

Resilient seated butterfly valves DN40-DN800 wafer and lugged versions, optimized for the food and beverage industry.

Features

- Top bushing absorbs actuator side thrust loads.
- Dirtscraper prevents moisture penetrating into the shaft area.
- Actuator flange acc. ISO 5211.
- High solid, glossy, silicone free, paint system ensuring excellent corrosion resistance.
- Body locating holes ease installation and centering between the flanges.
- Sealed body splits prevent moistures from penetrating behind the seat (up to DN300).
- Rounded polished disc edge gives full concentric sealing, lower torques, longer seat life and bubble-tight shut-off.
- The seat is field replaceable and fully isolates the body and stem from the flow.
- Primary stem sealing exceeds the pressure rating of the valve and prevents leakage through shaft area to atmosphere.
- A secondary shaft sealing provides back-up safety.
- A molded-in O-ring in the seat for flange sealing eliminates the need for gaskets.
- The thin disc provides the very minimum obstruction to flow (up to DN300).
- Relief hole drains possible fluids from the top plate recess space (up to DN300).
- Wafer and lugged body design, acc. ISO 5752/5 short. (DIN 3202, Part 3/K1).
- All valves are conform Pressure Equipment Directive (97/23/EU) Module H.
- Available approvals: CE Marking, FDA.
- Special XP-EPDM seat for specific brewery applications such as hot and cold wort.



Technical data

Pressure (bar)	: 10
Temperature (°C)	: -30 +150
Sizes (mm)	: 40 - 800
Flange accommodation	: PN 10/16 ANSI 150

General Applications

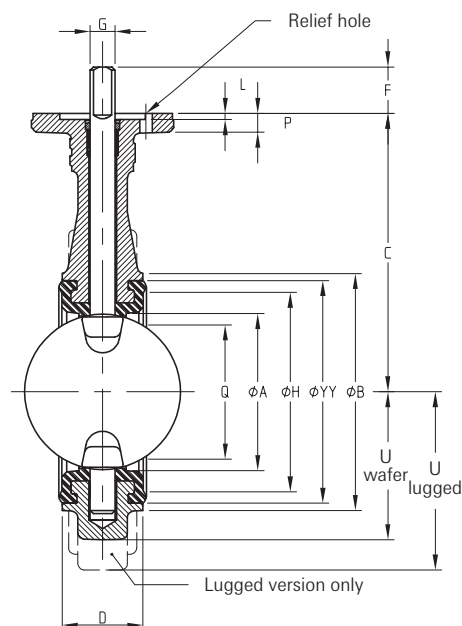
The disc and seat materials used in the BrewSeal are specifically suited for food and beverage applications including brew houses, pasteurization and filling area's.

Note

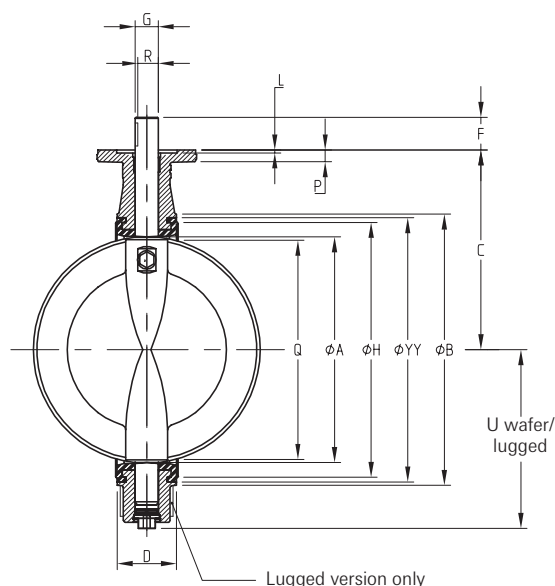
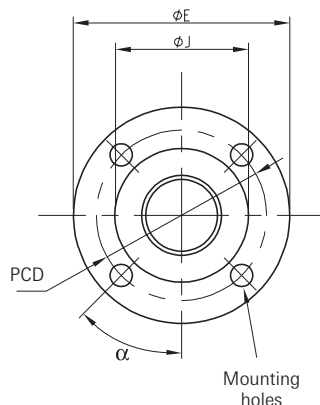
Valve in foreground shown with innovative composite handle and throttling plate.

