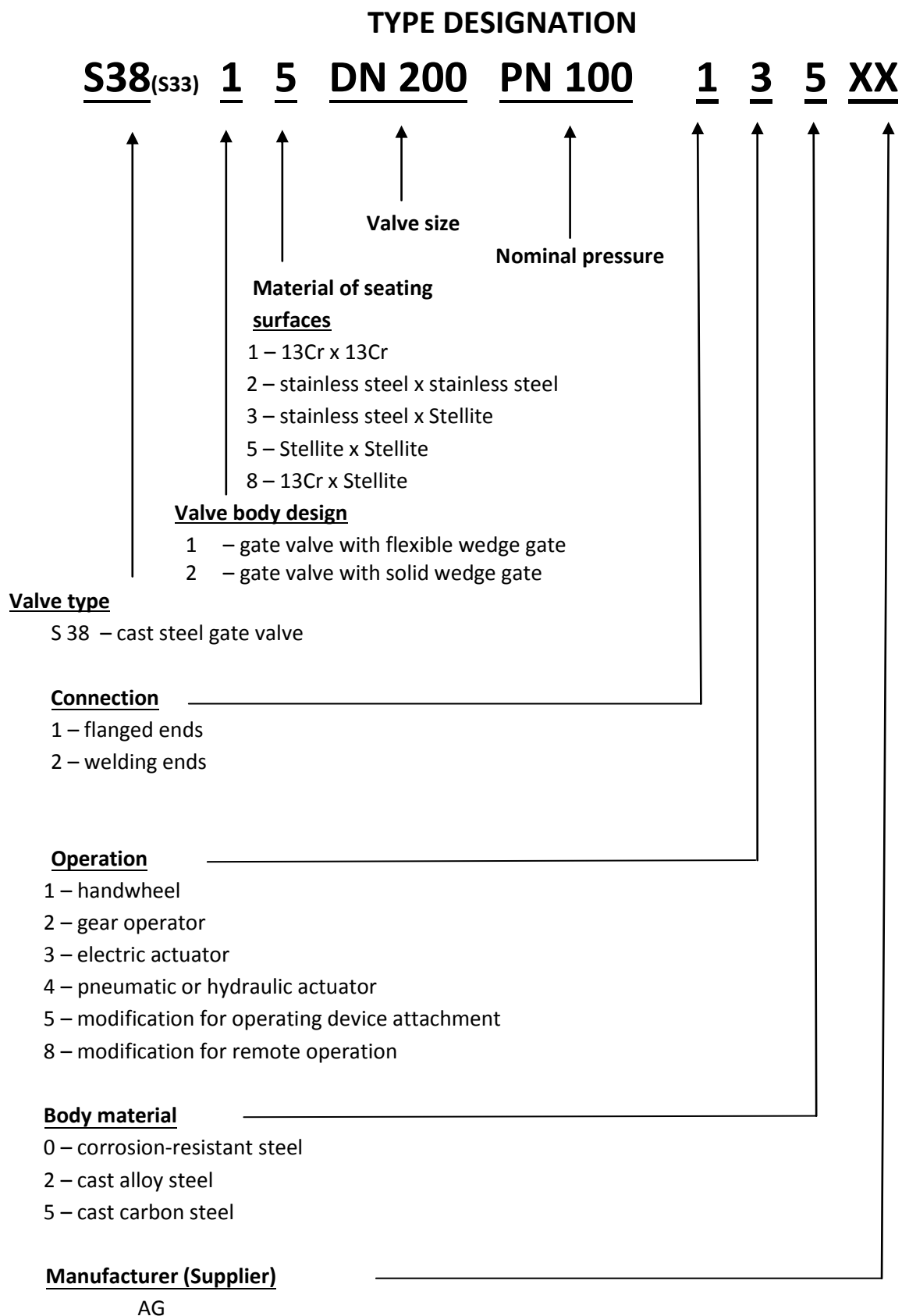
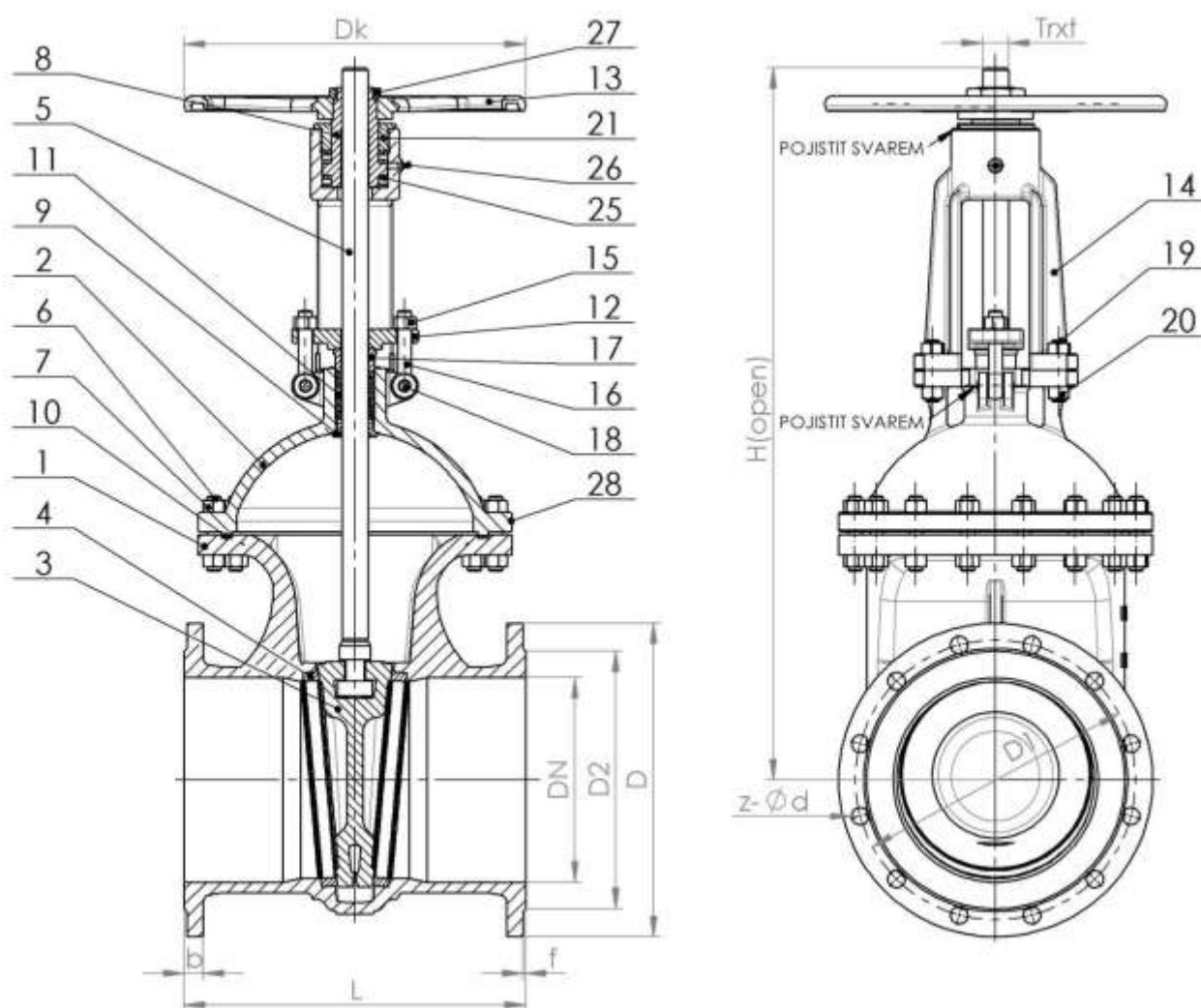


