

GLOBE AND CONTROL VALVES, LIFT CHECK VALVES

ARMATURY® Group

ARMATURY® Group

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 this 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
- oil and gas
- metallurgical industry
- water supply

CONTENT

Application
Globe valves (V46) are industrial valves designed to open or close the service fluid flow fully. Control (V40) valves are used to regulate flowing fluid. Both types are used especially in power engineering, chemical industry as well as other industries putting great demands on functionality at high pressures and high temperatures.

Working medium
- water
- steam
- gas
- other fluids
- seawater

Technical description
The valve has a one-piece body which can be a forged or a cast depending on nominal size and nominal pressure. The yoke-type bonnet is also cast or forged and is connected with the body by means of a bolted or flanged joint. The seat and the disc are hard faced. The disc is made as either a plug type disc (valves V46) or a regulating disc (valves V40). Valves with regulating disc have a linear regulating characteristic. Tightness is achieved by means of special graphite gaskets and packing rings. Tightness of the stem of valve type V46.6 is achieved by a bellow. The valves are designed so as to be earthquake resistant.

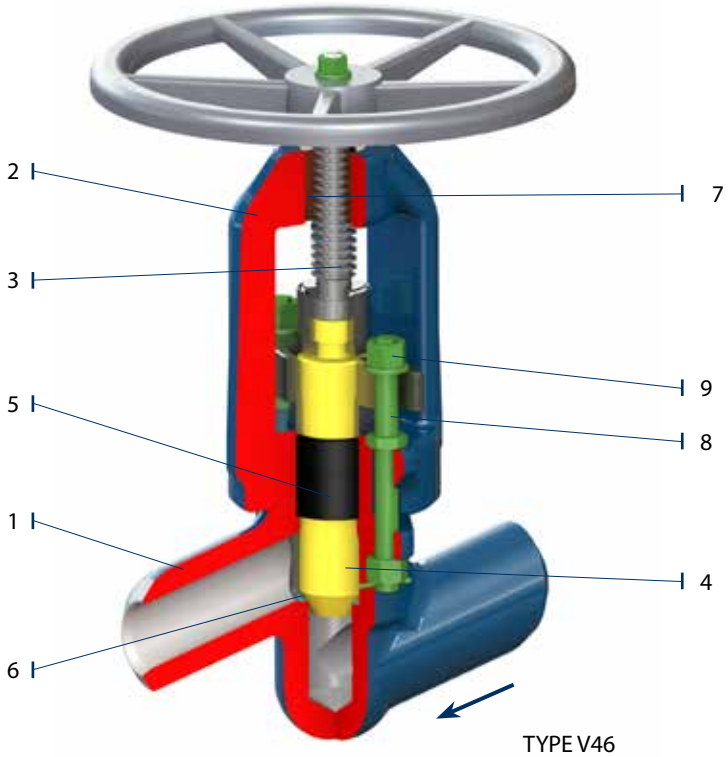
Operation
- manual (hand wheel, chain wheel)
- electric actuator
- pneumatic actuator, hydraulic actuator
- actuator located out of the valve

Globe valves can be equipped with a locking device.
Position indicator on request.
Operation is dimensioned for the working parameters acc. to EN 13709.

Testing
Valves are subject to shell strength test, shell tightness test, seat tightness test and functionality test according to EN 12266 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
Valves may be installed in any position. The flow direction shall correspond to the arrow on the valve body.

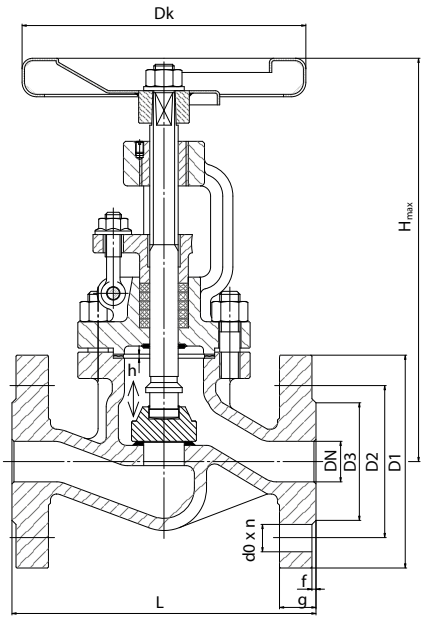


TYPE V46

Position	Component
1	Body
2	Bonnet
3	Top stem
4	Bottom stem
5	Packing
6	Seat
7	Stem nut
8	Bolts
9	Nuts

PN 16-40 • DN 15-200 • Tmax 600 °C (450°C)

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



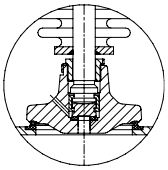
Material

Component	Tmax 450 °C	Tmax 530 °C	Tmax 560 °C	Tmax 600 °C
Body, bonnet	GP240GH (1.0619)	G20Mo5 (1.5419)	G17CrMo5-5 (1.7357)	1.4408
Seat	13Cr *	Stellite		A182 F316, Stellite
Disc DN 15-32	13Cr	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	1.4401
Disc DN 40-200	P250GH (1.0460)	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	1.4408
Disc ring	13Cr *	Stellite		A182 F316, Stellite
Stem	13Cr			A182 F316
Gasket	Graphite + Austenite			

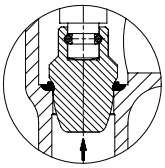
* We recommend Stellite overlay for steam as a medium (Trim.5)

DN 125-200

equilibrating disc



throttle plug

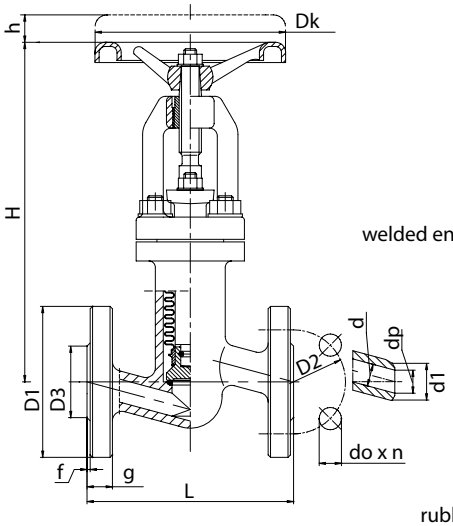


PN	DN	D1	D2	D3	do x n	L	g	f	H max	h	Dk	kg
16	15	95	65	45	4 x 14	130	16	2	190	13	120	3,8
	20	105	75	58	4 x 14	150	18	2	225	13	140	4,5
	25	115	85	68	4 x 14	160	18	2	240	13	160	5
	32	140	100	78	4 x 18	180	18	2	255	15	180	9,5
	40	150	110	88	4 x 18	200	18	3	275	19	200	10,7
	50	165	125	102	4 x 18	230	18	3	315	24	200	12,8
	65	185	145	122	8 x 18	290	18	3	360	30	250	28,4
	80	200	160	138	8 x 18	310	20	3	390	40	280	37
	100	220	180	158	8 x 18	350	20	3	435	45	300	52
	125	250	210	188	8 x 18	400	22	3	480	55	350	70
	150	285	240	212	8 x 22	480	22	3	535	65	500	106
	200	340	295	268	12 x 22	600	24	3	675	75	500	207
25	15	95	65	45	4 x 14	130	16	2	190	13	120	3,8
	20	105	75	58	4 x 14	150	18	2	225	13	140	4,5
	25	115	85	68	4 x 14	160	18	2	240	13	160	5
	32	140	100	78	4 x 18	180	18	2	255	15	180	9,5
	40	150	110	88	4 x 18	200	18	3	275	19	200	10,7
	50	165	125	102	4 x 18	230	20	3	315	24	200	12,8
	65	185	145	122	8 x 18	290	22	3	360	30	250	28,4
	80	200	160	138	8 x 18	310	24	3	390	40	280	37
	100	235	190	162	8 x 22	350	24	3	435	45	300	52
	125	270	220	188	8 x 26	400	26	3	480	55	350	70
	150	300	250	218	8 x 26	480	28	3	535	65	500	106
	200	360	310	278	12 x 26	600	30	3	675	75	500	207
40	15	95	65	45	14 x 4	130	16	2	170	13	120	3,1
	20	105	75	58	14 x 4	150	18	2	184	13	140	4,4
	25	115	85	68	14 x 4	160	18	2	206	13	160	5,6
	32	140	100	78	18 x 4	180	18	2	210	15	180	7,6
	40	150	110	88	18 x 4	200	18	3	238	19	200	9,8
	50	165	125	102	18 x 4	230	20	3	276	24	200	14
	65	185	145	122	18 x 8	290	22	3	315	30	250	21
	80	200	160	138	18 x 8	310	24	3	350	40	280	27,5
	100	235	190	162	22 x 8	350	24	3	392	45	300	41
	125	270	220	188	26 x 8	400	26	3	480	55	350	70
	150	300	250	218	26 x 8	480	28	3	535	65	500	106
	200	375	320	285	30 x 12	600	34	3	675	75	500	207

PN 63-160 • DN 15-200 • Tmax 560 °C (450 °C)

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

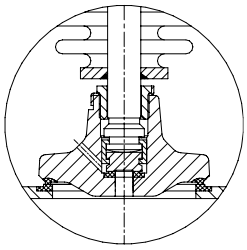
DN 15-40



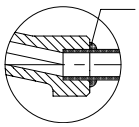
DN 50-200

equilibrating disc

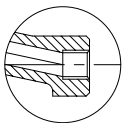
welded ends



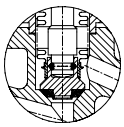
„SW"
socket weld



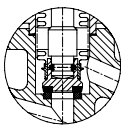
„G"
threaded ends



rubber ring for gas
Tmax 200 °C



disc with PTFE
or NBR ring
Tmax 200 °C



Material

Component	Tmax 450 °C	Tmax 530 °C	Tmax 560 °C	Tmax 450 °C	Tmax 530 °C	Tmax 550 °C
	DN 15-40			DN 50-200		
Body, bonnet	P250GH (1.0460)	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	GP240GH (1.0619)	G20Mo5 (1.5419)	G17CrMo5-5 (1.7357)
Packing seat ring	13Cr	Stellite		13Cr	Stellite	
Disc	P250GH (1.0460)	13CrMo4-5 (1.7335)		P250GH (1.0460)	13CrMo4-5 (1.7335)	
Disc ring	13Cr	Stellite		13Cr	Stellite	
Stem	13Cr					
Gasket	Graphite + Austenite					

