

APCO CVS-6000/6000A SWING CHECK VALVES

Design and Construction

APCO CVS Swing Check Valves are recommended for clean and dirty services such as Water, Sewage or Industrial applications. CVS-6000/6000A Swing Check Valves are a heavily constructed, full waterway flow area, premium design with multiple features and options. The CVS-6000/6000A is designed to handle higher flow rates, pressures and withstand shock.

Available in sizes 2-66" (50-1700mm), the CVS-6000/6000A Swing Check Valves are available with Acrylonitrile-Butadiene (NBR), Terpolymer of Ethylene, Propylene and A Diene (EPDM) or Fluoro Rubber (FKM) resilient disc seats, or cast aluminum bronze or stainless steel metal seats for durability. The body seat is long-wearing centrifugally cast aluminum bronze or Type 316 stainless steel. Body seats are available with a NBR, EPDM or FKM resilient seal.

High Strength Shaft

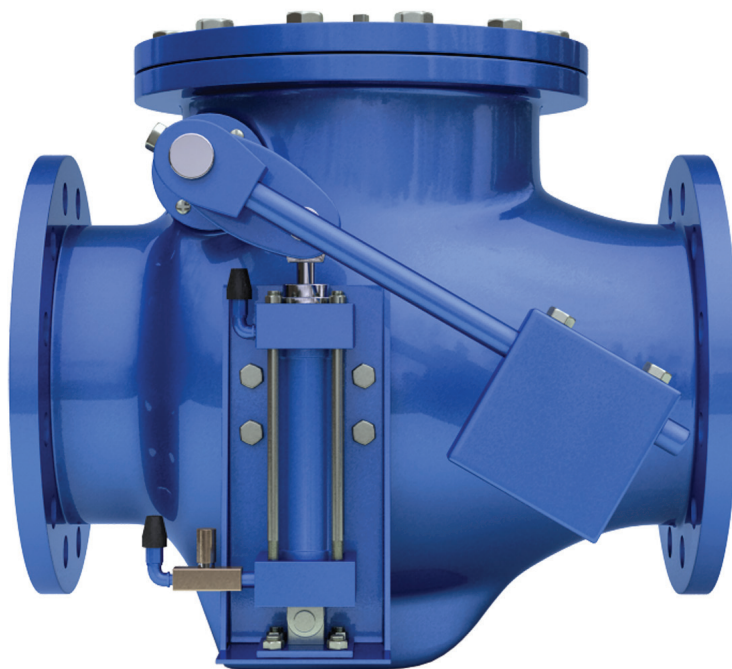
One-piece shafts are constructed of Type 303 or 17-4 PH stainless steel for high strength. Through-shaft design, with an integral retainer, prevents axial shaft movement.

Full Waterway Flow Area

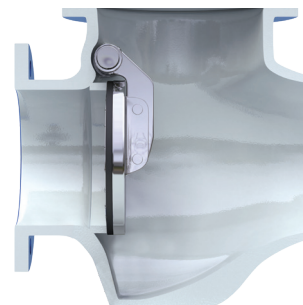
The valves feature a full waterway flow-through area and low head loss. The pivot point of the disc is located outside the port opening, allowing the entire disc to lift clear of the flow area. This is particularly important in sewage, slurries or other dirty service applications.

Double Clevis, Self-Aligning Disc

The double clevis design securely connects the disc to the disc arm in two places. The double



clevis hinge assures self-leveling and even load distribution upon closing, minimizing seat wear. The full open disc stop can be independently adjusted. The disc arm is ductile iron for high strength.



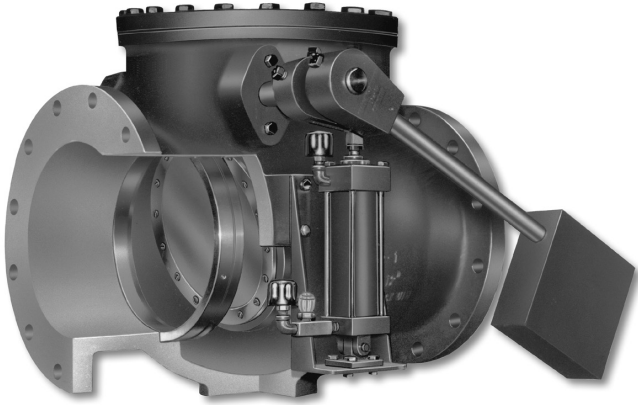
Internals Removable Without Removing Valve from the Line

Top entry design allows all internal parts, including the body seat, to be easily replaced in the field by removing the cover. The seat ring is field replaceable without the use of special tools.

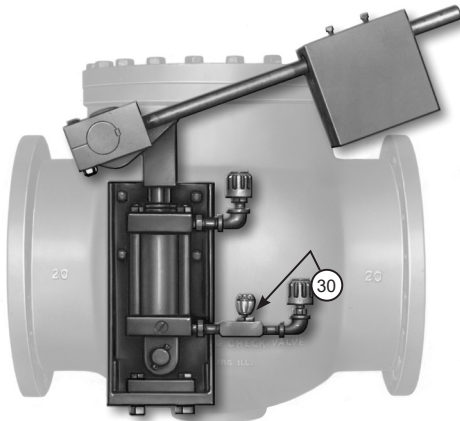
Closure Control Devices

Air Cushion Side Mounted Cylinder (AC)

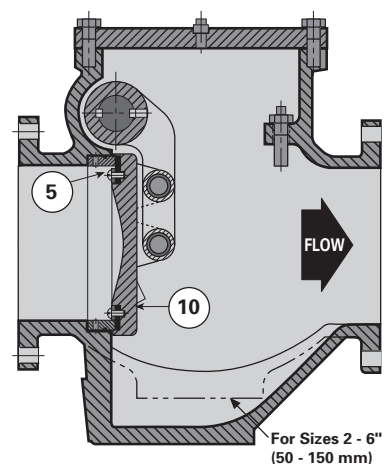
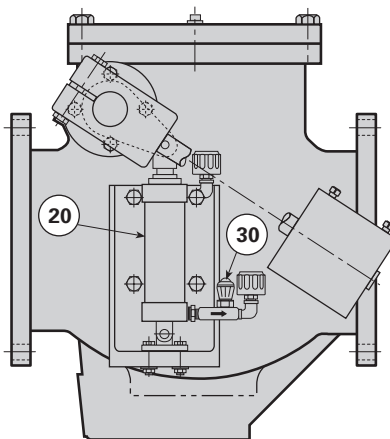
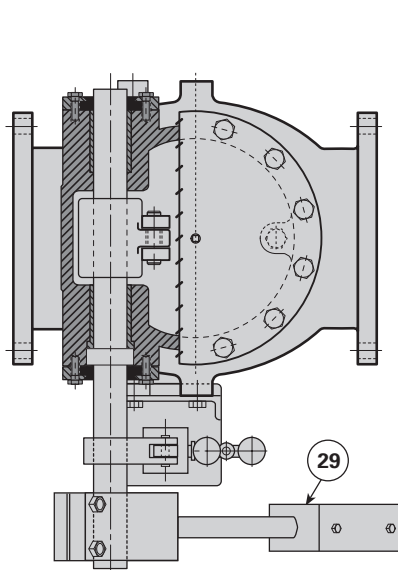
For Free Open, Fast Close applications, the air cushioned check valve utilizes a totally enclosed



cushion cylinder externally mounted to the side of the main valve body. A heavy outside lever, positively clamped to an extra-large diameter pivot shaft, forces the disc to close immediately upon pump shut down and before reverse flow takes place. The weighted lever drives the piston into the cushion chamber, compressing the trapped air and creating a cushion during valve closure.



Fast Closing With Cushion At Shut-Off



Principle of Operation

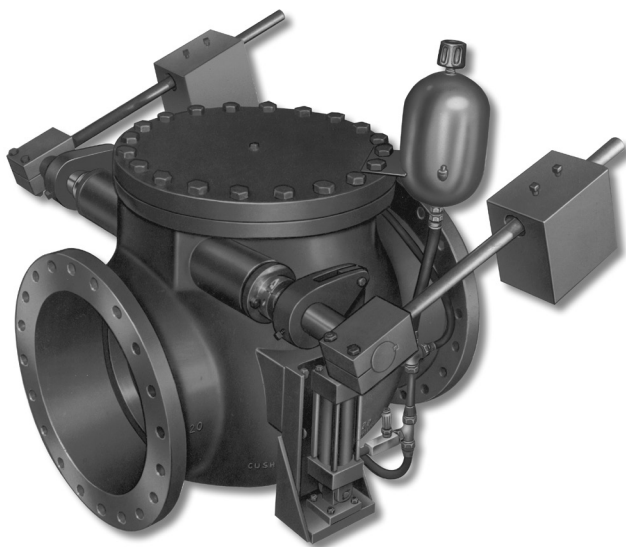
1. Discharge velocity head from the pump against the disc (10) opens the disc and raises the weighted lever (29) outside of the valve upward. At the same time, the piston inside the cushion cylinder (20) is pulled upward, drawing free air into the cushion cylinder through the one-way control check valve (30).
2. When reverse flow occurs against the backside of the disc (10), pressure forces the disc toward the shut-off position against the seat (5) at the same time forcing the cushion cylinder downward. Moving downward, the piston compresses the air in the cushion cylinder because the air cannot readily escape through the one-way control check valve. By restricting the air escape through the adjustable control check (30) air cushioned closing is accomplished.
3. Air cushioning is field adjustable by adjusting the flow control valve (30) for increased or decreased cushioning, or moving the weights on the pivot shaft for more or less rapid disc closure.

See pages 9 and 10 for lever and weight and lever and spring closure control devices.

