Datasheet
Tank bottom valve

Si-109 EN

Edition: 2010-12

Type KVBW	**Wafer design**
Type KVBF	**Flanged design**
Nominal pressure	**PN 6**
Nominal size	**DN 80-400**
Material	**Stainless steel**

- **Shut-off valve**
- **One-piece shaft gives torque transmission free of backlash**
- **Easy maintenance**

SOMAS tank bottom valve KVBW / KVBF is a ballsegment valve adapted for mounting on the bottom of a tank. An adaptation is made to minimize the volume between the ballsegment and the tank floor plane.

SOMAS tank bottom valve KVBW is intended for Installation between the flange and the tank bottom. KVBF is a flanged valve where one flange is adapted for mounting on the tank bottom.

The valve body is made in one piece. The shaft is manufactured in one piece to guarantee a Backlash-free transfer of the turning movement. Stuffing Box has sealing elements of white PTFE (FDA approved optional). The seat material is PTFE 53 (PTFE reinforced with stainless steel SS2353) optionally the FDA approved Hostaflone®, that is pressed against the ballsegment. The ballsement have been modified with a flat backside. Valve gaskets are made from Gylon. (FDA approved material).

The valves are in their basic version ATEX approved.

Valves that are both FDA and ATEX approved are optional, and must be checked with SOMAS.

Patent-pending shaft seal made from FDA approved material is also optional. (ATEX execution requires anti-static washer).

Surfaces facing media Polished to Ra0.8 optional.

Surfaces facing media Electro polished optional.

2 threaded connections for flushing of valve optional.

The valves can be used for shut-off of nearly all types of media.

The valves are delivered as tested units ready to use. The valves are tested complete with selected actuators and accessories.

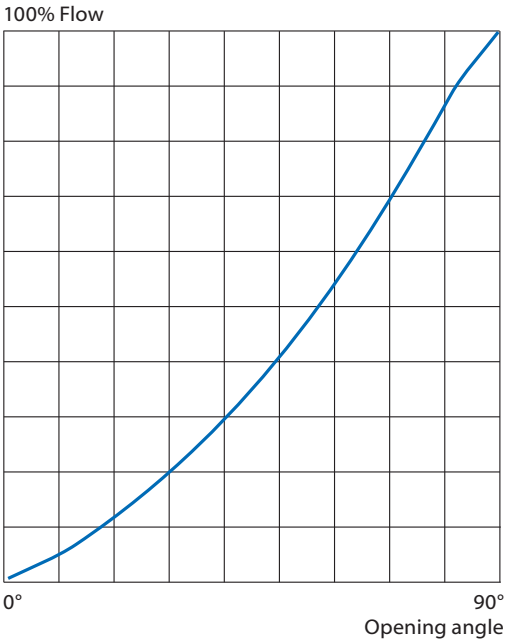
Tightness class

The tightness class is related to the chosen material in the seat ring.

PTFE 53-seat [1] (Code B) (IEC 534-4 VI (ANSI B16-104 Class VI)
Hostaflone® (Code X) (Class VI)

[1] 50% PTFE + 50% 1.4435 (316L) powder (percentage by weight)

Flow characteristics



Pressure and temperature limits

According to the material in the seat.

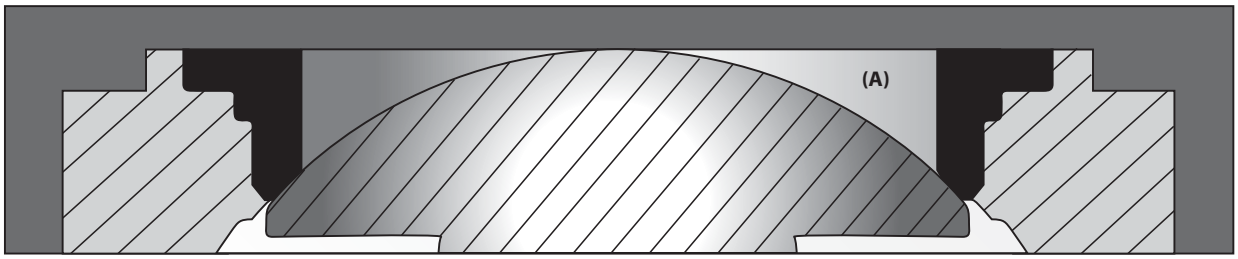
Seat Code	Max. working pressure[1] (bar at ° C)			
	150°	170°	200°	>200°
B	4.6	4.5	4.3	–
X	4.5	4.3	–	–