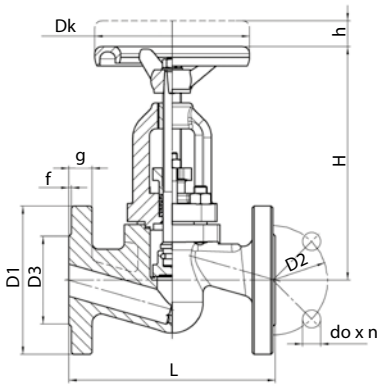
PN	DN	d	Flanged ends													Welded ends			
			D1		D3		D2	do x n	L	g	f	H	h	Dk	kg	*d1	*dp	L	kg
			GOST	EN	GOST	EN													
63 100 160	15	14	105		47	45	75	14 x 4	210	20	2	235	13	120	5,7	22	17	160	3,3
	20	19	125	130	58		90	18 x 4	230	22	2	285	13	120	10,1	28	21	160	3,3
	25	23	135	140	68		100	18 x 4	230	24	2	285	13	120	11,1	35	27	160	3,3
	32	30	150	155	78		110	22 x 4	260	24	2	315	16	160	15,4	44	34,5	230	9,7
	40	38	165	170	88		125	22 x 4	260	28	3	315	18	160	16,1	50	34,5	230	9,9
63	50	45	175	180	102		135	22 x 4	300	26	3	340	22	200	31,3	62	54	300	20,5
	65	62	200	205	122		160	22 x 8	340	26	3	415	30	250	46,6	77	69	340	31,5
	80	73	210	215	133	138	170	22 x 8	380	28	3	505	40	320	62,9	91	81	380	49,6
	100	94	250		158	162	200	22 x 8	430	30	3	645	55	360	122,5	117	104	430	96,1
	125	120	295		184	188	240	26 x 8	500	34	3	720	65	400	169,5	144	130,5	500	139,4
	150	144	340	345	212	218	280	33 x 8	550	36	3	795	70	500	254,0	172	156,5	550	204,1
	200	195	405	415	285		345	36 x 12	650	42	3	1155	90	600	295,0	223	204,5	650	220,0
100 160	50	45	195		102		145	26 x 4	300	28/30•	3	340	22	200	32,3	62	54/52,5•	300	21,5
	65	62	220		122		170	26 x 8	340	30/34•	3	415	30	280	48,6	77	69/65•	340	33,5
	80	73	230		133	138	180	26 x 8	380	32/36•	3	505	40	360	65,9	91	81/76,5•	380	52,6
	100	94	265		158	162	210	30 x 8	430	36/40•	3	645	55	360	126,5	117	104/98,5•	430	100,1
	125	120	310	315	184	188	250	33 x 8	500	40/44•	3	720	65	400	175,5	144	127/120,5•	500	145,4
	150	144	350	355	212	218	290	33 x 12	550	44/50	3	795	70	500	260,0	172	154/144,5•	550	210,1
	200	195	430		285		360	36 x 12	650	52/60	3	1155	90	600	302,0	223	199,5/189•	650	225,0

• is valid for PN 100 / PN160 *These dimensions of welded ends may vary acc. to the specifications of customer orders.

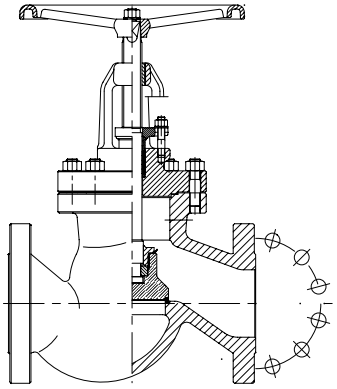
PN 63-100 • DN 10-200 • Tmax 560 °C (450 °C)

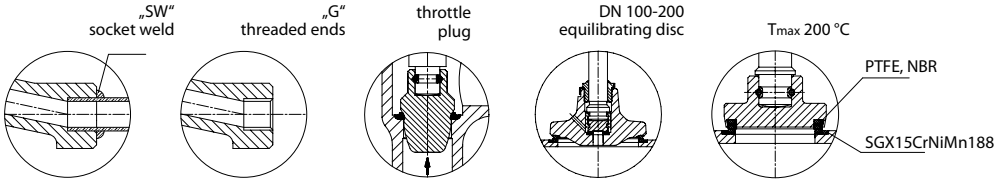
Connection: EN 1092-1, ISO 7005-1, GOST 12815-80 FLANGED ENDS
EN 12627 WELDED ENDS

DN 10-40



DN 50-200





Material

Component	Tmax 450 °C	Tmax 530 °C	Tmax 560 °C	Other versions
Body, bonnet DN 15-40	(P250GH) C22.8 (1.0460)	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	(P250GH) C22.8, 16Mo3, 13CrMo4-5
Body, bonnet DN 50-200	GP240GH (1.0619)	G20Mo5 (1.5419)	G17CrMo5-5 (1.7357)	GP240GH, G20Mo5, G17CrMo5-5
Seat	13Cr *	Stellite		13Cr, PTFE, NBR
Disc DN 15-50	P250GH (1.0460)	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	X30Cr13, 13CrMo4-5
Disc DN 65-200	P250GH (1.0460)	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	P250GH, 13CrMo4-5
Disc ring	13Cr *	Stellite		13Cr, PTFE, NBR
Stem	13Cr			1.4923
Gasket	Graphite + Austenite			

* We recommend Stellite overlay for steam as a medium (Trim.5)

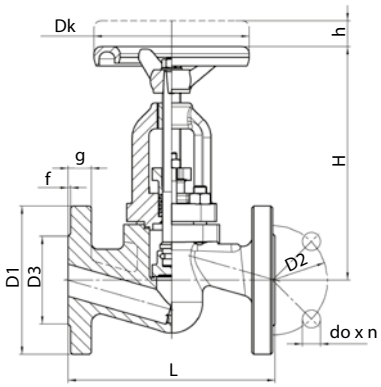
PN	DN	d	Flanged ends													Welded ends			
			D1		D3		D2	do x n	L	g	f	H	h	Dk	kg	*d1	*dp	L	kg
			GOST	EN	GOST	EN													
	10	10	100		42	40	70	14 x 4	210	20	2	160	13	120	5,4	18	13	150	3,0
	15	14	105		47	45	75	14 x 4	210	20	2	160	13	120	5,4	22	17	150	3,0
63	20	19	125	130	58		90	18 x 4	230	22	2	160	13	120	9,8	28	22	160	3,0
100	25	23	135	140	68		100	18 x 4	230	24	2	160	13	120	10,8	35	28,5	160	3,0
	32	30	150	155	78		110	22 x 4	260	24	2	210	16	160	15,0	44	36,5	230	9,3
	40	38	165	170	88		125	22 x 4	260	28	3	210	18	160	15,7	50	43	230	9,5
	50	45	175	180	102		135	22 x 4	300	26	3	250	22	200	30,7	62	54	300	19,9
	65	62	200	205	122		160	22 x 8	340	26	3	290	30	250	46,0	77	69	340	30,9
	80	73	210	215	133	138	170	22 x 8	380	28	3	300	40	320	62,0	91	81	380	48,7
63	100	94	250		158	162	200	22 x 8	430	30	3	500	55	360	121,5	117	104	430	95,1
	125	120	295		184	188	240	26 x 8	500	34	3	600	65	400	168,0	144	130,5	500	137,9
	150	144	340	345	212	218	280	33 x 8	550	36	3	700	70	500	251,0	172	156,5	550	201,1
	200	195	405	415	285		345	36 x 12	650	42	3	900	100	600	290,0	223	204,5	650	215,0
	50	45	195		102		145	26 x 4	300	28	3	250	22	200	30,7	62	54	300	19,9
	65	62	220		122		170	26 x 8	340	30	3	290	30	280	46,0	77	69	340	30,9
	80	73	230		133	138	180	26 x 8	380	32	3	300	40	360	62,0	91	81	380	48,7
100	100	94	265		158	162	210	30 x 8	430	36	3	500	55	360	121,5	117	104	430	95,1
	125	120	310	315	184	188	250	33 x 8	500	40	3	600	65	400	168,0	144	127	500	137,9
	150	144	350	355	212	218	290	33 x 12	550	44	3	700	70	500	251,0	172	154	550	201,1
	200	195	430		285		360	36 x 12	650	52	3	900	100	600	295,0	223	199,5	650	218,0

*These dimensions of welded ends may vary acc. to the specifications of customer orders.

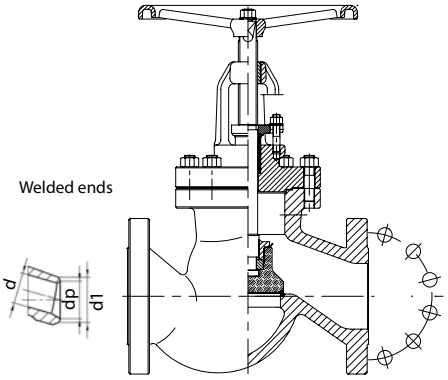
PN 160 • DN 10-200 • Tmax 560 °C (450 °C)

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

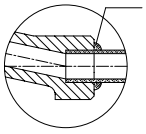
DN 10-40



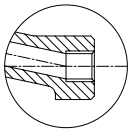
DN 50-200



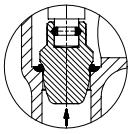
„SW“ socket weld



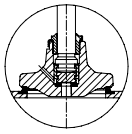
„G“ threaded ends



throttle plug



DN 65-200 equilibrating disc



Material

Component	Tmax 450 °C	Tmax 530 °C	Tmax 560 °C	Other versions
Body, bonnet DN 15-40	(P250GH) C22.8 (1.0460)	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	(P250GH) C22.8, 16Mo3, 13CrMo4-5
Body, bonnet DN 50-200	GP240GH (1.0619)	G20Mo5 (1.5419)	G17CrMo5-5 (1.7357)	GP240GH, G20Mo5, G17CrMo5-5
Seat	13Cr *	Stellite		13Cr
Disc DN 15-50	X30Cr13 (1.4028)	X30Cr13 (1.4028)	13CrMo4-5 (1.7335)	X30Cr13, 13CrMo4-5
Disc DN 65-200	P250GH (1.0460)	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	P250GH, 13CrMo4-5
Disc ring	13Cr *	Stellite		Stellite
Stem	13Cr			1.4923
Gasket	Graphite + Austenite			

* We recommend Stellite overlay for steam as a medium (Trim.5)

PN 160

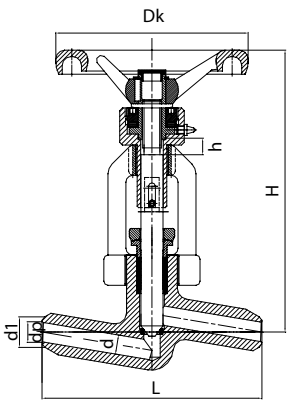
DN	d	Flanged ends													Welded ends			
		D1		D3		D2	do x n	L	g	f	H	h	Dk	kg	*d1	*dp	L	kg
		GOST	EN	GOST	EN													
10	10	-	100	-	40	70	14 x 4	210	20	2	175	13	120	5,4	18	13	150	3,2
15	15	105		47	45	75	14 x 4	210	20	2	175	13	120	5,4	22	17	150	3
20	20	125	130	58		90	18 x 4	230	22	2	215	13	120	9,7	28	21	160	3
25	24	135	140	68		100	18 x 4	230	24	2	215	13	120	10,6	35	27	160	2,8
32	30	150	155	78		110	22 x 4	260	24	2	245	16	160	15,6	44	34,5	230	10,1
40	38	165	170	88		125	22 x 4	260	28	3	245	18	160	17,3	50	41	230	9,4
50	47	195		102		145	30 x 4	300	30	3	300	22	180	29,0	62	52,5	300	8,7
65	63	220		122		170	26 x 8	340	34	3	330	30	280	47,8	77	65	340	16
80	73	230		133	138	180	26 x 8	380	36	3	375	40	360	62,0	91	76,5	380	23
100	95	265		158	162	210	30 x 8	430	40	3	520	55	360	112,0	117	98,5	430	55
125	120	310	315	184	188	250	33 x 8	500	44	3	600	65	400	165,0	144	120,5	500	70
150	145	350	355	212	218	290	33 x 12	550	44	3	700	70	500	251,0	172	144,5	550	174
200	190	430		285		360	36 x 12	650	60	3	900	110	600	295,0	223	189	650	220

*These dimensions of welded ends may vary acc. to the specifications of customer orders.

