

V101 (Wafer) / V102 (Lug) Series Proval Soft Seat Butterfly Valves

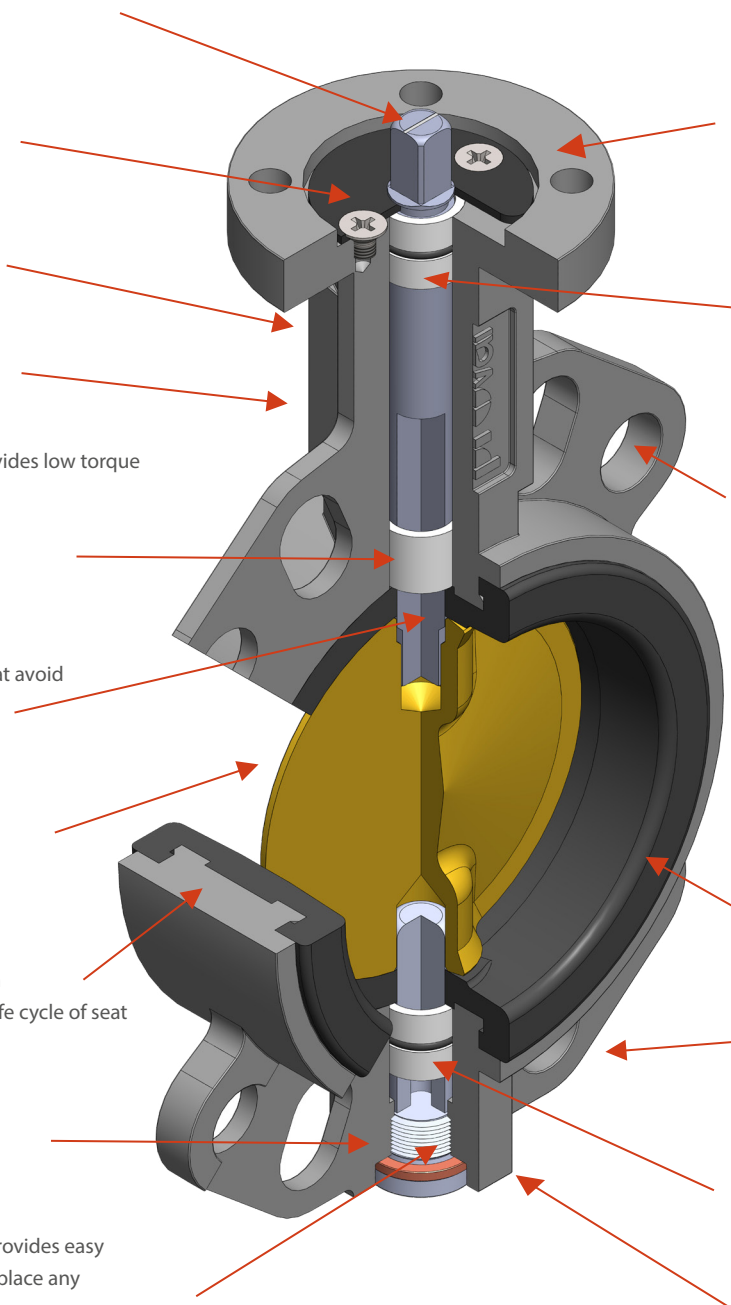
Butterfly valves, since their invention in 1960's became one of the most demanded flow control elements in industrial and domestic flow control applications due to their light weight, low pressure loss, 100% leak free operation, easy and economic automation capabilities.

Beside the soft seat applications, development of PTFE seats and metal seats of double eccentric high performance valves today, butterfly valves are used from basic water applications to industrial applications and highly corrosive severe service applications.

Butterfly valves have wide range of applications in water, sea water, steel, food, paper, chemical, petrochemical and all HVAC and general industrial flow process controls.

