



Ball segment valve Type KVT and K VX

Si-103 EN

Edition: 2006-04

Nominal pressure		PN 10
Nominal size	—	DN 450 - 700
Material	—	Stainless steel

- **Control and tight shut-off valve**
- **High capacity**
- **Ball segment and shaft in one piece gives a torque transmission free of backlash**
- **Excellent tightness irrespective of differential pressure**

The SOMAS ball segment valve type KVT with a centrally mounted ball segment and K VX with an eccentrically mounted ball segment are flanged.

The valve body is diagonally splited. Ball segment and shaft are made in one piece.

The spring-loaded seat offers excellent tightness also at low differential pressure.

The valves can be used for control, as well as for shut-off applications, of practically every type of media within a wide temperature range. Choose KVT for liquids, media containing impurities, sludge and chemicals. For dry media such as steam, gases and acids, choose K VX. In the K VX-valve the ball segment is eccentrically mounted and rotates out from the seat when the valve is opened. This reduce the wear on seat and segment.

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.





Tightness class

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

PTFE-seat	(code A)	IEC 534-4 Class VI
PTFE 53-seat*	(code B)	IEC 534-4 Class VI
HiCo seat**	(code T)	IEC 534-4 Class IV or better

*50% PTFE, 50% stainless powder 1.4435
 ** HiCo (High Cobalt alloy)

Pressure and temperature rating

(according to the material in the seat)

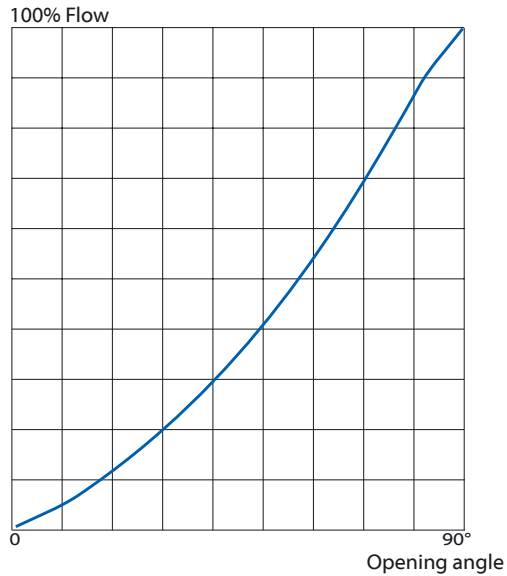
Material code Seat	Max working temperature (bar at °C)				
	150°	170°	200°	280°	>280°
A	10	8	—	—	—
B	10	10	6	—	—
T	10	10	8	7	1)

10 bar = 1 MPa

1) On request

NB! Do not exceed working pressure for the valve.

Flow characteristics



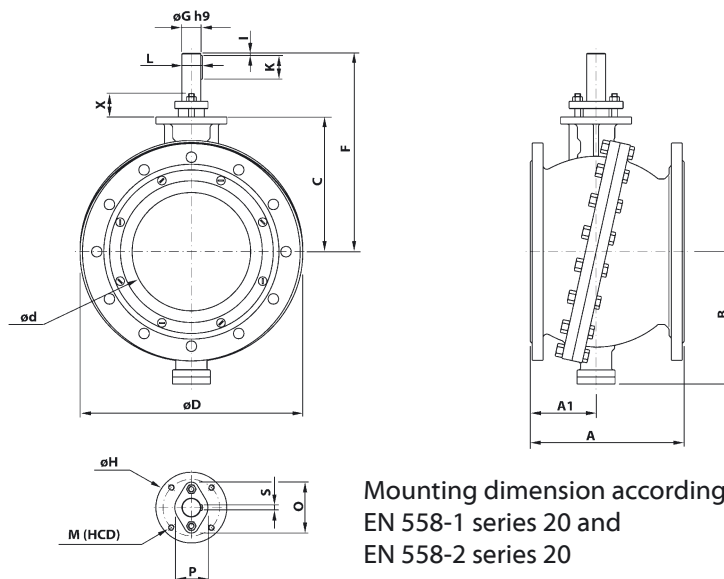
Capacity factor Kv and Resistance factor ξ for ball segment valve type KVT

