

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 sea 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, also makes cryogenic gate valve, Jacketed Gate Valve, Bellow Sealed Gate Valve, Extension Stem Gate Valve for underground application, Flat Gate Valve, etc.

Actuation

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

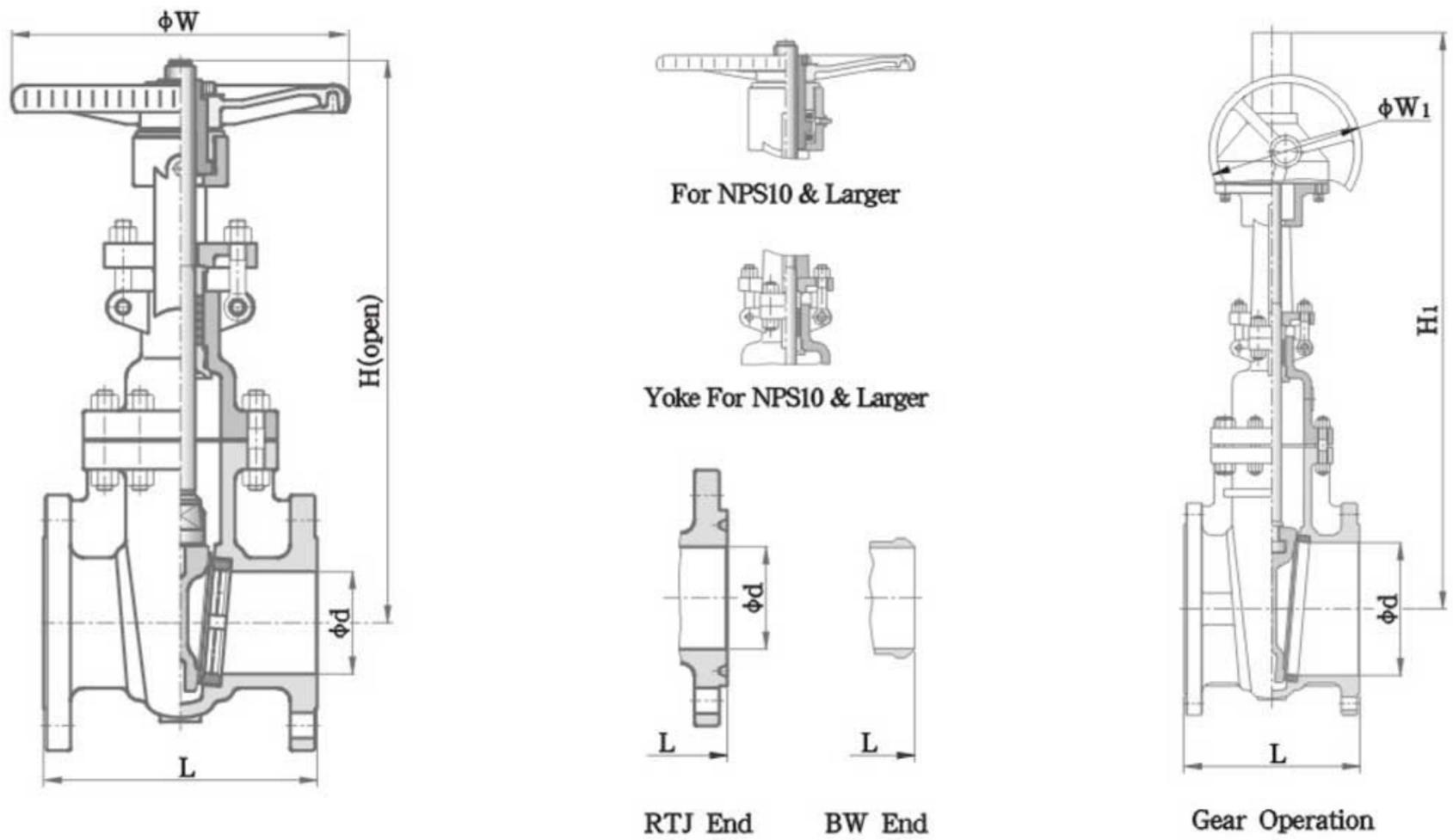


Parts and material list

Parts No.	Parts name	Materials				
		WCB/Trim 1	WCB/Trim 5	WCB/Trim 8	CF8/304	CF8M/316
1	Body		ASTM A 216 WCB		ASTM A351 CF8	ASTM A351 CF8M
2	Gasket		Soft Iron + Graphite or 304 + Graphite		304 + Graphite	316 + Graphite
3	Seat ring	A105 + 13Cr	A 105 + STL	A 105 + 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 F304	ASTM A182 F316
6	Backseat bushing		ASTM A 182 F6a		ASTM A351 CF8	ASTM A351 CF8M
7	Packing		Graphite		Graphite	Graphite
8	Gland		ASTM A182 F6a		ASTM A182 F304	ASTM A182 F316
9	Gland eyebolt		ASTM A193 B7		ASTM A193 B8	ASTM A193 B8M
