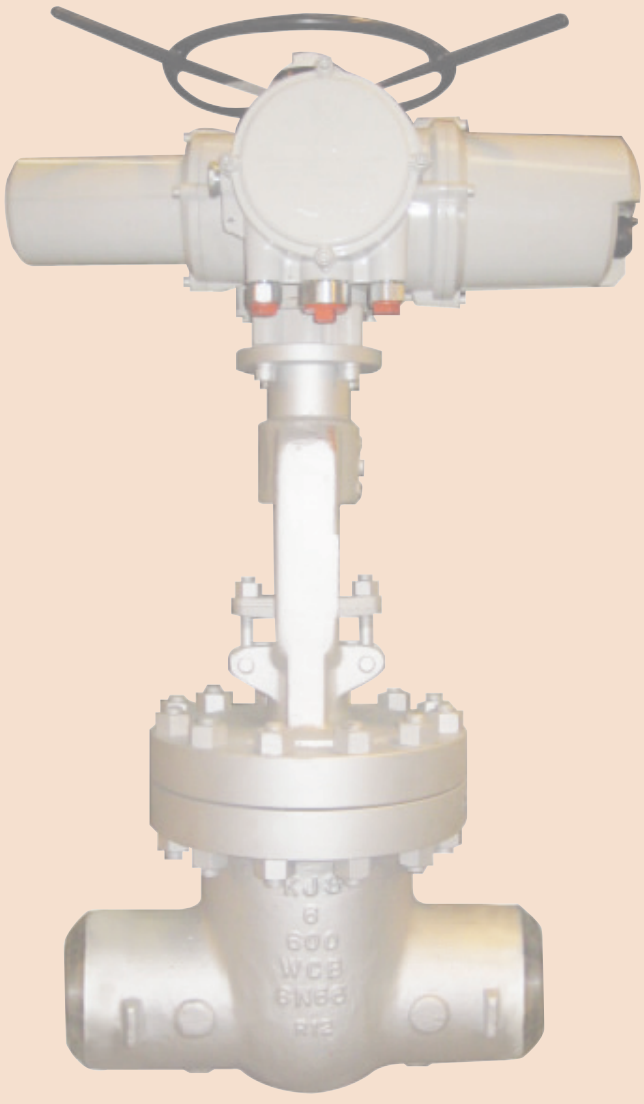
GATE VALVES

BOLTED BONNET



CAST STEEL
BOLTED BONNET

GATE VALVES

YOKE SLEEVE

The upper portion of the Yoke Sleeve is hexagonally tapered to fix the handwheel. The standard material of the Yoke Sleeve is Nodular Ni-resist D2 with over 1150℃(2100°F) dissolution point in accordance with API Std. specifications.

BOLTING

The body-bonnet bolts are manufactured in accordance with API Std. 600 specifications. The nuts also strictly conform with ANSI B 1.1
The stud-bolt nuts, hexagonal, rigid and hot-forged, bear material notation as well as do the bolt nuts made according to ANSI B18.2.2

BONNET

The bonnet and valve body have the same wall thickness.
The body-bonnet flange drilling is spot-faced to exactly meet stud-bolt nuts. The bonnet back seat bushing guarantees packing replacement even when the valve is fully opened. The stem packing dimensions of the stuffing box are in accordance with API specifications.

STEM

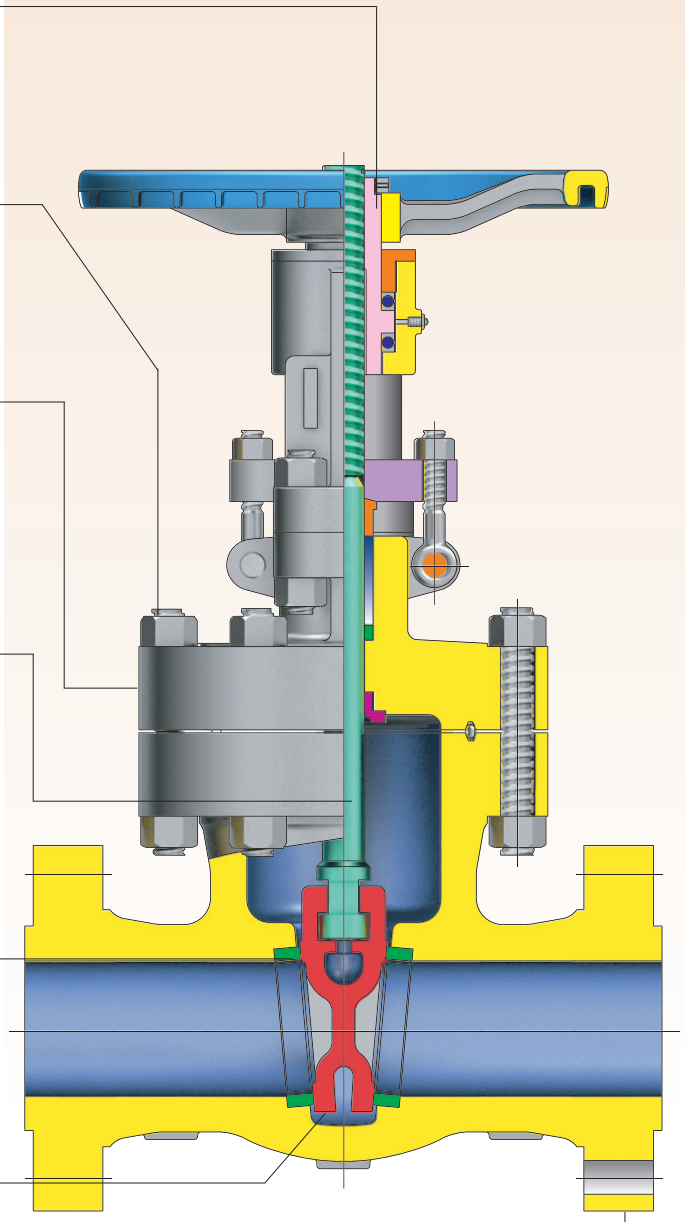
The machined forged stem comes with a T-shape head, which connects the slot of the wedge. The spherically shaped contacting surface of the head gives greater strength and durability.
The stem dimensions are in accordance with API Std. 600 specifications.
The heat treated stem delivers adequate mechanical properties as well as excellent surface hardness. Further, opening/shutting friction is minimized by accurate machining and lapping.

SEAT RING

Bottom seated type seat rings are welded or screwed into the body.
The seating surface is finished by lapping. They are forgings that have been heat treated to delived the best mechanical properties and required hardness. The difference in hardness between seats and wedge is in accordance with API specifications.

FLEXIBLE WEDGE

The standard disc of our valves is a one-piece flexible wedge.
Slots are machined on both sides of the wedge to allow it to travel correctly in the integrally cast body guides.
The wedge seating surfaces have been accurately machined, grind and lapped to a mirror finish to prevent leakage and eliminate galling.

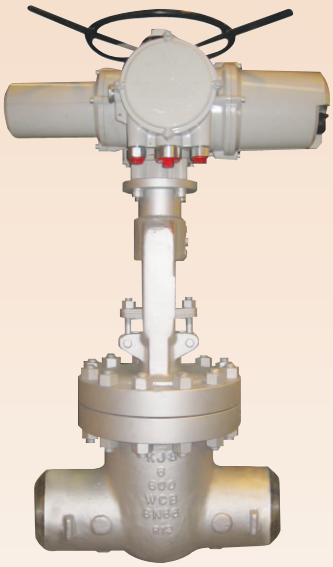


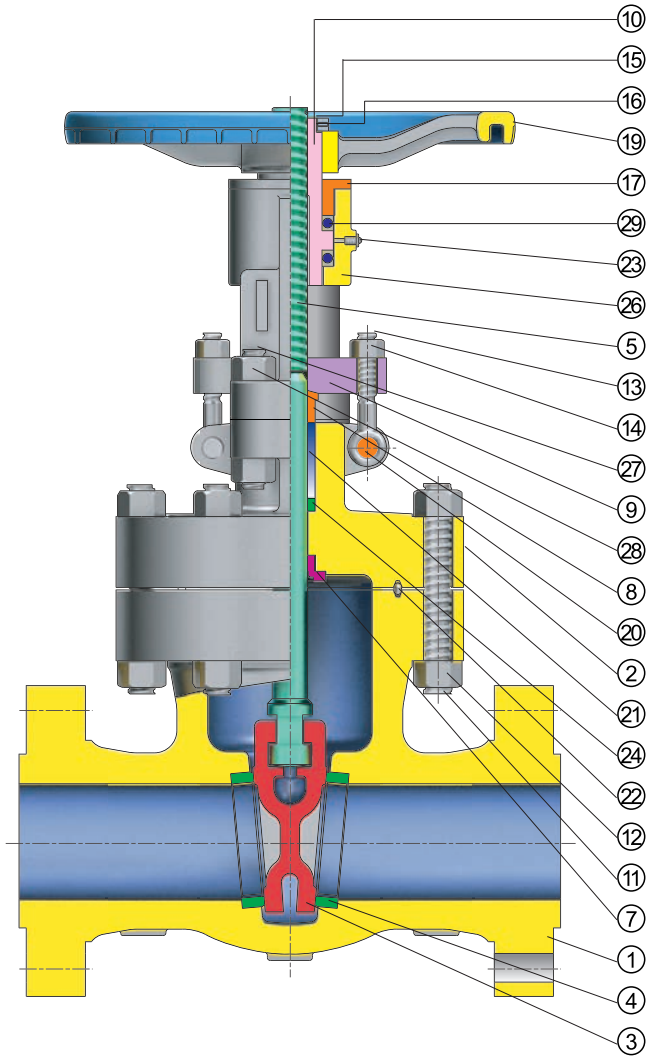
BODY

The cast steel body is designed to insure a wall thickness which is greater at any point than the minimum specified by API Std. 600. Special care has been taken with the design of the Class 150 valve body so that the elliptically shaped center section is free from intensified stresses in the critical area.
The body of above Class 300 are made circular in shape as much as possible to minimize distortion even under extreme operating conditions. Inlet and outlet port dimensions conform with ASME B16.34 Pipe Fitting. The welded-in type seat ring is standard to insure interchangeability. Except for Class 150, the standard body-bonnet joint is male and female.

CAST STEEL
BOLTED BONNET

GATE VALVES





NO	NAME OF PART	ASTM SPECIFICATION
15	HANDLE NUT	STEEL
16	SET SCREW	STEEL
17	SLEEVE GLAND	STEEL
19	HANDWHEEL	A395
21	PACKING	COMMERCIAL
22	GASKET	COMMERCIAL
23	GREASE NIPPLE	STEEL
29	BEARING	COMMERCIAL

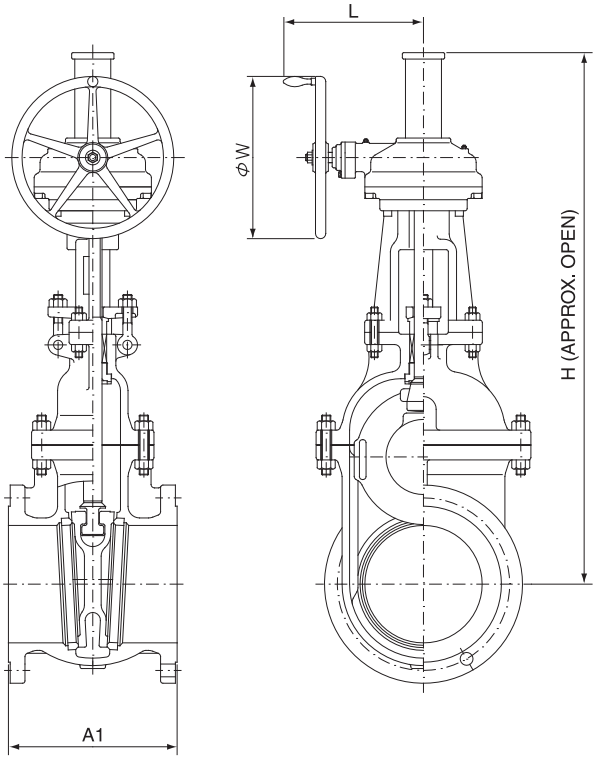
NO	NAME OF PART	ASTM SPECIFICATION												
		STANDARD	HIGH TEMPERATURE SERVICE				LOW TEMPERATURE SERVICE		STAINLESS STEEL				ALLOY STEEL	
1	BODY	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A352-LCB	A352-LC1/LC2/LC3	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
2	BONNET	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A352-LCB	A352-LC1/LC2/LC3	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
3	*DISC	A217-CA15	A217-CA15	A217-CA15	A217-CA15	A217-CA15	A351-CF8	A351-CF8	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
4	BODY SEAT RING	A105+STL	A182-F1	A182-F11	A182-F22	A182-F5a	A350-LF2	A350-LF2	A240-304	A240-316	A240-304L	A240-316L	ALLOY 20	A182-F51
5	STEM	A479-410					A276-304		A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A182-F51
7	BONNET BUSH	A479-410					A276-304		A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A276-304
8	PACKING GLAND	A479-410							A276-304				A276-304	
9	GLAND FLANGE	A105 or A283-D							AISI 304				AISI 304	
10	YOKE SLEEVE	A439-D2							A439-D2				A439-D2	
11	BONNET BOLT	A193-B7	A193-B7	A193-B16	A193-B16	A193-B16	A320-L7	A320-L7	A193-B8	A193-B8	A193-B8	A193-B8	A193-B8	A193-B8
12	BONNET NUT	A194-2H	A194-2H	A194-4	A194-4	A194-4	A194-4L	A194-4L	A194-8	A194-8	A194-8	A194-8	A194-8	A194-8
13	GLAND BOLT	A307-B							A193-B8				A193-B8	
14	GLAND NUT	A194-2H							A194-8				A194-8	
20	HINGE PIN	A108-1020							A276-304				A276-304	
24	LANTERN	A479-410					A276-304		A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A182-F51
26	YOKE	A216-WCB							A351-CF8				A351-CF8	
27	YOKE BOLT	A193-B7							A193-B8				A193-B8	
28	YOKE NUT	A194-2H							A194-8				A194-8	

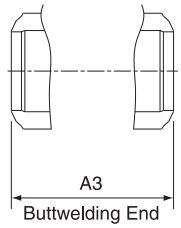
*Note : In case of 12" and larger size, we'll use trim material overlayed one on the same or equivalent material of the Body.

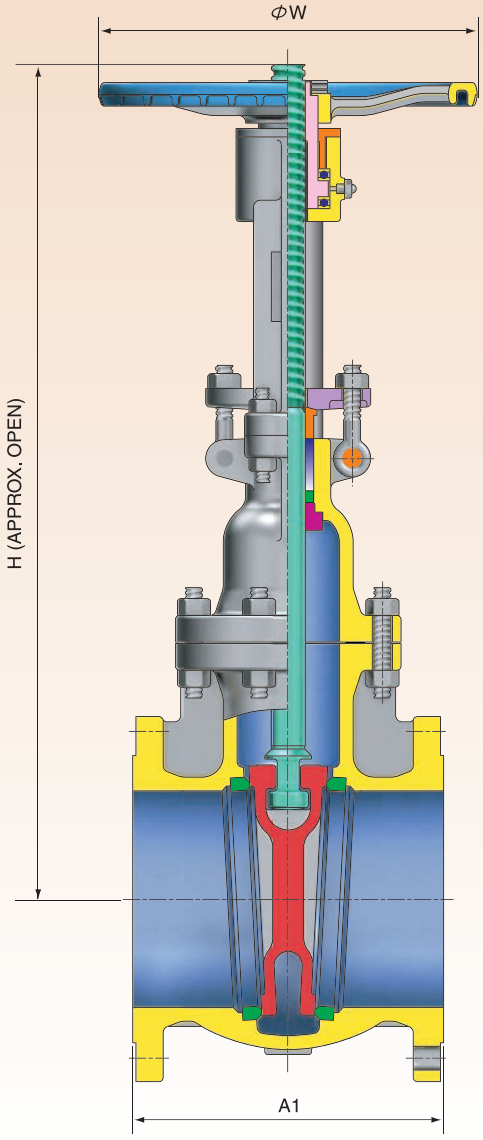
GATE VALVES

BOLTED BONNET

GT CLASS 150





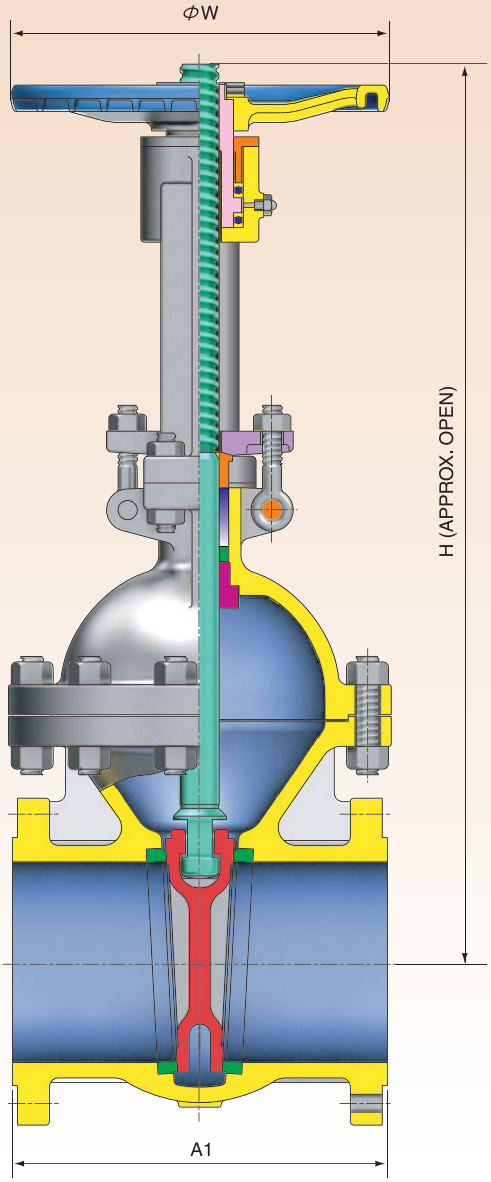


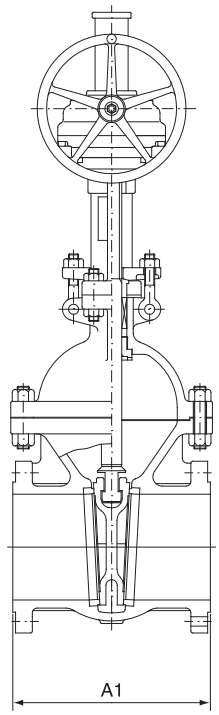
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20	24	28	30	36	40	42	48	52
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750	900	1000	1050	1200	1300
A1	in	7.0	7.5	8.0	9.0	10.5	11.5	13.0	14.0	15.0	16.0	17.0	18.0	20.0	24.0	24.0	28.0	30.0	32.0	34.0	36.0
	mm	178	190	203	229	267	292	330	356	381	406	432	457	508	610	610	711	762	813	864	914
A3	in	8.5	9.5	11.1	12.0	15.9	16.5	18.0	19.8	22.5	24.0	26.0	28.0	32.0	36.0	36.0	40.0	42.0	43.0	41.9	54.0
	mm	216	241	282	305	403	419	457	502	572	610	660	711	813	914	914	1016	1067	1092	1064	1372
H	in	13.7	16.6	18.0	22.3	29.5	36.7	46.3	52.2	60.0	71.2	87.2	99.3	112.2	129.3	139.0	156.7	169.0	181.1	204.7	224.4
	mm	347	422	457	566	749	931	1176	1326	1525	1809	2214	2522	2850	3284	3530	3980	4292	4600	5200	5700
W	in	7.9	7.9	7.9	9.8	11.8	14.0	15.7	17.7	19.7	22.0	19.7	24.8	24.8	28.0	28.0	31.5	35.4	35.4	35.4	39.4
	mm	200	200	200	250	300	355	400	450	500	560	500	630	630	710	710	800	900	900	900	1000
L	in	-	-	-	-	-	-	-	-	-	-	13.5	15.3	15.3	16.0	16.0	18.1	19.1	19.1	20.8	23.2
	mm	-	-	-	-	-	-	-	-	-	-	342	389	389	406	406	461	486	486	529	590
WEIGHT RF	lb	37.5	55.1	61.7	90.4	152.1	238.1	357.1	513.7	815.7	1177.3	1587.3	1851.9	3423.8	4817.1	5092.7	9740.0	10368.3	10445.5	15674.9	18739.3
	kg	17	25	28	41	69	108	162	233	370	534	720	840	1553	2185	2310	4418	4703	4738	7110	8500
WEIGHT BW	lb	35.3	46.3	57.3	83.8	132.3	202.8	310.9	467.4	749.6	1111.1	1397.7	1611.6	3090.9	4634.1	4916.3	9438.0	9332.2	9978.1	14107.4	16865.4
	kg	16	21	26	38	60	92	141	212	340	504	634	731	1402	2102	2230	4281	4233	4526	6399	7650

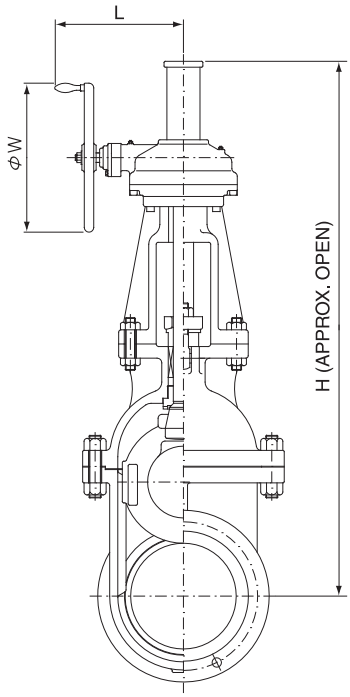
GATE VALVES

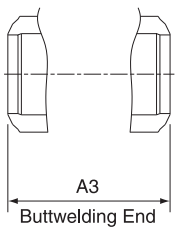
BOLTED BONNET

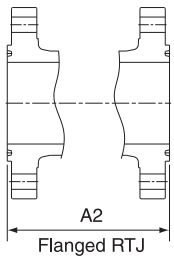
GT CLASS 300









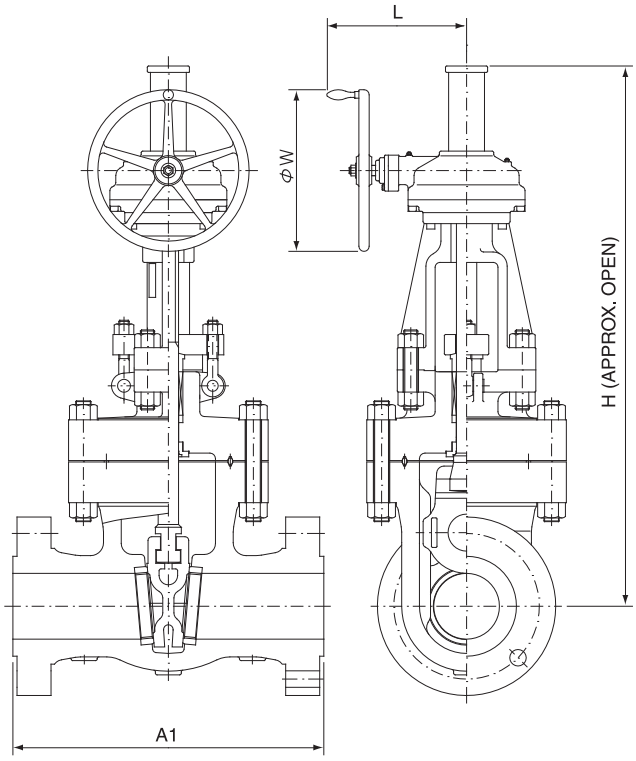


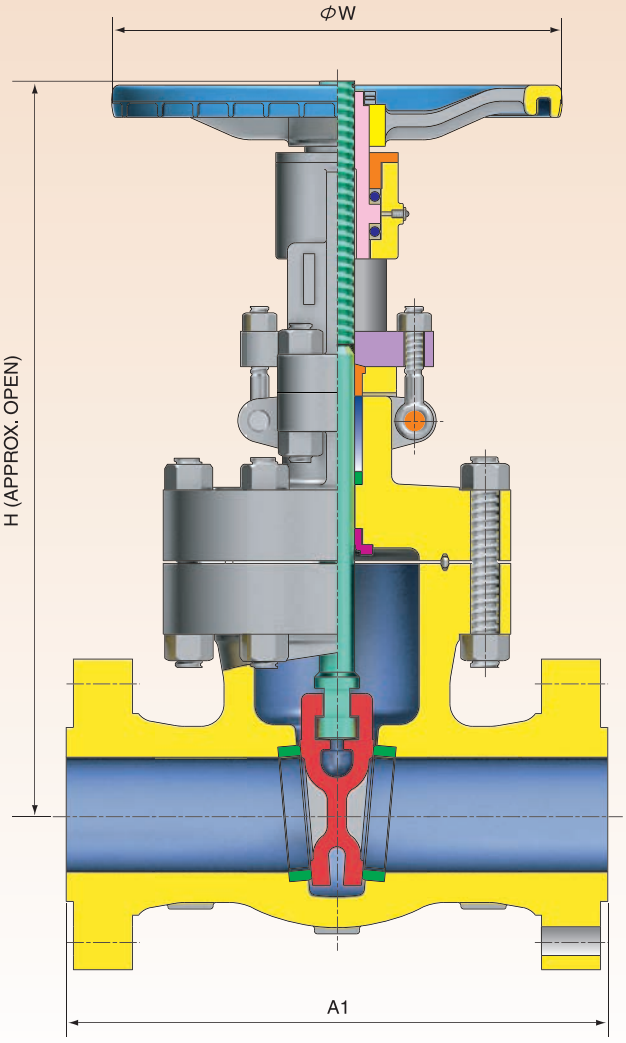
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20	24	28	30	36	40	42	48
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750	900	1000	1050	1200
A1 & A3	in	8.5	9.5	11.1	12.0	15.9	16.5	18.0	19.8	30.0	33.0	36.0	39.0	45.0	53.0	55.0	68.0	76.0	78.0	87.2
	mm	216	241	282	305	403	419	457	502	762	838	914	991	1143	1346	1397	1727	1930	1981	2215
A2	in	9.1	10.1	11.7	12.6	16.5	17.1	18.6	20.4	30.6	33.6	36.6	39.8	45.9	54.0	56.0	69.1	-	-	-
	mm	232	257	298	321	419	435	473	518	778	854	930	1010	1165	1372	1422	1756	-	-	-
H	in	14.8	18.0	18.7	23.1	30.6	37.9	46.4	55.8	68.1	77.0	89.3	95.0	109.6	136.2	137.8	156.4	188.6	174.4	217.4
	mm	375	456	475	586	776	963	1179	1417	1730	1955	2267	2414	2785	3460	3501	3973	4791	4430	5522
W	in	7.9	7.9	8.9	9.8	14.0	15.7	17.7	19.7	19.7	19.7	24.8	24.8	31.5	35.4	35.4	35.4	39.4	39.4	39.4
	mm	200	200	225	250	355	400	450	500	500	500	630	630	800	900	900	900	1000	1000	1000
L	in	-	-	-	-	-	-	-	-	13.5	13.5	15.3	15.3	18.1	19.1	19.1	20.8	23.2	23.2	23.2
	mm	-	-	-	-	-	-	-	-	342	342	389	389	461	486	486	529	590	590	590
WEIGHT RF	lb	50.7	83.8	88.2	134.5	269.0	412.3	604.1	1005.3	1593.9	2392.0	3082.1	3518.6	5304.3	8068.9	9678.3	15101.7	18651.1	20943.9	27337.3
	kg	23	38	40	61	122	187	274	456	723	1085	1398	1596	2406	3660	4390	6850	8460	9500	12400
WEIGHT BW	lb	46.3	70.5	77.2	92.6	260.1	330.7	480.6	802.5	1210.3	1907.0	2638.9	2985.1	4440.1	6865.2	8842.7	13066.8	13580.5	14991.4	19841.6
	kg	21	32	35	42	118	150	218	364	549	865	1197	1354	2014	3114	4011	5927	6160	6800	9000

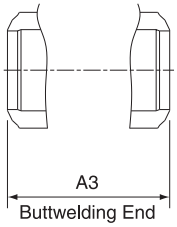
GATE VALVES

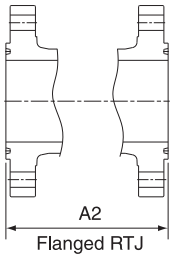
BOLTED BONNET

GT CLASS 600







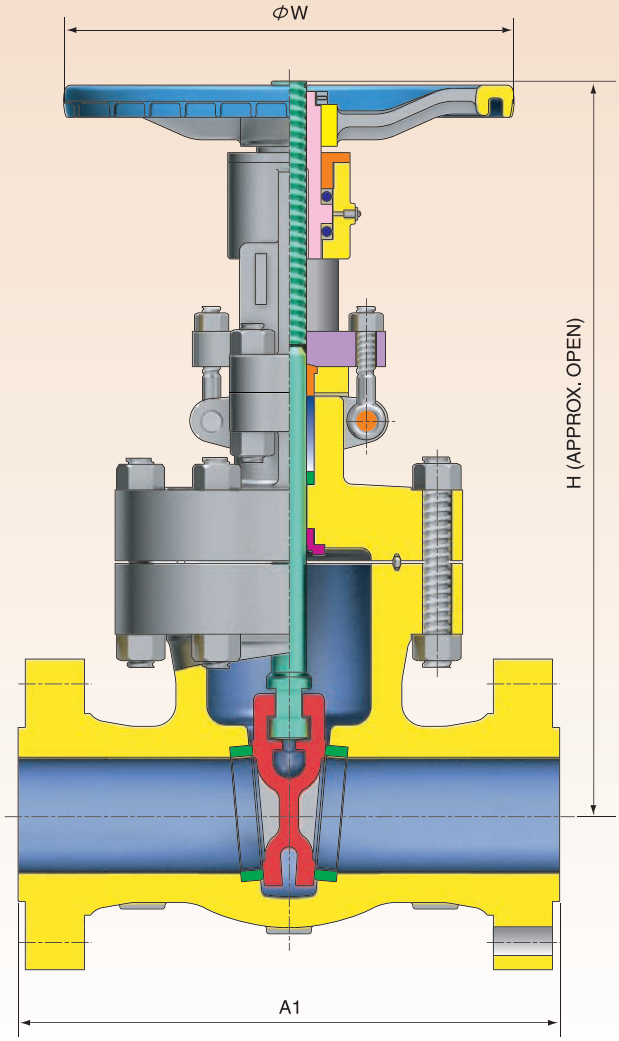


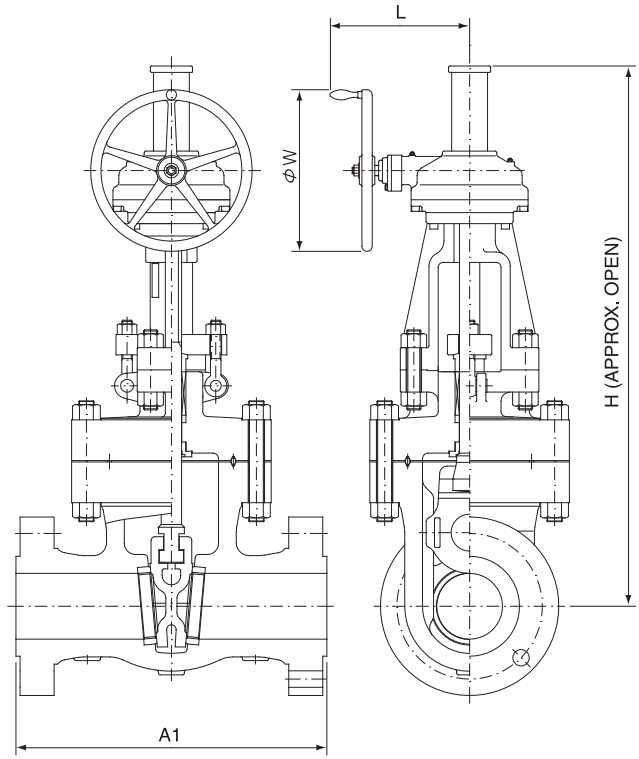
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20	24	28	30	36	40	42
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750	900	1000	1050
A1 & A3	in	11.5	13.0	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0	61.0	65.0	82.0	94.0	96.0
	mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1549	1651	2083	2387	2438
A2	in	11.6	13.1	14.1	17.1	22.1	26.1	31.1	33.1	35.1	39.1	43.1	47.2	55.4	61.5	65.5	82.6	-	-
	mm	295	333	359	435	562	663	790	841	892	994	1095	1200	1407	1562	1663	2098	-	-
H	in	18.5	19.4	22.0	26.9	37.4	42.6	49.8	66.9	73.0	84.3	103.0	108.2	111.1	128.8	138.6	179.5	207.6	240.1
	mm	471	494	558	682	951	1081	1264	1699	1855	2140	2616	2749	2823	3272	3521	4560	5273	6098
W	in	8.8	8.8	9.8	11.8	17.7	19.7	24.8	24.8	24.8	28.0	31.5	31.5	35.4	35.4	39.4	39.4	39.4	39.4
	mm	224	224	250	300	450	500	630	630	630	710	800	800	900	900	1000	1000	1000	1000
L	in	-	-	-	-	-	-	-	15.3	15.3	16.0	18.1	18.1	19.1	20.8	23.2	23.2	23.2	24.4
	mm	-	-	-	-	-	-	-	389	389	406	461	461	486	529	590	590	590	619
WEIGHT RF	lb	94.8	132.3	154.3	295.4	628.3	987.7	1499.1	2398.6	2892.5	4146.9	5216.1	7050.4	10472.0	13340.2	15311.1	21473.0	23258.8	24140.6
	kg	43	60	70	134	285	448	680	1088	1312	1881	2366	3198	4750	6051	6945	9740	10550	10950
WEIGHT BW	lb	61.7	99.2	132.3	229.3	451.9	690.0	1179.5	2151.7	2471.4	3558.3	4499.6	6139.9	9171.2	12202.6	13276.2	17945.6	18827.5	21539.2
	kg	28	45	60	104	205	313	535	976	1121	1614	2041	2785	4160	5535	6022	8140	8540	9770

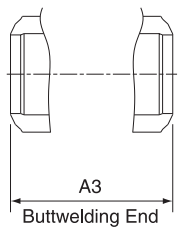
GATE VALVES

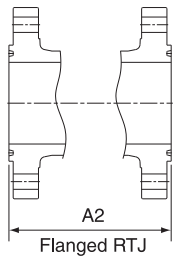
BOLTED BONNET

GT CLASS 900







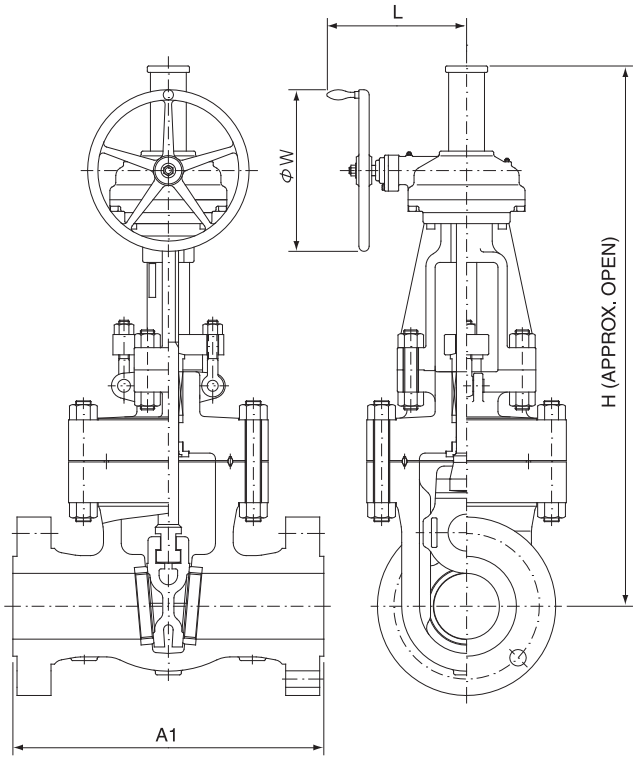


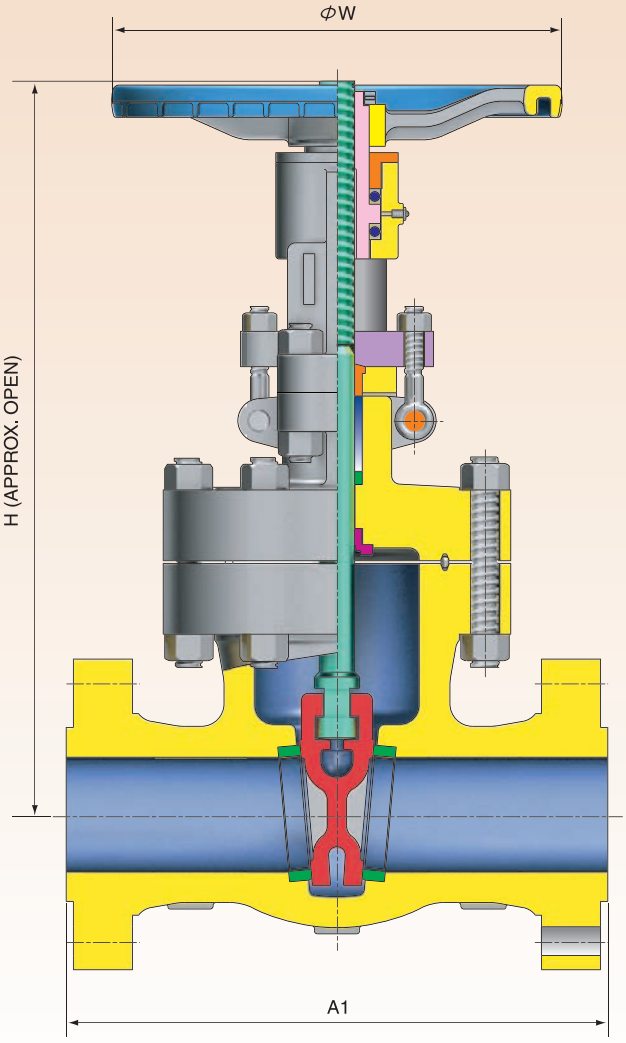
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1 & A3	in	14.5	16.5	15.0	18.0	24.0	29.0	33.0	38.0	40.5	44.5	48.0	52.0	61.0
	mm	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549
A2	in	14.6	16.6	15.1	18.1	24.1	29.1	33.1	38.1	40.9	44.9	48.5	52.5	61.7
	mm	371	422	384	460	613	740	841	968	1038	1140	1232	1334	1568
H	in	21.0	26.4	26.6	30.8	35.0	48.8	71.2	75.7	72.0	80.2	86.4	110.2	124.0
	mm	534	671	676	783	888	1239	1808	1923	1830	2036	2195	2800	3150
W	in	11.8	11.8	14.0	15.7	22.0	19.7	24.8	28.0	28.0	31.5	35.4	35.4	39.4
	mm	300	300	355	400	560	500	630	710	710	800	900	900	1000
L	in	-	-	-	-	-	13.5	15.3	16.0	16.0	18.1	19.1	23.2	23.2
	mm	-	-	-	-	-	342	389	406	406	461	486	590	590
WEIGHT RF	lb	180.8	341.7	363.8	383.6	998.7	1829.8	3042.4	3399.5	4894.3	6613.9	8531.9	10714.5	16093.7
	kg	82	155	165	174	453	830	1380	1542	2220	3000	3870	4860	7300
WEIGHT BW	lb	130.1	286.6	291.0	295.4	822.3	1536.6	2627.9	2844.0	4166.7	5881.9	7275.3	8928.7	13492.3
	kg	59	130	132	134	373	697	1192	1290	1890	2668	3300	4050	6120

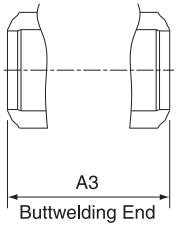
GATE VALVES

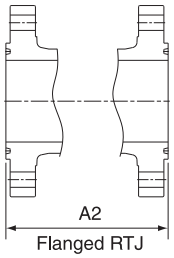
BOLTED BONNET

GT CLASS 1500







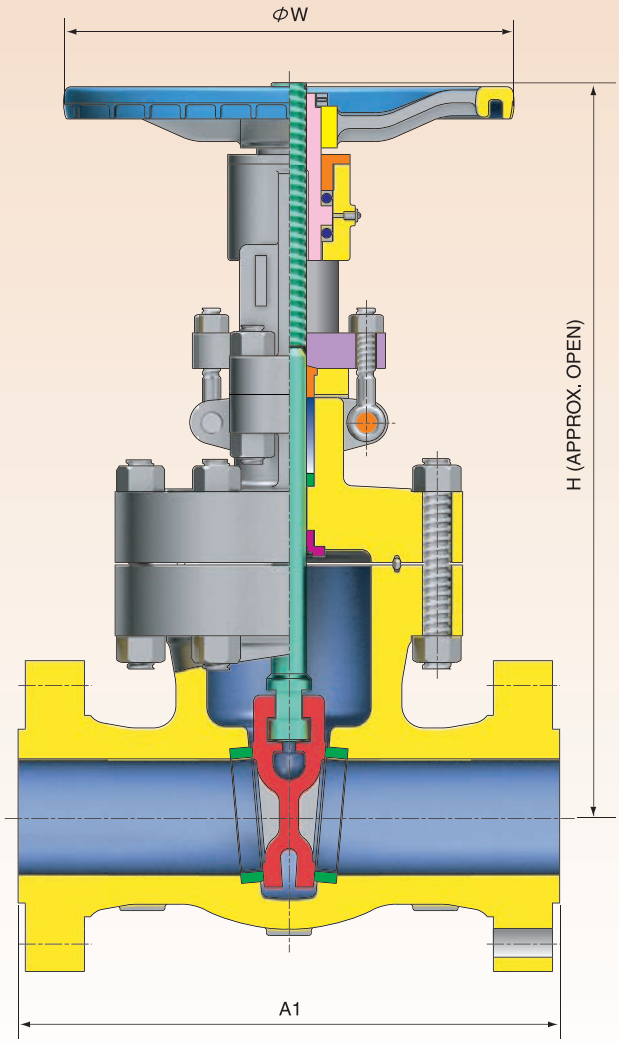


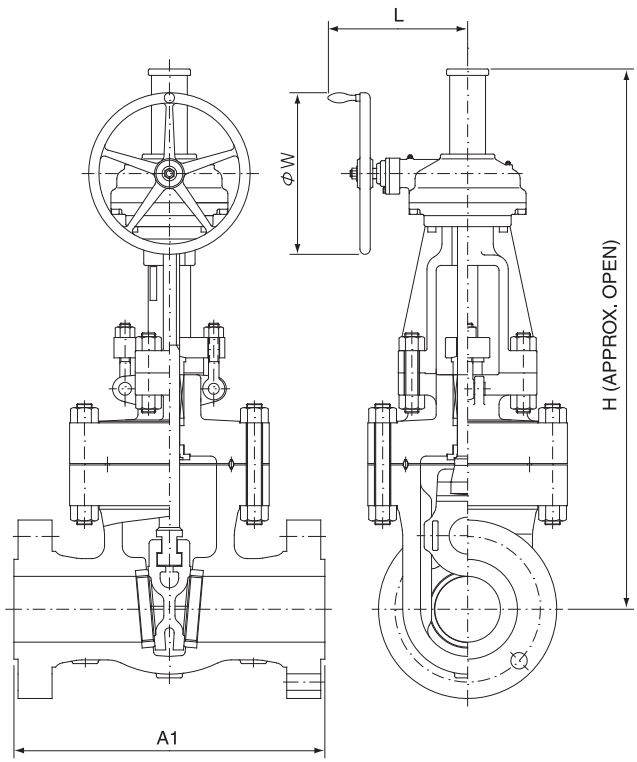
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1 & A3	in	14.5	16.5	18.5	21.5	27.8	32.8	39.0	44.5	49.5	54.5	60.5	65.5	76.5
	mm	368	419	470	546	705	832	991	1130	1257	1384	1537	1664	1943
A2	in	14.6	16.6	18.6	21.6	28.0	33.1	39.4	45.1	50.2	55.4	61.4	66.4	77.6
	mm	371	422	473	549	711	842	1000	1146	1276	1406	1559	1686	1971
H	in	21.0	26.4	29.1	30.8	51.9	63.0	66.4	82.3	85.1	97.9	108.7	122.1	146.5
	mm	534	671	738	783	1318	1600	1686	2090	2162	2486	2762	3102	3721
W	in	11.8	11.8	15.7	19.7	19.7	28.0	28.0	35.4	35.4	35.4	39.4	39.4	39.4
	mm	300	300	400	500	500	710	710	900	900	900	1000	1000	1000
L	in	-	-	-	-	13.5	16.0	16.0	19.1	20.8	20.8	23.2	23.2	24.4
	mm	-	-	-	-	342	406	406	486	529	529	590	590	619
WEIGHT RF	lb	180.8	341.7	370.4	573.2	1360.3	3284.9	4411.4	8412.8	9072.0	15322.1	19841.6	24537.4	35869.2
	kg	82	155	168	260	617	1490	2001	3816	4115	6950	9000	11130	16270
WEIGHT BW	lb	130.1	286.6	286.6	352.7	974.4	2755.8	3540.6	7079.0	7054.8	13227.7	17063.8	21076.2	30357.6
	kg	59	130	130	160	442	1250	1606	3211	3200	6000	7740	9560	13770

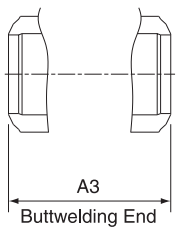
GATE VALVES

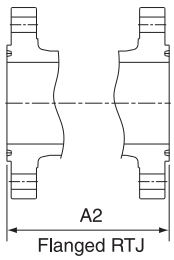
BOLTED BONNET

GT CLASS 2500





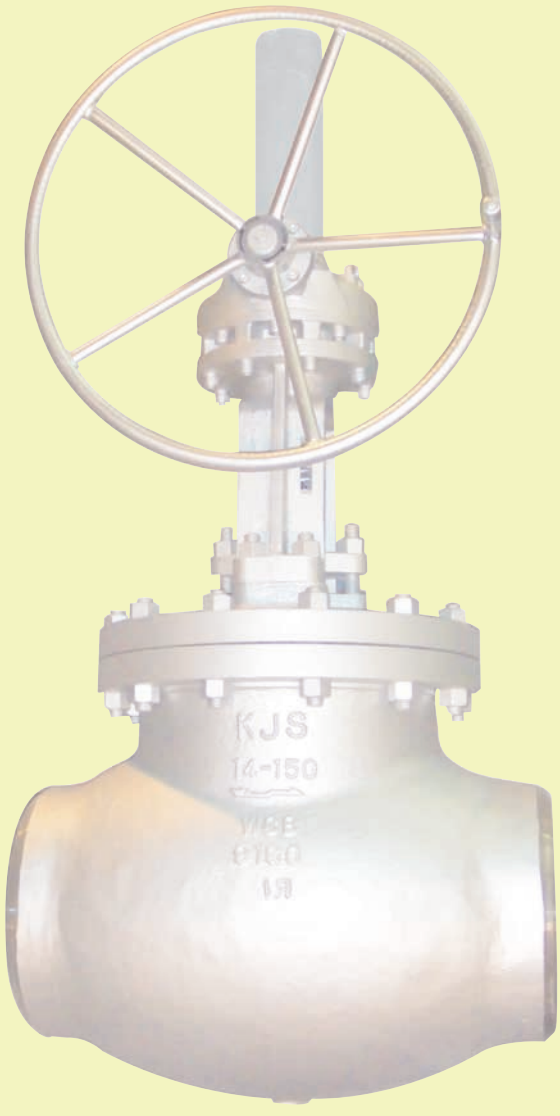




VALVE SIZE	in	2	2.5	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
A1 & A3	in	17.8	20.0	22.8	26.5	36.0	40.2	50.0	56.0
	mm	451	508	578	673	914	1022	1270	1422
A2	in	17.9	20.2	23.0	26.9	36.5	40.9	50.9	56.9
	mm	454	514	584	683	927	1038	1292	1444
H	in	24.4	31.9	31.9	42.3	57.1	63.0	82.5	90.2
	mm	619	809	809	1074	1451	1600	2096	2292
W	in	11.8	17.7	17.7	24.8	24.8	28.0	31.5	35.4
	mm	300	450	450	630	630	710	800	900
L	in	-	-	-	-	15.3	16.0	18.1	20.8
	mm	-	-	-	-	389	406	461	529
WEIGHT RF	lb	205.0	330.7	443.1	1336.0	3505.3	5379.3	10083.9	15829.2
	kg	93	150	201	606	1590	2440	4574	7180
WEIGHT BW	lb	127.9	220.5	288.8	1082.5	2866.0	4409.2	8377.6	13227.7
	kg	58	100	131	491	1300	2000	3800	6000

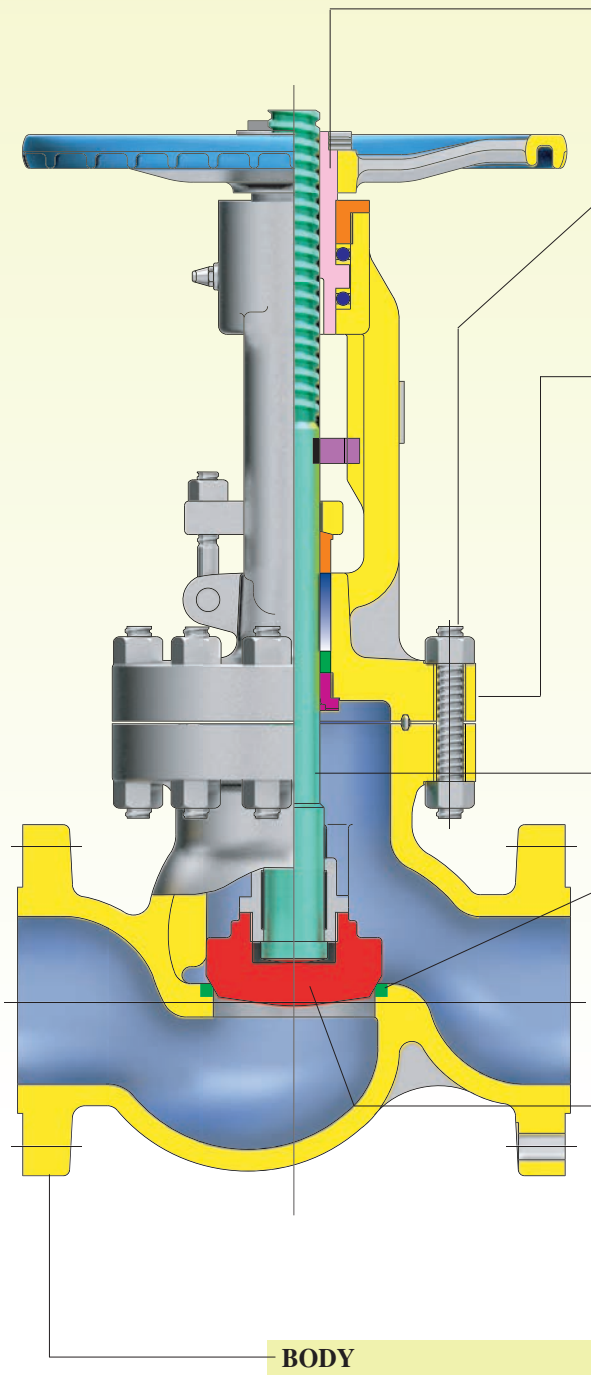
GLOBE VALVES

BOLTED BONNET



CAST STEEL
BOLTED BONNET

GLOBE VALVES



YOKE SLEEVE

The standard material of the Yoke Sleeve is Nodular Ni-resist D2 with over a 1150℃ (2100°F)dissolution point in conformity with API Std. Specifications.

BOLTING

The body-bonnet bolts are manufactured in accordance with API Std. 600 specifications. The nuts also strictly conform with ANSI B 1.1
The stud-bolt nuts, hexagonal, rigid and hot-forged, bear material notation as well as do the bolt nuts made according to ANSI B18.2.2

BONNET

The bonnet is integral or separate with the yoke and is the same material as the body. The body-bonnet flange drilling is spot-faced to exactly meet stud bolt nuts. The back seat bushing in the bonnet guarantees that the packing can be replaced even when the valve is fully opened. The stem packing dimensions of the stuffing box are in accordance with API Std. specifications.

STEM

The heat-treated stems of one-piece construction insure adequate mechanical properties and surface hardness.
Friction at the time of opening and shutting is reduced to a minimum friction to accurate machining and lapping.
The round finished surface of the stem head helps to achieve point contact with the inside of the disc housing to eliminate friction.

SEAT RING

The shoulder seated type seat ring is welded or screwed into body.
The seating surface is finished by lapping. The seat ring is forged and heat-treated to deliver the best mechanical properties and required hardness. The difference in hardness between the seats and disc conforms to API Std. specifications.

DISC

The disc of our globe valves is a loose disc and can freely revolve around the stem. This prevents friction and galling with the seating surface when the valve is shut. The disc is furnished with a conical seating surface that has been ground and lapped to a mirror finish. It is of one-piece construction, and forged and heat-treated to deliver the required mechanical properties and hardness.

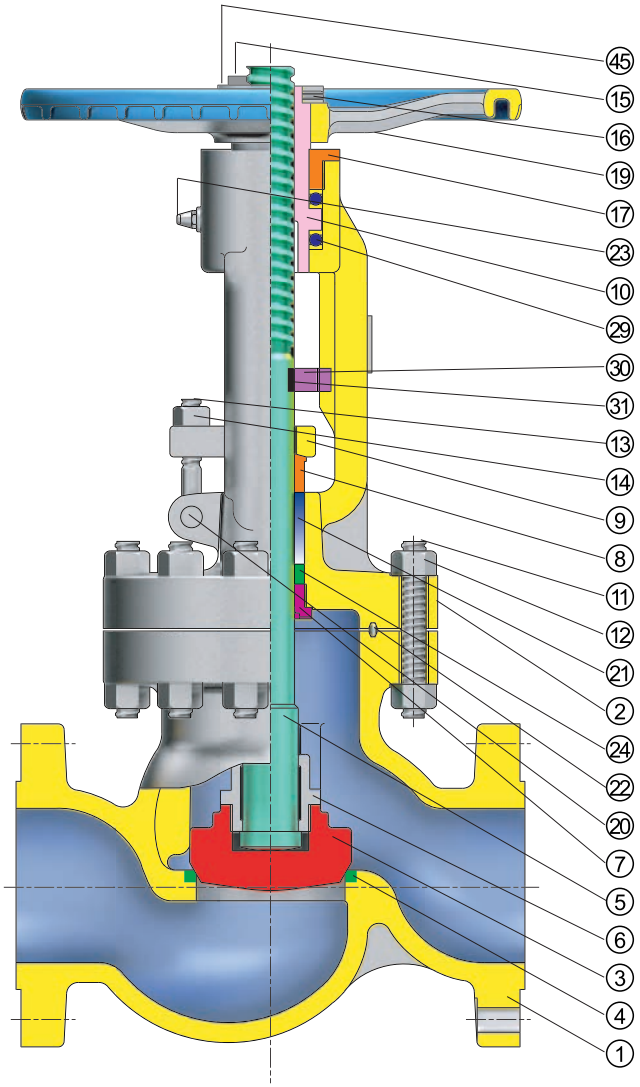
BODY

The cast steel body is designed to insure a wall thickness which is greater at any point than the minimum specified by API Std. 600. Port and seat passage dimensions conform to ASME B16.34.
The welded-in type seat ring is standard to allow interchangeability.
The standard body-bonnet joint is male-female, and the flange is round for all valves. Accurate machining insures perfect coaxiality of the valve ends and seat ring in addition to exact perpendicularity of the body-bonnet flanges.

CAST STEEL

BOLTED BONNET

GLOBE VALVES





NO	NAME OF PART	ASTM SPECIFICATION
15	HANDLE NUT	STEEL
16	SET SCREW	STEEL
17	SLEEVE GLAND	STEEL
19	HANDWHEEL	A395
21	PACKING	COMMERCIAL
22	GASKET	COMMERCIAL
23	GREASE NIPPLE	STEEL
29	BEARING	A295-52100
30	STOPPER	A283-D
31	KEY	STEEL
45	WASHER	STEEL

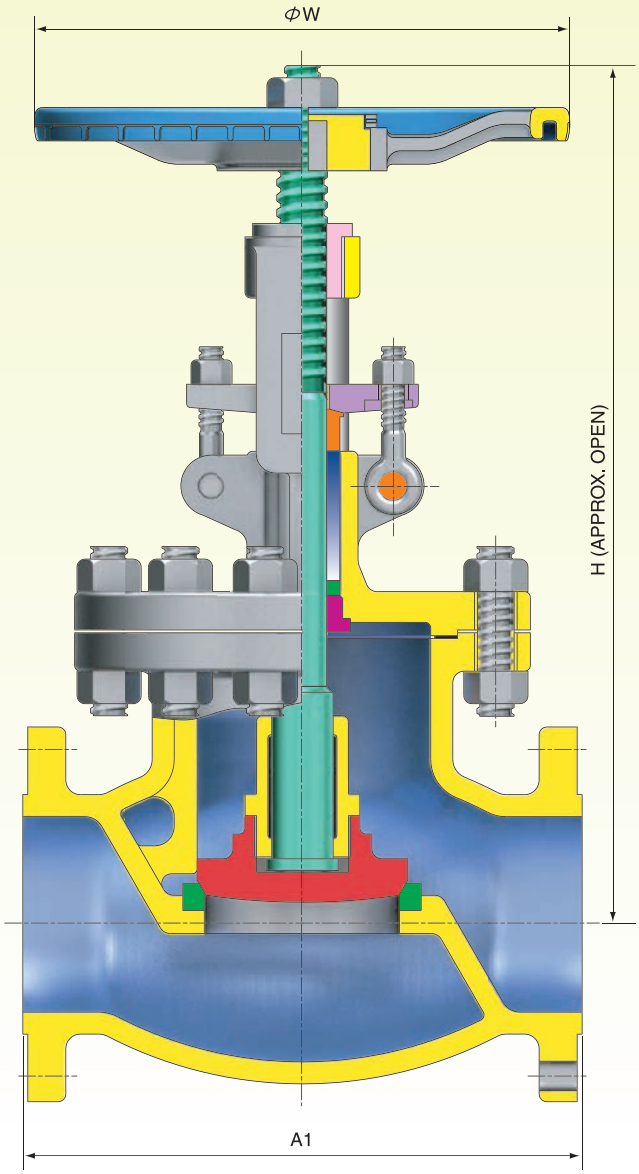
NO	NAME OF PART	ASTM SPECIFICATION													
		STANDARD	HIGH TEMPERATURE SERVICE				LOW TEMPERATURE SERVICE		STAINLESS STEEL				ALLOY STEEL	
1	BODY	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A352-LCB	A352-LC1/LC2/LC3	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
2	BONNET	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A352-LCB	A352-LC1/LC2/LC3	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
3	*DISC	A217-CA15	A217-CA15	A217-CA15	A217-CA15	A217-CA15	A351-CF8	A351-CF8	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
4	BODY SEAT RING	A105+STL	A182-F1	A182-F11	A182-F22	A182-F5a	A350-LF2	A350-LF2	A240-304	A240-316	A240-304L	A240-316L	ALLOY 20	A182-F51
5	STEM	A479-410					A276-304		A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A182-F51
6	DISC GLAND	A217-CA15	A217-CA15	A217-CA15	A217-CA15	A217-CA15	A351-CF8	A351-CF8	A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A182-F51
7	BONNET BUSH	A479-410					A276-304		A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A276-304
8	PACKING GLAND	A479-410					A276-304		A276-304				A276-304	
9	GLAND FLANGE	A105 or A283-D							AISI 304				AISI 304	
10	YOKE SLEEVE	A439-D2							A439-D2				A439-D2	
11	BONNET BOLT	A193-B7	A193-B7	A193-B16	A193-B16	A193-B16	A320-L7	A320-L7	A193-B8	A193-B8	A193-B8	A193-B8	A193-B8	A193-B8
12	BONNET NUT	A194-2H	A194-2H	A194-4	A194-4	A194-4	A194-4L	A194-4L	A194-8	A194-8	A194-8	A194-8	A194-8	A194-8
13	GLAND BOLT	A307-B							A193-B8				A193-B8	
14	GLAND NUT	A194-2H							A194-8				A194-8	
20	HINGE PIN	A108-1020							A276-304				A276-304	
24	PACKING RING	A479-410					A276-304		A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A182-F51

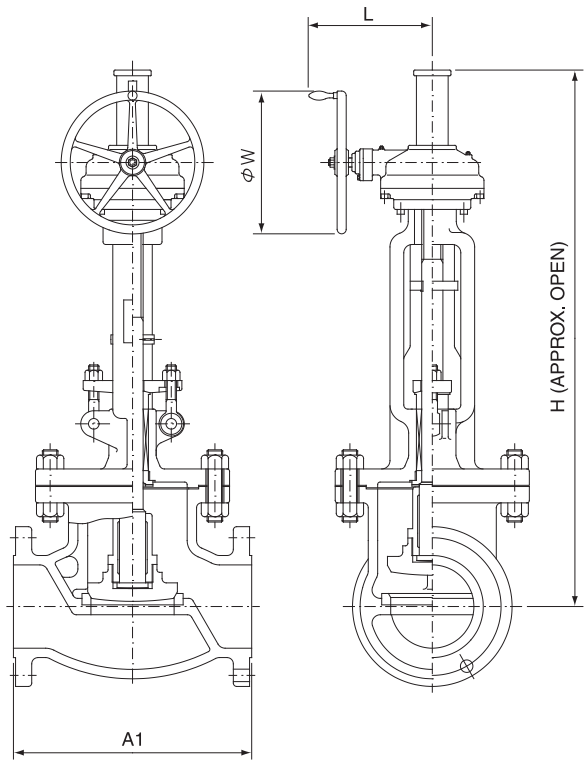
*Note : In case of 12" and larger size, we'll use trim material overlayed one on the same or equivalent material of the Body.

