



**DeZURIK BOS-CL ON-CENTER
RESILIENT SEATED
BUTTERFLY VALVE
TECHNICAL SPECIFICATIONS**



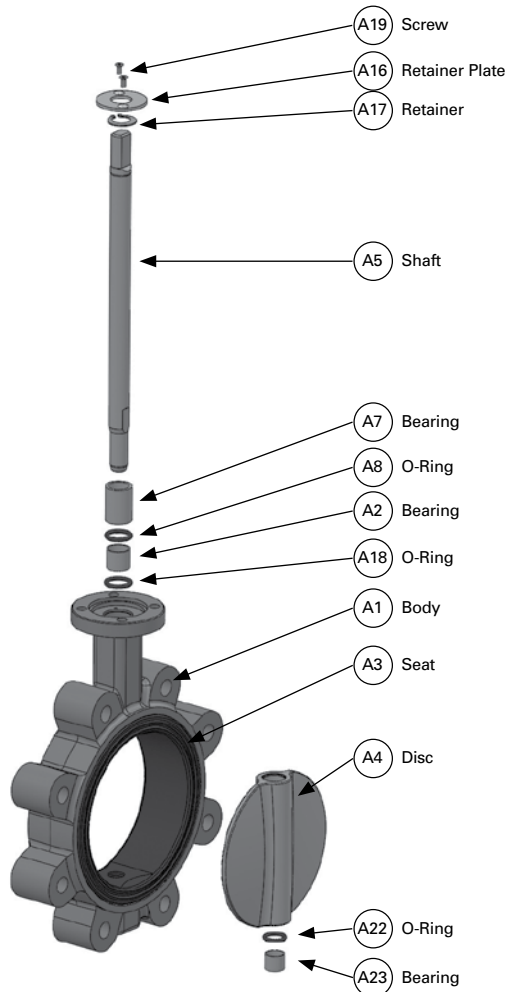
Materials of Construction

2-24" (50-600mm) Valve Sizes

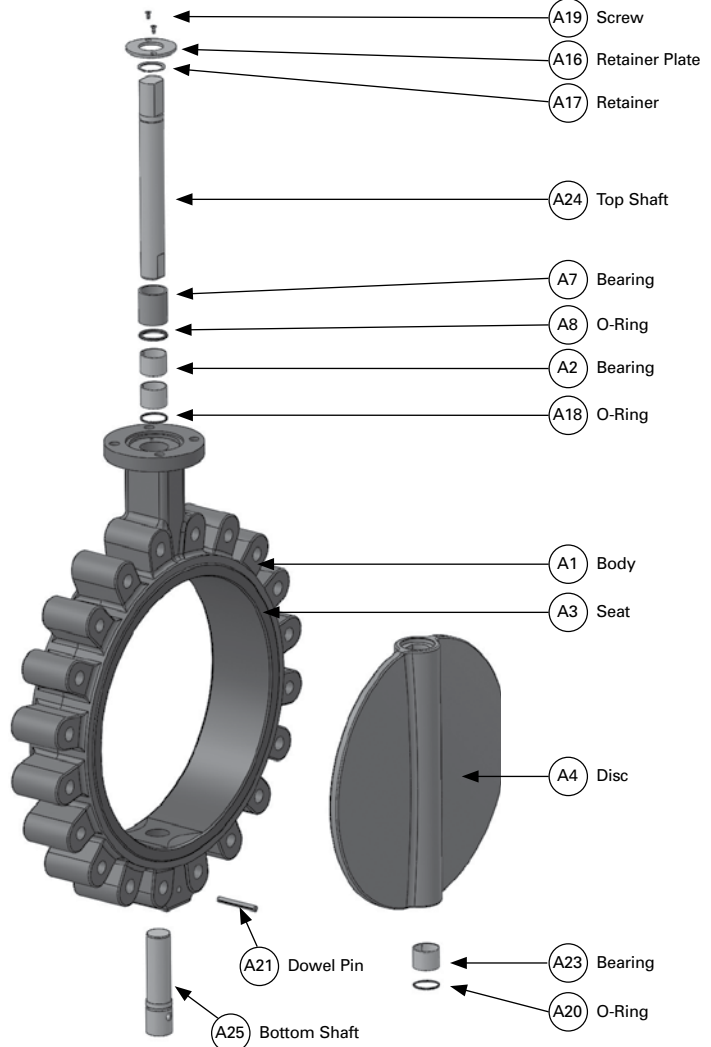
Item	Description	Material
A1	Body	Ductile Iron, ASTM A536, 65-45-12
A2	Bearing	Carbon steel with PTFE sintered bronze composite
A3	Seat*	NBR - Acrylonitrile-Butadiene EPDM-Terpolymer of Ethylene Propylene and a Diene
A4	Disc	Ductile Iron, ASTM A536, 65-45-12, Nylon 11 coated Stainless Steel, ASTM A351, CF8M Aluminum Bronze, ASTM B148, C954
A5	Shaft (2- 12")	420 Stainless Steel, ASTM A582
A7	Bearing (2-18") Bearing (20" & 24")	Glass Filled Nylon Brass
A8	O-Ring**	NBR - Acrylonitrile-Butadiene EPDM - Terpolymer of Ethylene Propylene and a Diene
A16	Retainer Plate	Carbon steel, Zinc Plated
A17	Retainer	Spring Steel
A18	O-Ring	NBR - Acrylonitrile-Butadiene EPDM - Terpolymer of Ethylene Propylene and a Diene
A19	Screw	Carbon steel, Zinc Plated
A20	O-Ring (14-24")**	NBR - Acrylonitrile-Butadiene EPDM - Terpolymer of Ethylene Propylene and a Diene
A21	Dowel Pin (14-24")	Spring Steel
A22	O-Ring (2"-14")**	NBR - Acrylonitrile-Butadiene EPDM - Terpolymer of Ethylene Propylene and a Diene
A23	Bearing (2-14")	Carbon steel with PTFE sintered bronze composite
A24	Shaft - Top (14-24")	420 Stainless Steel, ASTM A582
A25	Shaft - Bottom (14-24")	420 Stainless Steel, ASTM A582

