

● **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 API 600, it is not advisable to add or change packing by the mean of back seating when the valve is pressure 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 if being requested by the customer.

● **Stem Design**

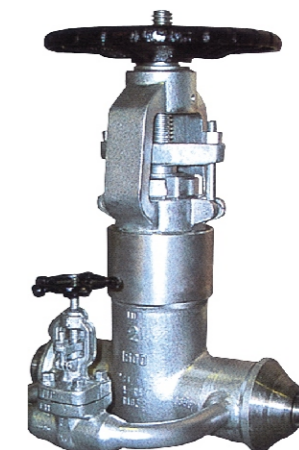
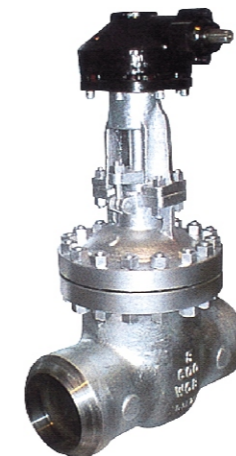
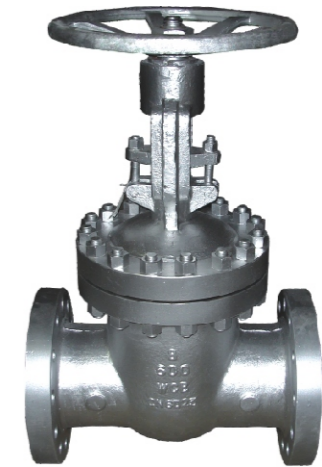
The stem is of integral forged design. The minimum diameter of the stem shall per the standard requirement. The connection of the stem and disc is T type. The strength of the connecting area is bigger than that of the T threaded part of the stem. The strength test of that area conforms to API 591.

● **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 600, 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.

● **Special Gate Valve**

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



Flat Gate Valve



Cryogenic Gate Valve



Bellow Sealed Gate Valve



Extension Stem Gate Valve for Underground Application

● **Technical Specification**

Design and Manufacture: API 600 (ISO 10434) or API 6D

Inspection and Test: API 598, API 600 or API 6D

End flange dimension: ASME B16.5 (for NPS≤24)、ASME B16.47 series B、API 605 or ASME B16.47 series A、MSS SP-44 (for NPS > 24)

