

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 wafer- or lug-style 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 connections acc. to ANSI 150lbs (DIN optional) 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)

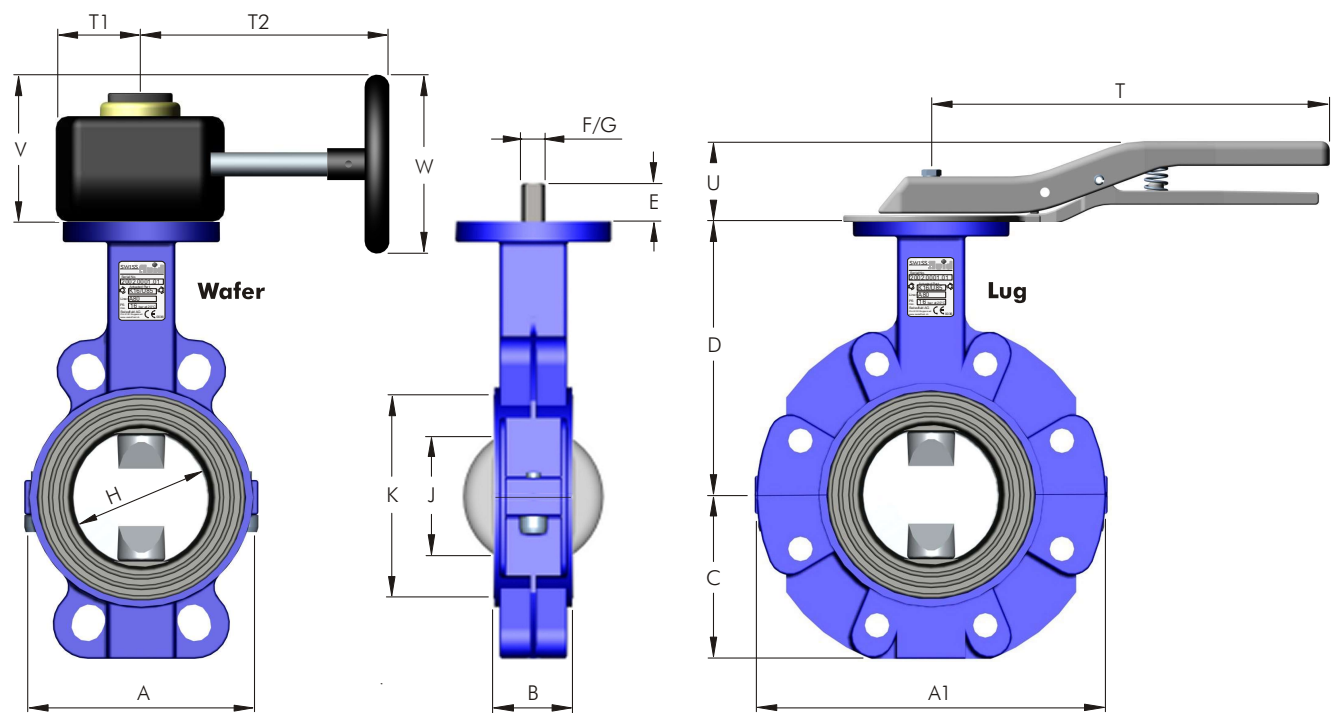
### Operating Conditions

- Temperature range from -40°F up to +400°F, depending on lining material
- Pressure range up to 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