*Seat backing material: 2-6" = Phenolic; 8-24" = Aluminum
 ** O-ring material matches seat material

2-12" (50-300mm) Valve Size



14-24" (350-600mm) Valve Size

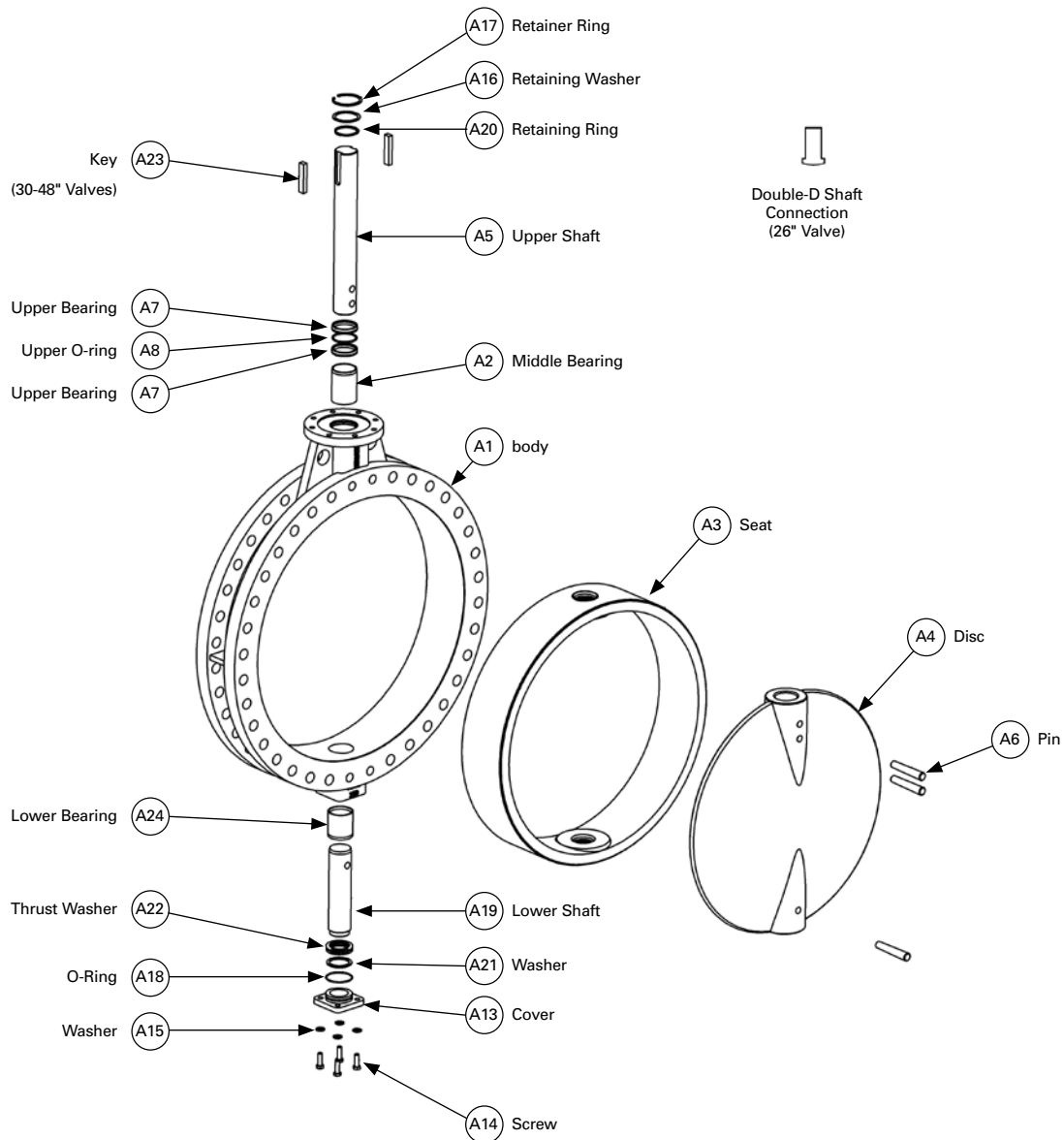


Materials of Construction

26-48" (650-1500mm) Valve Size

Item	Description	Material
A1	Body	Ductile Iron, ASTM A536, 65-45-12
A2	Bearing (Middle)	Phosphor Bronze, QSn4-3
A3	Seat*	NBR-Acrylonitrile-Butadiene
A4	Disc	Ductile Iron, ASTM A536, 65-45-12, Nylon 11 coated 316 Stainless Steel, ASTM A351, CFBM Aluminum Bronze, ASTM B148, C954
A5	Shaft (Upper)	420 Stainless Steel, ASTM A276 Condition "A"
A6	Pin	316 Stainless Steel
A7	Bearing (Upper)	Phosphor Bronze, QSn4-3
A8	O-Ring	NBR-Acrylonitrile-Butadiene
A13	Cover	Ductile Iron, ASTM A536, 65-45-12
A14	Screw	Stainless Steel A4-80 (316)
A15	Washer	Stainless Steel A4-80 (316)
A16	Washer	304 Stainless Steel
A17	Retaining Ring	Carbon Steel
A18	O-Ring	NBR-Acrylonitrile-Butadiene
A19	Shaft (Lower)	420 Stainless Steel, ASTM A276 Condition "A"
A20	Retaining Ring	Carbon Steel
A21	Washer	Carbon Steel
A22	Bearing (Thrust)	Carbon Steel, ASTM A295 E52100
A23	Key	Carbon Steel, AISI 1045
A24	Bearing (Lower)	Phosphor Bronze, QSn4-3

