

DN40 – DN800 resp. 1 1/2" – 32"

SBE Butterfly Valves are ideally suited for Shut-off, Flow Control and Throttling of corrosive and abrasive process media in either liquid, powdery or gaseous state.

Modular Design

Valves are available as DIN- or ANSI-versions, with bare shaft as per standard. Valves can be delivered as complete units, i.e. with mounted-on locking handles, manual gearboxes or with quarter turn pneumatic actuators double- or single-acting.

The sturdy design bodies are made of cast steel 1.0619 (WCB), coating RAL 5005 signal-blue or stainless steel casting 1.4408 (CF-8M), with resistant liners such as EPDM, EPDM white, FPM (Viton®), NBR, SBR or VMQ (Silicone).



Main Features

- Heavy-duty, compact construction, maintenance-free
- Bubble-tight shut-off throughout the full pressure and temperature range
- Wide selection of high-quality liner and disc materials for economical valve performance
- Standardized ISO mounting flange permits easy installation of various actuator options
- No need of additional flange gaskets due to wide and corrugated flange sealing surface
- One-piece disc/shaft for hysteresis-free flow control, with polished sealing surface leading to low torque values
- Flange drilling acc. to DIN PN10/16 resp. ANSI 150lbs for installation into existing piping systems

 **Conformity according to European Pressure Equipment Directive 2014/68/EU (PED)**

Options



Liners

EPDM black, EPDM white, SBR green, VMQ red (Silicone)

