

The gate valves are intended to close or open completely the flow of a working medium for:

- water
- noncorrosive fluids
- steam
- petroleum and petroleum product
- air
- gas
- acid surrounding

The industrial branches for application: power engineering, petrochemistry, gas industry, waterworks engineering.

technical description:**construction:**

The gate valves are yoke, flanged or welded type with a non-narrowed flow rate, flexible wedge and rising spindle. Bodies are made of cast steel with flanges that are casted as one whole with body. Seats are welded or bolted interchangeably in the body. Wedge is flexible or fixed. A joint spindle - wedge - spindle nut is tested by an independent organization. This test confirms that a critical place of possible failure of spindle is out of pressure space of valve. Spindle and the joint of body-cover is sealed only with non-asbestic material. If required the low-emissive valves are also supplied. A liquid working medium can have a growth of pressure in the body cavity. This pressure can be drawn into the pipeline with a special automatic equipment that is placed in wedge or with outer bypass. The equipment for pressure reduction in body is supplied only on the basis of order. Gate valves can be equipped additionally with other devices such as draining plug, deaerating plug, valve bypass. Gate valves are operated by a handwheel, angle gear box or cylindrical gear box or electrical actuator, eventually by remote control from stand.

designed dimensions:

The designed dimensions of standard design are stated in the table below.

material design:

The gate valves are supplied in the following materials: ČSN EN 1503-1,-2, GP 2406H (1.0619), G20Mn5 (1.620), G17CrMo5-5 (1.7357), GX5CrNiMo 19-11-2 (1.4408) as well as in their equivalents ASTM. Further possibilities after discussion with the manufacturer. The standard inner equipments of steel gate valves MSA correspond with TRIM no. 1, 5, 8, 10, 12 according to API 600. Further possibilities after discussion with the manufacturer.

assembly:

The gate valves can be assembled into the pipeline in a random position. In case the gate valve is operated with the electrical actuator, it is necessary follow the provisions of the manufacturer of actuator.

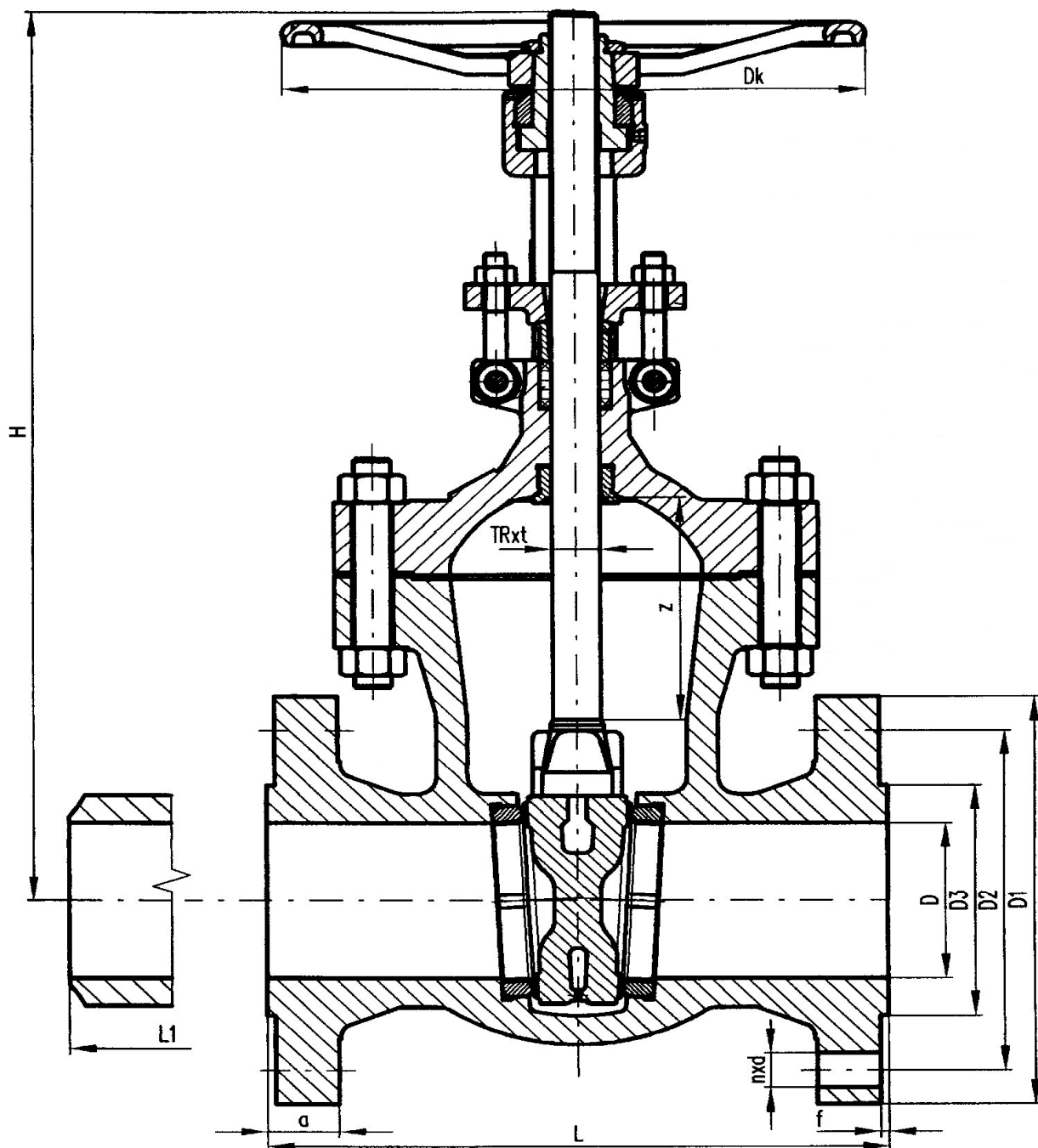
testing:

