

## 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

**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

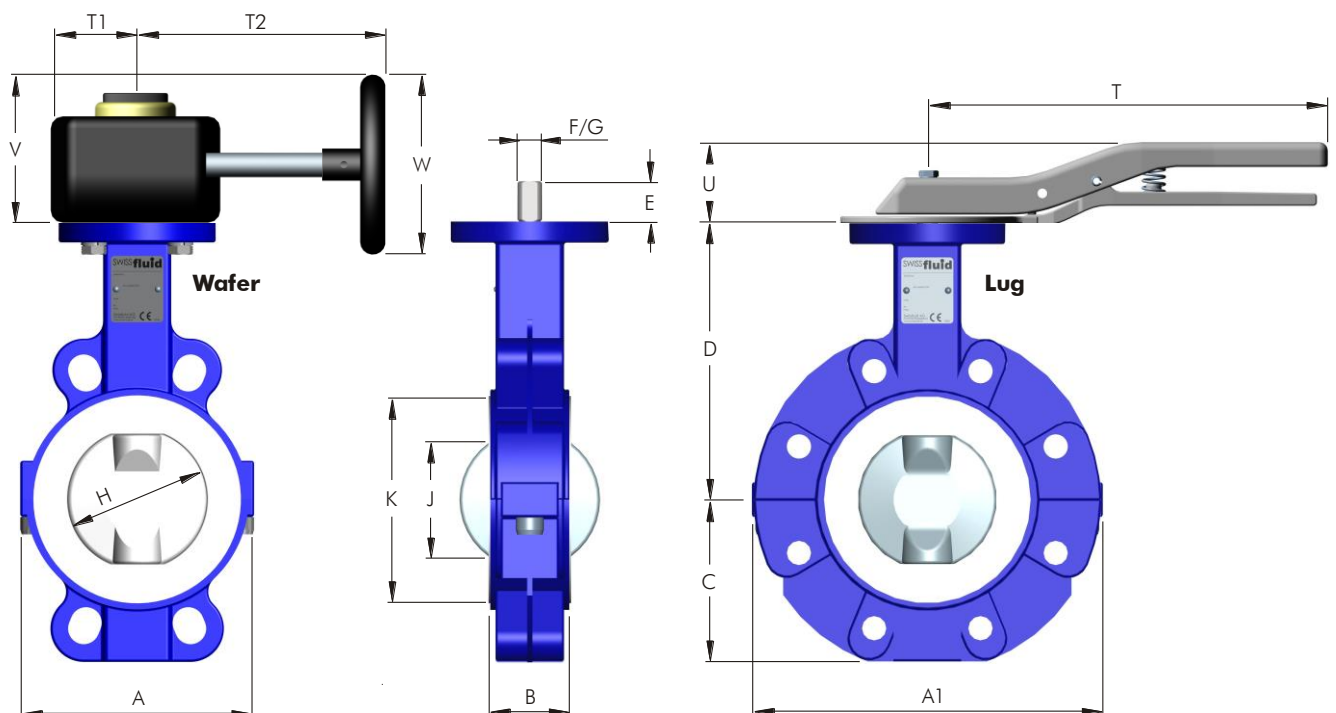
### Operating Conditions

- 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

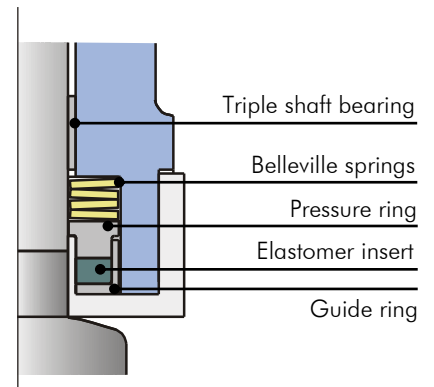
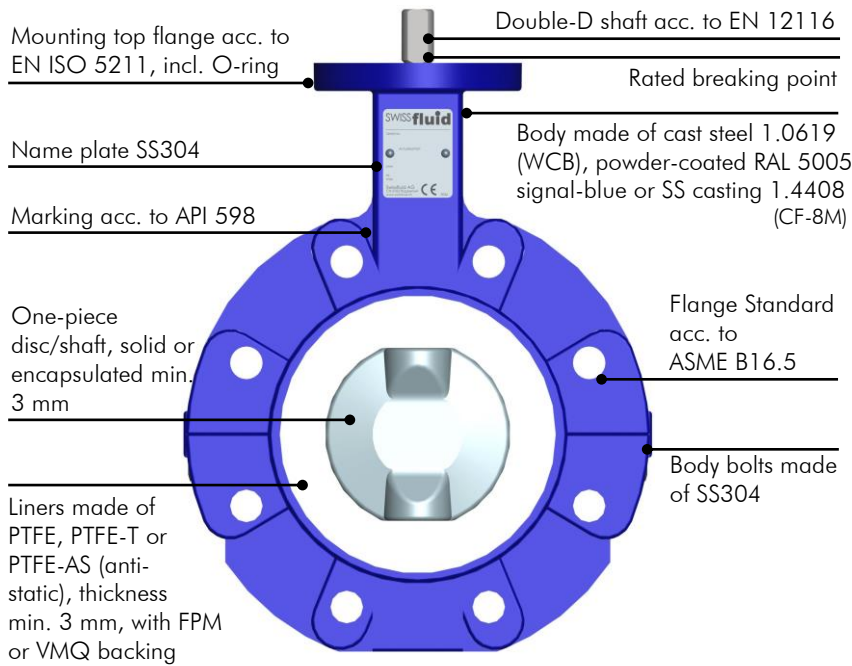

**Dimensions** inch

Size nom.	A	A1	B	C	D	E	F	G	H	J	K	ISO Top	T	T1	T2	U	V	W