PN 250-400 • DN 10-125 • Tmax 670 °C (450 °C)

Connection: EN 1092-1, ISO 7005-1 FLANGED ENDS
EN 12627 WELDED ENDS

DN 10-15



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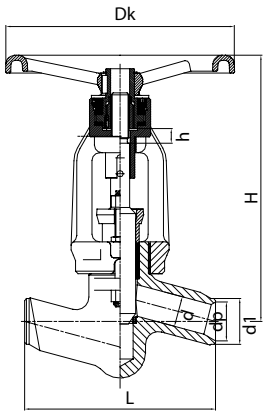
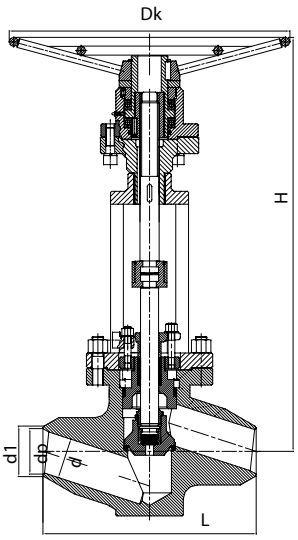
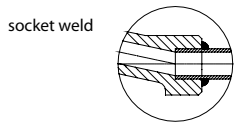
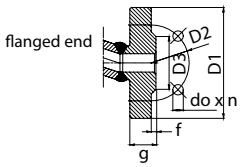


DN 65-125







Material

Component	Tmax 450 °C	Tmax 530 °C	Tmax 560 °C	Tmax 600 °C	Tmax 570 °C	Tmax 670 °C
Body	(P250GH) C22.8 (1.0460)	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	11 CrMo9-10 (1.7383)	14MoV6-3 (1.7715)	X10CrMoVNb9-1 (1.4903)
Bonnet	DN 15-25 13CrMo4-5 (1.7335) DN 32-125 G17CrMo5-5 (1.7357)					
Stem DN 15-65	X39CrNi17-1 (1.4122), sX22CrMoV12-1 (1.4923)					1.4923
Disc DN 80-125	C22.8 (1.0460)	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	11 CrMo9-10 (1.7383)	14MoV6-3 (1.7715)	X10CrMoVNb9-1 (1.4903)
Seat	Stellite, Titanium VT9	Stellite				
Upper stem	X17CrNi16-2 (1.4057), X39CrNi17-1 (1.4122)					1.4923
Gasket	Graphite					
Packing rings DN 65-125	Graphite					

PN 250

DN	Welded ends				d	H	h	Dk	Flanged ends							
	*d1	*dp	L	kg					D1	D3	D2	do x n	L	g	f	kg
10	20	12,0	150	10	9	205	12	140	125	40	85	18 x 4	230	24	2	13,7
15	22	16,0	150	9	14	205	12	140	130	45	90	18 x 4	230	26	2	13,7
20	28	19,5	160	9	18	266	19	200	-	-	-	-	-	-	-	-
25	35	26,5	160	9	24	266	19	200	150	68	105	22 x 4	260	28	2	18,3
32	44	32,5	300	30	30	418	23	360	-	-	-	-	-	-	-	-
40	50	38,5	300	30	34	418	37	360	185	88	135	26 x 4	300	34	3	45,2
50	62	45,0	300	30	42	418	37	360	200	102	150	26 x 8	350	38	3	47,0
65	77	59,5	340	40	56	714	45	700	230	122	180	26 x 8	400	42	3	71,3
80	117	93,0	380	70	76	637	36	500	255	138	200	30 x 8	450	46	3	107,5
100	144	116,5	430	90	92	720	50	500	300	162	235	33 x 8	520	54	3	157,5
125	159	120,5	500	125	112	750	65	500	340	188	275	33 x 12	600	60	3	220,9

*These dimensions of welded ends may vary acc. to the specifications of customer orders.

PN 320

DN	Welded ends				d	H	h	Dk	Flanged ends							
	*d1	*dp	L	kg					D1	D3	D2	do x n	L	g	f	kg
10	20	12	150	10	9	205	12	140	125	40	85	18 x 4	230	24	2	13,7
15	22	15,0	150	9	14	205	12	140	130	45	90	18 x 4	230	26	2	13,7
20	28	19,0	160	9	18	266	19	200	-	-	-	-	-	-	-	-
25	35	24,0	160	9	24	266	19	200	160	68	115	22 x 4	260	34	2	18,3
32	44	31,5	300	30	30	418	23	360	-	-	-	-	-	-	-	-
40	50	36,0	300	30	34	418	37	360	195	88	145	26 x 4	300	38	3	45,2
50	77	59,5	300	30	42	418	37	360	210	102	160	26 x 8	350	42	3	47,0
65	91	68,0	340	40	56	714	45	GNR 700	255	122	200	30 x 8	400	51	3	71,3
80	117	87,5	380	70	76	637	36	GNR 500	275	138	220	30 x 8	450	55	3	107,5
100	144	109,5	430	90	92	720	50	GNR 500	335	162	265	36 x 8	520	65	3	157,5
125	159	120,5	500	125	112	750	65	500	380	188	310	36 x 12	600	75	3	220,9

PN 400

DN	Welded ends				d	H	h	Dk	Flanged ends							
	*d1	*dp	L	kg					D1	D3	D2	do x n	L	g	f	kg
10	20	10,0	150	10	9	205	12	140	125	40	85	18 x 4	230	28	2	13,7
15	28	17,0	150	9	14	205	12	140	145	45	90	22 x 4	230	30	2	13,7
20	35	23,0	160	9	18	266	19	200	-	-	-	-	-	-	-	-
25	44	29,0	160	9	24	266	19	200	180	68	105	26 x 4	260	38	2	18,3
32	50	33,0	300	30	30	418	23	360	-	-	-	-	-	-	-	-
40	61	40,0	300	30	34	418	37	360	200	88	135	30 x 4	300	48	3	45,2
50	77	49,5	300	30	42	418	37	360	235	102	150	30 x 8	350	52	3	47,0
65	91	62,0	340	40	56	714	45	GNR 700	290	122	180	33 x 8	400	64	3	71,3
80	117	81,0	380	70	76	637	36	GNR 500	305	138	200	33 x 8	450	68	3	107,5
100	144	102,0	430	90	92	720	50	GNR 500	370	162	235	39 x 8	520	80	3	157,5
125	159	120,5	500	125	112	750	65	500	415	188	275	39 x 12	600	92	3	220,9

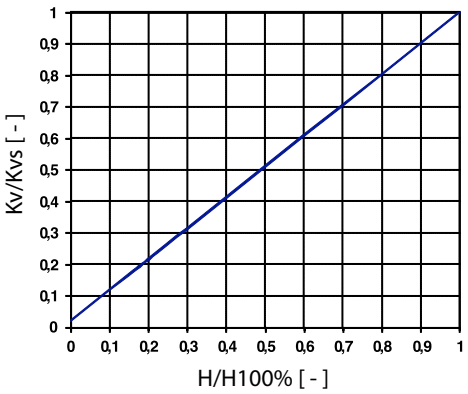
*These dimensions of welded ends may vary acc. to the specifications of customer orders.

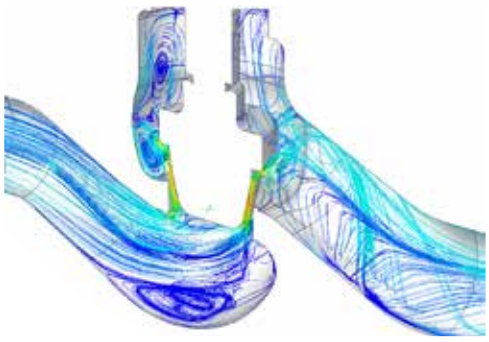
FLOW CHARACTERISTICS

Kv Coefficient
A coefficient of flow Kv expresses the rate of flow in m³/h at 15 °C water with a pressure drop Δp 0,1 MPa across the valve.

Standard values of Kvs for valves V40 (fully open)

DN	PN 63-160
10	1,62
15	3
20	5
25	9,9
32	13,9
40	22,3
50	43,4
65	79,6
80	114,6
100	188
125	294
150	424
200	754





Other designs with different working details (flow characteristics, Δp, Kv and Cv) are on request – Datasheet of such document can be downloaded from www.armaturygroup.cz or on request.

In case of higher pressure drops (~ p2 < 0,5 · p1; higher noisiness at gases and steam, cavitation for liquids, reduce of service life) we recommend you technical clarification.

For selecting Kvs following formula is used:

Kvs = 1,1 ÷ 1,3 • Kv

Kv [m³/h] flow coefficient (flow water 15 °C, Δp = 1 bar)
ζ [-] pressure loss coefficient

$$\Delta p = \frac{1}{2} \cdot \zeta \cdot c^2 \cdot \rho \cdot 10^{-6} \qquad c = \frac{Q \cdot 10^6}{\pi/4 \cdot DN^2 \cdot 3600} \qquad Kv = \frac{DN^2}{\sqrt{625 \cdot \zeta}}$$

Relation for required calculation of Kv

	$\Delta p < p_1/2$	$\Delta p \geq p_1/2$
Liquid	$Kv = \frac{Q}{100} \cdot \sqrt{\frac{\rho_1}{\Delta p}}$	
Gas	$Kv = \frac{Q_N}{5141} \cdot \sqrt{\frac{\rho_N \cdot T_1}{\Delta p \cdot p_2}}$	$Kv = \frac{2 \cdot Q_N}{5141 \cdot p_1} \cdot \sqrt{\rho_N \cdot T_1}$
Steam	$Kv = \frac{Q_m}{100} \cdot \sqrt{\frac{v_2}{\Delta p}}$	$Kv = \frac{Q_m}{100} \cdot \sqrt{\frac{2 \cdot v}{p_1}}$

DN [mm] diameter nominal
c [m/s] average flow velocity at DN
Q_N [m³/h] normal flow rate (for 0 °C; 0,101 MPa)
Q_m [kg/h] mass flow
Q [m³/h] flow rate (for T_1, p_1)
T_1 [°K] abs. inlet temperature (T_1 = 273 + t °C)
p_1 [MPa] abs. inlet pressure
p_2 [MPa] abs. outlet pressure
Δp [MPa] pressure drop across the valve (Δp = p_1 - p_2)
ρ_1 [kg/m³] density (pro T_1, p_1)
ρ_N [kg/m³] normal density (0 °C; 0,101 MPa)
v_2 [m³/kg] specific volume for T_1 and p_2
v [m³/kg] specific volume for T_1 and $p_{1/2}$

Table of TRIMs acc. to API600 (ISO 10434)

Component	TRIM number		
	1	5	8
Disc ring	Overlay 13Cr	Stellite	Overlay 13Cr
Seat ring	Overlay 13Cr	Stellite	Stellite
Stem	13Cr	13Cr	13Cr

Based on customer requirements the manufacturer may create also other options of TRIMs. (see Table No. 13 ISO 10434)

Application
Lift 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.
Lift check valves are not shut-off valves.

