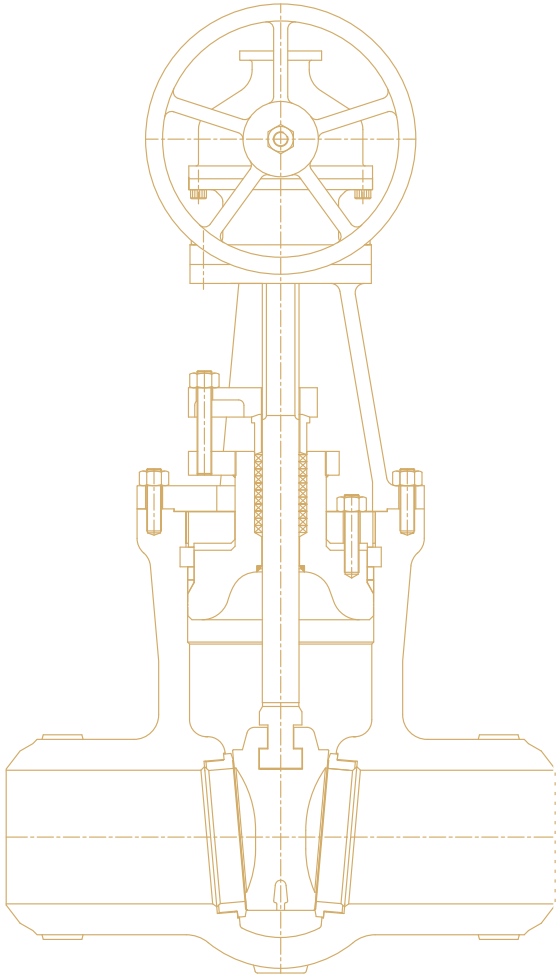
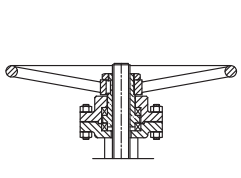


01

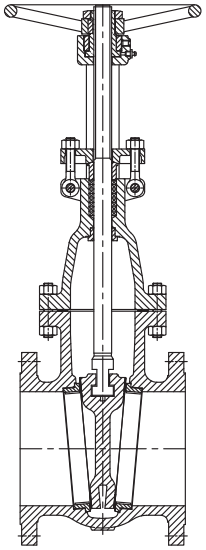
GATE VALVE

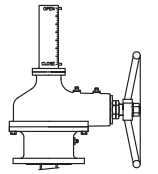
GATE VALVE CLASS 150, 300, 600.

API 600/ASME B 16.34/BS1414



WITH BEARING





GEAR OPERATION

MATERIAL SPECIFICATION

PART NAME	MATERIAL		MATERIAL	
BODY	A 216 WCB	A 217 WC6	A 351 CF8	A 351 CF8M
BONNET	A 216 WCB	A 217 WC6	A 351 CF8	A 351 CF8M
YOKE 1	A 216 WCB	A 217 WC6	A 351 CF8	A 351 CF8M
WEDGE	13%Cr. FACING ON WCB	13%Cr. FACING ON WC6	A 351 CF8	A 351 CF8M
SEAT RING 2	13%Cr. FACING ON A 515–70	S.S 304	T304/CF8	T316/CF8M
BACK SEAT	T410	T410	INTEGRAL	INTEGRAL
SPINDLE	T410	T410	T304	T316
GLAND BUSH	T410	T410	T304	T316
GLAND FLANGE	CARBON STEEL/WCB	CARBON STEEL/WCB	S.S 304	
YOKE SLEEVE	A 439 Gr.D2		AL–BRONZE	
YOKE NUT	ASTM A 515–70		S.S 304	
CASING COVER	A 216 WCB	A 217 WC6	A 351 CF8	A 351 CF8
HAND WHEEL	CARBON STEEL		CARBON STEEL	
HAND WHEEL NUT	CARBON STEEL		S.S 304	
STUD & NUT	A 193 B7/A 194 2H	A 193 Gr.B16/A 194 Gr.7	A 193 B8/A 194 Gr.8	
EYE BOLT & NUT	A 193 B7/A 194 2H		A 193 B7/A 194 2H	
CROSS BOLT & NUT	A 193 B7/A 194 2H		A 193 B7/A 194 2H	
GASKET	SPW SS 304/316 WITH GRAPHOIL			
GLAND PACKING	GRAPHOIL			
GRUB SCREW	STEEL			
GREASE NIPPLE	BRASS/STEEL			
NAME PLATE	ALUMINIUM/S.S.			
BEARING	STANDARD			

1 – SEPERATE YOKE 14"NB & ABOVE
2 – SEAL WELD 3"NB & ABOVE
3 – RENEWABLE BACK SEAT FOR AUSTENITIC STEEL VALVE OPTIONAL
4 – SEAT AND WEDGE STELLITING OPTIONAL.
5 – BY–PASS ARRANGEMENT OPTIONAL

