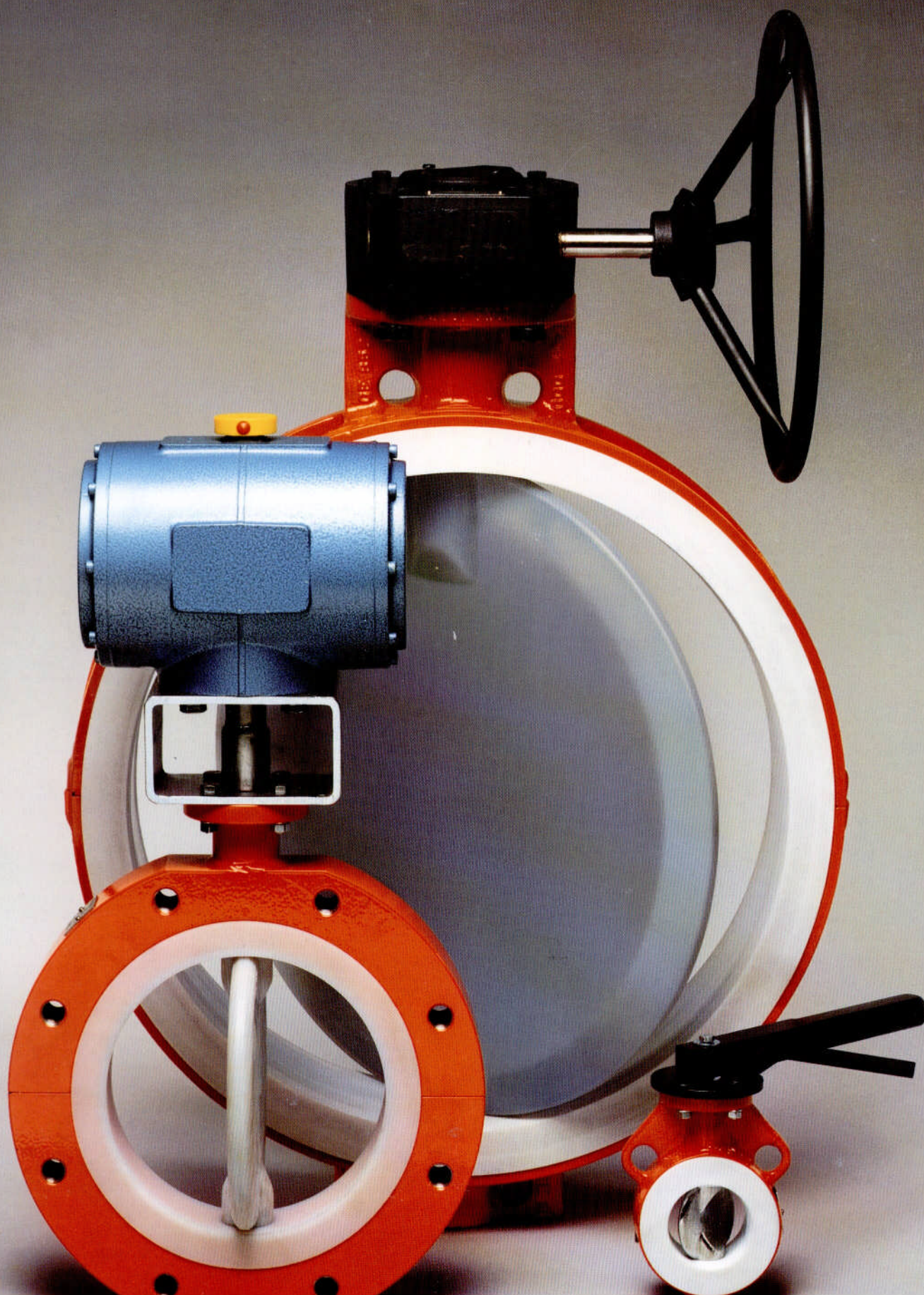


S P H E R - O - D I S C[®]

Butterfly-Valves

technova





Butterfly Valves SBP Series are available as DIN- or ANSI-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 drilling acc. to DIN PN10/16 resp. ANSI 150lbs for installation into existing piping systems



