SERIES 5C / 5D

Resilient Seated Thin Profile Disc Butterfly Valves for Special Applications

Wafer, Lug Body

DelVal®
Flow Controls

3-YEAR WARRANTY
3
ON DELVAL PRODUCTS

delvalflow.com

1-833-DELVAL1

STANDARD FEATURES

Quality & Performance

DelVal Flow Controls provides a wide range of quality products with the reliability you can count on. All Series 5C /5D valves are manufactured in ISO 9001 certified facilities with a robust quality management system and according to BS EN 593 standard.

Design Construction and Features

1. Stem Connection
Stem connection available in standard DelVal sizes.

2. Top Plate Drilling
Top plate drilled to fit DIN EN ISO 5211 dimensions. All handles, gear operators and pneumatic DelTorq actuators are designed to mount directly to DelVal valves.

3. Heavy Duty Body
Heavy duty two-piece body has extended neck for 2'' piping insulation.
Standard coating is two layers of hard, zinc phosphate epoxy coating with semi-gloss finish for excellent corrosion resistance.

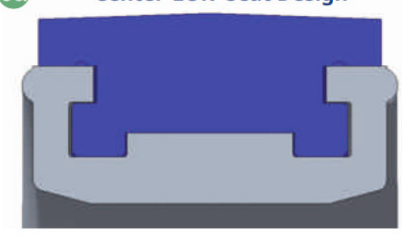
4. Locating Lug
Two flange locating holes for sizes up to 12" and four flange locating holes from 14'' to 24'' ensure easy alignment of valve during installation. They meet ASME CL 125 / 150 or other international drilling standards.

5. Disc-Stem
One-piece thin profile disc-stem in high strength design, available in fully lined in either EPDM, NBR, or Halar with the covering extending on the stem in sealing area. Stainless steel with high polished surface for food and pharmaceutical industry also available.

6. Seat
Heavy duty square-grooved seat design has molded O-ring seals to serve as flange gaskets. EPDM / NBR (BUNA-N) seats are peroxide cured to yield superior thermal and chemical resistance.

6a. Seat Design
Unique Center-LOK® seat design virtually eliminates any seat movement during the seating and un-seating of the of the disc, isolating the body and stem from process media.

6a **Center-LOK® Seat Design**



7. Disc-Seat Sealing
Precision machined radius on the upper and lower disc hubs presses against upper and lower seat sealing faces to achieve primary sealing between disc and seat.

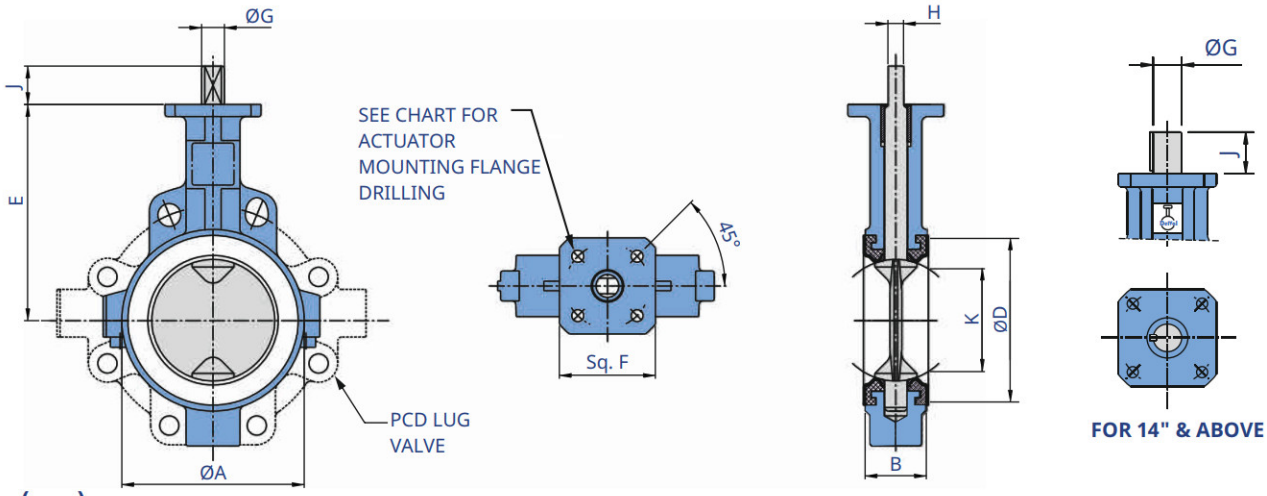
8. Secondary Seal
Double O-rings are molded in both upper and lower journals, providing a superior secondary seal.