BrewSeal butterfly valves

Wafer and lugged



Mounting holes acc. ISO 5211/1



Valve dimensions (mm)

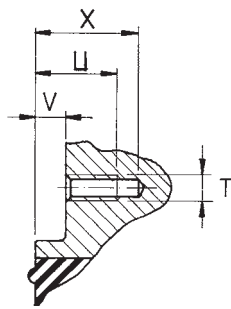
Shaft													Actuator flange acc. ISO 5211/1													Wafer		Lugged	
U				U				Key size					Hole				No.				mass		mass						
DN	A	B	C	Wafer	Lugged	D	H	Q	YY	F	G _{h9}	K ^{0.05}	R	width x height	Type	E	J	L	P	PCD	ø	holes	α	(kg)	(kg)				
40	40	78	130	56	68	33	49	24	64	25	12	8	-	-	F-05	65	35	4	9	50	6,6	4	45.0	1,5	2,7				
50	50	94	135	61	73	43	66	27	80	25	12	8	-	-	F-05	65	35	4	9	50	6,6	4	45.0	2,1	3,7				
65	62	109	150	76	80	46	78	43	93	30	16	11	-	-	F-07	90	55	4	12	70	9,0	4	45.0	3,2	5,0				
80	78	126	160	84	103	46	97	64	112	30	16	11	-	-	F-07	90	55	4	12	70	9,0	4	45.0	3,6	5,9				
100	99	156	180	97	117	52	129	87	144	30	16	11	-	-	F-07	90	55	4	12	70	9,0	4	45.0	5,2	8,3				
125	124	189	195	120	133	56	160	113	175	30	20	14	-	-	F-07	90	55	4	12	70	9,0	4	45.0	7,6	11,5				
150	151	214	210	132	144	56	181	141	196	30	20	14	-	-	F-07	90	55	4	12	70	9,0	4	45.0	8,5	13,0				
200	195	267	240	164	180	60	233	188	248	50	25	18	-	-	F-12	150	85	4	18	125	13,5	4	45.0	16,0	22,2				
250	245	321	275	200	220	68	290	237	305	50	30	22	-	-	F-12	150	85	4	18	125	13,5	4	45.0	23,5	33,5				
300	292	375	310	227	245	78	340	283	355	50	30	22	-	-	F-12	150	85	4	18	125	13,5	4	45.0	32,0	51,0				
350	325	413	325	274	274	78	378	319	398	70	35	-	30,0	10 x 8	F12	150	85	4	18	125	13,5	4	45.0	42	60				
400	380	470	360	312	312	102	435	369	455	70	40	-	35,0	12 x 8	F16	210	130	6	25	165	22.0	4	45.0	64	120				
450	434	530	395	348	348	114	495	422	515	70	40	-	35,0	12 x 8	F16	210	130	6	25	165	22.0	4	45.0	85	144				
500	486	584	430	385	385	127	549	472	569	70	50	-	44,5	14 x 9	F16	210	130	6	25	165	22.0	4	45.0	107	173				
600	585	685	500	456	456	154	650	569	670	70*	50*	-	44,5*	14 x 9*	F16	210	130	6	25	165	22.0	4	45.0	147	250				
700	685	795	570	518	518	165	755	669	775	100	70	-	62,5	20 x12	F25	300	200	6	30	254	17.5	8	22.5	247	321				
750	735	855	605	551	551	190	816	715	835	100	70	-	62,5	20 x12	F25	300	200	6	30	254	17.5	8	22.5	300	360				
800	785	900	640	583	583	190	860	766	880	100	70	-	62,5	20 x12	F25	300	200	6	30	254	17.5	8	22.5	330	425				

Notes

1. Flange accommodation must be specified when ordering.
2. Q is the disc chordal dimension at face of valve for disc clearance into pipe fitting or equipment.
3. Specify size, figure number, part name, material and flange accommodation when ordering spare parts.
4. Valve sizes shown are the DN100 and DN500.
5. Mass shown is for valve with a composite discstem about 3% up to 20% lower, depending on size and wafer- or lugged type.



DN350 - DN800 (wafer and lugged)

