

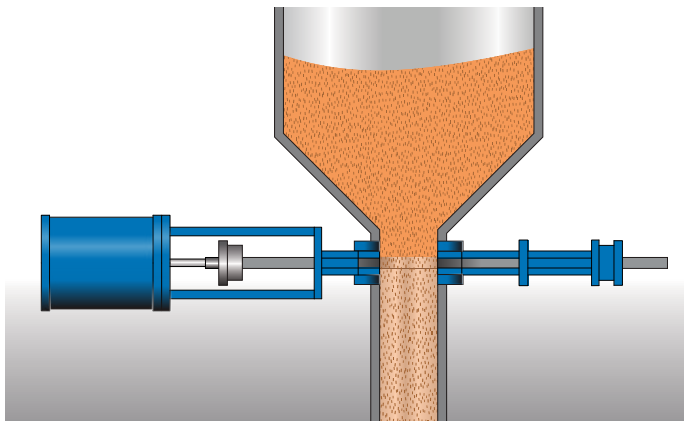
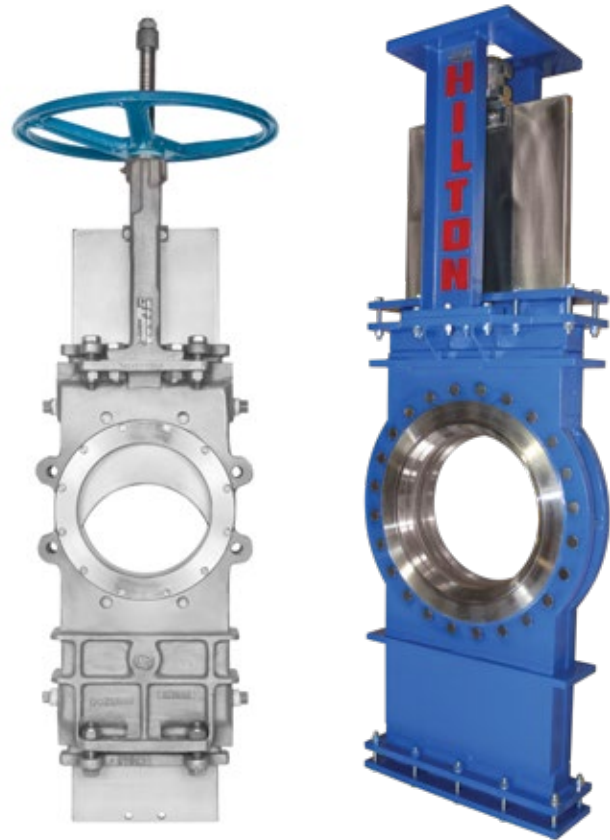
# DeZURIK KGO O-PORT GATE VALVES

## Design & Construction

DeZURIK KGO O-Port Gate Valves can be used on virtually all types of liquids, slurries and dry materials, but are specially designed to handle high-consistency paper stock, wood chips, fly ash, and slurries with high solids content and highly viscous fluids. KGO Valves are ideally suited for High Density Cleaners, Cyclones, Trash Dump Valves and Refiner Bypass or Isolation applications in the Pulp & Paper, Mining and Power industries.

DeZURIK KGO-CST Valves are available in sizes 2-24" (50-600mm) and feature a cast body rated to 150 psi CWP, and with uni-directional face sealing. Metal or resilient seats are available in 316 Stainless Steel, Terpolymer of Ethylene, Propylene and A Diene (EPDM), PTFE or Reinforced PTFE.

Hilton KGO-FAB Valves (H-1500 Thru Port) are available in sizes 2-66" (50-1700mm) with a wide variety of flange drillings, body materials, gate materials and hard facing options. They feature a fully fabricated body. Unidirectional seating is standard with bi-directional sealing available as an option. In addition, multiple packing options, seat options and seat facing options are available to meet the most rigorous applications.