10 bar = 1 MPa Note 1: Check with SOMAS

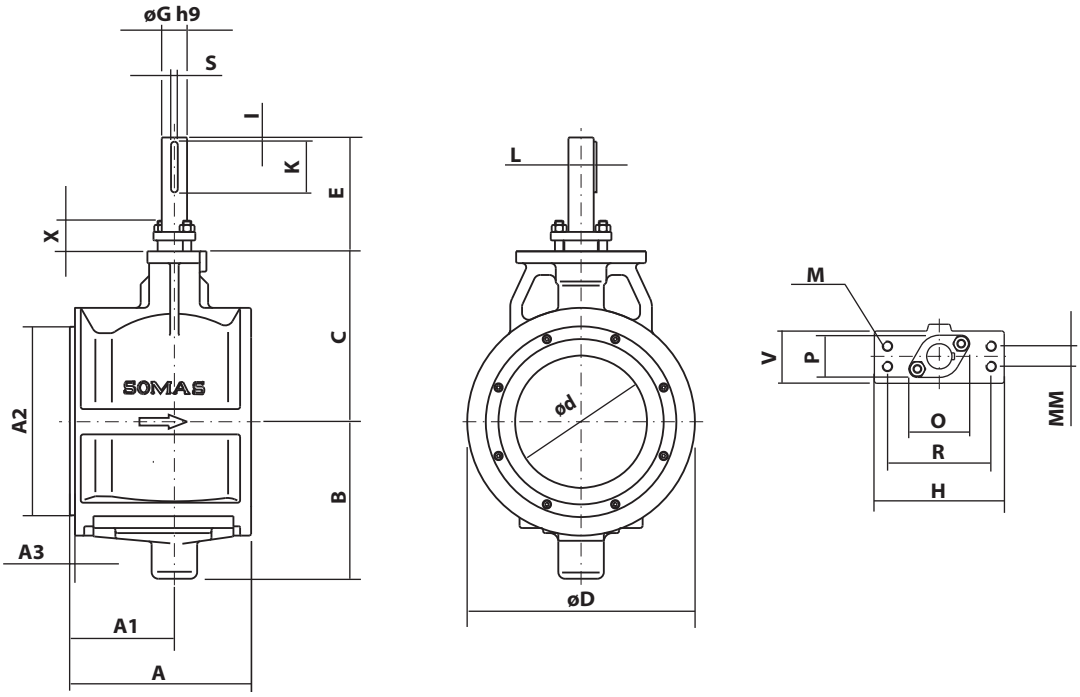
[1] **NB!** Do not exceed working pressure for the valve.

Ball segment valve type KVBW/KVBF

	DN	Vol.dm³ (A)
KVBW	150	0.17
KVBW	200	0.27
KVBW	250	0.5
KVBF	150	0.55
KVBF	200	0.61
KVBF	250	0.81
KVBF	300	0.55
KVBF	350	0.65
KVBF	400	0.75

