

SERIES 42 / 43

PTFE/PFA Lined Butterfly Valves

Wafer, Lug Body



STANDARD FEATURES

Quality & Performance

DelVal Flow Controls provides a wide range of quality products with the reliability you can count on. All Series 42/43 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 semigloss finish for excellent corrosion resistance.

4. Locating Lug

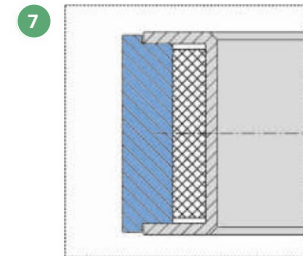
Two flange locating holes for sizes up to 12" and four flange locating holes from 14" to 24" ensure easy alignment of valve during installation. They meet ASME CL 125/150 or other international drilling standards.

5. Disc-Stem

One-piece disc-stem in high strength design, available in options such as stainless steel (thin profile, with polished edge and hubs) and PTFE/PFA /UHMWPE (minimum 3mm thick) encapsulated one piece disc-stem with the covering extending to the stem sealing area.

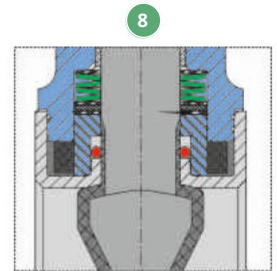
6. Seat

Precision machined PTFE / PFA /UHMWPE (minimum 3mm thick) seat provides maximum resistance to the permeation of the application media. The wide sealing surface guarantees a leak free sealing and serves as flange gaskets.



7. Seat Energizer

A resilient seat energizer extends completely around the seat, including the disc hub area. This provides uniform pressure onto the circumference of the disc ensuring a bubble tight shut-off in all operating conditions. The energizer material can be Silicone, Viton (FKM) or EPDM.



8. Live Loaded Stem Seal System

The live loaded stem seal system is uniformly loaded by a set of Belleville springs on the upper and lower stem. This system maintains an active sealing force on the disc hub which remains tight under the most extreme cyclic conditions.

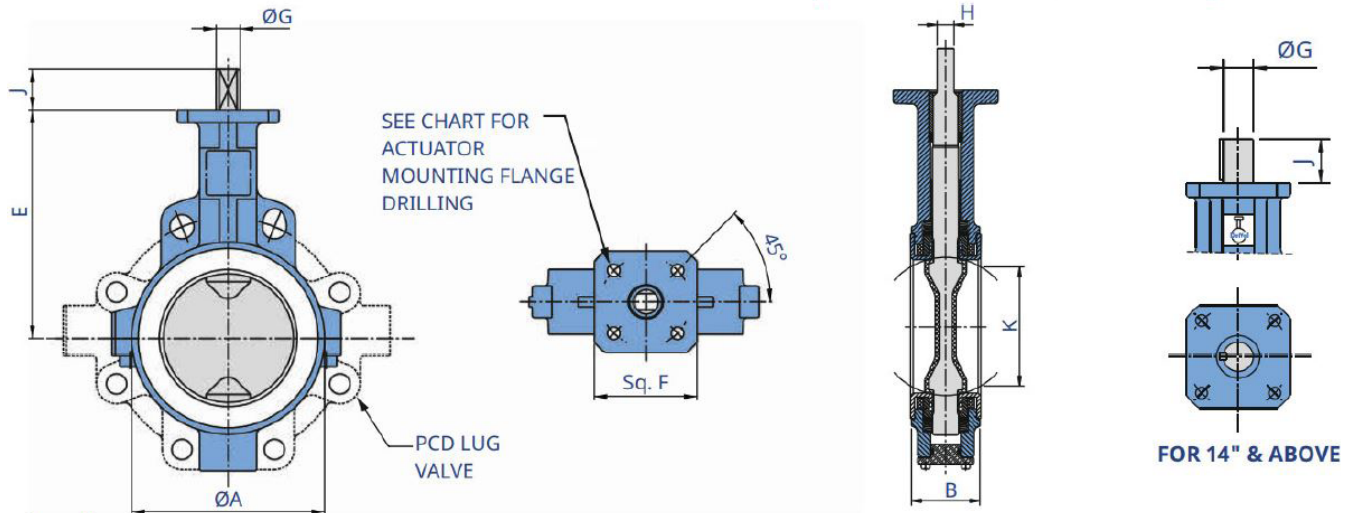
9. Bushing

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

10. Upper Stem Seal

Bi-directional 'U' cup stem seal.