Working medium
- water
- steam
- gas
- other fluids

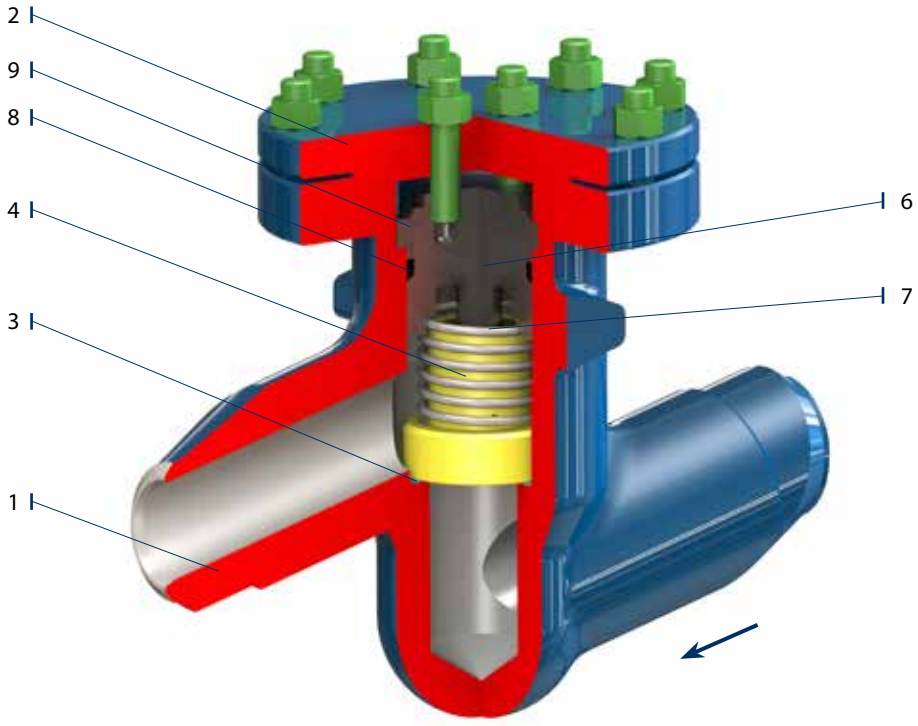
Technical description
The body is a forged or a cast depending on nominal size and nominal pressure. The disc is inserted into the valve body through the body-cover joint. Both the disc and the seat are hard faced and the disc is pressed into seat by a spring.

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 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
Lift check valves may be installed in any position. The flow direction shall correspond to the arrow on the valve body.

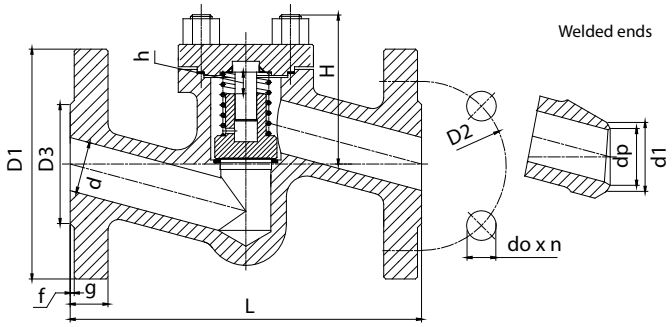


Position	Component
1	Body
2	Upper bonnet
3	Seat
4	Disc
6	Pressure seal bonnet
7	Spring
8	Gasket
9	Segmented ring

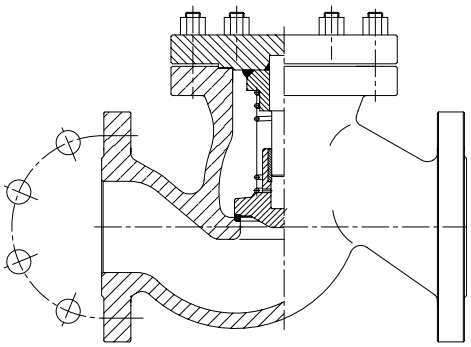
PN 16-40 • DN 15-300 • Tmax 560 °C (450 °C)

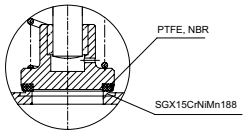
Connection: EN 1092-1, ISO 7005-1, GOST 12815-80 FLANGED ENDS
EN 12627 WELDED ENDS

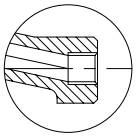
DN 15-50

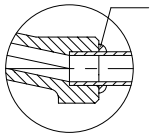


DN 65-300









Material - carbon and alloy design

Component	Tmax 450 °C	Tmax 530 °C	Tmax 560 °C	Tmax 450 °C	Tmax 530 °C	Tmax 560 °C
	DN 15-40			DN 50-300		
Body, bonnet	P250GH (1.0460)	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	GP240GH (1.0619)	G20Mo5 (1.5419)	G17CrMo5-5 (1.7357)
Seat	13Cr or Stellite					
Disc	X30Cr13 (1.4028), X17CrNi16-2 (1.4057), P250GH (1.0460), 13CrMo4-5 (1.7335)					
Disc ring	13Cr or Stellite or PTFE, NBR					
Spring	51CrV4 (1.8159)					
Packing rings, Gasket	Graphite					

PN 16-40

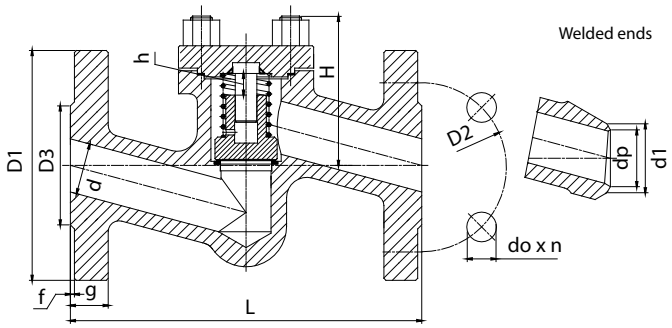
DN	Flanged ends														Welded ends		
	PN 16				PN 40				L	g	f	H	h	kg	*d1	*dp	kg
	D1	D3	D2	do x n	D1	D3	D2	do x n									
15	95	45	65	14 x 4	95	45	65	14 x 4	130	16	2	65	10	2,5	22	17	1,10
20	105	58	75	14 x 4	105	58	75	14 x 4	150	18	2	65	10	2,9	28	22	1,4
25	115	68	85	14 x 4	115	68	85	14 x 4	160	18	2	65	10	3,3	35	28,5	1,7
32	140	78	100	18 x 4	140	78	100	18 x 4	180	18	2	85	15	6,8	44	37	3,6
40	150	88	110	18 x 4	150	88	110	18 x 4	200	18	3	95	17	9,0	50	43	4,7
50	165	102	125	18 x 4	165	102	125	18 x 4	230	20	3	110	21	10,5	62	54	6,1
65	185	122	145	18 x 4	185	122	145	18 x 8	290	22	3	155	22	17,5	77	69	12,7
80	200	138	160	18 x 8	200	138	160	18 x 8	310	24	3	170	26	27,0	91	81	18,5
100	220	158	180	18 x 8	235	162	190	22 x 8	350	24	3	195	32	41,0	117	104	36,0
125	250	184	210	18 x 8	270	188	220	26 x 8	400	26	3	200	40	54,0	144	130,5	49,0
150	285	212	240	22 x 8	300	218	250	26 x 8	480	28	3	225	44	90,0	172	156,5	76,0
200	340	268	295	22 x 12	375	285	320	30 x 12	600	34	3	270	60	150,0	223	204,5	140,0
250	405	320	355	26 x 12	450	306	385	33 x 12	730	38	3	290	70	195,0	278	256,5	165,0
300	460	370	410	26 x 12	515	410	450	33 x16	850	42	3	410	130	360,0	329	306,5	280,0

*These dimensions of welded ends may vary acc. to the specifications of customer orders.

PN 63-100 • DN 15-200 • Tmax 560 °C (450 °C)

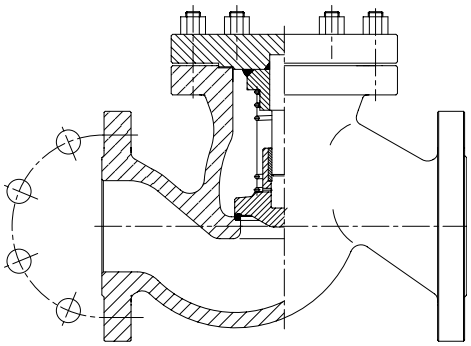
Connection: EN 1092-1, ISO 7005-1, GOST 12815-80 FLANGED ENDS
EN 12627 WELDED ENDS

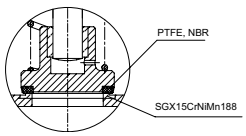
DN 15-40

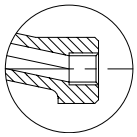


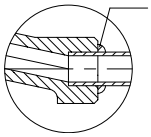
Welded ends

DN 50-200









Material - carbon and alloy design

Component	Tmax 450 °C	Tmax 530 °C	Tmax 560 °C	Tmax 450 °C	Tmax 530 °C	Tmax 560 °C
	DN 15-40			DN 50-200		
Body, bonnet	P250GH (1.0460)	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	GP240GH (1.0619)	G20Mo5 (1.5419)	G17CrMo5-5 (1.7357)
Seat	13Cr or Stellite					
Disc	X30Cr13 (1.4028), X17CrNi16-2 (1.4057), P250GH (1.0460), 13CrMo4-5 (1.7335)					
Disc ring	13Cr or Stellite or PTFE, NBR					
Spring	51CrV4 (1.8159)					
Gasket	Graphite + Austenite					

