



CHECK VALVES



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COMPANY PROFILE

The company ARMATURY Group a.s. is a leading Czech manufacturer and distributor of industrial valves, fittings and control systems for valves. The annual production is of more than 100 000 valves and 500 000 metallurgical stock items.

The company was established January 1, 2000. The tradition of our young and dynamically developing company is closely linked with the more than fifty-years' history of valve production in the Hlučín Region.

Our products have been supplied to local and foreign customers for the following industries:

- power engineering, nuclear power
- chemical and petrochemical
- gas supply
- metallurgical industry
- water supply



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Application

The butterfly swing check valves are self-acting and fast-closing valves which prevent a working medium from flowing back in a pipeline. They are used in order to prevent from backflow the pumps, fans etc. The check valve is not a shut-off valve.

Working medium

Water, air, steam and other non-aggressive liquids and gases. The fluid flow direction may be only from one side of the valve. The fluid flow direction is marked with an arrow on the valve body.

Working temperature

Service temperature depends on the material of seals.

- - 46°C up to 300 °C

Technical description

The valve disc, eccentrically embedded, rotates inside a flanged end fabricated body. The shaft is clamped in the self-lubricated friction bearings. Outside the valve on the end of the shaft there is the lever with counterweight.

Operation

The swing check valves are automatic, quick-acting valves. Movement of the disc is controlled by the flowing fluid.

Testing

The butterfly swing check valves are tested for strength and leakage, functionality and tightness acc. to EN 12 266 section 1, leakage grade is D (grade B on request) or acc. to API 598.

Connection to piping

- **flanged ends** acc. to EN 1092-1, EN 1759-1 or GOST 12815-80 face to face dimension acc. to EN 558
- **welded ends** acc. to EN 12 627 face to face dimension acc. to EN 12 982

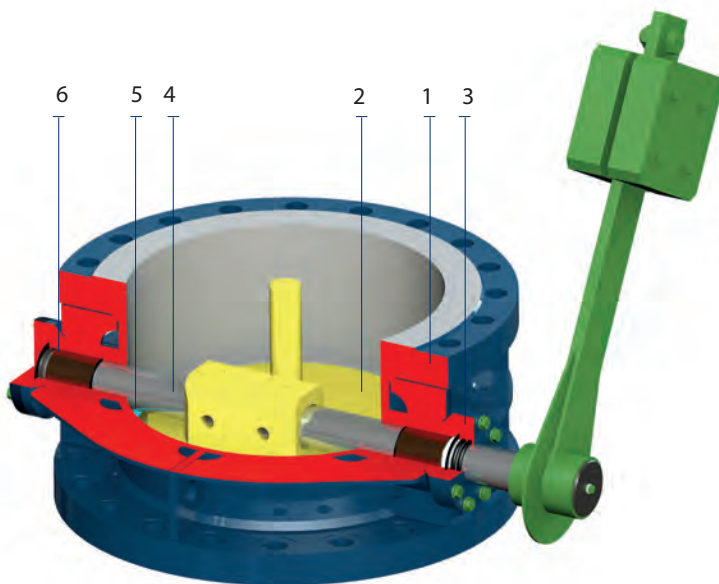


Installation

The butterfly swing check valves can be mounted into a horizontal or a vertical piping so that the arrow on the valve stamped in the valve body corresponds to the flow direction of the working medium, the valve disc rotation axis is in a horizontal position and above axis of flowing (only a horizontal piping). If the valve is to be mounted in a vertical piping, the working medium will have to flow upwards.

Advantages

- possibility of installation into vertical, horizontal or inclined pipings
- low pressure loss
- fabricated design, which allows us flexibility (no castings)
- maintenance free and long service life
- design variability
- one-piece body
- minimization of water hammer



Material acc. to EN

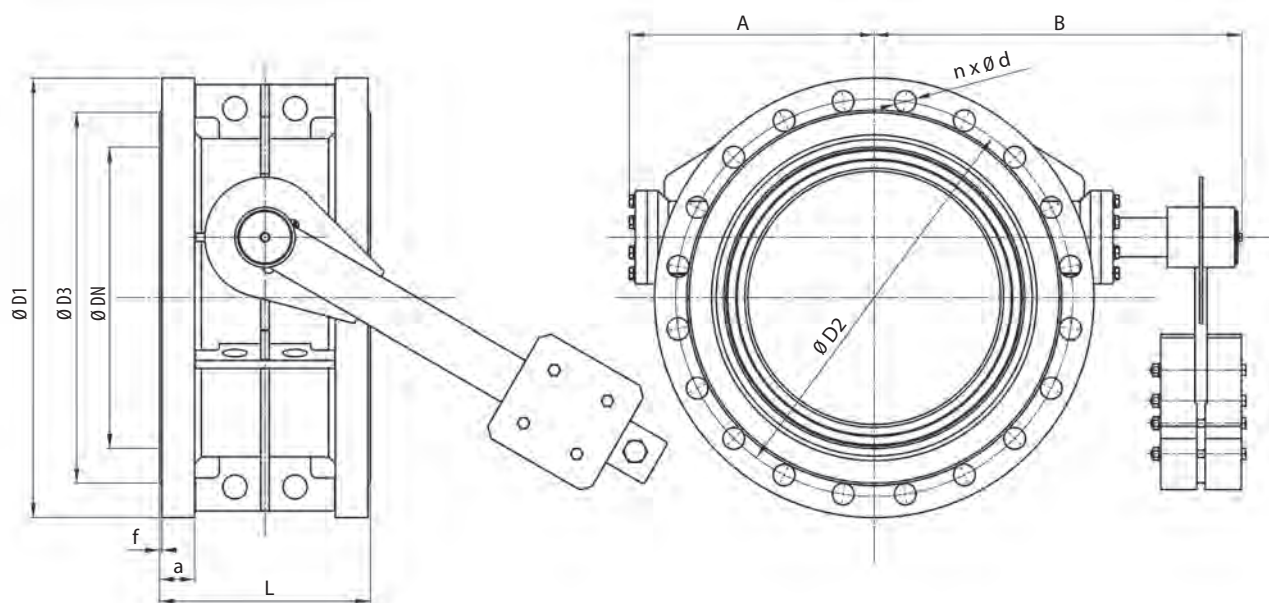
Position	Component	Carbon steel	
		For low temperatures from -46 °C to +300 °C	For normal temperatures from -20 °C to +300 °C *
1	Body	1.0566	1.0425, 1.0577
2	Disc		
3	Cover		
4	Shaft	1.4021	1.4021
5	Sealing surface	13Cr x 13Cr	13Cr x 13Cr
6	Packing	TURKON	NBR, EPDM, VITON, TURKON*

* - the temperature in accordance with the applied seal material



DN 100-1600 • PN 6-100 • Tmax +300 °C
 Body design: fabricated or forged

Connection: EN 1092-1, ISO 7005-1 FLANGED ENDS
 EN 12 627 WELDED ENDS



PN 6

DN	D1	D2	D3	d	n	a	f	L	A	B	Kv 100 %	kg
100	210	170	148	18	4	18	3	300	120	265	330	49
125	240	200	178	18	8	20	3	325	135	280	535	58
150	265	225	202	18	8	20	3	210	150	280	810	35
200	320	280	258	18	8	22	3	230	176	267	1500	40
250	375	335	312	18	12	24	3	250	230	320	2410	55
300	440	395	365	22	12	24	4	270	250	340	3530	68
350	490	445	415	22	12	26	4	290	270	360	5030	108
400	540	495	465	22	16	28	4	310	276	380	6640	148
500	645	600	570	22	20	30	4	350	450	590	10400	240
600	755	705	670	26	20	32	5	390	495	675	15200	320
700	860	810	775	26	24	40	5	430	538	720	20800	515
800	975	920	880	30	24	44	5	470	572	814	27100	695
1000	1175	1120	1080	30	28	52	5	550	687	890	42600	1060
1200	1405	1340	1295	33	32	60	5	630	780	1010	61800	1320
1400	1630	1560	1510	36	36	72	5	710	970	1250	84100	2450
1600	1830	1760	1710	36	40	80	5	790	1080	1380	109800	2990

Kv 100 % [m³/h] – a coefficient of flow Kv expresses the rate of flow with pressure drop 1 bar across the full open valve in one hour



DN 100-1600 • PN 6-100 • Tmax +300 °C
Body design: fabricated or forged

Connection: EN 1092-1, ISO 7005-1 FLANGED ENDS
 EN 12 627 WELDED ENDS

PN 10

DN	D1	D2	D3	d	n	a	f	L	A	B	Kv 100 %	kg
100	220	180	158	18	8	22	3	300	120	265	330	49
125	250	210	188	18	8	22	3	325	135	280	535	58
150	285	240	212	22	8	24	3	210	150	280	810	45
200	340	295	268	22	8	24	3	230	176	274	1500	44
250	395	350	320	22	12	26	3	250	230	320	2410	60
300	445	400	370	22	12	26	4	270	250	340	3530	90
350	505	460	430	22	16	30	4	290	270	360	5030	130
400	565	515	482	26	16	32	4	310	292	363	6640	160
500	670	620	585	26	20	38	4	350	440	600	10400	230
600	780	725	685	30	20	42	5	390	495	675	15200	360
700	895	840	800	30	24	50	5	430	538	720	20800	530
800	1015	950	905	33	24	56	5	470	572	814	27100	710
1000	1230	1160	1110	36	28	70	5	550	687	890	42600	1205
1200	1455	1380	1330	39	32	83	5	630	830	1100	61800	1900
1400	1675	1590	1535	42	36	65	5	710	970	1250	84100	2600
1600	1915	1820	1760	48	40	75	5	790	1080	1380	109800	3550