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

SBP: Technical Data

51 Butterfly Valves, plastomer-lined

PM 51 M.01 e

May 2004

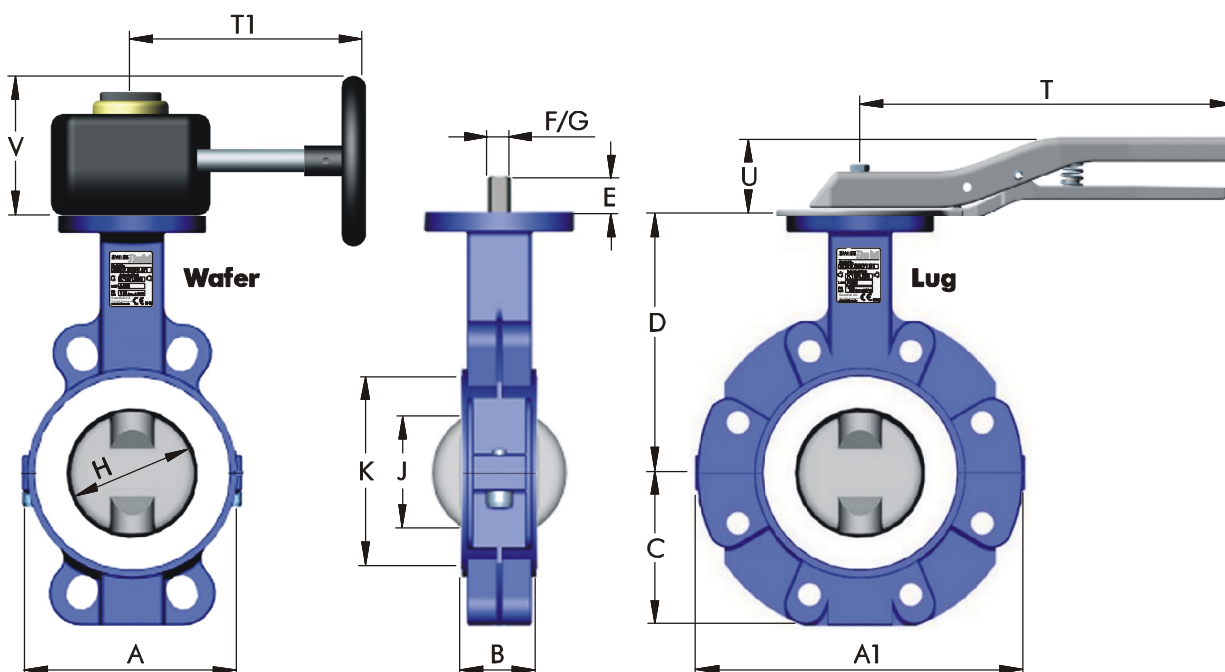


- Temperature range from -40°C up to $+220^{\circ}\text{C}$ (depending on material of liner resp. encapsulation)
- Pressure range from 1 mbar up to 16 bar

Testing / Marking

- Pressure- and tightness testing acc. to prEN 12266-1, leakage rate A, and spark testing at 35 kV to assure lining integrity. Marking of valves on body and name plate acc. to EN 19.
- Material- resp. test certificate acc. to EN 10204-3.1B