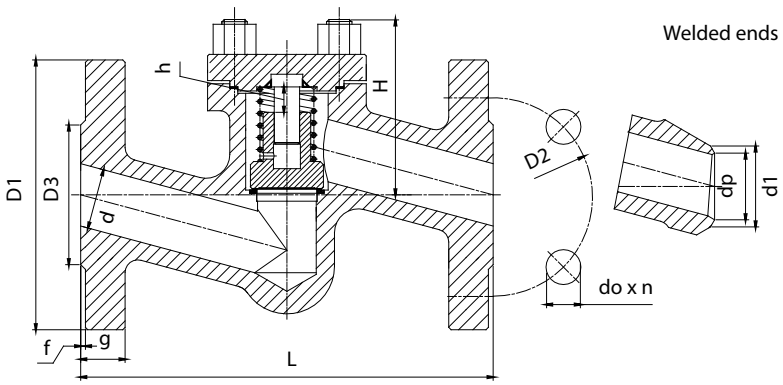
PN	DN	d	Flanged ends												Welded ends			
			D1		D3		D2	do x n	L	g	f	H	h	kg	*d1	*dp	L	kg
			GOST	EN	GOST	EN												
63 100	15	14	105		47	45	75	14 x 4	210	20	2	70	13	4,0	22	17	160	2,7
	20	19	125	130	58		90	18 x 4	230	22	2	75	13	6,2	28	22	160	2,7
	25	23	135	140	68		100	22 x 4	230	24	2	75	13	8,3	35	28,5	160	2,7
	32	30	150	155	78		110	22 x 4	260	24	2	95	16	11,5	44	36,5	230	5,2
	40	38	165	170	88		125	22 x 4	260	28	3	95	18	14,8	50	43	230	7,7
63	50	45	175	180	102		135	22 x 4	300	26	3	140	22	15,7	62	54	300	12,9
	65	62	200	205	122		160	22 x 8	340	26	3	170	30	37,5	77	69	340	26,3
	80	73	210	215	138		170	22 x 8	380	28	3	195	40	40,3	91	81	380	27,5
	100	94	250		162		200	22 x 8	430	30	3	200	55	54,0	117	104	430	37,2
	125	120	295		188		240	26 x 8	500	34	3	225	65	76,0	144	130,5	500	48,9
	150	144	340	345	212	218	290	33 x 8	550	36	3	300	70	151,0	172	156,5	550	101,1
	200	195	405	415	285		345	36 x 12	650	42	3	400	100	215,0	223	204,5	650	135,0
100	50	45	195		102		145	26 x 4	300	28	3	140	22	15,7	62	54	300	12,9
	65	62	220		122		170	26 x 8	340	30	3	170	30	37,5	77	69	340	26,3
	80	73	230		133	138	180	26 x 8	380	32	3	195	40	40,3	91	81	380	27,5
	100	94	265		158	162	210	30 x 8	430	36	3	200	55	54,0	117	104	430	37,2
	125	120	310	315	184	188	250	33 x 8	500	40	3	225	65	76,0	144	127	500	48,9
	150	144	350	355	212	218	290	33 x 12	550	44	3	300	70	151,0	172	154	550	101,1
	200	195	430		285		360	36 x 12	650	52	3	400	100	215,0	223	199,5	650	135,0

*These dimensions of welded ends may vary acc. to the specifications of customer orders.

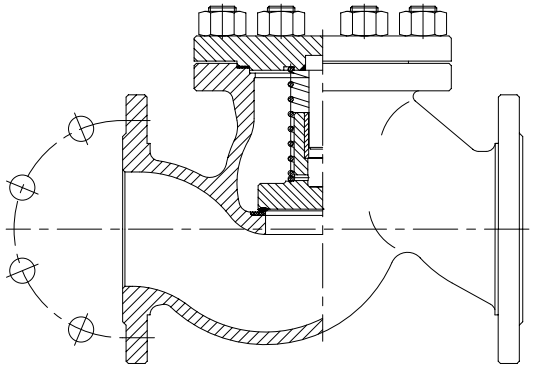
PN 160 • DN 15-200 • Tmax 560 °C (450 °C)

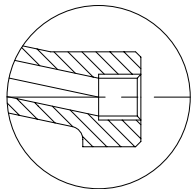
Connection: EN 1092-1, ISO 7005-1, GOST 12815-80 FLANGED ENDS
EN 12627 WELDED ENDS

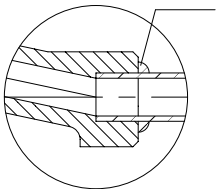
DN 15-40



DN 50-200







Material - carbon and alloy design

Component	Tmax 450 °C	Tmax 530 °C	Tmax 560 °C	Tmax 450 °C	Tmax 530 °C	Tmax 560 °C
	DN 15-40			DN 50-200		
Body, bonnet	P250GH (1.0460)	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	GP240GH (1.0619)	G20Mo5 (1.5419)	G17CrMo5-5 (1.7357)
Seat	13Cr or Stellite					
Disc	X30Cr13 (1.4028), X17CrNi16-2 (1.4057), P250GH (1.0460), 13CrMo4-5 (1.7335)					
Disc ring	13Cr or Stellite or PTFE, NBR					
Spring	51CrV4 (1.8159)					
Gasket	Graphite + Austenite					

PN 160

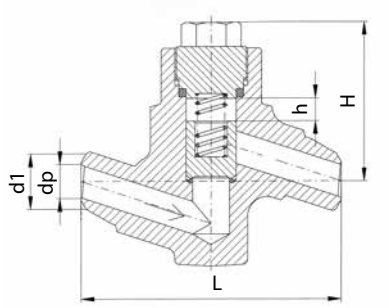
DN	d	Flanged ends												Welded ends			
		D1		D3		D2	do x n	L	g	f	H	h	kg	*d1	*dp	L	kg
		GOST	EN	GOST	EN												
15	14	105		47	45	75	14 x 4	210	20	2	70	13	4,0	22	17	160	2,7
20	19	125	130	58		90	18 x 4	230	22	2	75	13	6,2	28	21	160	2,7
25	23	135	140	68		100	18 x 4	230	24	2	75	13	8,3	35	27	160	2,7
32	30	150	155	78		110	22 x 4	260	24	2	95	16	11,5	44	34,5	230	5,2
40	38	165	170	88		125	22 x 4	260	28	3	95	18	14,8	50	43	230	7,7
50	45	195		102		145	26 x 4	300	30	3	140	22	15,7	62	52,5	300	12,9
65	62	220		122		170	26 x 8	340	34	3	170	30	37,5	77	65	340	26,3
80	73	230		133	138	180	26 x 8	380	36	3	195	40	40,3	91	76,5	380	27,5
100	94	265		158	162	210	30 x 8	430	40	3	200	55	54,0	117	98,5	430	37,2
125	120	310	315	184	188	250	33 x 8	500	44	3	225	95	76,0	144	120,5	500	48,9
150	144	350	355	212	218	290	33 x 12	550	50	3	300	100	151,0	172	144,5	550	101,1
200	190	430		285		360	36 x 12	650	60	3	400	110	210,0	223	192	650	145,0

*These dimensions of welded ends may vary acc. to the specifications of customer orders.

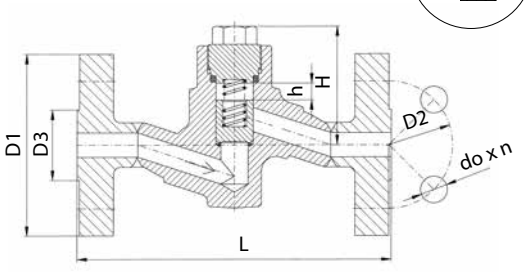
PN 250-400 • DN 15-125 • Tmax 600 °C (450 °C)

Connection: EN 1092-1, ISO 7005-1 FLANGED ENDS
EN 12627 WELDED ENDS

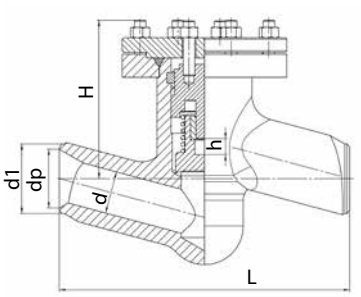
DN 15-25
welded ends

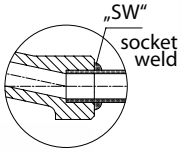


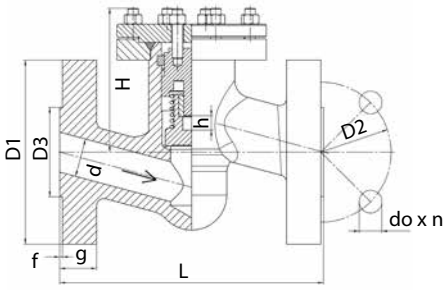
flanged ends



DN 32-125







Material - carbon and alloy design

Component	Tmax 450 °C	Tmax 530 °C	Tmax 560 °C	Tmax 570 °C	Tmax 600 °C
Body, bonnet	P250GH (1.0460)	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	14MoV6-3 (1.7715)	11CrMo9-10 (1.7383)
Seat	VT9 or 13Cr or Stellite				
Disc	X20Cr13 (1.4021), P250GH (1.0460)				
Disc ring	13Cr or Stellite				
Packing rings, gasket	Graphite + Austenitic steel				

PN 250-320

DN	Welded ends/ Standard					H	h	Flanged ends									
	d	*d1	*dp	L	kg			D1		D3	D2		do x n	L	g		f	kg
								PN 250	PN 320		PN 250	PN 320			PN 250	PN 320		
15	14	22	15,0	160	4	235	15	130		45	90		18 x 4	230	26		2	8,7
20	20	28	19,0	160	4	240	15	150		58	105		22 x 4	260	28	30	2	11,3
25	24	35	24,0	160	4	240	15	150	160	68	105	115	22 x 4	260	28	34	2	13,3
32	30	44	31,5	300	15	365	27	-		-	-		-	- / 300*	-		-	-
40	38	50	36,0	300	15	365	27	185	195	88	135	145	26 x 4	300	34	38	3	30,2
50	48	62 / 77*	45,0	300	15	365	27	200	210	102	150	160	26 x 8	350	38	42	3	32
65	62	77 / 91*	59,5	340	26,5	450	30	230	255	122	180	200	26/30* x 8	400	42	51	3	57,8
80	76	117	81,0	380	55,5	580	40	255	275	138	200	220	30 x 8	450	46	55	3	93
100	92	144	102,0	430	71	620	55	300	335	162	235	265	33/36* x 8	520	54	65	3	138,5
125	112	172	120,5	500	91	670	65	340	380	188	275	310	33/36* x 12	600	60	75	3	186,9

* is valid for PN 320

PN 400

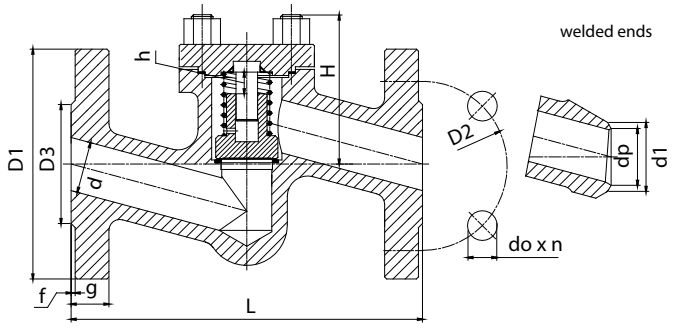
Welded ends						H	h
DN	d	*d1	*dp	L	kg		
15	14	28	17	160	4,00	135	15
20	20	35	21,5	160	4,00	140	15
25	24	44	29	160	4,00	140	15
32	30	50	33	300	15,00	245	27
40	38	62	40	300	15,00	245	27
50	44	77	49,5	300	15,00	245	27
65	62	91	62	340	26,50	270	30
80	76	117	81	380	55,50	320	40
100	92	144	102	430	71,00	390	55
125	112	172	126,5	500	91,00	420	65

*These dimensions of welded ends may vary acc. to the specifications of customer orders.

