

SBP Butterfly Valves 1" – 42"

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

SBP Butterfly Valves are available as wafer- or lug-style valves, 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 PTFE, PTFE-AS (anti-static), PTFE-T (mod.) or UHMWPE.



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
- Unique shaft sealing arrangement assures maintenance-free operation at automated processes and high operating pressures, optimized and reinforced liner shape
- No need of additional flange gaskets due to wide and chambered 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

CE Conformity according to European Pressure Equipment Directive 97/23/EC (PED)

Options



Lug 1.0619 (WCB)
PTFE/PFA, locking handle



Lug 1.4408 (CF-8M)
PTFE-AS/PFA-AS, bare shaft



Wafer SS316L (1.4435)
PTFE/PFA, pneum. actuator



Wafer 1.0619 (WCB)
PTFE/PFA, pneum. actuator
and E/P positioner

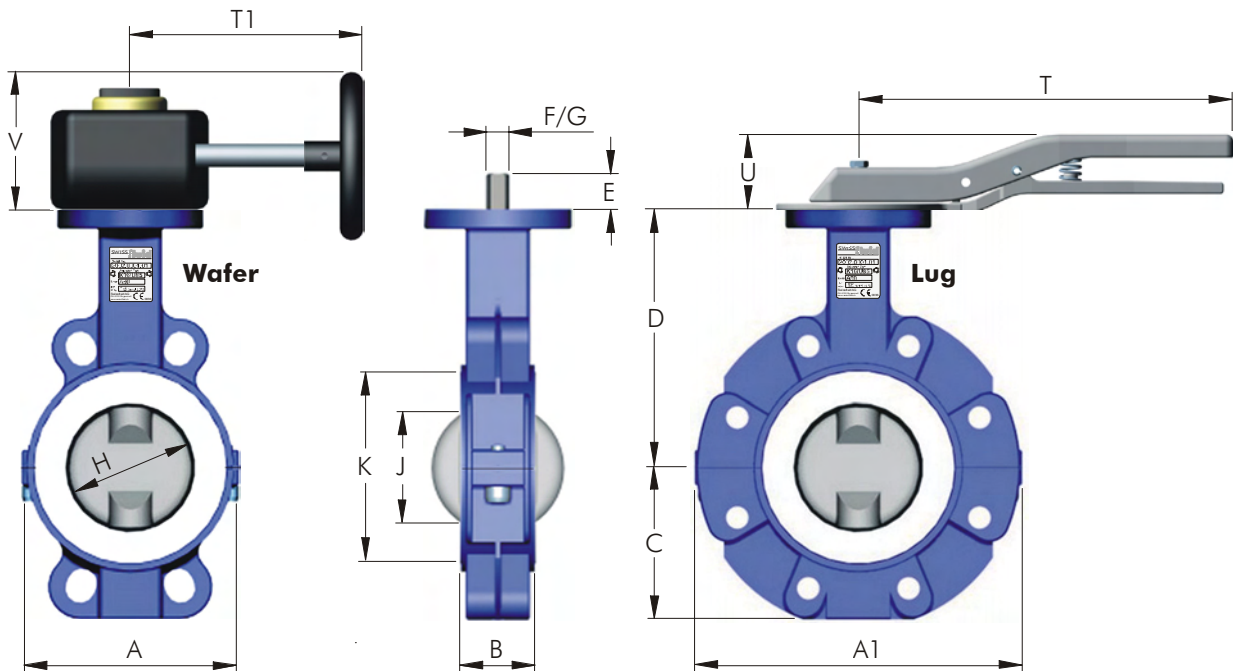
Operating Conditions

- Temperature range from -40°F up to +446°F, depending on lining material
- Pressure range from 0.01 psia up to 232 psi, depending on size/pressure/temperature

Testing / Marking

- Pressure- and tightness testing acc. to API 598, 9th ed. (2009-09) as well as spark testing at 35 kV to assure lining integrity. Marking of valves on body and name plate.
- Material- resp. test certificates acc. to API 598

