

# BULLETIN 35.00-1H

## Dezurik ais compliant KGC-BD BI-Directional cast stainless Steel KNIFE GATE VALVE

### Quality Knife Gate Valves for AIS Compliance

DeZURIK, your trusted source for quality valves, is committed to delivering products that comply with all AIS provisions. DeZURIK/APCO/Hilton and Willamette valves can be specified to meet provisions of H.R. 3547, the Consolidated Appropriations Act, for projects involving Clean Water State Revolving Funds (CWSRF) or Drinking Water State Revolving Funds (DWSRF). This requirement applies to projects for the construction, alteration, maintenance, or repair of a public water system or treatment works. DeZURIK has close relationships with a network of US-based vendors throughout our supply chain that provide AIS compliant castings and components. DeZURIK's AIS Compliant KGC-BD Bi-Directional Knife Gate Valve is just one of the many valve products available to meet AIS provisions.

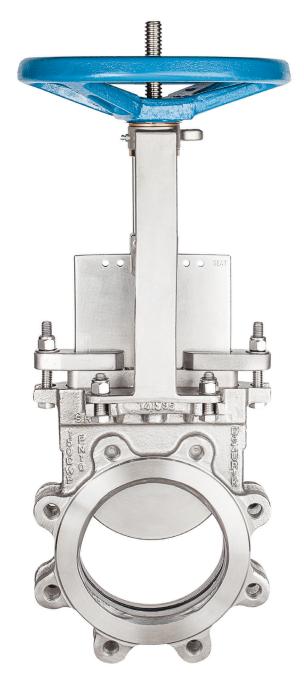
## **Design and Construction**

The KGC-BD 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 of clean, dirty, viscous and corrosive liquids; sludge; slurries; clean and corrosive gases.

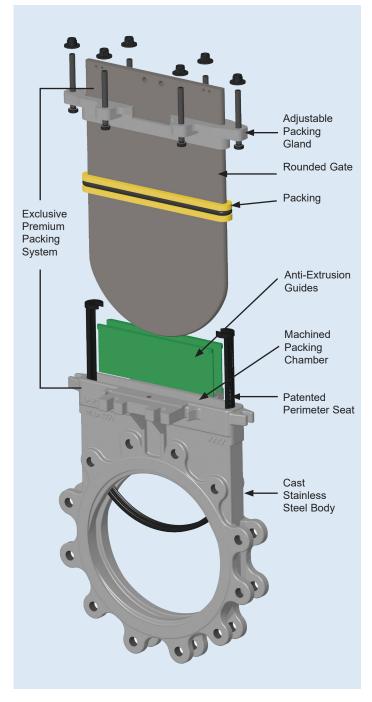
The KGC Bi-Directional valve features a rounded cast packing chamber, rounded gate edge and premium packing system. All of these features combine to provide improved sealing, extended packing lifeand reduced maintenance.

## **Size Range and Pressure Ratings**

3-24" (80-600mm) 150 psig CWP (1030 kPa)







## **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.



## **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.



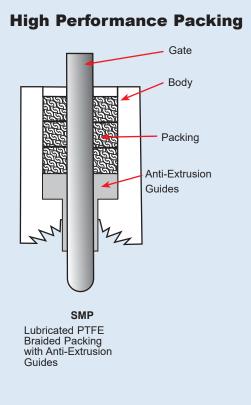
## **DeZURIK Exclusive Premium Packing System**

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, and anti-extrusion guides.

## 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



Sealing

- Adjustable Packing Gland will renew the seal by increasing the compression of the packing to seal the valve
- Scraping
  - Anti-Extrusion Guides function as a gate scraper, designed to prevent 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

## **Quality Materials for Reliable Service**

The heavy-duty cast body is 316 Stainless Steel. Resilient seat materials include Chloroprene CR; Terpolymer of Ethylene, Propylene and a Diene EPDM; Acrylonitrile-Butadiene NBR; and Fluoro Rubber FKM. Three rings of PTFE packing provide extended service life with fewer adjustments. The superstructure is 304 Stainless Steel.

