DeZURIK®

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KGL STAINLESS STEEL KNIFE GATE VALVES

SPX VALVES & CONTROLS™

Design & Construction

DeZURIK Stainless Steel Knife Gate Valves are designed for on-off and throttling applications. They feature a cast, corrosion resistant body in 316 or 317 stainless steel. The gate material is 316 or 317 stainless steel also. The stem and packing gland are also stainless steel for corrosion protection.

Stainless Steel Knife Gate Valves are available in sizes 2″-24″ and in metal and resilient seated versions.

A variety of actuator options are available including handwheels, chainwheels, bevel gears, levers, cylinder and electric motors. A full complement of accessories is also offered.

Stainless Steel Stem—All valves are furnished with a stainless steel stem that assures easy operation and dependable service. The double-lead threads minimize wear and reduce the number of handwheel turns (operating time) required to open and close the valve.

One Piece Cast, Corrosion Resistant Body—The heavy duty, cast 316, 317 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.

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 125/150 lb. dimensions.

Long Life Packing—A variety of packing materials are offered to assure a tight seal with minimum packing gland pressure. Materials include high temperature flax, PTFE impregnated synthetic fiber, fiberglass, PTFE filament-lubricant encapsulated, plus others. Maximum temperature is from 220°F to 1000°F dependent on material type. The packing gland and bolts are also stainless steel for corrosion resistance. Packing gland bolts are easily accessible for adjustments.

High Flow Capacity—Full, round port design allows high flow capacity and minimum pressure drop. A full, stepped transition port eliminates the need for a cavity where material can accumulate.

Rugged Stainless Steel Gate—Gates are available in 316 or 317 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.

Seat Options—Both metal and resilient seated valves are offered in a full, round port design. As an option, a metal seated version is available with shut-off capability exceeding current TAPPI standards. A V-Port design is also available for reliable throttling control of thick slurries—paper stock. The constant V-port orifice is maintained from open to closed to prevent bridging or plugging and to assure maximum control accuracy.

Resilient Seated Valves—Resilient ring seal seated valves are available for applications where drip-tight shutoff is required. Unlike valves which use an o-ring seal, DeZURIK Knife Gates have a resilient seat designed especially for knife gate valve applications. The resilient seat material is bonded into a stainless steel seat ring. When the valve is closed, the gate is pushed against the seat and held in place by the gate jams. When the valve is open, the gate moves away from the seat allowing operating clearance which prevents seat damage and makes operation easy.

A variety of resilient seat materials are available. Options include chloroprene, acrylonitrile butadiene, chloro-sulfonyl-polyethylene, fluoro rubber, off-white chloroprene and EPDM.

Accessories—A variety of accessories are offered as standard. Included are handwheel extensions, floorstands, plus a variety of cylinder actuator accessories for customizing the valve/actuator package to meet your specific application requirements.

Valve Selection

Cv Values

Valve Size (Inches)	Metal Seated						Resilient Seated		
	Round Port			V-Port			Round Port		
	Cv*	Head Loss** (Feet of Pipe)	Area of Opening (Square Inches)	Cv	Head Loss** (Feet of Pipe)	Area of Opening (Square Inches)	Cv	Head Loss** (Feet of Pipe)	Area of Opening (Square Inches)
2	240	2.5	3.14	89	18	1.92	135	7.7	1.77
3	565	3.6	7.07	210	26	4.30	392	7.4	4.91
4	1040	4.4	12.60	386	32	7.65	798	7.6	9.62
6	2440	6.8	28.80	900	50	17.20	1950	11.0	22.60
8	4460	8.7	50.30	1660	62	30.60	3670	13.0	41.30
10	6250	14.0	69.00	2320	102	42.00	5450	18.0	60.10
12	9400	15.0	102.00	3490	112	61.90	8230	21.0	88.60
14	12500	16.0	133.00	4650	120	80.80	10500	20.4	113.00
16	16500	18.0	174.00	6110	130	106.00	14000	23.2	148.00
18	21400	20.0	227.00	8000	138	138.00	18300	24.3	194.00
20	27000	22.0	280.00	10101	156	170.00	22000	27.5	240.00
24	39700	26.0	411.00	15100	182	250.00	36500	30.0	360.00

*Flow in GPM of water at 1 psi pressure drop.
**Pressure drop in equivalent length (feet) of standard weight steel pipe. Sizing based on discharge into conduit rather than atmosphere.