1 <sup>1)</sup>	-	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
1 1/4 <sup>1)</sup>	-	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
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	2.01	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

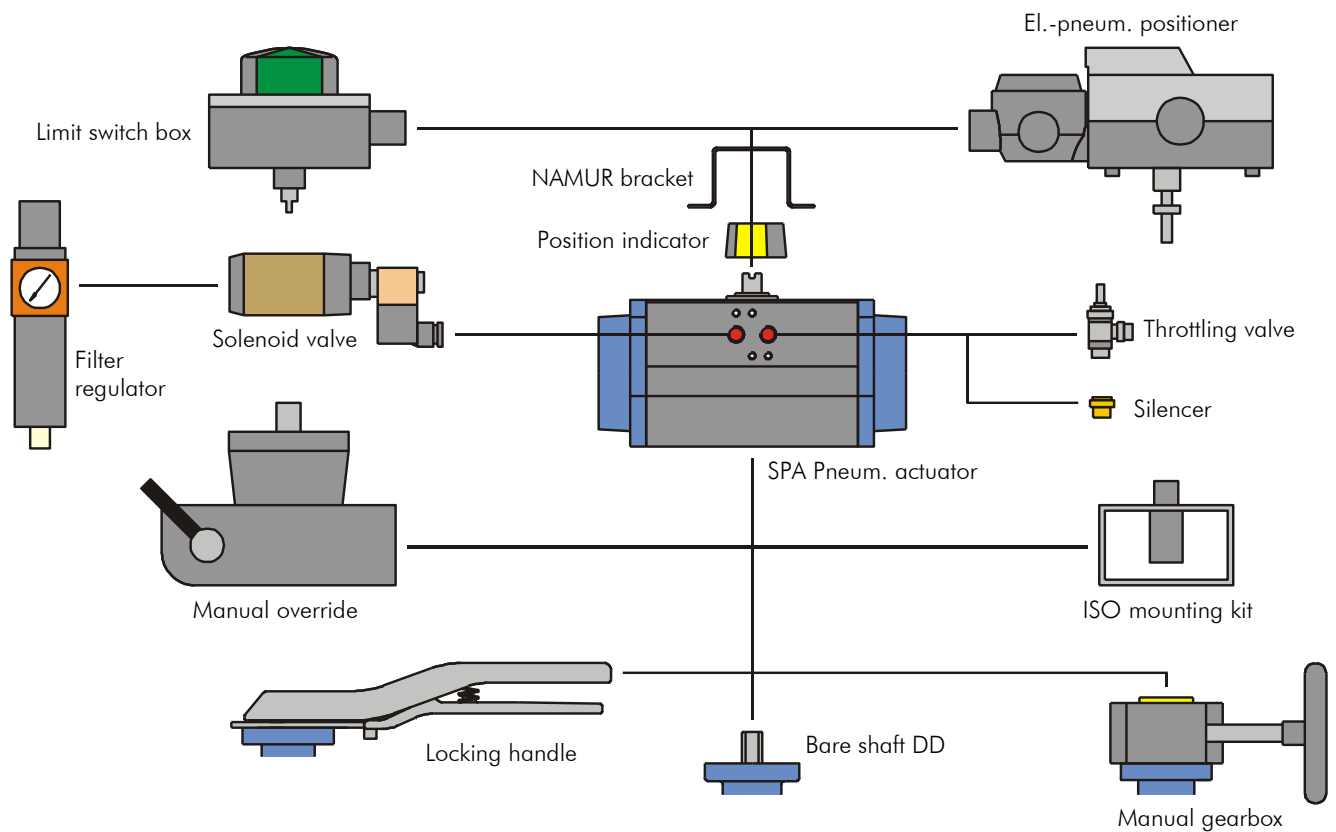
<sup>1)</sup> Wafer made of Lug bodies with drilled-through holes

