

SERIES 51 / 53

Resilient Seated Butterfly Valves

Wafer, Flanged End (Wafer U-Section)



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 51/53 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. Top Plate Drilling

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

2. Heavy Duty Body

Heavy duty one-piece body with two layers of hard, zinc phosphate epoxy coating with semi-gloss finish for excellent corrosion resistance.

3. Disc

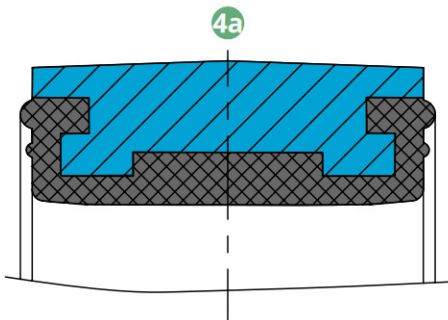
High strength disc with polished edge and hubs. Nylon PA12 coated disc option ensures excellent corrosion resistance to several chemical media. The hard, non-porous sintered polymer has very low hygroscopicity and resistance to greases, oils, fuels, hydraulic fluids, water, alkalis and many organic solvents.

4. Seat

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

4a. Seat Design

Unique Center-LOK® seat design virtually eliminates any seat movement during the seating and unseating of the disc, and isolates the body and stem from line media.



5. 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.

6. Secondary Seal

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

7. Stem Retention System

Unique stem retention system provides blow-out proof stem and easy assembly and disassembly of valve.

8. Bearing

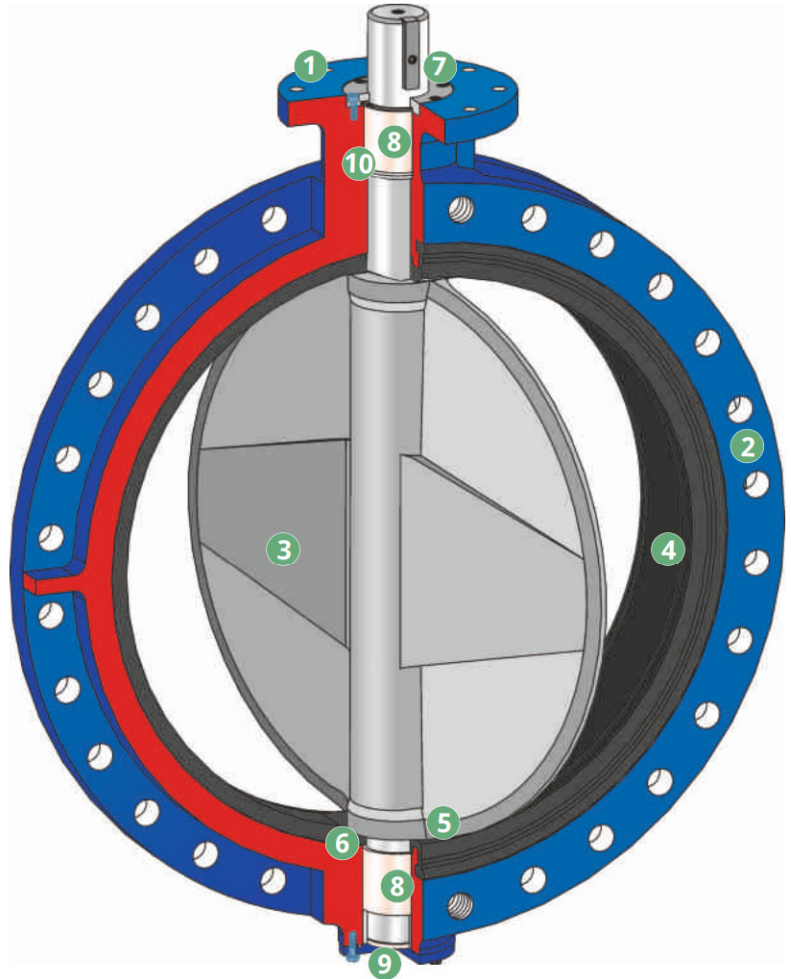
Heavy-duty bronze sleeve bearing absorbs the forces acting on the disc-stem assembly due to line pressure.