## Ideally Suited for Standing Column of Dry Material

DeZURIK KGO-CST O-Port and the KGO-FAB (Hilton H-1500 Thru-Port) Valves are capable of closing through a standing column of dry material. As the gate slides closed, it carries a slice of the media into the valve body. When the valve slides open, it pulls the slice of media from the body back into the flowing media stream. To view an animation of how these valves work, go to the DeZURIK KGO product page or the Hilton Thru-Port Gate Valve (H-1500) product page at [www.dezurik.com](http://www.dezurik.com).

## Full Port Reduces Turbulence

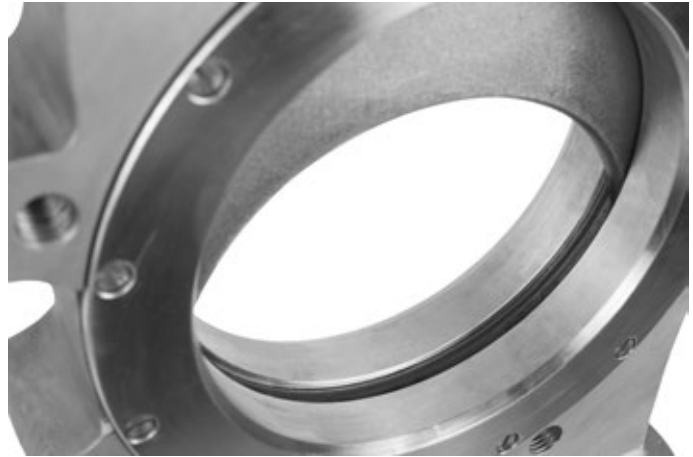
Full standard port diameter on the O-Port Gate Valves reduces turbulence and pressure loss.

## Replaceable Seats

Seat faces are protected from the media in the full open and closed position. Metal and resilient seats are easily replaceable in the field on KGO-CST valves.

## Purge Ports Facilitate Cleaning

Purge Ports in the chest and lower body area allow periodic purging to prevent clogging.



## Precision Ground Stainless Steel Gate

The 316 Stainless Steel gate is precision ground on all sides. Edges are beveled to maximize packing life.

## Common Actuator Mounting

DeZURIK KGO-CST O-Port Valves are available with handwheel actuators or can be supplied with the same powered actuators as the popular DeZURIK KGC Cast Stainless Steel Knife Gate Valves.