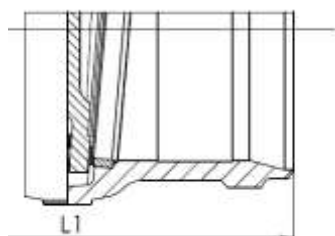


VALVE DESIGN AND MAIN DESIGN AND CONNECTING DIMENSIONS

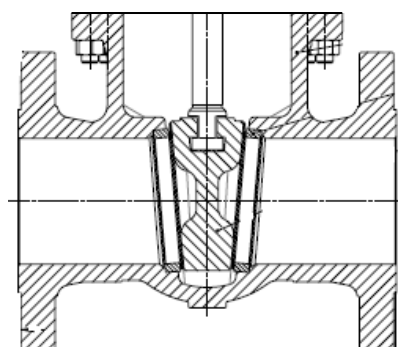
CAST STEEL GATE VALVE S38.1X



Pojistit svarem = To be secured by weld



Design with welding ends



Gate valve S38.2 with solid wedge gate

S38**PN 6**

DN	D	D1	D2	L	H(open)	Dk	b	n	d	kg
40	130	100	80	140	340	160	14	4	14	14
50	140	110	90	150	405	160	14	4	14	16
65	160	130	110	170	480	160	14	4	14	18
80	190	150	128	180	510	160	16	4	18	23
100	210	170	148	190	600	200	16	4	18	36
125	240	200	178	200	640	200	18	8	18	48
150	265	225	202	210	785	200	18	8	18	60
200	320	280	258	230	980	250	20	8	18	97
250	375	335	312	250	1190	320	22	12	18	166
300	440	395	365	270	1400	400	22	12	22	210
350	490	445	415	290	1585	450	22	12	22	345
400	540	495	465	310	1720	500	22	16	22	480
500	645	600	570	350	2095	500	24	20	22	645
600	755	705	670	390	2680	600	30	20	26	895

PN 10

DN	D	D1	D2	L	H(open)	Dk	b	n	d	kg
40	150	110	88	140	340	200	18	4	16	15
50	165	125	102	150	405	200	18	4	18	17
65	185	145	122	170	480	200	18	4	18	19
80	200	160	138	180	510	250	20	8	18	25
100	220	180	158	190	600	280	20	8	18	39
125	250	210	188	200	640	300	22	8	18	52
150	285	240	212	210	785	300	22	8	22	66
200	340	295	268	230	980	350	24	8	22	82
250	395	350	320	250	1190	400	26	12	22	180
300	460	400	370	270	1400	450	26	12	22	230
350	520	460	430	290	1585	500	26	16	22	380
400	580	515	482	310	1720	600	26	16	26	505
500	670	620	585	350	2095	600	28	20	26	700
600	780	725	685	390	2680	600	34	20	30	985

PN 16

DN	D	D1	D2	L acc.to ČSN	L=L1	H(open)	Dk	b	n	d	kg
40	150	110	88	170	240	360	160	18	4	18	16
50	165	125	102	180	250	405	200	18	4	18	18
65	185	145	122	200	270	480	200	18	4	18	20
80	200	160	138	210	280	510	200	20	8	18	28
100	220	180	158	230	300	605	250	20	8	18	48
125	250	210	188	255	325	640	250	22	8	18	65
150	285	240	212	280	350	785	320	22	8	22	73
200	340	295	268	330	400	980	400	24	12	22	118
250	405	355	320	450	450	1015	450	26	12	26	240
300	460	410	378	500	500	1190	500	28	12	26	300
350	520	470	438	550	550	1350	600	30	16	26	510
400	580	525	490	600	600	1460	600	32	16	30	670
500	715	650	610	700	700	1800	700	34	20	33	930
600	840	770	725	800	800	2200	800	36	20	36	1310