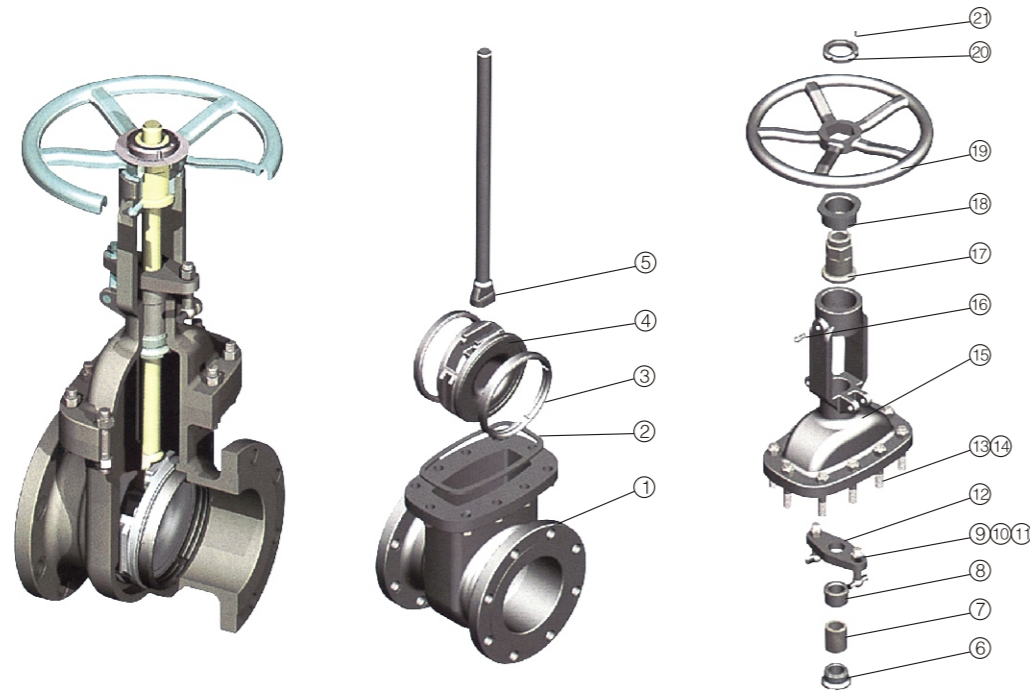
BW end dimension: ASME B16.25

Face to face and end to end: ASME B16.10

Pressure-temperature ratings: ASME B16.34

## Cast Steel Gate Valve

## Cast Steel Gate Valve

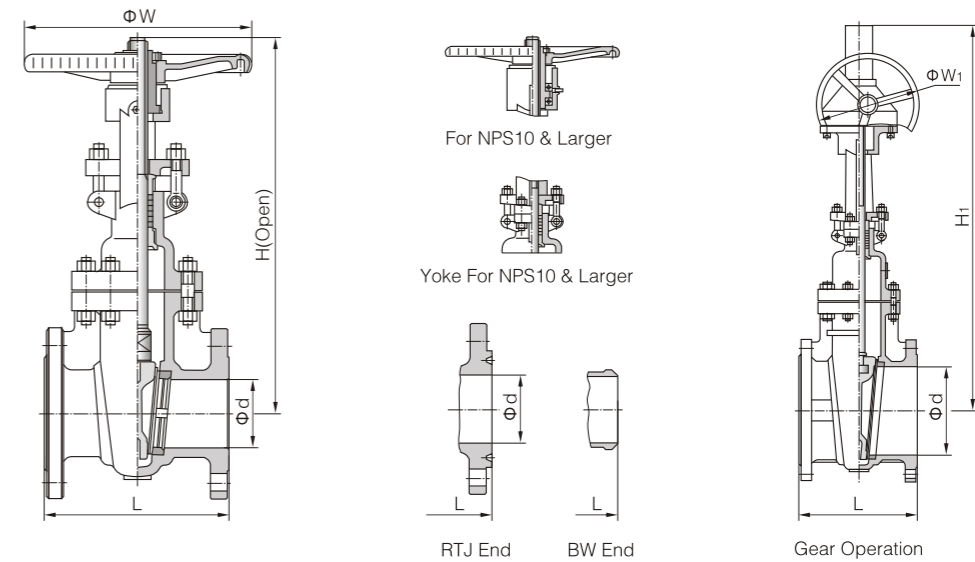


### Form of Major Part Material

Parts No.	Parts Name	Materials				
		WCB/Trim 1	WCB/Trim 5	WCB/Trim 8	CF8/304	CF8M/316
1	Body	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M
2	Gasket	Soft Iron + Graphite or 304 + Graphite			304 + Graphite	316 + Graphite
3	Seat ring	A105 + 13Cr	A105 + STL	A105 + STL	ASTM A351 CF8	ASTM A351 CF8M
4	Gate	ASTM A216 WCB + 13Cr	ASTM A216 WCB + STL	ASTM A216 WCB + 13Cr	ASTM A351 CF8	ASTM A351 CF8M
5	Stem	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F304	ASTM A182 F316
6	Backseat bushing	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A351 CF8	ASTM A351 CF8M
7	Packing	Graphite	Graphite	Graphite	Graphite	Graphite
8	Gland	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F304	ASTM A182 F316
9	Gland eyebolt	ASTM A193 B7	ASTM A193 B7	ASTM A193 B7	ASTM A193 B8	ASTM A193 B8M
10	Eyebolt nut	ASTM A194 2H	ASTM A194 2H	ASTM A194 2H	ASTM A194 8	ASTM A194 8M
11	Eyebolt pin	ASTM A36	ASTM A36	ASTM A36	304ss	316ss
12	Gland flange	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M
13	Bonnet bolt	ASTM A193 B7	ASTM A193 B7	ASTM A193 B7	ASTM A193 B8	ASTM A193 B8M
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 CF8M
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.