DN	Opening angle									ξ 90°
	10°	20°	30°	40°	50°	60°	70°	80°	90°	
450	434	1099	1909	2902	3934	5225	6575	8388	9640	0.71
500	656	1663	2888	4390	5951	7906	9948	12690	14585	0.47
600	950	2407	4181	6356	8616	11446	14402	18372	21120	0.46
700	1292	3275	5690	8650	11725	15575	19600	25000	28740	0.46

Capacity factor Kv and Resistance factor ξ for ball segment valve type KVX

DN	Opening angle									ξ 90°
	10°	20°	30°	40°	50°	60°	70°	80°	90°	
450	275	840	1575	2490	3485	4600	5985	7960	9250	0.78
500	415	1275	2380	3765	5275	6960	9050	12040	13850	0.52

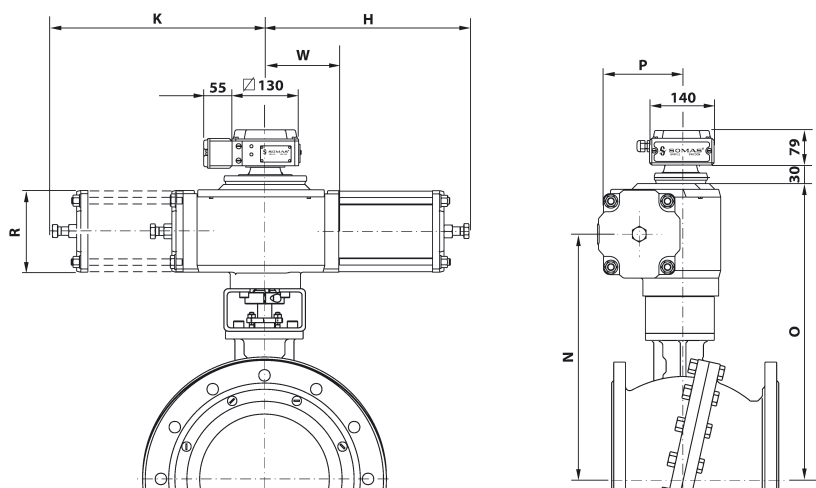
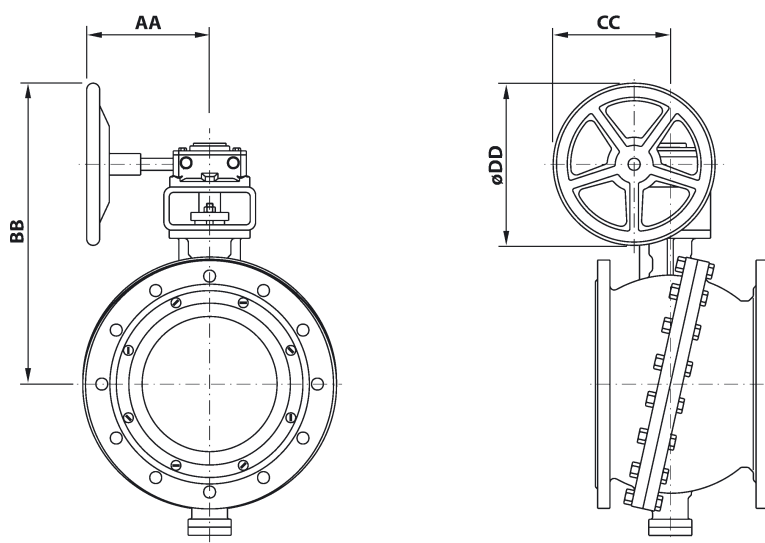
Relation between Kv and Cv Kv=0.86Cv