During the manufacture of gate valves, the quality management system is realized that includes: input and output inspections of material and sub-deliveries, superficial and functional inspections, non-destructive testing, pressure testing and special testing. Pressure tests are executed on gate valves in accordance with the standards ČSN EN 12 266-1,-2.

order specification:

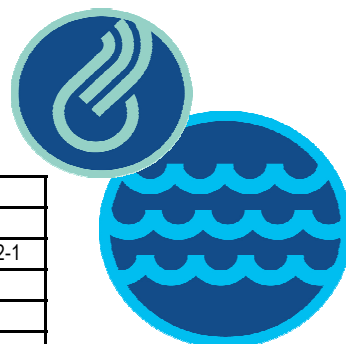
Data necessary for an order: type number, nominal diameter, nominal pressure, design (connection), type of operation, material of body, cover, inner equipment, working parameters, testing, accompanying documentation.





basic standard for construction

basic construction	EN 1984
designed dimension	EN 558-1
flanged dimension	DIN 25 43-47, EN 1092-1
dimensions of welded ends	EN 12 627
testing	EN 12 266-1,-2
dependence of maximal allowable pressure on temperature	EN 1092-1



PN	design				
	yoke cover	cover - yoke	non-flooded packing	flooded packing	ball bearing
16, 25, 40	DN 50 – 250	DN 300 and larger	standard design	standard design	DN 300 and larger
63, 100	DN 50 - 150	DN 200 and larger	in the whole range	in the whole range	DN 200 and larger