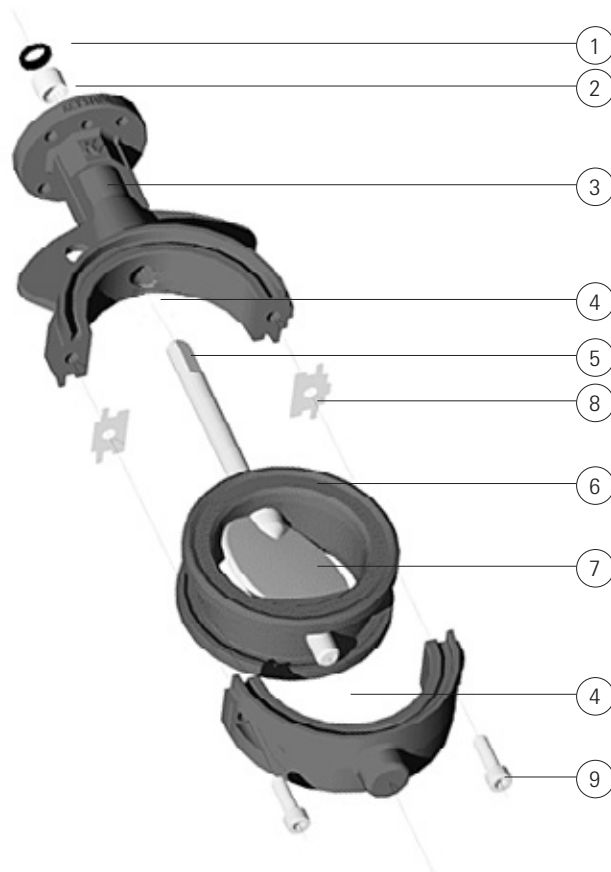


Dimensions of flange locating holes (in mm)

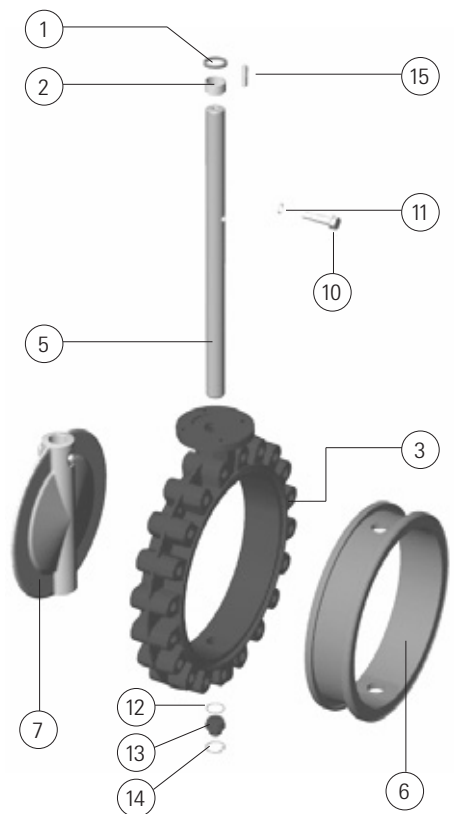
Size	PN 10				PN 16			
	T	U	V	X	T	U	V	X
700	M27				M33	55.5	22.5	62.5
750	M30				M33	63.0	30.0	70.0
800	M30				M36	61.0	25.0	70.0

Notes

1. T = thread type, U = full thread + V, X = max. bore depth.
2. All holes in lugged version are through threaded, except the holes closest to top and bottom shaft.



DN40 - DN300
(wafer version is shown)



DN350 - DN800
(lugged version is shown)

Part name

1. Dirtscraper	6. Disc	11. O-ring
2. Shaft bushing	7. Split seal	12. Plug
3. Body	8. Body screws	13. Circlip
4. Shaft	9. Disc screw	14. Key
5. Seat	10. O-ring	

Note

For other actuators and selection, please contact your local sales outlet.

Actuator selection

Actuator type	Figure	Remark	Suitable for
Handle	F419	Leverlock Composite leverlock	DN40 - DN150
Gear	F455	CM or WM	DN40 - DN800
Pneumatic	PremiAir	-	DN40 - DN800
Electric	EPI-2	-	DN40 - DN600

BrewSeal butterfly valves

Valve data for wafer and lugged versions

K_V values

Disc-opening	DN	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	750	800
10°	-	-	-	-	-	-	-	-	-	19,5	47,3	119	155	196	242	349	475	545	620
20°	0,6	0,9	2,4	5,0	9,2	14,8	22,4	53	151	314	304	397	503	621	894	1.216	1.396	1.589	
30°	3,8	5,9	11,1	20,4	37,6	66,8	108	204	300	369	637	832	1.053	1.300	1.871	2.547	2.924	3.327	
40°	9,2	14,3	26,2	47,4	84,8	143	221	392	572	718	1.142	1.492	1.888	2.331	3.357	4.569	5.245	5.968	
50°	18,1	28,3	49,7	87,9	154	254	381	657	956	1.212	1.936	2.529	3.200	3.951	5.689	7.744	8.890	10.114	
60°	33,5	51,6	87,4	151	260	420	621	1.050	1.540	1.993	3.110	4.062	5.141	6.347	9.140	12.440	14.281	16.248	
70°	54,2	88,6	156	274	471	743	1.062	1.731	2.628	3.624	5.010	6.544	8.288	10.224	14.723	20.040	23.005	26.174	
80°	57,6	111	232	442	789	1.261	1.802	2.946	4.616	6.613	8.969	11.714	14.826	18.303	26.357	35.875	41.183	46.857	
90°	58,5	112	249	492	895	1.444	2.099	3.715	6.883	11.343	10.407	13.592	17.203	21.238	30.583	41.626	47.785	54.369	