* Seat backing material: Aluminum



Valve Selection

Shut-Off Capabilities

All Seat Materials	Bubble Tight Shutoff*
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* Fully rated bi-directional shutoff; dead end service with downstream flange attached. On sizes 26" (650mm) and larger, valve is derated to 50 psi (320kPa) dead end service when downstream flange is not used

Pressure Ratings

Ductile Iron Nylon Coated or 316 Stainless Steel Discs	
2-12" (50-300mm)	175 psi (1210 kPa)
14-48" (350-1200mm)	150 psi (1030 kPa)
Aluminum Bronze Discs	
2-48" (50-1200mm)	150 psi (1030 kPa)

Temperature Ratings:

NBR	-20 to 180°F (-29 to 82°C)
EPDM	-20 to 250°F (-29 to 121°C)

Flow Parameters

Valve Size	Cv* Kv* 100% Open	K Factor**
2"	115	0.86
50mm	99	
2.5"	195	0.81
65mm	169	
3"	300	0.77
80mm	260	
4"	600	0.72
100mm	519	
5"	1020	0.70
125mm	882	
6"	1580	0.68
150mm	1367	
8"	3135	0.63
200mm	2712	
10"	5340	0.47
250mm	4619	
12"	8250	0.46
300mm	7136	
14"	11915	0.44
350mm	10306	
16"	16390	0.30
400mm	14177	
18"	21705	0.29
450mm	18775	
20"	27910	0.28
500mm	24142	
24"	43115	0.26
600mm	37294	
26"	44900	0.20
650mm	38800	
30"	70400	0.15
750mm	60900	
32"	81300	0.14
800mm	70300	
36"	84200	0.21
900mm	72800	
40"	116000	0.17
1000mm	101000	
42"	133000	0.16
1050mm	115000	
48"	147000	0.22
1200mm	127000	

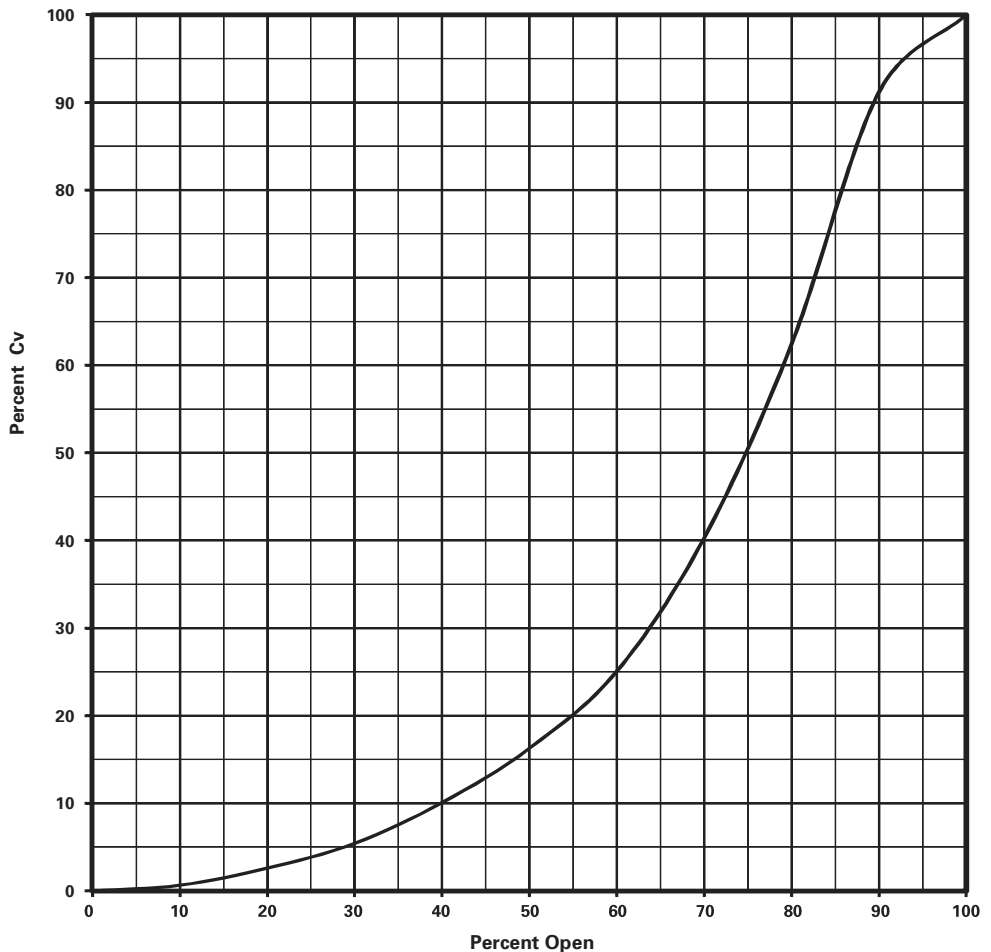
*Cv = Flow in GPM of water at 1 psi pressure drop.
 Kv = Flow in m3/hr. of water at 100 kPa pressure drop.
 ** K = The resistance coefficient of the valve. The constant (K) can be used to determine the equivalent length of pipe.

