GATE VALVE

GLOBE VALVE

CHECK VALVE

BALL VALVE

Y STRAINER - NEEDLE VALVE
BUTTERFLY VALVE

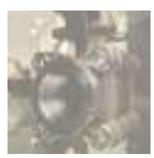
TECHNICAL DATA

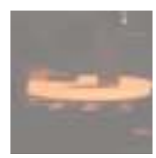


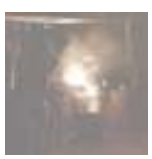
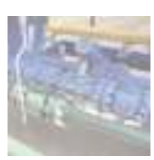














SPECIFICATION

GATE VALVE APPLICATION

Gate Valves are general service valves that can be made in a broad spectrum of sizes using a variety of materials. Gate valves are primarily used to turn on or shut the flow as opposed to regulating flow and are characterized by a traveling wedge, which is moved with the operation of the stem nut. The wedge travels perpendicular to the direction of the flow. Gate valves usually have a minimum pressure drop when fully opened, provide tight shut-off when fully closed, and remain relatively free of contamination build up.

MANUFACTURING STANDARDS

General Design	API 600 / API 6D / API 603
Face To Face	ASME/ANSI B16.10
Flange End	ASME/ANSI B16.5 & B16.47
Butt Weld End	ASME/ANSI B16.25
Pressure Rating	ASME/ANSI B16.34
Fire Safe Design	API 6FA
Inspection & Test	API 598 / API 6D
Features	Bolted Bonnet, Outside Screw & Yoke, Rising Stem, Flexible Wedge

DISC WEDGE

All gates are fully guided to the seats. Gate valves are equipped with flexible wedge disc.

SEAT RING

Seat rings are designed to greatly reduce and/or prevent any turbulance to avoid damages due to the corrosion. Seat rings for gate valves are typically made from forged steel.

BACK SEATING DESIGN

All our gate valves have back seating design. When the gate valve is at fully open position the back seat can seal against the stem.

STEM

The stem connection to the gate is of T design, which is forged integral with the stem. The stem to gate connection is designed to prevent the turning of the disengagement of stem from the wedge while the valve is in service.

PACKING

The stem packing is designed and arranged to ensure a maximum seal along the stem during operation or while at position thus allowing for a greater reduction in fugitive emissions. Our standard packings are made of graphite.

END CONNECTIONS

Our valves standard end connection are available in:

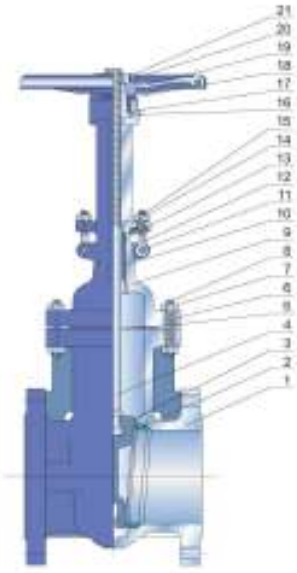
- Flange end type with Raised Face (RF), Flat Face (FF) or Ring Type Joint (RTJ) that conform to ANSI B16.5.
- Butt-welding ends (BW) that conform to ANSI B16.25.
- All face-to-face / end-to-end dimensions that conform to ANSI B16.10.

Other special end connections can be supplied according to customer's requirements.

OPERATOR

Standard valves come in manual operation. Gear operation can be installed in valves if required. Other accessories such as actuators, chainwheels, locking device and many others options are also available to meet customer requirements.

CAST STEEL GATE



STANDARD PARTS & MATERIAL

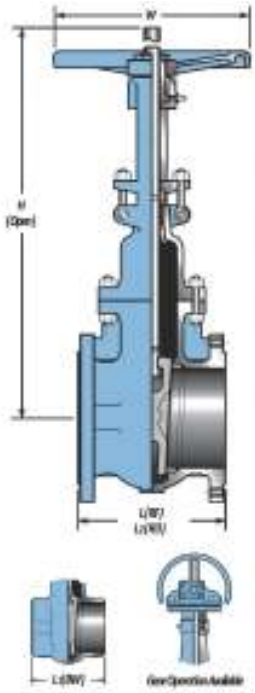
No.	Parts	CARBON STEEL		ALLOY STEEL				STAINLESS STEEL	
		WCB	LCB	WC6	WC9	C5	C12	CF8(M)	CF3(M)
1	Body	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8(M)	A351 CF3(M)
2	Seat	A105 + STL	A350 LF2 + STL	A182 F11 + STL	A182 F22 + STL	A182 F5 + STL	A182 F9 + STL	A351 CF8(M)	A351 CF3(M)
3	Disc	A216 WCB + 13CR	A352 LCB + 13CR	A217 WC6 +13CR	A217 WC9 + 13CR	A217 C5 + 13CR	A217 C12 + 13CR	A351 CF8(M)	A351 CF3(M)
4	Stem	A182 F6	A182 F304	A182 F6				A182 F304/ F316	A182 F304L/ F316L
5	Gasket	SS304 + Graphite						PTFE / SS316 + Graphite	
6	Bonnet	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8(M)	A351 CF3(M)
7	Bonnet Bolt	A193 B7	A320 L7	A193 B16				A193 B8	
8	Bonnet Nut	A194 2H	A194 7	A194 4				A194 8	
9	Back Seat	A276 410	A276 F304	A276 410				A182 F304/ F316	A182 F304L/ F316L
10	Packing	Flexible Graphite						PTFE/Flexible Graphite	
11	Pin	Steel						SS304	
12	Gland Eyebolt	A193 B7	A320 L7	A193 B16				A193 B8	
13	Gland	A276 410	A276 F304	A276 410				A182 F304/ F316	A182 F304L/ F316L
14	Gland Flange	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8(M)	A351 CF3(M)
15	Eye Bolt Nut	A194 2H	A194 7	A194 4				A194 8	
16	Grease Nipple	Brass							
17	Stem Nut	A493 D-2						Bronze	
18	Retaining Nut	Steel						Bronze	
19	Handwheel	Ductile Iron							
20	HandwheelNut	Steel						Bronze	
21	Screw	Steel						SS304	

Other valve material composition are available.

CAST STEEL GATE

CLASS 150
API 600 / ASME B16.34

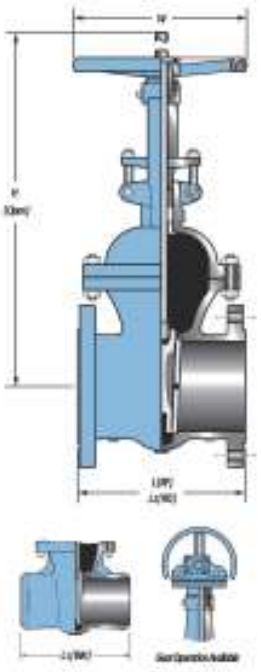
Size (In)	W	L (RF)	L1 (BW)	L2 (RTJ)	H (Open)	Wt . (Kg)
2	200 (8.00)	178 (7.00)	261 (8.50)	191 (7.50)	387 (15.20)	19
2.1/2	200 (8.00)	191 (7.50)	241 (9.50)	203 (8.00)	435 (17.10)	26
3	250 (10.00)	203 (8.00)	283 (11.12)	216 (8.50)	481 (18.90)	35
4	300 (12.00)	229 (9.00)	305 (12.00)	242 (9.50)	585 (23.00)	49
5	300 (12.00)	254 (10.00)	381 (15.00)	267 (10.50)	681 (26.80)	64
6	300 (12.00)	267 (10.50)	403 (15.88)	279 (11.00)	765 (30.10)	81
8	350 (14.00)	292 (11.50)	419 (16.50)	305 (12.00)	956 (37.60)	127
10	400 (16.00)	330 (13.00)	457 (18.00)	343 (13.50)	1149 (45.20)	204
12	450 (18.00)	356 (14.00)	502 (19.75)	368 (14.50)	1351 (53.20)	291
14	500 (20.00)	381 (15.00)	572 (22.50)	394 (15.50)	1508 (59.40)	400
16	550 (22.00)	406 (16.00)	610 (24.00)	419 (16.50)	1703 (67.00)	486
18	600 (24.00)	432 (17.00)	660 (26.00)	445 (17.50)	1892 (74.50)	610
20	680 (27.00)	457 (18.00)	711 (28.00)	470 (18.50)	2119 (83.40)	788
24	760 (30.00)	508 (20.00)	813 (32.00)	521 (20.50)	2500 (98.40)	1144
26	610 (24.00)	559 (22.00)	864 (34.00)	-	2806 (110.00)	1570
28	610 (24.00)	610 (24.00)	914 (36.00)	622 (24.50)	2960 (117.00)	1900
30	610 (24.00)	610 (24.00)	914 (36.00)	622 (24.50)	3148 (124.00)	2540
32	610 (24.00)	660 (26.00)	965 (38.00)	673 (26.50)	3281 (129.00)	2958
36	610 (24.00)	711 (28.00)	1016 (40.00)	724 (28.50)	3721 (146.00)	3380
40	610 (24.00)	762 (30.00)	1067 (42.00)	-	3980 (157.00)	4815
42	813 (32.00)	787 (31.00)	1092 (42.00)	-	4820 (190.00)	5300
48	813 (32.00)	864 (34.00)	1068 (46.00)	-	5920 (233.00)	7110



Standard Fig. No. 1A1C1

CLASS 300
API 600 / ASME B16.34

Size (In)	W	L (RF)	L1 (BW)	L2 (RTJ)	H (Open)	Wt . (Kg)
2	200 (8.00)	216 (8.00)	216 (8.00)	232 (9.12)	410 (16.10)	26
2.1/2	200 (8.00)	241 (9.50)	241 (9.50)	257 (10.12)	453 (17.80)	35
3	250 (10.00)	283 (11.12)	283 (11.12)	298 (11.75)	509 (20.00)	52
4	250 (10.00)	305 (12.00)	305 (12.00)	321 (12.62)	612 (24.10)	75
5	300 (12.00)	381 (15.00)	381 (15.00)	397 (15.60)	670 (26.40)	102
6	300 (12.00)	403 (15.88)	403 (15.88)	419 (16.50)	805 (31.70)	147
8	350 (14.00)	419 (16.50)	419 (16.50)	435 (17.12)	1000 (39.40)	235
10	400 (16.00)	457 (18.00)	457 (18.00)	473 (18.62)	1209 (47.60)	350
12	450 (18.00)	502 (19.75)	502 (19.75)	518 (20.38)	1416 (55.70)	472
14	500 (20.00)	762 (30.00)	762 (30.00)	778 (30.62)	1582 (62.30)	683
16	550 (22.00)	838 (33.00)	838 (33.00)	854 (33.62)	1725 (67.90)	950
18	600 (24.00)	914 (36.00)	914 (36.00)	930 (36.62)	1959 (77.10)	1145
20	680 (27.00)	991 (39.00)	991 (39.00)	1010 (39.75)	2194 (86.40)	1634
24	760 (30.00)	1143 (45.00)	1143 (45.00)	1165 (45.88)	2598 (102.30)	2660
26	610 (24.00)	1245 (49.00)	1245 (49.00)	1270 (50.00)	2986 (117.60)	3090
28	610 (24.00)	1346 (53.00)	1346 (53.00)	1372 (54.00)	3120 (122.80)	3312
30	610 (24.00)	1397 (55.00)	1397 (55.00)	1422 (56.00)	3205 (126.20)	3597
32	610 (24.00)	1524 (60.00)	1524 (60.00)	1553 (61.12)	3692 (145.40)	4850
36	610 (24.00)	1727 (68.00)	1727 (68.00)	1756 (69.12)	4104 (161.60)	6850



Standard Fig. No. 1A1C3

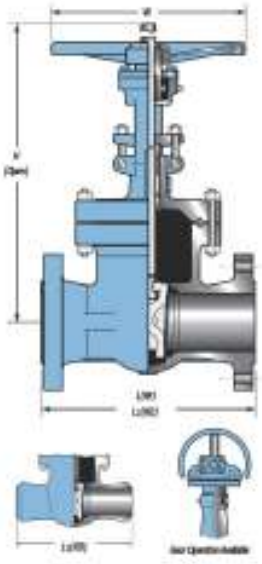
Unit : mm (inch)

CAST STEEL GATE

CLASS 600
API 600 / ASME B16.34

Size (In)	W	L (RF)	L1 (BW)	L2 (RTJ)	H (Open)	Wt . (Kg)
2	200 (8.00)	292 (11.50)	292 (11.50)	295 (11.62)	418 (16.50)	39
2.1/2	250 (10.00)	330 (13.00)	330 (13.00)	333 (13.12)	476 (18.70)	52
3	250 (10.00)	356 (14.00)	356 (14.00)	359 (14.12)	518 (20.40)	68
4	300 (12.00)	432 (17.00)	432 (17.00)	435 (17.12)	646 (25.40)	120
5	400 (16.00)	508 (20.00)	508 (20.00)	511 (20.12)	770 (30.30)	170
6	450 (18.00)	559 (22.00)	559 (22.00)	562 (22.12)	839 (33.00)	273
8	500 (20.00)	660 (26.00)	660 (26.00)	664 (26.12)	1024 (40.30)	402
10	600 (24.00)	787 (31.00)	787 (31.00)	791 (31.12)	1229 (48.40)	610
12	680 (27.00)	838 (33.00)	838 (33.00)	841 (33.12)	1450 (57.10)	902
14	610 (24.00)	889 (35.00)	889 (35.00)	892 (35.12)	1574 (62.00)	1245
16	610 (24.00)	991 (39.00)	991 (39.00)	994 (29.12)	1797 (70.70)	1530
18	610 (24.00)	1092 (43.00)	1092 (43.00)	1095 (43.12)	1931 (76.02)	2030
20	610 (24.00)	1194 (47.00)	1194 (47.00)	1200 (47.25)	2207 (86.90)	2735
24	610 (24.00)	1397 (55.00)	1397 (55.00)	1407 (55.38)	2582 (102.00)	3620
26	813 (32.00)	1448 (57.00)	1448 (57.00)	1461 (57.50)	3150 (124.00)	5220
28	1000 (40.00)	1549 (61.00)	1549 (61.00)	1562 (61.50)	3362 (133.00)	6050
30	1000 (40.00)	1651 (65.00)	1651 (65.00)	1664 (65.50)	3549 (140.00)	6945
32	1000 (40.00)	1778 (70.00)	1778 (70.00)	1794 (70.62)	3811 (150.00)	8312
36	1000 (40.00)	2082 (82.00)	2082 (82.00)	2099 (82.62)	4260 (168.00)	10000

Standard Fig. No. 1A1C6

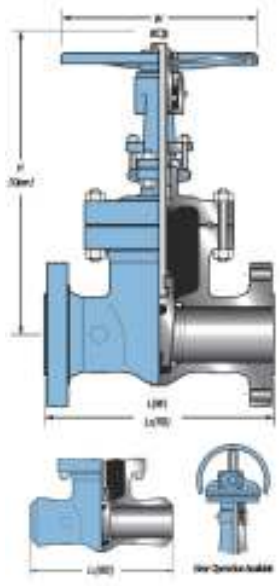


CLASS 900
API 600 / ASME B16.34

Size (In)	W	L (RF)	L1 (BW)	L2 (RTJ)	H (Open)	Wt . (Kg)
2	250 (10.00)	368 (14.50)	368 (14.50)	371 (14.62)	498 (19.60)	74
2.1/2	250 (10.00)	419 (16.50)	419 (16.50)	422 (16.62)	547 (21.50)	92
3	300 (12.00)	381 (15.00)	381 (15.00)	384 (15.12)	573 (22.60)	101
4	350 (14.00)	457 (18.00)	457 (18.00)	460 (18.12)	678 (26.70)	172
6	500 (20.00)	610 (24.00)	610 (24.00)	613 (24.12)	900 (35.40)	335
8	610 (24.00)	737 (29.00)	737 (29.00)	740 (29.12)	1103 (43.40)	640
10	610 (24.00)	838 (33.00)	838 (33.00)	841 (33.12)	1345 (53.00)	1100
12	610 (24.00)	965 (38.00)	965 (38.00)	968 (38.12)	1520 (59.80)	1360
14	610 (24.00)	1029 (40.50)	1029 (40.50)	1038 (40.88)	1902 (74.90)	2250
16	610 (24.00)	1130 (44.50)	1130 (44.50)	1140 (44.88)	2051 (80.70)	2850
18	810 (32.00)	1219 (48.00)	1219 (48.00)	1232 (48.50)	2212 (87.00)	3870
20	1000 (40.00)	1321 (52.00)	1321 (52.00)	1334 (52.50)	2417 (95.00)	4860
24	1000 (40.00)	1549 (61.00)	1549 (61.00)	1568 (61.75)	2750 (108.40)	6100

Standard Fig. No. 1A1C9

Unit : mm (inch)

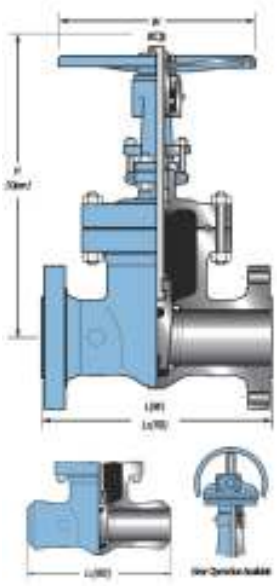


CAST STEEL GATE

CLASS 1500 API 600 / ASME B16.34

Size (In)	W	L (RF)	L1 (BW)	L2 (RTJ)	H (Open)	Wt . (Kg)
2	250 (10.00)	368(14.50)	368 (14.50)	371 (15.50)	487 (19.20)	74
2.1/2	300 (12.00)	419 (16.50)	419 (16.50)	422 (16.62)	572 (22.50)	131
3	350 (14.00)	470 (18.50)	470 (18.50)	473 (18.62)	603 (23.70)	165
4	500 (20.00)	546 (21.50)	546 (21.50)	549 (21.62)	700 (27.60)	248
6	610 (24.00)	705 (27.75)	705 (27.75)	711 (28.00)	984 (38.70)	510
8	458 (18.00)	832 (32.75)	832 (32.75)	841 (33.12)	1146 (45.10)	1040
10	458 (18.00)	991 (39.00)	991 (39.00)	1000 (39.38)	1371 (54.00)	1910
12	610 (24.00)	1130 (44.50)	1130 (44.50)	1146 (45.12)	1633 (64.30)	2685
14	610 (24.00)	1257 (49.50)	1257 (49.50)	1276 (50.25)	1798 (70.80)	4100
16	610 (24.00)	1384 (54.50)	1384 (54.50)	1407 (55.38)	1963 (77.30)	6200

Standard Fig. No. 1A1C15



CLASS 2500 API 600

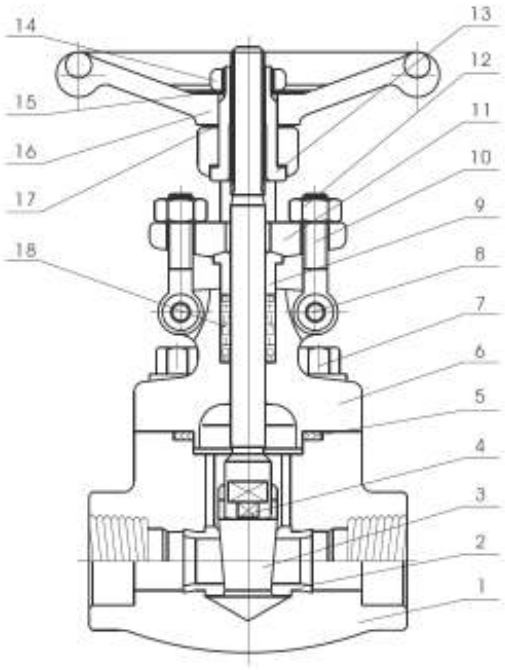
Size (In)	W	L (RF)	L1 (BW)	L2 (RTJ)	H (Open)	Wt . (Kg)
2	350 (14.00)	451 (17.75)	451 (17.75)	454 (17.88)	563 (22.20)	74
2.1/2	450 (18.00)	508 (20.00)	508 (20.00)	514 (20.50)	563 (22.20)	131
3	450 (18.00)	578 (22.75)	578 (22.75)	584 (23.00)	582 (22.90)	165
4	500 (20.00)	673 (26.50)	673 (26.50)	683 (26.88)	870 (34.30)	248
6	610 (24.00)	914 (36.00)	914 (36.00)	927 (36.50)	1450 (57.10)	510
8	610 (24.00)	1022 (40.25)	1022 (40.25)	1038 (10.88)	1610 63.40)	1040
10	610 (24.00)	1270 (50.00)	1270 (50.00)	1292 (50.88)	2076 (81.70)	1910
12	610 (24.00)	1422 (56.00)	1422 (56.00)	1445 (56.88)	2281 (89.80)	2685

Standard Fig. No. 1A1C25

Unit : mm (inch)

FORGED STEEL GATE

BOLTED / WELDED BONNET - REDUCED / FULL PORT



STANDARD PARTS & MATERIAL

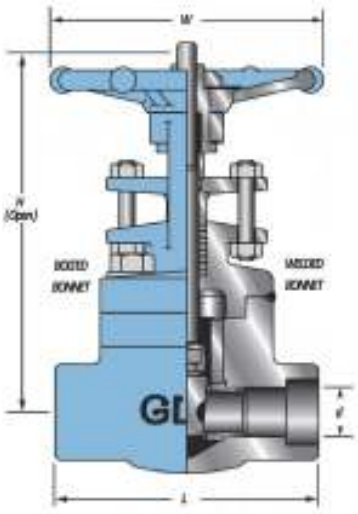
No.	Parts	A105/N	LF2	F11	F22	F304/L	F316/L	F51
1	Body	A105/N	A350-LF2	A182-F11	A182-F22	A182-F304/L	A182-F316/L	A182-F51
2	Seat Ring	410+STL	304+STL	410+STL	410+STL	304/L+STL	316/L+STL	F51+STL
3	Wedge	410	304	420	420	304/L	316/L	F51
4	Stem	410	304	410	410	304/L	316/L	F51
5	Gasket	Flexible Graphite + SS Wire						
6	Bonnet	A105/N	A350-LF2	A182-F11	A182-F22	A182-F304/L	A182-F316/L	A182-F51
7	Bonnet Bolt	A193-B7	A193-L7	A193-B16		A193-B8	A193-B8(M)	
8	Pin	SS304						
9	Gland	420/304/316						
10	Eyebolt	A193-B7	A193-L7	A193-B16		A193-B8	A193-B8(M)	
11	Gland Flange	A105				A105/F304		
12	Gland Nut	A194-2H				A194-8	A194-8(M)	
13	Stem Nut	410						
14	Handwheel Nut	A194-2H						
15	Name Plate	Aluminium						
16	Handwheel	A197						
17	Yoke Sleeve	A276-410						
18	Gland Packing	Flexible Graphite						

Other valve material composition are available.