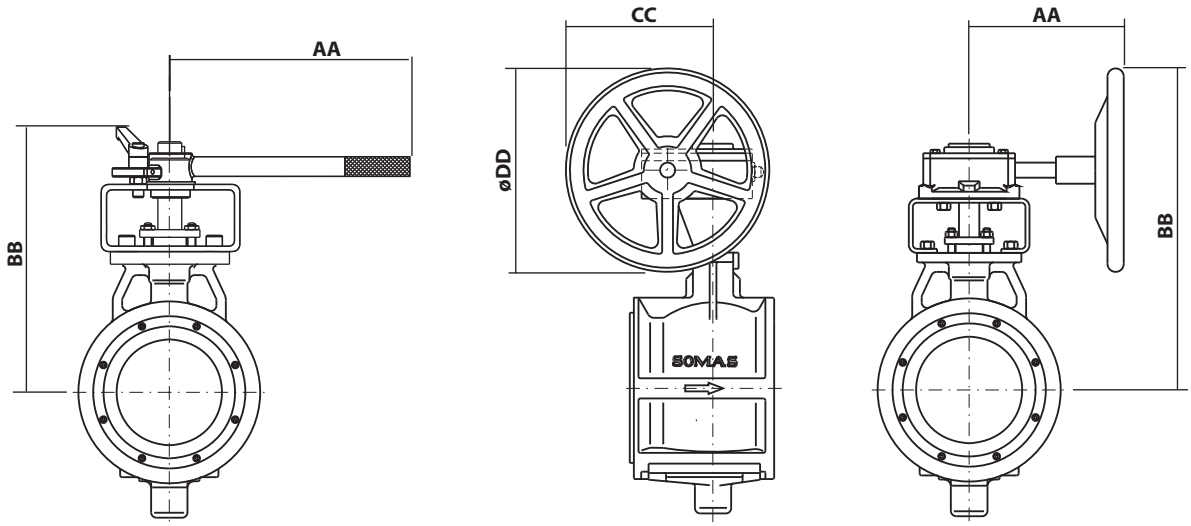


Wafer design



Ball segment valve type KVBW (valve body in one piece)

DN	A	A1	A2	A3	B	C	ød	øD	E	øG	H	I	K	L	M	MM	O	P	R	S	V	X	Weight
80	111	64	–	–	102	115	75	140	115	20	125	5	45	22.5	M12	–	61	42	98	6	48	30	8.5
100	125	73	–	–	116	140	92	162	115	20	125	5	45	22.5	M12	–	61	42	98	6	48	30	11.5
150	162	93	Ø190	8	151	176	124	216	115	25	125	5	45	28	M12	–	66	47	98	8	50	30	24
200	204	113	Ø230	10	187	202	154	270	135	30	155	5	60	33	M12	24	77	50	123	8	62	35	44
250	248	138	Ø270	10	230	242	188	324	135	35	155	5	50	38	M12	24	85	55	123	10	65	50	71



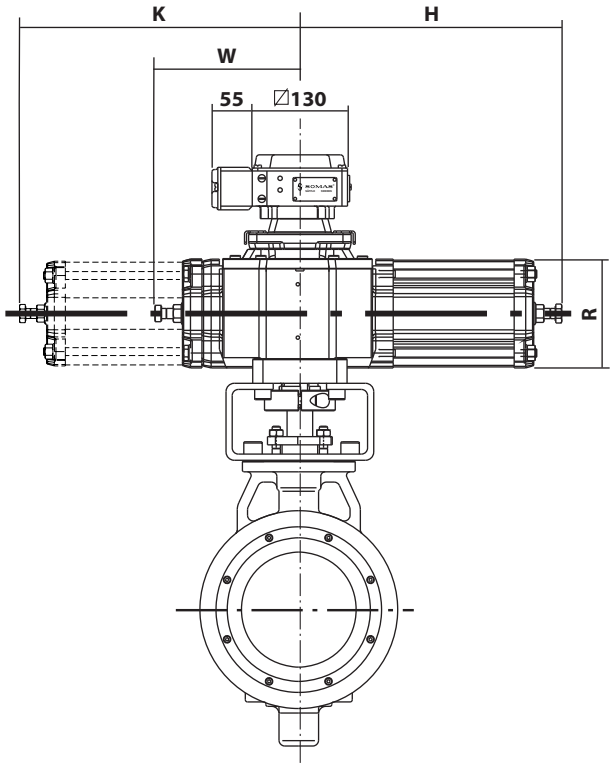
Ball segment valve type KVBW with hand lever

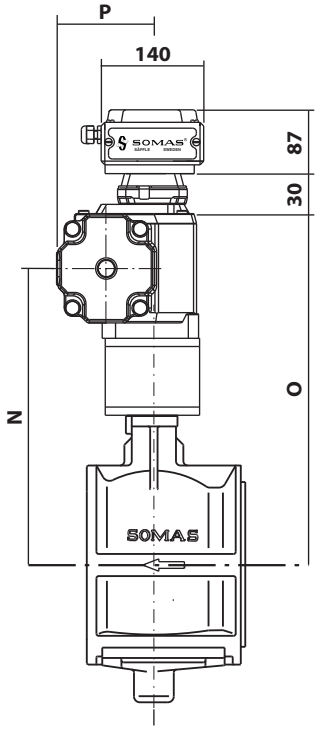
DN	Type	AA	BB	CC	Weight
80	**HSR20**	355	240	210	11.5
100	**HSR20**	355	265	135	14.5
150	**HSR25**	355	301	301	27