DIMENSIONS AND WEIGHTS (WAFER/ LUG)



Dimensions (mm)

Valve Size		$\varnothing A$	B	E	Sq. F	Top Flange Drilling			$\varnothing G$	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 42)	Lug (Series 43)
2	50	91	43	140	80	70	4	10	14.0	10	32	-	33.5	120.7	4	½-11	3.1	4.1
2½	65	106	46	152	80	70	4	10	14.0	10	32	-	52.1	139.7	4	½-11	3.5	4.7
3	80	122	46	160	80	70	4	10	14.0	10	32	-	68.5	152.4	4	½-11	4.2	5.0
4	100	152	52	180	80	70	4	10	19.0	13	32	-	91.7	190.5	8	½-11	6.0	9.0
5	125	176	56	192	100	70/102	4	10/12	22.0	16	32	-	117.3	215.9	8	¾-10	8.2	13.0
6	150	205	56	205	100	70/102	4	10/12	22.0	16	32	-	139.7	241.3	8	¾-10	10.8	16.3
8	200	264	60	241	120	102/125	4	12/14	24.0	19	32	-	180.6	298.5	8	¾-10	17.6	29.8
10	250	315	68	273	120	102/125	4	12/14	30.0	22	51	-	236.4	362.0	12	¾-9	27.4	38.4
12	300	370	78	311	120	125	4	14	35.0	24	51	-	382.4	431.8	12	¾-9	35.6	58.0
14	350	415	78	346	120	125	4	14	35.0	-	51	10.00x10.00	328.3	476.2	12	1-8	54.00	55.7
16	400	472	102	375	120	125	4	14	35.0	-	51	10.00x10.00	375.8	539.7	16	1-8	59.20	83.6
18	450	525	114	406	170	165	4	21	50.0	-	62	10.00x12.00	421.4	577.8	16	1½-7	88.20	108.6
20	500	580	127	438	170	165	4	21	50.0	-	62	10.00x12.00	472.6	635.0	20	1½-7	107.40	139.2
24	600	692	154	495	φ210	165	4	21	63.5	-	102	15.88x15.88	572.7	749.3	20	1½-7	175.00	216.4

Dimensions (Inch)

Valve Size		$\varnothing A$	B	E	Sq. F	Top Flange Drilling			$\varnothing G$	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 42)	Lug (Series 43)
2	50	3.58	1.69	5.51	3.15	2.76	4	0.39	0.55	0.39	1.25	-	1.32	4.75	4	½-11	6.83	9.04
2½	65	4.17	1.81	5.98	3.15	2.76	4	0.39	0.55	0.39	1.25	-	2.05	5.50	4	½-11	7.72	10.36
3	80	4.80	1.81	6.30	3.15	2.76	4	0.39	0.55	0.39	1.25	-	2.70	6.00	4	½-11	9.25	11.00
4	100	5.98	2.06	7.09	3.15	2.76	4	0.39	0.75	0.51	1.25	-	3.61	7.50	8	½-11	13.22	19.80
5	125	6.93	2.19	7.56	4.93	2.76/4.01	4	0.39/0.47	0.87	0.63	1.25	-	4.62	8.50	8	¾-10	18.08	28.66
6	150	8.07	2.19	8.07	4.93	2.76/4.01	4	0.39/0.47	0.87	0.63	1.25	-	5.50	9.50	8	¾-10	23.80	35.86
8	200	10.39	2.38	9.49	4.72	4.01/4.92	4	0.47/0.55	0.94	0.75	1.25	-	7.39	11.75	8	¾-10	38.90	65.69
10	250	12.40	2.69	10.75	4.72	4.01/4.92	4	0.47/0.55	1.18	0.87	2.00	-	9.31	14.25	12	¾-9	59.52	84.48
12	300	14.57	3.06	12.24	4.72	4.92	4	0.55	1.38	0.94	2.00	-	11.12	17.00	12	¾-9	78.47	127.60
14	350	16.34	3.06	13.62	4.72	4.92	4	0.55	1.38	-	2.00	0.39x0.39	12.92	18.75	12	1-8	119.04	122.80
16	400	18.58	4.00	14.76	4.72	4.92	4	0.55	1.38	-	2.00	0.39x0.39	14.80	21.25	16	1-8	130.51	184.31
18	450	20.67	4.50	15.98	6.70	6.50	4	0.83	1.97	-	2.50	0.39x0.47	16.59	22.75	16	1½-7	194.45	239.42
20	500	22.83	5.00	17.24	6.70	6.50	4	0.83	1.97	-	2.50	0.39x0.47	18.61	25.00	20	1½-7	236.78	306.88
24	600	27.24	6.06	19.49	φ8.27	6.50	4	0.83	2.50	-	4.00	0.62x0.62	22.55	29.50	20	1½-7	385.81	477.08