FORGED STEEL GATE

MANUFACTURING STANDARD

General Design	API 602
Face To Face	ASME/ANSI B16.10
Connection	Screw NPT to ANSI B1.20.1, Socket Weld to ANSI B16.11, Buttweld to ANSI B16.25
Pressure Rating	ASME/ANSI B16.34
Fire Safe Design	API 6FA
Inspection & Test	API 598 / API 6D
Features	Bolted Bonnet/Welded Bonnet, Outside Screw & Yoke, Rising Stem, Solid Wedge



CLASS 800 - API 602

Port	Size (In)	W	L	H (Open)	d	Wt. (Kg)
REGULAR	1/4	100 (3.94)	79 (3.11)	149 (5.87)	8 (0.31)	2
	1/2	100 (3.94)	79 (3.11)	153 (6.02)	10 (0.39)	2
	3/4	100 (3.94)	92 (3.62)	153 (6.02)	13 (0.51)	2
	1	125 (4.92)	111 (4.37)	185 (7.28)	18 (0.71)	4
	1.1/4	160 (6.30)	120 (4.72)	222 (8.74)	24 (0.94)	6
	1.1/2	160 (6.30)	120 (4.72)	240 (9.45)	29 (1.14)	6
	2	180 (7.09)	140 (5.51)	279 (10.98)	37 (1.44)	10
FULL	1/2	100 (3.94)	92 (3.62)	153 (6.02)	13 (0.51)	2
	3/4	125 (4.92)	111 (4.37)	185 (7.28)	18 (0.71)	4
	1	160 (6.30)	120 (4.72)	222 (8.74)	24 (0.94)	6
	1.1/4	160 (6.30)	120 (4.72)	240 (9.45)	29 (1.14)	6
	1.1/2	180 (7.09)	140 (5.51)	279 (10.98)	37 (1.44)	10
	2	200 (7.87)	160 (6.30)	333 (13.11)	48 (1.89)	15

Standard Fig. No. 1A2F8

CLASS 1500 - API 602

Port	Size (In)	W	L	H (Open)	d	Wt. (Kg)
REGULAR	1/4	100 (3.94)	79 (3.11)	175 (6.89)	8 (0.31)	3
	1/2	125 (4.92)	92 (3.62)	181 (7.13)	10 (0.39)	4
	3/4	125 (4.92)	111 (4.37)	181 (7.13)	13 (0.51)	4
	1	160 (6.30)	120 (4.72)	218 (8.58)	18 (0.71)	6
	1.1/4	160 (6.30)	120 (4.72)	237 (9.33)	24 (0.94)	7
	1.1/2	180 (7.09)	140 (5.51)	274 (10.79)	29 (1.14)	11
	2	200 (7.87)	160 (6.30)	319 (12.56)	37 (1.44)	16
FULL	1/2	125 (4.92)	111 (4.37)	181 (7.13)	13 (0.51)	4
	3/4	160 (6.30)	120 (4.72)	218 (8.58)	18 (0.71)	6
	1	160 (6.30)	120 (4.72)	237 (9.33)	24 (0.94)	7
	1.1/4	180 (7.09)	140 (5.51)	274 (10.79)	29 (1.14)	11
	1.1/2	200 (7.87)	160 (6.30)	319 (12.56)	37 (1.45)	16
	2	200 (7.87)	230 (9.06)	345 (13.58)	48 (1.89)	17

Standard Fig. No. 1A2F15

CLASS 2500 API 602

Port	Size (In)	W	L	H (Open)	d	Wt. (Kg)
REGULAR	1/2	160 (6.30)	150 (5.90)	253 (9.96)	14 (0.55)	7
	3/4	160 (6.30)	150 (5.90)	253 (9.96)	14 (0.55)	7
	1	200 (7.87)	170 (6.70)	291 (11.46)	19 (0.75)	10
	1.1/4	250 (9.84)	200 (7.87)	339 (13.35)	25 (0.98)	18
	1.1/2	250 (9.84)	200 (7.87)	342 (13.46)	28 (1.10)	20
	2	300 (11.81)	250 (9.84)	398 (15.67)	35 (1.38)	26

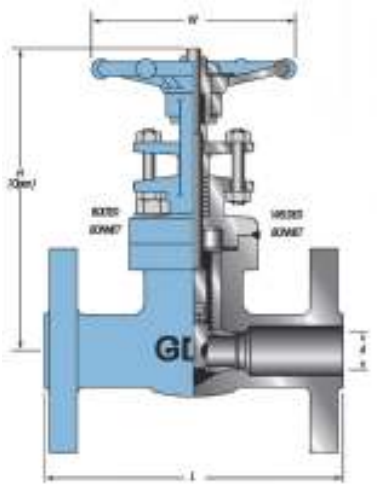
Standard Fig. No. 1A2F25

Unit : mm (inch)

FORGED STEEL GATE

MANUFACTURING STANDARD

General Design	API 602
Face To Face	ASME/ANSI B16.10
Connection	Flange to ANSI B16.5
Pressure Rating	ASME/ANSI B16.34
Fire Safe Design	API 6FA
Inspection & Test	API 598 / API 6D
Features	Bolted Bonnet/Welded Bonnet, Outside Screw & Yoke, Rising Stem, Solid Wedge, Integral Flange



CLASS 150 API 602

Size (In)	W	L	H (Open)	d	Wt. (Kg)
1/2	100 (3.94)	108 (4.25)	153 (6.02)	10 (0.39)	3
3/4	100 (3.94)	118 (4.63)	153 (6.02)	13 (0.51)	4
1	125 (4.92)	127 (5.00)	185 (7.28)	18 (0.71)	6
1.1/4	160 (6.30)	140 (5.50)	222 (8.74)	24 (0.94)	7
1.1/2	160 (6.30)	165 (6.50)	240 (9.45)	29 (1.14)	10
2	180 (7.09)	178 (7.00)	279 (10.98)	37 (1.44)	14

Standard Fig. No. 1A2F1

CLASS 300 API 602

Size (In)	W	L	H (Open)	d	Wt. (Kg)
1/2	100 (3.94)	140 (5.50)	153 (6.02)	10 (0.39)	4
3/4	100 (3.94)	152 (6.00)	153 (6.02)	13 (0.51)	5
1	125 (4.92)	165 (6.50)	185 (7.28)	18 (0.71)	7
1.1/4	160 (6.30)	178 (7.00)	222 (8.74)	24 (0.94)	9
1.1/2	160 (6.30)	191 (7.50)	240 (9.45)	29 (1.14)	13
2	180 (7.09)	216 (8.50)	279 (10.98)	37 (1.44)	18

Standard Fig. No. 1A2F3

CLASS 600 API 602

Size (In)	W	L	H (Open)	d	Wt. (Kg)
1/2	100 (3.94)	165 (6.50)	153 (6.02)	10 (0.39)	4
3/4	100 (3.94)	190 (7.50)	153 (6.02)	13 (0.51)	6
1	125 (4.92)	216 (8.50)	185 (7.28)	18 (0.71)	9
1.1/4	160 (6.30)	229 (9.00)	222 (8.74)	24 (0.94)	12
1.1/2	160 (6.30)	241 (9.50)	240 (9.45)	29 (1.14)	15
2	180 (7.09)	292 (11.50)	279 (10.98)	37 (1.44)	20

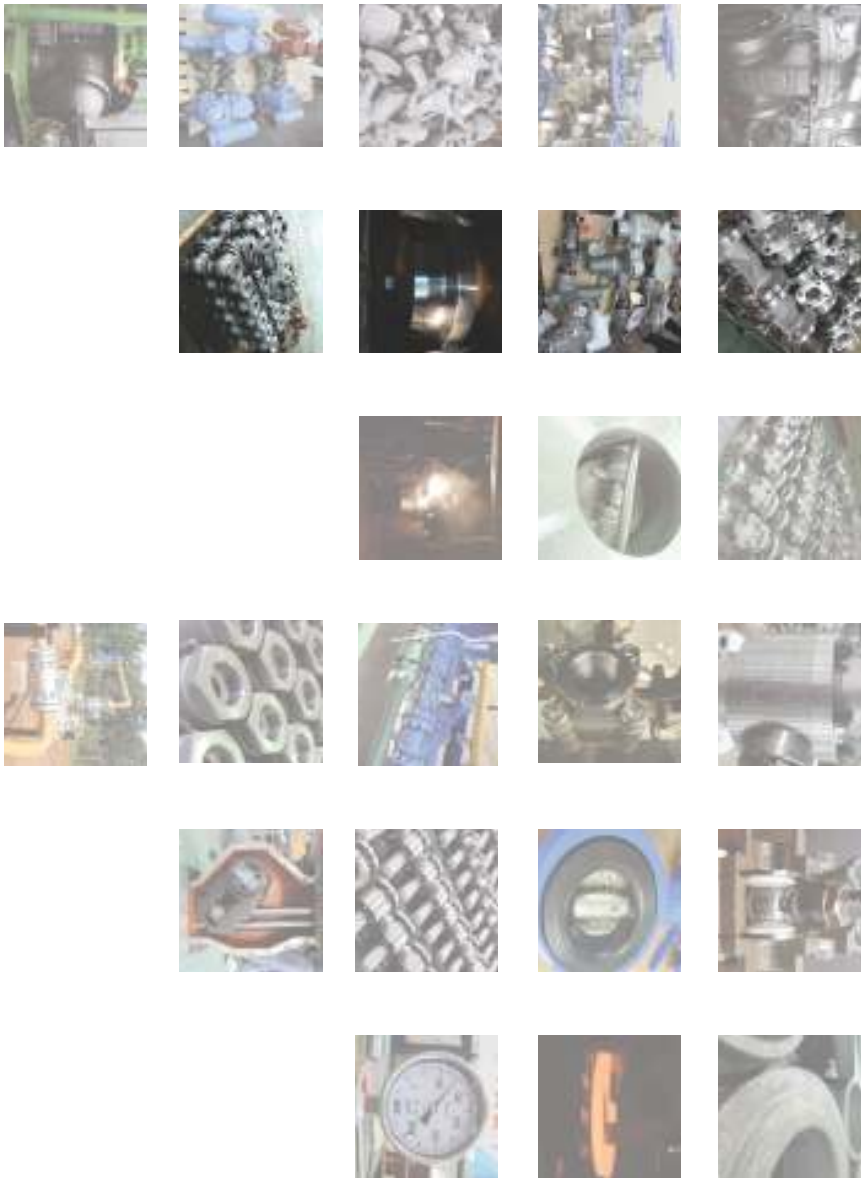
Standard Fig. No. 1A2F6

CLASS 1500 API 602

Size (In)	W	L	H (Open)	d	Wt. (Kg)
1/2	100 (3.94)	216 (8.50)	153 (6.02)	10 (0.39)	7
3/4	100 (3.94)	229 (9.00)	153 (6.02)	13 (0.51)	12
1	125 (4.92)	254 (10.00)	185 (7.28)	18 (0.71)	16
1.1/4	160 (6.30)	279 (10.98)	222 (8.74)	24 (0.94)	16
1.1/2	160 (6.30)	305 (12.00)	240 (9.45)	29 (1.14)	23
2	180 (7.09)	368 (14.49)	279 (10.98)	37 (1.44)	28

Standard Fig. No. 1A2F15

Unit : mm (inch)



GATE VALVE

GLOBE VALVE

CHECK VALVE

BALL VALVE

Y STRAINER - NEEDLE VALVE
BUTTERFLY VALVE

TECHNICAL DATA

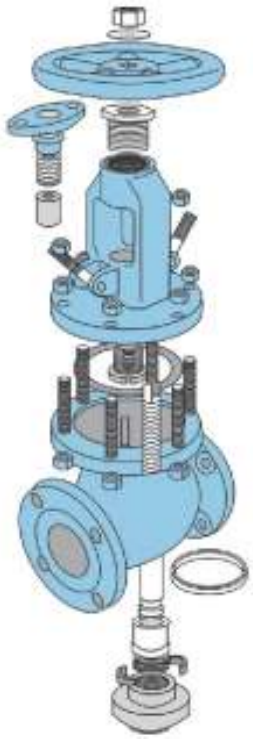
SPECIFICATION

GLOBE VALVE APPLICATION

Globe valves are primarily used as control valves where throttling or both throttling and shut-off are required. Globe valves can also be used for on-off service; however, because of the design, pressure drop becomes inherent. This is generally confined to on-off applications where the valve is normally closed and pressure drop is not important when the valve is open. Globe valves are uni-directional valves and normal applications will find the globe valve with the flow and pressure under the disc.

MANUFACTURING STANDARDS

General Design	BS 1873 / API 600 / API 603
Face To Face	ASME/ANSI B16.10
Flange End	ASME/ANSI B16.5 & B16.47
Butt Weld End	ASME/ANSI B16.25
Fire Safe Design	API 6FA
Pressure Rating	ASME/ANSI B16.34
Inspection & Test	API 598 / API 6D
Features	Bolted Bonnet, Outside Screw & Yoke, Rising Stem



DISC

The valve is normally supplied with the conical plug type disc. The disc rotates freely on the stem and incorporates a differential angle form that on the seat ring. This design provides the maximum assurance of shut off, is less likely to stick in the body seat, and is considered the simplest design for field repair.

BACK SEATING DESIGN

All our globe valves have back seating design. When the globe valve is at fully open position the back seat can seal against the stem.

STEM

All stem are rotating, rising and designed with integral backseat features which provide sealing when fully open.

PACKING

The stem packing is designed and arranged to ensure a maximum seal along the stem during operation or while at position thus allowing for a greater reduction in fugitive emissions. Our standard packings are made of graphite.

END CONNECTIONS

Our valves standard end connection are available in:

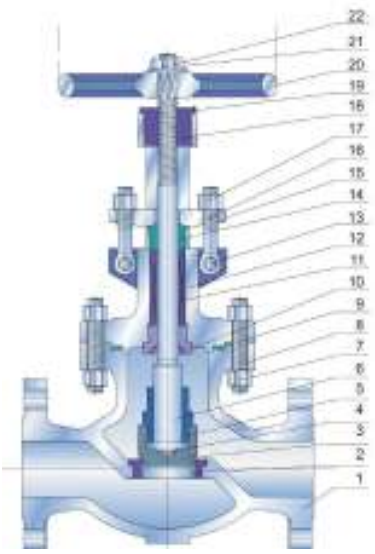
- Flange end type with Raised Face (RF), Flat Face (FF) or Ring Type Joint (RTJ) that conform to ANSI B16.5.
- Butt-welding ends (BW) that conform to ANSI B16.25.
- All face-to-face / end-to-end dimensions that conform to ANSI B16.10.

Other special end connections can be supplied according to customer's requirements.

OPERATOR

Standard valves come in manual operation. Gear operation can be installed in valves if required. Other accessories such as actuators, chainwheels, locking device and many others options are also available to meet customer requirements.

CAST STEEL GLOBE



STANDARD PARTS & MATERIAL

No.	Parts	CARBON STEEL		ALLOY STEEL				STAINLESS STEEL	
		WCB	LCB	WC6	WC9	C5	C12	CF8(M)	CF3(M)
1	Body	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8(M)	A351 CF3(M)
2	Seat	A105 + STL	A350 LF2 + STL	A182 F11 + STL	A182 F22 + STL	A182 F5 + STL	A182 F9 + STL	A351 CF8(M)	A351 CF3(M)
3	Disc	A216 WCB + 13CR	A352 LCB + 13CR	A217 WC6 +13CR	A217 WC9 + 13CR	A217 C5 + 13CR	A217 C12 + 13CR	A351 CF8(M)	A351 CF3(M)
4	Disc Thrust Plate	A276 420	A276 304	A276 420				A276 304/316	A276 304L/316L
5	Disc Nut	A276 410	A276 F304	A276 410				A182 F304/ F316	A182 F304L/ F316L
6	Stem	A182 F6	A182 F304	A182 F6				A182 F304/ F316	A182 F304L/ F316L
7	Bonnet Nut	A194 2H	A194 7	A194 4				A194 8	
8	Bonnet Bolt	A193 B7	A320 L7	A193 B16				A193 B8	
9	Gasket	SS304 + Graphite						PTFE / SS316 + Graphite	
10	Back Seat	A276 410	A276 F304	A276 410				A182 F304/ F316	A182 F304L/ F316L
11	Packing	Flexible Graphite						PTFE/Flexible Graphite	
12	Bonnet	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8(M)	A351 CF3(M)
13	Pin	Steel						SS304	
14	Gland	A276 410	A276 F304	A276 410				A182 F304/ F316	A182 F304L/ F316L
15	Gland Flange	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8(M)	A351 CF3(M)
16	Gland Eye-bolt	A193 B7	A320 L7	A193 B16				A193 B8	
17	Nut	A194 2H	A194 7	A194 4				A194 8	
18	Yoke Brush	A439 D-2							
19	Screw	Steel						SS304	
20	Handwheel	Ductile Iron							
21	Handwheel Nut	Steel						Bronze	
22	Washer								

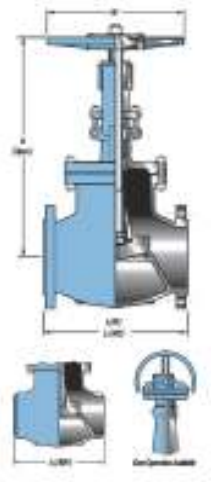
Other valve material composition are available.