Notes

- Rated K_V = the volume of water in m³/hr that will pass through a given valve opening at a pressure drop of 1 bar.
- $K_V = Q \sqrt{\frac{R.D.}{\Delta p}}$ (liquid)
Q = flow through valve (m³/hr)
R.D. = relative density of liquid (water = 1)

Dynamic torque factor F_T for metric units

Disc-opening	DN	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	750	800
10°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20°	0,1	0,1	0,2	0,5	0,9	1,8	3,0	7,2	14,1	24,3	21,4	32,0	45,6	62,5	108,0	171,5	210,9	256,0	
30°	0,1	0,3	0,6	1,1	2,1	4,1	7,1	16,8	32,8	56,7	64,3	96,0	136,7	187,5	324,0	514,5	632,8	768,0	
40°	0,3	0,5	1,1	2,1	4,1	8,0	13,8	32,8	64,1	110,7	124,3	185,6	264,3	362,5	626,4	994,7	1.223,4	1.484,8	
50°	0,4	0,9	1,9	3,6	7,0	13,7	23,6	56,0	109,4	189,0	235,8	352,0	501,2	687,5	1.188,0	1.886,5	2.320,3	2.816,0	
60°	0,8	1,5	3,3	6,1	12,0	23,4	40,5	96,0	187,5	324,0	415,9	620,8	883,9	1.212,5	2.095,2	3.327,1	4.092,2	4.966,4	
70°	1,3	2,5	5,5	10,2	20,0	39,1	67,5	160,0	312,5	540,0	733,2	1.094,4	1.558,2	2.137,5	3.693,6	5.865,3	7.214,1	8.755,2	
80°	2,0	3,9	8,5	15,9	31,0	60,5	104,6	248,0	484,4	837,0	1.346,3	2.009,6	2.861,3	3.925,0	6.782,4	10.770,2	13.246,9	16.076,8	
90°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes

- Dynamic operating torque formula:
T_D = **F_T x ΔP**
T_D = Dynamic torque (Nm)
ΔP = Pressure drop across disc at desired disc-opening (bar)
F_T = Dynamic torque factor (see table)
- The above mentioned dynamic torque includes all frictional resistances.
- The dynamic torque is tending to close the disc.
- ΔP to be determined with K_V formula.

Maximum allowable shaft torques in Nm

W.Nr.	DN	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	750	800
1.4408	32	32	80	80	80	160	160	327	580	580	-	-	-	-	-	-	-	-	-
1.4057											1.760	2.012	3.472	3.858	6.587	-	-	-	-
1.4057 *	65	65	110	160	160	320	320	935	1660	1660	-	-	-	-	-	-	-	-	-
1.4122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.685	8.234	8.782

* for Composite disc

Notes

- In ISO 5211/2 a table is listed representing the maximum torques which can be transmitted through the actuator flange. These values are based upon specific criteria and can be lower than the maximum allowable shaft torques. In this case the criteria can be changed in order to reach the maximum allowable shaft torques.

Sizing torques in Nm																			
ΔP in bar	DN	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	750	800
Application I																			
3,5	10	13	19	26	37	58	81	148	241	345	492	672	889	1.146	1.789	2.625	3.123	3.679	
7	10	13	20	27	40	63	88	164	271	387	559	773	1.032	1.342	2.128	3.164	3.786	4.482	
10	11	14	21	30	44	70	99	188	315	451	660	923	1.247	1.636	2.637	3.972	4.779	5.688	
Application II																			
3,5	11	14	21	29	42	66	93	169	274	392	555	755	994	1.276	1.976	2.880	3.416	4.011	
7	11	14	22	31	45	71	100	185	303	434	623	856	1.138	1.472	2.315	3.419	4.078	4.815	
10	11	15	23	33	49	78	111	208	347	498	724	1.007	1.352	1.766	2.824	4.226	5.072	6.021	
Application III																			
3,5	12	15	23	32	48	74	105	190	306	439	619	839	1.100	1.406	2.163	3.135	3.708	4.344	
7	12	16	24	34	50	79	112	206	336	481	686	939	1.243	1.602	2.502	3.673	4.371	5.148	
10	12	16	26	36	54	86	122	229	380	545	787	1.090	1.457	1.896	3.011	4.481	5.364	6.354	

