

# APCO CVS-EDV SWING CHECK VALVES

## Design and Construction

APCO CVS-EDV Swing Check Valves provide long-term, dependable service on both clean fluids and fluids containing solids including water, sewage and industrial applications. The CVS-EDV is designed to positively prevent reverse flow by closing prior to fluid back flow.

APCO CVS-EDV Swing Check Valves are available in sizes 3-30" (80-750mm). They are constructed of NSF epoxy lined and coated 12 mil Dry Film Thickness (DFT) ductile iron bodies and covers, stainless steel shafts and body seats and replaceable NBR or EPDM rubber seats. Available closure devices include Lever and Weight, Lever and Spring and Air Cushioned Lever and Weight to minimize slamming.

## AWWA C508 Compliant

APCO CVS-EDV Swing Check Valves meet or exceed all requirements of AWWA standard C508-09 *Swing Check Valves for Waterworks Service 2" through 24"* including design, materials of construction and testing.

## Working Pressure to 250 psi

APCO CVS-EDV Swing Check Valves are rated to 250 psi (1720 kPa) working pressure, and must pass a 500 psi (3450 kPa) hydrostatic shell test pressure.



## Low Head Loss

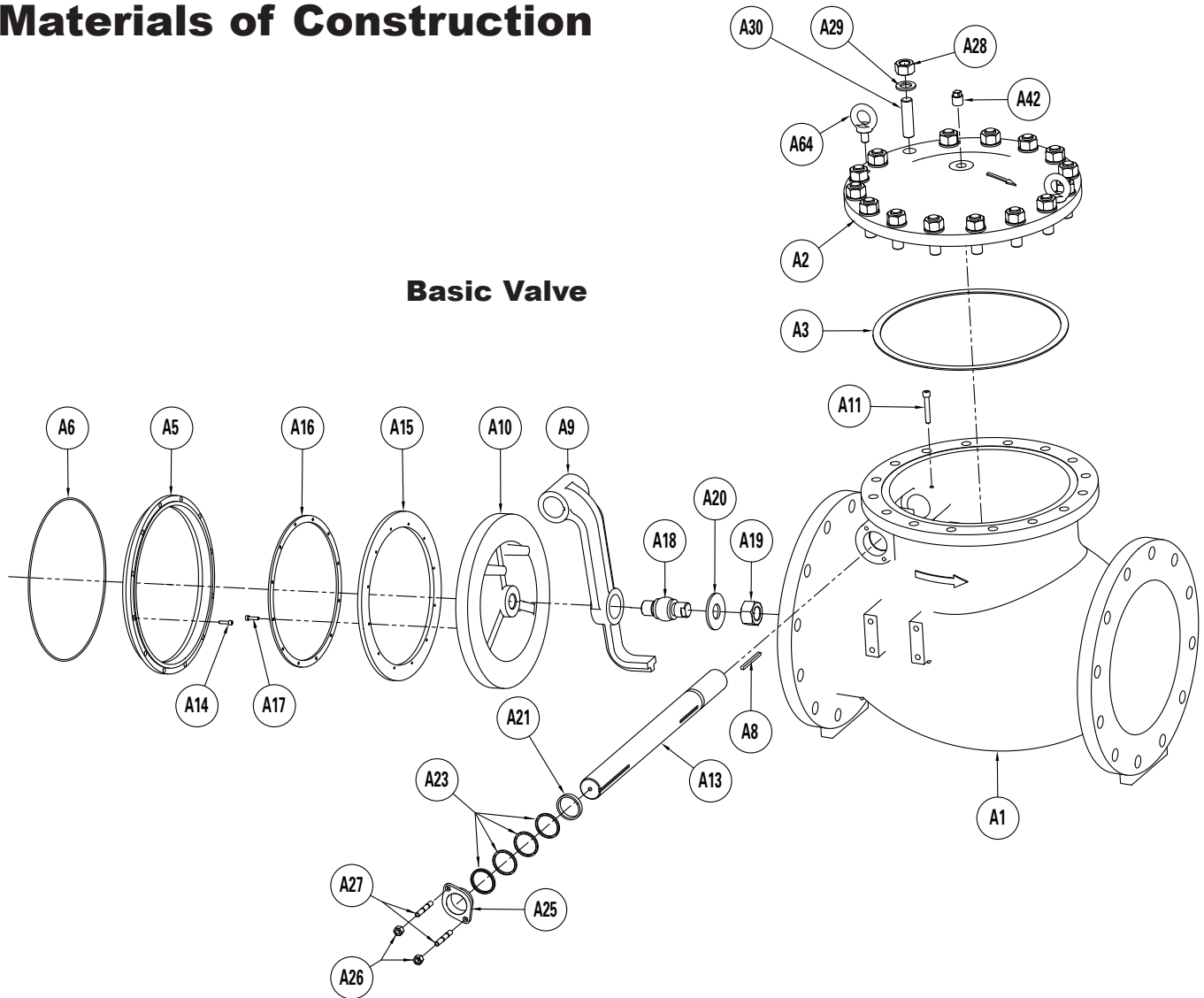
APCO CVS-EDV Swing Check Valves employ an efficient, low head loss, full waterway design with flow area equal to or greater than the nominal valve size area throughout the flow path.