10	Eyebolt nut		ASTM A194 2H		ASTM A194 8	ASTM A194 8M
11	Eyebolt pin		ASTM A36		304ss	316ss
12	Gland flange		ASTM A216 WCB		ASTM A351 CF8	ASTM A351 CF8M
13	Bonnet bolt		ASTM A193 B7		ASTM A193 B8	ASTM A193 B8M
14	Bonnet nut		ASTM A194 2H		ASTM A194 8	ASTM A194 8M
15	Bonnet		ASTM A216 WCB		ASTM A351 CF8	ASTM A351 CF8M
16	Nipple		Carbon steel		Carbon steel	Carbon steel
17	Stem nut		ASTM A439 D2		ASTM A439 D2	ASTM A439 D2
18	Yoke sleeve nut		Carbon steel		Carbon steel	Carbon steel
19	Hand wheel		Ductile Iron		Ductile Iron	Ductile Iron
20	Hand wheel nut		Carbon steel		Carbon steel	Carbon steel
21	Set screw		ASTM A193 B7		ASTM A193 B7	ASTM A193 B7

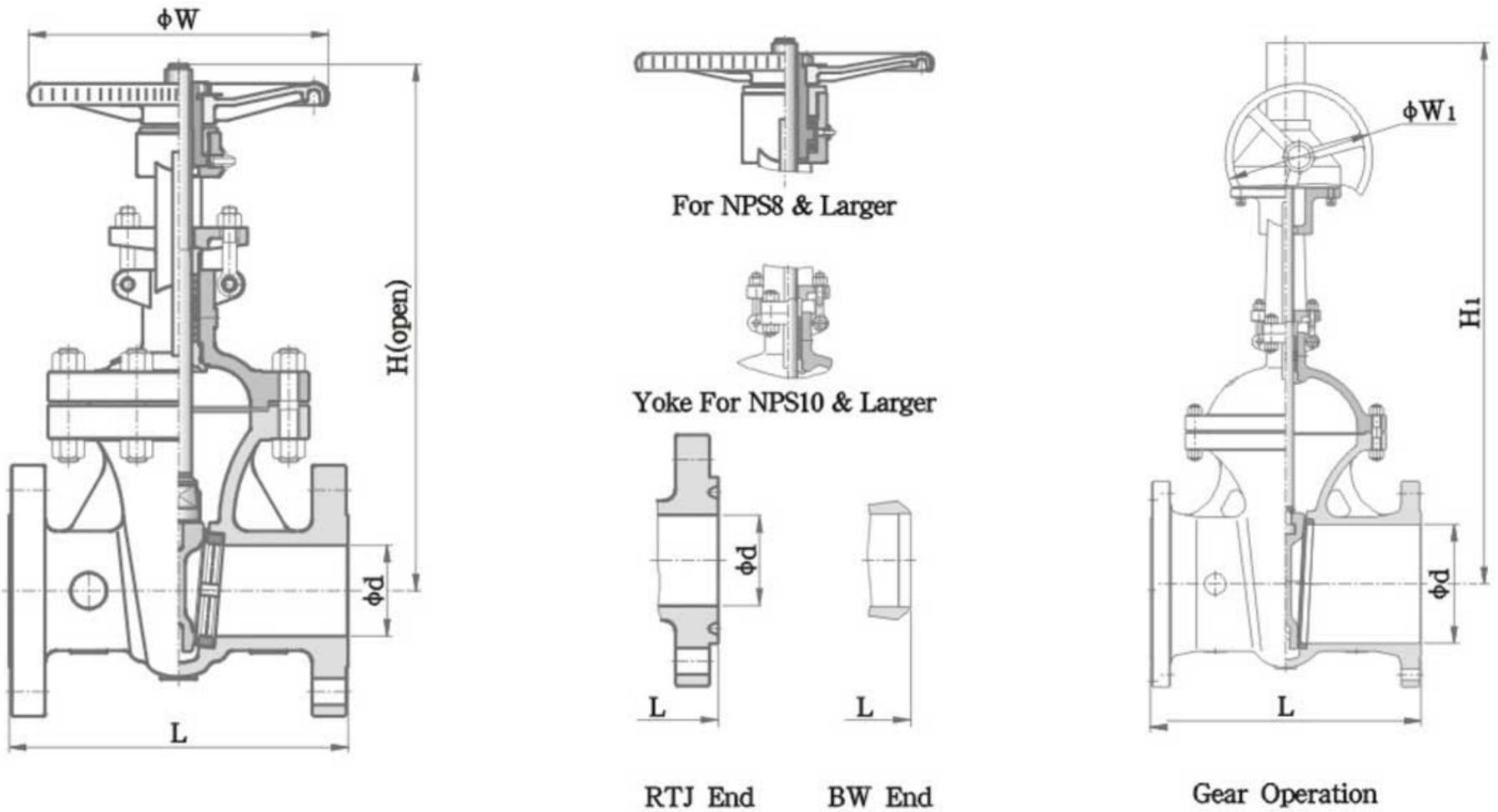
Note: The chart above only lists out some common composition of steel gate valve parts. We may provide other different parts material composition according to the customer's request or the actual valve working condition.

