

# DeZURIK KSL-LA SLURRY KNIFE GATE VALVES



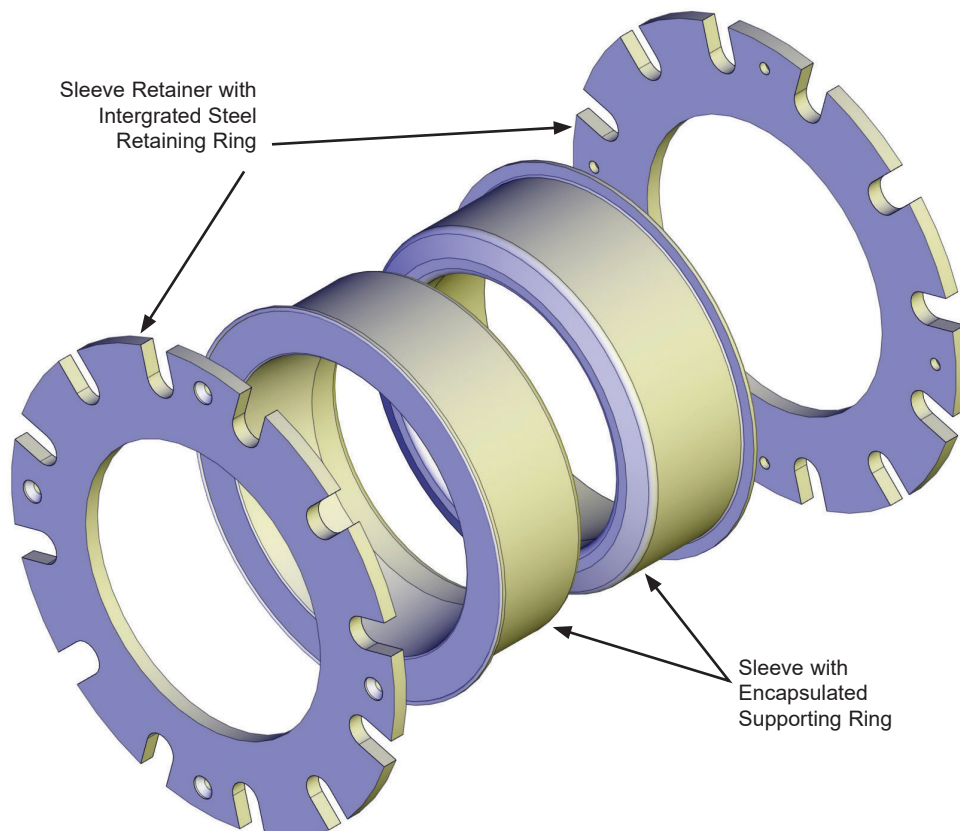
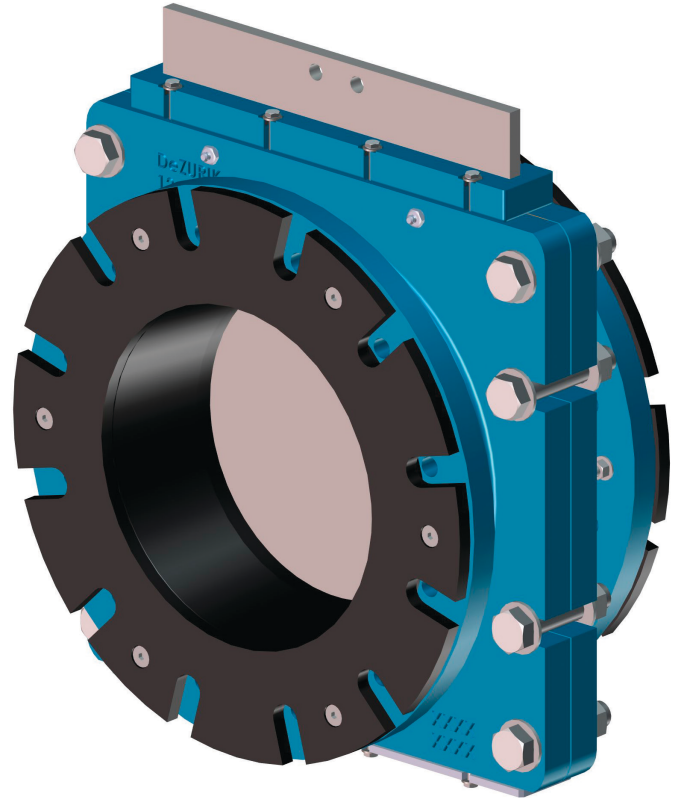
# Slurry Knife Gate

## Design and Construction

DeZURIK's KSL-LA Slurry Knife Gate Valves are designed for on-off (isolation) service for applications consisting of abrasive, high solids content, wet or dry media. KSL-LA Slurry Knife Gate Valves are ideally suited for applications in the mining, power, and aggregate industries.

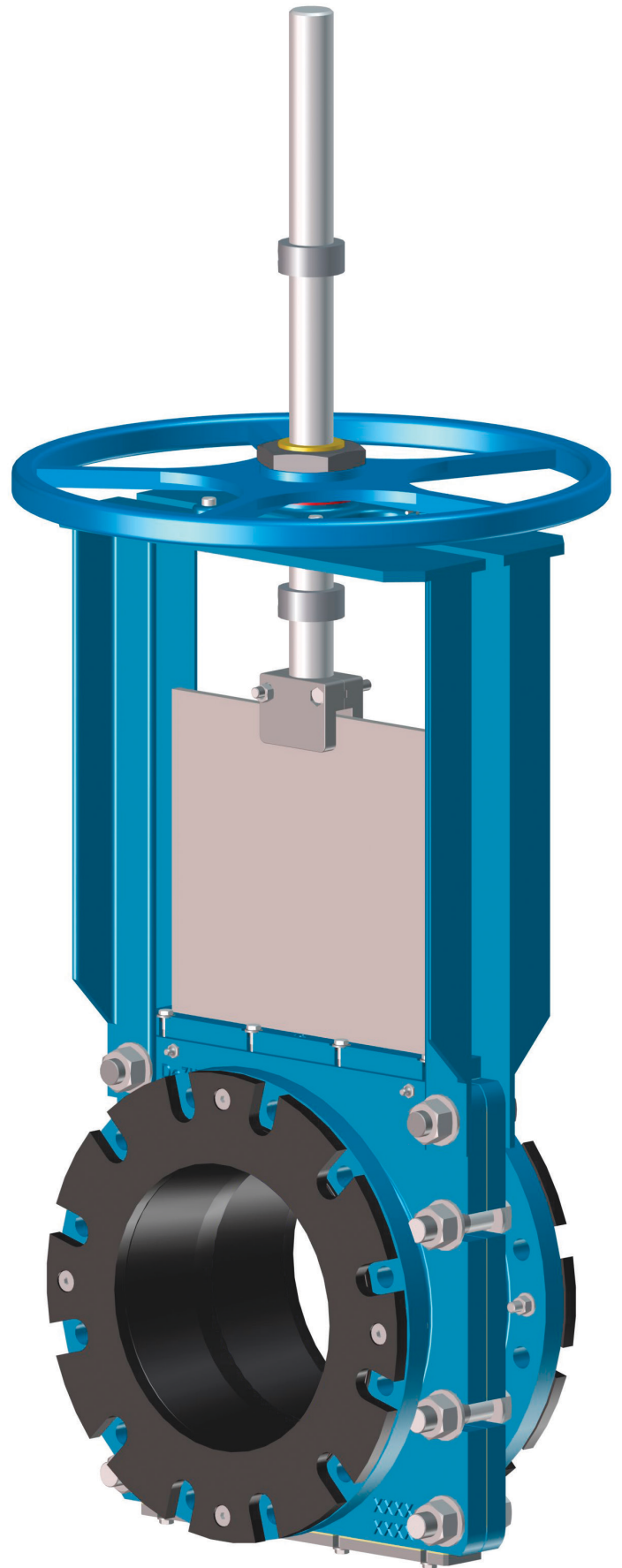
KSL-LA Knife Gate Valves are available in sizes 2-24" (50-600mm) with larger sizes available on application. Temperature ratings to 177°F (81°C) as standard, and up to 300°F (150°C) with high-temperature optional seat materials. Standard pressure rating on 2-24" valves is 100 psi (690kPa), with higher pressures available with optional gate materials.