**Construction of Valve**



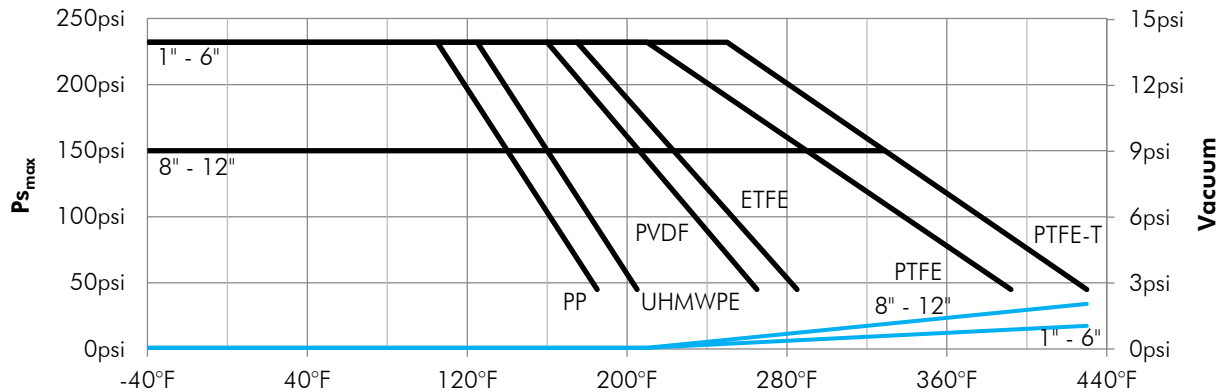
**Dynamic Shaft Seal**

**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"
<b>A80</b> PTFE	177	221	266	266	354	443	531	974	1,593	2,213	3,098
<b>A81</b> PTFE-T	195	248	292	292	389	487	584	1,080	1,752	2,434	3,407
<b>A82</b> PTFE-AS	177	221	266	266	354	443	531	974	1,593	2,213	3,098
<b>A89</b> PP	283	354	398	398	531	664	797	1,460	2,390	3,319	4,646
<b>A90</b> 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"
<b>Lug</b> -style body	5.06	7.04	10.34	13.20	14.30	18.70	23.32	30.58	39.38	59.84	78.98
<b>Wafer</b> -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