## Drip Tight Shut-Off

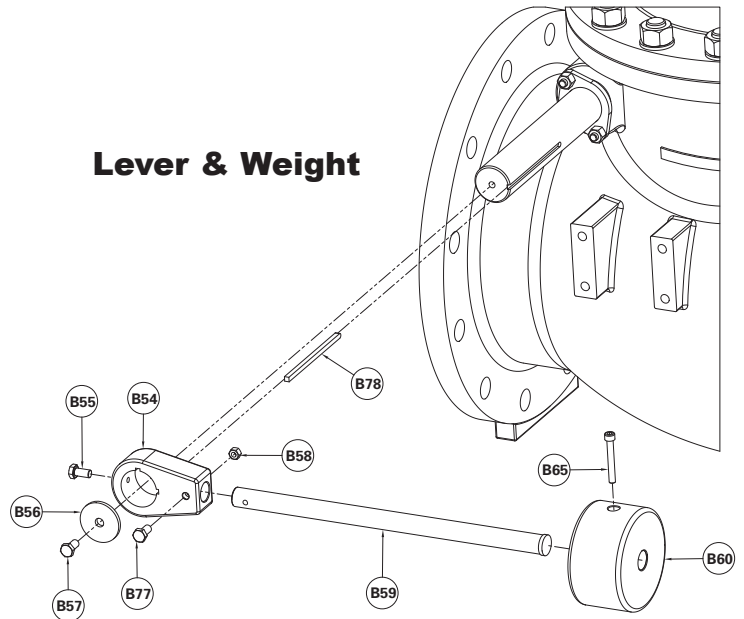
The APCO CVS-EDV replaceable resilient seat provides drip tight shut-off (no visible leakage) at the full pressure rating.