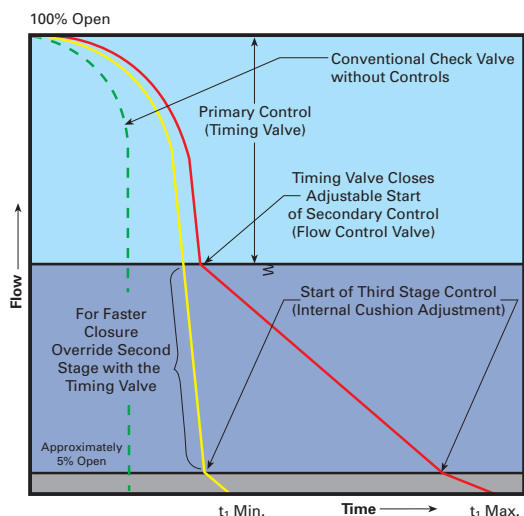
Closure Control Devices

Oil Controlled, Side Mounted Cylinder (OC)

For Free Open, Slow Close applications, CVS-6000 Swing Check Valves are available with an Oil Controlled, Side Mounted Cylinder closure control device. The totally enclosed oil cylinder is protected from the elements. Three-stage closure on valves 6-20" (150-500mm) minimizes damaging water hammer.



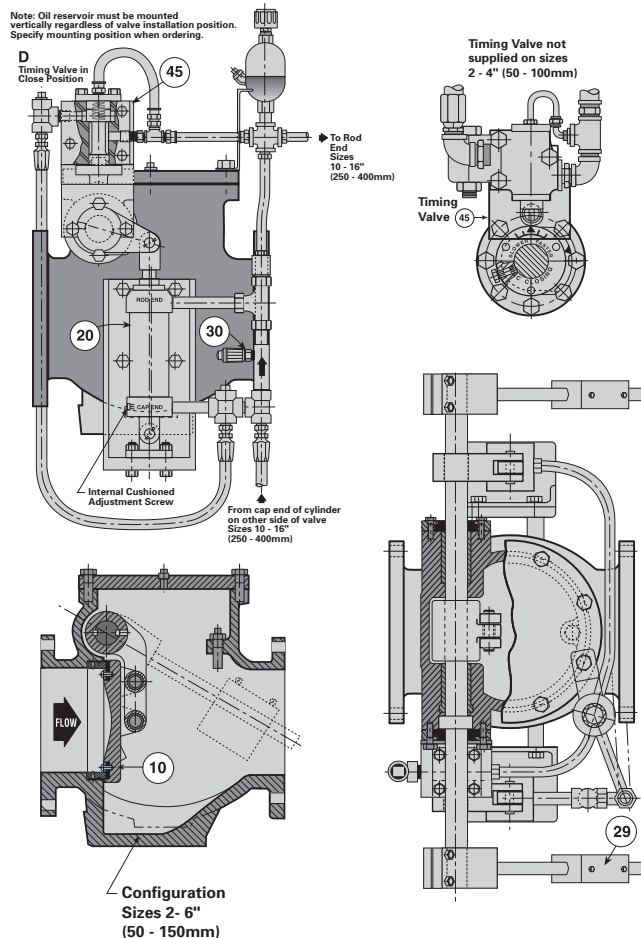
Three Stage Closing Characteristics



The graph shows flow rate as a function of closing time and illustrates the superiority of the APCO three stage Oil Controlled Side Mounted Cylinder over two stage closure devices.

Principle of Operation

1. Discharge velocity head from the pump causes the disc (10) to open and raises the outside weighted lever (29). Except for frictional resistance, the disc is free opening.
2. Three-stage closing is achieved by the oil dashpot/timing valve system which minimizes damaging water hammer. Each stage is independently adjustable.
 - a. The initial stage of closure is provided by the timing valve (45). The timing valve allows very fast closure of the disc from full open to any degree of closure. This feature greatly reduces the volume of backflow and flow reversal that occurs with on valves with only two stages of closure.
 - b. The second stage of closure is provided by the Flow Control Valve (30) that varies speed toward final closure.
 - c. The final stage of closure is provided by internal adjustment of the cylinder (20) that controls variable speed closure to shut-off.
 - d. Additional disc closing adjustments can be made by moving the weight on the pivot shaft.



Closure Control Devices

Oil Controlled, Bottom Mounted Buffer (BMB)

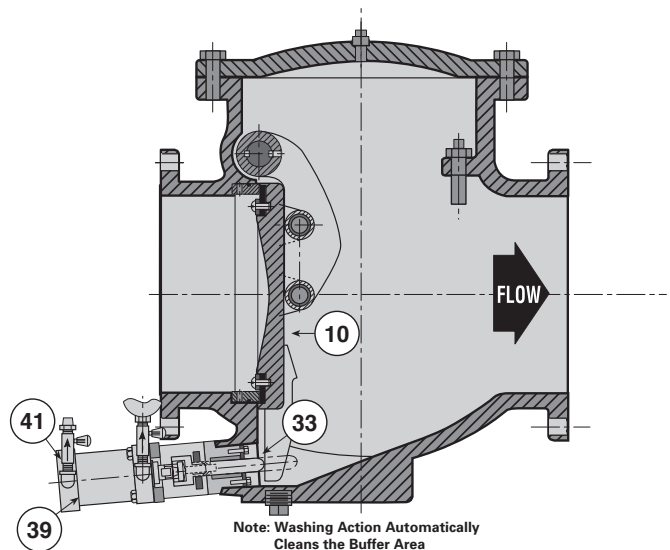
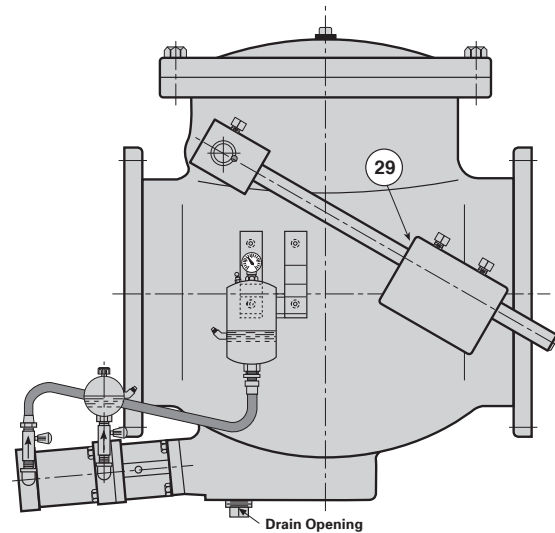
Bottom Mounted Buffers have been used successfully for decades to reduce slamming of the valve disc and resultant water hammer. For Free Open, Controlled Close applications, CVS-6000 Swing Check Valves sizes 8-66" (200-1700mm) are available with an Oil Controlled, Bottom Mounted Buffer closure control device.



Bottom Mounted Buffers are recommended for larger sized valves and for vertical upward flow installations. They are also recommended where instantaneous flow reversal caused by a hydro pneumatic surge tank or open line discharge is so fast that a free closing check valve cannot shut prior to reverse flow, and therefore slams.

Principle of Operation

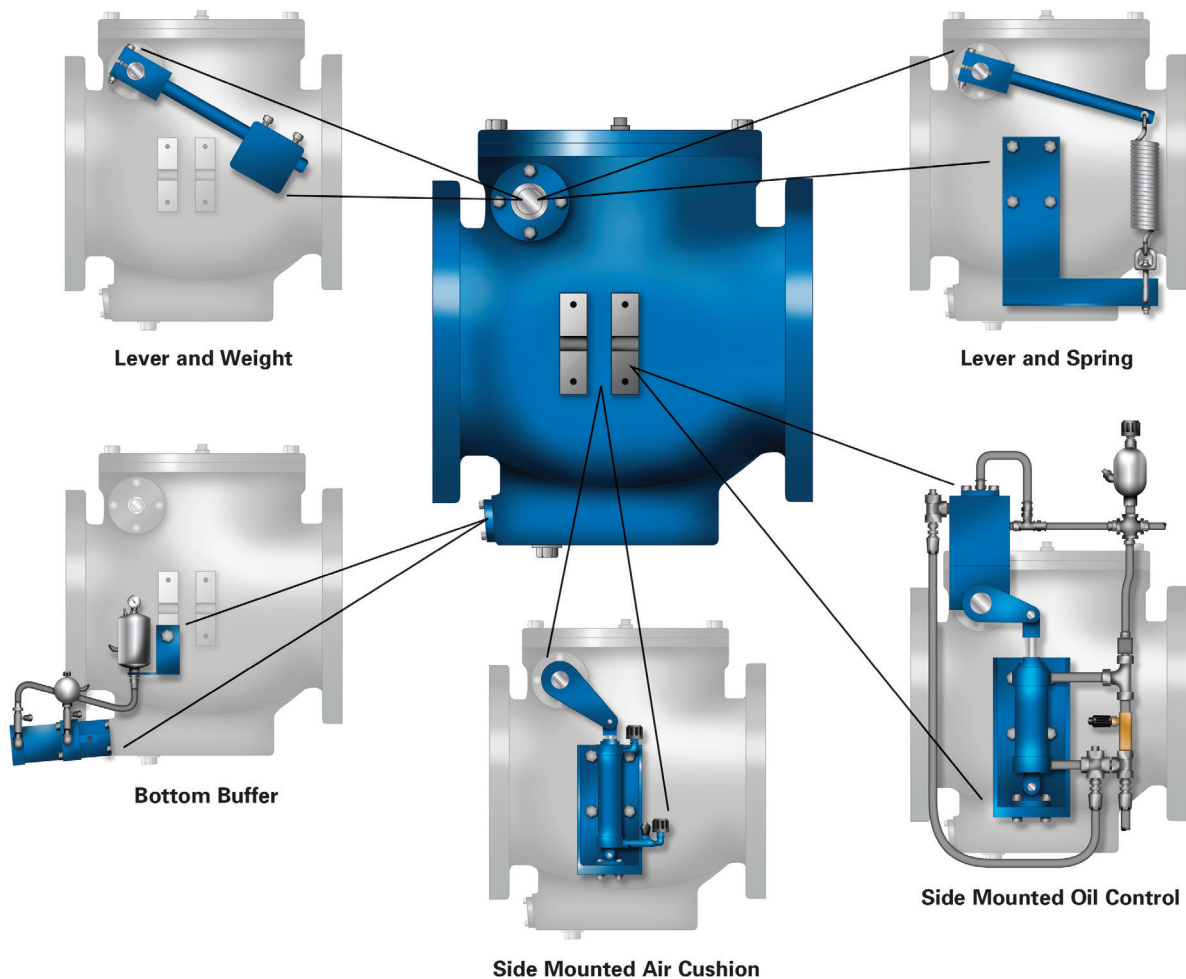
1. The unique buffer arrangement allows the valve disc (10) to open fully without interference and to close freely for approximately 90% of its stroke.
2. After the disc is 90% closed, the disc comes in contact with the buffer rod (33). The oil hydraulic buffer makes contact with the disc and controls closure during the final 10% of the stroke.
3. The flow control valve (41) on the cylinder (39) easily adjusts closing time to suit flow conditions reducing slam, water hammer and pressure surges. The color-coded micrometer type control valve adjusts the final closure, and has a locking set screw that is used to secure the final setting.