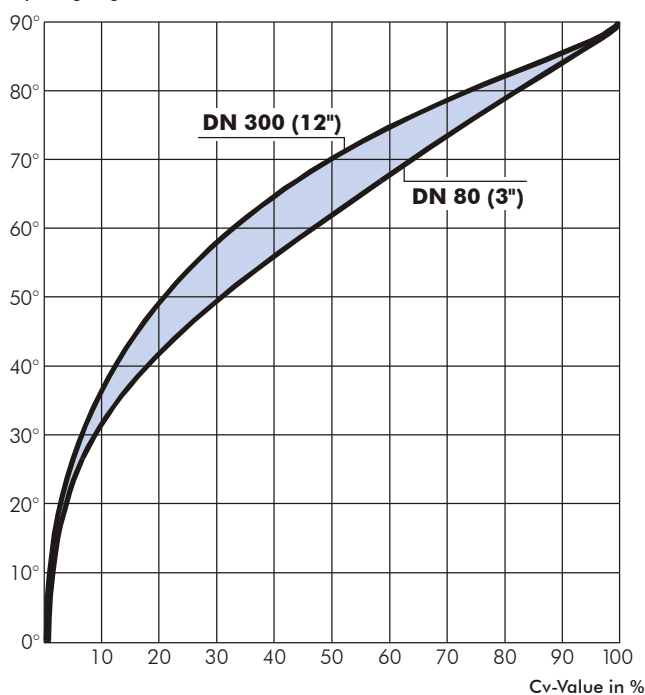
**Flow Rate Values Cv** usg/min.

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**

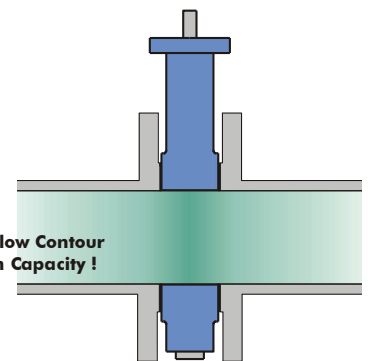
Opening angle of valve disc


**Liquids**

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

**Gases**

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

 Streamline Flow Contour  
for Maximum Capacity !


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



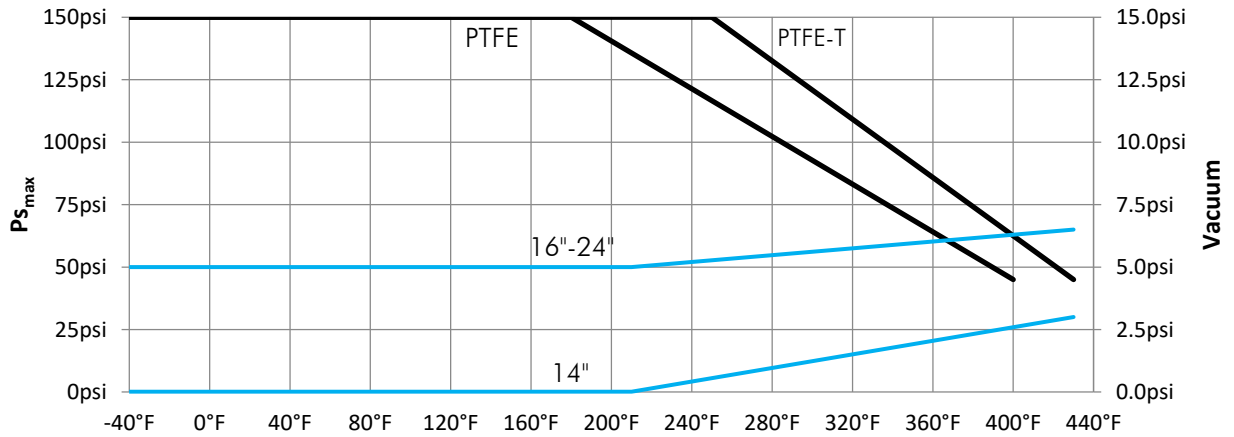
<b>Cv</b>	Valve Coefficient	usg/min
<b>Q</b>	Flow Rate	usg/min
<b>Q<sub>N</sub></b>	Flow Rate	usg/min
<b>SG</b>	Specific Gravity	lbs/usg
<b>SG<sub>N</sub></b>	Specific Gravity	lbs/usg
<b>P<sub>2</sub></b>	Downstream Pressure	psi
<b>ΔP</b>	Pressure Drop	psi
<b>T</b>	Temperature	°K