PN 16

DN	D1	D2	D3	d	n	a	f	L	A	B	Kv 100 %	kg
100	220	180	158	18	8	22	3	300	120	265	330	49
125	250	210	188	18	8	22	3	325	135	280	535	58
150	285	240	212	22	8	24	3	210	150	280	810	50
200	340	295	268	22	12	26	3	230	176	267	1500	54
250	405	355	320	26	12	29	3	250	230	320	2410	70
300	460	410	378	26	12	32	4	270	315	470	3530	93
350	520	470	438	26	16	35	4	290	270	435	5030	150
400	580	525	490	30	16	38	4	310	300	370	6640	190
500	715	650	610	33	20	46	4	350	440	600	10400	260
600	840	770	725	36	20	55	5	390	495	680	15200	390
700	910	840	795	36	24	63	5	430	540	720	20800	570
800	1025	950	900	39	24	74	5	470	572	814	27100	740
1000	1255	1170	1115	42	28	90	5	550	687	890	42600	1315
1200	1485	1390	1330	48	32	78	5	630	830	1100	61800	2300
1400	1685	1590	1530	48	36	84	5	710	970	1250	84100	3100
1600	1930	1820	1750	56	40	102	5	790	1080	1380	109800	3920

PN 25

DN	D1	D2	D3	d	n	a	f	L	A	B	Kv 100 %	kg
100	235	190	162	22	8	26	3	300	120	265	330	50
125	270	220	188	26	8	28	3	325	135	280	535	59
150	300	250	218	26	8	30	3	210	150	280	810	58
200	360	310	278	26	12	32	3	230	176	270	1500	65
250	425	370	335	30	12	35	3	250	235	330	2410	85
300	485	430	395	30	16	38	4	270	245	387	3530	111
350	555	490	450	33	16	42	4	290	270	440	4850	181
400	620	550	505	36	16	48	4	310	300	370	6400	230
500	730	660	615	36	20	58	4	350	407	615	10100	300
600	845	770	720	39	20	68	5	390	500	690	14700	450
700	960	875	820	42	24	85	5	430	550	750	20100	670
800	1085	990	930	48	24	95	5	470	572	914	26300	1060
1000	1320	1210	1140	56	28	63	5	550	700	950	41300	1520
1200	1530	1420	1350	56	32	86	5	630	840	1150	59400	2500

Kv 100 % [m³/h] – a coefficient of flow Kv expresses the rate of flow with pressure drop 1 bar across the full open valve in one hour



DN 100-1600 • PN 6-100 • Tmax +300 °C

Body design: fabricated or forged

Connection: ☉ EN 1092-1, ISO 7005-1 FLANGED ENDS

☼ EN 12 627 WELDED ENDS

PN 40

DN	D1	D2	D3	d	n	a	f	L	A	B	Kv 100 %	kg
100	235	190	162	22	8	26	3	300	120	250	330	55
125	270	220	188	26	8	28	3	325	135	280	535	65
150	300	250	218	26	8	30	3	350	150	280	810	75
200	375	320	285	30	12	36	3	400	180	280	1500	110
250	450	385	345	33	12	42	3	450	240	340	2410	165
300	515	450	410	33	16	52	4	500	260	400	3530	200
350	580	510	465	36	16	58	4	550	315	450	4850	280
400	660	585	535	39	16	65	4	600	340	515	6400	400
500	755	670	615	42	20	57	4	700	445	580	10100	590
600	890	795	735	48	20	72	5	800	510	684	14700	810
700	995	900	840	48	24	86	5	900	550	780	20100	1150
800	1140	1030	960	56	24	99	5	1000	670	890	26300	1490
1000	1360	1250	1180	56	28	115	5	1200	720	970	41300	2205
1200	1575	1460	1380	62	32	134	5	630	850	1160	59400	2950

PN 63

DN	D1	D2	D3	d	n	a	f	L	A	B	Kv 100 %	kg
100	250	200	162	26	8	32	3	300	130	260	330	60
125	295	240	188	30	8	34	3	325	145	290	535	68
150	345	280	218	33	8	36	3	350	150	295	790	80
200	415	345	285	36	12	48	3	400	240	343	1450	125
250	470	400	345	36	12	55	3	450	260	380	2330	160
300	530	460	410	36	16	65	4	500	315	405	3420	240
350	600	525	465	39	16	72	4	550	340	464	4720	350
400	670	585	535	42	16	80	4	600	385	516	6220	450
500	800	705	615	48	20	70	4	700	435	570	9800	700
600	930	820	735	56	20	76	5	800	520	690	14300	980
700	1045	935	840	56	24	95	5	900	560	790	19500	1310
800	1165	1050	960	62	24	115	5	1000	680	910	25500	1680

PN 100

DN	D1	D2	D3	d	n	a	f	L	A	B	Kv 100 %	kg
100	265	210	162	30	8	36	3	300	130	260	330	60
125	315	250	188	33	8	42	3	325	145	290	535	68
150	355	290	218	33	12	48	3	350	160	295	790	75
200	430	360	285	36	12	60	3	400	247	343	1450	135
250	505	430	345	39	12	72	3	450	255	380	2330	220
300	585	500	410	42	16	84	4	500	320	415	3420	372
350	655	560	465	48	16	95	4	550	340	464	4720	520
400	715	620	535	48	16	76	4	600	385	516	6220	680
500	870	760	615	56	20	89	4	700	440	580	9800	990

Kv 100 % [m³/h] – a coefficient of flow Kv expresses the rate of flow with pressure drop 1 bar across the full open valve in one hour

Application

Swing check valves are self-acting valves preventing the back flow of the fluid. It is used especially in power engineering, chemical industry as well as other industries depending on material selection. Swing check valves are not shut-off valves.

Working medium

- water
- steam
- gas
- other fluids

Working temperature

- -20 °C up to 650 °C

Technical description

The body is made of forged material. The disc is inserted into the valve body through the pressure seal cover joint or through the self-sealing body-cover joint. The seat ring is welded in the body and its seating surface and disc surface of the disc are hard faced. The cover is sealed by a special graphite gasket. Upon request, the valves may be equipped with a bypass.

Design configurations

- L10.1 - with bolted cover
- L10.2 - with pressure seal cover

Operation

- self-acting operation



Testing

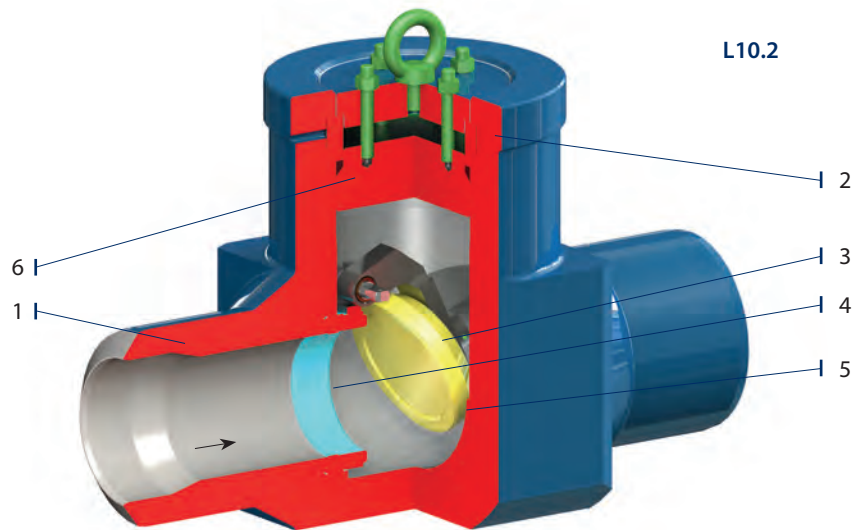
Valves are subject to shell strength test, shell tightness test, seat tightness test and functionality test according to EN 12266, API 598 with water as a standard. If required, other tests may be performed as well.

Connection to the piping

- flanged ends acc. to EN 1092-1, ISO 7005-1, GOST 12815-80
- welded ends acc. to EN 12627

Installation

Swing check valves may be installed into horizontal piping with the cover upwards or into vertical piping, but the flow direction is bottom up. The flow direction shall correspond to the arrow on the valve body.



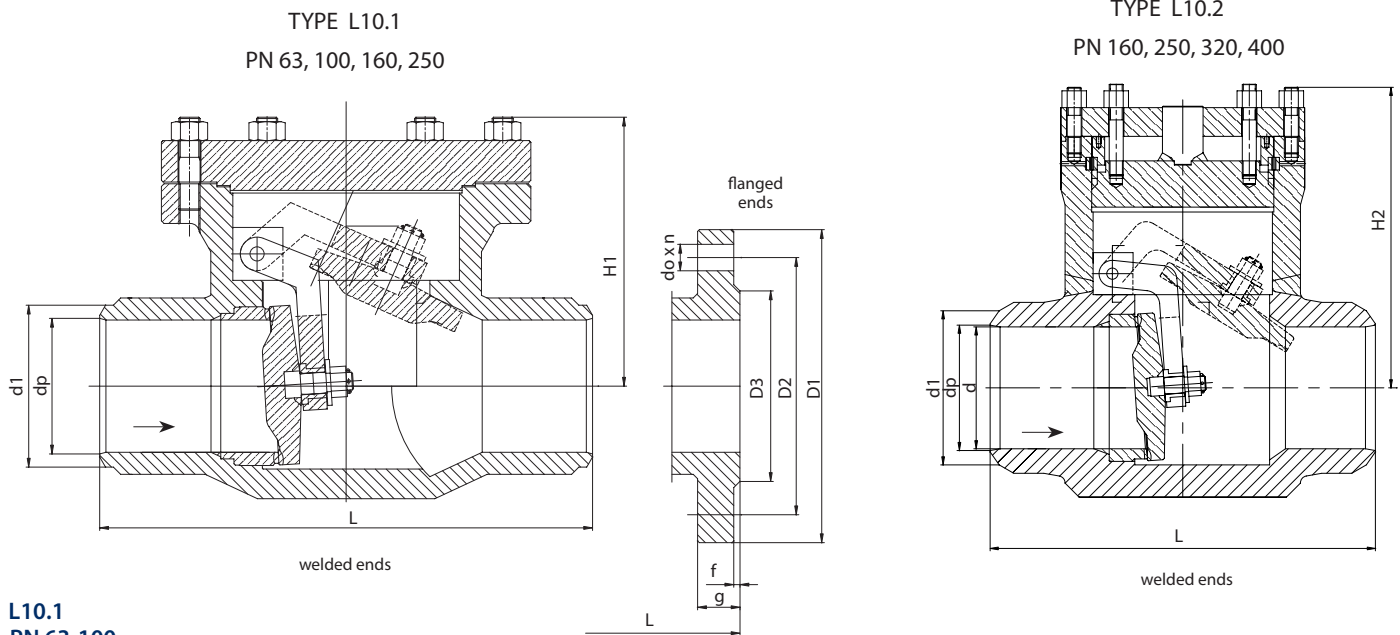
Material acc. to EN

Position	Component	T _{max} 450 °C	T _{max} 450 °C	T _{max} 530 °C	T _{max} 560 °C	T _{max} 570 °C	T _{max} 600 °C	T _{max} 650 °C
1	Body	P250GH (1.0460)	15NiCuMoNb5-6-4 (1.6368)	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	14MoV6-3 (1.7715)	11CrMo9-10 (1.7383)	X10CrMoVNb9-1 (1.4903)
2	Bonnet							
3	Disc							
4	Seat + overlay	1.0460 +Stellite	1.6368 +Stellite	1.5415 +Stellite	1.7335 +Stellite	1.7715 +Stellite	1.7383 +Stellite	1.4903 +Stellite
5	Disc + overlay	1.0460 +Stellite	1.6368 +Stellite	1.5415 +Stellite	1.7335 +Stellite	1.7715 +Stellite	1.7383 +Stellite	1.4903 +Stellite
6	Gasket	L10.1 PN 63, 100, 160, 250, - Graphite with stainless steel insert, L10.2 PN 160, 250, 320, 400, - Graphite						