Ball segment valve type KVBW with gear unit

DN	Type	AA	BB	CC	øDD	Weight
80	**M10/F07**	190	350	190	255	16
100	**M10/F07**	190	380	190	255	19
150	**M10/F07**	190	410	190	255	32
200	**M12/F12**	228	475	230	305	56
250	**M12/F12**	228	515	230	305	83

Wafer design





Ball segment valve KVBW with actuator type A-DA

DN	Type	H	K	N	O	P	R	W	Weight
80	**A21**	255	–	260	340	94	106	140	18
80	**A22**	255	260	260	320	94	106	–	20
100	**A21**	255	–	285	345	94	106	140	21
100	**A22**	255	260	285	345	94	106	–	23
150	**A22**	255	260	320	385	94	106	–	35
150	**A23**	305	–	320	385	117	152	140	41
200	**A24**	305	310	345	410	117	152	–	61
200	**A31**	380	–	400	485	144	152	215	69
250	**A31**	380	–	440	525	144	152	215	96
250	**A32**	380	395	440	525	144	152	–	102

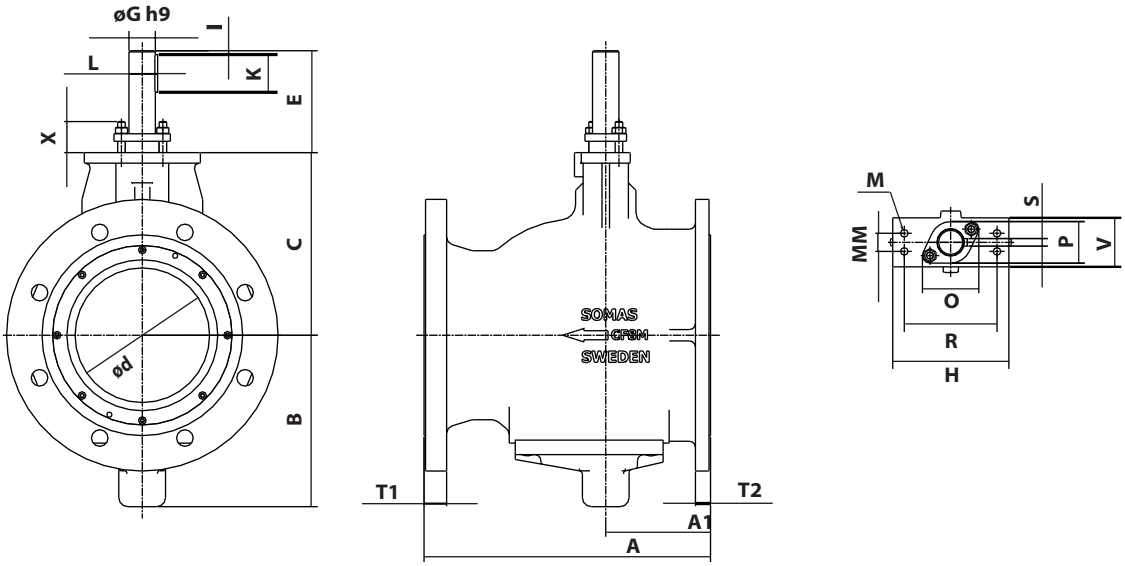
For units with the positioner type SP405, add 2 kg
For units with the positioner type SPE405, add 3 kg

Ball segment valve KVBW with actuator type A-SC/SO

DN	Type	H	K	N	O	P	R	W	Weight
80	**A23-X**	415	–	260	320	117	152	140	25
100	**A23-X**	415	–	285	345	117	152	140	28
150	**A24-X**	415	420	320	385	117	152	–	50
200	**A33-X**	660	–	400	485	183	228	215	103
250	**A33-X**	660	–	440	525	183	228	215	130

X = SC - Spring to close
X = SO - Spring to open
For units with the positioner type SP405, add 2 kg
For units with the positioner type SPE405, add 3 kg

