

Datasheet

Ball segment valve

Si-111 EN

Edition: 2010-04

Type KVTF/KVXF	Flanged design
Nominal pressure	PN 40 / PN 50
Nominal size	DN 80 - 250
Material	Stainless steel

- **Control- and shut-off valve**
- **High capacity**
- **One-piece shaft gives a torque transmission free of backlash**
- **Excellent tightness irrespective of differential pressure**
- **Easy maintenance**

The SOMAS ball segment valve type KVTF is a flanged version with centrally mounted shaft while KVXF is a flanged and eccentric design.

The valve body is in one piece. Shaft device in one piece for torque transmission free of backlash. The spring-loaded seat is available in three alternative materials (PTFE, PTFE 53 and HiCo).

The valves can be used for control, as well as for shut-off applications on practically every type of media within a wide temperature range. Choose KVTF for liquids, media containing impurities etc. For hot, dry and clean media choose KVXF. In the KVX-valve the ball segment is eccentrically mounted and rotates out from the seat when the valve is opened. This reduces the wear on seat and segment.

Low noise trim is available as an option. The designation "LN" indicates that the ball segment is equipped with a network of bars that are used to split up the pressure drop across the valve. This results in less pressure recovery, thereby reducing the noise and potential damage due to cavitation.

Note! Capacity factors will be reduced for valves with LN-trim

The SOMAS valves are delivered ready for installation and operation. The valve assemblies are delivered factory tested as complete units with actuators, positioners and accessories.

Option



- **LN (Low Noise) Ball segment with low noise trim for high ΔP**





Tightness class

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

PTFE seat	Code A	IEC 534-4 VI (ANSI B16-104 Class VI)
PTFE 53 seat ¹	Code B	IEC 534-4 VI (ANSI B16-104 Class VI)
HiCo seat	Code T	IEC 534-4 IV alt. V (ANSI B16-104 Class IV alt. V)

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

Pressure and temperature rating

According to the material in the seat.

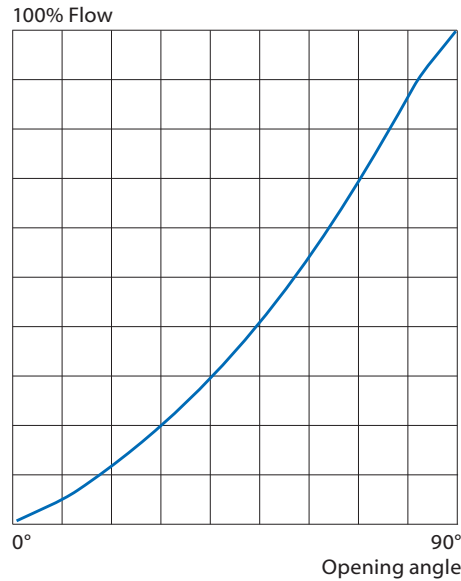
Seat Code	Max. working pressure ¹ (bar at° C)				
	150°	170°	200°	350°	>350°
A	40	30	–	–	Note 1
B	40	32	15	–	Note 1
T	40	32	25	15	Note 1

10 bar = 1 MPa

Note 1: Check with SOMAS

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

Flow characteristics



Capacity factor Kv and Resistance factor ξ for ball segment valve type KVTF/KVXF

DN	Opening angle										ξ 90°
	10°	20°	30°	40°	50°	60°	70°	80°	90°		
80	15	39	67	102	138	184	231	295	340	0.57	
100	23	58	101	154	208	276	348	444	510	0,62	
150	60	153	264	402	544	725	910	1123	1295	0.42	
200	100	253	437	665	901	1197	1507	1923	2210	0,42	
250	155	390	677	1030	1395	1853	2333	2976	3425	0.40	

Relation between Kv and Cv: $Kv = 0.86 \times Cv$

Actuators and accessories

The valves can be fitted with SOMAS manual, on/off or control actuators 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.