DN 50-400 • PN 63-400 • Tmax 650 °C (450 °C)
Body design: forged

Connection: ☉ EN 1092-1, ISO 7005-1, GOST 12815-80 FLANGED ENDS
☼ EN 12627 WELDED ENDS



L10.1
PN 63-100

PN	DN	Welded ends					Flanged ends									
		d1	dp	L	H1	kg	D1		D3		D2	do x n	L	g	f	kg
							GOST	EN	GOST	EN						
63	50	62	54	250	170	12	175	180	102		135	22 x 4	300	26	3	18
	65	77	69	290	190	17	200	205	122		160	22 x 8	340	26	3	25
	80	91	81	310	205	22	210	215	133	138	170	22 x 8	380	28	3	32
	100	117	104	350	220	33	250		158	162	200	26 x 8	430	30	3	45
	125	144	130,5	400	254	50	295		184	188	240	30 x 8	500	34	3	68
	150	172	156,5	450	305	80	340	345	212	218	280	33 x 8	550	36	3	100
	200	223	204,5	550	406	105	405	415	285		345	36 x 12	650	42	3	153
250	278	255	650	508	200	470		345		400	36 x 12	775	46	3	248	
100	50	62	54	250	170	13,2	195		102		145	26 x 4	300	28	3	20,7
	65	77	69	290	190	18,7	220		122		170	26 x 8	340	30	3	28,8
	80	91	81	310	205	24,2	230		133	138	180	26 x 8	380	32	3	36,8
	100	117	104	350	220	36,3	265		158	162	210	30 x 8	430	36	3	51,8
	125	144	127	400	254	55,0	310	315	184	188	250	33 x 8	500	40	3	78,2
	150	172	154	450	305	88,0	350	355	212	218	290	33 x 12	550	44	3	115,0
	200	223	199,5	550	406	115,5	430		285		360	36 x 12	650	52	3	176,0
250	278	248,5	650	508	220,0	500	505	345		430	39 x 12	775	60	3	285,2	

L10.2
PN 160-400

PN	DN/d	d1 *	dp	L *	Lmin*	H1	H2	kg
160-400**	65/50	77	Acc. to order	360	216	65	240	25
	80/75	90		450	305	85	255	47
	100/75	115		450	406	85	280	48
	125/110	141		500	483	115	315	107
	150/110	170		550	559	115	365	110
	175/125	180		650	559	145	405	285
	175/150	196		650	660	160	405	415
	200/150	222		650	660	160	485	445
	225/175	248		650	660	180	520	715
	250/200	276		800	787	200	590	930
	250/225	303		900	787	220	630	980
	300/225	325		900	914	220	700	1410
	300/250	325		1000	991	240	700	1520
	350/275	359		1000	991	270	760	1710
	400/300	411		1200	1092	310	825	1830

* dimensions d1 and L can be adjusted according to customer request, ** TYPE L10.1 is supplied only up to PN 250

Application

The check valves are self-acting valves which prevent a working medium from flowing back in a pipeline.

Working medium

Water, sea water, water steam, air, oil, oil products, other non-aggressive liquids group 1 and 2.

Working temperature

The working temperature is in dependence on material design in range from -50 °C to +570 °C.

Technical description

The check valves are made from cast steel with full port. The sealing surface of the disc bears on the overlay of seat (austenitic stainless steel). The disc with an arm rotates on hinge and is pushed to the seat by its own weight. Connection flanges are integral part of the body. The cover is connected with body by bolts with graphite gasket. They consist of a body, a cover, a seat, a disc and an arm. The allowed maximum working pressure in dependence on temperature is noted in pressure-temperature table.

Design configurations

- with lever
- with bypass
- with lever and bypass
- Design in accordance - for petroleum, oil and gas. Valve in the open position allows free mixing of the pressure, cleaning or measuring.

Operation

- self-acting



Testing

The swing check valves are tested acc. to EN 12 266-1, API 598 for strength and leakage of body and leakage of a cover.

Connection to piping

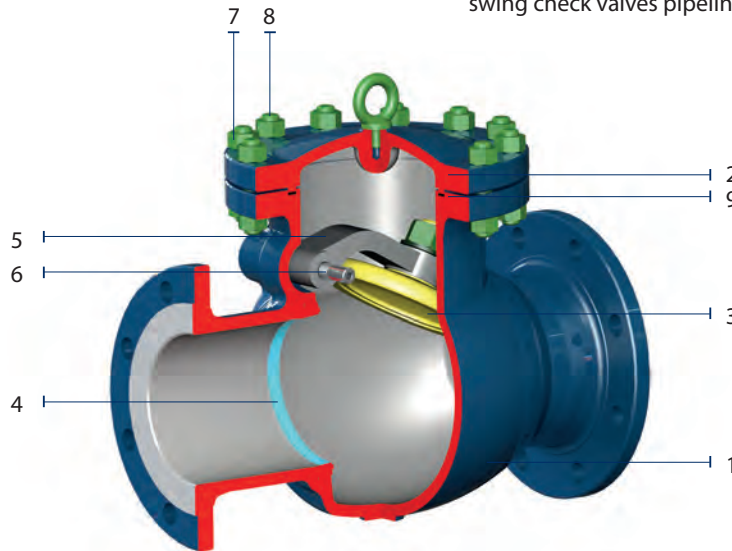
- **flanged ends** acc. to EN 1092-1 design B1 standard sealing surface (on customer's request DIN 2526 form C, form E). Face to face dimensions are acc. to EN 558.
- **welded ends** acc. to EN 12 627. Face to face dimensions are acc. to EN 12 982.

Installation

The check valves can be mounted into a horizontal (with top side bonnet) and a vertical piping so that the arrow on the valve stamped in the valve body corresponds to the flow direction of the working medium.

Advantages

- wide range of working parameters
- possibility to repair sealing surfaces without uninstallation of swing check valves pipeline.



Material acc. to EN

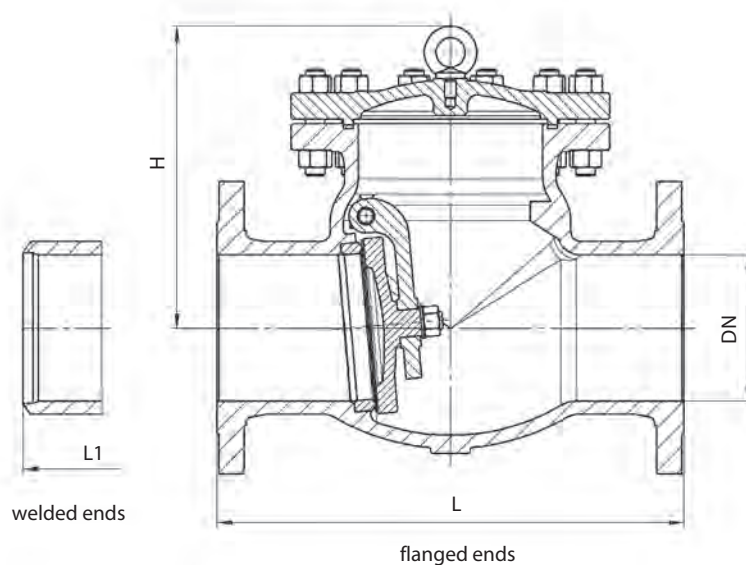
Position	Component	Carbon steel from -20 °C to 450 °C	Alloy steel from -10 °C to 570 °C	Carbon steel for low temperatures from -40 °C to 300 °C	Stainless steel from -50 °C to 550 °C
1	Body	1.0619	1.7357	1.6220	1.4408
2	Bonnet	1.0619	1.7357	1.6220	1.4408
3	Disc + overlay	1.0619 + 13Cr	1.7357 + Stellite 6	1.6220 + F304	1.4408
4	Seat ring + overlay	1.0460 + 13Cr	1.7335 + Stellite 6	1.0566 + Stellite 6	1.4408
5	Arm	1.0619	1.7357	1.6220	1.4408
6	Arm pin	1.4006	1.4301	1.4401	1.4401
7	Bonnet nut	1.1191*	1.7709*	1.7225*	1.4401*
8	Bonnet bolt	1.7218*	1.7709*	1.7225*	1.4401*
9	Bonnet sealing	Graphite with stainless steel insert			

* equivalent or acc. to customer's request



DN 50-600 • PN 16-100 • Tmax +570 °C
Body design: cast

Connection:  EN 1092-1 FLANGED ENDS
 EN 12 627 WELDED ENDS



PN 16-25

DN	PN 16					PN 25				
	L	L1	H	kg	kg 1*	L	L1	H	kg	kg 1*
50	230	230	160	21	19	230	230	160	22	19,8
65	290	290	175	28	25,2	290	290	175	29	26
80	310	310	185	38	34,2	310	310	185	38	34,5
100	350	350	220	58	52	350	350	220	61	55
125	400	400	248	92	83	400	400	248	96	86
150	480	460	276	130	117	480	480	276	132	119
200	500	500	350	210	189	550	550	350	213	192
250	600	600	410	294	265	650	650	410	297	268
300	700	700	430	367	330	750	750	430	372	335
350	800	800	518	410	369	850	850	518	415	373,5
400	900	900	560	461	415	950	950	560	480	432
500	1100	1100	618	850	765	1150	1150	618	920	828
600	1300	1300	660	1456	1311	1350	1350	660	1576	1410