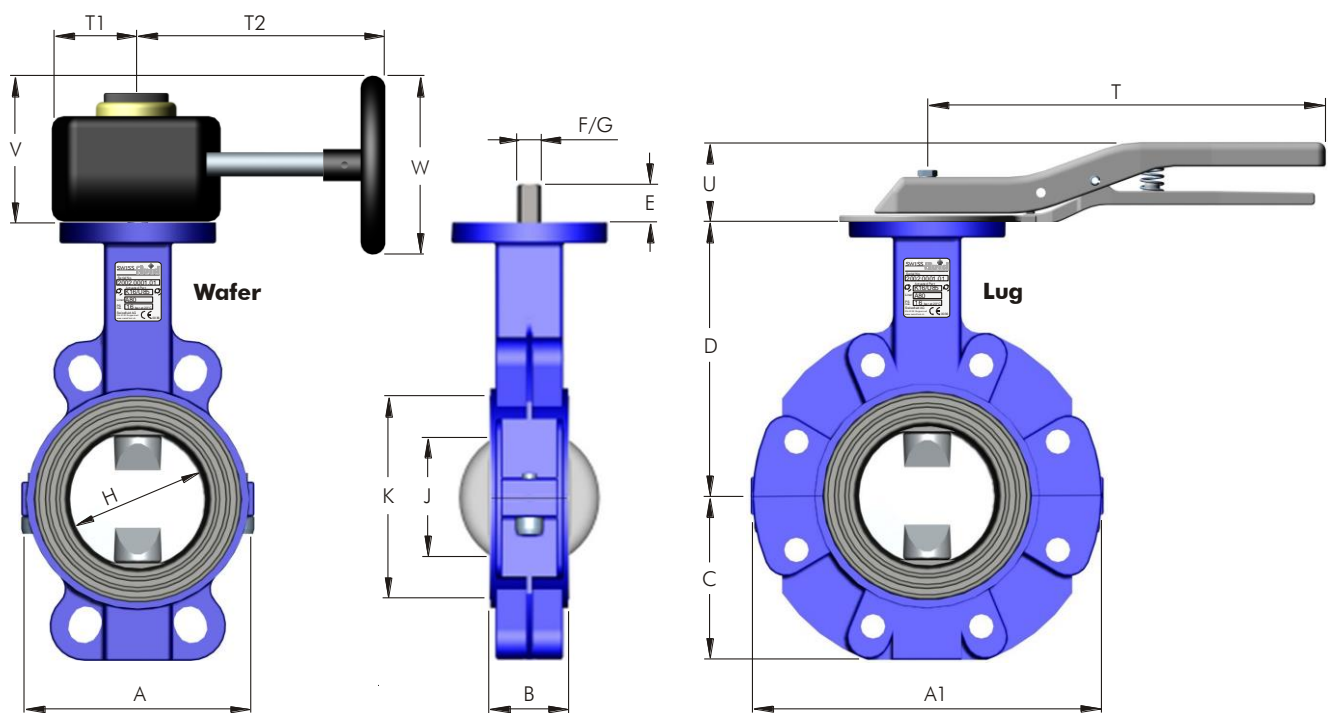
Operating Conditions

- Temperature range from -40°C (-40°F) up to $+200^{\circ}\text{C}$ ($+392^{\circ}\text{F}$), depending on lining material
- Pressure range up to 16 bar (232 psi), depending on size/pressure/temperature

Testing / Marking

- Pressure- and tightness testing acc. to EN 12266-1, leakage rate A, resp. API 598.
- Marking of valves on body and name plate acc. to EN 19.
- Material- resp. test certificates acc. to EN 10204-3.1/2.2/2.1

Outline Drawing / Actuator Options



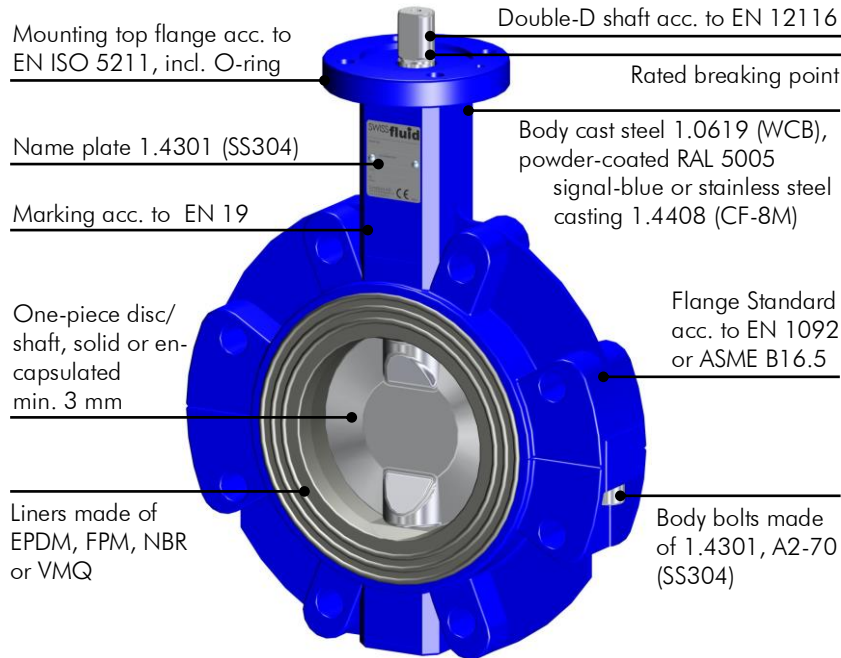
Dimensions in mm

DN	A	A1	B	C	D	E	F	G	H	J	K	ISO	T	T1	T2	U	V	W
Size nom.	Top																	
40/1½"¹)	-	145	33	64	109	23	14	11	50	38	79	F07	230	58	110	46	90	125
50/2"	118	160	43	69	124	23	14	11	60	42	99	F07	230	58	110	46	90	125
65/2½"	120	180	46	79	144	23	14	11	60	39	104	F07	230	58	110	46	90	125
80/3"	134	202	46	93	159	23	14	11	80	66	119	F07	230	58	110	46	90	125
100/4"	162	232	52	107	184	23	18	14	100	86	144	F07	270	58	110	51	90	125
125/5"	185	269	56	119	199	23	18	14	125	112	169	F07	270	58	110	51	90	125
150/6"	248	289	56	130	209	28	24	17	150	141	199	F07	325	58	200	56	127	200
200/8"	273	349	60	158	239	28	24	17	200	191	249	F10	-	58	200	-	127	200
250/10"	328	400	68	198	264	40	30	22	250	241	309	F10	-	73	280	-	190	300
300/12"	378	470	78	229	264	40	30	22	300	290	359	F10	-	73	280	-	190	300