# Materials of Construction

## Basic Valve



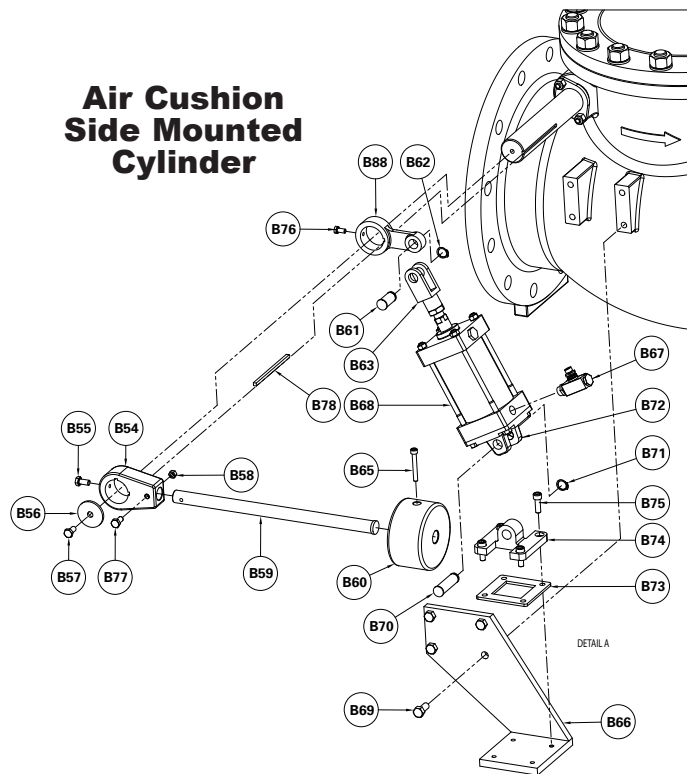
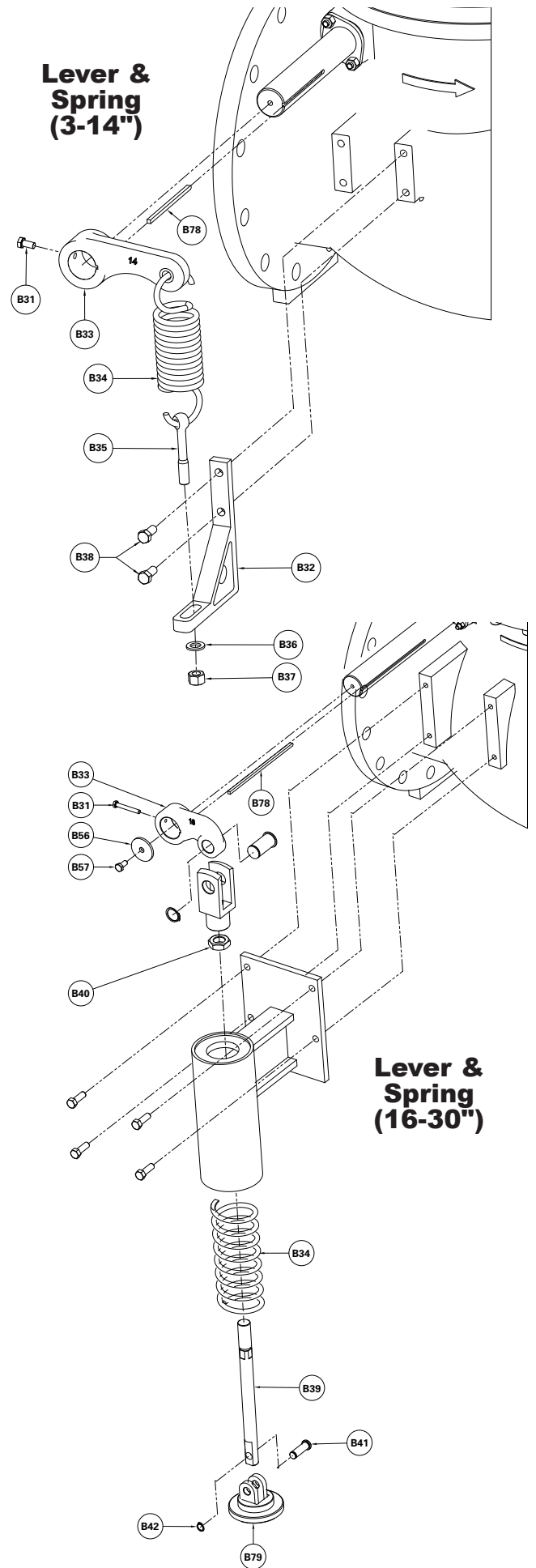
## Lever & Weight



Item	Description	Material
A1	Body	Ductile Iron, ASTM A536, Grade 65-45-12
A2	Cover	Ductile Iron, ASTM A536, Grade 65-45-12
A3	Cover Gasket	Graphite
A5	Body Seat Ring	Stainless Steel, Type 304
A6	Seat O-Ring	Acrylonitrile-Butadiene (NBR) or Terpolymer of Ethylene Propylene & A Diene (EPDM)
A8	Key	316 Stainless Steel
A9	Disc Arm	Ductile Iron, ASTM 536, Grade 65-45-12
A10	Disc	Ductile Iron, ASTM 536, Grade 65-45-12
A11	Limit Screw	Stainless Steel, Type 304
A13	Shaft	Stainless Steel, Type 304
A14	Body Seat Screw (sizes 14" & Larger)	Stainless Steel
A15	Disc Seat	Acrylonitrile-Butadiene (NBR) or Terpolymer of Ethylene Propylene & A Diene (EPDM)
A16	Seat Retaining Ring	Stainless Steel, Type 304
A17	Disc Seat Screw	Stainless Steel, Type 304
A18	Disc Stem	Stainless Steel
A19	Disc Nut	Stainless Steel, Type 304
A20	Disc Washer	Stainless Steel, Type 304
A21	Filler Ring	Brass
A23	V-Type Packing	PTFE
A25	Gland	Ductile Iron, ASTM A536, Grade 65-45-12
A26	Gland Nut	Stainless Steel, Type 304
A27	Gland Stud	Stainless Steel, Type 304
A28	Cover Nut	Stainless Steel, Type 304
A29	Cover Nut Washer	Stainless Steel, Type 304
A30	Cover Stud	Stainless Steel, Type 304
A42	Plug	Stainless Steel, Type 304
A64	Eye Bolt	Stainless Steel, Type 304
A42	Plug	Stainless Steel, Type 304
A64	Eye Bolt	Stainless Steel, Type 304

