



## Butterfly Valves SBE Series

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

Butterfly Valves SBE 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 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 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



#### Liners

EPDM black, EPDM white, SBR green, VMQ red (Silicone)

# SBE: Construction, Mounting Options

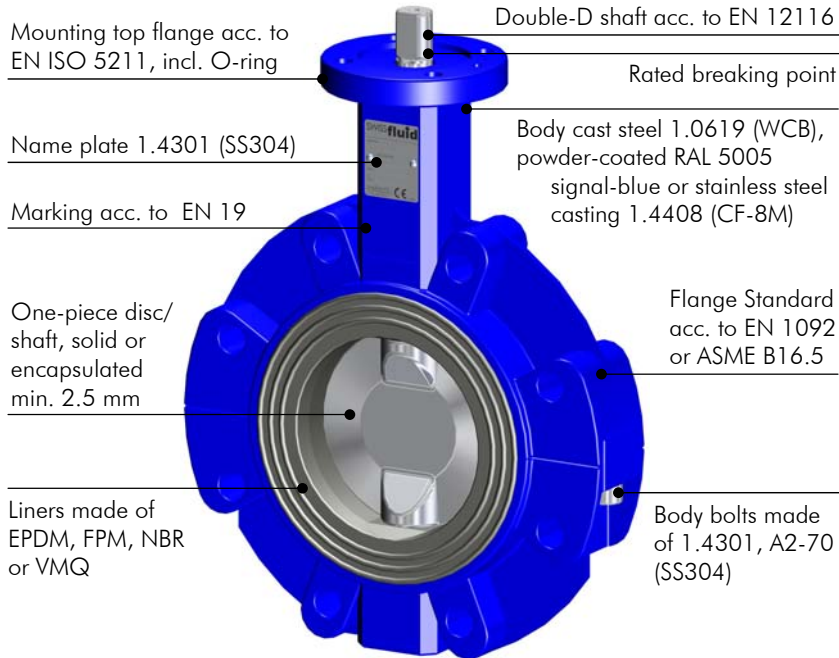
52 Butterfly Valves, elastomer-lined

PM 52 M.02 e

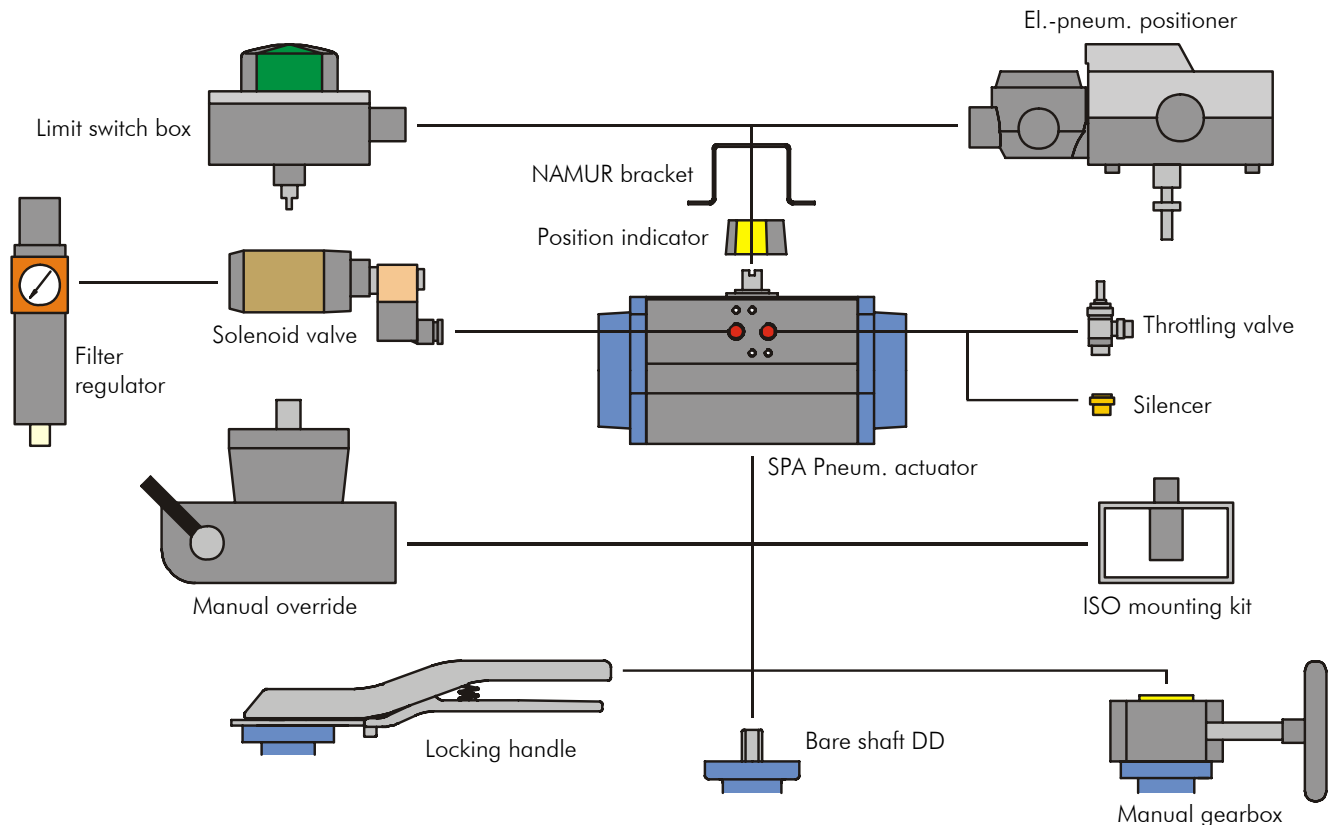
March 2006



## Construction of Valve



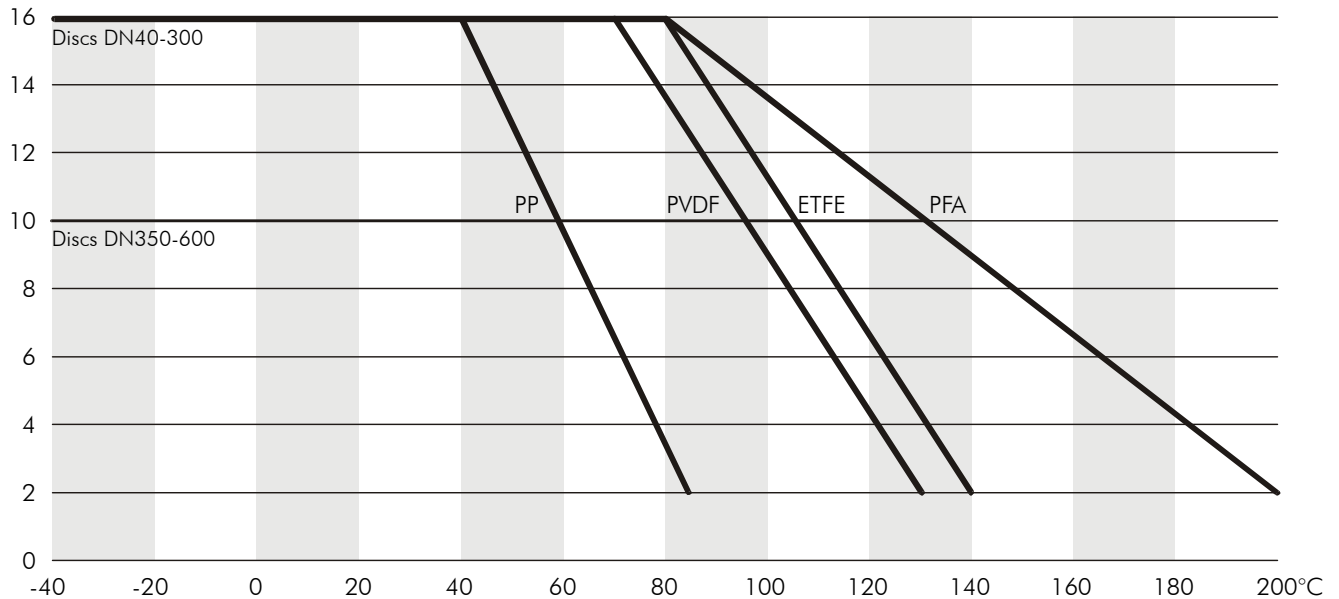
## Mounting Options



**Temperature Range for Liners**



PS max.  
bar



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

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