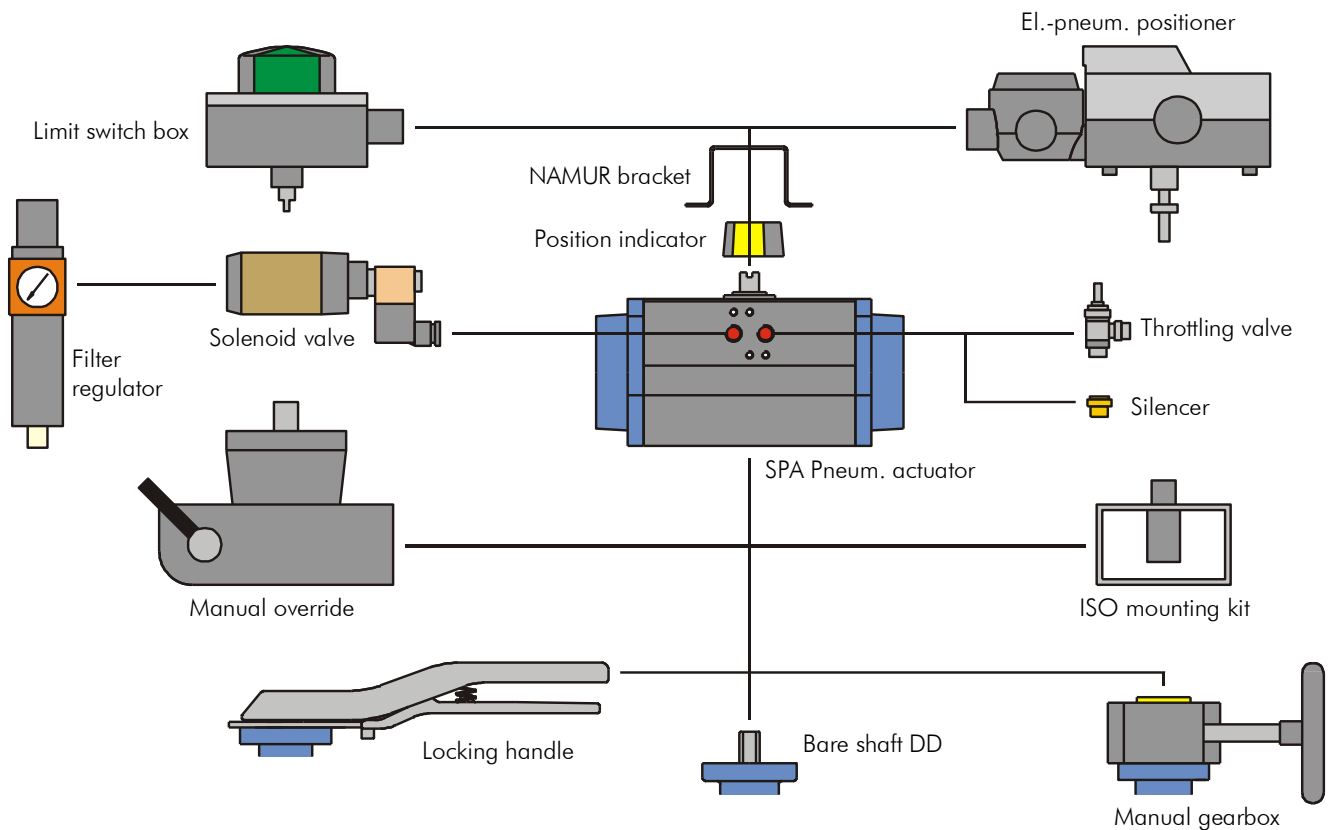
Face to face B acc. to DIN EN 558-1 range 20