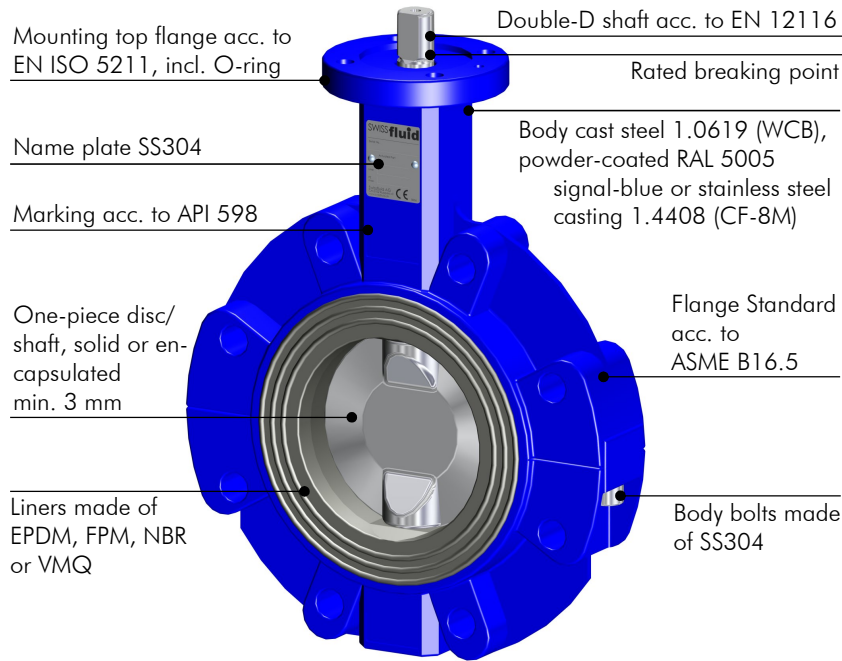
#### Dimensions inch

Size nom.	A	A1	B	C	D	E	F	G	H	J	K	ISO Top	T	T1	T2	U	V	W
1 1/2 <sup>1)</sup>	-	5.71	1.30	2.52	4.29	0.91	0.55	0.43	1.97	1.50	3.11	F07	9.06	2.28	4.33	1.81	3.54	4.92
2"	4.65	6.30	1.69	2.72	4.88	0.91	0.55	0.43	2.36	1.65	3.90	F07	9.06	2.28	4.33	1.81	3.54	4.92
2 1/2"	4.72	7.09	1.81	3.11	5.67	0.91	0.55	0.43	2.36	1.54	4.09	F07	9.06	2.28	4.33	1.81	3.54	4.92
3"	5.28	7.95	1.81	3.66	6.26	0.91	0.55	0.43	3.15	2.60	4.69	F07	9.06	2.28	4.33	1.81	3.54	4.92
4"	6.38	9.13	2.06	4.21	7.24	0.91	0.71	0.55	3.94	3.39	5.67	F07	10.63	2.28	4.33	2.01	3.54	4.92
5"	7.28	10.59	2.20	4.69	7.83	0.91	0.71	0.55	4.92	4.41	6.65	F07	10.63	2.28	4.33	2.01	3.54	4.92
6"	9.76	11.38	2.20	5.12	8.23	1.10	0.94	0.67	5.91	5.55	7.83	F07	12.80	2.28	7.87	2.20	5.00	7.87
8"	10.75	13.74	2.37	6.22	9.41	1.10	0.94	0.67	7.87	7.52	9.80	F10	-	2.28	7.87	-	5.00	7.87
10"	12.91	15.75	2.68	7.80	10.39	1.57	1.18	0.87	9.84	9.49	12.17	F10	-	2.87	11.02	-	7.48	11.81
12"	14.88	18.50	3.09	9.02	10.39	1.57	1.18	0.87	11.81	11.42	14.13	F10	-	2.87	11.02	-	7.48	11.81