Closure Control Devices

Convertible Swing Check Valves (CLW & CLS)

If hydraulic conditions exceed those anticipated, CVS Convertible Swing Check Valves can be converted in the field to closure control devices that reduce moderate or severe slam. For moderate slam, CVS-Convertible Lever & Spring Valves (CLS) or CVS-CLW Convertible Lever & Weight Valves (CLW) can be converted to an Air Cushion Side Mounted Cylinder. For severe slam, CVS-Convertible valves can be retrofitted in the field to Oil Controlled Side Mounted Cylinder or Bottom Mounted Buffer closure control devices.



Materials of Construction

Item	Description	Material
A01	Body	Ductile Iron, ASTM A536
A02	Cover	Ductile Iron, ASTM A536 or Steel, ASTM A36 or ASTM A105
A05	Body Seat	Aluminum Bronze, ASTM B148 with Acrylonitrile - Butadiene (NBR)
		316 Stainless Steel, ASTM A276 with Acrylonitrile - Butadiene (NBR)
		Aluminum Bronze, ASTM B148 with Terpolymer of Ethylene, Propylene and A Diene (EPDM)
		316 Stainless Steel, ASTM A276 with Terpolymer of Ethylene, Propylene and A Diene (EPDM)
		Aluminum Bronze, ASTM B148 with Fluoro Rubber (FKM)
A06	Disc Seat	316 Stainless Steel, ASTM A276 with Fluoro Rubber (FKM)
		Acrylonitrile-Butadiene (NBR)
		Terpolymer of Ethylene, Propylene and A Diene (EPDM)
		Fluoro Rubber (FKM)
A09	Disc Arm	Aluminum Bronze, ASTM B148
A10	Disc	316 Stainless Steel, ASTM A276
A13	Pivot Shaft	Ductile Iron, ASTM A536
		Stainless Steel, Type 303, ASTM A582
		17-4 PH Stainless Steel, ASTM 564 Type 630

Valve Selection Shut-Off Capabilities

Seat Type	Shut-Off
Acrylonitrile-Butadiene (NBR)	Drip-Tight
Terpolymer of Ethylene, Propylene and A Diene (EPDM)	
Fluoro Rubber (FKM)	

Pressure Ratings

End Connection	Valve Size	
	2-16" (51-406mm)	18-60" (457-1524mm)
F1	250 psi (1724 kPa)	150 psi (1034 kPa)
F2 (standard)	285 psi (1965 kPa)	250 psi (1724 kPa)
F2 (high pressure)*	640 psi (4413 kPa)	400 psi (2758 kPa)

*Available upon request

Note: CWP (non-shock working pressure ratings for Ductile Iron valves)

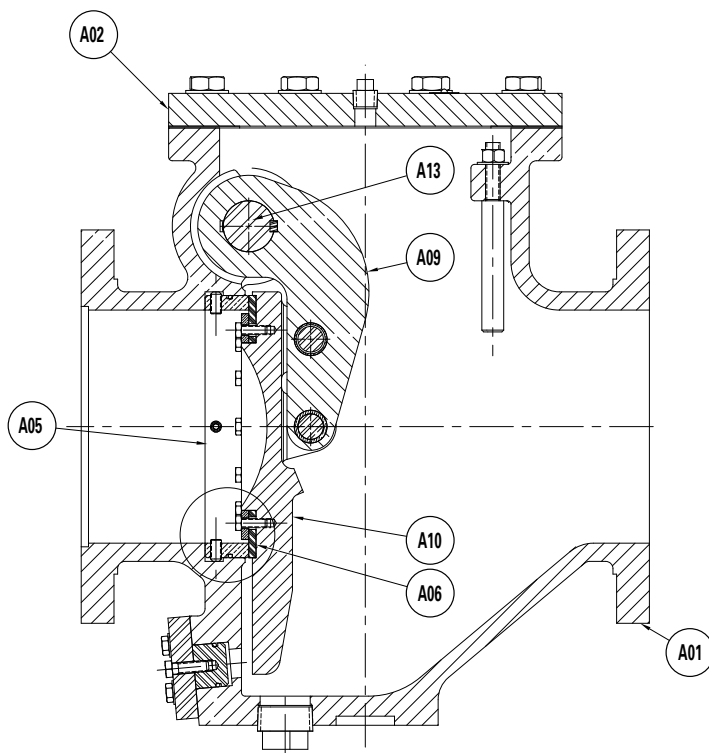
Temperature Ratings

All Seats	to 160° F (70° C)
-----------	-------------------

Contact application engineering if the valve is required to operate above this temperature.

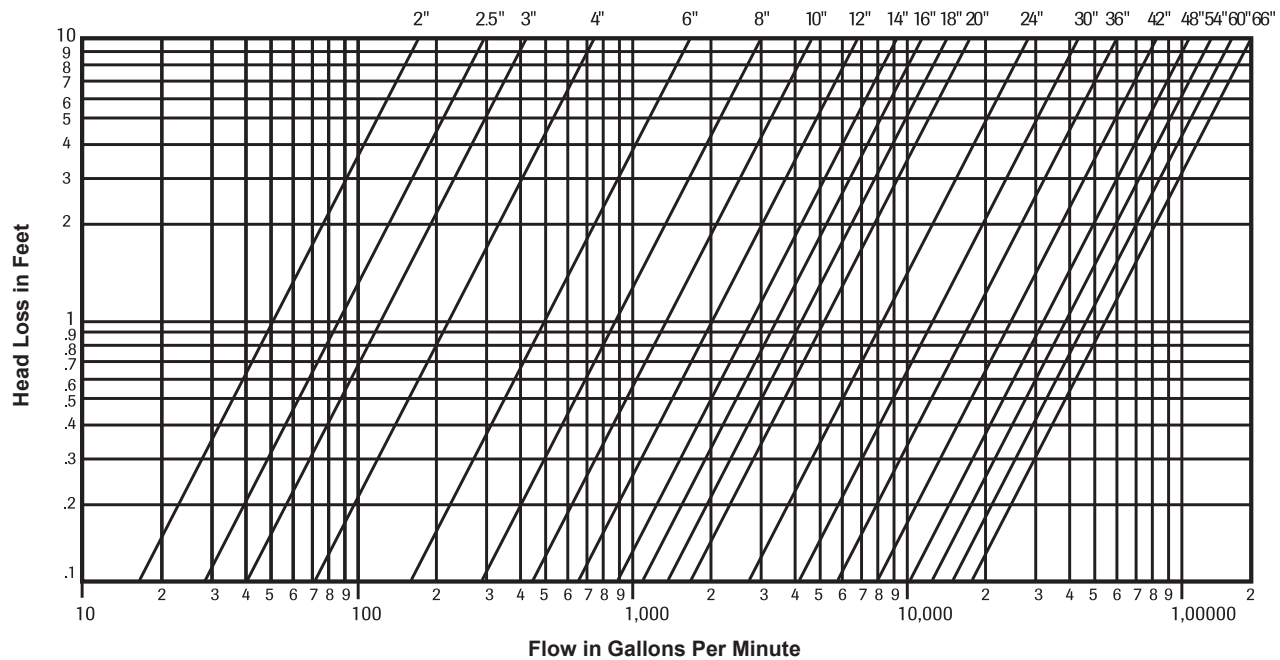
Applicable Standards

DeZURIK CVS-6000/6000A Swing Check Valves are designed and/or tested to meet the following standards:	
AWWA C508	AWWA C508-09 Swing-Check Valves for Waterworks Service 2-In Through 24-In (50-mm Through 600-mm) NPS
MSS SP-71	Testing Gray Iron Swing Check Valves
MSS SP-136	Testing Ductile Iron Swing Check Valves
ASME B16.1	Gray Iron Pipe Flanges and Flanged Fittings
ASME B16.5	Conforms to Bolt Pattern and Drilling



Valve Selection

Head Loss Characteristics for Swing Check Valves



Weights

Valve Size	Air Cushion Cylinder
2"	106
50mm	48
2.5"	138
65mm	63
3"	175
80mm	79
4"	238
100mm	108
6"	385
150mm	175
8"	475
200mm	216
10"	650
250mm	295
12"	1180
300mm	536
14"	1714
350mm	778
16"	2250
400mm	1021
18"	2721
450mm	1235
20"	3217
500mm	1460
24"	4197
600mm	1905
30"	6604
750mm	2997
36"	11830
900mm	5368
42"	17050
1100mm	7736
48"	24980
1200mm	11334

Valve Size	Bottom Mounted Buffer
8"	539
200mm	245
10"	795
250mm	361
12"	1150
300mm	522
14"	1803
350mm	819
16"	2500
400mm	1135
18"	3022
450mm	1372
20"	3600
500mm	1634
24"	5320
600mm	2414
30"	9000
750mm	4084
36"	11340
900mm	5146
42"	17265
1100mm	7834
48"	25000
1200mm	11344
54"	34649
1400mm	15721
60"	44300
1500mm	20100
66"	53949
1700mm	24478