PN 40-100

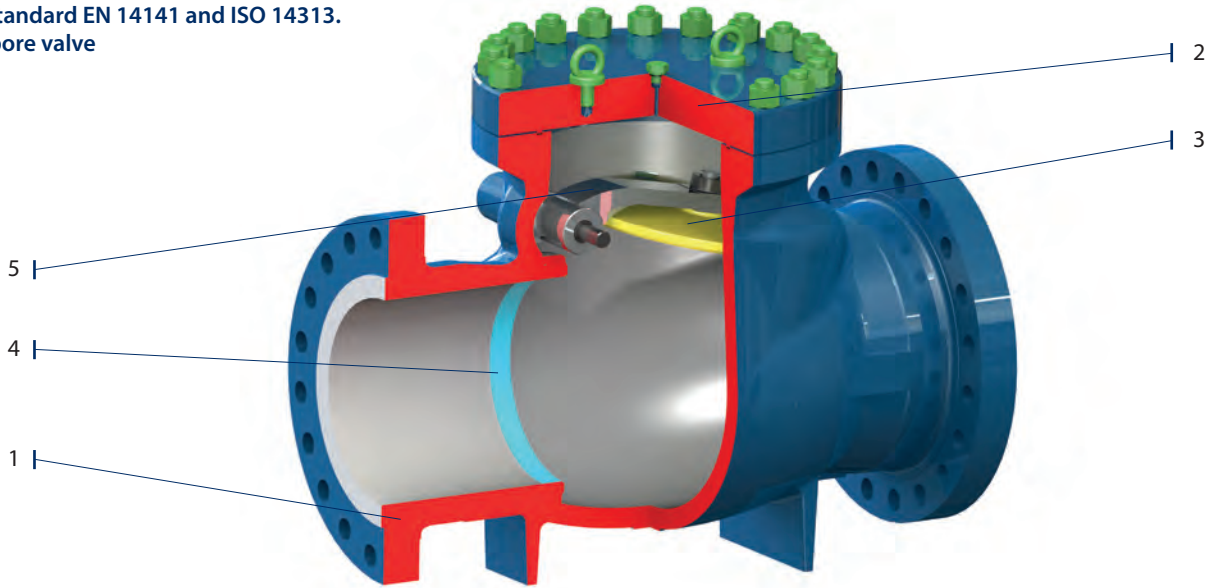
DN	PN 40					PN 63					PN 100				
	L	L1	H	kg	kg 1*	L	L1	H	kg	kg 1*	L	L1	H	kg	kg 1*
50	230	230	160	25	22,5	300	300	117	27	24,3	300	300	210	30	27
65	290	290	175	33	29,7	340	340	197	37	33,3	340	340	230	40	36
80	310	310	185	48	43,2	380	380	212	57	51,3	380	380	255	65	58
100	350	350	220	75	67,5	430	430	248	89	80,1	430	430	295	95	85
125	400	400	248	116	105	500	500	296	135	122	500	500	330	150	135
150	480	480	276	158	142	550	550	330	184	166	550	550	365	203	183
200	550	550	350	240	216	650	650	385	266	240	650	650	420	180	190
250	650	650	410	297	267	775	775	445	396	356	775	775	505	420	378
300	750	750	430	508	457	900	900	474	643	579	900	900	585	660	594
350	850	850	518	615	553,5	1025	1025	514	815	731	1025	1025	623	950	855
400	950	950	560	857	771	1150	1150	616	1234	1110	1150	1150	720	1390	1251
500	1150	1150	618	1492	1343	-	-	-	-	-	-	-	-	-	-
600	1350	1350	740	1892	1703	-	-	-	-	-	-	-	-	-	-

*for welded ends



DN 300-900 • PN 40-100 • Tmax +425°C
 Body design: cast
 Design in accordance with
 the standard EN 14141 and ISO 14313.
 Full bore valve

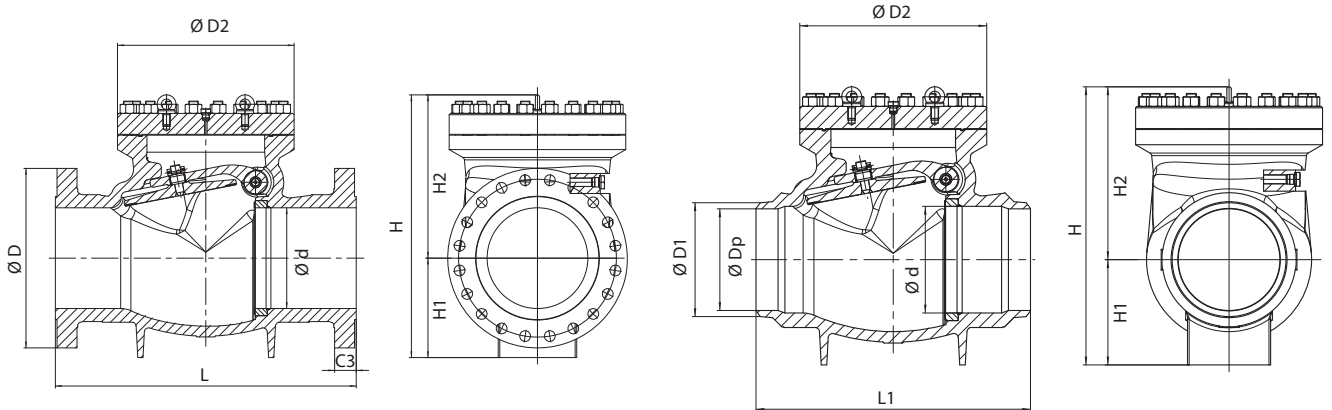
Connection: EN 1092-1 FLANGED ENDS
 EN 12 627 WELDED ENDS



Material

Position	Component	Carbon steel from -29°C to 425°C	Carbon steel for low temperatures from -46°C to 350°C
1	Body	A216 WCB	A 352 LCC
2	Bonnet	1.0425	A350 LF2
3	Disc + overlay	1.0425 + Stellite	A 350 LF2 + Stellite
4	Seat + overlay	1.0425 + Stellite	A 350 LF2 + Stellite
5	Arm	1.0425	A 350 LF2

*other materials upon request



PN 40-100

DN	PN	Ø d	Ø D2	H	H1	H2	Flanged ends				Welded ends			
							Ø D	C3	L	kg	Ø D1	Ø Dp	L1	kg
300	40	303	550	750	320	430	515	42	850	870	329	acc. to order	838	820
400		385	675	1004	380	624	660	50	1100	1050	413		991	928
600		589	930	1300	550	750	890	60	1450	2890	619		1397	2700
700		684	1150	1800	550	1250	995	70	1650	3990	721		1600	3830
300	63	303	550	750	320	430	530	52	900	920	329		838	820
400		385	675	1004	380	624	670	60	1150	1130	413		991	928
600		589	930	1300	550	750	930	72	1600	2970	619		1397	2700
700		684	1150	1800	550	1250	1045	85	1650	4250	721		1600	3830
300	100	303	550	750	320	430	585	68	900	945	329		838	820
400		385	675	1004	380	624	715	78	1150	1150	413		991	928
600		589	930	1300	550	750	-	-	-	-	619		1397	2700
700		684	1150	1800	550	1250	-	-	-	-	721		1600	3830



Application

The butterfly swing check valves are self-acting and fast-closing valves which prevent a working medium from flowing back in a pipeline. They are used in order to prevent from backflow the pumps, fans etc. The check valve is not a shut-off valve.

Working medium

Water, air, steam and other non-aggressive liquids and gases. The fluid flow direction may be only from one side of the valve. The fluid flow direction is marked with an arrow on the valve body.

Working temperature

Service temperature depends on the material of seals.

- - 46°C up to 300 °C

Technical description

The valve disc, eccentrically embedded, rotates inside a flanged end fabricated body. The shaft is clamped in the self-lubricated friction bearings. Outside the valve on the end of the shaft there is the lever with counterweight.

Operation

The swing check valves are automatic, quick-acting valves. Movement of the disc is controlled by the flowing fluid.

Testing

The butterfly swing check valves are tested for strength and leakage, functionality and tightness acc. to EN 12 266 section 1, leakage grade is D (grade B on request) or acc. to API 598.

Connection to piping

- **flanged** acc. to ASME B16.5
face to face dimension acc. to API Spec 6D
- **welded** acc. to ASME B16.25
face to face acc. to API Spec 6D

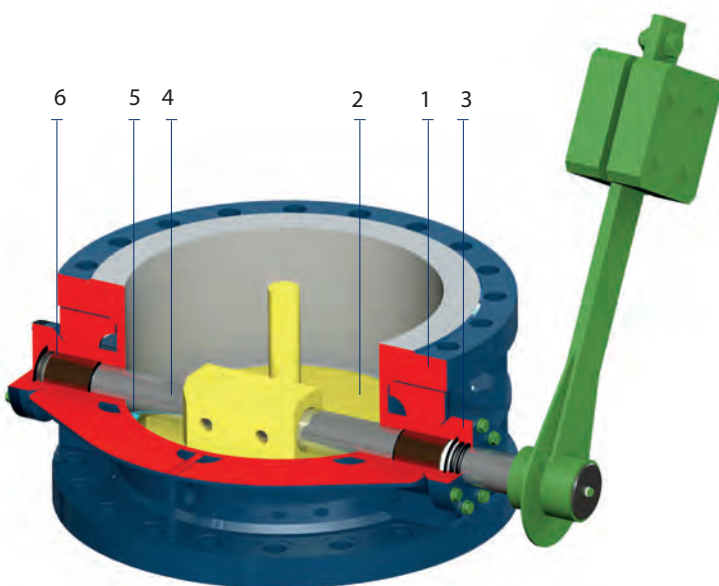


Installation

The butterfly swing check valves can be mounted into a horizontal or a vertical piping so that the arrow on the valve stamped in the valve body corresponds to the flow direction of the working medium, the valve disc rotation axis is in a horizontal position and above axis of flowing (only a horizontal piping). If the valve is to be mounted in a vertical piping, the working medium will have to flow upwards.