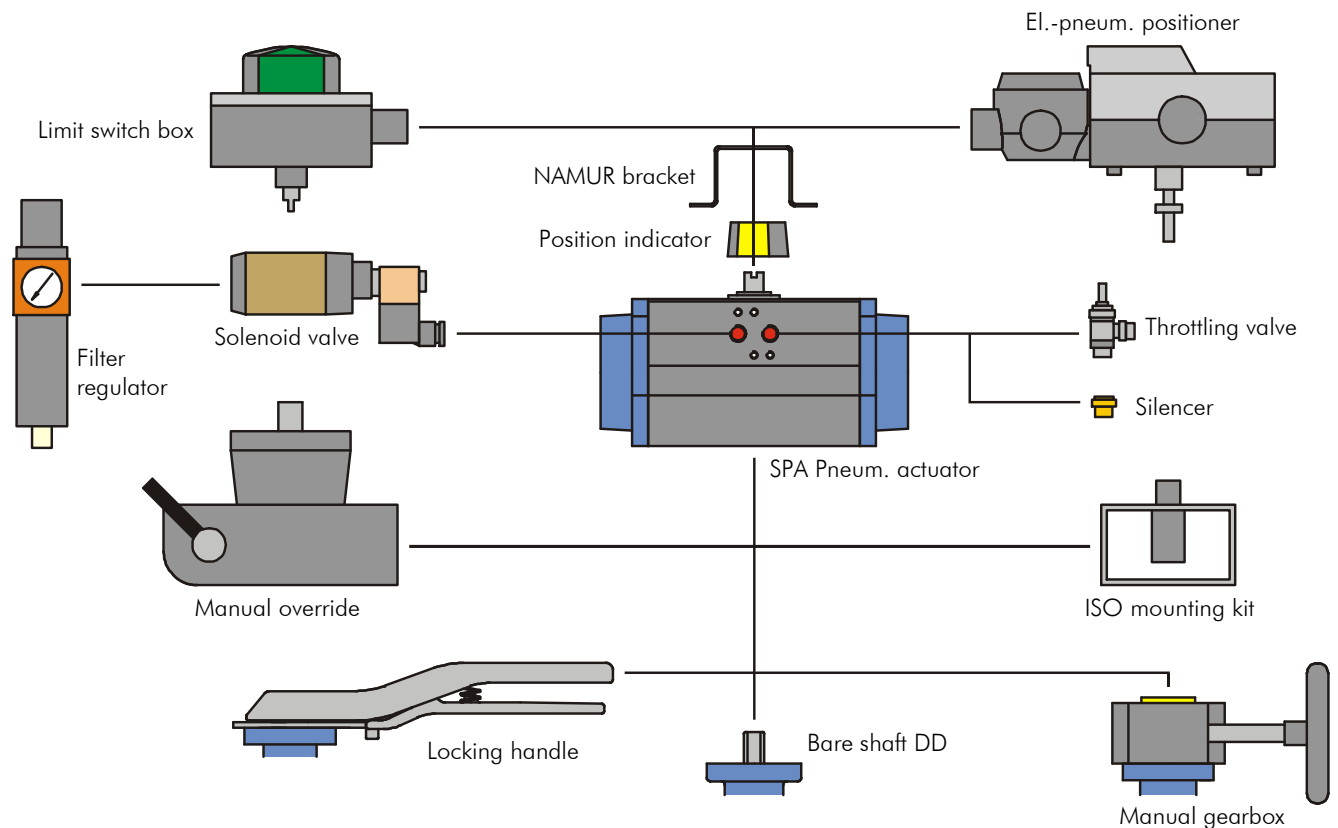
Face to face B acc. to ASME B16.10

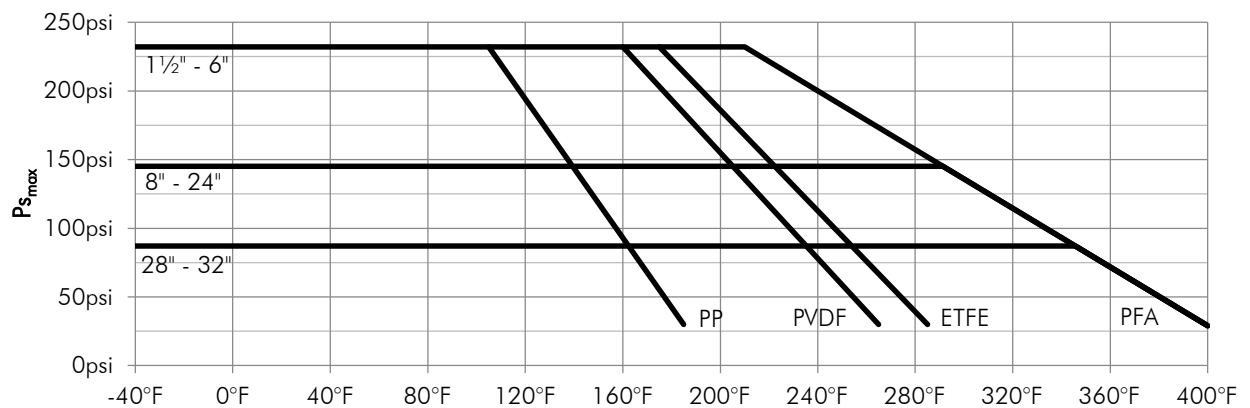
<sup>1)</sup> Wafer-style bodies 1 1/2" made of Lug bodies with drilled-through holes