### Class150 Cast Steel Gate Valve

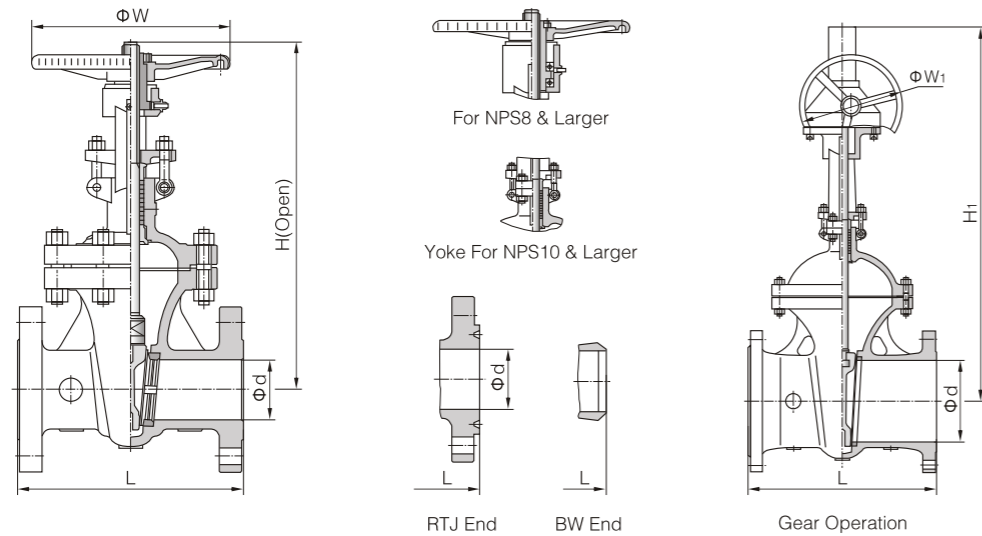


Class	Size		Dimensions(mm)								Weight(kg)	
	NPS	DN	L			d	H	H <sub>1</sub>	W	W <sub>1</sub>	H.W	G.O
			RF	RTJ	BW							
Class150	1/2	15	108	119	108	14	195	-	120	-	4	-
	3/4	20	117	130	117	19	210	-	120	-	5	-
	1	25	127	140	127	25	240	-	140	-	7	-
	1 1/4	32	140	153	140	32	300	-	180	-	10	-
	1 1/2	40	165	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	