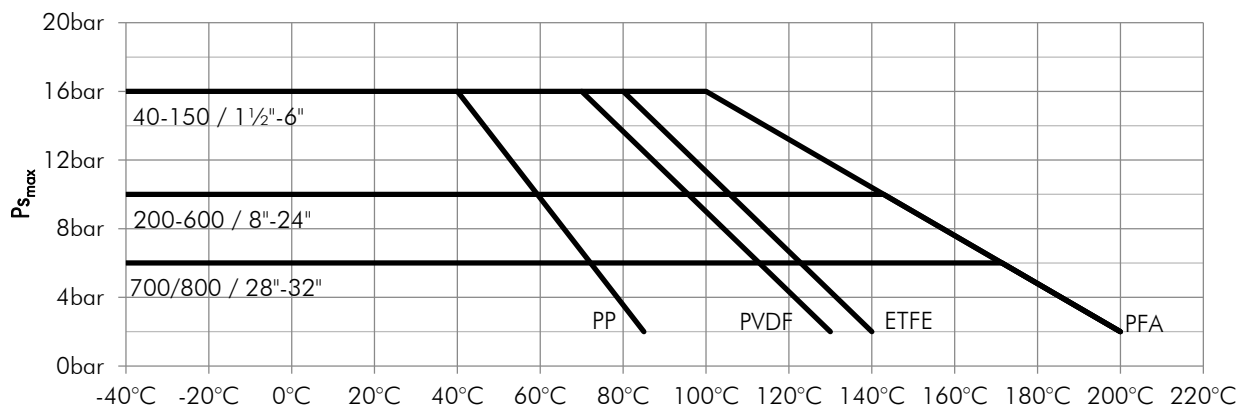
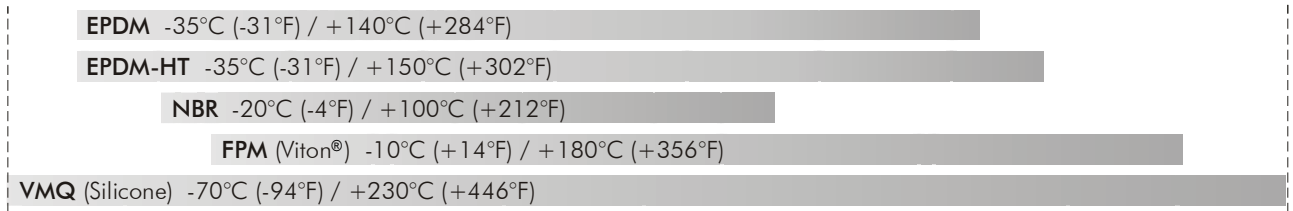
¹) Wafer-style bodies DN40/1½" made of Lug bodies with drilled-through flange holes

Construction of Valve



Mounting Options



Temperature Range for Liners


Low temperature or austenitic steels are required for use below -10°C (14°F) operating temperature.

Torque Values in Nm (in-lbs = Nm x 8.85)

Torque values for **Liner/Disc** combination as stated in below chart

DN Size		40	50	65	80	100	125	150	200	250	300
EPDM	SS316L	15	20	20	35	45	60	100	150	250	350
NBR	SS316L	15	20	20	35	45	60	100	150	250	350
EPDM	PFA	15	20	20	35	45	60	100	150	250	350
EPDM	PP	25	30	30	45	55	80	130	200	320	450
FPM	SS316L	25	30	30	45	55	80	130	200	320	450
max. allowable		145	145	145	145	320	320	700	700	1'200	1'200

- Stated values to be break-away torques without any consideration of safety factors (min. 1.3) for pneum. actuators.