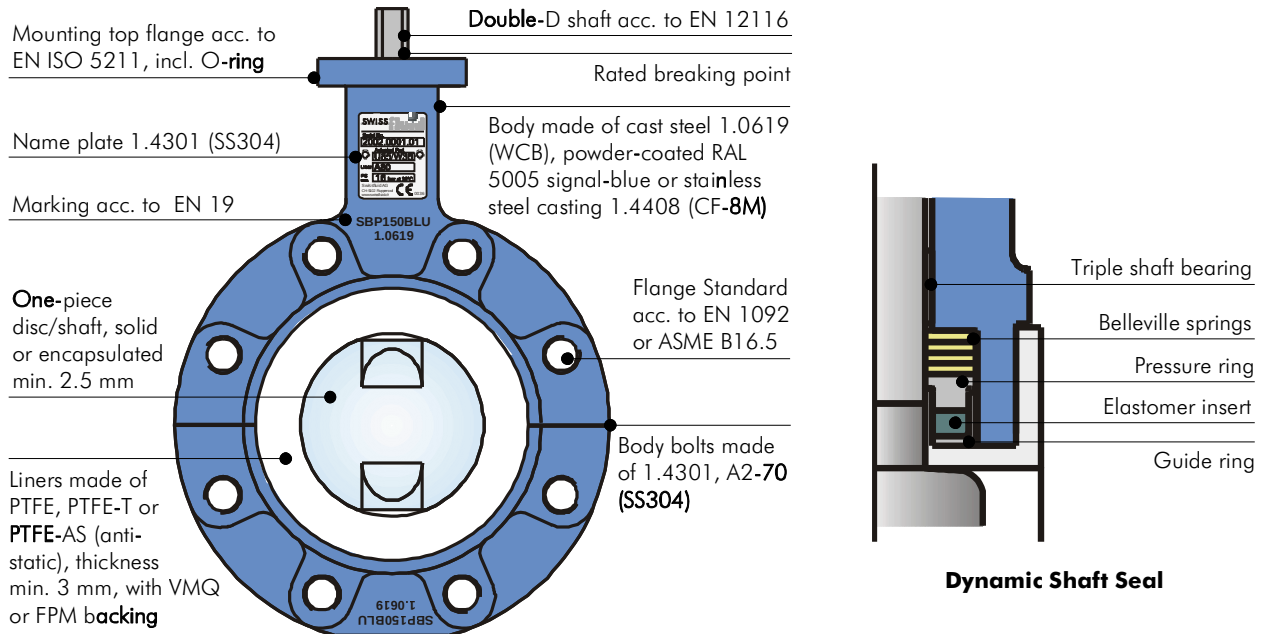
Outline Drawing / Actuator Options



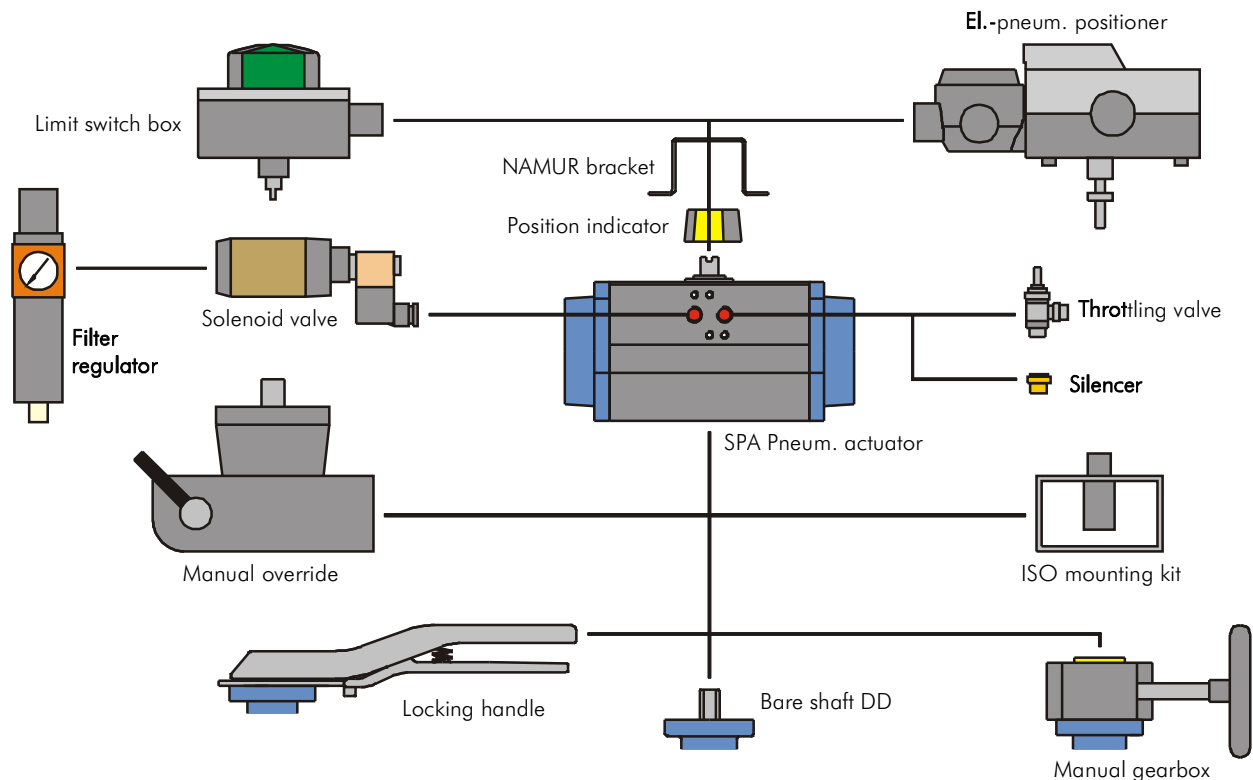
Dimensions in mm

Size DN	A	A1	B	C	D	E	F	G	H	J	K	ISO	T	T1	U	V
25/1"	-	115	33	46	87	23	14	11	35	10	64	F05	230	126	46	78
32/1¼"	-	115	33	46	87	23	14	11	35	10	64	F05	230	126	46	78
40/1½"	-	145	33	64	109	23	14	11	50	38	79	F07	230	126	46	78
50/2"	118	160	43	69	124	23	14	11	60	42	99	F07	230	126	46	78
65/2½"	-	180	46	79	144	23	14	11	60	39	104	F07	230	126	46	78
80/3"	134	202	46	93	159	23	14	11	80	66	119	F07	230	126	46	78
100/4"	162	232	52	107	184	23	18	14	100	86	144	F07	270	126	51	78
125/5"	-	269	56	119	199	23	18	14	125	112	169	F07	270	126	51	78
150/6"	248	289	56	130	209	28	24	17	150	141	199	F07	325	185	51	96
200/8"	273	349	60	158	239	28	24	17	200	191	249	F10	-	185	-	96
250/10"	328	400	68	195	264	40	30	22	250	241	309	F10	-	251	-	142
300/12"	378	470	78	229	264	40	30	22	300	290	359	F10	-	251	-	142

