

N V F® NINGBO VALVE FACTORY

Gate Valve



Since Professional We Can Do Better

COMPANY PROFILE

Found in 1959, NVF is a China-leading manufacturer of industrial valves, we have three specialized manufacturing plants in Wenzhou with more than 50000 square meters. With more than 50 years manufacturing experience and professional technical support, we are able to provide high quality industrial valves, including gate valve, globe valve, check valve, ball valve, butterfly valve, casting steel valve and forging steel valves with cost-effective and reliable service for the customers. Our products have been exported to more than 30 countries, including USA, Europe, Asia, Middle East, South America, South Africa etc., and have gained a good reputation in these markets.

The products are widely applied in petroleum, chemical industry, natural gas, electric power, metallurgy, pharmacy, pulp & paper, urban construction and long transportation pipeline projects. Our products are sold well worldwide include America, Europe, Southeast Asia, Middle East and Africa etc. Certificated with ISO9001, API6D, CE/ PED.

We has established the technical research, development center and quality inspection center with a relatively sound management system. In addition, it has introduced advanced manufacturing technology from abroad, and has advanced machining centers, CNC machine tools, metal cutting and processing equipment, physical and chemical testing equipment, nondestructive tester, spectrum analyzer, valve comprehensive performance tester and other equipment to ensure the products reach the purpose of zero leakage.

We insist on the concept of "Quality first, Prestige important", a well-trained and dedicated team including engineers, technicians and other employees, This allows us to offer customers quality product, competitive price and prompt delivery time.

We always work hard to improve our existing products and pursue new ideas and ways to stay ahead of the every changing market. With our professional and experience hope can enlarge your market and obtain a new brilliance in the future.

APPLICATIONS

The valve are used in a broad spectrum of market sectors, including refining, chemical processing, power generation, marine, pulp and paper, petroleum production, and gas processing.

Applications include process liquids, process gases, flue gas, cryogenics, steam, condensate, petroleum products, thermal fluid, and water.



Standards

Design and Manufacture: Cast steel gate valve to API 600 (ISO 10434) or API6D; Cast stainless steel gate valve to API 603 or API 600; Forged steel gate valve to API602. Inspection and Test: API598, API600 or API6D.

End flange dimension: ASME B 16.5 (for NPS \leq 24; ASME B 16.47 Series B、API 605、ASME B 16.47 Series A、MSS SP – 44 (for NPS >24)

BW end dimension: ASME B 16.25

Socket-weld dimension: ASME B 16.11

Face to face and end to end: ASME B 16.10

Pressure-temperature ratings: ASME B 16.34

Gasket of Cover Flange

Carbon steel or stainless steel + flexible graphite combined gasket is used for Class 150 gate valve;Stainless steel + flexible graphite wounded gasket is used for Class 300 gate valve;Stainless steel + flexible graphite wounded gasket is used for Class 600 gate valve;and ring joint gasket is also optional for Class 600 gate valve;Ring Joint gasket is used for Class 900 gate valve;Pressurized seal design is used for Class 1500~Class 500 gate valve.

Packing Seal

Molded flexible graphite is used for packing material.PTFE or combined packing material can also used if being requested by the customer.The internal surface of the stuffing box,of which area is contacted with thepacking,is of excellent finish (Ra3.2 μ m.)The stem surface,contacting with the packing, should be rolled and pressed after being precisely machined, so as to reach to the high finish and compactness(Ra0.8 μ m) and ensure the reliable tightness of the stem area.



Body and Bonnet Connection

The body and bonnet of Class 150~Class 900 gate valves Are usually connected with studs and nuts.And The body and bonnet of Class 1500~class 2500 gate valves are usually of pressurized seal design.

Actuation

Hand wheel or gear box is usually used for gate valve actuation. Chain wheel and electric actuator can also used for gate valve actuation if being requested by the customers.

Belleville spring Loaded Packing Impacting System

If being requested by the customer,the Belleville spring loaded packing impacting system can be adoptefor enhancing the durability and reliability of the packing seal.

Design of Disc

Gate Valves with NPS \geq 2" are of wedge flexible gate; gate valves with NPS <2" are of wedge solid gate.



Back Seating Design

All our gate valves have the back seating design. In most cases, the carbon steel gate valve is fitted with a renewable back seat. For stainless steel gate valve, the back seat is machined directly in the bonnet or is machined after welding. When the gate valve is at fully open position, the sealing of the back seat can be very reliable. However, as per the requirement of API600, it is not advisable to add or change packing by the mean of back seating when the valve is ressure containing.