Size DN		40	50	65	80	100	125	150	200	250	300
<b>EPDM</b>	<b>SS316L</b>	15	20	20	35	45	60	100	150	250	350
<b>NBR</b>	<b>SS316L</b>	15	20	20	35	45	60	100	150	250	350
<b>EPDM</b>	<b>PFA</b>	15	20	20	35	45	60	100	150	250	350
<b>EPDM</b>	<b>PP</b>	25	30	30	45	55	80	130	200	320	450
<b>FPM</b>	<b>SS316L</b>	25	30	30	45	55	80	130	200	320	450
max. allowable		145	145	145	145	320	320	700	700	1'200	1'200

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

**Weights** in kg (lbs = kg x 2.2)

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

Size DN		40	50	65	80	100	125	150	200	250	300
<b>Lug-style body</b>		3.2	4.7	6.0	6.5	8.5	10.6	13.9	17.9	27.2	35.9
<b>Wafer-style body</b>		-	-	-	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



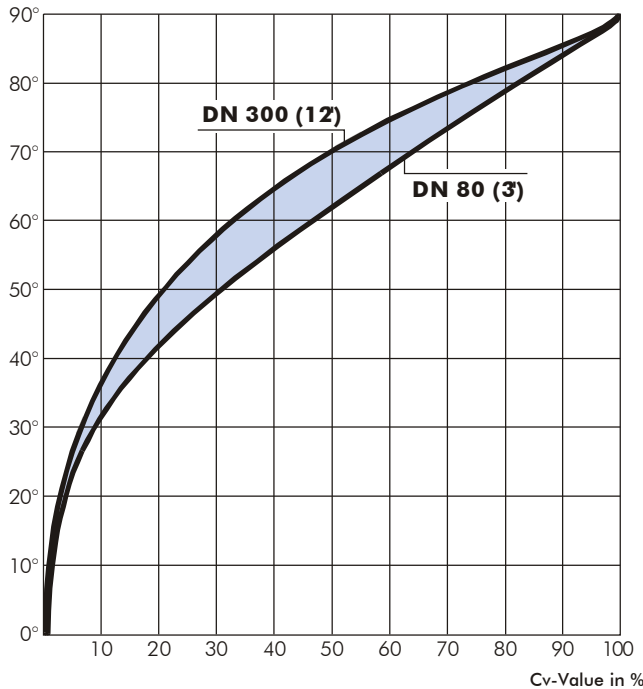
**Flow Rate Values Cv** usg/min.

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

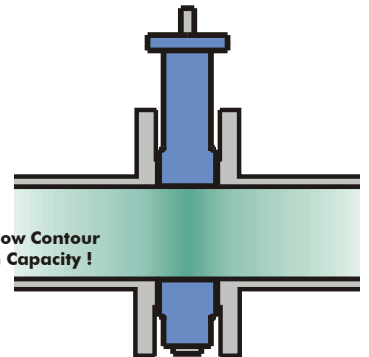


Liquids:

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

Gases:

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



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

$$K_v = C_v / 1.16$$

<b>Cv (Kv)</b>	Valve Coefficient	usg/min (m <sup>3</sup> /h)
<b>Q</b>	Flow Rate	usg/min (m <sup>3</sup> /h)
<b>Q<sub>N</sub></b>	Flow Rate	usg/min (Nm <sup>3</sup> /h)
<b>SG</b>	Specific Gravity	lbs/usg (kg/dm <sup>3</sup> )
<b>SG<sub>N</sub></b>	Specific Gravity	lbs/usg (kg/Nm <sup>3</sup> )
<b>P<sub>2</sub></b>	Downstream Pressure	psi (bar)
<b>ΔP</b>	Pressure Drop	psi (bar)
<b>T</b>	Temperature	°K (°C)