Torque

Valve DN	Shaft dia. (mm)	Necessary closing torque	
		Min. (Nm)	Max. (Nm)
80	25	220	370
100	25	300	370
150	35	600	1000
200	40	1200	1500
250	50	2000	2800

Selection table

Valve DN	Shaft dia. (mm)	Pneumatic actuators						Manual override	
		Double acting		Spring return				Hand lever	Gear unit
		5.5 bar	4 bar	Spring to close		Spring to open			
				5.5 bar	4 bar	5.5 bar	4 bar		
80	25	A22	A23	A24-SC	A24-SC	A24-SO	A24-SOL	–	M10/F07
100	25	A22	A24	A24-SC	A24-SC	A24-SO	A24-SOL	–	M10/F07
150	35	A31	A32	A33-SC	A33-SC	A33-SO	A33-SOL	–	M12/F12
200	40	A32	A33	A34-SC	A34-SC	A34-SO	A34-SOL	–	M12/F12
250	50	A41	A41	A43-SC	A43-SC	A43-SO	A43-SOL	–	M14/F14



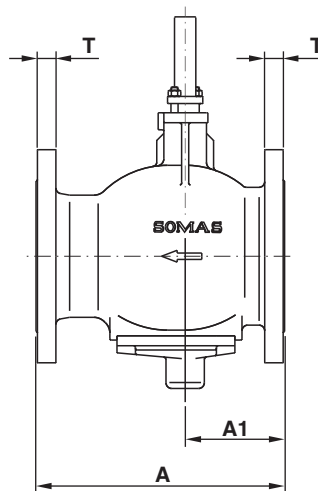
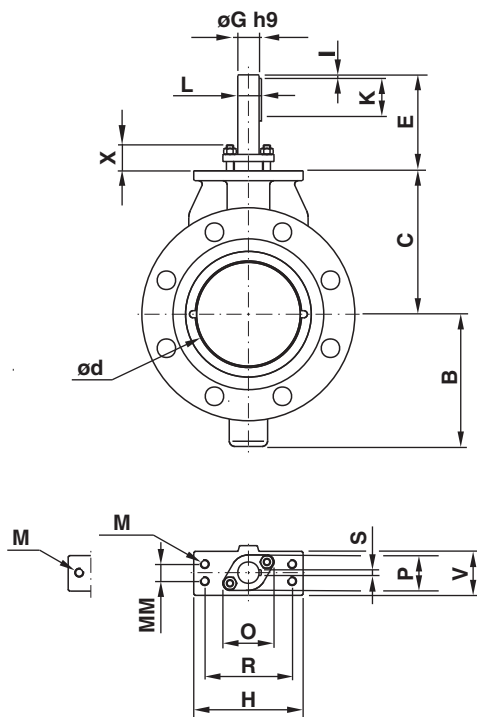
Valve sizing

Use SOMAS valve sizing program SOMSIZE to find the correct valve size. All sizing factors are included in the program.

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.

Flanged design



Flanged type of valves according to EN 558, Series 15

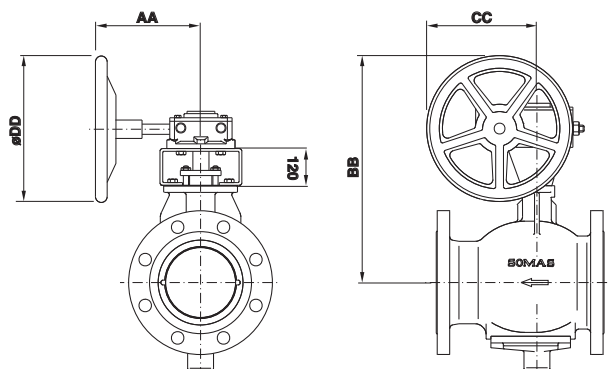
SOMAS ball segment valves type KVTF/ KVXF in this data sheet are flanged and can be drilled according to EN and ASME. The nominal pressure for the valve body is PN 40 and Class 300 / ISO PN 50 and must not be exceeded. When ordering, please state the pressure rating of the counter flanges. See the valve specification system, code 11.

