Datasheet
Ball segment valve
HVV

Si-115 EN

Edition: 2022-05

- Control valve designed for demanding applications
- High capacity

Option

- HVMW/HVMF ball segment with V-notch for optimization of decreased control flows



Type HVVW-A:
Wafer design Standard face to face dimension

Nominal pressure:	PN 10/16/25/40, Class 150/300
Nominal size:	DN 40/32-250, NPS $1^{1/2}$/ $1^{1/4}$-10

Type HVVW-D:
Wafer design Short face to face dimension

PN 10/16,25/40, Class150/300
DN 40/32-250, NPS $1^{1/2}$/ $1^{1/4}$-10

Type HVVF-L:
Flanged design

Nominal pressure:	PN 10/16/25/40, Class 150/300
Nominal size:	DN 40/32-50, NPS $1^{1/2}$/ $1^{1/4}$-2

Type HVVF-B:
Flanged design

Nominal pressure:	PN 10/16/25, Class 150, NPS 3-10
Nominal size:	DN 80-250

Type HVVF-C:
Flanged design Short face to face dimension

PN 10/16/25, Class150, NPS $1^{1/2}$/ $1^{1/4}$-10
DN 80-300

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Product Information

Somas ball segment valve type HVV with an excentrically mounted unchromed bearing shaft is available in wafer or flanged design. The design of the valve is a modification of Somas ball segment valve with a unique shaft design and a specifically engineered excentricity, and it is always equipped with a spring-loaded gland. Combinations of various media with added chemicals along with temperature changes sometimes result in a build-up of coating.

Another example where media with a high level of dry content that can cause clogging can be found in air-based applications. Somas HVV is intended for applications that require high reliability as well as easy maintenance while still offering a optimal control function.

To improve HVV even further the valve has been designed with an axis seal that prevents media from entering the shaft bearing. It is also equipped with bearings to maintain smooth maneuverability.

The valve is supplied with a high-cobolt alloy-seat as standard. The design of the valve is specifically engineered to counteract the build-up of media coating between the valve seat and ball segment.

Option



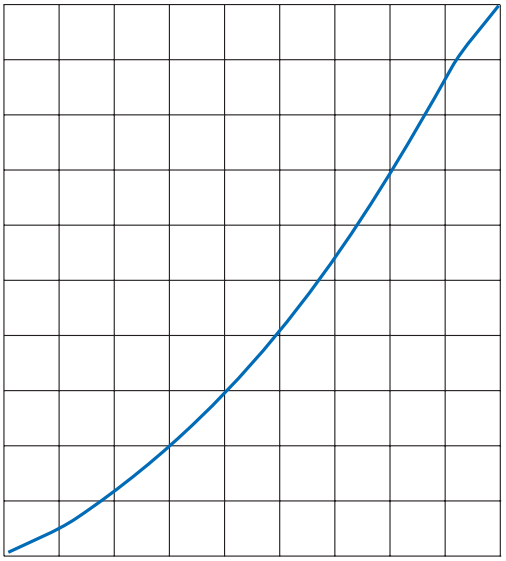
HVVM- ball segment with V-notch for optimization of decreased control flows.

Tightness class

Standard leakage class
EN 60534-4
HiCo - Class IV

Flow characteristics

100% Flow



0° 90°
Opening angle

Factor F_{LP}

	Opening angle								
	10°	**20°**	**30°**	**40°**	**50°**	**60°**	**70°**	**80°**	**90°**
F_{LP1}	0.85	0.82	0.78	0.75	0.70	0.66	0.60	0.55	0.50
F_{LP2}	0.85	0.82	0.78	0.73	0.68	0.62	0.56	0.50	0.45
F_{LP3}	0.85	0.82	0.78	0.73	0.67	0.61	0.54	0.49	0.43

F_{LP1} = One dimension bigger pipe size
F_{LP2} = Two dimensions bigger pipe size
F_{LP3} = Three dimensions bigger pipe size

Liquid pressure recovery factor F_L

Factor	Opening angle								
F_L	0.85	0.82	0.80	0.77	0.74	0.71	0.67	0.64	0.60

Pressure and temperature rating

	Max working temperature					
Seat	**150°C**		**170°C**		**200°C**	
Material Code	**300°F**		**340°F**		**400°F**	
PN25 T (HiCo)	22.7 bar	329.2 psi	22.0 bar	319.1 psi	21.0 bar	304.6 psi
PN40 T (HiCo)	36.3 bar	526.5 psi	35.3 bar	512.0 psi	33.7 bar	488.8 psi
Cl 150 T (HiCo)	14.8 bar	214.7 psi	14.3 bar	207.4 psi	13.7 bar	198.7 psi
Cl 300 T (HiCo)	38.5 bar	558.4 psi	37.4 bar	542.4 psi	35.7 bar	517.8 psi

Pipe geometry factor F_P
Metric

Valve	Pipe	Opening angle								
DN	DN	10°	20°	30°	40°	50°	60°	70°	80°	90°
	50				0.98	0.97	0.94	0.91	0.87	0.83
40/32	65	1.0	0.99	0.98	0.95	0.91	0.85	0.79	0.71	0.66
	80				0.92	0.87	0.80	0.73	0.64	0.59
	50				0.98	0.97	0.94	0.91	0.87	0.83
40	65	1.0	0.99	0.98	0.95	0.91	0.85	0.79	0.71	0.66
	80				0.92	0.87	0.80	0.73	0.64	0.59
	65				0.98	0.96	0.93	0.89	0.86	0.84
50	80	1.0	0.99	0.98	0.95	0.91	0.85	0.79	0.71	0.66
	100				0.92	0.87	0.80	0.73	0.64	0.59
	80				0.99	0.98	0.97	0.96	0.93	0.91
65	100	1.0	0.99	0.98	0.95	0.91	0.85	0.79	0.73	0.64
	125				0.92	0.87	0.80	0.73	0.64	0.59
	100	1.00	1.00	0.99	0.98	0.97	0.95	0.93	0.89	0.86
80	150	1.00	0.99	0.97	0.94	0.90	0.85	0.78	0.70	0.65
	200	1.00	0.99	0.97	0.93	0.87	0.80	0.73	0.64	0.59
	150	1.00	1.00	0.99	0.97	0.94	0.91	0.86	0.80	0.76
100	200	1.00	0.99	0.97	0.94	0.90	0.84	0.78	0.70	0.65
	250	1.00	0.99	0.97	0.93	0.88	0.82	0.75	0.66	0.61
	150	1.00	1.00	0.99	0.99	0.97	0.95	0.93	0.90	0.87
125	200	1.00	0.99	0.98	0.95	0.91	0.85	0.79	0.72	0.67
	250	1.00	0.99	0.96	0.92	0.87	0.80	0.72	0.64	0.59
	200	1.00	1.00	0.99	0.97	0.95	0.92	0.88	0.83	0.79
150	250	1.00	0.99	0.97	0.94	0.90	0.85	0.78	0.71	0.66
	300	1.00	0.99	0.97	0.93	0.87	0.80	0.73	0.66	0.60
	250	1.00	1.00	0.99	0.98	0.97	0.95	0.92	0.88	0.85
200	300	1.00	0.99	0.98	0.96	0.93	0.89	0.84	0.77	0.73
	350	1.00	0.99	0.98	0.95	0.91	0.85	0.79	0.71	0.66
	300	1.00	1.00	0.99	0.99	0.98	0.96	0.94	0.91	0.89
250	350	1.00	1.00	0.99	0.97	0.95	0.91	0.87	0.81	0.77
	400	1.00	0.99	0.98	0.96	0.92	0.88	0.82	0.75	0.70
	350	1.00	1.00	1.00	0.99	0.98	0.97	0.96	0.93	0.92
300	400	1.00	1.00	0.99	0.98	0.96	0.93	0.90	0.85	0.81
	450	1.00	0.99	0.98	0.96	0.94	0.90	0.85	0.78	0.74