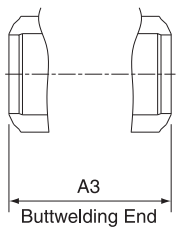
GLOBE VALVES

BOLTED BONNET

GL CLASS 150





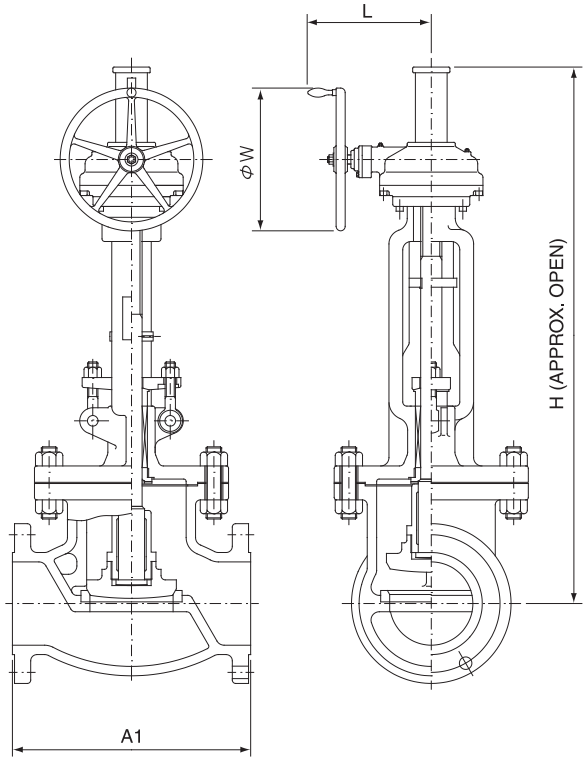


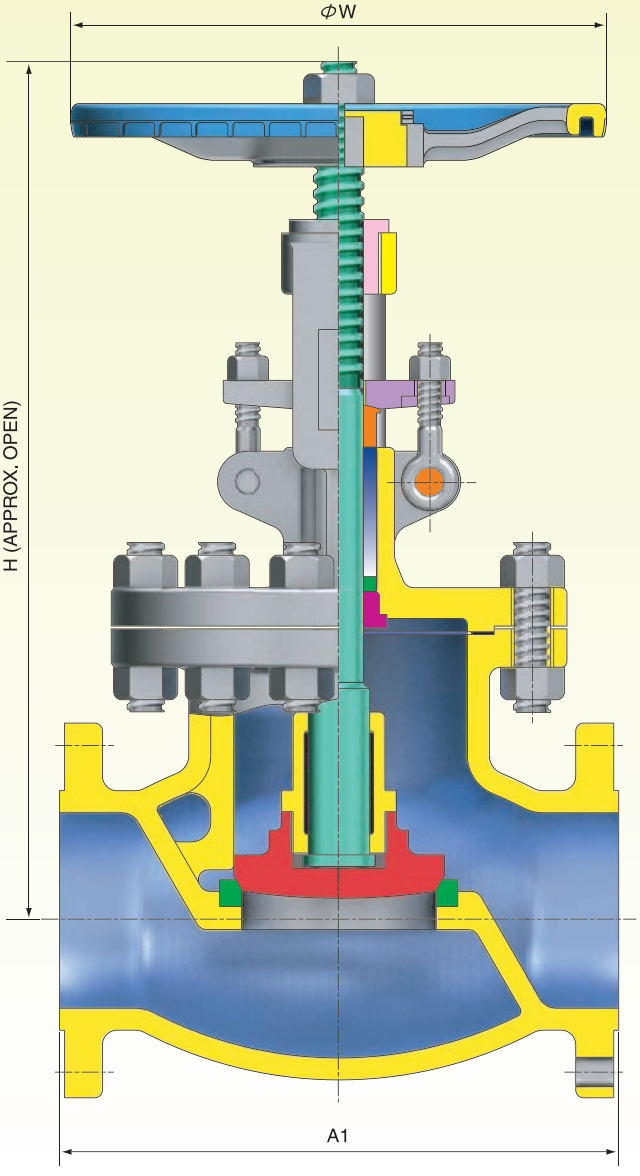
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18
		mm	50	65	80	100	150	200	250	300	350	400	450
A1 & A3		in	8.0	8.5	9.5	11.5	16.0	19.5	24.5	27.5	31.0	36.0	38.5
		mm	203	216	241	292	406	495	622	699	787	914	978
H		in	15.3	15.2	17.1	19.8	23.0	28.3	31.4	39.8	53.1	56.7	78.0
		mm	388	387	434	503	585	718	798	1011	1349	1440	1980
W		in	7.9	8.8	8.8	9.8	14.0	14.0	17.7	19.7	28.0	28.0	28.0
		mm	200	224	224	250	355	355	450	500	710	710	710
L		in	-	-	-	-	-	-	-	-	16.0	16.0	16.0
		mm	-	-	-	-	-	-	-	-	406	407	407
WEIGHT	RF	lb	44.1	77.2	88.2	123.5	229.3	401.3	650.5	903	1466	1975	3969
		kg	20	35	40	56	104	182	295	410	665	896	1800
	BW	lb	35.3	66.2	75	99.2	196.2	350.5	579.8	802.5	1327.2	1799	3889
		kg	16	30	34	45	89	159	263	364	602	816	1764

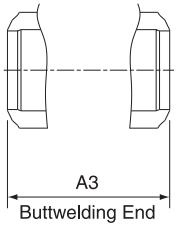
GLOBE VALVES

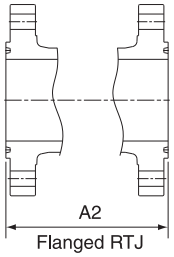
BOLTED BONNET

GL CLASS 300







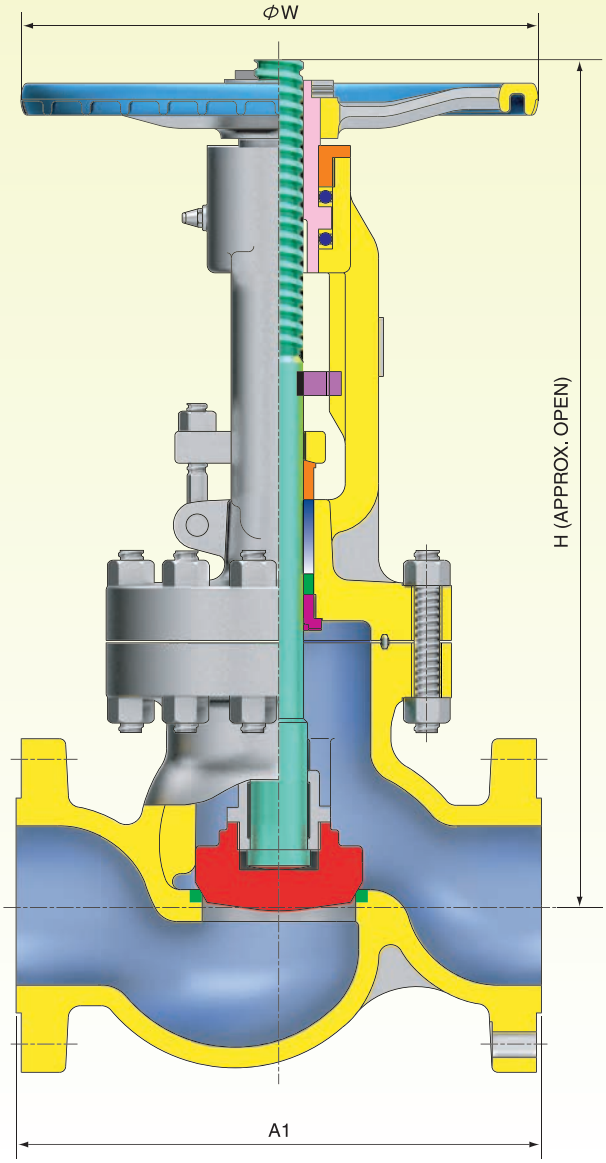


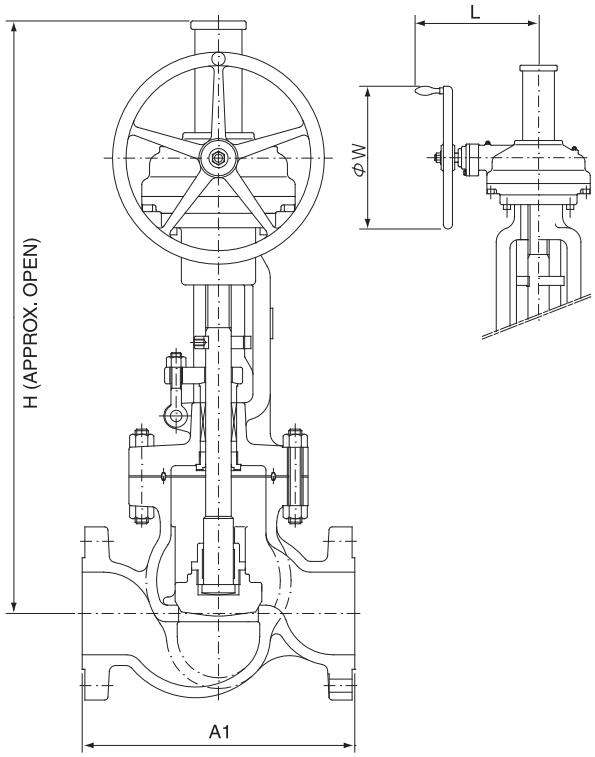
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16
	mm	50	65	80	100	150	200	250	300	350	400
A1 & A3	in	10.5	11.5	12.5	14.0	17.5	22.0	24.5	28.0	33.0	36.0
	mm	267	292	318	356	444	559	622	711	838	914
A2	in	11.1	12.1	13.1	14.6	18.1	22.6	25.1	28.6	33.6	36.6
	mm	283	308	333	371	460	575	638	727	854	929
H	in	15.5	16.8	18.1	21.7	29.4	31.7	46.3	50.7	62.5	64.4
	mm	393	427	461	552	746	806	1176	1287	1588	1635
W	in	7.9	8.8	9.8	14.0	17.7	22.0	28.0	28.0	35.4	31.5
	mm	200	224	250	355	450	560	710	710	900	800
L	in	-	-	-	-	-	-	16.0	16.0	20.8	21.0
	mm	-	-	-	-	-	-	406	406	529	534
WEIGHT RF	lb	70.6	92.6	141	220.5	419	595.4	1283	2416.3	2546.8	3748.5
	kg	32	42	64	100	190	270	582	1096	1155	1700
WEIGHT BW	lb	57.3	72.8	114.6	178.6	352.7	498.2	1137.6	2209	2262	3393
	kg	26	33	52	81	160	226	516	1002	1026	1539

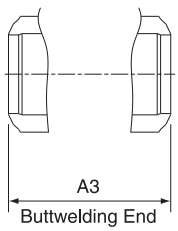
GLOBE VALVES

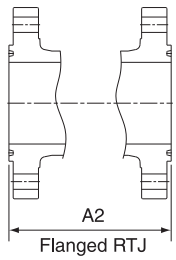
BOLTED BONNET

GL CLASS 600







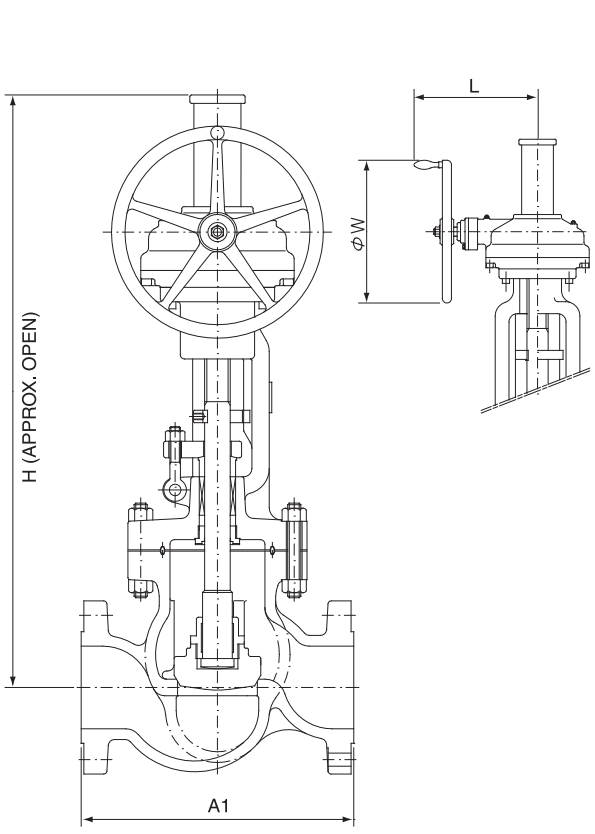


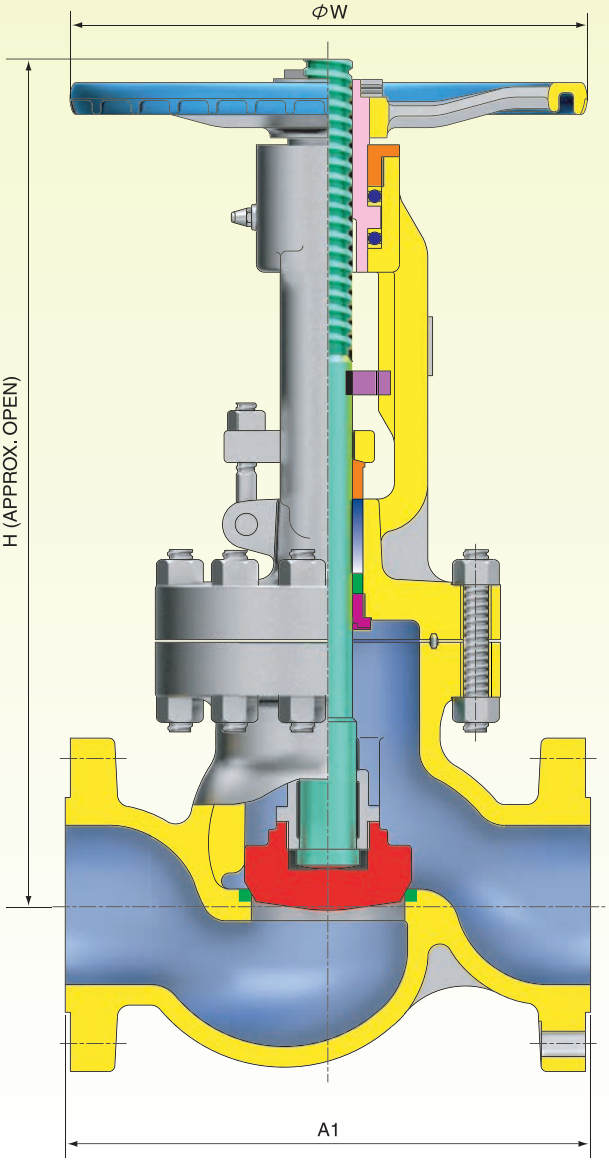
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16
	mm	50	65	80	100	150	200	250	300	350	400
A1 & A3	in	11.5	13.0	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0
	mm	292	330	356	432	559	660	787	838	889	991
A2	in	11.6	13.1	14.1	17.1	22.1	26.1	31.1	33.1	35.1	39.1
	mm	295	333	359	435	562	664	791	841	892	994
H	in	16.8	16.4	20.9	23.7	31.4	51.4	66.9	72.5	71.0	74.8
	mm	426	416	530	601	798	1306	1700	1842	1804	1900
W	in	8.8	8.8	11.0	14.0	17.7	31.5	39.4	39.4	39.4	39.4
	mm	224	224	280	355	450	800	1000	1000	1000	1000
L	in	-	-	-	-	-	18.1	23.2	23.2	23.2	24.4
	mm	-	-	-	-	-	461	590	590	590	619
WEIGHT RF	lb	94.8	154.4	172	300	619.6	1473	2024	5842.2	5953.5	7938
	kg	43	70	78	136	281	668	918	2650	2700	3600
WEIGHT BW	lb	64	66	104	216.1	410	1102	1753	3518.6	5534.6	7386.8
	kg	29	30	47	98	186	500	795	1596	2510	3350

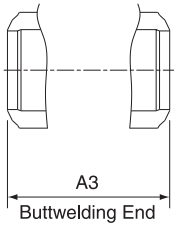
GLOBE VALVES

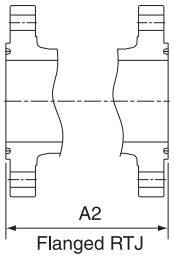
BOLTED BONNET

GL CLASS 900







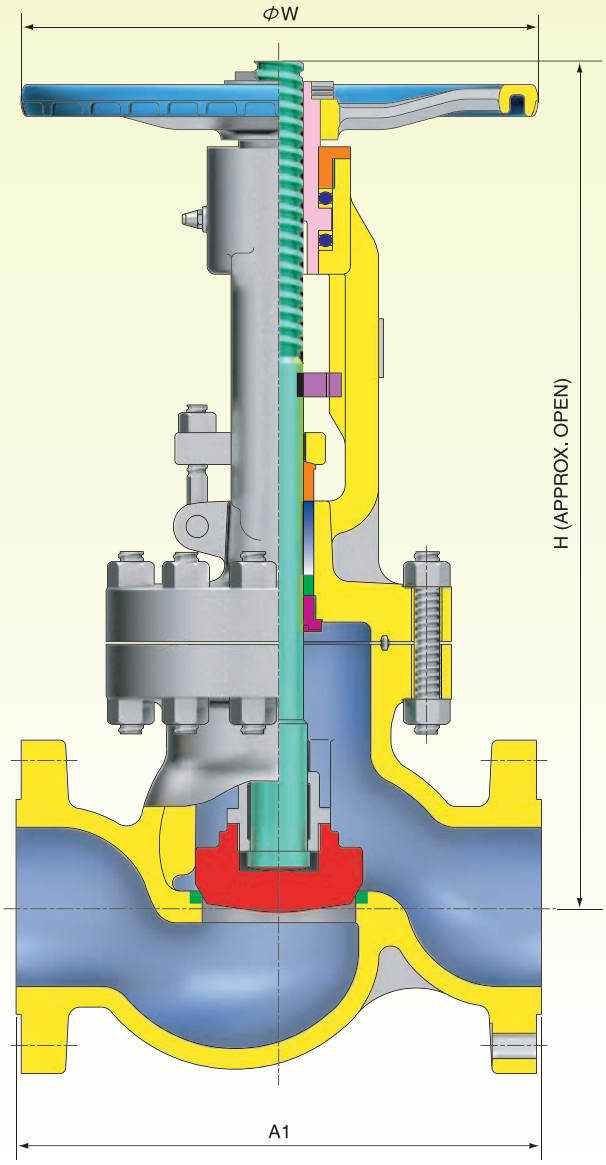


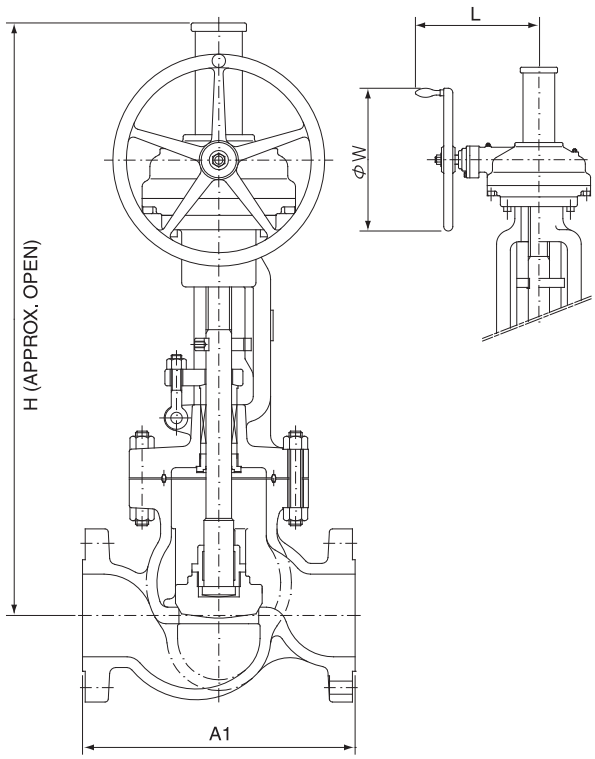
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16
	mm	50	65	80	100	150	200	250	300	350	400
A1 & A3	in	14.5	16.5	15.0	18.0	24.0	29.0	33.0	38.0	40.5	44.5
	mm	368	419	381	457	610	737	838	965	1029	1130
A2	in	14.6	16.6	15.1	18.1	24.1	29.1	33.1	38.1	40.9	44.9
	mm	371	422	384	460	613	740	841	968	1038	1140
H	in	27.2	27.0	30.2	34.6	53.9	67.7	69.5	67.1	87.0	103.1
	mm	690	686	768	880	1370	1719	1765	1705	2210	2620
W	in	15.7	15.7	15.7	15.7	28.0	35.4	31.5	35.4	35.4	35.4
	mm	400	400	400	400	710	900	800	900	900	900
L	in	-	-	-	-	16.0	20.8	12.2	26.4	26.4	26.4
	mm	-	-	-	-	406	529	310	670	670	670
WEIGHT RF	lb	271.2	341.8	390	441	1208	2844	4520.3	5842	8048.3	9481.5
	kg	123	155	177	200	548	1290	2050	2650	3650	4300
WEIGHT BW	lb	157	264.6	295.4	326	712	2425.5	4123.4	5292	7386.8	8600
	kg	71	120	134	148	323	1100	1870	2400	3350	3900

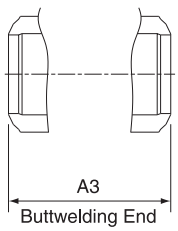
GLOBE VALVES

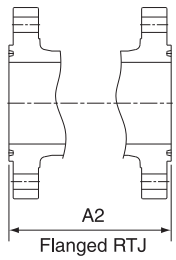
BOLTED BONNET

GL CLASS 1500







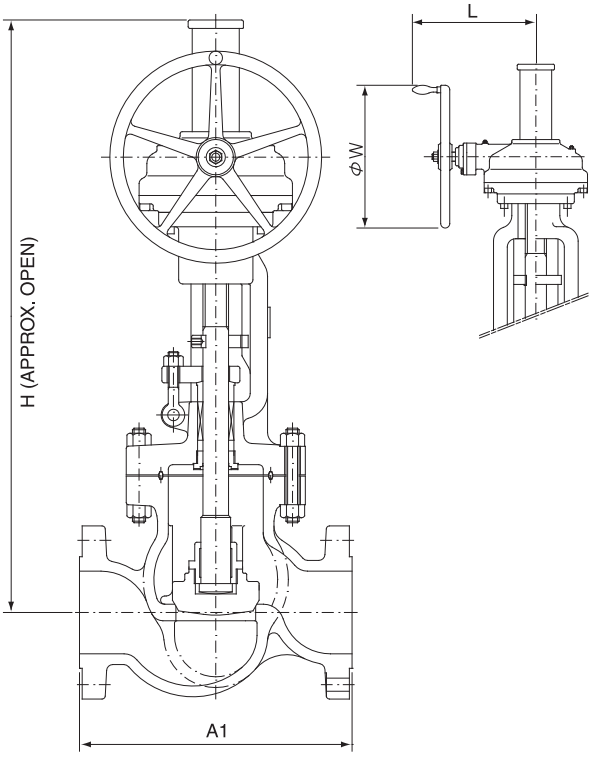


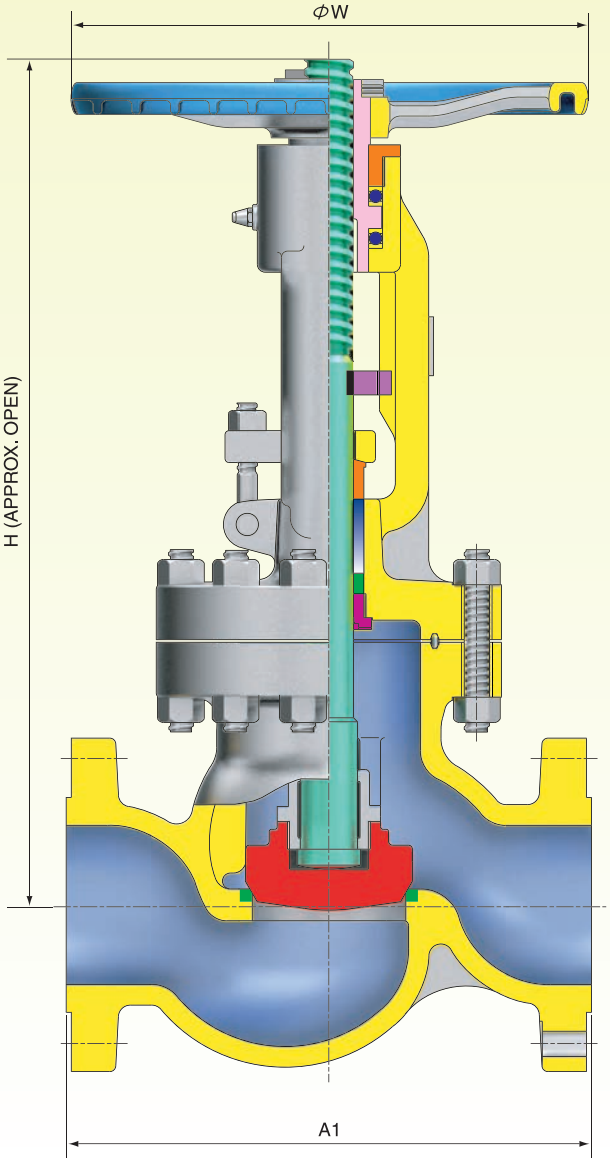
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16
		mm	50	65	80	100	150	200	250	300	350	400
A1 & A3		in	14.5	16.5	18.5	21.5	27.8	32.8	39.0	44.5	49.5	54.5
		mm	368	419	470	546	705	832	991	1130	1257	1384
A2		in	14.6	16.6	18.6	21.6	28.0	33.1	39.4	45.1	50.2	55.4
		mm	371	422	473	549	711	841	1000	1146	1276	1407
H		in	27.2	27.0	31.5	39.8	53.0	77.2	90.9	105.1	126.0	160.0
		mm	690	686	801	1012	1345	1960	2310	2670	3200	4064
W		in	15.7	15.7	19.7	19.7	35.4	28.0	29.9	29.9	29.9	29.9
		mm	400	400	500	500	900	710	760	760	760	760
L		in	-	-	-	-	20.8	18.4	20.2	20.2	22.3	22.3
		mm	-	-	-	-	529	468	512	512	567	567
WEIGHT	RF	lb	271.2	315	456	749.7	1482	4630.5	7056	9702	11907	14773.5
		kg	123	143	207	340	672	2100	3200	4400	5400	6700
	BW	lb	205.1	260	421	621.8	12171	4190	6174	8379	10363.5	12789
		kg	93	118	191	282	552	1900	2800	3800	4700	5800

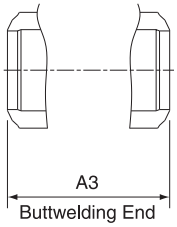
GLOBE VALVES

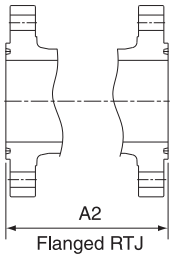
BOLTED BONNET

GL CLASS 2500









VALVE SIZE	in	2	2.5	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
A1 & A3	in	17.8	20.0	22.8	26.5	36.0	40.3	50.0	56.0
	mm	451	508	578	673	914	1022	1270	1422
A2	in	17.9	20.2	23.0	26.9	36.5	40.9	50.9	56.9
	mm	454	514	584	682	927	1038	1292	1444
H	in	23.9	31.5	32.8	49.6	75.0	97.0	110.2	138.0
	mm	606	800	834	1260	1905	2465	2800	3505
W	in	15.7	19.7	19.7	24.0	24.0	29.9	29.9	29.9
	mm	400	500	500	610	610	760	760	760
L	in	–	–	–	20.2	17.0	22.3	22.3	22.3
	mm	–	–	–	512	432	567	567	567
WEIGHT RF	lb	419	661.5	771.8	1852.2	5071.5	10584	14994	18742.5
	kg	190	300	350	840	2300	4800	6800	8500
WEIGHT BW	lb	352.8	529.2	617.4	1521.5	4410	9702	13230	16537.5
	kg	160	240	280	690	2000	4400	6000	7500

SWING CHECK VALVES

BOLTED COVER



CAST STEEL
BOLTED COVER

SWING CHECK VALVES

BOLTING
The body-cover bolting conforms with ANSI B.1.1
The nuts are manufactured to conform with ANSI B18.2.2

COVER
The cover material is identical to the body.
Depending on the valve size and pressure class, either a casting or a forging is used.

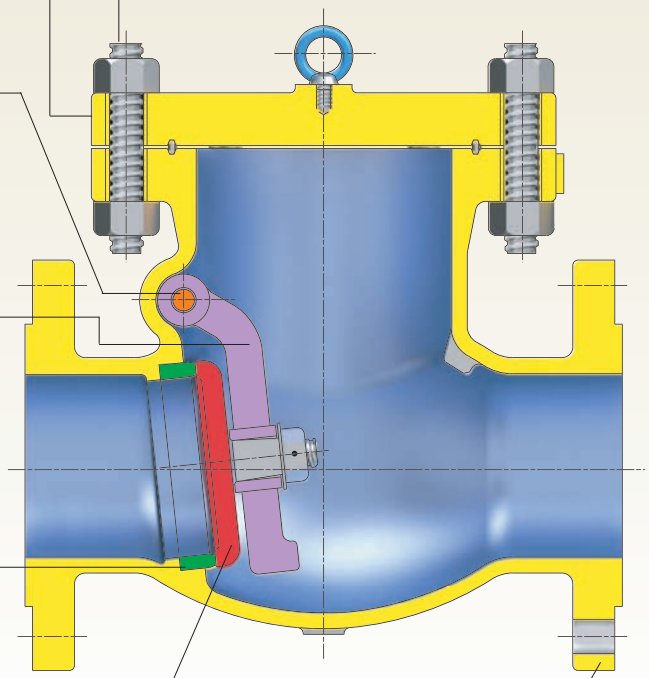
HINGE PIN
The hinge pin is inserted into the valve and held in position by plug.
The larger size valves are provided with bolted flanges instead of plugs.

ARM
The arm material is identical to the body.
Hinge bushing is provided in the larger valve sizes to minimize friction and eliminate seizing.

SEAT RING
The bottom seated type seat ring is welded or screwed into the body.
The seating surface is finished by lapping.
The forged seat ring is heat-treated to deliver the best mechanical properties and required hardness.

DISC
The disc has a sufficient seating surface area which is ground and lapped to a mirror finish.
It is of one-piece construction and is heat treated to deliver the required mechanical properties and hardness.

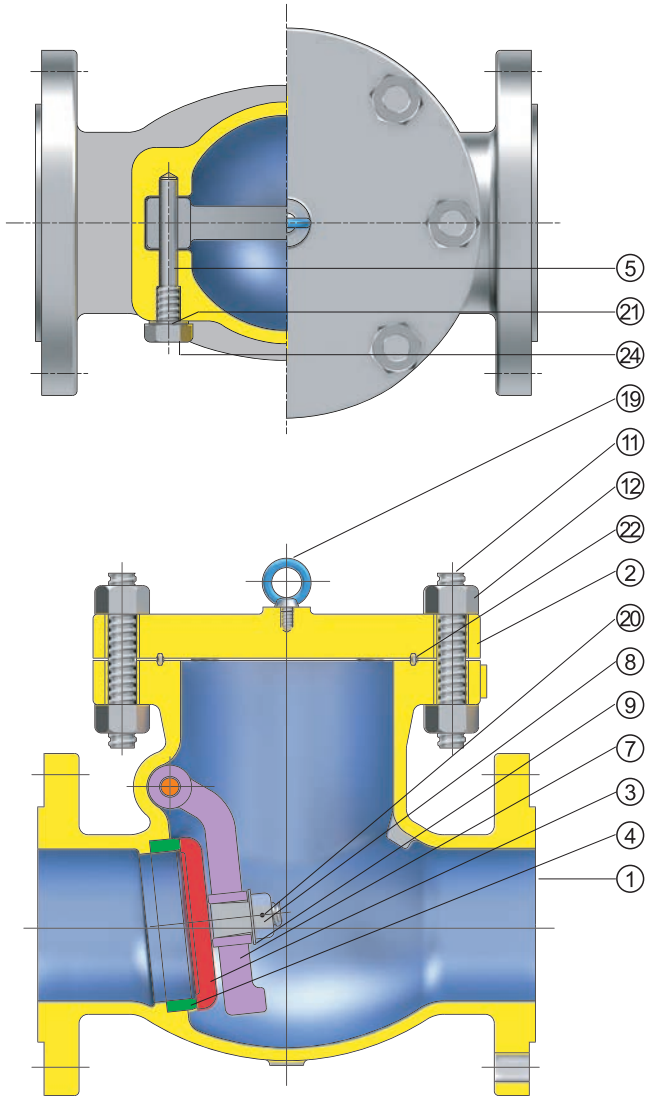
BODY
The cast steel body is designed with a wall thickness which is greater at any point than the minimum requirement provided by API Std. 600 or API 6D. Port and seat passage dimensions conform to ASME B16.34. The welded-in type seat ring is standard to allow interchangeability.
The standard body-bonnet joint is male-female, and the flange is round for all valves.



CAST STEEL
BOLTED COVER

SWING CHECK VALVES





NO	NAME OF PART	ASTM SPECIFICATION
8	DISC NUT	A194-8
9	DISC WASHER	A240-304
19	EVE BOLT	A105
20	SPLIT PIN	A580-304
21	PLUG GASKET	COMMERCIAL
22	GASKET	COMMERCIAL
24	PLUG	A105

Swing check valves can be supplied with the following accessories.

- outside weight and lever
- slam retarders
- assisting springs
- position switches/indicators
- pneumatic safety control

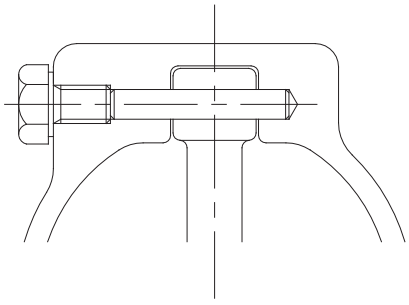
NO	NAME OF PART	ASTM SPECIFICATION												
		STANDARD	HIGH TEMPERATURE SERVICE				LOW TEMPERATURE SERVICE		STAINLESS STEEL				ALLOY STEEL	
1	BODY	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A352-LCB	352-LC1/LC2/LC3	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
2	COVER	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A352-LCB	352-LC1/LC2/LC3	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
3	*DISC	A217-CA15	A217-CA15	A217-CA15	A217-CA15	A217-CA15	A351-CF8	A351-CF8	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
4	BODY SEAT RING	A105+STL	A182-F1	A182-F11	A182-F22	A182-F5a	A350-LF2	A350-LF2	A240-304	A240-316	A240-304L	A240-316L	ALLOY 20	A182-F51
5	HINGE PIN	A479-304					A276-304		A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A182-F51
7	ARM	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A352-LCB	352-LC1/LC2/LC3	A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A182-F51
11	BONNET BOLT	A193-B7	A193-B7	A193-B16	A193-B16	A193-B16	A320-L7	A320-L7	A193-B8	A193-B8	A193-B8	A193-B8	A193-B8	A193-B8
12	BONNET NUT	A194-2H	A194-2H	A194-4	A194-4	A194-4	A194-4L	A194-4L	A194-8	A194-8	A194-8	A194-8	A194-8	A194-8

*Note : In case of 12” and larger size, we’ll use trim material overlayed one on the same or equivalent material of the Body.

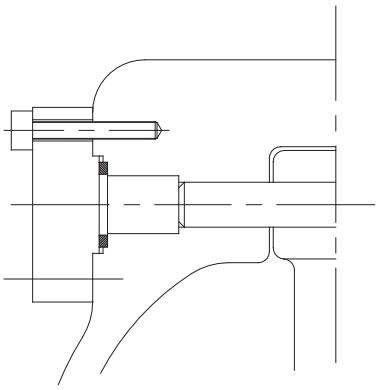
SWING CHECK VALVES

BOLTED COVER

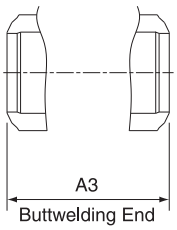
SW/CH CLASS 150

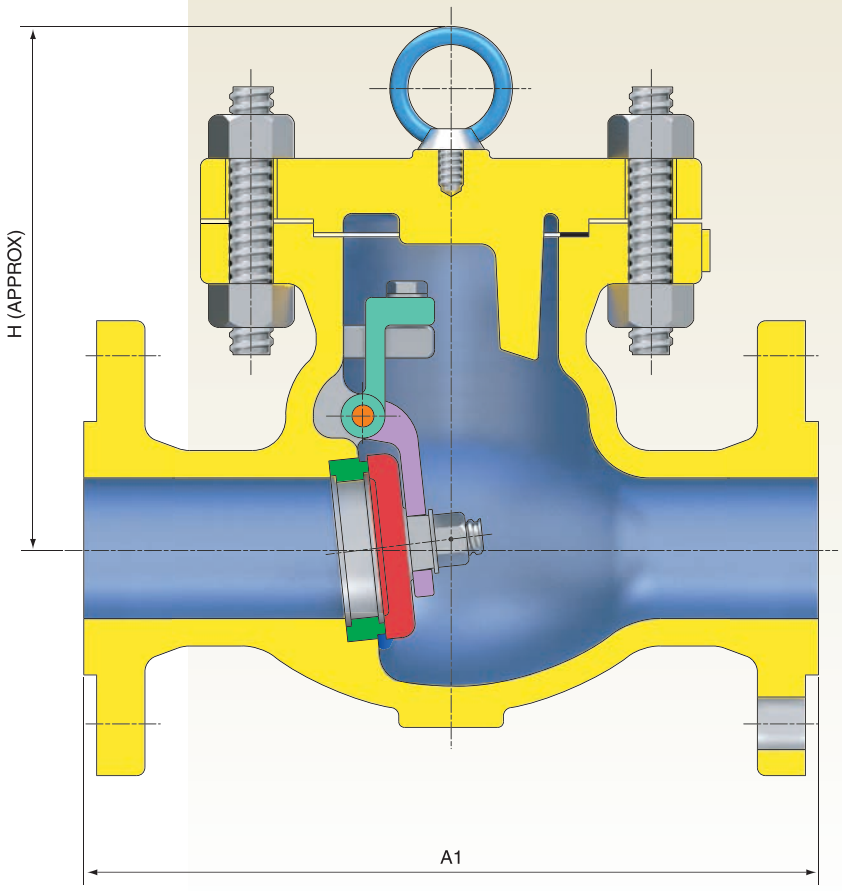


14″ Thru 18″



20″ & Lager



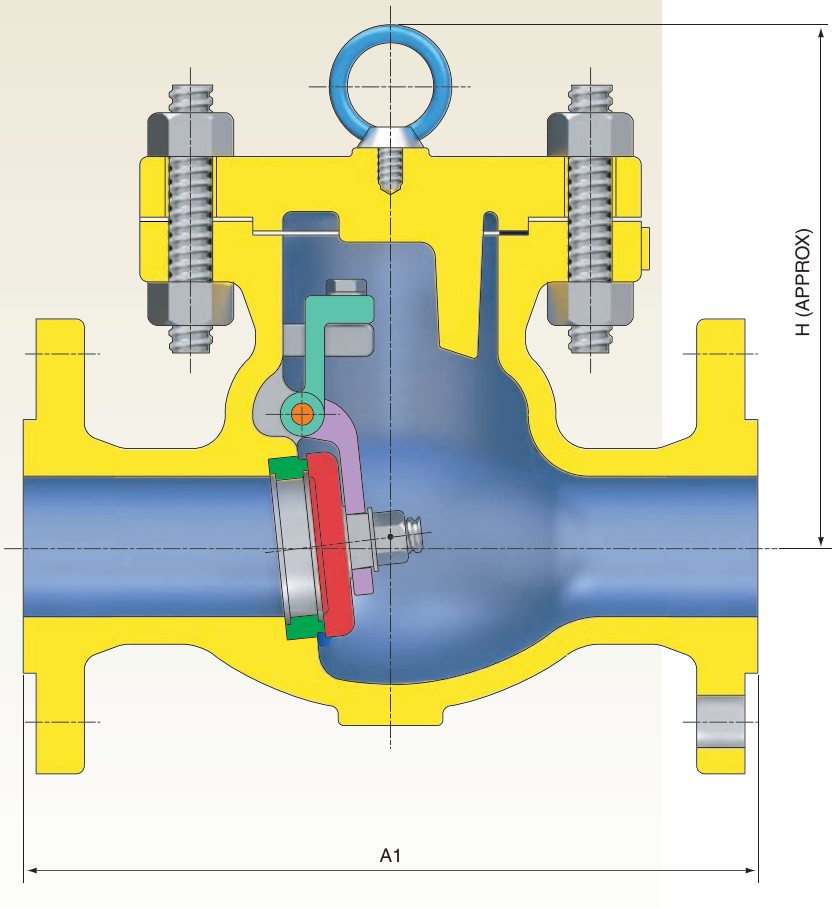


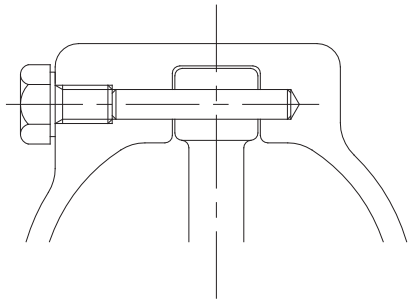
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900
A1 & A3		in	8.0	8.5	9.5	11.5	14.0	19.5	24.5	27.5	31.0	34.0	38.5	38.5	51.0	51.0	57.0	60.0	60.0	77.0
		mm	203	216	241	292	356	495	622	698	787	864	978	978	1295	1295	1448	1524	1524	1956
H		in	5.8	6.4	6.9	8.0	11.4	13.8	16.9	19.6	23.9	25.6	30.7	25.5	31.5	33.5	40.0	35.0	37.0	53.1
		mm	147	163	176	204	290	350	428	499	606	650	781	647	800	852	1017	888	941	1349
WEIGHT	RF	lb	35.3	48.5	66.1	97.0	172.0	260.1	520.3	758.4	930.3	1397.7	1798.9	2164.9	3924.2	3637.6	3825.0	4647.3	5291.0	7385.4
		kg	16	22	30	44	78	118	236	344	422	634	816	982	1780	1650	1735	2108	2400	3350
	BW	lb	28.7	33.1	46.3	57.3	136.7	200.6	449.7	645.9	661.4	1276.5	1547.6	1878.3	3584.7	3306.9	3223.1	4426.8	4960.3	6944.5
		kg	13	15	21	26	62	91	204	293	300	579	702	852	1626	1500	1462	2008	2250	3150

SWING CHECK VALVES

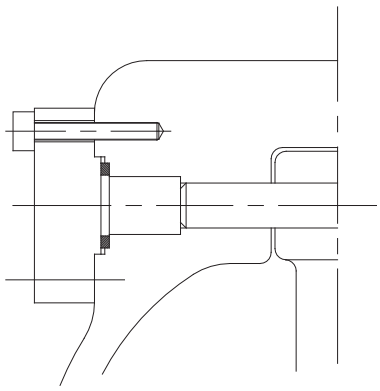
BOLTED COVER

SW/CH CLASS 300

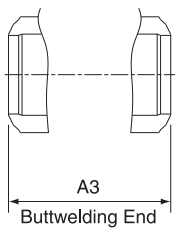


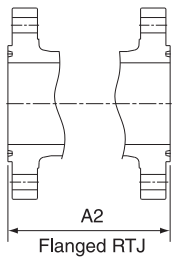


14″ Thru 16″



18″ & Lager



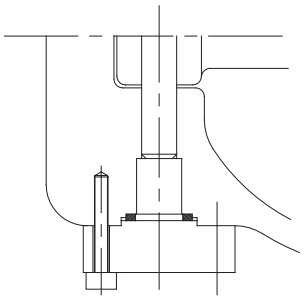


VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24	28	30	36
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750	900
A1 & A3		in	10.5	11.5	12.5	14.0	17.5	21.0	24.5	28.0	33.0	34.0	38.5	40.0	53.0	59.0	62.8	82.0
		mm	267	292	318	356	444	533	622	711	838	864	978	1016	1346	1499	1594	2083
A2		in	11.1	12.1	13.1	14.6	18.1	21.6	25.1	28.6	33.6	34.6	39.1	40.7	53.9	60.0	63.7	83.1
		mm	283	308	333	371	460	549	638	727	854	880	994	1035	1368	1524	1619	2111
H		in	6.4	7.1	7.8	8.7	13.1	15.0	18.8	21.1	22.8	27.4	31.4	30.5	40.4	45.2	50.0	46.1
		mm	163	180	197	220	332	380	477	535	580	695	797	775	1025	1149	1270	1171
WEIGHT	RF	lb	52.9	81.6	99.2	149.9	302.0	485.0	595.2	1091.3	1499.1	2094.4	2645.5	3306.9	4850.1	6172.9	7495.6	11022.9
		kg	24	37	45	68	137	220	270	495	680	950	1200	1500	2200	2800	3400	5000
	BW	lb	46.3	66.1	77.2	112.4	242.5	401.2	463.0	925.9	1157.4	1763.7	2202.4	2689.6	4060.9	5291.0	6503.5	9063.1
		kg	21	30	35	51	110	182	210	420	525	800	999	1220	1842	2400	2950	4111

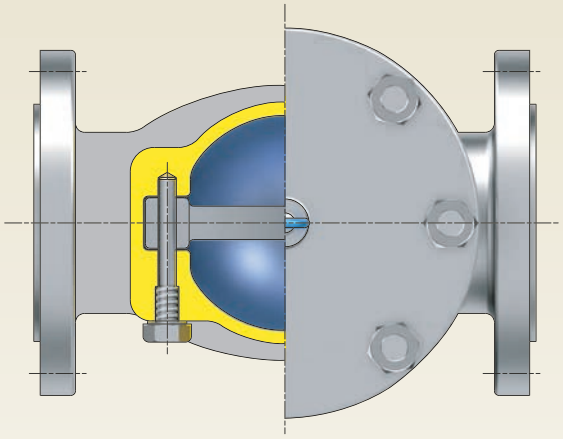
SWING CHECK VALVES

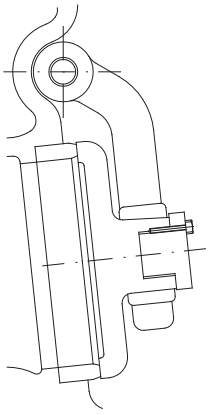
BOLTED COVER

SW/CH CLASS 600

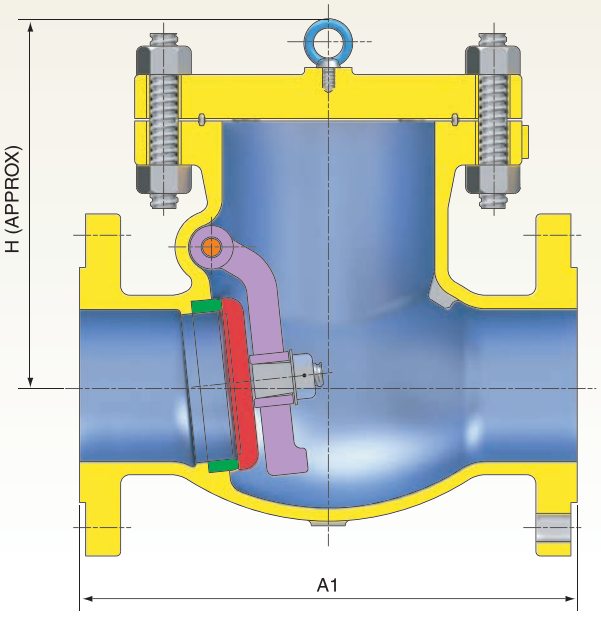


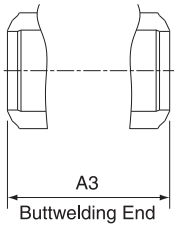
16″ & Lager

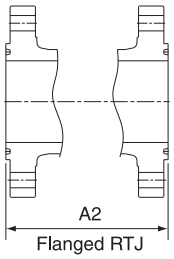




18″ & Lager





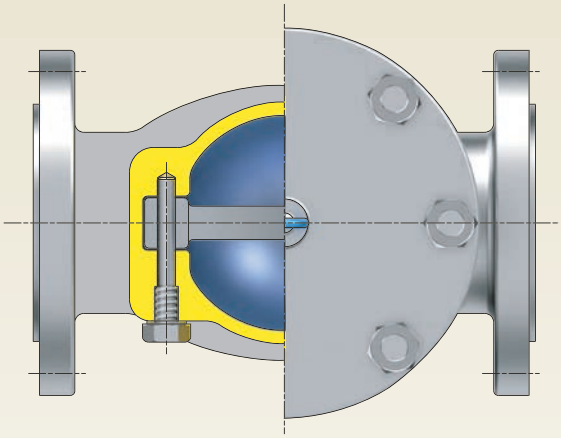


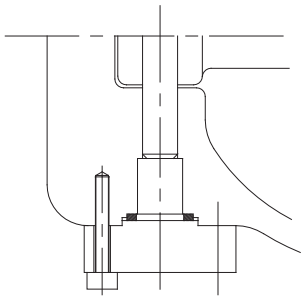
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24	28	30
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750
A1 & A3		in	11.5	13.0	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0	63.0	65.0
		mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1600	1651
A2		in	11.6	13.1	14.1	17.1	22.1	26.1	31.1	33.1	35.1	39.1	43.1	47.2	55.4	63.5	65.5
		mm	295	333	359	435	562	664	791	841	892	994	1095	1200	1407	1613	1664
H		in	8.3	8.6	10.5	12.2	15.5	21.2	24.6	24.4	26.8	32.0	37.8	40.5	47.3	54.6	51.7
		mm	210	219	267	310	393	538	625	620	680	812	960	1029	1202	1388	1313
WEIGHT	RF	lb	88.2	121.3	158.7	253.5	551.1	925.9	1349.2	1785.7	1984.1	2971.8	4448.9	5264.6	7195.8	9038.8	11022.9
		kg	40	55	72	115	250	420	612	810	900	1348	2018	2388	3264	4100	5000
	BW	lb	83.8	99.2	138.9	176.4	451.9	762.8	1078.0	1472.7	1940.0	2464.7	3798.5	4437.8	6011.9	7716.1	9261.5
		kg	38	45	63	80	205	346	489	668	880	1118	1723	2013	2727	3500	4201

SWING CHECK VALVES

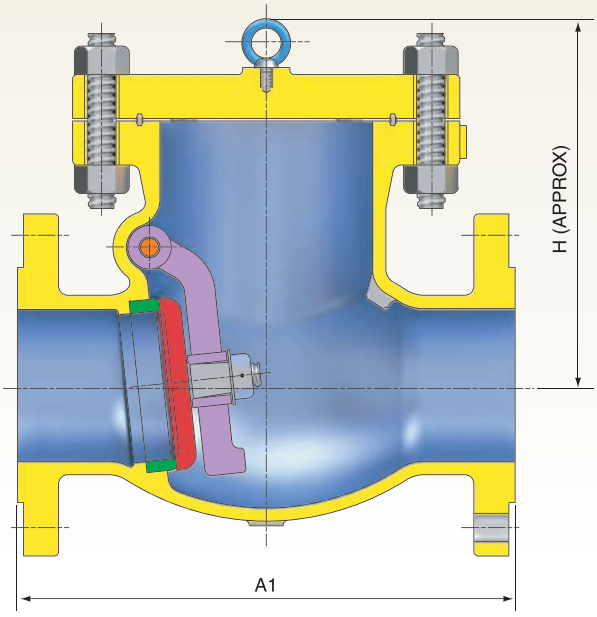
BOLTED COVER

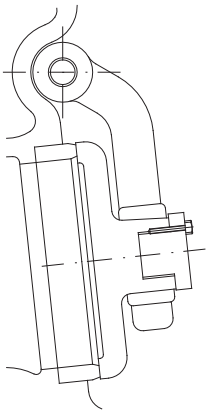
SW/CH CLASS 900



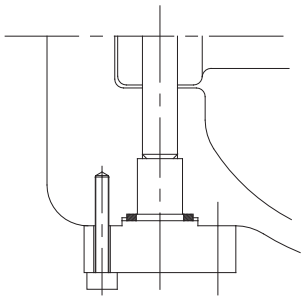


10″ & Under

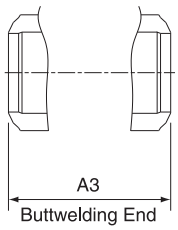




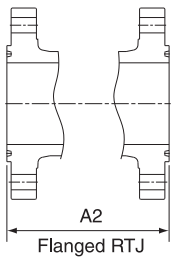
10″ & Lager



12″ & Lager



Buttwelding End



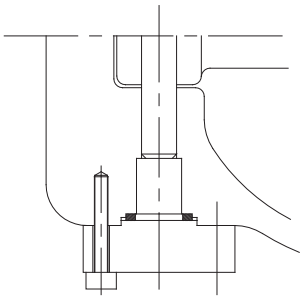
Flanged RTJ

VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24	28	30
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750
A1 & A3		in	14.5	16.5	15.0	18.0	24.0	29.0	33.0	38.0	40.5	44.5	48.0	52.0	61.0	69.0	73.0
		mm	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549	1753	1854
A2		in	14.6	16.6	15.1	18.1	24.1	29.1	33.1	38.1	40.9	44.9	48.5	52.5	61.7	69.9	73.9
		mm	371	422	384	460	613	740	841	968	1038	1140	1232	1333	1568	1775	1876
H		in	12.2	13.0	8.1	15.3	17.9	22.2	28.7	30.7	29.8	34.3	36.3	41.4	47.2	55.1	61.8
		mm	309	331	207	389	454	565	729	781	756	870	921	1051	1200	1400	1569
WEIGHT	RF	lb	160.9	242.5	180.8	471.8	837.7	1375.7	2535.3	3196.7	3858.0	5335.1	7164.9	8818.4	12786.6	17195.8	19951.5
		kg	73	110	82	214	380	624	1150	1450	1750	2420	3250	4000	5800	7800	9050
	BW	lb	119.0	191.8	136.7	383.6	502.6	1089.1	2094.4	2601.4	3196.7	4519.4	5952.4	7275.1	9920.7	14660.5	16865.1
		kg	54	87	62	174	228	494	950	1180	1450	2050	2700	3300	4500	6650	7650

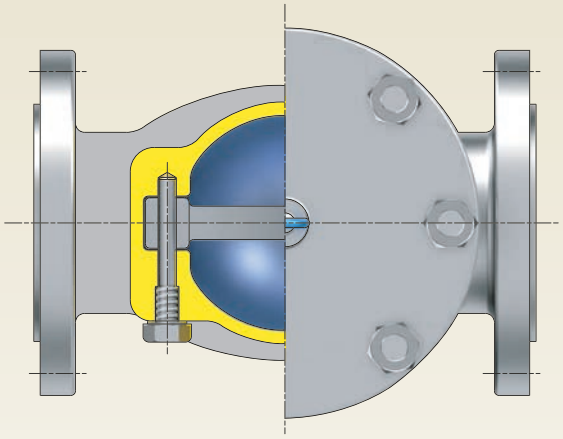
SWING CHECK VALVES

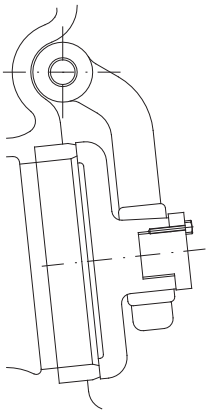
BOLTED COVER

SW/CH CLASS 1500

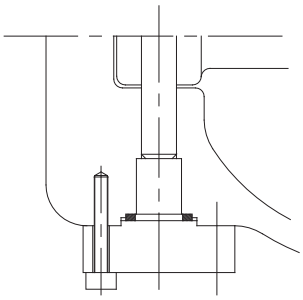


8″ & Under

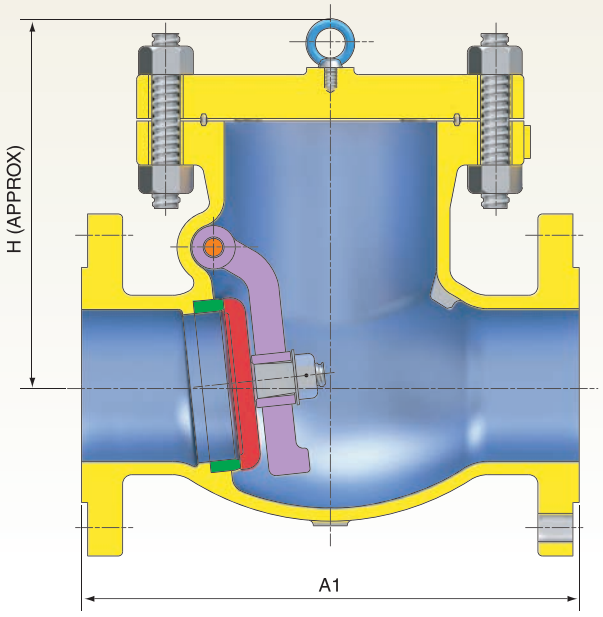


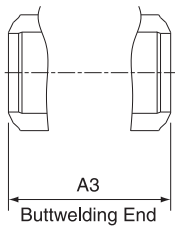


8″ & Lager

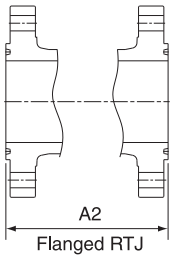


10″ & Lager





Buttwelding End



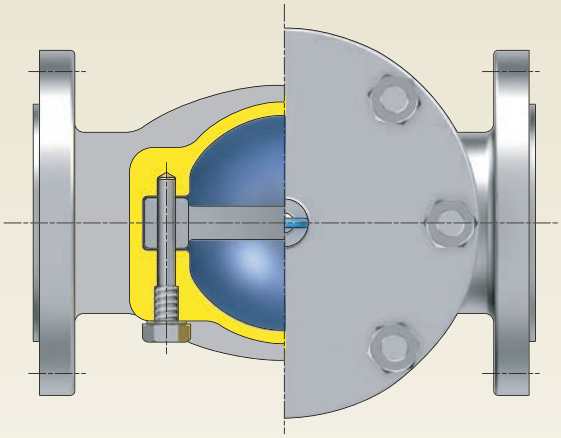
Flanged RTJ

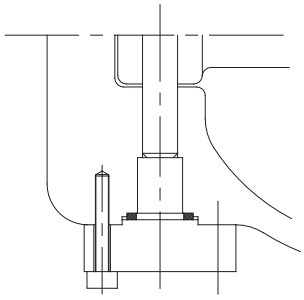
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1 & A3		in	14.5	16.5	18.5	21.5	27.8	32.8	39.0	44.5	49.5	54.4	60.5	65.5	76.5
		mm	368	419	470	546	705	832	991	1130	1257	1383	1537	1664	1943
A2		in	14.6	16.6	18.6	21.6	28.0	33.1	39.4	45.1	50.2	55.3	61.4	66.4	77.6
		mm	371	422	473	549	711	841	1000	1146	1276	1405	1559	1686	1972
H		in	12.2	13.0	14.8	17.0	22.3	26.3	28.9	35.6	40.7	42.0	47.1	51.1	57.1
		mm	309	331	375	433	567	668	734	904	1035	1067	1197	1299	1451
WEIGHT	RF	lb	154.3	220.5	374.8	467.4	1067.0	2623.5	4078.5	7341.3	7936.5	10802.5	14550.3	17967.4	25903.9
		kg	70	100	170	212	484	1190	1850	3330	3600	4900	6600	8150	11750
	BW	lb	112.4	191.8	308.6	361.6	813.5	2127.4	3262.8	6084.7	6250.0	8597.9	11574.1	14219.6	19841.3
		kg	51	87	140	164	369	965	1480	2760	2835	3900	5250	6450	9000

SWING CHECK VALVES

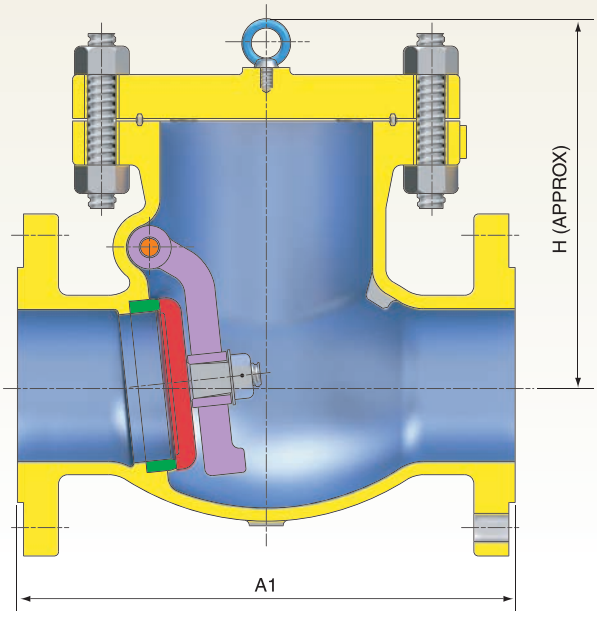
BOLTED COVER

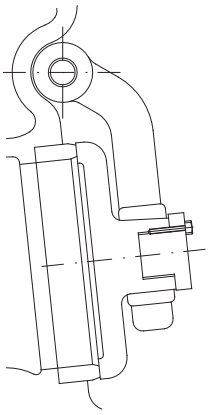
SW/CH CLASS 2500



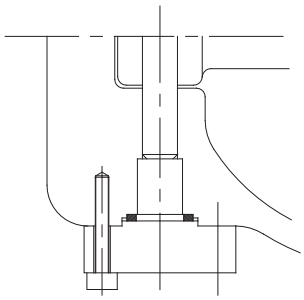


8″ & Under

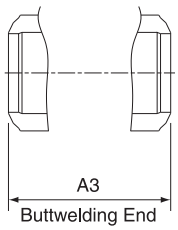




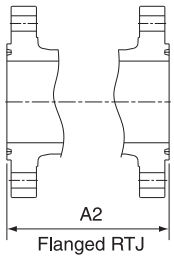
8″ & Lager



10″ & Lager



Buttwelding End



Flanged RTJ

VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16
		mm	50	65	80	100	150	200	250	300	350	400
A1 & A3		in	17.8	20.0	22.8	26.5	36.0	40.2	50.0	56.0	62.0	68.0
		mm	451	508	578	673	914	1022	1270	1422	1574.8	1727.2
A2		in	17.9	20.2	23.0	26.9	36.5	40.9	50.9	56.9	–	–
		mm	454	514	584	683	927	1038	1292	1444	–	–
H		in	16.4	16.5	17.4	21.3	28.9	28.4	33.5	39.4	47.2	51.1
		mm	416	419	441	541	733	722	851	1000	1200	1299
WEIGHT	RF	lb	330.7	529.1	771.6	1433.0	3196.7	5621.7	8708.1	12566.2	–	–
		kg	150	240	350	650	1450	2550	3950	5700	–	–
	BW	lb	264.6	429.9	617.3	1190.5	2645.5	4850.1	6944.5	10030.9	13668.5	17857.2
		kg	120	195	280	540	1200	2200	3150	4550	6200	8100

GATE VALVES

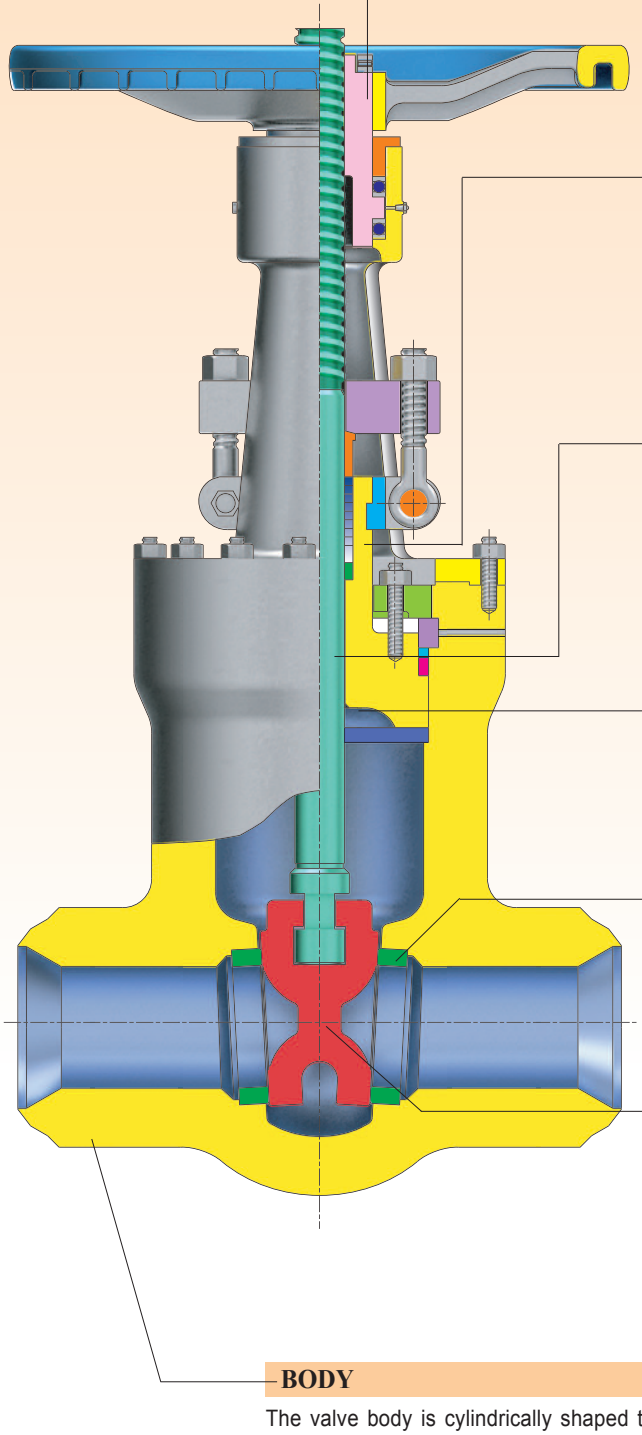
PRESSURE SEAL BONNET



CAST STEEL

PRESSURE SEAL BONNET

GATE VALVES



YOKE SLEEVE

The upper portion of the Yoke Sleeve is hexagonally tapered to fix the handwheel. The standard material of the Yoke Sleeve is Nodular Ni-resist D2 with over 1150℃ (2100℉) dissolution point in accordance with API Std. specifications.

BONNET

The bonnet is of a steel forging identical to the body to insure high reliability. The bonnet has a perfect body-bonnet seal and both ease of dismantling and reassembly are ensured. The bodies and bonnets of the valve are machined by special purpose machines to achieve perfect coaxiality and eliminate any misalignment which may damage the stems.

STEM

The machined forged stem comes with a T-shape head, which connects the slot of the wedge. The contacting surface of the head is spherically shaped. thereby giving it greater strength and durability. It is heat treated to give it adequate mechanical properties and surface hardness. Accurate machining and lapping insure minimized friction during opening and shutting.

BACK SEAT

All of our valves are provided with positive backseat, and packing replacement can be done with the valve fully open.
The conical seat and the guide are integrally stellite faced.

SEAT RING

The Stellite 6 surface of the seat ring is integrally applied to the body by means of welding in all valve sizes.
Lapping applied to the seating surface ensures perfect mating with the wedge surfaces.

FLEXIBLE WEDGE

The flexible wedge designed to absorb thermally-induced body distortion, thereby making it ideal for high temperature steam or water supply piping. A Stellite 6 layer is applied to the seating surface, and this deposit is subjected to a special heat treatment to secure required hardness and soundness.
The lapped finish then insures perfect mating with the seats.

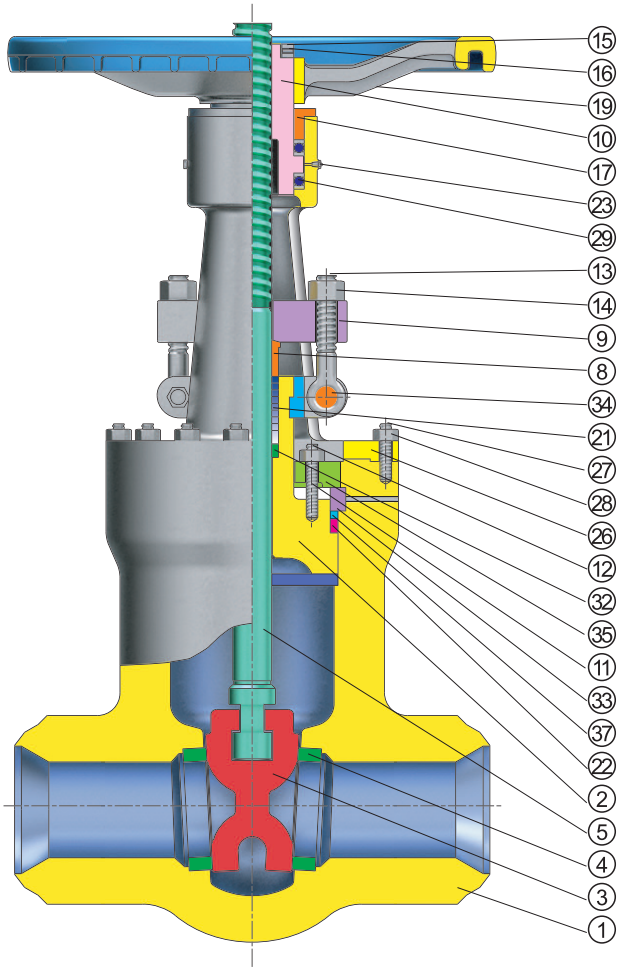
BODY

The valve body is cylindrically shaped to prevent distortion or undue stress during extreme working conditions. Inaddition, adequate padding helps to achieve a sound cast structure in critical area. The wall thickness is greater than, or in accordance with API, ANSI and ASME requirements. The contact surfaces ensure that a minimum specific pressure is achieved. The area contacting the pressure seal gasket has a stainless steel 18/8 inlay to eliminate corrosion or wire drawing and to insure easy dismantling at all times. The close tolerances of the inside diameter of this area are attained by accurate machining and honing finish.