General Specifications

Valve Size: 2″-24″
Body Style: Lugged, ANSI 150
Shutoff: Resilient seated, drip tight. Metal seated exceeds TAPPI standard TIS 405-8.

Materials of Construction

Body: 316 or 317 stainless steel
Gate: 316 or 317 stainless steel
Packing Gland: 316 or 317 stainless steel
Bolting/Hardware: 18-8 stainless steel
Yoke Sleeve: Aluminum bronze
Handwheel Stem & Clip: Stainless steel
Handwheel Pins: Stainless steel
Superstructure: 304 stainless steel
Actuators: Mild steel or cast iron construction. Optional corrosion resistance materials available on cylinder actuators.
Accessory Brackets/Fasteners: Stainless Steel

Packing:

Material	Maximum Temperature (°F)
Square Braided High Temperature Flax	220
Square Braided PTFE Impregnated Synthetic Fiber	500
Square Braided Fiberglass	1000
Square Braided PTFE Filament-Lubricant Encapsulated	500
Square Braided PTFE Impregnated Synthetic Fiber with 1 Ring of Copper Wire Braided Scrapper	500
Square Braided Fiberglass with 1 Ring of Copper Wire Braided Scrapper	1000
Square Braided PTFE Impregnated Synthetic Fiber with 1 Ring of PTFE Cord	500

Seat:

Material
316, 317 stainless steel
Chloroprene—Alkaline service
Acrylonitrile Butadiene—Non-alkaline service
Chloro-Sulfonyl-Polyethylene—Oxidizing chemical service
Fluoro Rubber—General chemical service at elevated temperatures
*Off-White Chloroprene—Non-staining alkaline service
Terpolymer Ethylene, Propylene and a Diene—High temperature water to 250°F

*Use with Square Braided PTFE Impregnated Synthetic Fiber

Ordering

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

Valve Style	Size Code	Size Inches	Size MM	End Connection	Body Material	Packing
KGL = Stainless Steel Knife Gate Valve	2	2	50	L1 = Lugged ANSI 150	S2 = 316 Stainless Steel S3 = 317 Stainless Steel	B = Square Braided High Temperature Flax to 220°F C = Square Braided PTFE Impregnated Synthetic Fiber to 500°F D = Square Braided Fiberglass to 1000°F CD = Square Braided PTFE Filament—Lubricant Encapsulated to 500°F CW = Square Braided PTFE Impregnated Synthetic Fiber with 1 Ring of Copper Wire Braided Scrapper to 500°F DW = Square Braided Fiberglass with 1 Ring of Copper Wire Braided Scrapper to 1000°F ZJ = Square Braided PTFE Impregnated Synthetic Fiber with 1 Ring of PTFE Cord to 500°F
	3	3	80			
	4	4	100			
	6	6	150			
	8	8	200			
	10	10	250			
	12	12	300			
	14	14	350			
	16	16	400			
	18	18	450			
	20	20	500			
	24	24	600			
KGL,	4,			L1,	S2,	C,

Seat Material/Design	Actuators		Accessories	
M = Stainless Steel V = V-Orifice Stainless Steel CR = Chloroprene NBR = Acrylonitrile-Butadiene CSM = Chloro-Sulfonyl-Polyethylene FKM = Fluoro Rubber CRW = Chloroprene—Off White—Use on Type C Packing Only EPDM = Terpolymer of Ethylene, Propylene and a Diene	All actuators must be ordered by adding the actuator code to the basic valve identification. For descriptions and sizing, see pages noted.		When ordering accessories as part of complete valve and actuator package, enter codes as referenced. Separate codes with hyphen when multiple items are required.	
	Manual	Page	Manual	Page 5
	Lever	5	Cylinder	Page 6
	Rotary	5	Electric Motor	Page 7
	Powered			
	Cylinder	6		
	Electric Motor	7		
CR,	*CY-PC4,		4VD	

Manual Actuators

Lever Actuators

Levers—Two through twelve inch valves can be furnished with mild steel type lever actuators for applications where rapid valve operation is required or where space prevents use of a standard handwheel or bevel gear. Maximum pressure differential for valves with lever actuators should not exceed the limits below. Maximums are based on the operating force required for each valve size.