9. Vertical Bearing

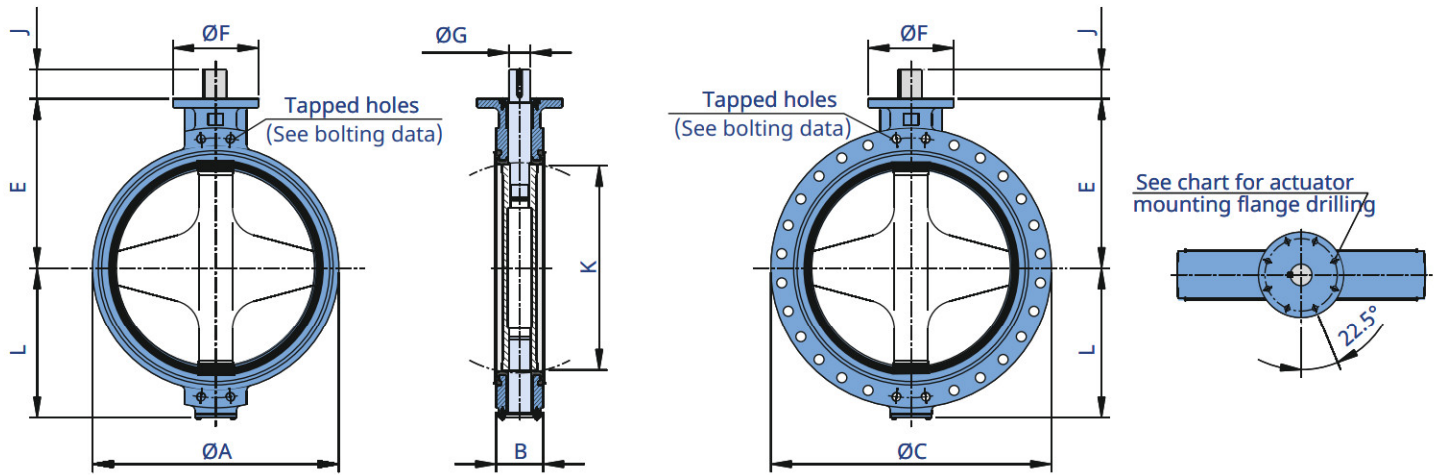
Vertical thrust bearing in bronze construction eliminates disc displacement due to weight of stem and disc.

10. Stem Seal

Bi-directional 'U' cup stem seal.



DIMENSIONS AND WEIGHTS (Wafer/Flanged End)



Dimensions (mm)

Valve Size		ØA	ØC	*B	E	L	Ø'F'	Top Flange Drilling			ØG	J	Key Size	K	**Bolting Data		App. Weight (kg)	
Inch	DN							PCD	No. of Holes	Hole Dia.					PCD	Threads UNC/UN- 2B	Wafer (Series 51)	Flanged End (Series 53)
26	650	745	870	165	555	475	300	254	8	18	63.5	102	15.88 x 15.88	598	806.40	1¼ - 7UNC	264	350
28	700	795	927	165	580	492	300	254	8	18	63.5	102	15.88 x 15.88	651	863.60	1¼ - 7UNC	275	375
30	750	860	984	165	595	528	300	254	8	18	76.2	102	19.05 x 19.05	717	914.40	1¼ - 7UNC	332	405
32	800	900	1060	190	670	565	300	254	8	18	76.2	102	19.05 x 19.05	756	977.90	1½ - 6UNC	360	510
36	900	1025	1168	203	705	640	350	298	8	21	88.9	134	22.23 x 15.88	870	1085.80	1½ - 6UNC	525	640
40	1000	1120	1289	216	782	675	350	298	8	21	101.6	134	25.40 x 19.05	952	1200.20	1½ - 6UNC	720	890
42	1050	-	1346	251	815	726	415	298	8	21	101.6	134	@25.40 x 19.05	1020	1257.30	1½ - 8UN	-	1160
44	1100	-	1403	251	845	740	415	298	8	21	101.6	134	@25.40 x 19.05	1070	1314.40	1½ - 8UN	-	1280
48	1200	1293	1511	276	915	800	350	298	8	21	101.6	134	@25.4 x 19.05	1120	1422.40	1½ - 8 UN	1200	1450
54	1350	-	1683	381	1030	950	415	356	8	33	101.6	134	@25.4 x 19.05	1250	1593.80	1¾ - 8UN	-	2550
56	1400	-	1746	381	1060	970	475	356	8	33	101.6	134	@25.4 x 19.05	1270	1651.00	1¾ - 8UN	-	2700
60	1500	-	1854	381	1125	995	475	406	8	38	130.0	150	@32.00 x 18.00	1440	1759.00	1¾ - 8UN	-	3180
64	1600	-	1915	381	1140	1050	475	406	8	38	130.0	150	@32.00 x 18.00	1452	Consult Factory	-	3400	
66	1650	-	2032	457	1240	1115	560	483	12	38	150.0	200	@36.00 x 20.00	1600		-	3630	
72	1800	-	2197	457	1330	1195	560	483	12	38	150.0	200	@36.00 x 20.00	1700		-	5100	