CAST STEEL

PRESSURE SEAL BONNET

GATE VALVES





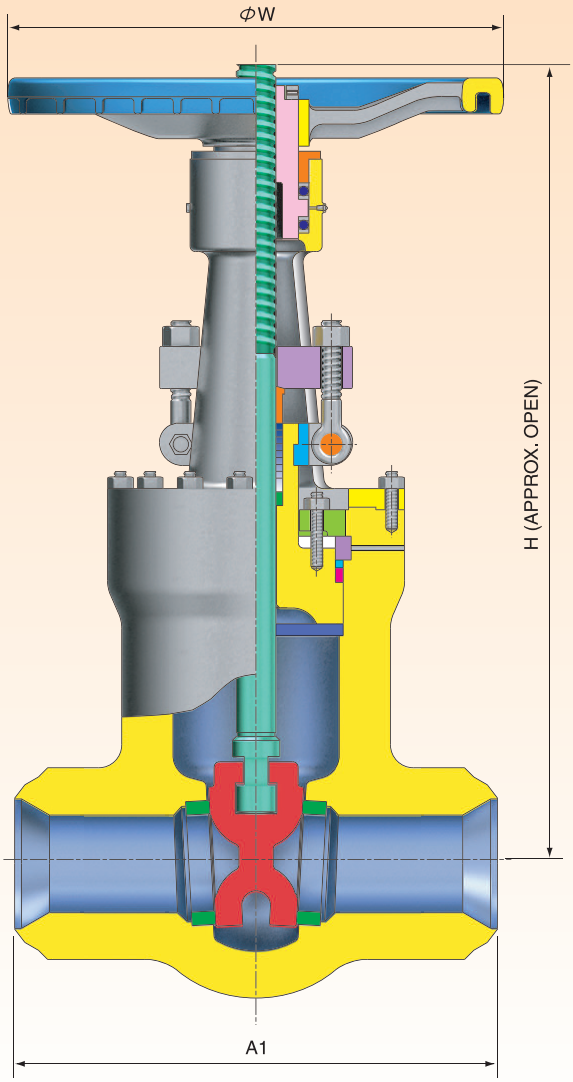
NO	NAME OF PART	ASTM SPECIFICATION
15	HANDLE NUT	STEEL
16	SET SCREW	STEEL
17	SLEEVE GLAND	STEEL
19	HANDWHEEL	A395
21	PACKING	COMMERCIAL
22	GASKET	COMMERCIAL
23	GREASE NIPPLE	STEEL
29	BEARING	COMMERCIAL

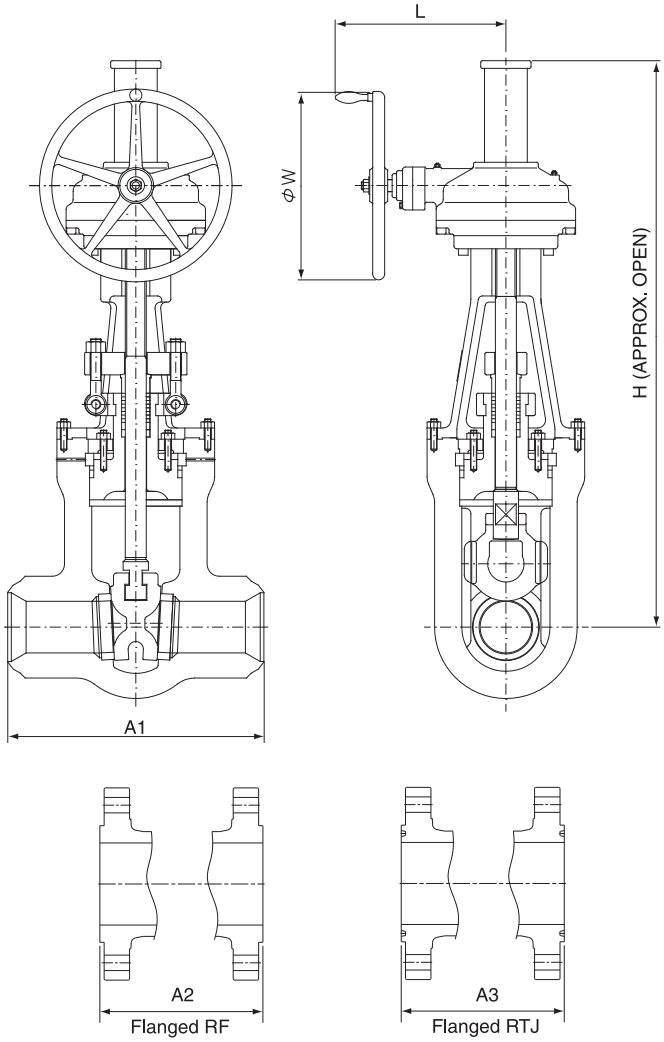
NO	NAME OF PART	ASTM SPECIFICATION										
		STANDARD	HIGH TEMPERATURE SERVICE						STAINLESS STEEL			
1	BODY	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
2	BONNET	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
3	DISC	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
4	BODY SEAT RING	A105+STL	A182-F1	A182-F11	A182-F22	A182-F5a	A182-F9	A182-F91	A182-F304	A182-F316	A182-F304L	A182-F316L
5	STEM	A479-410							A276-304	A276-316	A276-304L	A276-316L
8	PACKING GLAND	A479-410							A276-304			
9	GLAND FLANGE	A105 or A283-D							AISI 304			
10	YOKE SLEEVE	A439-D2							A439-D2			
11	BONNET BOLT	A193-B7	A193-B7	A193-B16	A193-B16	A193-B16	A193-B16	A193-B16	A193-B8			
12	BONNET NUT	A194-2H	A194-2H	A194-4	A194-4	A194-4	A194-4	A194-4	A194-8			
13	GLAND BOLT	A193-B7							A193-B8			
14	GLAND NUT	A194-2H							A194-8			
26	YOKE	A216--WCB							A351-CF8			
27	YOKE BOLT	A193-B7							A193-B8			
28	YOKE NUT	A194-2H							A194-8			
32	PACKING RING	A479-410							A276-304	A276-316	A276-304L	A276-316L
33	RETAINER	A29-1045+Cr. PLATED	A240-304						A240-304L			
34	HINGE CLAMP	A216-WCB							A351-CF8			
35	BONNET CLAMP	A29-1045							A240-304			
37	GASKET SPACER	A29-1045+Cr. PLATED	A240-304						A240-304			

GATE VALVES

PRESSURE SEAL BONNET

GT CLASS 600



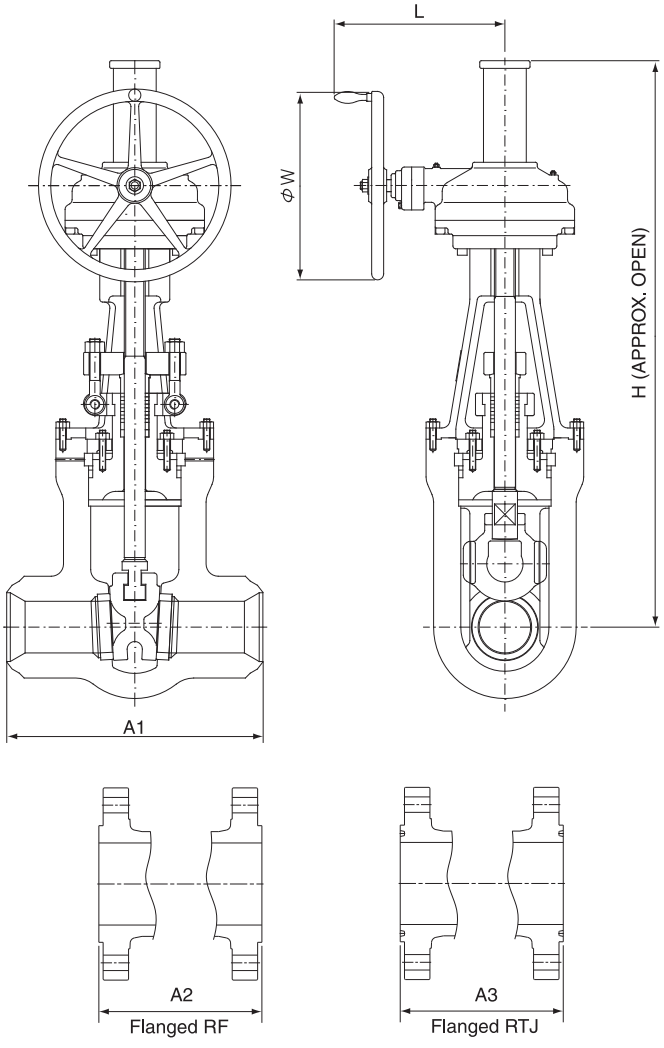


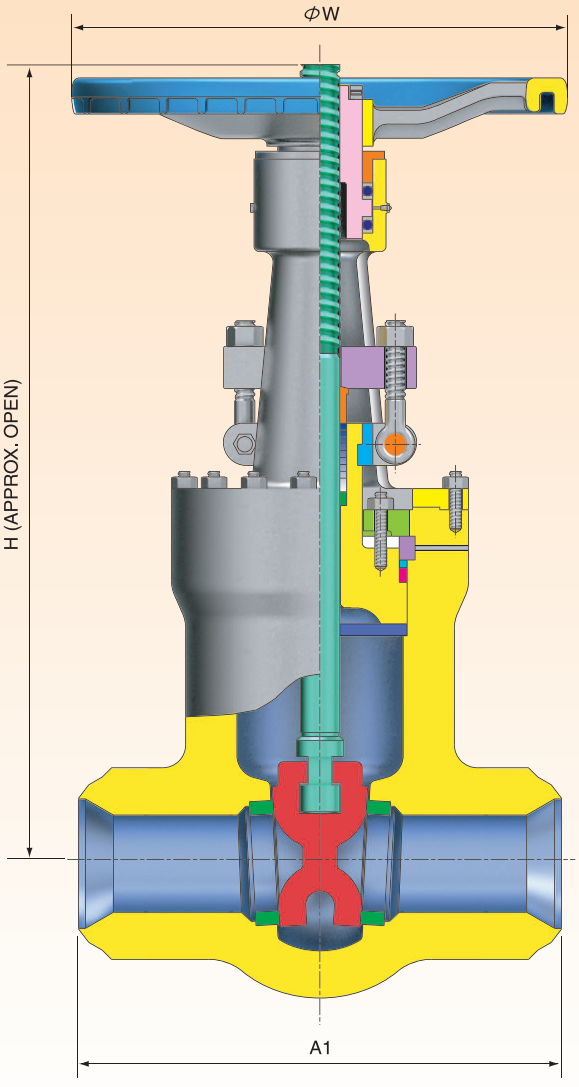
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1	in	11.5	8.5	10.0	12.0	18.0	23.0	28.0	32.0	35.0	39.0	43.0	47.0	55.0
	mm	292	216	254	305	457	584	711	813	889	991	1092	1194	1397
A2	in	11.5	13.0	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0
	mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397
A3	in	11.6	13.1	14.1	17.1	22.1	26.1	31.1	33.1	35.1	39.1	43.1	47.2	55.4
	mm	295	333	359	435	562	663	790	841	892	994	1095	1200	1407
H	in	23.1	21.1	19.9	23.4	37.0	43.3	49.1	66.9	71.6	80.3	96.1	101.1	109.9
	mm	586	535	505	594	941	1100	1248	1700	1818	2040	2442	2567	2792
W	in	19.7	11.8	9.8	11.8	17.3	19.7	24.8	24.8	24.8	28.0	31.5	31.5	35.4
	mm	500	300	250	300	440	500	630	630	630	710	800	800	900
L	in	–	–	–	–	–	–	–	15.3	15.3	16.0	18.1	18.1	19.1
	mm	–	–	–	–	–	–	–	389	389	406	461	461	486
WEIGHT RF	lb	154.3	209.4	220.5	326.3	555.6	705.5	1071.4	1642.4	1962.1	3104.1	4321.1	5820.2	7407.5
	kg	70	95	100	148	252	320	486	745	890	1408	1960	2640	3360
WEIGHT BW	lb	136.7	176.4	185.2	253.5	416.7	648.2	974.4	1492.5	1785.7	2821.9	3924.2	4850.2	6172.9
	kg	62	80	84	115	189	294	442	677	810	1280	1780	2200	2800

GATE VALVES

PRESSURE SEAL BONNET

GT CLASS 900



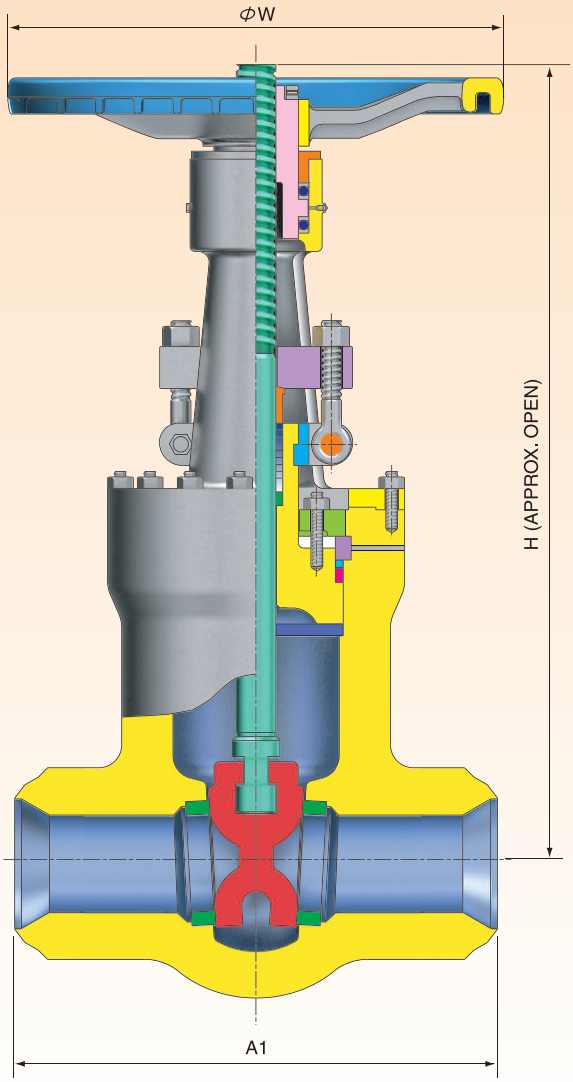


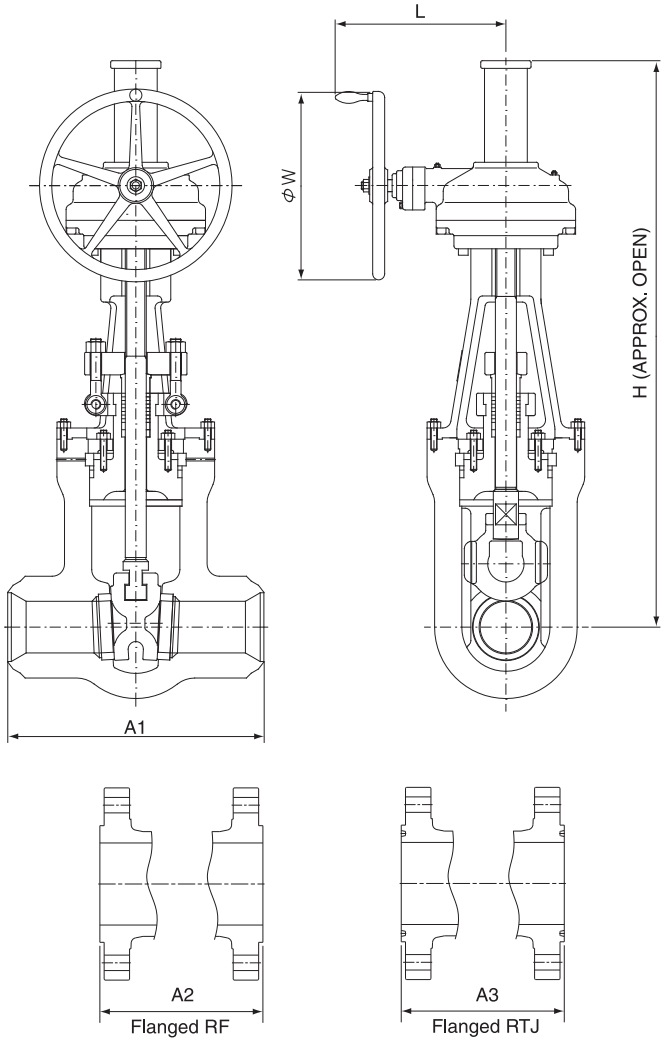
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1		in	8.5	10.0	12.0	14.0	20.0	26.0	31.0	36.0	39.0	43.0	48.0	52.0	61.0
		mm	216	254	305	356	508	660	787	914	991	1092	1219	1321	1549
A2		in	14.5	16.5	15.0	18.0	24.0	29.0	33.0	38.0	40.5	44.5	48.0	52.0	61.0
		mm	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549
A3		in	14.6	16.6	15.1	18.1	24.1	29.1	33.1	38.1	40.9	44.9	48.5	52.5	61.7
		mm	371	422	384	460	613	740	841	968	1039	1140	1232	1334	1568
H		in	23.1	21.1	26.2	31.4	40.8	53.3	62.2	70.6	73.2	85.9	97.2	100.2	119.5
		mm	586	535	666	798	1036	1353	1581	1792	1860	2181	2470	2546	3036
W		in	19.7	11.8	19.7	19.7	22.0	19.7	24.8	28.0	28.0	31.5	35.4	35.4	39.4
		mm	500	300	500	500	560	500	630	710	710	800	900	900	1000
L		in	–	–	–	–	–	13.5	15.3	16.0	16.0	18.1	19.1	20.8	23.2
		mm	–	–	–	–	–	342	389	406	406	461	486	529	590
WEIGHT	RF	lb	132.3	207.2	224.9	330.7	617.3	1455.1	2116.4	2976.2	3747.9	5291.1	7319.3	9700.3	14925.3
		kg	60	94	102	150	280	660	960	1350	1700	2400	3320	4400	6770
	BW	lb	88.2	141.1	176.4	220.5	407.9	1091.3	1620.4	2314.9	3086.5	4299.0	6018.6	8124.0	11971.1
		kg	40	64	80	100	185	495	735	1050	1400	1950	2730	3685	5430

GATE VALVES

PRESSURE SEAL BONNET

GT CLASS 1500



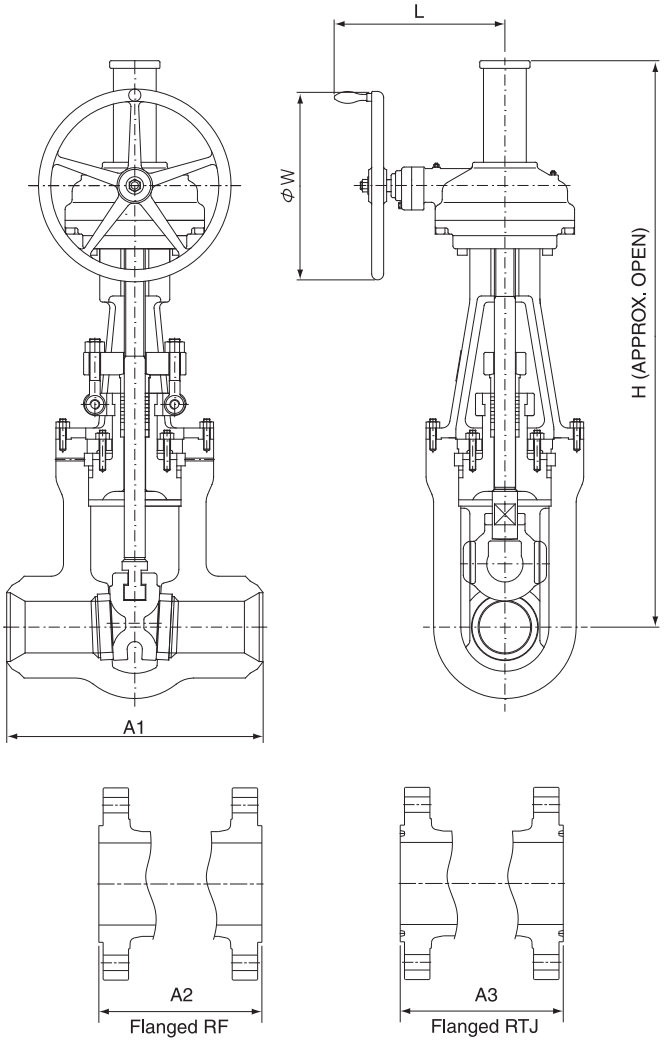


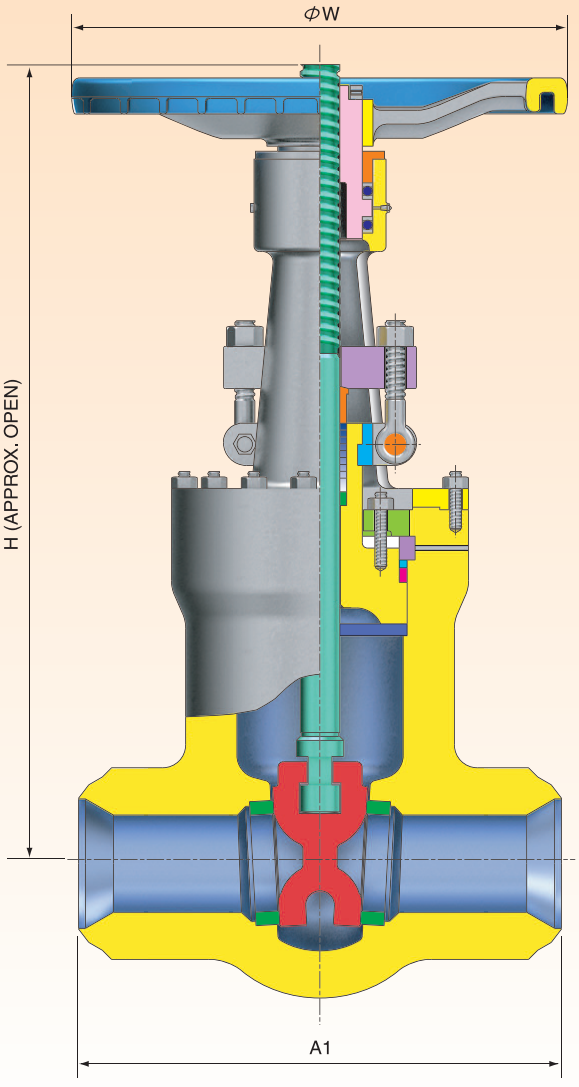
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1	in	8.5	10.0	12.0	16.0	22.0	28.0	34.0	39.0	42.0	47.0	53.0	58.0	64.0
	mm	216	254	305	406	559	711	864	991	1067	1194	1346	1473	1626
A2	in	14.5	16.5	18.5	21.5	27.8	32.8	39.0	44.5	49.5	54.5	60.5	65.5	76.5
	mm	368	419	470	546	705	832	991	1130	1257	1384	1537	1664	1943
A3	in	14.6	16.6	18.6	21.6	28.0	33.1	39.4	45.1	50.2	55.4	61.4	66.4	77.6
	mm	371	422	473	549	711	842	1000	1146	1276	1406	1559	1686	1971
H	in	23.1	21.1	26.2	32.0	53.7	56.1	62.3	66.7	79.6	91.8	111.1	101.5	116.3
	mm	586	535	666	812	1363	1426	1583	1694	2023	2331	2823	2579	2955
W	in	19.7	11.8	19.7	19.7	19.7	24.8	28.0	28.0	35.4	35.4	39.4	39.4	39.4
	mm	500	300	500	500	500	630	710	710	900	900	1000	1000	1000
L	in	–	–	–	–	13.5	15.3	16.0	16.0	20.8	20.8	23.2	23.2	24.4
	mm	–	–	–	–	342	389	406	406	529	529	590	590	619
WEIGHT RF	lb	132.3	207.2	264.6	458.6	1058.2	2006.2	3108.5	4585.6	5754.1	7936.6	13139.5	16248.1	23391.0
	kg	60	94	120	208	480	910	1410	2080	2610	3600	5960	7370	10610
WEIGHT BW	lb	88.2	141.1	185.2	308.6	749.6	1499.1	1984.2	3196.7	3968.3	6062.7	10207.4	12610.4	18166.1
	kg	40	64	84	140	340	680	900	1450	1800	2750	4630	5720	8240

GATE VALVES

PRESSURE SEAL BONNET

GT CLASS 2500





VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18
		mm	50	65	80	100	150	200	250	300	350	400	450
A1		in	11.0	13.0	14.5	18.0	24.0	30.0	36.0	41.0	44.0	49.0	55.0
		mm	279	330	368	457	610	762	914	1041	1118	1245	1397
A2		in	17.8	20.0	22.8	26.5	36.0	40.2	50.0	56.0	–	–	–
		mm	451	508	578	673	914	1022	1270	1422	–	–	–
A3		in	17.9	20.2	23.0	26.9	36.5	40.9	50.9	56.9	–	–	–
		mm	454	514	584	683	927	1038	1292	1444	–	–	–
H		in	24.4	25.9	31.9	29.5	46.1	55.0	60.9	76.5	72.7	97.2	116.1
		mm	619	659	809	750	1170	1397	1548	1942	1846	2470	2950
W		in	11.8	14.0	17.7	19.7	19.7	28.0	31.5	35.4	35.4	39.4	39.4
		mm	300	355	450	500	500	710	800	900	900	1000	1000
L		in	–	–	–	–	13.5	16.0	18.1	20.8	20.8	24.4	24.4
		mm	–	–	–	–	342	406	461	529	529	619	619
WEIGHT	RF	lb	187.4	297.6	363.8	765.0	1785.7	2910.1	5233.8	7539.8	–	–	–
		kg	85	135	165	347	810	1320	2374	3420	–	–	–
	BW	lb	110.2	198.4	253.5	418.9	1146.4	1631.4	3527.4	6613.9	7495.7	9259.4	11023.1
		kg	50	90	115	190	520	740	1600	3000	3400	4200	5000

GLOBE VALVES

PRESSURE SEAL BONNET



CAST STEEL
PRESSURE SEAL BONNET

GLOBE VALVES

YOKE SLEEVE

The standard material of the Yoke Sleeve is Nodular Ni-resist D2 with over 1150℃(2100°F) dissolution point in conformity with API Std. specifications.

BONNET

The bonnet is of a steel forging identical to the body to insure high reliability. The bonnet has a perfect body-bonnet seal and both ease of dismantling and reassembly are ensured. The body and bonnets of our valve are carefully machined to achieve perfect coaxiality and eliminate any misalignment which may cause damage stems.

STEM

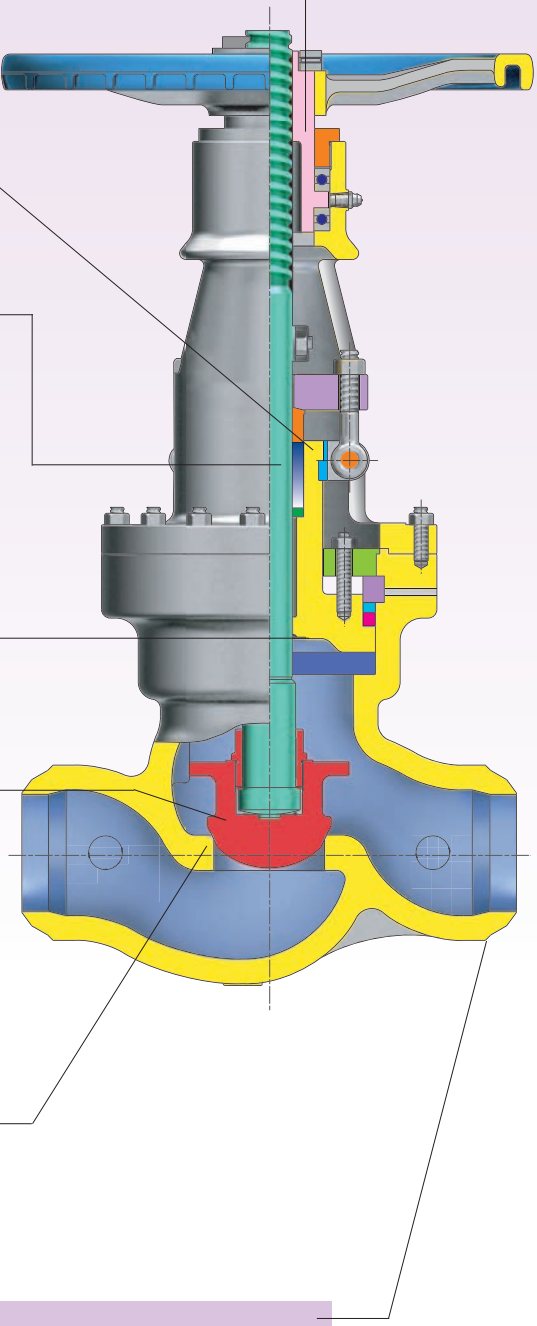
The stem of one-piece construction, is heat treated to secure the adequate mechanical properties and surface, hardness.
Accurate machining and grinding insure that there is minimized friction during valve opening/shutting.
The round head of the stem gives a point contact with the inside of the disc housing and thus prevents galling.

BACK SEAT

All of our valves are equipped with a backseat to allow packing replacement with the valve fully opened. The conical shape contact seat in the bonnet assmbly in integrally stellite faced.

DISC

The disc of our globes is a loose disc which freely revolves around the stem, thereby preventing friction and galling with the seating surface when the valve is shut. The outside diameter of the disc is accurately finished and cylindrical in shape to travel along the body guides. A stellite 6 layer is applied to the conical seating surface of the disc. This deposit undergoes a special heat treatment to secure the required hardness and soundness.
In addition, the lapped finish insures a perfect mating with the seats.



SEAT

The Stellite 6 seating surface is integrally applied to the body by means of welding in all valve sizes. Perfect mating of the disc surfaces is achieved by lapping applied to the seating surface.

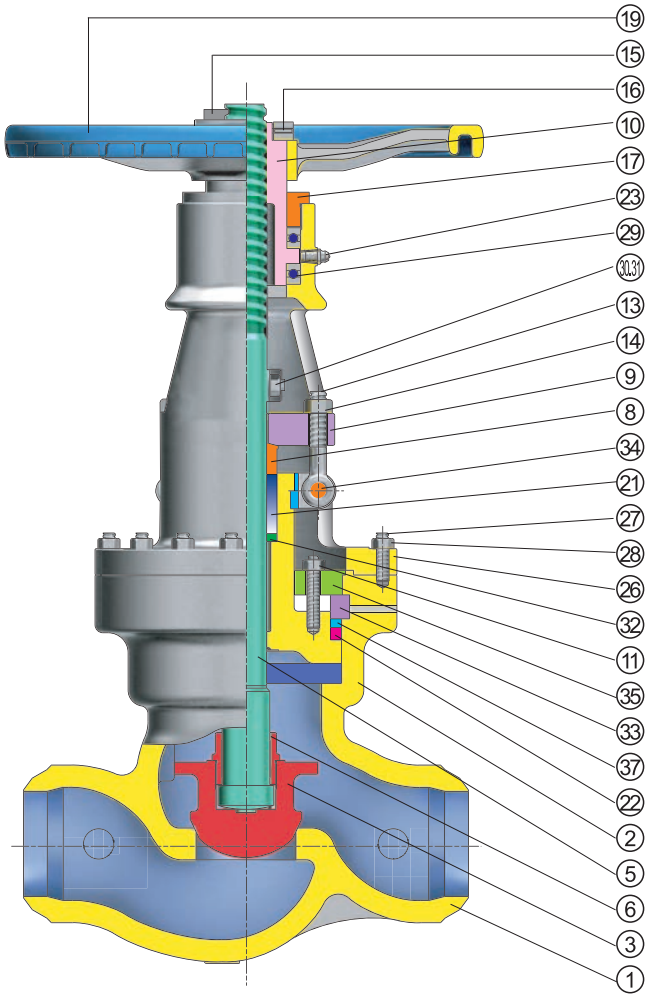
BODY

The cylindrically shaped valve body prevents distortion or undue stress under extreme working conditions. In addition, adequate padding ensures a sound cast structure in the critical areas. The wall thickness is greater than, or in accordance with API, ANSI and ASME requirements.
The close tolerances of the inside diameter of this area are attained by accurate machining and honing finish.

CAST STEEL
PRESSURE SEAL BONNET

GLOBE VALVES





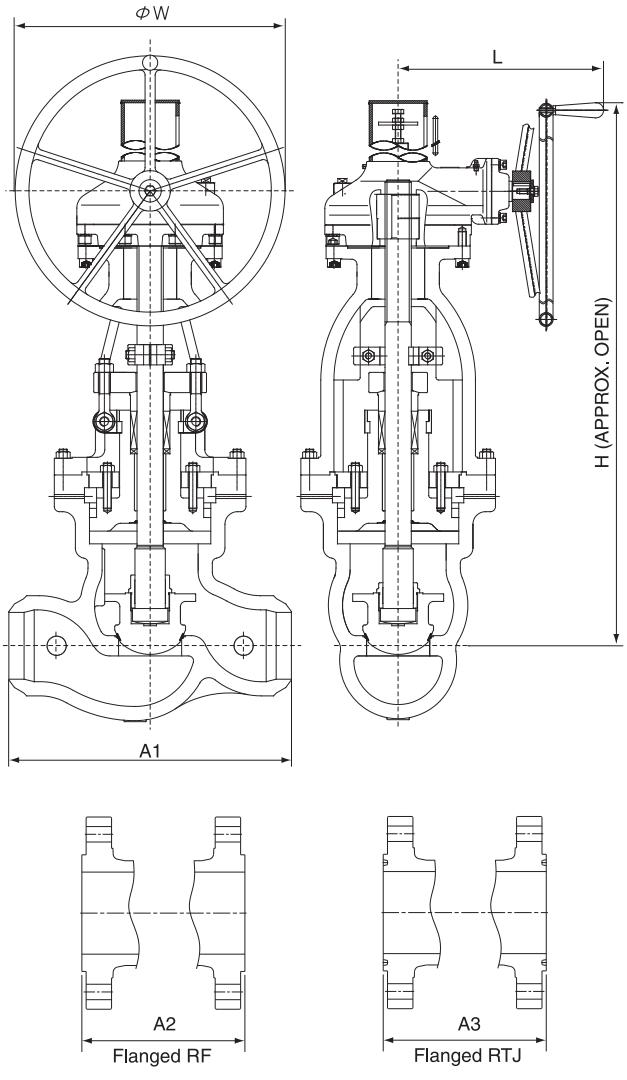
NO	NAME OF PART	ASTM SPECIFICATION
15	HANDLE NUT	STEEL
16	SET SCREW	STEEL
17	SLEEVE GLAND	STEEL
19	HANDWHEEL	A395
21	PACKING	COMMERCIAL
22	GASKET	COMMERCIAL
30	STOPPER	A283-D

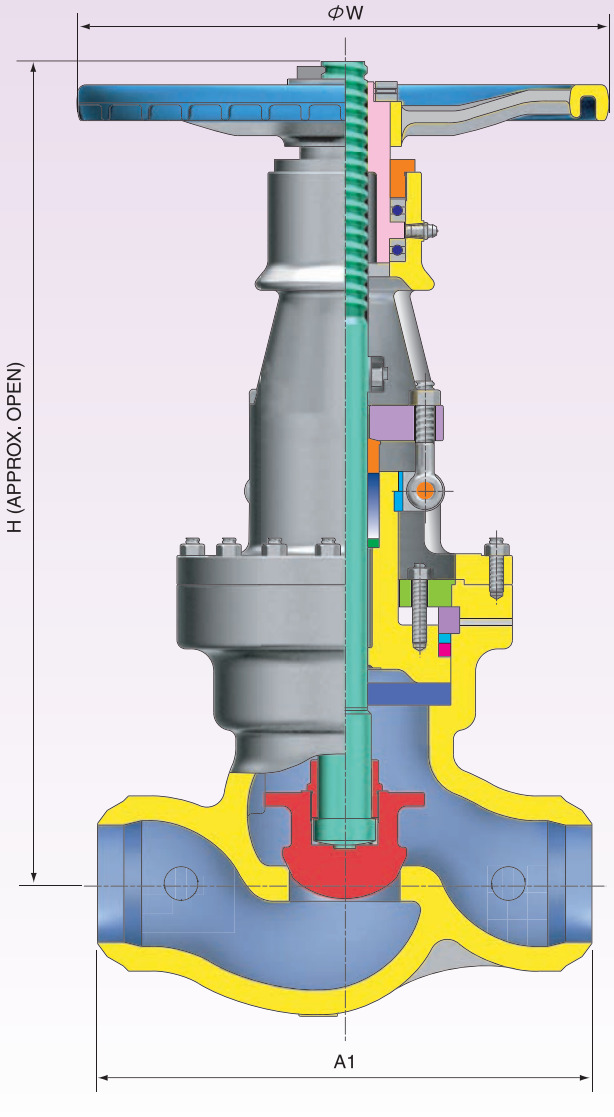
NO	NAME OF PART	ASTM SPECIFICATION										
		STANDARD	HIGH TEMPERATURE SERVICE						STAINLESS STEEL			
1	BODY	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
2	BONNET	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
3	DISC	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
5	STEM	A479-410							A276-304	A276-316	A276-304L	A276-316L
6	DISC GLAND	A217-CA15							A276-304	A276-316	A276-304L	A276-316L
8	PACKING GLAND	A479-410							A276-304			
9	GLAND FLANGE	A105 or A283-D							A351-CF8			
10	YOKE SLEEVE	A439-D2							A439-D2			
11	BONNET BOLT/NUT	A193-B7 / A194-2H		A193-B16 / A194-4					A193-B8 / A194-8			
13	GLAND BOLT	A193-B7							A193-B8			
14	GLAND NUT	A194-2H							A194-8			
26	YOKE	A216-WCB							A351-CF8			
27	YOKE BOLT	A193-B7							A193-B8			
28	YOKE NUT	A194-2H							A194-8			
31	STOPPER PIN	A193-B7							A29-1045			
32	PACKING RING	A479-410							A276-304	A276-316	A276-304L	A276-316L
33	RETAINER	A29-1045+Cr.PLATED	A240-304						A240-304L			
34	HINGE CLAMP	A216-WCB							A351-CF8			
35	BONNET CLAMP	A29-1045							A240-304			
37	GASKET SPACER	A29-1045+Cr.PLATED	A240-304						A240-304			

GLOBE VALVES

PRESSURE SEAL BONNET

GL CLASS 600



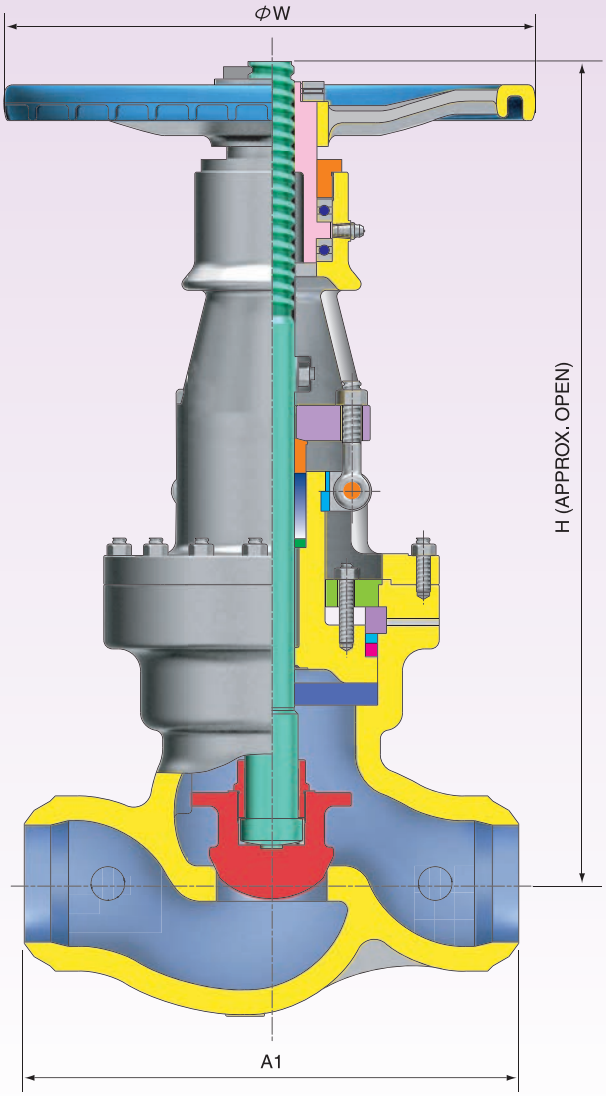


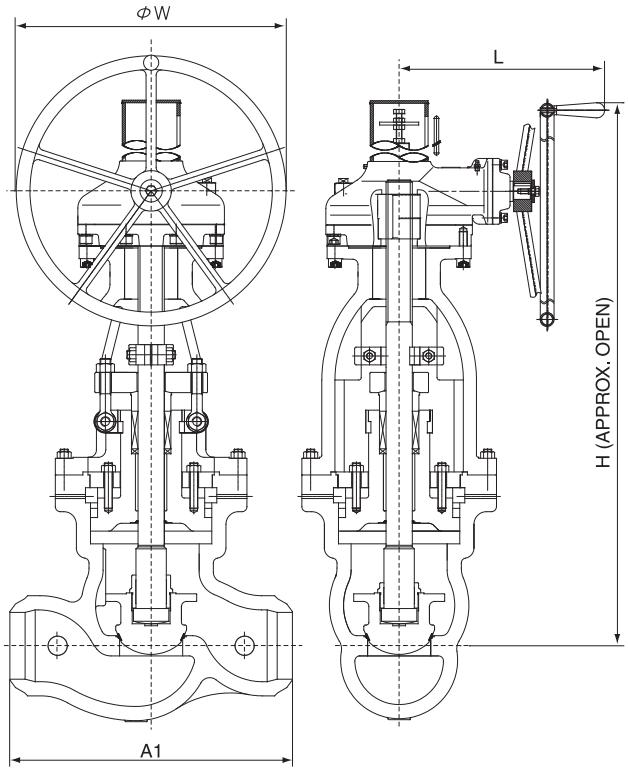
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16
		mm	50	65	80	100	150	200	250	300	350	400
A1		in	11.5	13.0	14.0	17.0	22.0	23.0	28.0	32.0	35.0	39.0
		mm	292	330	356	432	559	584	711	813	889	991
A2		in	11.5	13.0	14.0	17.0	22.0	26.0	31.0	32.2	35.0	39.0
		mm	292	330	356	432	559	660	787	818	889	991
A3		in	11.6	13.1	14.1	17.1	22.1	26.1	31.1	33.1	35.1	39.1
		mm	295	333	359	435	562	664	791	841	892	994
H		in	19.7	20.8	24.8	25.6	37.6	42.4	55.1	61.0	70.9	85.0
		mm	500	529	630	650	955	1076	1400	1550	1800	2160
W		in	19.7	19.7	15.7	17.7	24.8	24.8	24.0	24.0	24.0	29.9
		mm	500	500	400	450	630	630	610	610	610	760
L		in	–	–	–	–	15.3	15.3	17.0	20.2	20.2	22.3
		mm	–	–	–	–	389	389	432	512	512	567
WEIGHT	RF	lb	99.2	121.2	187.4	297.7	672.5	1367.1	2888.6	4189.5	5997.6	6945.8
		kg	45	55	85	135	305	620	1310	1900	2720	3150
	BW	lb	77.2	99.2	132.3	209.5	507.2	1190.7	2535.8	3792.6	5578.7	6394.5
		kg	35	45	60	95	230	540	1150	1720	2530	2900

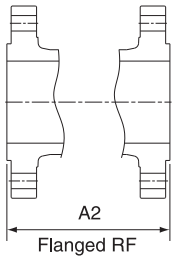
GLOBE VALVES

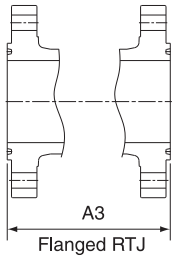
PRESSURE SEAL BONNET

GL CLASS 900







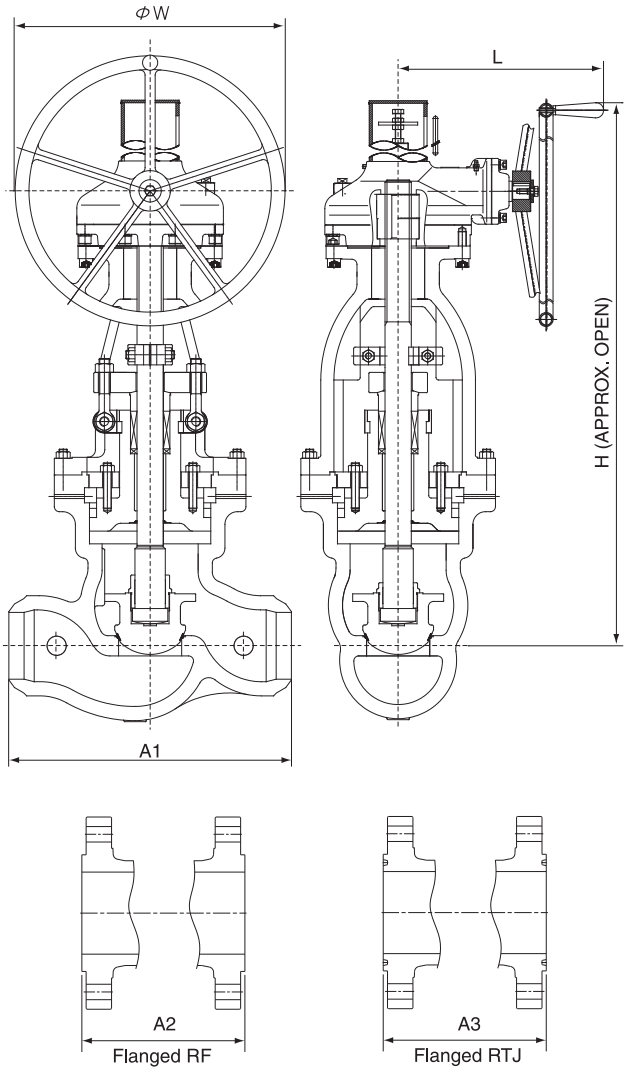


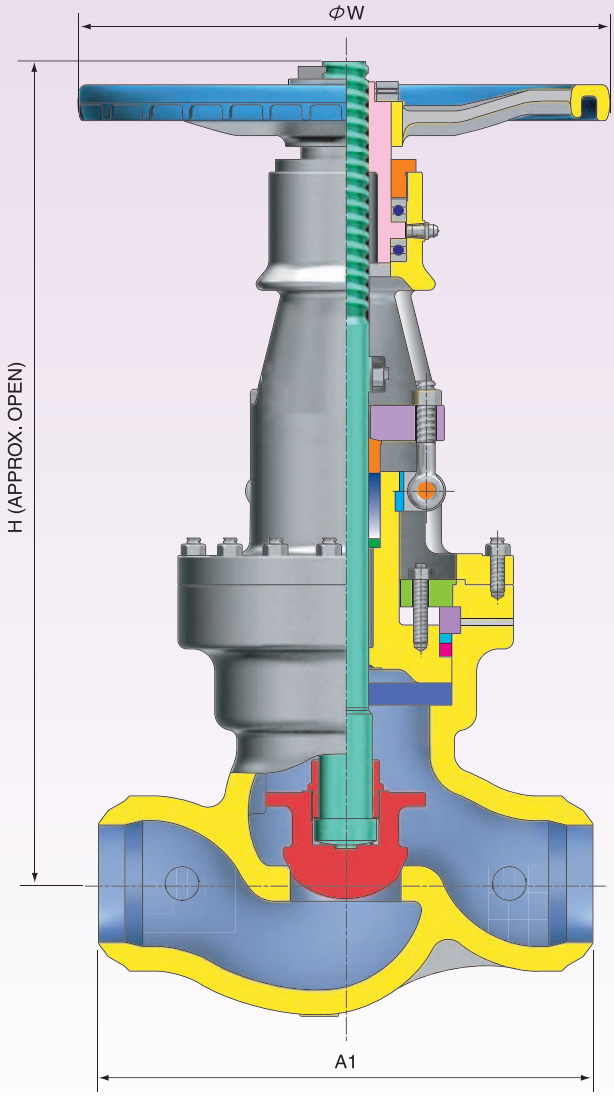
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16
	mm	50	65	80	100	150	200	250	300	350	400
A1	in	14.5	16.5	15.0	18.0	20.0	26.0	31.0	36.0	39.0	43.0
	mm	368	419	381	457	508	660	787	914	991	1092
A2	in	14.5	16.5	15.0	18.0	24.0	29.0	33.0	38.0	40.5	44.5
	mm	368	419	381	457	610	737	838	965	1029	1130
A3	in	14.6	16.6	15.1	18.1	24.1	29.1	33.1	38.1	40.9	44.9
	mm	371	422	384	460	613	740	841	968	1038	1140
H	in	20.7	26.1	24.9	27.0	53.3	53.1	61.0	68.9	78.7	90.9
	mm	525	663	633	687	1355	1350	1550	1750	2000	2310
W	in	19.7	19.7	19.7	19.7	28.0	24.0	24.0	24.0	29.9	29.9
	mm	500	500	500	500	710	610	610	610	760	760
L	in	–	–	–	–	16.0	17.0	20.2	20.2	22.3	22.3
	mm	–	–	–	–	406	432	512	512	567	567
WEIGHT RF	lb	176.4	242.6	231.5	374.9	926.1	2205	3792.6	5071.5	7386.8	8820
	kg	80	110	105	170	420	1000	1720	2300	3350	4000
WEIGHT BW	lb	121.3	176.4	176.4	286.7	793.8	1984.5	3351.6	4520.3	6725.3	7938
	kg	55	80	80	130	360	900	1520	2050	3050	3600

GLOBE VALVES

PRESSURE SEAL BONNET

GL CLASS 1500



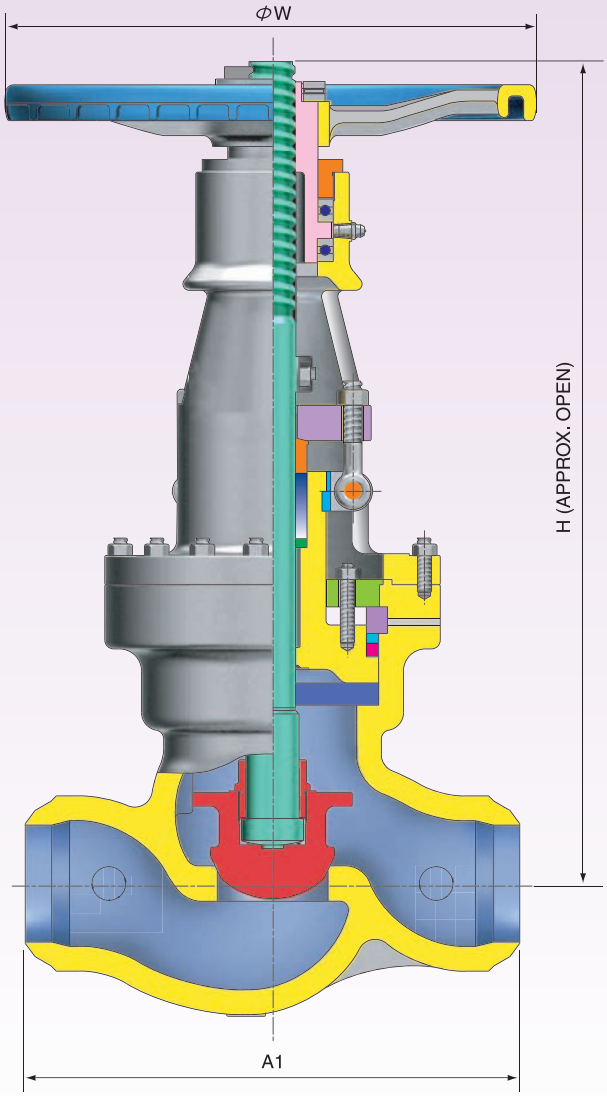


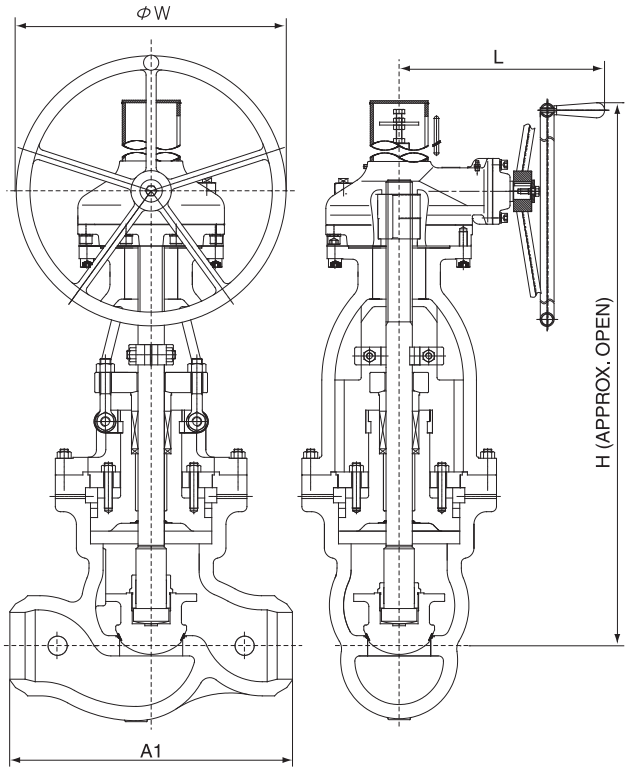
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14
		mm	50	65	80	100	150	200	250	300	350
A1		in	8.5	10.0	12.0	16.0	22.0	28.0	34.0	39.0	42.0
		mm	368	419	305	406	559	711	864	991	1067
A2		in	14.5	16.5	18.5	21.5	27.8	32.8	39.0	44.5	49.5
		mm	368	419	470	546	705	832	991	1130	1257
A3		in	14.6	16.6	18.6	21.6	28.0	33.1	39.4	45.1	50.2
		mm	371	422	473	549	711	841	1000	1146	1276
H		in	20.7	26.1	26.4	34.5	45.9	70.9	78.7	91.0	105.9
		mm	525	663	671	876	1167	1800	2000	2311	2691
W		in	19.7	19.7	19.7	19.7	31.5	24.0	29.9	29.9	29.9
		mm	500	500	500	500	800	610	760	760	760
L		in	–	–	–	–	18.1	20.2	20.2	20.2	22.3
		mm	–	–	–	–	461	512	512	512	567
WEIGHT	RF	lb	176.4	242.6	299.9	496.1	1433.3	3704.4	5909.4	7497	9481.5
		kg	80	110	136	225	650	1680	2680	3400	4300
	BW	lb	121.3	176.4	209.5	352.8	1146.6	3153.2	5027.4	6240.2	7938
		kg	55	80	95	160	520	1430	2280	2830	3600

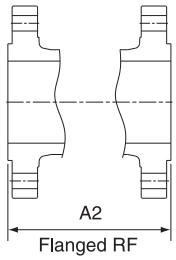
GLOBE VALVES

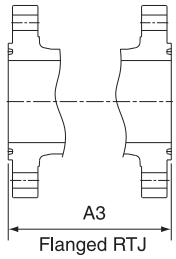
PRESSURE SEAL BONNET

GL CLASS 2500









VALVE SIZE	in	2	2.5	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
A1	in	11.0	13.0	14.5	18.0	24.0	30.0	36.0	41.0
	mm	279	330	368	457	610	762	914	1041
A2	in	17.8	20.0	22.8	26.5	36.0	40.3	50.0	56.0
	mm	451	508	578	673	914	1022	1270	1422
A3	in	17.9	20.2	23.0	26.9	36.5	40.9	50.9	56.9
	mm	454	514	584	682	927	1038	1292	1444
H	in	25.1	28.3	29.3	47.4	53.0	85.0	100.0	106.0
	mm	637	719	743	1205	1345	2160	2540	2692
W	in	19.7	19.7	22.8	28.0	35.4	29.9	29.9	29.9
	mm	500	500	580	710	900	760	760	760
L	in	–	–	–	16.0	19.1	22.3	22.3	22.3
	mm	–	–	–	406	486	567	567	567
WEIGHT RF	lb	220.5	341.8	463.1	1102.5	2756.3	5292	7276.5	9261
	kg	100	155	210	500	1250	2400	3300	4200
WEIGHT BW	lb	154.4	242.6	308.7	771.8	2094.8	4410	5512.5	7276.5
	kg	70	110	140	350	950	2000	2500	3300

SWING CHECK VALVES

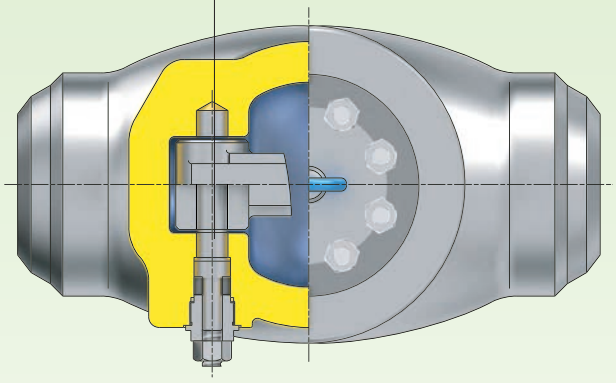
PRESSURE SEAL COVER



CAST STEEL

PRESSURE SEAL COVER

SWING CHECK VALVES



HINGE PIN

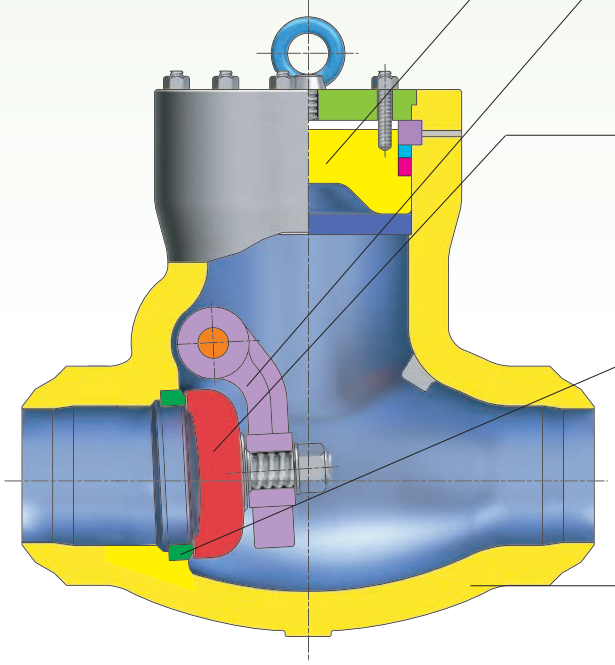
The hinge pin is inserted into the valve body to achieve pressure seal construction.

COVER

The cover material is a steel forging identical to the body to insure high dependability.
The cover construction has a perfect body-cover tightness and ease of dismantling and reassembly are ensured.

ARM

The arm is of a steel material identical to the body.
Larger sized valves are provided with a hinge bushing to reduce friction and to prevent galling.



DISC

The disc has a sufficient seating surface area which is ground and lapped to a mirror finish.
It is of one-piece construction and is heat treated to deliver the required mechanical properties and hardness.

SEAT RING

The Stellite 6 surface of the seat ring is integrally applied to the body by means of welding in all valve sizes.
Perfect mating with the DISC surfaces attained by a lapping finish applied to the seating.

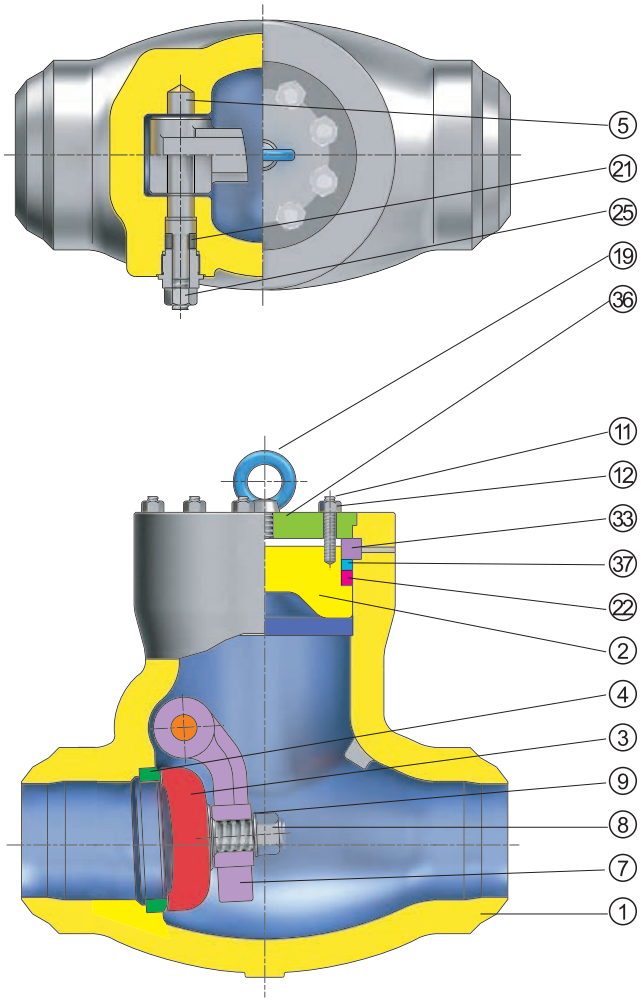
BODY

The cylindrically shaped valve body prevents distortion or undue stress under extreme working conditions. Padding is also provided to achieve a sound cast structure in the critical areas. The wall thickness is greater than, or in accordance with, API, ANSI and ASME requirements. The close tolerances of the inside diameter of this area are attained by accurate machining and honing finish.

CAST STEEL

PRESSURE SEAL COVER

SWING CHECK VALVES





NO	NAME OF PART	ASTM SPECIFICATION
8	DISC NUT	A194-8
9	WASHER	A240-304
19	EVE BOLT	A 105
21	PLUG GASKET	COMMERCIAL
22	GASKET	COMMERCIAL

Swing check valves can be supplied with the following accessories.

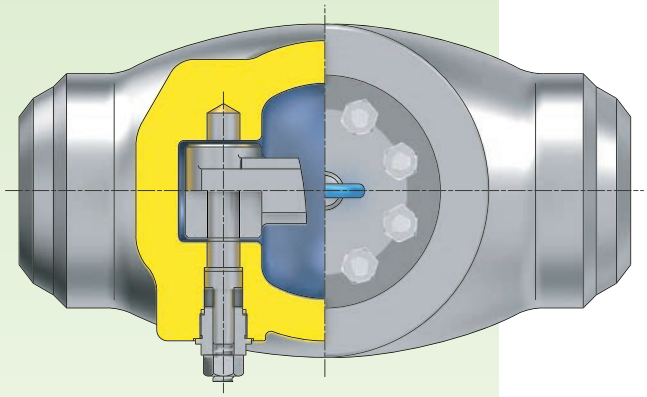
- outside weight and lever
- slam retarders
- assisting springs
- position switches/indicators
- pneumatic safety control

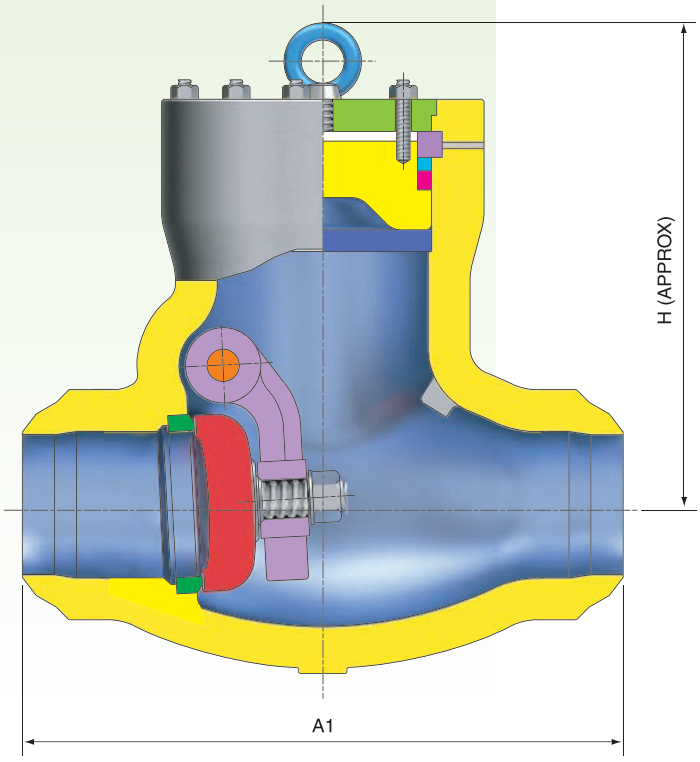
NO	NAME OF PART	ASTM SPECIFICATION										
		STANDARD	HIGH TEMPERATURE SERVICE						STAINLESS STEEL			
1	BODY	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
2	COVER	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
3	DISC	A217-CA15	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
4	BODY SEAT RING	A105+STL	A182-F1	A182-F11	A182-F22	A182-F5a	A182-F9	A182-F91	A240-304	A240-316	A240-304L	A240-316L
5	HINGE PIN	A479-410							A276-304	A276-316	A276-304L	A276-316L
7	ARM	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
11	BONNET BOLT	A193-B7		A193-B16					A193-B8			
12	BONNET NUT	A194-2H		A194-4					A194-8			
25	PLUG	A105	A479-410						A276-304	A276-316	A276-304L	A276-316L
33	RETAINER	A29-1045+Cr.PLATED	A240-304						A240-304			
36	BONNET CLAMP	A29-1045							A240-304			
37	GASKET SPACER	A29-1045+Cr.PLATED	A240-304						A240-304			

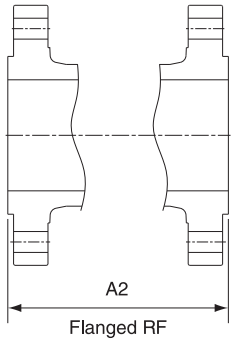
SWING CHECK VALVES

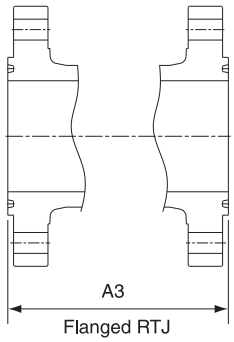
PRESSURE SEAL COVER

SW/CH CLASS 600







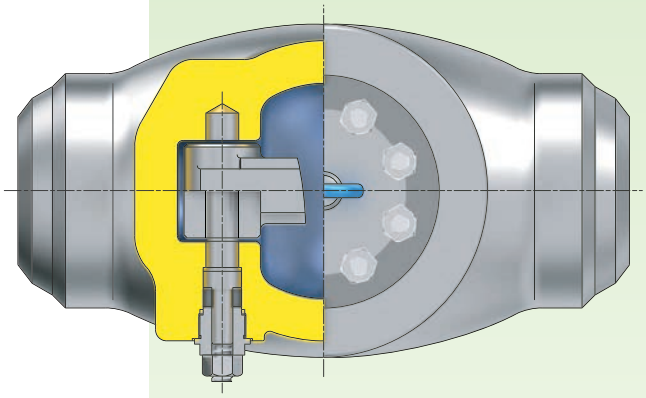


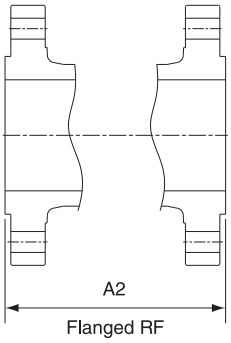
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1	in	11.5	13.0	10.0	12.0	18.0	23.0	28.0	32.0	35.0	39.0	43.0	47.0	55.0
	mm	292	330	254	305	457	584	711	813	889	991	1092	1194	1397
A2	in	11.5	13.0	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0
	mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397
A3	in	11.6	13.1	14.1	17.1	22.1	26.1	31.1	33.1	35.1	39.1	43.1	47.2	55.4
	mm	295	333	359	435	562	663	790	841	892	994	1095	1200	1407
H	in	11.4	13.5	8.1	10.2	12.8	17.1	23.9	27.4	29.5	28.7	28.7	32.2	37.4
	mm	289	343	205	260	325	434	606	695	749	730	730	819	949
WEIGHT RF	lb	59.5	77.2	99.2	187.4	418.9	771.6	1102.3	1477.1	1940.0	2535.3	3262.8	4144.6	5731.9
	kg	27	35	45	85	190	350	500	670	880	1150	1480	1880	2600
WEIGHT BW	lb	39.7	55.1	70.5	75.0	271.2	573.2	815.7	1080.2	1455.0	1873.9	2425.0	3284.8	4497.4
	kg	18	25	32	34	123	260	370	490	660	850	1100	1490	2040

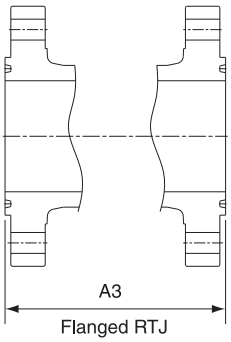
SWING CHECK VALVES

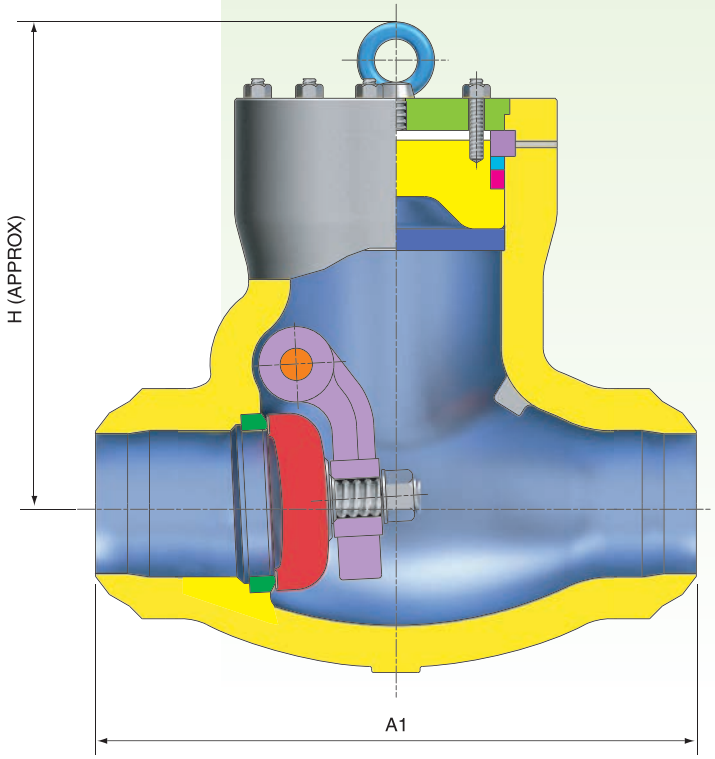
PRESSURE SEAL COVER

SW/CH CLASS 900







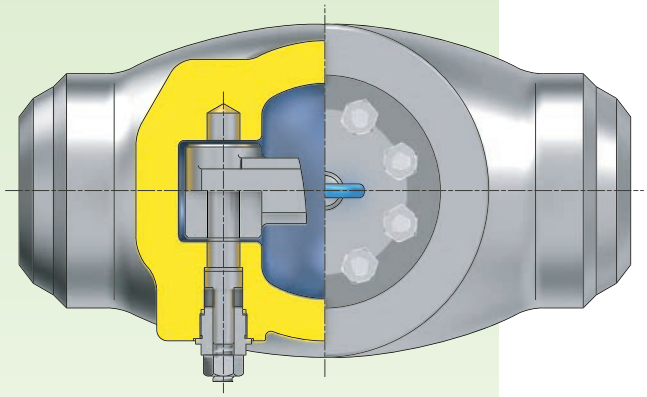


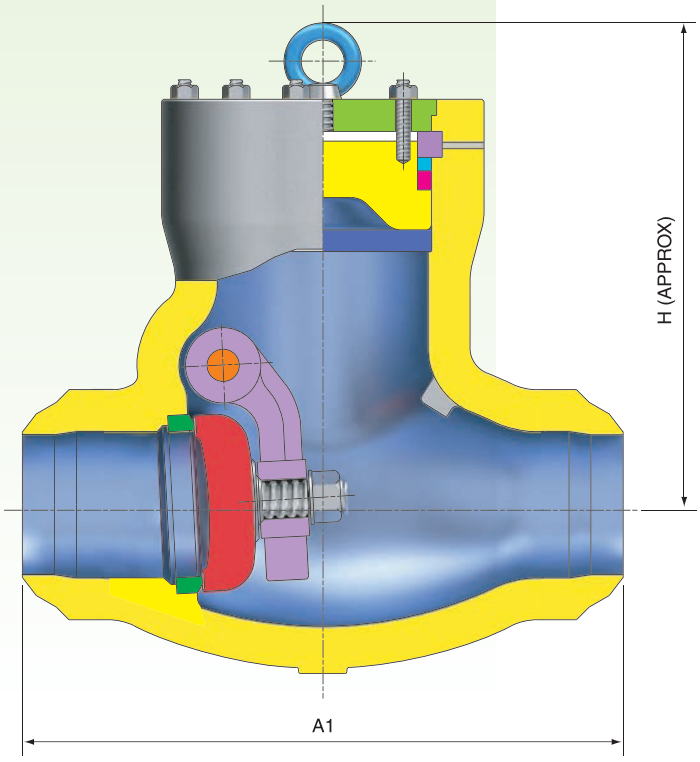
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1		in	14.5	16.5	12.0	14.0	20.0	26.0	31.0	36.0	39.0	43.0	46.5	50.5	59.5
		mm	368	419	305	356	508	660	787	914	991	1092	1181	1283	1511
A2		in	14.5	16.5	15.0	18.0	24.0	29.0	33.0	38.0	40.5	44.5	48.0	52.0	61.0
		mm	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549
A3		in	14.6	16.6	15.1	18.1	24.1	29.1	33.1	38.1	40.9	44.9	48.5	52.5	61.7
		mm	371	422	384	460	613	740	841	968	1039	1140	1232	1334	1568
H		in	11.4	13.5	8.1	15.0	15.9	23.1	23.9	27.4	29.5	28.7	33.5	34.0	37.8
		mm	289	343	205	381	403	587	606	695	749	730	851	864	959
WEIGHT	RF	lb	88.2	121.3	114.6	231.5	507.1	1256.6	1873.9	2866.0	3417.1	3637.6	5070.6	6613.8	9038.8
		kg	40	55	52	105	230	570	850	1300	1550	1650	2300	3000	4100
	BW	lb	44.1	70.5	66.1	143.3	352.7	970.0	1521.2	2248.7	2645.5	2976.2	4078.5	5291.0	6393.3
		kg	20	32	30	65	160	440	690	1020	1200	1350	1850	2400	2900

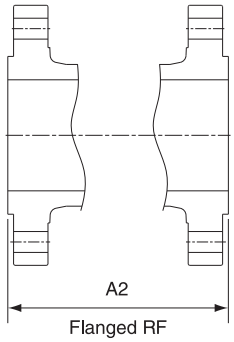
SWING CHECK VALVES

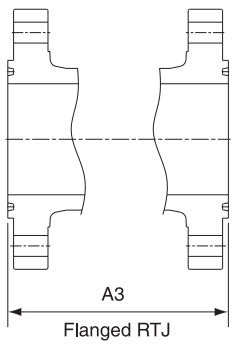
PRESSURE SEAL COVER

SW/CH CLASS 1500







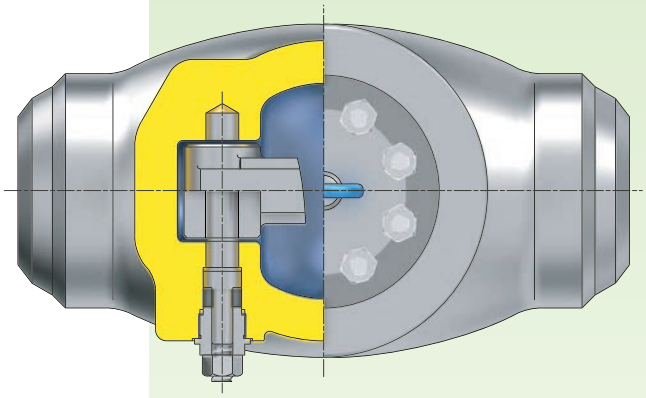


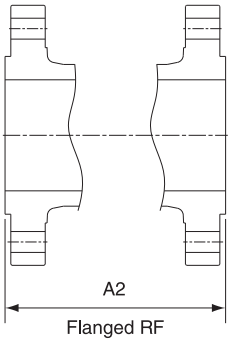
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1	in	14.5	16.5	18.5	16.0	22.0	28.0	34.0	39.0	42.0	47.0	53.0	58.0	64.0
	mm	368	419	470	406	559	711	864	991	1067	1194	1346	1473	1626
A2	in	14.5	16.5	18.5	21.5	27.8	32.8	39.0	44.5	49.5	54.4	60.5	65.5	76.5
	mm	368	419	470	546	705	832	991	1130	1257	1383	1537	1664	1943
A3	in	14.6	16.6	18.6	21.6	28.0	33.1	39.4	45.1	50.2	55.3	61.4	66.4	77.6
	mm	371	422	473	549	711	842	1001	1146	1276	1405	1559	1686	1972
H	in	11.4	13.5	15.1	14.8	17.6	19.7	23.5	25.4	28.0	29.5	34.6	37.4	43.3
	mm	289	343	383	376	448	500	598	645	711	749	880	949	1099
WEIGHT RF	lb	88.2	121.3	220.5	308.6	881.8	1344.8	2314.8	3417.1	4629.6	5731.9	7275.1	9259.3	13227.5
	kg	40	55	100	140	400	610	1050	1550	2100	2600	3300	4200	6000
WEIGHT BW	lb	44.1	70.5	88.2	154.3	617.3	1058.2	1631.4	2425.0	3108.5	3527.3	4629.6	5731.9	7716.1
	kg	20	32	40	70	280	480	740	1100	1410	1600	2100	2600	3500

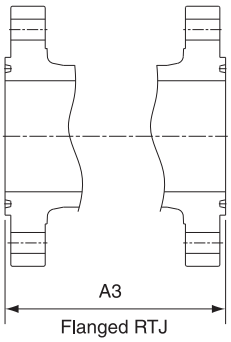
SWING CHECK VALVES

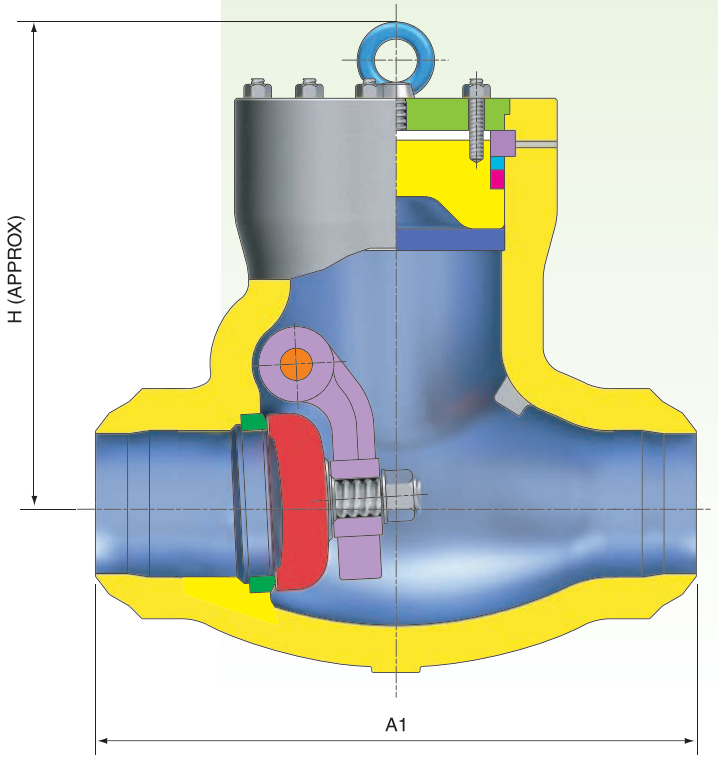
PRESSURE SEAL COVER

SW/CH CLASS 2500





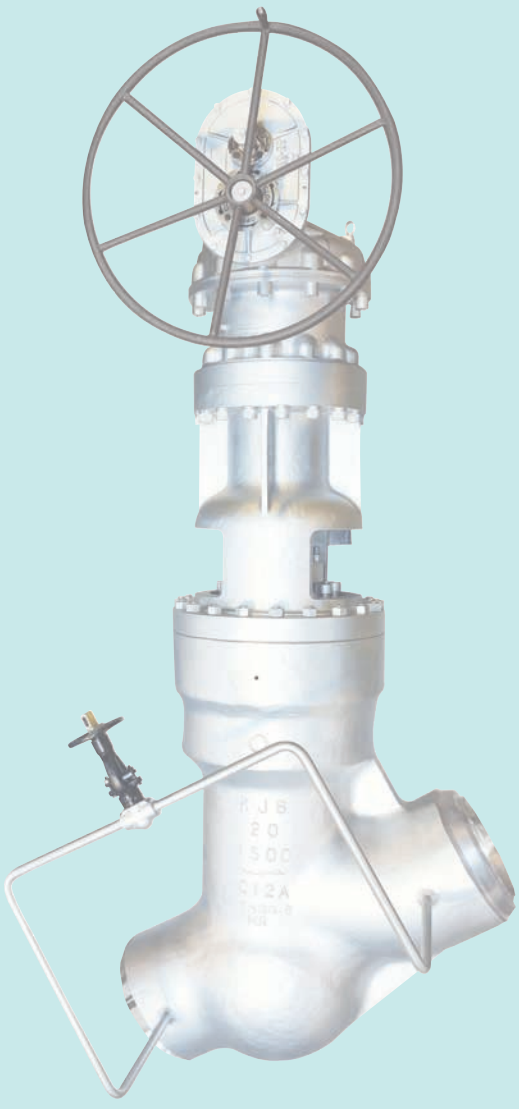




VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20
	mm	50	65	80	100	150	200	250	300	350	400	450	500
A1	in	17.8	20.0	22.8	18.0	24.0	30.0	36.0	41.0	44.0	49.0	55.0	55.0
	mm	451	508	578	457	610	762	914	1041	1118	1245	1397	1397
A2	in	17.8	20.0	22.8	26.5	36.0	40.2	50.0	56.0	62.0	68.0	–	–
	mm	451	508	578	673	914	1022	1270	1422	1575	1727	–	–
A3	in	17.9	20.2	23.0	26.9	36.5	40.9	50.9	56.9	–	–	–	–
	mm	454	514	584	683	927	1038	1292	1444	–	–	–	–
H	in	11.4	11.4	15.1	15.5	22.4	24.4	29.7	27.5	33.9	42.4	39.4	54.3
	mm	289	289	383	393	570	619	754	699	860	1076	1000	1378
WEIGHT RF	lb	187.4	260.1	341.7	628.3	1653.4	2976.2	4739.9	6613.8	9215.2	11155.2	16490.3	17636.7
	kg	85	118	155	285	750	1350	2150	3000	4180	5060	7480	8000
WEIGHT BW	lb	110.2	154.3	187.4	363.8	1014.1	1984.1	2866.0	3968.3	5401.2	7054.7	8928.6	11023.0
	kg	50	70	85	165	460	900	1300	1800	2450	3200	4050	5000

PRESSURE SEAL NON RETURN VALVES

PRESSURE SEAL BONNET



PRESSURE SEAL NON RETURN VALVES

YOKE SLEEVE

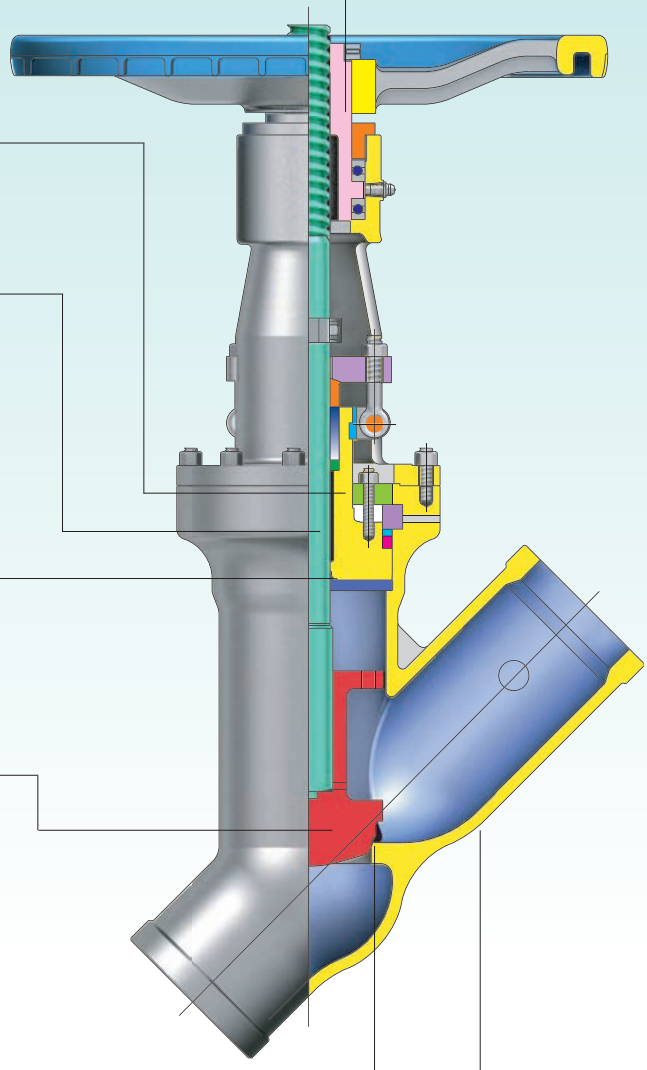
The standard material of the Yoke Sleeve is Nodular Ni-resist D2 with over 1150℃(2100°F) dissolution point in conformity with API Std. specifications.