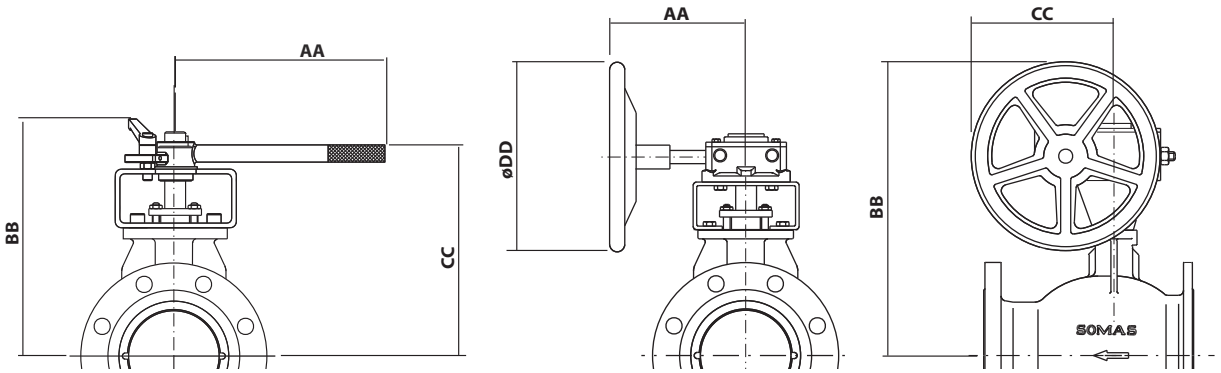
Flanged design



Ball segment valve type KVBF (valve body in one piece)

DN	A	A1	B	C	ød	E	øG	H	I	K	L	M	MM	O	O1	P	R	S	T1	T2	V	X	Weight
80	280	82	102	115	75	115	20	125	5	45	22.5	M12	–	61	–	42	98	6	24	24	48	30	18
100	300	94	116	140	92	115	20	125	5	45	22.5	M12	–	61	–	42	98	6	26	26	48	30	26
125	325	118	151	176	124	115	25	125	5	45	28	M12	–	66	–	47	98	8	26	26	50	30	38
150	350	140	187	202	145	135	30	155	5	60	–	M12	24	77	–	50	123	8	28	28	62	35	61
200	380	139	230	242	189	135	35	155	5	50	–	M12	24	85	–	55	123	10	30	20	62	50	95
250	425	167	281	297	232	155	40	170	5	50	–	M12	40	94	–	75	123	12	34	20	85	50	154
300	475	184	340	353	282	200	50	180	5	80	–	M16	55	105	–	85	136	14	37	20	95	50	214
350	520	211	385	393	326	210	60	225	5	90	–	M20	70	115	–	105	150	18	41	20	128	60	304
400	568	237	449	447	370	225	70	220	6	110	–	M16	113	162	–	112	113	20	43	20	154	60	395

A_1 = Face to face dimension according to EN 558 series 1 (PN 25, PN 40)
A_2 = Face to face dimension according to EN 558 series 4 (PN 20, PN 50, Class 150, Class 300)