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:

CVS = Swing Check Valves

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)	30	=	30"	(750mm)
6	=	6"	(150mm)	36	=	36"	(900mm)
8	=	8"	(200mm)	42	=	42"	(1100mm)
10	=	10"	(250mm)	48	=	48"	(1200mm)
12	=	12"	(300mm)	54	=	54"	(1400mm)
14	=	14"	(350mm)	60	=	60"	(1500mm)
16	=	16"	(400mm)	66	=	66"	(1700mm)

Body Style

Give body style code as follows:

6000A = Series 6000A (2-14")
6000 = Series 6000 (16-66")

End Connection

Give end connection code as follows:

F1 = Flanged ASME 125/150
F2 = Flanged ASME 250/300

Body Material

Give body material code as follows:

DI = Ductile Iron

Trim Combination

Disc Material

Give disc material code as follows:

DI = Ductile Iron

Shaft Material

Give shaft material code as follows:

S11 = 303 Stainless Steel
(2-66" AC, LS or LW; 24-48" CLS or CLW; 8-48" BMB)
S5 = 17-4PH Stainless Steel
(2-20" OC, CLS or CLW; 54-66" BMB, CLS or CLW)

Body Seat Material

Give body seat material code as follows:

For NBR, EPDM or FKM Disc Seat

ALB = Aluminum Bronze (F1 only)
S2 = 316 Stainless Steel (F1 only)

For ALB or S2 Disc Seat

ALBNB = Aluminum Bronze with NBR Seal
S2NB = 316 Stainless Steel with NBR Seal
ALBEP = Aluminum Bronze with EPDM Seal
ALBFBK = Aluminum Bronze with FKM Seal
S2EP = 316 Stainless Steel with EPDM Seal
S2FK = 316 Stainless Steel with FKM Seal

Disc Seat Material

Give disc seat material code as follows:

NBR = Acrylonitrile-Butadiene
EPDM = Terpolymer of Ethylene Propylene & A Diene
FKM = Fluoro Rubber
ALB = Aluminum Bronze
S2 = 316 Stainless Steel

Options

Give options code as follows:

DTR = DeZURIK Standard Certified Production Hydrostatic
Shell & Seat Test Report
VP = Vertical Flow Up Position Installation
(Not required with LS Closure Control Device)
SB16 = 316 Stainless Steel Bolting

Closure Control Devices

Give closure control device code as follows:

AC = Air Cushion Side Mounted Cylinder (Lever & Weight)
BMB = Oil Controlled Bottom Mounted Buffer (8-66")
OC = Oil Controlled Side Mounted Cylinder
LS = Lever & Spring
LW = Lever & Weight
CLS = Convertible - Lever & Spring
CLW = Convertible- Lever & Weight

Accessories

Give accessory code as follows:

SEL22 = (1) Limit Switch - DPDT AB H802T-DTP
SEL30 = (1) Proximity Switch - SPDT GO 73-13526-B2
SEL32 = (1) Proximity Switch - DPDT GO 7G-23523-B2

Ordering Example:

CVS,8,6000A,F1,DI,DI-S5-ALB-NBR*CLW,SEL22

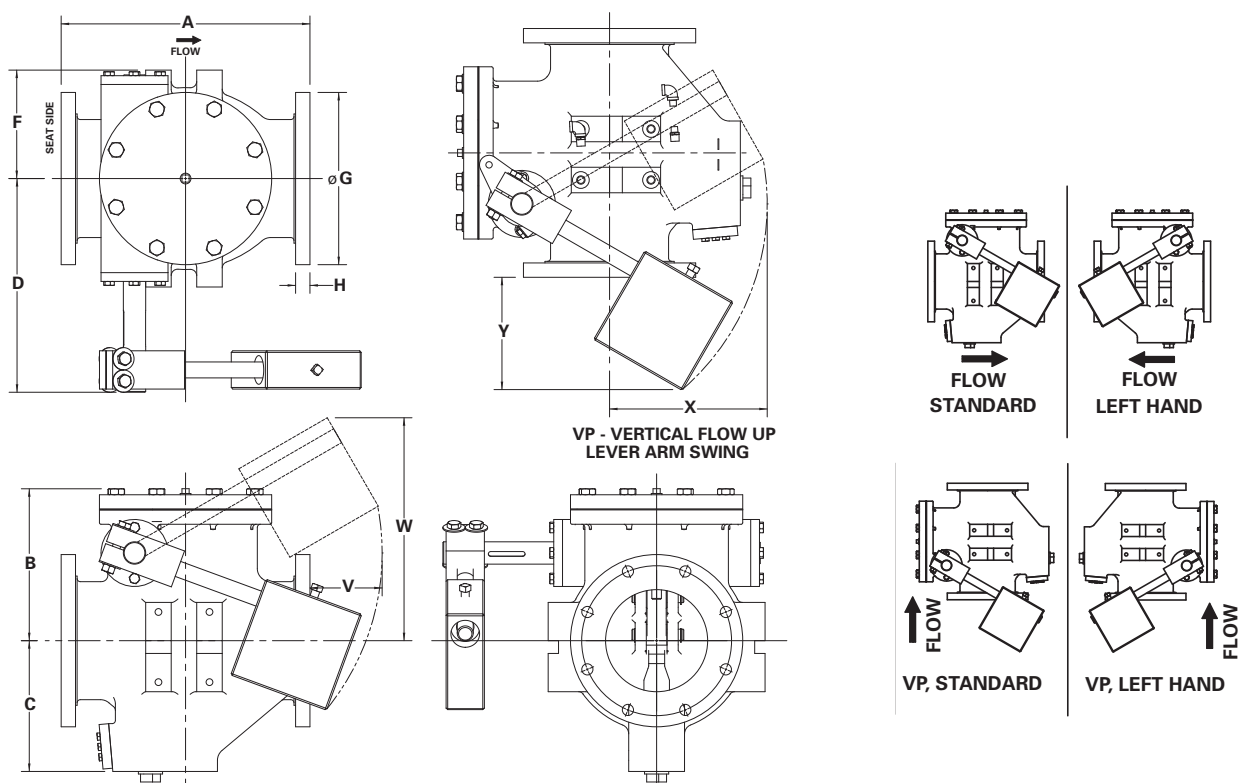
Dimensions

Lever and Weight (LW)

Valve Size	F1 & F2									F1		F2	
	A	B	C	D	F	V	W	X	Y	G	H	G	H
2"	8.00	6.00	3.50	13.25	5.00	5.25	9.00	9.50	6.25	6.00	0.63	6.50	0.88
50mm	203	152	89	337	127	133	229	241	159	152	16	165	22
2.5"	8.50	7.00	4.00	13.50	5.25	5.00	9.50	8.50	5.75	7.00	0.69	7.50	1.00
65mm	216	178	102	343	133	127	241	216	146	178	18	191	25
3"	9.50	7.00	4.13	13.75	5.50	4.63	9.50	8.50	5.13	7.50	0.75	8.25	1.13
80mm	241	178	105	349	140	118	241	216	130	191	19	210	29
4"	11.50	7.50	5.00	14.00	6.00	3.75	10.75	8.00	5.00	9.00	0.94	10.00	1.25
100mm	292	191	127	356	152	95	273	203	127	229	24	254	32
6"	14.00	10.00	6.50	17.00	8.38	9.38	16.50	14.25	11.63	11.00	1.00	12.50	1.44
150mm	356	254	165	432	213	238	419	362	295	279	25	318	37
8"	19.50	12.00	10.25	16.75	8.50	6.25	18.00	13.00	9.25	13.50	1.13	15.00	1.63
200mm	495	305	260	425	216	159	457	330	235	343	29	381	41
10"	24.50	14.25	12.63	21.00	10.00	7.00	20.50	13.50	8.50	16.00	1.19	17.50	1.88
250mm	622	362	321	533	254	178	521	343	216	406	30	445	48
12"	27.50	16.00	14.00	22.00	11.50	8.00	25.00	18.00	11.25	19.00	1.25	20.50	2.00
300mm	699	406	356	559	292	203	635	457	286	483	32	521	51
14"	31.00	19.63	15.75	26.00	13.75	8.25	29.00	20.00	14.50	21.00	1.38	23.00	2.13
350mm	787	499	400	660	349	210	737	508	368	533	35	584	54
16"	36.00	21.00	19.75	27.50	14.50	7.00	30.75	20.00	14.00	23.50	1.44	25.50	2.25
400mm	914	533	502	699	368	178	781	508	356	597	37	648	57
18"	40.00	24.00	20.25	29.00	16.00	8.25	35.00	24.50	15.00	25.00	1.56	28.00	2.38
450mm	1016	610	514	737	406	210	889	622	381	635	40	711	60
20"	40.00	26.00	21.50	32.00	17.50	8.25	36.00	23.50	15.00	27.50	1.69	30.50	2.50
500mm	1016	660	546	813	445	210	914	597	381	699	43	775	64
24"	48.00	30.00	24.50	33.50	20.00	10.00	43.75	28.00	18.00	32.00	1.88	36.00	2.75
600mm	1219	762	622	851	508	254	1111	711	457	813	48	914	70
30"	56.00	38.00	27.75	38.50	24.00	5.00	48.00	24.00	15.50	38.75	2.13	43.00	3.00
750mm	1422	965	705	978	610	127	1219	610	394	984	54	1092	76
36"	63.00	40.38	32.13	41.50	27.00	2.00	51.00	21.00	15.00	46.00	2.38	50.00	3.38
900mm	1600	1026	816	1054	686	51	1295	533	381	1168	60	1270	86
42"	70.00	50.63	36.00	49.00	33.00	15.00	65.00	41.00	26.00	53.00	2.63	57.00	3.69
1100mm	1778	1286	914	1245	838	381	1651	1041	660	1346	67	1448	94
48"	78.00	50.63	41.00	60.00	38.00	17.50	75.00	47.50	29.25	59.50	2.75	65.00	4.00
1200mm	1981	1286	1041	1524	965	445	1905	1207	743	1511	70	1651	102
54"	87.00	62.13	52.00	65.00	43.00	18.00	84.00	50.50	39.50	66.25	3.00	Contact DeZURIK	
1400mm	2210	1578	1321	1651	1092	457	2134	1283	1003	1683	76		
60"	97.00	72.00	58.00	70.00	46.00	10.50	88.50	45.50	35.50	73.00	3.13		
1500mm	2464	1829	1473	1778	1168	267	2248	1156	902	1854	80		
66"	108.00	66.63	64.00	76.00	50.50	3.50	91.00	43.00	33.50	80.00	3.44		
1700mm	2743	1692	1626	1930	1283	89	2311	1092	851	2032	87		

Note: 36" (900mm) & larger have two lever arms, one on each side.