Superiorities of New Design Proval V101 Butterfly Valves

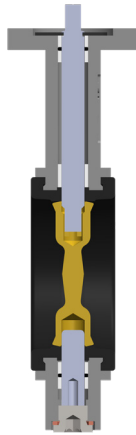
- Flow indication marked, ISO standard valve rotating shaft
- Easy removable, anti blow-out plate
- Tag plate with all valve material and usage data including valve serial number
- Long neck for easy insulation
- PTFE / Bronzee bushing provides low torque and longer seat life by centering the disc and avoids leakage from stem due to non-centric rotation
- Integral o-ring system on seat avoid the leakage from stem
- 2 Pc shaft construction disc provides higher flow rates (kv) and lower pressure loss in pipeline
- Special groove on body provides less torque figures in operation and improves the life cycle of seat
- O-ring to ensure 100% leak free operation
- Easy removable lower cap provides easy dismantling of the valve to replace any defected parts on maintenance
- According to ISO 5211 direct mount ISO pad
- Upper stem bushing
- EN1092 PN10, PN16 ANSI 125/150 and BS10 Table-D, Table-E suitable flange holes
- Wide range of seat solutions for all industrial applications
- 4 flange locating holes for easy alignment of valve during installation
- PTFE / Bronzee bushing provides low torque and longer seat life by centering the disc and avoids leakage from stem due to non-centric rotation
- Heat No for easy tracing and QC



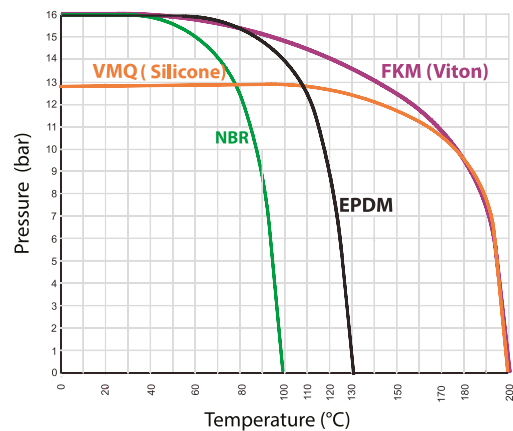
V101 (Wafer) / V102 (Lug) Series DN25-600 Butterfly Valves Material List

General Design and Manufacturing Standards

Design Standard	EN 558 Series 20 (DIN3202-K1)
	ISO5752 Series 20
	API609 Table 1
Flange Drilling	BS1555 Series 4
	EN1092 PN 6/10/16
Mounting Flange	ANSI B 16.5 Class 150
	ISO5211
Testing Standard	EN12266-1/2
	ISO5208, Category 3
	API 598 Table 5
	ANSI B16-104, Class VI
Pressure Rating	Max 16 bar
Differential Pressure	Δp 16 bar
Vacuum	Max 0.2 bar absolute pressure



Pressure - Temperature Diagram



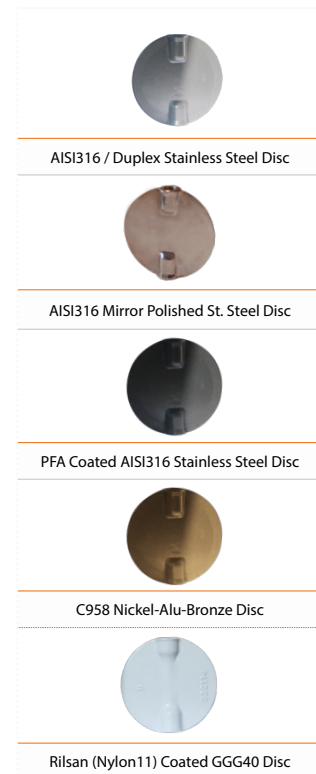
V101 / V102 / V103 Series Butterfly Valves Flow Coefficient Kv Values

Kv values given in the table below, show the volume of water in m³/h at room temperature that will pass through a given valve opening with a pressure drop of Δp 1 bar.

Butterfly Valves offer flow characteristics close to linear at angles of opening between 30° and 90°.

Recommended maximum velocity of flow for Butterfly Valves is 1.5 m/s.