Pipe geometry factor F_P
US

Valve	Pipe	Opening angle								
NPS	NPS	10°	20°	30°	40°	50°	60°	70°	80°	90°
	2				0.98	0.97	0.94	0.91	0.87	0.83
1.5/1.25	2.5	1.0	0.99	0.98	0.95	0.91	0.85	0.79	0.71	0.66
	3				0.92	0.87	0.80	0.73	0.64	0.59
	2				0.98	0.97	0.94	0.91	0.87	0.83
1.5	2.5	1.0	0.99	0.98	0.95	0.91	0.85	0.79	0.71	0.66
	3				0.92	0.87	0.80	0.73	0.64	0.59
	2.5				0.98	0.96	0.93	0.89	0.86	0.84
2	3	1.0	0.99	0.98	0.95	0.91	0.85	0.79	0.71	0.66
	4				0.92	0.87	0.80	0.73	0.64	0.59
	3				0.99	0.98	0.97	0.96	0.93	0.91
2.5	4	1.0	0.99	0.98	0.95	0.91	0.85	0.79	0.73	0.64
	5				0.92	0.87	0.80	0.73	0.64	0.59
	4	1.00	1.00	0.99	0.98	0.97	0.95	0.93	0.89	0.86
3	5	1.00	0.99	0.97	0.94	0.90	0.85	0.78	0.70	0.65
	6	1.00	0.99	0.97	0.93	0.87	0.80	0.73	0.64	0.59
	5	1.00	1.00	0.99	0.97	0.94	0.91	0.86	0.80	0.76
4	6	1.00	0.99	0.97	0.94	0.90	0.84	0.78	0.70	0.65
	8	1.00	0.99	0.97	0.93	0.88	0.82	0.75	0.66	0.61
	6	1.00	1.00	0.99	0.99	0.97	0.95	0.93	0.90	0.87
5	8	1.00	0.99	0.98	0.95	0.91	0.85	0.79	0.72	0.67
	10	1.00	0.99	0.96	0.92	0.87	0.80	0.72	0.64	0.59
	8	1.00	1.00	0.99	0.97	0.95	0.92	0.88	0.83	0.79
6	10	1.00	0.99	0.97	0.94	0.90	0.85	0.78	0.71	0.66
	12	1.00	0.99	0.97	0.93	0.87	0.80	0.73	0.66	0.60
	10	1.00	1.00	0.99	0.98	0.97	0.95	0.92	0.88	0.85
8	12	1.00	0.99	0.98	0.96	0.93	0.89	0.84	0.77	0.73
	14	1.00	0.99	0.98	0.95	0.91	0.85	0.79	0.71	0.66
	12	1.00	1.00	0.99	0.99	0.98	0.96	0.94	0.91	0.89
10	14	1.00	1.00	0.99	0.97	0.95	0.91	0.87	0.81	0.77
	16	1.00	0.99	0.98	0.96	0.92	0.88	0.82	0.75	0.70
	14	1.00	1.00	1.00	0.99	0.98	0.97	0.96	0.93	0.92
12	16	1.00	1.00	0.99	0.98	0.96	0.93	0.90	0.85	0.81
	18	1.00	0.99	0.98	0.96	0.94	0.90	0.85	0.78	0.74

Capacity factor Kv and Resistance factor ζ for ball segment valve type HVV

Metric

DN				Opening angle									
Wafer	Flanged												
A/D	L	B	C	10°	20°	30°	40°	50°	60°	70°	80°	90°	ζ 90°
40/32	40/32			1	3.3	6.9	12.9	19	25	35	48	-	-
40	40			4.3	11	19	29	39	53	66	84	96	0.44
50	50			6.8	17	30	45	61	82	103	131	150	0.44
65	65			9.8	25	43	65	87	113	139	171	191	0.77
80		80	80	15	39	67	102	138	184	231	295	340	0.57
100		100	100	23	58	101	154	208	276	348	444	510	0.62
150		125	150	43	109	189	288	390	519	652	817	925	0.44
		150		60	153	264	402	544	725	910	1123	1295	0.48
200			200	66	167	288	439	594	790	994	1268	1450	0.45
250			250	97	245	425	646	875	1162	1463	1866	2150	0.44
		200		100	253	437	665	901	1197	1507	1923	2210	0.52
			300	151	380	660	1004	1360	1807	2275	2902	3340	0.40
		250		155	390	677	1030	1395	1853	2333	2967	3425	0.53

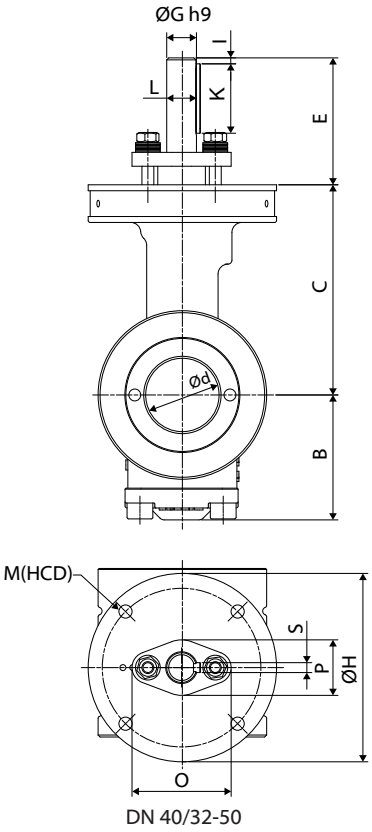
Capacity factor Cv and Resistance factor ζ for ball segment valve type HVV

US

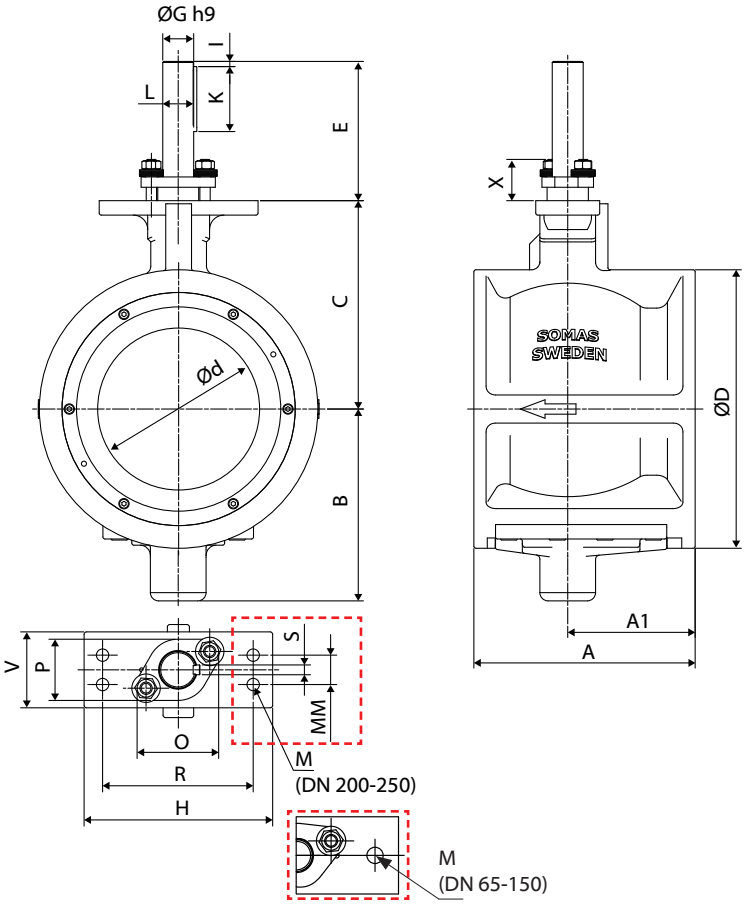
NPS				Opening angle									
Wafer	Flanged												
A/D	L	B	C	10°	20°	30°	40°	50°	60°	70°	80°	90°	ζ 90°
1.5/1.25	1.5/1.25			1.2	3.8	8.0	14.9	22	29	41	56	-	-
1.5	1.5			5.0	13	22	34	45	61	76	97	111	0.44
2	2			7.9	20	35	52	71	95	119	151	173	0.44
2.5	2.5			11	29	50	75	101	131	161	198	221	0.77
3		3	3	17	45	78	118	160	213	267	341	393	0.57
4		4	4	27	67	117	178	240	319	402	513	590	0.62
6		5	6	50	126	219	333	451	600	754	945	1069	0.44
		6		69	177	305	465	629	838	1052	1298	1497	0.48
8			8	76	193	333	508	687	913	1149	1466	1676	0.45
10			10	112	283	491	747	1012	1343	1691	2157	2485	0.44
		8		116	293	505	769	1042	1384	1742	2223	2555	0.52
			12	175	439	763	1161	1572	2089	2630	3355	3861	0.40
		10		179	451	783	1191	1613	2142	2697	3430	3959	0.53