Depending on the application requirements, the cast body is available in Ductile Iron, Carbon Steel and various Stainless Steel or higher alloy materials.



## Features include:

- Full flanged design with flange drilling per ASME B16.5 Class 150, DIN and BS standards, PN10 and PN16, and SANS 1123-1000 and 1600 Australian Table D & E (AS 2129) available.
- Bi-directional, drip tight shutoff to full pressure rating.
- Field replaceable sleeves with encapsulated supporting ring.
- Body construction allows for easy repairs.
- Full port reduces turbulence and pressure drop across the valve.
- Sleeve compression eliminates cavity where solids can collect.
- Sleeve design eliminates gate and stem packing.
- Sleeve design eliminates the requirement for flange gaskets.
- Straight vertical plane superstructure allows for easy installation of accessories.
- Gate fully retracts out of the flow path in the open position.
- Open / Closed position lock-outs optional.
- Optional gate coatings provide additional abrasion resistance and a non-stick (lubrication infused) surface that reduces actuating forces and extends sleeve life.
- Integral Lifting Lugs standard on sizes 12" (300mm) and larger.
- Flushing drain plates available.



## **Packingless Design**

The DeZURIK KSL-LA's compression-loaded sleeve design eliminates the need for conventional style packing. In the full open and closed positions, the sleeves seal to both downstream and atmosphere.

## **Open / Closed Position Lock-outs**

The DeZURIK KSL-LA is available with optional open and closed position lock-outs. The lock-outs are designed to withstand the maximum operating forces of the actuator supplied on the valve.

## **Rugged Stainless Steel Gate**

A durable gate resists damage and allows higher pressure drops. Gate material options include various stainless steels, heat-treated stainless steel and Hastelloy C. The gate is finish ground on both sides and edges to ensure long top seal and sleeve life.

To extend top seal and sleeve life, optional gate coatings are available that provide a lubrication-infused, non-stick surface that reduces the operating forces of the valve. A strong investment cast gate clip complements the KSL-LA's robust construction.

## **Stainless Steel Stem**

All valves are furnished with a stainless steel stem as standard that provides extra corrosion resistance, easy operation, and a longer cycle life. On manually operated valves the stem has single-lead threads to minimize wear and reduce the operating torque requirements of the valve.

## **Top Seal with Integrated Plate**

The DeZURIK KSL-LA has a top seal to prevent any discharge of process media from the top of the valve when the valve is stroked. The integrated plate design also centers, guides, and supports the gate, ensuring smooth operation.

## **Choice of Actuators**

The DeZURIK KSL-LA Slurry Knife Gate Valve is offered with a choice of handwheel, chainwheel, bevel gear, pneumatic or hydraulic cylinder, or electric motor actuators. Custom Engineered Hydraulic Power Units are also available.

## **Corrosion Resistant Yoke Sleeve**

A bronze yoke sleeve on manually operated valves provides corrosion resistance and assures easy operation. A grease fitting is provided to lubricate the stem thread and yoke sleeve.

## **Heavy-Duty Vertical Plane Superstructure**

The standard actuator superstructure is available in carbon steel or stainless steel and is designed to stand up under the most difficult operating conditions. The vertical plane design allows for easy installation of accessories. For valves mounted in horizontal installations, strengthened superstructures are available.