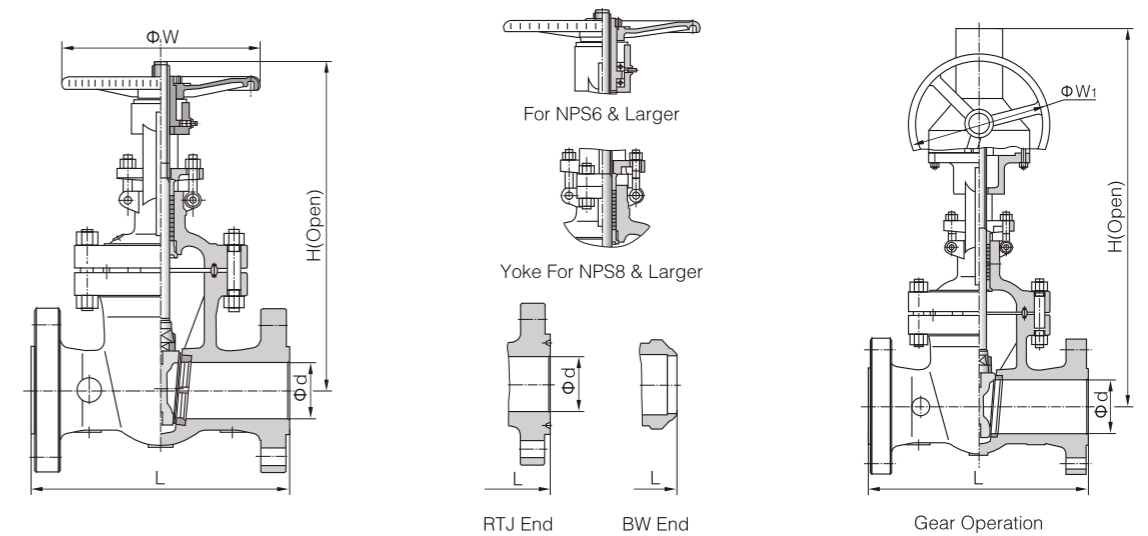
## Cast Steel Gate Valve

## Cast Steel Gate Valve

### ● Class300 Cast Steel Gate Valve



### ● Class600 & Class900 Cast Steel Gate Valve



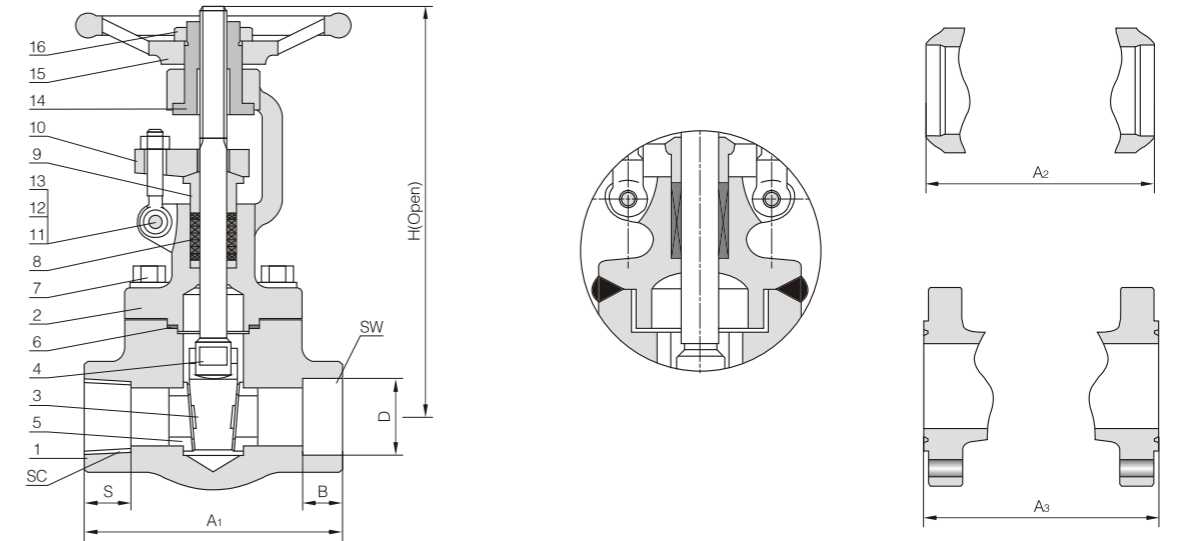
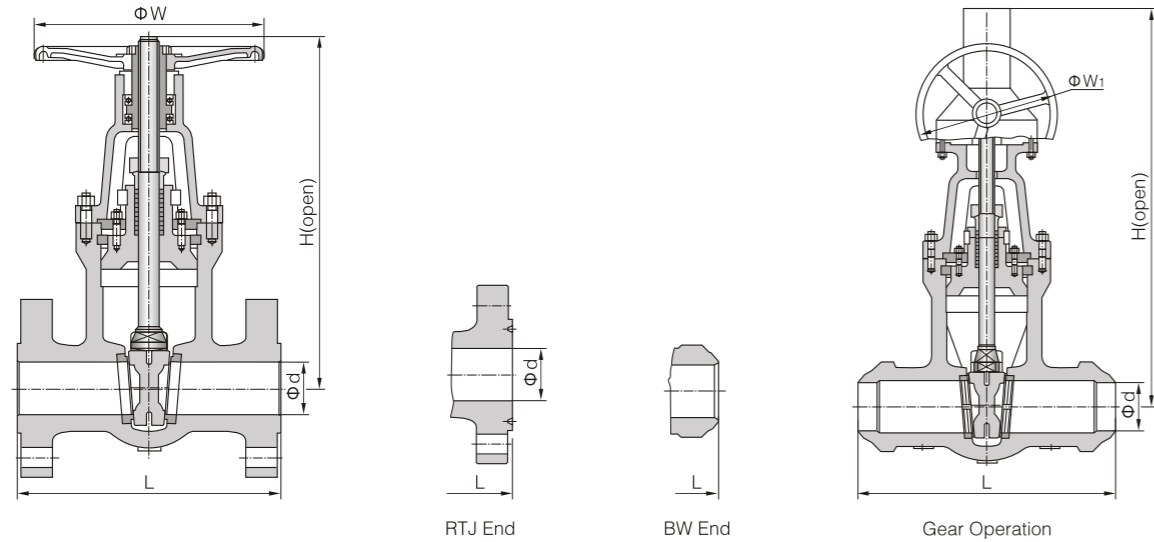
Class	Size		Dimensions(mm)								Weight(kg)	
	NPS	DN	L			d	H	H <sub>1</sub>	W	W <sub>1</sub>	H.W	G.O
			RF	RTJ	BW							
Class300	1/2	15	140	151	140	14	198	-	120	-	6	-
	3/4	20	152	165	152	19	215	-	140	-	7	-
	1	25	165	178	165	25	245	-	160	-	10	-
	1 1/4	32	178	191	178	32	306	-	180	-	15	-
	1 1/2	40	190	203	190	38	400	-	200	-	21	-
	2	50	216	232	216	51	420	-	200	-	25	-
	2 1/2	65	241	257	241	64	446	-	200	-	30	-
	3	80	283	298	283	76	537	-	250	-	48	-
	4	100	305	321	305	102	619	650	280	310	73	100
	5	125	381	397	381	127	722	750	300	310	99	126
	6	150	403	419	403	152	806	835	350	310	130	186
	8	200	419	435	419	203	1000	1030	400	310	208	235
	10	250	457	473	457	254	1240	1280	450	310	334	386
	12	300	502	518	502	305	1425	1460	500	310	450	502
	14	350	762	778	762	337	1585	1620	600	460	704	756
	16	400	838	854	838	387	1790	1830	500	460	923	965
	18	450	914	930	914	438	1960	2000	650	460	1131	1224
	20	500	991	1010	991	489	2158	2220	750	460	1345	1400
24	600	1143	1165	1143	591	2576	2620	900	600	2122	2385	
26	650	1245	1270	1245	633	-	2850	-	600	-	3000	
28	700	1346	1372	1346	684	-	3080	-	600	-	3300	
30	750	1397	1422	1397	735	-	3180	-	600	-	3550	
32	800	1524	1553	1524	779	-	3300	-	600	-	4400	
34	850	1626	1654	1626	830	-	3550	-	600	-	5200	
36	900	1727	1756	1727	874	-	3760	-	600	-	6050	

Class	Size		Dimensions(mm)								Weight(kg)	
	NPS	DN	L			d	H	H <sub>1</sub>	W	W <sub>1</sub>	H.W	G.O
			RF	RTJ	BW							
Class600	2	50	292	295	292	51	444	-	200	-	32	-
	2 1/2	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
Class900	2	50	368	371	368	51	500	-	280	-	70	-
	2 1/2	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	