CAST STEEL GLOBE

CLASS 150
API 600 / ASME B16.34

Size (In)	W	L (RF)	L1 (BW)	L2 (RTJ)	H (open)	Wt. (Kg)
2	200 (8.00)	200 (8.00)	200 (8.00)	203 (8.00)	338 (13.30)	21
2.1/2	250 (10.00)	216 (8.50)	216 (8.50)	216 (8.50)	373 (14.70)	29
3	250 (10.00)	241 (9.50)	241 (9.50)	241 (9.50)	396 (15.60)	35
4	300 (12.00)	292 (11.50)	292 (11.50)	292 (11.50)	476 (18.70)	58
5	350 (14.00)	356 (14.00)	356 (14.00)	369 (14.53)	497 (19.60)	78
6	350 (14.00)	400 (15.75)	400 (15.75)	406 (16.00)	524 (20.60)	104
8	400 (16.00)	495 (19.50)	495 (19.50)	495 (19.50)	588 (23.10)	162
10	500 (20.00)	622 (24.50)	622 (24.50)	622 (24.50)	738 (29.10)	289
12	500 (20.00)	699 (27.50)	699 (27.50)	698 (27.50)	862 (33.90)	485
14	560 (22.00)	787 (31.00)	787 (31.00)	787 (31.00)	950 (37.40)	550
16	650 (26.00)	914 (36.00)	914 (36.00)	914 (36.00)	994 (39.20)	724
18	610 (24.00)	978 (38.50)	978 (38.50)	991 (39.00)	1140 (44.90)	1400
20	610 (24.00)	978 (38.50)	978 (38.50)	991 (39.00)	1262 (49.70)	2600
24	810 (31.90)	1295 (51.00)	1295 (51.00)	1308 (51.50)	1524 (60.00)	3700

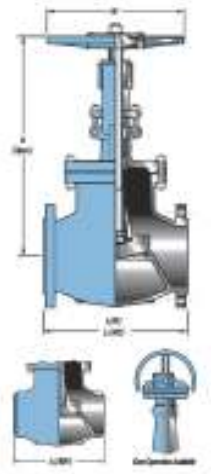
Standard Fig. No. 2A1C1



CLASS 300
API 600 / ASME B16.34

Size (In)	W	L (RF)	L1 (BW)	L2 (RTJ)	H (open)	Wt. (Kg)
2	200 (8.00)	267 (10.50)	267 (10.50)	282 (11.12)	354 (13.90)	26
2.1/2	250 (10.00)	292 (11.50)	292 (11.50)	308 (12.12)	389 (15.30)	38
3	250 (10.00)	318 (12.50)	318 (12.50)	333 (13.12)	421 (16.60)	51
4	350 (14.00)	356 (14.00)	356 (14.00)	371 (14.62)	496 (19.50)	76
5	450 (18.00)	400 (15.75)	400 (15.75)	416 (16.38)	577 (22.70)	125
6	500 (20.00)	445 (17.50)	445 (17.50)	460 (18.12)	675 (26.60)	173
8	560 (22.00)	559 (22.00)	559 (22.00)	575 (22.62)	912 (35.90)	297
10	600 (23.60)	622 (24.50)	622 (24.50)	638 (25.12)	949 (37.40)	500
12	650 (26.00)	711 (28.00)	711 (28.00)	727 (28.62)	1032 (40.60)	724
14	610 (24.00)	838 (33.00)	838 (33.00)	854 (33.62)	1130 (44.50)	1125
16	610 (24.00)	864 (34.00)	864 (34.00)	879 (34.61)	1310 (51.60)	1650

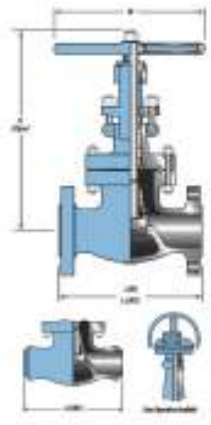
Standard Fig. No. 2A1C3



CLASS 600
API 600 / ASME B16.34

Size (In)	W	L (RF)	L1 (BW)	L2 (RTJ)	H (open)	Wt. (Kg)
2	250 (10.00)	29 (11.50)	292 (11.50)	295 (11.62)	397 (15.60)	37
2.1/2	250 (10.00)	330 (13.00)	330 (13.00)	333 (13.12)	446 (17.60)	50
3	350 (14.00)	356 (14.00)	356 (14.00)	359 (14.12)	496 (19.50)	62
4	450 (18.00)	432 (17.00)	432 (17.00)	435 (17.12)	599 (23.60)	150
5	500 (20.00)	508 (20.00)	508 (20.00)	511 (20.12)	700 (27.60)	187
6	560 (22.00)	559 (22.00)	559 (22.00)	562 (22.12)	791 (31.10)	294
8	600 (23.60)	660 (26.00)	660 (26.00)	663 (26.12)	1014 (39.90)	543
10	700 (28.00)	787 (31.00)	787 (31.00)	790 (31.12)	1180 (46.50)	1006
12	610 (24.00)	838 (33.00)	838 (33.00)	841 (33.13)	1397 (55.00)	1350
14	610 (24.00)	889 (35.00)	889 (35.00)	892 (35.12)	1450 (57.10)	1620
16	762 (30.00)	991 (39.00)	991 (39.00)	994 (39.13)	1610 (63.40)	2160

Standard Fig. No. 2A1C6



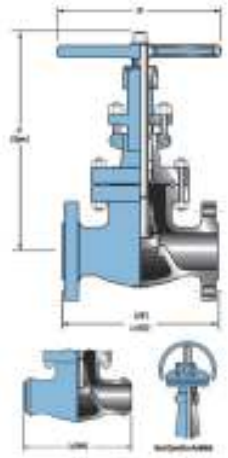
Unit : mm (inch)

CAST STEEL GLOBE

CLASS 900
API 600 / ASME B16.34

Size (In)	W	L	H (Open)	Wt. (Kg)
2	350 (14.00)	292 (11.50)	397 (15.60)	37
2.1/2	350 (14.00)	330 (13.00)	446 (17.60)	50
3	450 (18.00)	356 (14.00)	496 (19.50)	62
4	500 (20.00)	432 (17.00)	599 (23.60)	150
6	610 (24.00)	559 (22.00)	791 (31.10)	294
8	610 (24.00)	660 (26.00)	1014 (39.90)	543
10	610 (24.00)	787 (31.00)	1180 (46.50)	1006
12	810 (31.90)	838 (33.00)	1397 (55.00)	1350
14	810 (31.90)	889 (35.00)	1450 (57.10)	1620
16	810 (31.90)	991 (39.00)	1610 (63.40)	2160

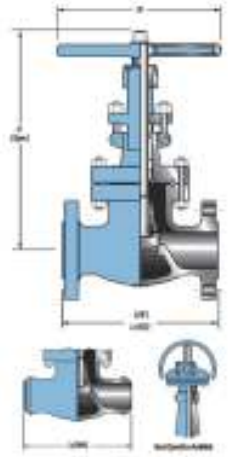
Standard Fig. No. 2A1C9



CLASS 1500
API 600
ASME B16.34

Size (In)	W	L	H (Open)	Wt. (Kg)
2	350 (14.00)	368 (14.50)	550 (21.70)	85
2.1/2	350 (14.00)	419 (16.50)	572 (22.50)	138
3	500 (20.00)	470 (18.50)	582 (22.90)	215
4	560 (22.00)	546 (21.50)	795 (31.30)	350
6	610 (24.00)	705 (27.75)	1278 (50.30)	560
8	610 (24.00)	832 (32.75)	1960 (77.20)	990
10	810 (31.90)	991 (39.00)	2450 (96.50)	1530
12	810 (31.90)	1130 (44.50)	2904 (114.30)	2570

Standard Fig. No. 2A1C15

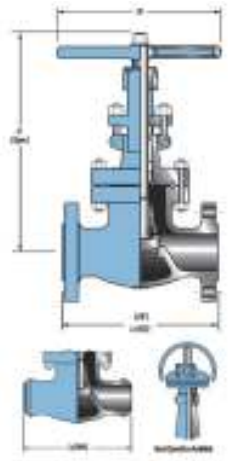


CLASS 2500
API 600
ASME B16.34

Size (In)	W	L	H (Open)	Wt. (Kg)
2	400 (16.00)	451 (17.75)	720 (28.30)	176
2.1/2	500 (20.00)	508 (20.00)	800 (31.50)	264
3	560 (22.00)	578 (22.75)	885 (34.80)	308
4	610 (24.00)	673 (26.50)	1260 (49.60)	759
6	610 (24.00)	914 (36.00)	1905 (75.00)	1990
8	610 (24.00)	1022 (40.25)	2465 (97.00)	4390
10	810 (31.90)	1270 (50.00)	3108 (122.40)	5290

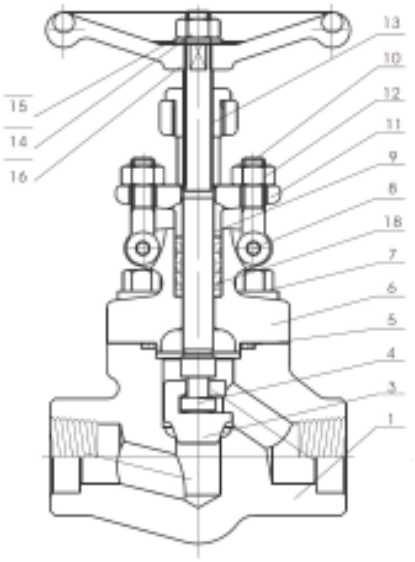
Standard Fig. No. 2A1C25

Unit : mm (inch)



FORGED STEEL GLOBE

BOLTED / WELDED BONNET - REDUCED / FULL PORT



STANDARD PARTS & MATERIAL

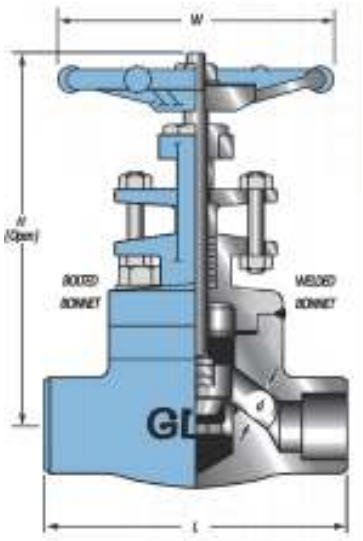
No.	Parts	A105/N	LF2	F11	F22	F304/L	F316/L	F51
1	Body	A105/N	A350-LF2	A182-F11	A182-F22	A182-F304/L	A182-F316/L	A182-F51
2	Seat	Integral Hardfaced Stellite						
3	Disc	410	304	420	420	304	316	F51
4	Stem	410	304	410	410	304	316	F51
5	Gasket	Flexible Graphite + SS304 / SS316						
6	Bonnet	A105/N	A350-LF2	A182-F11	A182-F22	A182-F304/L	A182-F316/L	A182-F51
7	Bonnet Bolt	A193-B7	A193-L7	A193-B16		A193-B8	A193-B8(M)	
8	Pin	SS304						
9	Gland	420/304/316						
10	Eyebolt	A193-B7	A193-L7	A193-B16		A193-B8	A193-B8(M)	
11	Gland Flange	A105				A105/F304		
12	Gland Nut	A194-2H				A194-8	A194-8(M)	
13	Stem Nut	410						
14	Handwheel Nut	A194-2H						
15	Name Plate	Aluminium						
16	Handwheel	A197						
18	Gland Packing	Flexible Graphite						

Other valve material composition are available.

FORGED STEEL GLOBE

MANUFACTURING STANDARD

General Design	API 602
Face To Face	ASME/ANSI B16.10
Connection	Screw NPT to ANSI B1.20.1, Socket Weld to ANSI B16.11, Buttweld to ANSI B16.25
Fire Safe Design	API 6FA
Pressure Rating	ASME/ANSI B16.34
Inspection & Test	API 598 / API 6D
Features	Bolted Bonnet/Welded Bonnet, Outside Screw & Yoke, Rising Stem



CLASS 800 - API 602

Port	Size	W	L	H (Open)	d	Wt. (Kg)
REGULAR	1/4	100 (3.94)	79 (3.11)	154 (6.06)	7 (0.26)	2
	1/2	100 (3.94)	79 (3.11)	158 (6.22)	10 (0.39)	2
	3/4	100 (3.94)	92 (3.62)	158 (6.22)	13 (0.51)	2
	1	125 (4.92)	111 (4.37)	192 (7.56)	18 (0.69)	3
	1.1/4	160 (6.30)	120 (4.72)	227 (8.94)	23 (0.91)	6
	1.1/2	160 (6.30)	152 (5.98)	240 (9.45)	29 (1.12)	7
	2	180 (7.09)	172 (6.77)	279 (10.98)	35 (1.38)	12
FULL	1/2	100 (3.94)	92 (3.62)	158 (6.22)	13 (0.51)	2
	3/4	125 (4.92)	111 (4.37)	192 (7.56)	18 (0.69)	4
	1	160 (6.30)	120 (4.72)	227 (8.94)	23 (0.91)	6
	1.1/4	160 (6.30)	152 (5.98)	240 (9.45)	29 (1.12)	7
	1.1/2	180 (7.09)	172 (6.77)	279 (10.98)	36 (1.40)	12
	2	200 (7.87)	220 (8.66)	325 (12.80)	47 (1.85)	12

Standard Fig. No. 2A2F8

CLASS 1500 - API 602

Port	Size	W	L	H (Open)	d	Wt. (Kg)
REGULAR	1/4	100 (3.94)	79 (3.11)	175 (6.89)	7 (0.26)	3
	1/2	125 (4.92)	92 (3.62)	187 (7.36)	10 (0.39)	4
	3/4	125 (4.92)	111 (4.37)	187 (7.36)	13 (0.51)	4
	1	160 (6.30)	120 (4.72)	227 (8.94)	18 (0.69)	6
	1.1/4	160 (6.30)	152 (5.98)	242 (9.53)	23 (0.91)	8
	1.1/2	180 (7.09)	172 (6.77)	278 (10.94)	29 (1.12)	13
	2	200 (7.87)	220 (8.66)	325 (12.80)	35 (1.38)	20
FULL	1/2	125 (4.92)	111 (4.37)	187 (7.36)	13 (0.51)	4
	3/4	160 (6.30)	120 (4.72)	227 (8.94)	18 (0.69)	6
	1	160 (6.30)	152 (5.98)	242 (9.53)	23 (0.91)	8
	1.1/4	180 (7.09)	172 (6.77)	278 (10.94)	29 (1.12)	13
	1.1/2	200 (7.87)	220 (8.66)	325 (12.80)	36 (1.40)	20
	2	200 (7.87)	250 (9.84)	355 (13.98)	47 (1.85)	20

Standard Fig. No. 2A2F15

CLASS 2500 API 602

Port	Size	W	L	H (Open)	d	Wt. (Kg)
REGULAR	1/2	160 (6.30)	150 (5.90)	249 (9.80)	14 (0.55)	8
	3/4	160 (6.30)	150 (5.90)	249 (9.80)	14 (0.55)	9
	1	200 (7.87)	170 (6.70)	292 (11.50)	19 (0.75)	13
	1.1/4	250 (9.84)	200 (7.87)	327 (12.87)	25 (0.98)	21
	1.1/2	250 (9.84)	200 (7.87)	327 (12.87)	28 (1.10)	21
	2	300 (11.81)	250 (9.84)	381 (15.00)	35 (1.38)	36

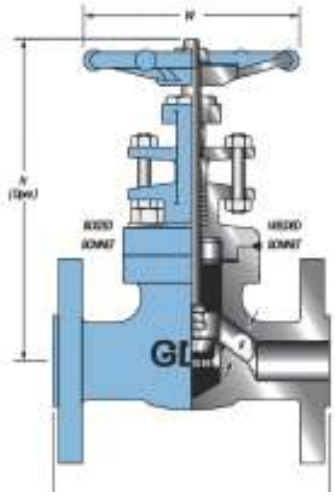
Standard Fig. No. 2A2F25

Unit : mm (inch)

FORGED STEEL GLOBE

MANUFACTURING STANDARD

General Design	API 602
Face To Face	ASME/ANSI B16.10
Connection	Flange to ANSI B16.5
Fire Safe Design	API 6FA
Pressure Rating	ASME/ANSI B16.34
Inspection & Test	API 598 / API 6D
Features	Bolted Bonnet/Welded Bonnet, Outside Screw & Yoke, Rising Stem, Integral Flange



CLASS 150 API 602

Port	Size (In)	W	L	H (Open)	d	Wt. (Kg)
REGULAR	1/2	100 (3.94)	108 (4.25)	153 (6.02)	10 (0.39)	5
	3/4	100 (3.94)	118 (4.63)	158 (6.22)	13 (0.51)	7
	1	125 (4.92)	127 (5.00)	192 (7.56)	18 (0.69)	10
	1.1/4	160 (6.30)	140 (5.50)	227 (8.94)	23 (0.91)	14
	1.1/2	160 (6.30)	165 (6.50)	241 (9.49)	29 (1.12)	20
	2	180 (7.09)	203 (8.00)	279 (10.98)	35 (1.38)	28

Standard Fig. No. 2A2F1

CLASS 300 API 602

Port	Size (In)	W	L	H (Open)	d	Wt. (Kg)
REGULAR	1/2	100 (3.94)	152 (6.00)	158 (6.22)	10 (0.39)	5
	3/4	100 (3.94)	178 (7.00)	158 (6.22)	13 (0.51)	8
	1	125 (4.92)	203 (8.00)	192 (7.56)	18 (0.69)	11
	1.1/4	160 (6.30)	216 (8.50)	227 (8.94)	23 (0.91)	17
	1.1/2	160 (6.30)	229 (9.00)	241 (9.49)	29 (1.12)	2
	2	180 (7.09)	267 (10.50)	279 (10.98)	35 (1.38)	33

Standard Fig. No. 2A2F3

CLASS 600 API 602

Port	Size (In)	W	L	H (Open)	d	Wt. (Kg)
REGULAR	1/2	100 (3.94)	165 (6.50)	158 (6.22)	10 (0.39)	6
	3/4	100 (3.94)	190 (7.50)	158 (6.22)	13 (0.51)	8
	1	125 (4.92)	216 (8.50)	192 (7.56)	18 (0.69)	13
	1.1/4	160 (6.30)	229 (9.00)	227 (8.94)	23 (0.91)	17
	1.1/2	160 (6.30)	241 (9.50)	241 (9.49)	29 (1.12)	24
	2	180 (7.09)	292 (11.50)	279 (10.98)	35 (1.38)	39

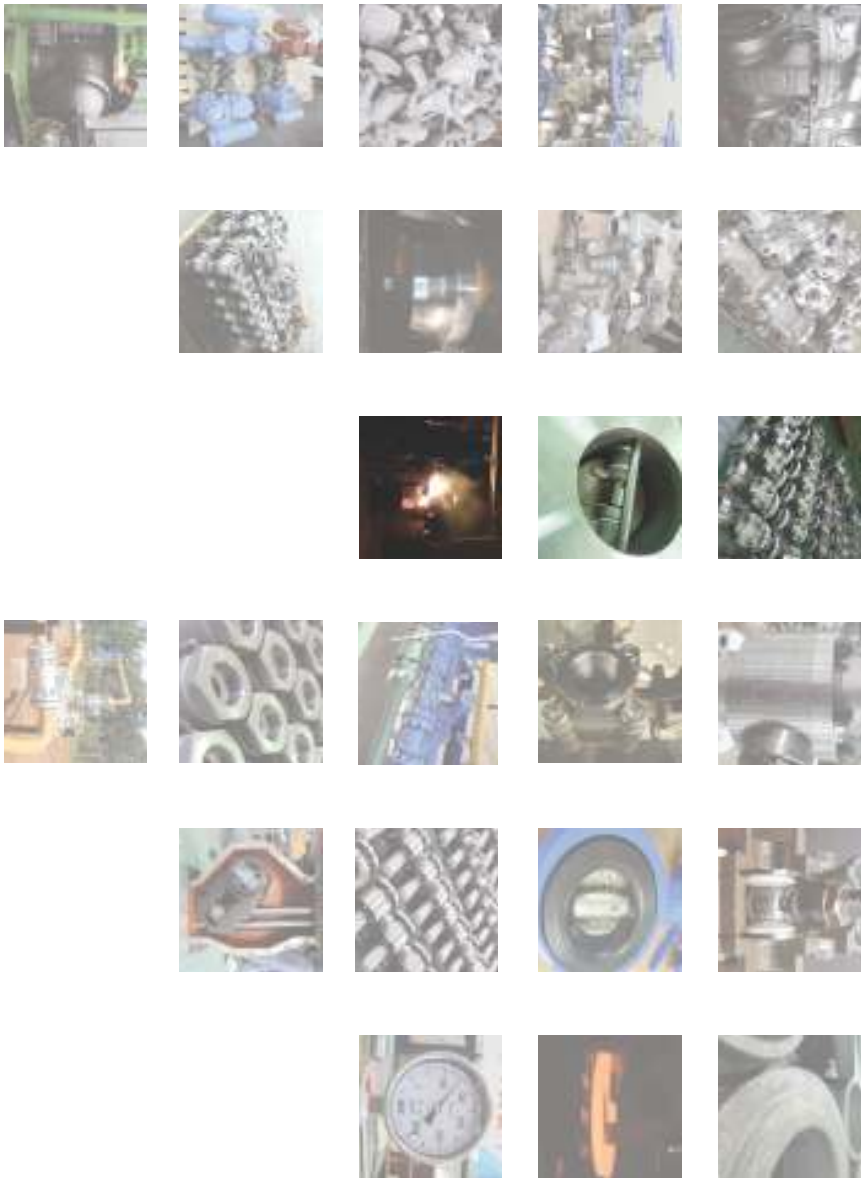
Standard Fig. No. 2A2F6

CLASS 1500 API 602

Port	Size (In)	W	L	H (Open)	d	Wt. (Kg)
REGULAR	1/2	125 (4.92)	216 (8.50)	187 (7.36)	10 (0.39)	11
	3/4	125 (4.92)	229 (9.00)	187 (7.36)	13 (0.51)	13
	1	160 (6.30)	254 (10.00)	227 (8.94)	18 (0.69)	17
	1.1/4	160 (6.30)	279 (10.98)	242 (9.53)	23 (0.91)	19
	1.1/2	180 (7.09)	305 (12.00)	278 (10.94)	29 (1.12)	25
	2	200 (7.87)	368 (14.49)	325 (12.80)	35 (1.38)	31

Standard Fig. No. 2A2F15

Unit : mm (inch)



GATE VALVE

GLOBE VALVE

CHECK VALVE

BALL VALVE

Y STRAINER - NEEDLE VALVE
BUTTERFLY VALVE

TECHNICAL DATA

SPECIFICATION

CHECK VALVE APPLICATION

Sometimes referred to as non-return valve, check valves prevents back-flow, constantly keeping flow in one direction. Check valve are designed to close quickly and automatically with positive shut off in either horizontal or vertical (flow up) pipe runs. Inherently, swing check valves have a low pressure drop and are best suitable for velocity applications. Our enclosure design allows check valve to close completely and remain closed even with no flow when installed in a pipe run.