Advantages

- possibility of installation into vertical, horizontal or inclined pipings
- low pressure loss
- fabricated design, which allows us flexibility (no castings)
- maintenance free and long service life
- design variability
- one-piece body
- minimization of water hammer



Material acc. to ASTM

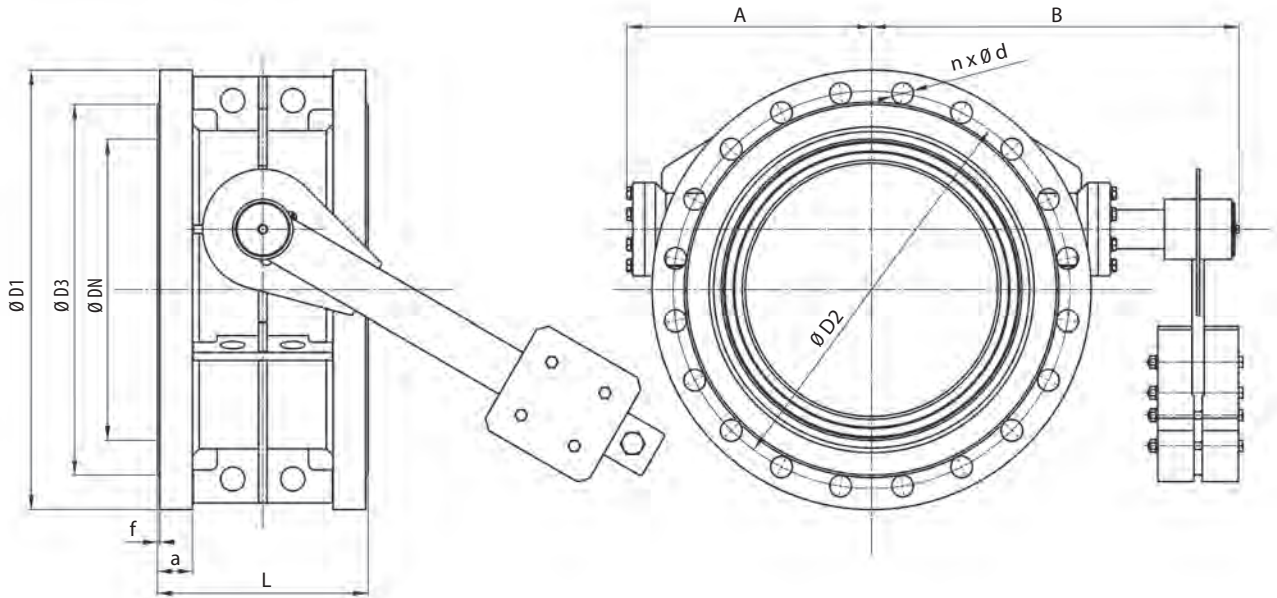
Position	Component	Carbon steel	
		For low temperatures from -46 °C to +300 °C	For normal temperatures from -20 °C to +300 °C*
1	Body	A350 LF2	A515 Gr.60 A537 Cl.1
2	Disc		
3	Cover	A182 F6a	A182 F6a
4	Shaft		
5	Sealing surface	13Cr x 13Cr	13Cr x 13Cr
6	Packing	TURKON	NBR, EPDM, VITON, TURKON*

* - the temperature in accordance with the applied seal material



NPS 4-48 • Class 150-600 • Tmax +300 °C

Connection: ASME B16.5 FLANGED ENDS
 ASME B16.25 WELDED ENDS



Class 150

NPS	D1	D2	D3	d	n	a	f	L	A	B	Kv 100 %	kg
4	228,6	190,5	157,2	19,1	8	23,9	1,6	300	120	265	330	49
5	254	215,9	185,7	22,4	8	23,9	1,6	325	135	280	535	58
6	279,4	241,3	215,9	22,4	8	25,4	1,6	210	150	280	810	55
8	342,9	298,5	269,7	22,4	8	28,4	1,6	230	176	270	1500	67
10	406,4	362	323,9	25,4	12	30,2	1,6	250	235	330	2410	93
12	482,6	431,8	381	25,4	12	31,8	1,6	270	245	387	3530	125
14	533,4	476,3	412,8	28,4	12	35,1	1,6	290	270	440	4850	192
16	596,9	539,8	469,9	28,4	16	36,6	1,6	310	300	370	6400	244
20	698,5	635	584,2	31,8	20	42,9	1,6	350	407	615	10100	338
24	812,8	749,3	692,2	35,1	20	47,8	1,6	390	500	690	14700	523
28	927,1	863,6	800,1	35,1	28	71,4	1,6	430	550	750	20100	740
32	1060,5	977,9	914,4	41,2	28	80,8	1,6	470	572	914	26300	965
40	1289,1	1200,2	1124	41,2	36	90,5	1,6	550	700	950	41300	1640
48	1511,3	1422,4	1358,9	41,2	44	108	1,6	630	840	1150	59400	2760

Class 300

NPS	D1	D2	D3	d	n	a	f	L	A	B	Kv 100 %	kg
4	254	200,1	157,2	22,3	8	31,7	1,6	300	120	250	330	57
5	279,4	234,9	185,6	22,3	8	35	1,6	325	135	280	535	68
6	317,5	269,7	215,9	22,3	12	36,5	1,6	350	150	280	810	79
8	381	330,2	269,7	25,4	12	41,1	1,6	400	180	280	1500	117
10	444,5	387,3	323,8	28,4	16	47,7	1,6	450	240	340	2410	167
12	520,7	450,8	381	31,7	16	50,8	1,6	500	260	400	3530	216
14	584,2	514,3	412,7	31,7	20	53,8	1,6	550	315	450	4850	326
16	647,7	571,5	469,9	35	20	57,1	1,6	600	340	515	6400	426
20	774,7	685,8	584,2	35	24	63,5	1,6	700	445	580	10100	629
24	914,4	812,8	692,1	41,1	24	69,8	1,6	800	510	684	14700	860
28	1035,1	939,8	800,1	44,5	28	85,9	1,6	900	550	780	20100	1255
32	1149,4	1054,1	914,4	50,8	28	98,7	1,6	1000	670	890	26300	1628
40	1238,3	1155,7	1085,9	44,5	32	114,3	1,6	1200	720	970	41300	2388
48	1466,9	1371,6	1301,8	50,8	32	133,6	1,6	630	850	1160	59400	3450

Kv 100 % [m³/h] – a coefficient of flow Kv expresses the rate of flow with pressure drop 1 bar across the full open valve in one hour



NPS 4-48 • Class 150-600 • Tmax +300 °C

Connection:  ASME B16.5 FLANGED ENDS
 ASME B16.25 WELDED ENDS

Class 400

NPS	D1	D2	D3	d	n	a	f	L	A	B	Kv 100%	kg
4	254	200,2	157,2	25,4	8	35,1	6,4	300	130	260	330	63
5	279,4	235	185,7	25,4	8	38,1	6,4	325	145	290	535	72
6	317,5	269,7	215,9	25,4	12	41,1	6,4	350	150	295	790	81
8	381	330,2	269,7	28,4	12	47,8	6,4	400	240	343	1450	140
10	444,5	387,4	323,9	31,8	16	53,8	6,4	450	260	380	2330	174
12	520,7	450,9	381	35,1	16	57,2	6,4	500	315	405	3420	260
14	584,2	514,4	412,8	35,1	20	60,5	6,4	550	340	464	4720	380
16	647,7	571,5	469,9	38,1	20	63,5	6,4	600	385	516	6220	600
20	774,7	685,8	584,2	41,1	24	69,9	6,4	700	435	570	9800	820
24	914,4	812,8	692,2	47,8	24	76,2	6,4	800	520	690	14300	1075
28	1035,1	939,8	800,1	50,8	28	95,3	6,4	900	560	790	19500	1460
32	1149,4	1054,1	914,4	53,9	28	114,35	6,4	1000	680	910	25500	1830

Class 600

NPS	D1	D2	D3	d	n	a	f	L	A	B	Kv 100%	kg
4	273,1	215,9	157,2	25,4	8	38,1	6,4	300	130	260	330	63
5	330,2	266,7	185,7	28,4	8	44,5	6,4	325	145	290	535	73
6	355,6	292,1	215,9	28,4	12	47,8	6,4	350	160	295	790	83
8	419,1	349,3	269,7	31,8	12	55,6	6,4	400	247	343	1450	175
10	508	431,8	323,9	35,1	16	63,5	6,4	450	255	380	2330	236
12	558,8	489	381	35,1	20	66,5	6,4	500	320	415	3420	389
14	603,3	527,1	412,8	38,1	20	69,9	6,4	550	340	464	4720	538
16	685,8	603,3	469,9	41,1	20	76,2	6,4	600	385	516	6220	719
20	812,8	723,9	584,2	44,5	24	88,9	6,4	700	440	580	9800	1095

Kv 100% [m³/h] – a coefficient of flow Kv expresses the rate of flow with pressure drop 1 bar across the full open valve in one hour

Application

The check valves are self-acting valves which prevent a working medium from flowing back in a pipeline.

Working medium

Water, sea water, water steam, air, oil, oil products, other non-aggressive liquids group 1 and 2.

Working temperature

The working temperature is in dependence on material design in range from -50 °C to +595 °C.

Technical description

The check valves are made from cast steel with full port. The sealing surface of the disc bears on the overlay of seat (austenitic stainless steel). The disc with an arm rotates on hinge and is pushed to the seat by its own weight. Connection flanges are integral part of the body. The cover is connected with body by bolts with graphite gasket. They consist of a body, a cover, a seat, a disc and an arm. The allowed maximum working pressure in dependence on temperature is noted in pressure-temperature table.