BONNET

The bonnet is of a steel forging identical to the body to insure high reliability. The bonnet has a perfect body-bonnet seal and both ease of dismantling and reassembly are ensured. The body and bonnets of our valve are carefully machined to achieve perfect coaxiality and eliminate any misalignment which may cause damage stems.

STEM

The stem. of one-piece construction, is heat treated to secure the adequate mechanical properties and surface, hardness.
Accurate machining and grinding insure that there is minimized friction during valve opening/shutting.
The round head of the stem gives a point contact with the inside of the disc housing and thus prevents galling.



BACK SEAT

All of our valves are equipped with a backseat to allow packing replacement with the valve fully opened. The conical shape contact seat in the bonnet assmbly in integrally stellite faced.

DISC

The disc of our globes is a loose disc which freely revolves around the stem, thereby preventing friction and galling with the seating surface when the valve is shut. The outside diameter of the disc is accurately finished and cylindrical in shape to travel along the body guides. A stellite 6 layer is applied to the conical seating surface of the disc. This deposit undergoes a special heat treatment to secure the required hardness and soundness.
In addition, the lapped finish insures a perfect mating with the seats.

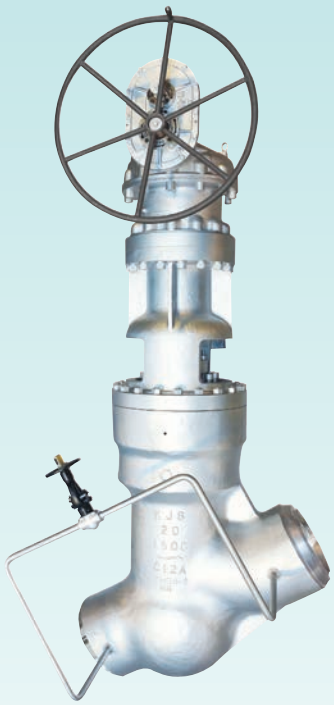
SEAT

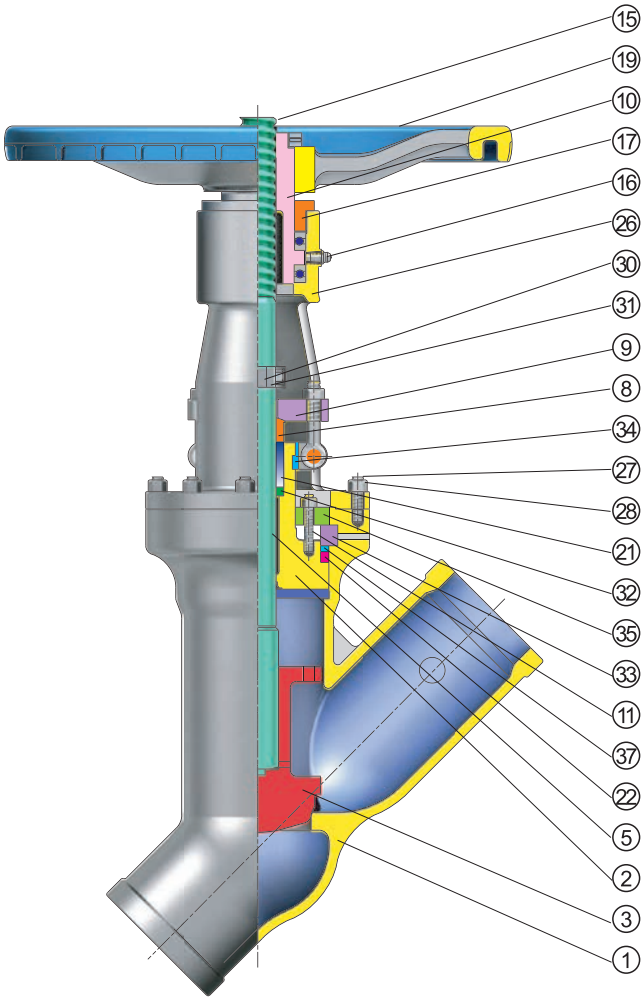
The Stellite 6 seating surface is integrally applied to the body by means of welding in all valve sizes. Perfect mating of the disc surfaces is achieved by lapping applied to the seating surface.

BODY

The cylindrically shaped valve body prevents distortion or undue stress under extreme working conditions. In addition, adequate padding ensures a sound cast structure in the critical areas. The wall thickness is greater than, or in accordance with API, ANSI and ASME requirements.
The close tolerances of the inside diameter of this area are attained by accurate machining and honing finish.

PRESSURE SEAL NON RETURN VALVES





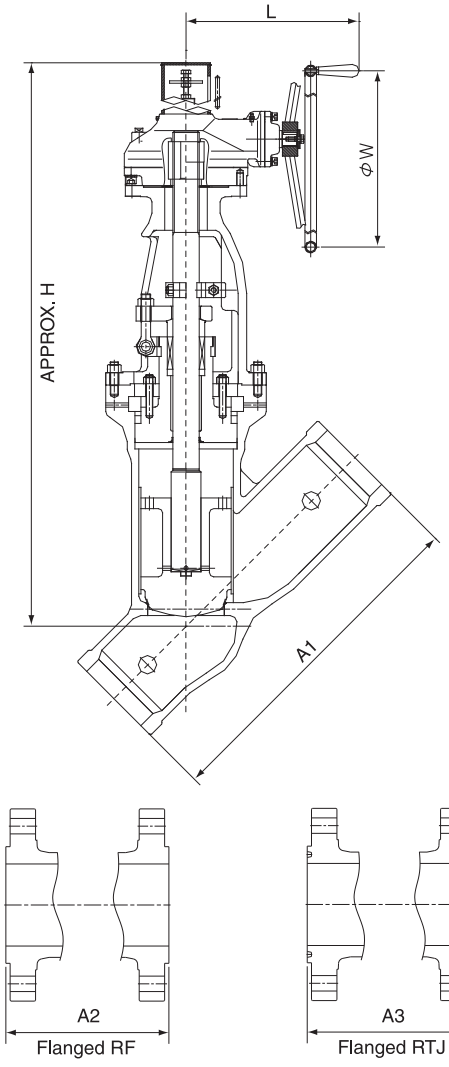
NO	NAME OF PART	ASTM SPECIFICATION
15	HANDLE NUT	STEEL
16	SET SCREW	STEEL
17	SLEEVE GLAND	STEEL
19	HANDWHEEL	A395
21	PACKING	COMMERCIAL
22	GASKET	COMMERCIAL
30	STOPPER	A283-D / AISI 304

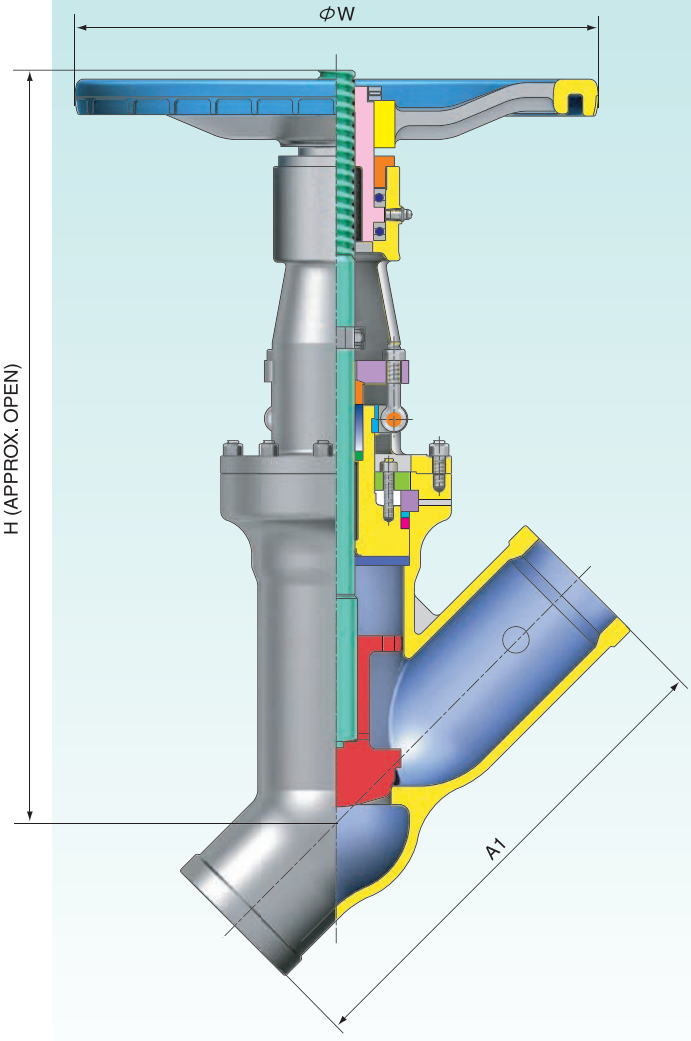
NO	NAME OF PART	ASTM SPECIFICATION										
		STANDARD	HIGH TEMPERATURE SERVICE						STAINLESS STEEL			
1	BODY	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
2	BONNET	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
3	DISC	A217-CA15	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
5	STEM	A479-410							A276-304	A276-316	A276-304L	A276-316L
8	PACKING GLAND	A479-410							A276-304			
9	GLAND FLANGE	A105 or A283-D							AISI 304			
10	YOKE SLEEVE	A439-D2							A439-D2			
11	BONNET BOLT/NUT	A193-B7 / A194-2H		A193-B16 / A194-4					A193-B8 / A194-8			
13	GLAND BOLT	A193-B7							A193-B8			
14	GLAND NUT	A194-2H							A194-8			
26	YOKE	A216-WCB							A351-CF8			
27	YOKE BOLT	A193-B7							A193-B8			
28	YOKE NUT	A194-2H							A194-8			
31	STOPPER PIN	A194-2H							A194-8			
32	PACKING RING	A479-410							A276-304	A276-316	A276-304L	A276-316L
33	RETAINER	A29-1045+Cr.PLATED		A240-304					A240-304L			
34	HINGE CLAMP	A216-WCB							A351-CF8			
35	BONNET CLAMP	A29-1045							A240-304			
37	GASKET SPACER	A29-1045+Cr.PLATED		A240-304					A240-304			

NON RETURN VALVES

PRESSURE SEAL BONNET

NRV CLASS 600



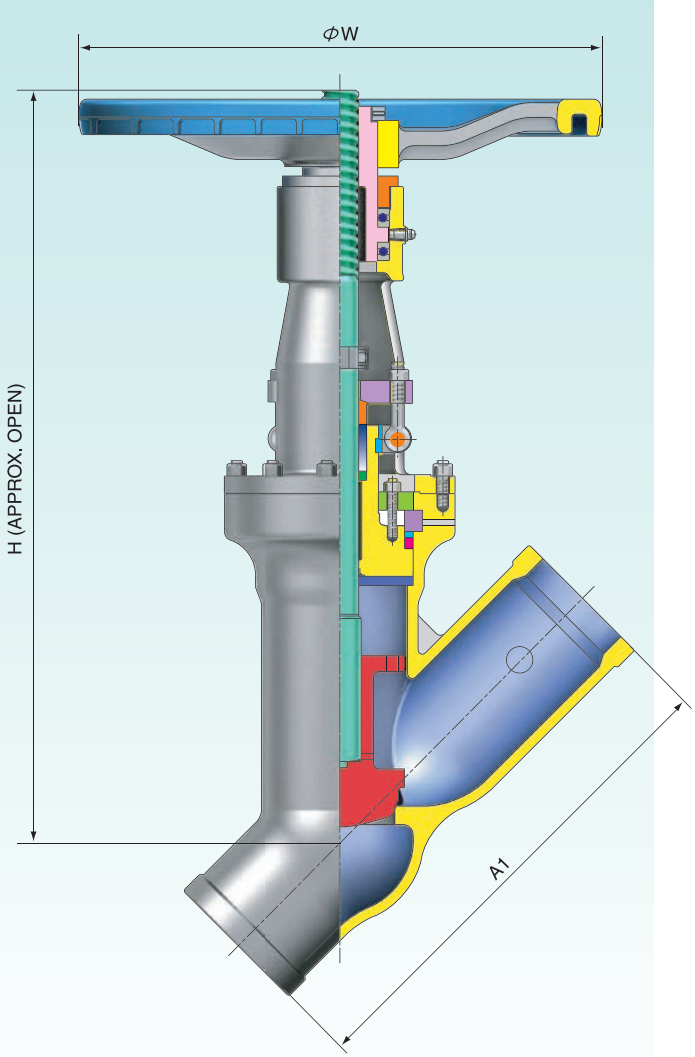


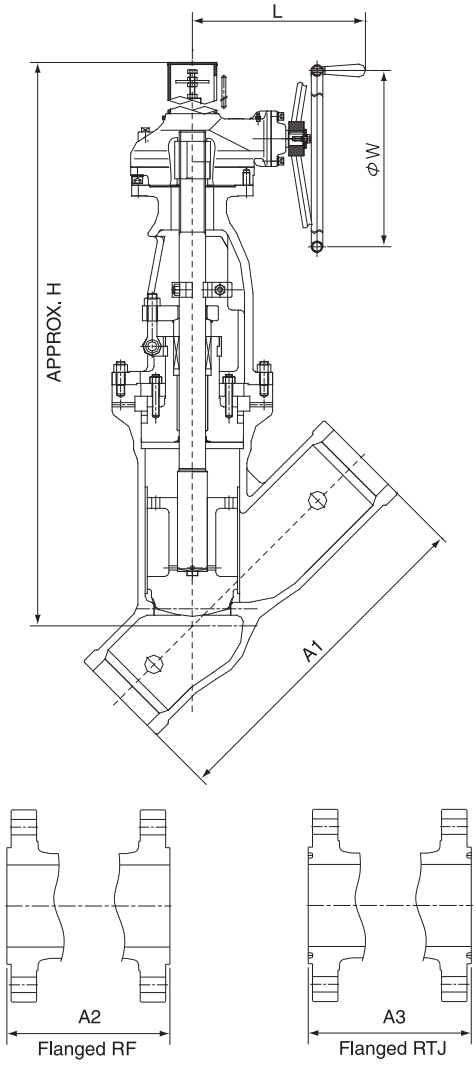
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16
	mm	50	65	80	100	150	200	250	300	350	400
A1	in	11.5	13.0	14.0	17.0	22.0	26.0	31.0	32.2	35.0	39.0
	mm	292	331	356	432	559	660	787	818	889	991
A2	in	13.78	15.75	18.90	21.65	25.59	31.50	39.37	45.28	48.43	51.57
	mm	350	400	480	550	650	800	1000	1150	1230	1310
A3	in	13.90	15.87	19.02	21.77	25.71	31.61	393.82	45.39	48.54	51.69
	mm	353	403	483	553	653	803	10003	1153	1233	1313
H	in	18.70	21.06	23.23	26.57	34.84	53.15	60.24	63.39	74.41	88.58
	mm	475	535	590	675	885	1350	1530	1610	1890	2250
W	in	9.84	11.81	11.81	17.72	23.62	27.95	31.50	35.43	35.43	39.37
	mm	250	300	300	450	600	710	800	900	900	1000
L	in	-	-	-	-	-	15.98	18.15	19.13	20.83	23.23
	mm	-	-	-	-	-	406	461	486	529	590
WEIGHT RF	lb	152.1	187.4	295.4	628.3	1212.5	1510.2	1845.3	2634.5	3196.7	4299.0
	kg	69	85	134	285	550	685	837	1195	1450	1950
WEIGHT BW	lb	130.1	165.3	240.3	540.1	1047.2	1333.8	1505.8	2228.9	2707.3	3622.2
	kg	59	75	109	245	475	605	683	1011	1228	1643

NON RETURN VALVES

PRESSURE SEAL BONNET

NRV CLASS 900



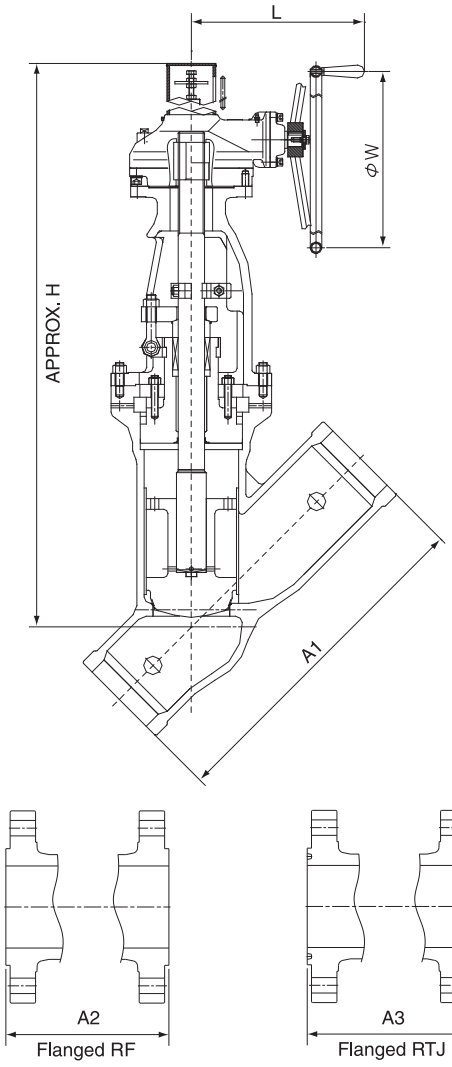


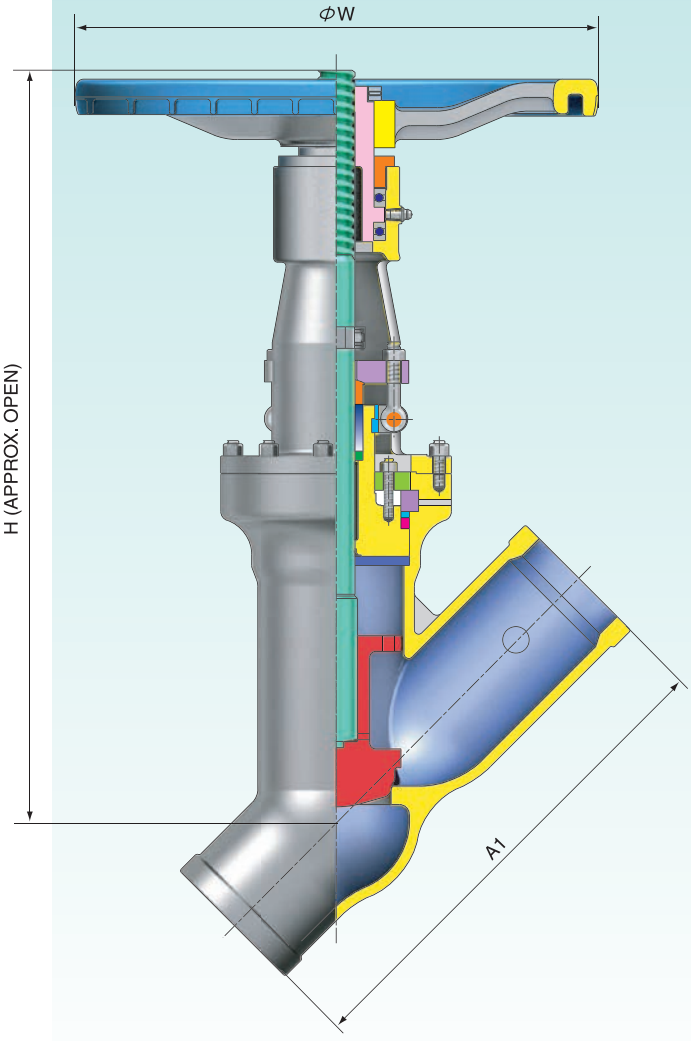
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16
		mm	50	65	80	100	150	200	250	300	350	400
A1		in	14.5	16.5	15.0	18.0	24.0	29.0	33.0	38.0	40.5	44.5
		mm	368	419	381	457	610	737	838	965	1029	1130
A2		in	20.39	22.40	20.91	23.90	29.92	34.92	38.90	43.90	46.42	50.39
		mm	518	569	531	607	760	887	988	1115	1179	1280
A3		in	20.51	22.52	21.02	24.02	30.04	35.04	39.02	44.02	46.77	50.79
		mm	521	572	534	610	763	890	991	1118	1188	1290
H		in	23.23	24.80	27.36	28.54	47.05	54.53	62.20	66.54	75.98	108.27
		mm	590	630	695	725	1195	1385	1580	1690	1930	2750
W		in	15.75	15.75	15.75	19.69	27.95	27.95	31.50	35.43	35.43	39.37
		mm	400	400	400	500	710	710	800	900	900	1000
L		in	-	-	-	-	15.98	15.98	18.15	20.83	20.83	23.23
		mm	-	-	-	-	406	406	461	529	529	590
WEIGHT	RF	lb	196.2	275.6	313.1	705.5	1276.5	1752.7	2976.2	3858.1	5842.2	7605.9
		kg	89	125	142	320	579	795	1350	1750	2650	3450
	BW	lb	141.1	209.4	253.5	617.3	1124.4	1510.2	2535.3	3306.9	5236.0	6624.9
		kg	64	95	115	280	510	685	1150	1500	2375	3005

NON RETURN VALVES

PRESSURE SEAL BONNET

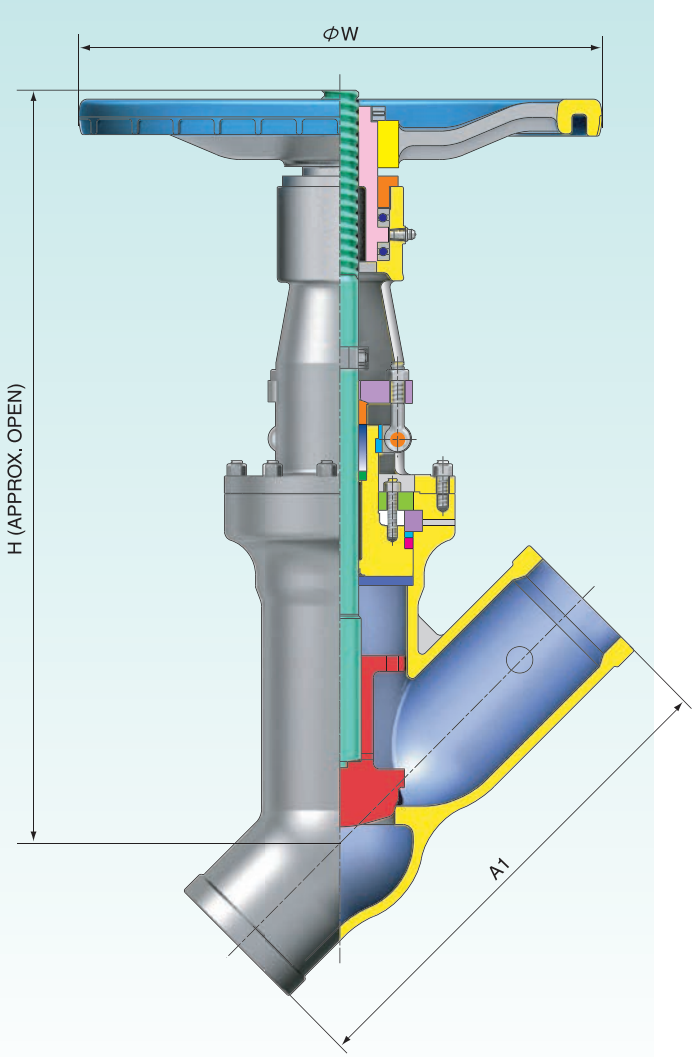
NRV CLASS 1500

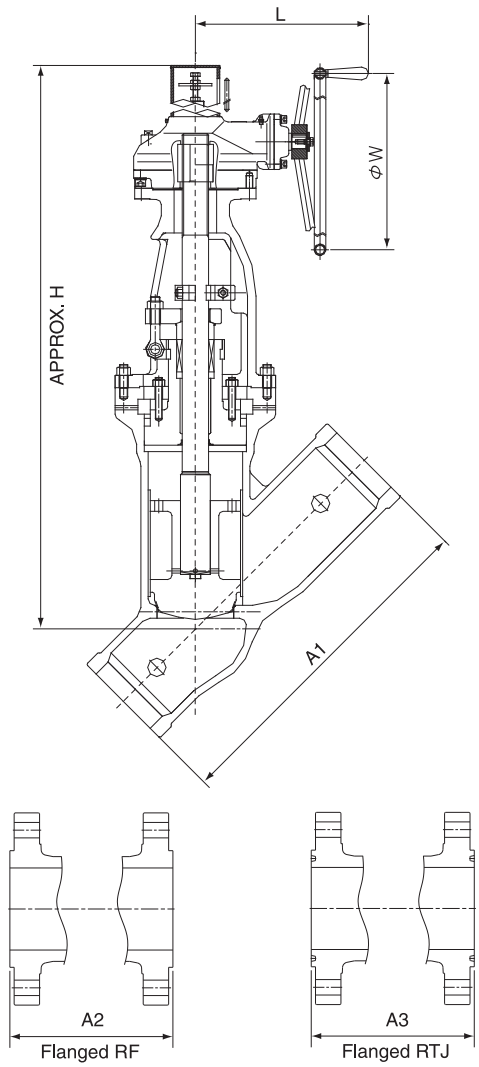




VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14
	mm	50	65	80	100	150	200	250	300	350
A1	in	14.5	16.5	18.5	21.5	27.8	32.8	39.0	44.5	49.5
	mm	368	419	470	546	705	832	991	1130	1257
A2	in	20.39	22.40	24.41	27.40	33.66	38.66	44.92	50.39	55.39
	mm	518	569	620	696	855	982	1141	1280	1407
A3	in	20.51	22.52	24.53	27.52	33.90	39.02	45.28	51.02	56.14
	mm	521	572	623	699	861	991	1150	1296	1426
H	in	23.23	24.80	27.95	30.12	48.62	54.72	66.14	75.98	87.80
	mm	590	630	710	765	1235	1390	1680	1930	2230
W	in	15.75	15.75	19.69	19.69	27.95	31.50	35.43	35.43	39.37
	mm	400	400	500	500	710	800	900	900	1000
L	in	-	-	-	-	15.98	18.15	20.83	20.83	23.23
	mm	-	-	-	-	406	461	529	529	590
WEIGHT RF	lb	196.2	56.7	341.7	771.6	1494.7	2083.4	3483.3	4960.4	9149.2
	kg	89	125	155	350	678	945	1580	2250	4150
WEIGHT BW	lb	141.1	209.4	251.3	628.3	1208.1	1752.7	2932.1	4078.6	7605.9
	kg	64	95	114	285	548	795	1330	1850	3450

NRV CLASS 2500

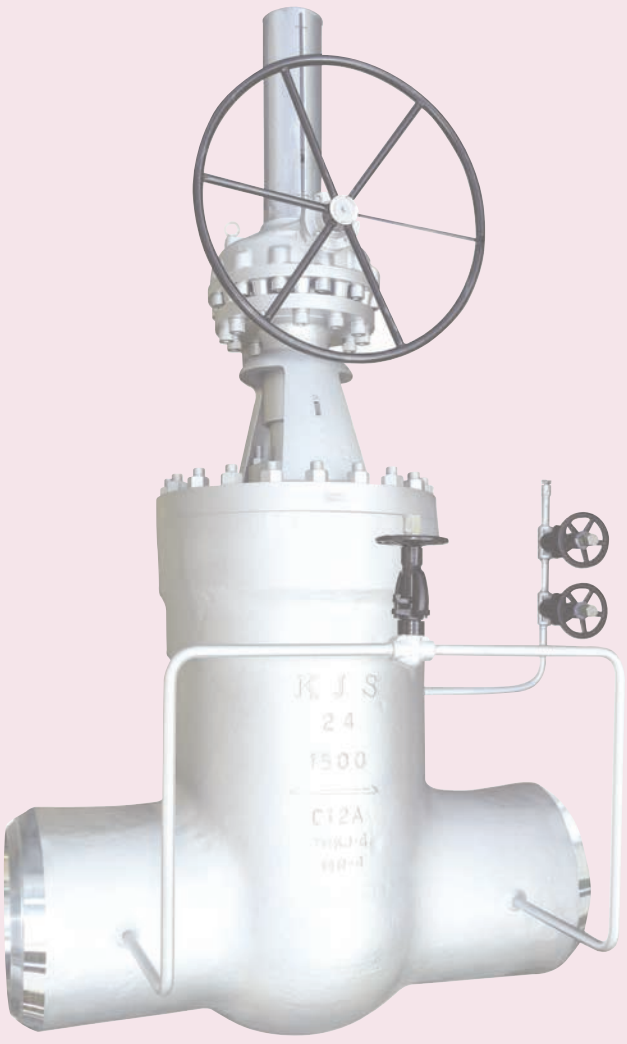




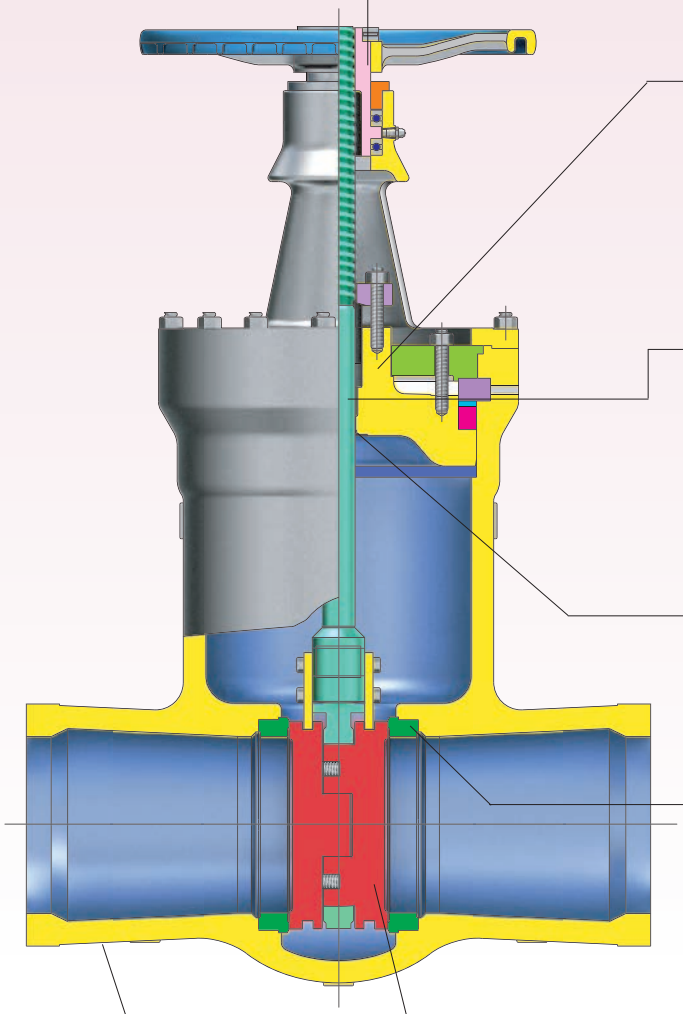
VALVE SIZE	in	2	2.5	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
A1	in	17.8	20.0	22.8	26.5	36.0	40.2	50.0	56.0
	mm	451	508	578	673	914	1022	1270	1422
A2	in	25.63	27.87	30.63	34.37	43.86	48.11	57.87	63.86
	mm	651	708	778	873	1114	1222	1470	1622
A3	in	25.75	28.11	30.87	34.76	44.37	48.74	58.74	64.76
	mm	654	714	784	883	1127	1238	1492	1645
H	in	23.23	30.12	31.10	46.85	51.57	76.77	83.86	96.46
	mm	590	765	790	1190	1310	1950	2130	2450
W	in	15.75	19.69	19.69	24.80	27.95	31.50	35.43	39.37
	mm	400	500	500	630	710	800	900	1000
L	in	-	-	-	15.31	15.98	18.15	20.83	23.23
	mm	-	-	-	389	406	461	529	590
WEIGHT RF	lb	231.5	71.7	474.0	1058.2	2072.3	3626.6	5643.8	7165.0
	kg	105	158	215	480	940	1645	2560	3250
WEIGHT BW	lb	165.3	49.9	319.7	727.5	1411.0	2744.8	3769.9	4530.5
	kg	75	110	145	330	640	1245	1710	2055

PRESSURE SEAL PARALLEL GATE VALVES

PRESSURE SEAL BONNET



PRESSURE SEAL PARALLEL GATE VALVES



YOKE SLEEVE

The upper portion of the Yoke Sleeve is hexagonally tapered to fix the handwheel. The standard material of the Yoke Sleeve is Nodular Ni-resist D2 with over 1150℃ (2100℉) dissolution point in accordance with API Std. specifications.

BONNET

The bonnet is of a steel forging identical to the body to insure high reliability. The bonnet has a perfect body-bonnet seal and both ease of dismantling and reassembly are ensured. The bodies and bonnets of the valve are machined by special purpose machines to achieve perfect coaxiality and eliminate any misalignment which may damage the stems.

STEM

The machined forged stem comes with a T-shape head, which connects the slot of the wedge. The contacting surface of the head is spherically shaped. thereby giving it greater strength and durability. It is heat treated to give it adequate mechanical properties and surface hardness. Accurate machining and lapping insure minimized friction during opening and shutting.

BACK SEAT

All of our valves are provided with positive backseat, and packing replacement can be done with the valve fully open.
The conical seat and the guide are integrally stellite faced.

SEAT RING

The Stellite 6 surface of the seat ring is integrally applied to the body by means of welding in all valve sizes.
Lapping applied to the seating surface ensures perfect mating with the wedge surfaces.

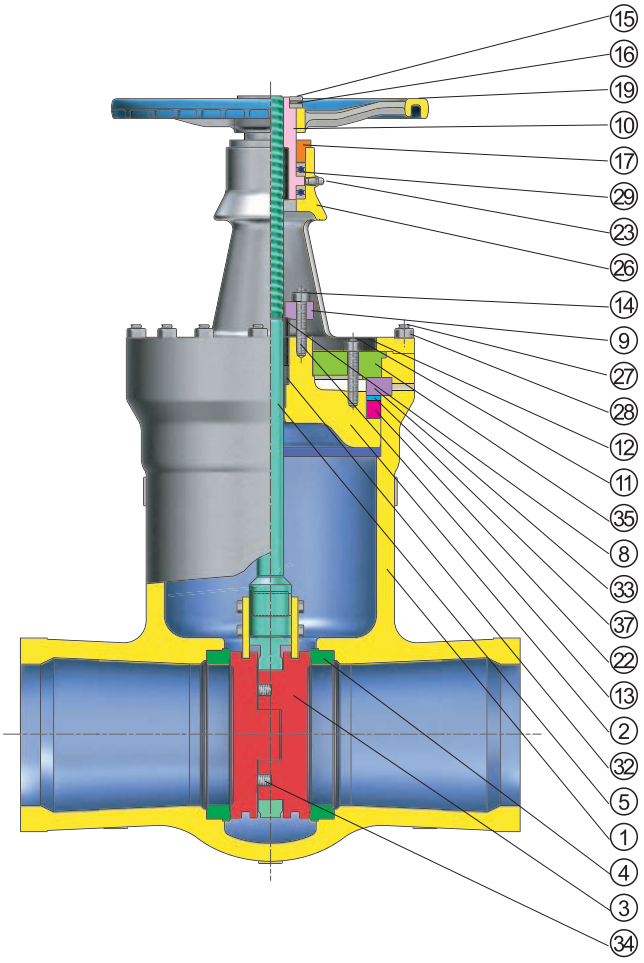
PARALLEL DISC

The parallel disc designed to absorb thermally-induced body distortion, thereby making it ideal for high temperature steam or water supply piping. A Stellite 6 layer is applied to the seating surface, and this deposit is subjected to a special heat treatment to secure required hardness and soundness.
The lapped finish then insures perfect mating with the seats.

BODY

The valve body is cylindrically shaped to prevent distortion or undue stress during extreme working conditions. Inaddition, adequate padding helps to achieve a sound cast structure in critical area. The wall thickness is greater than, or in accordance with API, ANSI and ASME requirements. The contact surfaces ensure that a minimum specific pressure is achieved. The close tolerances of the inside diameter of this area are attained by accurate machining and honing finish.

PRESSURE SEAL PARALLEL GATE VALVES





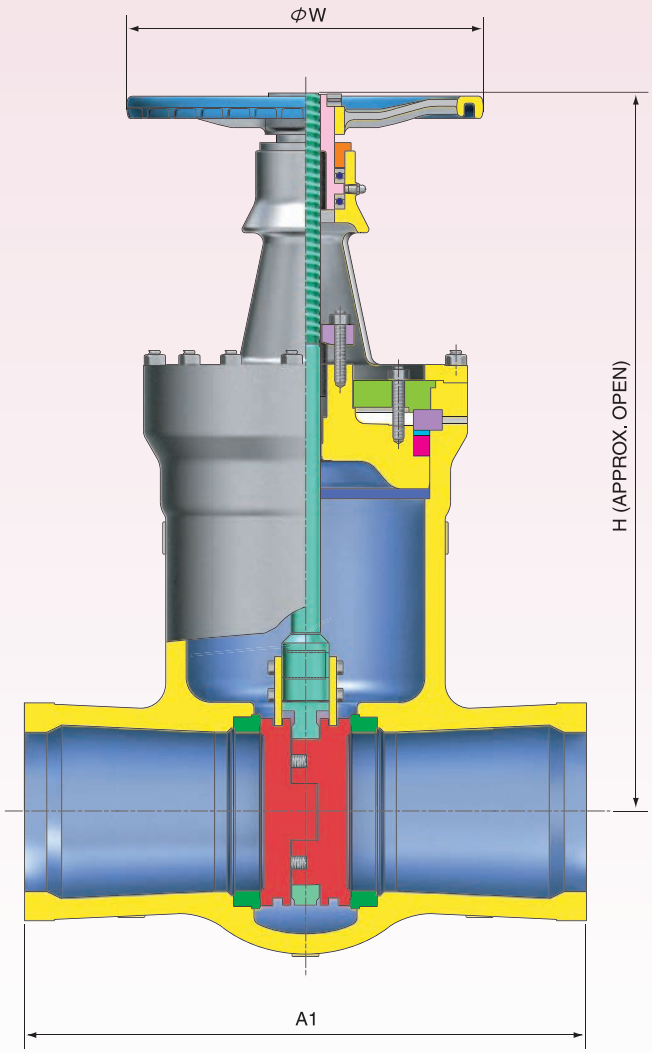
NO	NAME OF PART	ASTM SPECIFICATION
15	HANDLE NUT	STEEL
16	SET SCREW	STEEL
17	SLEEVE GLAND	STEEL
19	HANDWHEEL	A395
21	PACKING	COMMERCIAL
22	GASKET	COMMERCIAL
23	GREASE NIPPLE	STEEL
29	BEARING	COMMERCIAL

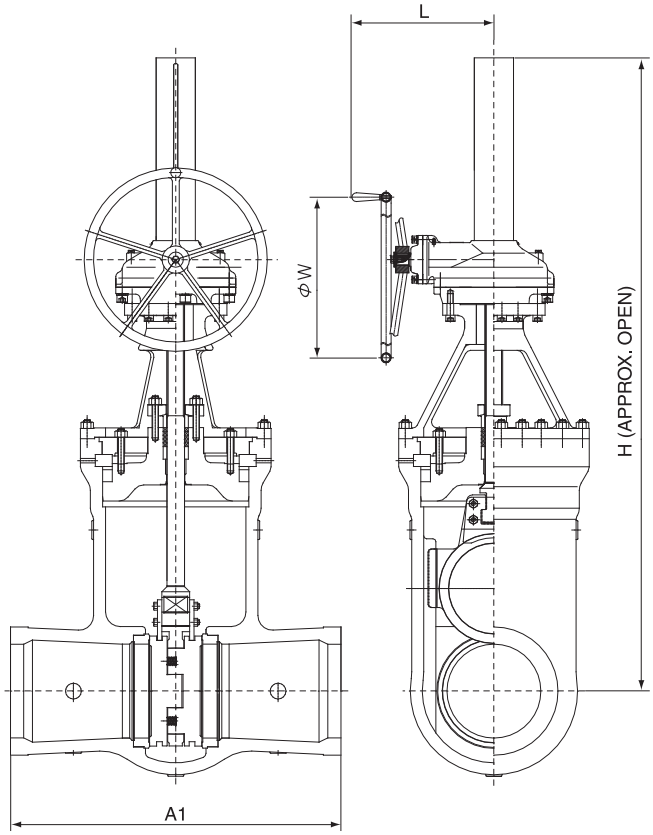
NO	NAME OF PART	ASTM SPECIFICATION										
		STANDARD	HIGH TEMPERATURE SERVICE						STAINLESS STEEL			
1	BODY	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
2	BONNET	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
3	DISC	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
4	BODY SEAT RING	A105+STL	A182-F1	A182-F11	A182-F22	A182-F5a	A182-F9	A182-F91	A240-304	A240-316	A240-304L	A240-316L
5	STEM	A479-410							A276-304	A276-316	A276-304L	A276-316L
8	PACKING GLAND	A479-410							A276-304			
9	GLAND FLANGE	A105 or A283-D							AISI 304			
10	YOKE SLEEVE	A439-D2							A439-D2			
11	BONNET BOLT	A193-B7	A193-B16						A193-B8			
12	BONNET NUT	A194-2H	A194-4						A194-8			
13	GLAND BOLT	A193-B7							A193-B8			
14	GLAND NUT	A194-2H							A194-8			
26	YOKE	A216--WCB							A351-CF8			
27	YOKE BOLT	A193-B7							A193-B8			
28	YOKE NUT	A194-2H							A194-8			
32	PACKING RING	A479-410							A276-304	A276-316	A276-304L	A276-316L
33	RETAINER	A29-1045+Cr.PLATED	A240-304						A240-304L			
34	SPRING	INCONEL							INCONEL			
35	BONNET CLAMP	A29-1045							A240-304			
37	GASKET SPACER	A29-1045+Cr.PLATED	A240-304						A240-304			

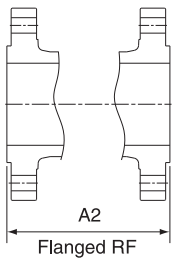
PARALLEL GATE VALVES

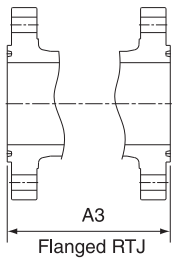
PRESSURE SEAL BONNET

PGT CLASS 600







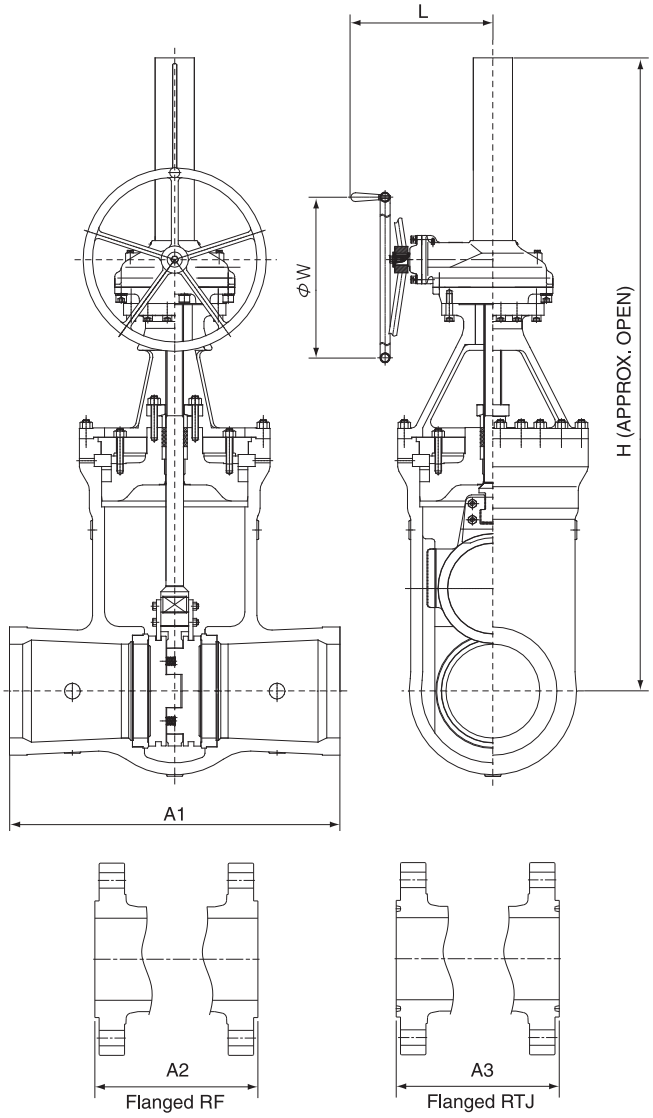


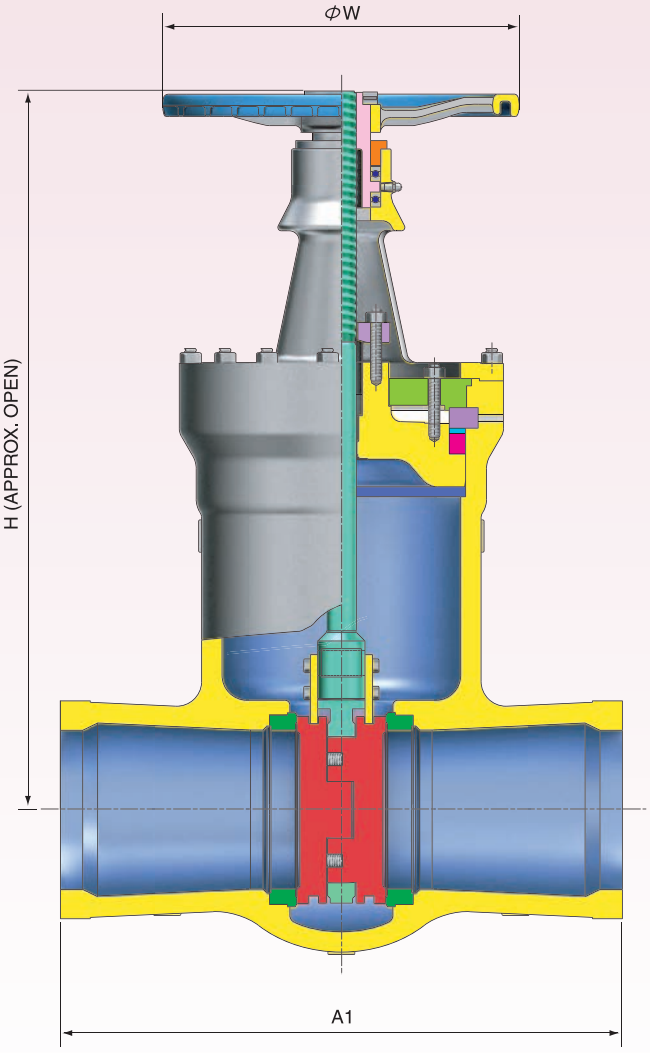
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1		in	7.0	8.5	10.0	12.0	18.0	23.0	28.0	32.0	35.0	39.0	43.0	47.0	55.0
		mm	178	216	254	305	457	584	711	813	889	991	1092	1194	1397
A2		in	11.5	13.0	14.0	17.0	21.9	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0
		mm	292	330	356	432	556	660	787	838	889	991	1092	1194	1397
A3		in	11.6	13.1	14.1	17.1	22.1	26.1	31.1	33.1	35.1	39.1	43.1	47.2	55.4
		mm	295	333	359	435	562	664	791	841	892	994	1095	1200	1406
H		in	19.1	20.3	22.8	27.1	37.6	44.7	50.2	57.3	66.9	84.1	104.3	110.0	122.2
		mm	485	515	578	689	955	1135	1275	1455	1698	2135	2650	2795	3105
W		in	8.8	8.8	9.8	11.8	17.7	19.7	24.8	15.7	19.7	24.8	28.0	28.0	31.5
		mm	224	224	250	300	450	500	630	400	500	630	710	710	800
L		in	-	-	-	-	-	-	-	13.0	13.5	15.3	16.0	16.0	18.1
		mm	-	-	-	-	-	-	-	330	342	389	406	406	461
WEIGHT	RF	lb	99.2	123.5	134.5	216.1	571.0	881.8	1338.2	1944.5	2381.0	3626.6	5070.6	6757.2	8873.6
		kg	45	56	61	98	259	400	607	882	1080	1645	2300	3065	4025
	BW	lb	81.6	90.4	99.2	143.3	407.9	650.4	981.1	1510.2	1862.9	2888.1	4122.6	5533.6	7120.9
		kg	37	41	45	65	185	295	445	685	845	1310	1870	2510	3230

PARALLEL GATE VALVES

PRESSURE SEAL BONNET

PGT CLASS 900



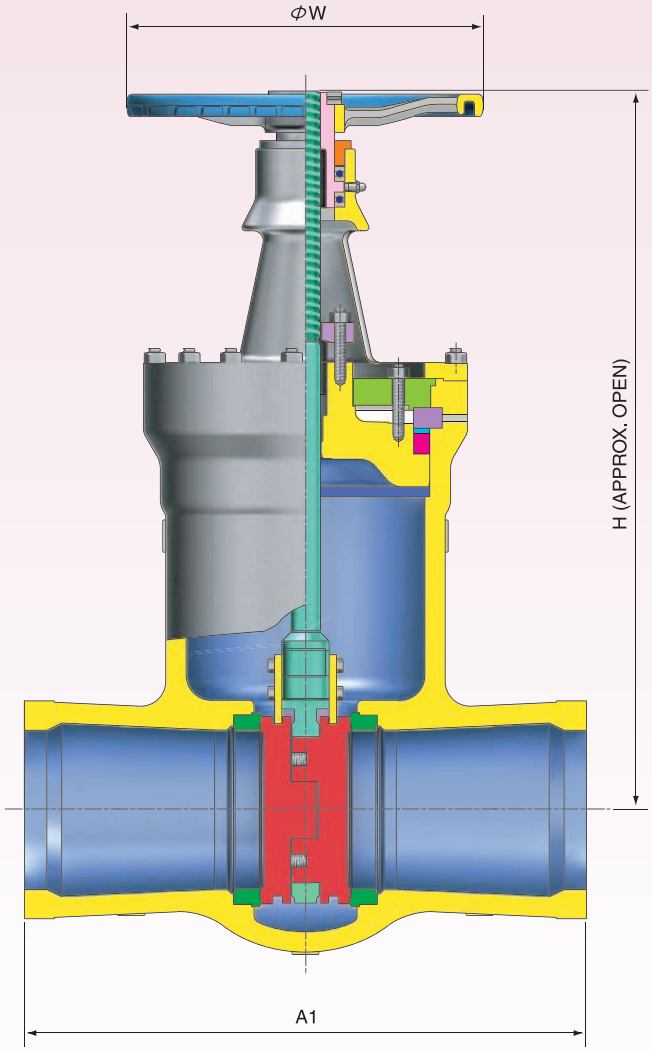


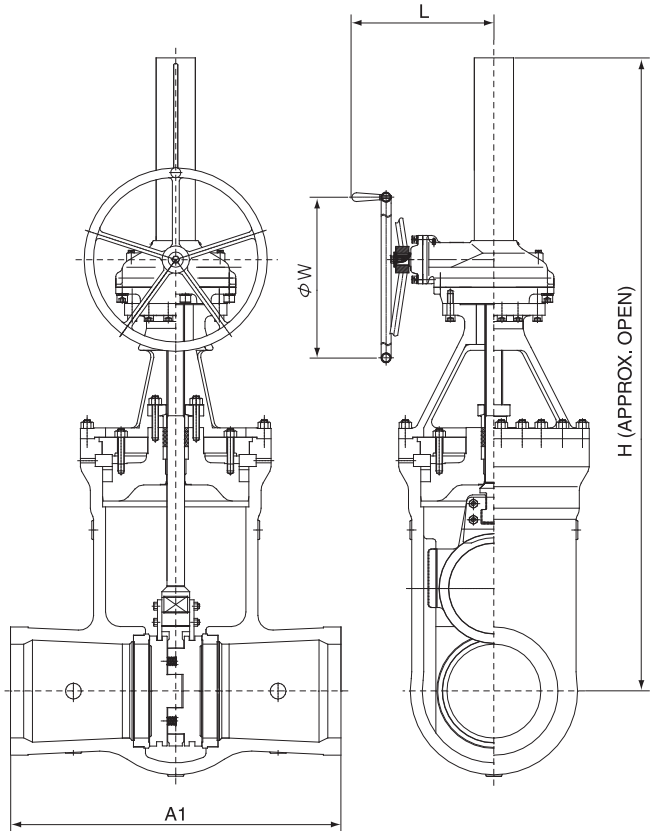
VALVE SIZE	in	2	2.5	2.5	4	6	8	10	12	14	16	18	20	24
	mm	50	65	65	100	150	200	250	300	350	400	450	500	600
A1	in	8.5	10.0	10.0	14.0	20.0	26.0	31.0	32.0	39.0	43.0	46.5	50.5	59.5
	mm	216	254	254	356	508	660	787	814	991	1092	1181	1283	1511
A2	in	14.5	16.5	16.5	18.0	24.0	29.0	33.0	38.0	40.5	44.5	48.0	52.0	61.0
	mm	368	419	419	457	610	737	838	965	1029	1130	1219	1321	1549
A3	in	14.6	16.6	16.6	18.1	24.1	29.1	33.1	38.1	40.9	44.9	48.5	52.5	61.7
	mm	371	422	422	460	612	740	841	968	1038	1140	1232	1333	1568
H	in	21.3	24.4	24.4	31.1	42.7	49.2	55.9	65.6	72.8	80.9	85.2	89.8	111.4
	mm	540	620	620	789	1085	1250	1420	1666	1850	2056	2165	2280	2830
W	in	11.8	11.8	11.8	15.7	22.0	19.7	24.8	28.0	28.0	31.5	31.5	35.4	35.4
	mm	300	300	300	400	560	500	630	710	710	800	800	900	900
L	in	-	-	-	-	-	13.5	15.3	16.0	16.0	18.1	18.1	19.1	19.1
	mm	-	-	-	-	-	342	389	406	406	461	461	486	486
WEIGHT RF	lb	141.1	160.9	160.9	280.0	937.0	1221.4	2030.5	2821.9	3216.5	5147.8	6655.8	9050	12930
	kg	64	73	73	127	425	554	921	1280	1459	2335	3019	4105	5865
WEIGHT BW	lb	94.8	105.8	105.8	189.6	749.6	903.9	1576.3	2193.6	2491.2	4259.3	5401.3	7495.7	9920.8
	kg	43	48	48	86	340	410	715	995	1130	1932	2450	3400	4500

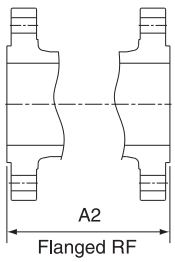
PARALLEL GATE VALVES

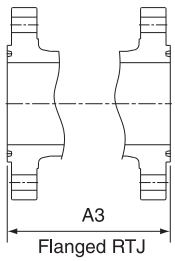
PRESSURE SEAL BONNET

PGT CLASS 1500







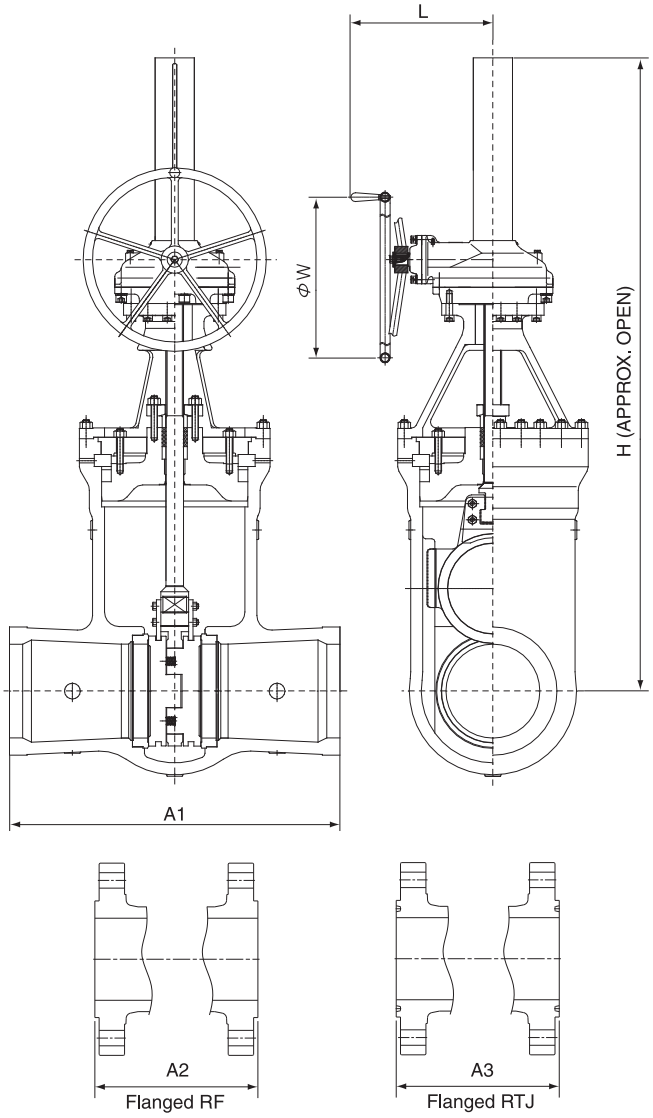


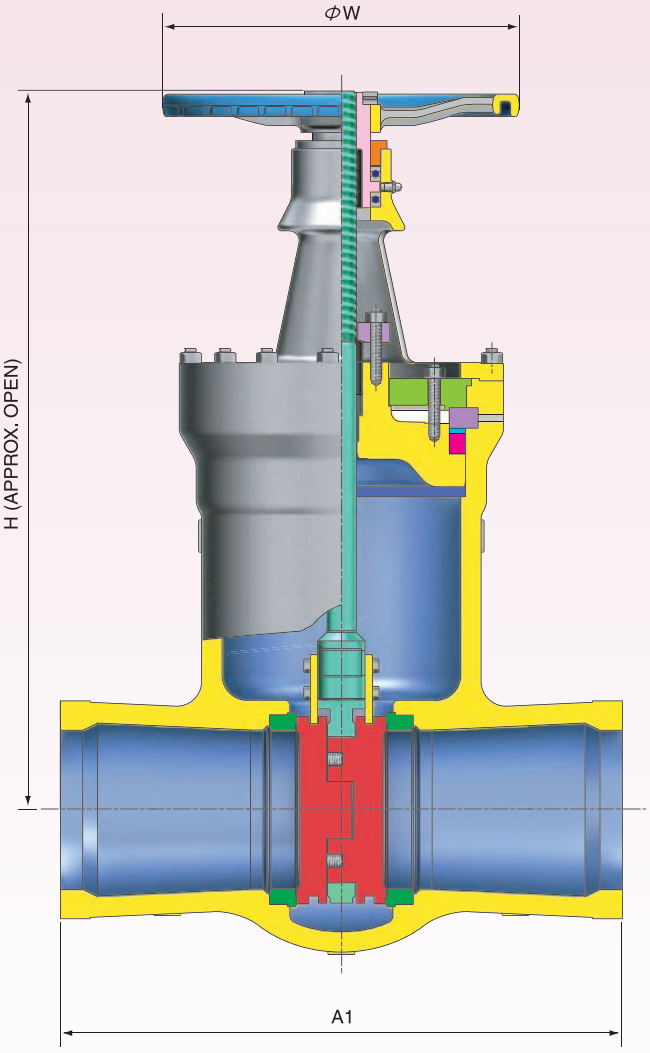
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1		in	8.5	10.0	12.0	16.0	22.0	28.0	34.0	39.0	42.0	47.0	53.0	58.0	64.0
		mm	216	254	305	406	559	711	864	991	1067	1194	1346	1473	1626
A2		in	14.5	16.5	18.5	21.5	27.8	32.8	39.0	44.5	49.5	54.5	60.5	65.5	76.5
		mm	368	419	470	546	705	832	991	1130	1257	1384	1536	1664	1943
A3		in	14.6	16.6	18.6	21.6	28.0	33.1	39.4	45.1	50.2	55.4	61.4	66.4	77.6
		mm	371	422	473	549	711	841	1000	1146	1276	1406	1559	1686	1972
H		in	21.3	24.4	27.4	33.1	47.0	52.8	57.1	61.8	66.3	74.4	82.3	103.5	117.3
		mm	540	620	695	840	1195	1340	1450	1570	1683	1890	2090	2630	2980
W		in	11.8	11.8	15.7	19.7	19.7	24.8	28.0	31.5	31.5	35.4	35.4	39.4	39.4
		mm	300	300	400	500	500	630	710	800	800	900	900	1000	1000
L		in	-	-	-	-	13.5	15.3	16.0	18.1	18.1	19.1	19.1	23.2	24.4
		mm	-	-	-	-	342	389	406	461	461	486	486	590	619
WEIGHT	RF	lb	141.1	160.9	284.4	456.4	983.3	1671.1	2885.9	3926.4	4872.2	7198.1	11001	15013	22575
		kg	64	73	129	207	446	758	1309	1781	2210	3265	4990	6810	10240
	BW	lb	94.8	105.8	198.4	326.3	674.6	1168.4	2028.3	2634.5	3130.6	4925.1	7936.6	11188	16424
		kg	43	48	90	148	306	530	920	1195	1420	2234	3600	5075	7450

PARALLEL GATE VALVES

PRESSURE SEAL BONNET

PGT CLASS 2500

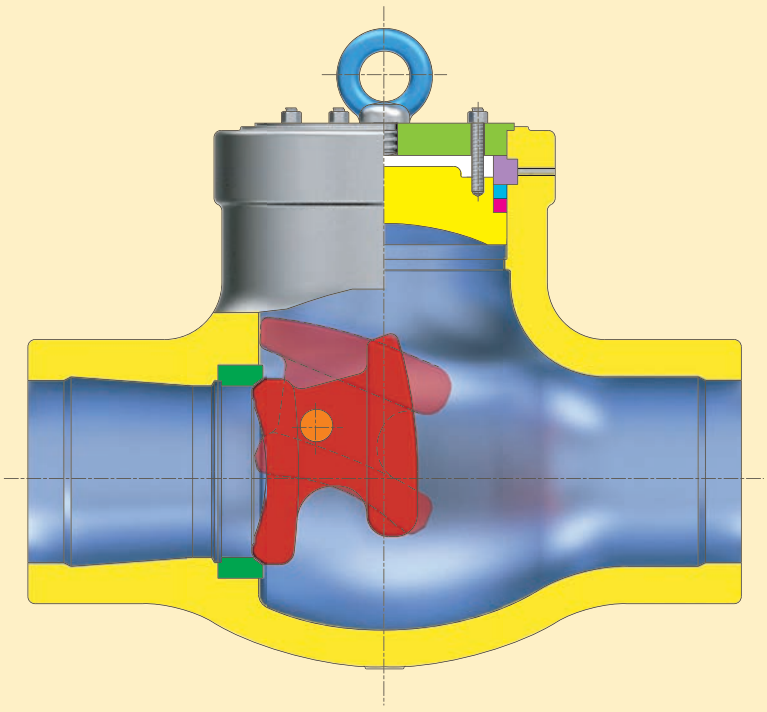




VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1	in	11.0	13.0	14.5	18.0	24.0	30.0	36.0	41.0	44.0	49.0	55.0	60.0	65.0
	mm	279	330	368	457	610	762	914	1041	1118	1245	1397	1524	1650
A2	in	17.8	20.0	22.8	26.5	36.0	40.2	50.0	56.0	-	-	-	-	-
	mm	451	508	578	673	914	1022	1270	1422	-	-	-	-	-
A3	in	17.9	20.2	23.0	26.9	36.5	40.9	50.9	56.9	-	-	-	-	-
	mm	454	514	584	683	927	1038	1292	1445	-	-	-	-	-
H	in	22.6	28.1	29.3	32.1	45.3	53.0	58.1	63.8	67.7	76.2	84.4	104.1	109.6
	mm	575	715	745	815	1150	1345	1475	1620	1720	1935	2145	2645	2785
W	in	11.8	15.7	19.7	19.7	24.8	28.0	31.5	31.5	35.4	35.4	39.4	39.4	39.4
	mm	300	400	500	500	630	710	800	800	900	900	1000	1000	1000
L	in	-	-	-	13.5	15.3	16.0	18.1	18.1	19.1	19.1	23.2	24.4	24.4
	mm	-	-	-	342	389	406	461	461	486	486	590	619	619
WEIGHT RF	lb	227.1	295.4	405.7	615.1	1580.7	2275.2	4144.7	6128.8	-	-	-	-	-
	kg	103	134	184	279	717	1032	1880	2780	-	-	-	-	-
WEIGHT BW	lb	154.3	187.4	242.5	363.8	937.0	1311.8	2259.7	3494.3	4166.7	6338.3	8587.0	12754	17538
	kg	70	85	110	165	425	595	1025	1585	1890	2875	3895	5785	7955

PRESSURE SEAL TILTING CHECK VALVES

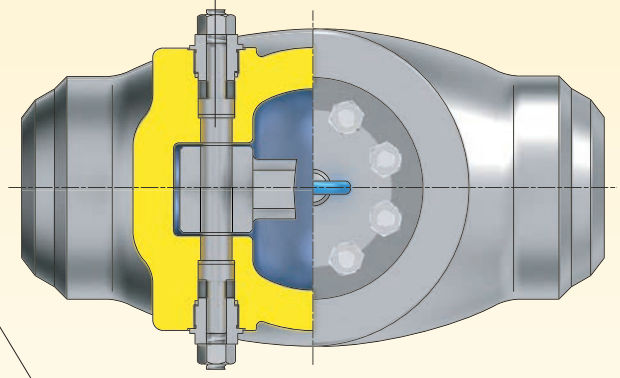
PRESSURE SEAL COVER



PRESSURE SEAL TILTING CHECK VALVES

HINGE PIN

The hinge pin is inserted into the valve body to achieve pressure seal construction.