MANUFACTURING STANDARDS

General Design	BS1868 / API 6D / API 600 / API 603
Face To Face	ASME/ANSI B16.10
Flange End	ASME/ANSI B16.5 & B16.47
Butt Weld End	ASME/ANSI B16.25
Fire Safe Design	API 6FA
Pressure Rating	ASME/ANSI B16.34
Inspection & Test	API 598 / API 6D
Features	Bolted Cap, Swing Disc

DISC

Each disc's seating surface is precision ground and paired to the seat ring for a positive shut off. The disc is secured to the hinge arm with the disc nut and pinned to prevent disengagement during service.

SEAT RING

Seat rings are designed to greatly reduce and / or prevent any turbulance and to avoid damage due to the corrosion. Seat rings for check valves are typically made from forged steel.

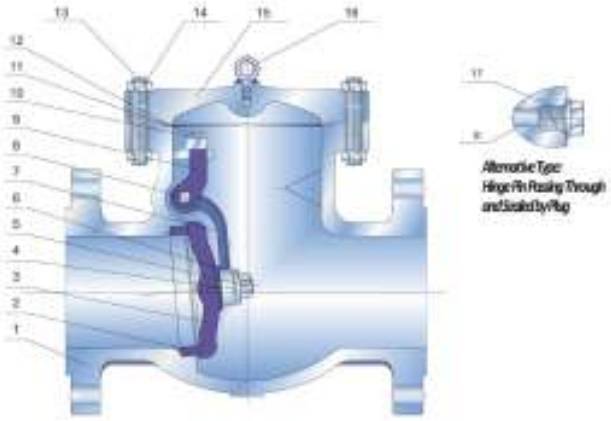
END CONNECTIONS

Our valve standard end connection are available in:

- Flange end type with Raised Face (RF), Flat Face (FF) or Ring Type Joint (RTJ) that conform to ANSI B16.5.
- Butt-welding ends (BW) that conform to ANSI B16.25.
- Threaded ends (NPT) that conform to ANSI B1.20.1 socket weld ends (SW) that conform to ANSI B16.11.
- All face-to-face / end-to-end dimensions conform to ANSI B16.10.

Other special end connections can be supplied according to customer's requirements.

CAST STEEL SWING CHECK



STANDARD PARTS & MATERIAL

No.	Parts	CARBON STEEL		ALLOY STEEL				STAINLESS STEEL	
		WCB	LCB	WC6	WC9	C5	C12	CF8(M)	CF3(M)
1	Body	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8(M)	A351 CF3(M)
2	Seat	A105 + STL	A350 LF2 + STL	A182 F11 + STL	A182 F22 + STL	A182 F5 + STL	A182 F9 + STL	A351 CF8(M)	A351 CF3(M)
3	Disc	A216 WCB + 13CR	A352 LCB + 13CR	A217 WC6 +13CR	A217 WC9 + 13CR	A217 C5 + 13CR	A217 C12 + 13CR	A351 CF8(M)	A351 CF3(M)
4	Disc Washer	A276 410	A276 304	A276 410				A276 316	
5	Disc Nut Pin	Steel						SS316	
6	Disc Nut	Steel						SS316	
7	Hinge	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8(M)	A351 CF3(M)
8	Hinge Pin	A182 F6a	A182 F304	A182 F6a				A182 F304/F316	
9	Bearing Bracket	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8(M)	A351 CF3(M)
10	Spring Washer	Carbon Steel	Steel					SS316	
11	Hex, Bolt	A193 B7	A320 L7	A193 B16				A193 B8	
12	Gasket	SS304 + Graphite						PTFE / SS316 + Graphite	
13	Cover Bolt	A193 B7	A320 L7	A193 B16				A193 B8	
14	Cover Bolt Nut	A194 2H	A194 4					A194 8	
15	Cover	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8(M)	A351 CF3(M)
16	Eye Bolt	Carbon Steel	Steel					SS316	
17	Plug	A105	A350 LF2	A182 F11	A182 F22	A182 F5	A182 F9	A182 F304/ F316	A182 F304L/ F316L

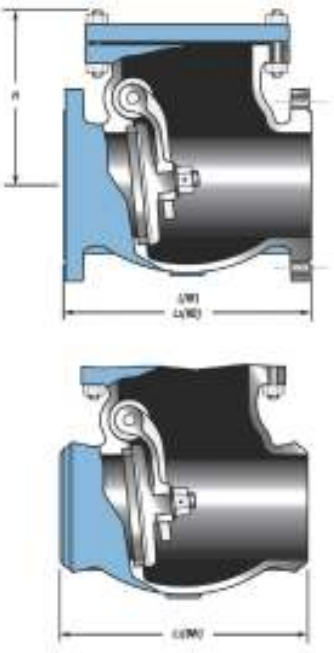
Other valve material composition are available.

CAST STEEL SWING CHECK

CLASS 150 API 600 / ASME B16.34

Size (In)	L (RF)	L1 (BW)	L2 (RTJ)	H	Wt. (Kg)
2	203 (8.00)	203 (8.00)	216 (8.50)	151 (5.90)	15
2.1/2	216 (8.50)	216 (8.50)	229 (9.00)	168 (6.60)	22
3	241 (9.50)	241 (9.50)	254 (10.00)	171 (6.70)	28
4	292 (11.50)	292 (11.50)	305 (12.00)	204 (8.00)	42
5	330 (13.00)	330 (13.00)	343 (13.50)	230 (9.10)	57
6	356 (14.00)	356 (14.00)	368 (14.50)	297 (11.70)	79
8	495 (19.50)	495 (19.50)	508 (20.00)	352 (13.80)	131
10	622 (24.50)	622 (24.50)	635 (25.00)	390 (15.30)	177
12	699 (27.50)	699 (27.50)	711 (28.00)	438 (17.20)	282
14	787 (31.00)	787 (31.00)	800 (31.50)	477 (18.80)	380
16	864 (34.00)	864 (34.00)	876 (34.50)	525 (20.70)	542
18	978 (38.50)	978 (38.50)	991 (39.00)	582 (22.90)	632
20	978 (38.50)	978 (38.50)	991 (39.00)	627 (24.70)	855
24	1295 (51.00)	1295 (51.00)	1308 (21.50)	880 (34.60)	970
26	1295 (51.00)	1295 (51.00)	-	910 (35.80)	1276
28	1448 (57.00)	1448 (57.00)	-	935 (36.80)	1600
30	1524 (60.00)	1524 (60.00)	-	970 (38.20)	2020
32	1727 (68.00)	1727 (68.00)	-	1250 (49.20)	2430
36	1956 (77.00)	1956 (77.00)	-	1377 (54.20)	3130
40	2159 (85.00)	2159 (85.00)	-	1410 (55.50)	4230
42	2261 (89.00)	2261 (89.00)	-	1468 (57.80)	5030
48	2566 (101.00)	2566 (101.00)	-	1642 (64.60)	6680

Standard Fig. No. 3A1C1

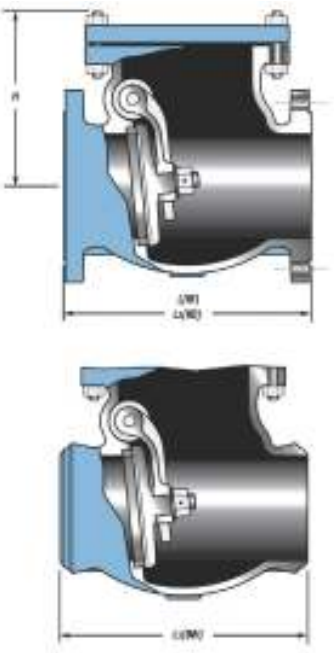


CLASS 300 API 600 / ASME B16.34

Size (In)	L (RF)	L1 (BW)	L2 (RTJ)	H	Wt. (Kg)
2	267 (10.50)	267 (10.50)	283 (11.12)	176 (6.90)	16
2.1/2	292 (11.50)	292 (11.50)	308 (12.12)	185 (7.30)	22
3	318 (12.50)	318 (12.50)	333 (13.12)	216 (8.50)	30
4	356 (14.00)	356 (14.00)	371 (14.62)	259 (10.20)	53
5	400 (15.75)	400 (15.75)	416 (16.38)	304 (12.00)	73
6	445 (17.50)	445 (17.50)	460 (18.12)	317 (12.50)	101
8	533 (21.00)	533 (21.00)	549 (21.62)	380 (15.00)	157
10	622 (24.50)	622 (24.50)	638 (25.12)	434 (17.10)	232
12	711 (28.00)	711 (28.00)	727 (28.62)	511 (20.10)	414
14	838 (33.00)	838 (33.00)	854 (33.62)	561 (22.10)	455
16	864 (34.00)	864 (34.00)	879 (34.62)	596 (23.50)	766
18	978 (38.50)	978 (38.50)	994 (39.12)	675 (26.60)	774
20	1016 (40.00)	1016 (40.00)	1035 (40.75)	730 (28.70)	960
24	1346 (53.00)	1346 (53.00)	1368 (53.88)	860 (33.90)	1792
26	1346 (53.00)	1346 (53.00)	-	930 (36.60)	1995
28	1499 (59.00)	1499 (59.00)	-	1163 (45.80)	2260
30	1594 (62.75)	1594 (62.75)	-	1270 (50.00)	2780
32	1727 (68.00)	1727 (68.00)	-	1270 (50.00)	3380
36	2083 (82.00)	2083 (82.00)	-	1510 (59.40)	5030

Standard Fig. No. 3A1C3

Unit : mm (inch)

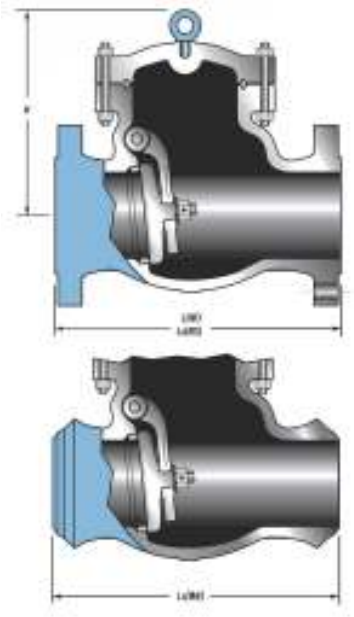


CAST STEEL SWING CHECK

CLASS 600 API 600 / ASME B16.34

Size (In)	L (RF)	L1 (BW)	L2 (RTJ)	H	Wt. (Kg)
2	292 (11.50)	292 (11.50)	295 (11.62)	184 (7.20)	30
2.1/2	330 (13.00)	330 (13.00)	333 (13.12)	210 (8.30)	43
3	356 (14.00)	356 (14.00)	359 (14.12)	232 (9.10)	55
4	432 (17.00)	432 (17.00)	435 (17.12)	263 (10.40)	93
5	508 (20.00)	508 (20.00)	511 (20.12)	295 (11.60)	160
6	559 (22.00)	559 (22.00)	562 (22.12)	374 (14.70)	208
8	660 (26.00)	660 (26.00)	664 (26.12)	426 (16.80)	339
10	787 (31.00)	787 (31.00)	791 (31.12)	517 (20.40)	547
12	838 (33.00)	838 (33.00)	841 (33.12)	569 (22.40)	715
14	889 (35.00)	889 (35.00)	892 (35.12)	622 (24.50)	885
16	991 (39.00)	991 (39.00)	994 (39.12)	680 (26.80)	1310
18	1092 (43.00)	1092 (43.00)	1095 (43.12)	752 (29.80)	1620
20	1194 (47.00)	1194 (47.00)	1200 (47.25)	975 (38.40)	2120
24	1397 (55.00)	1397 (55.00)	1407 (55.38)	1111 (43.70)	3100
26	1448 (57.00)	1448 (57.00)	-	1111 (43.70)	3800
28	1600 (63.00)	1600 (63.00)	-	1192 (46.90)	4600
30	1651 (65.00)	1651 (65.00)	-	1324 (52.10)	5500
32	1778 (70.00)	1778 (70.00)	-	1367 (53.80)	6800
36	2083 (82.00)	2083 (82.00)	-	1542 (60.70)	8100

Standard Fig. No. 3A1C6

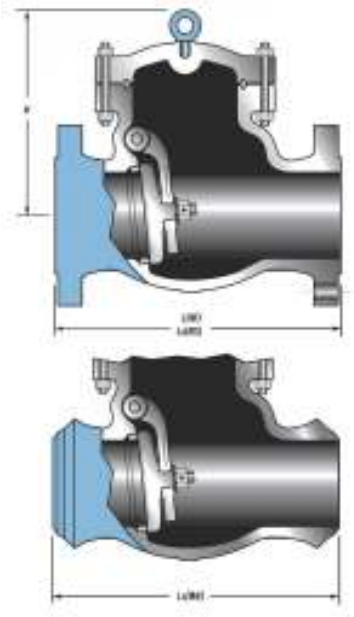


CLASS 900 API 600 / ASME B16.34

Size (In)	L (RF)	L1 (BW)	L2 (RTJ)	H	Wt. (Kg)
2	368 (14.50)	368 (14.50)	371 (14.62)	296 (11.70)	70
2.1/2	419 (16.50)	419 (16.50)	422 (16.62)	300 (11.80)	100
3	381 (15.00)	381 (15.00)	384 (15.12)	300 (11.80)	110
4	457 (18.00)	457 (18.00)	460 (18.12)	327 (12.90)	150
6	610 (24.00)	610 (24.00)	613 (24.12)	441 (17.40)	305
8	737 (29.00)	737 (29.00)	740 (29.12)	502 (19.80)	510
10	838 (33.00)	838 (33.00)	841 (33.12)	664 (26.10)	810
12	965 (38.00)	965 (38.00)	968 (38.12)	775 (30.50)	1120
14	1029 (40.50)	1029 (40.50)	1038 (40.38)	782 (30.80)	1380
16	1130 (44.50)	1130 (44.50)	1140 (44.88)	838 (33.00)	1900
18	1219 (48.00)	1219 (48.00)	1095 (43.11)	839 (33.00	3000
20	1321 (52.00)	1321 (52.00)	1200 (47.24)	932 (36.70)	4000
24	1549 (61.00)	1549 (61.00)	1407 (55.39)	924 (36.40)	5200

Standard Fig. No. 3A1C9

Unit : mm (inch)

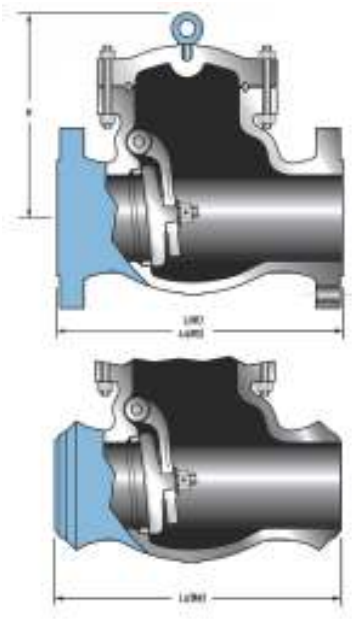


CAST STEEL SWING CHECK

CLASS 1500 API 600 / ASME B16.34

Size (In)	L (RF)	L1 (BW)	L2 (RTJ)	H	Wt. (Kg)
2	368 (14.50)	368 (14.50)	371 (14.61)	296 (11.70)	70
2.1/2	419 (16.50)	419 (16.50)	422 (16.61)	300 (11.80)	100
3	470 (18.50)	470 (18.50)	473 (18.62)	341 (13.40)	150
4	546 (21.50)	546 (21.50)	549 (21.61)	412 (16.20)	245
6	705 (27.75)	705 (27.75)	711 (28.00)	511 (20.10)	550
8	832 (32.75)	832 (32.75)	841 (33.11)	680 (26.80)	1010
10	991 (39.00)	991 (39.00)	1000 (39.37)	756 (29.80)	1476
12	1130 (44.50)	1130 (44.50)	1146 (45.12)	857 (33.70)	2280
14	1257 (49.50)	1257 (49.50)	1276 (50.24)	950 (37.40)	3060
16	1384 (54.50)	1384 (54.50)	1407 (55.39)	1020 (40.10)	4500

Standard Fig. No. 3A1C15



CLASS 2500 API 600 / ASME B16.34

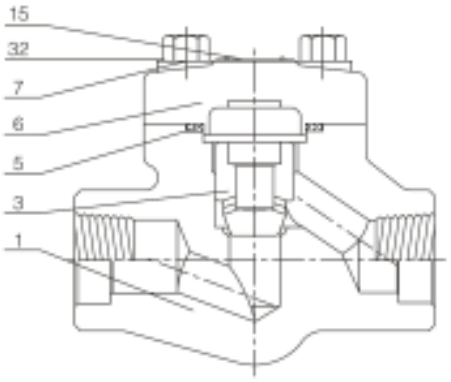
Size (In)	L (RF)	L1 (BW)	L2 (RTJ)	H	Wt. (Kg)
2	451 (17.75)	451 (17.75)	454 (17.91)	416 (16.40)	145
2.1/2	508 (20.00)	508 (20.00)	514 (20.24)	419 (16.50)	240
3	578 (22.75)	578 (22.75)	584 (23.00)	441 (17.40)	330
4	673 (26.50)	673 (26.50)	683 (26.89)	479 (18.90)	650
6	914 (36.00)	914 (36.00)	927 (36.50)	511 (20.10)	806
8	1022 (40.25)	1022 (40.25)	1038 (40.87)	711 (28.00)	2420
10	1270 (50.00)	1270 (50.00)	1292 (50.87)	851 (33.50)	3750
12	1422 (56.00)	1422 (56.00)	1445 (56.89)	1000 (39.40)	5500

Standard Fig. No. 3A1C25

Unit : mm (inch)

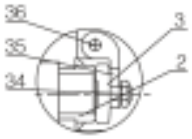
FORGED STEEL LIFT CHECK

BOLTED / WELDED CAP - REDUCED / FULL PORT



Please mark in you need load spring

Ball type



Swing type

STANDARD PARTS & MATERIAL

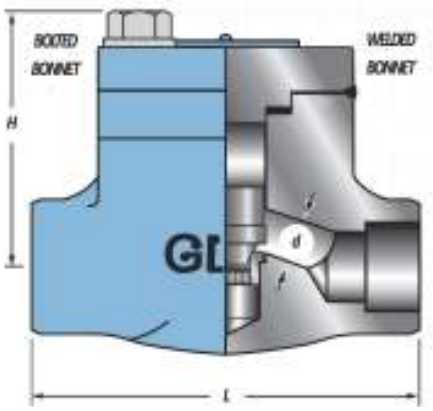
No.	Parts	A105/N	LF2	F11	F22	F304/L	F316/L	F51
1	Body	A105/N	A350-LF2	A182-F11	A182-F22	A182-F304/L	A182-F316/L	A182-F51
2	Seat	410+STL	304+STL	410+STL	410+STL	304+STL	316+STL	F51+STL
3	Disc	410	304	420	420	304	316	F51
5	Gasket	Flexible Graphite + SS Wire						
6	Cap	A105/N	A350-LF2	A182-F11	A182-F22	A182-F304/L	A182-F316/L	A182-F51
7	Cap Bolt	A193-B7	A193-L7	A193-B16		A193-B8	A193-B8(M)	
15	Name Plate	Aluminium						
32	Rivet	T3						
33	Ball	410	304	410		304/L	316/L	F51
34	Disc Nut	A194-8					A194-8(M)	
35	Hinge	A351-CF8					A351-CF8M	
36	Pin	304					316	

Other valve material composition are available.