Outline Drawing / Actuator Options

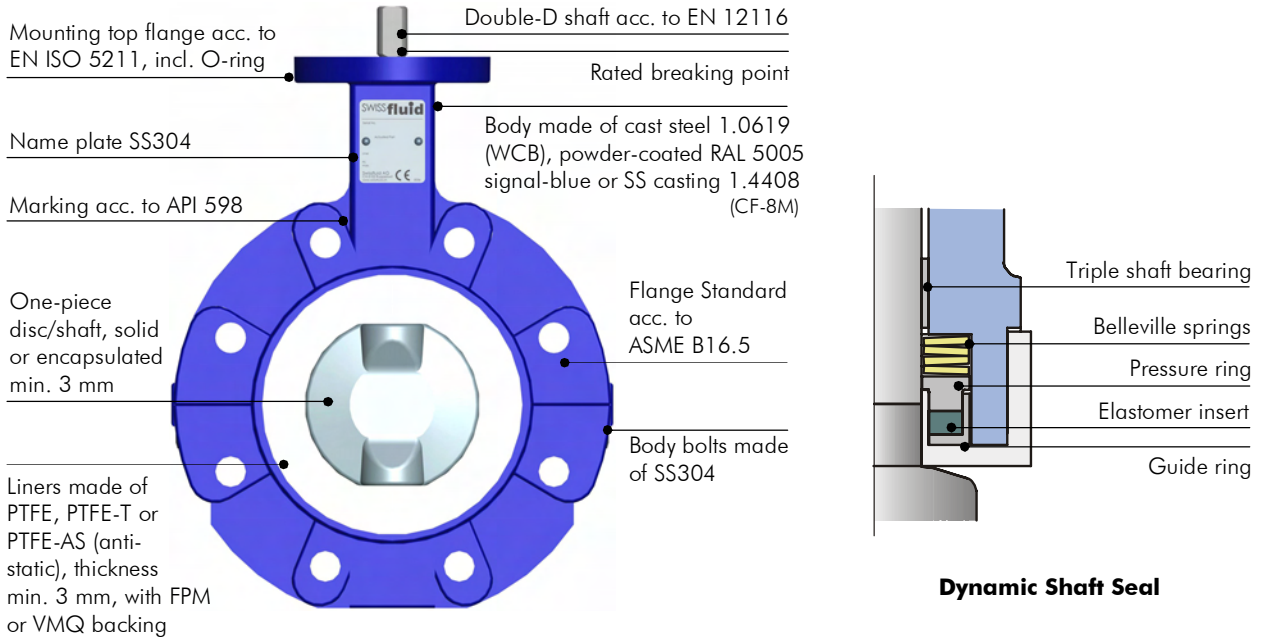


Dimensions inch

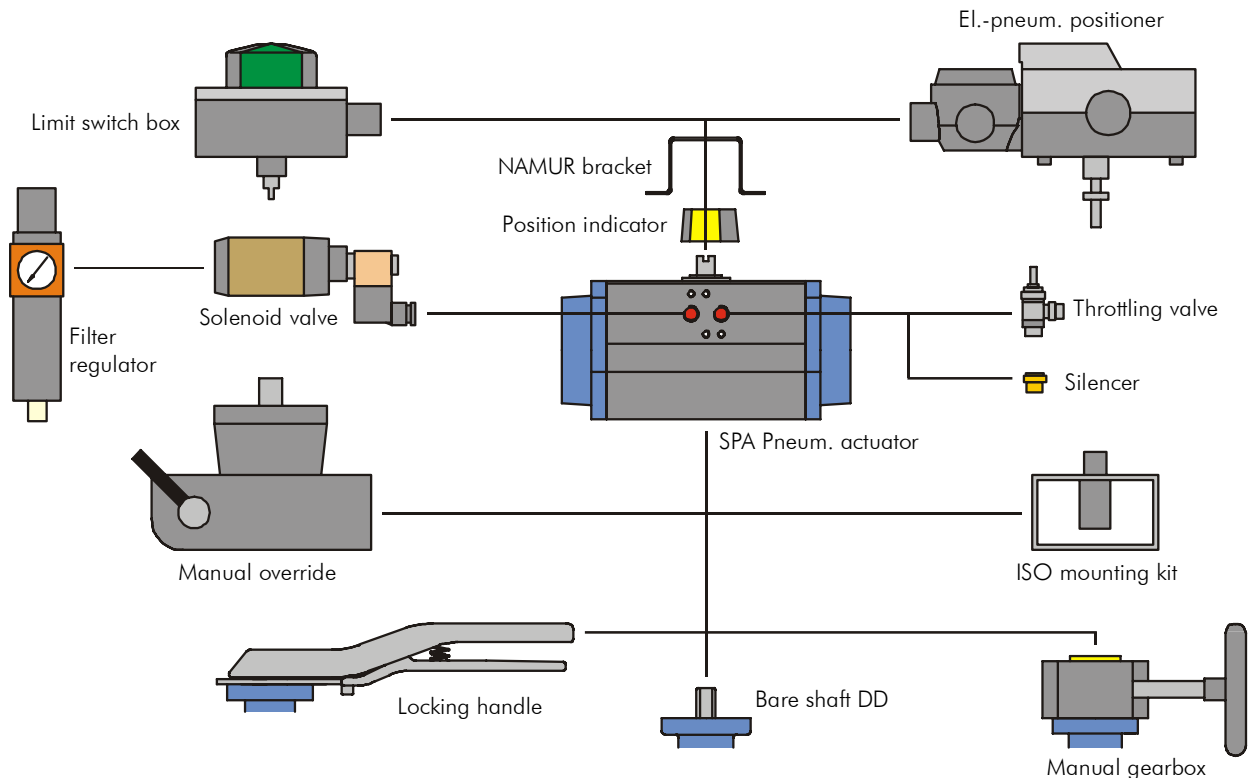
Size nom.	A	A1	B	C	D	E	F	G	H	J	K	ISO Top	T	T1	U	V
1"	-	4.53	1.30	1.81	3.43	0.91	0.55	0.43	1.38	0.39	2.52	F05	9.06	4.96	1.81	3.07
1 1/4"	-	4.53	1.30	1.81	3.43	0.91	0.55	0.43	1.38	0.39	2.52	F05	9.06	4.96	1.81	3.07
1 1/2"	-	5.71	1.30	2.52	4.29	0.91	0.55	0.43	1.97	1.50	3.11	F07	9.06	4.96	1.81	3.07
2"	4.65	6.30	1.69	2.72	4.88	0.91	0.55	0.43	2.36	1.65	3.90	F07	9.06	4.96	1.81	3.07
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	4.96	1.81	3.07
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	4.96	1.81	3.07
4"	6.38	9.13	2.05	4.21	7.24	0.91	0.71	0.55	3.94	3.39	5.67	F07	10.63	4.96	2.01	3.07
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	4.96	2.01	3.07
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	7.28	2.01	3.78
8"	10.75	13.74	2.36	6.22	9.41	1.10	0.94	0.67	7.87	7.52	9.80	F10	-	7.28	-	3.78
10"	12.91	15.75	2.68	7.80	10.39	1.57	1.18	0.87	9.84	9.49	12.17	F10	-	9.88	-	5.59
12"	14.88	18.50	3.07	9.02	10.39	1.57	1.18	0.87	11.81	11.42	14.13	F10	-	9.88	-	5.59