Wafer design Standard face to face dimension HVVW-A

DN 40/32-50



DN 65-250



Metric (mm)
Ball segment valve type HVVW -A

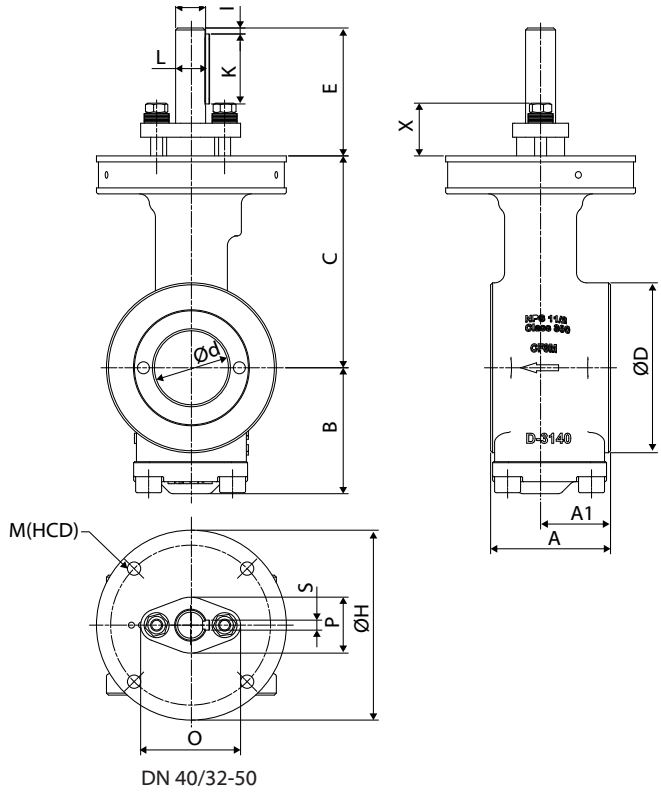
DN	PN	A	A1	B	C	Ød	ØD	E	ØG	H	I	K	L	HCD	M	MM	O	P	R	S	V	X	Weight (kg)
40/32	40	85	35	63	106	37	85	64	15	95	3	35	17	80	M8	-	50	28	0	5	0	25	4.4
40	40	85	35	63	106	37	85	64	15	95	3	35	17	80	M8	-	50	28	0	5	0	25	4.4
50	40	95	43	72	106	50	102	64	15	105	3	35	17	80	M8	-	50	28	0	5	0	25	5.6
65	40	120	56	90	115	60	122	115	20	127	5	45	22.5	-	M12	-	61	42	98	6	48	30	8.5
80	25	111	64	102	115	75	140	115	20	127	5	45	22.5	-	M12	-	61	42	98	6	48	30	8.5
100	25	125	73	116	140	92	162	115	20	127	5	45	22.5	-	M12	-	61	42	98	6	48	30	11.5
150	25	170	101	151	176	124	216	115	25	127	5	45	28	-	M12	-	64	47	98	8	50	35	24
200	25	215	124	187	202	156	270	135	30	154	5	60	33	-	M12	24	72	50	123	8	62	40	44
250	25	260	150	230	242	189	324	135	35	154	5	50	38	-	M12	24	75	55	123	10	70	40	71

US (in)
Ball segment valve type HVVW-A

NPS	Class	A	A1	B	C	Ød	ØD	E	ØG	H	I	K	L	HCD	M	MM	O	P	R	S	V	X	Weight (lbs)
1.5/1.25	300	3.35	1.38	2.48	4.17	1.46	3.35	2.52	0.59	3.74	0.12	1.38	0.67	3.15	M8	-	1.97	1.10	0.00	0.20	0.00	0.98	9.7
1.5	300	3.35	1.38	2.48	4.17	1.46	3.35	2.52	0.59	3.74	0.12	1.38	0.67	3.15	M8	-	1.97	1.10	0.00	0.20	0.00	0.98	9.7
2	300	3.74	1.69	2.84	4.17	1.97	4.02	2.52	0.59	4.13	0.12	1.38	0.67	3.15	M8	-	1.97	1.10	0.00	0.20	0.00	0.98	12.35
2.5	300	4.72	2.20	3.54	4.53	2.36	4.80	4.53	0.79	5.00	0.20	1.77	0.89	-	M12	-	2.40	1.65	3.89	0.24	1.89	1.18	18.74
3	150	4.37	2.52	4.02	4.53	2.95	5.51	4.53	0.79	5.00	0.20	1.77	0.89	-	M12	-	2.40	1.65	3.86	0.24	1.89	1.18	18.74
4	150	4.92	2.87	4.57	5.51	3.62	6.38	4.53	0.79	5.00	0.20	1.77	0.89	-	M12	-	2.40	1.65	3.86	0.24	1.89	1.18	25.35
6	150	6.69	3.98	5.95	6.93	4.88	8.50	4.53	0.98	5.00	0.20	1.77	1.10	-	M12	-	2.52	1.85	3.86	0.32	1.97	1.38	52.91
8	150	8.47	4.88	7.36	7.95	6.18	10.63	5.31	1.18	6.06	0.20	2.36	1.30	-	M12	0.94	2.84	1.97	4.84	0.32	2.44	1.58	97.00
10	150	10.24	5.91	9.06	9.53	7.48	12.76	5.31	1.38	6.06	0.20	1.97	1.50	-	M12	0.94	2.95	2.17	4.84	0.39	2.76	1.58	156.53

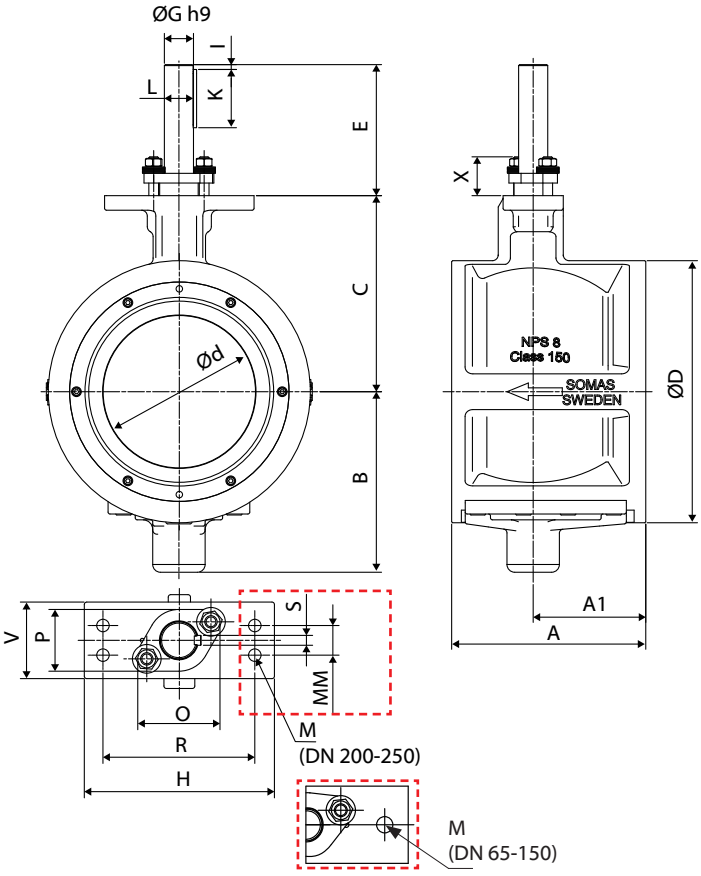
Wafer design Short face to face dimension HVVW-D

DN 40/32-50



DN 40/32-50

DN 65-250



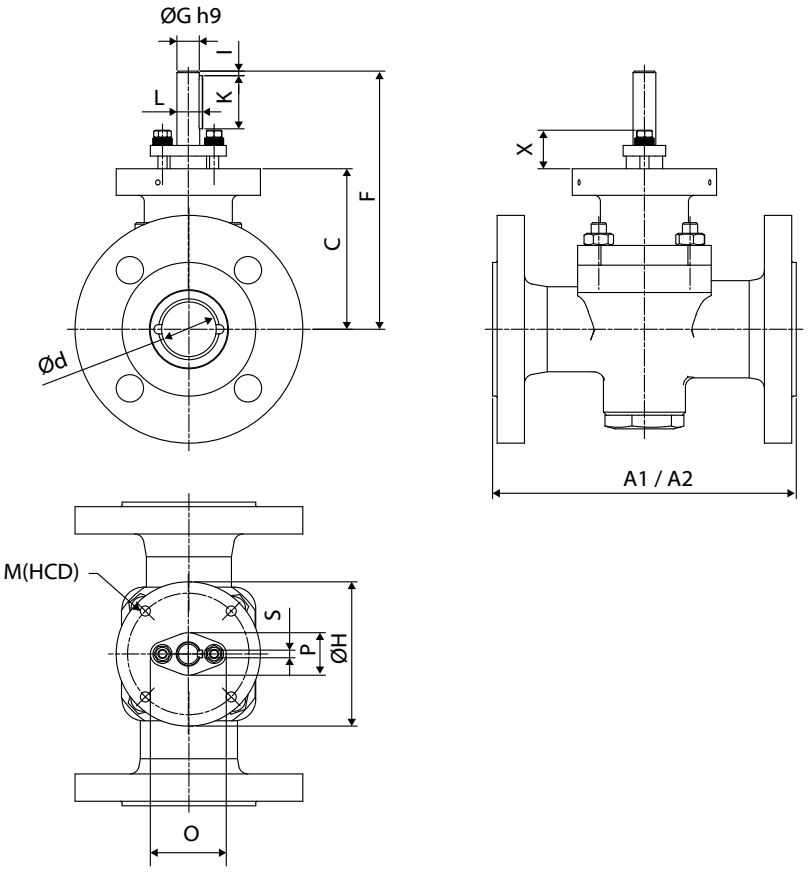
Metric (mm)
Ball segment vale type HVVW-D