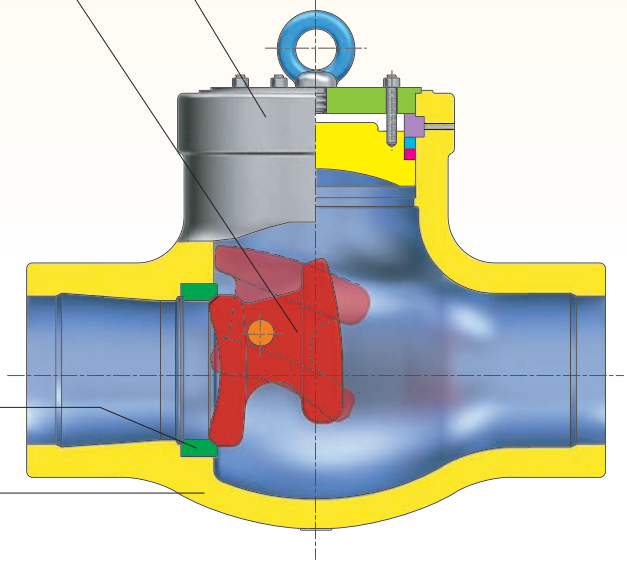


COVER

The cover material is a steel forging identical to the body to insure high dependability.
The cover construction has a perfect body-cover tightness and ease of dismantling and reassembly are ensured.

DISC

The disc has a sufficient seating surface area which is ground and lapped to a mirror finish.
It is of one-piece construction and is heat treated to deliver the required mechanical properties and hardness.



SEAT RING

The Stellite 6 surface of the seat ring is integrally applied to the body by means of welding in all valve sizes.
Perfect mating with the DISC surfaces attained by a lapping finish applied to the seating.

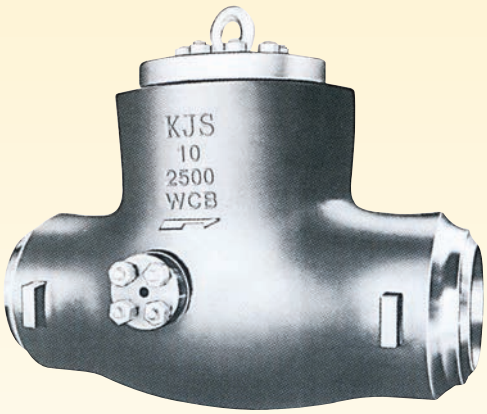
BODY

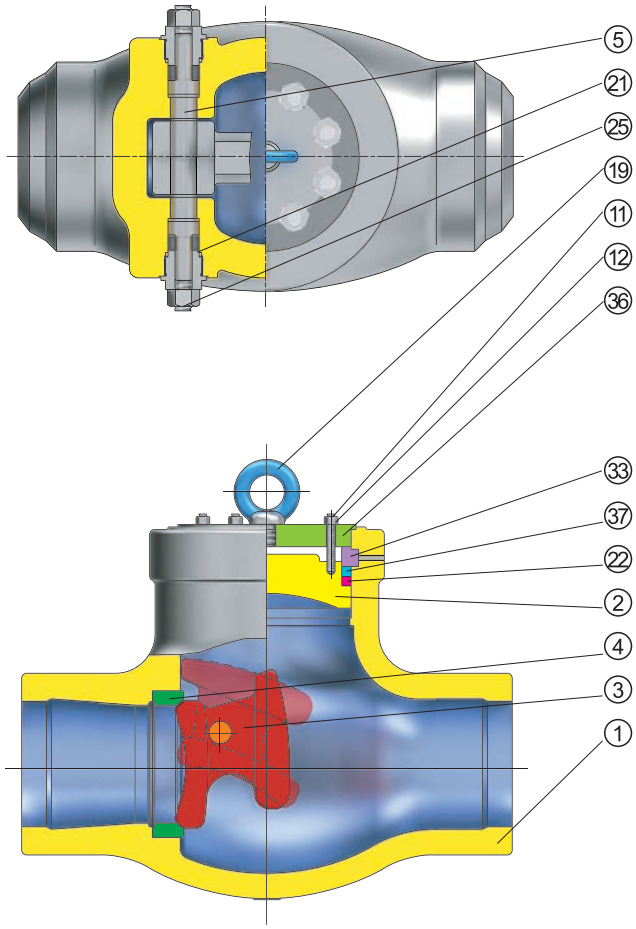
The cylindrically shaped valve body prevents distortion or undue stress under extreme working conditions. Padding is also provided to achieve a sound cast structure in the critical areas. The wall thickness is greater than, or in accordance with, API, ANSI and ASME requirements. The area contacting the pressure seal gasket has a stainless steel 18/8 inlay to eliminate corrosion or wire drawing. The close tolerances of the inside diameter of this area are attained by accurate machining and honing finish.

CAST STEEL

PRESSURE SEAL COVER

PRESSURE SEAL TILTING CHECK VALVES





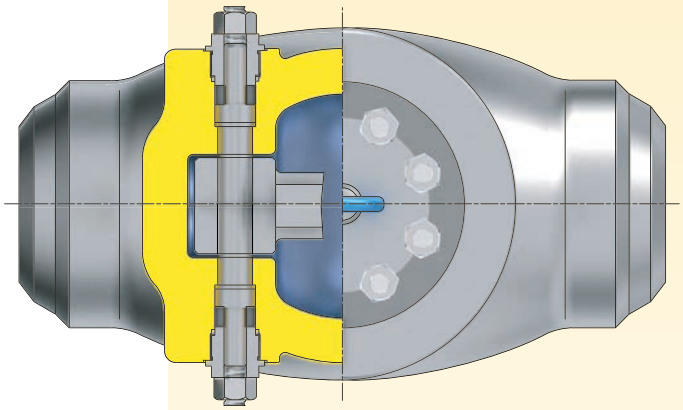
NO	NAME OF PART	ASTM SPECIFICATION
19	EVE BOLT	A 105
21	PLUG GASKET	COMMERCIAL
22	GASKET	COMMERCIAL

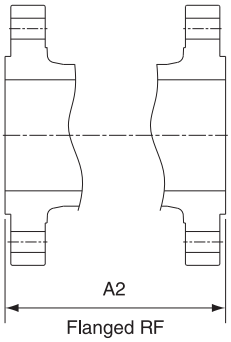
NO	NAME OF PART	ASTM SPECIFICATION										
		STANDARD	HIGH TEMPERATURE SERVICE				LOW TEMPERATURE SERVICE		STAINLESS STEEL			
1	BODY	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
2	COVER	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
3	DISC	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A217-C12	A217-C12A	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
4	BODY SEAT RING	A105+STL	A182-F1	A182-F11	A182-F22	A182-F5a	A182-F9	A182-F91	A240-304	A240-316	A240-304L	A240-316L
5	HINGE PIN	A479-410	A479-410	A479-410	A479-410	A479-410	A479-410	A479-410	A276-304	A276-316	A276-304L	A276-316L
7	ARM	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A479-410	A479-410	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
11	BONNET BOLT	A193-B7	A193-B7	A193-B16	A193-B16	A193-B16	A193-B16		A193-B8			
12	BONNET NUT	A194-2H	A194-2H	A194-4	A194-4	A194-4	A194-4		A194-8			
25	PLUG	A105	A479-410				A479-410		A276-304	A276-316	A276-304L	A276-316L
33	RETAINER	A29-1045Cr.PLATED	A240-304				A240-304		A240-304			
36	BONNET CLAMP		A29-1045				A29-1045		A240-304			
37	GASKET SPACER	A29-1045Cr.PLATED	A240-304				A240-304		A240-304			

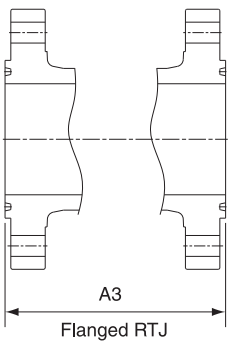
TILTING CHECK VALVES

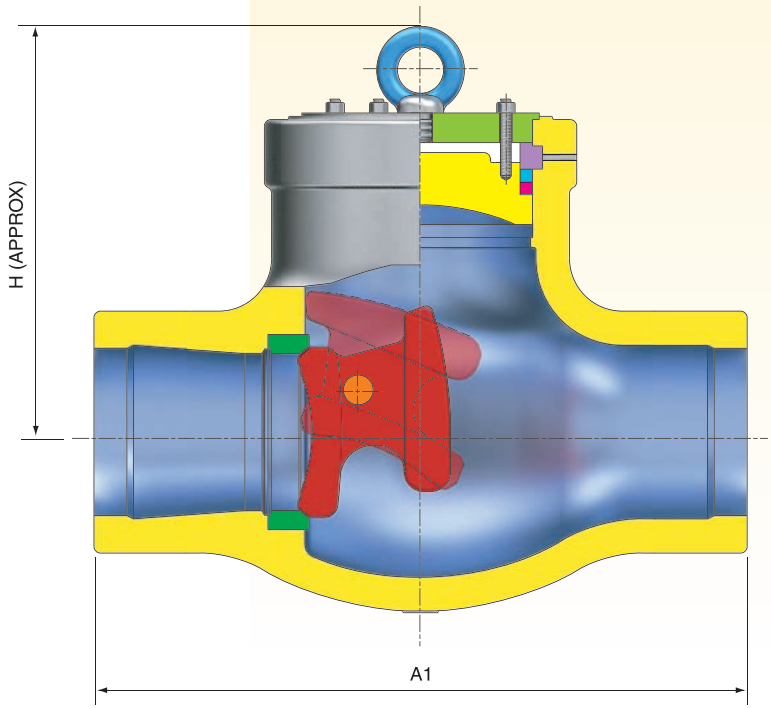
PRESSURE SEAL COVER

TC CLASS 600







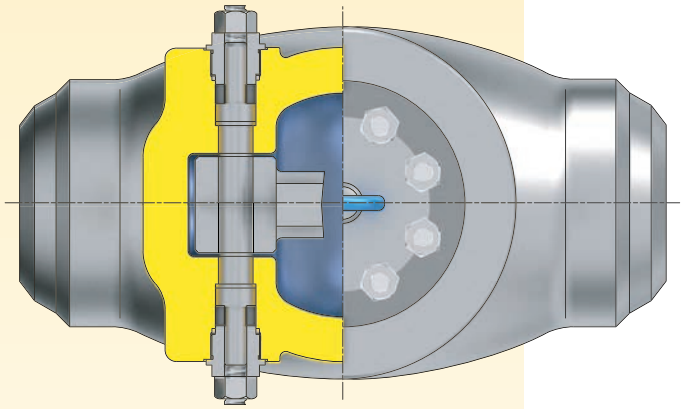


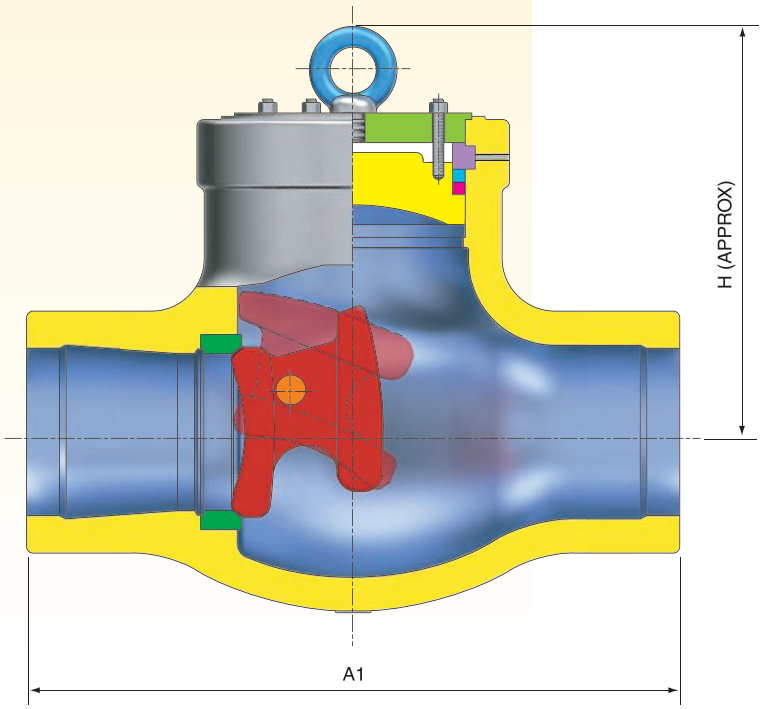
VALVE SIZE			2	2.5	3	4	6	8	10	12	14	16	18	20	24
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1		in	7.0	8.5	10.0	12.0	18.0	23.0	28.0	32.0	35.0	39.0	43.0	47.0	55.0
		mm	178	216	254	305	457	584	711	813	889	991	1092	1194	1397
A2		in	11.5	13.0	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0
		mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397
A3		in	11.6	13.1	14.1	17.1	22.1	26.1	31.1	33.1	35.1	39.1	43.1	47.2	55.4
		mm	295	333	359	435	562	664	791	841	892	994	1095	1200	1407
H		in	7.7	7.9	8.2	9.8	12.2	15.0	17.7	22.8	26.0	30.7	33.0	34.6	36.4
		mm	195	200	208	248	310	380	450	580	660	780	838	880	925
WEIGHT	RF	lb	55.1	79.4	90.4	147.7	438.7	815.7	1106.7	1492.5	1929.0	2579.4	3384.1	4376.2	6272.1
		kg	25	36	41	67	199	370	502	677	875	1170	1535	1985	2845
	BW	lb	37.5	46.3	55.1	75.0	275.6	584.2	749.6	1058.2	1411.0	1840.9	2436.1	3152.6	4519.5
		kg	17	21	25	34	125	265	340	480	640	835	1105	1430	2050

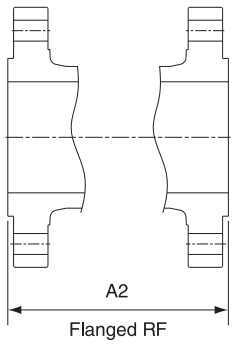
TILTING CHECK VALVES

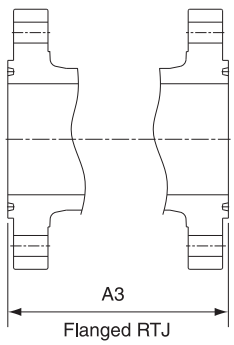
PRESSURE SEAL COVER

TC CLASS 900







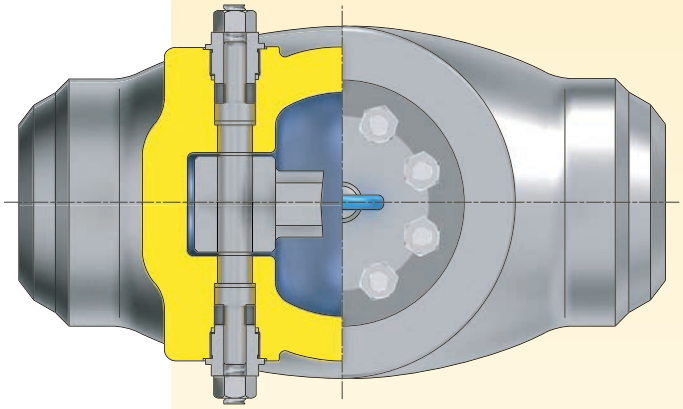


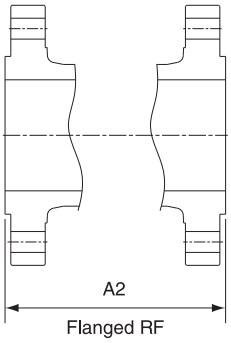
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1		in	8.5	10.0	12.0	14.0	20.0	26.0	31.0	32.0	39.0	43.0	46.5	50.5	59.5
		mm	216	254	305	356	508	660	787	814	991	1092	1181	1283	1511
A2		in	14.5	16.5	15.0	18.0	24.0	29.0	33.0	38.0	40.5	44.5	48.0	52.0	61.0
		mm	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549
A3		in	14.6	16.6	15.1	18.1	24.1	29.1	33.1	38.1	40.9	44.9	48.5	52.5	61.7
		mm	371	422	384	460	612	740	841	968	1038	1140	1232	1333	1568
H		in	8.1	8.7	9.1	10.2	12.8	15.2	17.9	21.5	25.4	28.7	31.3	33.1	35.2
		mm	205	220	230	258	325	385	455	545	645	730	795	842	895
WEIGHT	RF	lb	90.4	123.5	123.5	233.7	540.1	1034.0	1280.9	2160.5	2896.9	3586.9	4407.0	5191.9	7290.7
		kg	41	56	56	106	245	469	581	980	1314	1627	1999	2355	3307
	BW	lb	44.1	68.3	66.1	143.3	352.7	716.5	826.7	1532.2	2171.6	2698.5	3152.6	3637.6	4281.4
		kg	20	31	30	65	160	325	375	695	985	1224	1430	1650	1942

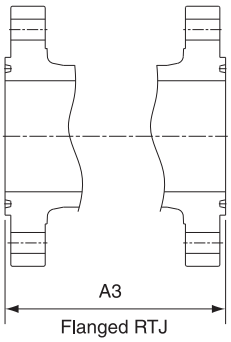
TILTING CHECK VALVES

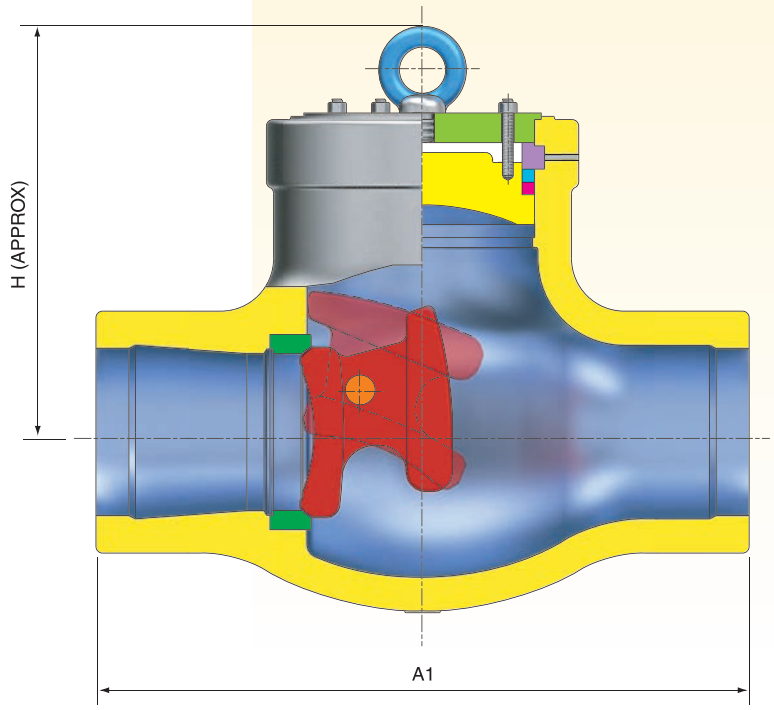
PRESSURE SEAL COVER

TC CLASS 1500







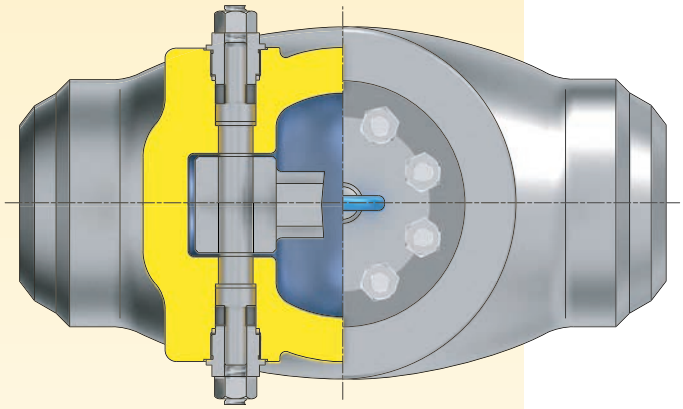


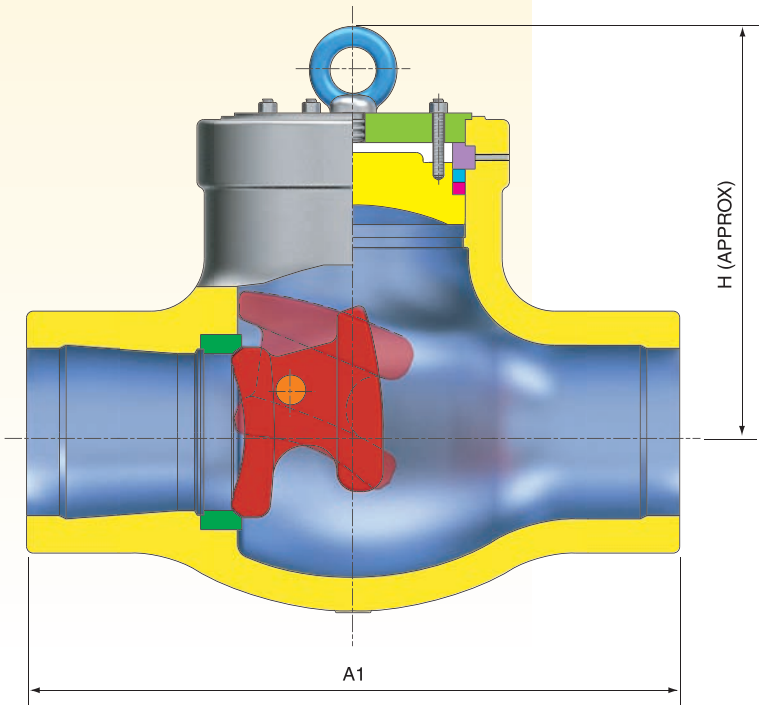
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1	in	8.5	10.0	12.0	16.0	22.0	28.0	34.0	39.0	42.0	47.0	53.0	58.0	64.0
	mm	216	254	305	406	559	711	864	991	1067	1194	1346	1473	1626
A2	in	14.5	16.5	18.5	21.5	27.8	32.8	39.0	44.5	49.5	54.5	60.5	65.5	76.5
	mm	368	419	470	546	705	832	991	1130	1257	1384	1536	1664	1943
A3	in	14.6	16.6	18.6	21.6	28.0	33.1	39.4	45.1	50.2	55.4	61.4	66.4	77.6
	mm	371	422	473	549	711	841	1000	1146	1276	1406	1559	1686	1972
H	in	8.1	8.7	10.9	12.6	13.6	15.5	20.1	24.3	31.9	36.4	38.8	42.4	46.7
	mm	205	220	278	320	345	394	510	616	810	925	985	1078	1185
WEIGHT RF	lb	90.4	123.5	191.8	266.8	509.3	718.7	1060.4	1514.6	2120.8	2610.3	3007.1	3897.8	4887.6
	kg	41	56	87	121	231	326	481	687	962	1184	1364	1768	2217
WEIGHT BW	lb	44.1	81.6	105.8	180.8	423.3	632.7	974.4	1428.6	2034.9	2524.3	2921.1	3811.8	4801.7
	kg	20	37	48	82	192	287	442	648	923	1145	1325	1729	2178

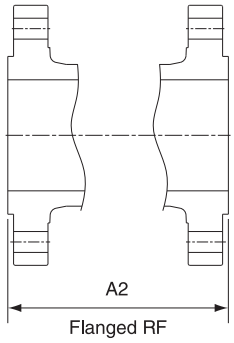
TILTING CHECK VALVES

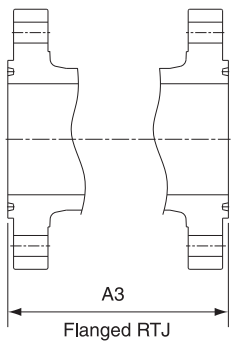
PRESSURE SEAL COVER

TC CLASS 2500









VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1		in	11.0	13.0	14.5	18.0	24.0	30.0	36.0	41.0	44.0	49.0	55.0	60.0	65.0
		mm	279	330	368	457	610	762	914	1041	1118	1245	1397	1524	1650
A2		in	17.8	20.0	22.8	26.5	36.0	40.2	50.0	56.0	-	-	-	-	-
		mm	451	508	578	673	914	1022	1270	1422	-	-	-	-	-
A3		in	17.9	20.2	23.0	26.9	36.5	40.9	50.9	56.9	-	-	-	-	-
		mm	454	514	584	683	927	1038	1292	1445	-	-	-	-	-
H		in	10.6	11.5	16.2	17.0	18.7	22.5	24.4	27.4	32.8	36.7	39.1	42.6	50.6
		mm	268	292	412	431	475	572	621	695	832	933	992	1083	1285
WEIGHT	RF	lb	178.6	264.6	401.2	557.8	1071.4	1827.6	3483.3	5110.3	-	-	-	-	-
		kg	81	120	182	253	486	829	1580	2318	-	-	-	-	-
	BW	lb	105.8	156.5	238.1	306.4	427.7	864.2	1598.4	2475.8	3381.9	3979.3	4281.4	4722.3	5474.1
		kg	48	71	108	139	194	392	725	1123	1534	1805	1942	2142	2483

STAINLESS STEEL GATE VALVES

BOLTED BONNET



STAINLESS STEEL

BOLTED BONNET

GATE, GLOBE, CHECK





Stainless steel valves are designed and manufactured in compliance with API, ASME, BS and other recognized standards with the qualities to meet their stringent requirements for such industrial applications.

DESIGN SPECIFICATION

Flange Dimensions and temperature and Pressure Rating of valves are conformance with ASME B16.5 and ASME B16.34 and Class 150 and 300 valves are normally furnished with 0.06″(1.6mm) raised face flanged ends and Class 600 and higher valves are normally furnished with 0.25″ (6.4mm) raised face flanged ends.
Face to Face Dimensions and End Dimensions, the former for flanged valves and the latter for weld-end, conform with ASME B16.10.

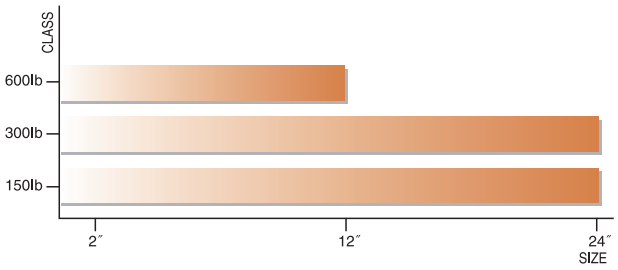
VALVE SHELL MATERIALS

KJS Standard shell materials are ASTM A351 Grade CF8M and CF8, and other materials are available optionally.

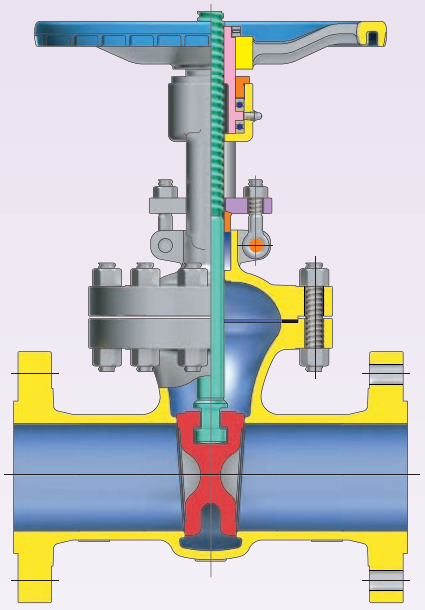
ASTM MATERIALS	MAXIMUM WORKING TEMPERATURE°F (℃)	
	WELDING END	FLANGE END
ASTM A351 Gr CF8M	1500°F (816℃)	1000°F (538℃)
ASTM A351 Gr CF8	1500°F (816℃)	1000°F (538℃)
ASTM A351 Gr CF3M	850°F (454℃)	-
ASTM A351 Gr CF3	800°F (427℃)	-
ASTM A351 Gr CN7M	300°F (149℃)	-

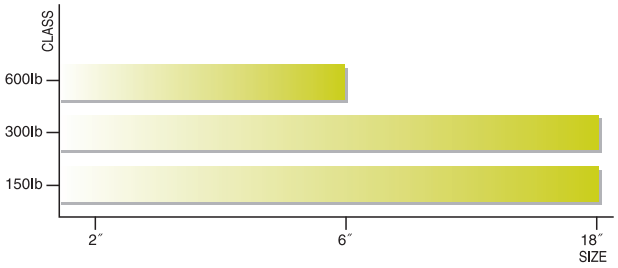
STAINLESS STEEL
BOLTED BONNET

GATE, GLOBE, CHECK

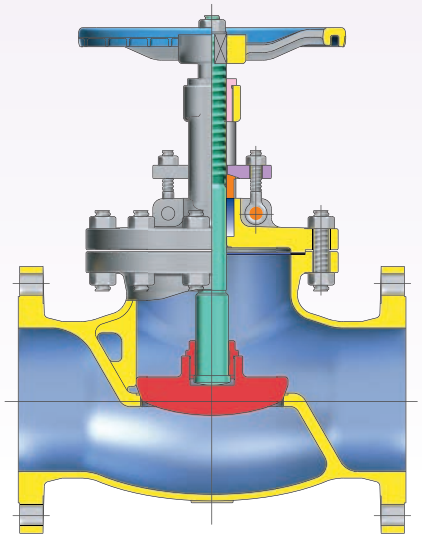


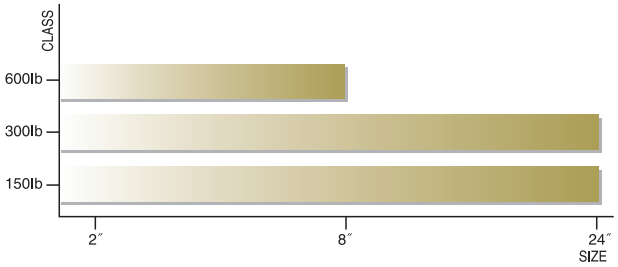
GATE VALVES



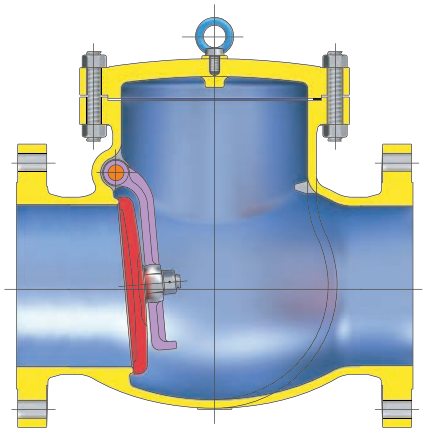


GLOBE VALVES



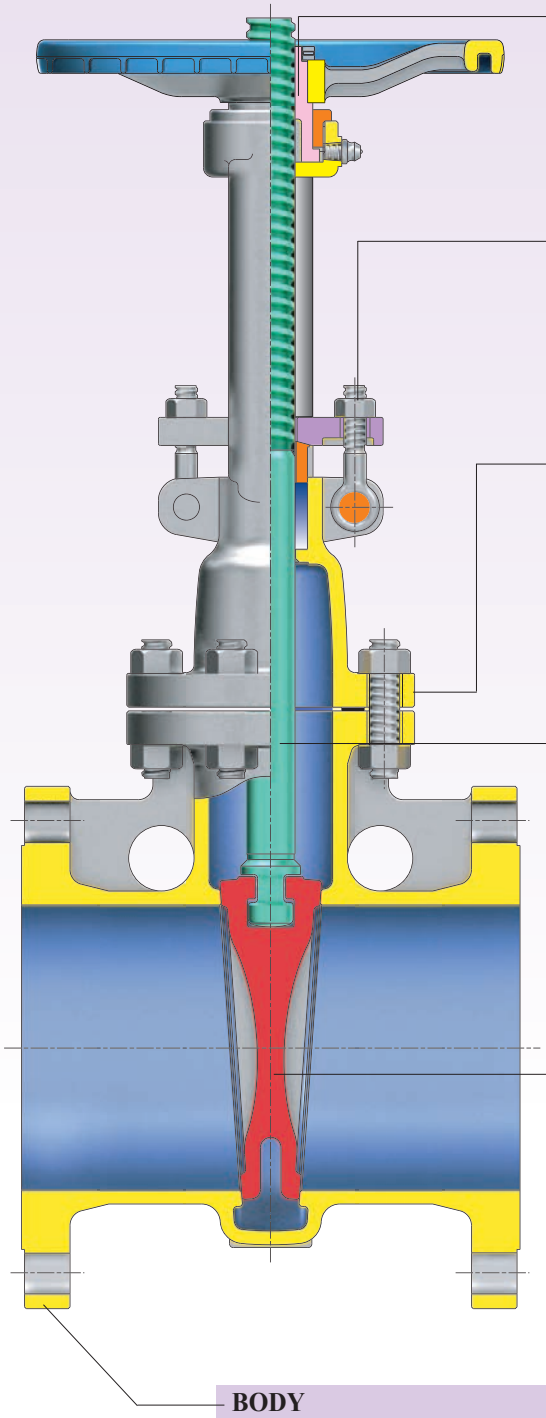


SWING CHECK VALVES



STAINLESS STEEL
BOLTED BONNET

GATE VALVES



YOKE SLEEVE

The upper portion of the Yoke Sleeve is hexagonally tapered to fix the handwheel. The standard material of the Yoke Sleeve is Nodular Ni-resist D2 with over 1150℃(2100℉) dissolution point in accordance with API Std. specifications.

BOLTING

The body-bonnet bolts are manufactured in accordance with API Std. 603 specifications. The nuts also strictly conform with ANSI B 1.1
The stud-bolt nuts, hexagonal, rigid and hot-forged, bear material notation as well as do the bolt nuts made according to ANSI B18.2.2

BONNET

The bonnet and valve body have the same wall thickness.
The body-bonnet flange drilling is spot-faced to exactly meet stud-bolt nuts. The bonnet back seat bushing guarantees packing replacement even when the valve is fully opened. The stem packing dimensions of the stuffing box are in accordance with API specifications.

STEM

The machined forged stem comes with a T-shape head, which connects the slot of the wedge. The spherically shaped contacting surface of the head gives greater strength and durability.
The stem dimensions are in accordance with API Std. 603 specifications.
The stem delivers adequate mechanical properties as well as excellent surface hardness. Further, opening/shutting friction is minimized by accurate machining and lapping.

FLEXIBLE WEDGE

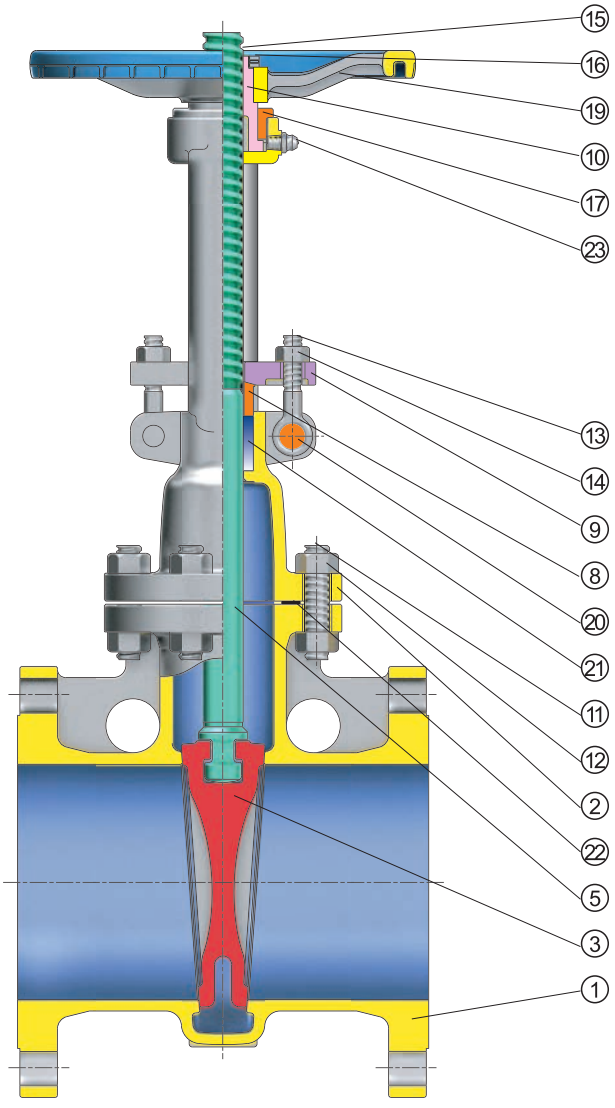
The standard disc of our valves is a one-piece flexible wedge.
Slots are machined on both sides of the wedge to allow it to travel correctly in the integrally cast body guides.
The wedge seating surfaces have been accurately machined, grind and lapped to a mirror finish to prevent leakage and eliminate galling.

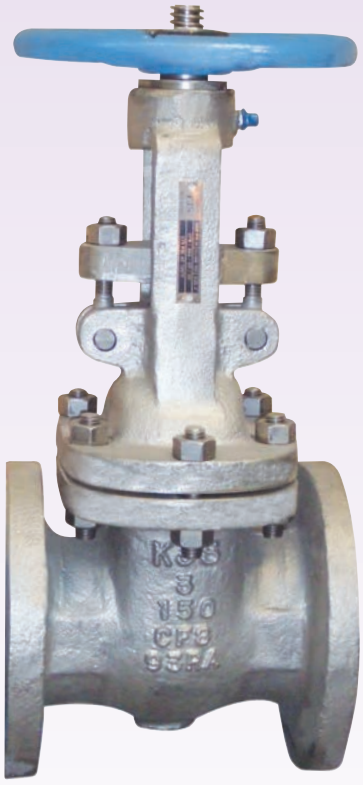
BODY

The cast stainless steel body is designed to insure a wall thickness which is greater at any point than the minimum specified by API Std. 603. Special care has been taken with the design of the Class 150 valve body so that the elliptically shaped center section is free from intensified stresses in the critical area.
The body of above Class 300 are made circular in shape as much as possible to minimize distortion even under extreme operating conditions. Inlet and outlet port dimensions conform with ASME B16.34 Pipe Fitting. The welded-in type seat ring is standard to insure interchangeability. Except for Class 150, the standard body-bonnet joint is male and female.

STAINLESS STEEL
BOLTED BONNET

GATE VALVES



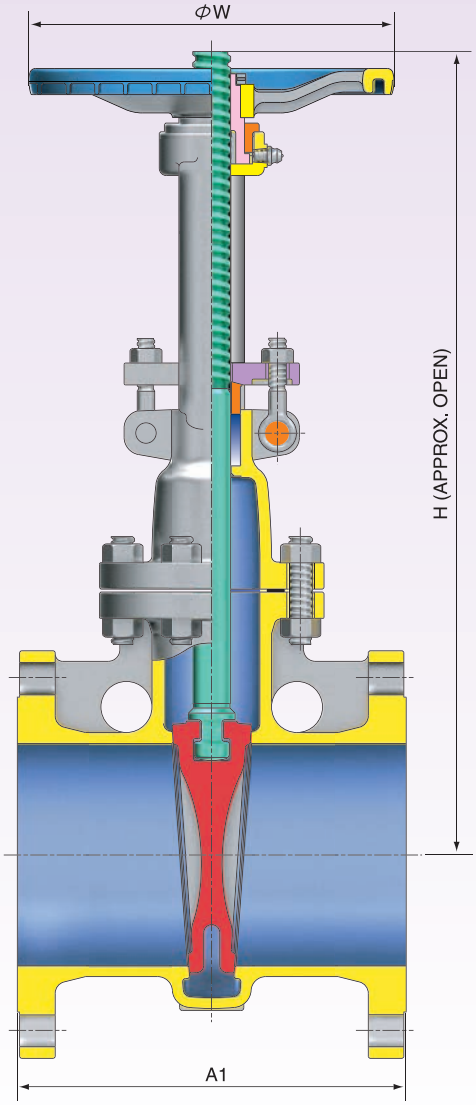


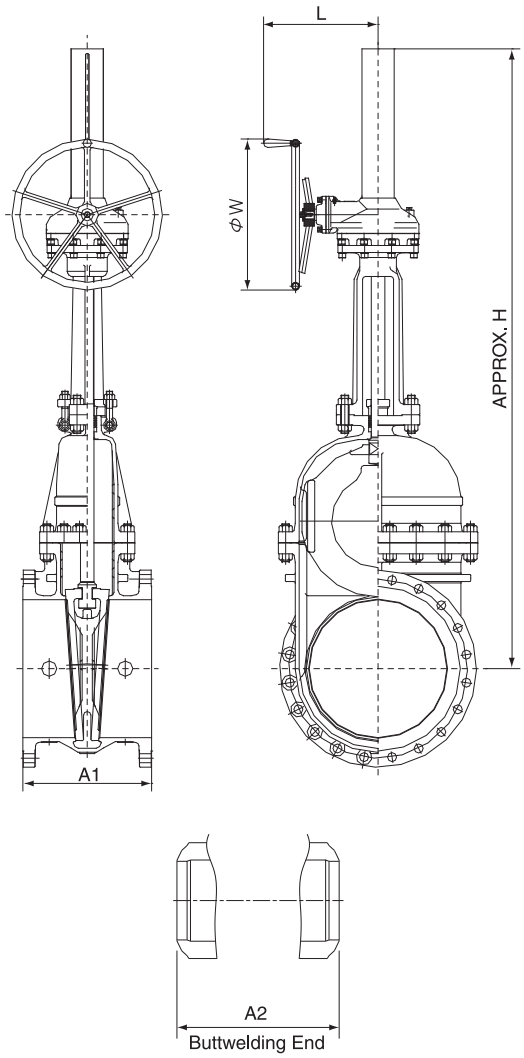
NO	NAME OF PART	ASTM SPECIFICATION
15	HANDLE NUT	STEEL
16	SET SCREW	STEEL
17	SLEEVE GLAND	STEEL
19	HANDWHEEL	A395
21	PACKING	COMMERCIAL
22	GASKET	COMMERCIAL
23	GREASE NIPPLE	STEEL

NO	NAME OF PART	ASTM SPECIFICATION					
		STAINLESS STEEL				ALLOY STEEL	
1	BODY	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
2	BONNET	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
3	DISC	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
5	STEM	A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A182-F51
8	PACKING GLAND	A276-304				A276-304	
9	GLAND FLANGE	A351-CF8				A351-CF8	
10	YOKE SLEEVE	A439-D2				A439-D2	
11	BONNET BOLT	A193-B8					
12	BONNET NUT	A194-8					
13	GLAND BOLT	A193-B8					
14	GLAND NUT	A194-8					
20	HINGE PIN	A276-304					

GATE VALVES
BOLTED BONNET

GT CLASS 150

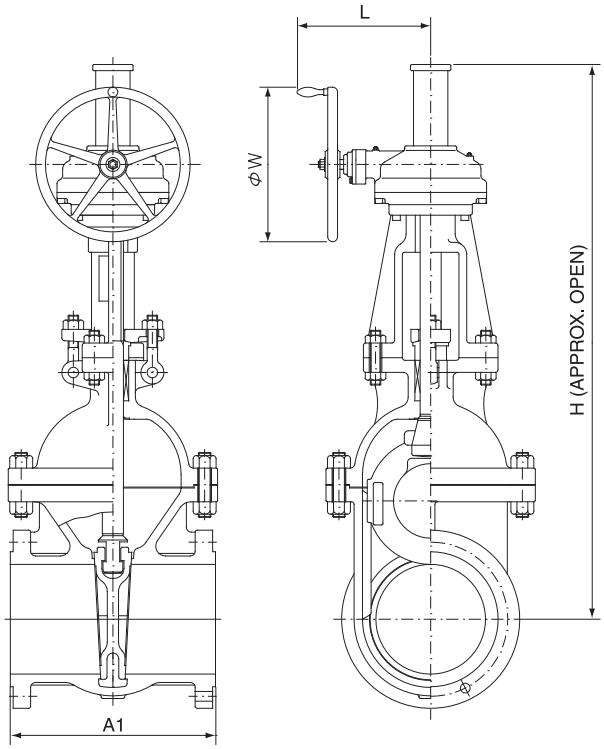


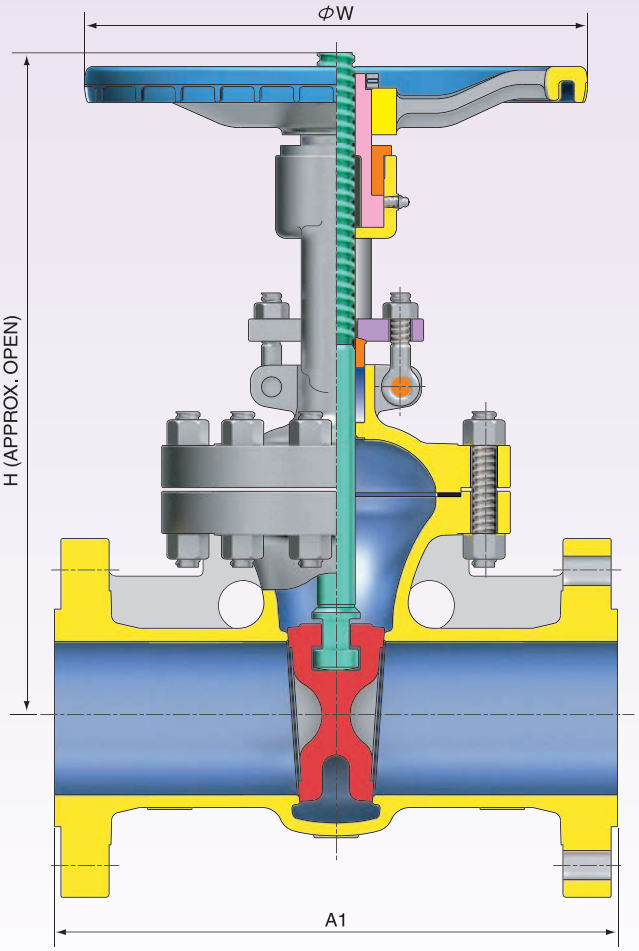


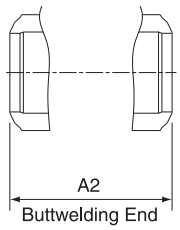
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24	28	30	36
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750	900
A1		in	7.0	7.5	8.0	9.0	10.5	11.5	13.0	14.0	15.0	16.0	17.0	18.0	20.0	24.0	24.0	28.0
		mm	178	190	203	229	267	292	330	356	381	406	432	457	508	610	610	711
A3		in	8.5	9.5	11.1	12.0	15.9	16.5	18.0	19.8	22.5	24.0	26.0	28.0	32.0	36.0	36.0	40.0
		mm	216	241	283	305	403	419	457	502	572	610	660	711	813	914	914	1016
H		in	13.5	15.2	16.3	21.3	28.5	36.1	43.7	54.1	58.3	66.9	78.9	87.2	107.5	122.2	133.0	156.9
		mm	342	386	415	542	725	916	1110	1375	1480	1700	2005	2215	2730	3105	3378	3985
W		in	7.1	7.1	7.9	9.8	11.8	14.0	17.7	17.7	19.7	22.0	19.7	24.8	24.8	28.0	28.0	31.5
		mm	180	180	200	250	300	355	450	450	500	560	500	630	630	710	710	800
L		in	-	-	-	-	-	-	-	-	-	-	13.5	15.3	15.3	16.0	16.0	18.1
		mm	-	-	-	-	-	-	-	-	-	-	342	389	389	406	406	461
WEIGHT	RF	lb	35.3	48.5	55.1	83.8	143.3	224.9	326.3	480.6	760.6	1091.3	1278.7	1675.5	3029.2	4168.9	4334.3	6267.7
		kg	16	22	25	38	65	102	148	218	345	495	580	760	1374	1891	1966	2843
	BW	lb	30.9	39.7	50.7	75.0	127.9	189.6	280.0	434.3	694.5	1025.1	1201.5	1587.3	2689.6	3483.3	3648.6	6161.9
		kg	14	18	23	34	58	86	127	197	315	465	545	720	1220	1580	1655	2795

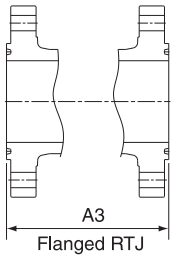
GATE VALVES
BOLTED BONNET

GT CLASS 300





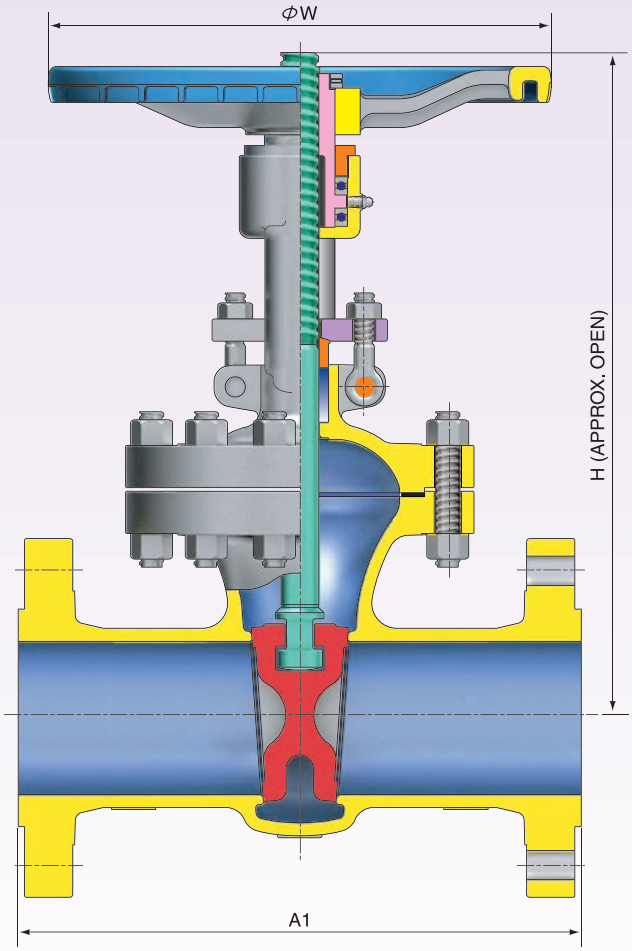


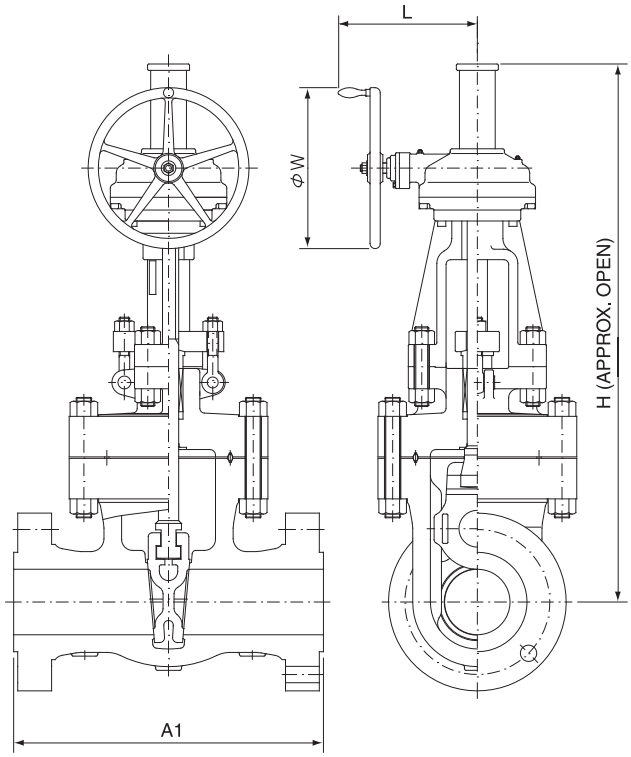


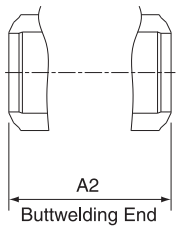
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20	24	28	30	36
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750	900
A1 & A2	in	8.5	9.5	11.1	12.0	15.9	16.5	18.0	19.8	30.0	33.0	36.0	39.0	45.0	53.0	55.0	68.0
	mm	216	241	283	305	403	419	457	502	762	838	914	991	1143	1346	1397	1727
A3	in	9.1	10.1	11.7	12.6	16.5	17.1	18.6	20.4	30.6	33.6	36.6	39.8	45.9	54.0	56.0	69.1
	mm	232	257	298	321	419	435	473	518	778	854	930	1010	1165	1372	1422	1756
H	in	14.6	16.9	18.3	21.4	29.7	38.6	47.0	54.1	64.2	72.4	84.1	91.5	110.8	129.3	145.1	168.6
	mm	370	430	465	544	755	980	1193	1375	1630	1840	2135	2325	2815	3285	3685	4283
W	in	7.9	7.9	8.8	9.8	14.0	15.7	17.7	19.7	19.7	24.8	24.8	28.0	28.0	31.5	35.4	39.4
	mm	200	200	224	250	355	400	450	500	500	630	630	710	710	800	900	1000
L	in	-	-	-	-	-	-	-	-	13.5	15.3	15.3	16.0	16.0	18.1	19.1	20.8
	mm	-	-	-	-	-	-	-	-	342	389	389	406	406	461	486	529
WEIGHT RF	lb	52.9	72.8	88.2	130.1	242.5	377.0	564.4	934.8	1192.7	2039.3	2672.0	3216.5	5037.6	7550.8	8124.0	11827.8
	kg	24	33	40	59	110	171	256	424	541	925	1212	1459	2285	3425	3685	5365
WEIGHT BW	lb	39.7	55.1	61.7	83.8	176.4	275.6	414.5	723.1	994.3	1704.2	2253.1	2733.7	4054.3	6583.0	6863.0	9931.8
	kg	18	25	28	38	80	125	188	328	451	773	1022	1240	1839	2986	3113	4505

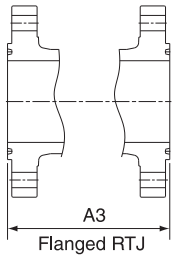
GATE VALVES
BOLTED BONNET

GT CLASS 600





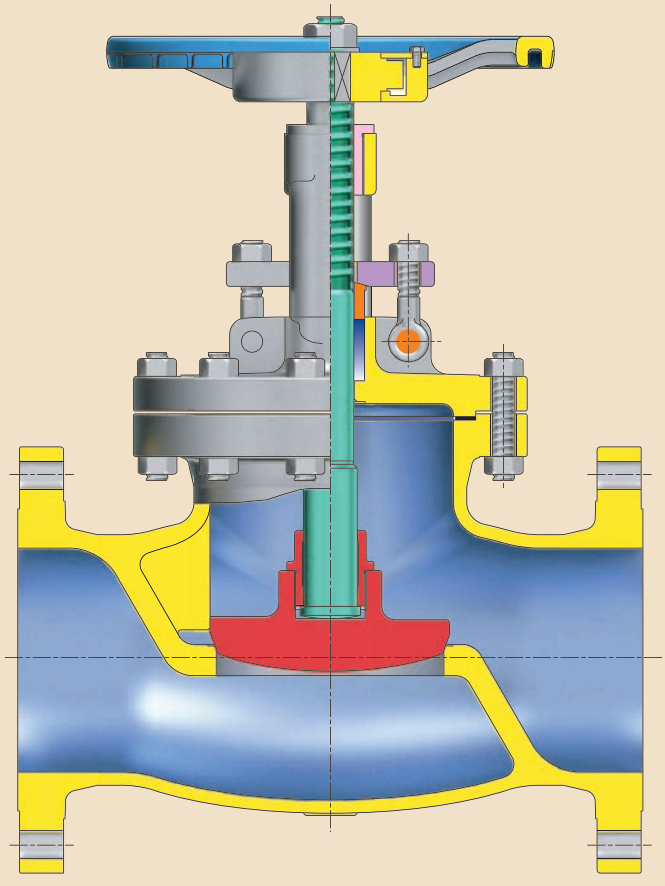




VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
A1 & A2	in	11.5	13.0	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0
	mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397
A3	in	11.6	13.1	14.1	17.1	22.1	26.1	31.1	33.1	35.1	39.1	43.1	47.2	55.4
	mm	295	333	359	435	562	664	791	841	892	994	1095	1200	1406
H	in	14.8	17.2	18.7	23.2	32.1	40.2	49.0	61.7	69.5	77.8	84.8	100.2	104.6
	mm	375	436	475	590	816	1020	1245	1566	1765	1975	2155	2545	2658
W	in	7.9	8.8	9.8	11.8	17.7	19.7	24.8	24.8	24.8	28.0	31.5	31.5	35.4
	mm	200	224	250	300	450	500	630	630	630	710	800	800	900
L	in	-	-	-	-	-	-	-	15.3	15.3	16.0	18.1	18.1	19.1
	mm	-	-	-	-	-	-	-	389	389	406	461	461	486
WEIGHT RF	lb	70.5	99.2	134.5	260.1	498.2	844.4	1318.4	1907.0	2502.2	2921.1	4299.0	5915.0	7447.2
	kg	32	45	61	118	226	383	598	865	1135	1325	1950	2683	3378
WEIGHT BW	lb	59.5	75.0	112.4	202.8	390.2	652.6	1036.2	1501.3	2125.3	2286.2	3648.6	5088.3	6265.5
	kg	27	34	51	92	177	296	470	681	964	1037	1655	2308	2842

STAINLESS STEEL GLOBE VALVES

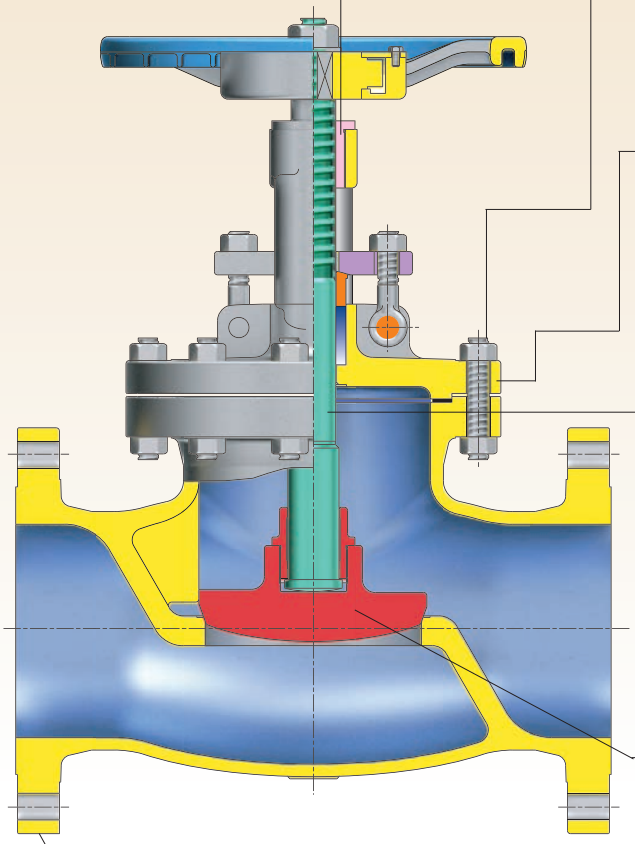
BOLTED BONNET



STAINLESS STEEL

BOLTED BONNET

GLOBE VALVES



YOKE SLEEVE

The standard material of the Yoke Sleeve is Nodular Ni-resist D2 with over a 1150℃ (2100°F)dissolution point in conformity with API Std. Specifications.

BOLTING

The body-bonnet bolts are manufactured in accordance with API Std. 600 specifications. The nuts also strictly conform with ANSI B 1.1
The stud-bolt nuts, hexagonal, rigid and hot-forged, bear material notation as well as do the bolt nuts made according to ANSI B18.2.2

BONNET

The bonnet is integral or separate with the yoke and is the same material as the body. The body-bonnet flange drilling is spot-faced to exactly meet stud bolt nuts. The back seat bushing in the bonnet guarantees that the packing can be replaced even when the valve is fully opened. The stem packing dimensions of the stuffing box are in accordance with API Std. specifications.

STEM

The heat-treated stems of one-piece construction insure adequate mechanical properties and surface hardness.
Friction at the time of opening and shutting is reduced to a minimum friction to accurate machining and lapping.
The round finished surface of the stem head helps to achieve point contact with the inside of the disc housing to eliminate friction.

DISC

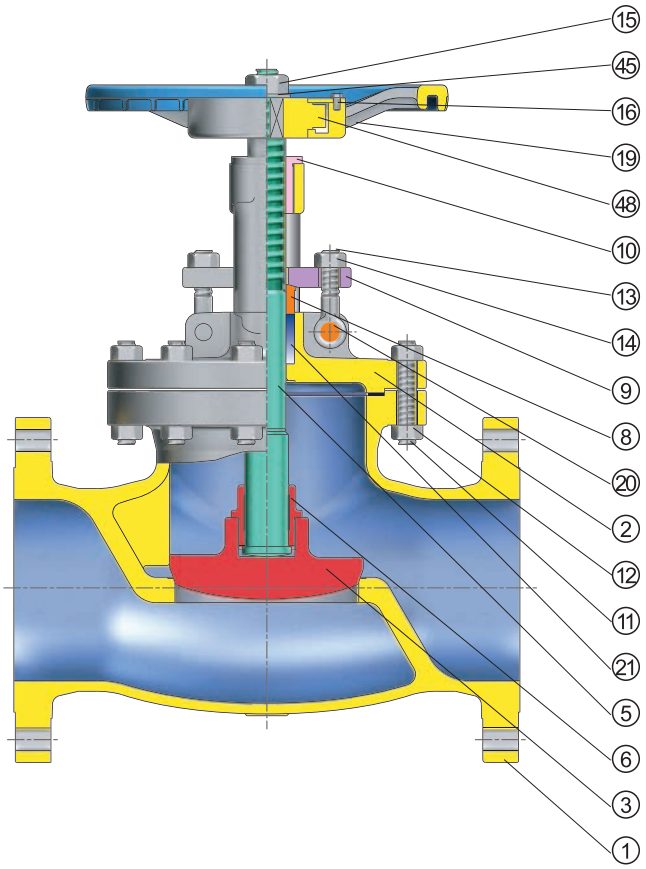
The disc of our globe valves is a loose disc and can freely revolve around the stem. This prevents friction and galling with the seating surface when the valve is shut. The disc is furnished with a conical seating surface that has been ground and lapped to a mirror finish. It is of one-piece construction, and forged and heat-treated to deliver the required mechanical properties and hardness.

BODY

The cast stainless steel body is designed to insure a wall thickness which is greater at any point than the minimum specified by API Std. 603. Port and seat passage dimensions conform to ASME B16.34.
The screw-in type seat ring is standard to allow interchangeability.
The standard body-bonnet joint is male-female, and the flange is round for all valves. Accurate machining insures perfect coaxiality of the valve ends and seat ring in addition to exact perpendicularity of the body-bonnet flanges.