Face to face B acc. to ASME B16.10

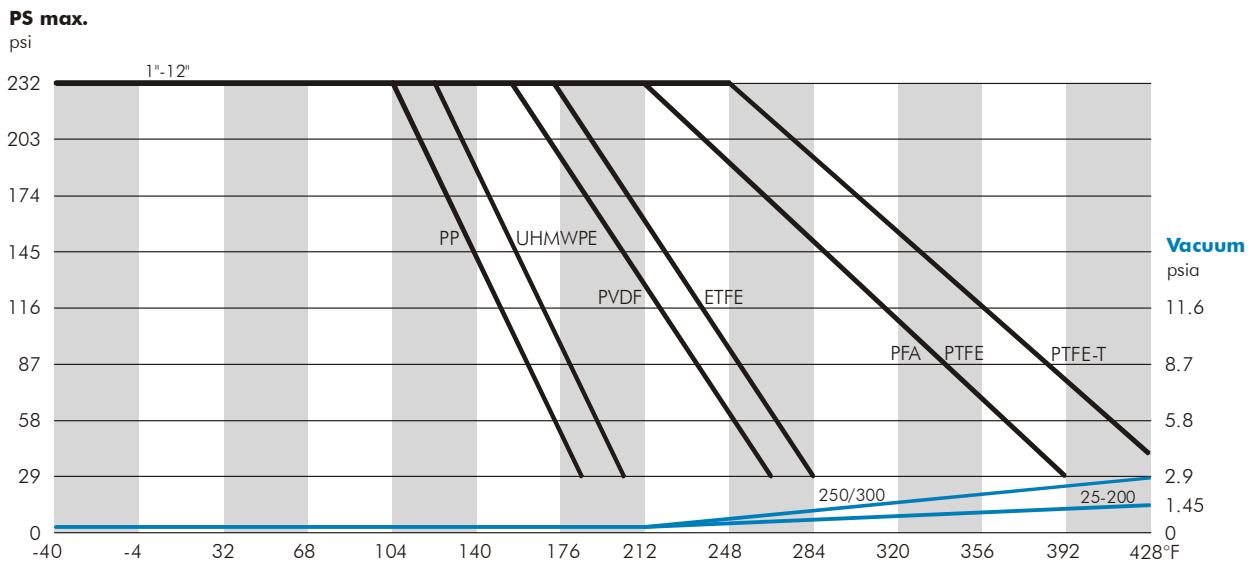
Construction of Valve



Mounting Options



Pressure-/Temperature Diagram



Torque Values in-lbs

Torque values for PFA-encapsulated or solid discs and specified body liner

Size nom.	1"/1¼"	1½"	2"	65	80	4"	5"	6"	8"	10"	12"
A80 PTFE	177	221	266	266	354	443	531	974	1,593	2,213	3,098
A81 PTFE-T	195	248	292	292	389	487	584	1,080	1,752	2,434	3,407
A82 PTFE-AS	177	221	266	266	354	443	531	974	1,593	2,213	3,098
A89 PP	283	354	398	398	531	664	797	1,460	2,390	3,319	4,646
A90 UHMWPE	248	310	354	354	460	575	690	1,239	2,036	2,876	4,027
max. allowable	145	145	1,283	1,283	1,283	1,283	1,283	2,832	2,832	6,195	6,195

- For liner resp. disc encapsulation never use for both the same material, otherwise considerable increase of torque values must be expected!
- Stated values to be break-away torques without any consideration of safety factors for actuators.

Weights lbs

Figures stated for execution PTFE/PFA/bare shaft

Size DN	1"/1¼"	1½"	2"	65	80	4"	5"	6"	8"	10"	12"
Lug -style body	5.06	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	1.98	2.64	2.64	3.30	-	-	-
Gearbox GG25	5.06	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

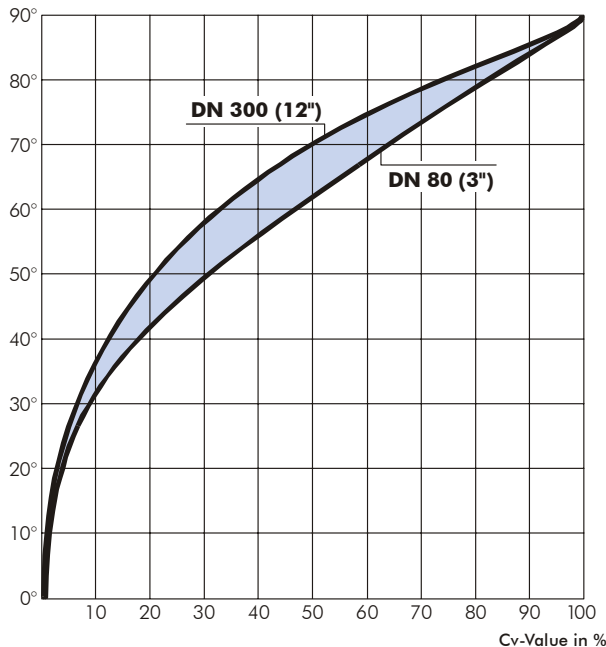
Flow Rate Values Cv usg/min.

Estimated values at corresponding opening angle of valve disc

Size nom.	1"/1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"
20°	3	6	8	8	17	23	44	70	110	203	307
30°	5	13	19	19	38	56	95	151	267	406	606
40°	9	28	41	41	83	110	191	273	539	824	1,154
50°	16	50	70	70	145	188	296	458	922	1,346	1,995
60°	26	74	107	107	220	296	528	748	1,369	1,868	3,091
70°	37	107	153	153	313	447	748	1,108	2,105	2,807	4,599
80°	46	139	197	197	389	563	945	1,415	2,796	4,234	6,914
90°	58	158	224	224	455	679	1,177	1,734	3,538	5,232	8,364

Flow Characteristic

Opening angle of valve disc

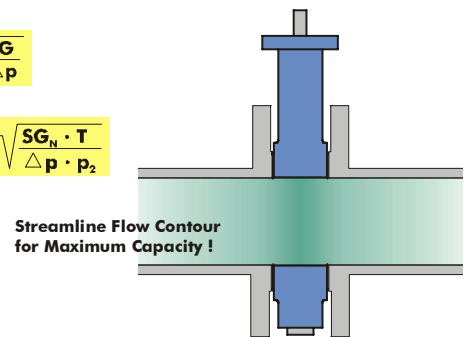


Liquids:

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

Gases:

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



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

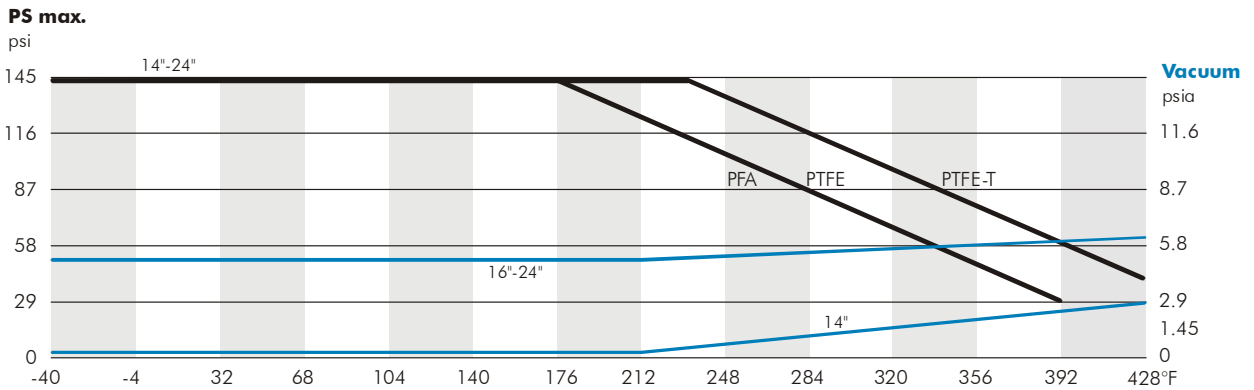
$$K_v = C_v / 1.16$$

Cv	Valve Coefficient	usg/min
Q	Flow Rate	usg/min
Q_N	Flow Rate	usg/min
SG	Specific Gravity	lbs/usg
SG_N	Specific Gravity	lbs/usg
P₂	Downstream Pressure	psi
ΔP	Pressure Drop	psi
T	Temperature	°K

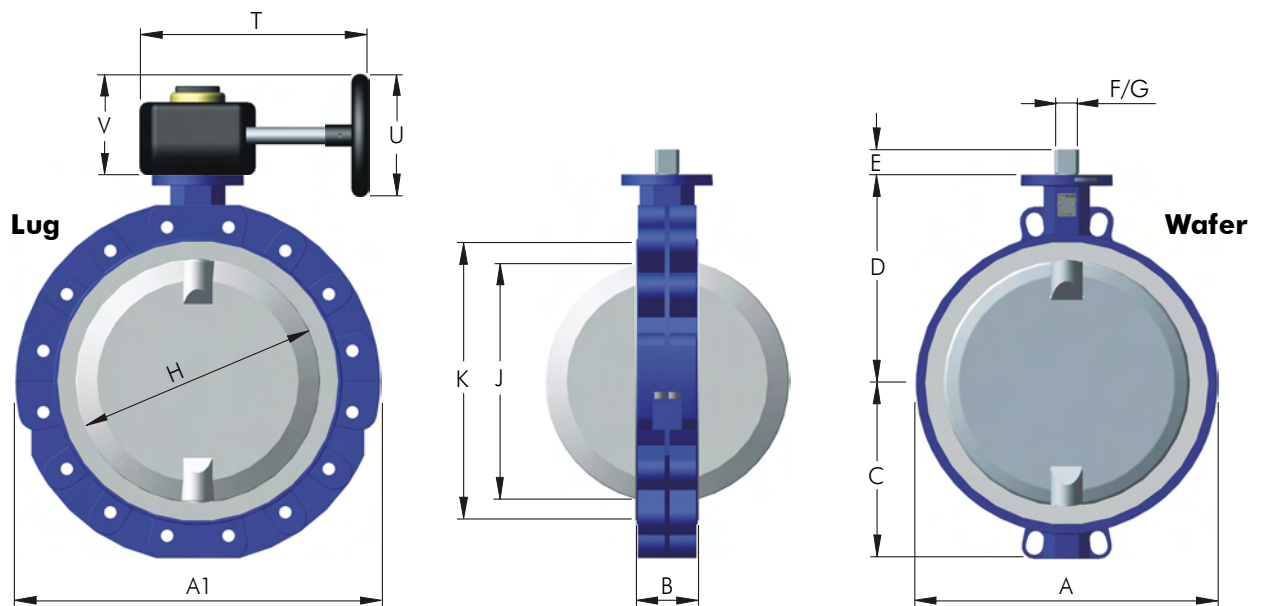
Typical Service Applications

- Chemical CPI
- Petro-Chemical
- Pharmaceutical Industry
- Semi-Conductors
- Pulp and Paper
- Food Processing
- Paint and Pigments
- Fertilizers
- Mining and Steel
- Desalination