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

Applicable Standards

DeZURIK BOS-CL Resilient Seated Butterfly Valves are designed and/or tested to meet the following standards:	
ASME B16.1	Class 125 Flange Drilling
ASME B16.5	Class 150 Flange Drilling, 2-24" (50-600mm)
ASME B16.47	Class 150 Flange Drilling, 26" (650mm) and larger
ASME B16.42	Class 150 Body Wall Thickness
API 609	Butterfly Valve Face to Face, Category A
ASME B16.10 & MSS SP-67	Butterfly Valve Face to Face, 2-14" Narrow body; 16-24" Wide Body
API 609/598 & MSS SP-67	Shell and Seat Pressure Testing
ASME 16.104	Exceeds Class VI Shutoff Requirements (Bubble Tight)
ISO 5211	Actuator Mounting
ISO 7005-2 or BS4504	PN10 and 16 Flange Drilling
NSF/ANSI-61 & NSF/ANSI-372	Sizes 2-24" (50-600mm) Certified for use in drinking water applications

BOS-CL Flow Curve
 Percent Open vs. Percent Cv



Valve Selection (Cont.)

Valve and Actuator Weights

Valve Size	Basic Valve	Valve with Lever	Valve with Handwheel	Valve with Chainwheel
2" 50mm	<u>8</u> 4	<u>11</u> 6	<u>19</u> 9	<u>32</u> 15
2.5" 65mm	<u>9</u> 5	<u>12</u> 6	<u>20</u> 10	<u>33</u> 16
3" 80mm	<u>11</u> 5	<u>14</u> 7	<u>22</u> 10	<u>35</u> 16
4" 100mm	<u>16</u> 8	<u>19</u> 9	<u>27</u> 13	<u>40</u> 19
5" 125mm	<u>19</u> 9	<u>22</u> 10	<u>30</u> 14	<u>42</u> 20
6" 150mm	<u>23</u> 11	<u>26</u> 12	<u>34</u> 16	<u>47</u> 22
8" 200mm	<u>39</u> 18	N/A	<u>52</u> 24	<u>68</u> 31
10" 250mm	<u>64</u> 29	N/A	<u>77</u> 35	<u>92</u> 42
12" 300mm	<u>93</u> 43	N/A	<u>126</u> 58	<u>148</u> 68
14" 350mm	<u>132</u> 61	N/A	<u>165</u> 75	<u>187</u> 85
16" 400mm	<u>209</u> 96	N/A	<u>262</u> 120	<u>294</u> 134

Valve Size	Basic Valve	Valve with Lever	Valve with Handwheel	Valve with Chainwheel
18" 450mm	<u>260</u> 119	N/A	<u>313</u> 143	<u>345</u> 157
20" 500mm	<u>329</u> 150	N/A	<u>381</u> 174	<u>413</u> 188
24" 600mm	<u>573</u> 261	N/A	<u>683</u> 311	<u>715</u> 325
26" 650mm	<u>825</u> 375	N/A	<u>930</u> 422	N/A
30" 750mm	<u>1173</u> 533	N/A	<u>1325</u> 602	N/A
32" 800mm	<u>1525</u> 692	N/A	<u>1677</u> 761	N/A
36" 900mm	<u>1949</u> 885	N/A	<u>2125</u> 965	N/A
40" 1000mm	<u>2141</u> 972	N/A	<u>2320</u> 1053	N/A
42" 1050mm	<u>2495</u> 1133	N/A	<u>2859</u> 1298	N/A
48" 1200mm	<u>3711</u> 1684	N/A	<u>4075</u> 1849	N/A

Pounds
Kilograms

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:

BOS = Resilient Seated Butterfly Valve

Valve Size

Give valve size code as follows:

2	=	2"	50mm	18	=	18"	450mm
2.5	=	2.5"	65mm	20	=	20"	500mm
3	=	3"	80mm	24	=	24"	600mm
4	=	4"	100mm	26	=	26"	650mm
5	=	5"	125mm	30	=	30"	750mm
6	=	6"	150mm	32	=	32"	800mm
8	=	8"	200mm	36	=	36"	900mm
10	=	10"	250mm	40	=	40"	1000mm
12	=	12"	300mm	42	=	42"	1050mm
14	=	14"	350mm	48	=	48"	1200mm
16	=	16"	400mm				

Body Style

Give body style code as follows:

CL = Center Line Seat

End Connection

Give end connection code as follows:

L1 = ASME Class 125/150 Lugged Drilling
2-24" (50-600mm) Only
F1 = ASME Class 125 Flanged
26-48" (650-1200mm) Only

Body Material

Give body material code as follows:

DI = Ductile Iron

Seat, Shaft Material Combination

Give material code as follows:

NBR,NBR = Acrylonitrile-Butadiene
-20° to 180°F (-29 to 82°C)
EPDM,EPDM = Terpolymer of Ethylene Propylene & A Diene
-20° to 250°F (-29 to 121°C)
2-24" (50-600mm) Only

Trim Combination

Give Disc-Shaft material code as follows:

ALB-S15 = Aluminum Bronze Disc and
420 Stainless Steel Shaft
DINY-S15 = Ductile Iron Nylon 11 Coated Disc and
420 Stainless Steel Shaft
S2-S15 = 316 Stainless Steel Disc and
420 Stainless Steel Shaft

Ordering Example:

BOS,6,CL,L1,DI,NBR,NBR,DINY-S15*actuator

Manual Actuators

DeZURIK BOS-CL On-Center Resilient Seated Butterfly Valves are available with lever, handwheel or chainwheel manual operators.