standard material specification

	name	GP240GH (1.0619)	G20Mn5 (1.6220)	GS17CrMo55 (1.7357)	Gx15CrMo5 (1.7365)	Gx5CrNiMo19-11-2 (1.4408)
	trim no.	1,5,8,11,12	12	5,8	5	10, 12
1	body	GP240GH	G20Mn5	GS17CrMo55	Gx15CrMo5	Gx5CrNiMo19-11-2
2	cover	GP240GH	G20Mn5	GS17CrMo55	Gx15CrMo5	Gx5CrNiMo19-11-2
3	wedge - variants > DN 125	A 182 F6a A 182 F316 A 105 + overlay	A 182 F316 A 352 LCC	A 182 F6a A 182 F9 + overlay	A 182 F9 + overlay	A 182 + F316 Gx5CrNiMo 19-11-2
	< DN 150	A 126 WCB + overlay	S 355 5263	A 217 WCB	A 217 C5	1.7389 + overlay
4	seat	S 355 J2G3 + overlay	S 355 J2G3 + overlay	A 426 CP5 + overlay	A 426 CP5 + overlay	A 451 CPF8M + overlay
5	bolt - variants	25 CrMo 5 21 CrMoV 5, 7	26 CrMo 4	21 CrMoV 5, 7	21 CrMoV 5, 7	A 193 B8 cl.2 A4 - 70
6	nut - variants	C 35 E 24 CrMo 5	26 CrMo 4	25 CrMo 5	25 CrMo 5	A 194 8 A4-70
7	handwheel	ČSN 42 23 04, GGG 40, A 47, A 356				
8	flange	ČSN 41 15 23, St 52 - 3.A 105				
9	spindle nut	(Ni - Resist) A 439 D2				
10	wheel nut	ČSN 42 25 36, GTW - 35, A 35				
11	yoke nut	ČSN 41 15 23, St 52 - 3				
12	yeyebolt	25 Cr Mo4				
13	pin	ČSN 41 15 23, St 52 - 3				
14	nut	C 35 E				
15	grease box	commercial				
16	label	X 5 CrNi 18 10				
17	yoke nut	GP 240 GH, G20 Mn5, Gx5 CrNiMo 19-11-2				

sealing - material design

	name	PN	material desing of bodiess				
			GP240GH	G20Mn5	GS17CrMo55	Gx15CrMo5	Gx5CrNiMo19-11-2
1	cover sealing	16 - 40	grafoil - GHE				
		63 - 100	RTJ rings				
2	gland packing sealing	16 - 100	set of graphited cords and graphited rings				

(or according to customer's requirements)

trim - material according to API 600

	name	trim no.				
		1	5	8	11	12
1	sealing surface of wedge	overlay 13 Cr	overlay Stellite 6	overlay 13 Cr	overlay Monel	overlay 316
2	sealing surface of seat	overlay 13 Cr	overlay Stellite 6	overlay Stellite 6	overlay Stellite 6	overlay Stellite 6
3	spindle	A 276 410 T	A 276 410 T	A 276 410 T	Monel	A 182 F 316
4	insert of check valve - variants	A 182 F 6a Cl.4 A 217 CA 15	A 182 F 6a Cl.4 A 217 CA 15	A 182 F 6a Cl.4 A 217 CA 15	Monel	A 182 F 316
5	packing box - variants	A 182 F 6a A 217 CA 15	A 182 F 6a A 217 CA 15	A 182 F 6a A 217 CA 15	Monel	A 182 F 316
6	latern ring - variants	A 182 F 6a A 217 CA 15	A 182 F 6a A 217 CA 15	A 182 F 6a A 217 CA 15	Monel	A 182 F 316

designed dimensions

PN 16

DN	designed dimensions [mm]														weight [kg]
	D	D1	D2	D3	a	f	n	d	L	L1	H	z	Dk	TRxt	
50	50	165	125	102	20	2	4	18	250	210	360	72	200	18x4	27
65	65	185	145	122	18	2	4	18	270	270	440	85	250	24x5	36
80	80	200	160	138	20	2	8	18	280	300	465	92	250	24x5	40
100	100	220	180	158	20	2	8	18	300	350	520	117	250	24x5	55
125	125	250	210	188	22	2	8	18	325	350	635	150	300	28x5	89
150	150	285	240	212	22	2	8	22	350	400	705	170	400	30x6	110
200	200	340	295	268	24	2	12	22	400	500	820	225	400	32x6	192
250	250	405	355	320	26	2	12	26	450	550	965	280	450	36x6	265
300	300	460	410	378	28	2	12	26	500	600	1 120	330	500	40x6	376
350	350	520	470	438	30	2	16	26	550	550	1 210	365	500	40x6	511
400	400	580	525	490	32	2	16	30	600	600	1 390	420	560	45x8	657
500	500	715	650	610	36	2	20	33	700	700	1 680	520	630	50x8	1 090
600	600	840	770	725	40	2	20	36	800	800	1 990	625	710	60x9	2 490
700	700	910	840	795	42	2	24	39	900	900	2 380	790	--	2,75"	3 300
800	800	1025	950	900	42	2	24	39	1000	1000	2 990	946	--	3"	4 100
1000	1 000	1 255	1 170	1 115	58	2	28	42	1 200	1 200	2 990	946	--	3"	5 100