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



Mounting Options

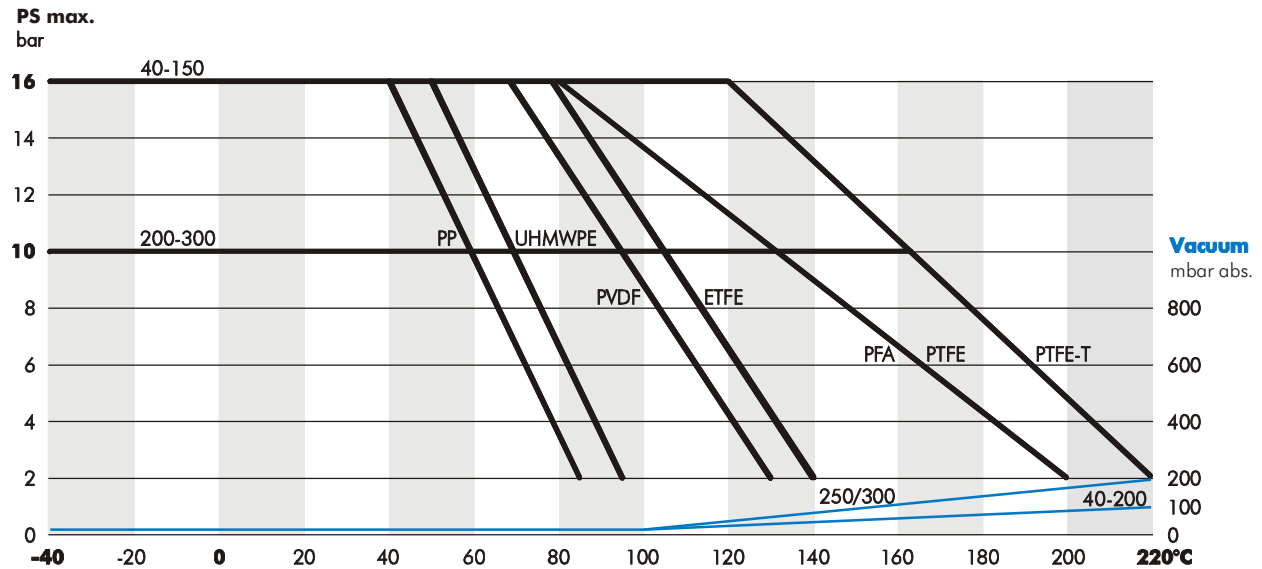


SBP: PT-Diagram, Torques, Weights

51 Butterfly Valves, plastomer-lined

PM 51 M.03 e

April 2003

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

Torque values for PFA-encapsulated disc and specified body liner

Size DN	40	50	65	80	100	125	150	200	250	300
A80 PTFE	25	30	30	40	50	60	110	180	250	350
A81 PTFE-T	28	33	33	44	55	66	122	198	275	385
A82 PTFE-AS	25	30	30	40	50	60	110	180	250	350
A89 PP	40	45	45	60	75	90	165	270	375	525
A90 UHMWPE	35	40	40	52	65	78	140	230	325	455
max. allowable	145	145	145	145	320	320	700	700	1'200	1'200

- 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 in kg (lbs = kg x 2.2)

Figures stated for execution PTFE/PFA/bare shaft

Size DN	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	-	-	-	4.3	6.3	-	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	2.2	2.5	2.5	4.5	4.5