PN 16

DN	D	D1	D2	L	H (open)	H (max.)*	Dk	b	d x n	kg	BW ends	
											L1	kg
50	165	125	102	250	360	605	200	18	18x4	20	216	17
65	185	145	122	270	410	630	250	18	18x8	30	241	26
80	200	160	138	280	460	670	250	20	18x8	36	283	34
100	220	180	158	300	550	740	300	20	18x8	49	305	48
125	250	210	188	325	660	810	300	22	18x8	66	381	72
150	285	240	212	350	775	930	300	22	22x8	95	404	100
200	340	295	268	400	960	1070	350	24	22x12	154	419	160
250	405	355	320	450	1175	1245	400	26	26x12	225	457	240
300	460	410	378	500	1360	1430	500	28	26x12	334	502	355
350	520	470	438	550	1525	1550	550	30	26x16	445	762	490
400	580	525	490	600	1675	1720	600	32	30x16	610	838	690
500	715	650	610	700	2050	2080	700	44	33x20	1105	991	1070
600	840	770	725	800	2400	2480	800	54	36x20	1190	1143	1660

PN 25

DN	D	D1	D2	L	H (open)	H (max.)*	Dk	b	d x n	kg	BW ends	
											L1	kg
50	165	125	102	250	360	605	200	20	18x4	20	216	17
65	185	145	122	270	410	630	250	22	18x8	32	241	26
80	200	160	138	280	460	670	250	24	18x8	39	283	34
100	235	190	162	300	550	740	300	24	22x8	53	305	48
125	270	220	188	325	660	810	300	26	26x8	71	381	72
150	300	250	218	350	775	930	300	28	26x8	101	404	100
200	360	310	278	400	960	1070	350	30	26x12	160	419	160
250	425	370	335	450	1175	1245	400	32	30x12	232	457	240
300	485	430	395	500	1360	1430	500	34	30x16	345	502	355
350	555	490	450	550	1525	1550	550	38	33x16	460	762	490
400	620	550	505	600	1675	1720	600	40	36x16	645	838	690
500	730	660	615	700	2050	2080	700	48	36x20	1166	991	1070
600	845	770	720	800	2450	2480	800	58	39x20	1258	1143	1660

PN 40

DN	D	D1	D2	L	H (open)	H (max.)*	Dk	b	d x n	kg	BW ends	
											L1	kg
50	165	125	102	250	360	605	200	20	18x4	20	216	17
65	185	145	122	290	410	630	250	22	18x8	28	241	26
80	200	160	138	310	460	670	250	24	18x8	44	283	34

100	235	190	162	350	560	740	300	24	22x8	62	305	48
125	270	220	188	400	660	810	300	26	26x8	87	381	72
150	300	250	218	450	765	930	350	28	26x8	125	404	100
200	375	320	285	550	955	1070	400	34	30x12	265	419	160
250	450	385	345	650	1185	1245	450	38	33x12	405	457	240
300	515	450	410	750	1380	1430	500	42	33x16	500	502	355
350	580	510	465	850	1510	1550	500	46	36x16	725	762	490
400	660	585	535	950	1690	1720	600	50	39x16	1280	838	690
500	755	670	615	1150	2065	2080	600	52	42x20	1589	991	1070
600	890	795	735	1350	2465	2480	700	60	48x20	1903	1143	1660

PN 63

DN	D	D1	D2	L	H (open)	H (max.)*	Dk	b	d x n	kg	BW ends	
											L1	kg
50	180	135	102	250	420	655	280	26	22x4	37	292	28
65	205	160	122	290	470	735	280	26	22x8	46	330	37
80	215	170	138	310	525	770	300	28	22x8	49	356	38
100	250	200	162	350	620	835	350	30	26x8	86	432	75
125	295	240	188	400	715	910	350	34	30x8	129	508	113
150	345	280	218	450	815	980	400	36	33x8	150	559	132
200	415	345	285	550	1115	1205	500	42	36x12	360	660	320
250	470	400	345	650	1280	1360	640	46	36x12	570	787	500
300	530	460	410	750	1550	1570	680	52	36x16	815	838	720
350	600	525	465	850	1665	1680	-	56	39x16	1080	889	950
400	670	585	535	950	1820	1840	-	60	42x16	1460	991	1290
500	800	705	615	1150	2235	2250	-	68	48x20	2315	1194	2040
600	930	820	735	1350	2570	2590	-	76	56x20	3480	1397	3060

PN 100

DN	D	D1	D2	L	H (open)	H (max.)*	Dk	b	d x n	kg	BW ends	
											L1	kg
50	195	145	102	250	420	655	280	30	26x4	39	292	29
65	220	170	122	290	470	735	280	34	26x8	50	330	39
80	230	180	138	310	525	770	300	36	26x8	54	356	40
100	265	210	162	350	620	835	350	40	30x8	94	432	80
125	315	250	188	400	715	910	350	40	33x8	138	508	122
150	355	290	218	450	815	980	400	44	33x12	160	559	141
200	430	360	285	550	1115	1205	500	52	36x12	385	660	340
250	505	430	345	650	1280	1360	640	60	39x12	610	787	540
300	585	500	410	750	1550	1570	680	68	42x16	890	838	780
350	655	560	465	850	1665	1680	-	74	48x16	1190	889	1050
400	715	620	535	950	1820	1840	-	78	48x16	1570	991	1380
500	870	760	615	1150	2235	2250	-	90	56x20	2630	1194	2315
600	940	838	692	1350	2570	2590	-	105	52x24	3870	1397	3405