# Materials of Construction

Item	Description	Material
B31	Spring Lever Arm Retaining Screw	Stainless Steel, Type 304
B32	Spring Bracket	Carbon Steel, ASTM A216 WCB
B33	Lever Arm	Carbon Steel, ASTM A216 WCB
B34	Spring	Steel
B35	Eye Bolt	Steel, ASTM 1035
B36	Eye Bolt Washer	Steel, ASTM 1035
B37	Eye Bolt Retaining Nut	Steel, ASTM 1035
B38	Spring Bracket Screw	Carbon Steel
B39	Spring Shaft	Stainless Steel, Type 410
B40	Spring Shaft Nut	Stainless Steel, Type 304
B41	Spring Cylinder Pin	Carbon Steel
B42	Spring Cylinder Pin Retaining Ring	Steel
B54	Counterweight Lever Arm	Carbon Steel, ASTM A216 WCB
B55	Lever Weight Assembly Set Screw	Stainless Steel, Type 304
B56	Washer	Stainless Steel, Type 410
B57	Lever Arm to Shaft Set Screw	Stainless Steel, Type 304
B58	Lever Arm Set Screw Nut	Stainless Steel, Type 304
B59	Counterweight Arm	Carbon Steel
B60	Counterweight	Carbon Steel, A570
B61	Cushion Lever Clevis Pin	Carbon Steel
B62	Cushion Lever Clevis Pin Retaining Ring	Steel
B63	Y-Connector	Carbon Steel
B64	Cushion Lever	Carbon Steel, ASTM A216 WCB
B65	Counterweight Set Screw	Stainless Steel, Type 304
B66	Cylinder Bracket	Carbon Steel
B67	Flow Control Valve	Aluminum Alloy
B68	Pneumatic Cylinder	Aluminum Alloy
B69	Cylinder Bracket Mounting Bolt	Carbon Steel
B70	Clevis Pin	Carbon Steel
B71	Clevis Pin Retaining Ring	Steel
B72	Female Clevis Bracket	Carbon Steel, ASTM A216 WCB
B73	Bracket Shim	Carbon Steel
B74	Male Clevis Bracket	Carbon Steel, ASTM A216 WCB
B75	Eye Bracket Mounting Bolt	Stainless Steel, Type 304
B76	AC Assembly Set Screw	Stainless Steel, Type 304
B77	Lever Arm Set Screw	Stainless Steel, Type 304
B78	Key	Stainless Steel, Type 316
B79	Spring Tension Plate	Carbon Steel
B88	Cushion Lever	Carbon Steel, ASTM A216 WCB



# Valve Selection

## Shut-Off Capabilities

Resilient Seat	Drip tight shut-off
----------------	---------------------

## Pressure Ratings

3-30" (80-750mm)	250 psi CWP 1720 kPa CWP
---------------------	-----------------------------

## Temperature Ratings

Acrylonitrile-Butadiene (NBR)	to 212° F (100° C)
Terpolymer of Ethylene Propylene & A Diene (EPDM)	to 250° F (120° C)

## Applicable Standards

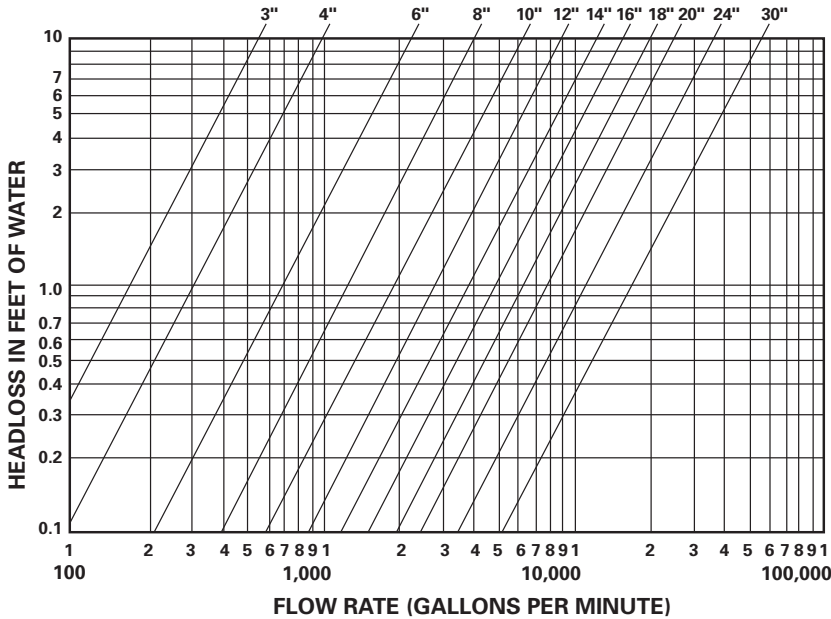
<b>DeZURIK CVS-EDV Valves are designed and/or tested to meet the following standards:</b>	
AWWA C508-09	Sizes 3-24" (80-600mm) conform to "Swing Check Valves for Waterworks Service."
ASME B16.1 (ASA B16.1)	Cast Iron Pipe Flanges and Flanged Fittings, 125 lbs. (60 kg) Conforms to related flange drilling dimensions.
ASME B16.5	Carbon Steel Flanges and Flanged Fittings, 150 lbs. (70 kg) Conforms to related flange drilling dimensions.