Seat

For carbon steel gate valve, the seat is usually forged steel. The sealing surface of the seat is spray welded with hard alloy specified by the customer. Renewable threaded seat is used for NPS ≤ 10 gate valves, and welded on seat can be also optional if being requested by the customer. Welded on seat is used for NPS ≤ 10 carbon steel gate valves. For Stainless steel gate valve, integral seat is usually adopted, or to weld hard alloy directly integrally. Threaded or welded on seat is also optional for stainless steel gate valve is being requested by the customer.

Stem Design

The stem is of intergral forged design. The minimum diameter of the stem shall per the standard requirement. The connection of the stem and disc is T type. The strength of the connecting area is bigger than that of the T threaded part of the stem. The strength test of that area conforms to API591.

Special Gate Valve

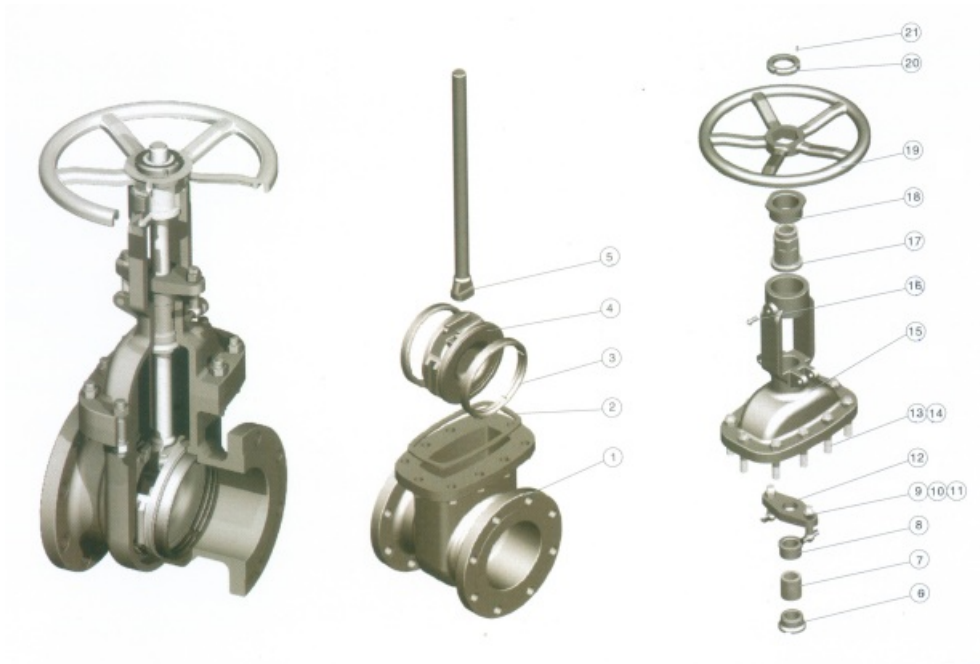
Besides the common gate valves, OKvalve also makes cryogenic gate valve, Jacketed Gate Valve, Bellow Sealed Gate Valve, Extension Stem Gate Valve for underground application, Flat Gate Valve, etc.

Stem Nut

Usually, the stem nut is made of ASTM A439 D2. It is also can be made of copper ally if being requested by the customer. For large sized gate valves (NPS 10 for Class 150, NPS 8 for Class 300, NPS 6 for Class, NPS 5 for Class 900), rolling bearing is fitted at the two sides of the stem nut in order to minimize the open and close torque of the gate valve.