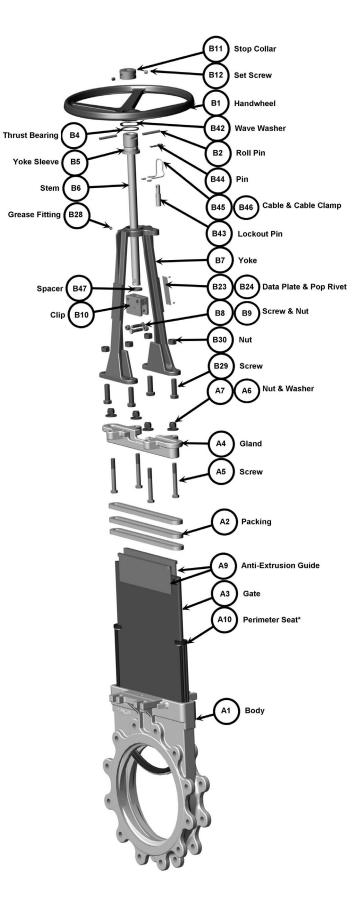
## **Rounded Stainless Steel Gate**

The 316 Stainless Steel gate resists corrosion. The gate has a precision ground finish on both sides to prevent packing and seat damage.

## **Materials of Construction**

Item	Description	Material			
A1	Body	316 Stainless Steel, ASTM A351 CF8M			
A2	Packing	SMP - PTFE Braided Packing to 500°F (260°C)			
AZ	8	(pH Range 0-14)			
A3	Gate	316 Stainless Steel, ASTM A240			
A4	Gland	316 Stainless Steel, ASTM A240			
A5	Screw	304 Stainless Steel			
A6	Washer	304 Stainless Steel			
A7	Nut	304 Stainless Steel			
A9	Anti-Extrusion Guide	Glass Filled PTFE			
		CR - Chloroprene to 180°F (83°C)			
		NBR - Acrylonitrile-Butadiene to 180°F (83°C)			
A10	Perimeter Seat*	EPDM - Terpolymer of Ethylene, Propylene and a Diene to 250°F (122°C)			
		FKM - Fluoro Rubber to 400°F (204°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	316 Stainless Steel			
B7	Superstructure	304 Stainless Steel, ASTM A351 CF8			
B8	Screw	18-8 Stainless Steel			
B9	Nut	18-8 Stainless Steel			
B10	Clip	304 Stainless Steel			
B11	Stop Collar	304 Stainless Steel			
B12	Set Screw	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	18-8 Stainless Steel			
B30	Nut	18-8 Stainless Steel			
B42	Wave Washer	304 Stainless Steel			
B43	Lockout Pin	304 Stainless Steel			
B44	Pin	18-8 Stainless Steel			
B45	Cable	316 Stainless Steel			
B46	Cable Clamp	316 Stainless Steel			
B47	Spacer	304 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

## **Pressure Ratings**

3-24" (80-600mm)	150 psi C.W.P. (1030 kPa)

## **Flow Parameters**

Valve Size	<u>Cν*</u> Κν* 100% Open	K** (resistance)	Port Area (in²/cm²)
<u>3"</u>	<u>755</u>	0.16	<u>8.3</u>
80mm	655		54
<u>4"</u>	<u>1275</u>	0.16	<u>13.5</u>
100mm	1100		87
<u>5"</u>	<u>2020</u>	0.16	<u>21.1</u>
125mm	1745		136
<u>6"</u>	<u>2750</u>	0.16	<u>29.4</u>
150mm	2380		190
<u>8"</u>	<u>5055</u>	0.16	<u>52.7</u>
200mm	4420		340
<u>10"</u>	<u>7880</u>	0.16	<u>82.9</u>
250mm	6830		535
<u>12"</u>	<u>11180</u>	0.16	<u>117</u>
300mm	9630		755
<u>14"</u>	<u>13800</u>	0.16	<u>144</u>
350mm	11920		930
<u>16"</u>	<u>18300</u>	0.16	<u>192</u>
400mm	15870		1239
<u>18"</u>	<u>23450</u>	0.16	<u>246</u>
450mm	20300		1585
<u>20"</u>	<u>29000</u>	0.16	<u>304</u>
500mm	25000		1959
<u>24"</u>	<u>42180</u>	0.16	<u>442</u>
600mm	36450		2854

\*Cv = Flow in GPM of water at 1 psi pressure drop.
Kv = Flow in m3/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= KxD Where

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

## **Applicable Standards**

#### DeZURIK KGC-BD Knife Gate Valves are designed and/or tested to meet the following standards: Flanges and Flanged Fittings, ASME 150 Conforms to related drilling dimensions ASME B16.5 Stainless Steel or Stainless Steel Lined, Bonnetless, Knife MSS SP-81 Gate Valves with Flanged Ends MSS SP-151 Pressure Testing of Knife Gate Valves Metallic Gaskets for Pipe Flanges. Conforms to spiral-ASME B16.20 wound gasket dimensions AWWA C520 AWWA C520 Standard for Knife Gate Valves