Ball segment valve KVT/KVX, PN 10																				
DN	A	A1	B	C	ød	øD	E	(F)	øG	øH	I	K	L	M	HCD	O	P	S	X	Weight
450	550	245	445	460	400		175	635	60	200	10	90	64	M12	120	147	96	18	60	345
500	715	335	525	540	492		225	765	70	200	10	110	75	M16	160	162	112	20	60	575
600	850	395	625	640	588		245	885	80	200	10	120	85	M16	160	183	120	22	76	710
700	960	440	708	725	690	Acc.to flange standard	255	980	100	250	10	125	106	M20	205	195	195	28	72	1180



Ball segment valve, with gear unit						
DN	Type	AA	BB	CC	øDD	Weight
450	M15/F16	330	860	350	430	385
500	MJF/S5	530	1030	400	610	685
600	MJF/S5	530	1130	400	610	820
700	MJF/S5	530	1215	400	610	1290



Ball segment valve type KVT/KVX with actuator type A-DA										Actuator type A-SC/SO									
DN	Type	H	K	N	O	P	R	W	Weight	DN	Type	H	K	N	O	P	R	W	Weight
450	A42	545	560	755	860	210	230	—	440	450	A44-X	925	935	735	860	279	354	—	575
500	A42	545	560	815	940	210	230	—	630										
500	A43	680	—	815	940	280	355	315	725										
600	A51	745	—	875	1060	314	354	370	915										
700	A51	745	—	960	1145	314	354	370	1385										
700	A52	745	760	960	1145	314	354	—	1420										

Flange standard

SOMAS ball segment valves type KVT and KVX in above mentioned sizes are equipped with flanges which can be drilled for PN 10.

Drilling according to ANSI, BS etc. is also possible.

When ordering, please state required drilling.

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

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 be delivered as tested units ready for installation. See section 3, 4 and 5 of our catalogue, where also actuators, positioners, limit switches and solenoid valves are presented.

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



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.

Torque

Valve DN	Shaft dia. (mm)	Mv min. (Nm)	Mv max. shaft (Nm)
450	60	3000	5000
500	70	4400	8000
600	80	5500	12000
700	100	7000	14000

Selection table, KVT / KVX

Valve DN	Shaft dia. (mm)	Pneumatic actuators						Manual operation	
		Double acting		Spring return				Hand lever	Gear unit
		5.5 bar	4 bar	Spring closes		Spring opens			
5.5 bar	4 bar	5.5 bar	4 bar	5.5 bar	4 bar	5.5 bar	4 bar		
450	60	A42-DA	A42-DA	A44-SC	A44-SC	A44-SO	A44-SOL	-----	M15/F16
500	70	A42-DA	A-43DA					-----	MJF/S5
600	80	A51-DA	A51-DA					-----	MJF/S5
700	100	A51-DA	A52-DA					-----	MJF/S5

For ordering

See valve specification system and also state type of actuator, positioner and accessories.

Valve sizing

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

Valve specification system

KVT - L 2 - A J A - A 7 1 - DN... - PN...

1 2 3 4 5 6 7 8 9 10 11

- | | | |
|---|---|---|
| 1 Type of valve
KVT (Centrically mounted segment)
KVX (Eccentrically mounted segment) | 5 Material - ball segment, coating incl.
K = SS 2324-12, hard chromed
L = SS 2324-12, HiCo coated | 8 Bearings - valve body/shaft
7 = 1.4539 |
| 2 Valve body design
L = Flanged design according to DIN | 6 Material - seat
A = PTFE (10% carbon)
B = PTFE 53 ¹ | 9 Stuffing box
1 = Graphite
2 = PTFE |
| 3 Nominal pressure
2 = PN10 | T = HiCo (High Cobalt alloy) | 10 Valve size, DN |
| 4 Material - valve body
A = SS 2343
B = SS 2343 hard chromed | 7 Material - shaft
A = SS 2324-12
B = SS 2324-12, hard chromed | 11 Drilling, counter flanges |

¹ (50% PTFE + 50% 1.4435 powder)

SOMAS reserve the right to make improvements without prior notice.



SOMAS[®]
P.O. Box 107, SE-661 23 SÄFFLE, SWEDEN
PHONE: +46 533 167 00
FAX: +46 533 141 36
E-mail: sales@somas.se
www.somas.se

Representative