Valve Size	Maximum Pressure Differential For Lever Operated Valves Only
2″-4″	75 psi
6″	45 psi
8″	25 psi
10″	20 psi
12″	14 psi

Ordering Levers—To order, add lever actuator code "MN-LV" to the basic valve identification. Lever actuated valves larger than 8″ are not available with type C packing due to packing friction.

Ordering Example: KGL,4,L1,S1,C,CR*MN-LV

Rotary Manual Actuators

Rotary Manual Actuators—All valves can be furnished with cast iron handwheels, cast iron chainwheels and mild steel bevel gear handwheels and chainwheels. Bevel gear actuators provide vertical mounting, rather than horizontal, of the handwheel or chainwheel. It is designed for applications where installation or operating space prohibits use of the standard handwheel. A 2 to 1 mechanical advantage makes large valve operation easier and faster.

Actuator Sizing

Valve Size (Inches)	Actuator Code		△P (psi)	Bevel Gear		△P (psi)
	Handwheel	Chainwheel		Handwheel	Chainwheel	
2	MN-HD8	MN-CW8	150	–	–	–
3 & 4	MN-HD8	MN-CW8	150	MNB-HD8	MNB-CW8	150
6	MN-HD10	MN-CW12	150	MNB-HD12	MNB-CW12	150
8	MN-HD12	MN-CW12	150	MNB-HD12	MNB-CW12	150
10 & 12	MN-HD16	MN-CW20	150	MNB-HD16	MNB-CW16	150
14 - 18	MN-HD20	MN-CW20	100	MNB-HD20	MNB-CW20	150
20	MN-HD20	MN-CW20	50	MNB-HD30	MNB-CW30	150
24	MN-HD20	MN-CW20	*	MNB-HD30	MNB-CW30	100

*Contact DeZURIK for sizing.

Mounting—Bevel gear actuators can be mounted in four positions: standard, 90°, 180° and 270° increments. Mounting is assumed as standard or 180° unless the alternate mounting (90° or 270°) "A" is specified.

Ordering Rotary Manual Actuators—To order rotary manual actuators, add the appropriate code from the sizing table to the basic valve identification. When ordering bevel gear actuators, standard or 180° mounting is assumed. To order 90° or 270° mounting, specify "A". In all cases, as second line information, specify 90°, 180° or 270°.

Ordering Example: KGL,4,L1,S2,C,CR*MN-HD8

Accessories

Manual Actuators

Chain—For chainwheel actuators.

Ordering—To order chain, specify "ACC*CN102" and chain length below code. Order as a separate item.

Ordering Example: ACC*CN102
Chain: 10 feet long

Handwheel Extension—Provides extension of the handwheel to allow remote operation—normally from above. Includes fittings and extension pipe with handwheel mounted.

Ordering—To order, specify handwheel actuator code, extension description and specify required extension length from the center line of valve to handwheel.

Ordering Example: KGL,4,L1,S2,C,CR*MN-HD8
Except with handwheel extension
Center line of valve to handwheel 72″

Floorstand—A floorstand for handwheel actuated valves allows operation from above. Includes floorstand with gate position indicator, handwheel, fittings and extension.

Ordering—To order, add floorstand description to the valve and actuator identification. Also specify length from center line of valve to base of floorstand—must be at least twice the dimension from center line to handwheel.

Ordering Example: KGL,4,L1,S2,C,CR*MN-HD8
Except with floorstand
Center line of valve to base of floorstand 96″

Cylinder Actuators

On-Off Actuators

DeZURIK cylinder actuators are available with double acting pneumatic or hydraulic cylinders for on-off service. Supply pressure is 50 or 100 psi. Materials of construction include a fiberglass reinforced epoxy cylinder, zinc plated steel fasteners, cast iron end caps, cast iron piston, stainless steel piston rod and stainless steel mounting plate/adapter. Corrosion resistant cylinder construction is available. The corrosion resistant cylinder assembly includes epoxy coating on the head, cap and gland, all of which are cast iron. The tube is fiberglass, and all fasteners are zinc-plated stainless steel.