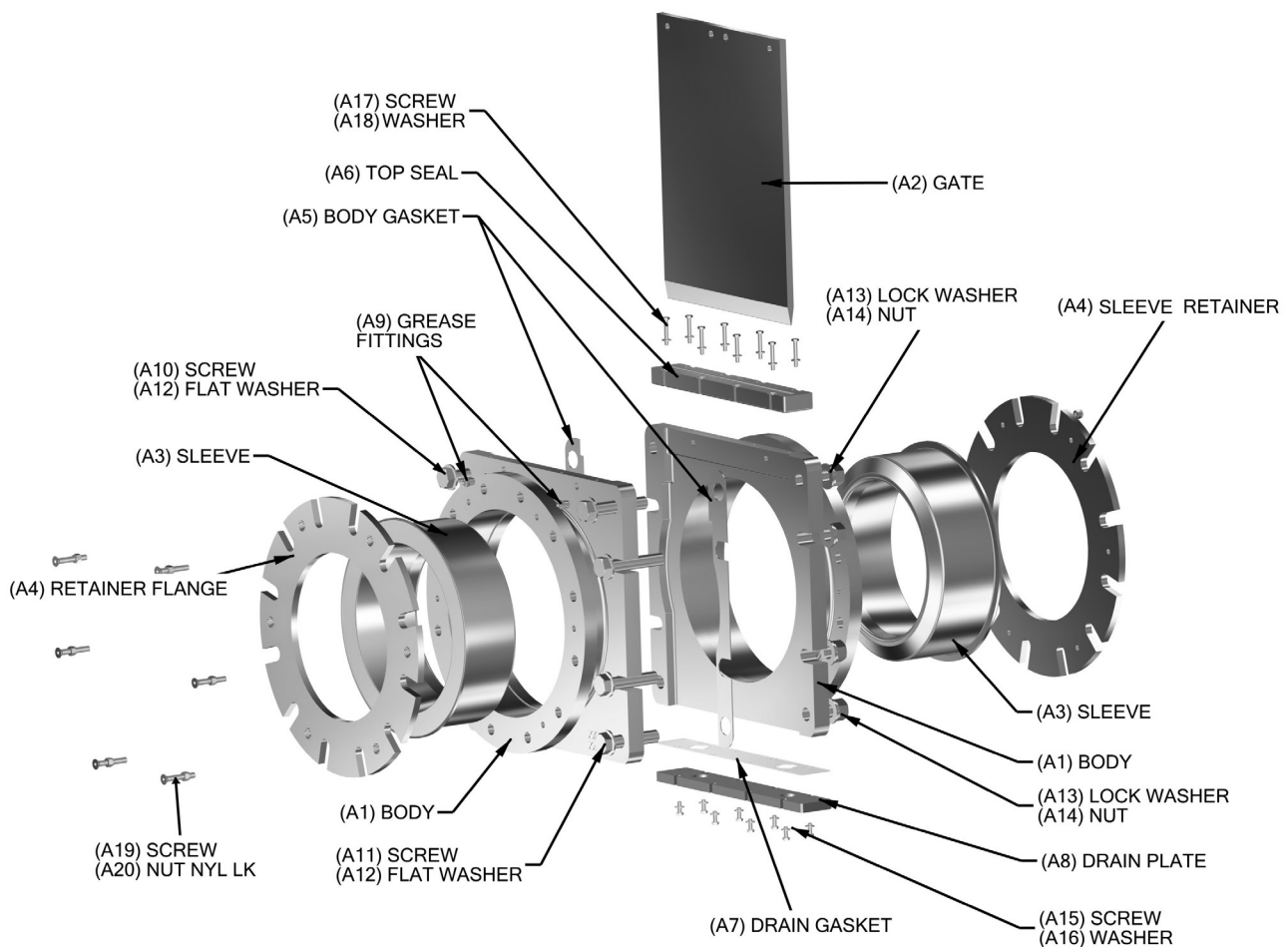
## **Accessories**

A wide variety of accessories are available including handwheel extensions, floorstands, stem covers and various cylinder actuator accessories such as filter regulators, speed controls and position indicating switches for customizing the valve/actuator package to meet specific application requirements.



# Materials of Construction

| Item | Description     | Material  |
|------|-----------------|---|
| A1   | Body            | Ductile Iron, ASTM A395, Grade 65-45-12   |
| A2   | Gate            | 316 Stainless Steel, ASTM A240 Type 316   |
|      |                 | 17-4 PH Stainless Steel H900 Heat Treated, ASTM A564  |
|      |                 | 2205 Duplex Stainless Steel, ASTM A240 Type 2205 Duplex   |
|      |                 | 316 Stainless Steel, ASTM A240 Type 316 with a hardened nickel based non-stick coating              |
|      |                 | 17-4 PH Stainless Steel H900 Heat Treated, ASTM A564 with a hardened nickel based non-stick coating |
| A3   | Sleeve          | 2205 Duplex Stainless Steel, ASTM A240 with a hardened nickel based non-stick coating               |
|      |                 | NR - Natural Rubber to 177°F (81°C)   |
|      |                 | HNBR - Hydrogenated Nitrile Butadiene to 300°F (150°C)  |
| A4   | Sleeve Retainer | EPDM - Terpolymer of Ethylene, Propylene & a Diene, to 250°F (120°C)                                |
|      |                 | NR - Natural Rubber to 177°F (81°C)   |
|      |                 | HNBR - Hydrogenated Nitrile Butadiene to 300°F (150°C)  |
| A5   | Body Gasket     | Duralon 8500  |
| A6   | Top Seal        | EPDM - Terpolymer of Ethylene, Propylene & a Diene, to 250°F (120°C)                                |
|      |                 | Hydrogenated Nitrile Butadiene to 300°F (150°C)   |
| A7   | Drain Gasket    | Duralon 8500 (DP Option)  |
| A8   | Drain Plate     | Carbon Steel, ASTM A36 (DP Option)  |
| A9   | Grease Fitting  | Steel   |
| A10  | Screw           | Carbon Steel, Zinc Plated   |
| A11  | Screw           | Carbon Steel, Zinc Plated   |
| A12  | Washer          | Carbon Steel, Zinc Plated   |
| A13  | Lockwasher      | Carbon Steel, Zinc Plated   |
| A14  | Nut             | Carbon Steel, Zinc Plated   |
| A15  | Screw           | Carbon Steel, Zinc Plated (DP Option)   |
| A16  | Washer          | Carbon Steel, Zinc Plated (DP Option)   |
| A17  | Screw           | Carbon Steel, Zinc Plated   |
| A18  | Washer          | Carbon Steel, Zinc Plated   |
| A19  | Screw           | Carbon Steel, Zinc Plated   |
| A20  | Nut             | Carbon Steel, Zinc Plated   |



# Valve Selection

## Shut-Off Capabilities

|                  |           |
|------------------|-----------|
| 2-24" (50-600mm) | Driptight |
|------------------|-----------|

NOTE: Leakage expected during actuation

## Pressure Ratings (Ambient Temperatures)

| Valve Size          |                          |
|---------------------|--------------------------|
| 2-24"<br>(50-600mm) | 100 psi C.W.P.<br>690kPa |

Higher pressures available on application

## Applicable Standards

| DeZURIK KSL-LA Knife Gate Valves are designed and/or tested to meet the following standards: |  |
|--|--|
| ASME B16.5/150   | ASME B16.5 Class 150 Flange Drilling   |
| DIN 10   | Metric 10 bar Flange Drilling          |
| DIN 16   | Metric 16 bar Flange Drilling          |
| AS2129 Table D   | Australian Table D Flange Drilling     |
| AS2129 Table E   | Australian Table E Flange Drilling     |
| SANS 1123-1000   | South African 1000 kPa Flange Drilling |
| SANS 1123-1600   | South African 1600 kPa Flange Drilling |

## Flow Parameters

| Valve Size   | Cv*<br>Kv*<br>100%<br>Open | K**<br>(resistance) | Port Area<br>(in <sup>2</sup> /cm <sup>2</sup> ) |
|--------------|----------------------------|---------------------|--|
| 2"<br>50mm   | 193<br>167                 | 0.16                | 2.0<br>13  |
| 3"<br>80mm   | 434<br>376                 | 0.16                | 4.6<br>29  |
| 4"<br>100mm  | 829<br>717                 | 0.16                | 8.7<br>56  |
| 5"<br>125mm  | 1500<br>1300               | 0.16                | 15.8<br>102                                      |
| 6"<br>150mm  | 2160<br>1870               | 0.16                | 22.7<br>146                                      |
| 8"<br>200mm  | 3540<br>3060               | 0.16                | 37.2<br>240                                      |
| 10"<br>250mm | 6140<br>5310               | 0.16                | 64.5<br>416                                      |
| 12"<br>300mm | 8640<br>7470               | 0.16                | 90.8<br>586                                      |
| 14"<br>350mm | 11700<br>10100             | 0.16                | 123<br>792                                       |
| 16"<br>400mm | 14700<br>12700             | 0.16                | 154<br>993                                       |
| 18"<br>450mm | 16600<br>14400             | 0.16                | 174<br>1122                                      |
| 20"<br>500mm | 20500<br>17700             | 0.16                | 215<br>1390                                      |
| 24"<br>600mm | 33600<br>29100             | 0.16                | 353<br>2275                                      |

\*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.