Standard Product Range

Valve Type	ANSI Class	Design Standard	Size
Gate	150	API 600/ BS 1414/ASME B 16.34	2" NB TO 60" NB
	300		2" NB TO 50" NB
	600		2" NB TO 36" NB
	900		2" NB TO 24" NB
	1500		2" NB TO 24" NB
	2500		2" NB TO 16" NB
Globe	150	BS 1873/ ASME B 16.34	2" NB TO 36" NB
	300		2" NB TO 36" NB
	600		2" NB TO 36" NB
	900		2" NB TO 24" NB
	1500		2" NB TO 16" NB
	2500		2" NB TO 16" NB
Swing Check	150	BS 1868/ API 6D/ASME B 16.34	2" NB TO 36" NB
	300		2" NB TO 36" NB
	600		2" NB TO 36" NB
	900		2" NB TO 24" NB
	1500		2" NB TO 24" NB
	2500		2" NB TO 16" NB
Dual Plate	150	BS 5352/ASME B 16.34	2" NB TO 60" NB
	300		2" NB TO 60" NB
	600		2" NB TO 60" NB
	900		2" NB TO 24" NB
	1500		2" NB TO 24" NB
	2500		2" NB TO 16" NB
Conduit Gate	150	API 6D/ASME B 16.34	2" NB TO 36" NB
	300		2" NB TO 24" NB
	600		2" NB TO 22" NB
Ball	150	BS 5351/ API 6D/ASME B 16.34	1/2" NB TO 24" NB
	300		1/2" NB TO 36" NB
	600		1/2" NB TO 36" NB
	800		1/4" NB TO 2" NB
	900		1/2" NB TO 24" NB
	1500		1/2" NB TO 24" NB
	2500		1/2" NB TO 24" NB
Forged Steel Gate	800	API 602/ ISO 15761/ BS 5352/ ASME B16.34	1/4" NB TO 2" NB
	1500		1/4" NB TO 1 1/2" NB
	2500-4500		
Forged Steel Globe	800	API 602/ ISO 15761/ BS 5352/ ASME B16.34	1/4" NB TO 1 1/2" NB
	1500		
	2500-4500		
Forged Steel Lift Check	800	API 602/ ISO 15761/ BS 5352/ ASME B16.34	1/4" NB TO 1 1/2" NB
	1500		
	2500-4500		

Note : Applicable standards are referred where size range exceeds design standard

Valve Shell Materials

Besides its Standard material ASTM A 216 (WCB)/A 105, NITON cast steel, Forged steel & Alloy Steel Valves are optionally available with the material listed below:

ASTM Cast	ASTM Forged	Material Designation	Working Temperature* °F / °C ASME B16.34
A216 WCB	A105	Carbon Steel	800/ 875 Maximum
A217 WC1	A182 F1	C-0.5 Mo	875
A217 WC6	A182 F11	1.25 Cr-1/2 Mo	1100/ 593 Maximum
A217 WC9	A182 F22	2.25 Cr-1Mo	
A217 C5	A 182 F5	5Cr-0.5 Mo	1200/ 649 Maximum
A217 C12	A 182 F9	9Cr-1Mo	
A352 LCB	A 350 LF2	Carbon Steel	-50/ -46 Minimum
A352 LCC	-	Carbon Steel	
A352 LC1	-	C-0.5 Mo	-75/ -59 Minimum
A352 LC2	-	2.5 Ni	-100/ -73 Minimum
A352 LC3	-	3.5 Ni	-150/ -101 Minimum
A351 CF8M	A 182 F316	13 Cr, 9Ni	1500/ 816 Maximum
A351 CF8	A 182 F304	18Cr, 8Ni	1500/ 816 Maximum
A351 CF3M	A 182 F316L	16Cr-12Ni - 2Mo	850/ 454 Maximum
A351 CF3	A 182 F304L	18Cr, 8Ni	800/ 427 Maximum
A351 CN7M		29Ni-20.5Cr-3.5Cu-2.5Mo	300/ 149 Maximum

General Design Specification

Items	American Std.	British Std.
Shell wall thickness and general valve design specifications, Cast Steel, Forged Steel.	API 600 / API 6D/API 602/ASME B 16.34	BS 1414 (Gate valve) BS 1873 (Globe Valve) BS 1868 (Check valve) BS 5352
Pressure-temperature rating	ASME B16.34/ API 602/ API 6D	BS1560 / BS 5352
Face-to-Face dimensions Flanged End End-to-end dimensions Butt Weld End @	ANSI B16.10/ API 6D	BS 2080
End Flange dimensions Gasket contact facing	ANSI B16.5*	BS 3293/ BS1560
Welding end dimensions Butt Weld	ANSI B16.25	BS1414 (Gate valve) BS1873 (Globe Valve) BS1868 (Check valve)
Welding end dimensions Socket Weld	ANSI B16.11	
Radiograph & NDT requirements	ASME B16.34	
Inspection and Testing Standard	API 598/ API 6D	BS 6755

* MSS SP-44 for 22" and API 605 for 26" large, for end flange dimensions.

@ End to End of Butt Weld end & socket weld end for forged steel valves as per manufacture standard.

Valve Trim

API 600 and BS 1414 / 1873 / 1868 specify the following valve components parts as the valve trim

Description	Gate Valve	Globe Valve	Check Valve
Wedge/Disc seat surface	⬭	⬭	⬭
Body seat surface	⬭	⬭	⬭
Bonnet bush (Backseat)	⬭	⬭	---
Stem	⬭	⬭	---
Others	Internal small parts	Plug nut	Hinge pin

Trim Material

API 600 Trim Number	Symbol	Wedge/ Disc Surface	Seat Surface	Stem Material
1	1	13% Cr.	13% Cr.	ASTM A 276 -T410
2	2	18% Cr.8% Ni	18% Cr.8% Ni	ASTM A 276 -T304
5	5	Stellite	Stellite	ASTM A 276 -T410
8	8	13% Cr.	Stellite	ASTM A 276 -T410
9	9	Monel	Monel	Ni Cu Alloy Monel
10	10	18% Cr.8% Ni	18% Cr.8% Ni	ASTM A 276 - T316
12	12	18% Cr.8% Ni	Stellite	ASTM A 276 - T316
13	13	Alloy 20 19% Cr.29% Ni.	Alloy 20 19% Cr.29% Ni.	ASTM B473
16	16	Stellite	Stellite	ASTM A 276 - T316

Gland Packing Materials

Graphite with sacrificial inhibitor & inconel wire reinforcement. is the standard gland packing material for NITON cast and forged steel valves. However various special Gland Packing material shall be used depending on service conditions.

Packing Material	
Inconel wire Graphite Asbestos	1200 / 649 high pressure
PTFE impregnated asbestos	450 / 232 corrosion resistant
Virgin PTFE	450 / 232 corrosion resistant
Graphite asbestos	650 / 343 medium pressure
Grafoil	1500 / 816 corrosion resistant
Gore - Tex	(-400 -520)/ (-240 + 270) corrosion resistant
Inconel wire Graphite Non Asbestos	1200 / 649 High pressure

Gasket Material	ANSI Class						
	150	300	600	800	900	1500	2500
Corrugated metal	●	⬭					
Oct. Ring metal			⬭	⬭	●	●	●
Spiral wound metal grafoil filler	⬭	⬭	⬭	⬭			
Spiral wound metal PTFE filler		⬭	⬭	⬭			
Seal Ring (Pr. Seal Bonnet)					●	●	●
Virgin PTFE	⬭	⬭					
Glass filled PTFE	⬭	⬭					

● : Niton Standard ⬭ : Option

Pressure Temperature Ratings

ASME B 16.34
Maximum Allowable Non-Shock Pressure, psig / kg / cm2 g.