*Face to face dimension "B" conforms to API 609 Category A/BS EN 558-1 Series 20/ISO 5752 Series 20/MS S 5P67/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	24	29	47	61	80	109	201	322	485	635	873	1230	2446

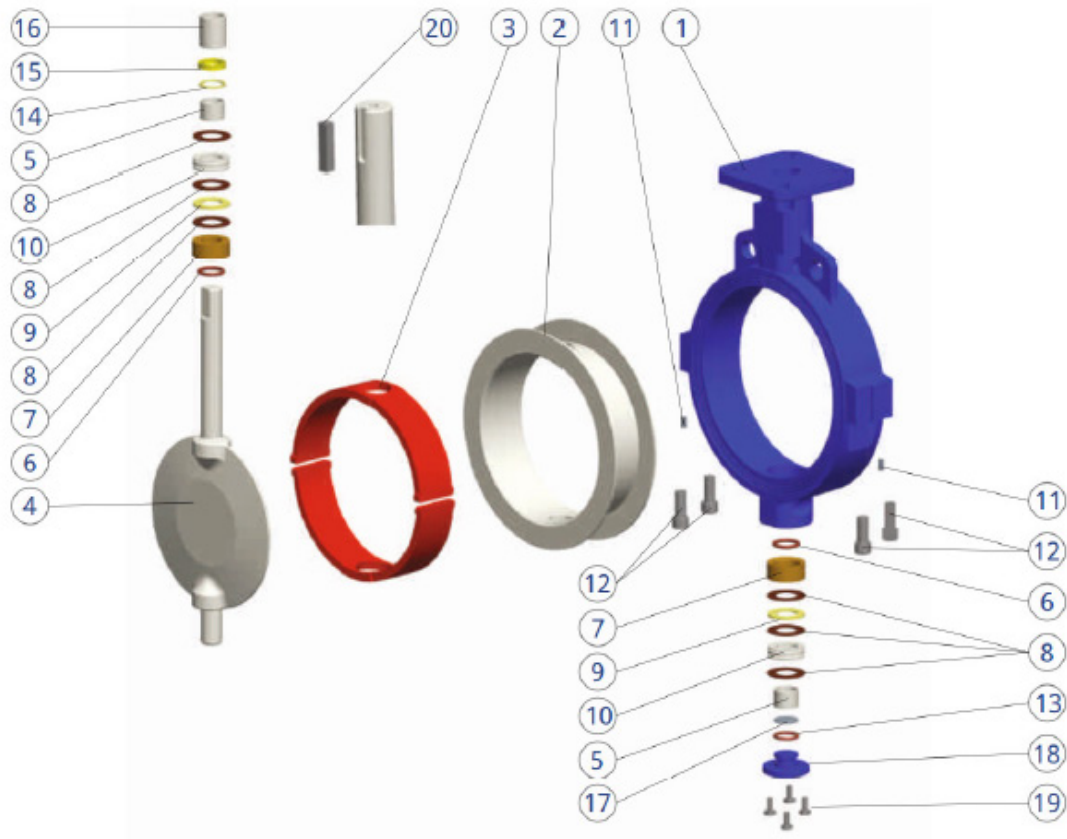
Torque Data (Lbf-Inch)

Valve Size	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
Pressure ΔP , PSI	150	212	257	416	540	708	965	1779	2850	4292	5620	7726	10886	21647

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.
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STANDARD MATERIALS OF CONSTRUCTION

