1" – 42"

SBP 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 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 (conductive), 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 2014/68/EU (PED)**

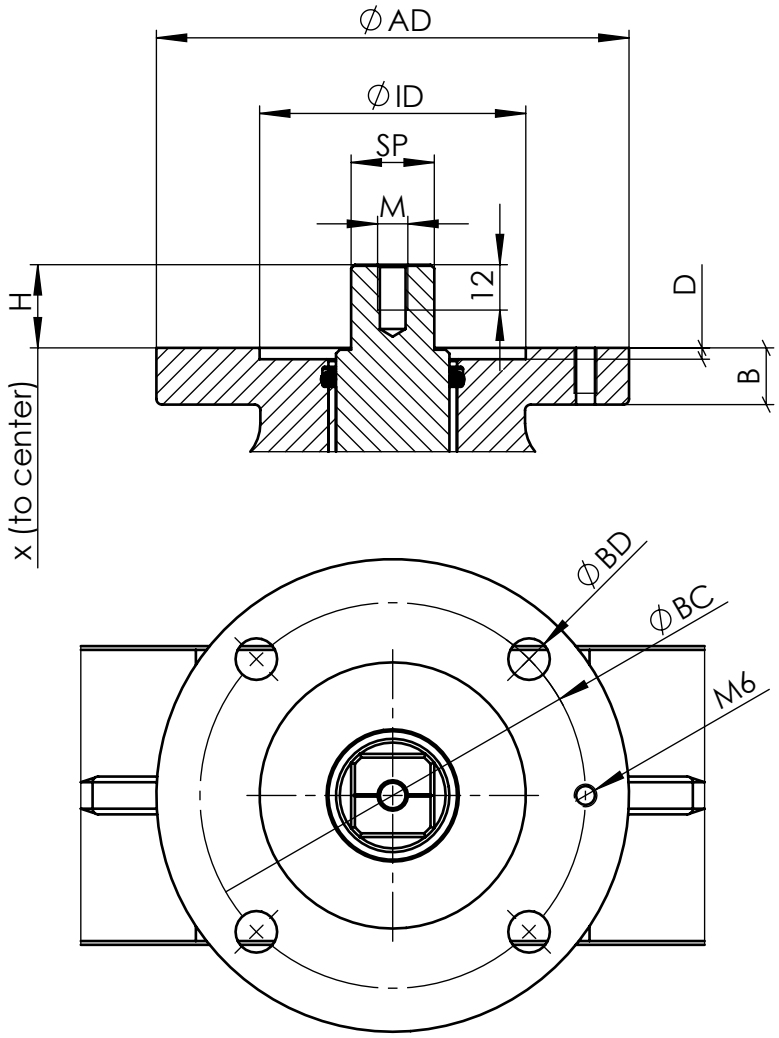
Options

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



Size	AD	ID	BC	BD	SP	H	B	D	X	M	ISO
25/1"	65	35.4	50	7	11	11	15	3	98	M6	F05
32/1¼"	65	35.4	50	7	11	11	15	3	98	M6	F05
40/1½"	90	55.4	70	9	11	11	12	3	120	M6	F07
50/2"	90	55.4	70	9	11	11	12	3	135	M6	F07
65/2½"	90	55.4	70	9	11	11	12	3	155	M6	F07
80/3"	90	55.4	70	9	11	11	12	3	170	M6	F07
100/4"	90	55.4	70	9	14	15	12	3	199	M6	F07
125/5"	90	55.4	70	9	14	15	12	3	214	M6	F07
150/6"	125	70.4	102	11	17	18	14	3	227	M8	F10
200/8"	125	70.4	102	11	17	18	14	3	257	M8	F10
250/10"	125	70.4	102	11	22	22.5	15	3	286.5	M8	F10
300/12"	125	70.4	102	11	22	22.5	15	3	286.5	M8	F10
350/14"	150	85.4	125	14	27	27.5	18	3	336.5	M12	F12
400/16"	150	85.4	125	14	27	27.5	18	3	366.5	M12	F12

General tolerance class for machined parts: Linear and angular dimensions, Form and position ISO 2768-mK

All dimensions in millimeters
Roughness symbols according to DIN ISO1302

Sep. parts list same no.: ☐ diff. no.: ☐

Scale: 1:2

Swissfluid AG
CH-5600 Lenzburg

	Date	Name	Signature	Material:
Drawn	29.11.21	GR		Weight:
Appv'd	29.11.21	RJ		Product Group: SBP
			Rev. description	
Revision				
Revision				
Revision				
Revision				

Title:

Shaft End SBP, SP

DN25/1" - DN400/16", Bare Shaft and ISO-Flange
Butterfly Valves SBP

Dwg No. 1.94.1737

Rev.

