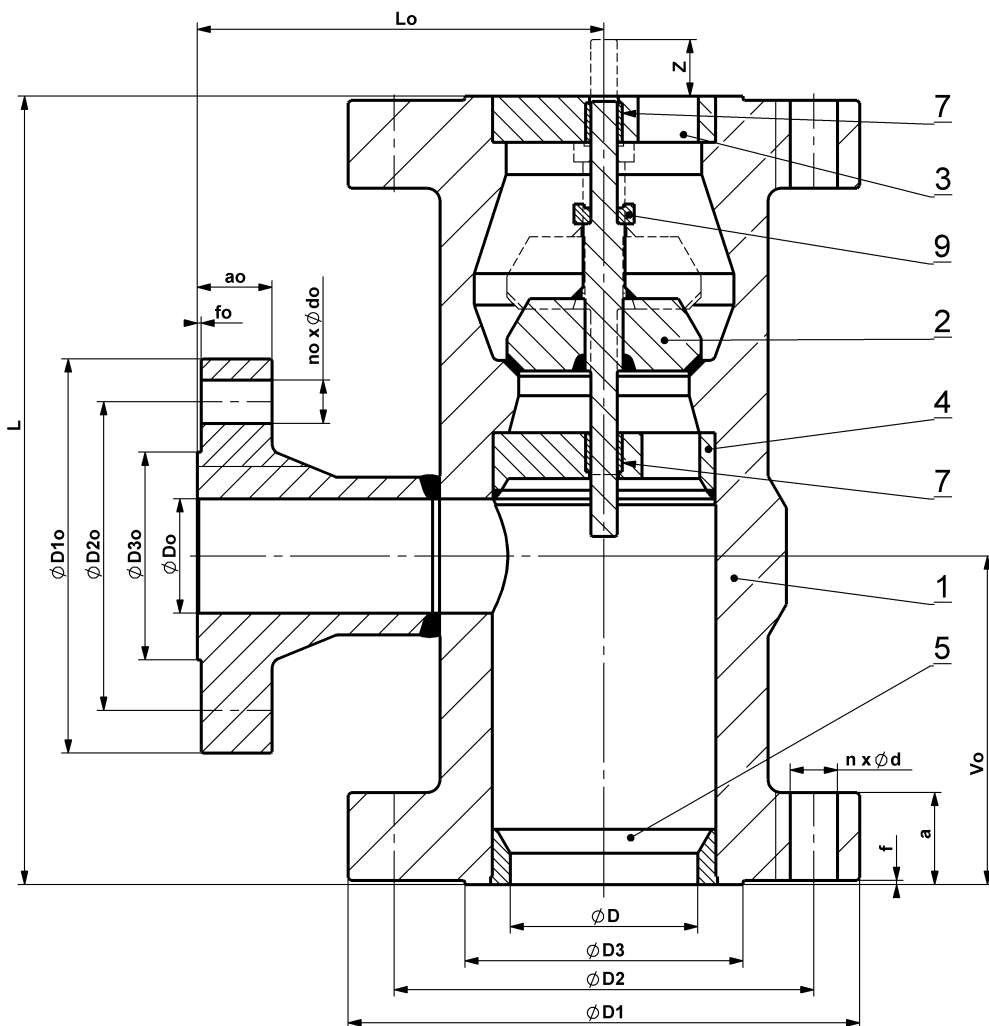


VERTICAL LIFT-TYPE CHECK VALVE WITH BRANCH PIECE

KM 9902.1 117 (Z35) FLANGED
DN 50–400 PN 16–400



Materials

KM 9902.1 117-X		Material		
		Stainless steel	Alloyed steel	Carbon steel
Position	Component	X=0	X=3	X=4
1	Body	1.4541	1.5415 + seat facing 18/8 CrNi	S355J2 + seat facing 18/8 CrNi
2	Disc	DN < 125	1.4541 + seat facing Stellite 6	1.4541
		DN > 125	1.4541 + seat facing Stellite 6	1.5415 + seat facing 18/8 CrNi
3	Outlet guide	1.4541	1.5415	S355J2
4	Guide	1.4541	1.5415	S355J2
5	Ring	1.4541	1.5415	S355J2
7	Slide bearing	1.4462	1.4034	1.4034
9	Travel stop	1.4541	1.4021, ČSN 17 027	1.4021, ČSN 17 027