DN	Disc Angle-Openness (%)								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
50	0,1	4,3	10	21	39	55	78	108	116
65	0,2	6,9	17	32	56	85	125	176	190
80	0,3	10	19	34	61	100	158	238	261
100	0,4	15	31	68	120	199	315	472	519
125	0,7	25	53	115	205	339	536	804	884
150	1,7	39	82	177	317	523	828	1243	1365
200	2,6	77	162	353	629	1039	1646	2468	2713
250	3,7	131	276	600	1070	1771	2802	4203	4619
300	4,3	202	428	927	1653	2735	4329	6494	7136
350	5,2	292	618	1339	2388	3951	6254	9380	10308
400	6,9	401	850	1842	3284	5434	8599	12899	14176
450	9,5	532	1126	2441	4349	7197	11390	17085	18774
500	12	684	1448	3138	5592	9253	14645	21967	24140
600	19	1057	2238	4848	8640	14296	22626	33939	37295
700	31	1568	3148	5740	8650	12930	19695	30186	42817
800	44	2064	4144	7557	11927	17830	27156	41621	59036
900	52	2613	5244	9563	15137	22564	34367	52674	74714
1000	73	3618	7262	13240	20897	31283	47648	73028	103583
1200	153	7598	15195	20020	43886	65695	100060	10146	217525



V101 Series Wafer Type DN25-300 Butterfly Valves

- Available in sizes from DN25 to DN300.
- Tongue and groove design, field-replaceable resilient rubber seats for a wide variety of applications and media.
- Bi-directional bubble tight shut off at full rated pressure of 16 bar(g).
- Flange locating holes drilled to meet PN10/16, ANSI Class 150 and other world drilling standards.



Dimensions	Lever / Gearbox Dimensions	Part List

Material List

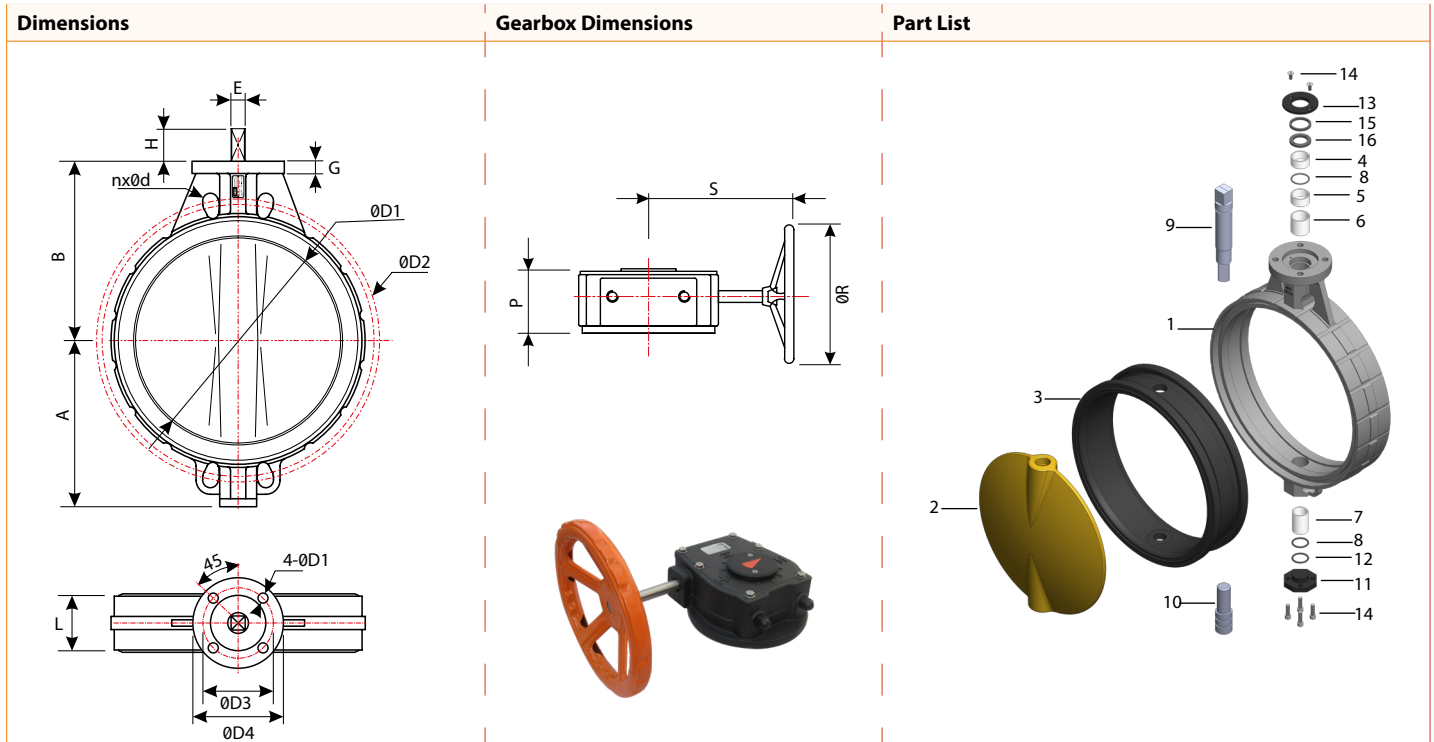
No	Part Name	Material	No	Part Name	Material	No	Part Name	Material	
1	Body	Epoxy Coated GG25 Cast Iron	3	Seat	EPDM (-30° C ~ +130° C)	10	Lower Stem	AISI420 Stainless Steel	
		Epoxy Coated GGG40 Ductile Iron			NBR (-20° C ~ +100° C)			AISI316 Stainless Steel	
		A216 WCB			Silicone (-30° C ~ +200° C)		11	Plug	Carbon Steel
		AISI316 Stainless Steel			Viton (-15° C ~ +200° C)		12	Sealing Ring	Brass
2	Disc	AISI316 Stainless Steel	4/5/6/7/8	Bushing	Bronze / PTFE	13			Retainer Plate
		Rilsan Coated (Nylon11) GGG40 Ductile Iron	9	Upper Stem	AISI420 Stainless Steel	14	Screw	Stainless Steel	
		Alu-Bronze			AISI316 Stainless Steel	15/16	O-Ring	NBR/Viton	
		HALAR / ETFE Lined AISI316 Stainless Steel							
	Super Duplex								