Actuator Sizing 50 psi Cylinder

Valve Size (Inches)	Actuator Code	Max. Pressure Differential (psi)			
		On-Off		Positioning	
		Dry Solids, Slurries & Paper Stock	Liquids & Gases	Dry Solids, Slurries & Paper Stock	Liquids & Gases
2 & 3	CY-PC4	75	150	75	150
4	CY-PC4	75	150	–	150
	CY-PC6	–	–	75	–
6	CY-PC4	–	150	–	25
	CY-PC6	75	–	–	150
	CY-PC8	–	–	75	–
8	CY-PC4	–	50	–	–
	CY-PC6	–	150	–	25
	CY-PC8	75	–	75	150
10	CY-PC6	–	50	–	–
	CY-PC8	–	150	–	25
	CY-PC10	75	–	–	50
	CY-PC12	–	–	75	150
12	CY-PC6	–	25	–	–
	CY-PC8	–	100	–	25
	CY-PC10	–	150	–	50
	CY-PC12	75	–	75	150
14	CY-PC6	–	25	–	–
	CY-PC8	–	50	–	–
	CY-PC10	–	100	–	25
	CY-PC12	75	150	75	150
16	CY-PC8	–	25	–	–
	CY-PC10	–	50	–	–
	CY-PC12	75	150	–	75
	CY-PC14	–	–	75	150
18	CY-PC8	–	25	–	–
	CY-PC10	–	50	–	–
	CY-PC12	75	100	–	25
	CY-PC14	–	–	75	75
	CY-PC16	–	–	–	100
20	CY-PC8	–	25	–	–
	CY-PC12	–	50	–	–
	CY-PC14	75	100	–	50
	CY-PC16	–	–	75	100
24	CY-PC12	–	50	–	–
	CY-PC16	75	100	–	50
	CY-PC18	75	–	75	100

Positioning Actuators

DeZURIK cylinder actuators are available with pneumatic or electronic positioners for throttling control. Positioners are enclosed and mounted on the superstructure. Positioner action is air-to-open (valve closed at minimum signal) or air-to-close (valve open at minimum signal).

Cylinder Code	Positioner Code	Signal Range
CY-PC4/CY-PC6	P36	3-15*, 3-9, 9-15 psi
CY-PC8/CY-PC10/ CY-PC12/CY-PC14/ CY-PC16/CY-PC18	P37	3-15 psi
CY-PC4/CY-PC6/ CY-PC8/CY-PC10/ CY-PC12/CY-PC14/ CY-PC16	P38 (High vibration applications)	3-15*, 3-9, 9-15 psi
CY-PC4/CY-PC6	P41	4-20 mA
CY-PC8/CY-PC10/ CY-PC12/CY-PC14/ CY-PC16/CY-PC18	P42	4-20 mA

*Standard

Ordering—To order cylinder actuators, add the appropriate actuator code from the sizing table to the basic valve identification. To order corrosion resistant cylinder construction, specify "CR". Also specify hydraulic supply media, if other than water. To order cylinder actuators with positioners, add appropriate positioner code from table to actuator identification. Also specify positioner action (air-to-open or air-to-close) and signal range.

Ordering Examples: KGL,4,L1,S2,C,CR*CY-PC4-CR
KGL,4,L1,S2,C,CR*CY-PC4,P36
Air-to-open, 3-19 psi signal range

Accessories
Cylinder Actuators

Four-Way Manual Control Valve—For all double acting pneumatic or hydraulic actuators. Available mounted or not mounted.

Ordering—To order mounted, as part of complete valve and actuator package, add "CV" to actuator code and follow with code from chart. To order separately, specify "ACC*CV" and follow with code from chart.

Valve Size (Inches)	Supply	NPT Size (Inches)	Code
2-24	Pneumatic	¼	CV201
2-10	Hydraulic	⅜	CV202
12-24	Hydraulic	½	CV203

Ordering Example: ACC*CV201

Filters/Strainers: For all pneumatic or hydraulic actuators. Not available mounted. Maximum supply pressure is 100 psi.

Ordering: To order separately specify "FP" for pneumatic filters or "FH" for hydraulic strainers.