STAINLESS STEEL
BOLTED BONNET

GLOBE VALVES



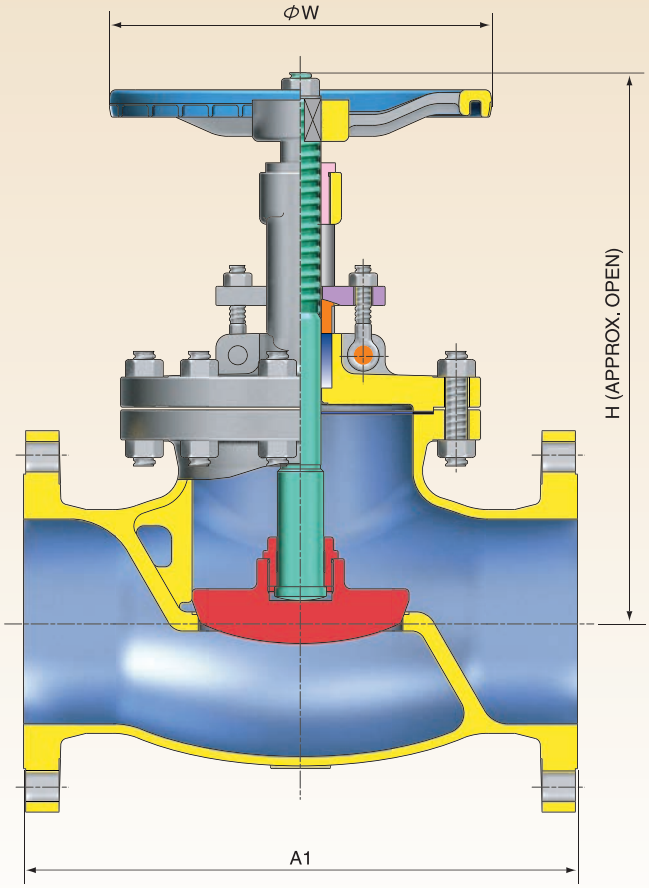
NO	NAME OF PART	ASTM SPECIFICATION
15	HANDLE NUT	STEEL
16	SET SCREW	STEEL
19	HANDWHEEL	A395
21	PACKING	COMMERCIAL
22	GASKET	COMMERCIAL
45	WASHER	STEEL

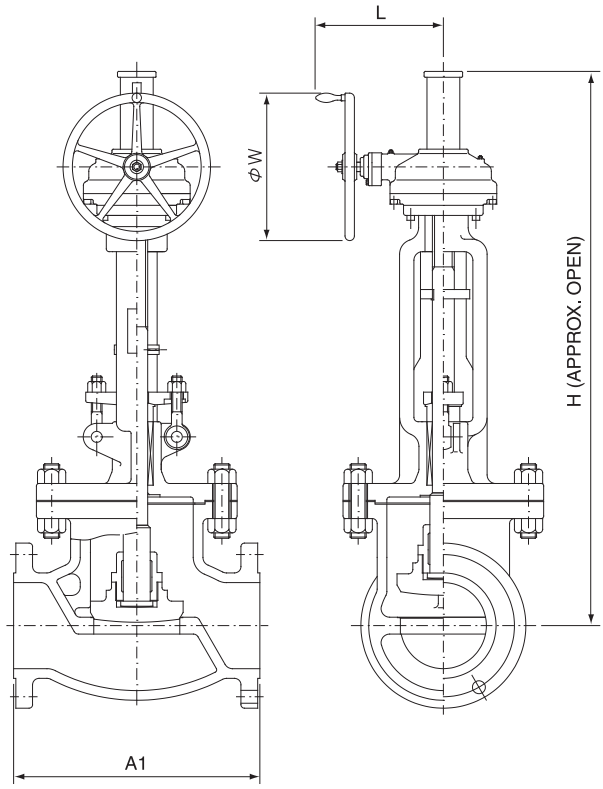
NO	NAME OF PART	ASTM SPECIFICATION					
		STAINLESS STEEL				ALLOY STEEL	
1	BODY	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
2	BONNET	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
3	DISC	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
5	STEM	A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A182-F51
6	DISC GLAND	A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A182-F51
8	PACKING GLAND	A276-304					
9	GLAND FLANGE	A351-CF8					
10	YOKE SLEEVE	A439-D2					
11	BONNET BOLT	A193-B8			A193-B8	A193-B8	
12	BONNET NUT	A194-8			A194-B8	A194-8	
13	GLAND BOLT	A193-B8					
14	GLAND NUT	A194-8					
20	HINGE PIN	A276-304					
48	IMPACT	A216-WCB					

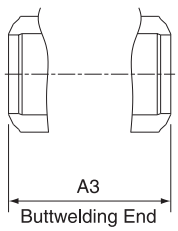
GLOBE VALVES

BOLTED BONNET

GL CLASS 150





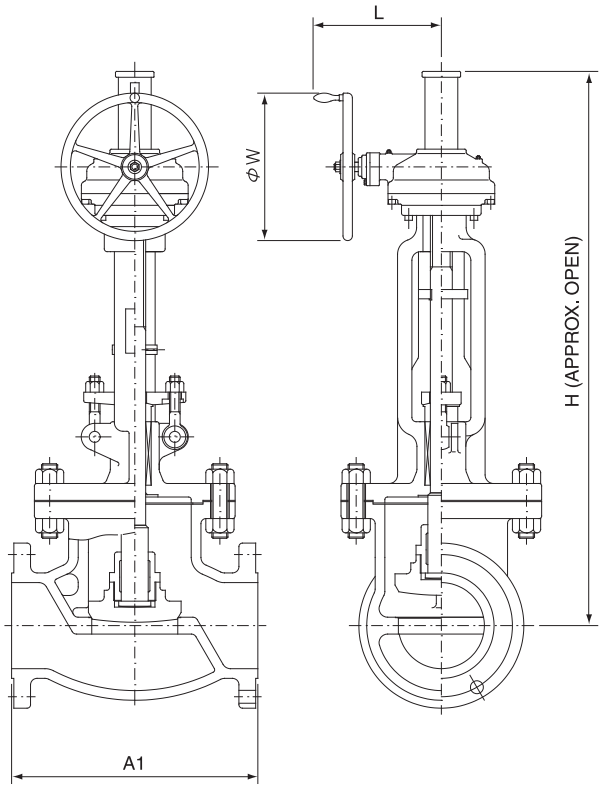


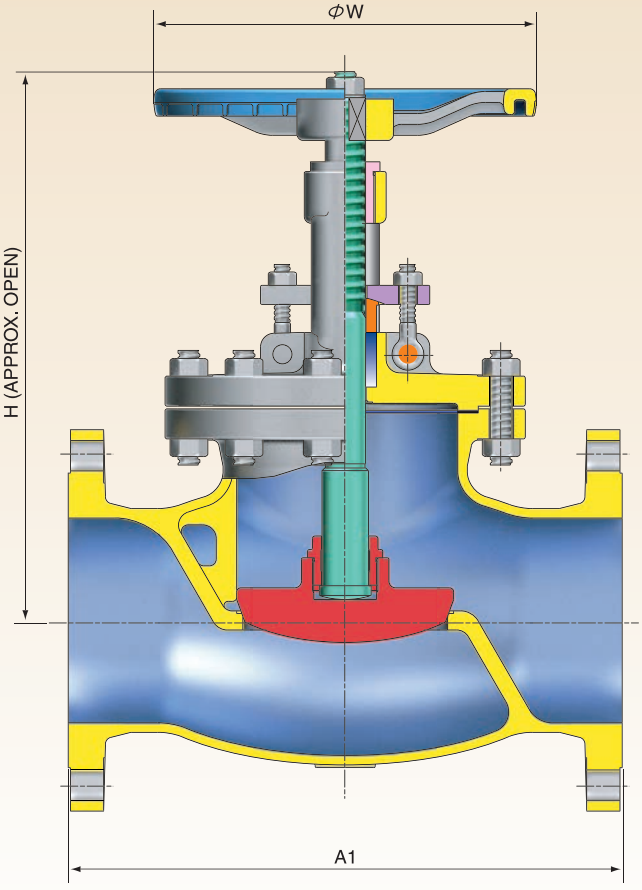
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18
		mm	50	65	80	100	150	200	250	300	350	400	450
A1 & A3		in	8.0	8.5	9.5	11.5	16.0	19.5	24.5	27.5	31.0	36.0	38.5
		mm	203	216	241	292	406	495	622	698	787	914	978
H		in	10.3	11.5	12.5	15.0	19.5	21.9	24.6	28.1	31.4	39.2	49.2
		mm	262	292	318	382	495	555	625	715	797	995	1250
W		in	7.9	8.8	8.8	9.8	14.0	15.7	17.7	19.7	28.0	28.0	28.0
		mm	200	224	224	250	355	400	450	500	710	710	710
L		in	-	-	-	-	-	-	-	-	16.0	16.0	16.0
		mm	-	-	-	-	-	-	-	-	406	407	407
WEIGHT	RF	lb	33.1	44.1	57.3	97.0	174.2	286.6	416.7	815.7	1014.1	1366.9	1609.4
		kg	15	20	26	44	79	130	189	370	460	620	730
	BW	lb	24.3	33.1	44.1	72.8	141.1	235.9	346.1	712.1	875.2	1190.5	1419.8
		kg	11	15	20	33	64	107	157	323	397	540	644

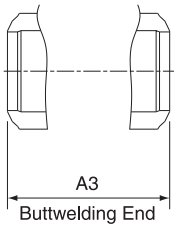
GLOBE VALVES

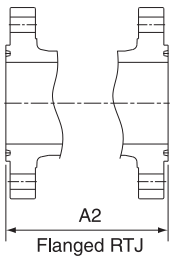
BOLTED BONNET

GL CLASS 300







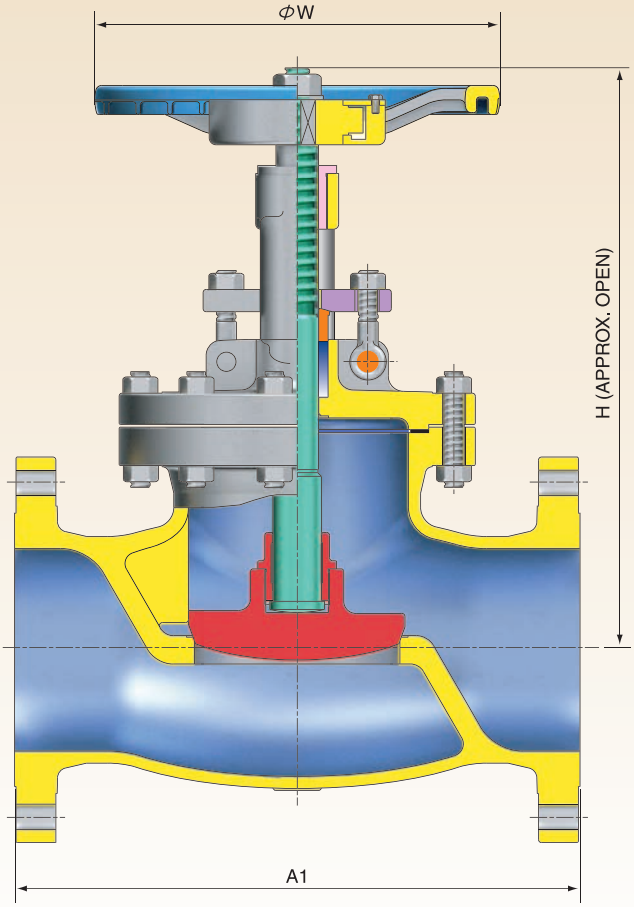


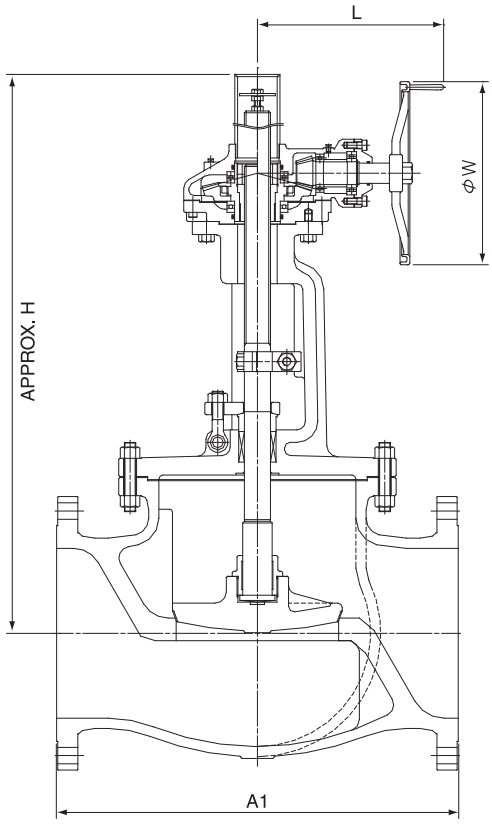
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16
	mm	50	65	80	100	150	200	250	300	350	400
A1 & A3	in	10.5	11.5	12.5	14.0	17.5	22.0	24.5	28.0	33.0	36.0
	mm	267	292	318	356	444	559	622	711	838	914
A2	in	11.1	12.1	13.1	14.6	18.1	22.6	25.1	28.6	33.6	36.6
	mm	283	308	333	371	460	575	638	727	854	929
H	in	10.8	12.2	12.8	15.6	20.3	22.6	25.4	28.7	31.7	46.4
	mm	275	310	325	395	515	575	645	730	806	1179
W	in	7.9	8.8	9.8	14.0	17.7	22.0	28.0	28.0	35.4	31.5
	mm	200	224	250	355	450	560	710	710	900	800
L	in	-	-	-	-	-	-	16.0	16.0	20.8	21.0
	mm	-	-	-	-	-	-	406	406	529	534
WEIGHT RF	lb	59.5	101.4	121.3	172.0	282.2	436.5	914.9	1212.5	1719.6	2535.3
	kg	27	46	55	78	128	198	415	550	780	1150
WEIGHT BW	lb	46.3	81.6	94.8	130.1	216.1	339.5	771.6	1005.3	1433.0	2180.4
	kg	21	37	43	59	98	154	350	456	650	989

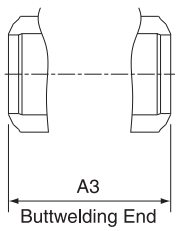
GLOBE VALVES

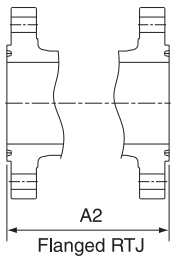
BOLTED BONNET

GL CLASS 600









VALVE SIZE	in	2	2.5	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
A1 & A3	in	11.5	13.0	14.0	17.0	22.0	26.0	31.0	33.0
	mm	292	330	356	432	559	660	787	838
A2	in	11.6	13.1	14.1	17.1	22.1	26.1	31.1	33.1
	mm	295	333	359	435	562	664	791	841
H	in	10.3	11.5	12.5	15.0	19.5	21.9	24.6	28.1
	mm	262	292	318	382	495	555	625	715
W	in	7.9	8.8	9.8	12.4	14.0	15.7	17.7	17.7
	mm	200	224	250	315	355	400	450	450
L	in	-	-	-	-	-	18.1	23.2	23.2
	mm	-	-	-	-	-	461	590	590
WEIGHT RF	lb	94.8	141.1	160.9	297.6	606.3	992.1	1653.5	3196.7
	kg	43	64	73	135	275	450	750	1450
WEIGHT BW	lb	77.2	114.6	127.9	231.5	471.8	787.1	1314.0	2791.1
	kg	35	52	58	105	214	357	596	1266

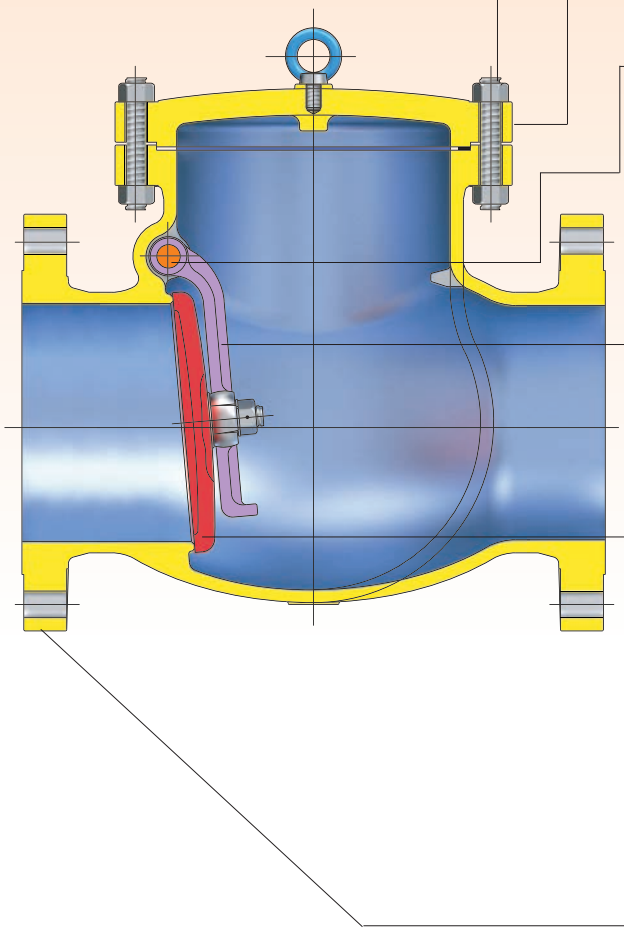
STAINLESS BC, SWING CHECK VALVES

BOLTED COVER



STAINLESS STEEL
BOLTED COVER

SWING CHECK VALVES



BOLTING
The body-cover bolting conforms with ANSI B.1.1
The nuts are manufactured to conform with ANSI B18.2.2

COVER
The cover material is identical to the body.
Depending on the valve size and pressure class, either a casting or a forging is used.

HINGE PIN
The hinge pin is inserted into the valve and held in position by plug.
The larger size valves are provided with bolted flanges instead of plugs.

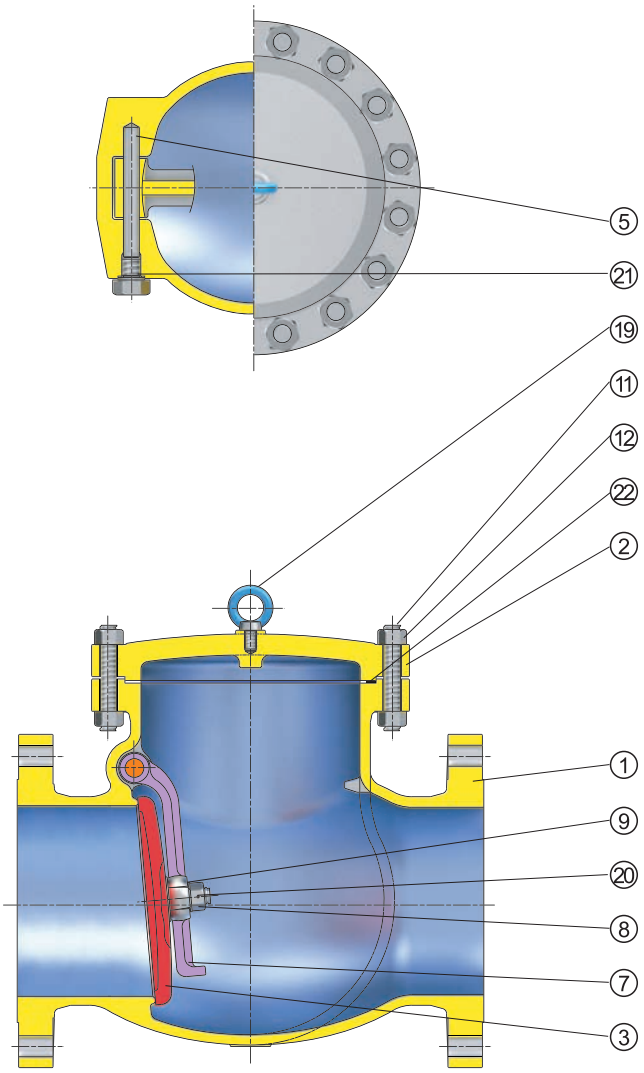
ARM
The arm material is identical to the body.
Hinge bushing is provided in the larger valve sizes to minimize friction and eliminate seizing.

DISC
The disc has a sufficient seating surface area which is ground and lapped to a mirror finish.
It is of one-piece construction and is heat treated to deliver the required mechanical properties and hardness.

BODY
The cast stainless steel body is designed with a wall thickness which is greater at any point than the minimum requirement provided by API Std. 603 or API 6D. Port and seat passage dimensions conform to ASME B16.34. The welded-in type seat ring is standard to allow interchangeability.
The standard body-bonnet joint is male-female, and the flange is round for all valves.

STAINLESS STEEL
BOLTED COVER

SWING CHECK VALVES





NO	NAME OF PART	ASTM SPECIFICATION
8	DISC NUT	AISI 304
9	DISC WASHER	AISI 304
19	EVE BOLT	A105
20	SPLIT PIN	AISI 304
21	PLUG GASKET	COMMERCIAL
22	GASKET	COMMERCIAL
24	PLUG	A105

Swing check valves can be supplied with the following accessories.

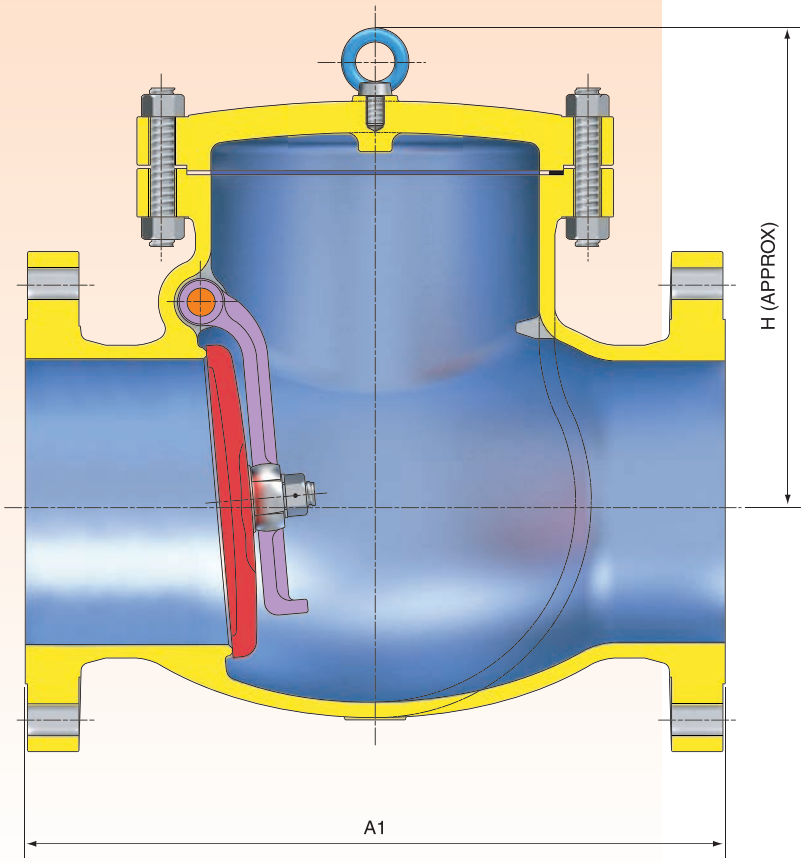
- outside weight and lever
- slam retarders
- assisting springs
- position switches/indicators
- pneumatic safety control

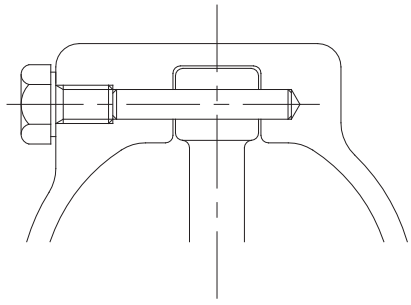
NO	NAME OF PART	ASTM SPECIFICATION					
		STAINLESS STEEL				ALLOY STEEL	
1	BODY	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
2	COVER	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
3	DISC	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
5	HINGE PIN	A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A182-F51
7	ARM	A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A182-F51
11	BONNET BOLT	A193-B8					
12	BONNET NUT	A194-8					

SWING CHECK VALVES

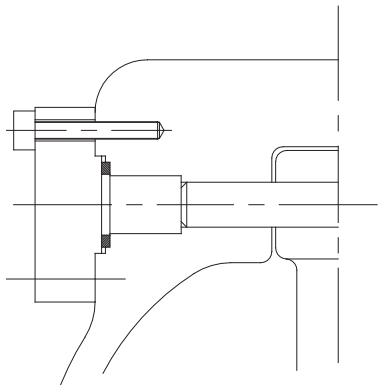
BOLTED COVER

SW/CH CLASS 150

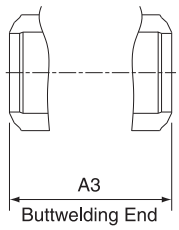




14″ Thru 18″



20″ & Lager

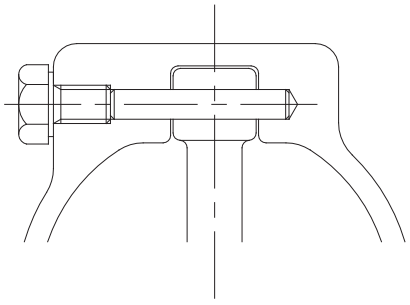


VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900
A1 & A3		in	8.0	8.5	9.5	11.5	14.0	19.5	24.5	27.5	31.0	34.0	38.5	38.5	51.0	51.0	57.0	60.0	60.0	77.0
		mm	203	216	241	292	356	495	622	698	787	864	978	978	1295	1295	1448	1524	1524	1956
H		in	5.8	6.4	6.9	8.0	11.4	13.8	16.9	19.6	23.9	25.6	30.7	25.5	31.5	33.5	40.0	35.0	37.0	53.1
		mm	147	163	176	204	290	350	428	499	606	650	781	647	800	852	1017	888	941	1349
WEIGHT	RF	lb	35.3	48.5	66.1	97.0	172.0	260.1	520.3	758.4	930.3	1397.7	1798.9	2164.9	3924.2	3637.6	3825.0	4647.3	5291.0	7385.4
		kg	16	22	30	44	78	118	236	344	422	634	816	982	1780	1650	1735	2108	2400	3350
	BW	lb	28.7	33.1	46.3	57.3	136.7	200.6	449.7	645.9	661.4	1276.5	1547.6	1878.3	3584.7	3306.9	3223.1	4426.8	4960.3	6944.5
		kg	13	15	21	26	62	91	204	293	300	579	702	852	1626	1500	1462	2008	2250	3150

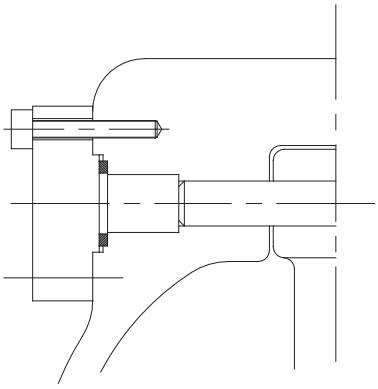
SWING CHECK VALVES

BOLTED COVER

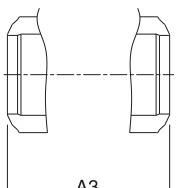
SW/CH CLASS 300



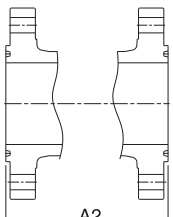
14″ Thru 16″



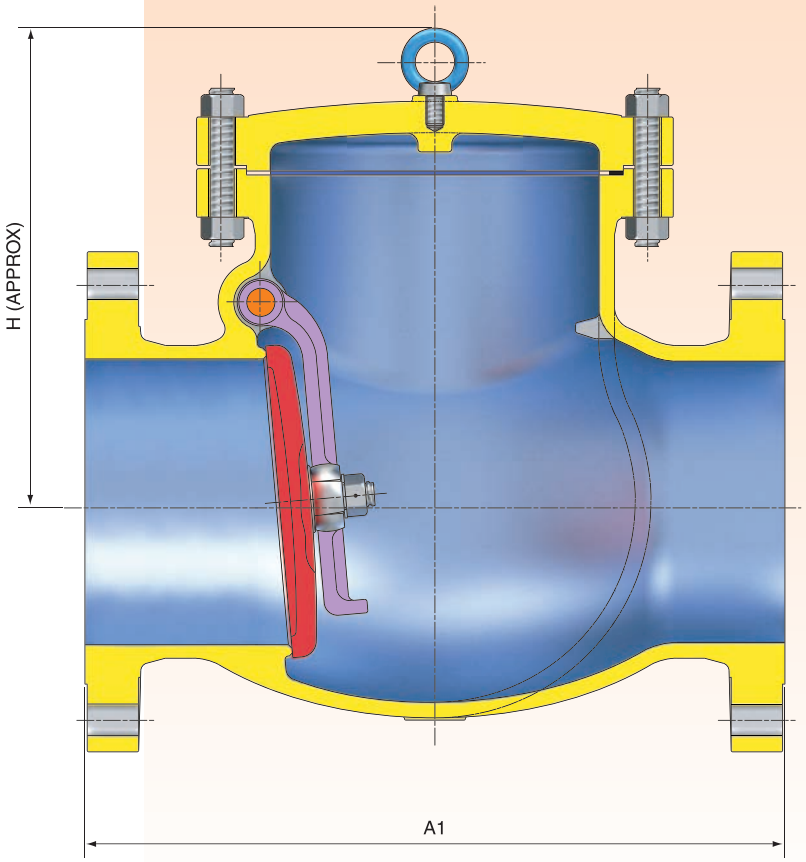
18″ & Lager



Buttwelding End



Flanged RTJ

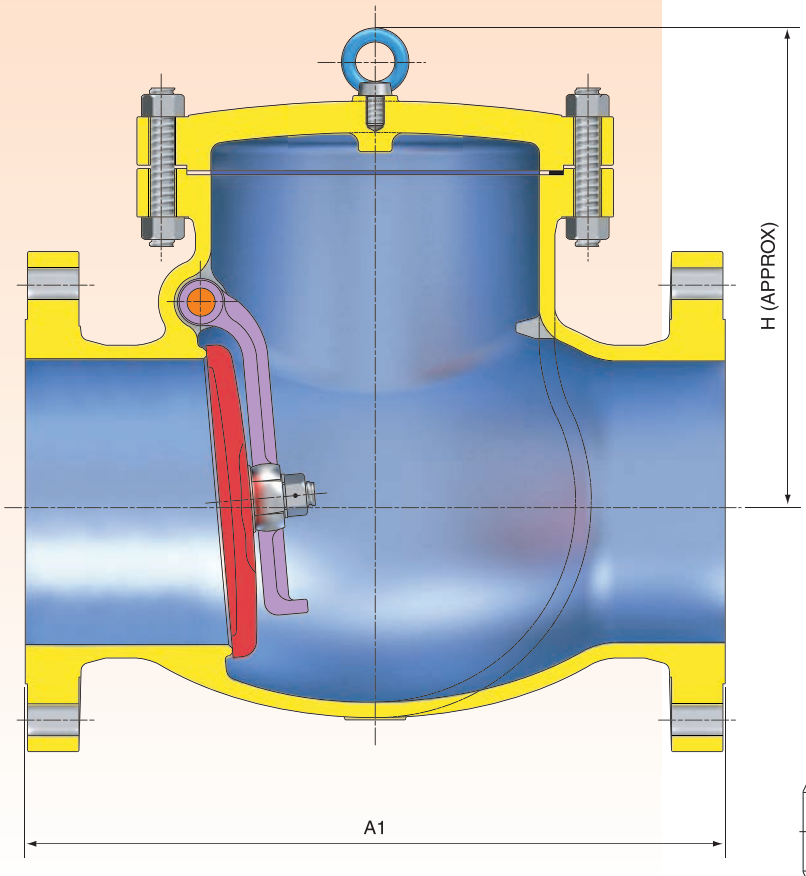


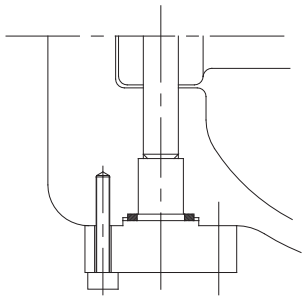
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24	28	30	36
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750	900
A1 & A3		in	10.5	11.5	12.5	14.0	17.5	21.0	24.5	28.0	33.0	34.0	38.5	40.0	53.0	59.0	62.8	82.0
		mm	267	292	318	356	444	533	622	711	838	864	978	1016	1346	1499	1594	2083
A2		in	11.1	12.1	13.1	14.6	18.1	21.6	25.1	28.6	33.6	34.6	39.1	40.7	53.9	60.0	63.7	83.1
		mm	283	308	333	371	460	549	638	727	854	880	994	1035	1368	1524	1619	2111
H		in	6.4	7.1	7.8	8.7	13.1	15.0	18.8	21.1	22.8	27.4	31.4	30.5	40.4	45.2	50.0	46.1
		mm	163	180	197	220	332	380	477	535	580	695	797	775	1025	1149	1270	1171
WEIGHT	RF	lb	52.9	81.6	99.2	149.9	302.0	485.0	595.2	1091.3	1499.1	2094.4	2645.5	3306.9	4850.1	6172.9	7495.6	11022.9
		kg	24	37	45	68	137	220	270	495	680	950	1200	1500	2200	2800	3400	5000
	BW	lb	46.3	66.1	77.2	112.4	242.5	401.2	463.0	925.9	1157.4	1763.7	2202.4	2689.6	4060.9	5291.0	6503.5	9063.1
		kg	21	30	35	51	110	182	210	420	525	800	999	1220	1842	2400	2950	4111

SWING CHECK VALVES

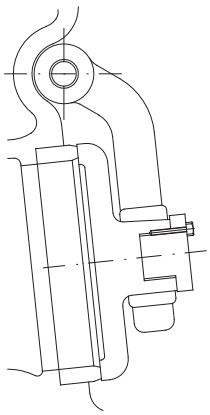
BOLTED COVER

SW/CH CLASS 600

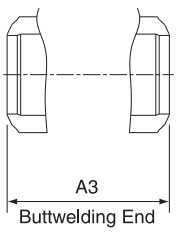




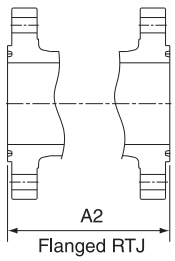
16″ & Lager



18″ & Lager



Buttwelding End

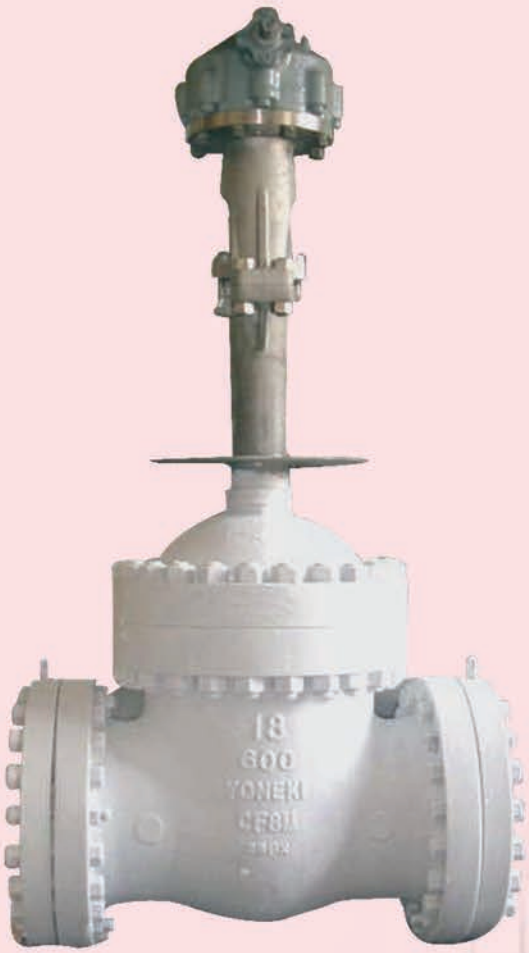


Flanged RTJ

VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24	28	30
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750
A1 & A3		in	11.5	13.0	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0	63.0	65.0
		mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1600	1651
A2		in	11.6	13.1	14.1	17.1	22.1	26.1	31.1	33.1	35.1	39.1	43.1	47.2	55.4	63.5	65.5
		mm	295	333	359	435	562	664	791	841	892	994	1095	1200	1407	1613	1664
H		in	8.3	8.6	10.5	12.2	15.5	21.2	24.6	24.4	26.8	32.0	37.8	40.5	47.3	54.6	51.7
		mm	210	219	267	310	393	538	625	620	680	812	960	1029	1202	1388	1313
WEIGHT	RF	lb	88.2	121.3	158.7	253.5	551.1	925.9	1349.2	1785.7	1984.1	2971.8	4448.9	5264.6	7195.8	9038.8	11022.9
		kg	40	55	72	115	250	420	612	810	900	1348	2018	2388	3264	4100	5000
	BW	lb	83.8	99.2	138.9	176.4	451.9	762.8	1078.0	1472.7	1940.0	2464.7	3798.5	4437.8	6011.9	7716.1	9261.5
		kg	38	45	63	80	205	346	489	668	880	1118	1723	2013	2727	3500	4201

CRYOGENIC VALVES

BOLTED BONNET



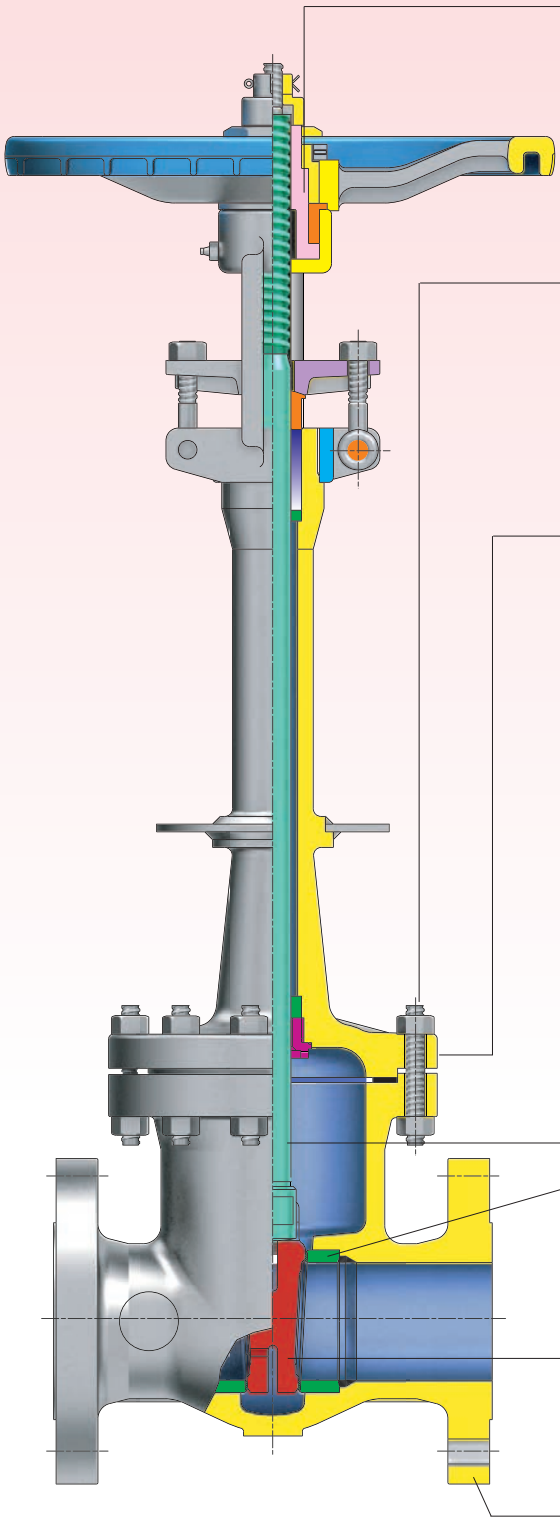




STAINLESS STEEL

BOLTED BONNET

CRYOGENIC GATE VALVES



YOKE SLEEVE

The upper portion of the Yoke Sleeve is hexagonally tapered to fix the handwheel. The standard material of the Yoke Sleeve is Nodular Ni-resist D2 with over 1150℃(2100℉) dissolution point in accordance with API Std. specifications.

BOLTING

The body-bonnet bolts are manufactured in accordance with API Std. 600 specifications. The nuts also strictly conform with ANSI B 1.1 Strain-hardened austentic stainless steel.

BONNET

Austenitic stainless steel used for bodies and bonnets offer excellent impact strength, minimize heat loss and protect against corrosion.

STEM

The heat treated stem delivers adequate mechanical properties as well as excellent surface hardness. Further, opening/shutting friction is minimized by accurate machining and lapping.

SEAT RING

Stellite 6 for all medium and high pressure application prevents seizing and galling.

FLEXIBLE WEDGE

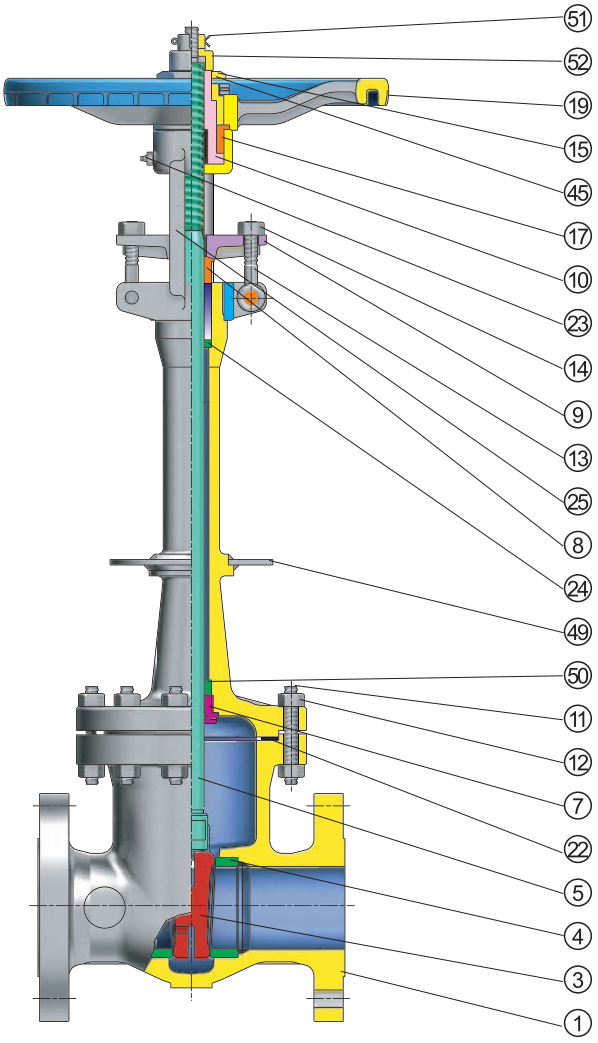
The wedge seating surfaces have been accurately machined, grind and lapped to a mirror finish to prevent leakage and eliminate galling. Stellite 6 for all medium and high pressure application prevents selzing and galling.

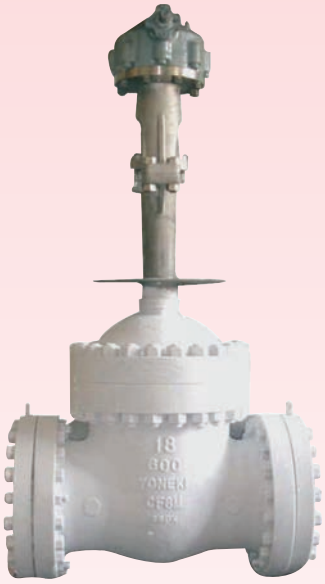
BODY

TAustenitic stainless steel used for bodies and bonnets offer excellent impact strength, minimize heat loss and protect against corrosion.

STAINLESS STEEL
BOLTED BONNET

CRYOGENIC GATE VALVES





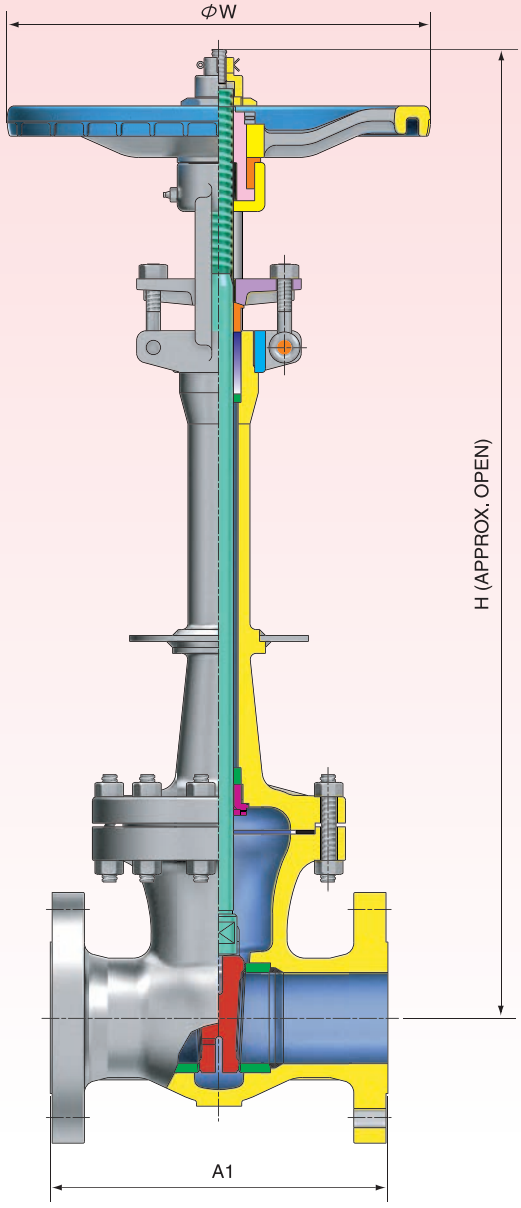
NO	NAME OF PART	ASTM SPECIFICATION
15	HANDLE NUT	AISI 304
17	SLEEVE GLAND	AISI 304
19	HANDWHEEL	A395
21	PACKING	COMMERCIAL
22	GASKET	COMMERCIAL
23	GREASE NIPPLE	STEEL
29	BEARING	COMMERCIAL
45	WASHER	AISI 304
49	INSULATION PLATE	AISI 304
50	STEM BEARING	COMMERCIAL
51	COTTER PIN	AISI 304
52	LIFT STOPPER	AISI 304

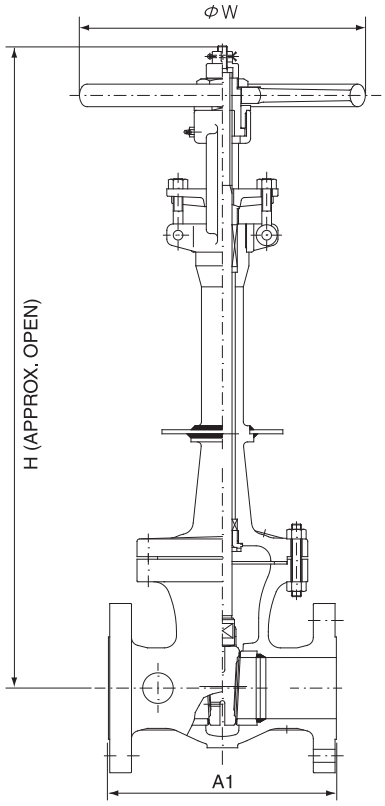
NO	NAME OF PART	ASTM SPECIFICATION			
		HIGH TEMPERATURE SERVICE			
1	BODY	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
2	BONNET	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
3	DISC	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
4	BODY SEAT RING	A240-304	A240-316	A240-304L	A240-316L
5	STEM	A276-304	A276-316	A276-304L	A276-316L
7	BONNET BUSH	A276-304	A276-316	A276-304L	A276-316L
8	PACKING GLAND	A276-304			
9	GLAND FLANGE	A361-CF8			
10	YOKE SLEEVE	A439-D2			
11	BONNET BOLT	A320-B8	A320-B8	A320-B8	A320-B8
12	BONNET NUT	A194-8	A194-8	A194-8	A193-8
13	GLAND BOLT	A193-B8			
14	GLAND NUT	A194-8			
20	HINGE PIN	A276-304			
24	PACKING RING	A276-304	A276-316	A276-304L	A276-316L
25	YOKE	A351-CF8			
27	YOKE BOLT	A193-B7			
28	YOKE NUT	A194-2H			

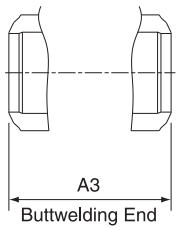
CRYOGENIC GATE VALVES

BOLTED BONNET

GT CLASS 150





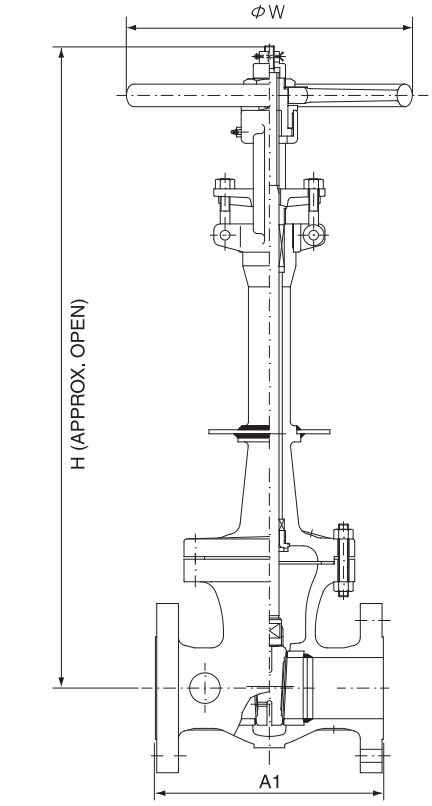


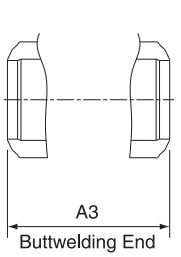
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18
		mm	50	65	80	100	150	200	250	300	350	400	450
A1		in	7.0	7.5	8.0	9.0	10.5	11.5	13.0	14.0	15.0	16.0	17.0
		mm	178	190	203	229	267	292	330	356	381	406	432
A3		in	8.5	9.5	11.1	12.0	15.9	16.5	18.0	19.8	22.5	24.0	26.0
		mm	216	241	283	305	403	419	457	502	572	610	660
H		in	29.4	32.5	34.3	37.5	44.4	61.2	67.9	74.3	88.0	97.2	105.0
		mm	748	826	870	953	1127	1554	1725	1887	2234	2469	2666
W		in	9.8	9.8	11.0	11.8	15.7	17.7	23.6	27.2	28.0	28.0	31.5
		mm	250	250	280	300	400	450	600	690	710	710	800
WEIGHT	RF	lb	79.4	92.6	105.8	158.7	291.0	432.1	610.7	903.9	1106.7	1430.8	1977.5
		kg	36	42	48	72	132	196	277	410	502	649	897
	BW	lb	66.1	79.4	88.2	132.3	264.6	379.2	551.2	837.7	1036.2	1344.8	1889.3
		kg	30	36	40	60	120	172	250	380	470	610	857

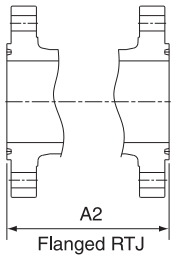
CRYOGENIC GATE VALVES

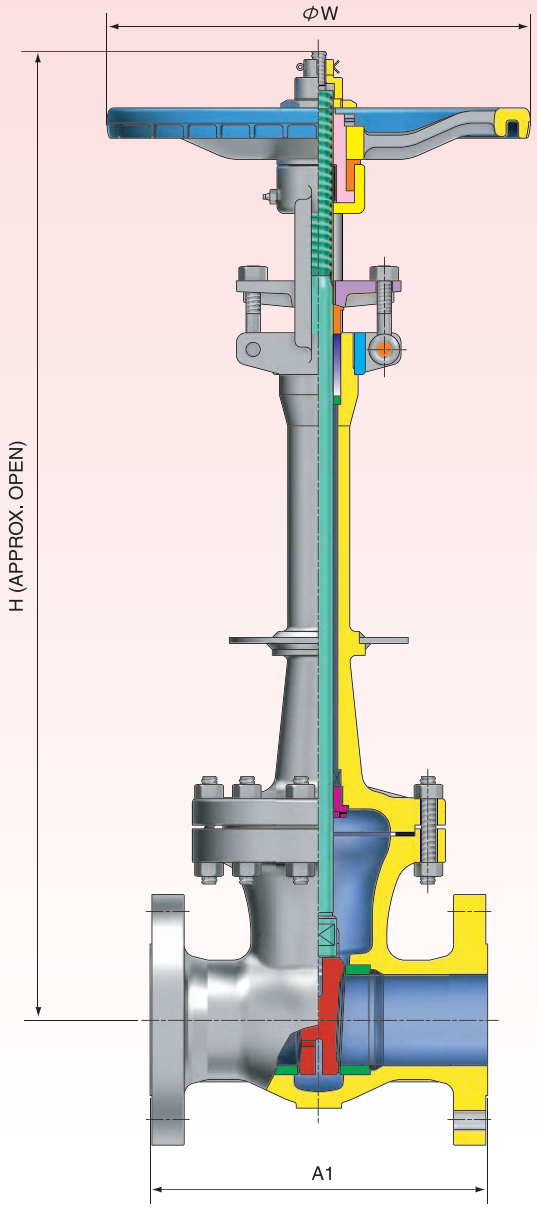
BOLTED BONNET

GT CLASS 300







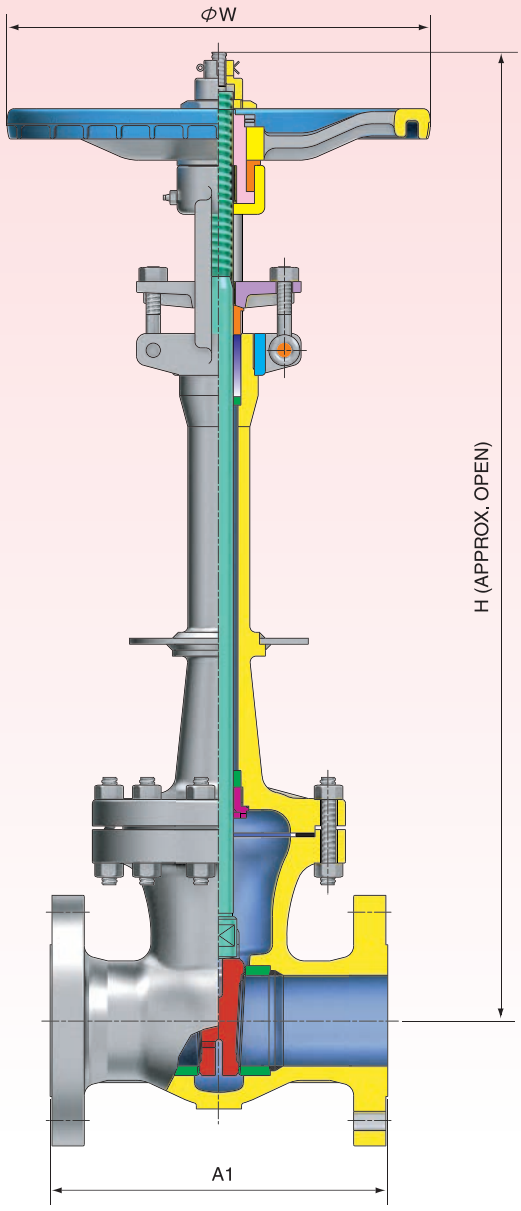


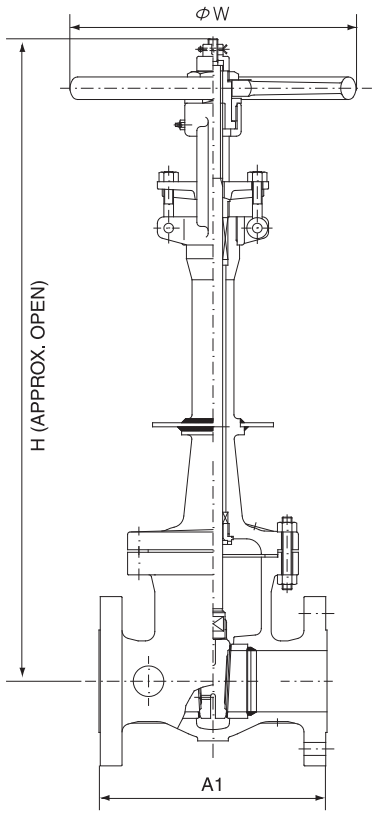
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18
	mm	50	65	80	100	150	200	250	300	350	400	450
A1 & A3	in	8.5	9.5	11.1	12.0	15.9	16.5	18.0	19.8	30.0	33.0	36.0
	mm	216	241	283	305	403	419	457	502	762	838	914
A2	in	9.1	10.1	11.7	12.6	16.5	17.1	18.6	20.4	30.6	33.6	36.6
	mm	232	257	298	321	419	435	473	518	778	854	930
H	in	30.0	33.5	34.9	38.1	49.5	60.0	68.0	82.1	89.8	101.5	109.5
	mm	763	850	886	969	1257	1524	1726	2085	2281	2579	2782
W	in	11.8	9.8	14.0	15.7	19.7	27.2	27.2	28.0	35.4	35.4	35.4
	mm	300	250	355	400	500	690	690	710	900	900	900
WEIGHT RF	lb	88.2	110.2	138.9	205.0	377.0	637.1	943.6	1283.1	1763.7	2578.0	3309.1
	kg	40	50	63	93	171	289	428	582	800	1251	1501
WEIGHT BW	lb	77.2	94.8	114.6	180.8	352.7	595.2	884.0	1239.0	1717.4	2425.1	3108.5
	kg	35	43	52	82	160	270	401	562	779	1100	1410

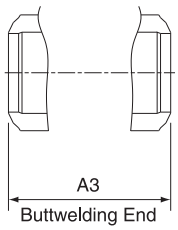
CRYOGENIC GATE VALVES

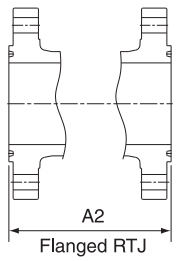
BOLTED BONNET

GT CLASS 600









VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18
		mm	50	65	80	100	150	200	250	300	350	400	450
A1 & A3		in	11.5	13.0	14.0	17.0	21.9	26.0	31.0	33.0	35.0	39.0	43.0
		mm	292	33.0	356	432	556	660	787	838	889	991	1092
A2		in	11.6	13.1	14.1	17.1	22.1	26.1	31.1	33.1	35.1	39.1	43.1
		mm	295	333	359	435	562	663	790	841	892	994	1095
H		in	29.2	35.2	36.4	39.9	53.5	68.2	79.5				
		mm	742	895	924	1014	1359	1733	2020				
W		in	9.8	9.8	11.0	15.7	23.6	24.8	31.5				
		mm	250	250	280	400	600	630	800				
WEIGHT	RF	lb	116.8	154.3	180.8	319.7	674.6	1113.3	1851.9				
		kg	53	70	82	145	306	505	840				
	BW	lb	99.2	136.7	154.3	286.6	595.2	1069.2	1818.8				
		kg	45	62	70	130	270	485	825				

STAINLESS STEEL

BOLTED BONNET

CRYOGENIC GLOBE VALVES

YOKE SLEEVE

The standard material of the Yoke Sleeve is Nodular Ni-resist D2 with over a 1150℃(2100°F) dissolution point in conformity with API Std. Specifications.

BOLTING

The body-bonnet bolts are manufactured in accordance with API Std. 600 specifications. The nuts also strictly conform with ANSI B1.1 Strain-hardened austentic stainless steel.

BONNET

Austenitic stainless steel used for bodies and bonnets ofter excellent impact strength, minimize heat loss and protect against corrosion.

STEM

The heat treated stem delivers adequate mechanical properties as well as excellent surface hardness. Further, opening shutting friction is minimized by accurate machining and lapping.

DISC

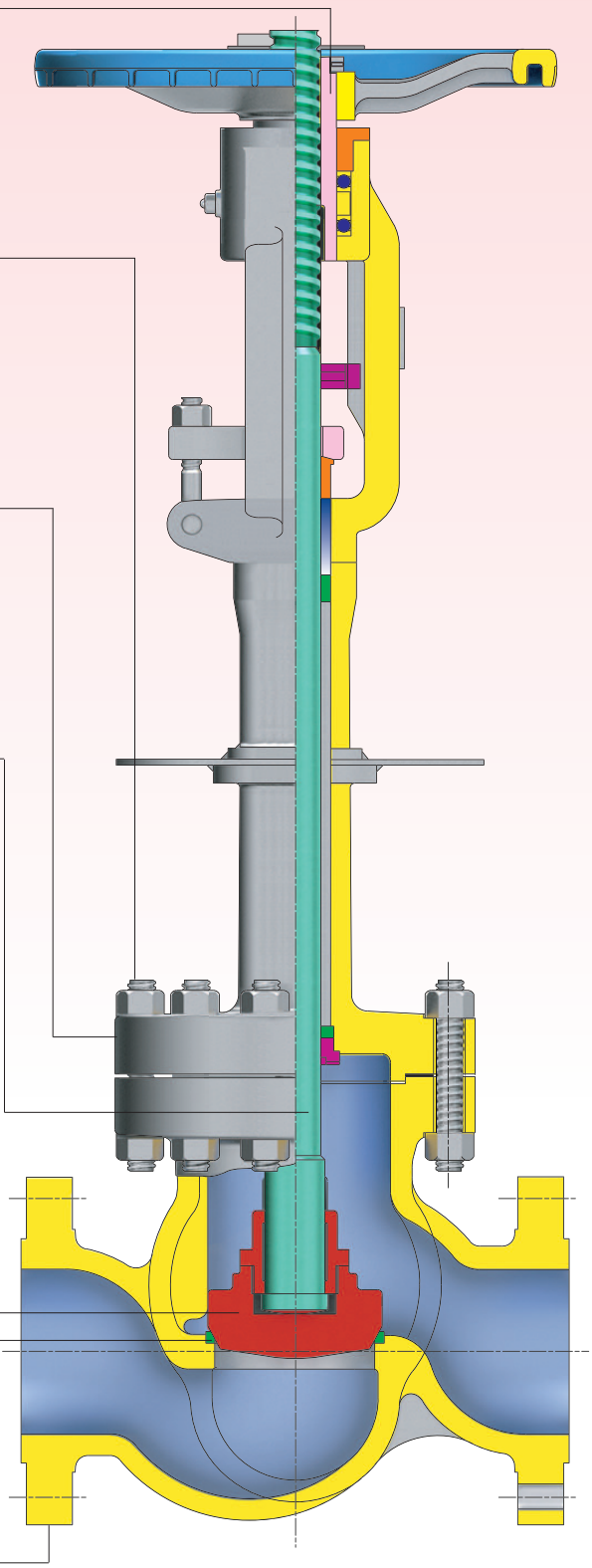
The disc of our globe valves is a loose disc and can freely revolve around the stem. This prevents friction and galling with the seating surface when the valve is shut. The disc is furnished with a conical seating surface that has been ground and lapped to mirror finish. Stellite 6 for all medium and high pressure application prevents seizing and galling.

SEAT RING

Stellite 6 for all medium and high pressure application prevents seizing and galling.

BODY

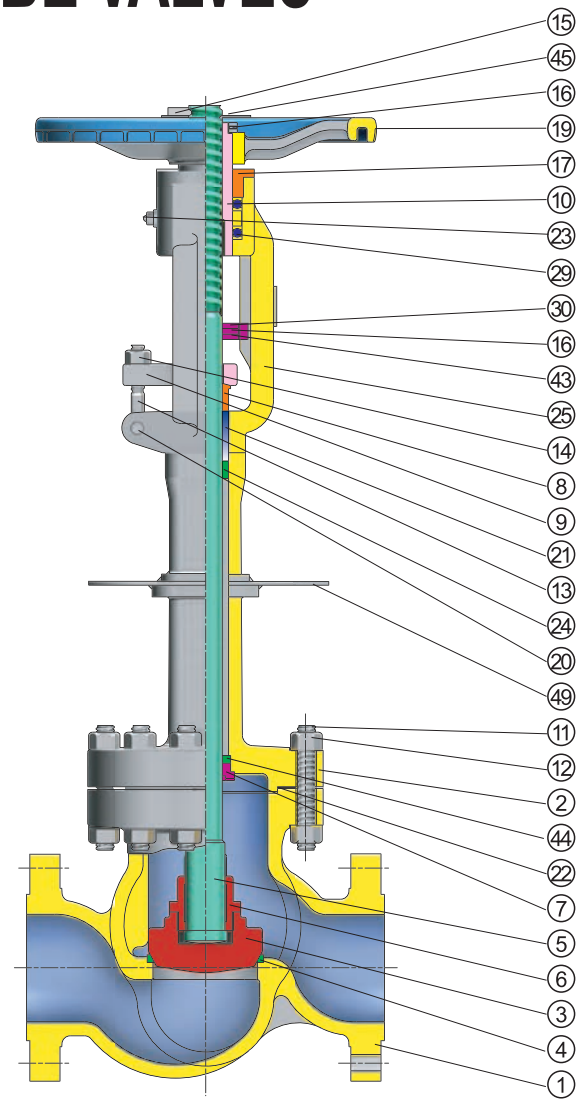
Austenitic stainless steel used for bodies and bonnets offer excellent impact strength, minimize heat loss and pretect against corrosion



STAINLESS STEEL

BOLTED BONNET

CRYOGENIC GLOBE VALVES



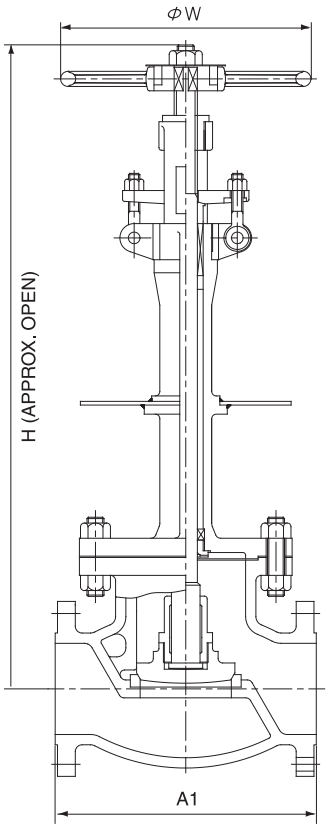
NO	NAME OF PART	ASTM SPECIFICATION
15	HANDLE NUT	AISI 304
16	SET SCREW	STEEL
17	SLEEVE GLAND	AISI 304
19	HANDWHEEL	A 395
21	PACKING	COMMERCAIL
22	GASKET	COMMERCAIL
23	GREASE NIPPLE	STEEL
29	BEARING	COMMERCAIL
30	STOPPER	A283-D
43	KEY	CARBON STEEL
44	STEM BEARING	COMMERCAIL
45	WASHER	AISI 304
49	INSULATION PLATE	AISI 304

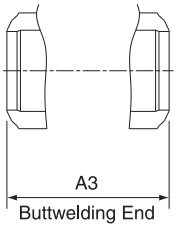
NO	NAME OF PART	ASTM SPECIFICATION			
		HIGH TEMPERATURE SERVICE			
1	BODY	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
2	BONNET	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
3	DISC	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
4	BODY SEAT RING	A240-304	A240-316	A240-304L	A240-316L
5	STEM	A276-304	A276-316	A276-304L	A276-316L
6	DISC GRAND	A276-304	A276-316	A276-304L	A276-316L
7	BONNET BUSH	A276-304	A276-316	A276-304L	A276-316L
8	PACKING GLAND	A276-304			
9	GLAND FLANGE	A351-CF8			
10	YOKE SLEEVE	A439-D2			
11	BONNET BOLT	A320-B8	A320-B8	A320-B8	A320-B8
12	BONNET NUT	A194-8	A194-8	A194-8	A193-8
13	GLAND BOLT	A193-B8			
14	GLAND NUT	A194-8			
20	HINGE PIN	A276-304			
24	PACKING RING	A276-304	A276-316	A276-304L	A276-316L
25	YOKE	A351-CF8	A351-CF8	A351-CF8	A351-CF8

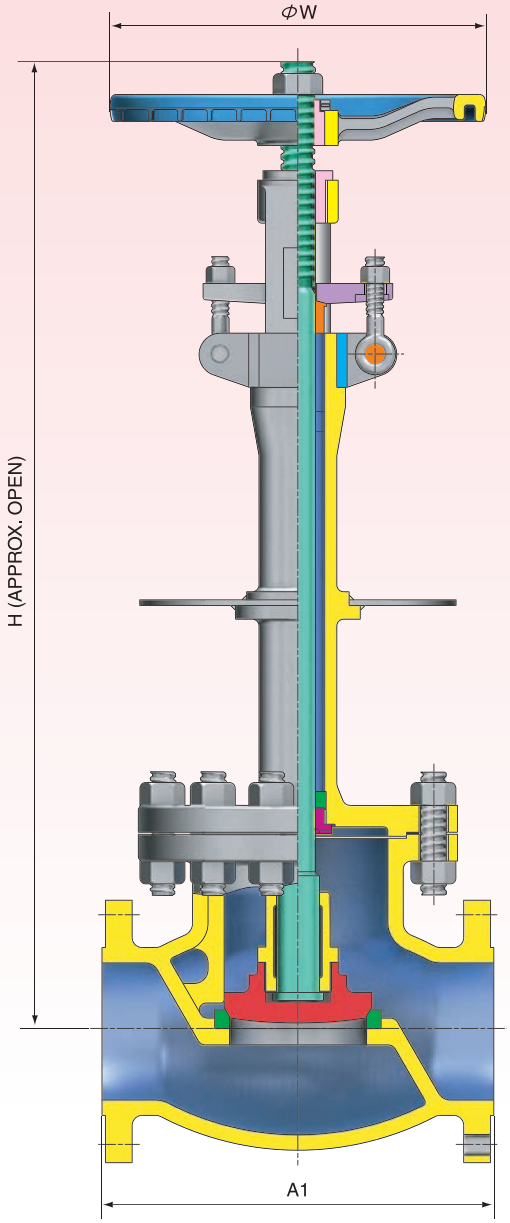
CRYOGENIC GLOBE VALVES

BOLTED BONNET

GL CLASS 150





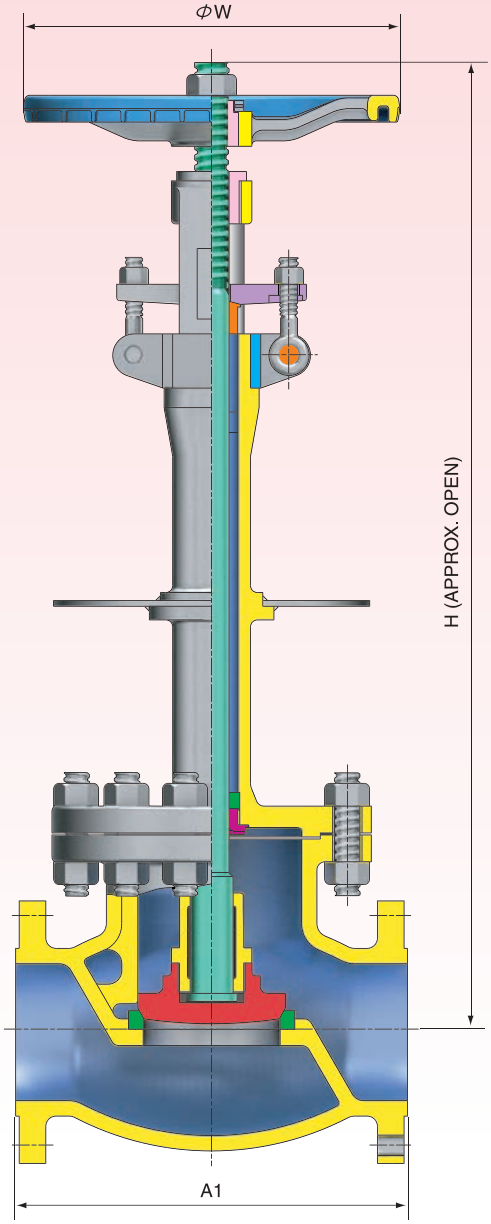


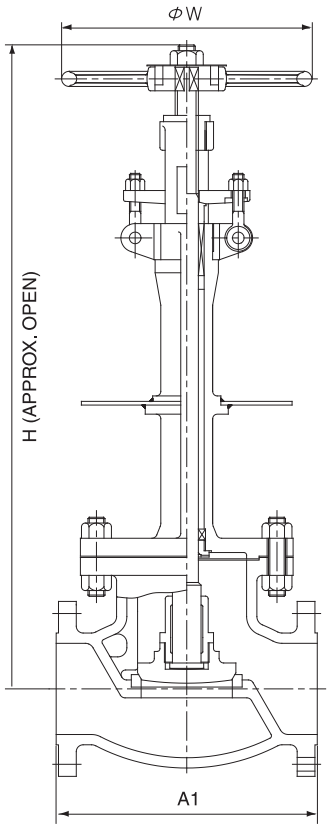
VALVE SIZE		in	2	2.5	3	4	6	8
		mm	50	65	80	100	150	200
A1 & A3		in	8.0	8.5	9.5	11.5	16.0	19.5
		mm	203	216	241	292	406	495
H		in	31.0	30.6	32.8	34.0	38.3	43.7
		mm	788	776	833	864.5	974	1110
W		in	8.8	9.8	14.0	15.7	17.7	22.0
		mm	224	250	355	400	450	560
WEIGHT	RF	lb	75.0	99.2	119.0	185.2	315.3	429.9
		kg	34	45	54	84	143	195
	BW	lb	63.9	83.8	99.2	158.7	288.8	385.8
		kg	29	38	45	72	131	175

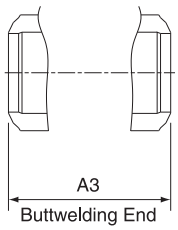
CRYOGENIC GLOBE VALVES

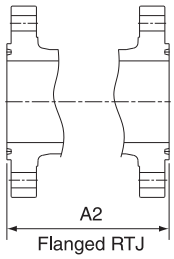
BOLTED BONNET

GL CLASS 300







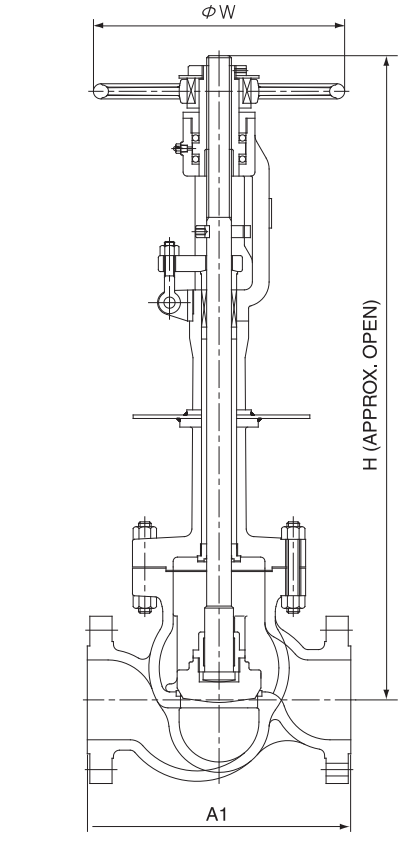


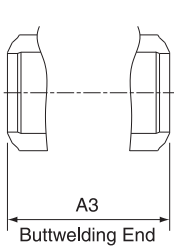
VALVE SIZE		in	2	2.5	3	4	6	8
		mm	50	65	80	100	150	200
A1 & A3		in	10.5	11.5	12.5	14.0	17.5	22.0
		mm	267	292	318	356	444	559
A2		in	11.1	12.1	13.1	14.6	18.1	22.6
		mm	283	308	333	371	460	575
H		in	27.2	28.3	29.8	36.7	43.0	47.2
		mm	690	720	756	932	1092	1200
W		in	9.8	11.0	14.0	23.6	22.0	28.0
		mm	250	280	355	300	560	710
WEIGHT	RF	lb	83.8	99.2	141.1	410.1	449.7	551.2
		kg	38	45	64	186	204	250
	BW	lb	66.1	81.6	121.3	374.8	407.9	496.0
		kg	30	37	55	170	185	225

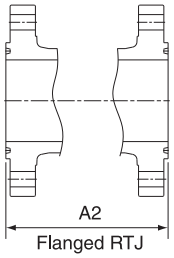
CRYOGENIC GLOBE VALVES

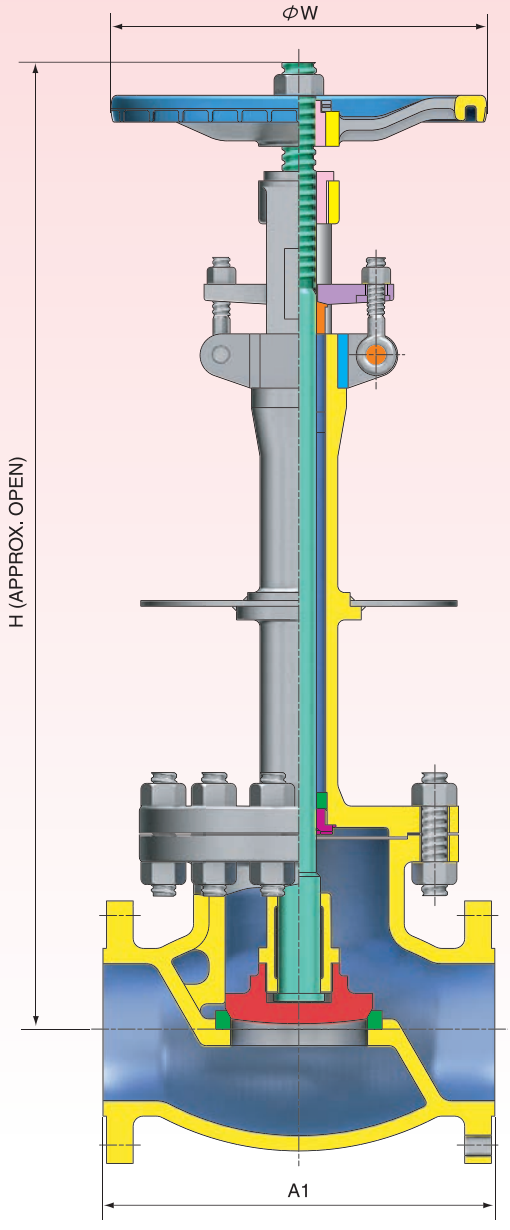
BOLTED BONNET

GL CLASS 600





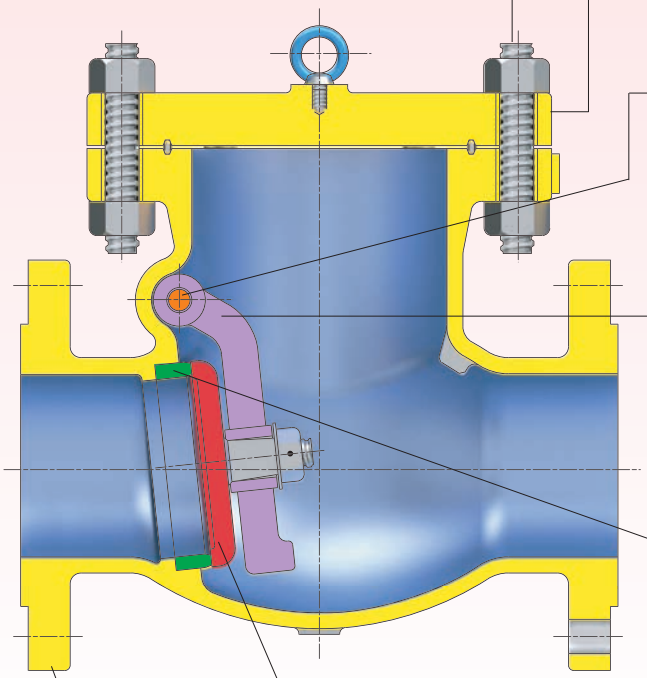




VALVE SIZE	in	2	2.5	3	4	6	8
	mm	50	65	80	100	150	200
A1 & A3	in	11.5	13.0	14.0	17.0	22.0	26.0
	mm	292	330	356	432	559	660
A2	in	11.6	13.1	14.1	17.1	22.1	26.1
	mm	295	333	359	435	562	664
H	in	27.8	31.6	31.7	34.2	41.7	44.3
	mm	707	802	805	868	1059	1125
W	in	11.0	14.0	17.7	22.0	28.0	31.5
	mm	280	355	450	560	710	800
WEIGHT RF	lb	154.3	176.4	198.4	339.5	749.6	1433
	kg	70	80	90	154	340	650
WEIGHT BW	lb	121.3	143.3	172.0	297.6	705.5	1254
	kg	55	65	78	135	320	570

STAINLESS STEEL
BOLTED COVER

CRYOGENIC SWING CHECK VALVES



BOLTING
The body-cover bolting conforms with ANSI B.1.1
The nuts are manufactured to conform with ANSI B18.2.2
Strain-hardened austentic stainless steel

COVER
Austenitic stainless steel used for bodies and bonnets offer excellent impact strength, minimize heat loss and protect against corrosion.