Lever Actuators

Lever actuators are available on 2-6" (50-150mm) valve sizes, and feature mounting hole for installing lockout device. Lever actuators may be mounted at standard or 180° from standard. To order, add code LT to valve order code.



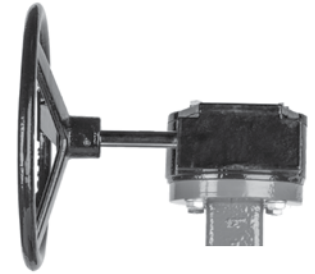
Valve Size	Order Code	Maximum Pressure Differential psi/kPa	
		Ductile Iron Nylon Coated (DINY) or Stainless Steel (S2) Disc	Aluminum Bronze (ALB) Disc
2-6" 50-150mm	LT	175 1210	150 1030

Ordering Example:

BOS,4,CL,L1,DI,NBR,NBR,DINY-S15*LT

Manual Gear Actuators

Manual gear actuators provide high torque for robust applications and a long service life without maintenance. Actuators provide visible indication of disc position. Adjustable open and closed position travel stops ensure proper disc seating.



Handwheel Actuator, 2-24" (50-600mm)

Valve Size	Order Code	Maximum Pressure Differential psi/kPa	
		Ductile Iron Nylon Coated (DINY) or Stainless Steel (S2) Disc	Aluminum Bronze (ALB) Disc
2-6" 50-150mm	AM-QT35-HD12	175 1210	150 1030
8 & 10" 200 & 250mm	AM-QT50-HD12	175 1210	150 1030
12" 300mm	AM-QT100-HD16	175 1210	150 1030
14" 350mm	AM-QT100-HD16	150 1030	150 1030
16-20" 400-500mm	AM-QT250-HD20	150 1030	150 1030
24" 600mm	AM-QT500-HD20	150 1030	150 1030

Chainwheel Actuator, 2-24" (50-600mm)

Valve Size	Order Code	Maximum Pressure Differential psi/kPa	
		Ductile Iron Nylon Coated (DINY) or Stainless Steel (S2) Disc	Aluminum Bronze (ALB) Disc
2-6" 50-150mm	AM-QT35-CW12	175 1210	150 1030
8 & 10" 200 & 250mm	AM-QT50-CW12	175 1210	150 1030
12" 300mm	AM-QT100-CW16	175 1210	150 1030
14" 350mm	AM-QT100-CW16	150 1030	150 1030
16-20" 400-500mm	AM-QT250-CW20	150 1030	150 1030
24" 600mm	AM-QT500-CW20	150 1030	150 1030

Handwheel Actuator, 26-42" (650-1300mm)

Valve Size	Order Code	Maximum Pressure Differential psi/kPa
26" 650mm	AM-400-HD15	150 1030
30 & 32" 750 & 800mm	AM-800-HD15	150 1030
36 & 40" 900 & 1000mm	AM-1500-HD15	150 1030
42 & 48" 1050 & 1200mm	AM-2500-HD17	150 1030

Ordering Example:

BOS,6,CL,L1,DI,NBR,NBR,DINY-S15*AM-QT35-HD12

Manual Actuator Accessories

Lockout Device

Manual gear actuators are available with an optional lockout on 2-24" (50-600mm) valves. Lockout is standard on sizes 26" (650mm) and larger. The lockout allows the handwheel to be locked with a padlock at any 1/8th turn increment. Lockouts may be ordered with a valve or separately as a kit. Padlock not included. To order, add code LK after the actuator order code.

Ordering Example:

BOS,6,CL,L1,DI,NBR,NBR,DINY-S15*AM-QT35-HD12,LK

Cylinder Actuators

Compatible with Standard Actuators

The actuator mounting flange on BOS-CL valves is compatible with the ISO 5211/1 bolt pattern which increases flexibility and reduces inventory. Actuator options include PowerRac® double acting or spring return cylinders, Compak™ double acting and spring return cylinder, and G-Series cylinder actuators.

PowerRac® Cylinder Actuators

Double-acting and spring-return PowerRac® actuators feature a proven rack-and-pinion design ideally suited for high cycle applications. PowerRac® actuators provide high output torque for on-off applications and consistently high output torque throughout the full stroke for accurate control. Its durability is backed by a Lifetime Warranty.



Chain for Chainwheel Actuators

Chain for chainwheel actuators is sold as a separate item. To order, specify code from chart below and length.

Description	Usage	Order Code
Chain, Babbitt #1/0	AM-QT35	ACC*CN104
Chain, Babbitt #4/0	AM-QT50, AM-QT100, AM-QT250, AM-QT500	ACC*CN105

Ordering Example:

ACC*CN105

Chain: 1 piece 10 feet long

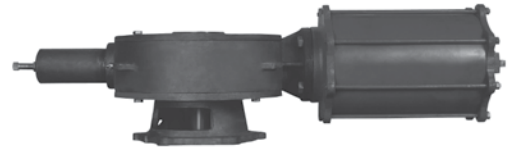
Compak™ Cylinder Actuators

The compact, modular design allows the Compak™ actuator to be mounted for a low profile assembly. Compak™ actuators are a versatile double rack-and-pinion design and are available as double-acting or spring-return units.