CLASS 150

NPS	DN mm	D	D1	D2	dxn	L	b	H (open)	Dk	kg	BW ends	
											L1	kg
2"	50	150	120.7	92.1	19.1x4	178	14.3	397	200	18	216	18
2.5"	65	180	139.7	104.3	19.1x4	190	20.7	435	250	26	241	28
3"	80	190	152.4	127	19.1x4	203	17.5	497	250	34	283	30
4"	100	230	190.5	157.2	19.1x8	229	22.3	585	250	52	305	50
6"	150	280	241.3	215.9	22.4x8	267	23.9	765	350	88	403	85
8"	200	345	298.5	269.9	22.4x8	292	27	973	350	144	419	128
10"	250	405	362	323.8	25.4x12	330	28.6	1160	400	197	457	220
12"	300	485	431.8	381	25.4x12	356	30.2	1362	450	298	502	310
14"	350	535	473.6	412.8	28.6x12	381	33.4	1520	500	406	572	450
16"	400	595	539.8	469.9	28.6x16	406	35	1725	560	524	610	550
18"	450	625	577.9	533.4	31.8x16	432	38.1	1930	560	626	660	700
20"	500	700	635	584.2	31.8x20	457	41.3	2160	610	789	711	910
24"	600	815	749.3	692.2	35x20	508	46.1	2540	610	1033	813	1130
28"	700	925	863.6	800	35x28	610	69.9	2990	-	1905	914	1750
30"	750	985	914.4	857	35x28	610	73.1	3070	-	2145	914	1960
32"	800	1060	977.9	914	41.3x28	711	79.4	3460	-	3506	-	-
36"	900	1170	1085.8	1022	41.3x32	711	88.9	3660	-	3575	-	-
42"	1000	1345	1257.3	1194	41.3x36	813	88.9	4260	-	5123	-	-
48"	1200	1510	1422.4	1356	41.3x44	884	95.3	4875	-	6668	-	-

CLASS 300

NPS	DN	D	D1	D2	dxn	L	b	H (open)	Dk	kg	BW ends	
											L1	kg
2"	50	165	127	92.1	19.1x8	216	20.7	422	200	24	216	19
2.5"	65	190	149.2	104.3	22.4x8	241	23.9	446	250	31	241	29
3"	80	210	168.3	127	22.4x8	282	27	512	250	52	282	38
4"	100	244	200	157.2	22.4x8	305	30.2	603	250	76	305	57
6"	150	320	269.9	215.9	22.4x12	403	35	804	350	146	403	118
8"	200	380	330.2	269.9	25.4x12	419	39.7	1002	400	218	419	183
10"	250	445	387.4	323.8	28.6x16	457	46.1	1229	400	352	457	278
12"	300	520	450.8	381	31.8x16	502	49.3	1479	460	460	502	406
14"	350	585	514.4	412.8	31.8x20	762	54.6	1630	560	857	762	565
16"	400	650	571.5	469.9	35x20	838	55.6	1815	460	1172	838	728
18"	450	710	628.6	533.4	35x24	914	58.8	2000	460	1281	914	806
20"	500	775	685.8	584.2	35x24	991	62	2220	560	1498	991	1231
24"	600	915	812.8	692.2	41.3x24	1143	68.3	2620	610	2282	1143	1890
30"	750	1090	997	857	47.6x28	1397	73.1	3180	700	4495	1397	3686
36"	900	1270	1168.4	1022	54x32	1727	88.9	3760	700	5833	1727	4784

CLASS 600

NPS	DN	D1	D2	D3	dxn	L	b	H (open)	Dk	kg	BW ends	
											L1	kg
2"	50	165	127	92.1	19.1x8	292	25.4	441	250	46	292	31
2.5"	65	190	149.2	104.3	22.4x8	330	28.6	510	300	62	330	57
3"	80	210	168.3	127	22.4x8	356	31.8	574	300	72	356	65
4"	100	275	215.9	157.2	25.4x8	432	38.1	700	350	128	432	87
6"	150	355	292.1	215.9	28.6x12	559	47.7	804	450	216	559	169
8"	200	420	349.2	269.9	31.8x12	660	55.6	1055	500	413	660	375
10"	250	510	431.8	323.8	35x16	787	63.5	1314	640	754	787	604
12"	300	460	489	381	35x20	838	66.7	1460	680	981	838	859
14"	350	605	527	412.8	38.1x20	889	69.9	1750	610	1316	889	1154
16"	400	685	603.2	469.9	41.3x20	991	76.2	1900	610	1672	991	1530
18"	450	745	654	533.4	44.5x20	1092	82.6	2020	640	2780	1092	2282
20"	500	815	723.9	584.2	44.5x24	1194	88.9	2172	700	3203	1194	2650
24"	600	940	838.2	692.2	50.8x24	1397	101.6	2650	750	4069	1397	3340

CLASS 900

NPS	DN	D	D1	D2	dxn	L	b	H(open)	Dk	kg	BW ends	
											L1	kg
3"	80	241	191	127	25x8	381	39	660	350	115	305	95
4"	100	292	235	157	32x8	457	45	825	350	160	356	130
6"	150	381	318	216	32x12	610	56	1015	600	310	508	280
8"	200	470	394	270	38x12	737	64	1225	600	500	660	460
10"	250	546	470	324	38x16	838	70	1435	700	880	787	820
12"	300	610	533	381	38x20	965	79	1625	700	1220	914	1150

CLASS 1500

NPS	DN	D	D1	D2	dxn	L	b	H(open)	Dk	kg	BW ends	
											L1	kg
1 1/2"	40	180	124	73	29 x 4	305	32	390	250	35	178	25
2"	50	216	165	92	25 x 8	368	39	420	300	59	216	42
3"	80	267	203	127	32 x 8	470	48	685	350	110	305	60
4"	100	311	241	157	35 x 8	546	54	745	450	180	406	110
6"	150	394	318	216	38 x 12	705	83	1015	600	370	559	230
8"	200	483	394	270	44 x 12	832	92	990	700	610	711	470
10"	250	584	483	324	51 x 12	991	108	1183	850	1300	864	800
12"	300	673	572	381	54 x 16	1130	124	1300	-	2000	991	1400

FLOW COEFFICIENT K_v

The value of K_v gives the volume flow rate of water in m^3/h with a density of 1000 kg/m^3 at a pressure drop of $\Delta p = 0.1 \text{ MPa}$ in open position of the valve.