## Weights

Valve Size	Lever & Weight	Lever & Spring	Air Cushion Cylinder
3" 80mm	54 25	52 24	58 27
4" 100mm	88 40	85 39	96 44
6" 150mm	133 61	133 61	143 65
8" 200mm	231 105	227 103	246 112
10" 250mm	351 160	348 158	376 171
12" 300mm	520 236	510 232	553 251
14" 350mm	664 302	655 298	692 314
16" 400mm	914 415	941 427	953 433
18" 450mm	1177 535	1141 518	1215 552
20" 500mm	1367 621	1373 623	1415 643
24" 600mm	Contact DeZURIK		
30" 750mm			

Pounds  
Kilograms

## Head Loss Characteristics for Swing Check Valves



# 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 Valve

## Valve Size

Give valve size code as follows:

3	=	3"	80mm	14	=	14"	350mm
4	=	4"	100mm	16	=	16"	400mm
6	=	6"	150mm	18	=	18"	450mm
8	=	8"	200mm	20	=	20"	500mm
10	=	10"	250mm	24	=	24"	600mm
12	=	12"	300mm	30	=	30"	750mm

## Body Style

Give body style code as follows:

EDV = Series EDV

## End Connection

Give end connection code as follows:

F1 = Flanged, ASME 125/150

## Body Material

Give body material code as follows:

DI = Ductile Iron

## Trim Combination

Give disc material code as follows:

DI = Ductile Iron

## Shaft Material

Give shaft material code as follows:

S1 = 304 Stainless Steel

## Body Seat Material

Give body seat material code as follows:

S1 = 304 Stainless Steel

## Disc Seat Material

Give disc seat material code as follows:

NBR = Acrylonitrile-Butadiene

EPDM = Terpolymer of Ethylene, Propylene and A Diene

## Options

Give option 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.  
LS mounts Vertical or Horizontal with no  
modifications required)

## Closure Control Devices

Give operating device code as follows:

AC = Air Cushion Side Mounted Cylinder (Lever & Weight)

LS = Lever & Spring

LW = Lever & Weight

## Accessories

Give accessory code as follows:

SEL22 = (1) Limit Switch - DPDT AB H802T-DTP

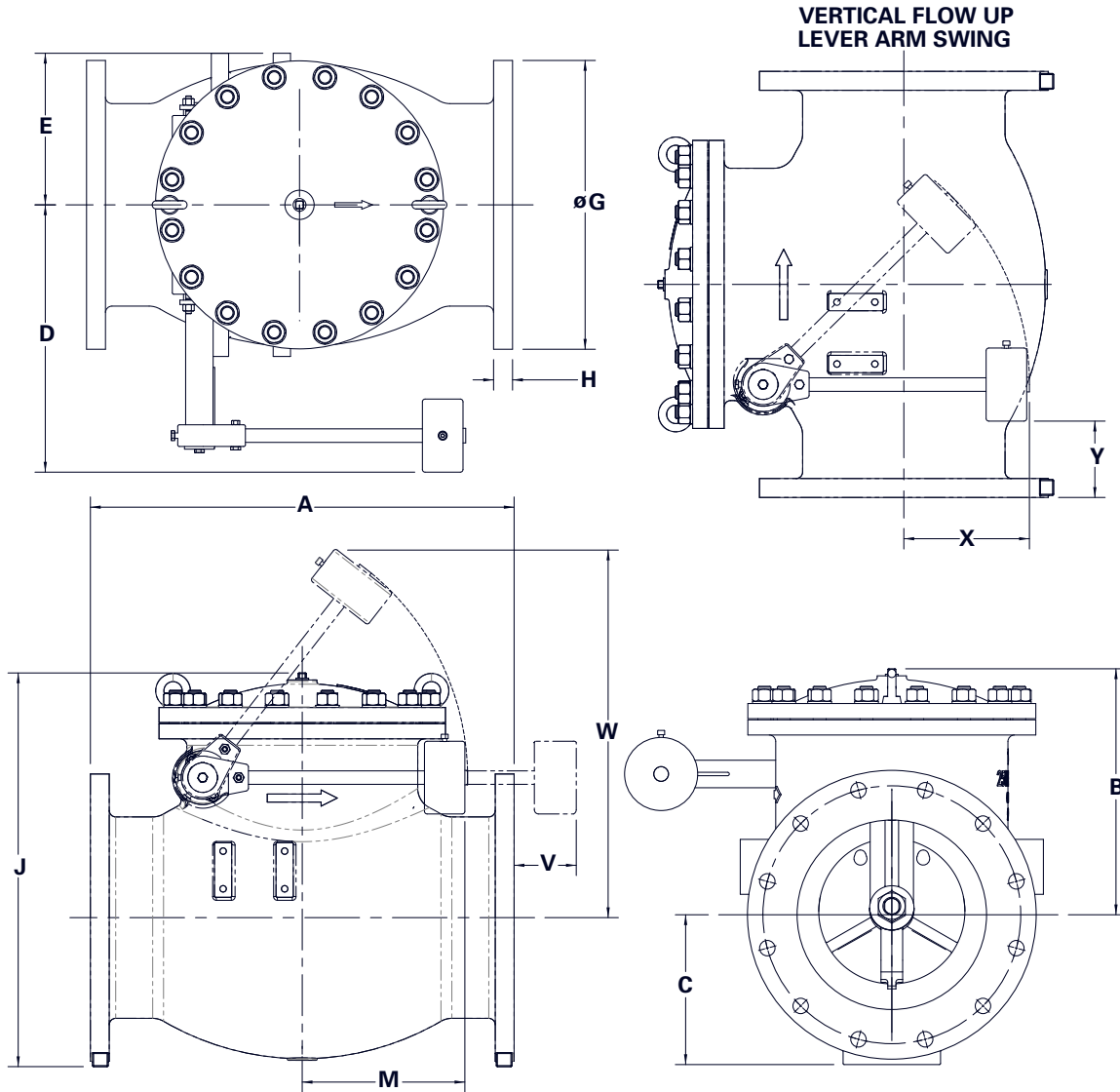
SEL30 = (1) Proximity Switch - SPDT GO 73-13526-B2