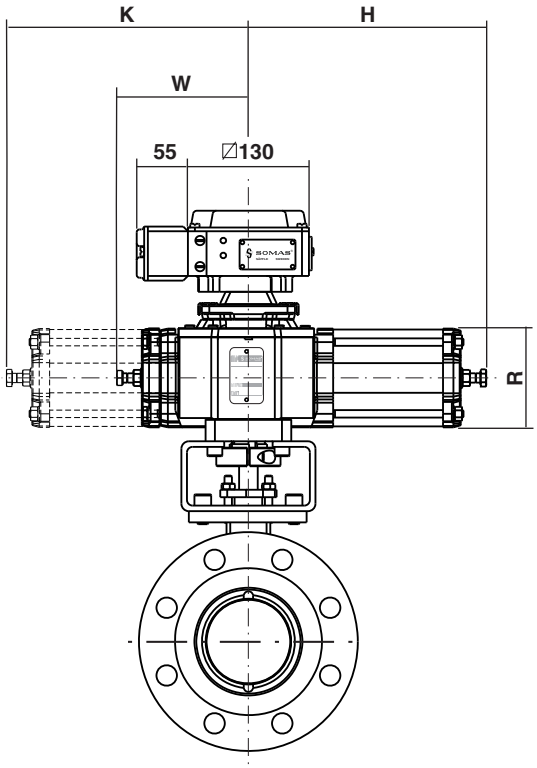


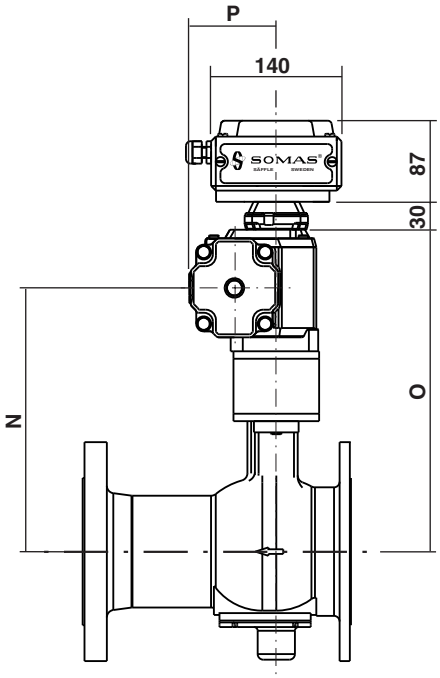
Ballsegment valve type KVBF with hand lever

DN	Type	AA	BB	CC	Weight
80	**HSR20**	355	240	210	21
100	**HSR20**	355	265	135	29
125	**HSR25**	355	301	271	41

Ballsegment valve type KVBF with gear unit

DN	Type	AA	BB	CC	øDD	Weight
80	**M10/F07**	190	380	190	255	25.5
100	**M10/F07**	190	380	190	255	33.5
125	**M10/F07**	190	415	190	255	45.5
150	**M12/F12**	228	475	230	305	73
200	**M12/F12**	228	515	230	305	107
250	**M12/F12**	228	555	230	305	166
300	**M14/F14**	250	700	265	350	235
350	**M15/F16**	385	795	353	460	342
400	**M20/F25**	450	942	395	610	440





Ball segment valve KVBF with actuator type A-DA

DN	Type	H	K	N	O	P	R	W	Weight
80	**A21**	255	–	260	320	94	106	140	27
80	**A22**	255	260	260	320	94	106	–	29
100	**A21**	255	–	285	345	94	106	140	35
100	**A22**	255	260	285	345	94	106	140	37
125	**A22**	255	260	320	380	94	106	–	49
125	**A23**	325	–	320	380	117	152	140	54
150	**A31**	380	–	350	415	144	152	215	87
200	**A31**	380	–	420	480	144	152	215	121
200	**A32**	380	395	415	475	144	152	–	127
250	**A32**	380	395	455	520	144	152	–	185
300	**A41**	550	–	595	750	211	228	315	290
350	**A41**	550	–	635	790	211	228	315	380
350	**A42**	545	560	635	790	211	228	–	395
400	**A42**	545	560	690	845	211	228	–	490

Ball segment valve KVBF with actuator type A-SC/SO

DN	Type	H	K	N	O	P	R	W	Weight
80	**A23-X**	415	–	260	320	117	152	140	35
100	**A23-X**	415	–	285	345	117	152	140	43
125	**A24-X**	415	310	320	380	117	152	–	64
150	**A33-X**	660	–	350	415	183	228	215	120
200	**A33-X**	660	–	420	480	183	228	215	155
250	**A34-X**	665	680	455	515	183	228	–	210
300	**A43-X**	920	–	595	750	279	354	315	380
350	**A43-X**	920	–	635	790	279	354	315	470
400	**A44-X**	925	935	690	845	279	354	–	615

A_1 EN 558-1 Series 1 / Face to face dimension for PN-rated valves (PN 25, PN 40)
A_2 EN 558-2 Series 4 / Face to face dimension for class-rated valves (PN 20, PN 50, ANSI 150, ANSI 300)

Torque/KVBW

Valve DN	Shaft dia. dia.(mm)	Necesarry closing torque Min. (Nm)	Max. (Nm)
80	20	120	200
100	20	150	200
150	25	250	370
200	30	400	640
250	35	600	1000

Torque/KVBF

Valve DN	Shaft dia. dia.(mm)	Necesarry closing torque Min. (Nm)	Max. (Nm)
80	20	120	200
100	20	150	200
125	25	250	370
150	30	400	640
200	35	550	1000
250	40	800	1500
300	50	1400	2800
350	60	2000	5000
400	70	2800	7500

Flange standard

SOMAS tank bottom valve KVBW is intended to be mounted between the tank bottom and the pipe flange. SOMAS tank bottom valve KVBF has a flanged design. The flange facing the tank bottom is modified to be mounted on the tank bottom in agreement with the tank manufacturer. Pipe flange are drilled PN 6.