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

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

## Valve Weights

| Valve Size   | Basic Valve | With Handwheel | With Chainwheel | With Bevel Gear Handwheel |              | With Bevel Gear Chainwheel |              | Pneumatic Cylinder | Hydraulic Cylinder |
|--------------|-------------|----------------|-----------------|---------------------------|--------------|----------------------------|--------------|--------------------|--------------------|
|              |             |                |                 | Standard Mounting         | 90° Mounting | Standard Mounting          | 90° Mounting |                    |                    |
| 2"<br>50mm   | 31<br>14    | 62<br>28       | 74<br>33        | 110<br>50                 |              | 118<br>53                  |              | 69<br>31           | 51<br>23           |
| 3"<br>80mm   | 45<br>20    | 76<br>35       | 88<br>40        | 124<br>56                 |              | 132<br>60                  |              | 83<br>38           | 65<br>30           |
| 4"<br>100mm  | 55<br>25    | 113<br>51      | 121<br>55       | 158<br>72                 |              | 166<br>75                  |              | 117<br>53          | 101<br>46          |
| 5"<br>125mm  | 71<br>32    | 121<br>55      | 130<br>59       | 168<br>76                 |              | 175<br>80                  | 222<br>101   | 136<br>62          | 109<br>50          |
| 6"<br>150mm  | 81<br>37    | 131<br>60      | 140<br>64       | 178<br>81                 |              | 185<br>84                  | 232<br>105   | 146<br>66          | 119<br>54          |
| 8"<br>200mm  | 148<br>67   | 212<br>96      | 228<br>104      | 254<br>115                |              | 261<br>119                 | 307<br>140   | 220<br>100         | 200<br>91          |
| 10"<br>250mm | 151<br>69   | 226<br>103     | 242<br>110      | 267<br>121                |              | 288<br>131                 | 334<br>152   | 228<br>104         | 235<br>107         |
| 12"<br>300mm | 271<br>123  | N/A            | N/A             | 460<br>209                |              | 479<br>218                 | 525<br>239   | 509<br>231         | 399<br>181         |
| 14"<br>350mm | 338<br>154  | N/A            | N/A             | 496<br>225                | 543<br>247   | 516<br>235                 | 563<br>256   | 511<br>232         | 452<br>205         |
| 16"<br>400mm | 472<br>215  | N/A            | N/A             | 628<br>285                | 674<br>306   | 649<br>295                 | 695<br>316   | 704<br>320         | 579<br>263         |
| 18"<br>450mm | 600<br>273  | N/A            | N/A             | 860<br>391                | 975<br>443   | 880<br>400                 | 995<br>452   | 846<br>385         | 710<br>323         |
| 20"<br>500mm | 885<br>402  | N/A            | N/A             | 1172<br>533               | 1287<br>585  | 1193<br>542                | 1307<br>594  | 1445<br>657        | 1090<br>495        |
| 24"<br>600mm | 1155<br>525 | N/A            | N/A             | 1499<br>681               | 1611<br>731  | 1519<br>690                | 1632<br>741  | 1704<br>775        | 1415<br>643        |

# Ordering

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

## Valve Style

Give valve style code as follows:

KSL = Slurry Knife Gate Valve

## Valve Size

Give valve size code as follows:

|    |   |     |         |    |   |     |         |
|----|---|-----|---------|----|---|-----|---------|
| 2  | = | 2"  | (50mm)  | 12 | = | 12" | (300mm) |
| 3  | = | 3"  | (80mm)  | 14 | = | 14" | (350mm) |
| 4  | = | 4"  | (100mm) | 16 | = | 16" | (400mm) |
| 5  | = | 5"  | (125mm) | 18 | = | 18" | (450mm) |
| 6  | = | 6"  | (150mm) | 20 | = | 20" | (500mm) |
| 8  | = | 8"  | (200mm) | 24 | = | 24" | (600mm) |
| 10 | = | 10" | (250mm) |    |   |     |         |

Sizes 22" (550mm) and 26-60" (650-1500mm) are available on application. Contact DeZURIK for more information.

## Body Style

Give body style code as follows:

LA = Long Body Style

## End Connection

Give end connection code as follows:

|       |   |  |
|-------|---|--|
| F1    | = | ASME B16.5 Class 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                      |
| F1S10 | = | SANS1123-1000                                |
| F1S16 | = | SANS1123-1600                                |

## Body Material

Give body material code as follows:

DI = Ductile Iron

Other body materials are available on application

## Top Seal

Give top seal material code as follows:

EPDM = Terpolymer of Ethylene, Propylene & a Diene, to 250°F (120°C)  
HNBR = Hydrogenated Nitrile Butadiene to 300°F (150°C)

## Gate Material

Give gate material code as follows:

S2 = 316 Stainless Steel  
S5 = 17-4 Stainless Steel H900 Heat Treated  
S10 = 2205 Duplex Stainless Steel  
S2C = 316 Stainless Steel with a hardened nickel-based, nonstick coating  
S5C = 17-4PH Stainless Steel H900 Heat Treated with a hardened nickel-based, nonstick coating  
S10C = 2205 Duplex Stainless Steel with a hardened nickel-based, nonstick coating

## Sleeve Material

Give sleeve material code as follows:

NR = Natural Rubber to 177°F (81°C)  
EPDM = Terpolymer of Ethylene, Propylene & a Diene, to 250°F (120°C)  
HNBR = Hydrogenated Nitrile Butadiene to 300°F (150°C)

## Options

Give option code as follows:

— = Paint Options (Contact DeZURIK)  
CRT = Certified Physical and Chemical Test Reports (body & gate only)  
CMC = Certificate of Material Conformance  
DP = Drain Plate  
FLS = Sleeve Retainer Flange Seals, 2-8" (50-200mm) valves only.  
Sleeve Retainer Flange Seals are included as standard on 10" (250mm) and larger valves

## Ordering Example:

KSL,6,LA,F1,DI,EPDM,S2,NR,DP\*actuator

# Manual Actuators

## Handwheel and Chainwheel Actuators

All 2-10" (50-250mm) valves can be furnished with handwheel or chainwheel actuators. To order, add the appropriate order code to the basic valve order code. Refer to information on bevel gear actuators when pressures exceed limits shown. Actuator sizing is for slurries and liquids; contact DeZURIK for sizing on dry materials applications. Order chain for chainwheel actuators as a separate item.

