HD10	<u>150</u> 1030
<u>4"</u> 100mm	MN-HD10	<u>150</u> 1030
<u>6"</u> 150mm	MN-HD12	<u>150</u> 1030
<u>8"</u> 200mm	MN-HD12	<u>150</u> 1030
<u>10"</u> 250mm	MN-HD14*	<u>150</u> 1030
<u>12"</u> 300mm	MN-HD14*	<u>150</u> 1030
<u>14"</u> 350mm	MN-HD18*	<u>125</u> 860
<u>16"</u> 400mm	MN-HD18*	<u>100</u> 690
<u>18"</u> 450mm	MN-HD24*	<u>75</u> 520
<u>20"</u> 500mm	MN-HD24*	<u>50</u> 340
<u>24"</u> 600mm	MN-HD24*	<u>25</u> 170

Bevel Gear Handwheel Actuators, 10- 24"

Valve Size	Order Code Standard or 180	Max. Pressure Differential (psi/kPa)
<u>10"</u> 250mm	MNB-HD12	<u>150</u> 1030
<u>12"</u> 300mm	MNB-HD12	<u>150</u> 1030
<u>14"</u> 350mm	MNB-HD12	<u>150</u> 1030
<u>16"</u> 400mm	MNB-HD12	<u>150</u> 1030
<u>18"</u> 450mm	MNB-HD12	<u>150</u> 1030
<u>20"</u> 500mm	MNB-HD16	<u>150</u> 1030
<u>24"</u> 600mm	MNB-HD16	<u>150</u> 1030

*Note: Bevel gear actuators recommended for 14" valves or larger used for dry solids, paper stock, slurries or when pressure exceeds limits shown.

Cylinder Actuator Sizing

60psi (408kPa) Air Supply

Valve Size	Actuator Order Code	Max. Pressure Differential (psi/kPa)	
		On-Off	
		Dry Solids, Slurries, Paper Stock	Liquids & Gases
<u>2"</u> 50mm	CY-PC4	<u>100</u> 690	<u>150</u> 1030
<u>3"</u> 80mm	CY-PC4	<u>100</u> 690	<u>150</u> 1030
<u>4"</u> 100mm	CY-PC4	<u>100</u> 690	<u>150</u> 1030
<u>6"</u> 150mm	CY-PC6	<u>100</u> 690	<u>150</u> 1030
<u>8"</u> 200mm	CY-PC6	<u>50</u> 340	<u>75</u> 520
	CY-PC8	<u>100</u> 690	<u>150</u> 1030
<u>10"</u> 250mm	CY-PC6	<u>50</u> 340	<u>75</u> 520
	CY-PC10	<u>100</u> 690	<u>150</u> 1030
<u>12"</u> 300mm	CY-PC8	<u>50</u> 340	<u>75</u> 520
	CY-PC10	<u>100</u> 690	<u>150</u> 1030

Valve Size	Actuator Order Code	Max. Pressure Differential (psi/kPa)	
		On-Off	
		Dry Solids, Slurries, Paper Stock	Liquids & Gases
<u>14"</u> 350mm	CY-PC8	<u>50</u> 340	<u>75</u> 520
	CY-PC12	<u>75</u> 520	<u>100</u> 690
<u>16"</u> 400mm	CY-PC10	<u>50</u> 340	<u>75</u> 520
	CY-PC12	<u>100</u> 690	<u>150</u> 1030
<u>18"</u> 450mm	CY-PC10	<u>50</u> 340	<u>75</u> 520
	CY-PC14	<u>100</u> 690	<u>150</u> 1030
<u>20"</u> 500mm	CY-PC12	<u>50</u> 340	<u>75</u> 520
	CY-PC14	<u>100</u> 690	<u>150</u> 1030
<u>24"</u> 600mm	CY-PC12	<u>50</u> 340	<u>75</u> 520
	CY-PC14	<u>75</u> 520	<u>100</u> 690

Accessories

Air Filter Regulator - For all pneumatic actuators. The DeZURIK Air Filter Regulator is designed to provide clean, accurate air pressure to actuators.

Four-Way Solenoid Valve - For all pneumatic actuators. Solenoid valves may be ordered mounted and piped as part of the complete valve/actuator assembly or as a separate item.

Position Indicating Switches - For all pneumatic actuators. Order as part of a complete valve/actuator assembly by adding the appropriate code from the tables below to the valve and actuator ordering code. Two switches will automatically be set to indicate full open and full closed positions.

Position Indicating Switch - Ordering

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	Proximity	No Approval	SEH93
2 SPDT	Proximity	UL, CSA, FM	SEH94
2 SPDT	Proximity	NEMA 4,4X,6	SEHK3

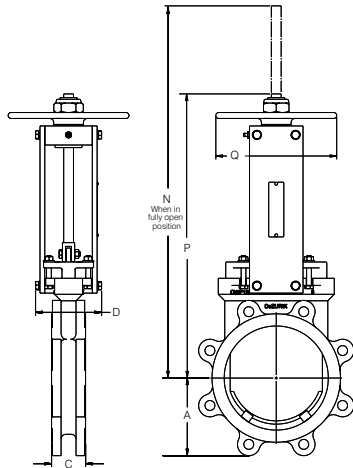
One Switch - Open

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	Proximity	No Approval	SEJ36
1 SPDT	Proximity	UL, CSA, FM	SEJ38
1 SPDT	Proximity	NEMA 4,4X,6	SEK37