## Valve and Actuator Weights

Valve Size	Basic Valve	With Handwheel	With Chainwheel	With Bevel Gear
<u>3"</u>	<u>17</u>	<u>28</u>	<u>40</u>	<u>89</u>
80mm	8	13	18	40
<u>4"</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>96</u>
100mm	11	16	22	44
<u>5"</u>	<u>33</u>	<u>52</u>	<u>67</u>	<u>109</u>
125mm	15	24	30	49
<u>6"</u>	<u>39</u>	<u>58</u>	<u>76</u>	<u>114</u>
150mm	18	26	34	52
<u>8"</u>	<u>65</u>	<u>86</u>	<u>101</u>	<u>144</u>
200mm	29	39	46	65
<u>10"</u>	<u>106</u>	<u>144</u>	<u>182</u>	<u>194</u>
250mm	48	65	83	88
<u>12"</u>	<u>151</u>	<u>190</u>	<u>230</u>	<u>244</u>
300mm	68	86	104	111
<u>14"</u>	<u>195</u>	<u>261</u>	<u>280</u>	<u>299</u>
350mm	88	118	127	136
<u>16"</u>	<u>281</u>	<u>350</u>	<u>367</u>	<u>387</u>
400mm	127	159	166	176
<u>18"</u>	<u>382</u>	<u>454</u>	<u>470</u>	<u>494</u>
450mm	173	206	213	224
<u>20"</u>	<u>511</u>	<u>586</u>	<u>647</u>	<u>630</u>
500mm	232	266	293	286
<u>24"</u> 600mm	<u>730</u> 331	N/A	N/A	<u>877</u> 398

<u>nds</u> grams

Note: Weights are approximate and do not include crating.

## Ordering DeZURIK's AIS Compliant Knife Gate Valve

DeZURIK's AIS designation must be specified in the order code at the time of quotation and ordering to ensure AIS compliance is maintained throughout the manufacturing process. When AIS valve products are ordered, DeZURIK will provide a certification letter that meets EPA documentation requirements.

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:

American Iron & Steel Compliant KGC = Cast Stainless Steel Knife Gate Valve

## Valve Size

Give	valv	/e siz	e code as t	follows:			
3	=	3"	(80mm)	12	=	12"	(300mm)
4	=	4"	(100mm)	14	=	14"	(350mm)
5	=	5"	(125mm)	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:

BD = **Bi-Directional** 

#### **End Connection**

Give end connection code as follows: F1

- ASME 150 UNC Tapping for Threads
- ASME 150 Through Bolting

#### **Body Material**

F1T

Give body material code as follows:

316 Stainless Steel S2 =

#### **Packing Material**

Give packing material code as follows: SMP = PTFE Braided Packing to 500°F (260°C) (pH Range 0-14)

### **Gate Material**

Give gate material code as follows:

S2 = 316 Stainless Steel

#### **Seat Material** Give seat material code as follows:

- CR Chloroprene to 180°F (83°C) =
- Acrylonitrile-Butadiene to 180°F (83°C) NBR =
- Terpolymer of Ethylene, Propylene and a EPDM =
- Diene to 250°F (122°C)
- FKM \_ Fluoro Rubber to 400°F (204°C)

## Standard Options Give option code as follows:

- AIS American Iron & Steel Compliant
- CMC Certificate of Material Conformance
- CRT = Certified Physical and Chemical Test Reports
- DTR DeZURIK Standard Certified Hydrostatic and Seat Test Report

Optional Coating

#### Ordering Example:

KGC,6,BD,F1,S2,SMP,S2-CR,AIS\*Actuator



## **Manual Actuators**

## Handwheel and Chainwheel Actuators

All 3-20" (80-500mm) 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 slurries or when pressure exceeds limits shown. Order chain for chainwheel actuators as a separate item.