### Construction of Valve



### Mounting Options



**Temperature Range for Liners**


Low temperature or austenitic steels are required for use below 14°F operating temperature.

**Torque Values** in-lbs

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

Size nom.		1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"
EPDM	SS316L	133	177	177	310	398	531	885	1,328	2,213	3,098
NBR	SS316L	133	177	177	310	398	531	885	1,328	2,213	3,098
EPDM	PFA	133	177	177	310	398	531	885	1,328	2,213	3,098
EPDM	PP	221	266	266	398	487	708	1,151	1,770	2,832	3,983
FPM	SS316L	221	266	266	398	487	708	1,151	1,770	2,832	3,983
max. allowable		1,283	1,283	1,283	1,283	2,832	2,832	6,195	6,195	10,620	10,620

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

**Weights** lbs

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

DN Size	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"
Lug-style body	7.04	10.34	13.20	14.30	18.70	23.32	30.58	39.38	59.84	78.98
Wafer-style body	-	7.26	9.24	9.46	13.86	16.72	23.98	35.64	53.02	68.64
Locking handle	1.98	1.98	1.98	1.98	2.64	2.64	3.30	-	-	-
Gearbox GG25	5.06	5.06	5.06	5.06	5.06	5.06	7.70	7.70	14.96	14.96

Weights for pneumatic actuators acc. to separate data sheet

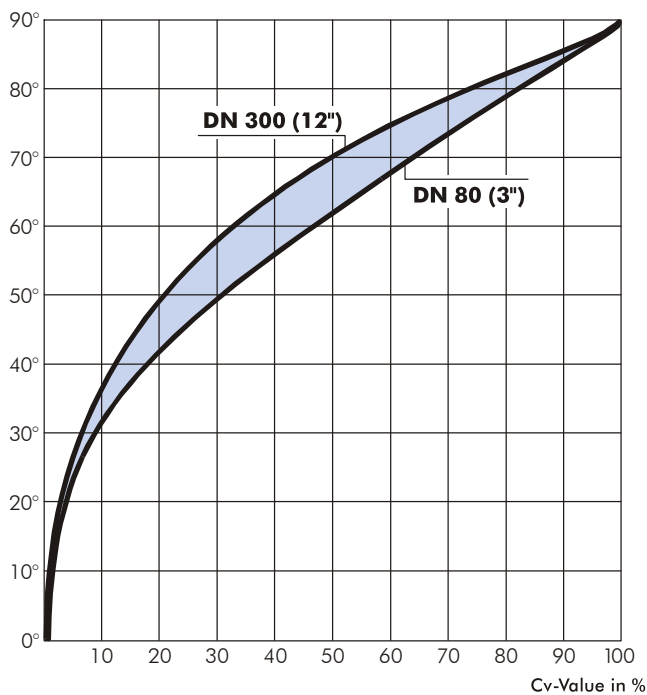
**Flow Rate Values Cv** usg/min

Estimated values at corresponding opening angle of valve disc

Size Nom.	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"
20°	6	8	8	17	23	44	70	110	203	307
30°	13	19	19	38	56	95	151	267	406	606
40°	28	41	41	83	110	191	273	539	824	1,154
50°	50	70	70	145	188	296	458	922	1,346	1,995
60°	74	107	107	220	296	528	748	1,369	1,868	3,091
70°	107	153	153	313	447	748	1,108	2,105	2,807	4,599
80°	139	197	197	389	563	945	1,415	2,796	4,234	6,914
90°	158	224	224	455	679	1,177	1,734	3,538	5,232	8,364