HINGE PIN
The hinge pin is insrted into the valve and held in position by plug.
The larger size valves are provided with bolted flanges instead of plugs.

ARM
The arm material is identical to the body.
Hinge bushing is provided in the larger valve sizes to minimize friction and eliminate seizing.

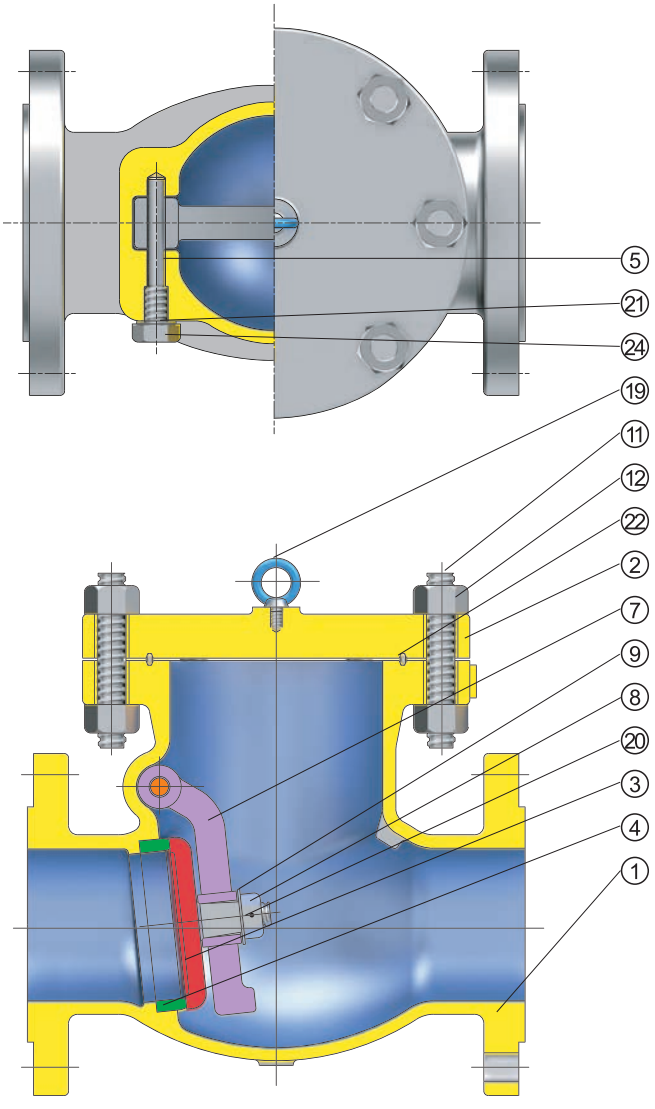
SEAT RING
The bottom seated type seat ring is screwed into the body.
The seating surface is finished by lapping.
The forged seat ring is heat-treated to deliver the best mechanical properties and required hardness.

DISC
The disc has a sufficient seating surface area which is ground and lapped to a mirror finish.
It is of one-piece construction and is heat treated to deliver the required mechanical properties and hardness.
Stellite 6 for all medium and high pressure application prevents seizing and galling

BODY
Austenitic stainless steel used for bodies and bonnets offer excellent impact strength, minimize heat loss and protect against corrosion

STAINLESS STEEL
BOLTED COVER

SW/CH CRYOGENIC VALVES





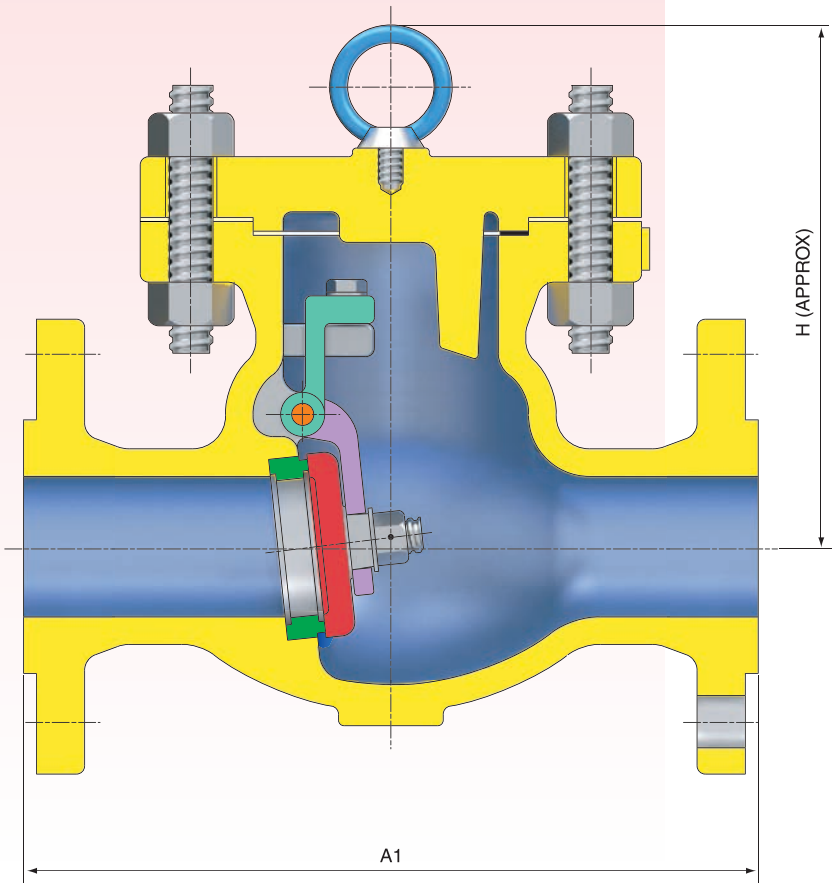
NO	NAME OF PART	ASTM SPECIFICATION
8	DISC NUT	A194-8
9	DISC WASHER	A240-304
15	EVE BOLT	A105
20	SPRIT PIN	AISI 304
21	PLUG GASKET	COMMERCIAL
22	GASKET	COMMERCIAL
24	PLUG	A105

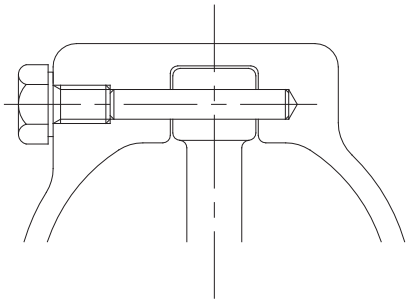
NO	NAME OF PART	ASTM SPECIFICATION			
		STAINLESS STEEL			
1	BODY	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
2	COVER	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
3	DISC	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
4	BODY SEAT RING	A240-304	A240-316	A240-304L	A240-316L
5	HINGE PIN	A276-304	A276-316	A276-304L	A276-316L
7	ARM	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
11	BONNET BOLT	A320-B8	A320-B8	A320-B8	A320-B8
12	BONNET NUT	A194-8	A194-8	A194-8	A193-8

CRYOGENIC SW/CH VALVES

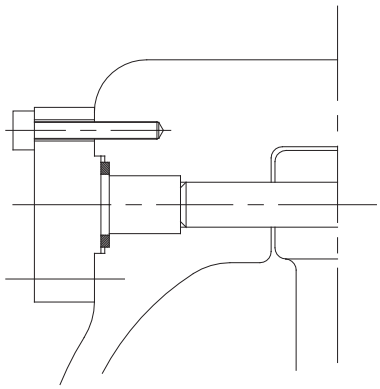
BOLTED COVER

SW/CH CLASS 150

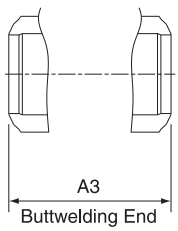




14″ Thru 18″



20″ & Lager

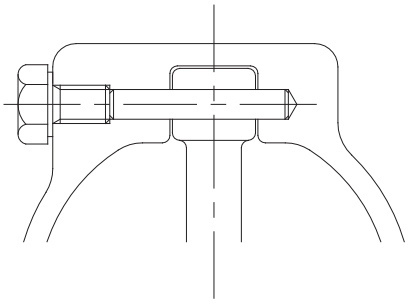


VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900
A1 & A3		in	8.0	8.5	9.5	11.5	14.0	19.5	24.5	27.5	31.0	34.0	38.5	38.5	51.0	51.0	57.0	60.0	60.0	77.0
		mm	203	216	241	292	356	495	622	698	787	864	978	978	1295	1295	1448	1524	1524	1956
H		in	5.8	6.4	6.9	8.0	11.4	13.8	16.9	19.6	23.9	25.6	30.7	25.5	31.5	33.5	40.0	35.0	37.0	53.1
		mm	147	163	176	204	290	350	428	499	606	650	781	647	800	852	1017	888	941	1349
WEIGHT	RF	lb	35.3	48.5	66.1	97.0	172.0	260.1	520.3	758.4	930.3	1397.7	1798.9	2164.9	3924.2	3637.6	3825.0	4647.3	5291.0	7385.4
		kg	16	22	30	44	78	118	236	344	422	634	816	982	1780	1650	1735	2108	2400	3350
	BW	lb	28.7	33.1	46.3	57.3	136.7	200.6	449.7	645.9	661.4	1276.5	1547.6	1878.3	3584.7	3306.9	3223.1	4426.8	4960.3	6944.5
		kg	13	15	21	26	62	91	204	293	300	579	702	852	1626	1500	1462	2008	2250	3150

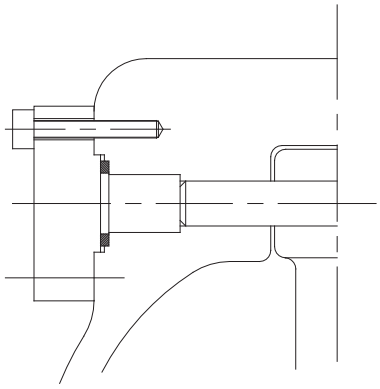
CRYOGENIC SW/CH VALVES

BOLTED COVER

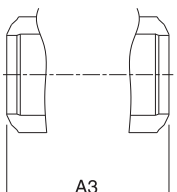
SW/CH CLASS 300



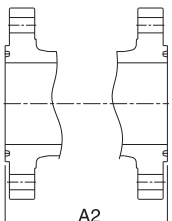
14″ Thru 16″



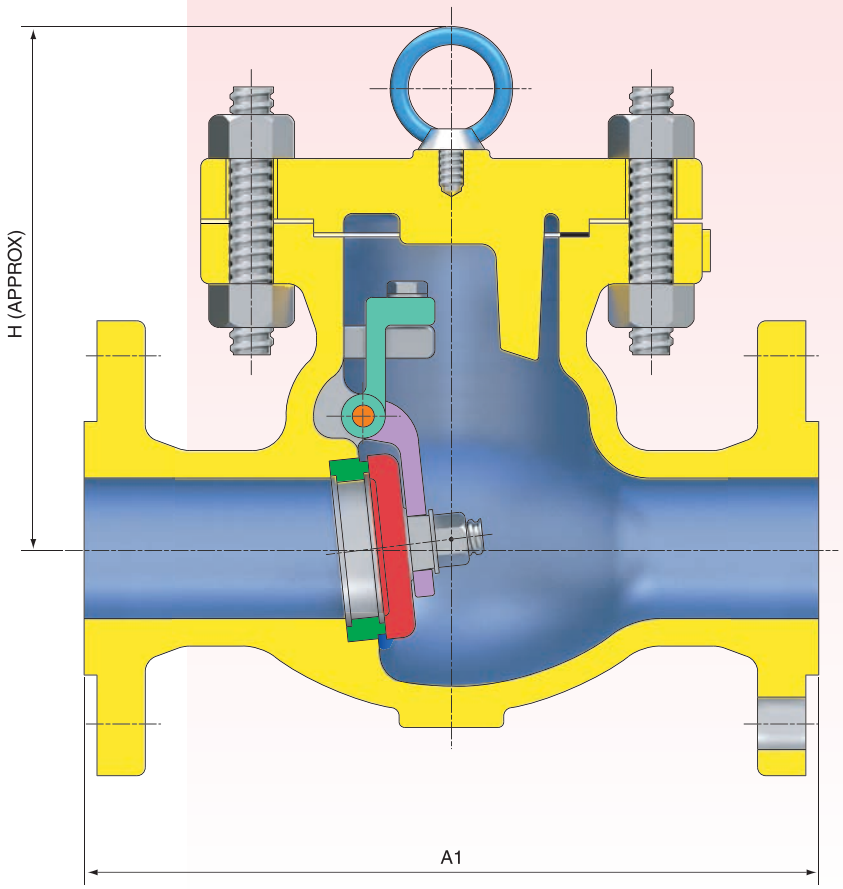
18″ & Lager



Buttwelding End



Flanged RTJ

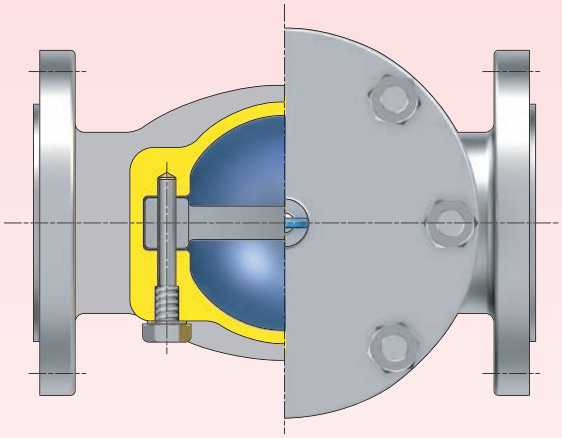


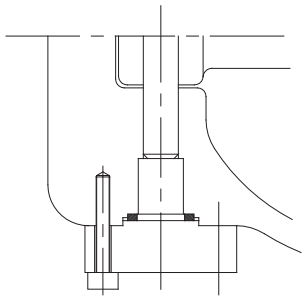
VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24	28	30	36
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750	900
A1 & A3		in	10.5	11.5	12.5	14.0	17.5	21.0	24.5	28.0	33.0	34.0	38.5	40.0	53.0	59.0	62.8	82.0
		mm	267	292	318	356	444	533	622	711	838	864	978	1016	1346	1499	1594	2083
A2		in	11.1	12.1	13.1	14.6	18.1	21.6	25.1	28.6	33.6	34.6	39.1	40.7	53.9	60.0	63.7	83.1
		mm	283	308	333	371	460	549	638	727	854	880	994	1035	1368	1524	1619	2111
H		in	6.4	7.1	7.8	8.7	13.1	15.0	18.8	21.1	22.8	27.4	31.4	30.5	40.4	45.2	50.0	46.1
		mm	163	180	197	220	332	380	477	535	580	695	797	775	1025	1149	1270	1171
WEIGHT	RF	lb	52.9	81.6	99.2	149.9	302.0	485.0	595.2	1091.3	1499.1	2094.4	2645.5	3306.9	4850.1	6172.9	7495.6	11022.9
		kg	24	37	45	68	137	220	270	495	680	950	1200	1500	2200	2800	3400	5000
	BW	lb	46.3	66.1	77.2	112.4	242.5	401.2	463.0	925.9	1157.4	1763.7	2202.4	2689.6	4060.9	5291.0	6503.5	9063.1
		kg	21	30	35	51	110	182	210	420	525	800	999	1220	1842	2400	2950	4111

CRYOGENIC SW/CH VALVES

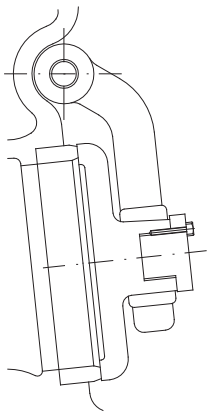
BOLTED COVER

SW/CH CLASS 600

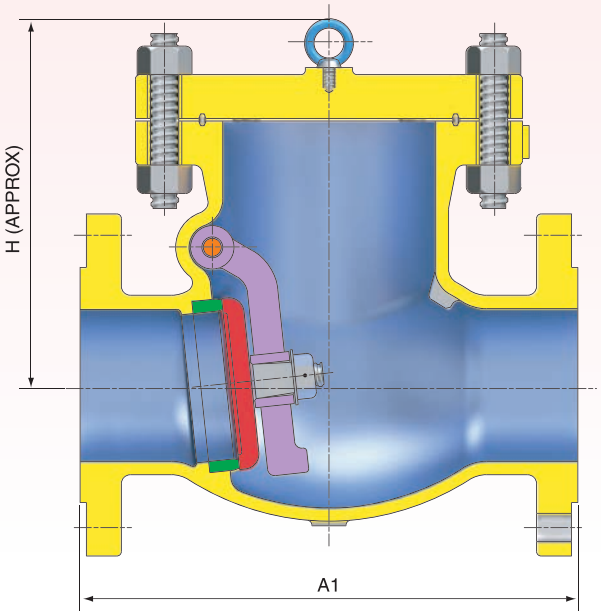


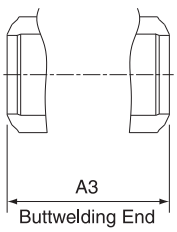


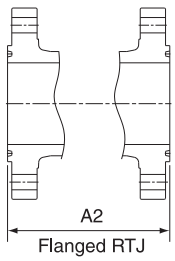
16″ & Lager



18″ & Lager



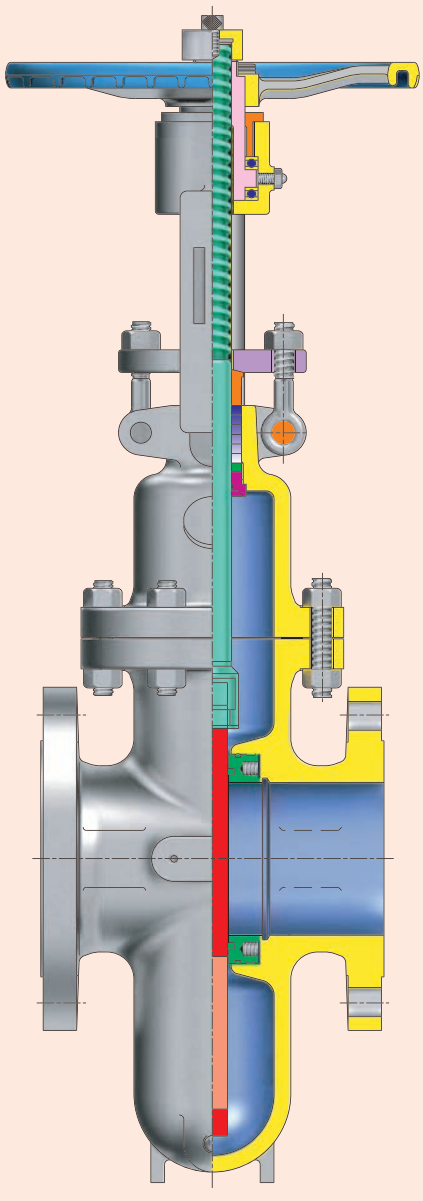




VALVE SIZE		in	2	2.5	3	4	6	8	10	12	14	16	18	20	24	28	30
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750
A1 & A3		in	11.5	13.0	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0	63.0	65.0
		mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1600	1651
A2		in	11.6	13.1	14.1	17.1	22.1	26.1	31.1	33.1	35.1	39.1	43.1	47.2	55.4	63.5	65.5
		mm	295	333	359	435	562	664	791	841	892	994	1095	1200	1407	1613	1664
H		in	8.3	8.6	10.5	12.2	15.5	21.2	24.6	24.4	26.8	32.0	37.8	40.5	47.3	54.6	51.7
		mm	210	219	267	310	393	538	625	620	680	812	960	1029	1202	1388	1313
WEIGHT	RF	lb	88.2	121.3	158.7	253.5	551.1	925.9	1349.2	1785.7	1984.1	2971.8	4448.9	5264.6	7195.8	9038.8	11022.9
		kg	40	55	72	115	250	420	612	810	900	1348	2018	2388	3264	4100	5000
	BW	lb	83.8	99.2	138.9	176.4	451.9	762.8	1078.0	1472.7	1940.0	2464.7	3798.5	4437.8	6011.9	7716.1	9261.5
		kg	38	45	63	80	205	346	489	668	880	1118	1723	2013	2727	3500	4201

THROUGH CONDUIT GATE VALVES

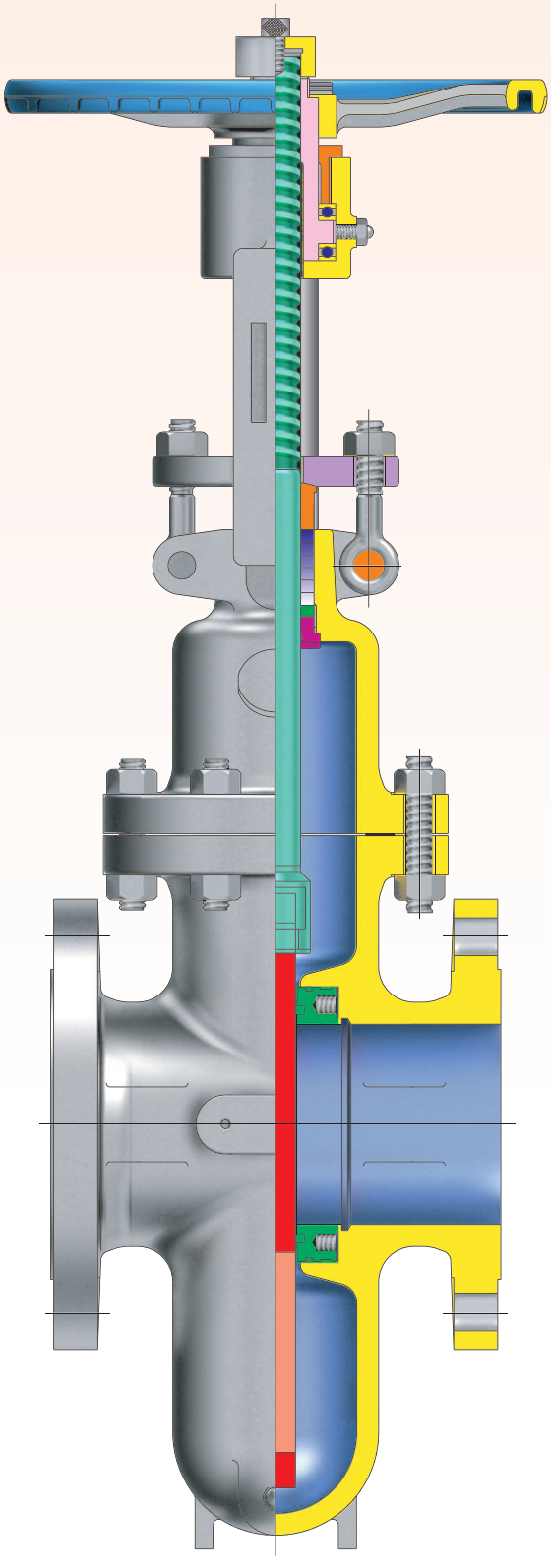
BOLTED BONNET



CAST STEEL

BOLTED BONNET

THROUGH CONDUIT GATE VALVES



CONFORMITY TO API STANDARDS

KJS Through-Conduit Gate Valves, uniquely designed by our advanced know-how and manufactured on a modern production line featuring rigid quality control, fully conforming to API 6D requirements.
They are classified into 150LB, 300LB, and 600LB Series.

BODY STRUCTURE

The entire valve body is made of cast steel, whereby a smooth internal construction is ensured. Moreover, stress concentration to four corners, which is a weak point of welding fabricated T-C valves of other manufactures, has been eliminated.
Because of this, KJS valves are free from body deformation due to external force which tends to take place on a pipeline valve, and thus free from any resultant malfunctions.

SEALING

The disc is single slab type configuration. It also adopts a foating seat construction which not only provides block-and-bleed but also maintains perfect sealing, even under valve body deformation due to extreme thermal warping along the entire pipeline.
The seat ring contains a specially designed “0” ring which ensures, through self-tightening, perfect sealing even under extremely low pressure or negative pressure in the pipeline.

TEFLON SEAT

To the contact surface of the seat, Teflon Elastomer rings are utilized in order to insure dependable and long term sealing over a wide range of temperature and pressure variations.
Because no direct metal-to-metal abrasion takes place when the valve opened and shut, neither abrasion nor seizure will result which ensures a longer valve service life.
Further, a grease injector is available at an option. This auxiliary device can be used as an emergency measure to apply sealing grease quickly and evenly to the seat for lubrication as well as to stop leakage.

BLOCK AND BLEED

The valve body’s internal pressure may increase extraordinarily due to the thermally-effected cubic expansion of liquid. If this should occur, the special elastic seal mechanism automatically discharges the excess pressure to the primary side of the line. Therefore, there automatic bleeder into this valve.

STEM SEALING MECHANISM

Stem sealing is achieved by using V-shape synthetic rubber packing. This type of packing opens its own lips to the necessary extent according to varying pressure which comes form underneath. In the intermediate space between these packing groups a lantern ring is provided for easier grease charging which promotes smoother movement and highly reliable leakage prevention.

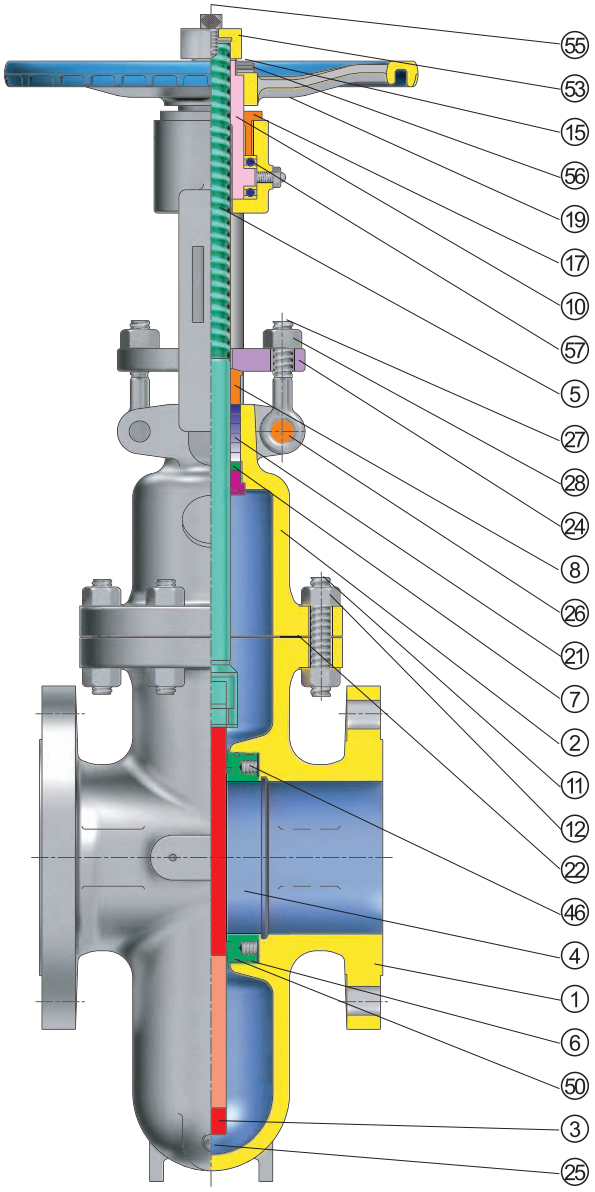
EASY PART REPLACEMENT

All valve parts including the seat ring can be easily replaced without dismounting the valve from the pipeline. In particular, the operational parts and stem packing can be inspected or replaced without difficulty under a full pressure load.

CAST STEEL

BOLTED BONNET

THROUGH CONDUIT GATE VALVES



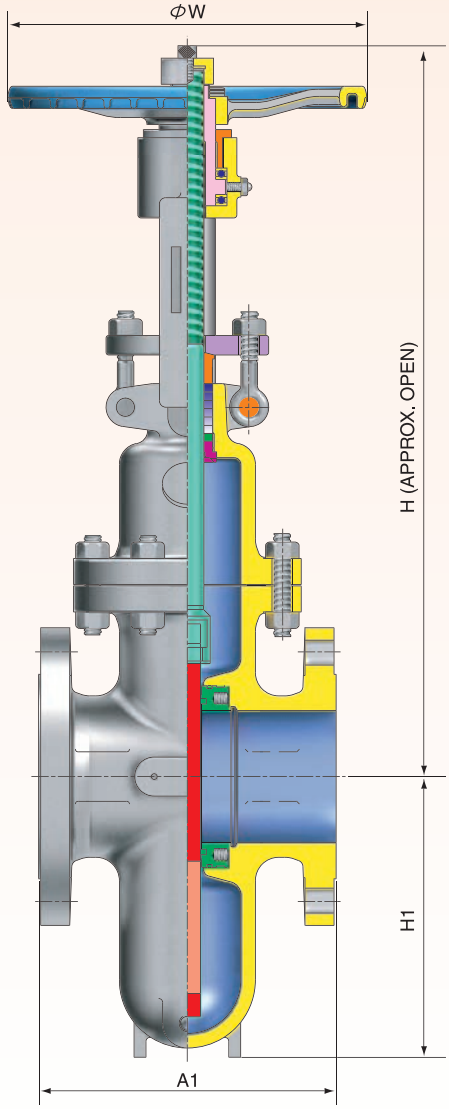
NO	NAME OF PART	QT'Y
1	BODY	1
2	BONNET	1
3	DISC PLATE	1
4	BODY SEAT RING	2
5	STEM	1
6	SQUARE RING	2
7	BONNET BUSH	1
8	PACKING GLAND	1
10	YOKE SLEEVE	1
11	BONNET BOLT	1SET
12	BONNET NUT	1SET
15	HANDLE NUT	1
17	SLEEVE GLAND	1
19	HANDWHEEL	1
21	PACKING	1SET
22	GASKET	1
24	GLAND FLANGE	1
25	PLUG	2
26	HINGE PIN	1
27	GLAND BOLT	1SET
28	GLAND NUT	1SET
46	DISC SPRING	2SET
50	O-RING	2
53	STEM COVER CAP	1
54	DRAIN FITTING	1
55	INDICATOR BOLT	1
56	SET SCREW	1
57	BEARING	2

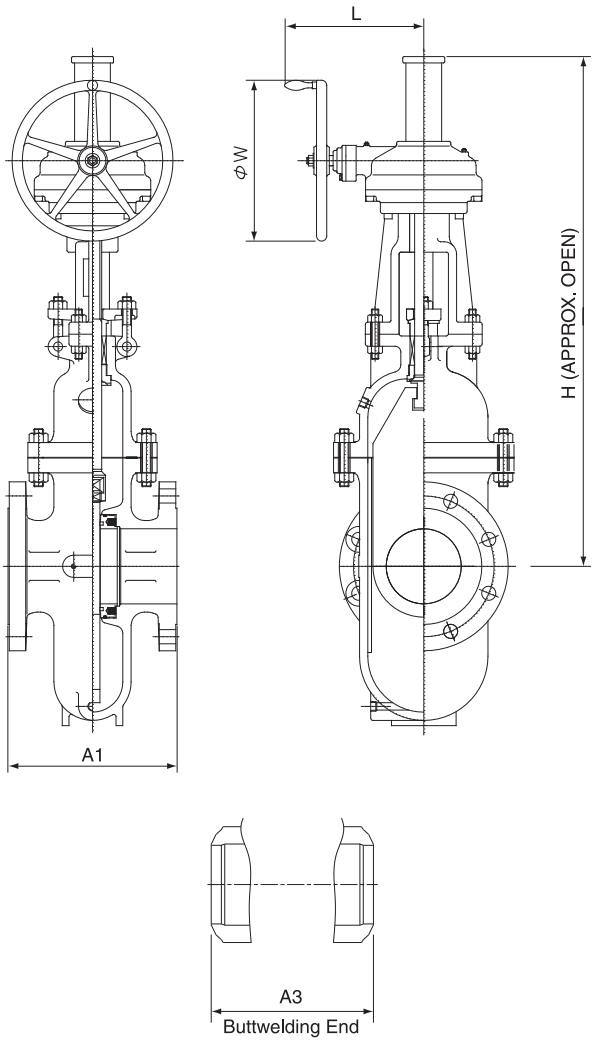
NAME OF PART	ASTM SPECIFICATION	
	BASIC	GEOTHERMAL SERVICE
BODY & BONNET & YOKE	A216-WCB	A216-WCC
BODY SEAT RING	A240-410	A240-316
SQUARE RING	TEFLON	TEFLON
O-RING	VITON	EPDM
DISC PLATE	A285 with Hard Cr-Plated	A285 with Hard Cr-Plated
STEM	A479-410	A479-410
GASKET	VITON	EPDM
BONNET BOLT	A193-B7	A193-B7M
BONNET NUT	A194-2H	A194-2HM
BONNET BUSH	A479-410	A276-316
PACKING	Synthetic Rubber	Synthetic Rubber
PACKING RING	A479-410	A276-316

THROUGH CONDUIT GATE VALVES

BOLTED BONNET

TC CLASS 150



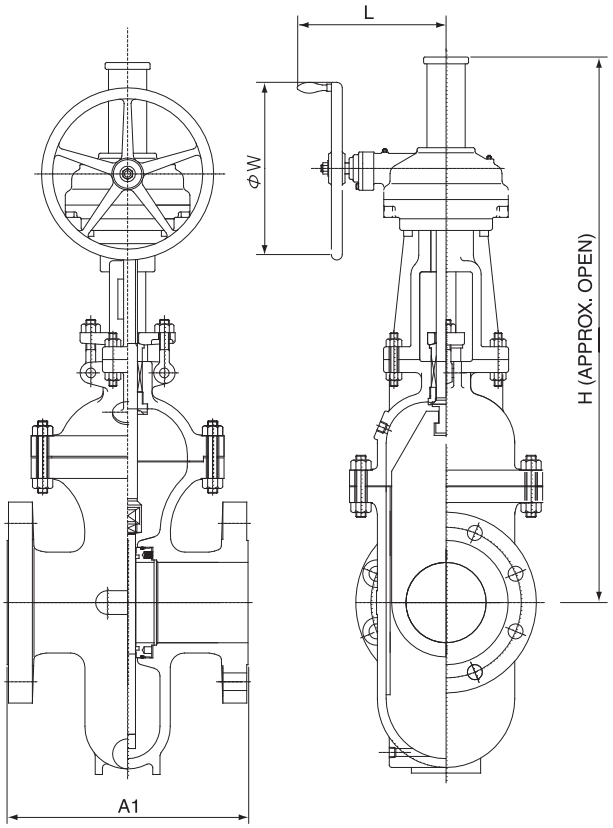


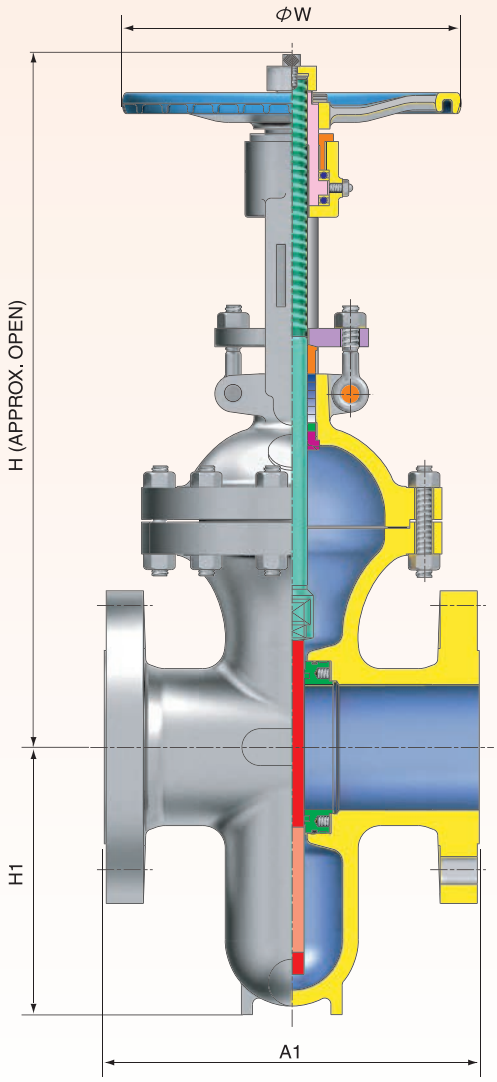
VALVE SIZE		in	4	6	8	10	12	14	16	18	20	24
		mm	100	150	200	250	300	350	400	450	500	600
A1		in	9.0	10.5	11.5	13.0	14.0	15.0	16.0	17.0	18.0	20.0
		mm	229	267	292	330	356	381	406	432	457	508
A3		in	12.0	15.88	16.5	18.0	19.75	22.5	24.0	26.0	28.0	32.0
		mm	305	403	419	457	502	572	610	660	711	813
H		in	29.9	44.1	57.1	64.2	76.4	84.6	89.4	99.2	109.8	131.9
		mm	760	1120	1450	1630	1940	2150	2270	2520	2790	3350
H1		in	8.5	11.9	15.2	18.6	22.1	24.1	27.8	31.0	34.4	41.1
		mm	215	302	385	473	562	611	705	787	873	1043
H2		in	-	-	-	-	-	50.4	53.9	59.4	65.4	78.3
		mm	-	-	-	-	-	1280	1370	1510	1660	1990
W		in	9.8	11.8	15.7	15.7	19.7	18.1	18.1	18.1	18.1	24.0
		mm	250	300	400	400	500	460	460	460	460	610
WEIGHT	RF	lb	242.6	396.9	573.3	837.9	1146.6	1433.3	2094.8	2668.1	3175.2	4961.3
		kg	110	180	260	380	520	650	950	1210	1440	2250
	BW	lb	231.5	377.1	533.6	787.2	1065.0	1382.5	1913.9	2266.7	2985.6	4350.5
		kg	105	171	242	357	483	627	868	1028	1354	1973

THROUGH CONDUIT GATE VALVES

BOLTED BONNET

TC CLASS 300



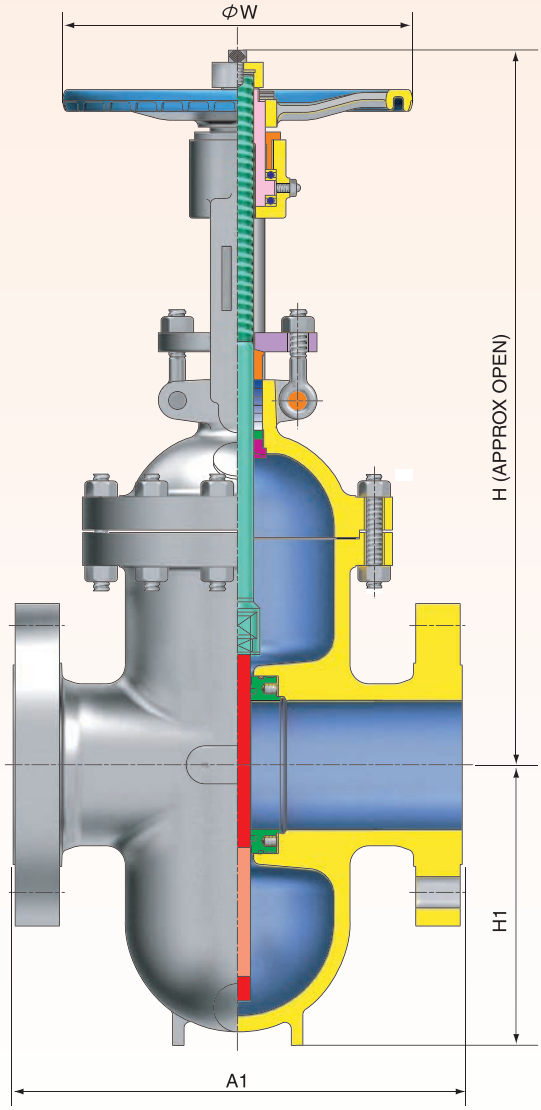


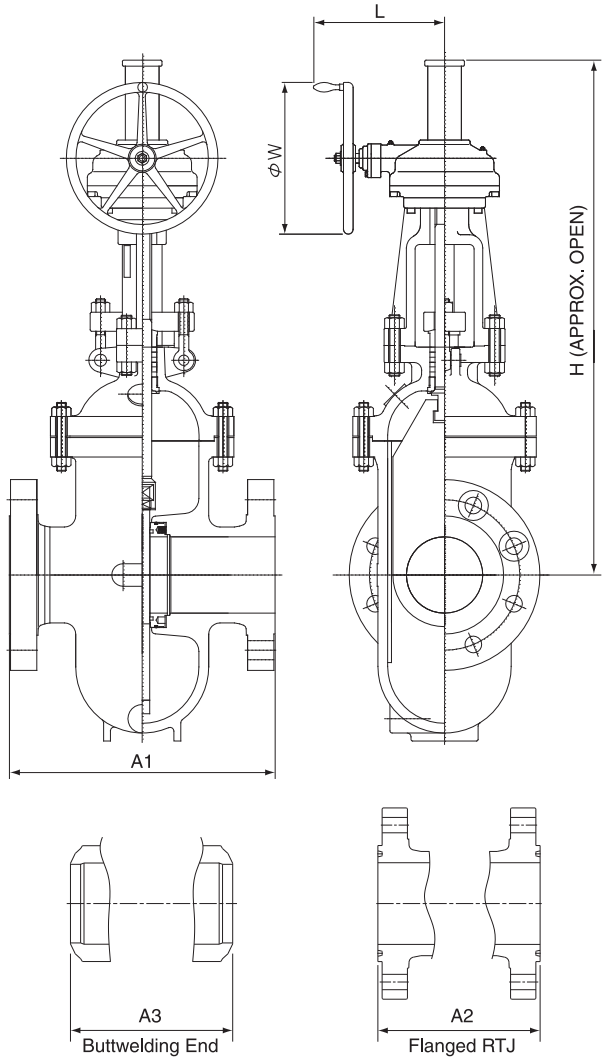
VALVE SIZE	in	4	6	8	10	12	14	16	18	20	24
	mm	100	150	200	250	300	350	400	450	500	600
A1 & A3	in	12.0	15.88	16.5	18.0	19.75	30.0	33.0	36.0	39.0	45.0
	mm	305	403	419	457	502	762	838	914	991	1143
A2	in	12.62	16.5	17.12	18.62	20.37	30.62	33.62	36.62	39.75	45.88
	mm	321	419	435	473	518	778	854	930	1010	1165
H	in	29.9	44.1	57.1	64.2	76.4	84.6	89.4	99.2	109.8	131.9
	mm	760	1120	1450	1630	1940	2150	2270	2520	2790	3350
H1	in	8.5	11.9	15.2	18.6	22.1	24.1	27.8	31.0	34.4	41.2
	mm	21.5	302	385	473	562	611	705	788	874	1046
H2	in	-	-	-	-	-	50.4	53.9	59.4	65.4	78.3
	mm	-	-	-	-	-	1280	1370	1510	1660	1990
W	in	9.8	11.8	15.7	15.7	19.7	18.1	18.1	18.1	18.1	24.0
	mm	250	300	400	400	500	460	460	460	460	610
WEIGHT RF	lb	4.7	8.7	13.4	19.7	8.4	2255	3065.0	3858.8	4961.3	7254.5
	kg	120	220	340	500	730	1000	1390	1750	2250	3290
WEIGHT BW	lb	233.7	445.1	690.2	1012.1	1468.5	2024.2	2833.4	3587.5	4621.7	6773.8
	kg	106	202	313	459	666	918	1285	1627	2096	3072

THROUGH CONDUIT GATE VALVES

BOLTED BONNET

TC CLASS 600

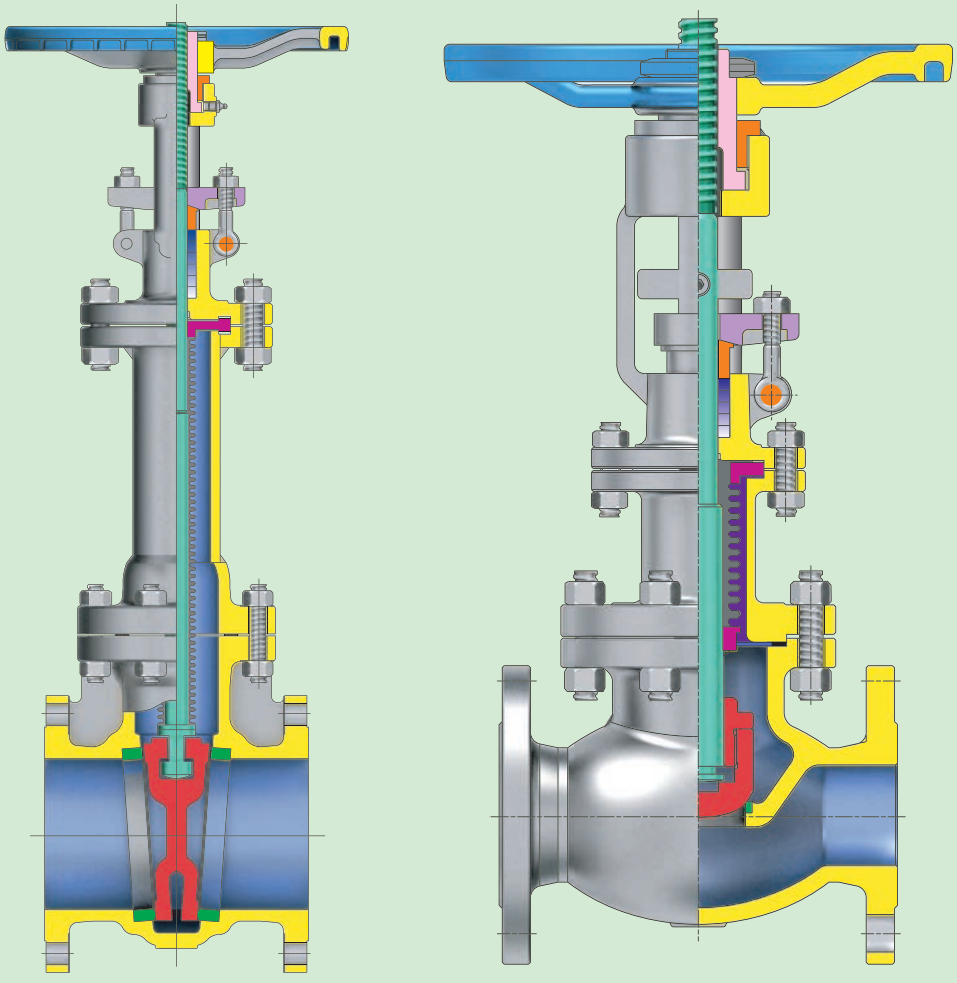




VALVE SIZE	in	4	6	8	10	12	14	16	18	20	24
	mm	100	150	200	250	300	350	400	450	500	600
A1 & A3	in	17.0	22.0	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0
	mm	432	556	660	787	838	889	991	1092	1194	1397
A2	in	17.12	22.12	26.12	31.12	33.12	35.12	39.12	43.12	47.25	55.38
	mm	435	562	664	791	841	892	994	1095	1200	1406
H	in	29.9	44.1	57.1	64.2	76.4	87.4	92.1	102.0	113.8	133.5
	mm	760	1120	1450	1630	1940	2220	2340	2590	2890	3390
H1	in	8.5	11.9	15.3	18.8	22.4	24.4	28.2	31.5	35.0	41.9
	mm	215	302	388	478	570	619	716	801	890	1065
H2	in	-	-	-	-	-	52.0	55.5	61.0	68.3	79.5
	mm	-	-	-	-	-	1320	1410	1550	1735	2020
W	in	14.0	19.7	23.6	27.0	30.0	18.1	24.0	29.9	29.9	29.9
	mm	355	500	600	685	760	460	610	760	760	760
WEIGHT RF	lb	286.7	529.2	904.1	1455.3	2205.0	3087.0	4299.8	5711.0	7254.5	10804.5
	kg	130	240	410	660	1000	1400	1950	2590	3290	4900
WEIGHT BW	lb	247.0	458.6	804.8	1274.5	1985.5	2787.1	3819.1	5230.3	6725.3	10244.4
	kg	112	208	365	578	900	1264	1732	2372	3050	4646

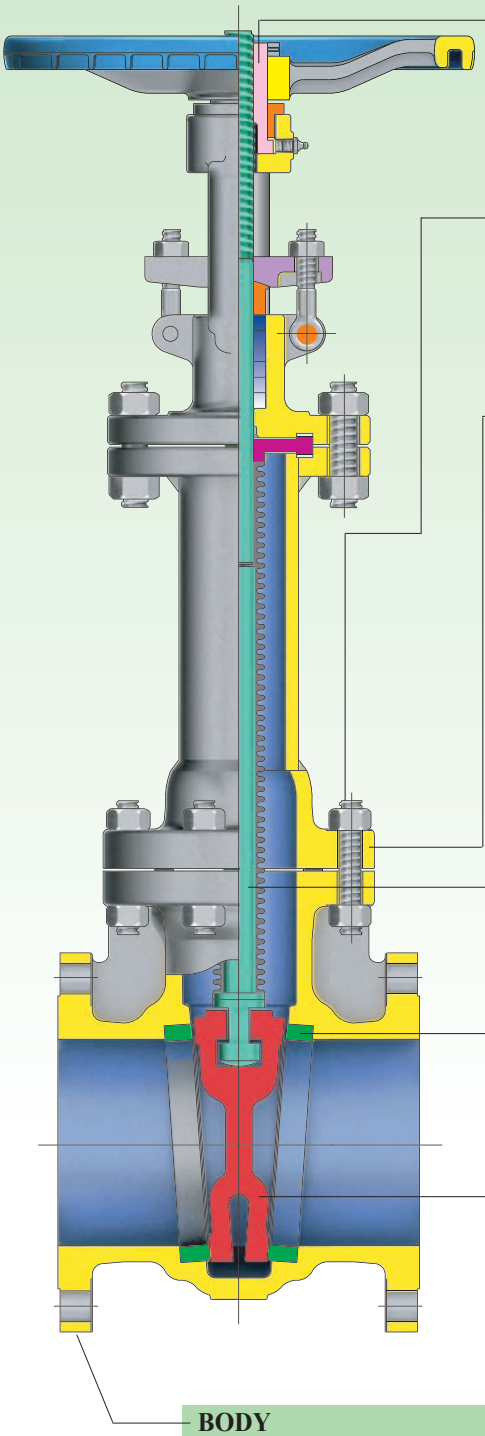
BELLOWS SEAL
GATE, GLOBE VALVES

BOLTED BONNET



CAST STEEL
BOLTED BONNET

BELLOWS SEAL GATE VALVES



YOKE SLEEVE

The upper portion of the Yoke Sleeve is hexagonally tapered to fix the handwheel. The standard material of the Yoke Sleeve is Nodular Ni-resist D2 with over 1150℃(2100℉) dissolution point in accordance with API Std. specifications.

BOLTING

The body-bonnet bolts are manufactured in accordance with API Std. 600 specifications. The nuts also strictly conform with ANSI B 1.1
The stud-bolt nuts, hexagonal, rigid and hot-forged, bear material notation as well as do the bolt nuts made according to ANSI B18.2.2

BONNET

The bonnet and valve body have the same wall thickness.
The body-bonnet flange drilling is spot-faced to exactly meet stud-bolt nuts. The bonnet back seat bushing guarantees packing replacement even when the valve is fully opened. The stem packing dimensions of the stuffing box are in accordance with API specifications.

STEM

The machined forged stem comes with a T-shape head, which connects the slot of the wedge. The spherically shaped contacting surface of the head gives greater strength and durability.
The stem dimensions are in accordance with API Std. 600 specifications.
The heat treated stem delivers adequate mechanical properties as well as excellent surface hardness. Further, opening/shutting friction is minimized by accurate machining and lapping.

SEAT RING

Bottom seated type seat rings are welded or screwed into the body.
The seating surface is finished by lapping. They are forgings that have been heat treated to delived the best mechanical properties and required hardness. The difference in hardness between seats and wedge is in accordance with API specifications.

FLEXIBLE WEDGE

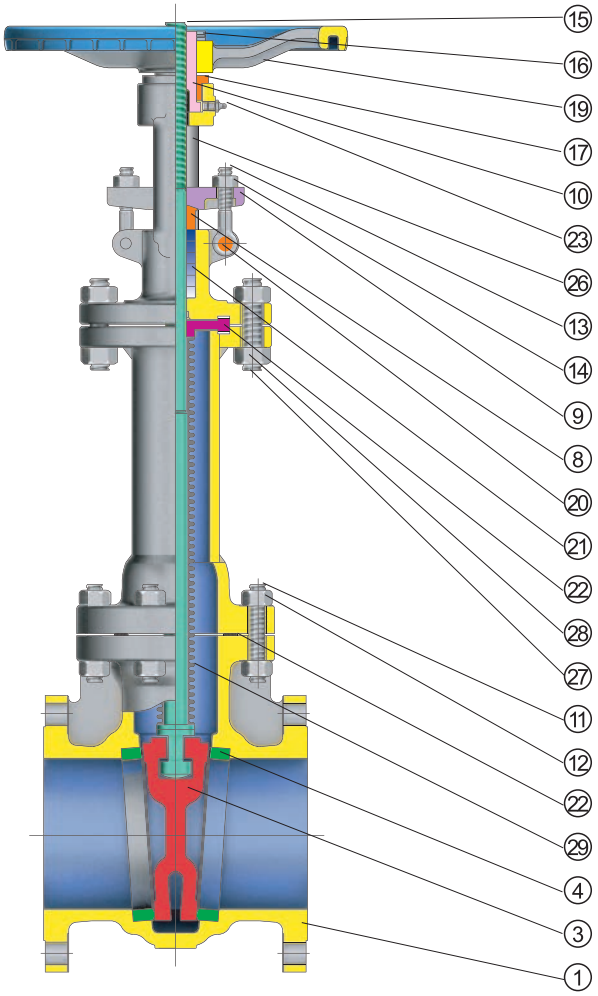
The standard disc of our valves is a one-piece flexible wedge.
Slots are machined on both sides of the wedge to allow it to travel correctly in the integrally cast body guides.
The wedge seating surfaces have been accurately machined, grind and lapped to a mirror finish to prevent leakage and eliminate galling.

BODY

The cast steel body is designed to insure a wall thickness which is greater at any point than the minimum specified by API Std. 600 or API 603. Special care has been taken with the design of the Class 150 valve body so that the elliptically shaped center section is free from intensified stresses in the critical area.
The body of above Class 300 are made circular in shape as much as possible to minimize distortion even under extreme operating conditions. Inlet and outlet port dimensions conform with ANSI B16.5 Pipe Fitting. The welded-in type seat ring is standard to insure interchangeability. Except for Class 150, the standard body-bonnet joint is male and female.

CAST STEEL
BOLTED BONNET

BELLOWS SEAL GATE VALVES



NO	NAME OF PART	ASTM SPECIFICATION
15	HANDLE NUT	STEEL
16	SET SCREW	STEEL
17	SLEEVE GLAND	STEEL
19	HANDWHEEL	A395
21	PACKING	COMMERCIAL
22	GASKET	COMMERCIAL
23	GREASE NIPPLE	STEEL
29	BELLOWS	COMMERCIAL

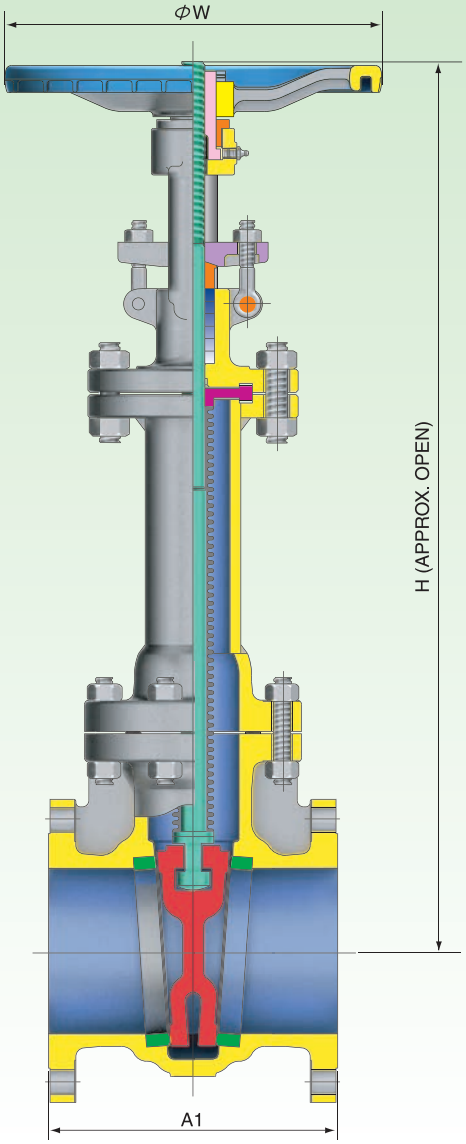
NO	NAME OF PART	ASTM SPECIFICATION												
		STANDARD	HIGH TEMPERATURE SERVICE			LOW TEMPERATURE SERVICE			STAINLESS STEEL				ALLOY STEEL	
1	BODY	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A352-LCB	A352-LC1/LC2/LC3	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
2	BONNET	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A352-LCB	A352-LC1/LC2/LC3	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
3	*DISC	A217-CA15	A217-WC1	A217-WC6	A217-WC9	A217-C5	A352-LCB	A352-LC1/LC2/LC3	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN
4	BODY SEAT RING	A105+STL	A182-F1	A182-F11	A182-F22	A182-F5a	A350-LF2	A350-LF2	A182-F304	A182-F316	A182-F304L	A182-F316L	ALLOY 20	A182-F51
5	STEM	A479-410					A276-304		A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A182-F51
7	BONNET BUSH	A479-410					A276-304		A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A276-304
8	PACKING GLAND	A479-410							A276-304					
9	GLAND FLANGE	A105 or A283-D							A351-CF8					
10	YOKE SLEEVE	A439-D2							A439-D2					
11	BONNET BOLT	A193-B7	A193-B7	A193-B16	A193-B16	A193-B16	A320-L7	A320-L7	A193-B8	A193-B8	A193-B8	A193-B8	A193-B8	A193-B8
12	BONNET NUT	A194-2H	A194-2H	A194-2H	A194-4	A194-4	A194-4L	A194-4L	A194-8	A194-8	A194-8	A194-8	A194-8	A194-8
13	GLAND BOLT	A307-B							A193-B8					
14	GLAND NUT	A194-2H							A194-8					
20	HINGE PIN	A108-1020							A276-304					
26	YOKE	A216-WCB							A351-CF8					
27	YOKE BOLT	A193-B7							A193-B8					
28	YOKE NUT	A194-2H							A194-8					

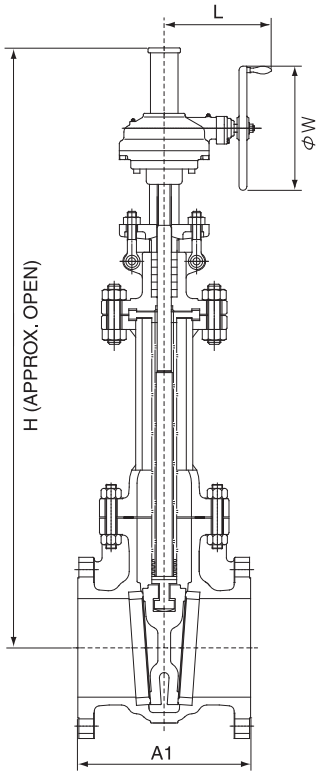
*Note : In case of 12” and larger size, we’ll use trim material overlayed one on the same or equivalent material of the Body.