Pressure-/Temperature Diagram



Dimensions in mm



Size nom.	A	A1	B	C	D	E	F	G	H	J	K	ISO	T	U	V
14"	16.38	20.87	3.62	10.00	12.17	1.57	1.57	1.06	13.39	12.91	16.10	F12	12.40	11.81	7.40
16"	18.19	23.46	4.02	11.38	13.35	1.57	1.57	1.06	15.75	15.24	18.07	F12	12.40	11.81	7.40
18"	24.80	24.80	4.49	12.13	14.13	1.97	1.97	0.55	17.72	17.17	20.28	F14	15.75	15.75	9.37
20"	23.31	27.48	5.00	13.35	15.35	1.97	1.97	0.55	19.69	19.06	22.40	F14	15.75	15.75	9.37
24"	26.30	31.97	6.06	15.71	17.68	1.97	1.97	0.55	23.62	22.76	26.34	F14	15.75	15.75	9.37

Face to face B acc. to ASME B16.10

* Wafer 18" made of Lug bodies with drilled-through holes

B: 14": optional 3.07 inch , ASME B16.10 wide

G: 18"-24": 1x Keyway

Torque Values in-lbs

Torque values for PFA-encapsulated disc and specified body liner

Size nom.	14"	16"	18"	20"	24"
A80 PTFE	3,983	5,310	6,549	7,965	10,620
A81 PTFE-T	4,381	5,841	7,213	8,762	11,682
A82 PTFE-AS	3,983	5,310	6,549	7,965	10,620
max. allowable	1,800	15,930	15,930	17,700	17,700

- For liner resp. disc encapsulation never use for both the same material, otherwise considerable increase of torque values must be expected!
- Stated values to be break-away torques without any consideration of safety factors for actuators.

Weights lbs

Figures stated for execution PTFE/PFA/bare shaft

Size nom.	14"	16"	18"	20"	24"
Lug -style body	191	222	301	348	532
Wafer -style body	125	152	301	211	310
Gearbox GG25	15	15	22	22	22

Weights for pneumatic actuators acc. to separate data sheet

* Wafer 18" made of Lug bodies with drilled-through holes

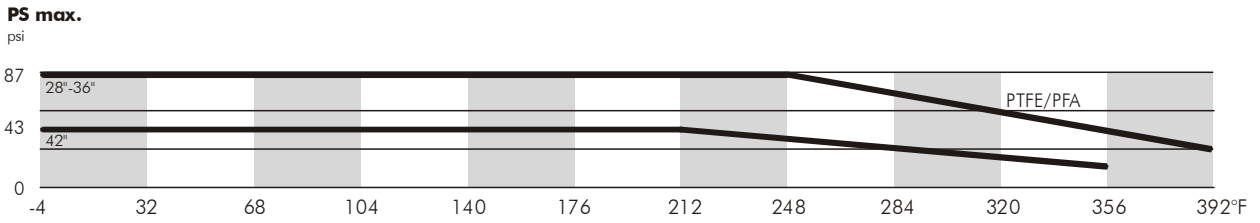
Flow Rate Values Cv usg/min

Estimated values at corresponding opening angle of valve disc

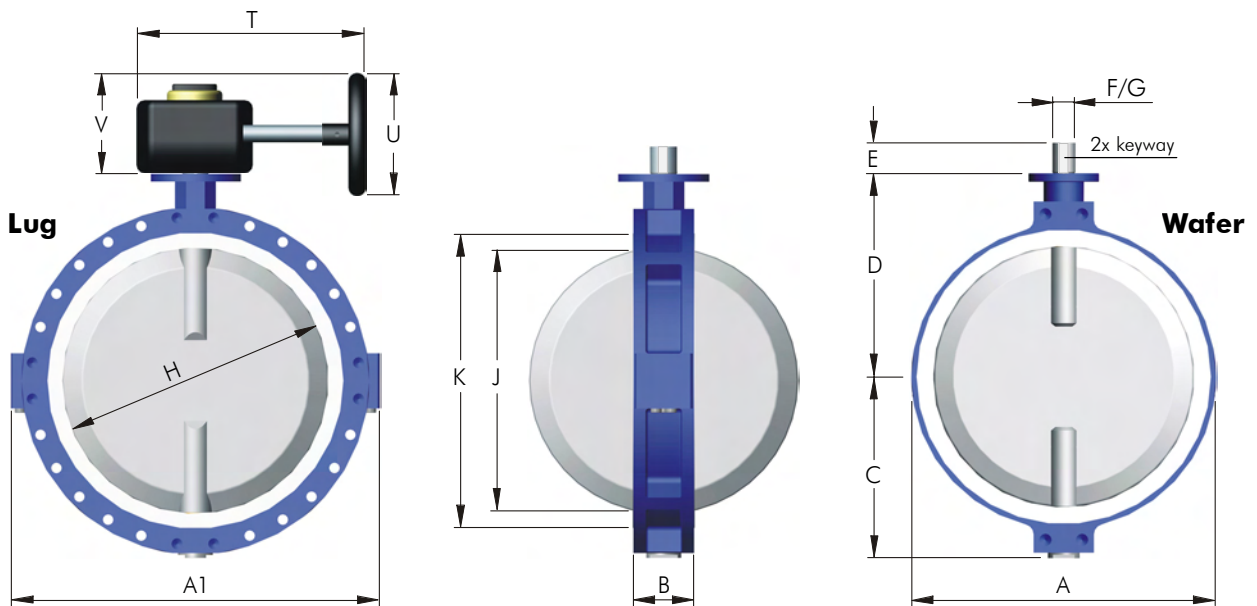
Size nom.	14"	16"	18"	20"	24"
20°	406	592	771	1,032	1,473
30°	766	1,143	1,456	1,879	2,494
40°	1,369	1,717	2,587	3,457	4,849
50°	2,088	2,842	4,466	6,206	8,607
60°	3,341	4,907	7,250	9,454	13,166
70°	5,278	7,598	10,672	13,688	19,082
80°	8,329	10,730	14,210	18,050	24,592
90°	10,162	13,166	17,284	20,880	28,420