**Flow Characteristic**

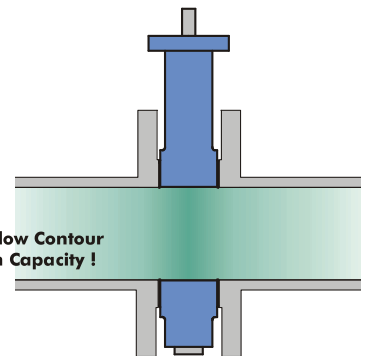
Opening angle of valve disc


**Liquids:**

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

**Gases:**

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

 Streamline Flow Contour  
for Maximum Capacity !


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

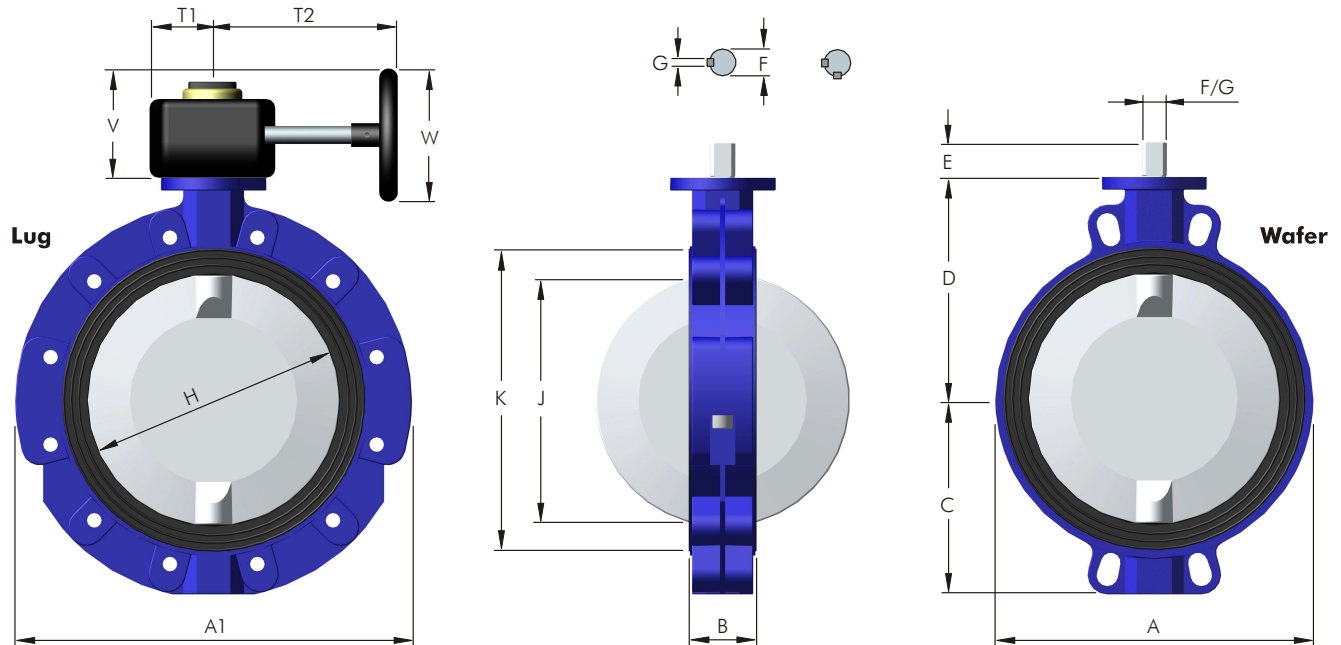
$$K_v = C_v / 1.16$$

<b>Cv</b>	Valve Coefficient	usg/min
<b>Q</b>	Flow Rate	usg/min
<b>Q<sub>N</sub></b>	Flow Rate	usg/min
<b>SG</b>	Specific Gravity	lbs/usg
<b>SG<sub>N</sub></b>	Specific Gravity	lbs/usg
<b>P<sub>2</sub></b>	Downstream Pressure	psi
<b>ΔP</b>	Pressure Drop	psi
<b>T</b>	Temperature	°K