The pressure class of the pipe flanges must be stated when the valve is ordered.

Further technical information

Technical data for the materials used in the SOMAS valves, flange standard, steam data, etc. can be found in section 6 of the SOMAS catalogue.

Actuators and accessories

The valves can be fitted with SOMAS manual, on/off in accordance with the selection table. The valves will then be delivered as tested shut-off or control units ready for installation.

Check sections 4 and 5 of the SOMAS catalogue, where positioners, limit switches and solenoid valves are also presented.

We can also fit other types of actuators and accessories in accordance with your specification.

Selection table

KVBW Valve DN	Shaft dia.	Pneumatic actuators: Double acting 5,5 bar	Double acting 4 bar	Spring return: Spring to close 5,5 bar	Spring to close 4 bar	Spring to open 5,5 bar	Spring to open 4 bar	Manual override: Hand lever	Manual override: Gear unit
80	20	A21	A22	A23-SC	A23-SC	A23-SO	A23-SOL	HSR020	M10/F07
100	20	A21	A22	A23-SC	A23-SC	A23-SO	A23-SOL	HSR020	M10/F07
150	25	A22	A23	A24-SC	A24-SC	A24-SO	A24-SOL	–	M10/F12
200	30	A31	A24	A33-SC	A33-SC	A33-SO	A33-SOL	–	M12/F12
250	35	A31	A32	A33-SC	A33-SC	A33-SO	A33-SOL	–	M12/F12

KVBF Valve DN	Shaft dia.	Pneumatic actuators: Double acting 5,5 bar	Double acting 4 bar	Spring return: Spring to close 5,5 bar	Spring to close 4 bar	Spring to open 5,5 bar	Spring to open 4 bar	Manual override: Hand lever	Manual override: Gear unit
80	20	A21	A22	A23-SC	A23-SC	A23-SO	A23-SOL	HSR020	M10/F07
100	20	A21	A22	A23-SC	A23-SC	A23-SO	A23-SOL	HSR020	M10/F07
125	25	A22	A23	A24-SC	A24-SC	A24-SO	A24-SOL	–	M10/F07
150	30	A31	A31	A33-SC	A33-SC	A33-SO	A33-SOL	–	M12/F12
200	35	A31	A32	A33-SC	A33-SC	A33-SO	A33-SOL	–	M12/F12
250	40	A32	A32	A34-SC	A34-SC	A34-SO	A34-SOL	–	M12/F12
300	50	A41	A41	A43-SC	A43-SC	A43-SO	A43-SOL	–	M14/F14
350	60	A41	A42	A43-SC	A43-SC	A43-SO	A43-SOL	–	M15/F16
400	70	A42	A42	A44-SC	A44-SC	A44-SO	A44-SOL	–	M20/F25

Ordering

State desired valve according to the valve specification system below as well as type of actuator, positioner and accessories.

Valve specification system

KVBF - B 1 - A X B - B 1 2 - DN... - PN...

1 2 3 4 5 6 7 8 9 10 11

1 Type of valve
Wafer design
KVBW (Centrically mounted segment)
Flanged design
KVBF (Centrically mounted segment)

2 Valve body design
A = Wafer design
B = Flanged design (body in one piece)

3 Nominal pressure
1 = PN 6

4 Material – valve body
A = CF8M

5 Material – ball segment
X = With flat backside

6 Material – seat
B = PTFE 53[1]
X = Hostaflone®

7 Material – shaft
B = 1.4460[2]

8 Bearings – valve body/shaft
1 = Without bearing
7 = 1.4539

9 Stuffing box
2 = PTFE

10 Valve size, DN

11 Drilling, counter flanges, PN/Class

[1] 50% PTFE + 1.4435 (316L) powder - percentage by weight
[2] 2324-12 for DN 200-400

SOMAS reserves the right to make improvements without prior notice.

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