DN	PN	A	A1	B	C	Ød	ØD	E	ØG	H	I	K	L	HCD	M	MM	O	P	R	S	V	X	Weight (kg)
40/32	40	60	35	63	106	37	85	64	15	95	3	35	17	80	M8	-	50	28	0	5	0	25	3.6
40	40	60	35	63	106	37	85	64	15	95	3	35	17	80	M8	-	50	28	0	5	0	25	3.6
50	40	75	43	72	106	50	102	64	15	105	3	35	17	80	M8	-	50	28	0	5	0	25	4.6
65	40	100	56	90	115	60	122	115	20	127	5	45	22.5	-	M12	-	61	42	98	6	48	30	7.6
80	25	100	58	101	115	75	134	115	20	128	5	45	22.5	-	M12	-	61	42	98	6	48	30	7.6
100	25	115	69.5	116	140	92	162	115	20	128	5	45	22.5	-	M12	-	61	42	98	6	48	30	11
150	25	160	96	151	176	124	216	115	25	127	5	45	28	-	M12	-	64	47	98	8	50	35	23.5
200	25	200	116	186	202	156	270	135	30	154	5	60	33	-	M12	24	72	50	123	8	62	40	43
250	25	240	150	228	242	189	324	135	35	154	5	50	38	-	M12	24	75	55	123	10	70	40	70

US (in)
Ball segment vale type HVVW-D

NPS	Class	A	A1	B	C	Ød	ØD	E	ØG	H	I	K	L	HCD	M	MM	O	P	R	S	V	X	Weight (lbs)
1.5/1.25	300	2.36	1.38	2.48	4.17	1.46	3.35	2.52	0.59	3.74	0.12	1.38	0.67	3.15	M8	-	1.97	1.10	0.00	0.20	0.00	0.98	7.94
1.5	300	2.36	1.38	2.48	4.17	1.46	3.35	2.52	0.59	3.74	0.12	1.38	0.67	3.15	M8	-	1.97	1.10	0.00	0.20	0.00	0.98	7.94
2	300	2.95	1.69	2.84	4.53	1.97	4.02	2.52	0.59	4.13	0.12	1.38	0.67	3.15	M8	-	1.97	1.10	0.00	0.20	0.00	0.98	10.14
2.5	300	3.94	2.20	3.54	4.53	2.95	4.80	4.53	0.79	5.00	0.20	1.77	0.89	-	M12	-	2.40	1.65	3.86	0.24	1.89	1.18	16.76
3	150	3.94	2.28	3.98	4.53	3.15	5.28	4.53	0.79	5.04	0.20	1.77	0.89	-	M12	-	2.40	1.65	3.86	0.24	1.89	1.18	16.76
4	150	4.53	2.74	4.57	5.51	3.62	6.38	4.53	0.79	5.04	0.20	1.77	0.89	-	M12	-	2.40	1.65	3.86	0.24	1.89	1.18	24.25
6	150	6.30	3.78	5.95	6.93	4.88	8.50	4.53	0.98	5.00	0.20	1.77	1.10	-	M12	-	2.52	1.85	3.86	0.32	1.97	1.38	51.81
8	150	7.87	4.57	7.32	7.95	6.22	10.63	5.32	1.18	6.06	0.20	2.36	1.30	-	M12	0.94	2.84	1.97	4.84	0.32	2.44	1.58	97
10	150	9.45	5.91	8.98	9.53	7.48	12.76	5.32	1.38	6.06	0.20	1.97	1.50	-	M12	0.94	2.95	2.17	4.84	0.39	2.76	1.58	154.32

Flanged design HVVF-L



Metric (mm)
Ball segment valve type HVVF-L

DN	PN	A1	A2	C	Ød	F	ØG	ØH	I	K	L	M	(HCD)	O	P	S	X	Weight (kg)
40/32	40	200	190	106	32	170	15	95	3	35	17	M8	80	50	28	5	25	11
40	40	200	190	106	32	170	15	95	3	35	17	M8	80	50	28	5	25	11
50	40	230	216	116	50	180	15	95	5	35	17	M8	80	50	28	5	25	14

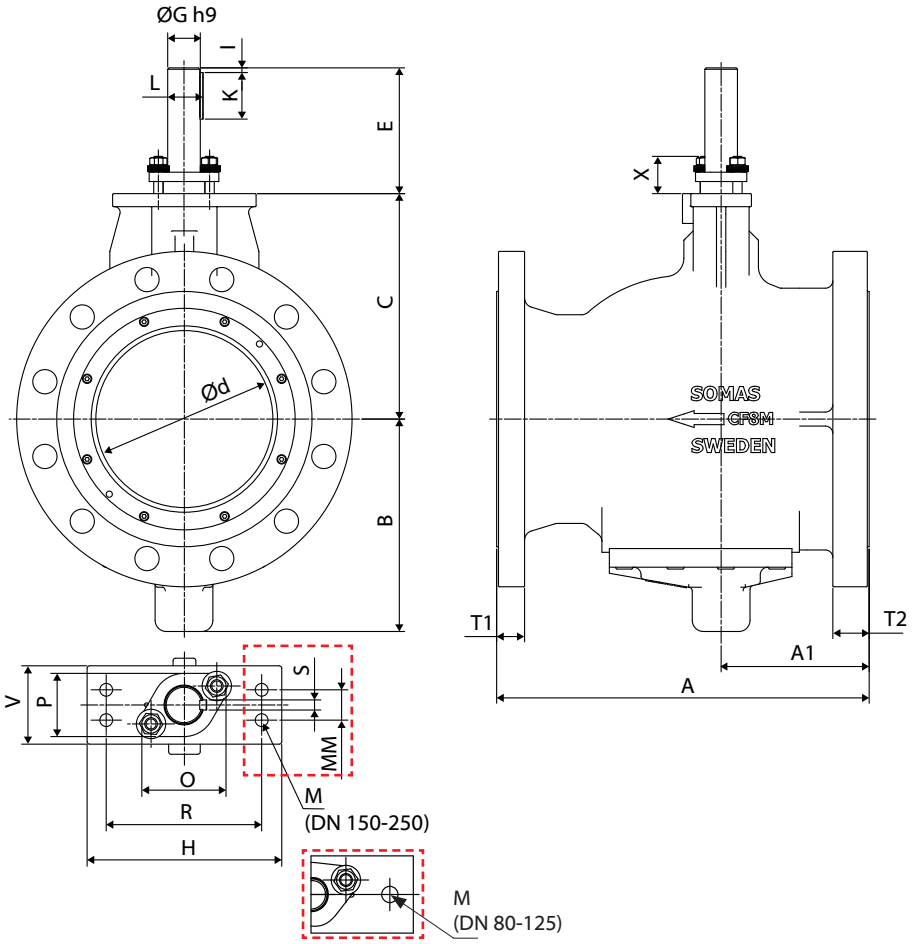
A1 = Face to face dimension according to EN 558 series 1 (PN 25, PN 40)

US (in)
Ball segment valve type type HVVF-L

NPS	Class	A1	A2	C	Ød	F	ØG	ØH	I	K	L	M	(HCD)	O	P	S	X	Weight (lbs)
1.5/1.25	300	7.87	7.48	4.17	1.26	6.69	0.59	3.74	0.12	1.38	0.67	M8	3.15	1.97	1.10	0.20	0.98	24.30
1.5	300	7.87	7.48	4.17	1.26	6.69	0.59	3.74	0.12	1.38	0.67	M8	3.15	1.97	1.10	0.20	0.98	24.30
2	300	9.06	8.50	4.57	1.97	7.09	0.59	3.74	0.20	1.38	0.67	M8	3.15	1.97	1.10	0.20	0.98	30.90

A2 = Face to face dimension according to EN 558 series 4 (PN 20, Class 150, Class 300)

Flanged design HVVF-B



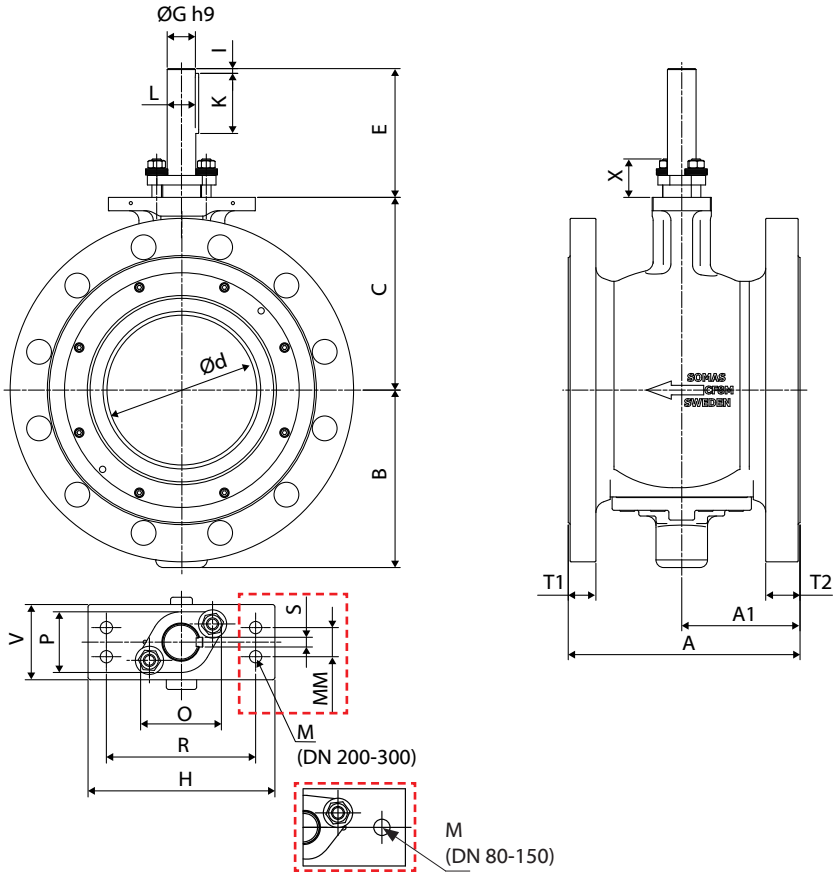
Metric (mm)
Ball segment valve type HVVF-B