**Typical Service Applications**

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

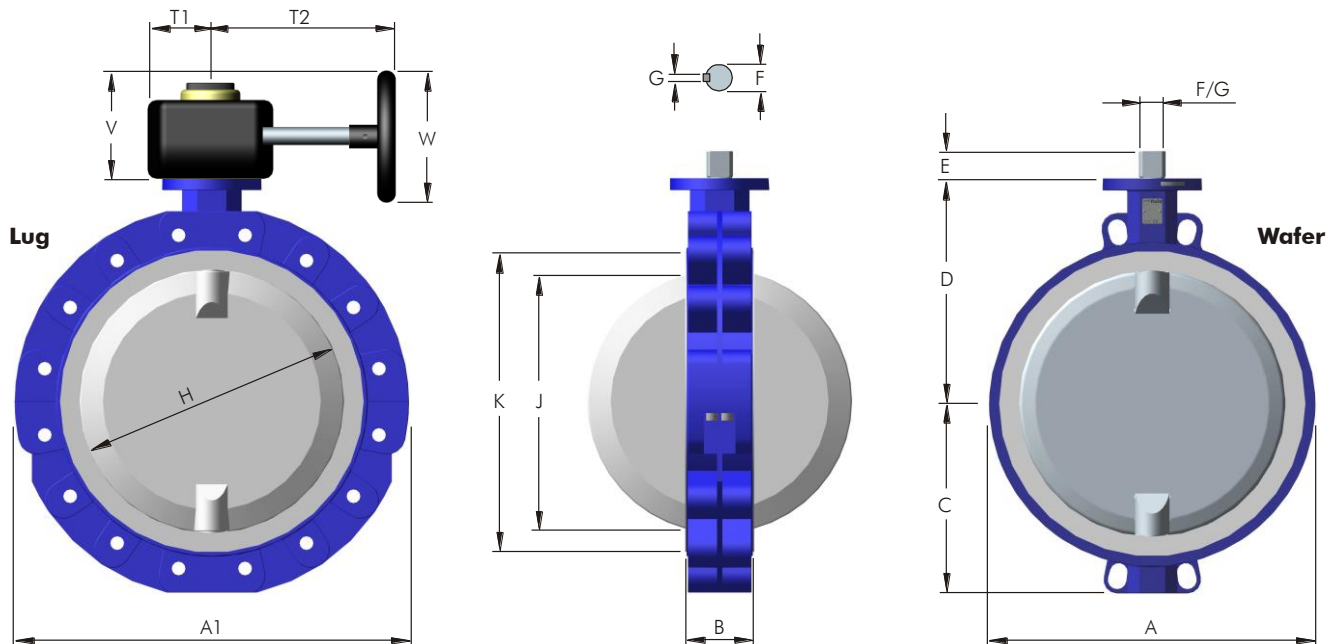
# 14" - 24"

## 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 <sup>1)</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	17.72	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

<sup>1)</sup> 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"
<b>A80</b> PTFE	3,983	5,310	6,549	7,965	10,620
<b>A81</b> PTFE-T	4,381	5,841	7,213	8,762	11,682
<b>A82</b> 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"
<b>Lug</b> -style body	191	222	301	348	532
<b>Wafer</b> -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

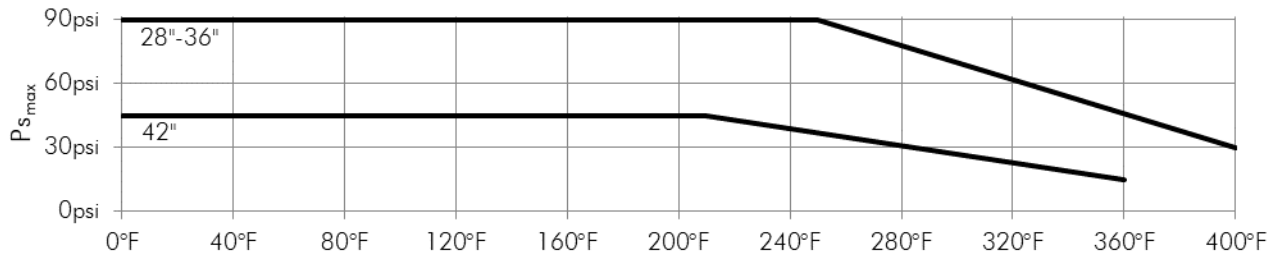
Estimated values at corresponding opening angle of valve disc