9. Bushing
Heavy duty acetal bushing absorbs the forces acting on the disc-stem assembly due to line pressure.

10. Stem Seal
Bi-directional 'U' cup stem seal.

11. Bearing
Upper and lower bearings securely support stem and isolate stem contact from valve body.

DIMENSIONS AND WEIGHTS (WAFER / LUG)



Dimensions (mm)

Valve Size		ØA	*B	ØD	E	Sq. F	Top Flange Drilling			ØG	H	J	Key Size	K	Lug Bolting Data			App. Weight (kg)	
Inch	DN						PCD	No. of Holes	Hole Dia.						PCD	No. of Holes	Threads UNC- 2B	Wafer (Series 5C)	Lug (Series 5D)
2	50	91	43	72	140	80	70	4	10	14.0	10	32	-	33.5	120.7	4	⅝ - 11	3.5	4.1
2½	65	106	46	88	152	80	70	4	10	14.0	10	32	-	52.1	139.7	4	⅝ - 11	3.5	4.7
3	80	122	46	104	160	80	70	4	10	14.0	10	32	-	68.5	152.4	4	⅝ - 11	3.8	4.8
4	100	152	52	130	180	80	70	4	10	16.0	11	32	-	91.7	190.5	8	⅝ - 11	5.6	8.8
5	125	176	56	158	192	100	70/102	4	10/12	19.0	13	32	-	117.3	215.9	8	¾ - 10	8.2	13.0
6	150	205	56	185	206	100	70/102	4	10/12	19.0	13	32	-	139.7	241.3	8	¾ - 10	9.6	19.6
8	200	284	60	238	241	120	102/125	4	12/14	22.0	16	32	-	187.6	298.5	8	¾ - 10	16.5	29.8
10	250	315	68	289	273	120	102/125	4	12/14	30.0	22	51	-	236.4	362.0	12	⅞ - 9	24.8	37.4
12	300	370	78	342	311	120	125	4	14	30.0	22	51	-	282.4	431.8	12	⅞ - 9	35.6	54.6
14	350	415	78	388	346	120	125	4	14	35.0	-	51	10.00 x 10.00	328.3	476.2	12	1 - 8	39.9	55.7
16	400	472	102	442	375	120	125	4	14	35.0	-	51	10.00 x 10.00	375.8	539.7	16	1 - 8	59.2	83.6
18	450	525	114	495	406	170	165	4	21	50.0	-	64	10.00 x 12.00	421.4	577.8	16	1⅛ - 7	88.2	108.6
20	500	500	127	548	438	170	165	4	21	50.0	-	64	10.00 x 12.00	472.6	635.0	20	1⅛ - 7	107.4	139.2
24	600	692	154	654	495	ϕ210	165	4	21	63.5	-	102	15.88 x 15.88	572.7	749.3	20	1¼ - 7	175.0	216.4

*Metric value face to face dimension 'B' conforms to API 609 category A / BS EN 558-1 Series 20 / ISO 5752 Series 20 / MSS SP 27 / ASME B16.10.