Design configurations

- with lever
- with bypass
- with lever and bypass
- Design in accordance - for petroleum, oil and gas. Valve in the open position allows free mixing of the pressure, cleaning or measuring

Operation

- self-acting



Testing

The swing check valves are tested acc. to API 598, EN 12 266-1 for strength and leakage of body and leakage of a cover.

Connection to piping

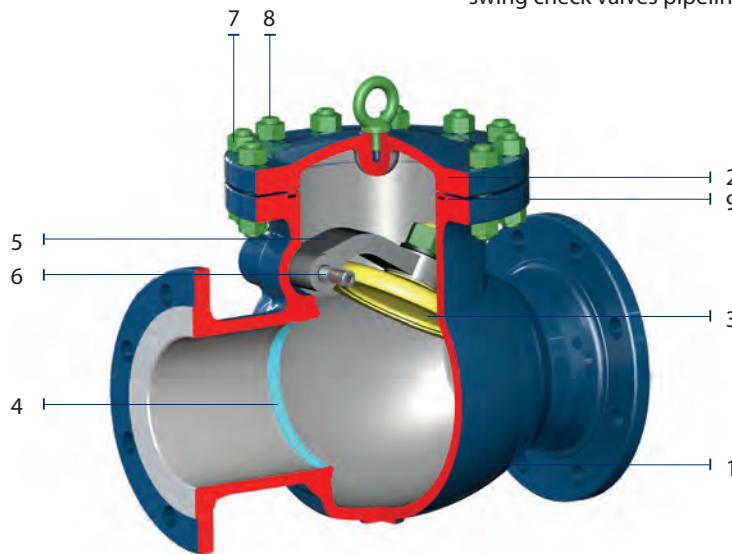
- flanged acc. to ASME B16.5, ASME B16.25
- welded acc. to ASME B16.25

Installation

The check valves can be mounted into a horizontal (with top side bonnet) and a vertical piping so that the arrow on the valve stamped in the valve body corresponds to the flow direction of the working medium.

Advantages

- wide range of working parameters
- possibility to repair sealing surfaces without uninstallation of swing check valves pipeline.



Material acc. to ASTM

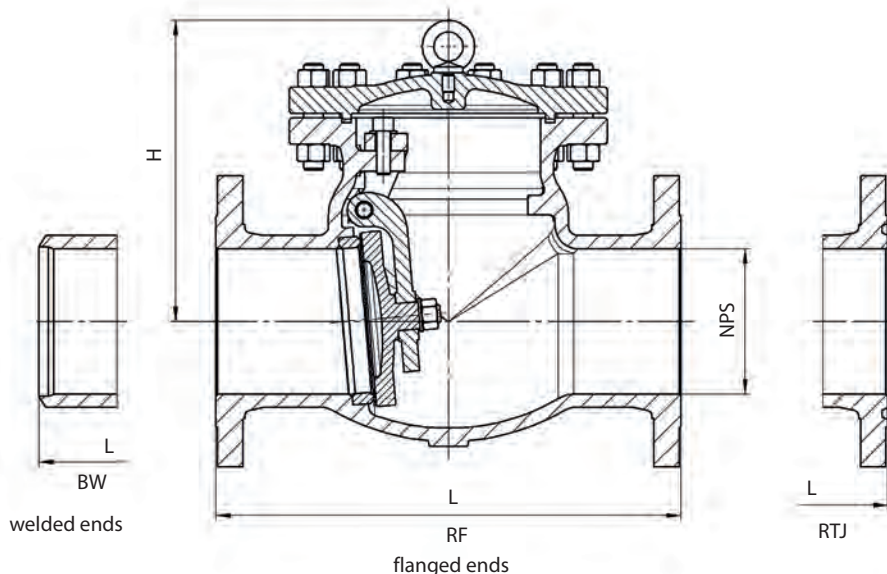
Position	Component	Carbon steel from -29 °C to 425 °C	Alloy steel from -29 °C to 595 °C	Carbon steel for low temperatures from -46 °C to 345 °C	Stainless steel from -50 °C to 538 °C
1	Body	A216 WCB	A217 WC6	A352 LCC	A351 CF8M
2	Bonnet	A216 WCB	A217 WC6	A352 LCC	A351 CF8M
3	Disc + overlay	A216 WCB + 13Cr	A217 WC6 + Stellite 6	A352 LCC + F304	A351 CF8M
4	Seat ring + overlay	A105 + 13Cr	A182 F11 + Stellite 6	A350 LF2 + Stellite 6	A351 CF8M
5	Arm	A216 WCB	A217 WC6	A352 LCC	A351 CF8M
6	Arm pin	A276 420	A182 F304	A182 F316	A182 F316
7	Bonnet nut	A194 2H*	A194 4*	A194 7M*	A194 8M*
8	Bonnet bolt	A193 B7*	A193 B16*	A320 L7M*	A193 B8M*
9	Bonnet sealing	Graphite with stainless steel insert			

* equivalent or acc. to customer's request



NPS 2-30 • Class 150-600 • Tmax +595 °C

Connection: ☉ ASME B16.5 FLANGED ENDS
 ☉ ASME B16.25 WELDED ENDS



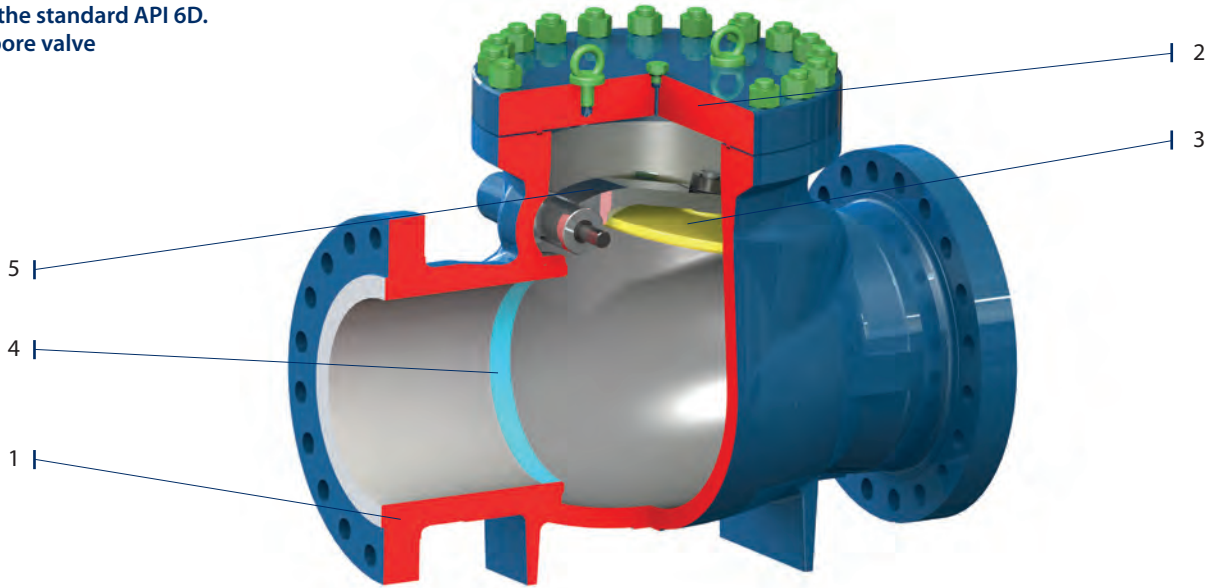
Class 150-600

NPS	DN	Class 150				Class 300					Class 600				
		L		H	kg	L			H	kg	L			H	kg
		RF	BW			RF	RTJ	BW			RF	RTJ	BW		
2	50	203	203	132	15	267	283	267	144	20	292	295	292	170	28
2 1/2	65	216	216	147	20	292	308	292	169	35	330	333	330	178	40
3	80	241	241	176	27	318	333	318	210	40	356	359	356	246	68
4	100	292	292	198	45	356	371	356	260	61	432	435	432	290	117
5	125	330	330	255	58	400	416	400	295	80	508	511	508	320	155
6	150	356	356	320	69	445	460	445	326	130	559	562	559	360	192
8	200	495	495	380	131	533	549	533	380	190	660	664	660	430	340
10	250	622	622	440	219	622	638	622	440	296	787	791	787	502	515
12	300	699	699	480	321	711	727	711	520	450	838	841	838	554	750
14	350	787	787	530	380	838	854	838	540	640	889	892	889	595	890
16	400	864	864	580	560	864	879	864	588	850	991	994	991	680	1303
18	450	978	978	618	630	978	994	978	670	1030	1092	1095	1092	778	1800
20	500	978	978	657	770	1016	1035	1016	720	1330	1194	1200	1194	970	2150
24	600	1295	1295	760	960	1346	1368	1346	850	1950	1397	1407	1397	1100	3200
26	650	1295	1295	840	1250	1346	1372	1346	920	2300	-	-	-	-	-
28	700	1448	1448	920	1580	1499	1524	1499	1150	2600	-	-	-	-	-
30	750	1524	1524	980	1950	1594	1619	1594	1260	3200	-	-	-	-	-



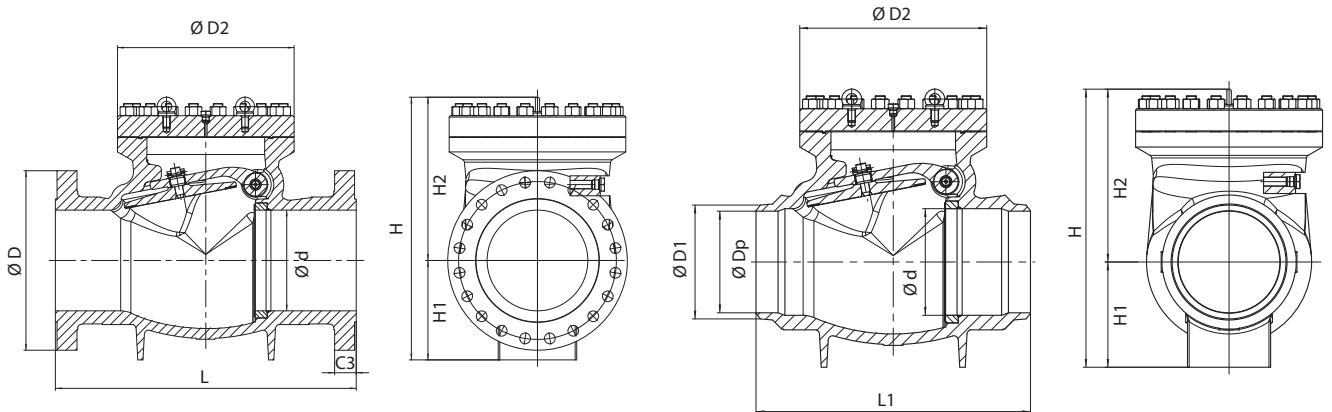
NPS 12-28 • Class 150-600 • Tmax +425 °C
 Body design: cast
 Design in accordance with the standard API 6D.
 Full bore valve