DN	PN	A	A1	B	C	Ød	E	ØøG	H	I	K	L	M	MM	O	P	R	S	T1	T2	V	X	Weight (kg)
80	25	280	82	102	115	75	115	20	125	5	45	22.5	M12	–	61	42	98	6	24	24	48	30	18
100	25	300	94	116	140	92	115	20	125	5	45	22.5	M12	–	61	42	98	6	26	26	48	30	26
125	25	325	118	151	176	124	115	25	125	5	45	28	M12	–	66	47	98	8	26	26	50	35	38
150	25	350	140	187	202	145	135	30	155	5	60	33	M12	24	77	50	123	8	28	28	62	35	61
200	25	400	159	230	242	189	135	35	155	5	50	38	M12	24	85	55	123	10	30	39	62	50	95
250	25	450	191	281	297	232	155	40	170	5	50	43	M12	40	94	75	123	12	34	45	85	50	154

US (in)
Ball segment valve type HVVF-B

NPS	Class	A	A1	B	C	Ød	E	ØG	H	I	K	L	M	MM	O	P	R	S	T1	T2	V	X	Weight (lbs)
3	150	11.02	3.23	4.02	4.53	2.95	4.53	0.79	4.92	0.20	1.77	0.89	M12	–	2.40	1.65	3.86	0.24	0.94	0.94	1.89	1.18	40
4	150	11.81	3.70	4.57	5.51	3.62	4.53	0.79	4.92	0.20	1.77	0.89	M12	–	2.40	1.65	3.86	0.24	1.02	1.02	1.89	1.18	57
5	150	12.80	4.65	5.94	6.93	4.88	4.53	0.98	4.92	0.20	1.77	1.10	M12	–	2.60	1.85	3.86	0.31	1.02	1.02	1.97	1.38	84
6	150	13.78	5.51	7.36	7.95	5.71	5.31	1.18	6.10	0.20	2.36	1.30	M12	0.94	3.03	1.97	4.84	0.31	1.10	1.10	2.44	1.38	135
8	150	15.75	6.26	9.06	9.53	7.44	5.31	1.38	6.10	0.20	1.97	1.50	M12	0.94	3.35	2.17	4.84	0.39	1.18	1.54	2.44	1.97	209
10	150	17.72	7.52	11.06	11.69	9.13	6.10	1.57	6.69	0.20	1.97	1.69	M12	1.57	3.70	2.95	4.84	0.47	1.34	1.77	3.35	1.97	340

Flanged design Short face to face dimension HVV-C



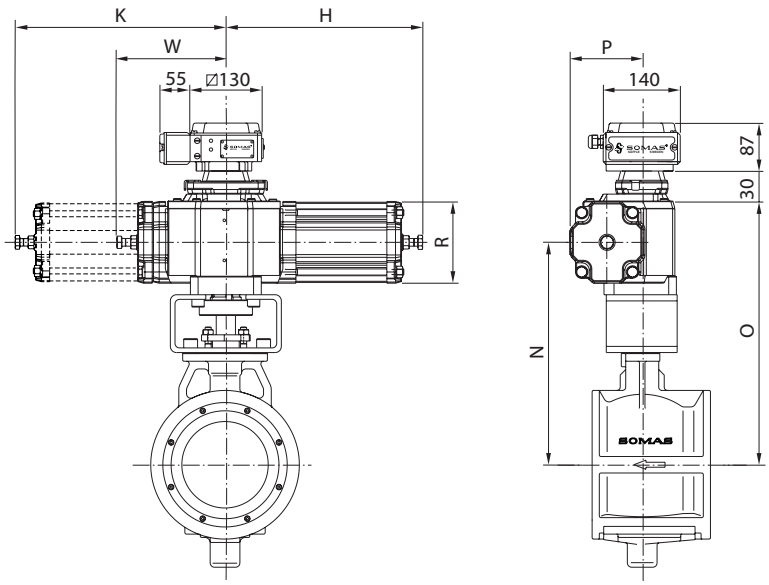
Metric (mm)
Ball segment valve type HVVF-C

DN	PN	A	A1	B	C	Ød	E	ØG	H	I	K	L	M	MM	O	P	R	S	T1	T2	V	X	Weight (kg)
80	25	165	82	105	115	75	115	20	125	5	45	22,5	M12	-	61	42	98	6	24	27	48	30	18
100	25	194	94	122	140	92	115	20	125	5	45	22,5	M12	-	61	42	98	6	25	29	48	30	25
150	25	229	118	157	176	124	115	25	125	5	45	28	M12	-	66	47	98	8	28	36	50	35	51
200	25	243	124	186	202	156	135	30	155	5	60	33	M12	24	77	50	123	8	29	36	62	35	75
250	25	297	153	228	242	189	135	35	155	5	50	38	M12	24	75	55	123	10	32	38	65	40	109
300	25	338	176	281	297	232	155	40	170	5	50	43	M12	40	94	75	123	12	34	45	85	50	161

US (in)
Ball segment valve type HVVF-C

NPS	Class	A	A1	B	C	Ød	E	ØG	H	I	K	L	M	MM	O	P	R	S	T1	T2	V	X	Weight (lb)
3	150	6.50	3.23	4.13	4.53	2.95	4.53	0.79	4.92	0.20	1.77	0.89	M12	-	2.40	1.65	3.86	0.24	1.06	0.94	1.89	1.18	40
4	150	7.64	3.70	4.80	5.51	3.62	4.53	0.79	4.92	0.20	1.77	0.89	M12	-	2.40	1.65	3.86	0.24	1.14	0.98	1.89	1.18	55
6	150	9.02	4.65	6.18	6.93	4.88	4.53	0.98	4.92	0.20	1.77	0.89	M12	-	2.60	1.85	3.86	0.31	1.42	1.10	1.97	1.38	112
8	150	9.57	4.88	7.32	7.95	6.18	5.31	1.18	6.10	0.20	2.36	1.30	M12	0.94	3.03	1.97	4.84	0.31	1.42	1.14	2.44	1.38	165
10	150	11.69	6.02	8.98	9.53	7.48	5.31	1.38	6.10	0.20	1.97	1.30	M12	0.94	3.35	2.17	4.84	0.39	1.50	1.26	2.44	1.97	240
12	150	13.31	6.91	11.06	11.69	9.13	6.10	1.57	6.69	0.20	1.97	1.69	M12	1.57	3.70	1.85	4.84	0.47	1.75	1.34	3.35	1.97	355

Ball segment valve type HVVW-A/D with actuator type A-DA / A-SC/SO



Metric (mm)

Ball segment valve HVVW-A/D with acuator A-DA

DN	Typ	H	K	N	O	P	R	W	HVVW-A Weight (kg)	HVVW-D Weight (kg)
40/32	A11	215	-	190	240	73	84	90	9	8
40	A11	215	-	190	240	73	84	90	9	8
50	A13	250	-	200	250	83	106	90	12	11
65	A21	255	-	280	345	94	106	140	18	16
65	A22	255	260	280	345	94	106		20	18
80	A21	255	-	260	340	94	106	140	18	16
80	A22	255	260	260	320	94	106	-	20	18
100	A21	255	-	285	345	94	106	140	21	19
100	A22	255	260	285	345	94	106	-	23	21
150	A22	255	260	320	385	94	106	-	33	33
150	A23	305	-	320	385	117	152	140	35	35
200	A24	305	310	345	410	117	152	-	61	59
200	A31	380	-	400	485	144	152	215	69	67
250	A31	380	-	440	525	144	152	215	96	94
250	A32	380	395	440	525	144	152	-	102	100

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

Metric (mm)