Ordering Example: ACC*FH

Pressure Reducing Valve & Filter—For all pneumatic actuators. Includes pressure reducing valve and filter with gauge. Maximum supply pressure is 100 psi.

Ordering—Order as separate item, not mounted. Specify "ACC*PRVF."

Ordering Example—ACC*PRVF

Four-Way Solenoid Valve—For all double acting pneumatic actuators. Standard solenoids are available mounted and piped or not mounted. Electrical characteristics include 120 volt, 60 Hz, single phase AC power.

Ordering—To order mounted and piped, as part of complete valve and actuator assembly, add "4V" plus code from chart to actuator identification.

To order separately, specify "ACC*4V" plus code from chart.

Solenoid Description	NEMA 1 Code	NEMA 4, 7, 9 Code
Standard	204	203
With Speed Control	202	201
With Manual Override	200	199
With Speed Control & Manual Override	198	197

Ordering Example: KGL,4,L1,S2,C,CR*CY-PC4,4V204

Position Indicating Switches—For on-off cylinder actuators. They're available in NEMA 4, 6, 7 and 9 ratings.

Switch Description	One Switch	Two Switches
NEMA 4 & 6		
SPDT	SE387	SE392
DPDT	SE388	SE393
Two Circuit Double Break	SE390	SE395
NEMA 7 & 9		
SPDT	SE389	SE394
DPDT	SE391	SE396
Two Circuit Double Break	SE486	SE487

Ordering—To order position indicating switches, add the appropriate code to the actuator identification.

Ordering Example: KGL,4,L1,S2,B,M*CY-PC4,SE387

Speed Control Valves—For controlling valve opening and closing speed on pneumatic cylinder actuators.

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

Ordering—To order mounted, add the appropriate code to the actuator identification.

Ordering Example: KGL,4,L1,S2,B,M*CY-PC4,SP

Sales and Service

SPX Valves & Controls is an ISO 9001 Certified Company
For information about our worldwide locations, approvals and certifications, and local representatives, please visit our web site.
Web Site: www.spxvalves.com **E-Mail: info@spxvalves.com**

SPX VALVES & CONTROLS™

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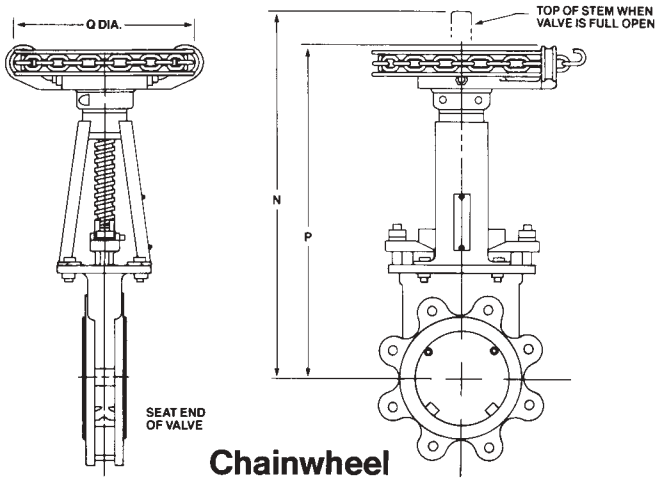
Dimensions