## Ordering Example:

CVS,8,EDV,F1,DI,DI-S1-S1-NBR\*LW,SEL22

# Dimensions

## Lever and Weight

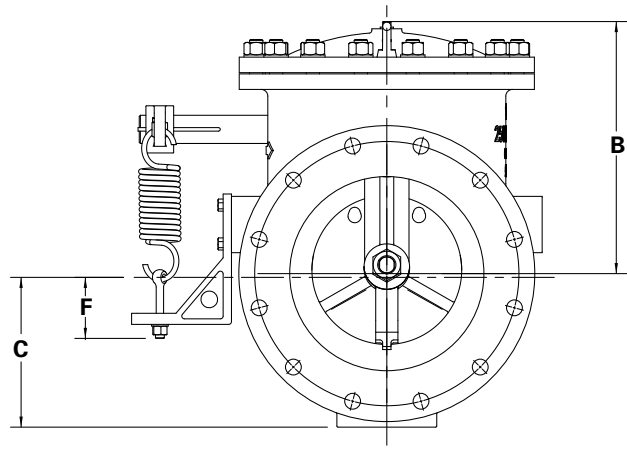
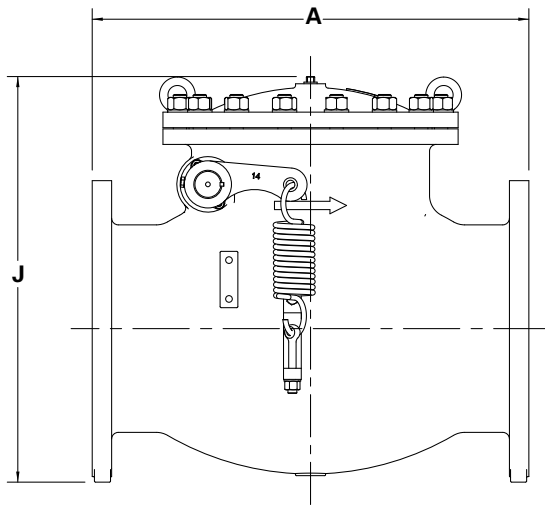
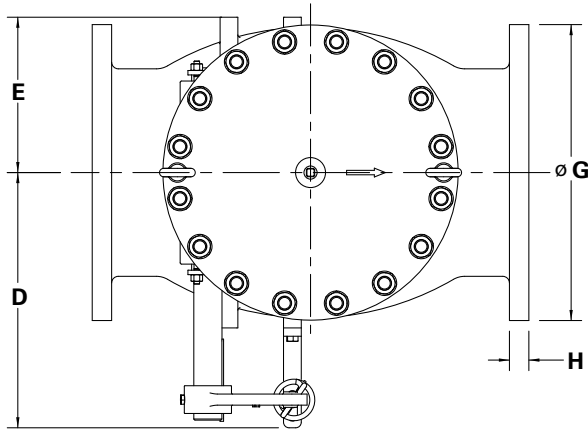