Ball segment valve HVVW-A/D with acuator A-SC/SOO

DN	Typ	H	K	N	O	P	R	W	HVVW-A Weight (kg)	HVVW-D Weight (Kg)
40/32	A13-X	325	-	190	240	83	106	90	13	12
40	A13-X	325	-	190	240	83	106	90	13	12
50	A13-X	325	-	201	250	83	106	90	14	13
50	A23-X	415	-	240	305	117	152	140	22	21
65	A23-X	415	-	280	345	117	152	140	26	24
80	A23-X	415	-	260	320	117	152	140	26	24
100	A23-X	415	-	285	345	117	152	140	29	27
150	A24-X	415	420	320	385	117	152	-	51	49
200	A33-X	660	-	400	485	183	228	215	102	100
250	A33-X	660	-	440	525	183	228	215	129	127

X = SC – Spring to close, X = SO –Spring to open

US (in)

Ball segment valve HVVW-A/D with acuator A-DA

NPS	Typ	H	K	N	O	P	R	W	HVVW-A Weight (lbs)	HVVW-D Weight (lbs)
1.5/1.25	**A11**	8.46	-	7.48	9.45	2.87	3.31	3.54	20	18
1.5	**A11**	8.46	-	7.48	9.45	2.87	3.31	3.54	20	18
2	**A13**	9.84	-	7.87	9.84	3.27	4.17	3.54	27	24
2.5	**A21**	10.04	-	11.02	13.58	3.70	4.17	5.51	40	35
2.5	**A22**	10.04	10.24	11.02	13.58	3.70	4.17	-	44	40
3	**A21**	10.04	-	10.24	13.39	3.70	4.17	5.51	40	35
3	**A22**	10.04	10.24	10.24	12.60	3.70	4.17	-	44	40
4	**A21**	10.04	-	11.22	13.58	3.70	4.17	5.51	46	42
4	**A22**	10.04	10.24	11.22	13.58	3.70	4.17	-	51	46
6	**A22**	10.04	10.24	12.60	15.16	3.70	4.17	-	73	73
6	**A23**	12.01	-	12.60	15.16	4.61	5.98	5.51	77	77
8	**A24**	12.01	12.20	13.58	16.14	4.61	5.98	-	135	130
8	**A31**	14.96	-	15.75	19.09	5.67	5.98	8.46	152	148
10	**A31**	14.96	-	17.32	20.67	5.67	5.98	8.46	212	207
10	**A32**	14.96	15.55	17.32	20.67	5.67	5.98	-	225	220

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

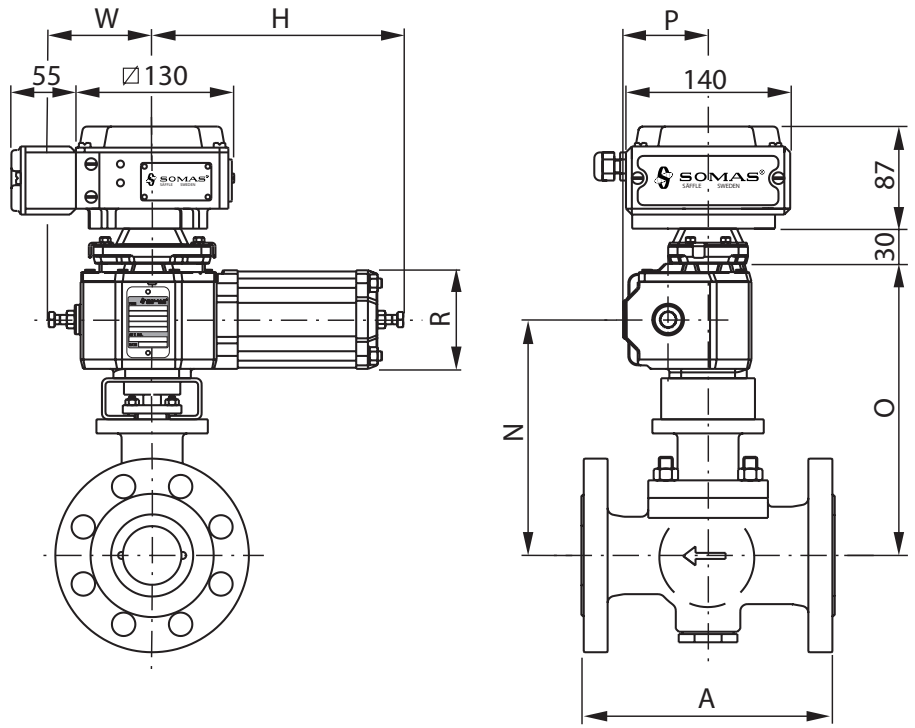
US (in)

Ball segment valve HVVW-A/D with acuator A-SC/SO

NPS	Typ	H	K	N	O	P	R	W	HVVW-A Weight (lbs)	HVVW-D Weight (lbs)
1.5/1.25	**A13-SX**	12.80	-	7.48	9.45	3.27	4.17	3.54	29	27
1.5	**A13-X**	12.80	-	7.48	9.45	3.27	4.17	3.54	29	27
2	**A13-X**	12.80	-	7.91	9.84	3.27	4.17	3.54	31	29
2	**A23-X**	16.34	-	9.45	12.01	4.61	5.98	5.51	49	46
2.5	**A23-X**	16.34	-	11.02	13.58	4.61	5.98	5.51	57	53
3	**A23-X**	16.34	-	10.24	12.60	4.61	5.98	5.51	57	53
4	**A23-X**	16.34	-	11.22	13.58	4.61	5.98	5.51	64	60
6	**A24-X**	16.34	16.54	12.60	15.16	4.61	5.98	-	112	108
8	**A33-X**	25.98	-	15.75	19.09	7.20	8.98	8.46	225	220
10	**A33-X**	25.98	-	17.32	20.67	7.20	8.98	8.46	284	280

X = SC – Spring to close, X = SO –Spring to open

Ball segment valve type HVVF-L with actuator type A-DA / A-SC/SO



Metric (mm)

Ball segment valve HVVF -L with actuator A-DA

DN	Type	H	N	O	P	R	W	Weight (kg)
40/32	**A11**	215	190	240	73	84	90	15
40	**A11**	215	190	240	73	84	90	15
50	**A13**	250	200	250	83	106	90	20

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

Metric (mm)

Ball segment valve HVVF -L with actuator A-SC/SO

DN	Type	H	N	O	P	R	W	Weight (kg)
40/32	**A13-X**	325	190	240	83	106	90	19
40	**A13-X**	325	190	240	83	106	90	19
50	**A13-X**	325	200	250	83	106	90	22
50	**A23-X**	415	240	305	117	152	140	30

X = SC – Spring to close, X = SO –Spring to open

US (in)

Ball segment valve HVVF -L with actuator A-DA

NPS	Type	H	N	O	P	R	W	Weight (lbs)
1.5/1.25	**A13**	8.46	7.48	9.45	2.87	3.31	3.54	33
1.5	**A13**	8.46	7.48	9.45	2.87	3.31	3.54	33
2	**A13**	9.84	7.87	9.84	3.27	4.17	3.54	44

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

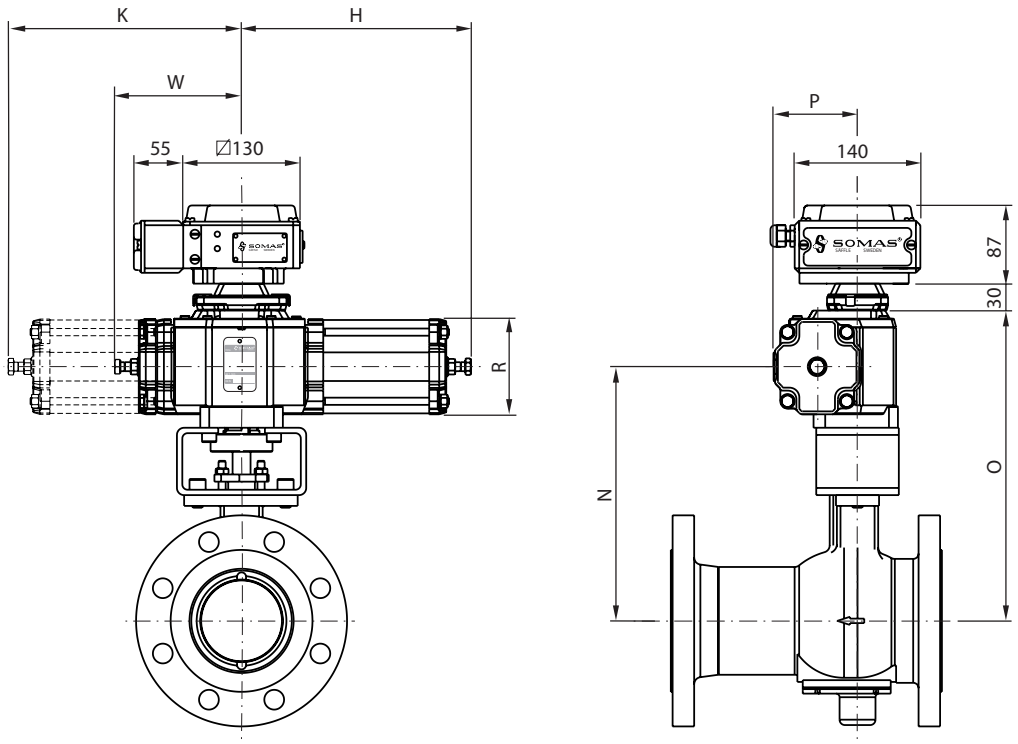
US (in)