ξ_{DN} , ξ_{NPS} – flow resistance coefficient (fully open valve) for the basic sizes of the piping. Coefficients for other sizes of the piping differ from those specified and will be advised upon request.

PN 6-25

DN	40	50	65	80	100	125	150	200
ξ_{DN}	0.39	0.32	0.27	0.24	0.22	0.20	0.17	0.15
$K_v 100\%$	105	175	325	525	850	1395	2200	4070
DN	250	300	350	400	500	600		
ξ_{DN}	0.14	0.14	0.14	0.14	0.14	0.14		
$K_v 100\%$	6670	9620	13100	17070	26730	38490		

PN 40

DN	50	65	80	100	125	150	200	250
ξ_{DN}	0.32	0.27	0.25	0.24	0.22	0.20	0.18	0.17
$K_v 100\%$	175	325	525	825	1335	2035	3820	6055
DN	300	350	400	500	600			
ξ_{DN}	0.16	0.16	0.16	0.15	0.15			
$K_v 100\%$	9065	12100	16140	25820	37180			

PN 63,100

DN	50	65	80	100	125	150	200	250
ξ_{DN}	0.32	0.27	0.25	0.24	0.22	0.20	0.18	0.17
$K_v 100\%$	175	325	515	825	1335	2035	3820	6055
DN	300	350	400	500	600			
ξ_{DN}	0.16	0.16	0.16	0.15	0.15			
$K_v 100\%$	9065	12100	16140	25820	37180			

Class 150

NPS	2	2 1/2	3	4	5	6	8	10
ξ_{NPS}	0.32	0.27	0.24	0.22	0.20	0.17	0.15	0.14
$K_v 100\%$	175	325	525	850	1395	2200	4070	6670
NPS	12	14	16	20	24	30	36	42
ξ_{NPS}	0.14	0.14	0.14	0.14	0.14			
$K_v 100\%$	9620	13100	17070	26730	38490			

Class 300

NPS	2	2 1/2	3	4	5	6	8	10
ξNPS	0.32	0.27	0.25	0.24	0.22	0.20	0.18	0.17
Kv 100%	175	325	525	825	1335	2035	3820	6055
NPS	12	14	16	20	24	30	36	
ξNPS	0.16	0.16	0.16	0.15	0.15			
Kv 100%	9065	12100	16140	25820	37180			

Class 600

NPS	2	2 1/2	3	4	5	6	8	10
ξNPS	0.32	0.27	0.25	0.24	0.22	0.20	0.18	0.17
Kv 100%	175	325	515	825	1335	2035	3820	6055
NPS	12	14	16	20	24			
ξNPS	0.16	0.16	0.16	0.15	0.15			
Kv 100%	9065	12100	16140	25820	37180			

Class 900

NPS	2	2 1/2	3	4	5	6	8	10
ξNPS	0.32	0.27	0.24	0.22	0.20	0.17	0.15	0.14
Kv 100%	175	325	525	850	1395	2200	4070	6670
NPS	12							
ξNPS	0.14							
Kv 100%	9620							

Class 1500

NPS	2	2 1/2	3	4	5	6	8	10
ξNPS	0.32	0.27	0.24	0.22	0.20	0.17	0.15	0.14
Kv 100%	175	325	525	850	1395	2200	4070	6670
NPS	12							
ξNPS	0.14							
Kv 100%	9620							

PRESSURE/TEMPERATURE RATINGS

The value of PS is in accordance with EN 1092-1.

PN 6

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]												
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
1.0619 (GP240GH)	3E0	6.0	5.5	5.2	5.0	4.5	4.1	3.8	3.5	1.9	-	-	-	-
1.4408 (GX5CrNiMo19-11-2)	14E0	6.0	6.0	5.4	5.0	4.7	4.4	4.2	4.1	4.0	3.9	3.9	-	-

PN 10

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]												
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
1.0619 (GP240GH)	3E0	10.0	9.2	8.8	8.3	7.6	6.9	6.4	5.9	3.2	-	-	-	-
1.7357 (G17CrMo5-5)	5E0	10.0	10.0	10.0	10.0	10.0	10.0	9.5	9.0	8.4	6.5	2.3	1.9	1.5
1.6220 (G20Mn5)	7E1	10.0	10.0	10.0	10.0	10.0	9.8	-	-	-	-	-	-	-
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	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]												
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
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	-	-	-	-	-	-	-
1.4408 (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	-	-

PN 25

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]												
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
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
1.6220 (G20Mn5)	7E1	25.0	25.0	25.0	25.0	25.0	24.5	-	-	-	-	-	-	-
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	-	-

PN 40

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]												
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
1.0619 (GP240GH)	3E0	40.0	37.1	35.2	33.3	30.4	27.6	25.7	23.8	13.1	-	-	-	-
1.7357 (G17CrMo5-5)	5E0	40.0	40.0	40.0	40.0	40.0	39.8	38.0	36.1	34.2	26.0	9.3	7.6	6.2
1.6220 (G20Mn5)	7E1	40.0	40.0	40.0	40.0	40.0	39.2	-	-	-	-	-	-	-
1.4408 (GX5CrNiMo19-11-2)	14E0	40.0	40.0	36.3	33.7	31.8	29.7	28.5	27.4	26.9	26.4	26.0	25.7	25.4