### Handwheel Actuator

| Valve Size   | Order Code             | Maximum Shutoff Pressure Differential<br>psi/kPa |
|--------------|------------------------|--|
|              | Carbon Steel (CS) Yoke |  |
| 2"<br>50mm   | MN-HD12-CS             | 100<br>690                                       |
| 3"<br>80mm   | MN-HD12-CS             | 100<br>690                                       |
| 4"<br>100mm  | MN-HD12-CS             | 100<br>690                                       |
| 5"<br>125mm  | MN-HD12-CS             | 100<br>690                                       |
| 6"<br>150mm  | MN-HD16-CS             | 100<br>690                                       |
| 8"<br>200mm  | MN-HD20-CS             | 100<br>690                                       |
| 10"<br>250mm | MN-HD20-CS             | 50<br>345  |

### Chainwheel Actuator

| Valve Size   | Order Code             | Maximum Shutoff Pressure Differential<br>psi/kPa |
|--------------|------------------------|--|
|              | Carbon Steel (CS) Yoke |  |
| 2"<br>50mm   | MN-CW12-CS             | 100<br>690                                       |
| 3"<br>80mm   | MN-CW12-CS             | 100<br>690                                       |
| 4"<br>100mm  | MN-CW12-CS             | 100<br>690                                       |
| 5"<br>125mm  | MN-CW12-CS             | 100<br>690                                       |
| 6"<br>150mm  | MN-CW20-CS             | 100<br>690                                       |
| 8"<br>200mm  | MN-CW20-CS             | 100<br>690                                       |
| 10"<br>250mm | MN-CW20-CS             | 50<br>345  |

#### Ordering Example:

KSL,6,LA,F1,DI,EPDM,S2,NR,DP\*MN-HD16-CS

## Bevel Gear Actuators

Bevel gear actuators are available on 3-24" (80-600mm) 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. Actuator sizing is for slurries and liquids; contact DeZURIK for sizing on dry materials applications.

### Bevel Gear Handwheel Actuator

| Valve Size   | Order Code             | Maximum Shutoff Pressure Differential<br>psi/kPa |
|--------------|------------------------|--|
|              | Carbon Steel (CS) Yoke |  |
| 3"<br>80mm   | MNB-HD12-CS            | 100<br>690                                       |
| 4"<br>100mm  | MNB-HD12-CS            | 100<br>690                                       |
| 5"<br>125mm  | MNB-HD12-CS            | 100<br>690                                       |
| 6"<br>150mm  | MNB-HD12-CS            | 100<br>690                                       |
| 8"<br>200mm  | MNB-HD12-CS            | 100<br>690                                       |
| 10"<br>250mm | MNB-HD24-CS            | 100<br>690                                       |
| 12"<br>300mm | MNB-HD24-CS            | 100<br>690                                       |
| 14"<br>350mm | MNB-HD24-CS            | 100<br>690                                       |
| 16"<br>400mm | MNB-HD24-CS            | 100<br>690                                       |
| 18"<br>450mm | MNB-HD24-CS            | 100<br>690                                       |
| 20"<br>500mm | MNB-HD24-CS            | 100<br>690                                       |
| 24"<br>600mm | MNB-HD24-CS            | 100<br>690                                       |

### Bevel Gear Chainwheel Actuator

| Valve Size   | Order Code             | Maximum Shutoff Pressure Differential<br>psi/kPa |
|--------------|------------------------|--|
|              | Carbon Steel (CS) Yoke |  |
| 3"<br>80mm   | MNB-CW12-CS            | 100<br>690                                       |
| 4"<br>100mm  | MNB-CW12-CS            | 100<br>690                                       |
| 5"<br>125mm  | MNB-CW12-CS            | 100<br>690                                       |
| 6"<br>150mm  | MNB-CW12-CS            | 100<br>690                                       |
| 8"<br>200mm  | MNB-CW12-CS            | 100<br>690                                       |
| 10"<br>250mm | MNB-CW20-CS            | 100<br>690                                       |
| 12"<br>300mm | MNB-CW20-CS            | 100<br>690                                       |
| 14"<br>350mm | MNB-CW20-CS            | 100<br>690                                       |
| 16"<br>400mm | MNB-CW20-CS            | 100<br>690                                       |
| 18"<br>450mm | MNB-CW20-CS            | 100<br>690                                       |
| 20"<br>500mm | MNB-CW20-CS            | 100<br>690                                       |
| 24"<br>600mm | MNB-CW20-CS            | 100<br>690                                       |

#### Ordering Example:

KSL,6,LA,F1,DI,EPDM,S2,NR,DP\*MNB-HD12-CS



# 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)

## Full-Force Lockout Device

Lockouts for open and closed position are available on all sizes of handwheel, bevel gear handwheel and cylinder actuated valves. Lockouts are designed to hold the full actuator force, plus a safety factor. To order, add a comma and the order code "LK" after the actuator code.

### Ordering Example:

KSL,6,LA,F1,DI,EPDM,S2,NR,DP\*MNB-HD12-CS,LK

# Pneumatic Cylinder Actuators

DeZURIK double-acting pneumatic cylinder actuators are available 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. Actuator sizing is for slurries and liquids; contact DeZURIK for sizing on dry materials applications.

### 60 psi (410 kPa) Air Supply

| Valve Size   | Order Code             | Maximum Shutoff Pressure Differential<br>psi/kPa |
|--------------|------------------------|--|
|              | Carbon Steel (CS) Yoke |  |
| 2"<br>50mm   | CY-PC4-CS              | 100<br>690                                       |
| 3"<br>80mm   | CY-PC6-CS              | 100<br>690                                       |
| 4"<br>100mm  | CY-PC6-CS              | 100<br>690                                       |
| 5"<br>125mm  | CY-PC6-CS              | 100<br>690                                       |
| 6"<br>150mm  | CY-PC6-CS              | 100<br>690                                       |
| 8"<br>200mm  | CY-PC8-CS              | 100<br>690                                       |
| 10"<br>250mm | CY-PC10-CS             | 100<br>690                                       |
| 12"<br>300mm | CY-PC12-CS             | 100<br>690                                       |
| 14"<br>350mm | CY-PC12-CS             | 100<br>690                                       |
| 16"<br>400mm | CY-PC14-CS             | 100<br>690                                       |
| 18"<br>450mm | CY-PC14-CS             | 100<br>690                                       |
| 20"<br>500mm | CY-PC16-CS             | 100<br>690                                       |
| 24"<br>600mm | CY-PC16-CS             | 100<br>690                                       |

### 80 psi (550 kPa) Air Supply

| Valve Size   | Order Code             | Maximum Shutoff Pressure Differential<br>psi/kPa |
|--------------|------------------------|--|
|              | Carbon Steel (CS) Yoke |  |
| 2"<br>50mm   | CY-PC4-CS              | 100<br>690                                       |
| 3"<br>80mm   | CY-PC6-CS              | 100<br>690                                       |
| 4"<br>100mm  | CY-PC6-CS              | 100<br>690                                       |
| 5"<br>125mm  | CY-PC6-CS              | 100<br>690                                       |
| 6"<br>150mm  | CY-PC6-CS              | 100<br>690                                       |
| 8"<br>200mm  | CY-PC8-CS              | 100<br>690                                       |
| 10"<br>250mm | CY-PC10-CS             | 100<br>690                                       |
| 12"<br>300mm | CY-PC12-CS             | 100<br>690                                       |
| 14"<br>350mm | CY-PC12-CS             | 100<br>690                                       |
| 16"<br>400mm | CY-PC14-CS             | 100<br>690                                       |
| 18"<br>450mm | CY-PC14-CS             | 100<br>690                                       |
| 20"<br>500mm | CY-PC16-CS             | 100<br>690                                       |
| 24"<br>600mm | CY-PC16-CS             | 100<br>690                                       |