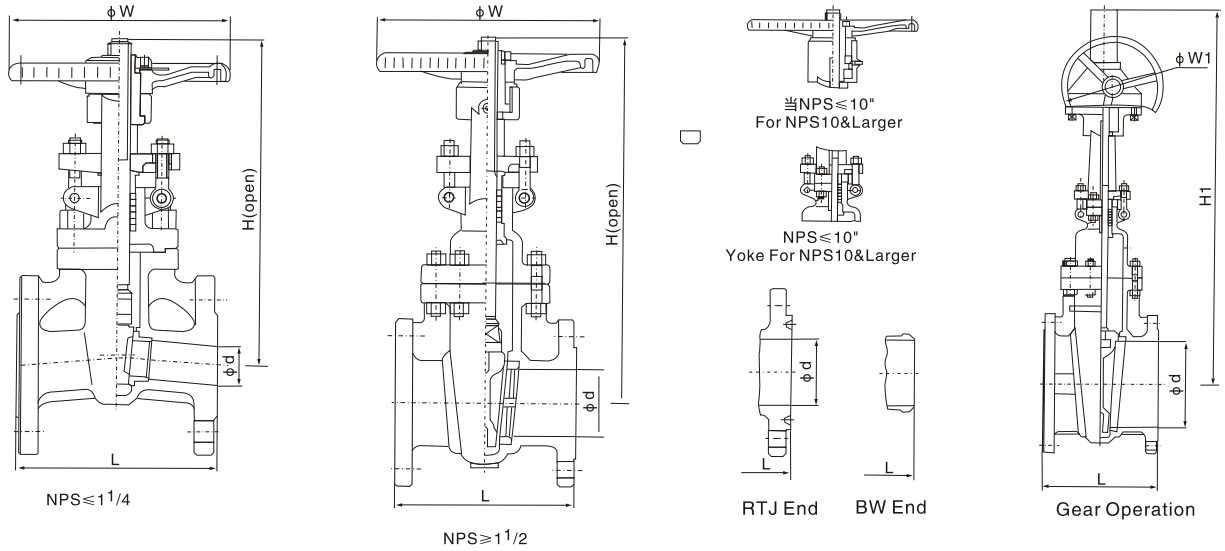
Parts and material list



Parts NO.	Parts name	Materials				
		WCB/Trim1	WCB/Trim5	WCB/Trim8	CF8/304	CF8M/316
1	Body	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 Cf8	ASTM A351 CF 8M
2	Gasket	Soft Iron+Graphite or 304+Graphite			304+Graphite	304+Graphite
3	Seat ring	A105+13Cr	A105+STL	A105+STL	ASTM A351 CF8	ASTM A351 CF 8M
4	Gate	ASTM A216WCB+13Cr	ASTM A216WCB+STL	ASTM A216WCB+13Cr	ASTM A351 CF8	ASTM A351 CF 8M
5	Stem	ASTM A182F 6a	ASTM A182F 6a	ASTM A182F 6a	ASTM A182F 304	ASTM A182F 316
6	Backseat bushing	ASTM A182F 6a	ASTM A182F 6a	ASTM A182F 6a	ASTM A182 304	ASTM A182 316
7	Packing	Graphite	Graphite	Graphite	Graphite	Graphite
8	Gland	ASTM A182F 6a	ASTM A182F 6a	ASTM A182F 6a	ASTM A182F 304	ASTM A182F 316
9	G land eyebolt	ASTM A193B 7	ASTM A193B 7	ASTM A193 B7	ASTM A193 B8	ASTM A193B 8M
10	Eyebolt nut	ASTM A194 2 H	ASTM A194 2H	ASTM A194 2H	ASTM A194 8	ASTM A194 8M
11	Eyebolt pin	ASTM A 36	ASTM A 36	ASTM A 36	304SS	304SS
12	Gland flange	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF 8M
13	Bonnet bolt	ASTM A193 B7	ASTM A193 B7	ASTM A193 B7	ASTM A193B 8	ASTM A193B 8M
14	Bonnet nut	ASTM A194 2H	ASTM A194 2H	ASTM A194 2H	ASTM A194 8	ASTM A194 8M
15	Bonnet	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF 8M
16	Nipple	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel
17	Stem nut	ASTM A439 D2	ASTM A439 D2	ASTM A439 D2	ASTM A439 D2	ASTM A439 D2
18	Yoke sleeve nut	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel
19	Hand wheel	Ductile Iron	Ductile Iron	Ductile Iron	Ductile Iron	Ductile Iron
20	Hand wheel nut	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel
21	Set screw	ASTM A193 B7	ASTM A193 B7	ASTM A193 B7	ASTM A193 B7	ASTM A193 B7

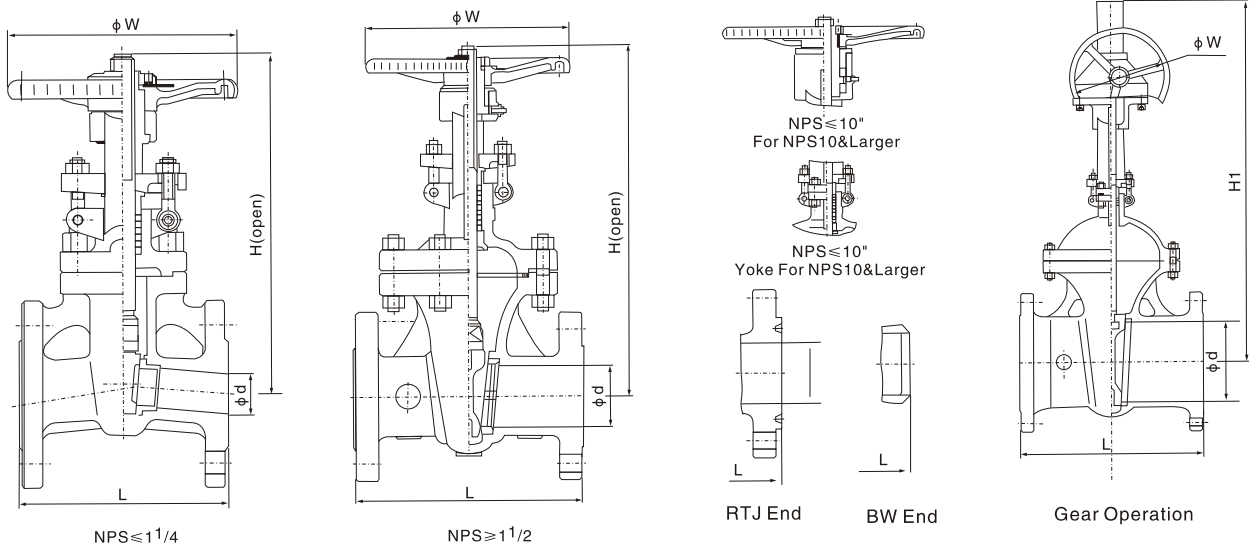
Note: The chart above only lists out some common composition of steel gate valve parts. We may provide other different parts material composition according to the customer's request or the actual valve working condition.