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

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

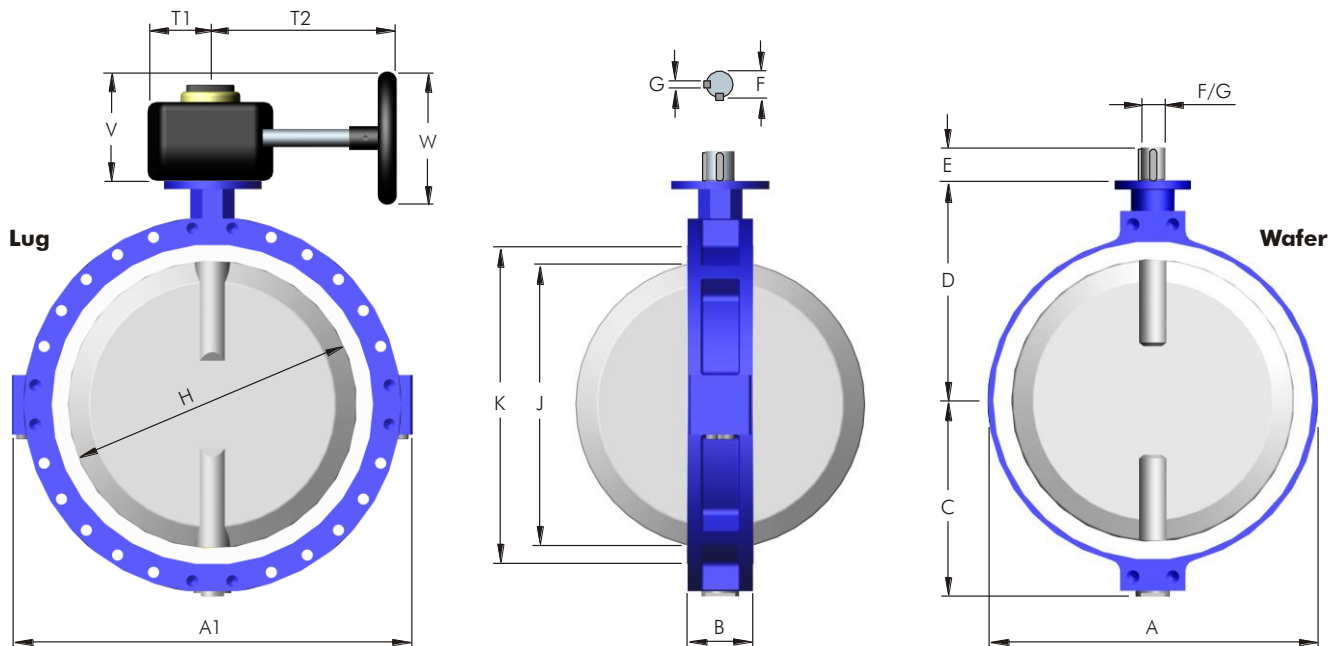
## 28" – 42"

### 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 <sup>1)</sup>	H	J	K	ISO Top	T1	T2	V	W
<b>28"</b>	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
<b>30"</b>	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
<b>32"</b>	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
<b>36"</b>	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
<b>42"</b>	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

<sup>1)</sup> 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"
<b>A80</b> 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"
<b>Lug</b> -style body	902	1,056	1,320	1,760	2,178
<b>Wafer</b> -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