## **Handwheel Actuator**

Valve Size	Order Code 304 SST (S1) Yoke	Maximum Pressure Differential psi/kPa
<u>3-4"</u> 80-100mm	MN-HD8-S1	<u>150</u> 1030
<u>5-8"</u> 125-200mm	MN-HD12-S1	<u>150</u> 1030
<u>10-12"</u> 250-300mm	MN-HD16-S1	<u>150</u> 1030
<u>14"</u> 350mm	MN-HD20-S1*	<u>100</u> 690
<u>16"</u> 400mm	MN-HD20-S1*	<u>75</u> 515
<u>18"</u> 450mm	MN-HD20-S1*	<u>50</u> 340
<u>20"</u> 500mm	MN-HD20-S1*	<u>25</u> 170

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

### **Ordering Example:**

KGC,6,BD,F1,S2,SMP,S2-CR,AIS\*MN-HD12-S1

## **Chainwheel Actuator**

Valve Size	Order Code 304 SST (S1) Yoke	Maximum Pressure Differential psi/kPa
<u>3-4"</u> 80-100mm	MN-CW8-S1	<u>150</u> 1030
<u>5-8"</u> 125-200mm	MN-CW12-S1	<u>150</u> 1030
<u>10-12"</u> 250-300mm	MN-CW20-S1	<u>150</u> 1030
<u>14"</u> 350mm	MN-CW20-S1*	<u>100</u> 690
<u>16"</u> 400mm	MN-CW20-S1*	<u>75</u> 515
<u>18"</u> 450mm	MN-CW20-S1*	<u>50</u> 340
<u>20"</u> 500mm	MN-CW30-S1*	<u>75</u> 515

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

#### Ordering Example: KGC,4,BD,F1,S2,SMP,S2-CR,AIS\*MN-CW8-S1

## **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.

## **Bevel Gear Handwheel Actuators**

	Order Code	Maximum	
Valve Size	304 SST (S1) Yoke	Pressure Differential psi/kPa	
<u>3-10"</u> 80-250mm	MNB-HD12-S1	<u>150</u> 1030	
<u>12-16"</u> 300-400mm	MNB-HD16-S1	<u>150</u> 1030	
<u>18-24"</u> 450-600mm	MNB-HD24-S1	<u>150</u> 1030	

### Ordering Example: KGC,14,BD,F1,S2,SMP,S2-CR,AIS\*MNB-HD16-S1

## **Bevel Gear Chainwheel Actuators**

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

### **Ordering Example:** KCG,14,BD,F1,S2,SMP,S2-CR,AIS\*MNB-CW20-S1-90

Actuator mounted at 90 degrees

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.





## **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,AIS\*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,AIS\*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,AIS\*MN-HD20-CS Except with floorstand. Center line of valve to base of floorstand 72 inches (1829mm).

## **Cylinder Actuators**

Pneumatic and Hydraulic Cylinder Actuators are available on application. Contact DeZURIK.

## **Electric Motor Actuators**

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

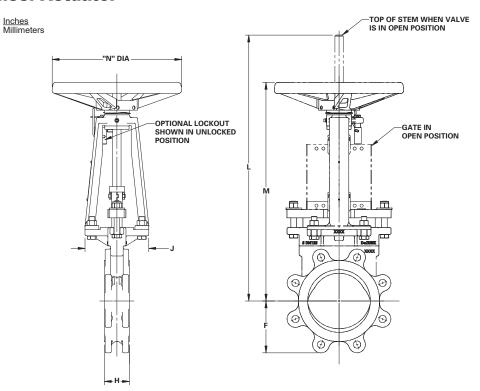
When ordering electric motor actuators, specify valve order code, shutoff pressure, service conditions (flowing media and installation direction); type of application (on/off); speed of operation; NEMA rating (4, 7, submersible, etc.); electrical characteristics (voltage and phase); actuator accessories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





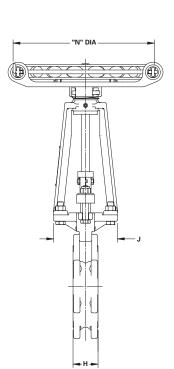
## **Dimensions** Basic Valve with Handwheel Actuator

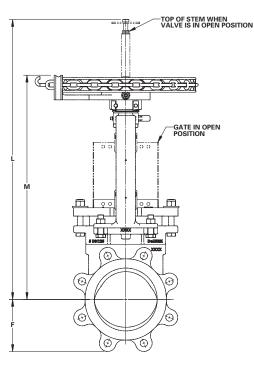
Valve	Dimensions							
Size	F	F H J L		M	Ν			
<u>3"</u>	<u>3.75</u>	2.00	4.75	17.50	14.62	8.00		
80mm	95	51	121	445	371	203		
4"	<u>4.50</u>	<u>2.00</u>	<u>5.00</u>	<u>22.77</u>	<u>16.90</u>	<u>8.00</u>		
100mm	114	51	127	578	429	203		
<u>5"</u>	<u>5.00</u>	<u>2.25</u>	<u>5.75</u>	<u>24.19</u>	<u>19.56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



