DelVal Series 50/52 Resilient Seated Butterfly Valve

Series 50 (wafer) and Series 52 (lug) are DelVal's general-purpose resilient seated butterfly valves for 2" to 24" (DN 50 to 600) lines, with Series 5A and 5B offering the same patterns with an alternate stem size.



Key data	
Size range	2" to 24" (DN 50 to 600)
Pressure rating	2" to 12" – Class 125, 175 PSIG (PN 12); 14" to 24" – 150 psi (PN 10); Optional: 2" to 24" – PN 16
Seat	EPDM, White EPDM, Buna-N, White Buna-N, FKM, Silicone
Body	CI, DI, CS

Pressure and temperature ratings

Seat temperature limits

Seat type	Lower limit*	Upper limit*
EPDM/WHITE EPDM	-20°F (-29°C)	302°F (150°C)
NBR (BUNA-N)/WHITE NBR (WHITE 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

Size (inch)	DN	psig	barg
2” to 24”**	50-600	230	16
2” to 24”	50-600	200	14
2” to 12”	50-300	175	12
2” to 40”	50-1000	150	10
2” to 40”	50-1000	87	6
2” to 40”	50-1000	50	3.5

**Optional, consult UEC for details.

End-of-line service (lug body)

Item	Detail
End-of-Line Service	Lug body valves may be used in end-of-line service with downstream piping removed.
2” to 40” (DN 50 to DN 1000)	2” to 40” (DN 50 to DN 1000) 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.

Standards and specifications

Design, testing and flange standards

Item	Detail
Design	Full compliance to BS EN 593, general compliance to API 609 & MSS SP 67
Face to Face	BS EN 558-1 Series 20, API 609 Category A, ISO 5752 Series 20, MSS SP 67, ASME B16.10
Testing	BS EN 12266-1, API 598, MSS SP 67
Flange Standard	ASME B16.5 Class 150, ASME B16.47 Class 150 Series A, Other International Standards
Body Style	One-Piece
Temp Range*	-29°C to 200°C, -20°F to 390°F
Size Range	2" to 40"

Dimensions and weights

Valve sizes from 26'' to 40'' in wafer body construction, please refer to Series 51.
For 22" valve size please consult UEC.

Key to dimension letters

Item	Detail
ØA	Body outside diameter
B	Face-to-face length
E	Valve centreline to top of top flange
Sq. F	Top flange square size
ØG	Stem diameter
H	Stem width across flats
J	Stem projection above top flange

Materials of construction

#Silicone seat configuration applicable up to PN6 rating only.
*Other materials may be available on request.
**Recommended spares.
CI = Cast Iron, DI = Ductile Iron, CS = Carbon Steel, SS = Stainless Steel.

Parts and materials, 2" to 24" wafer and lug

Item	Description	Standard material* (CI/DI)	Standard material* (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 CF8/CF8M/CF3M
2**	Seat	EPDM/WHITE EPDM NBR (BUNA-N) WHITE NBR (White BUNA-N) Viton®(FKM) Silicone#	EPDM/WHITE EPDM NBR (BUNA-N) WHITE NBR (White BUNA-N) Viton®(FKM) Silicone#
3	Disc	ASTM A536 65-45-12+Nylon 12 coated ASTM A536 65-45-12+Aroxy coated ASTM A216 WCB+Nylon 12 coated ASTM A216 WCB+Aroxy coated ASTM A351 CF8M/CF8/CF3M ASTM A995 4A/5A/6A NAB ASTM B148 C95800	ASTM A536 65-45-12+Nylon 12 coated ASTM A536 65-45-12+Aroxy coated ASTM A216 WCB+Nylon 12 coated ASTM A216 WCB+Aroxy coated ASTM A351 CF8M/CF8/CF3M ASTM A995 4A/5A/6A NAB ASTM B148 C95800
4	Stem	ASTM A479 SS410-L2 ASTM A479 SS316 SH ASTM A564 17-4 PH Type 630 ASTM A182 F51/F53	ASTM A479 SS410-L2 ASTM A479 SS316 SH ASTM A564 17-4 PH Type 630 ASTM A182 F51/F53
5**	U-Cup Seal	NBR (BUNA-N)	NBR (BUNA-N)
6**	Stem Bushing	POLYACETAL (Delrin)	POLYACETAL (Delrin)