Service Temperature		Class 150					Class 300					Class 600				
° F	° C	WCB (a)	WC1 (b)(c.)	WC6 (c.)	WC9 (c.)	C5 (c.)	WCB (a)	WC1 (b)(c.)	WC6 (c.)	WC9 (c.)	C5 (c.)	WCB (a)	WC1 (b)(c.)	WC6 (c.)	WC9 (c.)	C5 (c.)
-20 to	-29 to															
100	38	285	265	290	290	290	740	695	750	750	750	1480	1390	1500	1500	1500
200	93	260	260	260	260	260	675	680	750	750	745	1350	1360	1500	1500	1490
300	149	230	230	230	230	230	655	655	720	730	715	1315	1305	1445	1455	1430
400	204	200	200	200	200	200	635	640	695	705	705	1270	1280	1385	1410	1410
500	260	170	170	170	170	170	600	620	665	665	665	1200	1245	1330	1330	1330
600	316	140	140	140	140	140	550	605	605	605	605	1095	1210	1210	1210	1210
650	343	125	125	125	125	125	535	590	590	590	590	1075	1175	1175	1175	1175
700	371	110	110	110	110	110	535	570	570	570	570	1065	1135	1135	1135	1135
750	399	95	95	95	95	95	505	530	530	530	530	1010	1065	1065	1065	1055
800	427	80	80	80	80	80	410	510	510	510	510	825	1015	1015	1015	1015
850	454	65	65	65	65	65	270	485	485	485	485	535	975	975	975	965
900	482	50	50	50	50	50	170	450	450	450	370	345	900	900	900	740
950	510	35	35	35	35	35	105	280	320	375	275	205	560	640	755	550
1000	538	20	20	20	20	20	50	165	215	260	200	105	330	430	520	400
1050	566			20*	20*	20*			145	175	145			290	350	290
1100	593			20*	20*	20*			95	110	100			190	220	200
1150	621					20*					60					125
1200	649					15*					35					70
Hydrostatic Shell Test Pressure		450	425	450			1125	1075	1150			2250	2100	2275		
		31.5	29	31.5			79	75	805			157.5	147	154		
Valve Closure Test Pressure	Fluid	315	300	320			825	770	830			1630	1535	1655		
		22.00	21.00	22.5			58	54	58			114	107	116		
	Air	100/7					100/7					100/7				

Service Temperature		Class 900					Class 1500					Class 2500				
° F	° C	WCB (a)	WC1 (b)(c.)	WC6 (c.)	WC9 (c.)	C5 (c.)	WCB (a)	WC1 (b)(c.)	WC6 (c.)	WC9 (c.)	C5 (c.)	WCB (a)	WC1 (b)(c.)	WC6 (c.)	WC9 (c.)	C5 (c.)
-20 to	-29 to															
100	38	2220	2085	2250	2250	2250	3705	3470	3750	3750	3750	6170	5785	6250	6250	6250
200	93	2025	2035	2250	2250	2235	3375	3395	3750	3750	3725	5625	5660	6250	6250	6205
300	149	1970	1955	2165	2185	2150	3280	3260	3610	3640	3580	5470	5435	6015	6070	5965
400	204	1900	1920	2080	2115	2115	3170	3200	3465	3530	3530	5280	5330	5775	5880	5880
500	260	1795	1865	1995	1995	1995	2995	3105	3425	3325	3325	4990	5180	5540	5540	5540
600	316	1640	1815	1815	1815	1815	2735	3025	3025	3025	3025	4560	5040	5040	5040	5040
650	343	1610	1765	1765	1765	1765	2685	2940	2940	2940	2940	4475	4905	4905	4905	4905
700	371	1600	1705	1705	1705	1705	2665	2840	2840	2840	2840	4440	4730	4730	4730	4730
750	399	1510	1595	1595	1595	1585	2520	2660	2660	2660	2640	4200	4430	4430	4430	4400
800	427	1235	1525	1525	1525	1525	2060	2540	2540	2540	2540	3430	4230	4230	4230	4230
850	454	805	1460	1460	1460	1450	1340	2435	2435	2435	2415	2230	4060	4060	4060	4030
900	482	515	1350	1350	1350	1110	860	2245	2245	2245	1850	1430	3745	3745	3745	3085
950	510	310	845	955	1130	825	515	1405	1595	1885	1370	860	2345	2655	3145	2285
1000	538	155	495	650	780	595	260	825	1080	1305	995	430	1370	1800	2170	1655
1050	566			430	525	430			720	875	720			1200	1455	1200
1100	593			290	330	300			480	550	495			800	915	830
1150	621				205	185					310					515
1200	649				125	105					170					285
Hydrostatic Shell Test Pressure		3350	3150	3375			5575	5525	5650			9275	8700	9375		
		235	220.5	236.5			390	387	390			650	609	656		
Valve Closure Test Pressure	Fluid	2445	2295	2475			4080	3817	4130			6780	6365	6875		
		171	160.5	173			286	267	280			475	445	481		
	Air	100/7					100/7					100/7				

Notes: (a) --- Permissible, but not recommended for prolonged usage above 800° F. Upon prolonged exposure to temperature above 800° F, the carbide phase of carbon steel may be converted to graphite.

(b) --- Permissible, but not recommended for prolonged usage above 850° F.

(c) --- Use normalized and tempered material only.
* For welding end valves only. Flanged end ratings terminate at 1,000° F.

Pressure Temperature Ratings

ASME B 16.34
Maximum Allowable Non-Shock Pressure, psig / kg / cm2 g.