Ball segment valve HVVF -L with actuator A-SC/SO

NPS	Type	H	N	O	P	R	W	Weight (lbs)
1.5/1.25	**A13-X**	12.80	7.48	9.45	3.27	4.17	3.54	42
1.5	**A13-X**	12.80	7.48	9.45	3.27	4.17	3.54	42
2	**A13-X**	12.80	7.87	9.84	3.27	4.17	3.54	49
2	**A23-X**	16.34	9.45	12.01	4.61	5.98	5.51	66

X = SC – Spring to close, X = SO –Spring to open

Ball segment valve type HVVF-B with actuator type A-DA / A-SC/SO



Metric (mm)

Ball segment valve HVVF-B with actuator A-DA

DN	Type	H	K	N	O	P	R	W	Weight (kg)
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	-	37
125	**A22**	255	260	320	380	94	106	-	49
125	**A23**	305	-	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

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

Metric (mm)

Ball segment valve HVVF-B with actuator A-SC/SO

DN	Type	H	K	N	O	P	R	W	Weight (kg)
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

X = SC – Spring to close, X = SO –Spring to open

US (in)

Ball segment valve HVVF-B with actuator A-DA

NPS	Type	H	K	N	O	P	R	W	Weight (lbs)
3	**A21**	10.04	-	10.24	12.6	3.7	4.17	5.51	60
3	**A22**	10.04	10.24	10.24	12.6	3.7	4.17	-	64
4	**A21**	10.04	-	11.22	13.58	3.7	4.17	5.51	77
4	**A22**	10.04	10.24	11.22	13.58	3.7	4.17	-	82
5	**A22**	10.04	10.24	12.6	14.96	3.7	4.17	-	108
5	**A23**	12.01	-	12.6	14.96	4.61	5.98	5.51	119
6	**A31**	14.96	-	13.78	16.34	5.67	5.98	8.46	192
8	**A31**	14.96	-	16.54	18.9	5.67	5.98	8.46	267
8	**A32**	14.96	15.55	16.34	18.7	5.67	5.98	-	280
10	**A32**	14.96	15.55	17.91	20.47	5.67	5.98	-	408

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

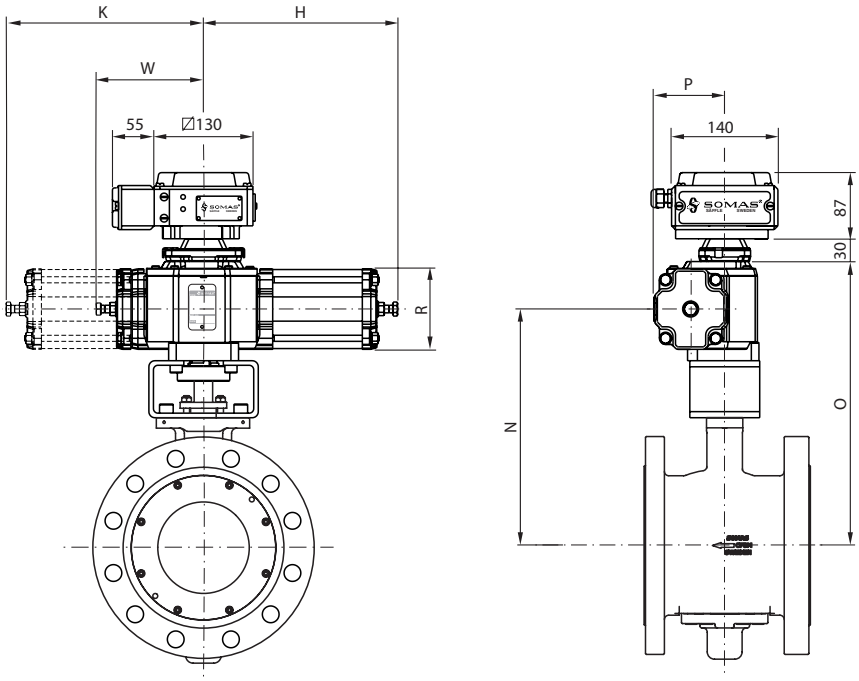
US (in)

Ball segment valve HVVF-B with actuator A-SC/SO

NPS	Type	H	K	N	O	P	R	W	Weight (lbs)
3	**A23-X**	16.34	-	10.24	12.6	4.61	5.98	5.51	77
4	**A23-X**	16.34	-	11.22	13.58	4.61	5.98	5.51	95
5	**A24-X**	16.34	12.2	12.6	14.96	4.61	5.98	-	141
6	**A33-X**	25.98	-	13.78	16.34	7.2	8.98	8.46	265
8	**A33-X**	25.98	-	16.54	18.9	7.2	8.98	8.46	342
10	**A34-X**	26.18	26.77	17.91	20.28	7.2	8.98	-	463
6	**A24-X**	16.34	16.54	12.6	15.16	4.61	5.98	-	112
8	**A33-X**	25.98	-	15.75	19.09	7.2	8.98	8.46	225
10	**A33-X**	25.98	-	17.32	20.67	7.2	8.98	8.46	284

X = SC – Spring to close, X = SO –Spring to open

Ball segment valve type HVVF-C with actuator type A-DA / A-SC/SO



Metric (mm)

Ball segment valve type HVVF-C with actuator A-DA

DN	Type	H	K	N	O	P	R	W	Weight (kg)
80	**A13-DA**	250	-	240	288	83	106	90	25
80	**A21-DA**	255	-	258	320	94	106	140	28
80	**A22-DA**	255	260	283	320	94	106	-	29
100	**A13-DA**	250	-	265	313	83	106	90	32
100	**A21-DA**	255	-	283	345	94	106	140	35
100	**A22-DA**	255	260	283	345	94	106	-	36
150	**A21-DA**	255	-	319	381	94	106	140	61
150	**A22-DA**	255	260	319	381	94	106	-	62
150	**A23-DA**	305	-	319	381	117	152	140	64
200	**A22-DA**	255	260	350	412	117	106	-	87
200	**A23-DA**	305	-	350	412	117	152	140	89
200	**A24-DA**	305	310	350	412	117	152	-	93
200	**A31-DA**	380	-	390	477	144	152	215	101
250	**A31-DA**	380	-	430	517	144	152	215	135
250	**A32-DA**	380	395	430	517	144	152	-	141
300	**A31-DA**	380	-	505	542	144	152	215	188
300	**A32-DA**	380	395	505	542	144	152	-	194

Metric (mm)

Ball segment valve type HVVF-C with actuator A-SC/SO

DN	Type	H	K	N	O	P	R	W	Weight (kg)
80	**A23-SX**	415	-	258	320	117	152	140	35
100	**A23-SX**	415	-	283	345	117	152	140	42
150	**A24-SX**	415	420	319	381	117	152	-	78
200	**A24-SX**	415	420	350	412	117	152	-	102
200	**A33-SX**	660	-	390	477	183	228	215	134
250	**A33-SX**	660	-	430	517	183	228	215	168
300	**A33-SX**	660	-	505	592	183	228	215	221
300	**A34-SX**	665	680	505	592	183	228	-	249

US (in)
Ball segment valve type HVVF-C with actuator A-DA

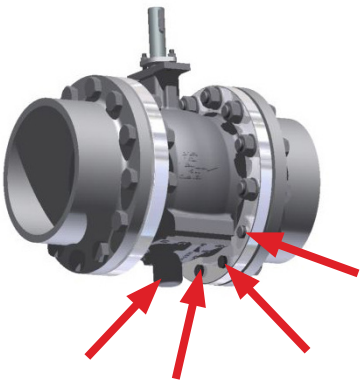
NPS	Type	H	K	N	O	P	R	W	Weight (lbs)
3	A13-DA	9.84	-	9.45	11.34	3.27	4.17	3.54	55
3	A21-DA	10.04	-	10.16	12.6	3.7	4.17	5.51	62
3	A22-DA	10.04	10.24	11.14	12.6	3.7	4.17	-	64
4	A13-DA	9.84	-	10.43	12.32	3.27	4.17	3.54	71
4	A21-DA	10.04	-	11.14	13.58	3.7	4.17	5.51	77
4	A22-DA	10.04	10.24	11.14	13.58	3.7	4.17	-	79
6	A21-DA	10.04	-	12.56	15	3.7	4.17	5.51	135
6	A22-DA	10.04	10.24	12.56	15	3.7	4.17	-	137
6	A23-DA	12.01	-	12.56	15	4.61	5.98	5.51	141
8	A22-DA	10.04	10.24	13.78	16.22	4.61	4.17	-	192
8	A23-DA	12.01	-	13.78	16.22	4.61	5.98	5.51	196
8	A24-DA	12.01	12.2	13.78	16.22	4.61	5.98	-	205
8	A31-DA	14.96	-	15.35	18.78	5.67	5.98	8.46	223
10	A31-DA	14.96	-	16.93	20.35	5.67	5.98	8.46	298
10	A32-DA	14.96	15.55	16.93	20.35	5.67	5.98	-	311
12	A31-DA	14.96	-	19.88	21.34	5.67	5.98	-	415
12	A32-DA	14.96	15.55	19.88	21.34	5.67	5.98	-	428