FORGED STEEL LIFT CHECK

MANUFACTURING STANDARD

General Design	API 602
Face To Face	ASME/ANSI B16.10
Connection	Screw NPT to ANSI B1.20.1, Socket Weld to ANSI B16.11, Buttweld to ANSI B16.25
Fire Safe Design	API 6FA
Pressure Rating	ASME/ANSI B16.34
Inspection & Test	API 598 / API 6D
Features	Bolted Cap / Welded Cap, Piston, Spring Loaded (Optional)



CLASS 800 - API 602

Port	Size (In)	L	H	d	Wt. (Kg)
REGULAR	1/4	79 (3.11)	54.5 (2.15)	6.5 (0.26)	2
	1/2	79 (3.11)	54.5 (2.15)	10.0 (0.39)	2
	3/4	92 (3.62)	54.5 (2.15)	13.0 (0.51)	2
	1	111 (4.37)	72.0 (2.83)	17.5 (0.69)	3
	1.1/4	120 (4.72)	81.0 (3.19)	23.0 (0.91)	4
	1.1/2	152 (5.98)	94.0 (3.70)	28.5 (1.12)	5
	2	172 (6.77)	112.0 (4.41)	35.0 (1.38)	9
FULL	1/2	92 (3.62)	54.5 (2.15)	13.0 (0.51)	2
	3/4	111 (4.37)	72.0 (2.83)	17.5 (0.69)	3
	1	120 (4.72)	81.0 (3.19)	23.0 (0.91)	4
	1.1/4	152 (5.98)	94.0 (3.70)	28.5 (1.12)	5
	1.1/2	172 (6.77)	112.0 (4.41)	35.0 (1.38)	9
	2	220 (8.66)	132.0 (5.20)	47.0 (1.85)	16

Standard Fig. No. 3A2F8

CLASS 1500 - API 602

Port	Size (In)	L	H	d	Wt. (Kg)
REGULAR	1/4	79 (3.11)	54.5 (2.15)	6.5 (0.26)	2
	1/2	92 (3.62)	54.5 (2.15)	10.0 (0.39)	2
	3/4	111 (4.37)	54.5 (2.15)	13.0 (0.51)	2
	1	120 (4.72)	72.0 (2.83)	17.5 (0.69)	3
	1.1/4	152 (5.98)	81.0 (3.19)	23.0 (0.91)	4
	1.1/2	172 (6.77)	94.0 (3.70)	28.5 (1.12)	5
	2	220 (8.66)	112.0 (4.41)	35.0 (1.38)	9
FULL	1/2	111 (4.37)	73.0 (2.87)	13.0 (0.51)	3
	3/4	120 (4.72)	84.0 (3.31)	17.5 (0.69)	5
	1	152 (5.98)	97.0 (3.82)	23.0 (0.91)	7
	1.1/4	172 (6.77)	115.0 (4.53)	28.5 (1.12)	11
	1.1/2	220 (8.66)	132.0 (5.20)	35.0 (1.38)	16
	2	250 (9.84)	132.0 (5.20)	47.0 (1.85)	17

Standard Fig. No. 3A2F15

CLASS 2500 API 602

Port	Size (In)	L	H	d	Wt. (Kg)
REGULAR	1/2	150 (5.90)	135 (5.31)	11.0 (0.43)	7
	3/4	150 (5.90)	135 (5.31)	17.0 (0.66)	7
	1	170 (6.70)	146 (5.74)	19.0 (0.74)	11
	1.1/4	200 (7.87)	176 (6.92)	25.0 (0.98)	18
	1.1/2	200 (7.87)	176 (6.92)	28.0 (1.10)	18
	2	250 (9.84)	196 (7.71)	35.0 (1.38)	29

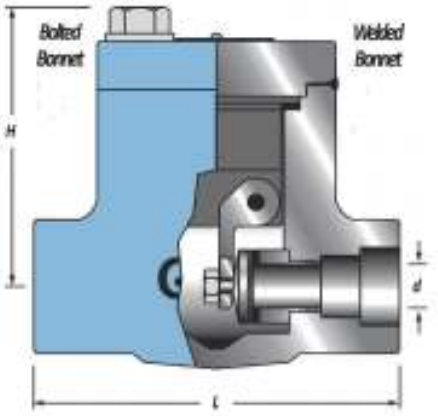
Standard Fig. No. 3A2F25

Unit : mm (inch)

FORGED STEEL SWING CHECK

MANUFACTURING STANDARD

General Design	API 602
Face To Face	ASME/ANSI B16.10
Connection	Screw NPT to ANSI B1.20.1, Socket Weld to ANSI B16.11, Buttweld to ANSI B16.25
Fire Safe Design	API 6FA
Pressure Rating	ASME/ANSI B16.34
Inspection & Test	API 598 / API 6D
Features	Bolted Cap / Welded Cap, Swing type



CLASS 800- API 602

Port	Size (In)	L	H	d	Wt. (Kg)
REGULAR	1/4	79 (3.11)	54.5 (2.15)	8.0 (0.31)	1
	1/2	79 (3.11)	54.5 (2.15)	13.0 (0.51)	1
	3/4	92 (3.62)	54.5 (2.15)	13.0 (0.51)	2
	1	111 (4.37)	72.0 (2.83)	18.0 (0.69)	2
	1.1/4	120 (4.72)	81.0 (3.19)	24.0 (0.94)	4
	1.1/2	120 (4.72)	94.0 (3.70)	29.0 (1.12)	5
	2	140 (5.51)	112.0 (4.41)	36.8 (1.45)	9
FULL	1/2	92 (3.62)	54.5 (2.15)	13.0 (0.51)	2
	3/4	111 (4.37)	72.0 (2.83)	18.0 (0.69)	2
	1	120 (4.72)	81.0 (3.19)	24.0 (0.94)	4
	1.1/4	120 (4.72)	94.0 (3.70)	29.0 (1.12)	5
	1.1/2	140 (5.51)	112.0 (4.41)	36.8 (1.45)	9
	2	160 (6.30)	132.0 (5.20)	48.0 (1.89)	15

Standard Fig. No. 3A2F8

CLASS 1500 - API 602

Port	Size (In)	L	H	d	Wt. (Kg)
REGULAR	1/4	79 (3.11)	73 (2.87)	6.8 (0.26)	2
	1/2	92 (3.62)	73 (2.87)	13.0 (0.51)	2
	3/4	111 (4.37)	73 (2.87)	13.0 (0.51)	3
	1	120 (4.72)	84 (3.31)	18.0 (0.69)	4
	1.1/4	120 (4.72)	97 (3.82)	24.0 (0.94)	6
	1.1/2	140 (5.51)	115 (4.53)	29.0 (1.12)	10
	2	160 (6.30)	132 (5.20)	36.8 (1.45)	15
FULL	1/2	111 (4.37)	73 (2.87)	13.0 (0.51)	3
	3/4	120 (4.72)	84 (3.31)	18.0 (0.69)	4
	1	120 (4.72)	97 (3.82)	24.0 (0.94)	6
	1.1/4	140 (5.51)	115 (4.53)	29.0 (1.12)	10
	1.1/2	160 (6.30)	132 (5.20)	36.8 (1.45)	15
	2	220 (8.66)	132 (5.20)	48.0 (1.89)	17

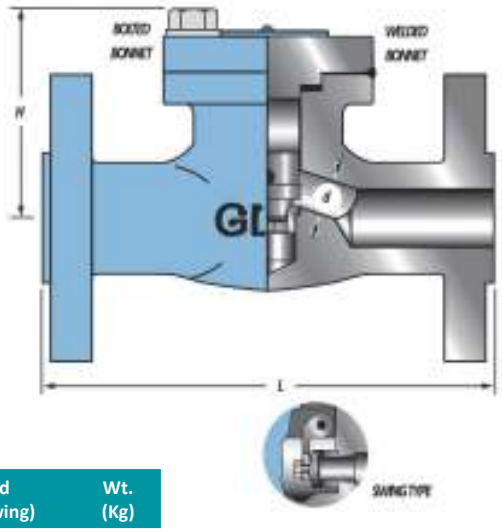
Standard Fig. No. 3A2F15

Unit : mm (inch)

FORGED STEEL CHECK VALVE

MANUFACTURING STANDARD

General Design	API 602
Face To Face	ASME/ANSI B16.10
Connection	Flange to ANSI B16.5
Fire Safe Design	API 6FA
Pressure Rating	ASME/ANSI B16.34
Inspection & Test	API 598 / API 6D
Features	Bolted Cap / Welded Cap, Piston & Swing type, Spring Loaded (Optional)



CLASS 150 API 602

Size (in)	L	H	d (Lift)	d (Swing)	Wt. (Kg)
1/2	108 (4.25)	54.5 (2.15)	10.0 (0.39)	13.0 (0.51)	3
3/4	117 (4.61)	54.5 (2.15)	13.0 (0.51)	13.0 (0.51)	4
1	127 (5.00)	72.0 (2.83)	17.5 (0.69)	18.0 (0.69)	8
1.1/4	140 (5.50)	81.0 (3.19)	23.0 (0.91)	24.0 (0.94)	9
1.1/2	165 (6.50)	91.0 (3.58)	28.5 (1.12)	29.0 (1.12)	12
2	203 (7.99)	112.0 (4.41)	35.0 (1.38)	36.8 (1.45)	14

Standard Fig. No. 3A2F1

CLASS 300 API 602

Size (In)	L	H	d (Lift)	d (Swing)	Wt. (Kg)
1/2	152 (5.98)	54.5 (2.15)	10.0 (0.39)	13.0 (0.51)	4
3/4	178 (7.01)	54.5 (2.15)	13.0 (0.51)	13.0 (0.51)	5
1	216 (8.50)	72.0 (2.83)	17.5 (0.69)	18.0 (0.69)	9
1.1/4	229 (9.02)	81.0 (3.19)	23.0 (0.91)	24.0 (0.94)	10
1.1/2	241 (9.49)	91.0 (3.58)	28.5 (1.12)	29.0 (1.12)	14
2	267 (10.51)	112.0 (4.41)	35.0 (1.38)	36.8 (1.45)	18

Standard Fig. No. 3A2F3

CLASS 600 API 602

Size (In)	L	H	d (Lift)	d (Swing)	Wt. (Kg)
1/2	165 (6.50)	54.5 (2.15)	10.0 (0.39)	13.0 (0.51)	4
3/4	190 (7.50)	54.5 (2.15)	13.0 (0.51)	13.0 (0.51)	6
1	216 (8.50)	72.0 (2.83)	17.5 (0.69)	18.0 (0.69)	10
1.1/4	229 (9.02)	81.0 (3.19)	23.0 (0.91)	24.0 (0.94)	10
1.1/2	241 (9.49)	91.0 (3.58)	28.5 (1.12)	29.0 (1.12)	16
2	292 (11.50)	112.0 (4.41)	35.0 (1.38)	36.8 (1.45)	25

Standard Fig. No. 3A2F6

CLASS 1500 API 602

Size	L	H	d (Lift)	d (Swing)	Wt. (Kg)
1/2	216 (8.50)	73 (2.87)	10.0 (0.39)	13.0 (0.51)	9
3/4	229 (9.02)	73 (2.87)	13.0 (0.51)	13.0 (0.51)	11
1	254 (10.00)	84 (3.31)	17.5 (0.69)	18.0 (0.69)	14
1.1/4	279 (10.98)	97 (3.82)	23.0 (0.91)	24.0 (0.94)	16
1.1/2	305 (12.01)	115 (4.53)	28.5 (1.12)	29.0 (1.12)	22
2	368 (14.49)	132 (5.20)	35.0 (1.38)	36.8 (1.45)	28

Standard Fig. No. 3A2F15

Unit : mm (inch)

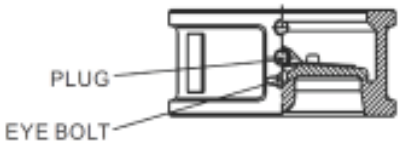
CAST STEEL WAFER CHECK

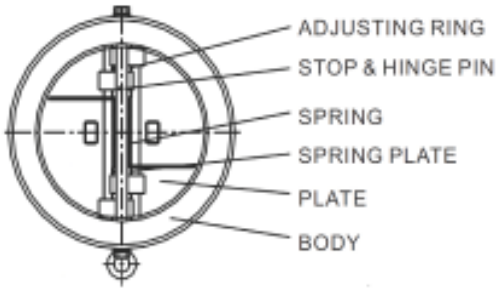
DUAL PLATE WAFER CHECK VALVE

Dual plate wafer check valve is typically installed in support of automatic shutdown valves and safety devices. Its purpose is to prevent and protect devices against the consequences of unintended reverse flow. It is immediately responsive and fast acting in its closure, thereby maximising protection to prevent or minimize the adverse effect of any backflow. It is not an isolating valve and should not be used as such. GLT dual plate wafer check valve provides enhance protection for the safety of equipment, plant, and against the loss of production. It is widely applied in the petroleum, petro-chemical, LNG, and other industries.

MANUFACTURING STANDARDS

General Design	API 6D / API 594
Fire Safe Design	API 607 / API 6FA
Pressure Rating	ASME / ANSI B16.34
Face to Face	ASME / ANSI B 16.10
Flange dimensions	ASME / ANSI B 16.5, ANSI 16.47A & ANSI B16.47B
Test & Inspection	API 6D / API 598





STANDARD PARTS & MATERIAL

No	Parts	CARBON STEEL			LOW CARBON STEEL		STAINLESS STEEL			
		13CR TRIM	SS304 TRIM	SS316 TRIM	SS304 TRIM	SS316 TRIM	SS304	SS316	SS304L	SS316L
1	Body	A216 WCB	A216 WCB	A216 WCB	A352 LCB	A352 LCB	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M
2	Seat	NBR / VITON / 13CR / STELLITE / SS304 / SS316								
3	Plate	A217 CA15	A351 CF8	A351 CF8M	A351 CF8	A351 CF8M	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M
4	Hinge Pin	A182 F6	A182 F304	A182 F316	A182 F304	A182 F316	A182 F304	A182 F316	A182 F304L	A182 F316L
5	Retainer Pin	A182 F6	A182 F304	A182 F316	A182 F304	A182 F316	A182 F304	A182 F316	A182 F304L	A182 F316L
6	Spring	INCONEL X750								
7	Eye Bolt	AISI 1035								
8	Bearing	PTFE / 13CR / SS304 / SS316								
9	Plug	STEEL								

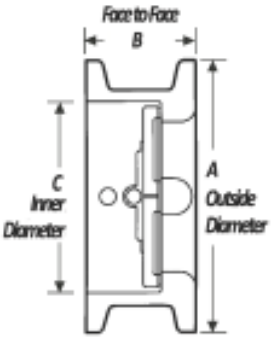
Other valve material composition are available.

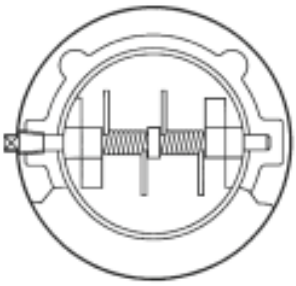
CAST STEEL WAFER CHECK

CLASS 150 - API 594

Size (In)	A	B	C	STUD SELECTION (In)			Wt. (Kg)
				No.	Dia.	Length	
2	105 (4.13)	60 (2.36)	57 (2.24)	4	0.625	6.000	3
2.1/2	124 (4.88)	67 (2.63)	77 (3.03)	4	0.625	6.375	5
3	137 (5.39	73 (2.87)	90 (3.54)	4	0.625	7.000	6
4	175 (6.89)	73 (2.87)	110 (4.33)	8	0.615	7.000	8
5	191 (7.52)	86 (3.39)	141 (5.55)	8	0.750	7.375	12
6	222 (8.74)	98 (3.89)	166 (6.54)	8	0.750	8.250	16
8	279 (10.98)	127 (5.00)	206 (8.11)	8	0.750	9.750	21
10	340 (13.39)	146 (5.75)	260 (10.24)	12	0.875	11.000	48
12	410 (16.14)	181 (7.13)	300 (11.81)	12	0.875	12.250	78
14	451 (17.76)	184 (7.24)	348 (13.70)	12	1.000	13.000	91
16	514 (20.24)	191 (7.52)	388 (15.28)	16	1.000	13.500	125
18	549 (21.61)	203 (7.99)	438 (17.24)	16	1.125	14.500	143
20	606 (23.86)	219 (8.62)	486 (19.13)	20	1.250	15.125	197
24	718 (28.27)	222 (8.74)	580 (22.83)	20	1.250	16.250	281

Standard Fig. No. 4A1C1

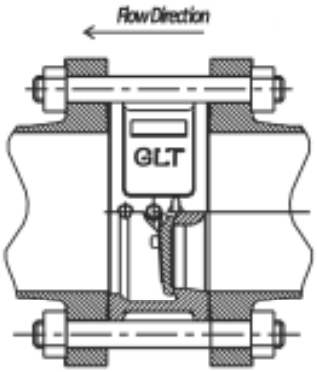




CLASS 300 - API 594

Size (In)	A	B	C	STUD SELECTION (In)			Wt. (Kg)
				No.	Dia.	Length	
2	111 (4.37)	60 (2.36)	57 (2.24)	8	0.625	6.875	3
2.1/2	130 (5.12)	67 (2.63)	77 (3.03)	8	0.750	6.875	5
3	149 (5.87)	73 (2.87)	90 (3.54)	8	0.75	8.125	6
4	181 (7.13)	73 (2.87)	110 (4.33)	8	0.750	8.125	8
5	216 (8.50)	86 (3.39)	141 (5.55)	8	0.750	8.125	16
6	251 (9.88)	98 (3.89)	166 (6.54)	12	0.570	9.625	20
8	308 (12.13)	127 (5.00)	206 (8.11)	12	0.875	14.500	37
10	362 (14.25)	146 (5.75)	260 (10.24)	12	1.000	12.750	57
12	422 (16.61)	181 (7.13)	300 (11.81)	16	1.125	14.625	91
14	486 (19.13)	222 (8.74)	348 (13.70)	20	1.125	16.500	147
16	540 (21.26)	232 (9.14)	388 (15.28)	20	1.250	17.375	188
18	597 (23.50)	264 (10.39)	438 (17.24)	24	1.250	18.875	252
20	654 (25.75)	292 (11.50)	486 (19.13)	24	1.250	20.500	329
24	775 (30.51)	318 (12.51)	580 (22.83)	24	1.500	22.750	499

Standard Fig. No. 4A1C3



CLASS 600 - API 594

Size (In)	A	B	C	STUD SELECTION (In)			Wt. (Kg)
				No.	Dia.	Length	
2	111 (4.37)	60 (2.36)	57 (2.24)	8	0.625	6.875	3
3	149 (5.87)	73 (2.87)	90 (3.54)	8	0.750	8.125	7
4	194 (7.64)	73 (2.87)	110 (4.33)	8	0.875	9.500	12
6	267 (10.51)	136 (5.35)	166 (6.54)	12	1.000	12.375	36
8	321 (12.63)	165 (6.50)	206 (8.11)	12	1.125	14.500	61
10	400 (10.16)	213 (8.39)	260 (10.24)	16	1.250	17.125	108
12	457 (17.99)	229 (9.02)	300 (11.81)	20	1.250	18.000	151
14	492 (19.37)	273 (10.75)	348 (13.70)	20	1.375	20.250	206
16	565 (22.24)	305 (12.00)	388 (15.28)	20	1.500	22.250	290
18	613 (24.13)	362 (14.25)	438 (17.24)	20	1.625	25.250	404
20	683 (26.89)	368 (14.49)	486 (19.13)	24	1.625	26.250	508
24	791 (31.14)	438 (17.24)	588 (23.15)	24	1.875	30.750	925

Standard Fig. No. 4A1C6

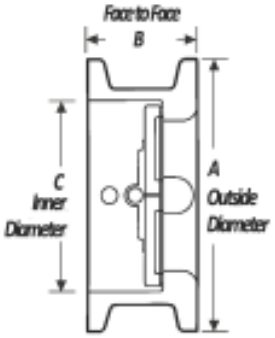
Unit : mm (inch)

CAST STEEL WAFER CHECK

CLASS 900 API 594

Size (In)	A	B	C	STUD SELECTION (In)			Wt. (Kg)
				No.	Dia.	Length	
2	143 (5.63)	70 (2.76)	57 (2.24)	8	0.875	8.750	6
3	168 (5.63)	83 (3.26)	90 (3.54)	8	0.875	9.500	11
4	206 (8.11)	102 (4.02)	110 (4.33)	8	1.125	11.000	18
6	289 (11.38)	159 (6.25)	166 (6.54)	12	1.125	14.000	52
8	359 (14.14)	206 (8.11)	206 (8.11)	12	1.375	17.125	104
10	435 (17.13)	241 (9.49)	260 (10.24)	16	1.375	19.000	176
12	498 (19.61)	292 (11.50)	300 (11.81)	20	1.375	21.750	245
14	541 (21.30)	356 (14.02)	348 (13.70)	20	1.500	25.500	420
16	575 (22.64)	384 (15.12)	388 (15.28)	20	1.625	27.125	523

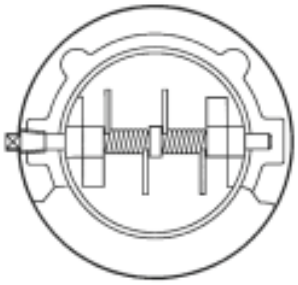
Standard Fig. No. 4A1C9



CLASS 1500 API 594

Size (In)	A	B	C	STUD SELECTION (In)			Wt. (Kg)
				No.	Dia.	Length	
2	143 (5.63)	70 (2.76)	57 (2.24)	8	0.875	8.750	6
3	175 (6.89)	83 (3.26)	90 (3.54)	8	1.125	10.500	11
4	210 (8.26)	102 (4.02)	110 (4.33)	8	1.250	12.000	20
6	283 (11.14)	159 (6.25)	166 (6.54)	12	1.375	16.750	50
8	352 (13.86)	206 (8.11)	206 (8.11)	12	1.625	20.25	99
10	435 (17.13)	248 (9.76)	260 (10.24)	12	1.875	23.500	180
12	421 (16.57)	305 (12.00)	300 (11.81)	16	2.000	27.500	329

