

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

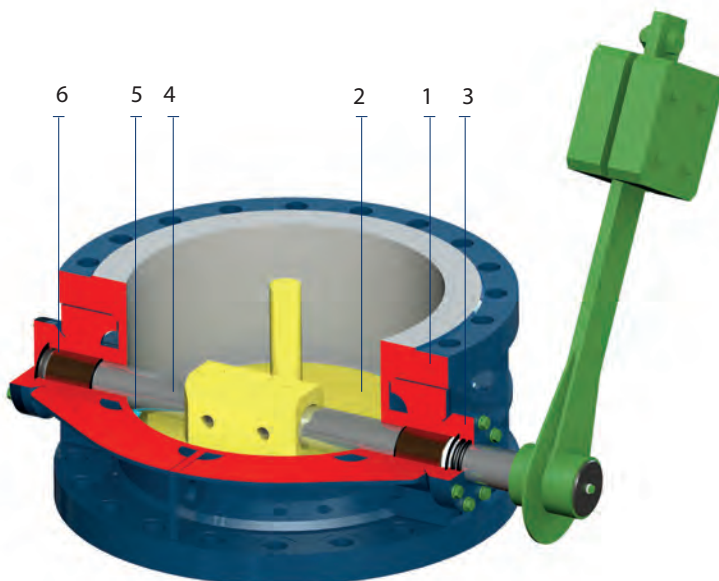


Installation

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

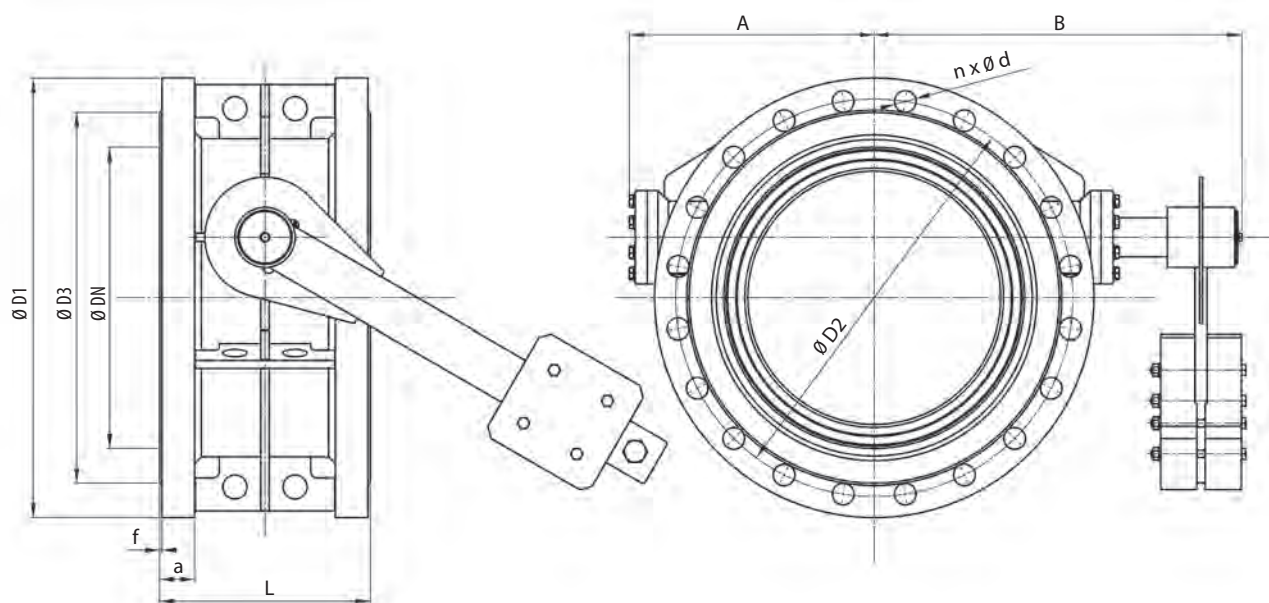
Position	Component	Carbon steel	
		For low temperatures from -46 °C to +300 °C	For normal temperatures from -20 °C to +300 °C *
1	Body	1.0566	1.0425, 1.0577
2	Disc		
3	Cover		
4	Shaft	1.4021	1.4021
5	Sealing surface	13Cr x 13Cr	13Cr x 13Cr
6	Packing	TURKON	NBR, EPDM, VITON, TURKON*