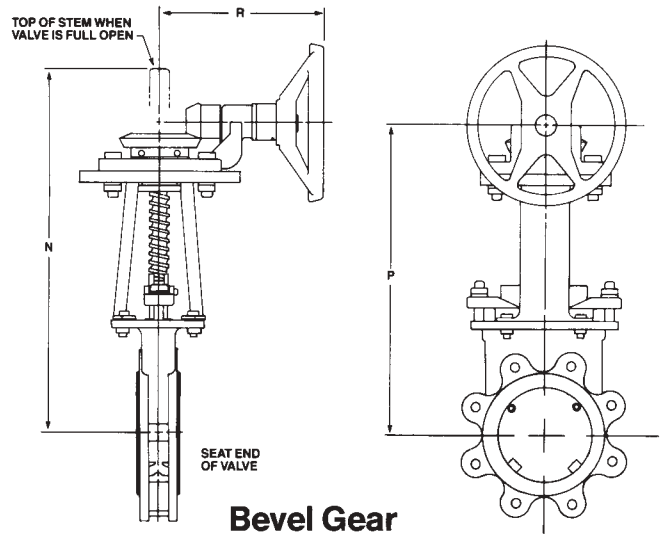
Chainwheel



Chainwheel

Valve Size (Inches)	Dimensions			Valve Size (Inches)	Dimensions		
	N	P	Q		N	P	Q
2	11.44 (290.5)	11.50 (292.1)	9.19 (233.4)	12	42.50 (1079.5)	32.69 (830.3)	20.06 (509.5)
3	16.44 (417.5)	15.44 (392.1)	9.19 (233.4)	14	48.12 (1222.2)	35.75 (908.0)	20.06 (509.5)
4	19.00 (482.6)	16.06 (408.0)	9.19 (233.4)	16	53.88 (1368.6)	39.69 (1008.1)	20.06 (509.5)
6	24.31 (617.5)	20.38 (517.5)	12.75 (323.8)	18	60.94 (1547.9)	44.75 (1136.6)	20.06 (509.5)
8	30.25 (768.4)	24.25 (616.0)	12.75 (323.8)	20	68.69 (1744.7)	50.50 (1282.7)	29.75 (755.7)
10	36.62 (930.3)	28.81 (731.8)	20.06 (509.5)	24	80.62 (2047.7)	58.44 (1484.4)	29.75 (755.7)

Bevel Gear

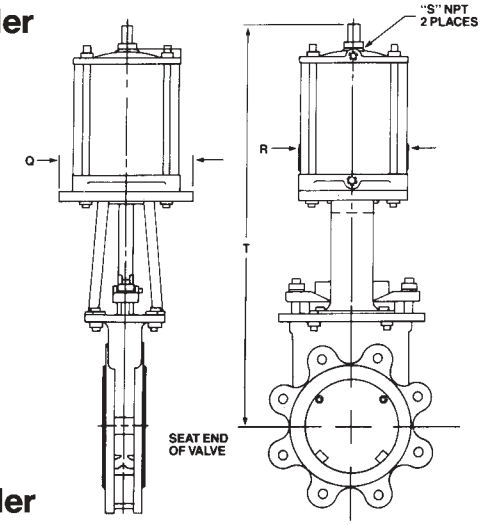


Bevel Gear

Valve Size (Inches)	Dimensions			
	N	P	R	
			Handwheel	Chainwheel
3	16.44 (417.5)	14.38 (365.1)	10.00 (254.0)	10.88 (276.2)
4	19.00 (482.6)	15.94 (404.8)	10.00 (254.0)	10.88 (276.2)
6	24.31 (617.5)	19.31 (490.5)	10.25 (260.4)	10.88 (276.2)
8	30.25 (768.4)	23.25 (590.6)	10.25 (260.4)	10.88 (276.2)
10	36.62 (930.3)	27.69 (703.3)	10.31 (261.9)	11.00 (279.4)
12	42.50 (1079.5)	31.50 (800.1)	10.31 (261.9)	11.00 (279.4)
14	48.12 (1222.2)	35.38 (898.7)	11.75 (298.4)	14.75 (374.6)
16	53.88 (1368.6)	39.25 (997.0)	11.75 (298.4)	14.75 (374.6)
18	60.94 (1547.9)	44.38 (1127.2)	11.75 (298.4)	14.75 (374.6)
20	68.69 (1744.7)	50.31 (1277.9)	14.75 (374.6)	14.75 (374.6)
24	80.62 (2047.7)	58.00 (1473.2)	14.75 (374.6)	14.75 (374.6)

Note: Diameter of bevel gear handwheel/chainwheel is the same as the standard handwheel/chainwheel.