# Hydraulic Cylinder Actuators

Double-acting hydraulic cylinders are available for on/off service. All actuators are sized to the full pressure rating of the valve. Actuator sizing is for slurries and liquids; contact DeZURIK for sizing on dry materials applications.

| Valve Size   | Order Code             | Fluid Supply Pressure (psi/kPa) | Maximum Shutoff Pressure Differential (psi/kPa) |
|--------------|------------------------|---------------------------------|---|
|              | Carbon Steel (CS) Yoke |                                 |   |
| 2"<br>50mm   | CY-HC1.5-CS            | 1200<br>8280                    | 100<br>690                                      |
| 3"<br>80mm   | CY-HC1.5-CS            | 1200<br>8280                    | 100<br>690                                      |
| 4"<br>100mm  | CY-HC1.5-CS            | 1200<br>8280                    | 100<br>690                                      |
| 5"<br>125mm  | CY-HC2-CS              | 1200<br>8280                    | 100<br>690                                      |
| 6"<br>150mm  | CY-HC2-CS              | 1200<br>8280                    | 100<br>690                                      |
| 8"<br>200mm  | CY-HC2-CS              | 1200<br>8280                    | 100<br>690                                      |
| 10"<br>250mm | CY-HC3.25-CS           | 550<br>3795                     | 100<br>690                                      |
| 12"<br>300mm | CY-HC3.25-CS           | 550<br>3795                     | 100<br>690                                      |
| 14"<br>350mm | CY-HC4-CS              | 550<br>3795                     | 100<br>690                                      |
| 16"<br>400mm | CY-HC4-CS              | 550<br>3795                     | 100<br>690                                      |
| 18"<br>450mm | CY-HC4-CS              | 550<br>3795                     | 100<br>690                                      |
| 20"<br>500mm | CY-HC5-CS              | 550<br>3795                     | 100<br>690                                      |
| 24"<br>600mm | CY-HC5-CS              | 550<br>3795                     | 100<br>690                                      |

Note: The maximum hydraulic pressure rating for hydraulic cylinders by size is as follows:

- HC1.5 is 2000 psi
- HC2 is 2000 psi
- HC3.25 is 1000 psi
- HC4 is 800 psi
- HC5 is 950 psi

# Cylinder Actuator Accessories

## Filter Regulator

The DeZURIK Filter Regulator is designed to provide clean, accurate pressure to cylinder actuators.

## Four-Way Solenoid Valve

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

## Speed Control Valves

Speed Control Valves are available for controlling valve opening or closing speed with cylinder actuators.

## Position Indicating Switches

Mechanical or Proximity Position Indicating Switches are available for use on 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.

## 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.

### Ordering Example:

KSL,6,LA,F1,DI,EPDM,S2,NR,DP\*CY-PC6-CS,SCB

## Full-Force Lockout Device

Lockouts for open and closed position are available on all sizes for cylinder actuated valves. Lockouts are designed to hold the full actuator force, plus a safety factor. To order, add a comma and the order code "LK" after the actuator code.

### Ordering Example:

KSL,6,LA,F1,DI,EPDM,S2,NR,DP\*CY-PC6-CS,LK

# Electric Motor Actuators

DeZURIK Knife Gate Valves can be furnished with electric motor actuators including Limitorque, 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, as per specification requirements.submersible, etc.); electrical characteristics (voltage and phase); actuator accessories and controls

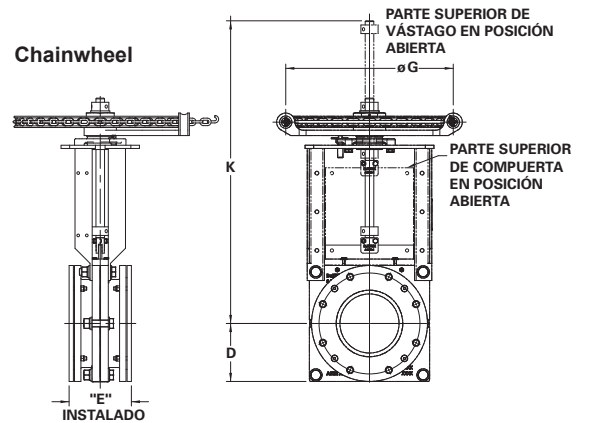
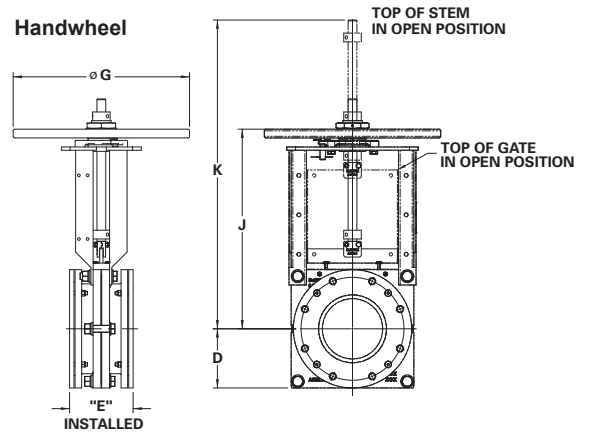
# Dimensions

## Handwheel & Chainwheel

| Valve Size   | Dimensions  |              |              |              |               |
|--------------|-------------|--------------|--------------|--------------|---------------|
|              | D           | E* Installed | G Handwheel  | G Chainwheel | K             |
| 2"<br>50mm   | 3.00<br>76  | 6.88<br>175  | 12.00<br>305 | 12.00<br>305 | 19.60<br>498  |
| 3"<br>80mm   | 3.75<br>95  | 6.88<br>175  | 12.00<br>305 | 12.00<br>305 | 20.98<br>533  |
| 4"<br>100mm  | 4.50<br>114 | 6.88<br>175  | 12.00<br>305 | 12.00<br>305 | 22.98<br>584  |
| 5"<br>125mm  | 5.00<br>127 | 7.00<br>178  | 12.00<br>305 | 12.00<br>305 | 28.85<br>733  |
| 6"<br>150mm  | 5.50<br>140 | 7.00<br>178  | 16.00<br>406 | 20.00<br>508 | 30.35<br>771  |
| 8"<br>200mm  | 6.75<br>171 | 7.25<br>184  | 20.00<br>508 | 20.00<br>508 | 35.23<br>895  |
| 10"<br>250mm | 8.00<br>203 | 8.88<br>226  | 20.00<br>508 | 20.00<br>508 | 45.37<br>1152 |

\* Retainer flanges are standard on 10" (250mm) and larger, and optional on 2-8" (50-200mm).  
If retainer flanges are not required, deduct 1.00" (25mm). Allow an additional .25-.50" (6-13mm) for installation.