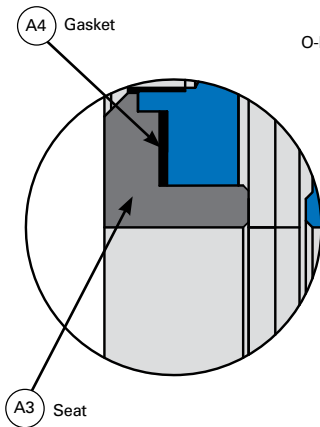


# Materials of Construction

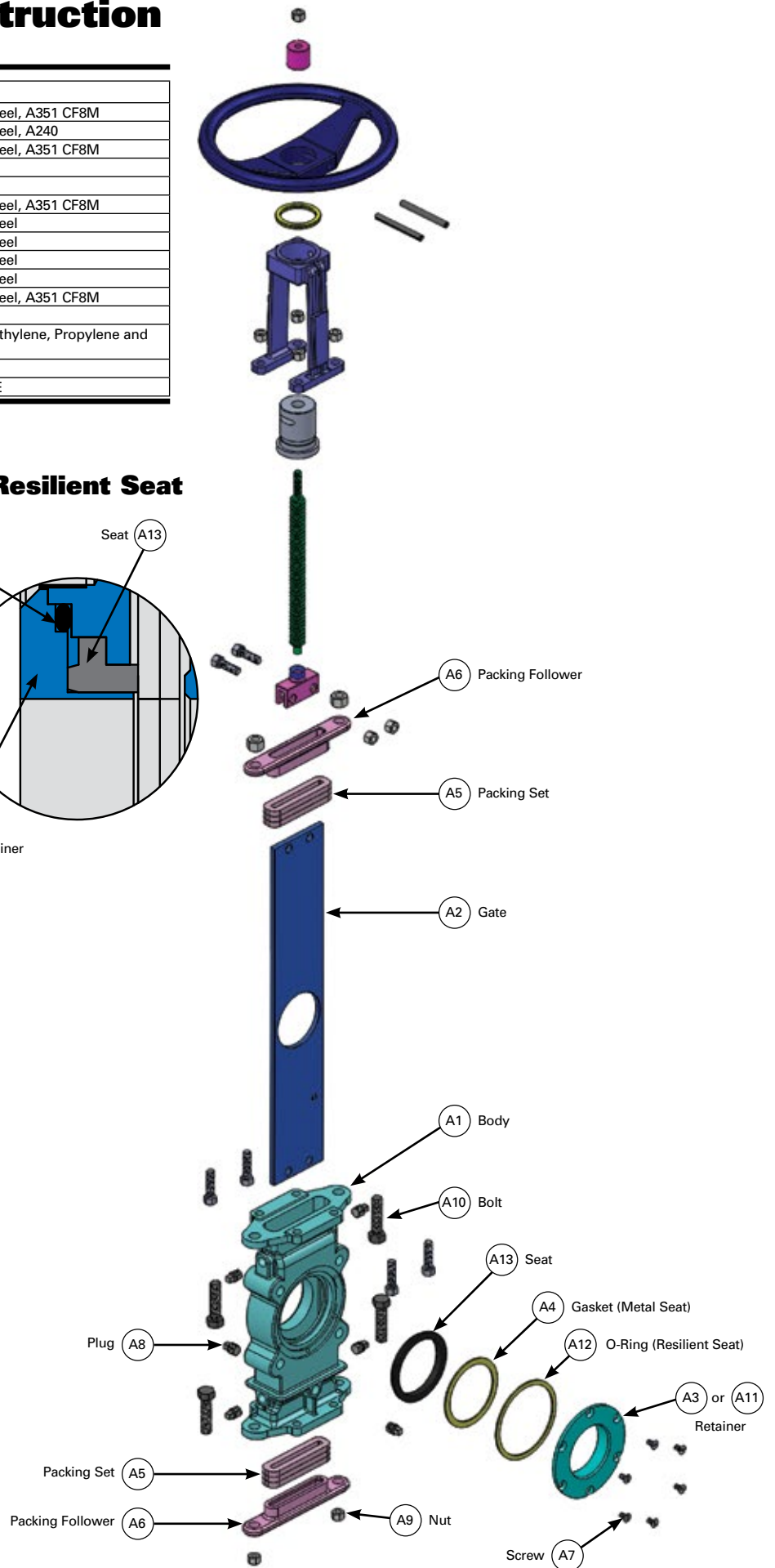
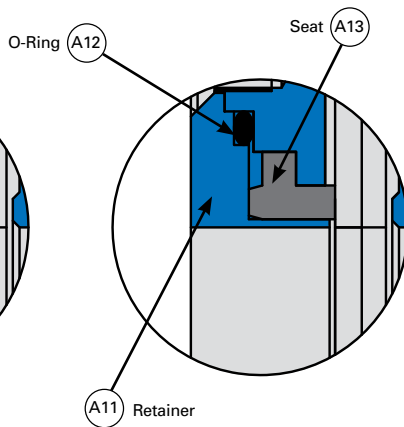
## KGO Cast Design

Item	Description	Material
A1	Body	316 Stainless Steel, A351 CF8M
A2	Gate	316 Stainless Steel, A240
A3	Seat (Metal Seat Only)	316 Stainless Steel, A351 CF8M
A4	Gasket (Metal Seat Only)	Fluoro Rubber
A5	Packing Set	Braided PTFE
A6	Packing Follower	316 Stainless Steel, A351 CF8M
A7	Screw	316 Stainless Steel
A8	Plug	316 Stainless Steel
A9	Nut	304 Stainless Steel
A10	Bolt	304 Stainless Steel
A11	Retainer (Resilient Seat Only)	316 Stainless Steel, A351 CF8M
A12	O-Ring (Resilient Seat Only)	Fluoro Rubber
A13	Seat (Resilient Seat Only)	Terpolymer of Ethylene, Propylene and A Diene (EPDM) PTFE Reinforced PTFE