**Typical Service Applications**

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

**Dimensions** inch

**14" – 32"**


Size nom.	A	A1	B	C	D	E	F	G <sup>2)</sup>	H	J	K	ISO Top	T1	T2	V	W
14"	16.38	20.87	3.62	10.00	12.17	1.57	1.57	1.06	13.39	12.91	16.10	F12	2.87	12.99	7.48	11.81
16"	18.19	23.46	4.00	11.38	13.35	1.57	1.57	1.06	15.75	15.24	18.07	F12	3.54	13.78	9.65	15.75
18"	21.14	24.80	4.50	12.13	14.13	1.97	1.97	0.55	17.32	16.73	20.28	F14	3.54	15.75	9.65	15.75
20"	22.28	27.48	5.00	13.35	15.35	1.97	1.97	0.55	19.69	19.06	22.40	F14	3.54	15.75	9.65	15.75
24"	26.30	31.97	6.06	15.71	17.68	1.97	1.97	0.55	23.62	22.76	26.34	F14	3.54	15.75	9.65	15.75
28"	31.69	40.16	6.50	18.74	21.97	3.54	2.36	0.71	26.77	25.98	30.55	F16	5.63	17.72	12.87	19.69
32" <sup>2)</sup>	43.70	43.70	6.50	21.26	23.94	3.54	2.76	0.79	30.71	29.96	35.28	F16	5.63	17.72	12.87	19.69

Face to face B acc. to ASME B16.10 B) 14" optional 3.07 inch, wide  
 1) 2) G: 14"/16" with DD drive, 18" up to 24" with 1x keyway, 28"/32" with 2x keyway 90° offset

**Torque Values** in-lbs

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

Size nom.		14"	16"	18"	20"	24"	28"	32"
EPDM	SS316L	3,983	5,841	7,080	7,965	8,850	22,125	29,205
FPM	SS316L	3,983	5,841	7,080	7,965	8,850	28,320	37,170
max. allowable		15,930	15,930	17,700	17,700	17,700	35,400	44,250