**Typical Service Applications**

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

# SBE: Technical Data DN350-600

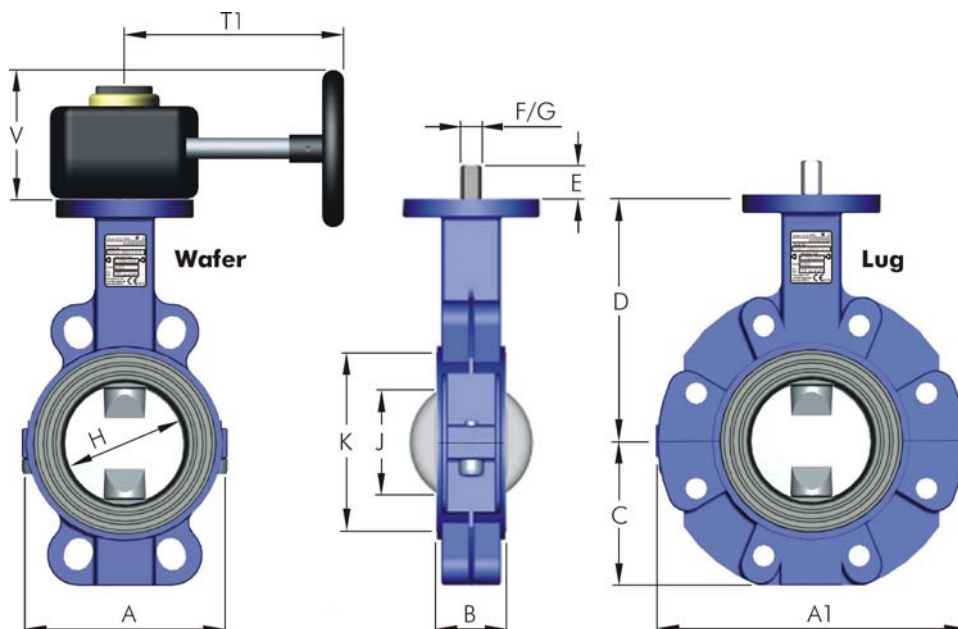
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## Dimensions in mm



Size DN	A	A1	B	C	D	E	F	G <sup>1)</sup>	H	J	K	ISO	T	T1	U	V
350	416	530	92	254	309	40	40	27	340	328	409	F12	-	268	-	168
400	462	596	102	289	339	40	40	27	400	387	459	F12	-	268	-	168
450	512	630	114	308	359	50	50	14	450	436	515	F14	-	275	-	208
500	566	698	127	339	390	50	50	14	500	484	569	F14	-	275	-	208
600	668	812	154	399	449	50	50	14	600	578	669	F14	-	298	-	250

Face to face B acc. to DIN EN 558-1 Range 20 <sup>1)</sup> DN450-600: Keyway <sup>2)</sup> Range 25, ASME B16.10 wide

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

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

Size DN		350	400	450	500	600
EPDM	SS316L	450	660	800	900	1'000
NBR	SS316L	450	660	800	900	1'000
EPDM	PFA	450	660	800	900	1'000
max. allowable		1'800	1'800	2'000	2'000	2'000