Wafer and Lug



Part List

Item	Description	*Standard Material	
		DI/CS	SS
1	Body	ASTM A395 60-40-18 ASTM A216 WCB	ASTM A351 CF8M/CF8
**2	Seat		PTFE PFA UHMWPE
**3	Seat Energizer		Viton (FKM) Silicone EPDM
4	Disc+ Stem	ASTM A351 CF8M/CF8 (One-piece investment cast disc-stem 2" to 12") ASTM A995 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") **PTFE/PFA/UHMWPE moulded over CB7CU-1(17-4 PH) (one-piece investment cast disc-stem 2" to 12") **PTFE/PFA/UHMWPE moulded over SS304 + 17-4 PH (one-piece disc-stem 14" to 24")	
**5	Sleeve Bearing		Bear-G
**6	'O' Ring	Viton (FKM)/Silicone/EPDM	
7	Pressure Ring	ASTM A479 SS304	
**8	Stem Gasket	Aramid Fibres AF159	
**9	Rubber Washer	Viton-A (FKM)/Silicone/EPDM	
**10	Belleville Spring	ASTM A693 Type 631 17-7 PH	
11	Dowel Pin	BS 970 ENS	
12	Socket Head Cap Screw	ISO 3506 A2-70	
**13	'O' Ring	NBR (BUNA-N)	
**14	Pack Support	Polyacetal (Delrin)	
**15	U-Cup Sea	NBR (BUNA-N)	
**16	Stem Bushing	Polyacetal (Delrin)	
**17	Thrust Bearing (24")	Phosphor Bronze BS 1400 PB4	
18	Bottom Plug/Plate	ASTM A479 SS410 Carbon steel IS 2062 Gr. B	ASTM A240 SS304/SS3
19	Hex Head Bolt	ISO 3506 A2-70	
20	Key (14" to 24")	BS 970 ENS	

**Recommended spares.

*Other materials may be available on request.

DI = Ductile Iron, CS = Carbon Steel, SS = Stainless Steel

Standards and Specifications

Delval Series 42/43 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: Split Body

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

Size Range: 2" to 24"

Seat Temperature Limits

Seat Type	Energizer	*Temperature Limits	
		Lower Limit	Upper Limit
PTFE	Silicone	-58°F(-50°C)	392°F(200°C)
	Viton® / FKM	0°F(-18°C)	392°F(200°C)
	EPDM	-20°F(-50°C)	302°F(150°C)
PFA	Silicone	-58°F(-50°C)	392°F(200°C)
	Viton® / FKM	0°F(-18°C)	392°F(200°C)
	EPDM	-20°F(-50°C)	302°F(150°C)
UHMWPE	Silicone	-58°F(-50°C)	185°F(85°C)
	Viton® / FKM	0°F(-18°C)	185°F(85°C)
	EPDM	-20°F(-50°C)	185°F(85°C)

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*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

PTFE Advantages and Applications:

PTFE is a superior material for use in highly corrosive applications. It is inert to most chemicals at high temperatures and pressures. It also has a low coefficient of friction. PTFE is ideal for use in the chemical industry, in processes with hazardous fluids, in the food and beverage industry, pharmaceutical facilities, electronics production plants and other industries where the media must not come in contact with any organic or metallic materials.

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 deadend pressure ratings are equal to the values stated above.

Operator Information



Valves up to size 6" 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

CERTIFICATES



Manufacturing & Sales International DelVal Flow Controls Pvt. Ltd.

Gat No: 25, Kavathe
Post-Javale, Tal. Khandala
Dist. Satara Pin-412801 | India
salesindia@delvalflow.com

Manufacturing & Sales Americas DelVal Flow Controls USA

6535 Industrial Drive, Suite 103
Geismar, LA 70734 | USA
T: +1 833-DELVAL1
F: +1 225-744-4328
sales@delvalflow.com

Middle East DelVal Flow Controls Middle East Company Ltd.

Factory No. 103, 3rd Industrial
Area, Dammam | Saudi Arabia
T: +966 13 864 2040
salesmea@delvalflow.com

Australia DelVal Flow Controls (ANZ) Pty Ltd.

Unit 6, 561 Great Western
Highway, Werrington,
NSW 2747 | Australia
T: +61 (0)2 97431271
delvalanz@delvalflow.com

www.delvalflow.com
1-833-DELVAL1

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