Class 150 & JIS 10K Cast Steel Gate valve



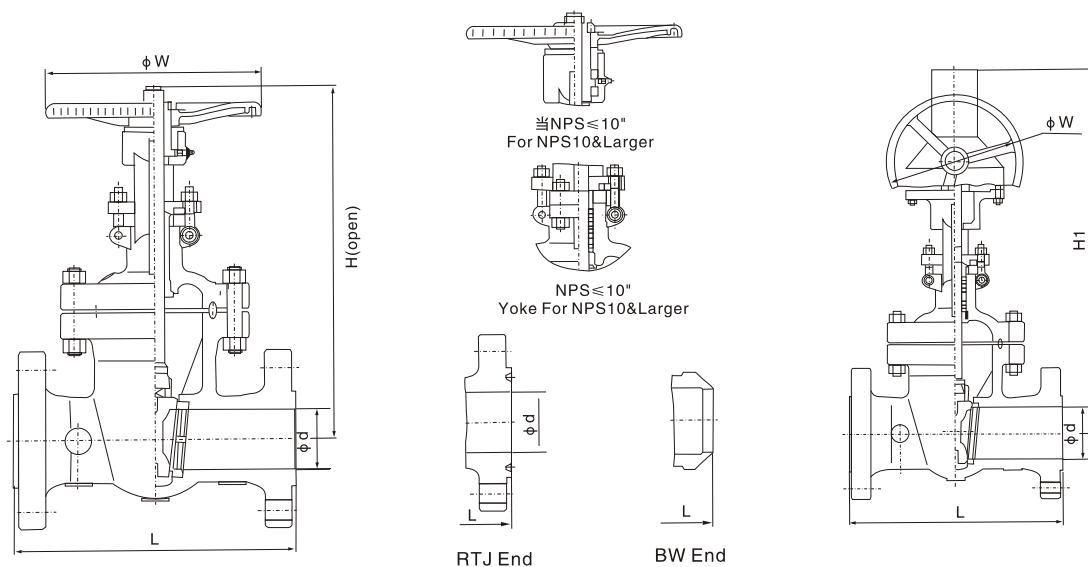
CLASS	Size		Dimensions(mm)								Weight(kg)	
	NPS	DN	L			d	H	H1	W	W1	hand wheel	Gear box
			TR	RTJ	BW							
Class 150 JIS 10K	1/2	15	108	119	108	14	195	-	120	-	4	-
	3/4	20	117	130	117	19	210	-	120	-	5	-
	1	25	127	140	127	25	240	-	140	-	7	-
	1 1/4	32	140	153	140	32	300	-	180	-	10	-
	1 1/2	40	165	178	165	38	395	-	200	-	14	-
	2	50	178	191	216	51	400	-	200	-	19	-
	2 1/2	65	191	203	241	64	435	-	200	-	25	-
	3	80	203	216	283	76	515	-	250	-	33	-
	4	100	229	241	305	102	595	-	280	-	49	-
	5	125	254	267	381	127	725	-	280	-	62	-
	6	150	267	279	403	152	780	820	300	310	77	104
	8	200	292	305	419	203	975	1020	350	310	123	150
	10	250	330	343	457	254	1150	1200	400	310	188	215
	12	300	356	368	502	305	1380	1430	450	310	288	315
	14	350	381	394	572	337	1545	1580	500	310	385	435
	16	400	406	419	610	387	1733	1780	500	460	500	552
	18	450	432	445	660	438	1915	1990	500	460	601	653
	20	500	457	470	711	489	2122	2220	600	460	764	816
	24	600	508	521	813	591	2520	2600	600	460	1007	1185
	26	650	559	-	864	633	-	2800	-	600	-	1550
28	700	610	-	914	684	-	3050	-	600	-	1880	
30	750	610	-	914	735	-	3130	-	600	-	2300	
32	800	711	-	965	779	-	3280	-	600	-	2550	
34	850	762	-	1016	830	-	3500	-	600	-	2950	
36	900	711	-	1016	874	-	3720	-	600	-	3390	