US (in)
Ball segment valve type HVVF-C with actuator A-SC/SO

NPS	Type	H	K	N	O	P	R	W	Weight (lbs)
3	A23-SX	16.34	-	10.16	12.6	4.61	5.98	5.51	77
4	A23-SX	16.34	-	11.14	13.58	4.61	5.98	5.51	93
6	A24-SX	16.34	-	12.56	15	4.61	5.98	-	172
8	A24-SX	16.34	-	13.78	16.22	4.61	5.98	-	225
8	A33-SX	25.98	-	15.35	18.78	7.2	8.98	8.46	295
10	A33-SX	25.98	-	16.93	20.35	7.2	8.98	8.46	370
12	A33-SX	25.98	-	19.88	23.31	7.2	8.98	8.46	487
12	A33-SX	26.18	-	19.88	23.31	7.2	8.98	-	549

Flange		PN10				PN16				PN25				ASME 150			
		Inlet		Outlet		Inlet		Outlet		Inlet		Outlet		Inlet		Outlet	
Valve	Number of bolts/holes	Total	Threaded	Total	Threaded	Total	Threaded	Total	Threaded	Total	Threaded	Total	Threaded	Total	Threaded	Total	Threaded
DN	80	8	2 X M16	8	2 X M16	8	2 X M16	8	2 X M16	8	2 X M16	8	2 X M16	4	2 X 5/8"	4	2 X 5/8"
	100	8	2 X M16	8	2 X M16	8	2 X M16	8	2 X M16	8	2 X M20	8	2 X M20	8	2 X 5/8"	8	2 X 5/8"
	150	8	2 X M20	8	2 X M20	8	2 X M20	8	2 X M20	8	2 X M24	8	2 X M24	8	2 X 3/4"	8	2 X 3/4"
	200	8	2 X M20	8	2 X M20	12	4 X M20	12	4 X M20	12	4 X M24	12	4 X M24	8	2 X 3/4"	8	2 X 3/4"
	250	12	4 X M20	12	4 X M20	12	4 X M24	12	4 X M24	12	4 X M27	12	4 X M27	12	4 X 7/8"	12	4 X 7/8"
	300	12	4 X M20	12	4 X M20	12	4 X M24	12	4 X M24	16	4 X M27	16	4 X M27	12	4 X 7/8"	12	4 X 7/8"

The HVVF-C valve has some of the holes in the flanges threaded. For valves Size DN80 to DN300 2 alternatively 4 of the holes at the bottom of the valve is threaded. The table above describes for each valve size and for each flange rating the number of threaded holes and the thread.



Selection table
Metric

DN					Pneumatic actuators			
Wafer	Flanged			Shaft	Double acting		Single acting	
A/D	L	B	C	dia (mm)	5,5 (bar)	4,0 (bar)	5,5 (bar)	4,0 (bar)
40/32	**40/32**			15	A11-DA	A11-DA	A13-SC/SO	A13-SCL/SOL
40	**40**			15	A11-DA	A11-DA	A13-SC/SO	A13-SC/SOL
50	**50**			15	A13-DA	A13-DA	A13-SC/SO	A23-SC/SOL
65	**65**			20	A21-DA	A22-DA	A23-SC/SO	A23-SC/SOL
80		**80**	**80**	20	A21-DA	A22-DA	A23-SC/SO	A23-SC/SOL
100		**100**	**100**	20	A21-DA	A22-DA	A23-SC/SO	A23-SC/SOL
150		**125**	**150**	25	A22-DA	A23-DA	A24-SC/SO	A24-SC/SOL
		150		30	A31-DA	A31-DA	A33-SC/SO	A33-SC/SOL
200			**200**	30	A31-DA	A24-DA	A33-SC/SO	A33-SC/SOL
250			**250**	35	A31-DA	A32-DA	A33-SC/SO	A33-SC/SOL
		200		35	A31-DA	A32-DA	A33-SC/SO	A33-SC/SOL
			300	40	A32-DA	A32-DA	A34-SC/SO	A34-SC/SOL
		250		40	A32-DA	A32-DA	A34-SC/SO	A34-SC/SOL

Selection table
US

NPS					Pneumatic actuators			
Wafer	Flanged			Shaft	Double acting		Single acting	
A/D	L	B	C	dia (in)	80 (psi)	58 (psi)	80 (psi)	58 (psi)
1,5/1,25	**1,5/1,25**			0,6	A11-DA	A11-DA	A13-SC/SO	A13-SCL/SOL
1,5	**1,5**			0,6	A11-DA	A11-DA	A13-SC/SO	A13-SC/SOL
2	**2**			0,6	A13-DA	A13-DA	A13-SC/SO	A23-SC/SOL
2,5	**2,5**			0,8	A21-DA	A22-DA	A23-SC/SO	A23-SC/SOL
3		**3**	**3**	0,8	A21-DA	A22-DA	A23-SC/SO	A23-SC/SOL
4		**4**	**4**	0,8	A21-DA	A22-DA	A23-SC/SO	A23-SC/SOL
6		**5**	**6**	1,0	A22-DA	A23-DA	A24-SC/SO	A24-SC/SOL
		6		1,2	A31-DA	A31-DA	A33-SC/SO	A33-SC/SOL
8			**8**	0,2	A31-DA	A24-DA	A33-SC/SO	A33-SC/SOL
10			**10**	1,4	A31-DA	A32-DA	A33-SC/SO	A33-SC/SOL
		8		1,4	A31-DA	A32-DA	A33-SC/SO	A33-SC/SOL
			12	1,6	A32-DA	A32-DA	A34-SC/SO	A34-SC/SOL
		10		1,6	A32-DA	A32-DA	A34-SC/SO	A34-SC/SOL

Torque

Metric

DN						
Wafer.	Flanged			Shaft	Closing torque	
A/D	L	B	C	dia (mm)	Min (Nm)	Max (Nm)
40/32	40/32			15	45	80
40	40			15	45	80
50	50			15	55	80
65	65			20	120	200
80		80	80	20	120	200
100		100	100	20	150	200
150		125	150	25	250	370
		150		30	400	640
200			200	30	400	640
250			250	35	600	1000
		200		35	550	1000
			300	40	800	1500
		250		40	800	1500

Torque

US

NPS						
Wafer.	Flanged			Shaft	Closing torque	
A/D	L	B	C	dia (in)	Min (lbf-in)	Max (lbf-in)
1.5/1.25	1.5/1.25			0.6	398	708
1.5	1.5			0.6	398	708
2	2			0.6	487	708
2.5	2.5			0.8	1062	1770
3		3	3	0.8	1062	1770
4		4	4	0.8	1328	1770
6		5	6	1.0	2213	3275
		6		1.2	3540	5664
8			8	0.2	3540	5664
10			10	1.4	5310	8851
		8		1.4	4868	8851
			12	1.6	7081	13276
		10		1.6	7081	13276

Face to face dimension

According to Industrial branch standards, standard face to face dimension.

Flange standard

Somas ball segment valves type HVV are available in wafer or flanged designs. The desired pressure class of the counter flanges must always be provided when ordering.

See valve code system, code 13.

Ordering

State desired valve according to the valve specification system (page 23).

Actuators and accessories

The valves can be equipped with Somas actuators, positioners and other accessories. The units are delivered tested and ready-to-use.

In the documents library on www.somas.se there is also information about positioners, limit switches and solenoid valves.

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

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

1 Valve type
HVVW (centrically mounted segment)
HVVF (centrically mounted segment)
HVMW (centrically mounted segment ball segment with V-groove)
HVMF (centrically mounted segment ball segment with V-groove)

2 Valve body design
A = Wafer design
L = Flanged design
D = Wafer design Short face to face dimension
B = Flanged design
C = Flanged design Short face to face dimension

3 Nominal pressure
5 = PN25
6 = PN40/Class 300

4 Material – valve body
A = CF8M /1.4408
H = 1.4470

5 Material – ball segment
K = 1.4460 alt. SS2324, hard chromed
Y = 1.4462 alt. 1.4470, hard chromed

6 Material – seat
T = HiCo Gr 6 alt. 1.4404,
HiCo Gr 6 alt. Gr 21 coated

7 Material – shaft
A = 1.4460 alt. SS2324-12
Z = 1.4462 alt. 1.4470

8 Bearings – valve body/shaft
8 = 316L PTFE coated

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

Somas reserves the right to make improvements without prior notice.

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