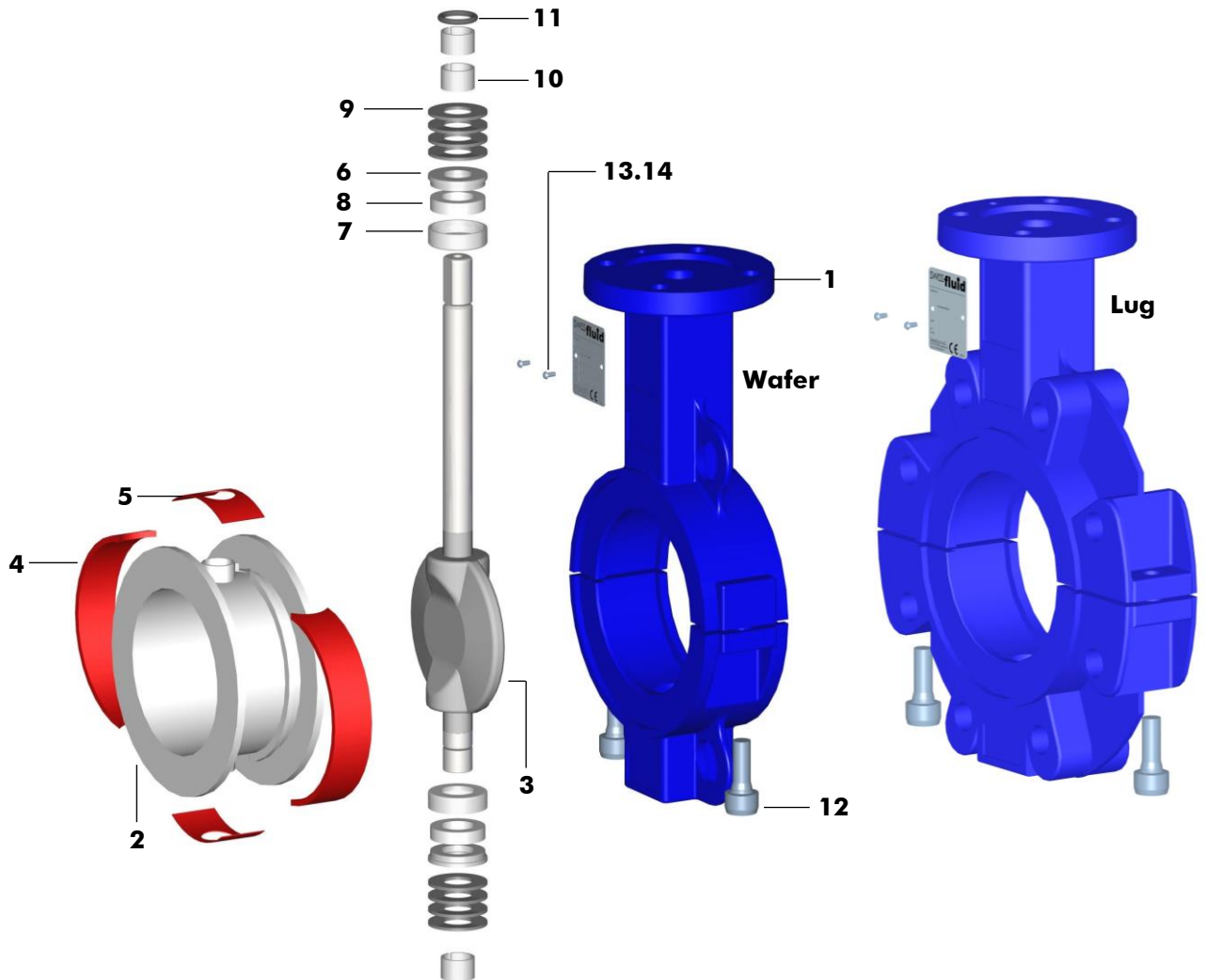
Weights for pneumatic actuators acc. to separate data sheet

**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**

<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: \_\_\_\_\_

**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
<b>SBPW</b>	<b>4"</b>	<b>150#</b>	<b>G10</b>	<b>A80</b>	<b>E67</b>	<b>U85</b>	<b>DD</b>	
<b>SBPW Wafer*</b>	1" - 42"	ANSI150#	G10 WCB	A80 PTFE	E60 EPDM	U85 PFA	DD DD drive	Po polished disc
<b>SBPL Lug</b>	DN25 - 1000	ANSI300#	G15 CF-8M	A81 PTFE-T	E67 FPM	U86 PFA-AS	SP SQ parallel	TA TA-Luft
<b>*Rem.:</b>		PN16	G34 SS316L	A82 PTFE-AS	E68 VMQ	U88 PVDF	SR SQ 45° rot.	Th thru holes
Wafer bodies		PN10	—	A88 PVDF	—	U89 PP	—	B7 B7 bolts
combined for		JIS 10K	—	A90 UHMWPE	—	U91 ETFE	—	Ti Ti bolts
DIN/ANSI		—	—	—	—	S16 SS Duplex	—	RAL.. special paint
		—	—	—	—	S34 SS316L	—	—
		—	—	—	—	S40 Tit. Gr.2	—	—
		—	—	—	—	S41 Tit. Gr.7	—	—
		—	—	—	—	S43 Hast. C	—	—

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