### Metal Seat



### Resilient Seat



# Valve Selection

## Shut-Off Capabilities

Seat type	Shut-Off
Metal	MSS-SP81
Terpolymer of Ethylene, Propylene and A Diene (EPDM)	Drip-Tight
PTFE	
Reinforced PTFE	

## Pressure Ratings

Valve Style	Maximum Pressure*
KGO-CST 2-24" (50-600)	150 psi CWP 1000 kPa CWP
KGO-FAB 2-66" (50-1700)	150 psi CWP 1000 kPa CWP
	285 psi CWP 1960 kPa CWP
	740 psi CWP 5100 kPa CWP

## Temperature Ratings

Seat Material	Temperature Rating*
Terpolymer of Ethylene, Propylene and A Diene (EPDM)	To 250°F (122°C)
PTFE	to 450°F (230°C)
Reinforced PTFE	to 500°F (260°C)
Metal Seat	Temperature Limit of Packing

\*Higher temperature ratings available on application.

## Applicable Standards

DeZURIK KGO Valves are designed and/or tested to meet the following standards:	
ASME B16.10	Meets Face-to-Face and End-to-End Dimensions of Valves
ASME B16.5	Conforms to Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24 Metric/Inch Standard
MSS SP-81	Face-to-face and testing meets Stainless-Steel or Stainless-Steel-Lined, Bonnetless, Knife Gate Valves with Flanged Ends

## Flow Parameters

Valve Size	Cv* Kv* 100% Open	K** Resistance	Area of Opening (in <sup>2</sup> /cm <sup>2</sup> )
2" 50mm	378 326	0.10	3.1 20
3" 80mm	590 510	0.10	4.9 32
4" 100mm	850 730	0.10	7.1 46
5" 125mm	1510 1300	0.10	19.6 127
6" 150mm	3400 2930	0.10	28.3 182
8" 200mm	6050 5200	0.10	50.3 324
10" 250mm	9450 8200	0.10	78.5 507
12" 300mm	13600 11700	0.10	113 730
14" 350mm	16600 14300	0.10	138 890
16" 400mm	22000 19000	0.10	183 1178
18" 450mm	28100 24200	0.10	234 1508
20" 500mm	35000 30200	0.10	291 1878
24" 600mm	51100 44000	0.10	425 2739

\*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 =  $\frac{K \times D}{f}$  Where L = Equivalent length of pipe in feet  
K = Resistance coefficient  
D = Pipe diameter in feet  
f = Friction factor, related to type of pipe

## Weights

### KGO-CST Body Style

Valve Size	Valve with Handwheel
2" 50mm	18 9
3" 80mm	26 12
4" 100mm	27 13
6" 150mm	40 19
8" 200mm	81 37
10" 250mm	110 50
12" 300mm	149 68
14" 350mm	232 106
16" 400mm	314 143
18" 450mm	392 178
20" 500mm	527 240
24" 600mm	840 382

Pounds  
Kilograms

### KGO-CST Body Style with Cylinder

Valve Size	Cylinder Size	Valve with Cylinder Weight
2" 50mm	CY-PC4-S1	37 17
3" 80mm	CY-PC6-S1	65 30
4" 100mm	CY-PC8-S1	66 30
6" 150mm	CY-PC8-S1	95 44
8" 200mm	CY-PC10-S1	236 108
10" 250mm	CY-PC10-S1	246 112
	CY-PC12-S1	264 120
12" 300mm	CY-PC12-S1	347 158
	CY-PC14-S1	444 202
14-24" 350-600mm	On Application	