G-Series Cylinder Actuators

G-Series actuators feature a rack-and-gear design for larger size rotary valves where constant high torque capability throughout the stroke is required. This double-acting actuator is available with either pneumatic or hydraulic supply.



Accessories

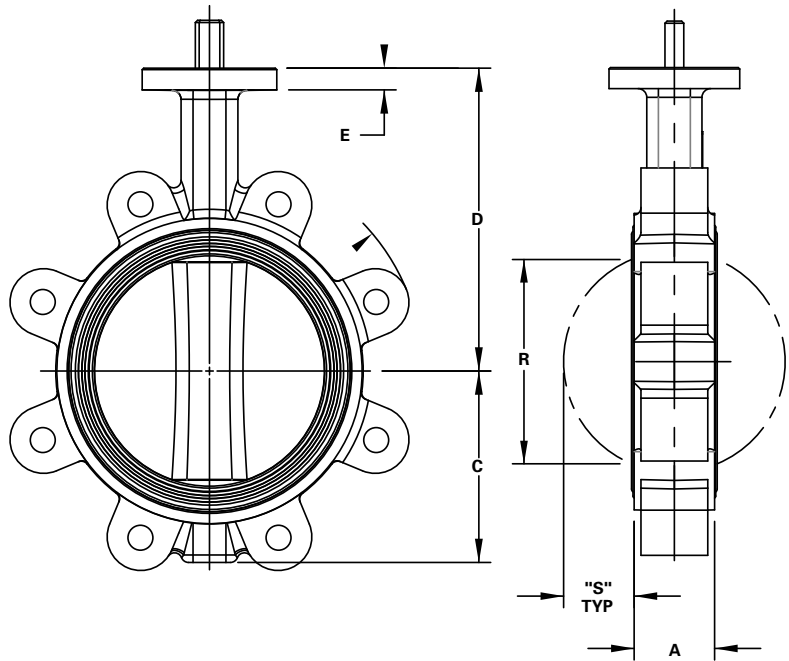
A full line of accessories are also available, including positioners, solenoids, switches, speed controls, floorstands and valves boxes.

Dimensions

Basic Valve, 2-24" (50-600mm)

Valve Size	Dimensions					
	A	C	D	E	R	S
2" 50mm	1.67 42	2.36 60	5.53 140	0.57 14	1.34 34	0.24 6
2.5" 65mm	1.79 45	2.76 70	6.02 153	0.57 14	1.85 47	0.39 10
3" 80mm	1.79 45	3.15 80	6.20 157	0.57 14	2.60 66	0.67 17
4" 100mm	2.02 51	3.54 90	6.93 176	0.57 14	3.62 92	1.06 27
5" 125mm	2.18 55	4.40 112	7.52 191	0.57 14	4.65 118	1.46 37
6" 150mm	2.18 55	5.04 128	7.97 202	0.57 14	5.75 146	1.97 50
8" 200mm	2.34 59	6.31 160	9.59 244	0.59 15	7.68 195	2.91 74
10" 250mm	2.65 67	7.76 197	10.75 273	0.59 15	9.65 245	3.70 94
12" 300mm	3.06 78	9.17 233	12.42 315	0.59 15	11.62 295	4.53 115
14" 350mm	3.06 78	10.51 267	13.78 350	0.59 15	12.78 325	5.12 130
16" 400mm	4.02 102	11.89 302	15.94 405	0.99 25	15.00 381	5.71 145
18" 450mm	4.41 112	12.99 330	16.61 422	0.99 25	16.85 428	6.50 165
20" 500mm	5.00 127	14.45 367	19.29 490	0.99 25	16.66 423	7.17 182
24" 600mm	5.98 152	17.56 446	22.54 573	0.99 25	22.83 580	8.62 219

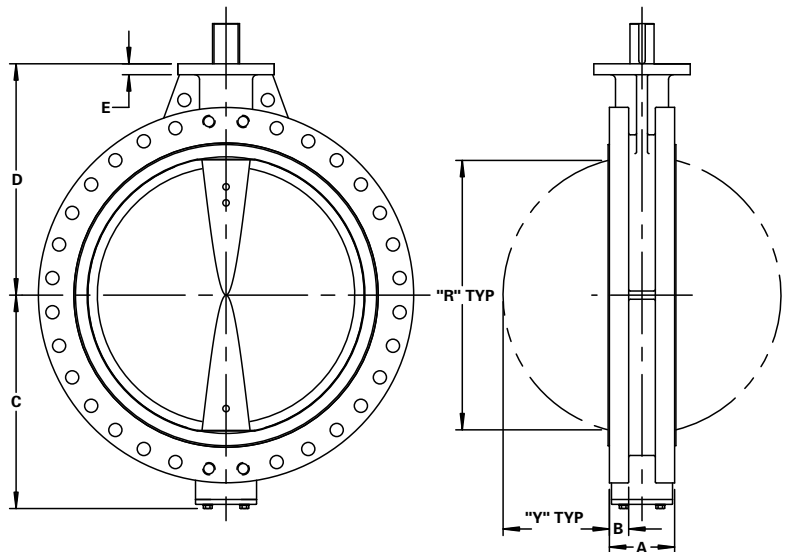
Inches
Millimeters



Basic Valve, 26-48" (650-1200mm)