Dimensions (Inch)

Valve Size		ØA	ØC	*B	E	L	Ø'F'	Top Flange Drilling			ØG	J	Key Size	K	**Bolting Data		App. Weight (lbs)	
Inch	DN							PCD	No. of Holes	Hole Dia.					PCD	Threads UNC/UN- 2B	Wafer (Series 51)	Flanged End (Series 53)
26	650	29.33	34.25	6.50	21.85	18.70	11.81	10.00	8	0.71	2.50	4.00	0.62 x 0.62	23.54	31.75	1¼ - 7UNC	582	771
28	700	31.30	36.50	6.50	22.83	19.37	11.81	10.00	8	0.71	2.50	4.00	0.62 x 0.62	25.63	34.00	1¼ - 7UNC	606	827
30	750	33.86	38.75	6.50	23.43	20.78	11.81	10.00	8	0.71	3.00	4.00	0.75 x 0.75	28.23	36.00	1¼ - 7UNC	732	893
32	800	35.43	41.75	7.48	26.38	22.24	11.81	10.00	8	0.71	3.00	4.00	0.75 x 0.75	29.76	38.50	1½ - 6UNC	793	1124
36	900	40.35	46.00	8.00	27.76	25.20	13.78	11.73	8	0.83	3.50	5.28	0.88 x 0.62	34.25	42.75	1½ - 6UNC	1157	1411
40	1000	44.09	50.75	8.50	30.78	26.57	13.78	11.73	8	0.83	4.00	5.28	1.00 x 0.75	37.48	47.25	1½ - 6UNC	1587	1962
42	1050	-	53.00	9.88	32.08	28.58	16.33	11.73	8	0.83	4.00	5.28	@1.00 x 0.75	40.16	49.50	1½ - 8UN	-	2557
44	1100	-	55.25	9.88	33.27	29.13	16.33	11.73	8	0.83	4.00	5.28	@1.00 x 0.75	42.13	51.75	1½ - 8UN	-	2821
48	1200	50.90	59.50	10.87	36.02	31.50	16.33	11.73	8	0.83	4.00	5.28	@1.00 x 0.75	44.09	56.00	1½ - 8 UN	-	3196
54	1350	-	66.25	15.00	40.55	37.40	16.33	14.02	8	1.30	4.00	5.28	@1.00 x 0.75	49.21	62.75	1¾ - 8UN	-	5620
56	1400	-	68.75	15.00	41.73	38.19	17.33	14.02	8	1.30	4.00	5.28	@1.00 x 0.75	50.00	65.00	1¾ - 8UN	-	5951
60	1500	-	73.00	15.00	44.29	39.17	18.70	15.98	8	1.57	5.12	5.90	@1.25 x 0.70	56.69	69.25	1¾ - 8UN	-	7011
64	1600	-	75.39	15.00	44.88	41.34	18.70	15.98	8	1.57	5.12	5.90	@1.25 x 0.70	57.16	Consult Factory	-	7496	
66	1650	-	80.00	17.99	48.82	43.90	22.04	19.02	12	1.57	5.91	7.87	@1.41 x 0.78	62.99		-	8001	
72	1800	-	86.50	17.99	52.36	47.05	22.04	19.02	12	1.57	5.91	7.87	@1.41 x 0.78	66.93		-	11240	

*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 with exceptions.