Pounds  
Kilograms

Contact DeZURIK for weights of KGO-FAB Valves

# Ordering

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

<p><b>Valve Style</b> Give valve style code as follows:</p> <p>KGO = O-Port Gate Valves</p>
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<p><b>Valve Size</b> Give valve size code as follows:</p> <table> <tr> <td>2 = 2" (50mm)</td> <td>24 = 24" (600mm)</td> </tr> <tr> <td>3 = 3" (80mm)</td> <td>28 = 28" (700mm)</td> </tr> <tr> <td>4 = 4" (100mm)</td> <td>30 = 30" (750mm)</td> </tr> <tr> <td>6 = 6" (150mm)</td> <td>32 = 32" (800mm)</td> </tr> <tr> <td>8 = 8" (200mm)</td> <td>36 = 36" (900mm)</td> </tr> <tr> <td>10 = 10" (250mm)</td> <td>42 = 42" (1100mm)</td> </tr> <tr> <td>12 = 12" (300mm)</td> <td>48 = 48" (1200mm)</td> </tr> <tr> <td>14 = 14" (350mm)</td> <td>54 = 54" (1400mm)</td> </tr> <tr> <td>16 = 16" (400mm)</td> <td>60 = 60" (1500mm)</td> </tr> <tr> <td>18 = 18" (450mm)</td> <td>66 = 66" (1700mm)</td> </tr> <tr> <td>20 = 20" (500mm)</td> <td></td> </tr> </table>	2 = 2" (50mm)	24 = 24" (600mm)	3 = 3" (80mm)	28 = 28" (700mm)	4 = 4" (100mm)	30 = 30" (750mm)	6 = 6" (150mm)	32 = 32" (800mm)	8 = 8" (200mm)	36 = 36" (900mm)	10 = 10" (250mm)	42 = 42" (1100mm)	12 = 12" (300mm)	48 = 48" (1200mm)	14 = 14" (350mm)	54 = 54" (1400mm)	16 = 16" (400mm)	60 = 60" (1500mm)	18 = 18" (450mm)	66 = 66" (1700mm)	20 = 20" (500mm)	
2 = 2" (50mm)	24 = 24" (600mm)																					
3 = 3" (80mm)	28 = 28" (700mm)																					
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16 = 16" (400mm)	60 = 60" (1500mm)																					
18 = 18" (450mm)	66 = 66" (1700mm)																					
20 = 20" (500mm)																						

<p><b>Body Style</b> Give body style code as follows:</p> <p>CST = Cast Design 2-24" (50-600mm) FAB = Fabricated Design 2-66" (50-1700mm)</p>
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<p><b>End Connection</b> Give end connection code as follows:</p> <p><b>Body Style CST</b> F1 = Flanged, ASME 150</p> <p><b>Body Style FAB</b> F1 = Flanged, ASME 150 F110 = Flanged, ISO 7500-1 or DIN 10 or BS4504/10 F116 = Flanged, ISO 7500-1 or DIN 16 or BS4504/16 F1J1 = Flanged, JIS10 t F1DA = Flanged, AS2129 Table D F1EA = Flanged, AS2129 Table E F2 = Flanged, ASME 300</p>
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<p><b>Body Material</b> Give body material code as follows:</p> <p><b>Body Style CST</b> S2 = 316 Stainless Steel</p> <p><b>Body Style FAB</b> S1 = 304 Stainless Steel S2 = 316 Stainless Steel S3 = 317 Stainless Steel CS = Carbon Steel AA = Alloy 20 TN = Titanium HC = Hastelloy C</p>
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<p><b>Packing Material</b> Give packing material code as follows:</p> <p><b>Body Style CST</b> SMP = PTFE Braided Packing to 500°F (260°C) (pH Range 0-14)</p> <p><b>Body Style FAB</b> MSP = Square Braided PTFE Impregnated Synthetic Fiber to 500°F (260°C) (pH Range 4-10) SMP = PTFE Braided Packing to 500°F (260°C) (pH Range 0-14) CWP = Square Braided PTFE Impregnated Synthetic Fiber with one ring Copper Wire Braided Scraper to 500°F (260°C) (pH Range 4-10) Not for use on clear liquid service. HB = High Temperature Braided Packing to 1000°F (540°C) (pH Range 4-10) GLCW = Expanded PTFE fiber with graphite live loading with copper wiper, 450°F (232°C) ASP = Self Adjusting PTFE Braided Packing with AFLAS Fluoroelastomer Cord to 400°F (205°C) (pH Range 0-14) TDP = Dry Service, Dry PTFE Braided Packing with Solid PTFE Cord to 500°F (260°C) (pH Range 0-14)</p>
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**Note:** The limiting factor in valve selection is the lowest temperature limit of the packing or seat.