Service Temperature		Class 150				Class 300				Class 600			
° F	° C	CF8		CF8M		CF8		CF8M		CF8		CF8M	
-20 to	-29 to	psig	kgf / cm2	psig	kgf / cm2	psig	kgf / cm2	psig	kgf / cm2	psig	kgf / cm2	psig	kgf / cm2
100	38	275	19.2	275	19.2	720	50.4	720	50.4	1440	100.8	1440	100.8
200	93	230	16.1	235	16.45	600	42	620	43.4	1200	84	1240	86.8
300	149	205	14.3	215	15.05	540	37.8	560	39.2	1080	75.6	1120	78.4
400	204	190	13.3	195	13.65	495	34.7	515	36.05	995	69.65	1025	71.75
500	260	170	11.9	170	11.9	465	32.55	480	33.6	930	65.1	955	66.85
600	316	140	9.8	140	9.8	435	30.45	450	31.5	875	61.25	900	63
650	343	125	8.75	125	8.75	430	30.1	445	31.15	860	60.2	890	62.3
700	371	110	7.7	110	7.7	425	29.75	430	30.1	850	59.5	870	60.9
750	399	95	6.65	95	6.65	415	29.05	425	29.75	830	58.1	855	59.85
800	427	80	5.6	80	5.6	405	28.35	420	29.4	805	56.35	845	59.15
850	454	65	4.55	65	4.55	395	27.65	420	29.4	790	55.3	835	58.45
900	482	50	3.5	50	3.5	390	27.3	415	29.05	780	54.6	830	58.1
950	510	35	2.45	35	2.45	380	26.6	385	26.95	765	53.55	775	54.25
1000	538	20	1.4	20	1.4	320	22.4	350	24.5	640	44.8	700	49.0
1050	566	20*	1.4	20*	1.4	310	21.7	345	24.15	615	43.05	685	47.95
1100	593	20*	1.4	20*	1.4	255	17.85	305	21.35	515	36.05	610	42.7
1150	621	20*	1.4	20*	1.4	200	14	235	16.45	400	28	475	33.25
1200	649	20*	1.4	20*	1.4	155	10.85	185	12.95	310	21.7	370	25.9
1250	677	20*	1.4	20*	1.4	115	8.05	145	10.15	225	15.75	295	20.65
1300	704	20*	1.4	20*	1.4	85	6.0	115	8.05	170	11.9	235	16.45
1350	732	20*	1.4	20*	1.4	60	4.2	95	6.65	125	8.75	190	13.3
1400	760	20*	1.4	20*	1.4	50	3.5	75	5.25	95	6.65	150	10.5
1450	788	15*	1.4	20*	1.4	35	2.5	60	4.2	70	4.9	115	8.05
1500	816	10*	0.7	15*	1.4	25	1.75	40	2.8	55	3.85	85	5.95
Hydrostatic Shell Test Pressure		425 / 30				1100 / 78				2175 / 153			
Valve Closure Test Pressure	Hydro-static	305 / 22				795 / 56				1585 / 115			
	Air	100 / 7				100 / 7				100 / 7			

Service Temperature		Class 900				Class 1500			
° F	° C	CF8		CF8M		CF8		CF8M	
-20 to	-29 to	psig	kgf / cm2	psig	kgf / cm2	psig	kgf / cm2	psig	kgf / cm2
100	38	2160	151.2	2160	151.2	3600	252	3600	252
200	93	1800	126	1860	130.2	3000	210	3095	216.65
300	149	1620	113.4	1680	117.6	2700	189	2795	195.65
400	204	1490	104.3	1540	107.8	2485	174.0	2570	179.9
500	260	1395	97.5	1435	100.4	2330	163.1	2390	167.3
600	316	1310	91.7	1355	94.85	2185	152.95	2255	157.85
650	343	1290	90.3	1330	93.1	2150	150.5	2220	155.4
700	371	1275	89.25	1305	91.4	2125	148.75	2170	151.9
750	399	1245	87.2	1280	89.6	2075	145.25	2135	149.45
800	427	1210	84.7	1265	88.55	2015	141.05	2110	147.7
850	454	1190	83.3	1255	87.85	1980	138.6	2090	146.3
900	482	1165	81.55	1245	87.2	1945	136.15	2075	145.25
950	510	1145	80.15	1160	81.2	1910	133.7	1930	135.1
1000	538	965	67.55	1050	73.5	1605	112.35	1750	122.5
1050	566	925	64.8	1030	72.1	1545	108.15	1720	120.4
1100	593	770	53.9	915	64.05	1285	89.95	1525	106.75
1150	621	595	41.65	710	49.7	995	69.65	1185	82.95
1200	649	465	32.55	555	38.85	770	53.9	925	64.75
1250	677	340	23.8	440	30.8	565	39.55	735	51.5
1300	704	255	17.85	350	24.5	430	30.1	585	40.95
1350	732	185	13.0	290	20.3	310	21.7	480	33.6
1400	760	145	10.15	225	15.75	240	16.8		26.6
1450	788	105	7.35	175	12.25	170	11.9		20.3
1500	816	80	5.6	125	8.75	135	9.45		14.35
Hydrostatic Shell Test Pressure		3250 / 230				5400 / 380			
Valve Closure Test Pressure	Hydro-static	2380 / 170				3960 / 280			
	Air	100 / 7				100 / 7			