Size: A4

Language: E

Sheets: 1 Sheet No.: 1

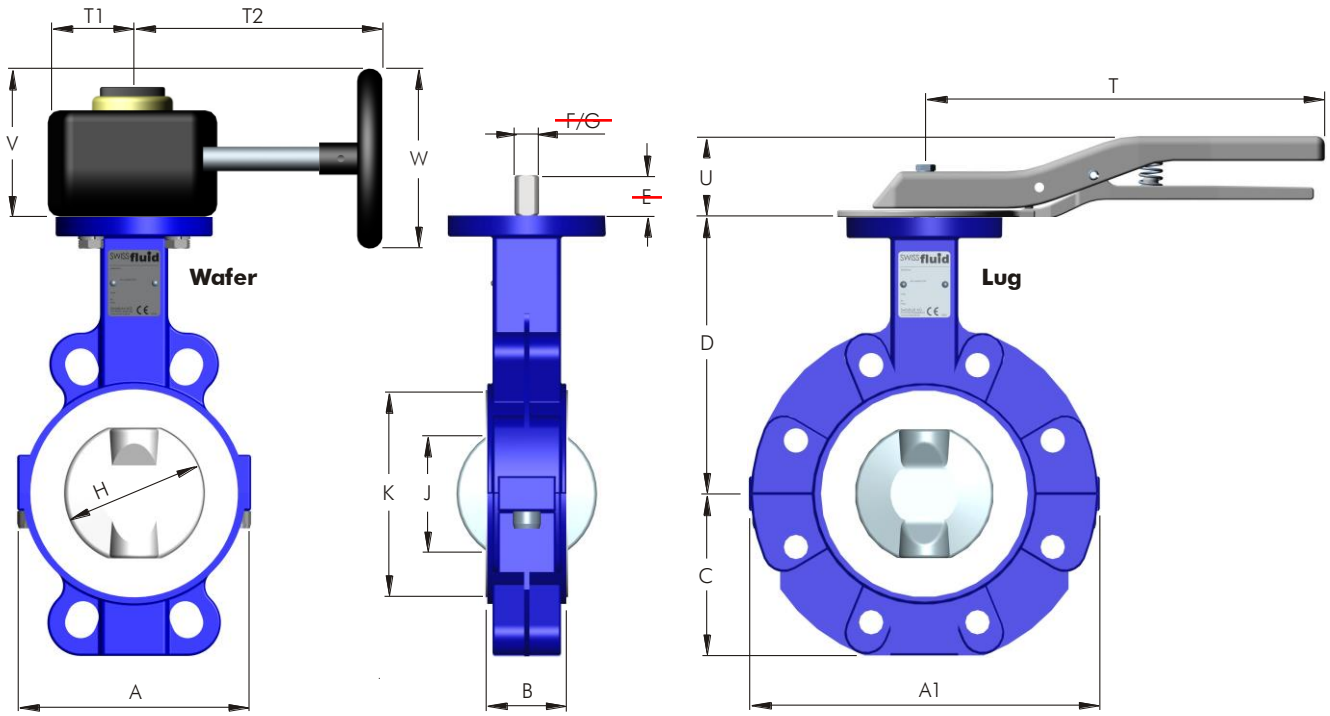
Operating Conditions

- Temperature range from -40°F up to +450°F, depending on lining material
- Pressure range from 0.01 psi 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