PN 63

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]												
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
1.0619 (GP240GH)	3E0	63.0	58.5	55.5	52.5	48.0	43.5	40.5	37.5	20.7	-	-	-	-
1.7357 (G17CrMo5-5)	5E0	63.0	63.0	63.0	63.0	63.0	62.7	60.0	57.0	54.0	41.1	14.7	12.0	9.9
1.6220 (G20Mn5)	7E1	63.0	63.0	63.0	63.0	63.0	61.8	-	-	-	-	-	-	-
1.4408 (GX5CrNiMo19-11-2)	14E0	63.0	63.0	57.3	53.1	50.1	46.8	45.0	43.2	42.4	41.7	41.1	40.5	40.0

PN 100

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]												
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
1.0619 (GP240GH)	3E0	100.0	92.8	88.0	83.3	76.1	69.0	64.2	59.5	32.8	-	-	-	-
1.7357 (G17CrMo5-5)	5E0	100.0	100.0	100.0	100.0	100.0	99.5	95.2	90.4	85.7	65.2	23.3	19.0	15.7
1.6220 (G20Mn5)	7E1	100.0	100.0	100.0	100.0	100.0	98.0	-	-	-	-	-	-	-
1.4408 (GX5CrNiMo19-11-2)	14E0	100.0	100.0	90.9	84.2	79.5	74.2	71.4	68.5	67.3	66.1	65.2	64.3	63.5

The value of PS is in accordance with EN 1092-1.

PN 6

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]													
Temperature		20°C	100°C	150°C	200°C	250°C	300°C	350°C	400°C	425°C	450°C	500°C	540°C	575°C	600°C
A 216 WCB	3E1	6.0	6.0	6.0	6.0	5.8	5.2	4.8	4.4	-	-	-	-	-	-
A 352 LCC	3E1	6.0	6.0	5.7	5.4	5.0	4.6	4.2	-	-	-	-	-	-	-
A 217 WC6	5E0	6.0	6.0	6.0	6.0	6.0	6.0	5.7	5.4	5.2	5.0	-	-	-	-
A 351 CF8M	14E0	6.0	6.0	5.4	5.0	4.7	4.4	4.2	4.1	4.1	4.0	3.9	3.9	3.8	-

PN 10

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]													
Temperature		20°C	100°C	150°C	200°C	250°C	300°C	350°C	400°C	425°C	450°C	500°C	540°C	575°C	600°C
A 216 WCB	3E1	6.0	6.0	6.0	6.0	5.8	5.2	4.8	4.4	-	-	-	-	-	-
A 352 LCC	3E1	6.0	6.0	5.7	5.4	5.0	4.6	4.2	-	-	-	-	-	-	-
A 217 WC6	5E0	6.0	6.0	6.0	6.0	6.0	6.0	5.7	5.4	5.2	5.0	-	-	-	-
A 351 CF8M	14E0	6.0	6.0	5.4	5.0	4.7	4.4	4.2	4.1	4.1	4.0	3.9	3.9	3.8	-

PN 16

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]													
Temperature		20°C	100°C	150°C	200°C	250°C	300°C	350°C	400°C	425°C	450°C	500°C	540°C	575°C	600°C
A 216 WCB	3E1	16	16	15.6	15.1	14.4	13.4	12.8	10.8	8.9	-	-	-	-	-
A 352 LCC	3E1	16	16	16	16	16	14.9	14.2	-	-	-	-	-	-	-
A 217 WC6	5E0	16	16	16	16	16	15.5	15	14.5	14.1	13.8	7.9	4.5	2.7	1.8
A 351 CF8M	14E0	14.7	12.5	11.4	10.6	9.8	9.3	9.0	8.7	8.6	8.5	8.4	8.3	-	-

PN 25

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]													
Temperature		20°C	100°C	150°C	200°C	250°C	300°C	350°C	400°C	425°C	450°C	500°C	540°C	575°C	600°C
A 216 WCB	3E1	25	25	24,4	23,7	22,5	20,9	20	16,9	14	-	-	-	-	-
A 352 LCC	3E1	25	25	25	25	25	23,3	22,2	-	-	-	-	-	-	-
A 217 WC6	5E0	25	25	25	25	25	24,3	23,5	22,7	22,1	21,5	12,5	7	4,2	2,9
A 351 CF8M	14E0	23	19,5	17,8	16,5	15,5	14,6	14,1	13,6	13,5	13,4	13,2	13	-	-

PN 40

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]													
Temperature		20°C	100°C	150°C	200°C	250°C	300°C	350°C	400°C	425°C	450°C	500°C	540°C	575°C	600°C
A 216 WCB	3E1	40	40	39.1	37.9	36	33.5	31.9	27	22.4	-	-	-	-	-
A 352 LCC	3E1	40	40	40	40	40	37.2	35.6	-	-	-	-	-	-	-
A 217 WC6	5E0	40	40	40	40	40	38.9	37.6	36.2	35.4	34.5	19.9	11.3	6.8	4.7
A 351 CF8M	14E0	36.8	31.3	28.5	26.4	24.7	23.4	22.6	21.8	21.6	21.4	21	20.8	-	-

PN 63

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]													
Temperature		20°C	100°C	150°C	200°C	250°C	300°C	350°C	400°C	425°C	450°C	500°C	540°C	575°C	600°C
A 216 WCB	3E1	63	63	61.5	59.6	56.8	52.7	50.3	42.5	35.2	-	-	-	-	-
A 352 LCC	3E1	63	63	63	63	63	58.7	56	-	-	-	-	-	-	-
A 217 WC6	5E0	63	63	63	63	63	61.2	59.2	57.1	55.7	54.3	31.4	17.8	10.8	7.4
A 351 CF8M	14E0	57.9	49.2	44.9	41.6	38.9	36.9	35.5	34.4	34	33.7	33.2	32.7	-	-

PN 100

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]													
Temperature		20°C	100°C	150°C	200°C	250°C	300°C	350°C	400°C	425°C	450°C	500°C	540°C	575°C	600°C
A 216 WCB	3E1	100	100	97.7	94.7	90.1	83.6	79.8	67.5	55.9	-	-	-	-	-
A 352 LCC	3E1	100	100	100	100	100	93.1	88.9	-	-	-	-	-	-	-
A 217 WC6	5E0	100	100	100	100	100	97.2	94	90.6	88.4	86.2	49.9	28.2	17.1	11.8
A 351 CF8M	14E0	91.9	78.1	71.3	66	61.8	58.5	56.4	54.5	54	53.4	52.6	51.9	-	-

Values of maximum allowable service pressure corresponding to ASME B16.34-2004, A Standard Class.