ASTM Materials

ASTM Code	Chemical Compositions %										Mechanical			
	C	Mn	P	S	Si	Cr	Mo	Ni	Cu	V	Tensile Mpa	Yield Mpa	% Elongation	% Reduct. Area
	max.	max.	max.	max.	max.	max.	max.	max.	max.	max.	min	min	min	min
A216 WCB	0.30	1.00	0.040	0.045	0.60	0.50	0.20	0.50	0.30	0.03	485	250	22	35
A216 WCC	0.25	1.20	0.040	0.045	0.60	0.50	0.20	0.50	0.30	0.03	485	275	22	35
A217 WC1	0.25	0.80	0.040	0.045	0.60		0.65		0.50		450	240	24	35
A217 WC5	0.05 0.20	0.40 0.70`	0.040	0.045	0.60	0.50 0.90	0.90 1.20	0.60 1.00	0.50	0.10 Tu	485 to 655	275	20	35
A217 WC6	0.20	0.80	0.040	0.045	0.60	1.50	0.65		0.50		485	275	20	35
A217 WC9	0.18	0.70	0.040	0.045	0.60	2.75	1.20		0.50	23	485	275	20	35
A217 C5	0.20	0.70	0.040	0.045	0.75	6.50	0.65		0.50		620	415	18	35
A217 CA15	0.15	1.00	0.040	0.040	1.50	14.00	0.50	1.00			620	450	18	30
A351 CF8	0.08	1.50	0.040	0.040	2.00	21.00	0.50	11.00			485	205	35	
A351 CF8M	0.08	1.50	0.040	0.040	1.50	21.00	3.00	12.00			485	205	30	
A351 CF3	0.03	1.50	0.040	0.040	2.00	21.00	0.50	12.00			485	205	35	
A351 CF3M	0.03	1.50	0.040	0.040	1.50	21.00	3.00	13.00			485	205	30	
A351 CN7M	0.07	1.50	0.040	0.040	1.50	22.00	3.00	30.50	4.00		425	170	35	
A352 LCB	0.30	1.00	0.040	0.045	0.60	0.50	0.20	0.50	0.30	0.03	450	240	24	35
A352 LCC	0.25	1.20	0.040	0.045	0.60	0.50	0.20	0.50	0.30	0.03	485	275	22	35
A105	0.35	1.05	0.035	0.040	0.35	0.30	0.12	0.40	0.40	0.05	485	250	30	30
A182 F304	0.08	2.00	0.040	0.030	1.00	20.00		11.00			515	205	30	50
A182 F316	0.08	2.00	0.040	0.030	1.00	18.00	3.00	14.00			515	205	30	50
A182 F304L	0.04	2.00	0.040	0.030	1.00	20.00		13.00			485	170	30	50
A182 F316L	0.04	2.00	0.040	0.030	1.00	18.00	3.00	15.00			485	170	30	50
A182 F5	0.15	0.30 0.60	0.030	0.030	0.500	4.00 6.00	0.44 0.65	0.50			485	275	20	35
A182 F11 Cl1	0.05 0.15	0.30 0.61	0.030	0.030	0.50 1.00	1.00 1.50	0.44 0.65				415	205	20	45
A182 F11 Cl2	0.10	0.30	0.040	0.040	0.50	1.00	0.44				485	276	20	30
A182 F11 Cl3	0.20	0.80	0.040	0.040	1.00	1.50	0.65				515	310	20	30
A182 F22 Cl1	0.05 0.15	0.30 0.60	0.040	0.040	0.50	2.00 2.50	0.87 1.13				415	205	20	35
A182 F22 Cl2	0.15 0.16	0.30 0.61	0.040	0.040	0.50	2.00 2.51	0.87 1.14				515	310	20	30
A350 LF2	0.03	0.60 1.35	0.035	0.040	0.15 0.30	0.30	0.12	0.40	0.40	0.02 0.03	485 to 655	250	30	197
A276 410	0.15	1.00	0.040	0.030	1.00	11.5 13.5					690	550	15	45
A276 420	>0.15	1.00	0.040	0.030	1.00	14.00								
A193 B7	0.49	1.10	0.035	0.040	0.35	1.20	0.25				860	720	16	50
A193 B7M	0.49	1.10	0.035	0.040	0.35	1.20	0.25				690	550	18	50
A193 B8	0.08	2.00	0.045	0.030	1.00	20.00		10.50			515	205	30	50
A193 B8M	0.08	2.00	0.045	0.030	1.00	18.00	3.00	14.00			515	205	30	50
A194 2H	0.40	1.00	0.040	0.050	0.40									
A194 2HM	0.40	1.00	0.040	0.050	0.40									
A320 L7	0.48	1.00	0.035	0.040	0.35	1.10	0.25				860	725	16	50
A320 L7M	0.48	1.00	0.035	0.040	0.35	1.10	0.25				690	550	18	50
A194 8	0.08	2.00	0.045	0.030	1.00	20.00		10.50						

DETAILS ABOUT ITEM CODING STRUCTURE

Our item code consist of 10 digits, each digit have containted some important, the following are the step by step explanation of each digit

I	II	III	IV	V	VI	VII

[I] TYPES OF VALVES 2 DIGIT

1	GATE VALVE
2	GLOBE VALVE
3	SWING CHECK VALVE
4	LIFT CHECK VALVE
5	BALL VALVE
6	FLUSH BOTTOM VALVE
7	NEEDLE VALVE
8	THROUGH CONDUIT GATE
9	DUAL PLATE CHECK VALVE
10	STOP CHECK VALVE
11	Y-TYPE GLOBE VALVE
12	ANGLE VALVE
13	DEAD MAN VALVE

[II] CLASS OF VALVES 1 DIGIT

0	125 CLASS
1	150CLASS
2	300 CLASS
3	400 CLASS
4	600 CLASS
5	800 CLASS
6	900 CLASS
7	1500 CLASS
8	2500 CLASS
9	4500 CLASS

[III] BODY MATERIALS - 2 DIGIT

01	WCB	02	A105
03	CF8	04	CF8M
05	LCB	06	WC6
07	WC9	08	A182 F 304
09	AF182 F316	10	CF3
11	CF3M	12	C5
13	ALLOY- 20	14	HASTELLOY -B
15	HASTELLOY-C	16	CAST IRON
17	C.S.BARSTOCK	18	S.S.304
19	S.S.316	20	WCI
21	F304L	22	F316L
23	C12	24	CF8C
25	CN7M	26	CF10
27	LC3	28	MONEL
29	CD4N-CU	30	F5
31	F9	32	F11
33	WC5	34	F22
35	F321	37	A350 LF2