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

## Weights in kg (lbs = kg x 2.2)

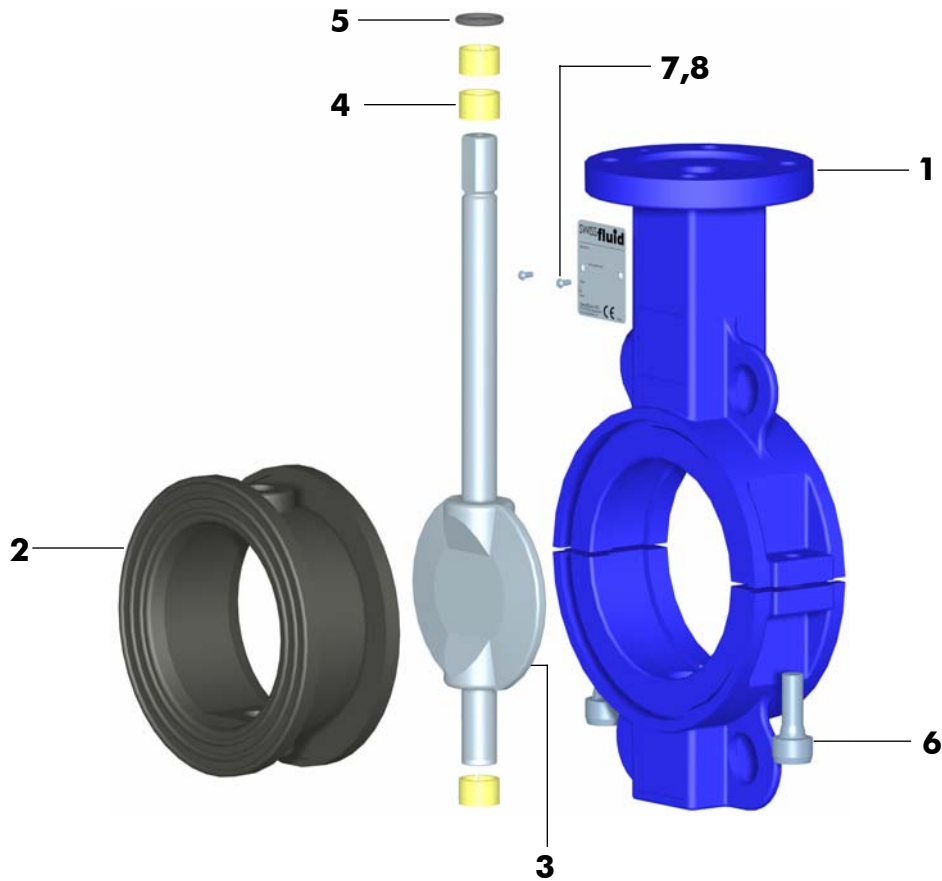
Figures stated for execution EPDM liner/stainless steel disc/bare shaft

Size DN	350	400	450	500	600
Lug-style body	85.0	98.0	124.0	132.0	224.0
Wafer-style body	51.0	63.0	76.0	88.0	132.0
Gearbox GG25	8.5	8.5	17.5	17.5	18.0

Weights for pneumatic actuators acc. to separate data sheet



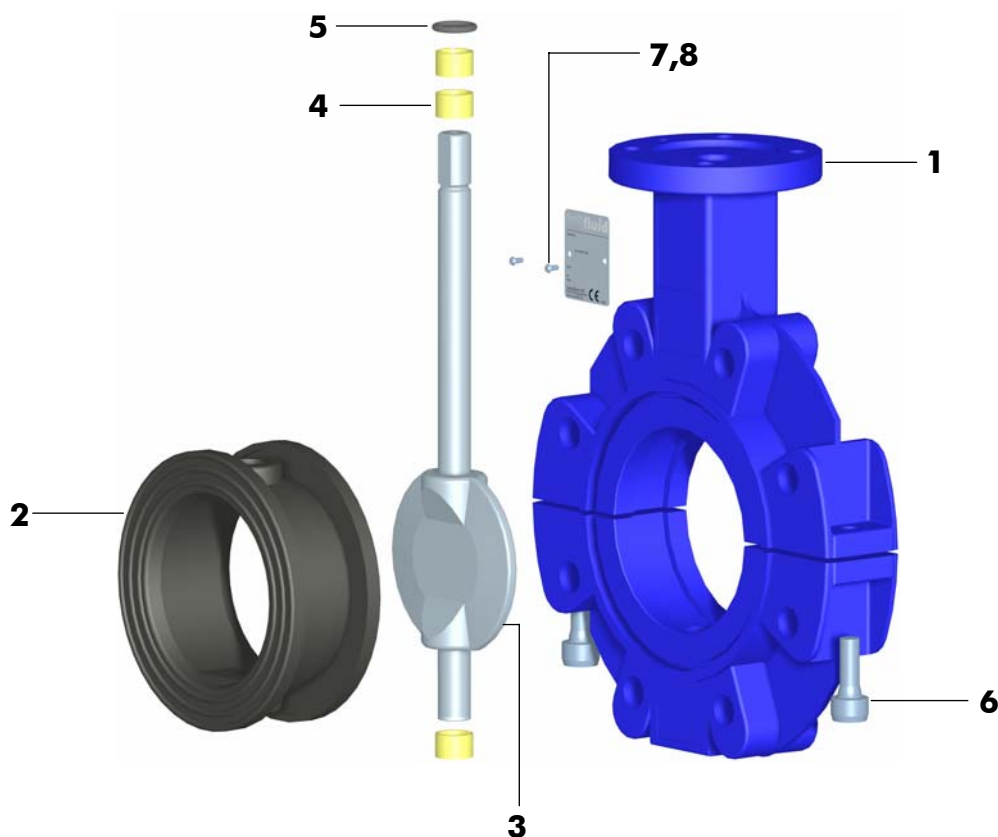
**Standard Version** (Picture showing DN 80 PN16, EPDM liner, SS disc, bare shaft)