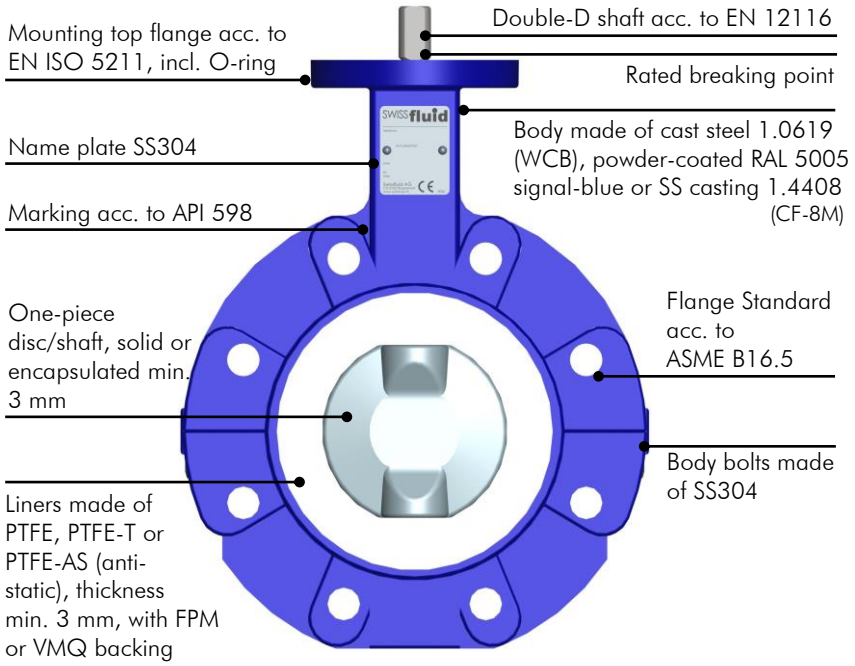


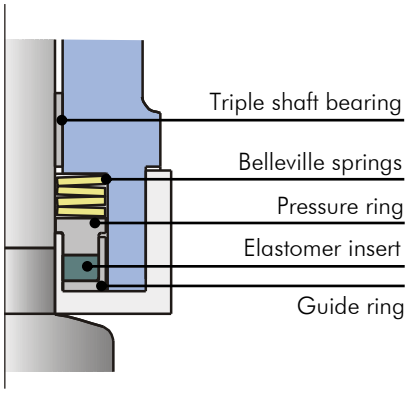
Dimensions inch

Size nom.	A	A1	B	C	D	E	F	G	H	J	K	ISO Top	T	T1	T2	U	V	W
1"[1)]	-	4.53	1.30	1.81	3.43	0.91	0.55	0.43	1.38	0.39	2.52	F05	9.06	2.28	4.33	1.81	3.54	4.92
1¼"[1)]	-	4.53	1.30	1.81	3.43	0.91	0.55	0.43	1.38	0.39	2.52	F05	9.06	2.28	4.33	1.81	3.54	4.92
1½"[1)]	-	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
2½"	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	2.01	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
[1)] Wafer made of Lug bodies with drilled-through holes