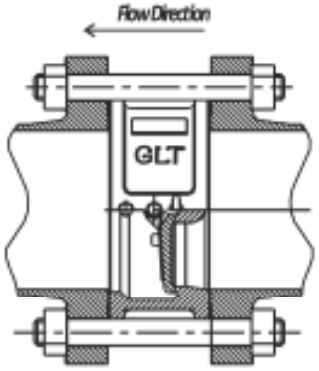
Standard Fig. No. 4A1C15



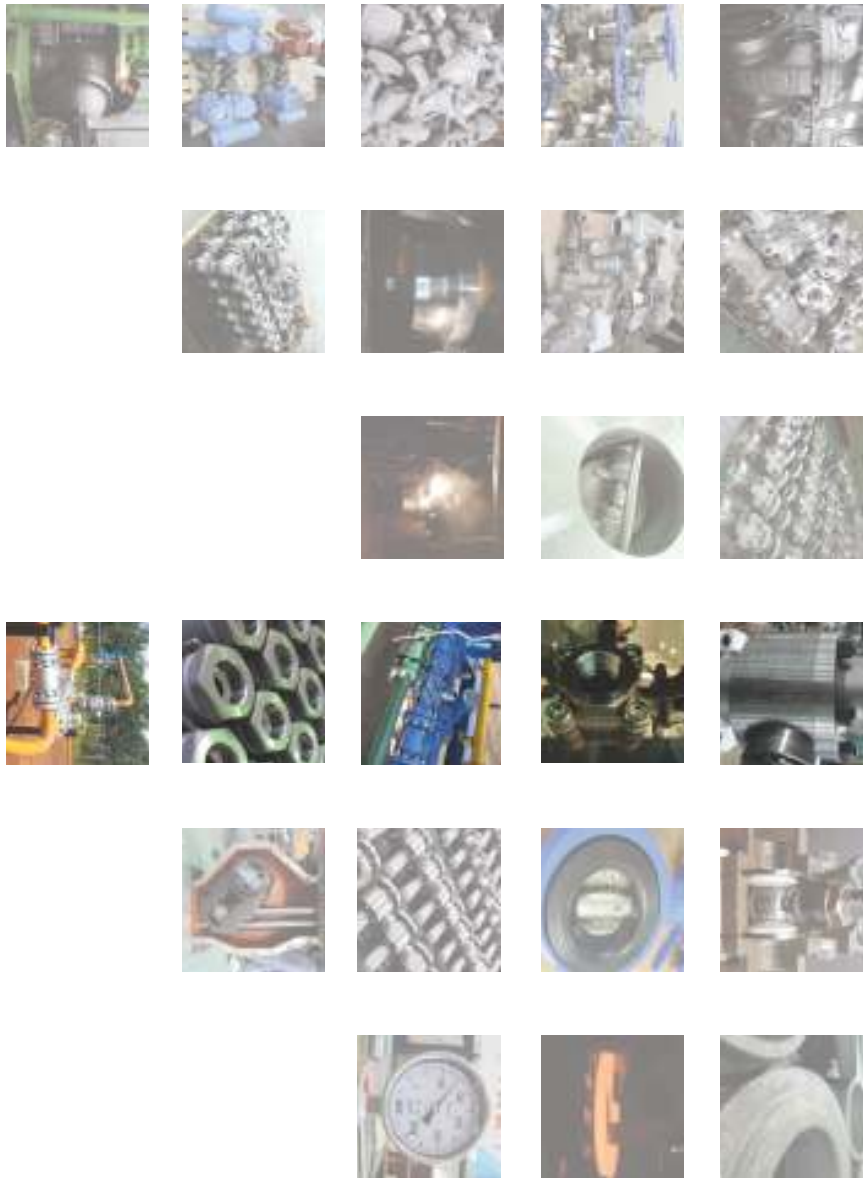
CLASS 2500 API 594

Size (In)	A	B	C	STUD SELECTION (In)			Wt. (Kg)
				No.	Dia.	Length	
2	146 (5.75)	70 (2.76)	57 (2.24)	8	1.000	10.000	7
3	197 (7.76)	86 (3.38)	90 (3.54)	8	1.125	10.500	14
4	235 (9.25)	105 (4.13)	110 (4.33)	8	1.500	14.625	25
6	318 (12.52)	159 (6.25)	166 (6.54)	12	1.375	16.750	86
8	387 (15.24)	206 (8.11)	206 (8.11)	12	2.000	24.000	129
10	476 (18.74)	254 (10.00)	260 (10.24)	12	2.500	30.500	228
12	549 (21.61)	305 (12.00)	300 (11.81)	12	2.750	34.500	437

Standard Fig. No. 4A1C25



Unit : mm (inch)



GATE VALVE

GLOBE VALVE

CHECK VALVE

BALL VALVE

Y STRAINER - NEEDLE VALVE
BUTTERFLY VALVE

TECHNICAL DATA

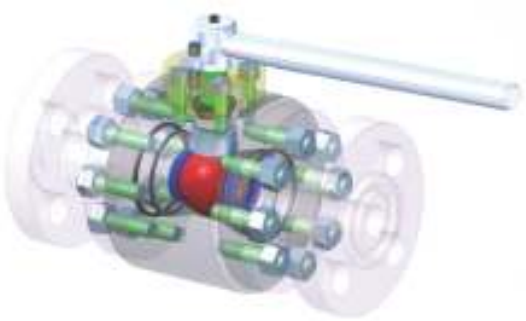
FLOATING BALL VALVE

BALL VALVE APPLICATION

Because of their excellent operating characteristics, ball valves are used for the broadest spectrum of isolation applications and are available in a wide range of sizes, pressure ratings, materials and trim. Ball valves are quick acting, allows flow in either direction, has a low pressure drop with bubble tight shut off. It is easily actuated with multiple designs possible.

MANUFACTURING STANDARDS

General Design	API 6D
Face To Face	ASME/ANSI B16.10
Flange End	ASME/ANSI B16.5
Butt Weld End	ASME/ANSI B16.25
Fire Safe Design	API 607 / API 6FA
Pressure Rating	ASME/ANSI B16.34
Inspection & Test	API 6D & API 598



BLOW-OUT PROOF STEM

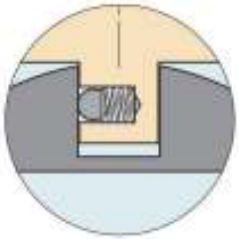
Blow-out proof design is adopted for the stem to ensure that even if the pressure in the body cavity has risen to abnormal levels, the stem will not be blown out by the medium. The stem design includes a collar, with the sealing force greater as the medium pressure is higher.

FIRE-SAFE DESIGN

GLT Ball Valve are constructed according to fire-safe design and have been fire tested to API 607 standard. Resilient sealing materials has failure possibility when subjected to high temperatures. As the resilient material are burned or damaged, the edge of the seat holder comes into contact with the ball to form a metal to metal sealing and minimize leakage.

ANTI-STATIC DEVICE

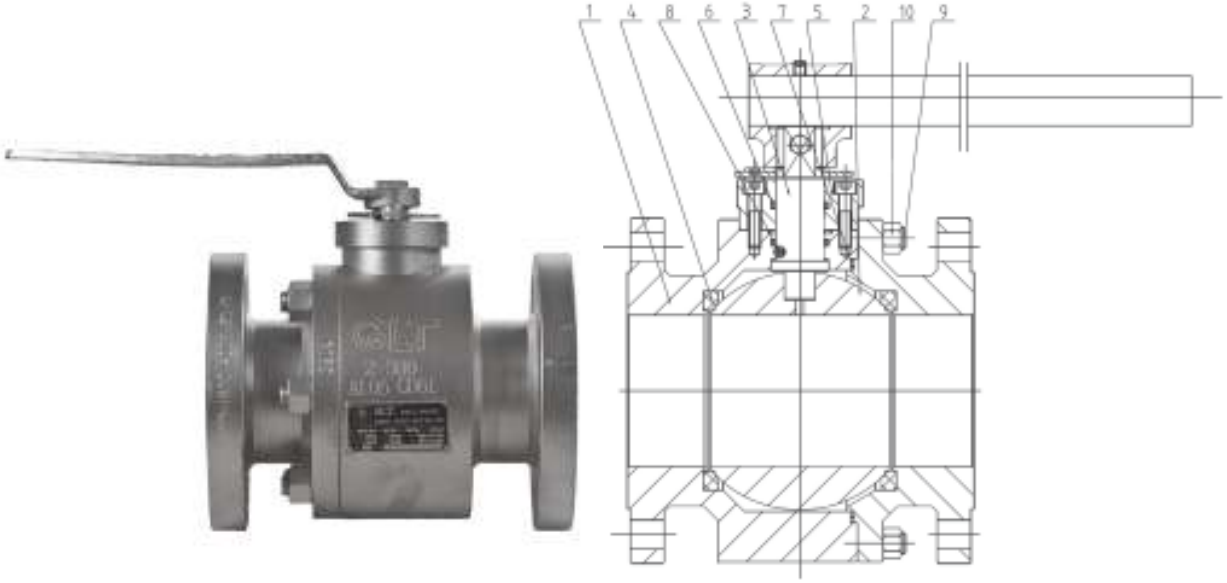
An anti-static device is built into the valve stem to allow the static charges to be led to the piping, thus eliminating electrostatic charging of the ball.



OPERATING INDICATOR

To prevent the ball valve from wrong operation, at the stem head, the stem head and lever is so designed that the valve opens with the lever in parallel to piping, and when closed, with the lever perpendicular to piping.

FLOATING BALL VALVE

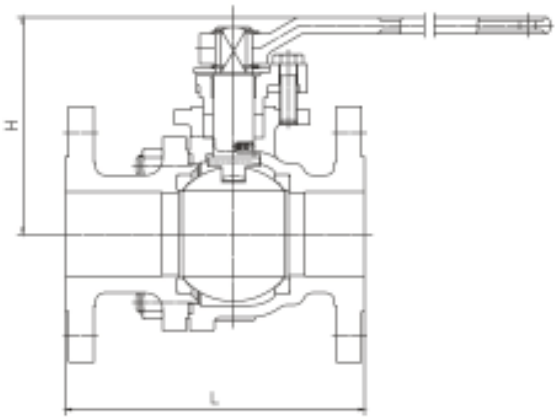


STANDARD PARTS & MATERIAL

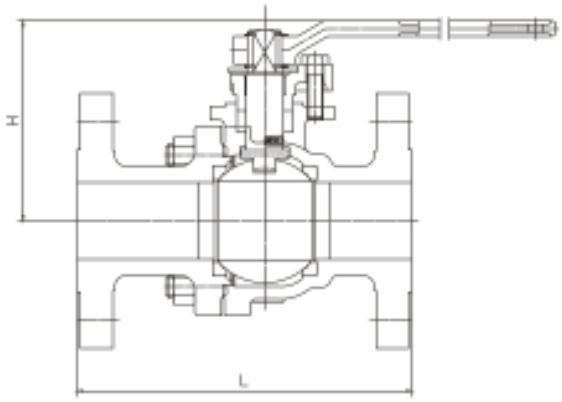
No.	Parts	Standard	SS304/L	SS316/L	Low Temp	Duplex
1	Body & Cover	A216-WCB A105/N	CF8/CF3 A182-F304/L	CF8M/CF3M A182-F316/L	A352-LCB A350-LF2	A182-F51/F53
2	Ball	A105+ENP F304/F316	A182-F304 A182-F304L	A182-F316 A182-F316L	LF2+ENP F304/F316	A182-F51/F53
3	Stem	A182-F6a	A182-F304 A182-F304L	A182-F316 A182-F316L	LF2+ENP F304/F316	A182-F51/F53
4	Seat	PTFE / RTFE / Nylon				
5	Gland	A105	A182-F304 A182-F304L	A182-F316 A182-F316L	A352-LCB A350-LF2	A182-F51/F53
6	O Ring	Viton				
7	Body Gasket	Graphite				
8	Anti Static	Stainless Steel				
9	Stud	A193-B7	193-B8	A193-B8M	A320-L7	A193-B8M
10	Nut	A194-2H	A194-8	A194-8M	A194-4	A194-8M

Other valve material composition are available.

CAST STEEL FLOATING BALL



CLASS 150#



CLASS 300#

CLASS 150 - API 6D

Port	Size (In)	L		H	Wt. (Kg)
		RF	RTJ		
FULL BORE	1/2	108 (4.25)	119 (4.69)	59 (2.32)	3
	3/4	117 (4.61)	130 (5.11)	63 (2.48)	4
	1	127 (5.00)	140 (5.51)	75 (2.95)	5
	1.1/2	165 (6.50)	178 (7.00)	95 (3.74)	7
	2	178 (7.00)	191 (7.52)	107 (4.21)	10
	2.1/2	190 (7.48)	203 (7.99)	142 (5.60)	15
	3	203 (7.99)	216 (8.50)	152 (5.98)	19
	4	229 (9.02)	242 (9.53)	178 (7.00)	33
	6	394 (15.51)	407 (16.02)	272 (10.71)	93

Standard Fig. No. FA1C1

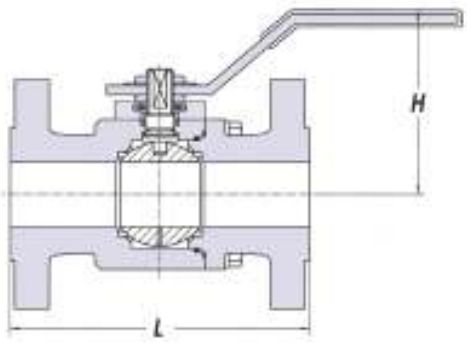
CLASS 300 - API 6D

Port	Size (In)	L		H	Wt. (Kg)
		RF	RTJ		
FULL BORE	1/2	140 (5.51)	151 (5.95)	59 (2.32)	3
	3/4	152 (5.98)	165 (6.50)	63 (2.48)	5
	1	165 (6.50)	178 (7.00)	75 (2.95)	6
	1.1/2	190 (7.48)	203 (7.99)	95 (3.74)	11
	2	216 (8.50)	232 (9.13)	107 (4.21)	15
	2.1/2	241 (9.49)	257 (10.12)	142 (5.59)	24
	3	283 (11.14)	299 (11.77)	152 (5.98)	30
	4	305 (12.00)	321 (12.64)	178 (7.00)	55
	6	403 (15.87)	419 (16.50)	272 (10.71)	118

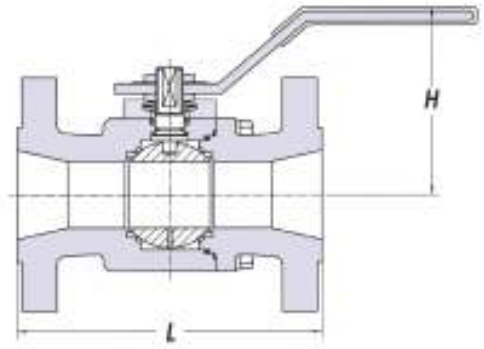
Standard Fig. No. FA1C3

Unit : mm (inch)

FORGED STEEL FLOATING BALL



FULL BORE



REDUCE BORE

CLASS 150 - API 6D

Port	Size (In)	L		H	Wt. (Kg)
		RF	RTJ		
FULL BORE	1/2	108 (4.25)	119 (4.69)	59 (2.32)	3
	3/4	117 (4.61)	130 (5.12)	63 (2.48)	4
	1	127 (5.00)	140 (5.51)	75 (2.95)	5
	1.1/2	165 (6.50)	178 (7.00)	95 (3.74)	9
	2	178 (7.00)	191 (7.52)	107 (4.21)	12
	2.1/2	190 (7.48)	203 (7.99)	142 (5.59)	17
	3	203 (7.99)	216 (8.50)	152 (5.98)	25
	4	229 (9.01)	242 (9.53)	178 (7.00)	38
	6	394 (15.51)	407 (16.02)	272 (10.71)	95
	8	457 (17.99)	470 (18.50)	342 (13.46)	175
REDUCED BORE	1/2 x 3/8	108 (4.25)	119 (4.69)	57 (2.24)	2
	3/4 x 1/2	117 (4.61)	130 (5.12)	61 (2.40)	3
	1 x 3/4	127 (5.00)	140 (5.51)	71 (2.80)	4
	1.1/2 x 1	165 (6.50)	178 (7.00)	89 (3.50)	7
	2 x 1.1/2	178 (7.00)	192 (7.56)	102 (4.02)	10
	3 x 2	203 (7.99)	216 (8.50)	139 (5.47)	20
	4 x 3	229 (9.01)	242 (9.53)	162 (6.38)	30
	6 x 4	394 (15.51)	407 (16.02)	250 (9.84)	70
	8 x 6	457 (17.99)	470 (18.50)	317 (12.48)	135

Standard Fig. No. FA1F1

CLASS 300 - API 6D

Port	Size (In)	L		H	Wt. (Kg)
		RF	RTJ		
FULL BORE	1/2	140 (5.51)	151 (5.94)	59 (2.32)	3
	3/4	152 (5.98)	165 (6.50)	63 (2.48)	5
	1	165 (6.50)	178 (7.00)	75 (2.95)	6
	1.1/2	190 (7.48)	203 (7.99)	95 (3.74)	11
	2	216 (8.50)	232 (9.13)	107 (4.21)	15
	2.1/2	241 (9.49)	257 (10.12)	142 (5.59)	24
	3	283 (11.14)	299 (11.77)	152 (5.98)	30
	4	305 (12.00)	321 (12.64)	178 (7.00)	55
	6	403 (15.87)	419 (16.50)	272 (10.71)	118
	8	502 (19.76)	518 (20.39)	342 (13.46)	200
REDUCED BORE	1/2 x 3/8	140 (5.51)	151 (5.94)	57 (2.24)	3
	3/4 x 1/2	152 (5.98)	165 (6.50)	60 (2.36)	4
	1 x 3/4	165 (6.50)	178 (7.00)	71 (2.80)	5
	1.1/2 x 1	190 (7.48)	203 (7.99)	89 (3.50)	9
	2 x 1.1/2	216 (8.50)	232 (9.13)	102 (4.02)	12
	3 x 2	283 (11.14)	299 (11.77)	135 (5.31)	24
	4 x 3	305 (12.00)	321 (12.64)	165 (6.50)	40
	6 x 4	403 (15.87)	419 (16.50)	250 (9.42)	88
	8 x 6	502 (19.76)	518 (20.39)	319 (12.56)	162

Standard Fig. No. FA1F3

CLASS 600 - API 6D

Port	Size (In)	L		H	Wt. (Kg)
		RF	RTJ		
FULL BORE	1/2	165 (6.50)	163 (6.42)	85 (3.35)	6
	3/4	191 (7.52)	191 (7.52)	93 (3.66)	9
	1	216 (8.50)	216 (8.50)	99 (3.90)	12
	1.1/2	241(9.48)	241(9.48)	117 (4.61)	24
REDUCED BORE	1/2 x 3/8	165 (6.50)	163 (6.42)	85 (3.35)	5
	3/4 x 1/2	191 (7.52)	191 (7.52)	85 (3.35)	8
	1 x 3/4	216 (8.50)	216 (8.50)	93 (3.66)	10
	1.1/2 x 1	241 (9.48)	241 (9.48)	99 (3.90)	16
	2 x 1.1/2	292 (11.50)	295 (11.61)	117 (4.61)	34

Standard Fig. No. FA1F6

Unit : mm (inch)

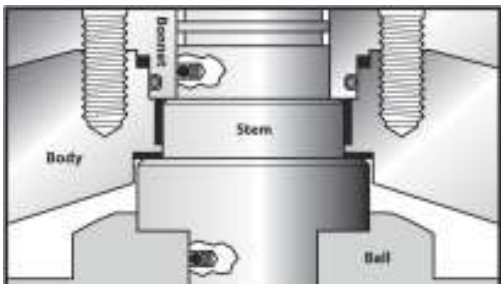
TRUNNION BALL VALVE

MANUFACTURING STANDARDS

General Design	API 6D
Face To Face	ASME/ANSI B16.10
Flange End	ASME/ANSI B16.5 & ANSI B16.47
Butt Weld End	ASME/ANSI B16.25
Fire Safe Design	API 607 / API 6FA
Pressure Rating	ASME/ANSI B16.34
Inspection & Test	API 6D & API 598

BLOW-OUT PROOF STEM

Stem seal integrity is achieved by the use of double o-rings and graphite gasket. Blow-out proof stem structure is provided standard with the stem independent of the ball which allow a reduction of the operating torque.

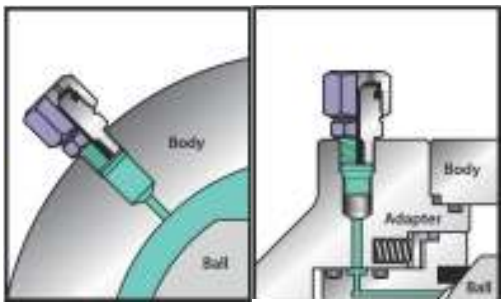


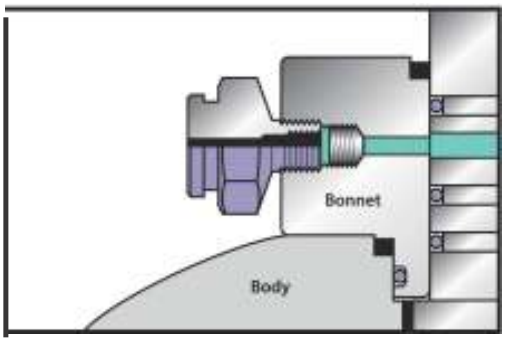
ANTI-STATIC DEVICE

An anti-static device is built into the valve stem to allow the static charges to be led to the piping, thus eliminating electrostatic charging of the ball.