One Switch - 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	Proximity	No Approval	SEJ37
1 SPDT	Proximity	UL, CSA, FM	SEJ39
1 SPDT	Proximity	NEMA 4,4X,6	SEK87

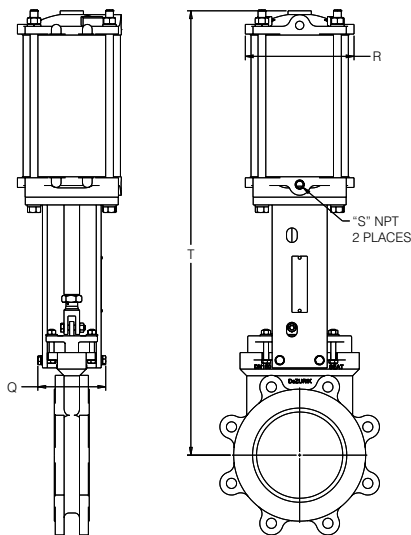
Dimensions



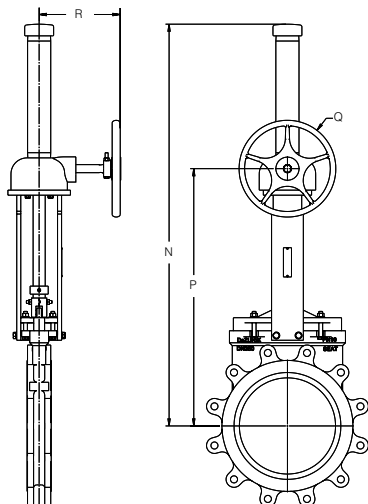
Basic Valve with Handwheel Actuator

Valve Size Inches/mm	A	C	O	N	P	O
2" 50mm	2.30 58.5	1.88 47.6	3.24 82.3	13.36 339.3	11.19 284.3	10.00 203.2
3" 80mm	2.87 72.9	2.00 50.8	3.39 86.0	16.86 428.3	13.83 351.3	10.00 203.2
4" 100mm	4.21 107.0	2.00 50.8	3.39 86.0	19.24 488.8	15.35 389.8	10.00 203.2
6" 150mm	5.14 130.5	2.25 57.2	4.37 111.0	24.63 625.8	18.80 477.6	12.00 203.2
8" 200mm	6.22 157.9	2.75 69.8	4.50 114.3	29.47 748.6	21.91 556.6	12.00 304.8
10" 250mm	7.67 194.8	2.75 69.8	5.25 133.3	34.77 883.2	25.36 644.2	14.00 355.6
12" 300mm	9.00 228.5	3.00 76.2	6.18 156.9	39.62 1006.2	28.29 718.5	14.00 355.6
14" 350mm	10.04 255.0	3.00 76.2	6.38 161.5	43.81 1112.9	31.53 800.9	18.00 457.2
16" 400mm	11.41 289.7	3.50 88.9	7.31 185.6	49.8 1264.9	35.61 904.5	18.00 457.2
18" 450mm	12.24 310.8	3.50 88.9	7.31 185.6	55.28 1404.1	39.26 997.1	24.00 609.6
20" 500mm	13.43 341.1	4.50 114.3	8.38 213.0	60.98 1548.8	43.14 1095.8	24.00 609.6
24" 600mm	15.75 400.0	4.50 114.3	8.38 213.0	70.39 1787.8	48.93 1242.8	24.00 609.6

Cylinder Actuator



Valve Size Inches/mm	Q	R	S	T
2" 50mm	3.08 78.3	5.00 127.0	1" 4	18.56 471.4
3" 80mm	3.26 82.7	5.00 127.0	1" 4	21.00 533.4
4" 100mm	3.26 82.7	5.00 127.0	1" 4	22.49 571.4
6" 150mm	4.37 111.0	7.00 177.8	1" 4	28.61 726.7
8" 200mm	4.50 114.3	9.00 228.6	1" 2	34.20 868.6
10" 250mm	5.25 133.3	11.25 285.8	1" 2	43.61 1107.7
12" 300mm	6.18 156.9	11.25 285.8	1" 2	46.91 1191.6
14" 350mm	6.41 162.9	13.25 336.6	1" 2	52.69 1338.4
16" 400mm	7.31 185.6	13.25 336.6	1" 2	56.40 1432.6
18" 450mm	7.31 185.6	15.50 393.7	1" 2	64.36 1634.8
20" 500mm	8.10 205.6	15.50 393.7	1" 2	67.96 1726.3
24" 600mm	8.38 213.0	15.50 393.7	1" 2	77.69 1973.4



Bevel Gear Actuator

Valve Size Inches/mm	N	P	Q	R
10" 250mm	40.66 1032.76	26.24 666.5	12.00 304.8	10.12 257.0
12" 300mm	44.09 1120.0	29.67 753.5	12.00 304.8	10.12 257.0
14" 350mm	49.84 1266.0	31.91 810.6	12.00 304.8	10.12 257.0
16" 400mm	53.55 1360.2	35.63 904.9	12.00 304.8	10.12 257.0
18" 450mm	61.45 1560.8	39.52 1003.9	12.00 304.8	10.12 257.0
20" 500mm	65.05 1652.3	43.12 1095.3	16.00 406.4	10.12 257.0
24" 600mm	74.78 1899.4	48.85 1240.8	16.00 406.4	10.12 257.0

Sales and Service

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

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