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



**Standard Version** (Picture showing DN 80 PN16, EPDM liner, SS disc, bare shaft)



Item	Qty.	Description	Material	No.
1	1	Body Lug 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

# SBE: Specification

52 Butterfly Valves, elastomer-lined

**PM 52 M.10 e**

April 2003



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

## Operating Conditions

### Media / Chemical Composition:

<input type="checkbox"/> Liquid	<input type="checkbox"/> powdery	<input type="checkbox"/> crystallizing	<input type="checkbox"/> sticky	<input type="checkbox"/> Spez. Grav. ____
<input type="checkbox"/> gaseous	<input type="checkbox"/> Solids ____ %	<input type="checkbox"/> viscous	<input type="checkbox"/> Flow Velocity ____ m/s	
<input type="checkbox"/> abrasive	<input type="checkbox"/> Paricle ____ mm	<input type="checkbox"/> Visc. ____ cp	<input type="checkbox"/> Flow Rate ____ m <sup>3</sup> /h	

Pressure	Temperature	Mode	Installation / Environment	
max. ____ bar	max. ____ °C	<input type="checkbox"/> On/Off	<input type="checkbox"/> horizontal	<input type="checkbox"/> Room dry
min. ____ bar	min. ____ °C	<input type="checkbox"/> Flow Control	<input type="checkbox"/> vertical	<input type="checkbox"/> Room humid
		____ cycles/ ____	<input type="checkbox"/> _____	<input type="checkbox"/> outdoor

Remarks: \_\_\_\_\_

## Specification of a complete Butterfly Valve SBE Series

Size/ Flange  
Nom. Press. Connection

**SBE** - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Body	
<b>G10</b>	Cast steel WCB (1.0619)
<b>G15</b>	Stainl. st. casting CF-8M (1.4408)

Liner	
<b>A60</b>	EPDM
<b>A61</b>	EPDM-W
<b>A64</b>	NBR
<b>A67</b>	FPM (Viton®)
<b>A68</b>	VMQ (Silicone)
<b>A69</b>	SBR

Disc / Shaft	
<b>U85</b>	PFA/1.4462
<b>U86</b>	PFA-AS/1.4462
<b>U88</b>	PVDF/1.4462
<b>K16</b>	Duplex (1.4462)
<b>S32</b>	1.4435
<b>S40</b>	Titanium Gr.2
<b>S43</b>	Hastelloy C-276

Options	
<b>Po</b>	Disc mirror-polished
<b>Fb</b>	FEB Safety stuffing box
<b>0000</b>	Special Paint (RAL-Code)
<b>Th</b>	Drilled-thru holes (Wafer)
<b>W1</b>	Shaft extension 100 mm

Actuator Options	
<b>PI</b>	Safety lock/Padlock

Shaft end / Actuator			
<b>DD</b>	Bare shaft, Double D	<b>RH</b>	Locking handle
<b>VK</b>	Bare shaft, square parallel	<b>HG</b>	Manual gearbox
<b>VV</b>	Bare shaft, square, 45° rot.		

**Automated Valves**  
Actuator Specification acc. to PM 61 M.04 e