### **Basic Valve with Chainwheel Actuator**

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



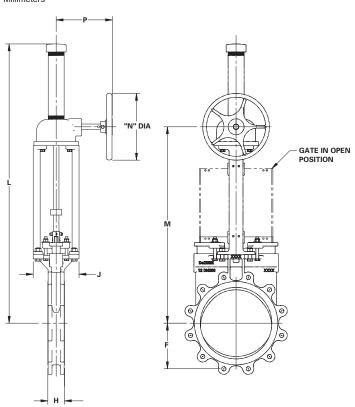




## **Dimensions Bevel Gear Handwheel Actuator**

Value			Dime	Р				
Valve Size	F	н	J	L	М	N	Standard & 180°	90° & 270°
<u>3"</u>	<u>3.75</u>	<u>2.00</u>	<u>4.75</u>	<u>22.10</u>	<u>16.09</u>	<u>12.00</u>	<u>10.12</u>	<u>10.12</u>
80mm	95	51	121	561	409	305	257	257
<u>4"</u>	<u>4.50</u>	<u>2.00</u>	<u>5.00</u>	<u>26.38</u>	<u>18.37</u>	<u>12.00</u>	<u>10.12</u>	<u>10.12</u>
100mm	114	51	127	670	467	305	257	257
<u>5"</u>	<u>5.00</u>	<u>2.25</u>	<u>5.75</u>	<u>28.82</u>	<u>20.76</u>	<u>12.00</u>	<u>10.12</u>	<u>10.12</u>
125mm	127	57	146	732	527	305	257	257
<u>6"</u>	<u>5.50</u>	<u>2.25</u>	<u>5.75</u>	<u>32.38</u>	<u>22.29</u>	<u>12.00</u>	<u>10.12</u>	<u>10.12</u>
150mm	140	57	146	822	566	305	257	257
<u>8"</u>	<u>6.75</u>	<u>2.75</u>	<u>6.38</u>	<u>40.88</u>	<u>25.84</u>	<u>12.00</u>	<u>10.12</u>	<u>10.12</u>
200mm	171	70	162	1038	656	305	257	257
<u>10"</u>	<u>8.00</u>	<u>2.75</u>	<u>8.25</u>	<u>46.57</u>	<u>31.54</u>	<u>12.00</u>	<u>10.12</u>	<u>10.12</u>
250mm	203	70	210	1183	801	305	257	257
<u>12"</u>	<u>9.50</u>	<u>3.00</u>	<u>8.25</u>	<u>50.26</u>	<u>35.16</u>	<u>12.00</u>	<u>10.12</u>	<u>10.12</u>
300mm	241	76	210	1277	893	305	257	257
<u>14"</u>	<u>10.50</u>	<u>3.00</u>	<u>8.25</u>	<u>56.82</u>	<u>37.78</u>	<u>12.00</u>	<u>10.12</u>	<u>24.13</u>
350mm	267	76	210	1443	960	305	257	613
<u>16"</u>	<u>11.75</u>	<u>3.50</u>	<u>8.69</u>	<u>62.51</u>	<u>41.47</u>	<u>12.00</u>	<u>10.12</u>	<u>24.13</u>
400mm	298	89	221	1588	1053	305	257	613
<u>18"</u>	<u>12.50</u>	<u>3.50</u>	<u>9.06</u>	<u>69.95</u>	<u>47.03</u>	<u>12.00</u>	<u>10.12</u>	<u>24.13</u>
450mm	318	89	230	1777	1195	305	257	613
<u>20"</u>	<u>13.75</u>	<u>4.50</u>	<u>9.19</u>	<u>73.63</u>	<u>50.59</u>	<u>16.00</u>	<u>10.12</u>	<u>24.13</u>
500mm	349	114	233	1870	1285	406	257	613
<u>24"</u>	<u>16.00</u>	<u>4.50</u>	<u>9.19</u>	<u>85.60</u>	<u>58.57</u>	<u>16.00</u>	<u>10.12</u>	<u>24.13</u>
600mm	406	114	233	2174	1488	406	257	613