Dimensions (mm)

Size (DN)	A	B	C	ØD1	ØD2			ØD3 ISO5211	ØD4	4xØd	4xØd1	L	E	G	M	N	S	P	ØR	Net Unit Weight (Kg)		
					PN10	PN16	#150													Free Shaft	Lever Op.	Gearbox Op.
25	41	92	12	31,5	85	85	79,25	42	55	14	6	33	9	13	180	28	84	54	140	1,0	1,3	3,0
32/40	45	98	12	38	110	110	98,55	42	55	18	6	33	9	13	180	28	84	54	140	1,0	1,3	3,0
50	63	126	16	51,2	125	125	120,6	50	65	18	7	43	9	13	180	33	84	54	140	2,1	2,3	4,1
65	69	133	16	65,6	145	145	139,7	50	65	18	7	46	9	13	180	33	84	54	140	2,5	2,8	4,5
80	86	152	16	80	160	160	152,4	50	65	18	7	46	9	13	180	33	84	54	140	3,0	3,3	5,0
100	106	170	19	102,2	180	180	190,5	70	90	18	10	52	11	14	284	33	84	54	160	4,8	5,2	6,8
125	115	181	25	125,6	210	210	215,9	70	90	18	10	56	14	14	284	33	124	67	160	6,6	7,0	9,9
150	128	196	25	150,6	240	240	241,3	70	90	22	10	56	14	14	284	33	124	67	160	7,5	7,9	10,8
200	160	238	30	200,4	295	295	298,4	102	125	22	12	60	17	14	350	45	124	67	250	13,8	14,9	18,4
250	190	258	39	249	350	355	361,9	102	125	26	12	68	22	14	350	45	157	73	300	21,2	22,3	27,7
300	235	300	39	300	400	410	431,8	102	125	26	12	78	22	20	350	45	157	73	300	31,5	33,0	38,0

V101 Series Wafer Type DN350-600 Butterfly Valves

- Available in sizes from DN350 to DN600.
- Tongue and groove design, field-replaceable resilient rubber seats for a wide variety of applications and media.
- Bi-directional bubble tight shut off at full rated pressure of 16 bar(g).
- Flange locating holes drilled to meet PN10/16, ANSI Class 150 and other world drilling standards.