Valve Size	Dimensions						
	A	B	C	D	E	R	Y
26" 650mm	6.50 165	2.00 51	19.57 497	21.85 555	1.10 28	23.65 601	9.02 229
30" 750mm	6.50 165	2.12 54	22.17 563	25.98 660	1.30 33	28.57 726	11.40 290
32" 800mm	7.50 191	2.38 60	23.58 599	26.22 666	1.30 33	30.40 772	11.91 303
36" 900mm	8.00 203	2.38 60	26.14 664	28.35 720	1.34 34	33.09 840	13.03 331
40" 1000mm	8.50 216	2.38 60	29.02 737	31.73 806	1.38 35	37.03 941	14.74 374
42" 1050mm	9.88 251	2.62 67	31.54 801	34.06 865	1.38 35	39.30 998	15.32 389
48" 1200mm	10.88 276	2.75 70	34.61 879	36.93 938	1.50 38	44.36 1127	17.41 442

Inches
Millimeters

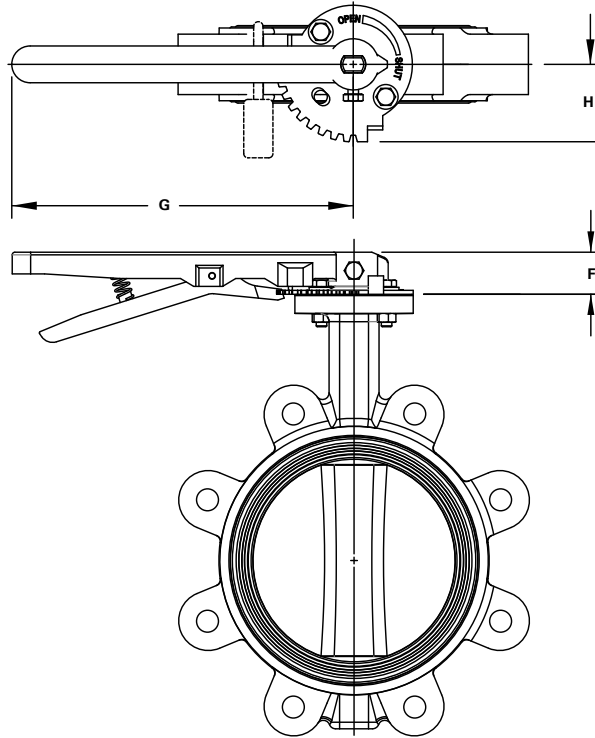


Dimensions

Lever Actuator

Valve Size	Dimensions		
	F	G	H
2-6" 50-150mm	1.26 32	10.24 260	2.32 59

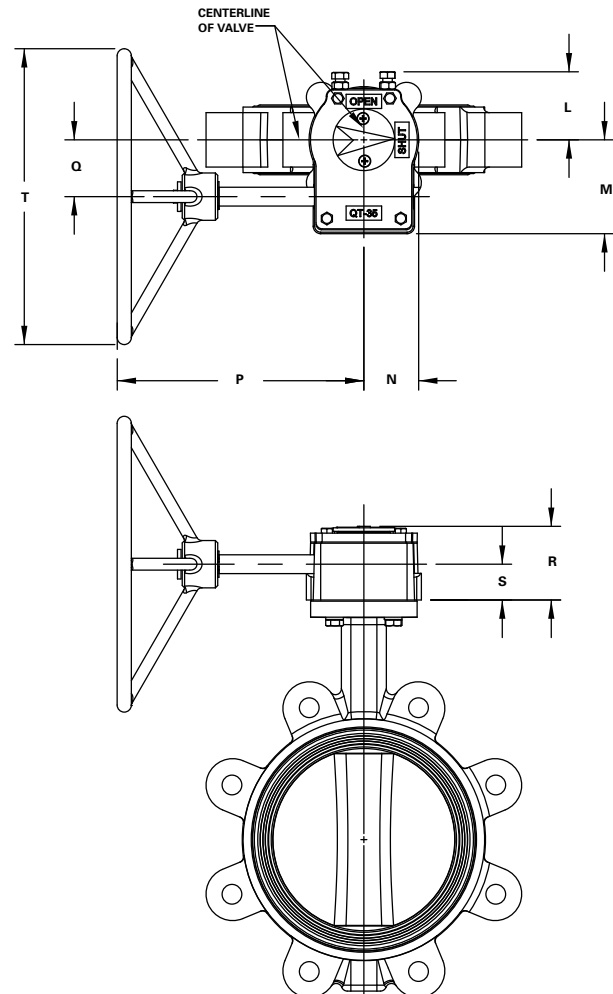
Inches
Millimeters



Handwheel Actuator, 2-24" (50-600mm)

Valve Size	Dimensions							
	L	M	N	P	Q	R	S	T
2-6" 50-150mm	2.26 57	3.12 79	1.82 46	8.21 209	1.89 48	2.45 62	1.19 30	12.00 305
8 & 10" 200 & 250mm	3.03 77	3.41 87	2.03 52	8.21 209	2.20 56	2.64 67	1.35 34	12.00 305
12 & 14" 300 & 350mm	4.19 106	4.65 118	3.37 86	12.54 319	3.09 78	3.31 84	1.65 42	16.00 406
16-20" 400-500mm	4.62 117	5.82 148	4.13 105	13.43 341	4.13 105	4.23 107	2.34 59	20.00 508
24" 600mm	5.57 141	10.06 256	5.57 141	15.93 405	8.15 207	4.95 126	2.15 55	20.00 508