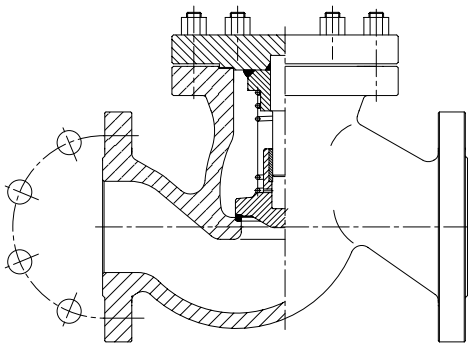
PN 16-40 • DN 15-300 • Tmax 580°C

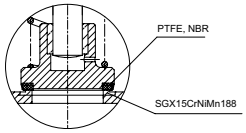
Connection: EN 1092-1, ISO 7005-1, GOST 12815-80 FLANGED ENDS
EN 12627 WELDED ENDS

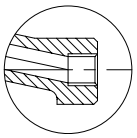
DN 15-50

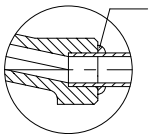


DN 65-300









Material - stainless steel design

Component	Tmax 550 °C		Tmax 500 °C	
	DN 15-50		DN 65-300	
Body, bonnet	X6CrNiTi18-10 (1.4541)	X2CrNiMo17-12-2 (1.4404)	GX5CrNi19-10 (1.4308)	GX5CrNiMo19-11-2 (1.4408)
Disc	X6CrNiTi18-10 (1.4541), X2CrNiMo17-12-2 (1.4404), X6CrNiTi18-10 (1.4541), X2CrNiMo17-12-2 (1.4404)			
Spring	X6CrNiMoTi17-12-2 (1.4571)			
Packing rings	Graphite			

The temperatures listed above are designed for non-aggressive media. For aggressive media apply Tmax 250 °C.

PN 16-40

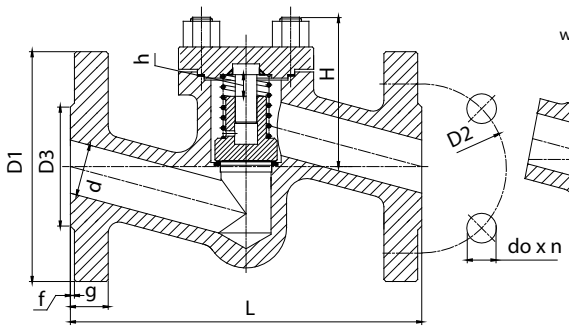
DN	Flanged ends														Welded ends		
	PN 16				PN 40				L	g	f	H	h	kg	*d1	*dp	kg
	D1	D3	D2	do x n	D1	D3	D2	do x n									
15	95	45	65	14 x 4	95	45	65	14 x 4	130	16	2	65	10	2,5	22	17	1,10
20	105	58	75	14 x 4	105	58	75	14 x 4	150	18	2	65	10	2,9	28	22	1,4
25	115	68	85	14 x 4	115	68	85	14 x 4	160	18	2	65	10	3,3	35	28,5	1,7
32	140	78	100	18 x 4	140	78	100	18 x 4	180	18	2	85	15	6,8	44	37	3,6
40	150	88	110	18 x 4	150	88	110	18 x 4	200	18	3	95	17	9,0	50	43	4,7
50	165	102	125	18 x 4	165	102	125	18 x 4	230	20	3	110	21	10,5	62	54	6,1
65	185	122	145	18 x 4	185	122	145	18 x 8	290	22	3	155	22	17,5	77	69	12,7
80	200	138	160	18 x 8	200	138	160	18 x 8	310	24	3	170	26	27,0	91	81	18,5
100	220	158	180	18 x 8	235	162	190	22 x 8	350	24	3	195	32	41,0	117	104	36,0
125	250	184	210	18 x 8	270	188	220	26 x 8	400	26	3	200	40	54,0	144	130,5	49,0
150	285	212	240	22 x 8	300	218	250	26 x 8	480	28	3	225	44	90,0	172	156,5	76,0
200	340	268	295	22 x 12	375	285	320	30 x 12	600	34	3	270	60	150,0	223	204,5	140,0
250	405	320	355	26 x 12	450	306	385	33 x 12	730	38	3	290	70	195,0	278	256,5	165,0
300	460	370	410	26 x 12	515	410	450	33 x16	850	42	3	410	130	360,0	329	306,5	280,0

*These dimensions of welded ends may vary acc. to the specifications of customer orders.

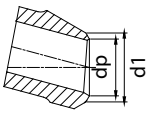
PN 63-100 • DN 15-200 • Tmax 580 °C

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

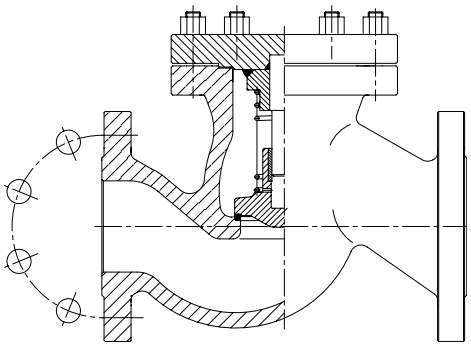
DN 15-40



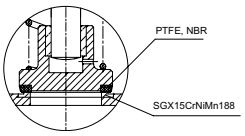
welded ends



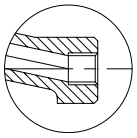
DN 50-200



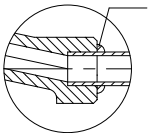
Tmax 200 °C



„G" threaded ends



„SW" socket weld



Material - stainless steel design

Component	Tmax 550 °C		Tmax 500 °C	
	DN 15-50		DN 65-300	
Body, bonnet	X6CrNiTi18-10 (1.4541)	X2CrNiMo17-12-2 (1.4404)	GX5CrNi19-10 (1.4308)	GX5CrNiMo19-11-2 (1.4408)
Disc	X6CrNiTi18-10 (1.4541), X2CrNiMo17-12-2 (1.4404), X6CrNiTi18-10 (1.4541), X2CrNiMo17-12-2 (1.4404)			
Spring	X6CrNiMoTi17-12-2 (1.4571)			
Packing rings	Graphite			

The temperatures listed above are designed for non-aggressive media. For aggressive media apply Tmax 250 °C.

PN 63

DN	d	Flanged ends												Welded ends			
		D1		D3		D2	do x n	L	g	f	H	h	kg	*d1	*dp	L	kg
		GOST	EN	GOST	EN												
15	14	105	105	47	45	75	14 x 4	210	20	2	70	13	4,0	22	17	160	2,7
20	19	125	130	58	58	90	18 x 4	230	22	2	75	13	6,2	28	22	160	2,7
25	23	135	140	68	68	100	22 x 4	230	24	2	75	13	8,3	35	28,5	160	2,7
32	30	150	155	78	78	110	22 x 4	260	24	2	95	16	11,5	44	36,5	230	5,2
40	38	165	170	88	88	125	22 x 4	260	28	3	95	18	14,8	50	43	230	7,7
50	45	175	180	102	102	135	22 x 4	300	26	3	140	22	15,7	62	54	300	12,9
65	62	200	205	122	122	160	22 x 8	340	26	3	170	30	37,5	77	69	340	26,3
80	73	210	215	138	138	170	22 x 8	380	28	3	195	40	40,3	91	81	380	27,5
100	94	250	250	162	162	200	22 x 8	430	30	3	200	55	54,0	117	104	430	37,2
125	120	295	295	188	188	240	26 x 8	500	34	3	225	65	76,0	144	130,5	500	48,9
150	144	340	345	212	218	290	33 x 8	550	36	3	300	70	151,0	172	156,5	550	101,1
200	195	405	415	285	285	345	36 x 12	650	42	3	400	100	215,0	223	204,5	650	135,0

PN 100

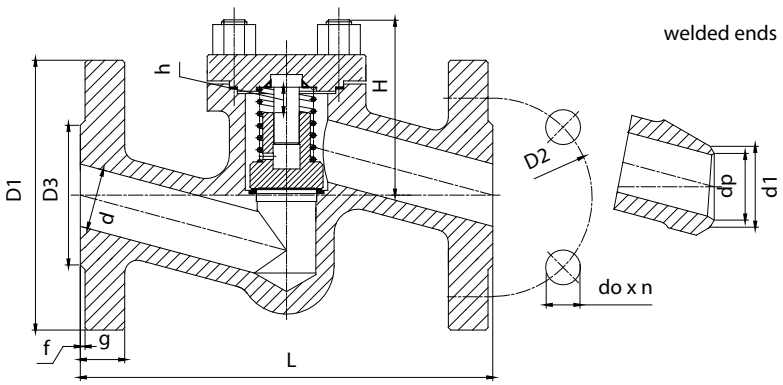
DN	d	Flanged ends												Welded ends			
		D1		D3		D2	do x n	L	g	f	H	h	kg	*d1	*dp	L	kg
		GOST	EN	GOST	EN												
15	14	105	105	47	45	75	14 x 4	210	20	2	70	13	4,0	22	17	160	2,7
20	19	125	130	58	58	90	18 x 4	230	22	2	75	13	6,2	28	21,5	160	2,7
25	23	135	140	68	68	100	22 x 4	230	24	2	75	13	8,3	35	28,5	160	2,7
32	30	150	155	78	78	110	22 x 4	260	24	2	95	16	11,5	44	36	230	5,2
40	38	165	170	88	88	125	22 x 4	260	28	3	95	18	14,8	50	43	230	7,7
50	45	175	180	102	102	135	22 x 4	300	26	3	140	22	15,7	62	54	300	12,9
65	62	200	205	122	122	160	22 x 8	340	26	3	170	30	37,5	77	69	340	26,3
80	73	210	215	138	138	170	22 x 8	380	28	3	195	40	40,3	91	81	380	27,5
100	94	250	250	162	162	200	22 x 8	430	30	3	200	55	54,0	117	104	430	37,2
125	120	295	295	188	188	240	26 x 8	500	34	3	225	65	76,0	144	127	500	48,9
150	144	340	345	212	218	290	33 x 8	550	36	3	300	70	151,0	172	154	550	101,1
200	195	405	415	285	285	345	36 x 12	650	42	3	400	100	215,0	223	199,5	650	135,0

*These dimensions of welded ends may vary acc. to the specifications of customer orders.