Dimensions

PN 16, 25 PN 40	DN	ØD1	ØD2	ØD3	f	a	n	Ød	L	Lo	Vo	Z~
	50	165	125	102	2	20	4	18	230	130	80	*
	65	185	145	122	2	22	8	18	290	150	90	17.5
	80	200	160	138	2	24	8	18	310	160	100	*
PN 16	DN	ØD1	ØD2	ØD3	f	a	n	Ød	L	Lo	Vo	Z~
	100	220	180	158	2	20	8	18	350	200	110	*
	125	250	210	188	2	22	8	18	400	210	140	*
	150	285	240	212	2	22	8	22	480	260	160	*
	200	340	295	268	2	24	12	22	600	310	165	*
	250	405	355	320	2	26	12	26	730	340	165	*
	300	460	410	378	2	28	12	26	850			*
	350	520	470	438	2	30	16	26	980			*
PN 25, 40	DN	ØD1	ØD2	ØD3	f	a	n	Ød	L	Lo	Vo	Z~
	100	235	190	162	2	24	8	22	350	200	110	*
	125	270	220	188	2	26	8	26	400	210	140	*
PN 25	DN	ØD1	ØD2	ØD3	f	a	n	Ød	L	Lo	Vo	Z~
	200	360	310	278	2	30	12	26	600	310	165	*
	250	425	370	335	2	32	12	30	730	340	165	*
	300	485	430	395	2	34	16	30	850			*
	350	555	490	450	2	38	16	33	980			*
PN 40	DN	ØD1	ØD2	ØD3	f	a	n	Ød	L	Lo	Vo	Z~
	200	375	320	285	2	34	12	30	600	310	165	*
	250	450	385	345	2	38	12	33	730	340	165	*
	300	515	450	410	2	42	16	33	850			*
	350	580	510	465	2	46	16	36	980			*
PN 63	DN	ØD1	ØD2	ØD3	f	a	n	Ød	L	Lo	Vo	Z~
	50	180	135	102	2	26	4	22	300			*
	65	205	160	122	2	26	8	22	340	193	110	*
	80	215	170	138	2	28	8	22	380	203	120	*
	100	250	200	162	2	30	8	26	430	218	125	*
	125	295	240	188	2	34	8	30	500			*
	150	345	280	218	2	36	8	33	550	233	190	*
	200	415	345	285	2	42	12	36	650	308	205	*
	250	470	400	345	2	46	12	36	775			*
	300	530	460	410	2	52	16	36	900			*
	350	600	525	465	2	56	16	39	1025			*
400	670	585	535	2	60	16	42	1150			*	

* = contact our office.

Dimensions

	DN	ØD1	ØD2	ØD3	f	a	n	Ød	L	Lo	Vo	Z~
PN 100	50	195	145	102	2	30	4	26	300			*
	65	220	170	122	2	34	8	26	340	193	110	*
	80	230	180	138	2	36	8	26	380	203	120	*
	100	265	210	162	2	40	8	30	430	218	125	*
	125	315	250	188	2	40	8	33	500			*
	150	355	290	218	2	44	12	33	550	233	190	*
	200	430	360	285	2	52	12	36	650	308	205	*
	250	505	430	345	2	60	12	39	775			*
	300	585	500	410	2	68	16	42	900			*
	350	655	560	465	2	74	16	48	1025			*
400	715	620	535	2	78	16	48	1150			*	
PN 160	50	195	145	102	3	30	4	26	300			*
	65	220	170	122	3	34	8	26	340			*
	80	230	180	138	3	36	8	26	380			*
	100	265	210	162	3	40	8	30	430			*
	125	315	250	188	3	44	8	33	500			*
	150	355	290	218	3	50	12	33	550			*
	200	430	360	285	3	60	12	36	650			*
	250	515	430	345	3	68	12	42	775			*
	300	585	500	410	4	78	16	42	900			*
PN 250	50	200	150	102	3	38	8	26	350			*
	65	230	180	122	3	42	8	26	400			*
	80	255	200	138	3	46	8	30	430	235	170	16.5
	100	300	235	162	3	54	8	33	520	270	200	23
	125	340	275	188	3	60	12	33	550			*
	150	390	320	218	3	68	12	36	600	310	250	43
	200	485	400	285	3	82	12	42	750			*
	250	585	490	345	3	100	16	48	900			*
	300	690	590	410	4	120	16	52	1050			*
PN 320	50	210	160	102	3	42	8	26	350			*
	65	255	200	122	3	51	8	30	400			*
	80	275	220	138	3	55	8	30	430			*
	100	335	265	162	3	65	8	36	520			*
	125	380	310	188	3	75	12	36	550			*
	150	425	350	218	3	84	12	39	600			*
	200	525	440	285	3	103	16	42	750			*
	250	640	540	345	3	125	16	52	900			*
PN 400	50	235	180	102	3	52	8	30	350			*
	65	290	225	122	3	64	8	33	400			*
	80	305	240	138	3	68	8	33	430			*
	100	370	295	162	3	80	8	39	520			*
	125	415	340	188	3	92	12	39	550			*
	150	475	390	218	3	105	12	42	600			*
	200	585	490	285	3	130	16	48	750			*