Class 300 & JIS 20K Cast Steel Gate valve



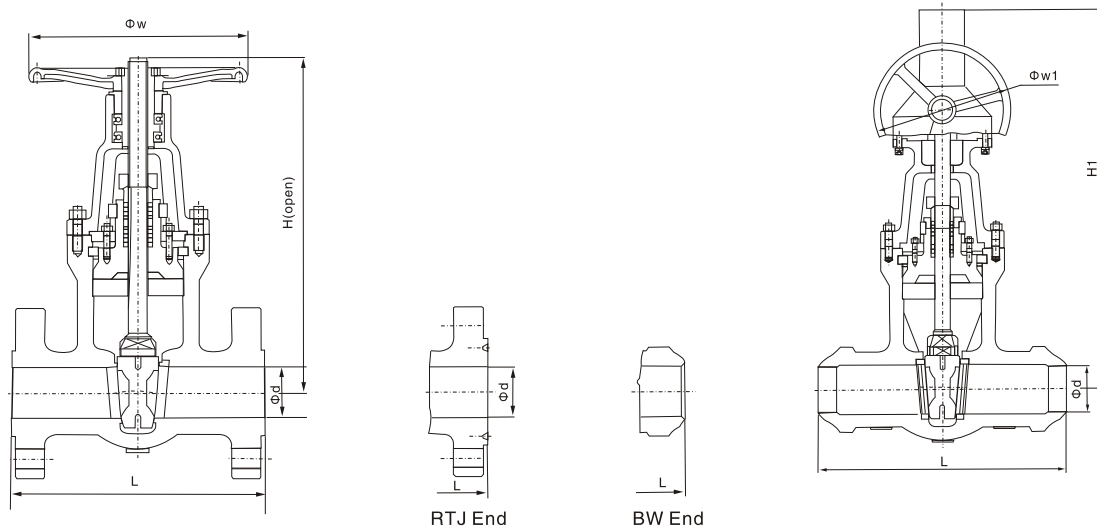
CLASS	Size		Dimensions(mm)								Weight(kg)	
	NPS	DN	L			d	H	H1	W	W1	hand wheel	Gear box
			TR	RTJ	BW							
Class 300 JIS 20K	1/2	15	108	119	108	14	195	-	120	-	4	-
	3/4	20	117	130	117	19	210	-	120	-	5	-
	1	25	127	140	127	25	240	-	140	-	7	-
	1 1/4	32	140	153	140	32	300	-	180	-	10	-
	1 1/2	40	165	178	165	38	395	-	200	-	14	-
	2	50	178	191	216	51	400	-	200	-	19	-
	2 1/2	65	191	203	241	64	435	-	200	-	25	-
	3	80	203	216	283	76	515	-	250	-	33	-
	4	100	229	241	305	102	595	-	280	-	49	-
	5	125	254	267	381	127	725	-	280	-	62	-
	6	150	267	279	403	152	780	820	300	310	77	104
	8	200	292	305	419	203	975	1020	350	310	123	150
	10	250	330	343	457	254	1150	1200	400	310	188	215
	12	300	356	368	502	305	1380	1430	450	310	288	315
	14	350	381	394	572	337	1545	1580	500	310	385	435
	16	400	406	419	610	387	1733	1780	500	460	500	552
	18	450	432	445	660	438	1915	1990	500	460	601	653
	20	500	457	470	711	489	2122	2220	600	460	764	816
	24	600	508	521	813	591	2520	2600	600	460	1007	1185
	26	650	559	-	864	633	-	2800	-	600	-	1550
28	700	610	-	914	684	-	3050	-	600	-	1880	
30	750	610	-	914	735	-	3130	-	600	-	2300	
32	800	711	-	965	779	-	3280	-	600	-	2550	
34	850	762	-	1016	830	-	3500	-	600	-	2950	
36	900	711	-	1016	874	-	3720	-	600	-	3390	