Class 150

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]													
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	575°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 352 LCC	1.2	19.8	17.7	15.8	13.8	12.1	10.2	8.4	-	-	-	-	-	-	-
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	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	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]													
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	575°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 352 LCC	1.2	51.7	51.5	50.2	48.6	46.3	42.9	40.0	-	-	-	-	-	-	-
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	8.8	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 600

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]													
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	575°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 352 LCC	1.2	103.4	103.0	100.3	97.2	92.7	85.7	80.0	-	-	-	-	-	-	-
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	17.6	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	-	-

Class 900

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]													
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	575°C	600°C
A 216 WCB	1.1	153.2	139.8	135.2	131.4	125.8	119.5	112.7	104.2	86.3	-	-	-	-	-
A 352 LCC	1.2	155.1	154.6	150.5	145.8	139.0	128.6	120.1	-	-	-	-	-	-	-
A 217 WC6	1.9	155.1	154.4	149.2	143.9	139.0	128.6	120.7	109.8	105.1	101.4	77.2	44.7	26.4	18.3
A 351 CF8M	2.2	148.9	126.6	115.5	107.0	100.1	94.9	91.0	88.3	87.4	86.5	84.7	75.2	-	-

Class 1500

Body material	Mat.group	Maximum allowable pressure PS [bar] for maximum service temperature TS [°C]													
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	575°C	600°C
A 216 WCB	1.1	255.3	233.0	225.4	219.0	209.7	199.1	187.8	173.6	143.8	-	-	-	-	-
A 352 LCC	1.2	258.6	257.6	250.8	243.2	231.8	214.4	200.1	-	-	-	-	-	-	-
A 217 WC6	1.9	258.6	257.4	248.7	239.8	231.8	214.4	201.1	183.1	175.1	169.0	128.6	74.5	44.0	30.5
A 351 CF8M	2.2	248.2	211.0	192.5	178.3	166.9	158.1	151.6	147.2	145.7	144.2	140.9	125.5	-	-

PRODUCT HANDLING

Only duly trained personnel may perform handling activities. The handling of products, parts and components must not lead to damages, deterioration or reduction of function of products, and must not endanger health of personnel.

Basic rules for safe handling in loading and unloading:

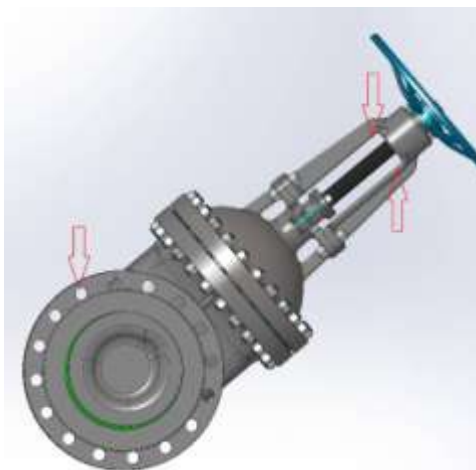
- *the weight of the load shall be known for selection of a suitable sling*
- *the load shall have a defined centre of gravity or it shall be possible to estimate its location*
- *it is always necessary to keep in mind that if an actuator (electric actuator or manual gear operator) is attached to the valve, the centre of gravity moves closer to the actuator; overturning of the product with subsequent damaging shall be avoided when lifting the product*
- *places for attachment of webbing slings or chains shall be marked or the slinger shall know possible places of attachment of webbing slings or chains*
- *the surface finish shall be taken into consideration when slinging the load*
- *functionality of the product must not be impaired by handling of the product (for instance, when removing it from a shipping case – only textile ropes shall be used, etc.)*
- *the product on which the load is to be placed shall be known (pallet, skid, truck) to avoid squeezing the rope between the load and the floor*

The Manufacturer bears no responsibility for any damage to the valve caused by handling and no claim or complaint may be lodged in connection with such a damage.

Manual handling can be used for gate valves the weight of which does not exceed the limit for manual handling. However, it is always necessary to consider additional aspects of handling, such as actual physical constitution of the operator, number of handling operations per shift, etc.

It is forbidden to make use of operating devices (handwheels or actuators) when slinging the valve for the reason of handling and special attention shall be paid to the operating device when lifting the product and placing it on the ground.

Before commencing the handling operation, it is necessary to estimate the location of the centre of gravity of the product, to know its weight, to know the location of handling elements – yoke and threaded holes in the valve body. For slinging purposes, also the holes in flanges of flanged-end valves may be used.



Examples of gate valve slinging



EXAMPLES OF OPERATING DEVICES

INSTALLATION DIMENSIONS OF GATE VALVES WITH ACTUATORS DEPEND ON THE TYPE (MANUFACTURER) OF ACTUATOR.