EMERGENCY SEAL RESTORATION

GLT Trunnion ball valves are all designed and made with devices for grease or sealant injection, both on the stem and the seat. The sealant injection system allows the lubrication of the seat and stem area to restore the sealing integrity in case of damages to the sealing surfaces until the valve is properly serviced during maintenance.

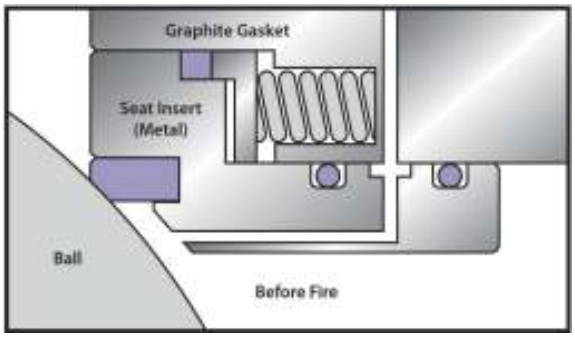




TRUNNION BALL VALVE

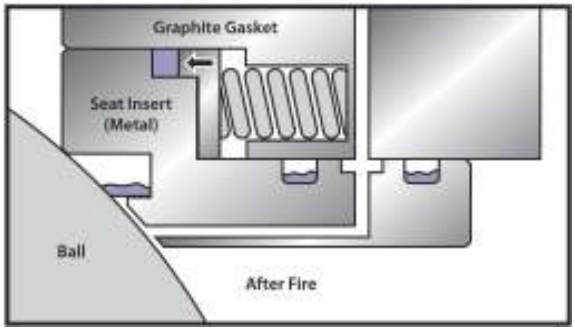
SPRING LOADED SEATS

Independent spring loaded seats are always in contact with the ball to provide an effective tight seal even at low differential pressures. As line pressure increases, the seat area creates a piston effect which forces the seat against the ball, creating an even tighter seal.



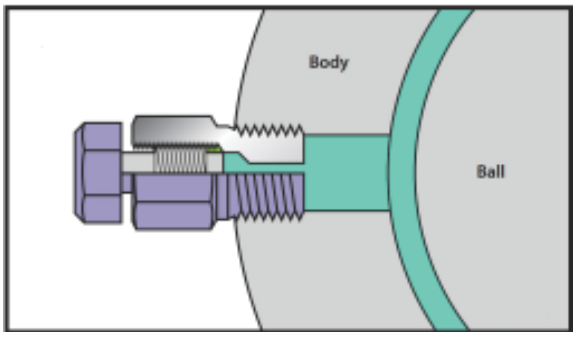
FIRE-SAFE DESIGN
WITH SECONDARY METAL SEAT

GLT Ball Valves are constructed according to fire-safe design and have been fire tested to API 607 and API 6FA standards. Resilient sealing materials has failure possibility when subjected to high temperatures. As the resilient material are burned or damaged, the edge of the metal seat retainer preloaded by the seat spring comes into contact with the ball to form a metal to metal sealing.



BODY VENT & DRAIN

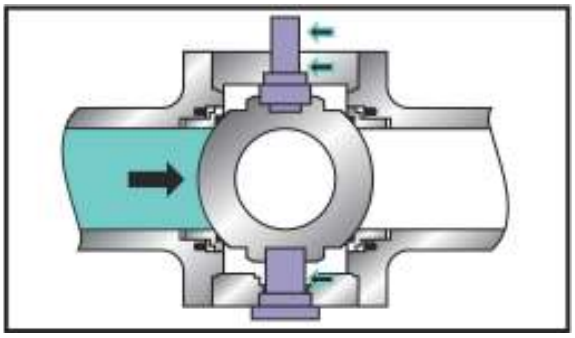
The body cavity may be vented and drain in both open and close state.



TRUNNION BALL VALVE

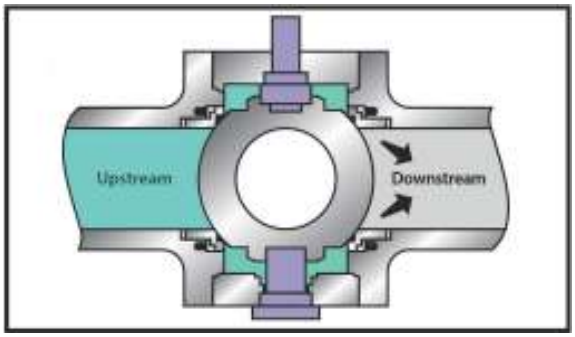
TRUNNION MOUNTED BALL

Trunnion mounted stem absorb the thrust from line pressure thus preventing additional friction between ball and seats, thus helping to keep the operational torque lower.



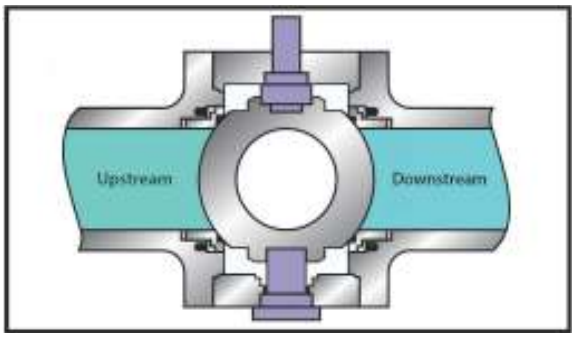
CAVITY PRESSURE SELF-RELIEF

In the event of an unusually high increase of temperature, liquified gas or highly volated liquid trapped within the body cavity may cause an abnormal rise in the cavity pressure to exceeds the line pressure. The medium itself would propel the seat and self-relieves the pressure from the cavity into the valve bore.

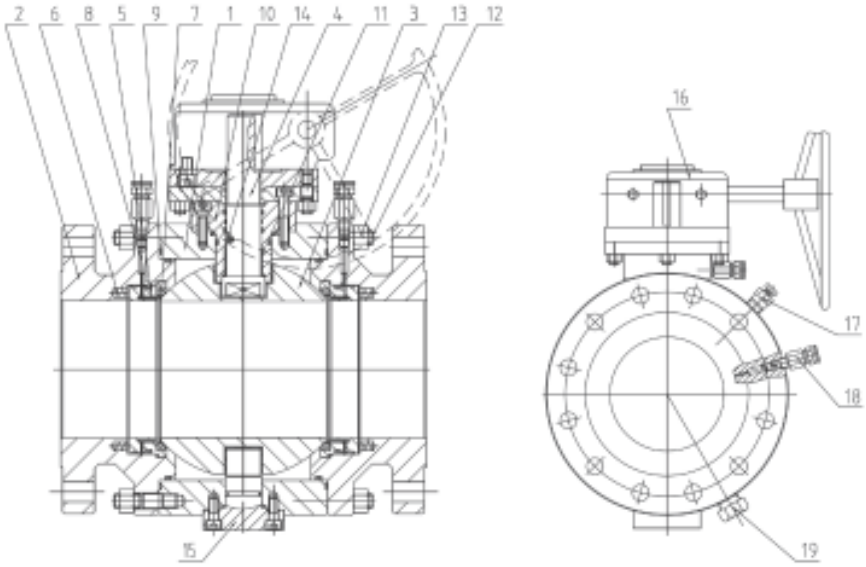


DOUBLE BLOCK AND BLEED FUNCTION

Ball seals shut off the flow line independently on the upstream and downstream side of the ball. The valve bore and the body cavity are isolated from each other when the valve is fully opened or closed so that residue and pressure within the body cavity may be disposed through the drain plug/valve. This design prevents fluid contamination or pressure build up within the valve interior.



TRUNNION BALL VALVE

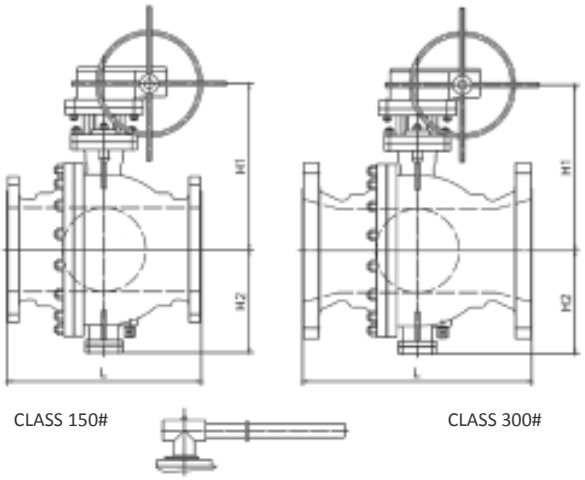


STANDARD PARTS & MATERIAL

No.	Parts	Standard	SS304/L	SS316/L	Low Temp	Duplex
1	Body	A216 - WCB A105/N	CF8/CF3 A182-F304/L	CF8M/CF3M A182-F316/L	A352-LCB A350-LF2	A182-F51/F3
2	Cover	A216 - WCB A105/N	CF8/CF3 A182-F304/L	CF8M/CF3M A182-F316/L	A352-LCB A350-LF2	A182-F51/F3
3	Ball	A105+HCr/ENP F304/F316	A182-F304 A182-F304L	A182-F316 A182-F316L	LF2+ENP F304/F316	A182-F51/F53
4	Stem	A182-F6a F304/F316	A182-F304 A182-F304L	A182-F316 A182-F316L	LF2+ENP F304/F316	A182-F51/F53
5	Seat Ring	A105+ENP F304/F316	A182-F304 A182-F304L	A182-F316 A182-F316L	LF2+ENP F304/F316	A182-F51/F53
6	Spring	Inconel X750				
7	Seat Insert	PTFE / RTFE / Nylon / Devlon / PEEK				
8	O Ring	Viton				
9	Body Gasket	Graphite				
10	Gland	A105	A182-F304 A182-F304L	A182-F316 A182-F316L	A350-LF2	A182-F51/F53
11	Bearing	PTFE				
12	Stud	A193-B7	A193-B8	A193-B8	A320-L7	A193-B8M
13	Nut	A194-2H	A194-8	A194-8M	A194-4	A194-8M
14	Anti Static	Stainless Steel				
15	Trunnion	A182-F6a F304/F316	A182-F304 A182-F304L	A182-F316 A182-F316L	LF2+ENP F304/F316	A182-F51/F53
16	Gear	Assembly				
17	Vent	Assembly				
18	Sealant Injection	Assembly				
19	Plug	Assembly				

Other valve material composition are available.

CAST STEEL TRUNNION BALL



CLASS 150# CLASS 300#

	Port	Size (In)	L			H1	H2	Wt. (Kg)
			RF	RTJ	BW			
CLASS 150 - API 6D	FULL BORE	2	178 (7.01)	191 (7.52)	216 (8.50)	107 (4.21)	102 (4.02)	12
		3	203 (7.99)	216 (8.50)	283 (11.14)	152 (5.98)	127 (5.00)	22
		4	229 (9.02)	242 (9.53)	305 (12.01)	178 (7.00)	152 (5.98)	35
		6	394 (15.51)	407 (16.02)	457 (17.99)	330 (12.99)	219 (8.62)	74
		8	457 (17.99)	470 (18.50)	521 (20.51)	398 (15.67)	273 (10.75)	205
		10	533 (20.98)	546 (21.50)	559 (22.01)	495 (19.49)	360 (14.17)	322
		12	610 (24.02)	623 (24.53)	635 (25.00)	580 (22.83)	395 (15.55)	460
		14	686 (27.01)	699 (27.52)	762 (30.00)	625 (24.61)	430 (16.93)	576
		16	762 (30.00)	775 (30.51)	838 (32.99)	670 (26.38)	470 (18.50)	864
		18	864 (34.02)	877 (34.53)	914 (35.98)	698 (27.48)	550 (21.65)	1280
		20	914 (35.98)	927 (36.50)	991 (39.02)	840 (33.07)	580 (22.83)	1600
		24	1067 (42.01)	1080 (42.52)	1143 (45.00)	1050 (41.34)	700 (27.56)	3540

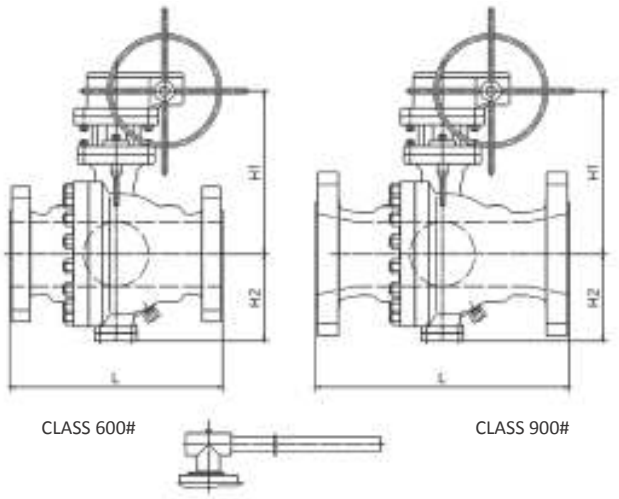
Standard Fig. No. TA1C1

	Port	Size (In)	L			H1	H2	Wt. (Kg)
			RF	RTJ	BW			
CLASS 300 - API 6D	FULL BORE	2	216 (8.50)	232 (9.13)	216 (8.50)	107 (4.21)	102 (4.02)	15
		3	283 (11.14)	299 (11.77)	283 (11.14)	152 (5.98)	127 (5.00)	30
		4	305 (12.01)	321 (12.64)	305 (12.01)	178 (7.00)	152 (5.98)	55
		6	403 (15.87)	419 (16.50)	403 (15.87)	330 (12.99)	219 (8.62)	118
		8	502 (19.76)	518 (20.39)	502 (19.76)	398 (15.67)	273 (10.75)	255
		10	568 (22.36)	584 (22.99)	568 (22.36)	495 (19.49)	360 (14.17)	370
		12	648 (25.51)	664 (26.14)	648 (25.51)	580 (22.83)	395 (15.55)	533
		14	762 (30.00)	778 (30.63)	762 (30.00)	625 (24.61)	430 (16.93)	640
		16	838 (32.99)	854 (33.62)	838 (32.99)	670 (26.38)	470 (18.50)	1030
		18	914 (35.98)	930 (36.61)	914 (35.98)	698 (27.48)	550 (21.65)	1542
		20	991 (39.02)	1007 939.65)	991 (39.02)	840 (33.07)	580 (22.83)	2100
		24	1143 (45.00)	1159 (45.62)	1143 (45.00)	1050 (41.34)	700 (27.56)	4200

Standard Fig. No. TA1C3

Unit : mm (inch)

CAST STEEL TRUNNION BALL



CLASS 600# CLASS 900#

CLASS 600 - API 6D

Port	Size (In)	L			H1	H2	Wt. (Kg)
		RF	RTJ	BW			
FULL BORE	2	292 (11.50)	295 (11.61)	292 (11.50)	114 (4.49)	108 (4.25)	35
	3	356 (14.02)	359 (14.13)	356 (14.02)	197 (7.76)	133 (5.28)	55
	4	432 (17.01)	435 (17.13)	432 (17.01)	235 (9.25)	159 (6.26)	102
	6	559 (22.01)	562 (22.13)	559 (22.01)	300 (12.18)	250 (9.84)	232
	8	660 (25.98)	664 (26.14)	660 (25.98)	374 (14.72)	294 (11.57)	390
	10	787 (30.98)	791 (31.14)	787 (30.98)	445 (17.52)	395 (15.55)	710
	12	838 (32.99)	841 (33.11)	838 (32.99)	512 (20.16)	445 (17.52)	960
	14	889 (35.00)	892 (35.11)	889 (35.00)	550 (21.65)	500 (19.69)	1700
	16	991 (39.02)	994 (39.13)	991 (39.02)	615 (24.21)	530 (20.87)	1970
	18	1092 (42.99)	1095 (43.11)	1092 (42.99)	700 (27.56)	580 (22.83)	2530
	20	1194 (47.01)	1197 (47.13)	1200 (47.24)	810 (31.89)	660 (25.98)	3150
	24	1397 (55.00)	1400 (55.11)	1407 (55.39)	1010 (41.02)	800 (31.50)	5800

Standard Fig. No. TA1C6

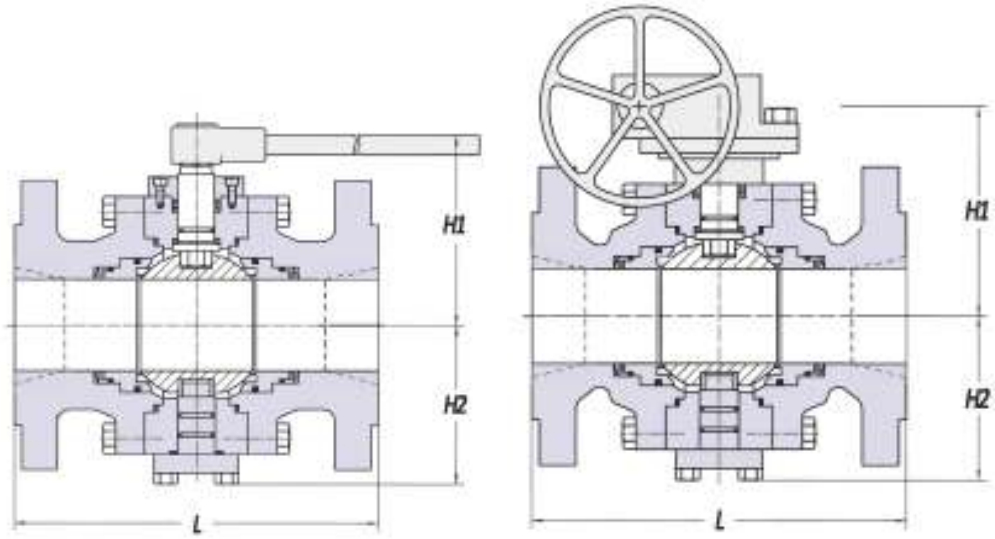
CLASS 900 - API 6D

Port	Size (In)	L			H1	H2	Wt. (Kg)
		RF	RTJ	BW			
FULL BORE	2	368 (14.49)	371 (14.61)	368 (14.49)	217 (8.54)	126 (4.96)	50
	3	381 (15.00)	384 (15.12)	381 (15.00)	259 (10.20)	191 (7.52)	80
	4	457 (17.99)	460 (18.11)	457 (17.99)	297 (11.69)	216 (8.50)	125
	6	610 (24.02)	613 (24.13)	610 (24.02)	360 (14.17)	270 (10.63)	270
	8	737 (29.02)	740 (29.13)	737 (29.02)	394 (15.51)	322 (12.68)	310
	10	838 (32.99)	841 (33.11)	838 (32.99)	502 (19.76)	420 (16.54)	550
	12	965 (37.99)	968 (38.11)	965 (37.99)	572 (22.52)	470 (18.50)	1250
	14	1029 (40.51)	1038 (40.87)	1029 (40.51)	675 (26.57)	510 (20.08)	1530
	16	1130 (44.49)	1146 (45.12)	1130 (44.49)	831 (32.72)	670 (26.38)	2150

Standard Fig. No. TA1C9

Unit : mm (inch)

FORGED STEEL TRUNNION BALL



LEVER OPERATED

GEAR OPERATED

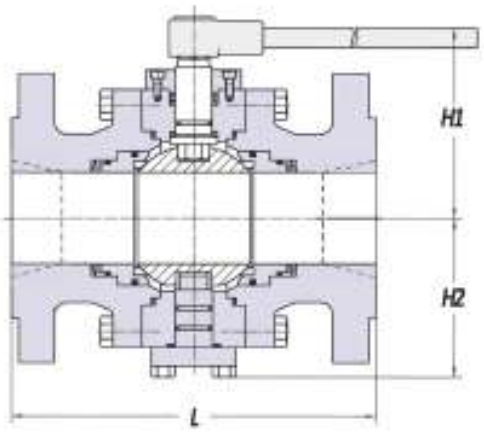
CLASS 150 - API 6D

Port	Size (In)	L			H1	H2	Wt. (Kg)
		RF	RTJ	BW			
FULL BORE	2	178 (7.00)	191 (7.52)	216 (8.50)	105 (4.13)	100 (3.94)	28
	3	203 (7.99)	216 (8.50)	283 (11.14)	155 (6.10)	125 (4.92)	53
	4	229 (9.01)	242 (9.53)	305 (12.01)	200 (7.87)	160 (6.30)	90
	6	394 (15.51)	407 (16.02)	457 (17.99)	250 (9.84)	185 (7.28)	163
	8	457 (17.99)	470 (18.50)	521 (20.51)	278 (10.94)	222 (8.74)	250
	10	533 (20.98)	546 (21.50)	559 (22.01)	323 (12.71)	280 (11.02)	385
	12	610 (24.01)	623 (24.52)	635 (25.00)	340 (13.39)	303 (11.93)	562
	14	686 (27.00)	699 (27.52)	762 (30.00)	375 (14.76)	330 (12.99)	765
	16	762 (30.00)	775 (30.51)	838 (32.99)	410 (16.14)	355 (13.98)	1030
	18	864 (34.01)	877 (34.53)	914 (35.98)	440 (17.32)	390 (15.35)	1218
	20	914 (35.98)	927 (36.50)	991 (39.02)	495 (19.49)	430 (16.93)	1798
	24	1067 (42.00)	1080 (42.52)	1143 (45.00)	585 (23.03)	520 (20.47)	3097
REDUCED BORE	2 x 1.1/2	178 (7.00)	191 (7.52)	216 (8.50)	95 (3.74)	100 (3.94)	26
	3 x 2	203 (7.99)	216 (8.50)	283 (11.14)	105 (4.13)	100 (3.94)	31
	4 x 3	229 (9.01)	242 (9.53)	305 (12.01)	155 (6.10)	125 (4.92)	63
	6 x 4	394 (15.51)	407 (16.02)	457 (17.99)	200 (7.87)	160 (6.30)	102
	8 x 6	457 (17.99)	470 (18.50)	521 (20.51)	250 (9.84)	185 (7.28)	188
	10 x 8	533 (20.98)	546 (21.50)	559 (22.01)	278 (10.94)	222 (8.74)	290
	12 x 10	610 (24.01)	623 (24.52)	635 (25.00)	323 (12.71)	280 (11.02)	465
	14 x 12	686 (27.00)	699 (27.52)	762 (30.00)	340 (13.39)	303 (11.93)	622
	16 x 14	762 (30.00)	775 (30.51)	838 (32.99)	375 (14.76)	330 (12.99)	830
	18 x 16	864 (34.01)	877 (34.53)	914 (35.98)	410 (16.14)	355 (13.98)	1080
	20 x 18	914 (35.98)	927 (36.50)	991 (39.02)	440 (17.32)	390 (15.35)	1298
	24 x 20	1067 (42.00)	1080 (42.52)	1143 (45.00)	495 (19.49)	430 (16.93)	2048