[IV] TRIM MATERIAL 2 DIGITS

01	13% CR SS
02	C.S 13% CR. FACING
03	S.S.304
04	S.S.316
05	S.S.410
06	S.S.304L
07	S.S.316L
08	ALLOY-20
09	BRONZE
10	S.S.304 TI
11	S.S.316 TI
12	HASTELLOY-B
13	HASTELLOY-C
16	S.S.321
17	S.S.304 H
18	MONEL

[V] WEDGE/DISC/BALL 1 DIGIT

1	SOLID WEDGE
2	FLEXIBLE WEDGE
3	PLUG TYPE DISC
4	REGULATING PLUG/ PARABOLIC PLUG
5	FULL BORE
6	REGULAR BORE
7	PARALLEL SLIDE
8	DOUBLE DISC

[VI] END CONNECTIONS 1 DIGIT

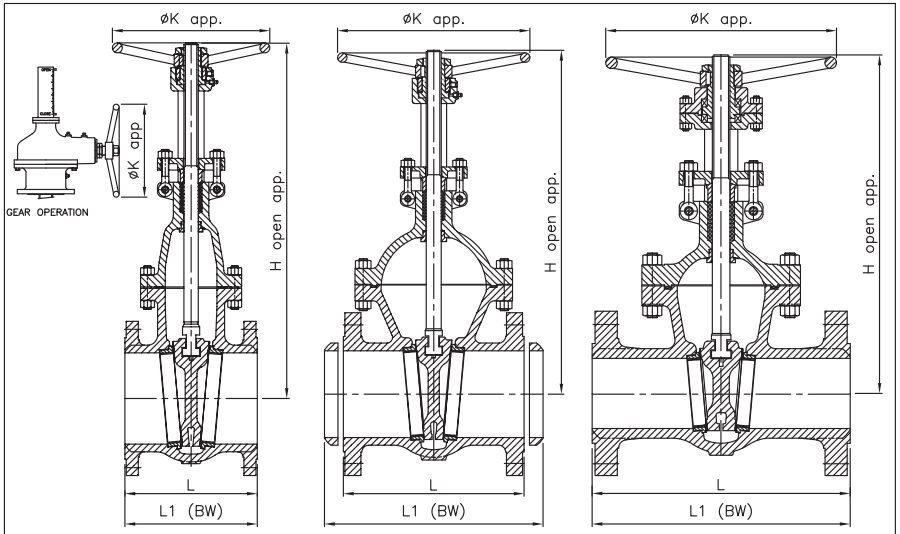
1	FLANGED END - B.16.5
2	FLANGED END DIN
3	BUTT WELD END
4	SOCKET WELD END
5	SCREWED END BSP
6	SCREWED END NPT
7	FLANGED END RING TYPE JOINT B16.5
8	NIPPLE WELD
9	FE B 16.5 FLANGES WELDED THEREON
0	WAFER TYPE

[VII] SPECIAL REQUIREMENT 1 DIGIT (ALPHA NUMERIC)

A	ACTUATOR	B	BY PASS	C	CHAIN WHEEL OPERATED
D	DEEP STUFFING BOX	E	EXTENSION SPINDLE	F	STELLITED SEAT & DISC
G	GEAR OPERATED	H	HYDRAULIC CYLINDER	I	I.B.R
J	JACKETED	K	GRAFOIL GLAND PACKING	L	GLAND SEALING
M	DRAIN PLUG AS PER MSS-SP-54	N	FIRE SAFE DESIGN	O	OTHERS
P	PNEUMATIC CYLINDER	R	RADIOGRAPHY	S	STELLITED SEAT
T	OPEN INTO TANK	V	OPEN INTO VALVE	W	STELLITED WEDGE
X	STELLITED PLUG	Y	STELLITED SEAT & WEDGE	Z	STELLITED SEAT & PLUG
1	OPEN INTO TANK WITH STELLITED SEAT			2	OPEN INTO TANK WITH STELLITED SEAT & PLUG
3	OPEN INTO VALVE WITH STELLITED SEAT			4	OPEN INTO VALVE WITH STELLITED SEAT & PLUG
5	REDUCE BORE			6	STELITED SEAT WITH MOTOR OPERATED MOUNTING
				7	EXTENDED BONNET

GATE VALVE CLASS 150, 300, 600.

API 600/ASME B 16.34/BS1414



DIMENSION TABLE 150 CLASS

VALVE SIZE in	2	2.5	3	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	36	42	46	48	50	52	54	56	58	60
VALVE SIZE mm	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750	800	900	1050	1150	1200	1250	1300	1350	1400	1450	1500
L	7.0 178	7.5 190	8.0 203	9.0 229	10.0 254	10.5 267	11.5 292	13.0 330	14.0 356	15.0 381	16.0 406	17.0 432	18.0 457	19.0 483	20.0 508	22.0 559	24.0 610	24.0 610	28.0 711	28.0 711	32.0 813	–	35.9 914	35.9 914	35.9 914	35.9 914	–	–	–
L1	8.5 216	9.5 241	11.12 282.5	12.0 305	15.0 381	15.9 403	16.5 419	18.0 457	19.8 502	22.5 572	24.0 610	26.0 660	28.0 711	30.0 762	32.0 813	35.5 902	39.0 991	39.0 991	–	48.0 1219	55.0 1397	–	–	–	–	–	–	–	–
H app	400	445	485	600	725	765	985	1220	1395	1500	1775	2000	2210	2530	2725	2800	3130	3300	3420	3975	4370	–	4900	5365	5415	5465	–	–	–
øK app	200	200	250	250	300	300	350	450	500	400	450	450	500	500	550	600	650	700	750	750	750	–	750	750	750	750	–	–	–
Wt. kg app(F/E)	20	28	33	55	70	90	130	225	330	450	530	625	825	1150	1210	1415	1620	2025	2450	3050	4250	–	–	–	–	–	–	–	–