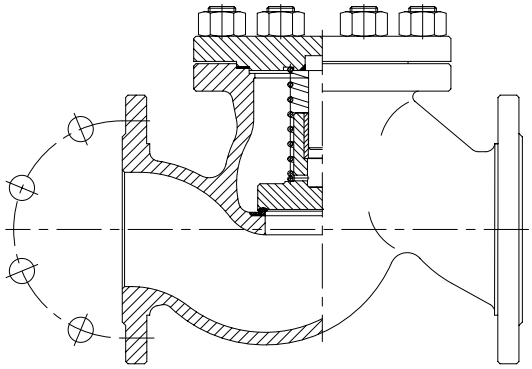
PN 160 • DN 15-200 • Tmax 580 °C

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

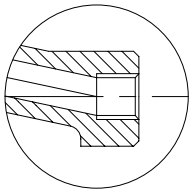
DN 15-40



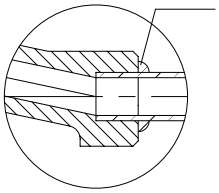
DN 50-200



„G“
threaded ends



„SW“
socket weld



Material - stainless steel design

Component	Tmax 550 °C		Tmax 500 °C	
	DN 15-50		DN 65-300	
Body, bonnet	X6CrNiTi18-10 (1.4541)	X2CrNiMo17-12-2 (1.4404)	GX5CrNi19-10 (1.4308)	GX5CrNiMo19-11-2 (1.4408)
Disc	X6CrNiTi18-10 (1.4541), X2CrNiMo17-12-2 (1.4404), X6CrNiTi18-10 (1.4541), X2CrNiMo17-12-2 (1.4404)			
Spring	X6CrNiMoTi17-12-2 (1.4571)			
Packing rings	Graphite			

The temperatures listed above are designed for non-aggressive media. For aggressive media apply Tmax 250 °C.

PN 160

DN	d	Flanged ends												Welded ends			
		D1		D3		D2	do x n	L	g	f	H	h	kg	d1*	*dp	L	kg
		GOST	EN	GOST	EN												
15	14	105	105	47	45	75	14 x 4	210	20	2	70	13	4,0	22	17	160	2,7
20	19	125	130	58	58	90	18 x 4	230	22	2	75	13	6,2	28	22	160	2,7
25	23	135	140	68	68	100	22 x 4	230	24	2	75	13	8,3	35	28,5	160	2,7
32	30	150	155	78	78	110	22 x 4	260	24	2	95	16	11,5	44	36,5	230	5,2
40	38	165	170	88	88	125	22 x 4	260	28	3	95	18	14,8	50	43	230	7,7
50	45	175	180	102	102	135	22 x 4	300	26	3	140	22	15,7	62	54	300	12,9
65	62	200	205	122	122	160	22 x 8	340	26	3	170	30	37,5	77	69	340	26,3
80	73	210	215	138	138	170	22 x 8	380	28	3	195	40	40,3	91	81	380	27,5
100	94	250	250	162	162	200	22 x 8	430	30	3	200	55	54,0	117	104	430	37,2
125	120	295	295	188	188	240	26 x 8	500	34	3	225	65	76,0	144	130,5	500	48,9
150	144	340	345	212	218	290	33 x 8	550	36	3	300	70	151,0	172	156,5	550	101,1
200	195	405	415	285	285	345	36 x 12	650	42	3	400	100	215,0	223	204,5	650	135,0

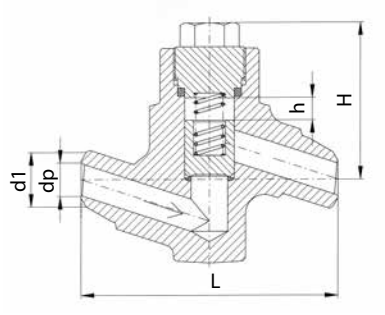
*These dimensions of welded ends may vary acc. to the specifications of customer orders.

PN 250-320 • DN 15-125 • Tmax 580 °C

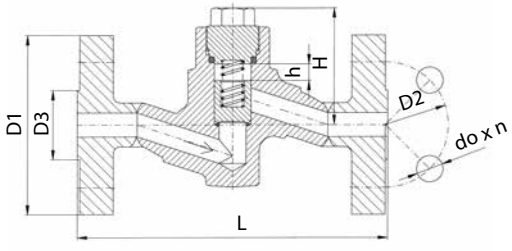
Connection: EN 1092-1, ISO 7005-1 FLANGED ENDS
EN 12627 WELDED ENDS

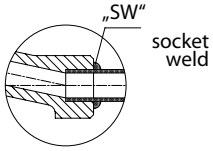
DN 15-25

welded ends

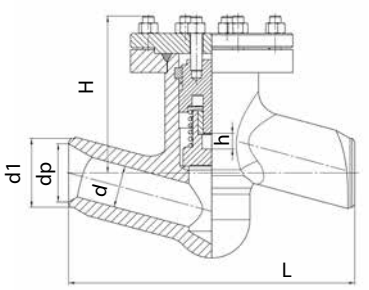


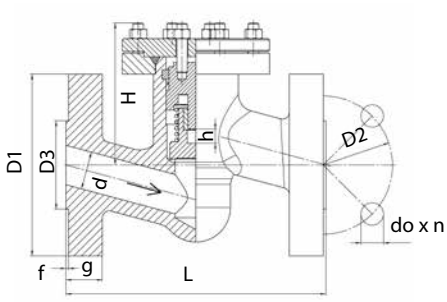
flanged ends





DN 32-125





Material - stainless steel design

Component	Tmax 550 °C		Tmax 500 °C	
	DN 15-50		DN 65-300	
Body, bonnet	X6CrNiTi18-10 (1.4541)	X2CrNiMo17-12-2 (1.4404)	GX5CrNi19-10 (1.4308)	GX5CrNiMo19-11-2 (1.4408)
Disc	X6CrNiTi18-10 (1.4541), X2CrNiMo17-12-2 (1.4404), X6CrNiTi18-10 (1.4541), X2CrNiMo17-12-2 (1.4404)			
Spring	X6CrNiMoTi17-12-2 (1.4571)			
Packing rings	Graphite			

The temperatures listed above are designed for non-aggressive media. For aggressive media apply Tmax 250 °C.

PN 250

DN	Welded ends					H	h	Flanged ends							
	d	*d1	*dp	L	kg			D1	D2	D3	do x n	L	g	f	kg
15	14	22	16,0	160	4	235	15	130	90	45	18 x 4	230	26	2	8,7
20	20	28	19,5	160	4	240	15	150	105	58	22 x 4	260	28	2	11,3
25	24	35	26,5	160	4	240	15	150	105	68	22 x 4	260	28	2	13,3
32	32	44	32,5	300	15	365	27	-	-	-	-	-	-	-	-
40	38	50	38,5	300	15	365	27	185	135	88	26 x 4	300	34	3	30,2
50	48	62	45,0	300	15	365	27	200	150	102	26 x 8	350	38	3	32
65	62	77	59,5	340	26,5	450	30	230	180	122	26 x 8	400	42	3	57,8
80	76	117	93,0	380	55,5	580	40	255	200	138	30 x 8	450	46	3	93
100	92	144	116,5	430	71	620	55	300	235	162	33 x 8	520	54	3	138,5
125	112	172	138,5	500	91	670	65	340	275	188	33 x 12	600	60	3	186,9

PN 320

DN	Welded ends					H	h	Flanged ends							
	d	*d1	*dp	L	kg			D1	D2	D3	do x n	L	g	f	kg
15	14	22	15,0	160	4	235	15	130	90	45	18 x 4	230	26	2	8,7
20	20	28	19,0	160	4	240	15	150	105	58	22 x 4	260	30	2	11,3
25	24	35	24,0	160	4	240	15	160	115	68	22 x 4	260	34	2	13,3
32	30	44	31,5	300	15	365	27	-	-	-	-	300	-	-	-
40	38	50	36,0	300	15	365	27	195	145	88	26 x 4	300	38	3	30,2
50	44	77	59,5	300	15	365	27	210	160	102	26 x 8	350	42	3	32
65	62	91	68,0	340	26,5	450	30	255	200	122	30 x 8	400	51	3	57,8
80	76	117	87,5	380	55,5	580	40	275	220	138	30 x 8	450	55	3	93
100	92	144	109,5	430	71	620	55	335	265	162	36 x 8	520	65	3	138,5
125	112	172	130,5	500	91	670	65	380	310	188	36 x 12	600	75	3	186,9

*These dimensions of welded ends may vary acc. to the specifications of customer orders.

PRESSURE-TEMPERATURE RATING

Pressure-temperature ratings are for welded ends. Values for flanged ends are acc. to EN 1092-1.

PN 63

Body material		Maximum Allowable Pressure - PS 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	69	66	60	52,5	48	43,5	40,5	37,5	20,7	-	-	-	-	-	-	-	-	-	-	-
16Mo3	1.5415	77,4	70,5	63	57	52,5	45	43,5	42	40,5	39,6	27,9	17,7	14,1	-	-	-	-	-	-	-
13CrMo4-5	1.7335	76,2	72	67,5	63	60	55,5	52,5	49,5	46,5	45,6	41,1	28,2	23,4	18,3	14,7	12	9,9	-	-	-
11CrMo9-10 (1.7383)	1.7383	75	70,4	67,4	64,5	61,5	58,5	55,5	52,5	49,5	47,7	40,5	30,9	27	23,4	20,4	17,4	15,3	13,2	11,4	10,2
14MoV6-3	1.7715	86,3	84,6	82,8	80,1	72,3	67,5	64,8	62,7	60,9	60,4	57,9	44,7	39,3	33,9	29,7	25,8	21,9	-	-	-
GP240GH	1.0619	63	58,5	55,5	52,5	48	43,5	40,5	37,5	20,7	-	-	-	-	-	-	-	-	-	-	-
G20Mo5	1.5419	63	63	63	63	61,5	54	51	48	46,5	35,3	27,9	17,7	14,1	-	-	-	-	-	-	-
G17CrMo5-5	1.7357	73,5	67,8	63,5	63	63	62,7	60	57	54	46,2	41,1	28,2	23,4	18,3	14,7	12	-	-	-	-

PN 100

Body material		Maximum Allowable Pressure - PS 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	109,5	104,8	95,2	83,3	76,1	69	64,2	59,5	32,9	-	-	-	-	-	-	-	-	-	-	-
16Mo3	1.5415	122,9	111,9	100	90,5	83,3	71,4	69	66,7	64,3	62,9	44,3	28,1	22,4	-	-	-	-	-	-	-
13CrMo4-5	1.7335	121	114,3	107,1	100	95,2	88,1	83,3	78,6	73,8	72,4	65,2	44,8	37,1	29	23,3	19	15,7	-	-	-
11CrMo9-10 (1.7383)	1.7383	119	111,7	107	102,4	97,6	92,9	88,1	83,3	78,6	75,7	64,3	49	42,9	37,1	32,4	27,6	24,3	21	18,1	16,2
14MoV6-3	1.7715	136,9	134,3	131,4	127,1	114,8	107,1	102,9	99,5	96,7	95,8	91,9	71	62,4	53,8	47,1	41	34,8	-	-	-
GP240GH	1.0619	100	92,8	88	83,3	76,1	69	64,2	59,5	32,8	-	-	-	-	-	-	-	-	-	-	-
G20Mo5	1.5419	100	100	100	100	97,6	85,7	80,9	76,1	73,8	56	44,2	28	22,3	-	-	-	-	-	-	-
G17CrMo5-5	1.7357	116,7	107,6	100,8	100	100	99,5	95,2	90,4	85,7	73,4	65,2	44,7	37,1	29	23,3	19	-	-	-	-