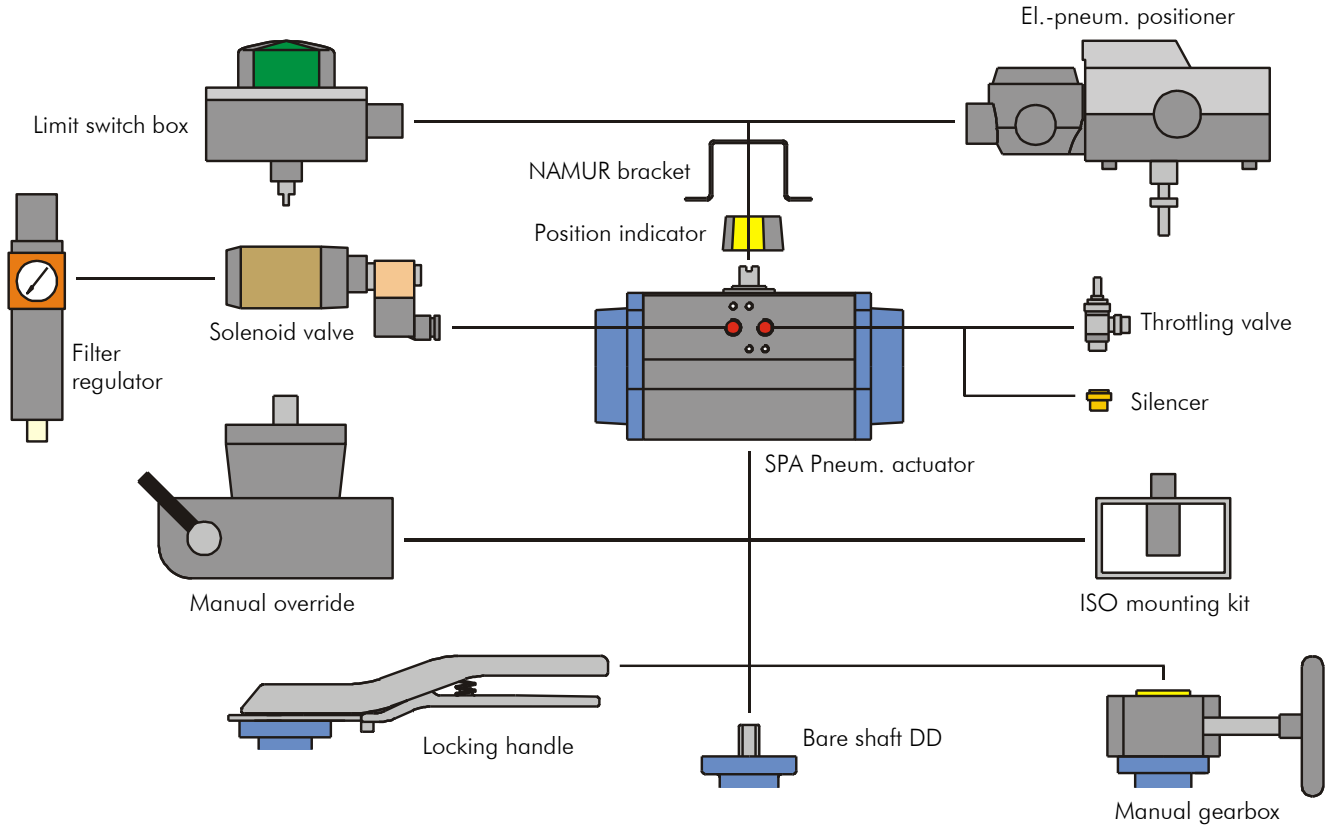
Construction of Valve





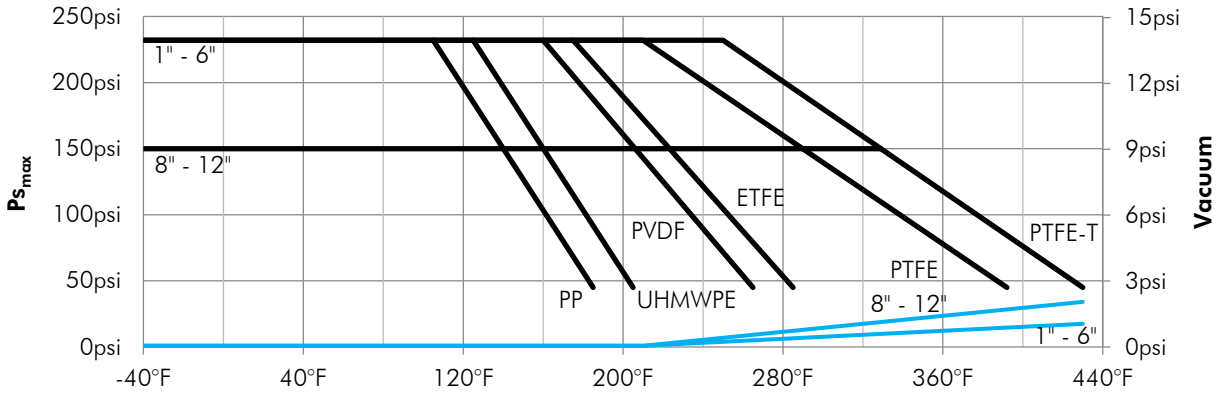
Dynamic Shaft Seal

Mounting Options



1" – 12"

Pressure-/Temperature Diagram



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

Torque Values in-lbs

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

Size nom.	**1"/1¼"**	**1½"**	**2"**	**2½"**	**3"**	**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	1,283	1,283	1,283	1,283	1,283	2,832	2,832	6,195	6,195	10,620	10,620

- 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"**	**2½"**	**3"**	**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

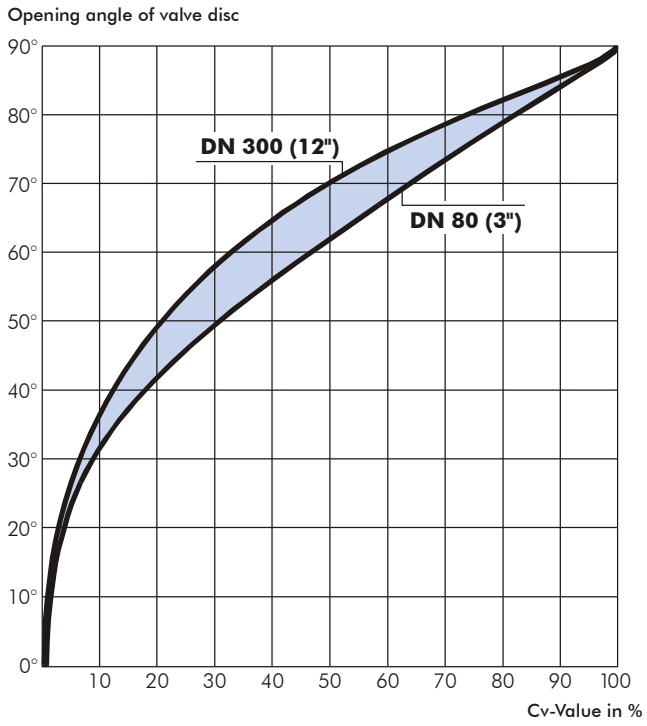
Weights for pneumatic actuators acc. to separate data sheet