Dimensions (Inch)

Valve Size		ØA	**B	ØD	E	Sq. F	Top Flange Drilling			ØG	H	J	Key Size	K	Lug Bolting Data			App. Weight (lbs)	
Inch	DN						PCD	No. of Holes	Hole Dia.						PCD	No. of Holes	Threads UNC- 2B	Wafer (Series 5C)	Lug (Series 5D)
2	50	3.58	1.69	2.83	5.51	3.15	2.76	4	0.39	0.55	0.39	1.25	-	1.32	4.75	4	⅝ - 11	7.72	9.04
2½	65	4.17	1.81	3.46	5.98	3.15	2.76	4	0.39	0.55	0.39	1.25	-	2.05	5.50	4	⅝ - 11	7.72	10.36
3	80	4.80	1.81	4.09	6.30	3.15	2.76	4	0.39	0.55	0.39	1.25	-	2.70	6.00	4	⅝ - 11	8.38	10.58
4	100	5.98	2.06	5.12	7.09	3.15	2.76	4	0.39	0.63	0.43	1.25	-	3.61	7.50	8	⅝ - 11	12.34	19.40
5	125	6.93	2.19	6.22	7.56	3.93	2.76/0.41	4	0.39/0.47	0.75	0.51	1.25	-	4.62	8.50	8	¾ - 10	18.08	28.66
6	150	8.07	2.19	7.28	8.07	3.93	2.76/0.41	4	0.39/0.47	0.75	0.51	1.25	-	5.50	9.50	8	¾ - 10	21.16	43.21
8	200	10.39	2.38	9.37	9.49	4.72	4.01/4.92	4	0.47/0.55	0.87	0.63	1.25	-	7.39	11.75	8	¾ - 10	36.38	65.69
10	250	12.40	2.69	11.38	10.75	4.72	4.01/4.92	4	0.47/0.55	1.18	0.87	2.00	-	9.31	14.25	12	⅞ - 9	54.67	82.44
12	300	14.57	3.06	13.46	12.24	4.72	4.92	4	0.55	1.18	0.87	2.00	-	11.12	17.00	12	⅞ - 9	78.47	120.36
14	350	16.34	3.06	15.28	13.62	4.72	4.92	4	0.55	1.38	-	2.00	0.39 x 0.39	12.92	18.75	12	1 - 8	87.96	122.80
16	400	18.58	4.00	17.40	14.76	4.72	4.92	4	0.55	1.38	-	2.00	0.39 x 0.39	14.80	21.25	16	1 - 8	130.51	184.31
18	450	20.67	4.50	19.49	15.56	6.70	6.50	4	0.83	1.97	-	2.50	0.39 x 0.47	16.59	22.75	16	1⅛ - 7	194.45	239.42
20	500	22.83	5.00	21.57	17.31	6.70	6.50	4	0.83	1.97	-	2.50	0.39 x 0.47	18.61	25.00	20	1⅛ - 7	236.78	306.88
24	600	27.24	6.06	25.75	19.49	ϕ8.27	6.50	4	0.83	2.50	-	4.00	0.62 x 0.62	22.55	29.50	20	1¼ - 7	385.81	477.08

**Face to face dimension ''B'' generally conforms to API 609 Category A/BS EN 558-1 Series 20/ISO 5752 Series 20/MSS SP67/ ASME B 16.10.

Torque Data (Nm)

Valve Size		2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
Pressure ΔP, Bar	10	9	16	20	31	48	66	122	198	337	450	585	989	1144	1760