Connection: ☉ ASME B16.5, ASME B16.47 FLANGED ENDS
 * ASME B16.25 WELDED ENDS



Position	Component	Carbon steel from -29°C to 425°C	Carbon steel for low temperatures from -46°C to 350°C
1	Body	A216 WCB	A 352 LCC
2	Bonnet	1.0425	A350 LF2
3	Disc + overlay	1.0425 + Stellite	A 350 LF2 + Stellite
4	Seat + overlay	1.0425 + Stellite	A 350 LF2 + Stellite
5	Arm	1.0425	A 350 LF2

*other materials upon request



Class 150-600

NPS	PN	Ø d	Ø D2	H	H1	H2	Flanged ends				Welded ends			
							Ø D	C3	L	kg	Ø D1	Ø Dp	L1	kg
12	40	303	550	750	320	430	485	32	699	870	329	acc. to order	838	820
16		385	675	1004	380	624	595	37	864	1050	413		991	928
24		589	930	1300	550	750	815	48	1295	2890	619		1397	2700
28		684	1150	1800	550	1250	925	72	1448	3990	721		1600	3830
12	63	303	550	750	320	430	520	51	711	920	329		838	820
16		385	675	1004	380	624	650	57	864	1130	413		991	928
24		589	930	1300	550	750	915	72	1346	2970	619		1397	2700
28		684	1150	1800	550	1250	1035	86	1499	4250	721		1600	3830
12	100	303	550	750	320	430	560	74	838	945	329		838	820
16		385	675	1004	380	624	685	84	991	1150	413		991	928
24		589	930	1300	550	750	940	109	1397	3150	619		1397	2700
28		684	1150	1800	550	1250	-	-	-	-	721		1600	3830

TABLE OF PRESSURE-TEMPERATURE RATINGS

PS value are acc. to flange connection standard EN 1092-1.

PN 2,5

Body material	Material class	Maximum allowable working pressure - in bar																
		Temperature	20 °C	100 °C	150 °C	200 °C	250 °C	300 °C	350 °C	400 °C	450 °C	500 °C	550 °C	560 °C	570 °C	580 °C	590 °C	600 °C
1.0425 (P265GH)	3E0		2,5	2,3	2,2	2,0	1,9	1,7	1,6	1,4	0,8	-	-	-	-	-	-	-
1.0566 (P355NL1)	7E1		2,5	2,5	2,5	2,5	2,5	2,4	2,2	1,9	-	-	-	-	-	-	-	-
1.4541 (X6CrNiTi18-10)	12E0		2,5	2,4	2,3	2,2	2,1	1,9	1,9	1,8	1,8	1,7	1,6	1,5	1,4	1,2	1,1	1

PN 6

Body material	Material class	Maximum allowable working pressure - in bar																
		Temperature	20 °C	100 °C	150 °C	200 °C	250 °C	300 °C	350 °C	400 °C	450 °C	500 °C	550 °C	560 °C	570 °C	580 °C	590 °C	600 °C
1.0425 (P265GH)	3E0		6,0	5,5	5,2	5,0	4,5	4,1	3,8	3,5	1,9	-	-	-	-	-	-	-
1.0619 (GP240GH)	3E0		6,0	9,2	8,8	8,3	7,6	6,9	6,4	5,9	3,2	-	-	-	-	-	-	-
1.7335 (13CrMo45)	5E0		6,0	6,0	6,0	6,0	6,0	5,9	5,7	5,4	5,1	3,9	-	-	-	-	-	-
1.0566 (P355NL1)	7E1		6,0	6,0	6,0	6,0	6,0	5,8	5,4	4,7	-	-	-	-	-	-	-	-
1.4541 (X6CrNiTi18-10)	12E0		6,0	5,9	5,6	5,3	5	4,7	4,6	4,4	4,3	4,2	4	3,6	3,3	3	2,7	2,4
1.4408 (GX5CrNiMo19-11-2)	14E0		6,0	10,0	9,0	8,4	7,9	7,4	7,1	6,8	6,7	6,6	6,5	-	-	-	-	-
1.0577 (S355J2G3)			6,0	5,9	5,4	-	-	-	-	-	-	-	-	-	-	-	-	-

PN 10

Body material	Material class	Maximum allowable working pressure - in bar																
		Temperature	20 °C	100 °C	150 °C	200 °C	250 °C	300 °C	350 °C	400 °C	450 °C	500 °C	550 °C	560 °C	570 °C	580 °C	590 °C	600 °C
1.0619 (GP240GH)	3E0		10,0	9,2	8,8	8,3	7,6	6,9	6,4	5,9	3,2	-	-	-	-	-	-	-
1.7335 (13CrMo45)	5E0		10,0	10,0	10,0	10,0	10,0	9,9	9,5	9,0	8,5	6,5	-	-	-	-	-	-
1.4541 (X6CrNiTi18-10)	12E0		10,0	9,9	9,3	8,8	8,4	7,9	7,6	7,4	7,2	7	6,7	6,1	5,6	5	4,5	4
1.4408 (GX5CrNiMo19-11-2)	14E0		10,0	10,0	9,0	8,4	7,9	7,4	7,1	6,8	6,7	6,6	6,5	-	-	-	-	-

PN 16

Body material	Material class	Maximum allowable working pressure - in bar																
		Temperature	20 °C	100 °C	150 °C	200 °C	250 °C	300 °C	350 °C	400 °C	450 °C	500 °C	550 °C	560 °C	570 °C	580 °C	590 °C	600 °C
1.0425 (P265GH)	3E0		16,0	14,8	14,0	13,3	12,1	11,0	10,2	9,5	5,2	-	-	-	-	-	-	-
1.0566 (P355NL1)	7E1		16,0	16,0	16,0	16,0	16,0	15,6	14,4	12,7	-	-	-	-	-	-	-	-
1.0619 (GP240GH)	3E0		16,0	14,8	14,0	13,3	12,1	11,0	10,2	9,5	5,2	-	-	-	-	-	-	-
1.7357 (G17CrMo5-5)	5E0		16,0	16,0	16,0	16,0	16,0	15,9	15,2	14,4	13,7	10,4	3,7	3,0	2,5	-	-	-
1.6220 (G20Mn5)	7E1		16,0	16,0	16,0	16,0	16,0	15,6	-	-	-	-	-	-	-	-	-	-
1.4541 (X6CrNiTi18-10)	12E0		16,0	15,8	14,9	14,1	13,4	12,7	12,2	11,8	11,6	11,3	10,8	9,8	8,9	8,1	7,3	6,5
1.4408 (GX5CrNiMo19-11-2)	14E0		16,0	16,0	14,5	13,4	12,7	11,8	11,4	10,9	10,7	10,5	10,4	-	-	-	-	-
1.0577 (11 523)			16,0	15,8	14,5	-	-	-	-	-	-	-	-	-	-	-	-	-
1.7335 (13CrMo45)	5E0		16,0	16,0	16,0	16,0	16,0	15,9	15,2	14,4	13,7	10,4	-	-	-	-	-	-

PN 25

Body material	Material class	Maximum allowable working pressure - in bar																
		Temperature	20 °C	100 °C	150 °C	200 °C	250 °C	300 °C	350 °C	400 °C	450 °C	500 °C	550 °C	560 °C	570 °C	580 °C	590 °C	600 °C
1.0425 (P265GH)	3E0		25,0	23,2	22,0	20,8	19,0	17,2	16,0	14,8	8,2	-	-	-	-	-	-	-
1.0619 (GP240GH)	3E0		25,0	23,2	22,0	20,8	19,0	17,2	16,0	14,8	8,2	-	-	-	-	-	-	-
1.7357 (G17CrMo5-5)	5E0		25,0	25,0	25,0	25,0	25,0	24,8	23,8	22,6	21,4	16,3	5,8	4,7	3,9	-	-	-
1.7335 (13CrMo45)	5E0		25,0	25,0	25,0	25,0	25,0	24,8	23,8	22,6	21,4	16,3	-	-	-	-	-	-
1.0566 (P355NL1)	7E1		25,0	25,0	25,0	25,0	25,0	24,5	22,6	19,8	-	-	-	-	-	-	-	-
1.6220 (G20Mn5)	7E1		25,0	25,0	25,0	25,0	25,0	24,5	-	-	-	-	-	-	-	-	-	-
1.4541 (X6CrNiTi18-10)	12E0		25,0	24,7	23,3	22,1	21	19,8	19,1	18,5	18,1	17,7	16,9	15,3	14	12,7	11,4	10,2
1.4408 (GX5CrNiMo19-11-2)	14E0		25,0	25,0	22,7	21,0	19,8	18,5	17,8	17,1	16,8	16,5	16,3	-	-	-	-	-
1.0577 (11 523)			25,0	24,7	22,7	-	-	-	-	-	-	-	-	-	-	-	-	-



PN 400

Body material		Maximum allowable working pressure - in bar																			
Temperature		20 °C	100 °C	150 °C	200 °C	250 °C	300 °C	350 °C	400 °C	450 °C	480 °C	500 °C	520 °C	530 °C	540 °C	550 °C	560 °C	570 °C	580 °C	590 °C	600 °C
P250GH (C22.8)	1.0460	438	419	381	333	295	257	219	171,4	131,4	-	-	-	-	-	-	-	-	-	-	-
16Mo3	1.5415	491	448	400	362	333	286	276	267	257	251	177,1	112,4	89,5	-	-	-	-	-	-	-
13CrMo4-5	1.7335	484	457	429	400	381	352	333	314	295	290	261	179	148,6	116,2	93,3	76,2	62,9	-	-	-
11CrMo9-10 (1.7383)	1.7380	476	447	428	410	390	371	352	333	314	303	257	196,2	171,4	148,6	129,5	110,5	97,1	83,8	72,4	64,8
14MoV6-3	1.7715	548	537	526	509	459	429	411	398	387	383	368	284	250	215	188,6	163,8	139	-	-	-
15NiCuMoNb5-6-4	1.6368	640	640	640	640	640	640	623	560	392	-	-	-	-	-	-	-	-	-	-	-

TABLE OF PRESSURE-TEMPERATURE RATINGS

PS value are acc. to flange connection standard ASME B16.34.