Inches
Millimeters

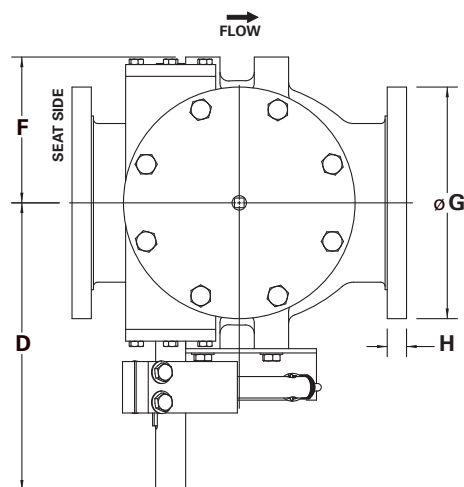


Dimensions

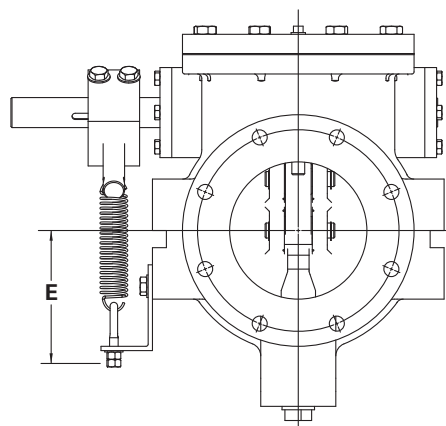
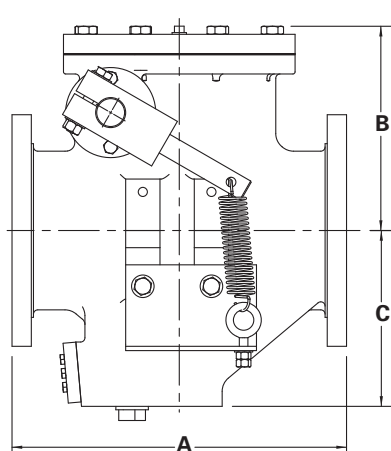
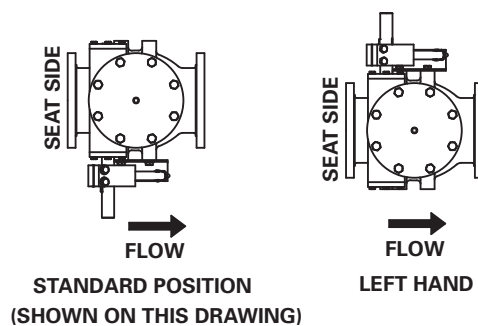
Lever and Spring (LS)

Valve Size	F1 & F2						F1		F2	
	A	B	C	D	E	F	G	H	G	H
2"	8.00	6.00	3.50	13.25	6.50	5.00	6.00	0.63	6.50	0.88
50mm	203	152	89	337	165	127	152	16	165	22
2.5"	8.50	7.00	4.00	13.50	10.50	5.25	7.00	0.69	7.50	1.00
65mm	216	178	102	343	267	133	178	18	191	25
3"	9.50	7.00	4.13	13.75	10.00	5.50	7.50	0.75	8.25	1.13
80mm	241	178	105	349	254	140	191	19	210	29
4"	11.50	7.50	5.00	14.00	5.38	6.00	9.00	0.94	10.00	1.25
100mm	292	191	127	356	137	152	229	24	254	32
6"	14.00	10.00	6.50	17.00	8.00	8.38	11.00	1.00	12.50	1.44
150mm	356	254	165	432	203	213	279	25	318	37
8"	19.50	12.00	10.25	16.75	8.00	8.50	13.50	1.13	15.00	1.63
200mm	495	305	260	425	203	216	343	29	381	41
10"	24.50	14.25	12.63	21.00	10.50	10.00	16.00	1.19	17.50	1.88
250mm	622	362	321	533	267	254	406	30	445	48
12"	27.50	16.00	14.00	22.00	10.75	11.50	19.00	1.25	20.50	2.00
300mm	699	406	356	559	273	292	483	32	521	51
14"	31.00	19.63	15.75	26.00	10.25	13.75	21.00	1.38	23.00	2.13
350mm	787	499	400	660	260	349	533	35	584	54
16"	36.00	21.00	19.75	27.50	13.00	14.50	23.50	1.44	25.50	2.25
400mm	914	533	502	699	330	368	597	37	648	57
18"	40.00	24.00	20.25	29.00	11.50	16.00	25.00	1.56	28.00	2.38
450mm	1016	610	514	737	292	406	635	40	711	60
20"	40.00	26.00	21.50	32.00	10.00	17.50	27.50	1.69	30.50	2.50
500mm	1016	660	546	813	254	445	699	43	775	64
24"	48.00	30.00	24.50	33.50	7.38	20.00	32.00	1.88	36.00	2.75
600mm	1219	762	622	851	187	508	813	48	914	70
30"	56.00	38.00	27.75	38.50	-	24.00	38.75	2.13	43.00	3.00
750mm	1422	965	705	978	-	610	984	54	1092	76
36"	63.00	40.38	32.13	41.50	7.25	27.00	46.00	2.38	50.00	3.38
900mm	1600	1026	816	1054	184	686	1168	60	1270	86
42"	70.00	50.63	36.00	49.00	2.75	33.00	53.00	2.63	57.00	3.69
1100mm	1778	1286	914	1245	70	838	1346	67	1448	94

Inches
Millimeters



CLOSURE CONTROL MOUNTING POSITIONS

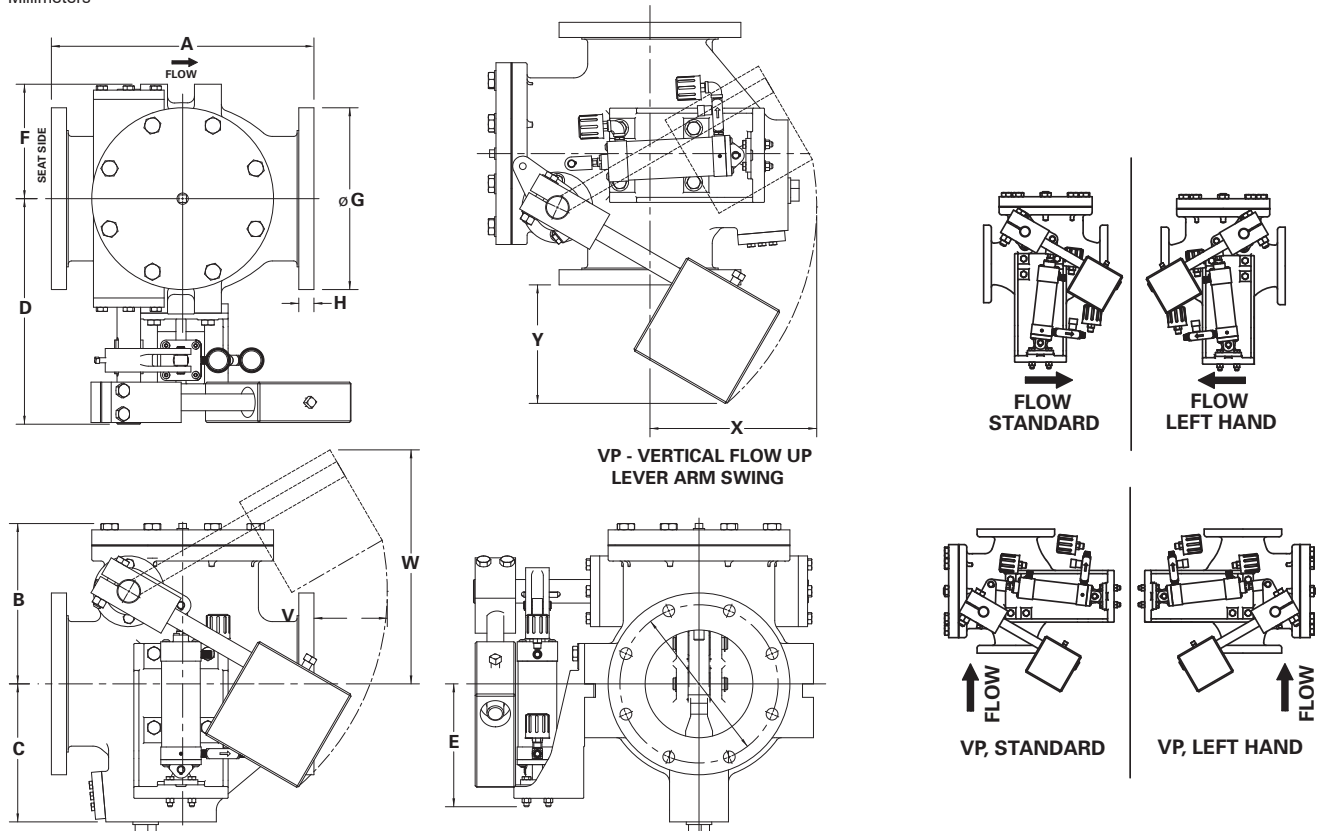


Dimensions

Valve & Air Cushioned Side Mounted Cylinder (AC)