DIMENSION TABLE 300 CLASS

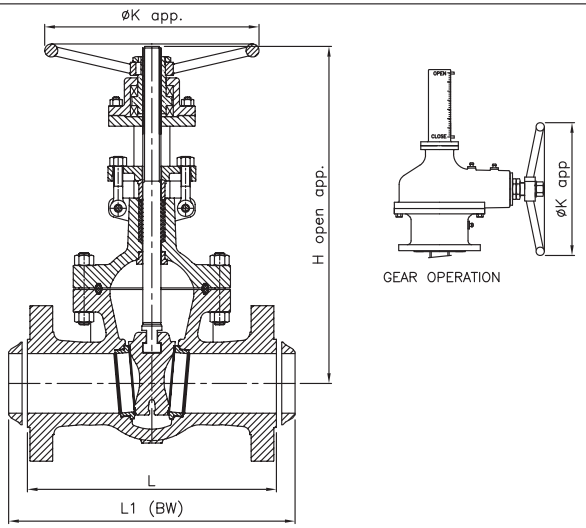
VALVE SIZE in	2	2.5	3	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	36	42	46	48	50
VALVE SIZE mm	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750	800	900	1050	1150	1200	1250
L	8.5 216	9.5 241	11.12 282.5	12.0 305	15.0 381	15.88 403	16.5 419	18.0 457	19.8 502	30.0 762	33.0 838	36.0 914	39.0 991	43.0 1092	45.0 1143	49.0 1245	52.9 1346	55.0 1397	60.0 1524	–	–	–	–	77.5 1970
L1	8.5 216	9.5 241	11.12 282.5	12.0 305	15.0 381	15.88 403	16.5 419	18.0 457	19.8 502	30.0 762	33.0 838	36.0 914	39.0 991	43.0 1092	45.0 1143	49.0 1245	52.9 1346	55.0 1397	60.0 1524	–	–	–	–	77.5 1970
H app	410	450	485	615	725	835	1015	1230	1555	1720	1970	2160	2410	2550	2810	3010	3170	3440	3570	–	–	–	–	5600
øK app	200	250	250	300	350	350	450	500	500	600	600	700	700	700	750	750	750	750	750	–	–	–	–	750
Wt. kg app(F/E)	32	35	55	80	100	150	225	350	480	745	1060	1325	1725	1900	2570	–	–	–	–	–	–	–	–	–

DIMENSION TABLE 600 CLASS

VALVE SIZE in	**2**	**2.5**	**3**	**4**	**5**	**6**	**8**	**10**	**12**	**14**	**16**	**18**	20	22	24	26	28	30	32	36
VALVE SIZE mm	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750	800	900
L	11.5 292	13.0 330	14.0 356	17.0 432	20.0 508	22.0 559	26.0 660	31.0 787	33.0 838	35.0 889	39.0 991	43.0 1092	47.0 1194	51.0 1295	55.0 1397	57.0 1448	60.9 1549	65.0 1651	–	70.8 1800
L1	11.5 292	13.0 330	14.0 356	17.0 432	20.0 508	22.0 559	26.0 660	31.0 787	33.0 838	35.0 889	39.0 991	43.0 1092	47.0 1194	51.0 1295	55.0 1397	57.0 1448	60.9 1549	65.0 1651	–	70.8 1800
H app	410	485	560	705	800	895	1125	1400	1535	1825	1955	2140	2310	2680	2725	2850	3130	–	–	4000
øK app	250	250	350	450	500	500	600	450	500	550	600	650	650	700	700	750	750	750	–	750
Wt. kg app(F/E)	38	56	72	136	170	245	432	780	835	1190	1690	2010	2400	2650	3700	–	–	–	–	–

GATE VALVE CLASS 900, 1500, 2500.

API 600/ASME B 16.34/BS1414



DIMENSION TABLE 900 CLASS

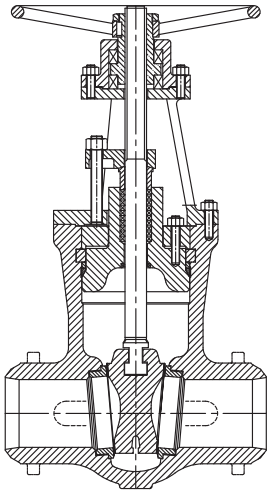
VALVE SIZE in	2	3	4	6	8	10	12	14	16	18	20	24
VALVE SIZE mm	50	80	100	150	200	250	300	350	400	450	500	600
L	14.5 368	15.0 381	18.0 457	24.0 610	29.0 737	33.0 838	38.0 965	40.5 1029	44.5 1130	48.0 1219	52.0 1321	61.0 1549
L1	14.5 368	15.0 381	18.0 457	24.0 610	29.0 737	33.0 838	38.0 965	40.5 1029	44.5 1130	48.0 1219	52.0 1321	61.0 1549
H app	440	584	712	927	1220	1600	1752	2286	2362	2450	2600	–
øK app	250	300	400	500	600	400	450	650	650	700	700	750
Wt. kg app(F/E)	70	105	190	380	595	975	1275	1665	2310	2880	3505	–

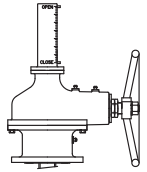
DIMENSION TABLE 1500 CLASS

VALVE SIZE in	2	3	4	6	8	10	12	14	16	18	20	24
VALVE SIZE mm	50	80	100	150	200	250	300	350	400	450	500	600
L	14.5 368	18.5 470	21.5 546	27.8 705	32.7 832	39.0 991	44.5 1130	49.5 1257	54.5 1384	60.5 1537	65.5 1664	76.5 1943
L1	14.5 368	18.5 470	21.5 546	27.8 705	32.7 832	39.0 991	44.5 1130	49.5 1257	54.5 1384	60.5 1537	65.5 1664	76.5 1943
H app	500	633	725	1045	1310	1410	1550	2100	2475	–	–	–
øK app	250	350	400	600	450	450	450	650	700	750	750	750
Wt. kg app(F/E)	80	150	225	625	1115	1430	1955	2690	3830	–	–	–

DIMENSION TABLE 2500 CLASS

VALVE SIZE in	2	3	4	6	8	10	12	14	16
VALVE SIZE mm	50	80	100	150	200	250	300	350	400
L	17.8 451	22.8 578	26.5 673	36.0 914	40.3 1022	50.0 1270	55.9 1422	–	–
L1	17.8 451	22.8 578	26.5 673	36.0 914	40.3 1022	50.0 1270	40.9 1041	44.0 1118	49.0 1245
H app	595	750	805	1200	1346	1500	1720	–	–
øK app	250	350	400	600	680	910	750	750	750
Wt. kg app(F/E)	130	220	320	815	1405	2550	–	–	–