## Cast Steel Gate Valve

## Forged Steel Gate Valve

### ● Class1500 & Class2500 Cast Steel Gate Valve



Class	Size		Dimensions(mm)								Weight(kg)	
	NPS	DN	L			d	H	H <sub>1</sub>	W	W <sub>1</sub>	H.W	G.O
			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	705	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
Class 2500	16	400	1384	1407	1384	360	-	2180	-	600	-	3450
	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	125	794	807	794	96	900	960	500	460	550	580
	6	150	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	

### ● Technical Specification

Steel Gate Valves, API 602  
 Steel Valves, ASME B16.34  
 Face to Face, Manufacturer Standard  
 Face to Face, Flanged, ASME B16.10  
 End Flanges, ASME B16.5  
 Buttwelding Ends, ASME B16.25  
 Socket-welding Ends, ASME B16.11  
 Screwed Ends, ASME B1.20.1  
 Inspection and Test, API 598

### ● Design Description

Outside Screw and Yoke (OS&Y)  
 Bolted Bonnet  
 Choice of WB, Welding Bonnet  
 Single Wedge, Fully Guided  
 Renewable Seat Rings  
 Yoke Integral with Bonnet  
 Rising Stem and Non-rising Handwheel  
 SW, Socket-welding Ends  
 SC, Screwed Ends  
 BW, Buttwelding Ends  
 Flanged Ends

### ● Form of Major Part Material

No.	Part Name	ASTM Material								
		Carbon Steel	1.25Cr-0.5Mo	2.25Cr-1Mo	304 Type	316 Type	304L Type	316L Type	20 Alloy	
1	Body	A105	A182 F11	A182 F22	A182 F304	A182 F316	A182 F304L	A182 F316L	20-Alloy	
2	Bonnet	A105	A182 F11	A182 F22	A182 F304	A182 F316	A182 F304L	A182 F316L	20-Alloy	
3	Wedge	A105+13Cr *1	A182 F11+HF	A182 F22+HF	A182 F304	A182 F316	A182 F304L	A182 F316L	20-Alloy	
4	Stem	A182 F6a	A182 F11	A182 F22	A182 F304	A182 F316	A182 F304L	A182 F316L	20-Alloy	
5	Seat Ring	A105+13Cr *1	A182 F11+HF	A182 F22+HF	NA	NA	NA	NA	Na	
6	Bonnet Gasket	304+Graphit	304+Graphit	304+Graphit	304+Graphit	316+Graphit	304L+Graphit	316L+Graphit	316+Graphit	
7	Bonnet Bolt	A193 B7	A193 B7	A193 B16	A193 B8	A193 B8M	A193 B8M	A193 B8M	A193 B8M	
8	Packing	Graphite	Graphite	Graphite	Graphite *2	Graphite *2	Graphite *2	Graphite *2	Graphite *2	
9	Gland	A276 410	A276 410	A276 410	A276 304	A276 316	A276 304L	A276 316L	20-Alloy	
10	Gland Flange	A105	A105	A105	A182 F304	A182 F316	A182 F304L	A182 F316L	20-Alloy	
11	Eyebolt	Carbon Steel	A193 B7	A193 B7	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	
12	Eyebolt Nut	Carbon Steel	A194 2H	A194 2H	A194 8	A194 8	A194 8	A194 8	A194 8	
13	Eyebolt Pin	A276 410	A276 410	A276 412	A276 304	A276 304	A276 304	A276 304	A276 304	
14	Stem Nut	Bronze	Bronze *3	Bronze *3	Bronze	Bronze	Bronze	Bronze	Bronze	
15	Hand wheel	Malleable iron	Malleable iron	Malleable iron	Malleable iron	Malleable iron	Malleable iron	Malleable iron	Malleable iron	
16	Wheel Nut	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel+Zn	Carbon Steel+Zn	Carbon Steel+Zn	Carbon Steel+Zn	Carbon Steel+Zn	
*1	PN ≥ 600 Class seal face will be HF									
*2	PTFE Optional									
*3	Ductile Ni-Resist iron Optional									