Valve Size	F1 & F2										F1		F2	
	A	B	C	D	E	F	V	W	X	Y	G	H	G	H
2" 50mm	8.00 203	6.00 152	3.50 89	13.25 337	10.75 273	5.00 127	5.25 133	9.00 229	9.50 241	6.25 159	6.00 152	0.63 16	6.50 165	0.88 22
2.5" 65mm	8.50 216	7.00 178	4.00 102	13.50 343	10.25 260	5.25 133	5.00 127	9.50 241	8.50 216	5.75 146	7.00 178	0.69 18	7.50 191	1.00 25
3" 80mm	9.50 241	7.00 178	4.13 105	13.75 349	10.13 257	5.50 140	4.63 118	9.50 241	8.50 216	5.13 130	7.50 191	0.75 19	8.25 210	1.13 29
4" 100mm	11.50 292	7.50 191	5.00 127	14.00 356	9.13 232	6.00 152	3.75 95	10.75 273	8.00 203	5.00 127	9.00 229	0.94 24	10.00 254	1.25 32
6" 150mm	14.00 356	10.00 254	6.50 165	17.00 432	10.38 264	8.38 213	9.38 238	16.50 419	14.25 362	11.63 295	11.00 279	1.00 25	12.50 318	1.44 37
8" 200mm	19.50 495	12.00 305	10.25 260	16.75 425	9.25 235	8.50 216	6.25 159	18.00 457	13.00 330	9.25 235	13.50 343	1.13 29	15.00 381	1.63 41
10" 250mm	24.50 622	14.25 362	12.63 321	21.00 533	8.63 219	10.00 254	7.00 178	20.50 521	13.50 343	8.50 216	16.00 406	1.19 30	17.50 445	1.88 48
12" 300mm	27.50 699	16.00 406	14.00 356	22.00 559	8.88 226	11.50 292	8.00 203	25.00 635	18.00 457	11.25 286	19.00 483	1.25 32	20.50 521	2.00 51
14" 350mm	31.00 787	19.63 499	15.75 400	26.00 660	11.00 279	13.75 349	8.25 210	29.00 737	20.00 508	14.50 368	21.00 533	1.38 35	23.00 584	2.13 54
16" 400mm	36.00 914	21.00 533	19.75 502	27.50 699	9.75 248	14.50 368	7.00 178	30.75 781	20.00 508	14.00 356	23.50 597	1.44 37	25.50 648	2.25 57
18" 450mm	40.00 1016	24.00 610	20.25 514	29.00 737	8.25 210	16.00 406	8.25 210	35.00 889	24.50 622	15.00 381	25.00 635	1.56 40	28.00 711	2.38 60
20" 500mm	40.00 1016	26.00 660	21.50 546	32.00 813	8.88 226	17.50 445	8.25 210	36.00 914	23.50 597	15.00 381	27.50 699	1.69 43	30.50 775	2.50 64
24" 600mm	48.00 1219	30.00 762	24.50 622	33.50 851	6.00 152	20.00 508	10.00 254	43.75 1111	28.00 711	18.00 457	32.00 813	1.88 48	36.00 914	2.75 70
30" 750mm	56.00 1422	38.00 965	27.75 705	38.50 978	9.75 248	24.00 610	5.00 127	48.00 1219	24.00 610	15.50 394	38.75 984	2.13 54	43.00 1092	3.00 76
36" 900mm	63.00 1600	40.38 1026	32.13 816	41.50 1054	5.00 127	27.00 686	2.00 51	51.00 1295	21.00 533	15.00 381	46.00 1168	2.38 60	50.00 1270	3.38 86
42" 1100mm	70.00 1778	50.63 1286	36.00 914	49.00 1245	1.00 25	33.00 838	15.00 381	65.00 1651	41.00 1041	26.00 660	53.00 1346	2.63 67	57.00 1448	3.69 94
48" 1200mm	78.00 1981	50.63 1286	41.00 1041	60.00 1524	6.00 152	38.00 965	17.50 445	75.00 1905	47.50 1207	29.25 743	59.50 1511	2.75 70	65.00 1651	4.00 102
54" 1400mm	87.00 2210	62.13 1578	52.00 1321	65.00 1651	16.00 406	43.00 1092	18.00 457	84.00 2134	50.50 1283	39.50 1003	66.25 1683	3.00 76	Contact DeZURIK	
60" 1500mm	97.00 2464	72.00 1829	58.00 1473	70.00 1778	27.00 686	46.00 1168	10.50 267	88.50 2248	45.50 1156	35.50 902	73.00 1854	3.13 80		
66" 1700mm	108.00 2743	66.63 1692	64.00 1626	76.00 1930	39.00 991	50.50 1283	3.50 89	91.00 2311	43.00 1092	33.50 851	80.00 2032	3.44 87		

Inches
Millimeters



Dimensions

Oil Controlled Side Mounted Cylinder

Valve Size	F1											
	A	B	C	D	E	F	K	W	X	Y	G	H
2" 50mm	8.00 203	6.00 152	3.50 89	13.25 337	10.75 273	5.00 127	7.50 191	9.00 229	9.50 241	6.25 159	6.00 152	0.63 16
2.5" 65mm	8.50 216	7.00 178	4.00 102	13.50 343	10.25 260	5.25 133	8.00 203	9.50 241	8.50 216	5.75 146	7.00 178	0.69 18
3" 80mm	9.50 241	7.00 178	4.13 105	13.75 349	10.13 257	5.50 140	8.13 207	9.50 241	8.50 216	5.13 130	7.50 191	0.75 19
4" 100mm	11.50 292	7.50 191	5.00 127	14.00 356	9.13 232	6.00 152	8.94 227	10.75 273	8.00 203	5.00 127	9.00 229	0.94 24
6" 150mm	14.00 356	10.00 254	6.50 165	17.00 432	14.00 356	8.38 213	22.50 572	16.50 419	14.25 362	11.63 295	11.00 279	1.00 25
8" 200mm	19.50 495	12.00 305	10.25 260	16.75 425	12.50 318	8.50 216	24.00 610	18.00 457	13.00 330	9.25 235	13.50 343	1.13 29
10" 250mm	24.50 622	14.25 362	12.63 321	21.00 533	8.63 219	10.00 254	28.00 711	20.50 521	13.50 343	8.50 216	16.00 406	1.19 30
12" 300mm	27.50 699	16.00 406	14.00 356	22.00 559	8.88 226	11.50 292	29.50 749	25.00 635	18.00 457	11.25 286	19.00 483	1.25 32
14" 350mm	31.00 787	19.63 499	15.75 400	26.00 660	11.00 279	13.75 349	33.00 838	29.00 737	20.00 508	14.50 368	21.00 533	1.38 35
16" 400mm	36.00 914	21.00 533	19.75 502	27.50 699	9.75 248	14.50 368	35.50 902	30.75 781	20.00 508	14.00 356	23.50 597	1.44 37
18" 450mm	40.00 1016	24.00 610	20.25 514	29.00 737	8.25 210	16.00 406	37.50 953	35.00 889	24.50 622	15.00 381	25.00 635	1.56 40
20" 500mm	40.00 1016	26.00 660	21.50 546	32.00 813	8.88 226	17.50 445	39.00 991	36.00 914	23.50 597	15.00 381	27.50 699	1.69 43

Inches
Millimeters

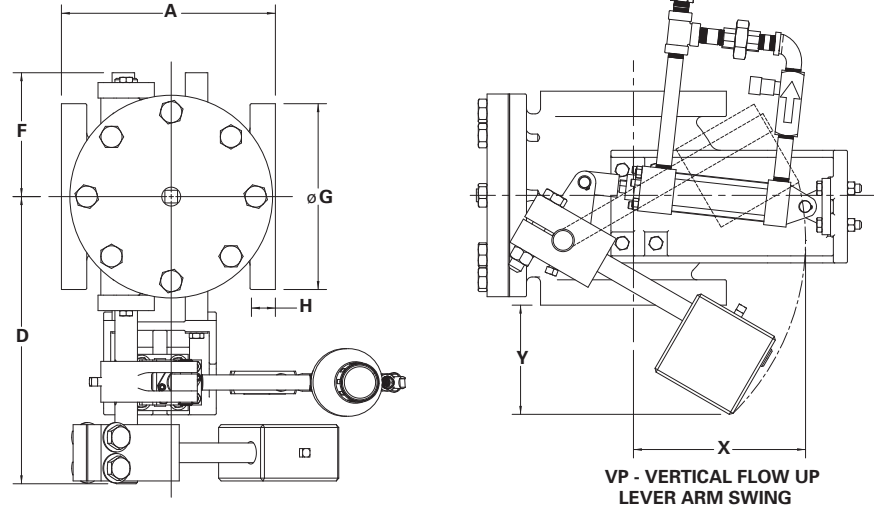
Valve Size	F2											
	A	B	C	D	E	F	K	W	X	Y	G	H
2" 50mm	8.00 203	6.00 152	3.50 89	13.25 337	10.75 273	5.00 127	7.50 191	9.00 229	9.50 241	6.25 159	6.50 165	0.88 22
2.5" 65mm	8.50 216	7.00 178	4.00 102	13.50 343	10.25 260	5.25 133	8.00 203	9.50 241	8.50 216	5.75 146	7.50 191	1.00 25
3" 80mm	9.50 241	7.00 178	4.13 105	13.75 349	10.13 257	5.50 140	8.13 207	9.50 241	8.50 216	5.13 130	8.25 210	1.13 29
4" 100mm	11.50 292	7.50 191	5.00 127	14.00 356	9.13 232	6.00 152	8.94 227	10.75 273	8.00 203	5.00 127	10.00 254	1.25 32
6" 150mm	14.00 356	10.00 254	6.50 165	17.00 432	14.00 356	8.38 213	22.50 572	16.50 419	14.25 362	11.63 295	12.50 318	1.44 37
8" 200mm	19.50 495	12.00 305	10.25 260	16.75 425	12.50 318	8.50 216	24.00 610	18.00 457	13.00 330	9.25 235	15.00 381	1.63 41
10" 250mm	24.50 622	14.25 362	14.13 359	21.00 533	12.00 305	10.00 254	28.00 711	20.50 521	13.50 343	8.50 216	17.50 445	1.88 48
12" 300mm	27.50 699	16.00 406	15.50 394	22.00 559	12.00 305	11.50 292	29.50 749	25.00 635	18.00 457	11.25 286	20.50 521	2.00 51
14" 350mm	31.00 787	19.63 499	17.25 438	26.00 660	14.25 362	13.75 349	33.00 838	29.00 737	20.00 508	14.50 368	23.00 584	2.13 54
16" 400mm	36.00 914	21.00 533	21.25 540	27.50 699	15.50 394	14.50 368	35.50 902	30.75 781	20.00 508	14.00 356	25.50 648	2.25 57
18" 450mm	40.00 1016	24.00 610	21.75 552	29.00 737	16.75 425	16.00 406	44.00 1118	35.00 889	24.50 622	15.00 381	28.00 711	2.38 60
20" 500mm	40.00 1016	26.00 660	23.00 584	32.00 813	19.25 489	17.50 445	46.00 1168	36.00 914	23.50 597	15.00 381	30.50 775	2.50 64