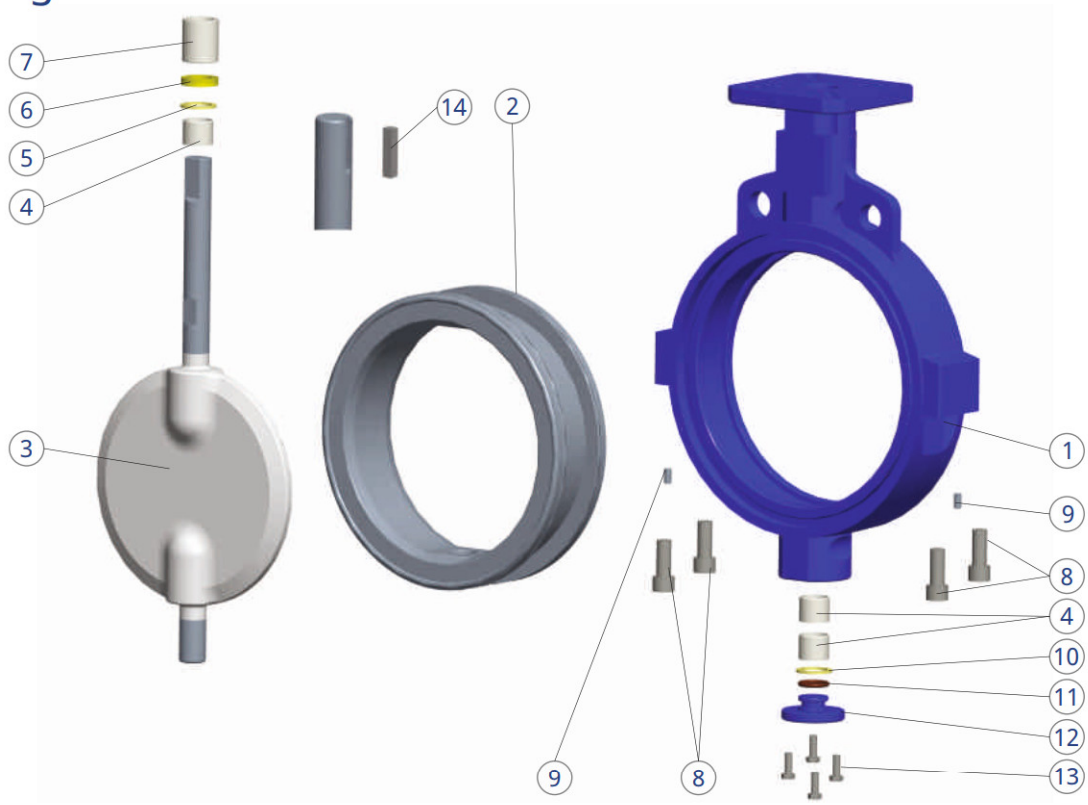
Torque Data (Lbf-Inch)

Valve Size		2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
Pressure ΔP, PSI	150	80	142	17 7	271	426	582	1083	1756	2987	3980	5178	8756	10126	15576

Note: Above torques are for clean media and do not contain any safety factors for actuator sizing. If other conditions exist, a service factor should be applied. Please consult DelVal for specific service factor.

STANDARD MATERIALS OF CONSTRUCTION

Wafer & Lug



Part List

Item	Description	*Standard Material	
		CI/DI/CS	SS
1	Body	CI ASTM A126 CLASS B CI IS 210 FG 260 DI ASTM A395 60-40-18 ASTM A216 WCB	ASTM A351 CF8M/CF8
**2	Seat	EPDM/WHITE EPDM NBR (BUNA-N)/WHITE NBR (BUNA-N) Viton®(FKM) #Silicone	
3	Disc + Stem	ASTM A351 CF8M/CF8 (One-piece investment cast disc-stem 2" to 12") ASTM A995 GR 4A/5A/6A (One-piece investment cast disc-stem 2" to 12") Halar coated ASTM A351 CF8M/CF8 (One-piece investment cast disc-stem 2" to 12") ASTM A351 CF8M/CF8 + ASTM A479 SS410/SS316 SH (One-piece disc-stem 14" to 24") Halar coated ASTM A351 CF8M/CF8 + ASTM A479 SS410/SS316 SH (One-piece disc-stem 14" to 24") High Polished ASTM A240 SS316 + ASTM A479 SS316 SH (One-piece disc-stem 2" to 24") **Elastomer (EPDM/NBR) Lined over Carbon Steel IS 2062 Gr-B + A479 SS410 (One- piece disc-stem 2" to 24")	ASTM A351 CF8M/CF8 (One-piece investment cast disc-stem 2" to 12") ASTM A995 GR 4A/5A/6A (One-piece investment cast disc-stem 2" to 12") ASTM A351 CF8M/CF8 + ASTM A479 SS410/SS316 SH (One-piece disc-stem 14" to 24") High Polished ASTM A240 SS316 + ASTM A479 SS316 SH (One-piece disc-stem 2" to 24")

#Silicone seat configuration applicable up to PN6 rating only.
*Other materials may be available on request.