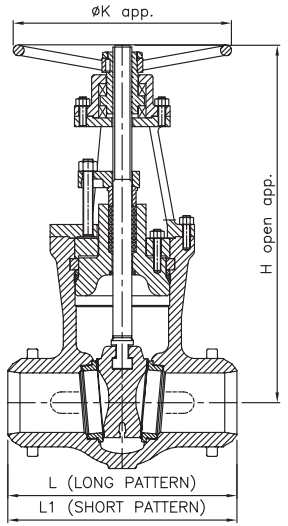


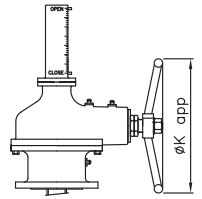
GEAR OPERATION

MATERIAL SPECIFICATION

PART NAME	MATERIAL		MATERIAL	
BODY	A 216 WCB	A 217 WC6	A 351 CF8	A 351 CF8M
BONNET	A 216 WCB	A 217 WC6	A 351 CF8	A 351 CF8M
YOKE	A 216 WCB	A 217 WC6	A 351 CF8	A 351 CF8M
WEDGE	13%Cr. FACING ON WCB+STELLITED	WC6 + STELLITED	A 351 CF8+STELLITED	A 351 CF8M+STELLITED
SEAT RING 1	A 515–70/ 13%Cr.+STELLITED	S.S 304 + STELLITED	T304 + STELLITED	T316 + STELLITED
BACK SEAT	INTEGRAL		INTEGRAL	
SPINDLE	T410	T410	T304	T316
GLAND BUSH	T410	T410	T304	T316
GLAND FLANGE	CARBON STEEL/WCB		S.S 304	
YOKE SLEEVE	A 439 Gr.D2		AL–BRONZE	
CASING COVER	A 216 WCB	A 216 WCB/A 217 WC6	A 351 CF8	
BONNET PLATE	A 515 70		S.S 304	
HAND WHEEL	CARBON STEEL		CARBON STEEL	
HAND WHEEL NUT	CARBON STEEL		S.S 304	
STUD & NUT	A 193 B7/A 194 2H	A 193 Gr.B16/A 194 Gr.7	A 193 B8/A 194 Gr.8	
GLAND STUD & NUT	A 193 B7/A 194 2H		A 193 B7/A 194 2H	
CASING STUD & NUT	A 193 B7/A 194 2H		A 193 B7/A 194 2H	
YOKE STUD & NUT	A 193 B7/A 194 2H		A 193 B7/A 194 2H	
GLAND PACKING	GRAPHOIL			
SEAL RING	T304		T304	T316
SPACER RING	A 515 70	T304	T304	T316
SEGMENTAL RING	A 515 70	T304	T304	T316
NAME PLATE	ALUMINIUM/S.S.			
BEARING	STANDARD			

1 – SEAL WELDED
2 – BY–PASS ARRANGEMENT OPTIONAL





GEAR OPERATION

DIMENSION TABLE 900 CLASS

VALVE SIZE in / mm	2 / 50	3 / 80	4 / 100	6 / 150	8 / 200	10 / 250	12 / 300	14 / 350	16 / 400	18 / 450	20 / 500	24 / 600
L	14.5 / 368	15.0 / 381	18.0 / 457	24.0 / 610	29.0 / 737	33.0 / 838	38.0 / 965	40.5 / 1029	44.5 / 1130	48.0 / 1219	52.0 / 1321	61.0 / 1549
L1	8.5 / 216	12.0 / 305	14.0 / 356	20.0 / 508	26.0 / 660	31.0 / 787	36.0 / 914	39.0 / 991	43.0 / 1092	–	–	–
H app	545	595	720	970	1140	1345	1615	1651	2362	2450	2550	–
øK app	250	300	400	500	600	400	450	650	650	700	750	750
Wt. kg app	50	75	130	265	430	680	950	1290	1850	2250	2785	–

DIMENSION TABLE 1500 CLASS

VALVE SIZE in / mm	2 / 50	3 / 80	4 / 100	6 / 150	8 / 200	10 / 250	12 / 300	14 / 350	16 / 400	18 / 450	20 / 500	24 / 600
L	14.5 / 368	18.5 / 470	21.5 / 546	27.8 / 705	32.7 / 832	39.0 / 991	44.5 / 1130	49.5 / 1257	54.5 / 1384	60.5 / 1537	65.5 / 1664	76.4 / 1943
L1	8.5 / 216	12.0 / 305	16.0 / 406	22.0 / 559	28.0 / 711	34.0 / 863	39.0 / 991	42.0 / 1067	47.0 / 1194	53.0 / 1346	58.0 / 1473	–
H app	545	625	900	1085	1290	1420	1580	2100	2457	–	–	–
øK app	250	350	400	600	450	450	450	650	700	650	700	750
Wt. kg app	55	85	160	440	760	1050	1350	1890	2830	–	–	–

DIMENSION TABLE 2500 CLASS

VALVE SIZE in / mm	2 / 50	3 / 80	4 / 100	6 / 150	8 / 200	10 / 250	12 / 300	14 / 350	16 / 400	18 / 450
L	17.8 / 451	22.8 / 578	26.5 / 673	36.0 / 914	40.3 / 1022	50.0 / 1270	56.0 / 1422	–	–	–
L1	11.0 / 279	14.5 / 368	18.0 / 457	24.0 / 610	30.0 / 762	36.0 / 914	41.0 / 1041	44.0 / 1118	49.0 / 1245	55.0 / 1397
H app	590	800	865	950	1050	1345	1690	–	–	–
øK app	250	350	400	600	500	500	550	550	600	650
Wt. kg app	85	120	190	520	980	1600	–	–	–	–

1 – END TO END AS PER L1 UNLESS OTHERWISE SPECIFIED.