Inches  
Millimeters



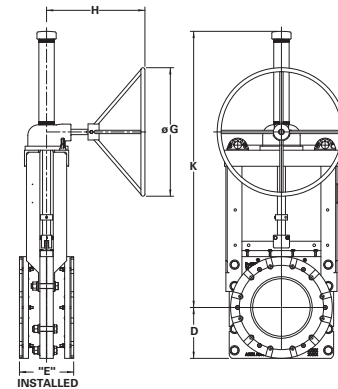
## Bevel Gear Handwheel

| Valve Size   | Dimensions   |              |              |                     |                      |               |
|--------------|--------------|--------------|--------------|---------------------|----------------------|---------------|
|              | D            | E* Installed | G            | H Standard Mounting | H 90 Degree Mounting | J             |
| 3"<br>80mm   | 3.75<br>95   | 6.88<br>175  | 12.00<br>305 | 10.12<br>257        | 10.12<br>257         | 23.45<br>596  |
| 4"<br>100mm  | 4.50<br>114  | 6.88<br>175  | 12.00<br>305 | 10.12<br>257        | 10.12<br>257         | 25.70<br>653  |
| 5"<br>125mm  | 5.00<br>127  | 7.00<br>178  | 12.00<br>305 | 10.12<br>257        | 10.12<br>257         | 30.38<br>772  |
| 6"<br>150mm  | 5.50<br>140  | 7.00<br>178  | 12.00<br>305 | 10.12<br>257        | 10.12<br>257         | 32.70<br>831  |
| 8"<br>200mm  | 6.75<br>171  | 7.25<br>184  | 12.00<br>305 | 10.12<br>257        | 10.12<br>257         | 39.07<br>992  |
| 10"<br>250mm | 8.00<br>203  | 8.88<br>226  | 24.00<br>610 | 18.37<br>467        | 18.37<br>467         | 44.45<br>1129 |
| 12"<br>300mm | 9.50<br>241  | 10.13<br>257 | 24.00<br>610 | 18.37<br>467        | 18.37<br>467         | 51.58<br>1310 |
| 14"<br>350mm | 10.50<br>267 | 10.15<br>258 | 24.00<br>610 | 18.37<br>467        | 26.25<br>667         | 55.45<br>1408 |
| 16"<br>400mm | 11.75<br>298 | 11.00<br>279 | 24.00<br>610 | 18.37<br>467        | 26.25<br>667         | 63.20<br>1605 |
| 18"<br>450mm | 12.50<br>318 | 12.25<br>311 | 24.00<br>610 | 20.98<br>533        | 35.48<br>901         | 72.33<br>1837 |
| 20"<br>500mm | 13.75<br>349 | 14.13<br>359 | 24.00<br>610 | 20.98<br>533        | 35.48<br>901         | 75.15<br>1909 |
| 24"<br>600mm | 16.00<br>406 | 14.63<br>372 | 24.00<br>610 | 20.98<br>533        | 35.48<br>901         | 94.95<br>2412 |

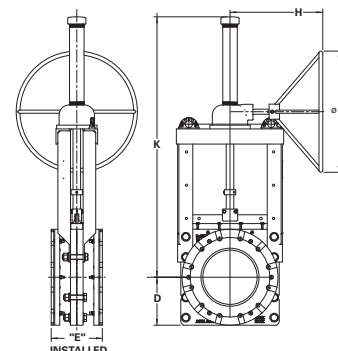
\* Retainer flanges are standard on 10" (250mm) and larger, and optional on 2-8" (50-200mm).  
If retainer flanges are not required, deduct 1.00" (25mm). Allow an additional .25-.50" (6-13mm) for installation.

Inches  
Millimeters

### Standard Mounting



### 90 Degree Mounting



# Dimensions

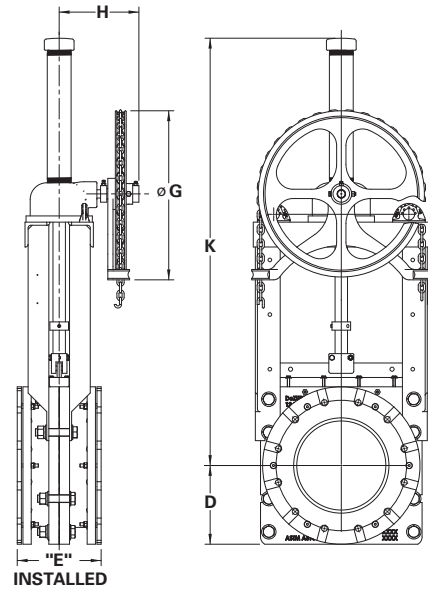
## Bevel Gear Chainwheel

| Valve Size   | Dimensions   |              |              |                     |                      |               |
|--------------|--------------|--------------|--------------|---------------------|----------------------|---------------|
|              | D            | E* Installed | G            | H Standard Mounting | H 90 Degree Mounting | K             |
| 3"<br>80mm   | 3.75<br>95   | 6.88<br>175  | 12.00<br>305 | 9.62<br>244         | 9.62<br>244          | 23.45<br>596  |
| 4"<br>100mm  | 4.50<br>114  | 6.88<br>175  | 12.00<br>305 | 9.62<br>244         | 9.62<br>244          | 25.70<br>653  |
| 5"<br>125mm  | 5.00<br>127  | 7.00<br>178  | 12.00<br>305 | 9.62<br>244         | 18.37<br>467         | 30.38<br>772  |
| 6"<br>150mm  | 5.50<br>140  | 7.00<br>178  | 12.00<br>305 | 9.62<br>244         | 18.37<br>467         | 32.70<br>831  |
| 8"<br>200mm  | 6.75<br>171  | 7.25<br>184  | 12.00<br>305 | 9.62<br>244         | 18.37<br>467         | 39.07<br>992  |
| 10"<br>250mm | 8.00<br>203  | 8.88<br>226  | 20.00<br>508 | 9.62<br>244         | 18.37<br>467         | 44.45<br>1129 |
| 12"<br>300mm | 9.50<br>241  | 10.13<br>257 | 20.00<br>508 | 9.62<br>244         | 18.37<br>467         | 51.58<br>1310 |
| 14"<br>350mm | 10.50<br>267 | 10.15<br>258 | 20.00<br>508 | 9.62<br>244         | 18.37<br>467         | 55.45<br>1408 |
| 16"<br>400mm | 11.75<br>298 | 11.00<br>279 | 20.00<br>508 | 9.62<br>244         | 18.37<br>467         | 63.20<br>1605 |
| 18"<br>450mm | 12.50<br>318 | 12.25<br>311 | 20.00<br>508 | 12.23<br>311        | 26.27<br>667         | 72.33<br>1837 |
| 20"<br>500mm | 13.75<br>349 | 14.13<br>359 | 20.00<br>508 | 12.23<br>311        | 26.27<br>667         | 75.15<br>1909 |
| 24"<br>600mm | 16.00<br>406 | 14.63<br>372 | 20.00<br>508 | 12.23<br>311        | 26.27<br>667         | 94.95<br>2412 |

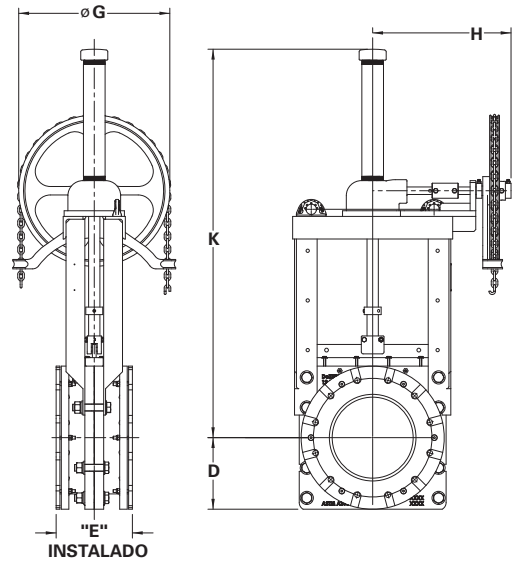
\* Retainer flanges are standard on 10" (250mm) and larger, and optional on 2-8" (50-200mm).  
If retainer flanges are not required, deduct 1.00" (25mm). Allow an additional .25-.50" (6-13mm) for installation.