Class 600 & Class 900 Cast Steel Gate valve



CLASS	Size		Dimensions(mm)								Weight(kg)	
	NPS	DN	L			d	H	H1	W	W1	hand wheel	Gear box
			TR	RTJ	BW							
Class 600	2	50	292	295	292	51	444	-	200	-	32	-
	2½	65	330	333	330	64	500	-	250	-	52	-
	3	80	356	359	356	76	558	585	280	310	60	87
	4	100	432	435	432	102	665	695	300	310	107	134
	5	125	508	511	508	127	760	790	350	310	175	227
	6	150	559	562	559	152	868	900	450	310	216	268
	8	200	660	664	660	203	1073	1110	500	310	399	451
	10	250	787	791	787	254	1263	1300	650	460	605	657
	12	300	838	841	838	305	1600	1650	700	460	851	893
	14	350	889	892	889	337	1705	1750	900	460	1177	1232
	16	400	991	994	991	387	1835	1900	900	460	1513	1568
	18	450	1092	1095	1092	438	-	2020	-	600	-	1980
	20	500	1194	1200	1194	489	-	2172	-	600	-	2460
24	600	1397	1407	1397	591	-	2650	-	600	-	3650	
Class 900	2	50	368	371	368	51	500	-	280	-	70	-
	2½	65	419	422	419	64	550	-	280	-	110	-
	3	80	381	384	381	76	610	660	300	310	140	167
	4	100	457	460	457	102	702	750	350	310	200	227
	5	125	559	562	559	127	850	900	400	310	258	285
	6	150	610	613	610	152	980	1060	500	460	358	410
	8	200	737	740	737	203	1100	1140	650	460	550	600
	10	250	838	841	838	254	1320	1370	700	460	1000	1100
	12	300	965	968	965	305	1500	1560	900	460	1215	1310
	14	350	1029	1038	1029	322	1900	1950	900	600	1600	1700
16	400	1130	1140	1130	373	2050	2100	900	600	2150	2330	

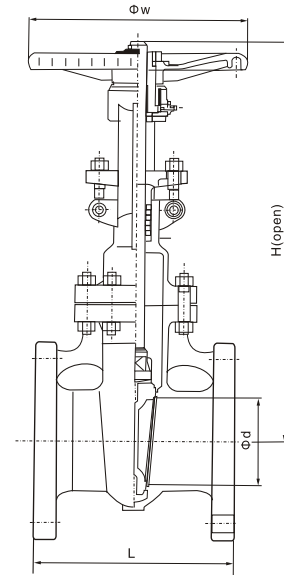
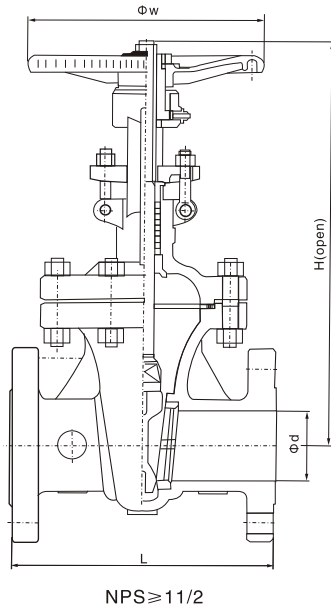
Class 1500 & Class 2500 Cast Steel Gate valve



Class	Size		Dimensions(mm)								Weight(Kg)	
	NPS	DN	L			D	H	H1	W	W1	Hand wheel	Gear box
			RF	RTJ	BW							
Class 1500	2	50	368	371	368	51	510	-	280	-	70	-
	2 1/2	65	419	422	419	64	560	-	300	-	110	-
	3	80	470	473	470	76	620	670	350	310	175	202
	4	100	546	549	546	102	728	770	400	310	270	300
	5	125	673	676	673	127	870	920	450	310	378	405
	6	150	705	711	405	144	1000	1070	500	460	520	575
	8	200	832	841	832	192	1130	1180	750	460	820	915
	10	250	991	1000	991	239	1360	1410	900	600	1560	1750
	12	300	1130	1146	1130	287	-	1620	-	600	-	2120
	14	350	1257	1276	1257	315	-	2020	-	600	-	2600
16	400	1384	1407	1384	360	-	2180	-	600	-	3450	
Class 2500	2	50	451	454	451	42	530	580	280	310	100	130
	2 1/2	65	508	514	508	52	580	630	300	310	150	180
	3	80	578	584	578	62	650	700	350	310	245	275
	4	100	673	683	673	87	750	800	400	310	390	420
	5	150	794	807	794	96	900	960	500	460	550	580
	6	125	914	927	914	131	1040	1100	600	460	780	835
	8	200	1022	1038	1022	179	1150	1200	750	460	1260	1355
	10	250	1270	1292	1270	223	1400	1460	900	600	2380	2565
	12	300	1422	1445	1422	265	-	1660	-	600	-	3250