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

**Weights** lbs

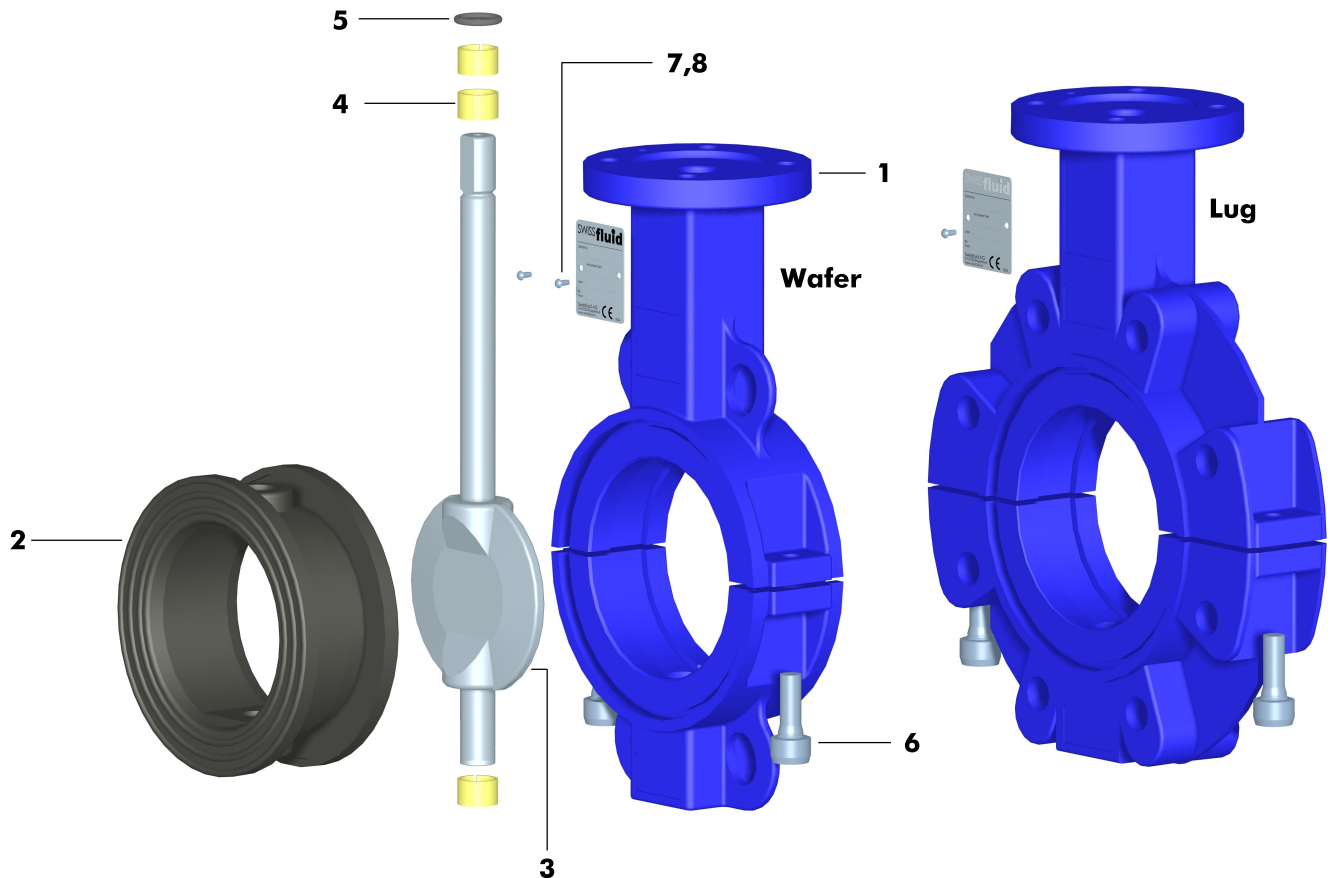
Figures stated for execution EPDM liner/stainless steel disc/bare shaft

Size nom.	14"	16"	18"	20"	24"	28"	32"
Lug-style body	191.40	222.20	301.40	347.60	532.40	902.00	1320.00
Wafer-style body	125.40	151.80	301.40	211.20	310.20	660.00	1320.00
Gearbox GG25	14.96	14.96	22.00	22.00	22.00	165.00	165.00

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**

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

**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 _____ ft/sec	
<input type="checkbox"/> abrasive	<input type="checkbox"/> Particle _____ mm	<input type="checkbox"/> Visc. _____ cp	<input type="checkbox"/> Flow Rate _____ usg/min	

**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
<b>SBEW</b>	<b>4"</b>	<b>150#</b>	<b>G10</b>	<b>A60</b>	<b>U85</b>	<b>DD</b>	
<b>SBEW</b> Wafer*	1" - 42"	ANSI150#	G10 WCB	A60 EPDM	U85 PFA	DD DD drive	Po polished disc
<b>SBEL</b> Lug	DN25 - 1000	ANSI300#	G15 CF-8M	A61 EPDM-W	U86 PFA-AS	SP SQ parallel	TA TA-Luft
*Rem.:		PN16	G34 SS316L	A64 NBR	U88 PVDF	SR SQ 45° rot.	Th thru holes
Wafer bodies		PN10		A67 FPM	U89 PP		B7 B7 bolts
combined for		JIS 10K		A68 VMQ	U91 ETFE		Ti Ti bolts
DIN/ANSI				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.