Item	Description	Standard material* (CI/DI)	Standard material* (CS/SS)
7**	Internal Circlip (2” – 20”)	Spring steel IS 2507 70C6	Spring steel IS 2507 70C6
8**	Stem Retainer (2” – 20”)	ASTM A240 SS304	ASTM A240 SS304
9**	External Circlip (14” – 24”)	Spring steel IS 2507 70C6	Spring steel IS 2507 70C6
10**	Retainer Ring (24”)	Carbon Steel IS 2062 Gr-B	Carbon Steel IS 2062 Gr-B ASTM A240 SS304/SS316
11	Socket Head Cap Screw (24”)	IS 1367 HTS 12.9	IS 1367 HTS 12.9 ISO 3506 A2-70
12	Key (14” – 24”)	BS 970 En8	BS 970 En8
13**	Thrust Bearing (24”)	Phosphor Bronze BS 1400 PB4	Phosphor Bronze BS 1400 PB4
14	Bearing Spacer (24”)	Carbon Steel IS 2062 Gr-B	Carbon Steel IS 2062 Gr-B ASTM A240 SS304/SS316
15**	O-ring (24”)	NBR (BUNA-N)	NBR (BUNA-N)
16	Bottom Plate (18” - 24”)	Carbon steel IS 2062 Gr. B	Carbon steel IS 2062 Gr. B ASTM A240 SS304/SS316
17	Plain Washer (24”)	Carbon steel IS 2062 Gr. B	Carbon steel IS 2062 Gr. B ASTM A240 SS304/SS316
18	Hex Head Bolt (4” - 20”)	–	ISO 3506 A2-70
18a	Hex head Bolt (24'')	IS 1367 HTS 12.9	IS 1367 HTS 12.9 ISO 3506 A2-70
19	Bottom Plug (2” - 16”)	–	ASTM A479 SS410
20**	Top Bearing	–	Bear-G
21**	Bottom Bearing	–	Bear-G
22**	Internal Circlip	–	Spring steel IS 2507 70C6
23**	O-ring	–	NBR (BUNA-N)
24**	Pack Support	–	POLYACETAL (Delrin)

Parts and materials, 26" to 40" lug

Item	Description	Standard material* (CI/DI/CS)	Standard material* (SS)
1	Body	CI ASTM A126 CLASS B CI IS 210 FG 260 DI ASTM A395 60-40-18 ASTM A216 WCB	ASTM A351 CF8/CF8M/CF3M
2**	Seat	EPDM/WHITE EPDM NBR (BUNA-N)/WHITE NBR (WHITE BUNA-N) Viton®(FKM) Silicone#	EPDM/WHITE EPDM NBR (BUNA-N)/WHITE NBR (WHITE BUNA-N) Viton®(FKM) Silicone#
3	Disc	ASTM A536 65-45-12+Nylon 12 coated ASTM A536 65-45-12+Aroxy coated ASTM A216 WCB+Nylon 12 coated ASTM A216 WCB+Aroxy coated ASTM A351 CF8M/CF8/CF3M ASTM A995 4A/5A/6A NAB ASTM B148 C95800	ASTM A351 CF8M/CF8/CF3M ASTM A995 4A/5A/6A NAB ASTM B148 C95800
4	Stem	ASTM A479 SS410-L2/ SS316 SH ASTM A564 17-4 PH Type 630 ASTM A182 F51/F53	ASTM A479 SS316 SH ASTM A564 17-4 PH Type 630 ASTM A182 F51/F53
5**	U-Cup Seal	NBR (BUNA-N)	NBR (BUNA-N)
6**	Stem Bushing	Phosphor Bronze BS 1400 PB4	Phosphor Bronze BS 1400 PB4
7**	External Circlip	Spring Steel IS 2507 70C6	Spring Steel IS 2507 70C6
8	Top Cover	Carbon Steel IS 2062 Gr.B	ASTM A240 SS304/ SS316
9	Socket Head Cap Screw	IS 1367 HTS 12.9	ISO 3506 A2-70
10**	Bearing Spacer	Carbon Steel IS 2062 Gr.B	ASTM A240 SS304
11	Thrust Bearing	Phosphor Bronze BS 1400 PB4	Phosphor Bronze BS 1400 PB4
12**	‘O’ Ring	NBR (BUNA-N)	NBR (BUNA-N)
13	Bottom Plate	Carbon Steel IS 2062 Gr.B	ASTM A240 SS304/ SS316
14	Plain Washer	Carbon Steel IS 2062 Gr-B	ASTM A240 SS304
15	Hex Head Bolt	IS 1367 HTS 12.9	ISO 3506 A2-70
16	Plug	ISO 3506 A2-70	ISO 3506 A2-70