Class 150

Body material		Material class	Maximum allowable working pressure - in bar												
Temperature			20 °C	100 °C	150 °C	200 °C	250 °C	300 °C	350 °C	400 °C	425 °C	450 °C	500 °C	538 °C	600 °C
A 216 WCB		1.1	19,6	17,7	15,8	13,8	12,1	10,2	8,4	6,5	5,5	-	-	-	-
A 350 LF2		1.1	19,6	17,7	15,8	13,8	12,1	10,2	8,4	6,5	5,5	-	-	-	-
A 516 Gr.70		1.1	19,6	17,7	15,8	13,8	12,1	10,2	8,4	6,5	5,5	-	-	-	-
A537 Cl.1		1.1	19,6	17,7	15,8	13,8	12,1	10,2	8,4	6,5	5,5	-	-	-	-
A 335 P12		1.16	-	15,0	14,3	13,8	12,1	10,2	8,4	6,5	-	4,6	2,8	-	-
A 352 LCC		1.2	19,8	17,7	15,8	13,8	12,1	10,2	8,4	-	-	-	-	-	-
A515 Gr.60		1.4	-	14,9	14,4	13,8	12,1	10,2	8,4	6,5	5,5	4,6	2,8	1,4	-
A 217 WC6		1.9	19,8	17,7	15,8	13,8	12,1	10,2	8,4	6,5	5,5	4,6	2,8	1,4	1,4
A 351 CF8M		2.2	19,0	16,2	14,8	13,7	12,1	10,2	8,4	6,5	5,5	4,6	2,8	1,4	-

Class 300

Body material		Material class	Maximum allowable working pressure - in bar												
Temperature			20 °C	100 °C	150 °C	200 °C	250 °C	300 °C	350 °C	400 °C	425 °C	450 °C	500 °C	538 °C	600 °C
A 216 WCB		1.1	51,1	46,6	45,1	43,8	41,9	39,8	37,6	34,7	28,8	-	-	-	-
A 350 LF2		1.1	51,1	46,6	45,1	43,8	41,9	39,8	37,6	34,7	28,8	-	-	-	-
A 516 Gr.70		1.1	51,1	46,6	45,1	43,8	41,9	39,8	37,6	34,7	28,8	-	-	-	-
A537 Cl.1		1.1	19,6	17,7	15,8	13,8	12,1	10,2	8,4	6,5	5,5	-	-	-	-
A 335 P12		1.16	-	39,1	37,3	36,0	34,8	33,7	32,6	31,5	-	29,9	22,8	-	-
A 352 LCC		1.2	51,7	51,5	50,2	48,6	46,3	42,9	40,0	-	-	-	-	-	-
A515 Gr.60		1.4	-	38,8	37,6	36,4	34,9	33,2	31,2	29,3	25,8	21,4	20,6	5,9	-
A 217 WC6		1.9	51,7	51,5	49,7	48,0	46,3	42,9	40,3	36,5	35,2	33,7	25,7	14,9	6,1
A 351 CF8M		2.2	49,6	42,2	38,5	35,7	33,4	31,6	30,3	29,4	29,1	28,8	28,2	25,2	-

Class 400

Body material		Material class	Maximum allowable working pressure - in bar												
Temperature			20 °C	100 °C	150 °C	200 °C	250 °C	300 °C	350 °C	400 °C	425 °C	450 °C	500 °C	538 °C	600 °C
A 335 P12		1.16	56,7	55,8	52,4	50,9	49,7	48,8	47,7	45,4	43,1	-	41,3	36,6	18,3
A515 Gr.60		1.4	56,7	55,6	51,5	50,3	48,8	46,3	43,1	41,2	40,4	34,4	-	-	-

Class 600

Body material		Material class	Maximum allowable working pressure - in bar												
Temperature			20 °C	100 °C	150 °C	200 °C	250 °C	300 °C	350 °C	400 °C	425 °C	450 °C	500 °C	538 °C	600 °C
A 216 WCB		1.1	102,1	93,2	90,2	87,6	83,9	79,6	75,1	69,4	57,5	-	-	-	-
A 350 LF2		1.1	102,1	93,2	90,2	87,6	83,9	79,6	75,1	69,4	57,5	-	-	-	-
A 516 Gr.70		1.1	102,1	93,2	90,2	87,6	83,9	79,6	75,1	69,4	57,5	-	-	-	-
A537 Cl.1		1.1	19,6	17,7	15,8	13,8	12,1	10,2	8,4	6,5	5,5	-	-	-	-
A 335 P12		1.16	-	78,1	74,5	72,0	69,7	67,4	65,2	62,9	-	59,8	45,6	-	-
A 352 LCC		1.2	103,4	103,0	100,3	97,2	92,7	85,7	80,0	-	-	-	-	-	-
A515 Gr.60		1.4	-	77,7	75,1	72,8	69,8	66,4	62,5	58,7	51,5	42,7	20,6	11,8	-
A 217 WC6		1.9	103,4	103,0	99,5	95,9	92,7	85,7	80,4	73,3	70,0	67,7	51,5	29,8	12,2
A 351 CF8M		2.2	99,3	84,4	77,0	71,3	66,8	63,2	60,7	58,9	58,3	57,7	56,5	50,0	-



CERTIFICATION



QMS Certificate acc. to EN ISO 9001:2015



MS Certificate acc. to EN ISO 14001:2015



Certificate acc. to BS OHSAS 18001:2007



Certificate PED 2014/68/EU module H



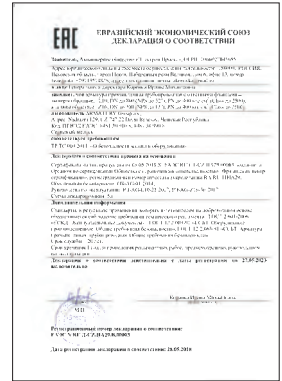
Inspection certificate of Safety Integrity Level (SIL) of check valves L10



QMS Certificate in welding acc. to EN ISO 3834-2



Certificate acc. to TP TC 032/2013 to the Euroasian Union



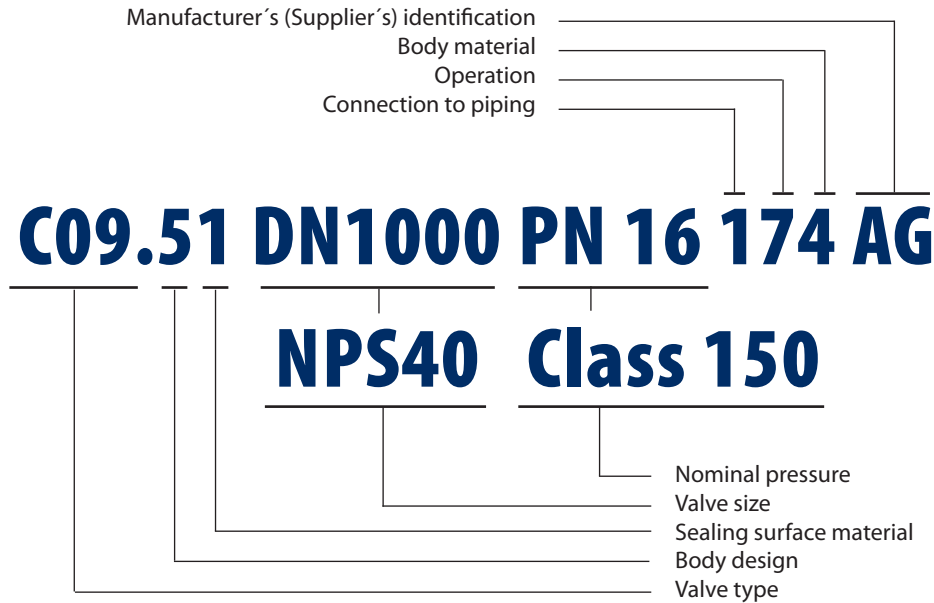
Declaration acc. to TC 010/2011 to the Euroasian Union

TYPE NUMBER POSITION

Type number uniquely describes the valve.

Type number is fixed by the manufacturer (supplier).

Type number serves to customers in subsequent communication with the manufacturer (supplier) valve.



Valve type

- C09 - butterfly swing check valve
- L10 - check valve

Body design - C09

- 5 - fabricated body or forged body, with lever and weight

Body design - L10

- 1 - forged body, bolted cover
- 2 - forged body, pressure seal cover
- 3 - cast body, bolted cover
- 4 - cast body, pressure seal cover
- 7 - forged body, wafer type

Sealing surface material

- 1 - 13Cr x 13Cr
- 2 - stainless steel x stainless steel
- 3 - stainless steel x stellit
- 4 - metal x rubber
- 5 - stellit x stellit
- 6 - basic material x basic material
- 7 - 13Cr x stainless steel
- 8 - 13Cr x stellit

Connection to piping

- 1 - flanged ends
- 2 - welded ends
- 7 - wafer type

Operation

- 7 - self-acting (lever, weight)
- 9 - auxiliary (lever with counterweight, hydraulic cylinder)

Body material

- 0 - stainless forged steel
- 2 - alloy steel
- 3 - alloy forged steel
- 4 - carbon forged steel
- 5 - cast carbon steel

Manufacturer's (Supplier's) identification

- AG – ARMATURY Group a.s.

The marking decoding procedure for gate type C09.51 DN 200 PN 16 174 AG - welded body, sealing surface material 13Cr x 13Cr, flange design. Similarly for the remaining positions from this catalog.

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