Datasheet
Ball segment valve
KVTF/KVXF

Si-111 EN

Edition: 2021-01

- 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

Option

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

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

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Sales and distribution

SOMAS Instrument AB
P.O. Box 107
SE-661 23 SÄFFLE, Sweden
Visiting address: Norrlandsv. 26-28

Phone: +46 533 167 00
Mail to: sales@somas.se
Internet: www.somas.se

Product Information

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

The valve body is in one piece. SOMAS unique shaft device is designed for torque transmission and gives backlash-free operation with accurate control. 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

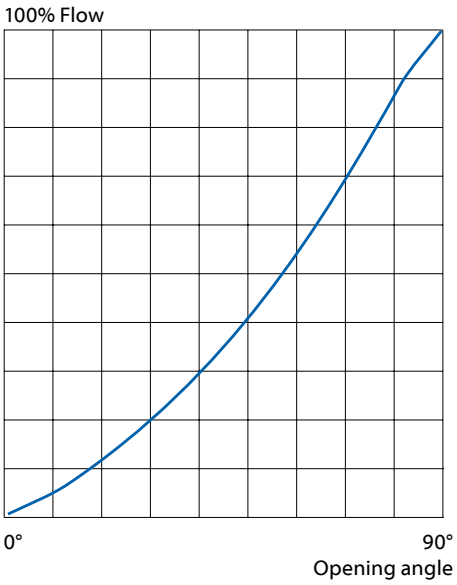
- **LN (Low Noise) Ball segment with low noise trim for high ΔP**

Tightness class

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

Standard leakage class	Optional leakage class
EN 60534-4	**EN 60534-4**
PTFE - Class V	PTFE - Class VI
PTFE 53/PEEK - Class V	HiCo - Class V
HiCo - Class IV-S1	
	EN 12266-1
	PTFE - Rate C
	PTFE - Rate D
	PTFE 53/PEEK - Rate D
	HiCo - Rate E
	HiCo - Rate F

Flow characteristics



Pressure and temperature rating

According to the material in the seat.

	Seat Code	Max. working pressure (bar/psi) at temperature (°C/°F)											
		0 °C	32 °F	150 °C	300 °F	170 °C	340	200 °C	400 °F	350 °C	660 °F	> 350 °C	> 660 °F
PN50	A (PTFE)	50 bar	725 psi	36,3 bar	526 psi	35,3 bar	512 psi	-		-	-	Contact Somas	
	B (PTFE53)	50 bar	725 psi	36,3 bar	526 psi	35,3 bar	512 psi	20,15 bar	292 psi	-	-		
	T (HiCo)	50 bar	725 psi	36,3 bar	526 psi	35,3 bar	512 psi	33,7 bar	488 psi	17,03 bar	246 psi		

Minimum working temperature -60°. If lower temperatures are needed contact SOMAS.

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

DN	Opening angle 10°	20°	30°	40°	50°	60°	70°	80°	90°	ζ 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: Cv = 1,156 x Kv

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.

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: 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	Gear unit
80	25	A22	A23	A24-SC	A24-SC	A24-SO	A24-SOL	–	AB215N
100	25	A22	A24	A24-SC	A24-SC	A24-SO	A24-SOL	–	AB215N
150	35	A31	A32	A33-SC	A33-SC	A33-SO	A33-SOL	–	AB550N
200	40	A32	A33	A34-SC	A34-SC	A34-SO	A34-SOL	–	AB880N
250	50	A41	A41	A43-SC	A43-SC	A43-SO	A43-SOL	–	AB880N

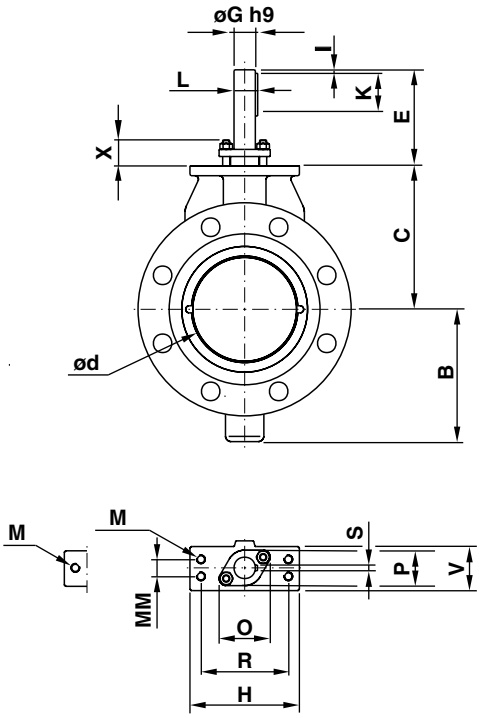
Valve sizing

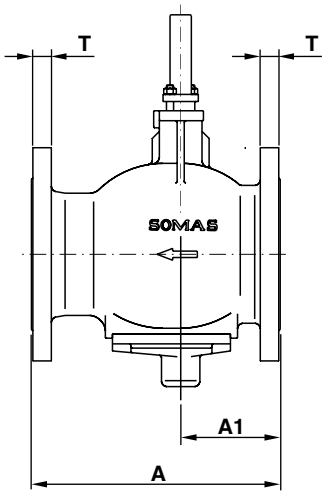
Use SOMAS valve sizing program SOMSIZE to find the correct valve size. All sizing factors are included in the program.