PN 25

DN	designed dimensions [mm]														weight [kg]
	D	D1	D2	D3	a	f	n	d	L	L1	H	z	Dk	TRxt	
50	50	165	125	102	20	2	4	18	250	250	360	72	200	18x4	27
65	65	185	145	122	22	2	4	18	270	270	440	85	250	24x5	36
80	80	200	160	138	24	2	8	18	280	280	465	92	250	24x5	40
100	100	235	190	162	24	2	8	22	300	300	520	117	250	24x5	55
125	125	270	220	188	26	2	8	26	325	350	635	150	300	28x5	89
150	150	300	250	218	28	2	8	26	350	350	705	170	400	30x6	122
200	200	360	310	278	30	2	12	26	400	400	840	225	400	36x6	202
250	250	425	370	335	32	2	12	30	450	450	965	280	450	36x6	278
300	300	485	430	395	34	2	16	30	500	500	1 122	330	500	40x6	394
350	350	555	490	450	38	2	16	33	550	550	1 212	365	500	40x6	541
400	400	620	550	505	40	2	16	36	600	600	1 387	420	560	45x8	695
500	500	730	660	615	44	2	20	36	700	700	1 680	520	630	50x8	1 127
600	600	845	770	720	46	2	20	39	800	--	1 990	625	710	60x9	2 520
700	700	860	875	820	50	2	24	42	900	--	2 260	730	--	2 3/8"	1 850
800	800	1 085	990	930	54	2	24	48	1 000	900	2 520	830	--	2 3/4"	2 960
1000	1 000	--	--	--	--	--	--	--	--	1 800	3 200	1 024	--	100x12	5 860

PN 40

DN	designed dimensions [mm]														weight [kg]
	D	D1	D2	D3	a	f	n	d	L	L1	H	z	Dk	TRxt	
50	50	165	125	102	20	2	4	18	250	250	360	72	200	18x4	27
65	65	185	145	122	22	2	4	18	290	290	440	85	250	24x5	38
80	80	200	160	138	24	2	8	18	310	310	465	92	250	24x5	44
100	100	235	190	162	24	2	8	22	350	350	520	117	250	24x5	56
125	125	270	220	188	26	2	8	26	400	400	635	150	300	28x5	101
150	150	300	250	218	28	2	8	26	450	450	705	170	400	30x6	125
200	200	375	320	285	34	2	12	30	550	550	840	225	450	36x6	223
250	250	450	385	345	38	2	12	33	650	650	988	280	500	40x6	383
300	300	515	450	410	42	2	16	33	750	750	1 122	330	500	40x6	520
350	350	580	510	465	46	2	16	36	850	850	1 242	365	560	45x8	700
400	400	660	585	535	50	2	16	39	950	950	1 417	420	630	50x8	910
500	500	755	670	615	52	2	20	42	1 150	1 150	1 720	520	710	50x8	1 448
600	600	890	795	735	60	2	20	48	1 350	1 350	2 030	625	800	2 3/4"	2 600
700	675	--	--	--	--	--	--	--	--	1 397	2 612	798	--	3 1/4"	4 325
800	725	--	--	--	--	--	--	--	--	1 397	2 612	798	--	3 1/4"	4 400