Same values to be applied on Butterfly Valves SBE Series elastomer-lined

Pressure-/Temperature Diagram



Dimensions inch



Size nom.	A	A1	B	C	D	E	F	G	H	J	K	ISO	T	U	V
28"	31.69	40.16	6.50	18.74	21.97	1.97	1.97	0.55	26.77	25.98	30.67	F14	19.29	19.69	12.99
30"	43.70	43.70	6.50	21.26	23.94	3.54	2.76	0.79	29.13	28.39	33.03	F16	19.29	19.69	12.99
32"	43.70	43.70	6.50	21.26	23.94	3.54	2.76	0.79	30.71	29.96	33.03	F16	19.29	19.69	12.99
36"	48.03	48.03	7.99	23.07	26.97	3.54	3.54	0.98	34.65	33.70	38.58	F25	19.29	19.69	12.99
42"	55.91	55.91	8.50	29.69	30.24	3.54	3.94	1.10	39.37	38.43	43.31	F25	19.29	19.69	12.99

F/F acc. to ASME B16.10

* Wafer 30", 32" and 36" made of Lug bodies with drilled-through holes

Torque Values in-lbs

Torque values for PFA-encapsulated disc and specified body liner

Size nom.	28"	30"	32"	36"	42"
A80 PTFE	15,576	17,523	18,497	23,364	29,205
max. allowable	21,240	35,400	35,400	44,250	44,250

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

Weights lbs

Figures stated for execution PTFE/PFA/bare shaft

Size nom.	28"	30"	32"	36"	42"
Lug -style body	902	1,056	1,320	1,760	2,178
Wafer -style	660	1,056	1,320	1,760	2,178
Gearbox GG25	165	165	165	165	165