Inches
Millimeters

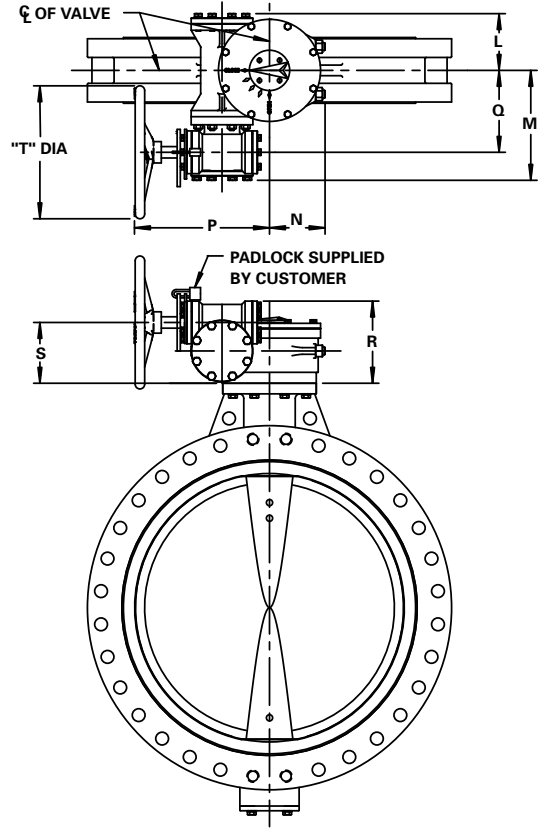


Dimensions

Handwheel Actuator, 26" (650mm) & Larger

Valve Size	Acuator Order Code	Dimensions								
		L	M	N	P	Q	R	S	T	
26" 650mm	AM-400-HD15	5.24 133	9.84 250	5.20 132	13.43 341	7.78 198	6.93 176	5.12 130	15.20 386	
30 & 32" 750 & 800mm	AM-800-HD15	6.26 159	11.18 284	6.69 170	15.00 381	8.74 222	8.39 213	6.22 158	15.20 386	
36 & 40" 900 & 1000mm	AM-1500-HD15	7.00 178	11.77 299	6.97 177	15.62 397	9.33 237	8.74 222	6.57 167	15.20 386	
42 & 48" 1050 & 1200mm	AM-2500-HD17	9.57 243	14.37 365	6.97 177	19.88 505	11.69 297	10.91 277	8.27 210	16.89 429	

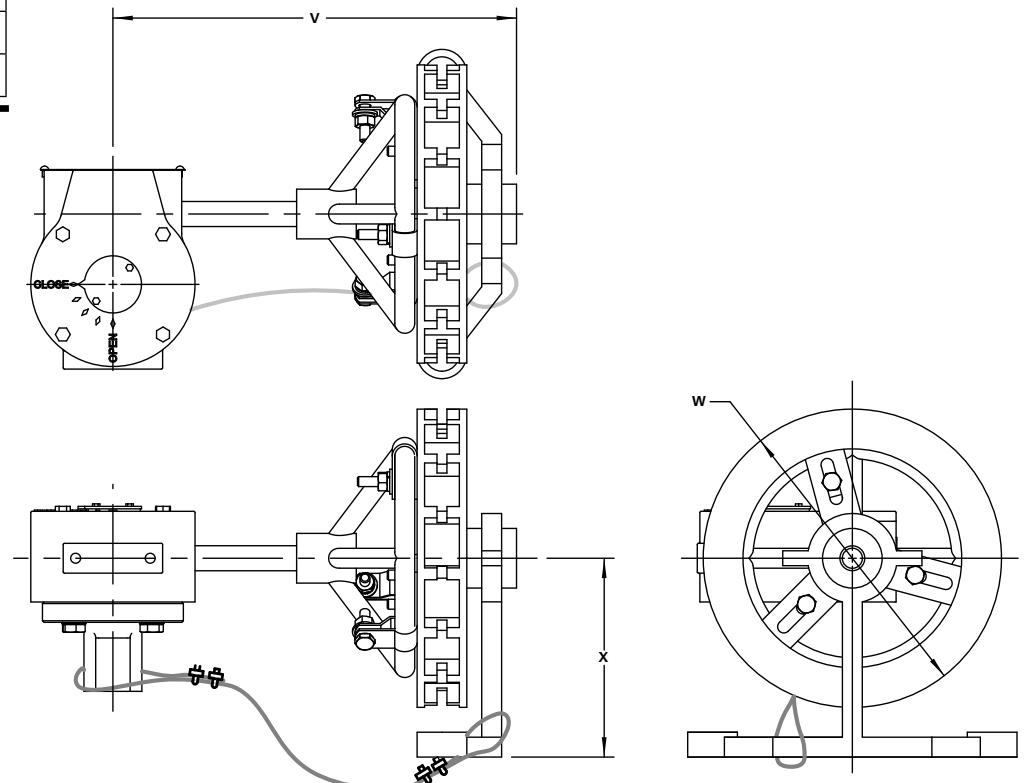
Inches
Millimeters



Chainwheel Actuator

Valve Size	Dimensions		
	V	W	X
2 & 10" 50 & 250mm	11.28 287	12.50 318	6.38 162
12-14" 300-350mm	15.53 394	15.50 394	8.38 213
16-20" 400-500mm	16.42 417	19.00 483	9.50 241
24" 600mm	16.75 425	19.00 483	9.50 241

Inches
Millimeters



Sales and Service

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

Web Site: www.dezurik.com E-Mail: info@dezurik.com



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