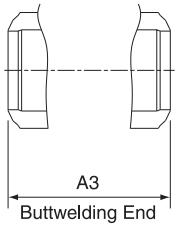
BELLOWS SEAL GATE VALVES

BOLTED BONNET

GT CLASS 150





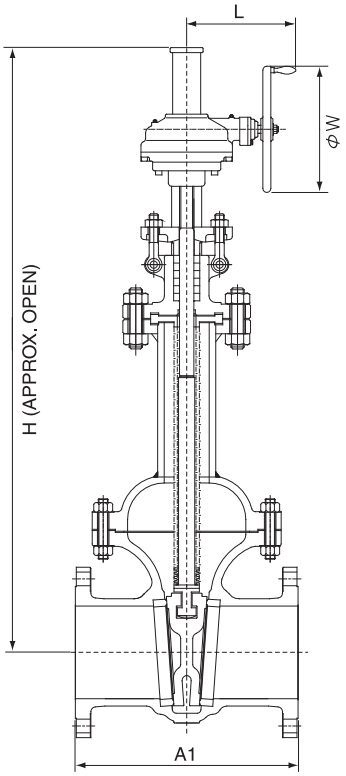


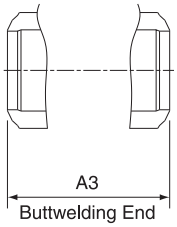
VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20
	mm	50	65	80	100	150	200	250	300	350	400	450	500
A1	in	7.0	7.5	8.0	9.0	10.5	11.5	13.0	14.0	15.0	16.0	17.0	18.0
	mm	178	190	203	229	267	292	330	356	381	406	432	457
A3	in	8.5	9.5	11.1	12.0	15.9	16.5	18.0	19.8	22.5	24.0	26.0	28.0
	mm	216	241	282	305	403	419	457	502	572	610	660	711
H	in	23.4	28.4	30.7	35.4	45.5	53.1	66.0	75.6	86.6	102.4	120.1	134.6
	mm	595	722	780	900	1155	1350	1676	1920	2200	2600	3050	3420
W	in	7.9	7.9	7.9	9.8	11.8	14.0	15.7	17.7	15.7	19.7	19.7	24.8
	mm	200	200	200	250	300	355	400	450	400	500	500	630
L	in	-	-	-	-	-	-	-	-	13.0	13.5	13.5	15.3
	mm	-	-	-	-	-	-	-	-	330	342	342	389
WEIGHT RF	lb	92.6	136.7	154.3	189.6	251.3	348.3	478.4	650.4	948.0	1333.8	1774.7	2094.4
	kg	42	62	70	86	114	158	217	295	430	605	805	950
WEIGHT BW	lb	90.4	130.1	149.9	183.0	231.5	313.1	432.1	604.1	881.8	1267.7	1585.1	1849.7
	kg	41	59	68	83	105	142	196	274	400	575	719	839

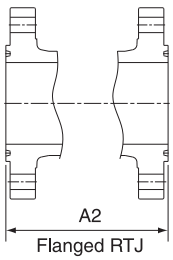
BELLOWS SEAL GATE VALVES

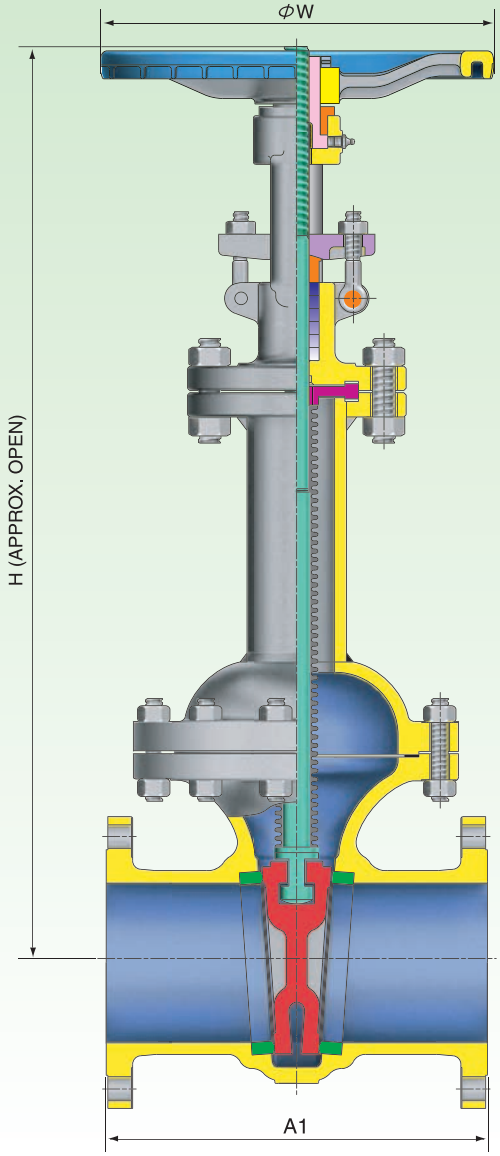
BOLTED BONNET

GT CLASS 300







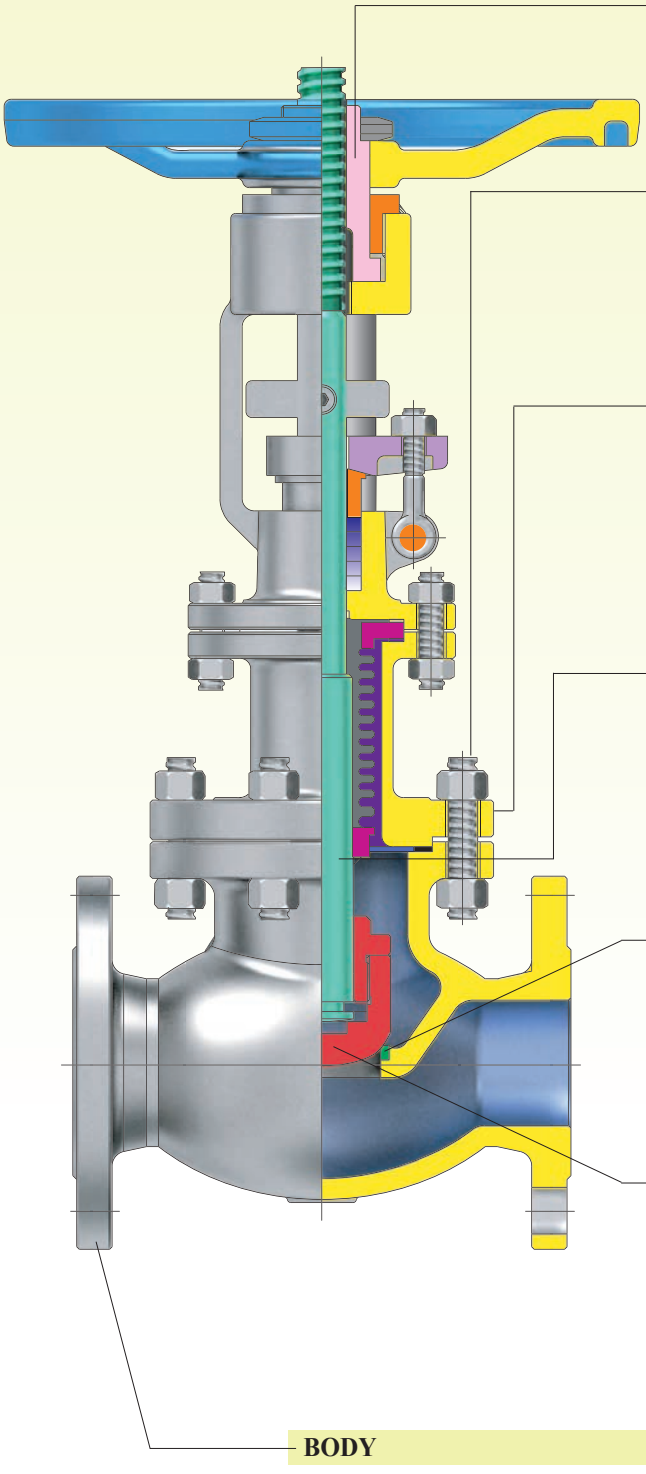


VALVE SIZE	in	2	2.5	3	4	6	8	10	12	14	16	18	20
	mm	50	65	80	100	150	200	250	300	350	400	450	500
A1 & A3	in	8.5	9.5	11.1	12.0	15.9	16.5	18.0	19.8	30.0	33.0	36.0	39.0
	mm	216	241	282	305	403	419	457	502	762	838	914	991
A2	in	9.1	10.1	11.7	12.6	16.5	17.1	18.6	20.4	30.6	33.6	36.6	39.8
	mm	232	257	298	321	419	435	473	518	778	854	930	1010
H	in	24.5	29.8	31.4	36.2	46.5	56.4	66.1	79.2	95.5	108.1	122.2	136.6
	mm	623	756	798	920	1182	1432	1679	2011	2425	2746	3103	3470
W	in	7.9	7.9	8.9	9.8	14.0	15.7	17.7	19.7	19.7	19.7	24.8	24.8
	mm	200	200	225	250	355	400	450	500	500	500	630	630
L	in	-	-	-	-	-	-	-	-	13.5	13.5	15.3	15.3
	mm	-	-	-	-	-	-	-	-	342	342	389	389
WEIGHT RF	lb	105.8	165.3	180.8	233.7	366.0	522.5	725.3	1137.6	1730.6	2548.5	3269.5	3761.1
	kg	48	75	82	106	166	237	329	516	785	1156	1483	1706
WEIGHT BW	lb	101.4	152.1	156.5	191.8	304.2	440.9	601.9	934.8	1347.0	2063.5	2762.4	3227.6
	kg	46	69	71	87	138	200	273	424	611	936	1253	1464

CAST STEEL

BOLTED BONNET

BELLOWS SEAL GLOBE VALVES



YOKE SLEEVE

The standard material of the Yoke Sleeve is Nodular Ni-resist D2 with over a 1150℃ (2100℉)dissolution point in conformity with API Std. Specifications.

BOLTING

The body-bonnet bolts are manufactured in accordance with API Std. 600 specifications. The nuts also strictly conform with ANSI B 1.1
The stud-bolt nuts, hexagonal, rigid and hot-forged, bear material notation as well as do the bolt nuts made according to ANSI B18.2.2

BONNET

The bonnet is integral or separate with the yoke and is the same material as the body. The body-bonnet flange drilling is spot-faced to exactly meet stud bolt nuts. The back seat bushing in the bonnet guarantees that the packing can be replaced even when the valve is fully opened. The stem packing dimensions of the stuffing box are in accordance with API Std. specifications.

STEM

The heat-treated stems of one-piece construction insure adequate mechanical properties and surface hardness.
Friction at the time of opening and shutting is reduced to a minimum friction to accurate machining and lapping.
The round finished surface of the stem head helps to achieve point contact with the inside of the disc housing to eliminate friction.

SEAT RING

The shoulder seated type seat ring is welded or screwed into body.
The seating surface is finished by lapping. The seat ring is forged and heat-treated to deliver the best mechanical properties and required hardness. The difference in hardness between the seats and disc conforms to API Std. specifications.

DISC

The disc of our globe valves is a loose disc and can freely revolve around the stem. This prevents friction and galling with the seating surface when the valve is shut. The disc is furnished with a conical seating surface that has been ground and lapped to a mirror finish. It is of one-piece construction, and forged and heat-treated to deliver the required mechanical properties and hardness.

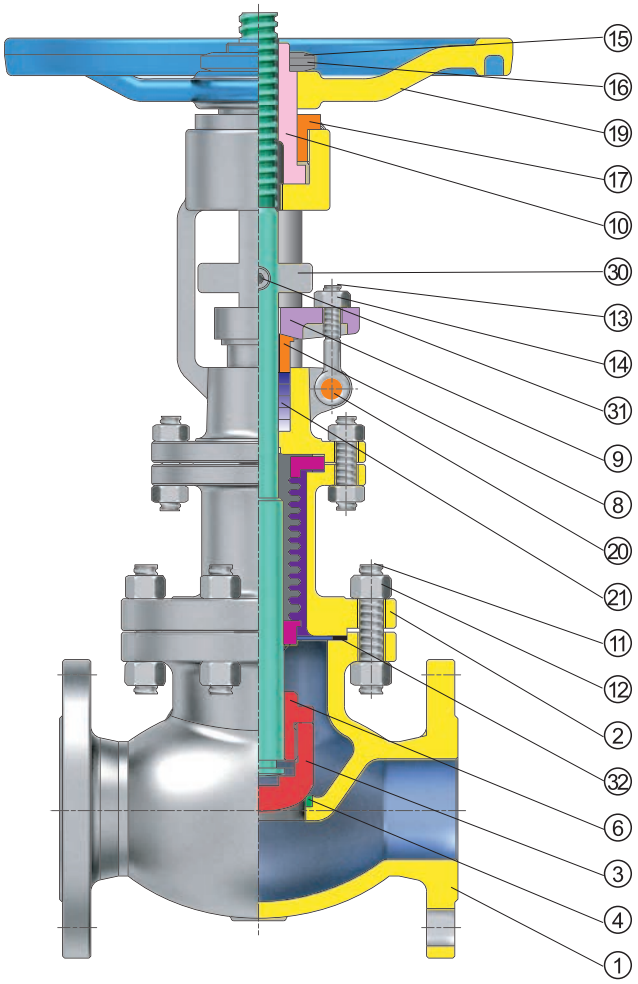
BODY

The cast steel body is designed to insure a wall thickness which is greater at any point than the minimum specified by API Std. 600 or API 603. Port and seat passage dimensions conform to ASME B16.34.
The screw-in type seat ring is standard to allow interchangeability.
The standard body-bonnet joint is male-female, and the flange is round for all valves. Accurate machining insures perfect coaxiality of the valve ends and seat ring in addition to exact perpendicularity of the body-bonnet flanges.

CAST STEEL

BOLTED BONNET

BELLOWS SEAL GLOBE VALVES



NO	NAME OF PART	ASTM SPECIFICATION
15	HANDLE NUT	STEEL
16	SET SCREW	STEEL
17	SLEEVE GLAND	STEEL
19	HANDWHEEL	A395
21	PACKING	COMMERCIAL
22	GASKET	COMMERCIAL
30	STOPPER	A283-D
31	STOPPER BOLT	STEEL

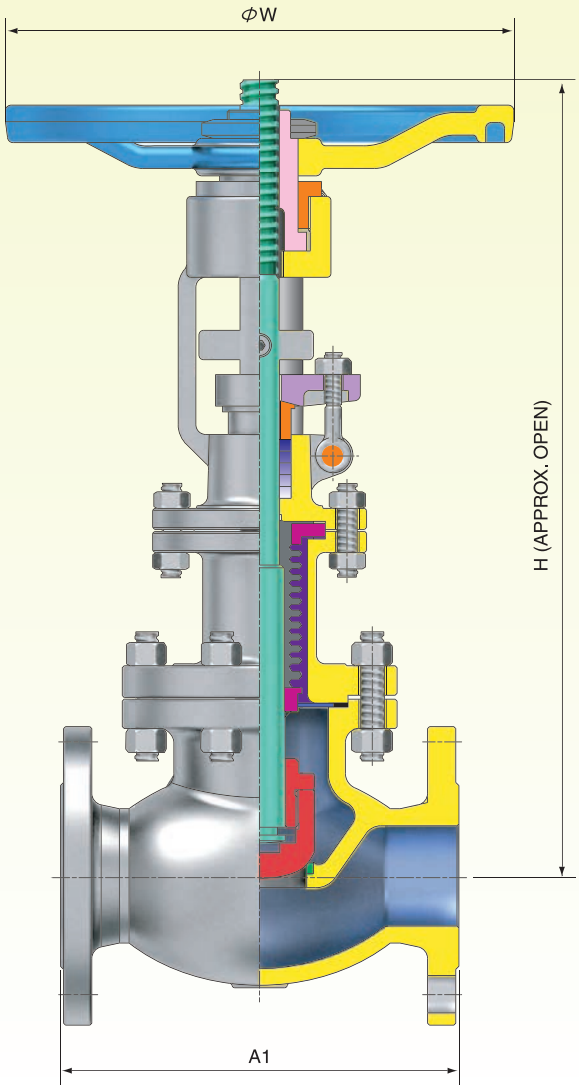
NO	NAME OF PART	ASTM SPECIFICATION													
		STANDARD	HIGH TEMPERATURE SERVICE				LOW TEMPERATURE SERVICE		STAINLESS STEEL					ALLOY STEEL	
1	BODY	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A352-LCB	A352-LC1/LC2/LC3	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN	
2	BONNET	A216-WCB	A217-WC1	A217-WC6	A217-WC9	A217-C5	A352-LCB	A352-LC1/LC2/LC3	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN	
3	*DISC	A217-CA15	A217-CA15	A217-CA15	A217-CA15	A217-CA15	A351-CF8	A351-CF8	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M	A351-CN7M	A351-CK3MCUN	
4	BODY SEAT RING	A105+STL	A182-F1	A182-F11	A182-F22	A182-F5a	A350-LF2	A350-LF2	A182-F304	A182-F316	A182-F304L	A182-F316L	ALLOY 20	A182-F51	
5	STEM	A276-410					A276-304		A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A182-F51	
6	DISC GLAND	A217-CA15	A217-CA15	A217-CA15	A217-CA15	A217-CA15	A351-CF8	A351-CF8	A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A182-F51	
7	BONNET BUSH	A276-410					A276-304		A276-304	A276-316	A276-304L	A276-316L	ALLOY 20	A276-304	
8	PACKING GLAND	A276-410							A276-304						
9	GLAND FLANGE	A105 or A283-D							A351-CF8						
10	YOKE SLEEVE	A439-D2							A439-D2						
11	BONNET BOLT	A193-B7		A193-B16			A320-L7		A193-B8						
12	BONNET NUT	A194-2H		A194-4			A194-4L		A194-8			A194-B8	A194-8		
13	GLAND BOLT	A307-B							A193-B8						
14	GLAND NUT	A194-2H							A194-8						
20	HINGE PIN	A108-1020							A276-304						

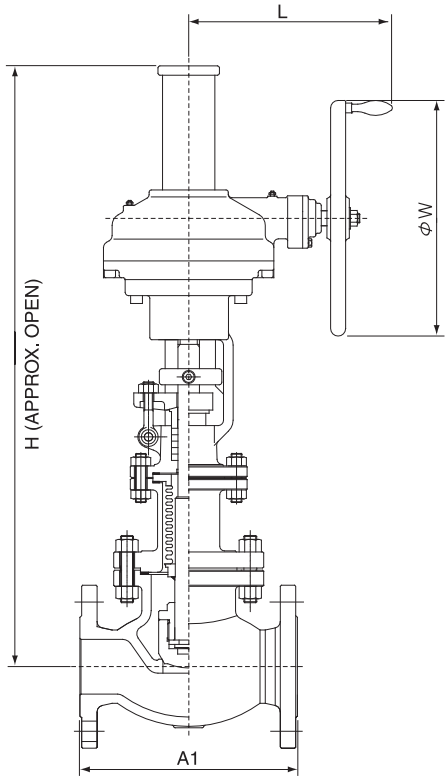
*Note : In case of 12” and larger size, we’ll use trim material overlayed one on the same or equivalent material of the Body.

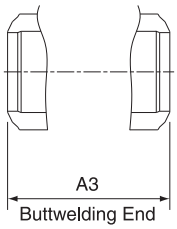
BELLOWS SEAL GLOBE VALVES

BOLTED BONNET

GL CLASS 150





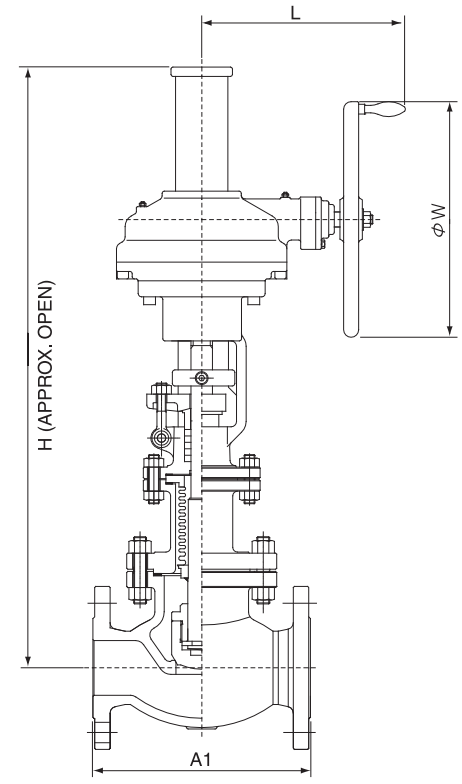


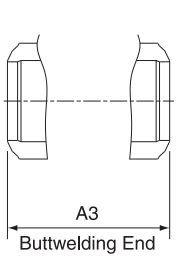
VALVE SIZE		in	2	2.5	3	4	6	8	10	12
		mm	50	65	80	100	150	200	250	300
A1 & A3		in	8.0	8.5	9.5	11.5	16.0	19.5	24.5	27.5
		mm	203	216	241	292	406	495	622	699
H		in	16.5	17.5	19.1	22.8	27.0	30.7	34.8	43.5
		mm	420	445	485	580	685	780	885	1105
W		in	7.9	8.8	8.8	9.8	14.0	15.7	19.7	24.8
		mm	200	224	224	250	355	400	500	630
L		in	-	-	-	-	-	13.0	13.5	15.3
		mm	-	-	-	-	-	330	342	389
WEIGHT	RF	lb	44.1	77.2	88.2	123.5	229.3	401.3	650.5	903
		kg	35	52	63	81	115	193	325	445
	BW	lb	33	66.2	70.6	90.4	183	311	496.1	780
		kg	31	47	57	52	100	170	293	399

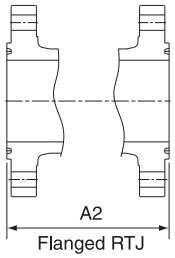
BELLOWS SEAL GLOBE VALVES

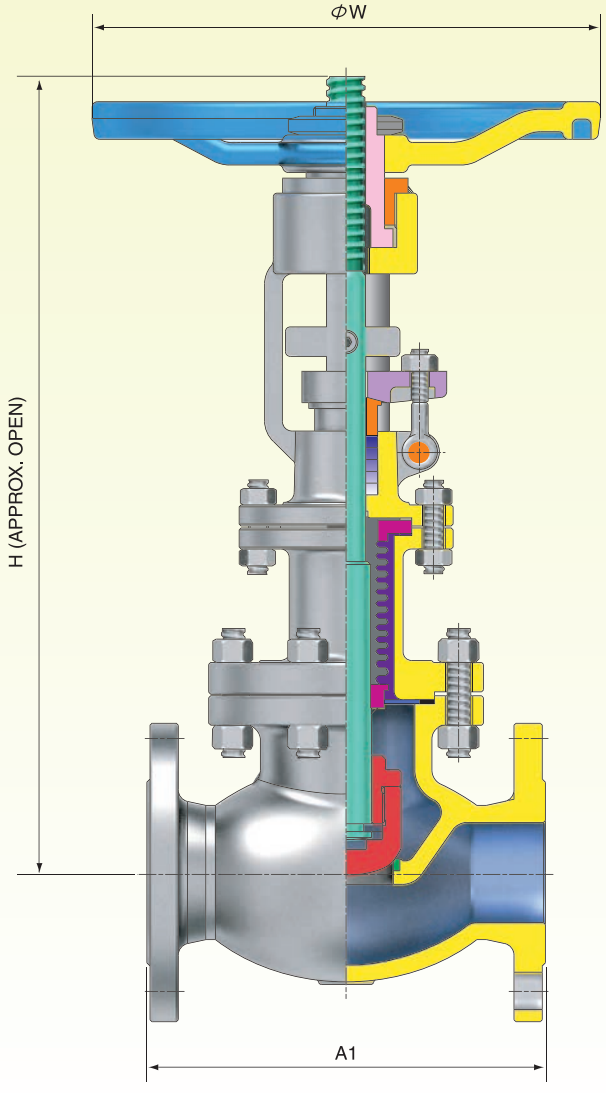
BOLTED BONNET

GL CLASS 300





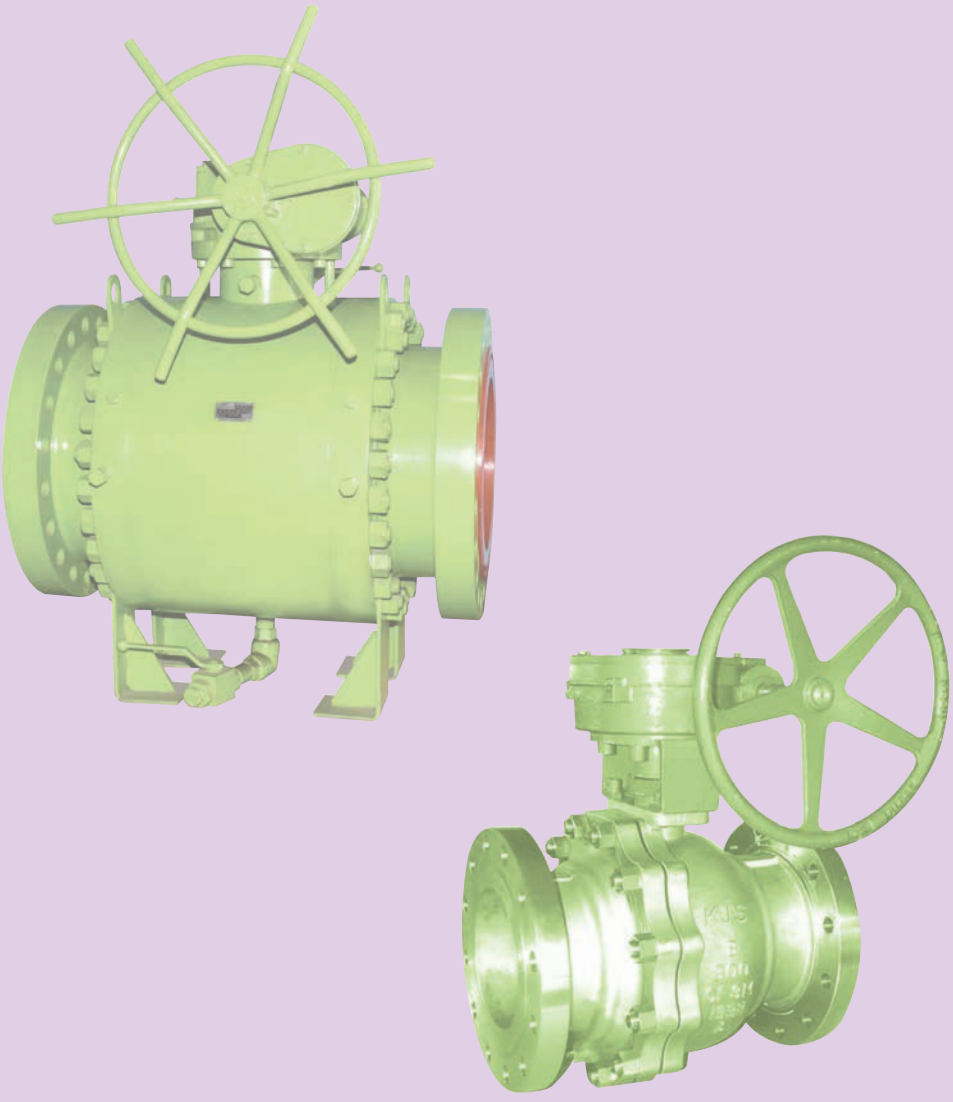




VALVE SIZE	in	2	2.5	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
A1 & A3	in	10.5	11.5	12.5	14.0	17.5	22.0	24.5	28.0
	mm	267	292	318	356	444	559	622	711
A2	in	11.1	12.1	13.1	14.6	18.1	22.6	25.1	28.6
	mm	283	308	333	371	460	575	638	727
H	in	16.7	19.1	20.7	24.8	33.3	36.3	45.3	48.6
	mm	425	485	526	629	846	921	1150	1234
W	in	7.9	8.8	9.8	14.0	17.7	24.8	28.0	28.0
	mm	200	224	250	355	450	630	710	710
L	in	-	-	-	-	-	15.3	16.0	16.0
	mm	-	-	-	-	-	389	406	406
WEIGHT RF	lb	70.6	92.6	141	220.5	419	595.4	1389	2416.3
	kg	47	59	87	125	215	305	580	1096
WEIGHT BW	lb	49	66.2	81.6	194	328.5	441	961	1246
	kg	41	50	75	110	185	261	515	1002

BALL VALVES

BOLTED CAP



FLOATING BALL VALVES FEATURE

GENERAL

KJS floating ball valves are designed in accordance with API 608 or ISO17292(BS5351) for ANSI Class rating 150 to 2500, Nominal size from 1/2" to 12".
Valves have been designed for use with various combinations of materials such as; Carbon Steel, Low Carbon steel, special alloy, stainless steel, monel, inconel.

BODY JOINT CONSTRUCTION

The one piece unibody end entry design, graphite ring or-oring viton (on request) seals ensure absolute seal integrity.
The two piece bolted body designs include a tight toleranced overlapping metal fit between the body and the adapter to minimize any possibility of movement due to pipeline stress. A special high temperature spiral wound stainless steel/grafoil filled gasket is utilized for absolute seal.
This gasket is encapsulated by body and adapted on all four sides. Body and adaptors are dimensioned for metal contact to ensure correct gasket crush.

BLOW-OUT PROOF STEM

Stem is made separately from the ball, anti blow-up design with suitable PTFE and graphite rings and antistaitc device.
The lower and of the stem is designed with an integral collar to be blowout-proof. It also functions as the backseat for assured stem sealing. (fig. A)

ANTI-STATIC DEVICE

All Flow Control floating flange ball valves include dual grounding systems from stem to ball and stem to body. Valve testing to ISO17292(BS5351) was perfomed for all sizes, and witnessed by a third party inspection company.
An antistatic feature is provided to ensure electrical continuity for assured stem sealing. (fig. B)

LIVE LOADED GLAND FLANGE

Live loading is designed to provide gland load retention, compensating for expected in-service consolidation of the packing. A Set of Belleville-Spring Washers are used on each gland stud to helpexert a continuous compressive force on the gland follower flange and therefore reduce fugitive emissions from the stem packing. KJS standard Belleville-Spring Washers are protected by a weatherproof cap to keep them free from environmental contamination, resulting in a long stable life. (fig. C)

LOCKING DEVICE

Stem head design provides mounting of the lever handle always in parallel to the flow passage. Facility for mounting a locking device for prevention of accidental valve operation is provided. (fig. D)

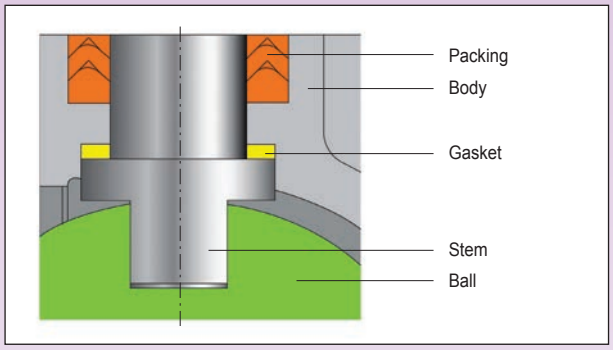


Fig. A

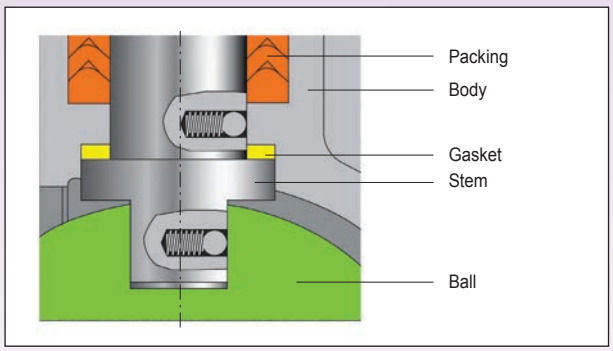


Fig. B

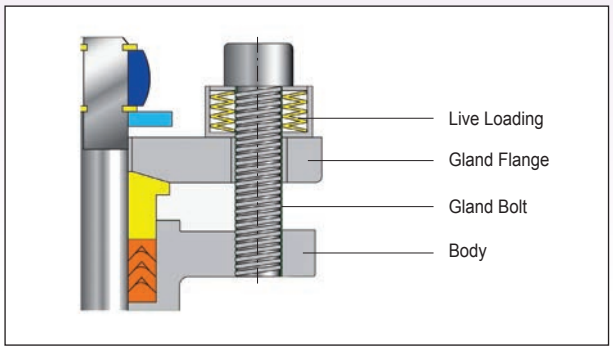


Fig. C

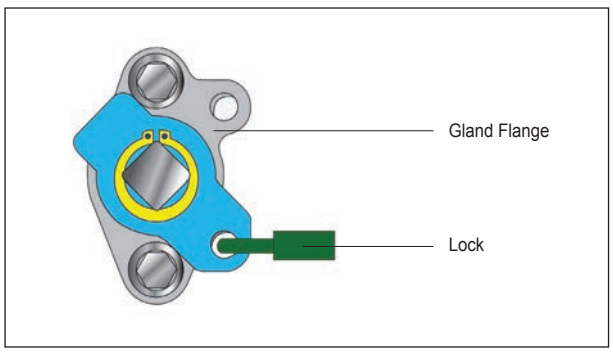


Fig. D

FLOATING BALL VALVES FEATURE

CONTACT BETWEEN STEM AND VALVE SHELL

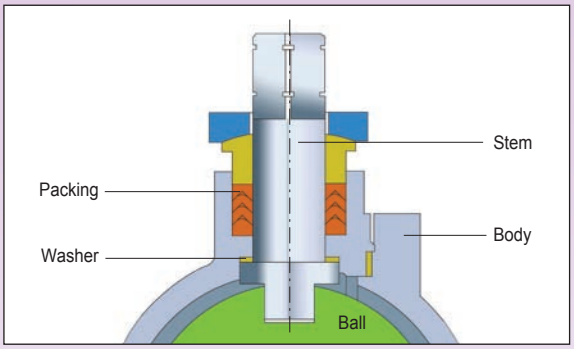


Fig. E (Befor Fire)

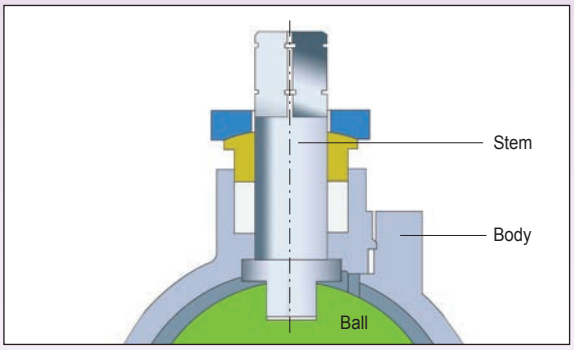


Fig. F (After Fire)
Metal-to-metal contact

CONTACT BETWEEN BALL AND VALVE SHELL

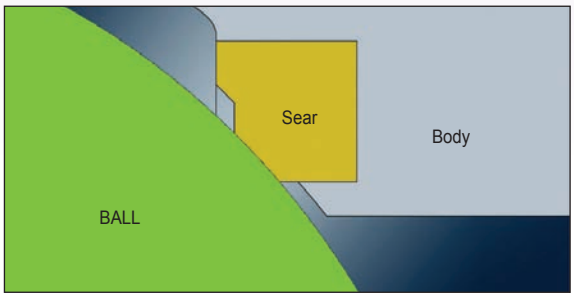


Fig. G (Befor Fire)

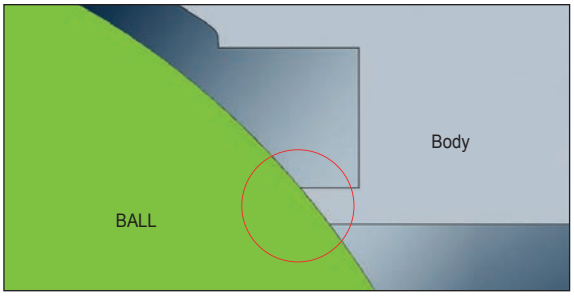


Fig. H (After Fire)
Metal-to-metal contact

FIRE SAFETY

All-fire-safe valves conform to API 607 and API 6FA standards.
When fire accident occurs at valve operating jobsite, and components such as seat ring, stem back seat, stem packing and mid-flange gasket which made of non-metallic material such as PTFE were broken or destroyed.

However, **KJS** particularly metal to metal added seal seated designed ball valves can effectively control external or internal leakage.

KJS soft seated fire safety designed as follows:

LONGEVITY OF LIFE

Special consideration was devoted to the attainment of enhanced life and operation of our valve throughout design, development, testing and manufacturing stages.

Valve designs combined with the selection of advanced materials are such that long periods of inactivity should not affect the operations of efficiency.

VALVE SHELL COUPLING FLANGES OF SPLIT BODY DESIGN

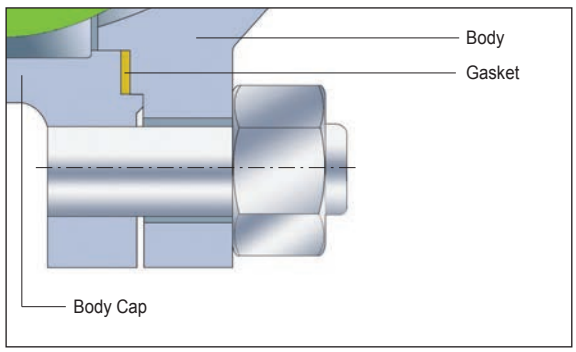


Fig. I (Befor Fire)

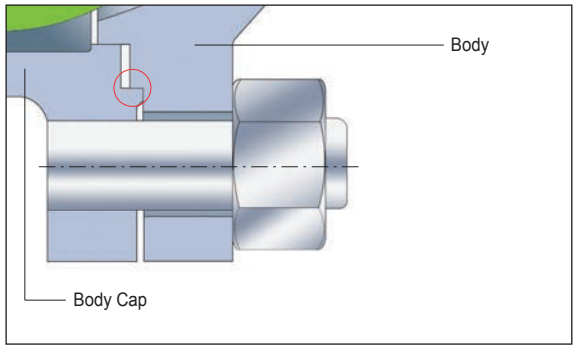
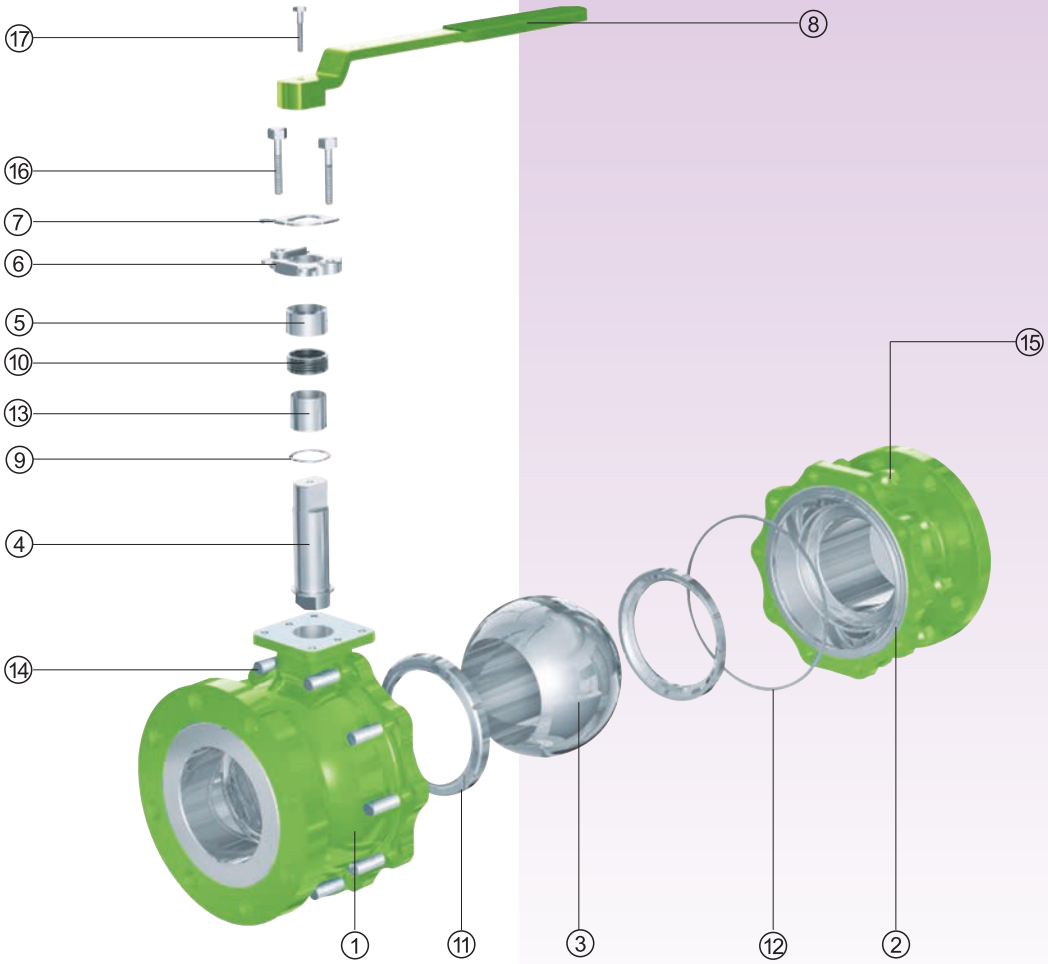


Fig. J (After Fire)
Metal-to-metal contact

BALL VALVES

BOLTED CAP

PART LIST AND MATERIAL SPECIFICATIONS (TYPICAL)



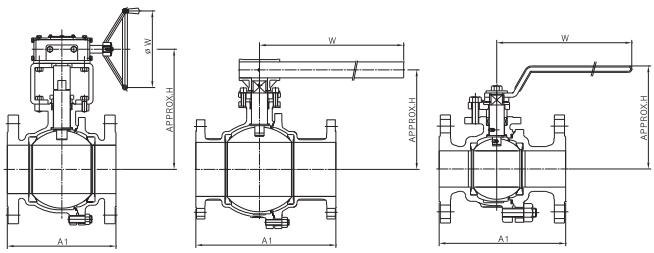
NO	PART NAME	Q'TY	CARBON STEEL	STAINLESS STEEL
1	BODY	1	A216-WCB	A351-CF8M
2	CAP	1	A216-WCB	A351-CF8M
3	BALL	1	A351-CF8M	A351-CF8M
4	STEM	1	A276-316	A276-316
5	GLAND	1	A276-304	A276-304
6	GLAND FLANGE	1	A351 CF8	A351-CF8
7	STOPPER	1	A240-304	A240-304
8	HANDLE	1	A283-D, A536	A283-D, A536
9	THRUST WASHER	1	PTFE	PTFE
10	GLAND PACKING	1Set	GRAPHITE +CARBON FIBER	GRAPHITE +CARBON FIBER PTFE
11	SEAT	2	RTFE	RTFE
12	GASKET	1	316HOOP+GRAPHITE	316HOOP+GRAPHITE
13	STEM BEARING	1	RTFE	RTFE
14	CAP BOLT	1Set	A193-B7	A193-B8
15	CAP BOLT NUT	1Set	A194-2H	A194-8
16	GLAND BOLT	2	A193-B7	A193-B8
17	HANDLE BOLT	1	A193-B8	A193-B8

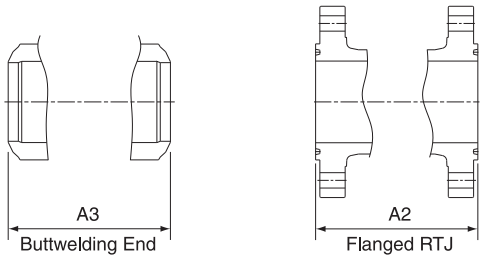
BALL VALVES

BOLTED CAP

FLOTING BALL VALVE







CLASS 150

VALVE SIZE	in	1/2	3/4	1	11/2	2	3	4	6	8	10	12
	mm	15	20	25	40	50	80	100	150	200	250	300
A1	in	4.3	4.6	5.0	6.5	7.0	8.0	9.0	15.5	18.0	21.0	24.0
	mm	108	117	127	165	178	203	229	394	457	533	610
H	in	3.3	3.5	4.0	5.0	5.6	6.7	8.1	12.2	16.0	18.7	21.3
	mm	84	88	102	127	142	170	206	310	406	475	541
W	in	5.1	5.1	6.1	9.1	9.1	13.8	17.7	23.6	15.7	19.7	22.0
	mm	130	130	155	230	230	350	450	600	400	500	560
WEIGHT RF	lb	4.4	6.6	8.8	7.6	24.3	50.7	72.8	183.0	330.7	496.0	617.3
	kg	2	3	4	8	11	23	33	83	150	225	280

CLASS 300

VALVE SIZE	in	1/2	3/4	1	11/2	2	3	4	6	8	10
	mm	15	20	25	40	50	80	100	150	200	250
A1	in	8.5	9.5	11.1	12.0	8.5	11.1	12.0	15.9	16.5	18.0
	mm	216	241	282	305	216	282	305	403	419	457
H	in	3.3	3.5	4.0	5.0	5.6	6.7	8.1	12.2	16.0	18.7
	mm	84	88	102	127	142	170	206	310	406	475
W	in	5.1	5.1	6.1	9.1	9.1	13.8	17.7	23.6	15.7	19.7
	mm	130	130	155	230	230	350	450	600	400	500
WEIGHT RF	lb	6.6	8.8	13.2	24.3	30.9	70.5	108.0	233.7	401.2	557.8
	kg	3	4	6	11	14	32	49	106	182	253

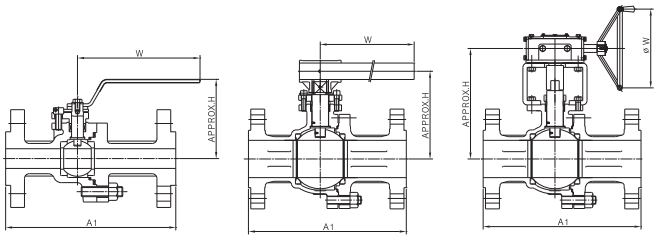
CLASS 600

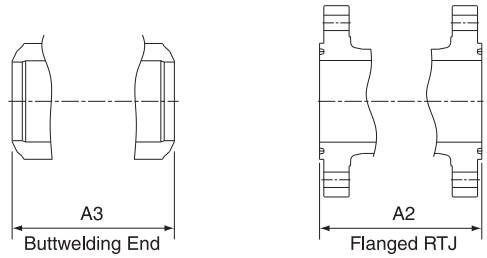
VALVE SIZE	in	1/2	3/4	1	11/2	2	3	4	6
	mm	15	20	25	40	50	80	100	150
A1 & A3	in	6.5	7.5	8.3	9.5	11.5	14.0	17.0	22.0
	mm	165	190	210	241	292	356	432	559
A2	in	6.4	7.5	8.3	9.5	11.6	14.1	17.1	22.1
	mm	163	190	210	241	295	359	435	562
H	in	3.5	3.7	4.7	5.0	5.3	6.7	8.1	10.8
	mm	90	93	120	126	135	170	206	275
W	in	5.1	5.1	6.1	9.1	13.8	17.7	23.6	17.7
	mm	130	130	155	230	350	450	600	450
WEIGHT RF	lb	8.8	11.0	15.4	28.7	57.3	114.6	202.8	385.8
	kg	4	5	7	13	26	52	92	175

BALL VALVES

BOLTED CAP

FLOTING BALL VALVE







CLASS 900

VALVE SIZE	in	1/2	3/4	1	11/2	2
	mm	15	20	25	40	50
A1 & A3	in	8.5	9.0	10.0	12.0	14.5
	mm	216	229	254	305	368
A2	in	8.5	9.0	10.0	12.0	14.6
	mm	216	229	254	305	371
H	in	3.9	4.0	4.6	5.7	6.1
	mm	100	102	116	144	156
W	in	6.1	9.1	9.1	13.8	13.8
	mm	155	230	230	350	350
WEIGHT RF	lb	19.8	26.5	33.1	57.3	86.0
	kg	9	12	15	26	39

CLASS 1500

VALVE SIZE	in	1/2	3/4	1	11/2	2
	mm	15	20	25	40	50
A1 & A3	in	8.5	9.0	10.0	12.0	14.5
	mm	216	229	254	305	368
A2	in	8.5	9.0	10.0	12.0	14.6
	mm	216	229	254	305	371
H	in	3.9	4.0	4.6	5.7	6.1
	mm	100	102	116	144	156
W	in	6.1	9.1	9.1	13.8	13.8
	mm	155	230	230	350	350
WEIGHT RF	lb	19.8	26.5	33.1	57.3	86.0
	kg	9	12	15	26	39

CLASS 2500

VALVE SIZE	in	1/2	3/4	1	11/2	2
	mm	15	20	25	40	50
A1 & A3	in	10.4	10.7	12.1	15.1	17.8
	mm	264	273	308	384	451
A2	in	10.4	10.7	12.1	15.2	17.9
	mm	264	273	308	387	454
H	in	3.9	4.0	4.6	5.7	6.1
	mm	100	102	116	144	156
W	in	9.8	9.8	11.8	11.8	13.8
	mm	250	250	300	300	350
WEIGHT RF	lb	33.1	44.1	63.9	77.2	110.2
	kg	15	20	29	35	50

TRUNNION BALL VALVE

STANDARD

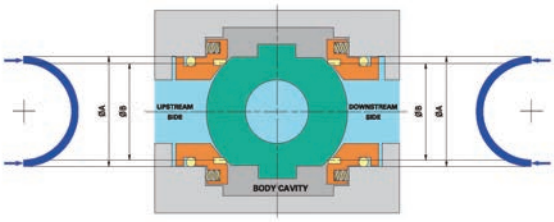
SINGLE PISTON EFFECT (SELF-RELIEVING SEATS)

Fluid pressure, both upstream and downstream, creates a resultant thrust that pushes the seat rings against the ball.

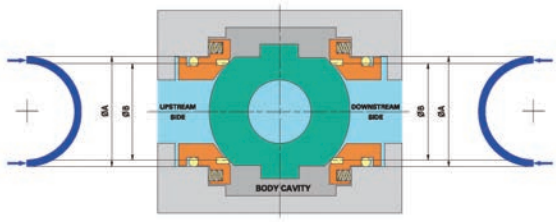
Fluid pressure acting in the body cavity creates a resultant thrust that pushes the seat rings away from the ball.

The single piston design permits the automatic release of any overpressure in the body cavity when the valve is in the fully open or fully closed position, therefore the seat rings are “self-relieving”

SINGLE PISTON EFFECT



PRESSURE ACTING UPSTREAM AND / OR DOWNSTREAM



PRESSURE ACTING IN THE BODY CAVITY

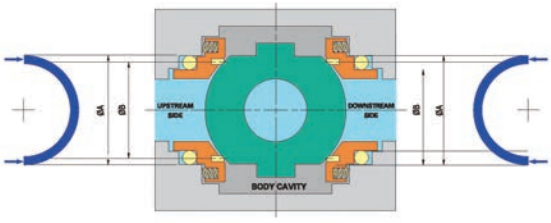
OPTIONAL

DOUBLE PISTON EFFECT

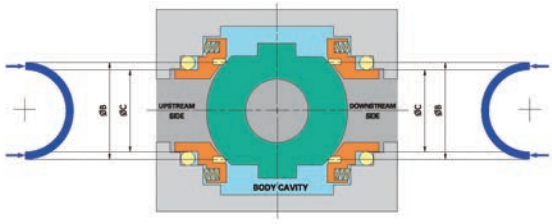
Fluid pressure, both upstream and down-stream, as well as in the body cavity creates a resultant thrust that pushes the seat rings towards the ball.

Valves with double piston effect seat rings require a relief valve in order to reduce the build-up of overpressure in the body cavity.

DOUBLE PISTON EFFECT



PRESSURE ACTING UPSTREAM AND / OR DOWNSTREAM



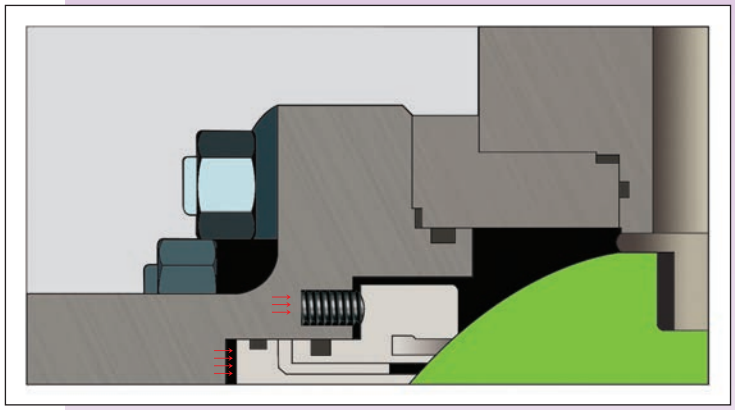
PRESSURE ACTING IN THE BODY CAVITY

FEATURES

SEAT SEALING

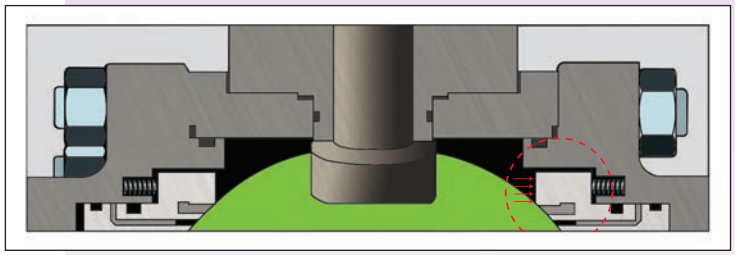
Soft seats are standard. Seat inserts of synthetic material such as Nylon, PTFE, RTFE or Peek are contained within a one-piece metal seat ring.

With no or very low line pressure. sealing between the seats and ball is achieved by seat springs. With higher line pressure, the line pressure, in conjunction with the spring load, forces the upstream seat ring against the ball, which results in tighter sealing.



SELF RELIEVING SEAT

This standard feature is designed to prevent excessive pressure buildup within the valve by automatically relieving pressure when body cavity pressure exceeds the spring load on the seats.
Double Piston Seat is also available as an option.



SEAT RING SEALING

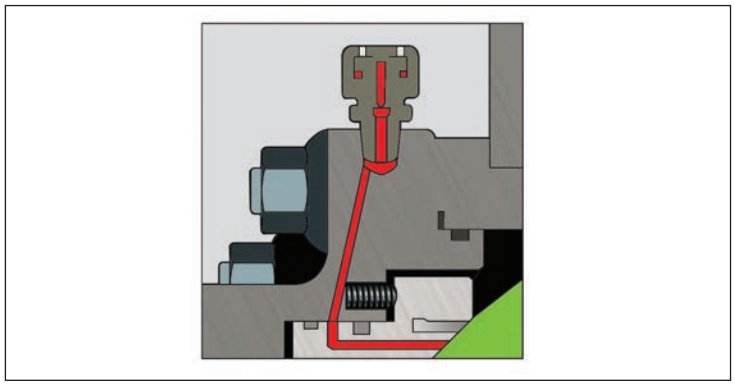
Two o-rings or one each of an o-ring and graphite ring are used for pressure classes 150 through 600. One lip seal with an o-ring or graphite ring is used for the pressure class 900 up to 2500.



SEALANT INJECTION FITTING

This feature is standard except in sizes 2”-4” for pressure classes 150, 300 and 600.
In case of seat ring damage, sealant injection provides a fast, reliable way to restore tight sealing.

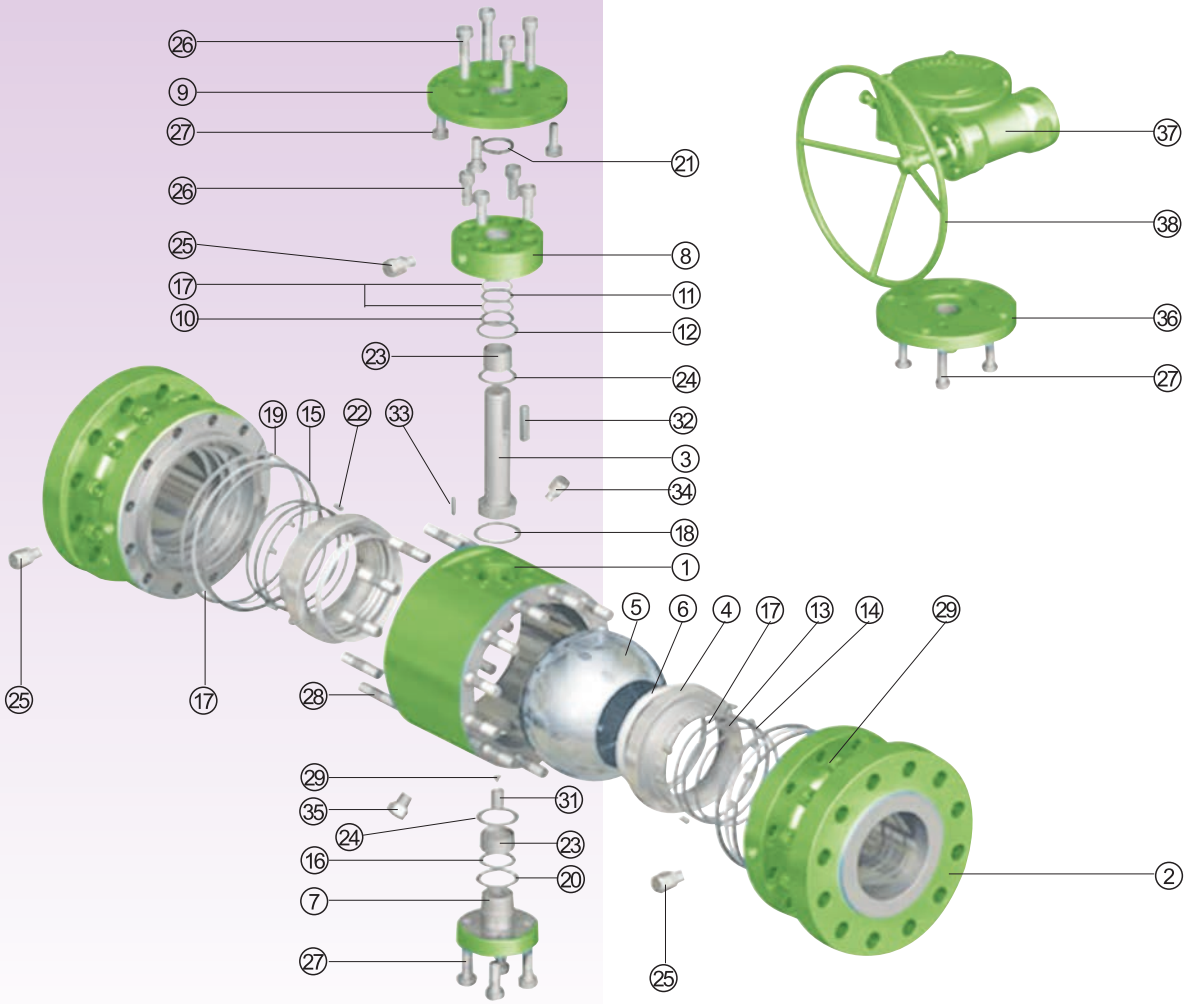
This injection system can also be used for routine flushing or the seat ring area while in service.



BALL VALVES

BOLTED CAP

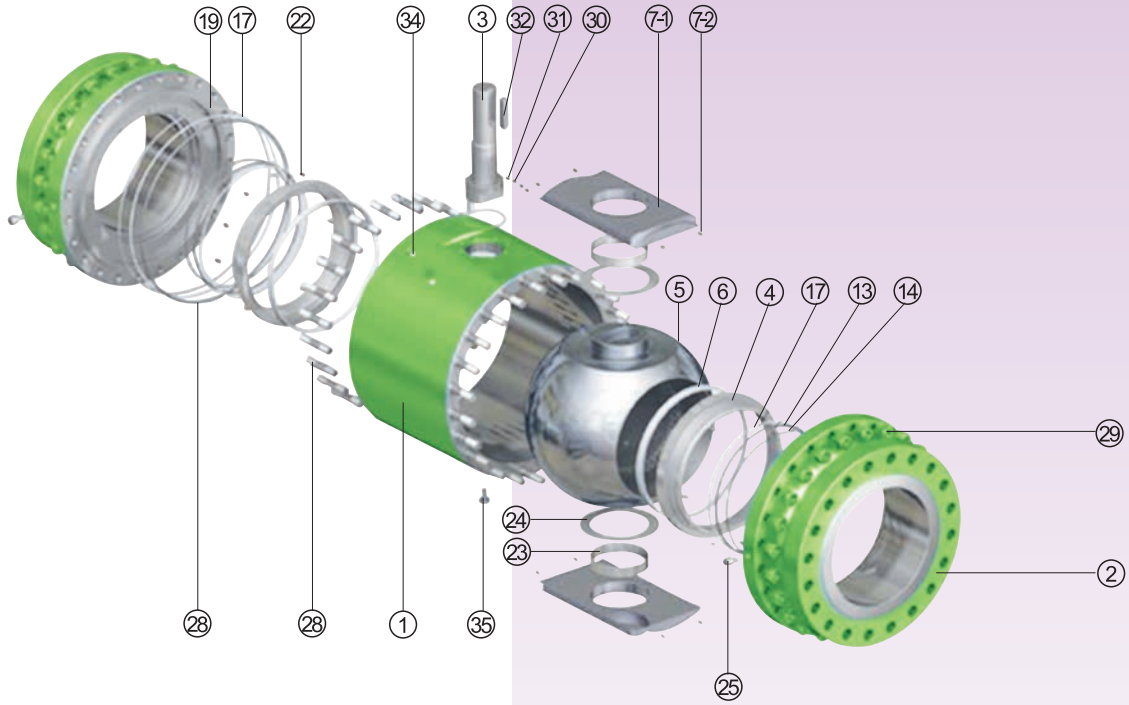
PART LIST AND MATERIAL SPECIFICATIONS (TYPICAL)



NO	PART NAME	CARBON STEEL NACE	LOW TEMP NACE	STAINLESS STEEL NACE
1	BODY	A105, A216 WCB	A350 LF2, A352 LCB	A182 F316, A351 CF8M
2	CAP	A105, A216 WCB	A350 LF2, A352 LCB	A182 F316, A351 CF8M
3	STEM	AISI 1045 ENP, AISI 4140 ENP	AISI 4140 ENP	316SS, 17-4 PHSS
4	SEAT RING	A105 ENP, A216 WCB ENP	A350 LF2 ENP, A352 LCB ENP	316SS
5	BALL	A105 ENP, A216 WCB ENP	A350 LF2 ENP, A352 LCB ENP	A182 F316, A351 CF8M
6	SEAT INSERT	Nylon, PTFE, PEEK	NYLON, PTFE, PEEK	Nylon, PTFE, PEEK
7	TRUNNION	AISI 1045, AISI 4140		316SS
7-1	TRUNNION BLOCK	AISI 1045, AISI 4140		316SS
7-2	TRUNNION BLOCK PIN	AISI 410		316SS
8	GLAND	AISI 1045		316SS
9	ADAPTER PLATE	AISI 1045		316SS
10	STEM O-RING / LIPSEAL	Viton / Polymite	Viton GLT / Polymite	Viton / Polymite
11	STEM O-RING	Viton	Viton GLT	Viton
12	GLAND O-ING	Viton	Viton GLT	Viton

BALL VALVES
BOLTED CAP

PART LIST AND MATERIAL SPECIFICATIONS (TYPICAL)

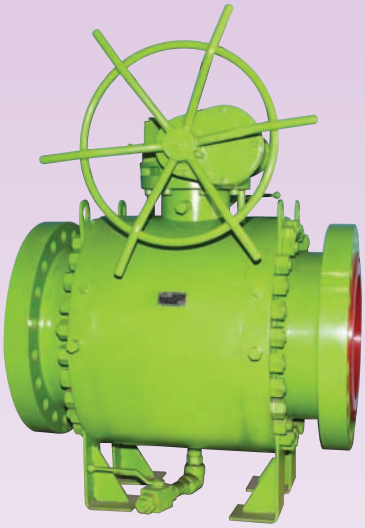


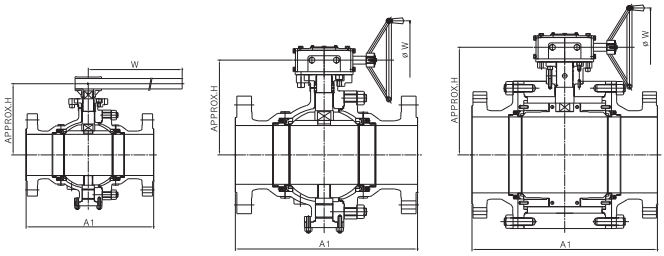
NO	PART NAME	CARBON STEEL NACE	LOW TEMP NACE	STAINLESS STEEL NACE
13	SEAT O-RING / LIPSEAL	Viton / Polymite	Viton GLT / Polymite	Viton / Polymite
14	SEAT SUBSEAL	Viton, Graphite	Viton GLT, Graphite	Viton, Graphite
15	CLOSURE O-RING	Viton	Viton GLT	Viton
16	TRUNNION O-RING	Viton	Viton GLT	Viton
17	BACKUP RING	PTFE, Nylon	PTFE, Nylon	PTFE, Nylon
18	GLAND SEAL	Spiral Wound Gasket 316SS + Graphite		
19	BODY SEAL	Spiral Wound Gasket 316SS + Graphite		
20	TRUNNION SEAL	Spiral Wound Gasket 316SS + Graphite		
21	STEM PACKING	Graphite		
22	SEAT SPRING	Inconel X-750, 17-7 PHSS		
23	BEARING	PTFE / Carbon Steel		PTFE / 316 SS
24	THRUST WASHER	PTFE / Carbon Steels		PTFE / 316 SS
25	SEALANT FITTING	Carbon Steel / SS Ball Check		316SS / SS Ball Check
26	SOCKET BOLT	A574		316SS
27	HEX / SOCKET BOLT	A574		316SS
28	STUD BOLT	A193 B7	A320L 7	A193 B8
29	HEX NUT	A194 2H	A194 7	A194 8
30	GROUNDING PIN	Stainless Steel		
31	GROUNDING SPRING	Stainless Steel		
32	KEY	Carbon Steel	Carbon Steel	Stainless Steel
33	DOWEL PIN	Carbon Steel	Carbon Steel	Stainless Steel
34	RELIEF PLUG	Carbon Steel	Carbon Steel	Stainless Steel
35	DRAIN PLUG	Carbon Steel	Carbon Steel	Stainless Steel
36	MOUNTING PLATE	Carbon Steel	Carbon Steel	Stainless Steel
37	GEAR OPERATOR	Ductile Iron Case / Carbon Steel Worm Gear		
38	HAND WHEEL	Carbon Steel, Ductile Iron		

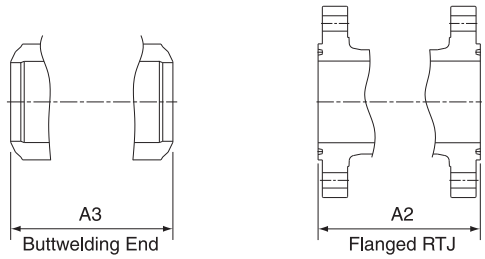
BALL VALVES

BOLTED CAP

BC, TRUNNION BALL







CLASS 150

VALVE SIZE	in	6	8	10	12	14	16	18	20	24	28	30	36
	mm	150	200	250	300	350	400	450	500	600	700	750	900
A1	in	15.5	18.0	21.0	24.0	27.0	30.0	34.0	36.0	42.0	49.0	51.0	60.0
	mm	393.7	457.2	533.4	609.6	685.5	762	863.6	914.4	1066.8	1245	1295	1524
H	in	29.5	36.7	46.3	52.2	60.0	71.2	87.2	99.3	112.2	129.3	139.0	156.7
	mm	749	931	1176	1326	1525	1809	2214	2522	2850	3284	3530	3980
W	in	23.6	15.7	15.7	17.7	19.7	22.0	19.7	24.8	24.8	28.0	28.0	31.5
	mm	600	400	400	450	500	560	500	630	630	710	710	800
WEIGHT RF	lb	277.8	423.3	588.6	1003.1	1730.6	2275.2	3053.4	4695.8	6172.9	8035.8	10670.4	1642.4
	kg	126	192	267	455	785	1032	1385	2130	2800	3645	4840	7450

CLASS 300

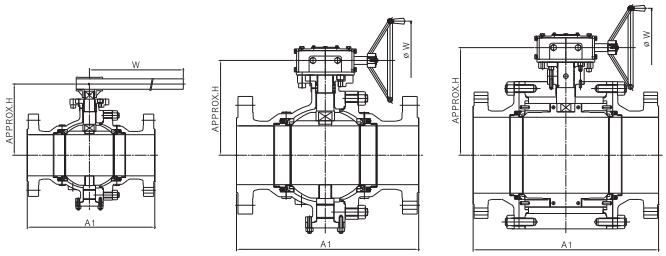
VALVE SIZE	in	4	6	8	10	12	14	16	18	20	24	28	30	36
	mm	100	150	200	250	300	350	400	450	500	600	700	750	900
A1 & A3	in	12.0	15.9	16.5	18.0	19.8	30.0	33.0	36.0	39.0	45.0	53.0	55.0	68.0
	mm	305	403	419	457	502	762	838	914	991	1143	1346	1397	1727
H	in	9.3	12.0	13.6	16.1	17.9	19.0	20.1	21.7	24.0	27.4	30.8	33.7	37.8
	mm	235	305	345	410	455	482	510	550	610	695	782	855	960
W	in	23.6	19.7	22.0	24.8	24.8	28.0	31.5	31.5	31.5	31.5	31.5	31.5	31.5
	mm	600	500	560	630	630	710	800	800	800	800	800	800	800
WEIGHT RF	lb	174.2	341.7	529.1	665.8	1135.4	21991.1	2623.5	3042.4	4343.1	6613.9	9336.6	12897.0	18386.5
	kg	79	155	240	302	515	9975	1190	1380	1970	3000	4235	5850	8340

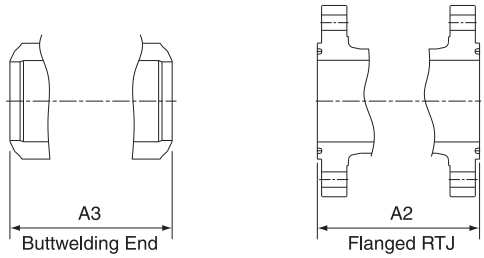
CLASS 600

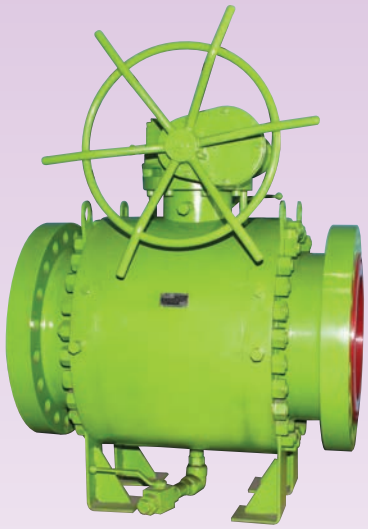
VALVE SIZE	in	2	3	4	6	8	10	12	14	16	18	20	24
	mm	50	80	100	150	200	250	300	350	400	450	500	600
A1 & A3	in	11.5	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0
	mm	292	356	432	559	660	787	838	889	991	1092	1194	1397
A2	in	11.6	14.1	17.1	22.1	26.1	31.1	33.1	35.1	39.1	43.1	47.2	55.4
	mm	295	359	435	562	663	790	841	892	994	1095	1200	1407
H	in	6.9	8.8	10.0	12.1	14.6	16.3	18.1	19.7	21.9	21.5	24.8	28.0
	mm	175	223	255	308	372	415	460	500	556	545	630	710
W	in	23.6	23.6	23.6	15.7	19.7	24.8	24.8	24.8	28.0	31.5	31.5	31.5
	mm	600	600	600	400	500	630	630	630	710	800	800	800
WEIGHT RF	lb	94.8	154.3	295.4	628.3	987.7	1499.1	2398.6	2892.5	4146.9	5216.1	7050.4	10472.0
	kg	43	70	134	285	448	680	1088	1312	1881	2366	3198	4750

BALL VALVES
BOLTED CAP

BC, TRUNNION BALL







CLASS 900

VALVE SIZE	in	2	3	4	6	8	10	12	14	16
	mm	50	80	100	150	200	250	300	350	400
A1 & A3	in	14.5	15.0	18.0	24.0	29.0	33.0	38.0	40.5	44.5
	mm	368	381	457	610	737	838	965	1029	1130
A2	in	14.6	15.1	18.1	24.1	29.1	33.1	38.1	40.9	44.9
	mm	371	384	460	613	740	841	968	1038	1140
H	in	7.4	9.1	10.3	12.6	15.2	17.9	21.9	22.6	23.2
	mm	188	230	262	320	385	455	555	575	590
W	in	23.6	23.6	15.7	22.0	19.7	24.8	31.5	31.5	31.5
	mm	600	600	400	560	500	630	800	800	800
WEIGHT RF	lb	165.3	209.4	451.9	738.5	1415.4	1653.5	2425.1	3417.2	4365.2
	kg	75	95	205	335	642	750	1100	1550	1980

CLASS 1500

VALVE SIZE	in	2	3	4	6	8	10	12
	mm	50	80	100	150	200	250	300
A1 & A3	in	14.5	18.5	21.5	27.8	32.8	39.0	44.5
	mm	368	470	546	705	832	991	1130
A2	in	14.6	18.6	21.6	28.0	33.1	39.4	45.1
	mm	371	473	549	711	842	1000	1146
H	in	7.4	9.1	10.3	12.6	15.2	17.8	23.0
	mm	188	230	262	320	385	452	583
W	in	23.6	23.6	19.7	22.0	24.8	28.0	31.5
	mm	600	600	500	560	630	710	800
WEIGHT RF	lb	165.3	297.6	573.2	1135.4	1569.7	2711.7	3957.3
	kg	75	135	260	515	712	1230	1795

CLASS 2500

VALVE SIZE	in	2	3	4	6	8	10
	mm	50	80	100	150	200	250
A1 & A3	in	17.8	22.8	26.5	36.0	40.2	50.0
	mm	451	578	673	914	1022	1270
A2	in	17.9	23.0	26.9	36.5	40.9	50.9
	mm	454	584	683	927	1038	1292
H	in	9.5	11.2	13.2	16.9	19.9	29.5
	mm	241.3	284.5	335.2	429.3	505.5	749.3
W	in	15.7	19.7	22.0	24.8	28.0	31.5
	mm	400	500	560	630	710	800
WEIGHT RF	lb	220.5	540.1	826.7	882.7	3858.1	6018.6
	kg	100	245	375	854	1750	2730