<p><b>Gate Material</b> Give gate material code as follows:</p> <p><b>Body Style CST</b> S2 = 316 Stainless Steel</p> <p><b>Body Style FAB</b> S1 = 304 Stainless Steel S2 = 316 Stainless Steel S3 = 317 Stainless Steel S8 = 410 Stainless Steel HC = Hastelloy C CSH = Hardened Carbon Steel AA = Alloy 20 S5 = Hardened 17-4 PH Stainless Steel TN = Titanium</p>
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<p><b>Seat Material</b> Give seat material code as follows:</p> <p><b>Body Style CST</b> S2 = 316 Stainless Steel EPDM = Terpolymer of Ethylene, Propylene and A Diene (EPDM) T = PTFE RT = Reinforced PTFE</p> <p><b>Body Style FAB</b> CS = Carbon Steel S1 = 304 Stainless Steel S2 = 316 Stainless Steel S3 = 317 Stainless Steel S5 = Hardened 17-4 PH Stainless Steel AA = Alloy 20 TN = Titanium HC = Hastelloy C RT = Reinforced PTFE</p>
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<p><b>Seat Facing</b> Give seat facing code as follows:</p> <p><b>Body Style CST</b> NR = No Coating, Replaceable</p> <p><b>Body Style FAB</b> NR = No Coating, Replaceable TWR = Tungsten Carbide (Welded), Replaceable CCR = Chrome Carbide, Replaceable</p> <p><b>Available with CS, S1, S2 or S3 Seat Material only</b> SR = Cobalt Chromium Alloy Overlay, Replaceable SNR = Cobalt Chromium Alloy Overlay, Non-Replaceable TR = Tungsten Carbide, Replaceable</p>
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<p><b>CWP Rating</b> Give CWP rating code as follows:</p> <p><b>Body Style CST</b> 3 = 150 psi (1030 kPa)</p> <p><b>Body Style FAB</b> 3 = 150 psi (1030 kPa)F1, F110, F116, F1J1, F1DA or F1EA CL150 bodies with MSP, HDP, CWP, SMP or TDP packing 5 = 0 - 285 psi (1960 kPa)F1, F110, F116, F1J1, F1DA or F1EA CL150 bodies with GLCW or ASP packing 6 = 0 - 740 psi (5090) kPaF2 CL300 bodies with GLCW or ASP packing</p>
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**Ordering Example:**  
KGO,16,CST,F1,S2,SMP,S2-S2-NR,3\*Actuator

# Actuator Sizing

To order handwheel or cylinder actuators, add the appropriate order code from the chart to the valve order code.

## Handwheel Actuator

Valve Size	Order Code	Maximum Pressure Differential psi/kPa
	304 Stainless Steel Yoke	
2" 50mm	MN-HD8-S1	150 1035
3" 80mm	MN-HD8-S1	150 1035
4" 100mm	MN-HD10-S1	150 1035
6" 150mm	MN-HD12-S1	150 1035
8" 200mm	MN-HD16-S1	150 1035
10" 250mm	MN-HD20-S1	150 1035
12" 300mm	MN-HD20-S1	150 1035
14" 350mm	MN-HD24-S1	150 1035
16" 400mm	MN-HD24-S1	150 1035
18" 450mm	MN-HD24-S1	150 1035
20" 500mm	MN-HD30-S1	150 1035
24" 600mm	MN-HD30-S1	150 1035