Class 150 & JIS 10K Cast Steel Gate Valve



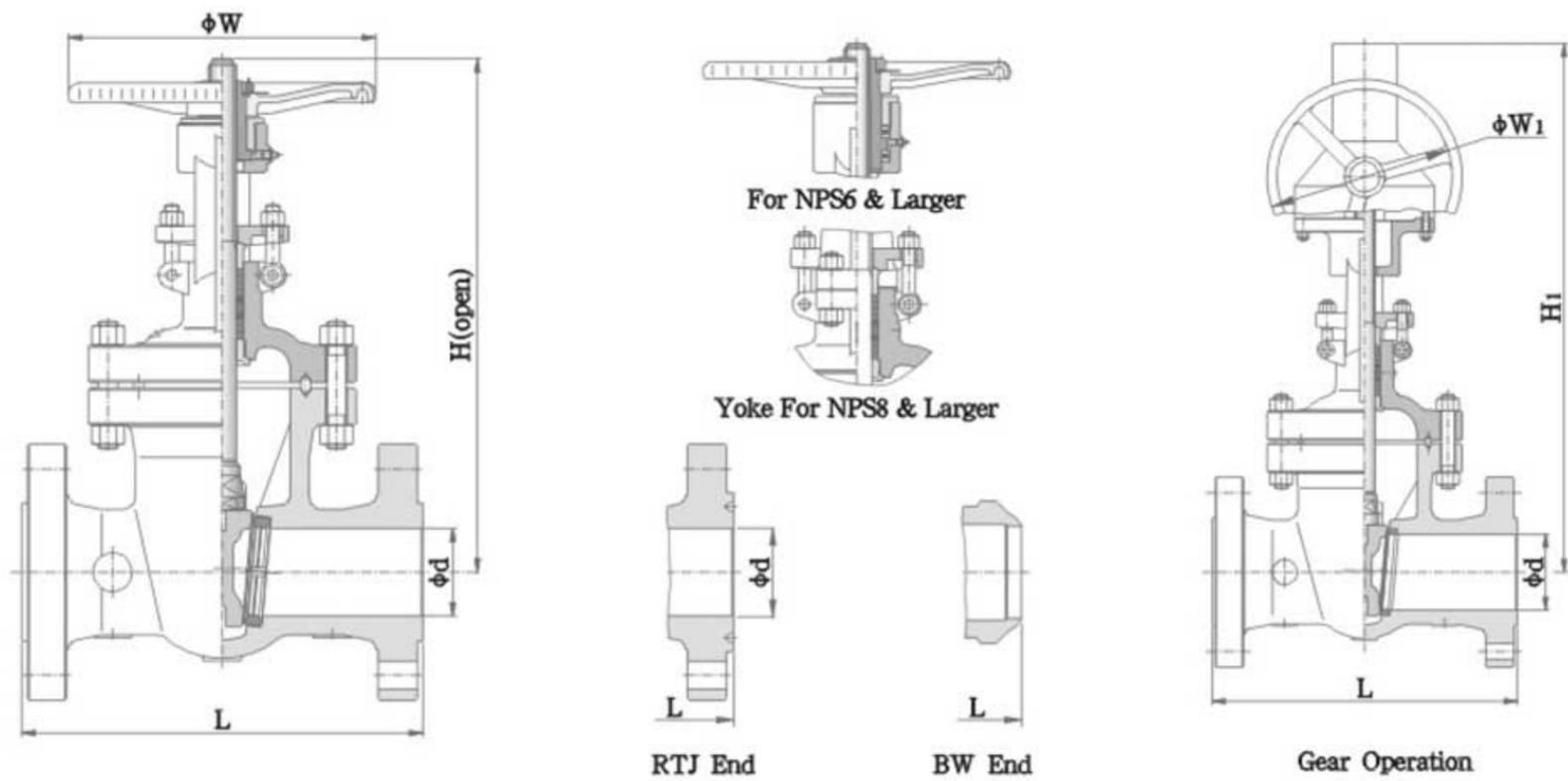
Class	Size		Dimensions (mm)								Weight (kg)	
	NPS	DN	L			d	H	H _i	W	W _i	H.W	G.O
			RF	RTJ	BW							
150	2	50	178	191	216	51	400	-	200	-	19	-
	2 1/2	65	191	203	241	64	435	-	200	-	25	-
	3	80	203	216	283	76	515	-	250	-	33	-
	4	100	229	241	305	102	595	-	280	-	49	-
	5	125	254	267	381	127	725	-	280	-	62	-
	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