@ indicates 2-keyway and # indicates 4-keyway.

Valve sizes from 42" to 44" wafer body construction, refer to Series 56.

**Bolting data confirms to ASME B16.47 Series A, consult factory for other requirement.

Consult DelVal for valve size 24" in Series 53. DelVal reserves rights to change the contents without notice.

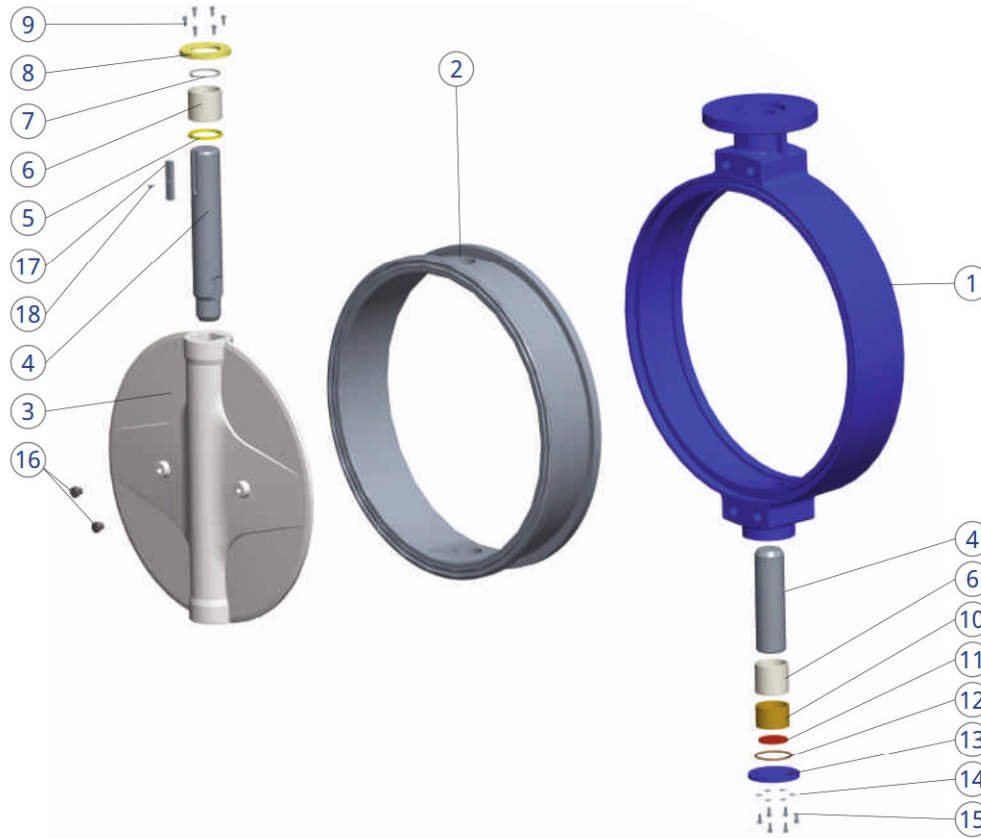
TORQUE DATA (Nm/Lbf-Inch)

Inch	DN	Differential Pressure (ΔP)					
		Undercut Disc		Standard Disc			
		PN 3.5 / 50 Psi		PN 6 / 87 Psi		PN 10 / 150 Psi	
		Nm	Lbf-Inch	Nm	Lbf-Inch	Nm	Lbf-Inch
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
42	1050	4317	38208	8475	75010	11300	100013
44	1100	4495	44209	9797	86710	13368	118316
48	1200	8200	72576	12430	110014	16950	150020
54	1350	11920	105492	19546	172982	31862	281979
56	1400	13926	123241	21524	190483	37172	328972
60	1500	15931	140989	23501	207984	42482	375966
64	1600	19440	172044	33972	300652	50010	442588
66	1650	22959	203187	44448	393365	57555	509362
72	1800	35000	309750	50000	442500	64000	566400

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

STANDARD MATERIALS OF CONSTRUCTION

26" to 40" Wafer/Flanged End (Wafer U-Section)