Item	Description	*Standard Material	
		CI/DI/CS	SS
**4	Sleeve Bearing	Bear-G	
**5	Pack Support	Polyacetal (Delrin)	
**6	U-Cup Seal	NBR (BUNA-N)	
**7	Stem Bushing	Polyacetal (Delrin)	
8	Socket Head Cap Screw	ISO 3506 A2-70	
9	Dowel Pin	BS970 EN8	
**10	Thrust Bearing (24")	Phosphor Bronze BS1400 PB4	
**11	'O' Ring (from 8'' and above)	NBR (BUNA-N)	
12	Bottom Cover (from 8'' and above)	ASTM A479 SS410 ASTM A240 SS304	ASTM A479 SS316 ASTM A240 SS316
13	Hex Head Bolt (from 8'' and above)	ISO 3506 A2-70	
14	Key (14" to 24")	BS970 EN8	

**Recommended spares.
CI = Cast Iron, DI = Ductile Iron, CS = Carbon Steel, SS = Stainless Steel

Standards and Specifications

DelVal Series 5C/5D Butterfly Valves are designed and manufactured to meet the requirements of the following general industry standards:

Design: Full compliance to BS EN 593, general compliance to API 609, MSS SP 67

Face to Face: BS EN 558 Series 20, API 609 Category-A, ISO 5752 Series 20, MSS SP 67

Testing: BS EN 12266-1, API 598, MSS SP 67

Flange Standard: ASME B16.5 Class 150, Other International Standards

Body Style: Two-Piece

***Temp Range:** -29°C to 200°C
-20°F to 390°F

Size Range: 2" to 24"

Seat Temperature Limits

Seat Type	*Temperature Limits	
	Lower Limit	Upper Limit
EPDM / WHITE EPDM	-20°F (-29°C)	302°F (150°C)
NBR (BUNA-N) / WHITE NBR (BUNA-N)	0°F (-18°C)	212°F (100°C)
Viton®(FKM)	0°F (-18°C)	390°F (200°C)
#Silicone	-58°F (-50°C)	390°F (200°C)

#Maximum pressure rating limited to 6 Bar.

Viton® is registered trademark of E.I. DuPont.

*Temperature range shall be the lesser of the seat temperature or disc coating temperature.

Pressure Rating

Inch	DN	PSIG	BARG
2"to 24"	50 to 600	150	10

End-of-Line Service

Lug body valves may be used in end-of-line service with downstream piping removed.

2" to 24" (DN 50 to DN 600) lug type butterfly valves are suitable for operation without a downstream flange installed, the dead-end pressure ratings are equal to the values stated above.

Operator Information

Valves up to size 8" can be supplied with lever handles for manual operation. Optional accessories for hand-lever operation can be provided for various flow control requirements. Pad-lock can also be provided to prevent unauthorized operation.

Valves of all sizes can be direct mounted with gear operators for manual operation. Gear operators can also be attached with chain-wheel operators to open or close valves located on pipelines at high elevations.

All valves can be direct mounted with pneumatic actuators or electric actuators and accessories for complete on-off automation or modulating control. Valves can be mounted with manual overrides.

100% TESTING
100% SERIALIZATION

3-YEAR WARRANTY ON DELVAL PRODUCTS

CERTIFICATES

QUALITY ASSURANCE MANAGEMENT ISO 9001
ENVIROMENTAL MANAGEMENT ISO 14001
OCCUPATIONAL HEALTH & SAFETY ISO 45001
DIRECTIVE 2014/68/EU ANNEX III MODULE B PED CERTIFIED
DRINKING WATER SYSTEM UL NSF/ANSI 61
DRINKING WATER - LEAD CONTENT UL NSF/ANSI 372

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