## Cylinder Actuator

### 60 psi (410 kPa) Air Supply

Valve Size	Order Code	Maximum Pressure Differential psi/kPa
	304 Stainless Steel Yoke	
2" 50mm	CY-PC4-S1	150 1035
3" 80mm	CY-PC6-S1	150 1035
4" 100mm	CY-PC8-S1	150 1035
6" 150mm	CY-PC8-S1	150 1035
8" 200mm	CY-PC10-S1	150 1035
10" 250mm	CY-PC12-S1	150 1035
12" 300mm	CY-PC14-S1	150 1035
14" 350mm	On Application	
16" 400mm		
18" 450mm		
20" 500mm		
24" 600mm		

### 80 psi (550 kPa) Air Supply

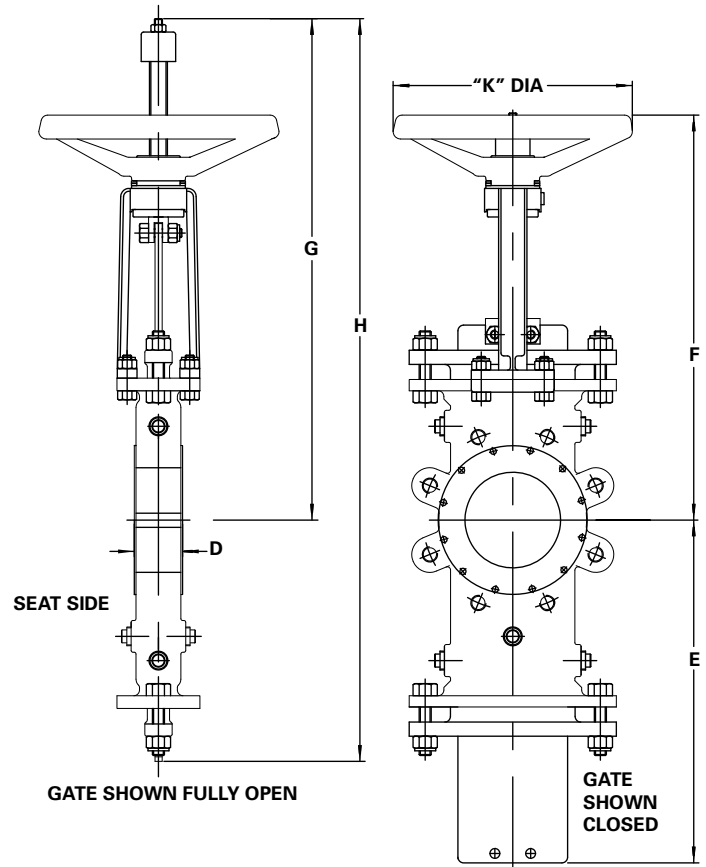
Valve Size	Order Code	Maximum Pressure Differential psi/kPa
	304 Stainless Steel Yoke	
2" 50mm	CY-PC4-S1	150 1035
3" 80mm	CY-PC6-S1	150 1035
4" 100mm	CY-PC6-S1	150 1035
6" 150mm	CY-PC8-S1	150 1035
8" 200mm	CY-PC10-S1	150 1035
10" 250mm	CY-PC10-S1	150 1035
12" 300mm	CY-PC12-S1	150 1035
14" 350mm	On Application	
16" 400mm		
18" 450mm		
20" 500mm		
24" 600mm		