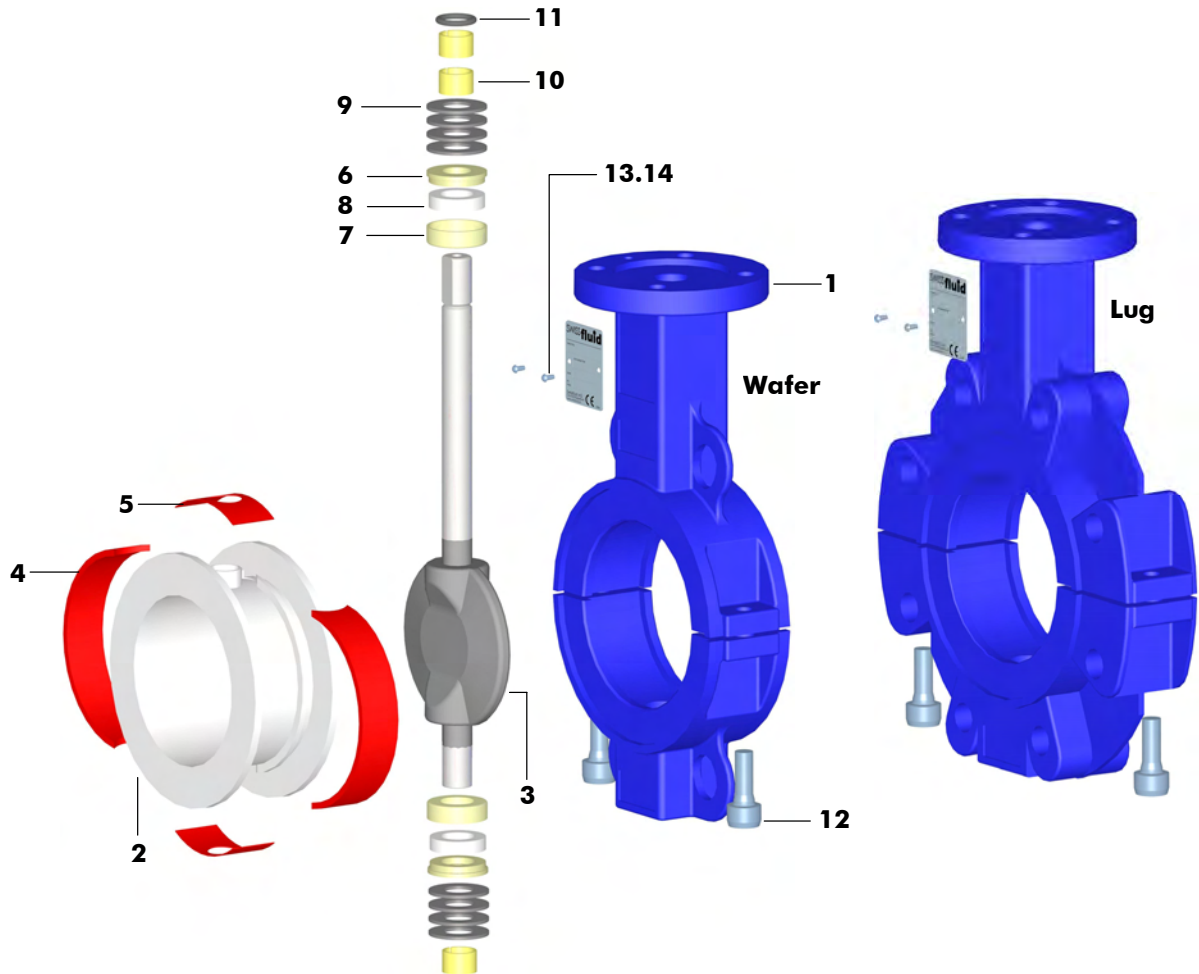
* Wafer 30", 32", 36" and 42" made of Lug-style bodies with drilled-through flange holes

Weights for pneumatic actuators acc. to separate data sheet

Flow Rate Values Cv usg/min

28"	30"	32"	36"	42"
41,920	46,850	49,390	66,440	73,760

Standard Version (Picture showing DN 80 PN16, PTFE liner, PFA-encapsulated disc, bare shaft)



Item	Qty.	Description	Material	No.
1	1	Body two-piece, RAL 5005 epoxy (Wafer-style or Lug)	WCB	1.0619
2	1	Liner	PTFE	
3	1	Disc encapsulated	Duplex/PFA	1.4462
4	2	Elastomer	FPM	
5	2	Elastomer Pad	FPM	
6	2	Pressure Ring	C.Steel	1.0737
7	2	Guide Ring	C.Steel	1.0737
8	2	Elastomer Insert	FPM	
9	8	Belleville Spring	Spring Steel	1.8159
10	3	Bearing DU	C.Steel/PTFE	
11	1	O-Ring top	FPM	
12	2	Socketed Head Cap Screw	A2-70	1.4310
13	1	Name Plate 42 x 14 CE	A2	1.4301
14	2	Hammer Screw 2.49 x 4.76	A2	1.4310

Project-/Customer Data

Inquiry/Date: _____

Ref. SF _____

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 Room dry
 vertical Room humid
 outdoor

Remarks:

SBP Product Code

Specification of a complete Butterfly Valve SBP Series

Product code	Nom. size	Flange conn.	Body	Liner	Elastomer	Disc encaps./solid	Shaft end	Options
SBPW	4"	150#	G10	A80	E67	U85	DD	
SBPW Wafer*	1" - 42"	ANSI150#	G10 WCB	A80 PTFE	E60 EPDM	U85 PFA	DD DD drive	Po polished disc
SBPL Lug	DN25 - 1000	ANSI300#	G15 CF-8M	A81 PTFE-T	E67 FPM	U86 PFA-AS	SP SQ parallel	TA TA-Luft
*Rem.:		PN16	G34 SS316L	A82 PTFE-AS	E68 VMQ	U88 PVDF	SR SQ 45° rot.	Th thru holes
Wafer bodies combined for DIN/ANSI		PN10		A88 PVDF		U89 PP		B7 B7 bolts
		JIS 10K		A90 UHMWPE		U91 ETFE		Ti Ti bolts
						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.