Material List

No	Part Name	Material	No	Part Name	Material	No	Part Name	Material		
1	Body	Epoxy Coated GGG40 Ductile Iron	3	Seat	EPDM (-30° C ~ +130° C)	10	Lower Stem	AISI420 Stainless Steel		
		A216 WCB			NBR (-20° C ~ +100° C)			AISI316 Stainless Steel		
		AISI316 Stainless Steel			Silicone (-30° C ~ +200° C)			11	Plug	Carbon Steel
2	Disc	AISI316 Stainless Steel	9	Upper Stem	Viton (-15° C ~ +200° C)	12	Sealing Ring	Brass		
		Rilsan Coated (Nylon11) GGG40 Ductile Iron			SBR (-20° C ~ +80° C)			13	Retainer Plate	Carbon Steel
		Alu-Bronze			AISI420 Stainless Steel			14	Screw	Stainless Steel
		HALAR / ETFE Lined AISI316 Stainless Steel			AISI316 Stainless Steel			15/16	O-Ring	NBR/Viton
		Super Duplex								

Dimensions(mm)

DN	A	B	H	E	G	L	P	S	ØR	ØD2			ØD4	ISO5211 (ØD3)	4-ØD1	nxØd			Net Unit Weight (kg)	
										PN10	PN16	#150				PN10	PN16	#150	Free Shaft	Gearbox Op.
350	260	310	40	27	22	78	97	201	300	460	470	476,3	150	125	4-14	16x20	16x24	12x1 1/8 UNC	42,5	55,5
400	315	340	40	27	23	102	105	230	300	515	525	539,8	175	140	4-18	16x24	16x27	16x1 1/8 UNC	53	72,5
450	330	375	40	36	25	114	110	230	400	565	585	577,9	175	140	4-18	20x24	20x27	16x1 1/4 UNC	88	112,0
500	348	425	40	36	27	127	110	230	400	620	650	635	175	140	4-18	20x24	20x30	20x1 1/4 UNC	98	122,0
600	438	505	50	46	27	154	124	301	400	725	770	749,3	210	165	4-23	20x27	20x33	20x1 3/8 UNC	138	184,0

V102 Series Lug Type DN50-300 Butterfly Valves

- Available in sizes from DN50 to DN300 .
- Tongue and groove design, field-replaceable resilient rubber seats for a wide variety of applications and media.
- Bi-directional bubble tight shut off at full rated pressure of 16 bar(g).
- Drilled and tapped to meet PN10, PN16, ANSI Class 150 or other world drilling standards.



Dimensions	Lever / Gearbox Dimensions	Part List

Material List

No	Part Name	Material	No	Part Name	Material	No	Part Name	Material
1	Body	Epoxy Coated GG25 Cast Iron	3	Seat	EPDM (-30° C ~ +130° C)	10	Lower Stem	AISI420 Stainless Steel
		Epoxy Coated GGG40 Ductile Iron			NBR (-20° C ~ +100° C)			AISI316 Stainless Steel
		A216 WCB			Silicone (-30° C ~ +200° C)			Carbon Steel
		AISI316 Stainless Steel			Viton (-15° C ~ +200° C)			Brass
2	Disc	AISI316 Stainless Steel	4/5/6/7/8	Bushing	Bronze / PTFE	13	Retainer Plate	Carbon Steel
		Rilsan Coated (Nylon11) GGG40 Ductile Iron	9	Upper Stem	AISI420 Stainless Steel	14	Screw	Stainless Steel
		Alu-Bronze			AISI316 Stainless Steel	15/16	O-Ring	NBR/Viton
		HALAR / ETFE Lined AISI316 Stainless Steel						
Super Duplex								