Inches
Millimeters

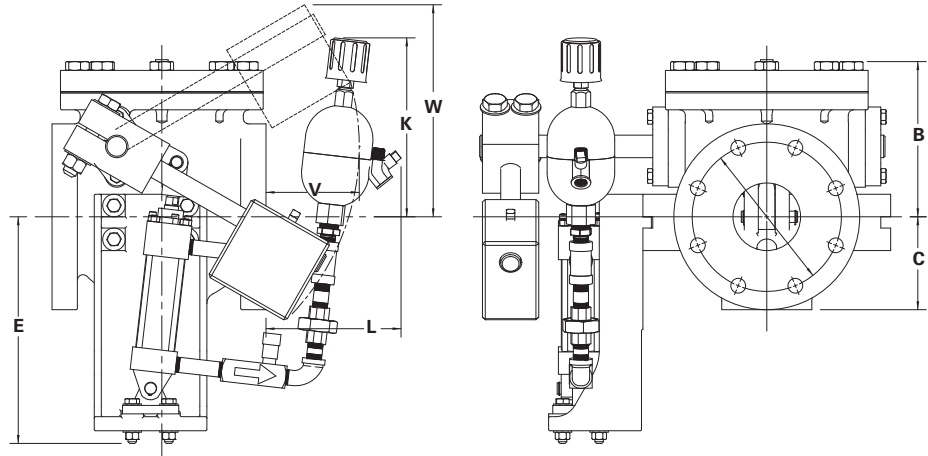
Dimensions

Oil Controlled Side Mounted Cylinder

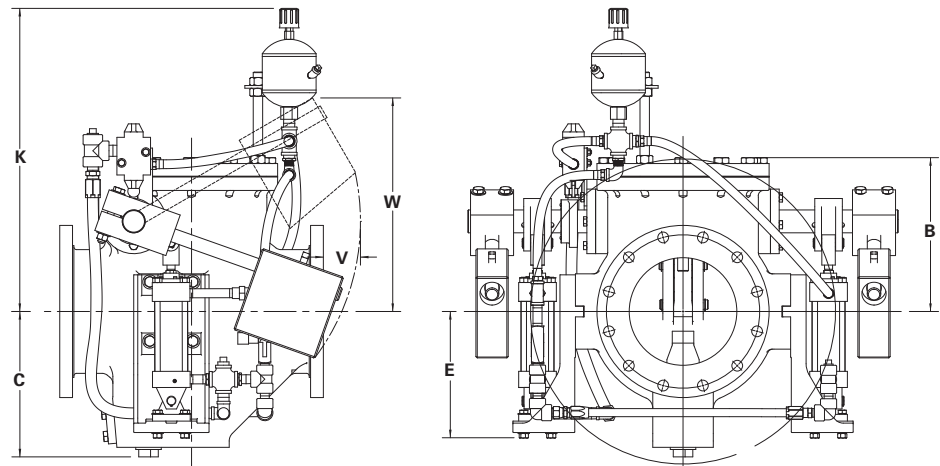
All Sizes



Size 2-8" (50-200mm)



Size 10-20" (250-500mm)

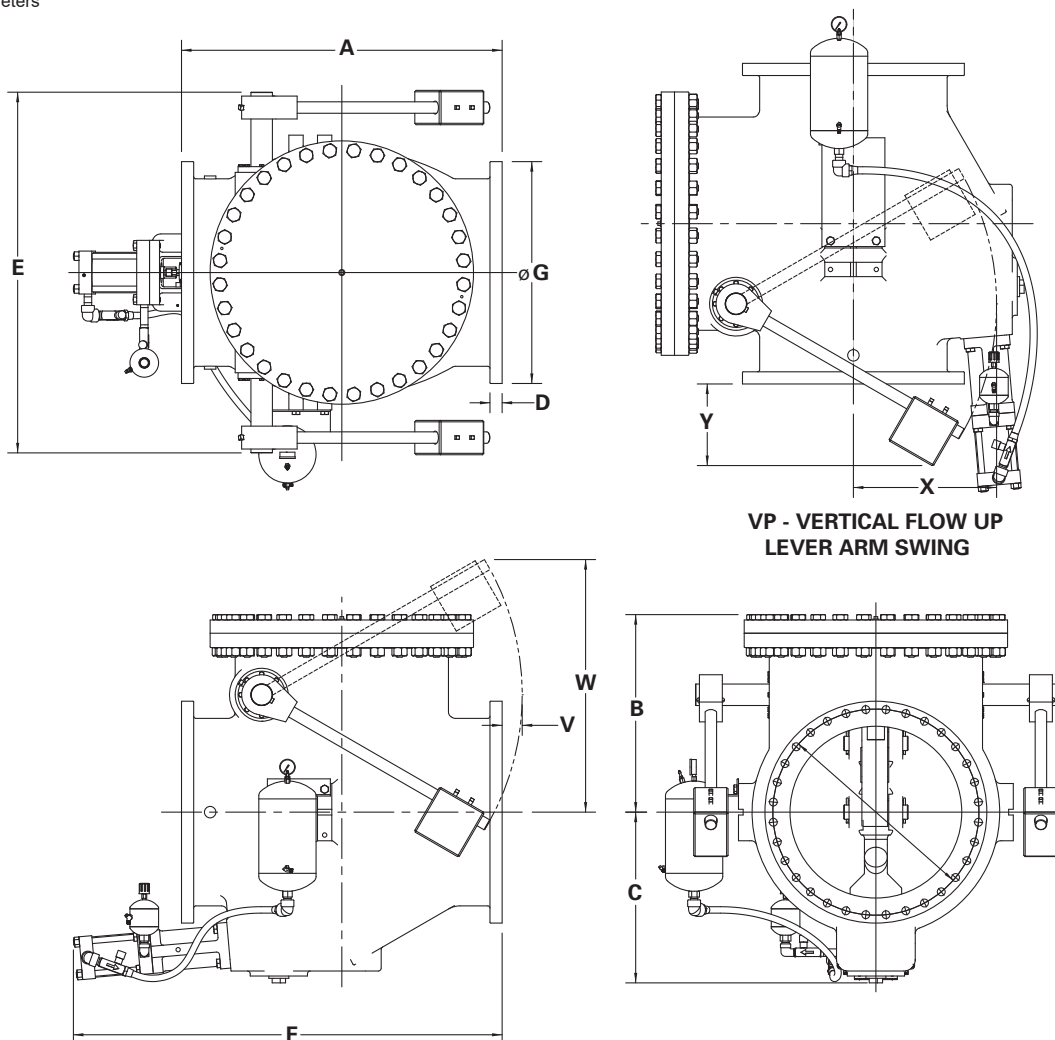


Dimensions

Valve & Oil Controlled Bottom Mounted Buffer (BMB)

Valve Size	F1 & F2										F1			F2		
	A	B	C	E	F	V	W	X	Y		D	G	H	D	G	H
8" 200mm	19.50 495	12.00 305	11.75 298	25.00 635	28.00 711	6.25 159	18.00 457	13.00 330	9.25 235		1.13 29	13.50 343	11.75 298	1.63 41	15.00 381	13.00 330
10" 250mm	24.50 622	14.25 362	14.13 359	30.00 762	33.50 851	7.00 178	20.50 521	13.50 343	8.50 216		1.19 30	16.00 406	14.25 362	1.88 48	17.50 445	15.25 387
12" 300mm	27.50 699	16.00 406	15.50 394	31.50 800	42.00 1067	8.00 203	25.00 635	18.00 457	11.25 286		1.25 32	19.00 483	17.00 432	2.00 51	20.50 521	17.75 451
14" 350mm	31.00 787	19.63 499	17.25 438	46.00 1168	48.00 1219	8.25 210	29.00 737	20.00 508	14.50 368		1.38 35	21.00 533	18.75 476	2.13 54	23.00 584	20.25 514
16" 400mm	36.00 914	21.00 533	21.25 540	46.00 1168	50.00 1270	7.00 178	30.75 781	20.00 508	14.00 356		1.44 37	23.50 597	21.25 540	2.25 57	25.50 648	22.50 572
18" 450mm	40.00 1016	24.00 610	21.75 552	58.00 1473	56.00 1422	8.25 210	35.00 889	24.50 622	15.00 381		1.56 40	25.00 635	22.75 578	2.38 60	28.00 711	24.75 629
20" 500mm	40.00 1016	26.00 660	23.00 584	64.00 1626	60.00 1524	8.25 210	36.00 914	23.50 597	15.00 381		1.69 43	27.50 699	25.00 635	2.50 64	30.50 775	27.00 686
24" 600mm	48.00 1219	30.00 762	26.00 660	67.00 1702	65.00 1651	10.00 254	43.75 1111	28.00 711	18.00 457		1.88 48	32.00 813	29.50 749	2.75 70	36.00 914	32.00 813
30" 750mm	56.00 1422	38.00 965	29.25 743	77.00 1956	76.00 1930	5.00 127	48.00 1219	24.00 610	15.50 394		2.13 54	38.75 984	36.00 914	3.00 76	43.00 1092	39.25 997
36" 900mm	63.00 1600	40.38 1026	33.79 858	83.00 2108	86.00 2184	2.00 51	51.00 1295	21.00 533	15.00 381		2.38 60	46.00 1168	42.75 1086	3.38 86	50.00 1270	46.00 1168
42" 1100mm	70.00 1778	50.63 1286	37.91 963	98.00 2489	95.00 2413	15.00 381	65.00 1651	41.00 1041	26.00 660		2.63 67	53.00 1346	49.50 1257	3.69 94	57.00 1448	52.75 1340
48" 1200mm	78.00 1981	50.63 1286	42.16 1071	115.00 2921	108.00 2743	17.50 445	75.00 1905	47.50 1207	29.25 743		2.75 70	59.50 1511	56.00 1422	4.00 102	65.00 1651	60.75 1543
54" 1400mm	87.00 2210	62.13 1578	53.16 1350	130.00 3302	120.00 3048	18.00 457	84.00 2134	50.50 1283	39.50 1003		3.00 76	66.25 1683	62.75 1594	Contact DeZURIK		
60" 1500mm	97.00 2464	72.00 1829	59.25 1505	140.00 3556	130.00 3302	10.50 267	88.50 2248	45.50 1156	35.50 902		3.13 80	73.00 1854	69.25 1759			
66" 1700mm	108.00 2743	66.63 1692	65.16 1655	152.00 3861	140.00 3556	3.50 89	91.00 2311	43.00 1092	33.50 851		3.44 87	80.00 2032	76.00 1930			