Weights in kg (lbs = kg x 2.2)

Figures stated for execution EPDM liner/stainless steel disc/bare shaft

DN Size	40	50	65	80	100	125	150	200	250	300
Lug-style body	3.2	4.7	6.0	6.5	8.5	10.6	13.9	17.9	27.2	35.9
Wafer-style body	-	3.3	4.2	4.3	6.3	7.6	10.9	16.2	24.1	31.2
Locking handle	0.9	0.90	0.9	0.9	1.2	1.2	1.5	-	-	-
Gearbox GG25	2.3	2.3	2.3	2.3	2.3	2.3	3.5	3.5	6.8	6.8

Weights for pneumatic actuators acc. to separate data sheet

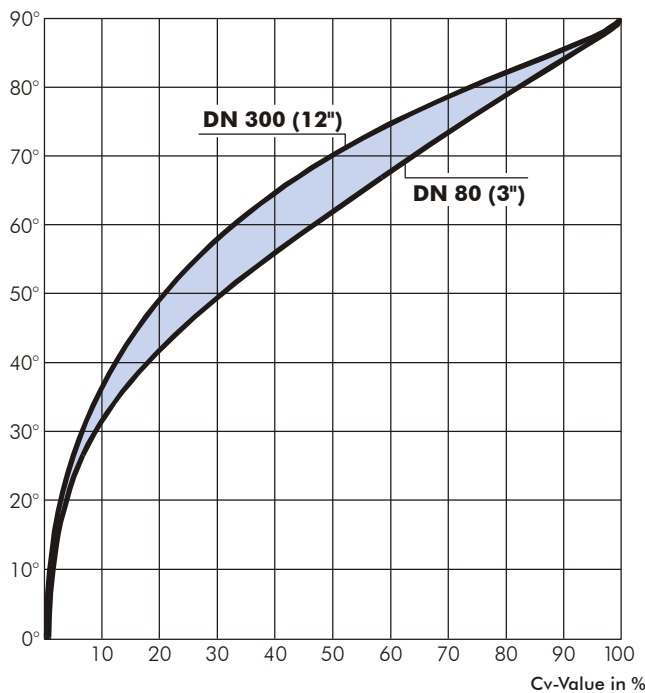
Flow Rate Values Kv m³/h.

Estimated values at corresponding opening angle of valve disc

DN Size	40	50	65	80	100	125	150	200	250	300
20°	5	7	7	15	20	38	60	95	175	265
30°	11	16	16	33	48	82	130	230	350	522
40°	24	35	35	72	95	165	235	465	710	995
50°	43	60	60	125	162	255	395	795	1'160	1'720
60°	64	92	92	190	255	455	645	1'180	1'610	2'665
70°	92	132	132	270	385	645	955	1'815	2'420	3'965
80°	120	170	170	335	485	815	1'220	2'410	3'650	5'960
90°	136	193	193	392	585	1'015	1'495	3'050	4'510	7'210