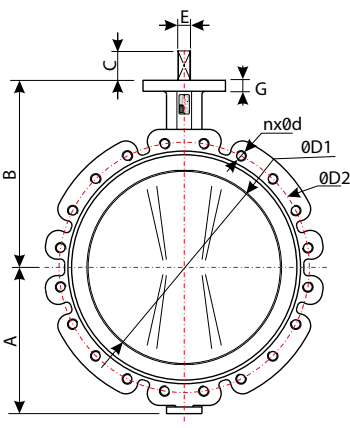
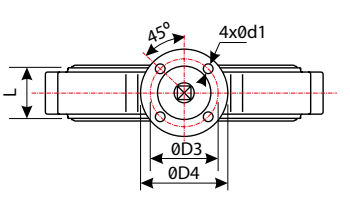
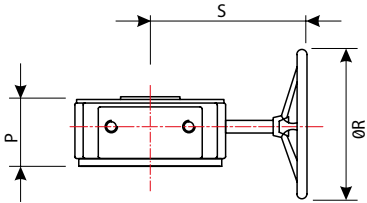

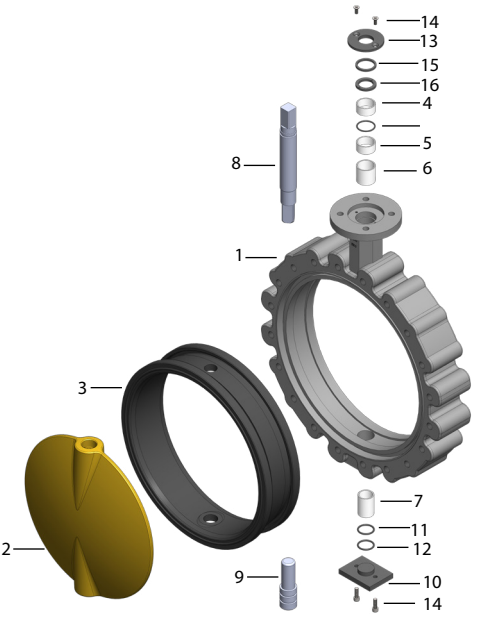
Dimensions(mm)

Size (DN)	ØD1	ØD2			ISO5211	ØD4	nxØM			4xØd1	A	B	C	L	E	G	M	N	S	P	ØR	Net Unit Weight (Kg)		
		PN10	PN16	#150			PN10	PN16	#150													Free Shaft	Lever Op.	Gearbox Op.
50	51,2	125	125	120,6	50	65	4xM16	4xM16	4x5/8"UNC	7	63	126	16	43	9	13	180	33	84	54	140	3,8	4,1	5,8
65	65,6	145	145	139,7	50	65	4xM16	4xM16	4x5/8"UNC	7	69	133	16	46	9	13	180	33	84	54	140	4,3	4,6	6,3
80	80	160	160	152,4	50	65	8xM16	8xM16	4x5/8"UNC	7	86	152	16	46	9	13	180	33	84	54	140	4,8	5,1	6,8
100	102,2	180	180	190,5	70	90	8xM16	8xM16	8x5/8"UNC	10	106	170	19	52	11	14	284	33	84	54	160	7,8	8,2	9,8
125	125,6	210	210	215,9	70	90	8xM16	8xM16	8x3/4"UNC	10	115	181	25	56	14	14	284	33	124	67	160	10,3	10,7	13,6
150	150,6	240	240	241,3	70	90	8xM20	8xM20	8x3/4"UNC	10	128	196	25	56	14	14	284	33	124	67	160	12,3	12,7	15,6
200	200,4	295	295	298,4	102	125	8xM20	12xM20	8x3/4"UNC	12	160	238	30	60	17	14	350	45	124	67	250	17,1	18,2	21,7
250	249	350	355	361,9	102	125	12xM20	12xM24	12x7/8"UNC	12	190	258	39	68	22	14	350	45	157	73	300	29,1	30,2	35,6
300	299,2	400	410	431,8	102	125	12xM20	12x2M4	12x7/8"UNC	12	235	300	39	78	22	20	350	45	157	73	300	49,8	50,9	56,3

V102 Series Lug Type DN350-600 Butterfly Valves

- Available in sizes from DN350 to DN600.
- Tongue and groove design, field-replaceable resilient rubber seats for a wide variety of applications and media.
- Bi-directional bubble tight shut off at full rated pressure of 16 bar(g).
- Drilled and tapped to meet PN10/16, ANSI Class 150 and other world drilling standards.