Part List

Item	Description	*Standard Material		Item	Description	*Standard Material	
		CI/DI/CS	SS			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 CF8/CF8M/CF3M	8	Top Cover	Carbon Steel IS 2062 Gr-B	ASTM A240 SS304
**2	Seat (Replaceable)	EPDM/NBR (BUNA-N)/Viton®(FKM)/#Silicone		9	Socket Head Cap Screw	IS 1367 HTS 12.9	ISO 3506 A2-70
3	Disc	ASTM A536 65-45-12+Nylon 12 ctd. ASTM A536 65-45-12+Aroxy ctd. ASTM A216 WCB+Nylon 12 ctd. ASTM A216 WCB+Aroxy ctd. ASTM A351 CF8M/CF8/CF3M ASTM A995 4A/5A/6A	ASTM A351 CF8M/CF8/CF3M ASTM A995 4A/5A/6A	10	Bearing Spacer	Carbon Steel IS 2062 Gr-B	ASTM A240 SS304/SS316
4	Stem (Upper/ Lower)	ASTM A479 SS410 - L2 ASTM A479 SS316 SH ASTM A564 17-4 PH Type 630 ASTM A182 F51/F55	ASTM A479 SS410-L2 ASTM A479 SS316 SH ASTM A564 17-4 PH Type 630 ASTM A182 F51/F55	11	Thrust Bearing	Phosphor Bronze BS 1400 PB4	
**5	U-Cup Seal	NBR (BUNA-N)		**12	'O' Ring	NBR (BUNA-N)	
**6	Stem Bearing	Phosphor Bronze BS 1400 PB4		13	Bottom Plate	Carbon Steel IS 2062 Gr-B	ASTM A240 SS304/SS316
**7	External Circlip	Spring Steel IS 2507 70C6		14	Punch Washer	Carbon Steel IS 2062 Gr-B	ASTM A240 SS304
				15	Hex Head Bolt	IS 1367 HTS 8.8	ISO 3506 A2-70
				16	Plug	ISO 3506 A2 -70	
				17	Key	BS 970 En8	
				18	Socket Head Cap Screw	IS 1367 HTS 12.9	ISO 3506 A2-70

#Silicone seat configuration applicable up to PN6 rating only.

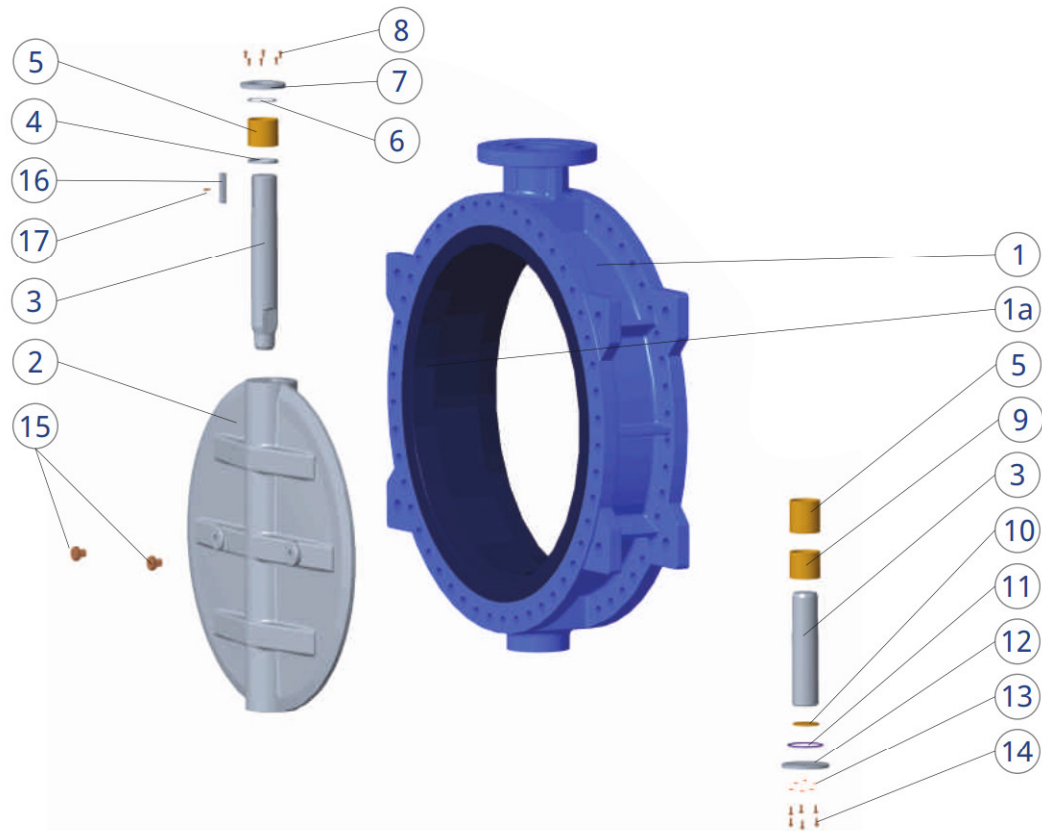
*Other materials may be available on request.