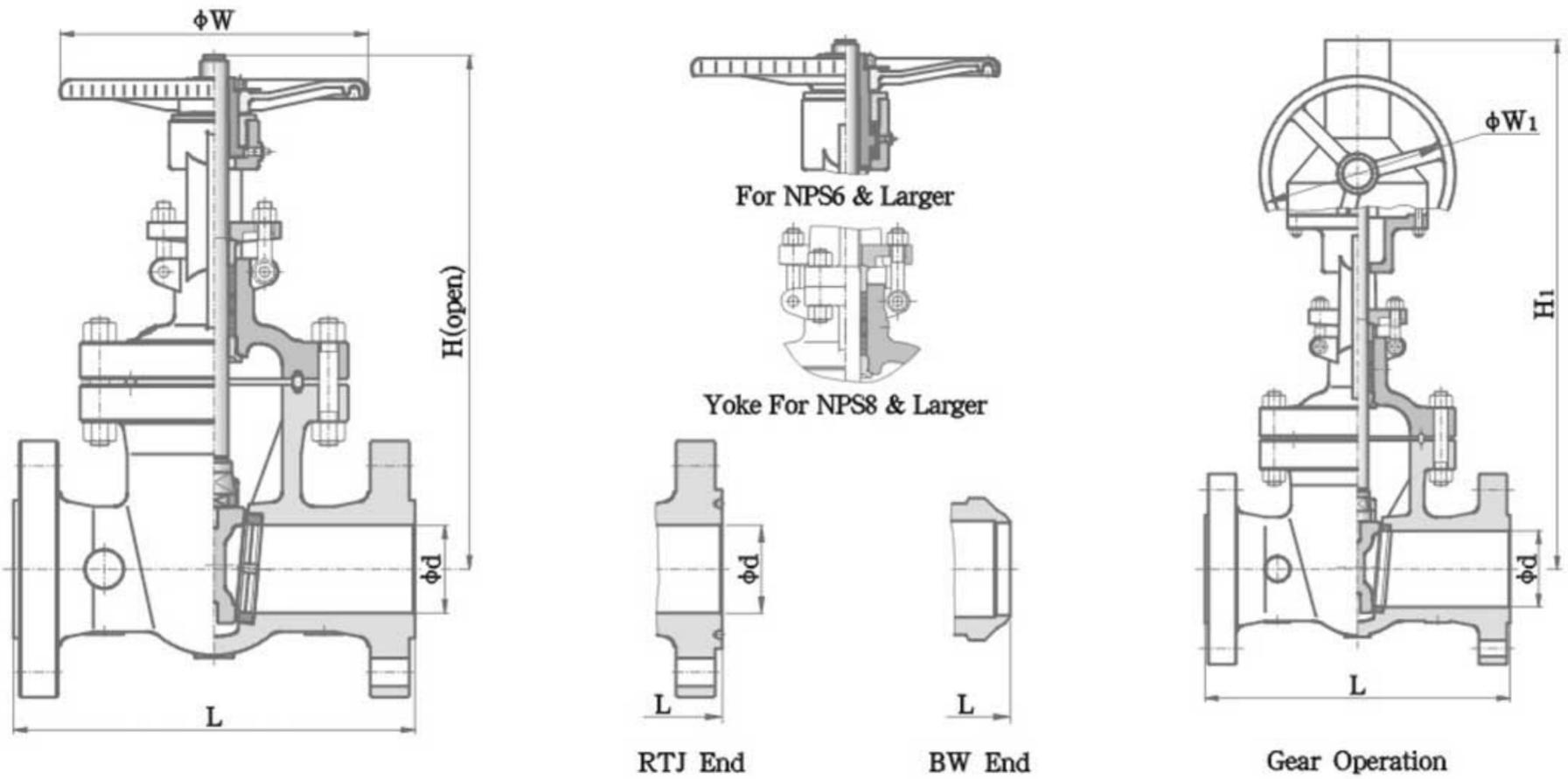
Class	Size		Dimensions (mm)								Weight (kg)		
	NPS	DN	L			d	H	H ₁	W	W ₁	Weight (kg)		
			R F	RTJ	BW						H.W	G.O	
300	2	50	216	232	216	51	420	-	200	-	25	-	
	2 1/2	65	241	257	241	64	446	-	200	-	30	-	
	3	80	283	298	283	76	537	-	250	-	48	-	
	4	100	305	321	305	102	619	650	280	310	73	100	
	5	125	381	397	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 600 & Class 900 Cast Steel Gate Valve