Flow Characteristic

Opening angle of valve disc

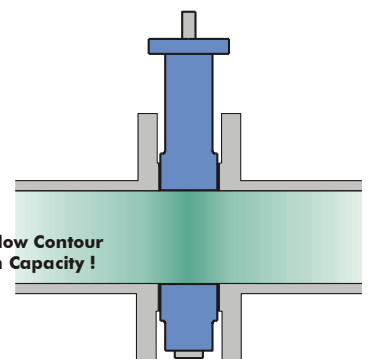


Liquids

$$K_v = Q \sqrt{\frac{SG}{\Delta p}}$$



$$K_v = \frac{Q_N}{514} \sqrt{\frac{SG_N \cdot T}{\Delta p \cdot p_2}}$$



$$^{\circ}K = ^{\circ}C + 273$$

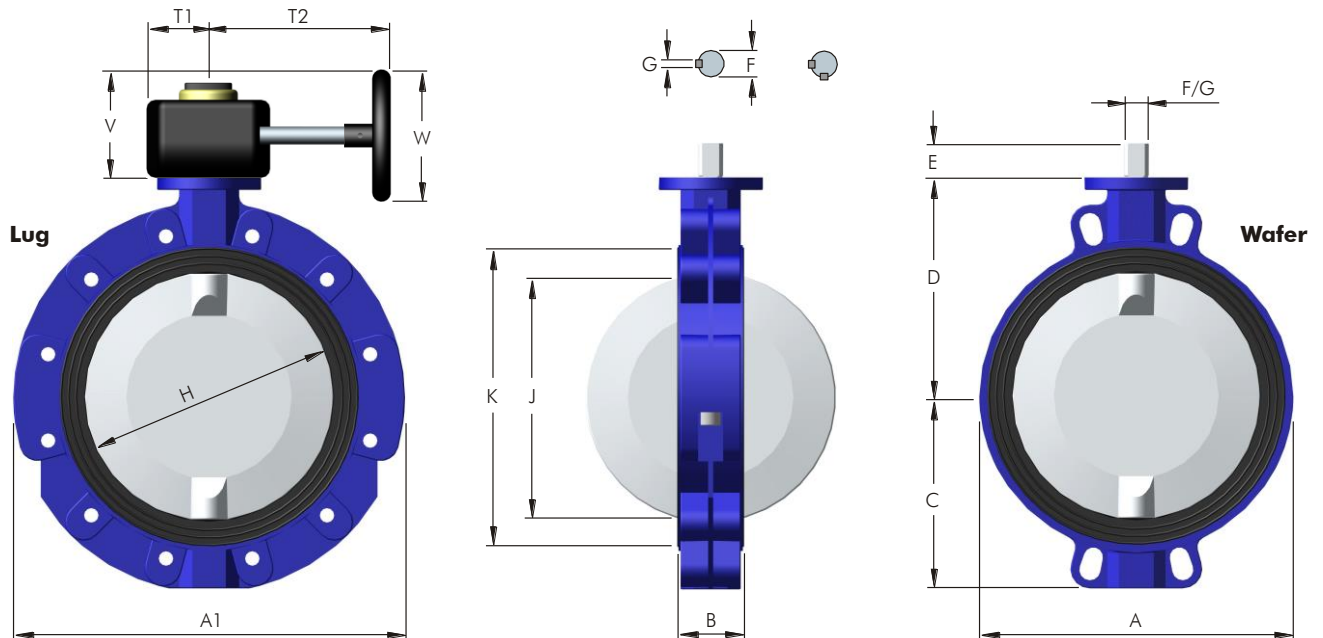


Cv (Kv)	Valve Coefficient	usg/min (m ³ /h)
Q	Flow Rate	usg/min (m ³ /h)
Q_N	Flow Rate	usg/min (Nm ³ /h)
SG	Specific Gravity	lbs/usg (kg/dm ³)
SG_N	Specific Gravity	lbs/usg (kg/Nm ³)
P₂	Downstream Pressure	psi (bar)
ΔP	Pressure Drop	psi (bar)
T	Temperature	°K (°C)

Typical Service Applications

- Chemical CPI
- Petro-Chemical
- Food Processing
- Paint and Pigments
- Fertilizers
- Mining and Steel
- Desalination

Dimensions in mm

DN350/14" – DN800/32"


DN Size	A	A1	B	C	D	E	F	G ¹⁾	H	J	K	ISO	T1	T2	V	W
350/14"	416	530	92	254	309	40	40	27	340	328	409	F12	73	330	190	300
400/16"	462	596	102	289	339	40	40	27	400	387	459	F12	90	350	245	400
450/18"	537	630	114	308	359	50	50	14	440	425	515	F14	90	400	245	400
500/20"	566	698	127	339	390	50	50	14	500	484	569	F14	90	400	245	400
600/24"	668	812	154	399	449	50	50	14	600	578	669	F14	90	400	245	400
700/28"	805	1020	165	476	558	90	60	18	680	660	776	F16	143	450	327	500
800/32"	1110 ¹⁾	1110	165	540	608	90	70	20	780	761	896	F16	143	450	327	500

Face to face B acc. to DIN EN 558-1 Range 20 B) DN350/14" optional 78 mm, Range 25, wide

¹⁾ G: DN350/14"/16" with DD drive, DN450/18" up to DN600/24" with 1x keyway, DN700/28"/DN800/32" with 2x keyway 90° offset

Torque Values in Nm (in-lbs = Nm x 8.85)

 Torque values for **Liner/Disc** combination as stated in below chart

DN Size		350	400	450	500	600	700	800
EPDM	SS316L	450	660	800	900	1'000	2'500	3'300
FPM	SS316L	450	660	800	900	1'000	3'200	4'200
max. allowable		1'800	1'800	2'000	2'000	2'000	4'000	5'000

- Stated values to be break-away torques without any consideration of safety factors for actuators.