Item	Description	Standard material* (CI/DI/CS)	Standard material* (SS)
17	Key	BS 970 En8	BS 970 En8
18	Socket Head Cap Screw	ISO 3506 A2-70	ISO 3506 A2-70

Dimensions and weights

Wafer and lug, Series 50/52 (mm) (columns 1 of 2)

Valve size (inch)	DN	ØA	B*	ØD	E	Sq. F	Top flange PCD	Top flange no. of holes	Top flange hole dia.	ØG	H	J
2	50	91	43	72	140	80	70/82.5	4	10/11	14.0	10	32
2.5	65	105	46	88	152	80	70/82.5	4	10/11	14.0	10	32
3	80	120	46	104	160	80	70/82.5	4	10/11	14.0	10	32
4	100	150	52	130	180	80	70/82.5	4	10/11	16.0	11	32
5	125	175	56	158	192	80	70/82.5	4	10/11	19.0	13	32
6	150	205	56	185	205	80	70/82.5	4	10/11	19.0	13	32
8	200	259	60	238	241	120	70/102/125/127	4	10/11/14/14.3	22.0	16	32
10	250	310	68	289	273	120	102/125/127	4	11/14/14.3	30.0	22	51
12	300	364	78	342	311	120	102/125/127	4	11/14/14.3	30.0	22	51
14	350	415	78	388	346	120	125/127	4	14/14.3	35.0	---	51
16	400	472	102	442	375	120	125	4	14	35.0	---	51
18	450	525	114	495	406	170	165	4	21	50.0	---	64
20	500	580	127	548	438	170	165	4	21	50.0	---	64
24	600	692	154	654	495	Ø210	165	4	21	63.5	---	102
26	650	745	165	706	555	Ø300	254	8	18	63.5	---	102
28	700	795	165	756	580	Ø300	254	8	18	63.5	---	102
30	750	860	165	815	595	Ø300	254	8	18	76.2	---	102
32	800	900	190	859	670	Ø300	254	8	18	76.2	---	102
36	900	1025	203	976	705	Ø350	298	8	21	88.9	---	134
40	1000	1120	216	1065	782	Ø350	298	8	21	101.6	---	134

*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 67/ASME B16.10.

Wafer and lug, Series 50/52 (mm) (columns 2 of 2)