Valve Size	A	B	C	D	E	G	H	J	M	V	W	X	Y
3" 80mm	9.50 241	6.93 176	3.83 97	10.31 262	4.06 103	7.50 191	0.75 19	10.76 273	5.60 142	0.85 22	9.22 234	4.80 122	1.40 36
4" 100mm	11.50 292	7.95 202	4.58 116	11.10 282	4.83 123	9.00 229	0.94 24	12.53 318	7.95 202	2.20 56	12.29 312	6.77 172	2.01 51
6" 150mm	14.00 356	9.96 253	5.62 143	12.32 313	6.02 153	11.00 279	1.00 25	15.58 396	7.47 190	0.47 12	13.79 350	6.10 155	2.28 58
8" 200mm	19.50 495	11.98 304	6.95 177	14.69 373	7.60 193	13.50 343	1.12 28	18.93 481	10.32 262	0.57 14	18.67 474	8.74 222	3.84 98
10" 250mm	24.50 622	14.65 372	8.20 208	16.69 424	9.16 233	16.00 406	1.19 30	22.85 580	12.49 317	0.24 6	21.69 551	10.08 256	5.35 136
12" 300mm	27.50 698	16.77 426	9.70 246	18.90 480	10.24 260	19.00 483	1.25 32	26.47 672	13.04 331	NA	25.86 657	10.24 260	4.49 114
14" 350mm	31.00 787	17.89 454	10.89 277	19.41 493	11.02 280	21.00 533	1.38 35	28.78 731	12.12 308	NA	27.14 689	9.17 233	5.55 141
16" 400mm	36.00 914	20.63 524	12.34 313	24.53 623	12.32 313	23.50 597	1.44 37	32.97 837	14.05 357	NA	30.91 785	11.10 282	6.38 162
18" 450mm	40.00 1016	22.09 561	13.48 342	25.39 645	13.19 335	25.00 635	1.56 40	35.57 903	16.26 413	NA	32.95 837	12.72 323	7.64 194
20" 500mm	40.00 1016	24.24 616	14.93 379	26.77 680	14.57 370	27.50 699	1.69 43	39.17 995	15.24 387	NA	34.84 885	11.30 287	6.61 168
24" 600mm	48.00 1219	29.52 750	17.97 456	29.33 745	18.50 470	32.00 813	1.88 48	47.48 1206	21.38 543	NA	45.16 1147	17.24 438	8.06 205
30" 750mm	60.00 1524	35.35 898	21.34 542	30.71 780	22.05 560	38.74 984	2.13 54	56.69 1440	Contact Factory				

Inches  
Millimeters

# Dimensions

## Lever and Spring\*



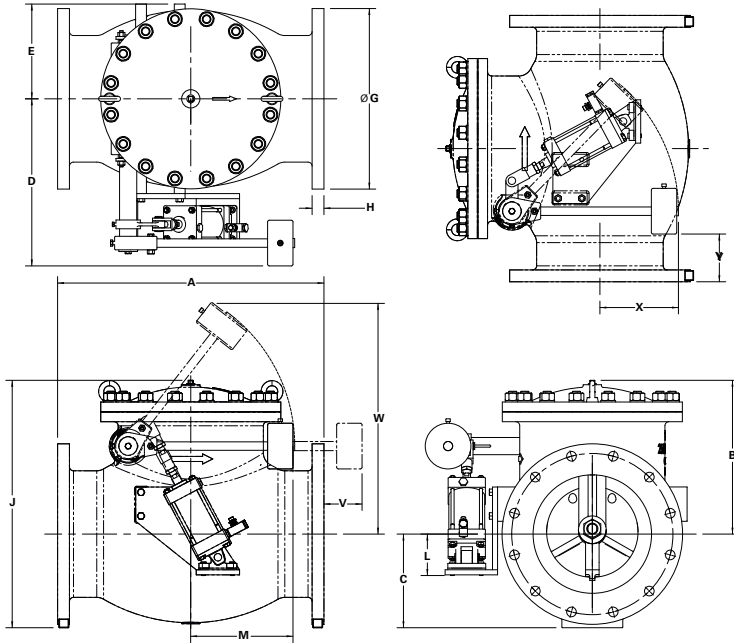
Valve Size	A	B	C	D	E	F	G	H	J
3" 80mm	9.50 241	6.93 176	3.83 97	9.84 250	4.06 103	4.53 115	7.50 191	0.75 19	10.76 273
4" 100mm	11.50 292	7.95 202	4.58 116	10.75 273	4.83 123	4.06 103	9.00 229	0.94 24	12.53 318
6" 150mm	14.00 356	9.96 253	5.62 143	12.09 307	6.02 153	4.69 119	11.00 279	1.00 25	15.58 396
8" 200mm	19.50 495	11.98 304	6.95 177	14.49 368	7.60 193	5.31 135	13.50 343	1.12 28	18.93 481
10" 250mm	24.50 622	14.65 372	8.20 208	16.65 423	9.16 233	8.03 204	16.00 406	1.19 30	22.85 580
12" 300mm	27.50 698	16.77 426	9.70 246	17.72 450	10.24 260	5.75 146	19.00 483	1.25 32	26.47 672
14" 350mm	31.00 787	17.89 454	10.89 277	18.11 460	11.02 280	4.72 120	21.00 533	1.38 35	28.78 731
16" 400mm	36.00 914	20.63 524	12.34 313	24.02 610	12.32 313	8.77 223	23.50 597	1.44 37	32.97 837
18" 450mm	40.00 1016	22.09 561	13.48 342	24.86 631	13.19 335	7.43 189	25.00 635	1.56 40	35.57 903
20" 500mm	40.00 1016	24.24 616	14.93 379	26.24 666	14.57 370	6.01 153	27.50 699	1.69 43	39.17 995
24" 600mm	48.00 1219	29.52 750	17.97 456	28.80 732	18.50 470	8.95 227	32.00 813	1.88 48	47.48 1206
30" 750mm	60.00 1524	35.35 898	21.34 542	Contact DeZURIK	22.05 560	Contact DeZURIK	38.74 984	2.13 54	56.69 1440