Further technical information

Technical data for the materials used in the SOMAS valves, flange standard, steam data, etc. can be found in documents library on www.somas.se.

Flanged design



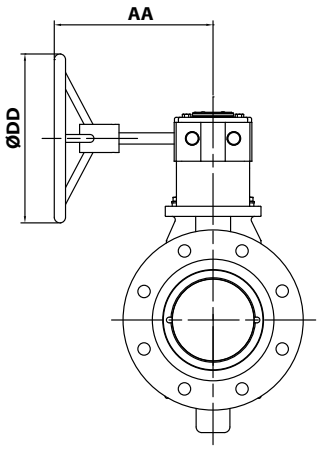


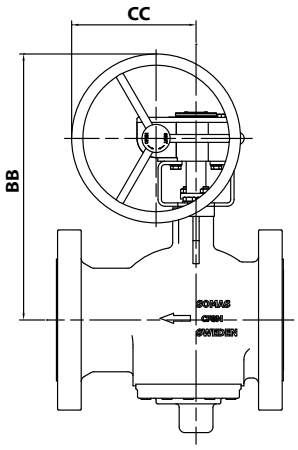
Flanged type of valves according to EN 558, Series 15

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 13.

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

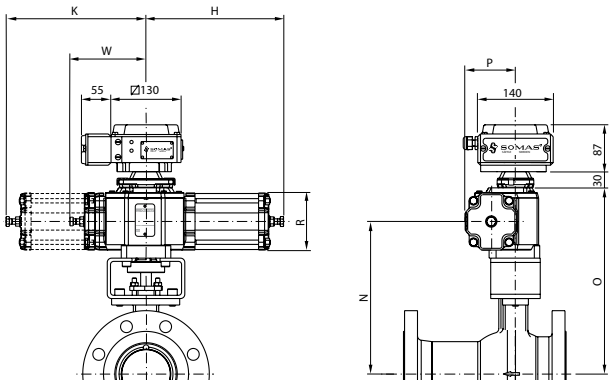
DN	A	A1	B	C	ød	E	øG	H	I	K	L	M	MM	O	P	R	S	T	V	X	Weight
80	283	105	123	130	75	115	25	128	5	45	28	M12	–	61	42	98	8	36	54	30	26
100	305	116	134	140	92	115	25	128	5	45	28	M12	–	61	42	98	8	39	54	30	40
150	403	155	200	202	145	135	35	170	5	70	38	M12	24	85	55	123	10	44	65	50	87
200	502	180	241	242	189	155	40	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	**AB215N**	217	334	152	200	35
100	**AB215N**	217	344	152	200	49
150	**AB550N**	282	473	221	300	102
200	**AB880N**	275	539	261	300	156
250	**AB880N**	275	614	261	300	232



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

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

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 J A - B 7 1 - DN... - D... - B... - PN...
1 2 3 4 5 6 7 8 9 10 11 12 13

1 Type of valve
Flanged design
KVTF (centrically mounted segment)
KVXF (eccentrically mounted segment)
KVTF LN (centr. mounted segment, Low Noise)
KVXF LN (eccentr. mounted segment, Low Noise)

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

3 Nominal pressure
6 = PN 40/ Class 300

4 Material – valve body
A = CF8M/1.4408
C = 1.4409
E = CK-3MCuN

5 Material – ball segment
J = 1.4460 alt. SS2324-12
K = 1.4460 alt SS2324-12 hard chromed
L = 1.4460 alt. SS2324-12, HiCo Gr 21-coated
S = CK-3MCuN alt.1.4547

6 Material – seat
A = PTFE (10% carbon, (percentage by weight)
B = PTFE 53 (50% PTFE + 50% 1.4435 (316L) powder (percentage by weight)
T = HiCo Gr 6 alt. 1.4404, HiCo Gr 6 alt. Gr 21 coated

7 Material – spindel
A = 1.4460 alt. SS 2324-12
B = 1.4460 alt. SS 2324-12, hard chromed
G = 1.4409 alt. 1.4404, hard chromed
J = CK-3MCuN/1.4547

8 Bearings – valve body/shaft
6 = N06625 (High Nickel Alloy)
7 = 1.4462

9 Stuffing box
1 = Graphite
2 = PTFE

10 Valve size, DN

11 Shaft diameter

12 Actuator mounting flange drilling

13 Drilling, counter flanges, PN/Class

Other materials are available on request.
Contact Somas for further information.

SOMAS reserves the right to make improvements without prior notice.

Concern and head office:
SOMAS Instrument AB
Norrlandsvägen 26
SE-661 40 SÄFFLE
Sweden

Phone: +46 (0)533 167 00
E-mail: sales@somas.se
www.somas.se