**Recommended spares.

CI = Cast Iron, DI = Ductile Iron, CS = Carbon Steel, SS = Stainless Steel,
Ctd. = Coated.

STANDARD MATERIALS OF CONSTRUCTION

42" to 72" Flanged End (Wafer U-Section)



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 CF8/CF8M/CF3M
1a	Seat (in-situ molded)	EPDM/NBR (BUNA-N)/Viton®(FKM)/#Silicone	
2	Disc	ASTM A216 WCB+Epoxy painted ASTM A351 CF8M/CF8/CF3M ASTM A995 4A/5A/6A	ASTM A351 CF8M/CF8/CF3M ASTM A995 4A/5A/6A
3	Stem (Upper/Lower)	ASTM A479 SS410 - L2 ASTM A479 SS316 SH ASTM A564 17-4 PH Type 630 ASTM A182 F51/F55	ASTM A479 SS316 SH ASTM A564 17-4 PH Type 630 ASTM A182 F51/F55
4	U-Cup Seal	NBR (BUNA-N)	
5	Stem Bearing	Phosphor Bronze BS 1400 PB4	
6	External Circlip	Spring Steel IS 2507 70C6	

Item	Description	*Standard Material	
		CI/DI/CS	SS
7	Top Cover	Carbon Steel IS 2062 Gr-B	ASTM A240 SS304
8	Socket Head Cap Screw	IS 1367 HTS 12.9	ISO 3506 A2-70
9	Bearing Spacer	Carbon Steel IS 2062 Gr-B	ASTM A240 SS304/SS316
10	Thrust Bearing	Phosphor Bronze BS 1400 PB4	
11	'O' Ring	NBR (BUNA-N)	
12	Bottom Plate	Carbon Steel IS 2062 Gr-B	ASTM A240 SS304/SS316
13	Punch Washer	Carbon Steel IS 2062 Gr-B	ASTM A240 SS304
14	Hex Head Bolt	IS 1367 HTS 8.8	ISO 3506 A2-70
15	Plug	ISO 3506 A2 -70	
16	Key	BS 970 En8	
17	Socket Head Cap Screw	IS 1367 HTS 12.9	ISO 3506 A2-70

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

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

Standards and Specifications

DelVal Series 51/53 Butterfly Valves are designed and manufactured to meet the requirements of the following industry standards:

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

Face to Face: General conformance to API 609 Category A, BS EN 558-1 Series 20, ISO 5752 Series 20, MSS SP 67, ASME B16.10 with exceptions.

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

Flange Standard: ASME B16.47 Class 150 Series A, AWWA C207 Class-D, Other International Standards

Body Style: One-Piece

****Body Construction:** Wafer/Flanged End (Wafer U-Section)

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

@Size Range: 26" to 72"

Seat Temperature Limits

Seat Type	*Temperature Limits	
	Lower Limit	Upper Limit
EPDM	-20°F (-29°C)	302°F (150°C)
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.

** Flanged body construction conforming to "U-section wafer" body as per BS EN 593.

@Consult DelVal for sizes not available in the bulletin.

End-of-Line Service

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

26" to 72" (DN 650 to DN 1800) Wafer U-section 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 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.

Pressure Rating

Inch	DN	PSIG	BARG
26" to 72"	650-1800	150	10
26" to 72"	650-1800	87	6
26" to 72"	650-1800	50	3.5

100% TESTING 100% SERIALIZATION



CERTIFICATES



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