API 603 Class 150~ Class 300 Cast Stainless Steel Gate valve

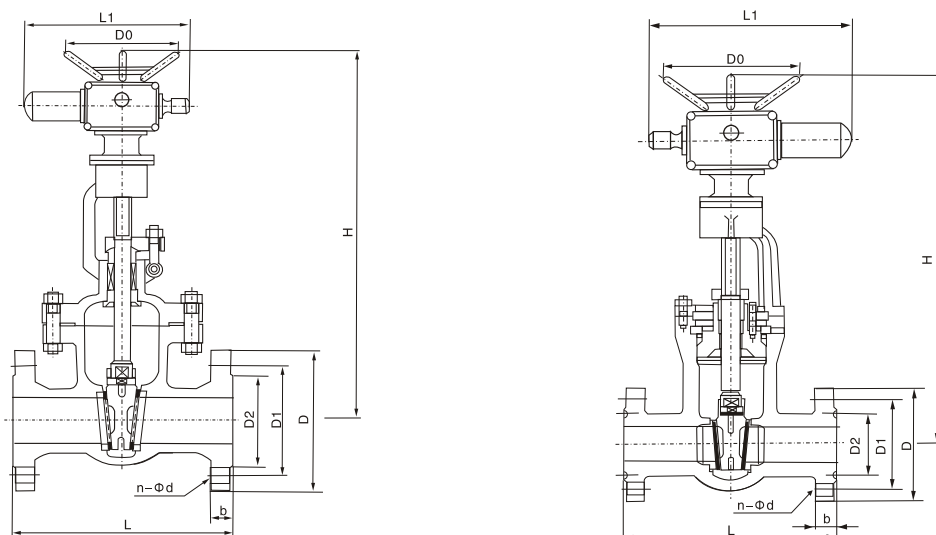


Standards

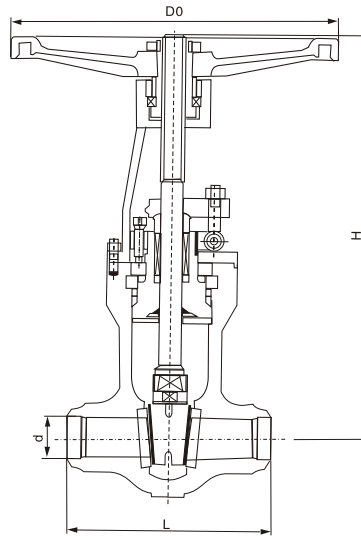
Design and Manufacture : API 603
Inspection and Test : API 598
End flange dimension : ASME B 16.5

Face to face : ASME B 16.10
Pressure-temperature ratings : ASME B 16.34

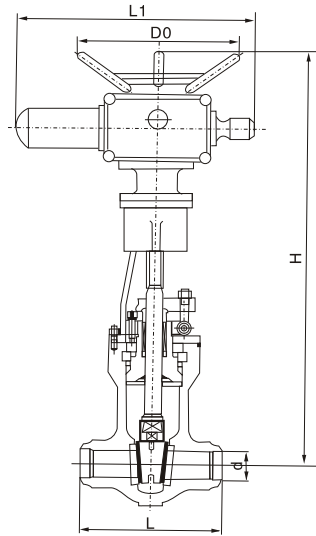
Size		Class 150					Class 300				
NPS	DN	Dimensions(mm)				Weight(Kg)	Dimensions(mm)				Weight(Kg)
		L	D	H	W		L	D	H	W	
1/2	15	108	14	195	120	3	140	14	198	120	5
3/4	20	117	19	210	120	4	152	19	215	140	6
1	25	127	25	240	140	6	165	25	245	160	9
1 1/4	32	140	32	300	180	8	178	32	306	180	12
1 1/2	40	165	38	395	200	12	190	38	400	200	18
2	50	178	51	365	160	16	216	51	400	200	22
2 1/2	65	191	64	420	160	22	241	64	435	200	26
3	80	203	76	485	200	28	283	76	515	250	41
4	100	229	102	580	250	42	305	102	600	280	62
5	125	254	127	710	250	53	381	127	715	300	84
6	150	267	152	741	280	65	403	152	780	350	110
8	200	292	203	960	300	105	419	203	980	400	177
10	250	330	254	1055	350	160	457	254	1200	400	284
12	300	356	305	1352	400	245	502	305	1400	400	382
14	350	381	337	1520	400	328	762	337	1560	500	598
16	400	406	387	1734	500	425	838	387	1760	500	785
18	450	432	438	1920	500	510	914	438	1940	600	962
20	500	457	489	2110	600	650	991	489	2140	600	1144
24	600	508	591	2520	700	855	1143	591	2550	700	1805