Dimensions	Gearbox Dimensions	Part List
 	 	

Material List

No	Part Name	Material	No	Part Name	Material	No	Part Name	Material
1	Body	Epoxy Coated GGG40 Ductile Iron	3	Seat	EPDM (-30° C ~ +130° C)	9	Lower Stem	AISI420 Stainless Steel
		A216 WCB			NBR (-20° C ~ +100° C)			AISI316 Stainless Steel
		AISI316 Stainless Steel			Silicone (-30° C ~ +200° C)			Carbon Steel
2	Disc	AISI316 Stainless Steel	4/5/6/7	Bushing	Viton (-15° C ~ +200° C)	11/12	Sealing Ring	Brass
		Rilsan Coated (Nylon11) GGG40 Ductile Iron			Bronze / PTFE			13
		Alu-Bronze	AISI420 Stainless Steel	14	Screw	Stainless Steel		
		HALAR / ETFE Lined AISI316 Stainless Steel	AISI316 Stainless Steel	15/16	O-Ring	NBR/Viton		
		Super Duplex						

Dimensions(mm)

DN	A	B	C	E	G	L	P	S	ØR	ØD2			ØD4	ISO5211 (ØD3)	4xØd1	nxM			Net Unit Weight (kg)	
										PN10	PN16	#150				PN10	PN16	#150	V102	Gearbox Op.
350	260	310	40	27	20	78	97	201	300	460	470	476,3	150	125	4x14	16xM20	16xM24	12 x 1" UNC	72	85,0
400	315	340	40	27	20	102	105	230	300	515	525	539,8	175	140	4x18	16xM24	16xM27	16 x 1" UNC	90	109,5
450	330	375	40	36	20	114	110	230	400	565	585	577,9	175	140	4x18	20xM24	20xM27	16 x 1.1/8" UNC	111	135,0
500	348	425	40	36	22	127	110	230	400	620	650	635	175	140	4x18	20xM24	20xM30	20 x 1.1/8" UNC	123	147,0
600	438	505	50	46	25	154	124	301	400	725	770	749,3	210	165	4x23	20xM27	20xM33	20 x 1.1/4" UNC	178	224,0

V101/V102 Series Butterfly Valves Torque Values (Nm)

DN	Torque (Nm)		DN	Torque (Nm)	
	PN10	PN16		PN10	PN16
50	10	12	350	550	625
65	12	15	400	755	846
80	26	40	450	1012	1131
100	24	44	500	1350	1431
125	80	85	600	2111	2301
150	60	90	700	3272	3599
200	130	140	800	4308	4739
250	300	350	900	5257	5783
300	310	350	1000	8920	9819
			1200	12555	13811



Electric Actuated Butterfly Valves



Silicone Seal Actuated Butterfly Valves

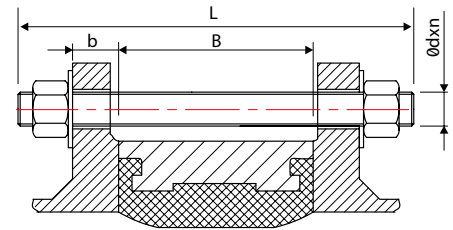


ATEX Approved Biogas Butterfly Valves

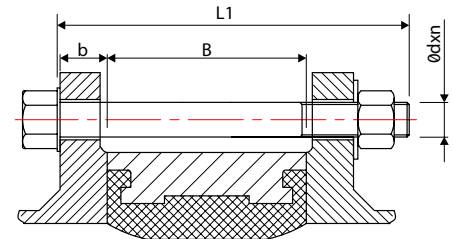


Wafer Type Butterfly Valves Flange Bolting Dimensions (mm)