Inches
Millimeters



Dimensions

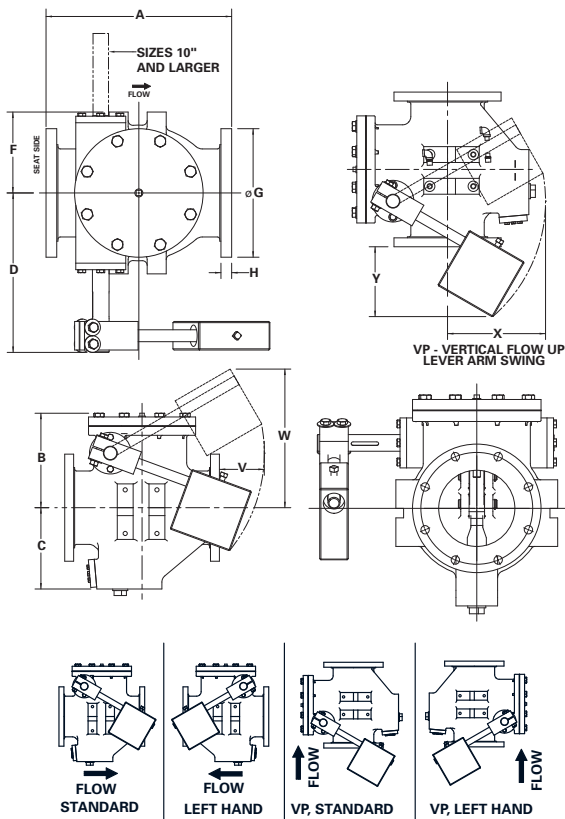
Convertible - Lever and Weight (CLW)

Convertible - Lever and Spring (CLS)

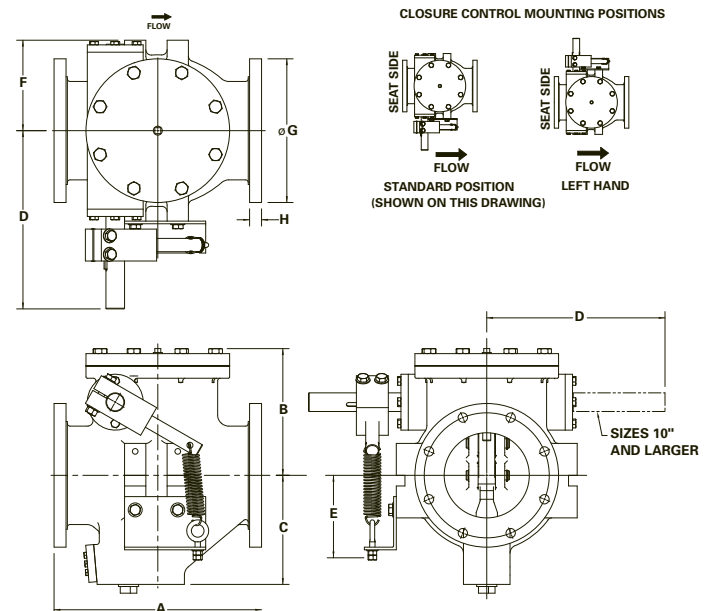
Valve Size	F1 & F2										F1		F2	
	A	B	C	D	E	F	V	W	X	Y	G	H	G	H
2"	8.00	6.00	3.50	13.25	6.50	5.00	5.25	9.00	9.50	6.25	6.00	0.63	6.50	0.88
50mm	203	152	89	337	165	127	133	229	241	159	152	16	165	22
2.5"	8.50	7.00	4.00	13.50	10.50	5.25	5.00	9.50	8.50	5.75	7.00	0.69	7.50	1.00
65mm	216	178	102	343	267	133	127	241	216	146	178	18	191	25
3"	9.50	7.00	4.13	13.75	10.00	5.50	4.63	9.50	8.50	5.13	7.50	0.75	8.25	1.13
80mm	241	178	105	349	254	140	118	241	216	130	191	19	210	29
4"	11.50	7.50	5.00	14.00	5.38	6.00	3.75	10.75	8.00	5.00	9.00	0.94	10.00	1.25
100mm	292	191	127	356	137	152	95	273	203	127	229	24	254	32
6"	14.00	10.00	6.50	17.00	8.00	8.38	9.38	16.50	14.25	11.63	11.00	1.00	12.50	1.44
150mm	356	254	165	432	203	213	238	419	362	295	279	25	318	37
8"	19.50	12.00	10.25	16.75	8.00	8.50	6.25	18.00	13.00	9.25	13.50	1.13	15.00	1.63
200mm	495	305	260	425	203	216	159	457	330	235	343	29	381	41
10"	24.50	14.25	12.63	21.00	10.50	10.00	7.00	20.50	13.50	8.50	16.00	1.19	17.50	1.88
250mm	622	362	321	533	267	254	178	521	343	216	406	30	445	48
12"	27.50	16.00	14.00	22.00	10.75	11.50	8.00	25.00	18.00	11.25	19.00	1.25	20.50	2.00
300mm	699	406	356	559	273	292	203	635	457	286	483	32	521	51
14"	31.00	19.63	15.75	26.00	10.25	13.75	8.25	29.00	20.00	14.50	21.00	1.38	23.00	2.13
350mm	787	499	400	660	260	349	210	737	508	368	533	35	584	54
16"	36.00	21.00	19.75	27.50	13.00	14.50	7.00	30.75	20.00	14.00	23.50	1.44	25.50	2.25
400mm	914	533	502	699	330	368	178	781	508	356	597	37	648	57
18"	40.00	24.00	20.25	29.00	11.50	16.00	8.25	35.00	24.50	15.00	25.00	1.56	28.00	2.38
450mm	1016	610	514	737	292	406	210	889	622	381	635	40	711	60
20"	40.00	26.00	21.50	32.00	10.00	17.50	8.25	36.00	23.50	15.00	27.50	1.69	30.50	2.50
500mm	1016	660	546	813	254	445	210	914	597	381	699	43	775	64
24"	48.00	30.00	24.50	33.50	7.38	20.00	10.00	43.75	28.00	18.00	32.00	1.88	36.00	2.75
600mm	1219	762	622	851	187	508	254	1111	711	457	813	48	914	70
30"	56.00	38.00	27.75	38.50	—	24.00	5.00	48.00	24.00	15.50	38.75	2.13	43.00	3.00
750mm	1422	965	705	978	—	610	127	1219	610	394	984	54	1092	76
36"	63.00	40.38	32.13	41.50	7.25	27.00	2.00	51.00	21.00	15.00	46.00	2.38	50.00	3.38
900mm	1600	1026	816	1054	184	686	51	1295	533	381	1168	60	1270	86
42"	70.00	50.63	36.00	49.00	2.75	33.00	15.00	65.00	41.00	26.00	53.00	2.63	57.00	3.69
1100mm	1778	1286	914	1245	70	838	381	1651	1041	660	1346	67	1448	94
48"	78.00	50.63	41.00	60.00	—	38.00	17.50	75.00	47.50	29.25	59.50	2.75	65.00	4.00
1200mm	1981	1286	1041	1524	—	965	445	1905	1207	743	1511	70	1651	102
54"	87.00	62.13	52.00	65.00	—	43.00	18.00	84.00	50.50	39.50	66.25	3.00	Contact DeZURIK	
1400mm	2210	1578	1321	1651	—	1092	457	2134	1283	1003	1683	76		
60"	97.00	72.00	58.00	70.00	—	46.00	10.50	88.50	45.50	35.50	73.00	3.13		
1500mm	2464	1829	1473	1778	—	1168	267	2248	1156	902	1854	80		
66"	108.00	66.63	64.00	76.00	—	50.50	3.50	91.00	43.00	33.50	80.00	3.44	Contact DeZURIK	
1700mm	2743	1692	1626	1930	—	1283	89	2311	1092	851	2032	87		

Inches
Millimeters

LEVER AND WEIGHT



LEVER AND SPRING



Sales and Service

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

Web Site: DeZURIK.com **E-Mail:** info@DeZURIK.com



250 Riverside Ave. N. Sartell, Minnesota 56377 • Phone: 320-259-2000 • Fax: 320-259-2227

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.