* - 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

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

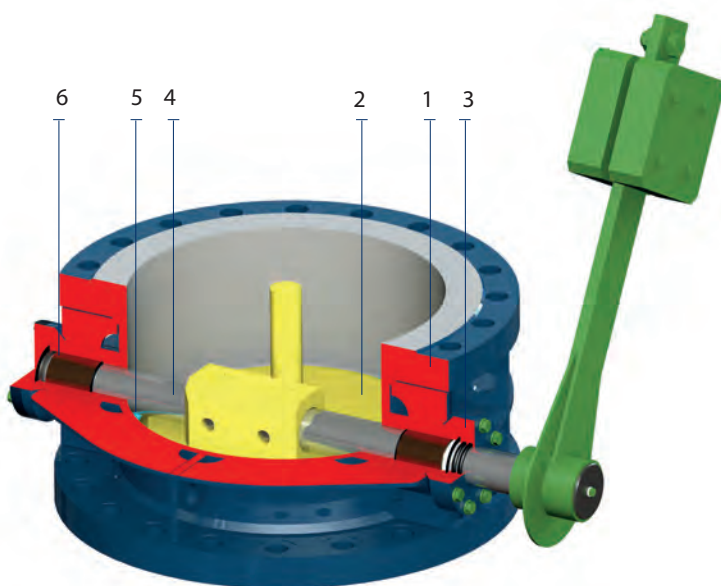


Installation

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

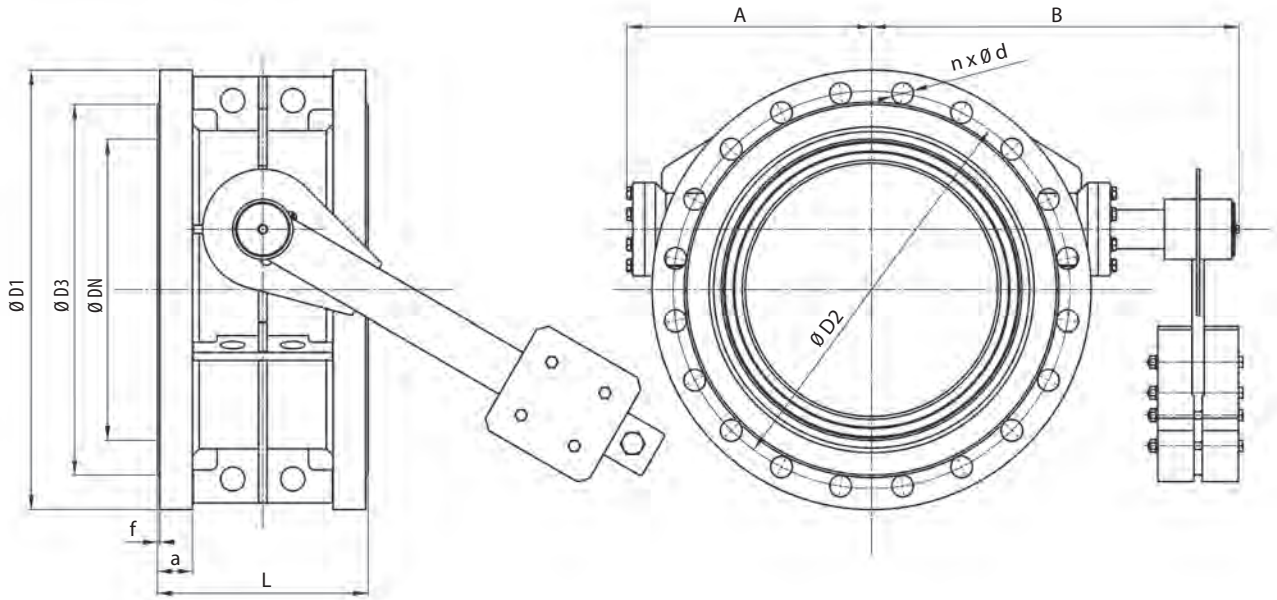
Position	Component	Carbon steel	
		For low temperatures from -46 °C to +300 °C	For normal temperatures from -20 °C to +300 °C*
1	Body	A350 LF2	A515 Gr.60 A537 Cl.1
2	Disc		
3	Cover	A182 F6a	A182 F6a
4	Shaft		
5	Sealing surface	13Cr x 13Cr	13Cr x 13Cr
6	Packing	TURKON	NBR, EPDM, VITON, TURKON*

* - 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