Weights in kg (lbs = kg x 2.2)

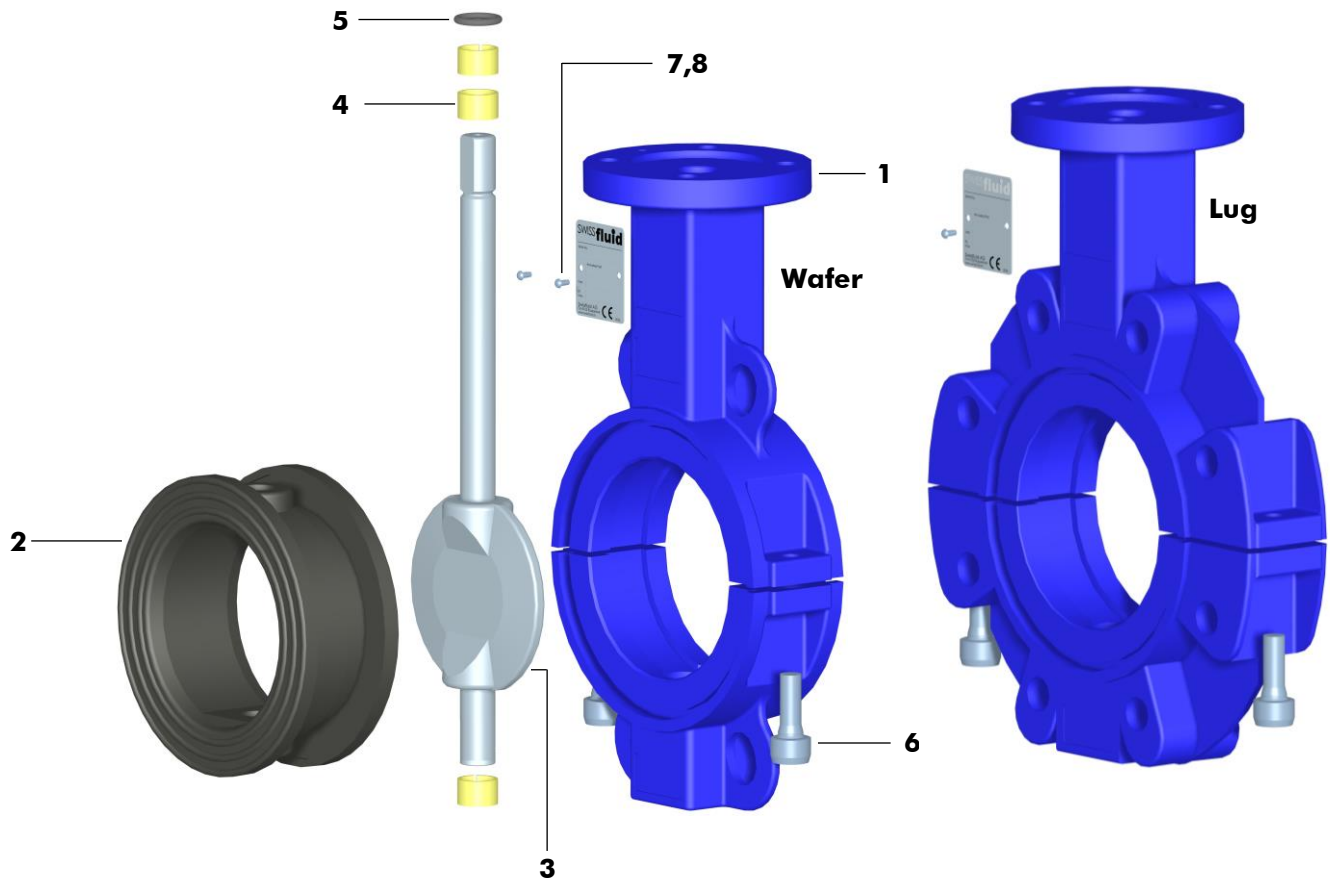
Figures stated for execution EPDM liner/stainless steel disc/bare shaft