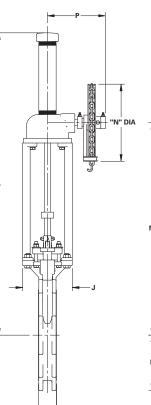
Inches Millimeters



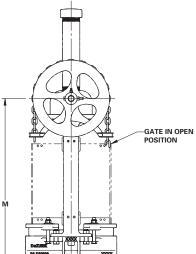
## **Bevel Gear Chainwheel Actuator**

Valve			Dim	Р				
Size	F	н	J	L	М	N	Standard & 180°	90° & 270°
<u>3"</u>	<u>3.75</u>	<u>2.00</u>	<u>4.75</u>	<u>22.10</u>	<u>16.09</u>	<u>12.00</u>	<u>9.62</u>	<u>10.12</u>
80mm	95	51	121	561	409	305	244	257
<u>4"</u>	<u>4.50</u>	<u>2.00</u>	<u>5.00</u>	<u>26.38</u>	<u>18.37</u>	<u>12.00</u>	<u>9.62</u>	<u>10.12</u>
100mm	114	51	127	670	467	305	244	257
<u>5"</u>	<u>5.00</u>	<u>2.25</u>	<u>5.75</u>	<u>28.82</u>	<u>20.76</u>	<u>12.00</u>	<u>9.62</u>	<u>10.12</u>
125mm	127	57	146	732	527	305	244	257
<u>6"</u>	<u>5.50</u>	<u>2.25</u>	<u>5.75</u>	<u>32.38</u>	<u>22.29</u>	<u>12.00</u>	<u>9.62</u>	<u>10.12</u>
150mm	140	57	146	822	566	305	244	257
<u>8"</u>	<u>6.75</u>	<u>2.75</u>	<u>6.38</u>	<u>40.88</u>	<u>25.84</u>	<u>12.00</u>	<u>9.62</u>	<u>10.12</u>
200mm	171	70	162	1038	656	305	244	257
<u>10"</u>	<u>8.00</u>	<u>2.75</u>	<u>8.25</u>	<u>46.57</u>	<u>31.54</u>	<u>12.00</u>	<u>9.62</u>	<u>10.12</u>
250mm	203	70	210	1183	801	305	244	257
<u>12"</u>	<u>9.50</u>	<u>3.00</u>	<u>8.25</u>	<u>50.26</u>	<u>35.16</u>	<u>12.00</u>	<u>9.62</u>	<u>10.12</u>
300mm	241	76	210	1277	893	305	244	257
<u>14"</u>	<u>10.50</u>	<u>3.00</u>	<u>8.25</u>	<u>56.82</u>	<u>37.78</u>	<u>12.00</u>	<u>9.62</u>	<u>24.13</u>
350mm	267	76	210	1443	960	305	244	613
<u>16"</u>	<u>11.75</u>	<u>3.50</u>	<u>8.69</u>	<u>62.51</u>	<u>41.47</u>	<u>12.00</u>	<u>9.62</u>	<u>24.13</u>
400mm	298	89	221	1588	1053	305	244	613
<u>18"</u>	<u>12.50</u>	<u>3.50</u>	<u>9.06</u>	<u>69.95</u>	<u>47.03</u>	<u>12.00</u>	<u>9.62</u>	<u>24.13</u>
450mm	318	89	230	1777	1195	305	244	613
<u>20"</u>	<u>13.75</u>	<u>4.50</u>	<u>9.19</u>	<u>73.63</u>	<u>50.59</u>	<u>20.00*</u>	<u>9.62</u>	<u>24.13</u>
500mm	349	114	233	1870	1285	508	244	613
<u>24"</u>	<u>16.00</u>	<u>4.50</u>	<u>9.19</u>	<u>85.60</u>	<u>58.57</u>	<u>20.00*</u>	<u>9.62</u>	<u>24.13</u>
600mm	406	114	233	2174	1488	508	244	613

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



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Perth Branch U2/41-45 Furnace Road Welshpool WA 6106 Phone: +618 9353 2565 sales@thevalvecompany.com.au Kalgoorlie Branch 2/69 Craig Road West Kalgoorlie WA 6430 Phone: +618 9021 6668 sales@thevalvecompany.com.au sales@thevalvecompany.com.au

Brisbane Branch U5/225 Queensport Road North Murrarie QLD 4172 Phone: +617 3348 8636

**Bunbury Branch** Phone: +61 417 744 791 sales@thevalvecompany.com.au