- 1 – handwheel
- 2 – gear operator (spur or bevel gearbox)
- 3 – electric actuator
- 4 – pneumatic or hydraulic actuator
- 5 – modification for actuator attachment
- 8 – remote operation

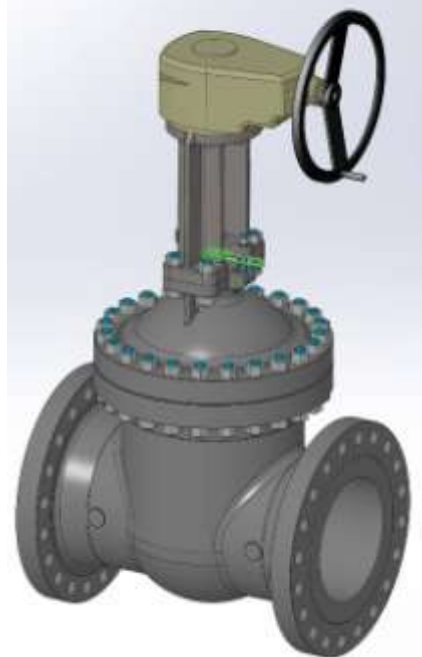
HANDWHEEL



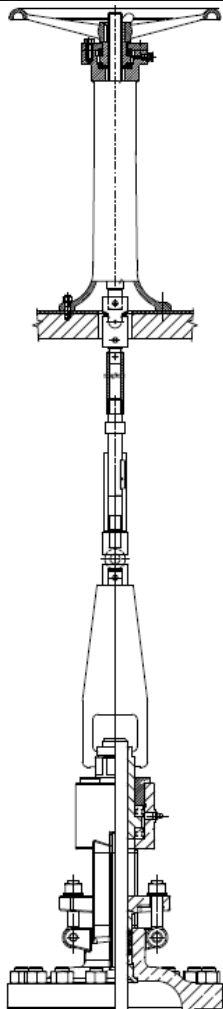
**ELECTRIC
ACTUATOR**



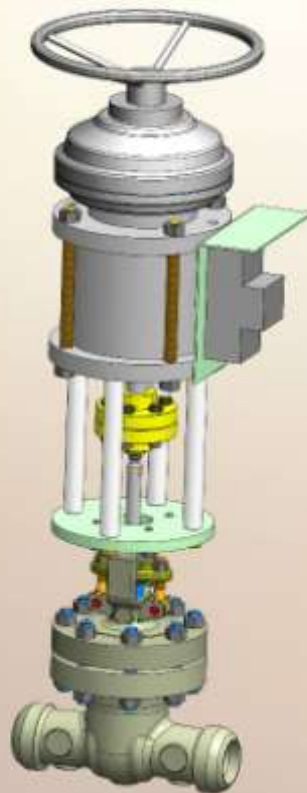
BEVEL GEARBOX



REMOTE OPERATION



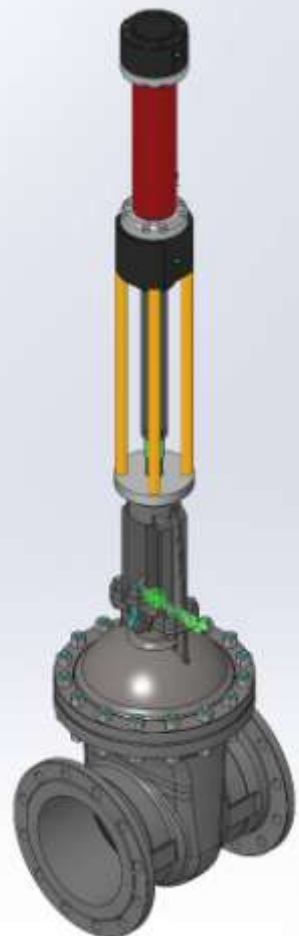
**PNEUMATIC
ACTUATOR**



**MODIFICATION FOR
ACTUATOR
ATTACHMENT**



**HYDRAULIC
ACTUATOR**



BYPASSES

Bypass system with one isolating valve



Bypass system with two isolating valves



Note: Table specifying relation between bypass size and the maximum pressure drop is shown in the main text part of these Directions for Installation and Operation, Table No. 5. Detailed description of bypasses is given in ČSN 13 3080, Valve bypasses.

LIST OF APPLICABLE STANDARDS

- EN 1984 Industrial valves – Steel gate valves
 - EN 10204 Types of inspection documents
 - EN 1092-1 Flanges and their joints – Circular flanges for pipes, valves, fittings and accessories, PN designated – Part 1: Steel flanges (tables of p/t ratings)
 - EN 1759-1 Flanges and their joints – Circular flanges for pipes, valves, fittings and accessories, Class designated – Part 1: Steel flanges
 - EN 1515-1 Flanges and their joints – Bolting – Part 1: Selection of bolting
 - EN 12266-1 Testing of valves – Mandatory requirements
 - EN 12266-2 Testing of valves – Supplementary requirements
 - EN ISO 6708 Definition and selection of DN
 - EN 1333 Pipework components. Definition and selection of PN
 - EN 19 Industrial valves – Marking
 - EN 558-1 Face-to-face and centre-to-face dimensions. PN-designated valves
 - EN 1503-1 Materials for bodies, bonnets and covers. Part 1 – Steels specified in European Standards
 - EN 1503-2 Materials for bodies, bonnets and covers. Part 2 – Steels other than those specified in European Standards
 - ČSN 133060-2 Industrial valves. Testing of valves
 - EN 736-1 Valves. Terminology – Part 1: Definitions of types of valves
 - EN 736-2 Valves. Terminology – Part 2: Definitions of components of valves
 - EN 736-3 Valves. Terminology – Part 3: Definition of terms
 - GOST 9544-93 Pipeline isolating valves – Closure tightness standards
 - GOST 12.2.063-81 Pipeline valves. General safety requirements
 - GOST 5762-2000 General technical conditions for gate valves up to 25 MPa
 - GOST 50460-92 Mark of conformity for mandatory certification
 - GOST 9544-2005 Pipeline gate valves. Classes and rates of gates sealability
 - ANSI/ASME B16.25 Buttwelding ends
 - ASME B16.34 Valves – Flanged, welding and threaded end
 - ASME B16.5 Pipe flanges and flanged fittings
 - ASME B16.10 Face-to-face and end-to-end dimensions of valves
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