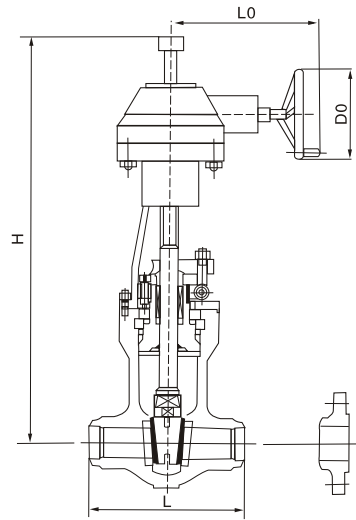
Class	mm	in	L	D	D1	n-φd	Electric Actuator Code	L1	D0	H
600Lb RF	50	2	292	165	127.0	8-φ19	DZW15	590	365	810
	65	2 1/2	330	190	149.4	8-φ22.5	DZW20	590	365	860
	80	3	356	210	168.1	8-φ22.5	DZW20	590	365	892
	100	4	432	273	216.0	8-φ25.4	DZW30	810	470	1013
	125	5	508	330	266.7	8-φ28.5	DZW45	810	470	1250
	150	6	559	356	292.1	12-φ28.5	DZW60	810	470	1250
	200	8	660	419	349.3	12-φ32	DZW90	830	550	1420
	250	10	787	508	431.8	16-φ35	DZW120	830	550	1650
	300	12	838	559	489.0	20-φ35	DZW180	870	320	1800
	350	14	889	603	527.0	20-φ38	DZW250	870	320	2030
900Lb RTJ Self-sealing	50	2	371	216	165.0	8-φ25.4	DZW20	590	365	832
	65	2 1/2	422	244	190.5	12-φ28.5	DZW20	590	365	880
	80	3	384	241	190.5	8-φ25.4	DZW30	590	365	905
	100	4	460	292	235.0	8-φ32	DZW30	810	470	1071
	125	5	562	349	279.5	8-φ35	DZW60	810	470	1112
	150	6	613	381	317.5	12-φ32	DZW90	830	550	1170
	200	8	740	470	393.7	12-φ38	DZW120	830	550	1440
	250	10	841	546	470.0	16-φ38	DZW180	870	320	1930
	300	12	968	610	533.4	20-φ38	DZW250	870	320	2259



Class	Size DN	Dimensions					Weight
	mm	in	d	L	H	D0	kg
900Lb	65	2 1/2	65	254	680	200	45
	80	3	80	305	974	200	60
	100	4	100	356	1038	230	120
	150	6	146	508	1432	260	205
	200	8	178	660	1705	360	351
1500Lb	65	2 1/2	56	254	671	200	48
	80	3	64	305	692	200	58
	100	4	84	406	790	230	98
	125	5	100	483	875	260	126
	150	6	126	559	1055	360	212
	200	8	158	711	1148	410	377
2500Lb	65	2 1/2	46	330	639	200	70
	80	3	54	368	680	230	90
	100	4	70	457	805	260	142
	125	5	86	533	965	360	191
	150	6	104	610	1070	410	339



Class	Size DN	Dimensions							Weight
	mm	in	L	d	Electric Actuator Code	L0	D0	H	kg
1500Lb	65	2 1/2	254	56	DZW45A	810	470	698	110
	80	3	305	64	DZW45A	810	470	701	210
	100	4	406	84	DZW45A	810	470	737	440
	150	6	559	126	DZW180A	870	320	991	560
	200	8	711	158	DZW180A	870	320	999	850
	250	10	864	200	DZW180A	870	320	1124	1150
	300	12	991	250	DZW250	870	320	1196	1800
	350	14	1067	280	DZW800	1060	500	1688	2500
	400	16	1194	318	DZW1000	1060	500	1713	2600
2500Lb	65	2 1/2	330	46	DZW45A	810	470	970	
	80	3	368	54	DZW45A	810	470	990	
	100	4	457	70	DZW60A	810	470	1080	
	125	6	610	104	DZW180	870	320	1450	
	150	8	762	130	DZW180	870	320	1460	
	200	10	914	162	DZW250	870	320	1620	
	250	12	1041	210	DZW350	870	320	1830	
	350	14	1118	234	DZW800	1060	500	2310	
	400	16	1245	164	DZW1000	1060	500	2480	



Class	Dimensions								
	Size DN		H	D0	L0	(RF)		(BW)	
	mm	in				L	W(kg)	L	W(kg)
600Lb	150	6	990	305	357	559	260	559	207
	200	8	1130	305	357	660	418	660	341
	250	10	1357	458	427	787	674	787	547
	300	12	1519	610	427	838	984	838	824
	350	14	1730	610	427	889	1288	889	1113
	400	16	1836	610	507	991	1800	991	1550
	450	18	2364	813	665	1092	2792	1092	2392
	500	20	2594	813	665	1194	3655	1194	3173
	600	24	3152	813	665	1397	4060	1397	3470
900Lb	150	6	893	458	427	610	440	610	385
	200	8	1070	458	427	737	720	737	650
	250	10	1292	610	427	838	1140	838	1020
	300	12	1540	610	507	965	1720	965	1560
	350	14	1618	813	665	1092	2400	1092	2160
	400	16	1732	813	665	1130	3040	1130	2700