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

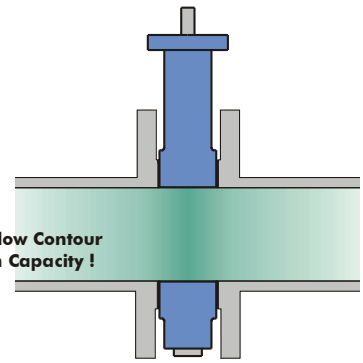


Liquids

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

Gases

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



°K = °C + 273

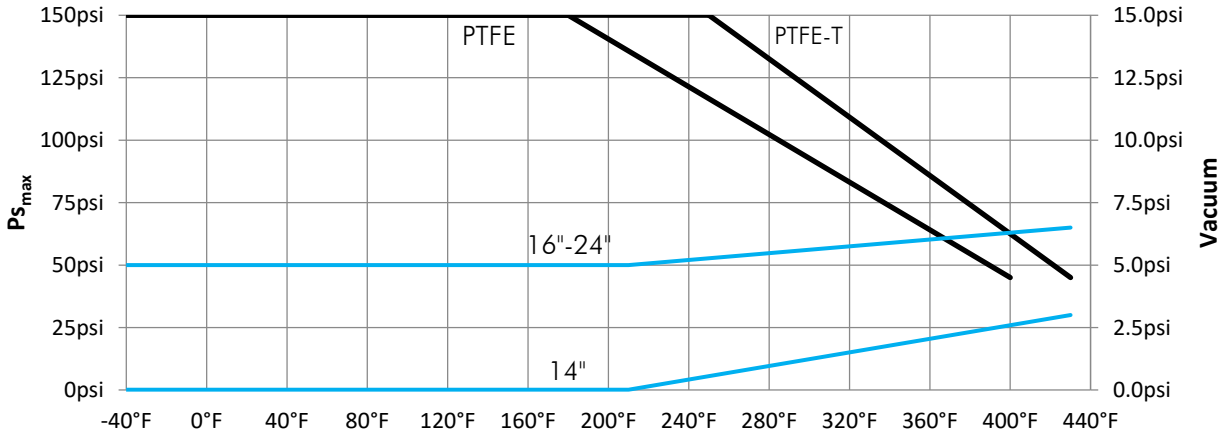
Cv	Valve Coefficient	usg/min
Q	Flow Rate	usg/min
Q_N	Flow Rate	usg/min
SG	Specific Gravity	lbs/usg
SG_N	Specific Gravity	lbs/usg
P_2	Downstream Pressure	psi
ΔP	Pressure Drop	psi
T	Temperature	°K