Class	Size		Dimensions (mm)								Weight (kg)	
	NPS	DN	L			d	H	H ₁	W	W ₁	H.W	G.O
			RF	RTJ	BW							
600	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	
900	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	

Class 1500 & Class 2500 Cast Steel Gate Valve



Class	Size		Dimensions (mm)								Weight (kg)	
	NPS	DN	L			d	H	H _i	W	W _i	Weight (kg)	
			RF	RTJ	BW						RF	BW
1500	2	50	368	371	368	51	510	-	280	-	117	93
	2 1/2	65	419	422	419	64	560	-	300	-	175	144
	3	80	470	473	470	76	620	670	350	310	240	185
	4	100	546	549	546	102	728	770	400	310	337	285
	5	125	673	676	673	127	870	920	450	310	405	378
	6	150	705	711	705	144	1000	1070	500	460	680	584
	8	200	832	841	832	192	1130	1180	750	460	1228	978
	10	250	991	1000	991	239	1360	1410	900	600	2278	1990
	12	300	1130	1146	1130	287	-	1620	-	600	3260	2850
	14	350	1257	1276	1257	315	-	2020	-	600	4100	3320
16	400	1384	1407	1384	360	-	2180	-	600	5960	4890	
2500	2	50	451	454	451	42	530	580	280	310	132	99
	2 1/2	65	508	514	508	52	580	630	300	310	206	155
	3	80	578	584	578	62	650	700	350	310	256	192
	4	100	673	683	673	87	750	800	400	310	498	390
	5	125	794	807	794	96	900	960	500	460	978	828
	6	150	914	927	914	131	1040	1100	600	460	1550	1230
	8	200	1022	1038	1022	179	1150	1200	750	460	2395	1980
	10	250	1270	1292	1270	223	1400	1460	900	600	4460	3700