Valve size (inch)	DN	Key size	K	Lug bolting PCD	Lug bolting no. of holes	Lug bolting thread (UNC-2B)	Approx. weight, wafer Series 50 (kg)	Approx. weight, lug Series 52 (kg)
2	50	---	33.5	120.70	4	5/8-11	2.30	3.08
2.5	65	---	52.1	139.70	4	5/8-11	2.63	3.59
3	80	---	68.5	152.40	4	5/8-11	3.10	4.05
4	100	---	91.7	190.50	8	5/8-11	4.93	7.42
5	125	---	117.3	215.90	8	3/4-10	6.31	9.78
6	150	---	139.7	241.30	8	3/4-10	7.40	11.50
8	200	---	187.6	298.50	8	3/4-10	12.70	17.20
10	250	---	236.4	362.00	12	7/8- 9	20.00	28.00
12	300	---	282.4	431.80	12	7/8- 9	27.60	41.85
14	350	10.00 x 10.00	328.3	476.20	12	1- 8	39.90	55.70
16	400	10.00 x 10.00	375.8	539.70	16	1- 8	59.20	83.60
18	450	10.00 x 12.00	421.4	577.80	16	1 1/8- 7	88.20	108.60
20	500	10.00 x 12.00	472.6	635.00	20	1 1/8- 7	107.40	139.20
24	600	15.88 x 15.88	572.7	749.30	20	1 1/4- 7	175.00	216.40
26	650	15.88 x 15.88	598.0	806.45	24	1 1/4- 7	---	292.00
28	700	15.88 x 15.88	651.0	863.60	28	1 1/4- 7	---	340.00
30	750	19.05 x 19.05	717.0	914.40	28	1 1/4- 7	---	405.00
32	800	19.05 x 19.05	756.0	977.90	28	1 1/2- 6	---	512.00
36	900	22.23 x 15.88	870.0	1085.85	32	1 1/2- 6	---	655.00
40	1000	25.40 x 19.05	952.0	1200.15	36	1 1/2- 6	---	925.00

*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 67/ASME B16.10.

Operating torque

Torque by disc type and differential pressure

Valve size (inch)	DN	Undercut disc, PN 3.5/50 psi (Nm)	Undercut disc, PN 3.5/50 psi (lbf-in)	Standard disc, PN 6/87 psi (Nm)	Standard disc, PN 6/87 psi (lbf-in)	Standard disc, PN 10/150 psi (Nm)	Standard disc, PN 10/150 psi (lbf-in)	Standard disc, PN 12/175 psi (Nm)	Standard disc, PN 12/175 psi (lbf-in)	Oversized disc, PN 14/200 psi, PN 16/230 psi (Nm)	Oversized disc, PN 14/200 psi, PN 16/230 psi (lbf-in)
2	50	7	62	8	72	9	80	10	91	17	150
2.5	65	12	106	14	124	16	142	17	150	22	195
3	80	13	115	16	142	20	177	22	197	32	283
4	100	15	133	29	256	31	271	32	279	45	398
5	125	21	187	44	393	48	426	50	443	65	575
6	150	30	267	62	545	66	582	70	620	110	974
8	200	70	623	110	977	122	1083	128	1133	210	1859
10	250	87	771	179	1586	198	1756	208	1841	319	2823
12	300	142	1259	302	2677	337	2987	355	3146	468	4142
14	350	244	2159	398	3527	450	3980	---	---	690	6106
16	400	297	2627	500	4428	585	5178	---	---	925	8187
18	450	412	3649	822	7273	989	8756	---	---	1192	10550
20	500	484	4285	954	8441	1144	10126	---	---	1506	13329
24	600	734	6500	1410	12482	1760	15576	---	---	3029	26809
26	650	1063	9408	2202	19488	2750	24338	---	---	---	---
28	700	1266	11204	2640	23364	3320	29382	---	---	---	---
30	750	1465	12965	3083	27285	3900	34515	---	---	---	---
32	800	1755	15532	3715	32878	4740	41949	---	---	---	---
36	900	2342	20727	4975	44029	6420	56817	---	---	---	---
40	1000	3085	27302	6175	54649	8165	72260	---	---	---	---

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 UEC for specific service factor.

For a quotation, send the size, pressure rating, materials, operator and quantity to UEC by phone, WhatsApp or email. Inch and pound tables are on the product page at www.unitedengg.co.in/valves/delval/series-50-52-resilient-seated-butterfly-valve. Data as published by DelVal Flow Controls; DelVal and DelTorq are trademarks of DelVal Flow Controls.