Typical Service Applications

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

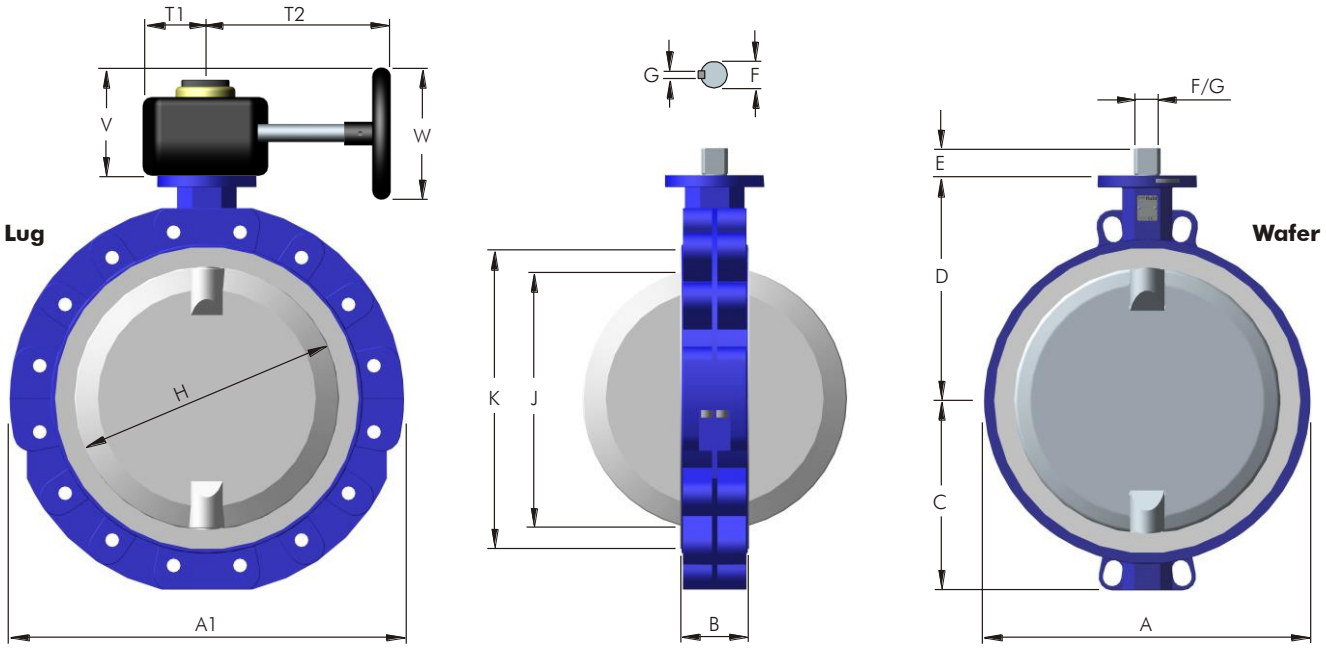
14" – 24"

Pressure-/Temperature Diagram



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

Dimensions inch



Size nom.	A	A1	B	C	D	E	F	G[1]	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	17.72	17.17	20.28	F14	3.54	15.75	9.65	15.75
20"	23.31	27.48	5.00	13.58	15.35	1.97	1.97	0.55	19.69	19.06	22.40	F14	3.54	15.75	9.65	15.75
24"	27.32	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

Face to face B acc. to ASME B16.10
B: 14": optional 3.07 inch , ASME B16.10 wide
[1] G: 14"/16": DD drive, 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		15,930	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

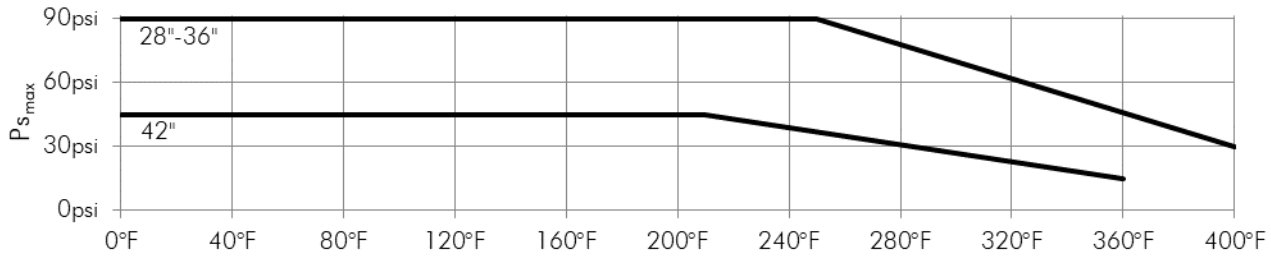
Estimated values at corresponding opening angle of valve disc