Inches  
Millimeters

### Standard Mounting



### 90 Degree Mounting

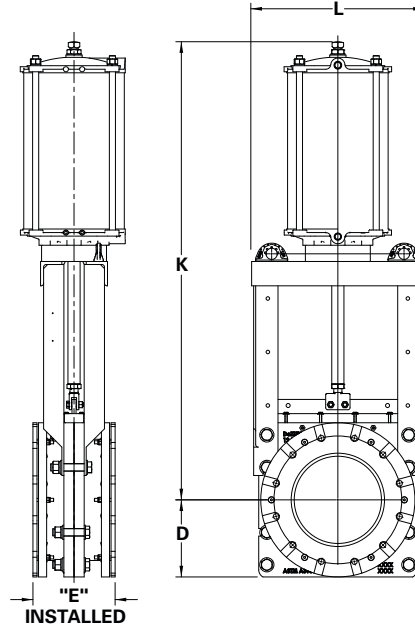




# Dimensions

## Pneumatic Cylinder

| Valve Size   | Dimensions   |              |              |               |
|--------------|--------------|--------------|--------------|---------------|
|              | D            | E* Installed | L            | K             |
| 2"<br>50mm   | 3.00<br>76   | 6.88<br>175  | 7.88<br>200  | 23.83<br>605  |
| 3"<br>80mm   | 3.75<br>95   | 6.88<br>175  | 9.50<br>241  | 25.33<br>643  |
| 4"<br>100mm  | 4.50<br>114  | 6.88<br>175  | 11.00<br>279 | 27.20<br>691  |
| 5"<br>125mm  | 5.00<br>127  | 7.00<br>178  | 12.50<br>318 | 32.89<br>835  |
| 6"<br>150mm  | 5.50<br>140  | 7.00<br>178  | 13.50<br>343 | 35.20<br>894  |
| 8"<br>200mm  | 6.75<br>171  | 7.25<br>184  | 15.00<br>381 | 37.61<br>955  |
| 10"<br>250mm | 8.00<br>203  | 8.88<br>226  | 18.00<br>457 | 37.68<br>957  |
| 12"<br>300mm | 9.50<br>241  | 10.13<br>257 | 21.25<br>540 | 56.32<br>1431 |
| 14"<br>350mm | 10.50<br>267 | 10.15<br>258 | 22.75<br>578 | 59.89<br>1521 |
| 16"<br>400mm | 11.75<br>298 | 11.00<br>279 | 25.00<br>635 | 67.89<br>1724 |
| 18"<br>450mm | 12.50<br>318 | 12.25<br>311 | 26.50<br>673 | 71.20<br>1808 |
| 20"<br>500mm | 13.75<br>349 | 14.13<br>359 | 29.50<br>749 | 74.38<br>1889 |
| 24"<br>600mm | 16.00<br>406 | 14.63<br>372 | 34.00<br>864 | 87.44<br>2221 |

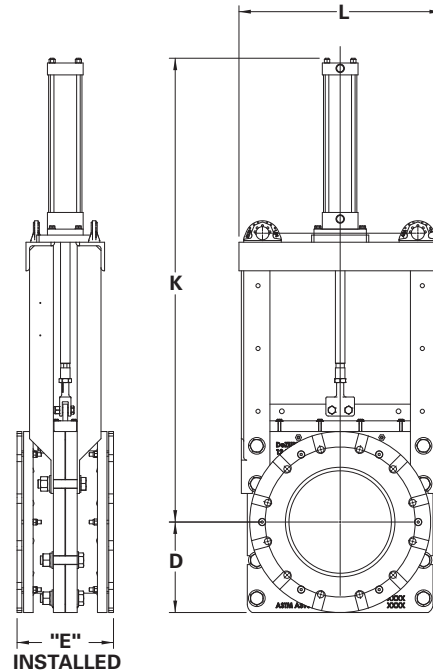


\* Retainer flanges are standard on 10" (250mm) and larger, and optional on 2-8" (50-200mm). If retainer flanges are not required, deduct 1.00" (25mm). Allow an additional .25-.50" (6-13mm) for installation.

Inches  
Millimeters

## Hydraulic Cylinder

| Valve Size   | Dimensions   |              |               |              |
|--------------|--------------|--------------|---------------|--------------|
|              | D            | E* Installed | K             | L            |
| 2"<br>50mm   | 3.00<br>76   | 6.88<br>175  | 20.50<br>521  | 7.88<br>200  |
| 3"<br>80mm   | 3.75<br>95   | 6.88<br>175  | 21.87<br>555  | 9.50<br>241  |
| 4"<br>100mm  | 4.50<br>114  | 6.88<br>175  | 24.25<br>616  | 11.00<br>279 |
| 5"<br>125mm  | 5.00<br>127  | 7.00<br>178  | 28.75<br>730  | 12.50<br>318 |
| 6"<br>150mm  | 5.50<br>140  | 7.00<br>178  | 31.31<br>795  | 13.50<br>343 |
| 8"<br>200mm  | 6.75<br>171  | 7.25<br>184  | 34.44<br>875  | 15.00<br>381 |
| 10"<br>250mm | 8.00<br>203  | 8.88<br>226  | 42.63<br>1083 | 18.00<br>457 |
| 12"<br>300mm | 9.50<br>241  | 10.13<br>257 | 47.57<br>1208 | 21.25<br>540 |
| 14"<br>350mm | 10.50<br>267 | 10.15<br>258 | 53.38<br>1356 | 22.75<br>578 |
| 16"<br>400mm | 11.75<br>298 | 11.00<br>279 | 59.26<br>1505 | 25.00<br>635 |
| 18"<br>450mm | 12.50<br>318 | 12.25<br>311 | 66.31<br>1684 | 26.50<br>673 |
| 20"<br>500mm | 13.75<br>349 | 14.13<br>359 | 71.69<br>1821 | 29.50<br>749 |
| 24"<br>600mm | 16.00<br>406 | 14.63<br>372 | 84.81<br>2154 | 34.00<br>864 |



\* Retainer flanges are standard on 10" (250mm) and larger, and optional on 2-8" (50-200mm). If retainer flanges are not required, deduct 1.00" (25mm). Allow an additional .25-.50" (6-13mm) for installation.

Inches  
Millimeters



Need Knife Gate Valve pricing or support for your mining project? Contact us for more assistance.

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