DN Size		350	400	450	500	600	700	800
Lug -style body		87.0	101.0	137.0	158.0	242.0	410.0	600.0
Wafer -style body		57.0	69.0	137.0	96.0	141.0	300.0	600.0
Gearbox GG25		6.8	6.8	10.0	10.0	10.0	75.0	75.0

Weights for pneumatic actuators acc. to separate data sheet

Standard Version (Picture showing DN 80 PN16, EPDM liner, SS disc, bare shaft)

Parts List Valve compl.



Item	Qty.	Description	Material	No.
1	1	Body Wafer two-piece, RAL 5005	WCB	1.0619
2	1	Liner	EPDM	
3	1	Disc solid	Duplex	1.4462
4	3	Bearing DU	C.Steel/PTFE	
5	1	O-Ring top	FPM	
6	2	Socket Head Cap Screw	A2-70	1.4310
7	1	Name Plate 42 x 14 CE	A2	1.4301
8	2	Hammer Screw 2.49 x 4.76	A2	1.4310

Specification

Project-/Customer Data		Inquiry/Date: _____		Ref. SF _____	
Company:	_____	Contact Person:	_____	Phone:	_____
Address:	_____	Function:	_____	Fax:	_____
ZIP/Place:	_____	Department:	_____	E-mail:	_____
Project:	_____	Phone direct:	_____	Mobile:	_____

Operating Conditions

Media / Chemical Composition:

<input type="checkbox"/> liquid	<input type="checkbox"/> powdery	<input type="checkbox"/> crystallizing	<input type="checkbox"/> sticky	<input type="checkbox"/> Spec. Grav. ____
<input type="checkbox"/> gaseous	<input type="checkbox"/> Solids ____ %	<input type="checkbox"/> viscous	<input type="checkbox"/> Flow Velocity ____ m/s	
<input type="checkbox"/> abrasive	<input type="checkbox"/> Particle ____ mm	<input type="checkbox"/> Visc. ____ cp	<input type="checkbox"/> Flow Rate ____ m ³ /hr	

Pressure

max. ____ bar
min. ____ bar

Temperature

max. ____ °C
min. ____ °C

Mode

On/Off
 Flow Control
____ cycles/ ____

Installation / Environment

horizontal
 vertical
 Room dry
 Room humid
 outdoor

Remarks:

SBE Product Code

Specification of a complete Butterfly Valve SBE Series

Product code	Nom. size	Flange conn.	Body	Liner	Disc encaps./solid	Shaft end	Options
SBEW	DN150	PN16	G10	A60	U85	DD	
SBEW Wafer*	DN25 - 1000	PN16	G10 WCB	A60 EPDM	U85 PFA	DD DD drive	Po polished disc
SBEL Lug	1" - 42"	PN10	G15 CF-8M	A61 EPDM-W	U86 PFA-AS	SP SQ parallel	TA TA-Luft
*Rem.:		ANSI150#	G34 SS316L	A64 NBR	U88 PVDF	SR SQ 45° rot.	Th thru holes
Wafer bodies combined for DIN/ANSI		ANSI300#		A67 FPM	U89 PP		B7 B7 bolts
		JIS 10K		A68 VMQ	U91 ETFE		Ti Ti bolts
				A69 SBR	S16 SS Duplex		RAL... special paint
					S32 SS316L		
					S40 Tit. Gr.2		
					S41 Tit. Gr.7		
					S43 Hast. C		

Note: Actuator options and accessories to be specified on orders separately.