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

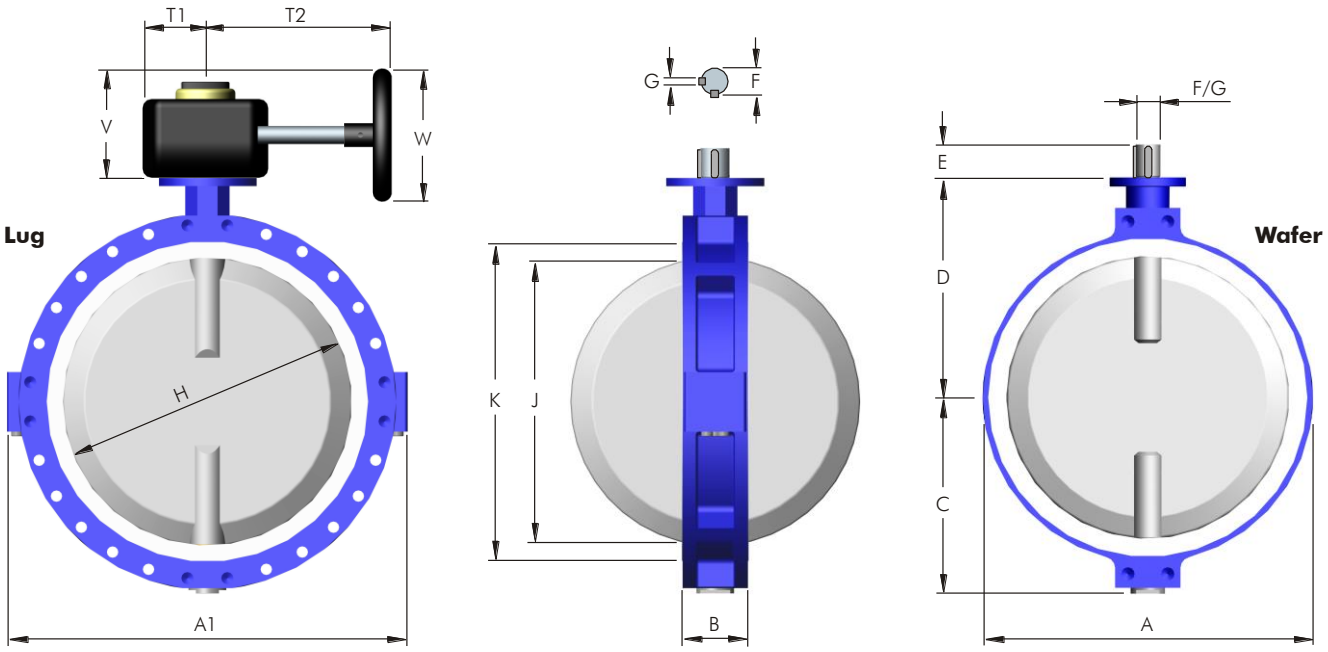
28" – 42"

Pressure-/Temperature Diagram



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

Dimensions inch



Size nom.	A	A1	B	C	D	E	F	G[1)]	H	J	K	ISO Top	T1	T2	V	W
28"	31.69	40.16	6.50	18.74	21.97	1.97	1.97	0.55	26.77	25.98	30.67	F14	5.63	17.72	12.87	19.69
30"	43.70	43.70	6.50	21.26	23.94	3.54	2.76	0.79	29.13	28.39	33.03	F16	5.63	17.72	12.87	19.69
32"	43.70	43.70	6.50	21.26	23.94	3.54	2.76	0.79	30.71	29.96	33.03	F16	5.63	17.72	12.87	19.69
36"	48.03	48.03	8.00	23.07	26.97	3.54	3.54	0.98	34.65	33.70	38.58	F25	6.69	17.72	12.99	19.69
42"	55.91	55.91	8.50	29.69	30.24	3.54	3.94	1.10	39.37	38.43	43.31	F25	6.69	17.72	12.99	19.69

F/F acc. to ASME B16.10
A: Wafer-style bodies 30" up to 42" made of Lug bodies with drilled-through holes
[1)] G: 2x Keyway 90° offset