Cylinder



Cylinder

Actuator Code	Valve Size (Inches)	Dimensions	
		Q	R
CY-PC4	2-8	8.38 (212.7)	6.38 (161.9)
CY-PC6	4-8	8.38 (212.7)	6.38 (161.9)
	10-12	8.38 (212.7)	8.38 (212.7)
	14 & 16	10.31 (261.9)	10.31 (261.9)
CY-PC8	6 & 8	10.25 (260.4)	9.00 (228.6)
	10 & 12	10.25 (260.4)	10.25 (260.4)
	14-24	10.31 (261.9)	10.31 (261.9)
CY-PC10	10 & 12	14.00 (355.6)	14.00 (355.6)
	14-18	12.31 (312.7)	12.31 (312.7)
CY-PC12	10 & 12	14.00 (355.6)	14.00 (355.6)
	14-24	14.88 (378.0)	14.88 (378.0)
CY-PC14	16-20	14.75 (374.6)	14.75 (374.6)
CY-PC16	18-24	17.00 (431.8)	17.00 (431.8)
CY-PC18	24	19.00 (482.6)	19.00 (482.6)

inch
(millimeter)

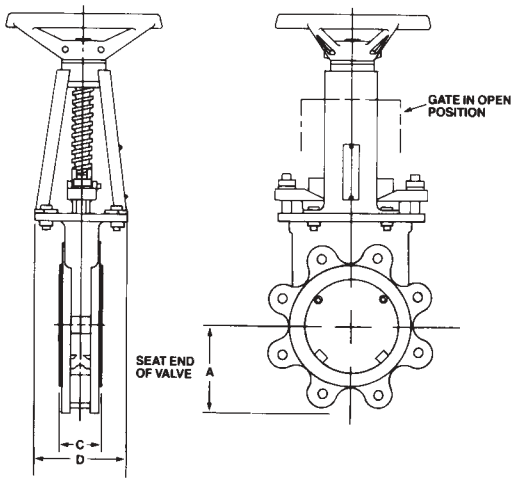
Cylinder

Valve Size (Inches)	"T" Dimensions							
	Actuator Code							
	CY-PC4	CY-PC6	CY-PC8	CY-PC10	CY-PC12	CY-PC14	CY-PC16	CY-PC18
2	15.69 (398.5)	–	–	–	–	–	–	–
3	21.56 (547.7)	–	–	–	–	–	–	–
4	23.12 (587.4)	24.25 (616.0)	–	–	–	–	–	–
6	28.69 (728.7)	29.69 (754.1)	30.50 (774.7)	–	–	–	–	–
8	34.56 (877.9)	35.50 (901.7)	36.56 (928.7)	–	–	–	–	–
10	–	42.56 (1081.1)	43.62 (1108.1)	43.56 (1106.5)	45.44 (1154,1)	–	–	–
12	–	48.31 (1227.1)	49.31 (1252.5)	49.12 (1247.8)	50.81 (1290.6)	–	–	–
14	–	53.31 (1354.1)	54.31 (1379.5)	55.44 (1408.2)	57.25 (1454.2)	–	–	–
16	–	58.94 (1497.1)	–	61.06 (1550.9)	62.88 (1597.2)	66.66 (1693.1)	–	–
18	–	–	66.94 (1700.3)	68.06 (1728.7)	69.88 (1775.0)	74.09 (1882.0)	74.47 (1891.5)	–
20	–	–	74.56 (1893.8)	–	77.44 (1967.0)	82.00 (2082.8)	82.38 (2092.3)	–
24	–	–	–	–	88.38 (2244.9)	–	94.44 (2398.7)	94.94 (2411.4)