PN 63

DN	designed dimensions [mm]														weight [kg]
	D	D1	D2	D3	a	f	n	d	L	L1	H	z	Dk	TRxt	
50	50	180	135	102	26	2	4	22	250	250	360	72	200	18x4	38
65	65	205	160	122	26	2	8	22	290	290	440	85	250	24x5	55
80	80	215	170	138	28	2	8	22	310	310	465	92	250	24x5	60
100	100	250	200	162	30	2	8	26	350	350	540	117	300	28x5	95
125	125	295	240	188	34	2	8	30	400	400	635	150	300	28x5	161
150	150	345	280	218	36	2	8	33	450	450	805	170	500	40x6	260
200	200	415	345	285	42	2	12	36	550	550	865	225	500	40x6	333
250	250	470	400	345	46	2	12	36	650	650	1 060	275	630	50x8	495
300	300	530	460	410	52	2	16	36	750	750	1 184	330	630	50x8	675
350	350	600	525	465	56	2	16	39	850	850	1 400	375	710	50x8	911
400	400	670	585	535	60	2	16	42	950	950	1 545	435	710	50x8	1 206
500	500	800	705	615	68	2	20	48	1 150	991	1 719	520	710	2 3/8"	2 100
600	568	--	--	--	--	--	--	--	--	1 143	2 180	625	--	2 3/4"	3 950

PN 100

DN	designed dimensions [mm]														weight [kg]
	D	D1	D2	D3	a	f	n	d	L	L1	H	z	Dk	TRxt	
50	50	195	145	102	30	2	4	26	250	250	370	72	200	18x4	42
65	65	220	170	122	34	2	8	26	290	290	440	85	250	24x5	59
80	80	230	180	138	36	2	8	26	310	310	465	92	250	24x5	61
100	100	265	210	162	40	2	8	30	350	350	540	117	300	28x5	105
125	125	315	250	188	40	2	8	33	400	400	635	150	300	28x5	163
150	150	355	290	218	44	2	12	33	450	450	805	170	500	40x6	275
200	200	430	360	285	52	2	12	36	550	550	865	225	500	40x6	434
250	250	505	430	345	60	2	12	39	650	650	1 060	275	630	50x8	689
300	300	585	500	410	68	2	16	42	750	750	1 184	330	630	50x8	1 000

quality system:

The whole manufacturing process is completely monitored and includes the following tests and inspections: acceptance inspections of all input materials and sub-deliveries, inspections of particular components in the course of manufacture, assembly testing, pressure testing, operating testing, non-destructive testing and final inspections of finished product.

testing:

MSA, a.s. executes the whole range of special tests which verify the properties of valves. They are:

pressure testing

All pressure tests are executed according to API 598, API 600, API 6D and DIN 3230. MSA, a.s. also performs standard as well as special tests according to API 6D. A criterium for acceptance is zero permeability. At the same time, MSA, a.s. executes testing at full operating pressure as standard by which a possible leakage could be detected in body-cover joint, spindle, fittings or grease box etc.

fire testing

Fire test is executed at MSA, a.s. according to the standard API 6FD, API 607 and BS 6755, part 2, for pressure class 16, 25, 40, 63 and 100.

testing on seal strenght

Test on seal strenght is executed with methan.

cycle testing

Cycle test is executed by 3000 cycles (open-close) with water.

hydrodynamic and aerodynamic testing

MSA, a.s. executes this test for the verification of hydropneumatic and aerodynamic properties.

operating testing

Operating test is executed on all valves at MSA, a.s.

non-destructive testing

MSA, a.s. executes the non-destructive test in the own facilities and testing room. The non-destructive test includes RT, MT, UT or DP testing. The testing operators are highly qualified and certified according to EN 473 or STN-TC-1A.

visual inspection

Visual inspection is performed at all castings that are used for the valves of MSA, a.s. according to the quality directive MSS SP-55 for steel castings and according to order specifications.

certification:

Quality system of MSA, a.s. is based on the strict observation of EN ISO 9001:2000 and API Spec Q1 (Specification D - number 0239).

research and development:

Specialists of MSA, a.s. work on the development and research of new products and verify their properties as well such as:

- suitability of applied material
- strenght and rigidity of construction (FEM method)
- operability with the emphasis on strenght and controlability
- hydraulic and aerodynamic properties etc.

New products are tested in the testing room of MSA, a.s. as well as in real operating conditions. The properties of product are observed during the whole service life and findings are applied in the development and production of new products.