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

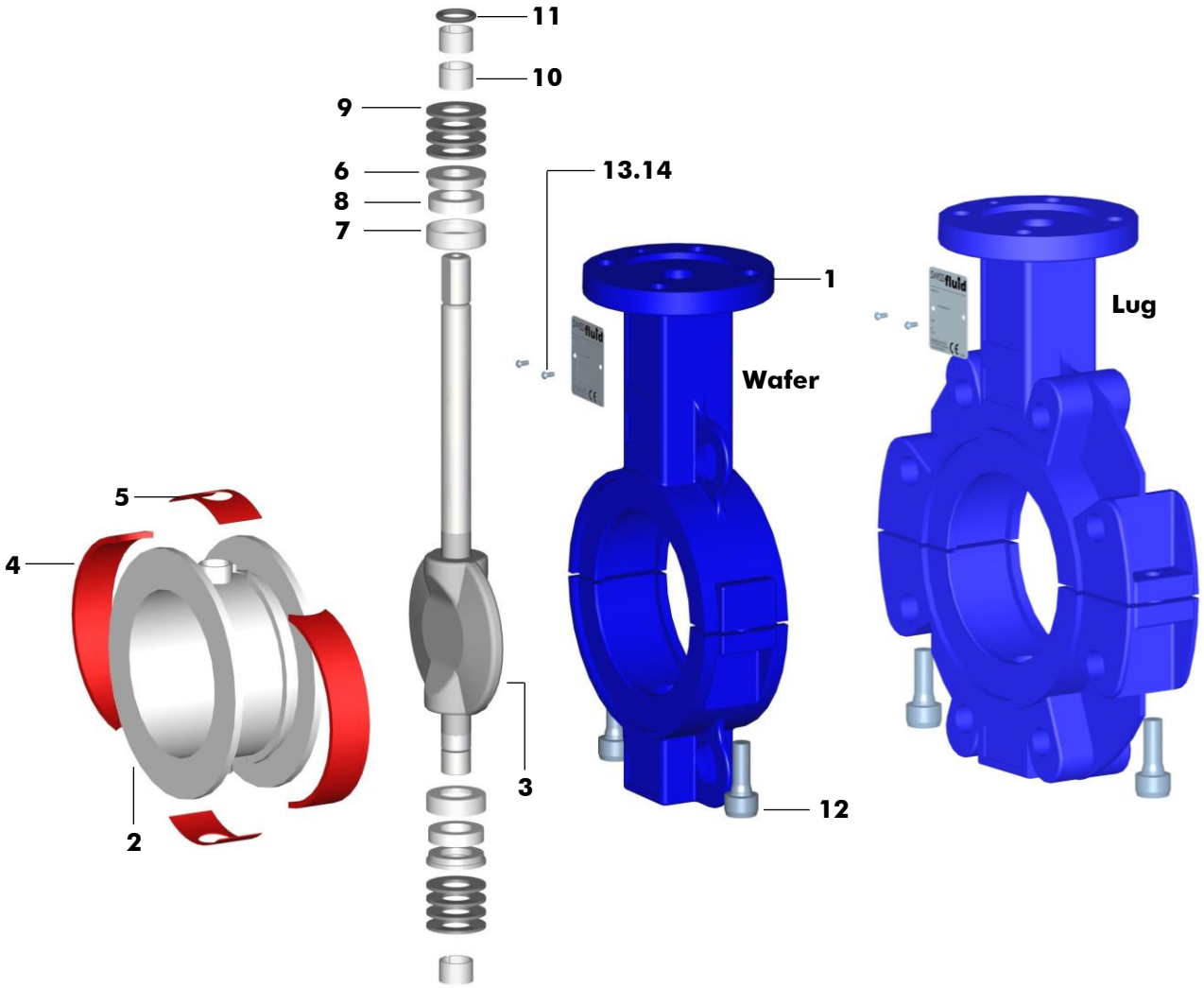
Weights for pneumatic actuators acc. to separate data sheet

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)

Parts List Valve compl.



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	SS316L	1.4404
7	2	Guide Ring	SS316L	1.4404
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	Socked 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

Specification

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:

☐ liquid ☐ powdery ☐ crystallizing ☐ sticky ☐ Spec. Grav. ____
☐ gaseous ☐ Solids ___ % ☐ viscous ☐ Flow Velocity _____ ft/sec
☐ abrasive ☐ Particle ____ mm ☐ Visc. _____ cp ☐ 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** -	

Product code	
SBPW	Wafer*
SBPL	Lug

*Rem.: Wafer bodies combined for DIN/ANSI

Nom. size
1" – 42"
DN25 - 1000

Flange conn.
ANSI150#
ANSI300#
PN16
PN10
JIS 10K

Body	
G10	WCB
G15	CF-8M
G34	SS316L

Liner	
A80	PTFE
A81	PTFE-T
A82	PTFE-AS
A88	PVDF
A90	UHMWPE

Elastomer	
E60	EPDM
E67	FPM
E68	VMQ

Disc encaps./solid	
U85	PFA
U86	PFA-AS
U88	PVDF
U89	PP
U91	ETFE
S16	SS Duplex
S34	SS316L
S40	Tit. Gr.2
S41	Tit. Gr.7
S43	Hast. C

Shaft end	
DD	DD drive
SP	SQ parallel
SR	SQ 45° rot.

Options	
Po	polished disc
TA	TA-Luft
Th	thru holes
B7	B7 bolts
Ti	Ti bolts
RAL..	special paint

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