Wafer: DN40/65/125 made of Lug-style bodies with drilled-thru holes

Weights for pneumatic actuators acc. to separate data sheet

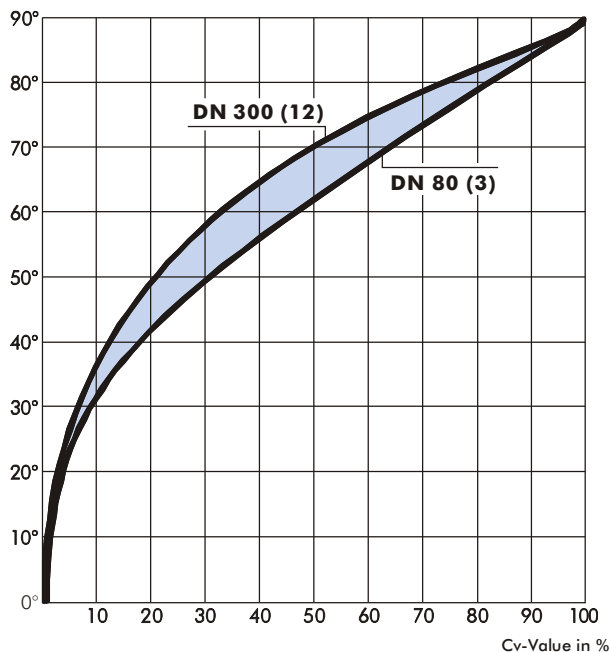


Estimated values at corresponding opening angle of valve disc

Size DN	40	50	65	80	100	125	150	200	250	300
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	1415	2796	4234	6914
90°	158	224	224	455	679	1'177	1'734	3'538	5'232	8'364

Flow Characteristic

Opening angle of valve disc



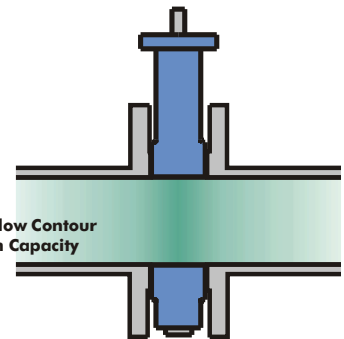
Liquids:

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

Gases:

$$K_v = \frac{Q_N}{514} \sqrt{\frac{SG_N \cdot T}{\Delta P \cdot P_2}}$$

Streamline Flow Contour
for Maximum Capacity



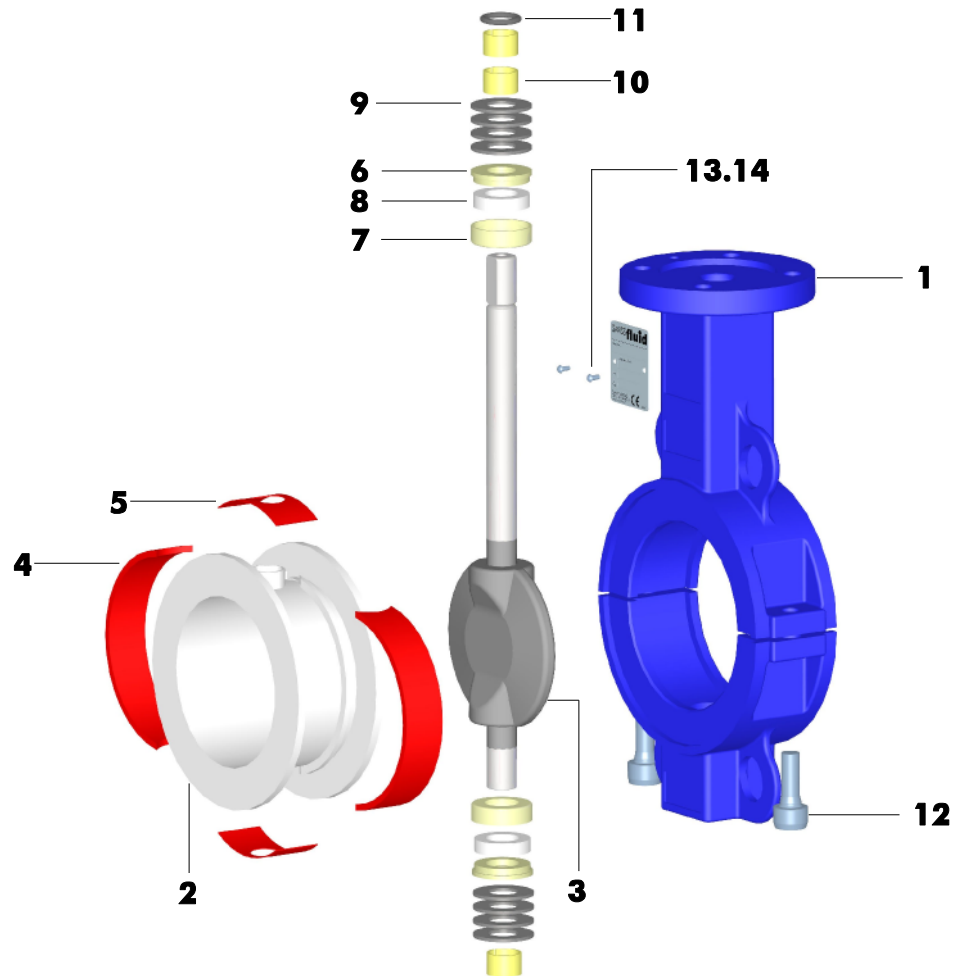
$$^{\circ}\text{K} = ^{\circ}\text{C} + 273$$