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

Dimensions

Basic Valve

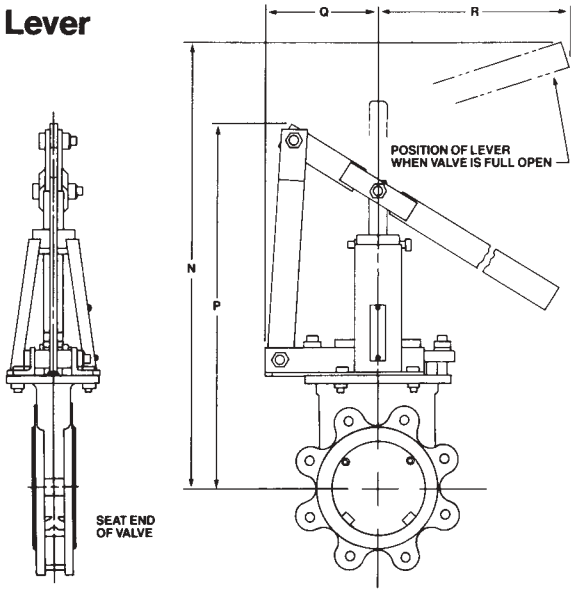


Basic Valve

Valve Size (Inches)	Dimensions			Valve Size (Inches)	Dimensions		
	A	C	D		A	C	D
2	3.00 (76.2)	1.88 (47.6)	4.44 (112.7)	12	9.50 (241.3)	3.00 (76.2)	8.25 (209.6)
3	3.75 (95.2)	2.00 (50.8)	4.75 (120.6)	14	10.50 (266.7)	3.00 (76.2)	9.12 (231.6)
4	4.50 (114.3)	2.00 (50.8)	5.00 (127.0)	16	11.75 (298.4)	3.50 (88.9)	9.12 (231.6)
6	5.50 (139.7)	2.25 (57.2)	5.75 (146.0)	18	12.75 (323.8)	3.50 (88.9)	10.50 (266.7)
8	6.75 (171.4)	2.75 (69.8)	6.38 (161.9)	20	14.12 (358.6)	4.50 (114.3)	13.38 (339.8)
10	8.00 (203.2)	2.75 (69.8)	8.25 (209.6)	24	16.38 (416.0)	4.50 (114.3)	14.00 (355.6)

inch
(millimeter)

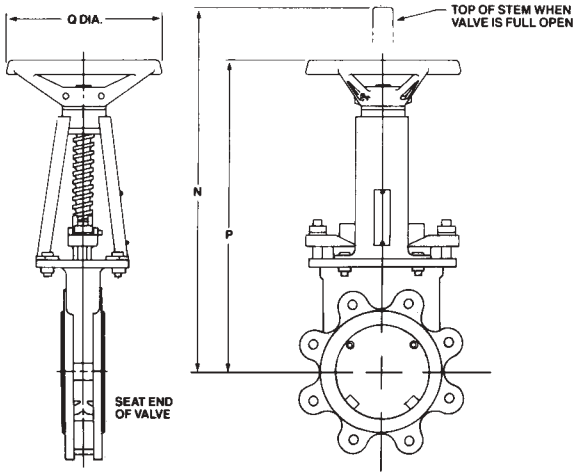
Lever



Lever

Valve Size (Inches)	Dimensions			
	N	P	Q	R
2	13.12 (333.4)	12.44 (315.9)	4.31 (109.5)	8.00 (203.2)
3	20.19 (512.8)	17.44 (442.9)	5.44 (138.1)	17.88 (454.2)
4	25.62 (650.9)	20.88 (530.2)	6.19 (157.2)	24.50 (622.3)
6	37.40 (950.0)	23.19 (589.0)	6.94 (176.2)	20.06 (509.6)
8	52.81 (1341.4)	27.56 (700.1)	7.94 (201.6)	25.56 (649.3)
10	58.22 (1478.8)	34.12 (866.8)	10.06 (255.6)	33.16 (842.3)
12	66.62 (1692.3)	39.06 (992.2)	12.00 (304.8)	38.59 (980.3)

Handwheel



Handwheel

Valve Size (Inches)	Dimensions		
	N	P	Q
2	11.44 (290.5)	10.62 (269.9)	8.00 (203.2)
3	16.44 (417.5)	14.62 (371.5)	8.00 (203.2)
4	19.00 (482.6)	16.25 (412.8)	8.00 (203.2)
6	24.31 (617.5)	19.75 (501.6)	10.00 (254.0)
8	30.25 (768.4)	23.69 (601.7)	12.00 (304.8)
10	36.62 (930.3)	28.00 (711.2)	16.00 (406.4)
12	42.50 (1079.5)	31.88 (809.6)	16.00 (406.4)
14	48.12 (1222.2)	34.88 (886.0)	20.00 (508.0)
16	53.88 (1368.6)	38.69 (982.7)	20.00 (508.0)
18	60.94 (1547.9)	43.75 (1111.2)	20.00 (508.0)
20	68.69 (1744.7)	49.50 (1257.3)	20.00 (508.0)
24	80.62 (2047.7)	57.44 (1459.0)	20.00 (508.0)