* = contact our office.

Application

Flanged vertical lift-type check valve with branch piece type KM 9902.1 117 (Z 35) is designed to protect pumps against reverse flow of the pumped fluid or no-load running. If the pressure of the fluid in the piping system behind the pump exceeds the value of the pressure generated by the pump and the fluid starts flowing back, the disc closes the check valve automatically. The pumped fluid is then discharged through the branch piece to the discharge pipe which mouths into the pump tank.

Vertical lift-type check valves are not designed as conventional isolating valves. If permanent tightness of the disc is required, an isolating valve shall be installed into the delivery piping. The service fluid shall not contain hard and abrasive particles as this could damage the seating surfaces and bring about heavier untightness or sticking of the disc in the bearings. The same applies to impurities in the piping system during installations, repairs or replacements.

The check valves are designed to be used with fluids in groups 1 and 2 according to Section 3(1)(a, b) of Decree of the Government No. 26/2003 as subsequently amended, i.e. water with the exception of potable water, non-aggressive fluids (liquids, gases, vapours, air), oil and oil products, gaseous fuels, inorganic and organic media (acc. to materials used and after an agreement with a manufacturer). This specification corresponds to Article 9 (2.1, 2.2) of the European Parliament and Council Directive 97/23/EC. The resistance of the check valve to the fluid and its temperature is limited by the chemical composition of the check valve materials. It is therefore recommended to consult the suitability for the relevant fluid with the manufacturer. Allowable service pressures are in compliance with the pressure-temperature ratings.

Technical description

The main part of the flanged vertical lift-type check valve with branch piece is a one-piece body which is made of rolled or forged steel. The body contains an inlet disc guide and an outlet disc guide with plain bearings which are pressed into the body. The pressed-in parts are secured by centre punching or welds. The disc guides are secured in place by the counter-flanges of the piping. The seats of both the body and the disc are usually weld-deposited with austenitic steel of 18/8 CrNi type or Stellite 6 – type of the weld overlay depends on the material composition of the check valve. The disc is lapped with the body seat. The branch piece is attached to the body by welding.

Connection to piping

Overall dimensions are shown in the tables of dimensions.

- connection according to EN 1092-1
- face-to-face dimensions in pressure classes PN 16, 25, 40 – Series 1 according to EN 558-1
- face-to-face dimensions in pressure classes PN 63, 100, 160 – Series 2 according to EN 558-1
- face-to-face dimensions in pressure classes PN 250, 320, 400 – not standardized

Testing

According to EN 12 266-1 as a standard, i.e. shell strength test P10, P11, seat tightness test P12 (water pressure $1,1 \times PN$ and air pressure 0,6 MPa), leakage rate A – zero leakage, operability test F20. Standard ČSN EN 13709 specifies that a seat leakage corresponding to leakage rate C according to ČSN EN 12266-1 is allowed in case of test P12. If required by the Customer, additional tests may be performed as well.

Installation, service and maintenance

Vertical lift-type check valve shall be installed in vertical position. As it is a uni-directional valve, the fluid flow shall correspond to the arrow marked on the valve body. When installing the vertical lift-type check valve to piping it should be taken into account the fact that in the fully open position of the valve the shaft of cone protrudes above the outlet flange by a distance which is equal to the maximum cone lift.

The valve requires no special maintenance or adjustment. If the values of temperature and pressure of the fluid and quantity of the fluid flowing through the branch piece as specified on the valve label are adhered to, the check valve operation is fully automatic.