PN 160

Body material		Maximum Allowable Pressure - PS 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	175,2	167,6	152,4	133,3	121,9	110,4	102,8	95,2	52,6	-	-	-	-	-	-	-	-	-	-	-
16Mo3	1.5415	197	179	160	144,8	133,3	114,3	110,5	106,7	102,9	100,6	70,9	45	35,8	-	-	-	-	-	-	-
13CrMo4-5	1.7335	194	182,9	171,4	160	152,4	141	133,3	125,7	118,1	115,8	104,4	71,6	59,4	46,5	37,3	30,5	25,1	-	-	-
11CrMo9-10 (1.7383)	1.7383	190,5	178,7	171,2	163,8	156,2	148,6	141	133,3	125,7	121,1	102,9	78,5	68,6	59,4	51,8	44,2	38,9	33,5	29	25,9
14MoV6-3	1.7715	219	215	210	203	183,6	171,4	164,6	159,2	154,7	153,3	147	113,5	99,8	86,1	75,4	65,5	55,6	-	-	-
15NiCuMoNb5-6-4	1.6368	260	260	260	260	260	258	249	224	157	-	-	-	-	-	-	-	-	-	-	-
GP240GH	1.0619	160	149	141	133	122	110	103	95,2	52,5	-	-	-	-	-	-	-	-	-	-	-
G20Mo5	1.5419	160	160	160	160	156	137	130	122	118	89,7	70,8	44,9	35,8	-	-	-	-	-	-	-
G17CrMo5-5	1.7357	186,7	172,1	161,2	160	160	159	152	145	137	117	104	71,6	59,4	46,4	37,3	30,4	-	-	-	-

PN 250

Body material		Maximum Allowable Pressure - PS 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	274	262	238	208	190,4	172,6	160,7	148,8	82,1	-	-	-	-	-	-	-	-	-	-	-
16Mo3	1.5415	307	280	250	226	208	178,6	172,6	166,7	160,7	157,1	110,7	70,2	56	-	-	-	-	-	-	-
13CrMo4-5	1.7335	302	286	268	250	238	220	208	196	184,5	181	163,1	111,9	92,9	72,6	58,3	47,6	39,3	-	-	-
11CrMo9-10 (1.7383)	1.7383	298	279	268	256	244	232	220	208	196,4	189,3	160,7	122,6	107,1	92,9	81	69	60,7	52,4	45,2	40,5
14MoV6-3	1.7715	342	336	329	318	287	268	257	249	242	240	230	177,4	156	134,5	117,9	102,4	86,9	-	-	-
15NiCuMoNb5-6-4	1.6368	400	400	400	400	400	400	389	350	245	-	-	-	-	-	-	-	-	-	-	-

PRESSURE-TEMPERATURE RATING

Pressure-temperature ratings are for welded ends. Values for flanged ends are acc. to EN 1092-1.

PN 320

Body material		Maximum Allowable Pressure - PS 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	350	335	305	267	243,8	220,9	205,7	190,4	105,1	-	-	-	-	-	-	-	-	-	-	-
16Mo3	1.5415	393	358	320	290	267	229	221	213	206	201	141,7	89,9	71,6	-	-	-	-	-	-	-
13CrMo4-5	1.7335	387	366	343	320	305	282	267	251	236	232	209	143,2	118,9	93	74,7	61	50,3	-	-	-
11CrMo9-10 (1.7383)	1.7383	381	357	342	328	312	297	282	267	251	242	206	157	137,1	118,9	103,6	88,4	77,7	67	57,9	51,8
14MoV6-3	1.7715	438	430	421	407	367	343	329	318	309	307	294	227	199,6	172,2	150,9	131	111,2	-	-	-
15NiCuMoNb5-6-4	1.6368	510	510	510	510	510	510	498	448	314	-	-	-	-	-	-	-	-	-	-	-

PN 400

Body material		Maximum Allowable Pressure - PS 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	304,7	276,1	257,1	238	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)	1.7383	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	-	-	-	-	-	-	-	-	-	-	-

X10CrMoVNb9-1 1.4903	Maximum Allowable Pressure - PS in bar																
Temperature:	450 °C	480 °C	500 °C	520 °C	530 °C	540 °C	550 °C	560 °C	570 °C	580 °C	590 °C	600 °C	610 °C	620 °C	630 °C	640 °C	650 °C
PN 160	244	235	197	168	153	139,4	126,5	114,3	102,1	91,4	80,8	71,6	63,2	55,6	49,5	42,7	37,3
PN 250	381	367	307	262	239	218	198	179	160	142,9	126,2	111,9	98,8	86,9	77,4	66,7	58,3
PN 320	488	469	393	335	306	279	253	229	204	183	162	143,2	126,5	111,2	99	85,3	74,7
PN 400	610	587	491	419	383	349	316	286	255	229	202	179	158,1	139	123,8	106,7	93,3
PN 630	960	924	774	660	603	549	498	450	402	360	318	282	249	219	195	168	147

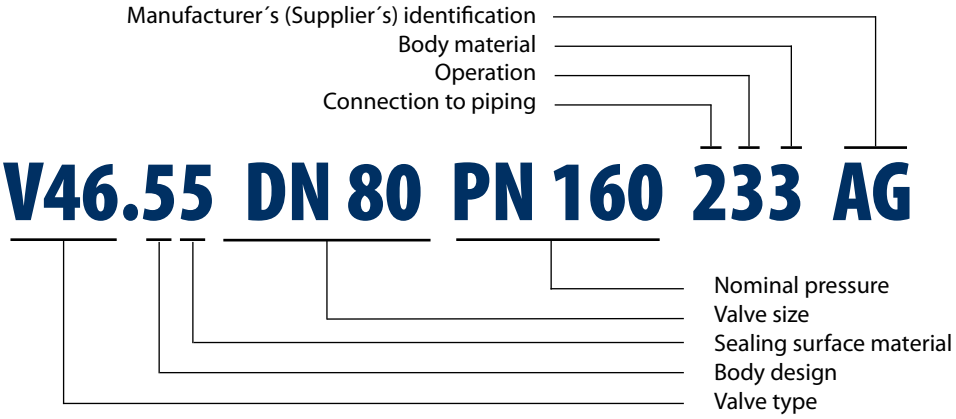
Based on the customer requirements the manufacturer may confirm higher pressure-temperature ratings than stated in the charts above mentioned.

Pressure-temperature rating for stainless steel globe valves

Body material			Maximum Allowable Pressure - PS in bar													
PN	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
63	X2CrNiMo17-12-2	1.4404	63	59,7	54,3	50,1	47,1	43,5	41,7	40,5	39,4	38,4	-	-	-	-
	GX5CrNi19-10	1.4308	63	57,3	51,6	47,1	43,5	40,5	38,7	37,5	36,7	36	27,6	-	-	-
	X6CrNiTi18-10	1.4541	63	62,4	58,8	55,8	53,1	50,1	48,3	46,8	45,7	44,7	42,8	38,7	35,4	32,1
	GX5CrNiMo19-11-2	1.4408	63	63	57,3	53,1	50,1	46,8	45	43,2	42,4	41,7	41,1	40,5	40	39,5
100	X2CrNiMo17-12-2	1.4404	100	94,7	86,1	79,5	74,7	69	66,1	64,2	62,6	60,9	-	-	-	-
	GX5CrNi19-10	1.4308	100	90,9	81,9	74,7	69	64,2	61,4	59,5	58,3	57,1	43,8	-	-	-
	X6CrNiTi18-10	1.4541	100	99	93,3	88,5	84,2	79,5	76,6	74,2	72,6	70,9	67,5	61,4	58,1	50,9
	GX5CrNiMo19-11-2	1.4408	100	100	90,9	84,2	79,5	74,2	71,4	68,5	67,3	66,1	65,2	64,3	63,5	62,7
160	X2CrNiMo17-12-2	1.4404	160	151,6	137,9	127,2	119,6	110,4	105,9	102,8	100,1	97,5	-	-	-	-
	GX5CrNi19-10	1.4308	160	145,5	131	119,6	110,4	102,8	98,2	95,2	93,3	91,4	70	-	-	-
	X6CrNiTi18-10	1.4541	160	158,4	149,3	141,7	134,8	127,2	122,6	118,8	116,1	113,5	108,1	98,2	89,9	81,5
	GX5CrNiMo19-11-2	1.4408	160	160	145,5	134,8	127,2	118,8	114,2	109,7	107,8	105,9	104,3	103	101,6	100,3
250	X2CrNiMo17-12-2	1.4404	250	236,9	215,4	198,8	186,9	172,6	165,4	160,7	156,5	152,3	-	-	-	-
	GX5CrNi19-10	1.4308	250	227,3	204,7	186,9	172,6	160,7	153,5	148,8	145,8	142,8	109,5	-	-	-
	X6CrNiTi18-10	1.4541	250	247,6	233,3	221,4	210,7	198,8	191,6	185,7	181,5	177,3	169	153,5	140,4	127,3
	GX5CrNiMo19-11-2	1.4408	250	250	227,3	210,7	198,8	185,7	178,5	171,4	168,4	165,4	163	160,9	158,8	156,7
320	X2CrNiMo17-12-2	1.4404	320	303,2	275,8	254,4	239,2	220,9	211,8	205,7	200,3	195	-	-	-	-
	GX5CrNi19-10	1.4308	320	291	262	239,2	220,9	205,7	196,5	190,4	186,6	182,8	140,1	-	-	-
	X6CrNiTi18-10	1.4541	320	316,9	298,6	283,4	269,7	254,4	245,3	237,7	232,3	227	216,3	196,6	179,8	163
	GX5CrNiMo19-11-2	1.4408	320	320	291	269,7	254,4	237,7	228,5	219,4	215,6	211,8	208,7	206	203,3	200,6

TYPE NUMBER COMPOSITION

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
- V46 - globe valve
- V40 - control valve
- Z16 - lift check valve

Body design

for type V40, V46
- 1 - casting body, bolted bonnet
- 2 - casting body, threaded bonnet
- 3 - forged body, bolted bonnet
- 4 - forged body, threaded bonnet
- 5 - casting or forged body, pressure seal bonnet
- 6 - casting or forged body, with bellows

for type Z16
- 1 - casting or forged body, bolted bonnet
- 2 - casting or forged body, threaded bonnet
- 5 - casting or forged body, pressure seal bonnet

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

Connection to piping
- 1 - flanged ends
- 2 - welded ends
- 3 - threaded ends
- 4 - socket welding ends

Operation
- 1 - hand wheel
- 2 - gear-box
- 3 - electric actuator
- 4 - pneumatic, hydraulic, el.-hydraulic actuator and their combination
- 5 - bare shaft
- 7 - self-acting
- 8 - extension

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

Manufacturer´s (Supplier´s) identification
- AG - ARMATURY Group a.s.

Data mentioned in the catalogue are not subject to changes, for an order and delivery of the goods are obligatory the data mentioned in respective specifications.

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