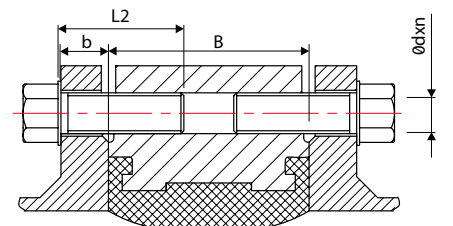
Size (DN)	B	PN10					PN16					ANSI150				
		b	L	L1	d	n	b	L	L1	d	n	b	L	L1	d	n
25	28	16	100	80	M12	4	16	100	80	M12	4	15	110	90	1/2"13 UNC	4
32	33	16	110	90	M16	4	16	110	90	M16	4	16	110	90	1/2"13 UNC	4
40	33	16	130	90	M16	4	16	130	90	M16	4	18	120	100	1/2"13 UNC	4
50	43	18	130	110	M16	4	18	130	110	M16	4	19	140	110	5/8"11 UNC	4
65	46	18	140	110	M16	4	18	140	110	M16	4	22	140	120	5/8"11 UNC	4
80	52	20	150	120	M16	8	20	140	120	M16	8	24	160	130	5/8"11 UNC	4
100	56	20	150	120	M16	8	20	150	120	M16	8	24	160	130	5/8"11 UNC	8
125	56	22	160	130	M16	8	22	160	130	M16	8	25	170	140	3/4"10 UNC	8
150	56	22	160	130	M20	8	22	160	130	M20	8	25	170	140	3/4"10 UNC	8
200	60	24	170	140	M20	8	24	170	140	M20	12	29	190	160	3/4"10 UNC	8
250	68	26	180	154	M20	12	26	190	160	M24	12	30	200	170	7/8"9 UNC	12
300	78	26	200	170	M20	12	28	210	180	M24	12	32	220	190	7/8"9 UNC	12
350	78	26	200	170	M20	16	30	210	180	M24	16	35	240	200	1"8 UNC	12
400	102	26	230	200	M24	16	32	250	210	M24	16	37	240	220	1"8 UNC	16
450	114	28	250	210	M24	20	34	260	230	M27	20	40	290	250	1 1/8"7 UNC	16
500	127	28	260	230	M24	20	34	280	240	M30	20	43	310	270	1 1/8"7 UNC	20
600	154	28	300	260	M27	20	36	320	280	M33	20	48	360	310	1 1/4"7 UNC	20



Installation using a stud bolt, two hexagonal nuts and washers



Installation using Cap screws and nuts



Installation using cap screws

Lug Type Butterfly Valves Flange Bolting Dimensions (mm)

Size(DN)	B	PN10				PN16				ANSI150			
		b	L2	d	n	b	L2	d	n	b	L2	d	n
50	43	18	40	M16	4	18	40	M16	4	19	45	5/8"11 UNC	4
65	46	18	40	M16	4	18	40	M16	4	22	45	5/8"11 UNC	4
80	52	20	40	M16	8	20	40	M16	8	24	45	5/8"11 UNC	4
100	56	20	45	M16	8	20	45	M16	8	24	50	5/8"11 UNC	8
125	56	22	50	M16	8	22	50	M16	8	25	50	3/4"10 UNC	8
150	56	22	50	M20	8	22	50	M20	8	25	50	3/4"10 UNC	8
200	60	24	55	M20	8	24	55	M20	12	29	60	3/4"10 UNC	8
250	68	26	60	M20	12	26	60	M24	12	30	65	7/8"9 UNC	12
300	78	26	60	M20	12	28	65	M24	12	32	70	7/8"9 UNC	12
350	78	26	60	M20	16	30	65	M24	16	35	70	1"8 UNC	12
400	102	26	65	M24	16	32	70	M24	16	37	75	1"8 UNC	16
450	114	28	65	M24	20	34	70	M27	20	40	80	1 1/8"7 UNC	16
500	127	28	65	M24	20	34	70	M30	20	43	80	1 1/8"7 UNC	20
600	154	28	70	M27	20	36	75	M33	20	48	80	1 1/4"7 UNC	20



Supervisory Switch (Gear Box) Butterfly Valve



Supervisory Switch Manual Butterfly Valve