Notes

- Application I** : Water.
Temp.: 0-80°C; Valve opens at least once a month.
Application II : All other liquid applications and lubricating gasses.
Application III : Non-lubricating and dry media.
 - The charted maximum sizing operating torque is the sum of all friction and resistance for opening and closing of the disc against the indicated pressure differential.
 - The effect of dynamic torque is not considered in tabulation.
 - In sizing operators it is not necessary to include safety-factors.
- * For limited shaft material selection only.

Material specification				
Part name	Material	EN designation.	EN/DIN Mat. No.	Remarks
Body	Cast iron	GJL-250	EN JS 1040	Pressure max. 10 bar
	Stainless steel	GX5CrNiMo19-11-2	1.4408	Comparable with CF8M
Disc	Stainless steel	GX5CrNiMo19-11-2	1.4408	Comparable with CF8M
	Stainless steel mirror polished	GX5CrNiMo19-11-2	1.4408	Comparable with CF8M
	Stainless steel	GX5CrNiMo19-11-2	1.4408	DN350 - DN800
	Stainless steel pickled and passivated	GX5CrNiMo19-11-2	1.4408	DN350 - DN800
	Composite			Engineered Composite DN40 - DN300
Shaft	Stainless steel (cast)	GX5CrNiMo19-11-2	1.4408	DN40 - DN300
	Stainless steel	X 17 CrNi 16-2	1.4057	DN40 - DN600
	Stainless steel	X 35 Cr Mo 17	1.4122	DN700 - DN800
Seat	XP EPDM			FDA approved
	PTFE / EPDM			Upon request
Body screw	Stainless steel			A2
Disc screw	Stainless steel	X 2 CrNiMoN 22 5	1.4462	DN350 - DN800
Bushing	Polyacetal			
Plug	Carbon steel	C45	1.0503	DN350 - DN800
O-Ring plug	NBR			DN350 - DN800
Circlip	Spring steel			According DIN 472, DN350 - DN800
Dirt scraper	NBR/Steel			
Key	Steel			According DIN 6885, DN350 - DN800
Split seal	Graphite			

Note

Please refer to the OptiSeal documentation for safety, installation and maintenance instructions.

BrewSeal butterfly valves

Valve data for wafer and lugged versions

Pressure-Temperature Diagram (DN40-DN300)

Seat material	Disc material	Body material	Size range DN (mm)	Valve function Wafer/End of Line	Temperature in °C												Trim
					-40	-30	-20	-15	0	50	100	120	130	150	160		
XP EPDM	Stainless steel	CI	40 - 250	W / EOL					10 Bar / 6 Bar							850*	
	Stainless steel MP	CI	40 - 250	W / EOL					10 Bar / 6 Bar							851*	
	Stainless steel	SS	50 - 300	W / EOL					10 Bar / 6 Bar							435*	
	Stainless steel MP	SS	50 - 300	W / EOL					10 Bar / 6 Bar							436*	
	Composite	CI	40 - 300	W / EOL					10 Bar / 6 Bar							440	

* DN300 6 Bar / 6 Bar

MP = mirror polished

Pressure-Temperature Diagram (DN350-DN900)

Seat material	Disc material	Body material	Size range DN (mm)	Valve function Wafer/End of Line	Temperature in °C												Trim
					-40	-30	-20	-15	0	50	100	120	130	150	160		
XP EPDM	Stainless steel	CI	350 - 800	W / EOL						10 Bar / 6 Bar						730	
	Stainless steel PP	CI	350 - 800	W / EOL						10 Bar / 6 Bar						731	

PP = pickled & passivated

Trim

Body	Seat	Disc	Shaft	Trim number	Remarks
Cast iron	XP-EPDM	Stainless steel (cast)	Stainless steel (cast)	850	DN40 - DN300
		Stainless steel MP (cast)	Stainless steel (cast)	851	DN40 - DN300
		Stainless steel	Stainless steel	730	DN350 - DN800
		Stainless steel PP	Stainless steel	731	DN350 - DN800
		Composite	Stainless steel	440	DN40 - DN300
Stainless steel	XP-EPDM	Stainless steel (cast)	Stainless steel (cast)	435	DN50 - DN300
		Stainless steel MP (cast)	Stainless steel (cast)	436	DN50 - DN300

MP = mirror polished

PP = pickled & passivated