$$K_v = C_v / 1.16$$

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
- Bio-Technical
- Pharmaceutical Industry
- Semi-Conductors
- Pulp and Paper
- Food Processing
- Paint and Pigments
- Fertilizers
- Textile Industry
- Mining and Steel
- Desalination



Item	Qty.	Description	Material	No.
1	1	Body two-piece, RAL 5005	WCB	1.0619
2	1	Liner	PTFE	
3	1	Disc encapsulated	Duplex/PFA	1.4462
4	2	Elastomer	VMQ	
5	2	Elastomer Pad	VMQ	
6	2	Pressure Ring	C.Steel	1.0737
7	2	Guide Ring	C.Steel	1.0737
8	2	Elastomer Insert	VMQ	
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

SPHER-O-DISC® Butterfly-Valves – variety by modular design!

SPEHR-O-DISC® = Registered Trade Mark of Technova AG, CH-5000 Aarau / Switzerland



PTFE-AS / 316-L
DN 100 / 4" with
Locking-Handle

PTFE / PFA DN 150 / 6"
with Gear Operator
Nickel-plated body

UHMWPE / UHMWPE
DN 200 / 8"-Lug
with double-acting
pneumatic actuator

PP / PP DN 80 / 3"
with single-acting
(spring-return)
pneumatic actuator

Typical Critical Service Applications:

- Chemical
- Chlor Alkali
- Pharmaceutical
- Pulp and Paper
- Water Treatment
- Detergents, Oils, Fatty Acids
- Food Processing
- Steel / Metal Processing
- Paint Products
- Electronic Industry

How to order:

10" - B2 - D1 - L1 - E1 - 02 _____
Manual Gear Operator
Viton Elastomer
Virgin PTFE-Liner
Disc PFA-encapsulated
Ductile Iron Body (Lug)

Body

- B1 – Ductile Iron ASTM A395 Wafer
- B2 – Ductile Iron ASTM A395 Lug
- B3 – Stainless Steel 316-L Wafer
- B4 – Stainless Steel 316-L Lug
- B5 – Ductile Iron Ni-plated Wafer
- B6 – Ductile Iron Ni-plated Lug
- B7 – Carbon Steel 52-3 Wafer
- B8 – Carbon Steel 52-3 Lug
- B0 – others

Disc / Stem

- D 1 – Carbon Steel Ck15 / PFA
- D 2 – Carbon Steel Ck15 / UHMWPE
- D 3 – Carbon Steel Ck15 / PVDF
- D 4 – Carbon Steel Ck15 / PP
- D 5 – Stainless Steel 316-L
- D 6 – Stainless Steel 316-L polished
- D 7 – Titanium Grade 2
- D 8 – Monel® 400
- D 9 – Hastelloy® B / C
- D10 – Carbon Steel Ck15 / ETFE
- D 0 – others

Liner

- L1 – Virgin PTFE
- L2 – PTFE Anti Static
- L3 – UHMWPE
- L4 – PVDF
- L5 – PP
- L6 – ETFE
- L0 – others

other materials or sizes on request
subject to technical revisions

Elastomer

- E1 – Viton
- E2 – Silicone
- E3 – Hypalon
- E4 – EPDM
- E0 – others

Operators

- 00 – Bare Stem
- 01 – Lever Locking Handle
- 02 – Manual Gear Operator
- 03 – Pneumatic Actuator
- 04 – Electric Actuator
- 05 – Hydraulic Actuator

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FLUID HANDLING PRODUCTS