# Dimensions

## KGO-CST Valve and Handwheel

Valve Size	Dimensions					
	D	E	F	G	H	K
2"	1.88	10.80	13.30	15.50	24.10	8.00
50mm	48	274	338	394	612	203
3"	2.00	12.10	15.40	18.60	27.50	8.00
80mm	51	307	391	472	699	203
4"	2.00	14.10	17.10	21.30	31.20	10.00
100mm	51	358	434	541	792	254
6"	2.25	19.40	19.60	25.90	39.10	12.00
150mm	57	493	498	658	993	305
8"	2.75	24.60	24.10	32.30	48.60	16.00
200mm	70	625	612	820	1234	406
10"	2.75	29.50	26.90	37.10	56.40	20.00
250mm	70	749	683	942	1433	508
12"	3.00	35.10	31.70	44.10	66.80	20.00
300mm	76	892	805	1120	1697	508
14"	3.00	38.60	37.10	50.80	75.70	24.00
350mm	76	980	942	1290	1923	610
16"	3.50	44.50	41.50	57.20	86.10	24.00
400mm	89	1130	1054	1453	2187	610
18"	3.50	49.70	43.80	61.80	93.60	24.00
450mm	89	1262	1113	1570	2377	610
20"	4.50	54.80	47.80	67.80	102.70	30.00
500mm	114	1392	1214	1722	2609	762
24"	4.50	65.10	54.40	78.40	119.50	30.00
600mm	114	1654	1382	1991	3035	762

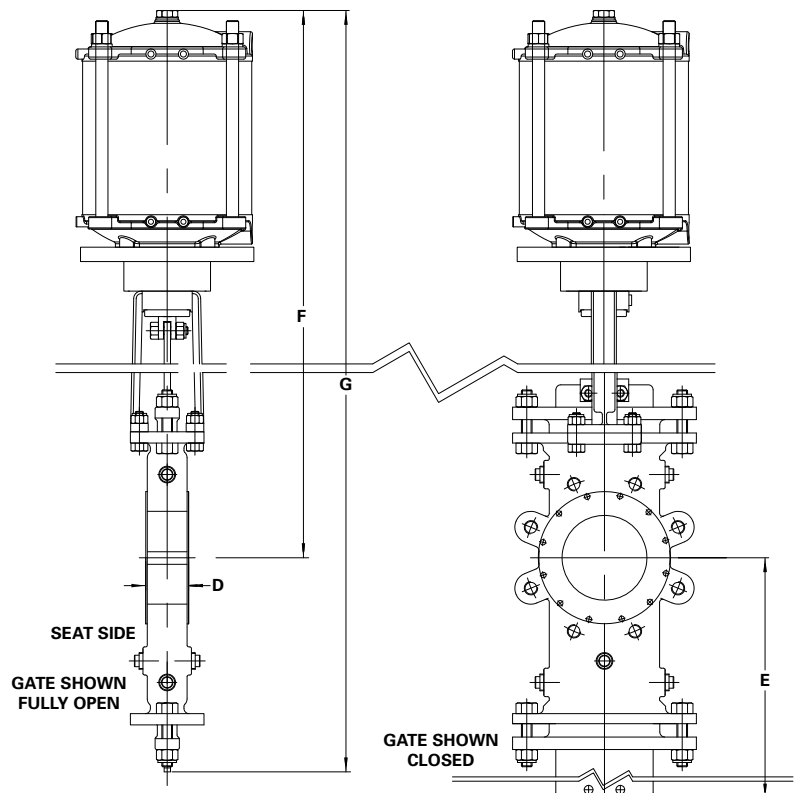
Inches  
Millimeters



## KGO-CST Valve and Cylinder

Valve Size	Dimensions			
	D	E	F	G
2"	1.88	10.80	25.00	33.60
50mm	48	274	635	853
3"	2.00	12.10	27.10	36.00
80mm	51	307	688	914
4"	2.00	14.10	30.15	40.05
100mm	51	358	766	1017
6"	2.25	19.40	34.98	48.18
150mm	57	493	888	1224
8"	2.75	24.60	41.53	57.83
200mm	70	625	1055	1469
10"	2.75	29.50	50.37	69.97
250mm	70	749	1279	1770
12"	3.00	35.10	55.13	77.83
300mm	76	892	1400	1977
14-24" 350-600mm	On Application			

Inches  
Millimeters



## **Sales and Service**

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

**Web Site: [www.dezurik.com](http://www.dezurik.com) E-Mail: [info@dezurik.com](mailto:info@dezurik.com)**



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*DeZURIK, Inc. reserves the right to incorporate our latest design and material changes without notice or obligation. Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing by DeZURIK, Inc. Certified drawings are available upon request.*