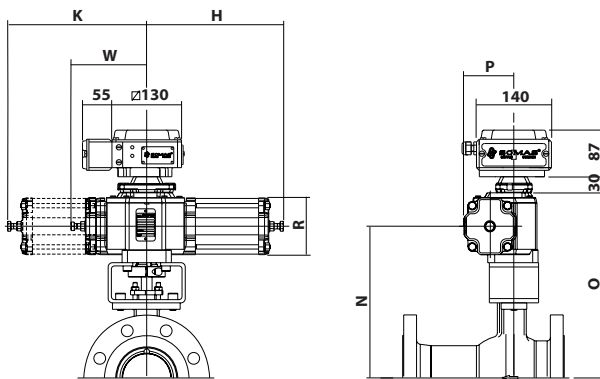
Ball segment valve type KVTF/KVXF PN50 (valve body in one piece)

DN	A	A1	B	C	ød	E	øG	H	I	K	L	M	MM	O	P	R	S	T	V	X	Weight
80	283	105	123	130	75	115	25	128	5	45	28	M12	-	61	42	98	8	36	54	30	26
100	305	116	134	140	92	115	25	128	5	45	28	M12	-	61	42	98	8	39	54	30	40
150	403	155	200	202	145	135	35	170	5	70	38	M12	24	85	55	123	10	44	65	50	87
200	502	180	241	242	189	155	40	170	3	90	43	M12	40	94	75	123	12	49	85	50	143
250	568	230	284	297	232	200	50	180	5	80	53	M16	55	107	87	136	14	52	95	50	210

Ball segment valve with hand gear

DN	Type	AA	BB	CC	øDD	Weight
80	M10/F07	190	375	180	255	34
100	M10/F07	190	385	180	255	48
150	M12/F12	228	475	220	305	99
200	M12/F12	228	500	220	305	155
250	M15/F16	250	645	265	350	231





Ball segment valve type KVTF/KVXF with actuator type A-SC/SO

DN	Type	H	K	N	O	P	R	W	Weight
80	A24-X	415	420	275	335	117	152	-	53
100	A24-X	415	420	285	345	117	152	-	67
150	A33-X	660	-	350	415	183	228	215	145
200	A34-X	665	680	390	455	183	228	-	230
250	A43-X	920	-	540	694	279	354	315	376

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

Ball segment valve type KVTF/KVXF with actuator type A-DA

DN	Type	H	K	N	O	P	R	W	Weight
80	A22	255	260	275	335	94	106	-	37
80	A24	305	310	275	335	117	152	-	43
100	A22	255	260	285	345	94	106	-	51
100	A24	305	310	285	345	117	152	-	57
150	A31	380	-	350	415	144	152	215	112
150	A32	380	395	350	415	144	152	-	118
200	A32	380	395	390	455	144	152	-	174
200	A33	470	-	390	455	183	228	215	181
250	A41	550	-	540	694	211	228	315	286

For units with the positioner type SP405, add 2 kg

For units with the positioner type SPE405, add 3 kg

Ordering

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

Valve specification system

KVTF - B 6 - A K A - B 7 1 - DN... - PN...

- | | | |
|---|---|---|
| <p>1 Type of valve
 <i>Flanged design</i>
 KVTF (centrically mounted segment)
 KVXF (eccentrically mounted segment)
 KVTF LN (cent. mounted segment, Low Noise)
 KVXF LN (eccentr. mounted segment, Low Noise)</p> <p>2 Valve body design
 B = Flanged design (body in one piece)</p> <p>3 Nominal pressure
 6 = PN 50</p> <p>4 Material – valve body
 A = CF8M
 B = CF8M, hard chromed
 C = 1.4409</p> | <p>5 Material – ball segment
 J = 1.4460¹
 K = 1.4460¹, hard chromed
 L = 1.4460¹, HiCo coated</p> <p>6 Material – seat
 A = PTFE (10% carbon)
 B = PTFE 53²
 T = HiCo (High Cobalt alloy)</p> <p>7 Material – shaft
 A = 2324-12
 B = 2324-12, hard chromed
 G = 1.4435, hard chromed</p> | <p>8 Bearings – valve body/shaft
 7 = 1.4539</p> <p>9 Stuffing box
 1 = Graphite
 2 = PTFE</p> <p>10 Valve size, DN</p> <p>11 Drilling, counter flanges, PN/Class</p> |
|---|---|---|

¹ 2324-12 for DN 200-250

² 50% PTFE + 50% 1.4435 (316L) powder (percentage by weight)

SOMAS reserves the right to make improvements without prior notice.