Inches  
Millimeters

\* 3-14" (80-350mm) design depicted in drawings

# Dimensions

## Air Cushion Side Mounted Cylinder (Lever and Weight)



Valve Size	A	B	C	D	E	G	H	J	L	M	V	W	X	Y
3" 80mm	9.50 241	6.93 176	3.83 97	10.31 262	4.06 103	7.50 191	0.75 19	10.76 273	6.72 171	5.60 142	0.85 22	9.22 234	4.80 122	1.40 36
4" 100mm	11.50 292	7.95 202	4.58 116	11.10 282	4.83 123	9.00 229	0.94 24	12.53 318	7.06 179	7.95 202	2.20 56	12.29 312	6.77 172	2.01 51
6" 150mm	14.00 356	9.96 253	5.62 143	12.32 313	6.02 153	11.00 279	1.00 25	15.58 396	6.04 153	7.47 190	0.47 12	13.79 350	6.10 155	2.28 58
8" 200mm	19.50 495	11.98 304	6.95 177	14.69 373	7.60 193	13.50 343	1.12 28	18.93 481	5.82 148	10.32 262	0.57 14	18.67 474	8.74 222	3.84 98
10" 250mm	24.50 622	14.65 372	8.20 208	16.69 424	9.16 233	16.00 406	1.19 30	22.85 580	7.72 196	12.49 317	0.24 6	21.69 551	10.08 256	5.35 136
12" 300mm	27.50 698	16.77 426	9.70 246	18.90 480	10.24 260	19.00 483	1.25 32	26.47 672	6.31 160	13.04 331	NA	25.86 657	10.24 260	4.49 114
14" 350mm	31.00 787	17.89 454	10.89 277	19.41 493	11.02 280	21.00 533	1.38 35	28.78 731	13.01 330	12.12 308	NA	27.14 689	9.17 233	5.55 141
16" 400mm	36.00 914	20.63 524	12.34 313	24.53 623	12.32 313	23.50 597	1.44 37	32.97 837	9.44 240	14.05 357	NA	30.91 785	11.10 282	6.38 162
18" 450mm	40.00 1016	22.09 561	13.48 342	25.39 645	13.19 335	25.00 635	1.56 40	35.57 903	8.10 206	16.26 413	NA	32.95 837	12.72 323	7.64 194
20" 500mm	40.00 1016	24.24 616	14.93 379	26.77 680	14.57 370	27.50 699	1.69 43	39.17 995	6.68 170	15.24 387	NA	34.84 885	11.30 287	6.61 168
24" 600mm	48.00 1219	29.52 750	17.97 456	29.33 745	18.50 470	32.00 813	1.88 48	47.48 1206	4.74 120	21.38 543	NA	45.16 1147	17.24 438	8.06 205
30" 750mm	60.00 1524	35.35 898	21.34 542	30.71 780	22.05 560	38.74 984	2.13 54	56.69 1440	Contact Factory	Contact Factory				

Inches  
Millimeters

### Sales and Service

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

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