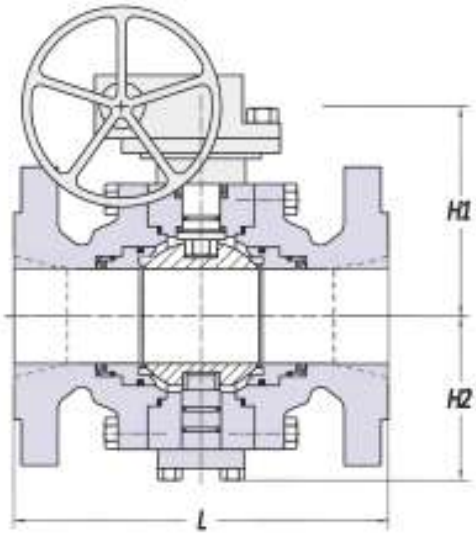
Standard Fig. No. TA1F1

Unit : mm (inch)

FORGED STEEL TRUNNION BALL



LEVER OPERATED



GEAR OPERATED

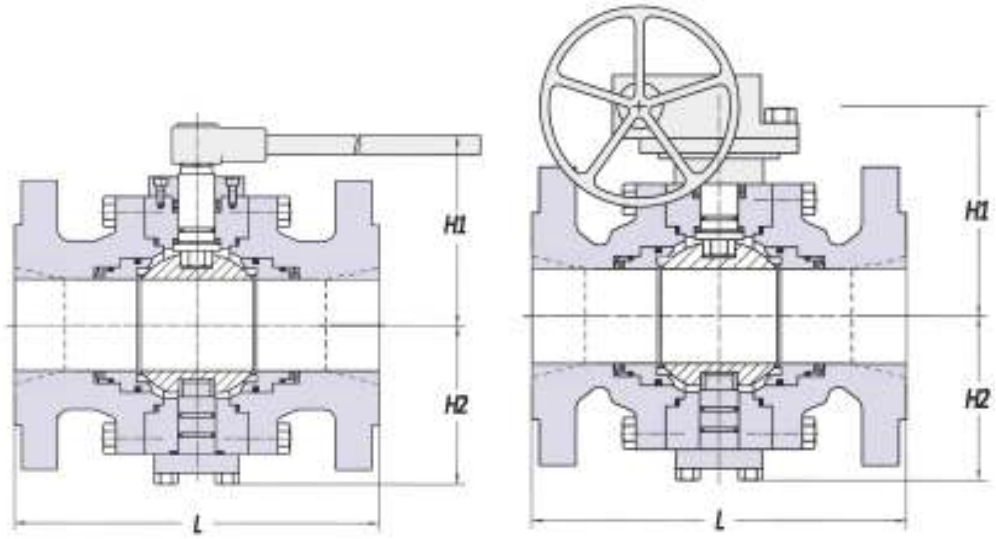
CLASS 300 - API 6D

Port	Size (In)	L			H1	H2	Wt. (Kg)
		RF	RTJ	BW			
FULL BORE	2	216 (8.50)	232 (9.13)	216 (8.50)	105 (4.13)	100 (3.94)	29
	3	283 (11.14)	299 (11.77)	283 (11.14)	155 (6.10)	125 (4.92)	57
	4	305 (12.00)	321 (12.64)	305 (12.00)	200 (7.87)	160 (6.30)	95
	6	403 (15.87)	419 (16.50)	457 (17.99)	250 (9.84)	203 (7.99)	185
	8	502 (19.76)	518 (20.39)	521 (20.51)	278 (10.94)	232 (9.13)	287
	10	568 (22.36)	584 (22.99)	559 (22.01)	333 (13.11)	298 (11.73)	507
	12	648 (25.51)	664 (26.14)	635 (25.00)	360 (14.17)	333 (13.11)	740
	14	762 (30.00)	778 (30.63)	762 (30.00)	395 (15.55)	350 (13.78)	1038
	16	838 (15.08)	854 (33.62)	838 (15.08)	433 (17.05)	398 (15.67)	1428
	18	914 (35.98)	930 (36.61)	914 (35.98)	460 (18.11)	410 (16.14)	1602
	20	991 (39.02)	1007 (39.64)	991 (39.02)	505 (19.88)	470 (18.50)	2207
	24	1143 (45.00)	1159 (45.63)	1143 (45.00)	590 (23.23)	550 (21.65)	3470
REDUCED BORE	2 x 1.1/2	216 (8.50)	232 (9.13)	216 (8.50)	95 (3.74)	100 (3.94)	27
	3 x 2	283 (11.14)	299 (11.77)	283 (11.14)	105 (4.13)	100 (3.94)	34
	4 x 3	305 (12.00)	321 (12.64)	305 (12.00)	155 (6.10)	125 (4.92)	65
	6 x 4	403 (15.87)	419 (16.50)	457 (17.99)	200 (7.87)	160 (6.30)	118
	8 x 6	502 (19.76)	518 (20.39)	521 (20.51)	250 (9.84)	203 (7.99)	222
	10 x 8	568 (22.36)	584 (22.99)	559 (22.01)	278 (10.94)	232 (9.13)	297
	12 x 10	648 (25.51)	664 (26.14)	635 (25.00)	333 (13.11)	298 (11.73)	597
	14 x 12	762 (30.00)	778 (30.63)	762 (30.00)	360 (14.17)	333 (13.11)	820
	16 x 14	838 (15.08)	854 (33.62)	838 (15.08)	395 (15.55)	350 (13.78)	1130
	18 x 16	914 (35.98)	930 (36.61)	914 (35.98)	433 (17.05)	398 (15.67)	1598
	20 x 18	991 (39.02)	1007 (39.64)	991 (39.02)	460 (18.11)	410 (16.14)	1797
	24 x 20	1143 (45.00)	1159 (45.63)	1143 (45.00)	505 (19.88)	470 (18.50)	2667

Standard Fig. No. TA1F3

Unit : mm (inch)

FORGED STEEL TRUNNION BALL



LEVER OPERATED

GEAR OPERATED

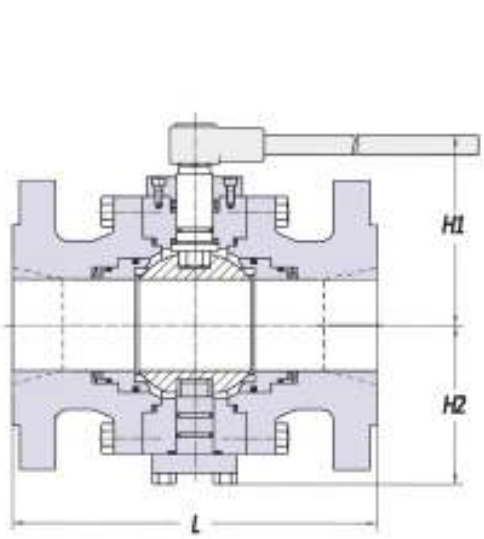
CLASS 600 - API 6D

Port	Size (In)	L			H1	H2	Wt. (Kg)
		RF	RTJ	BW			
FULL BORE	2	292 (11.50)	295 (11.61)	292 (11.50)	105 (4.13)	100 (3.94)	33
	3	356 (14.02)	359 (14.13)	356 (14.02)	165 (6.50)	165 (6.50)	64
	4	432 (17.00)	435 (17.13)	432 (17.01)	210 (8.27)	210 (8.27)	114
	6	559 (22.00)	562 (22.13)	559 (22.01)	253 (9.96)	253 (9.96)	255
	8	660 (25.98)	664 (26.14)	660 (25.98)	290 (11.42)	290 (11.42)	487
	10	787 (30.98)	791 (31.14)	787 (30.98)	333 (13.11)	333 (13.11)	760
	12	838 (32.99)	841 (33.11)	838 (32.99)	380 (14.96)	380 (14.96)	1070
	14	889 (35.00)	892 (35.11)	889 (35.00)	395 (15.55)	395 (15.55)	1085
	16	991 (39.02)	994 (39.13)	991 (39.02)	433 (17.05)	433 (17.04)	1527
	18	1092 (42.99)	1095 (43.11)	1092 (42.99)	470 (18.50)	470 (18.50)	2097
	20	1194 (47.00)	1197 (47.13)	1200 (47.24)	505 (19.88)	505 (19.88)	2640
	24	1397 (55.00)	1400 (55.11)	1407 (55.39)	595 (23.43)	595 (23.43)	4740
REDUCED BORE	2 x 1.1/2	292 (11.50)	295 (11.61)	292 (11.50)	95 (3.74)	100 (3.94)	30
	3 x 2	356 (14.02)	359 (14.13)	356 (14.02)	105 (4.13)	100 (3.94)	40
	4 x 3	432 (17.00)	435 (17.13)	432 (17.01)	165 (6.50)	130 (5.12)	80
	6 x 4	559 (22.00)	562 (22.13)	559 (22.01)	210 (8.27)	162 (6.38)	153
	8 x 6	660 (25.98)	664 (26.14)	660 (25.98)	253 (9.96)	203 (7.99)	290
	10 x 8	787 (30.98)	791 (31.14)	787 (30.98)	290 (11.42)	257 (10.12)	547
	12 x 10	838 (32.99)	841 (33.11)	838 (32.99)	333 (13.11)	310 (12.20)	810
	14 x 12	889 (35.00)	892 (35.11)	889 (35.00)	380 (14.96)	350 (13.78)	1140
	16 x 14	991 (39.02)	994 (39.13)	991 (39.02)	395 (15.55)	360 (14.17)	1308
	18 x 16	1092 (42.99)	1095 (43.11)	1092 (42.99)	433 (17.05)	413 (16.26)	1682
	20 x 18	1194 (47.00)	1197 (47.13)	1200 (47.24)	470 (18.50)	430 (16.93)	2377
	24 x 20	1397 (55.00)	1400 (55.11)	1407 (55.39)	505 (19.88)	490 (19.29)	3250

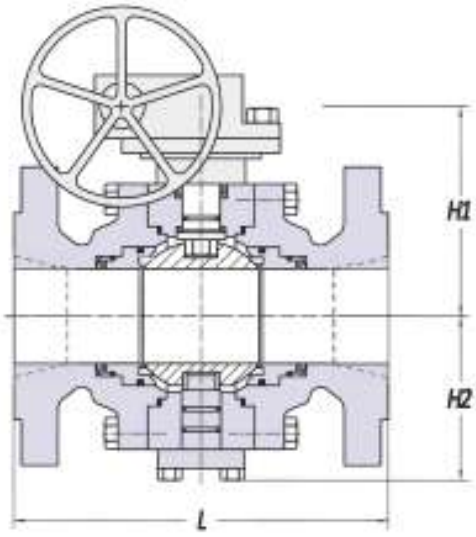
Standard Fig. No. TA1F6

Unit : mm (inch)

FORGED STEEL TRUNNION BALL



LEVER OPERATED



GEAR OPERATED

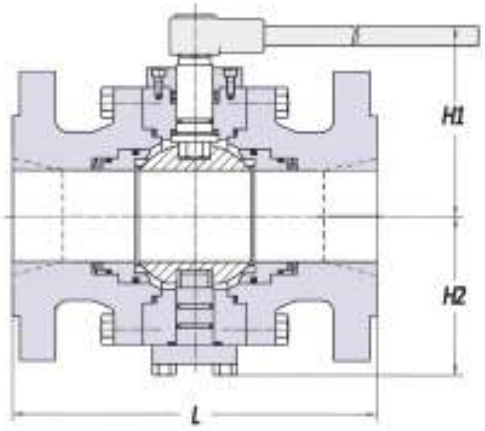
CLASS 900 - API 6D

Port	Size (In)	L			H1	H2	Wt. (Kg)
		RF	RTJ	BW			
FULL BORE	2	368 (14.49)	371 (14.61)	368 (14.49)	105 (4.13)	105 (4.13)	50
	3	381 (15.00)	384 (15.12)	381 (15.00)	165 (6.50)	130 (5.12)	76
	4	457 (17.99)	460 (18.11)	457 (17.99)	210 (8.27)	167 (6.57)	150
	6	610 (24.02)	613 (24.13)	610 (24.02)	260 (10.24)	210 (8.27)	367
	8	737 (29.02)	740 (29.13)	737 (29.02)	295 (11.61)	266 (10.47)	600
	10	838 (32.99)	841 (33.11)	838 (32.99)	345 (13.58)	330 (12.99)	1027
	12	965 (37.99)	968 (38.11)	965 (37.99)	390 (15.35)	380 (14.96)	1558
	14	1029 (40.51)	1038 (40.87)	1029 (40.51)	400 (15.75)	390 (15.35)	1477
	16	1130 (44.49)	1146 (45.12)	1130 (44.49)	440 (17.32)	435 (17.13)	2157
REDUCED BORE	2 x 1.1/2	368 (14.49)	371 (14.61)	368 (14.49)	95 (3.74)	105 (4.13)	40
	3 x 2	381 (15.00)	384 (15.12)	381 (15.00)	105 (4.13)	105 (4.13)	53
	4 x 3	457 (17.99)	460 (18.11)	457 (17.99)	165 (6.50)	130 (5.12)	97
	6 x 4	610 (24.02)	613 (24.13)	610 (24.02)	210 (8.27)	167 (6.57)	210
	8 x 6	737 (29.02)	740 (29.13)	737 (29.02)	260 (10.24)	210 (8.27)	447
	10 x 8	838 (32.99)	841 (33.11)	838 (32.99)	295 (11.61)	266 (10.47)	700
	12 x 10	965 (37.99)	968 (38.11)	965 (37.99)	345 (13.58)	330 (12.99)	1148
	14 x 12	1029 (40.51)	1038 (40.87)	1029 (40.51)	390 (15.35)	380 (14.96)	1643
	16 x 14	1130 (44.49)	1146 (45.12)	1130 (44.49)	400 (15.75)	390 (15.35)	1717

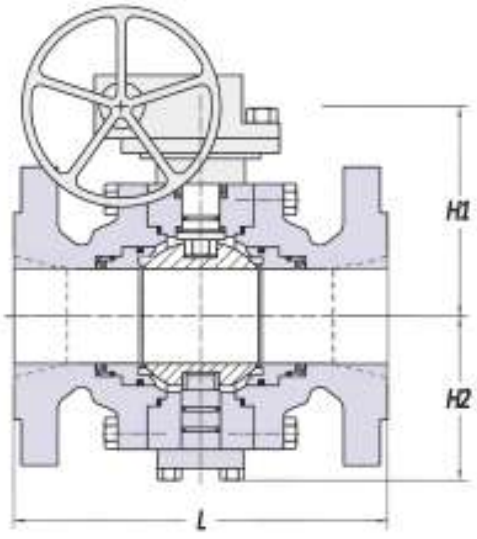
Standard Fig. No. TA1F9

Unit : mm (inch)

FORGED STEEL TRUNNION BALL



LEVER OPERATED

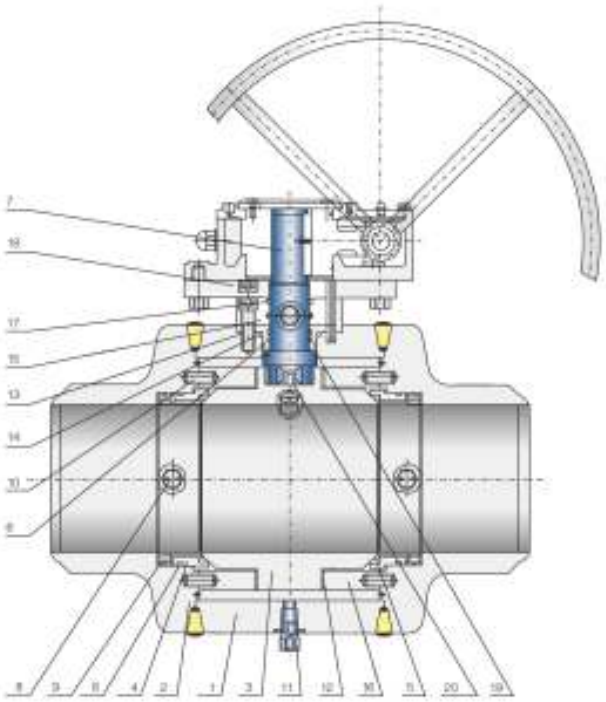


GEAR OPERATED

	Port	Size (In)	L			H1	H2	Wt. (Kg)	
			RF	RTJ	BW				
CLASS 1500 - API 6D	FULL BORE	2	368 (15.67)	371 (14.61)	368 (15.67)	105 (4.13)	105 (4.13)	53	
		3	470 (18.50)	473 (18.62)	470 (18.50)	165 (6.50)	130 (5.12)	98	
		4	546 (21.50)	549 (21.61)	546 (21.50)	215 (8.46)	167 (6.57)	200	
		6	705 (27.76)	711 (27.99)	705 (27.76)	260 (10.23)	230 (9.06)	485	
		8	832 (32.76)	842 (33.15)	832 (32.76)	300 (11.81)	285 (11.22)	827	
		10	991 (39.02)	1000 (39.37)	991 (39.02)	365 (14.37)	350 (13.78)	1507	
		12	1130 (44.49)	1146 (45.12)	1130 (44.49)	420 (16.54)	423 (16.65)	2272	
		14	1257 (49.49)	1276 (50.24)	1257 (49.49)	440 (17.32)	430 (16.93)	2880	
		16	1384 (54.49)	1407 (55.40)	1384 (54.49)	480 (18.90)	500 (19.69)	4120	
	REDUCED BORE	2 x 1.1/2	368 (15.67)	371 (14.61)	368 (15.67)	95 (3.74)	105 (4.13)	45	
		3 x 2	470 (18.50)	473 (18.62)	470 (18.50)	105 (4.13)	105 (4.13)	66	
		4 x 3	546 (21.50)	549 (21.61)	546 (21.50)	165 (6.50)	130 (5.12)	126	
		6 x 4	705 (27.76)	711 (27.99)	705 (27.76)	215 (8.46)	167 (6.57)	290	
		8 x 6	832 (32.76)	842 (33.15)	832 (32.76)	260 (10.23)	230 (9.06)	575	
		10 x 8	991 (39.02)	1000 (39.37)	991 (39.02)	300 (11.81)	285 (11.22)	1032	
		12 x 10	1130 (44.49)	1146 (45.12)	1130 (44.49)	365 (14.37)	350 (13.78)	1767	
		14 x 12	1257 (49.49)	1276 (50.24)	1257 (49.49)	420 (16.54)	423 (16.65)	2537	
		16 x 14	1257 (49.49)	1407 (55.40)	1257 (49.49)	440 (17.32)	430 (16.93)	3280	Standard Fig. No. TA1F15
CLASS 2500 - API 6D	FULL BORE	2	451 (17.76)	454 (17.87)	451 (17.76)	160 (6.30)	110 (4.33)	118	
		3	578 (22.76)	584 (22.99)	578 (22.76)	181 (7.13)	140 (5.51)	218	
		4	673 (26.50)	683 (26.89)	673 (26.50)	200 (7.87)	250 (9.84)	362	
		6	914 (35.98)	927 (36.50)	914 (35.98)	235 (9.25)	290 (11.42)	750	
		8	1022 (40.24)	1038 (40.87)	1022 (40.24)	393 (15.47)	385 (15.16)	1970	
		10	1270 (50.00)	1292 (50.87)	1270 (50.00)	465 (18.31)	435 (17.13)	2990	
		12	1422 (55.98)	1445 (56.89)	1422 (55.98)	521 (20.51)	500 (19.69)	4130	
	REDUCED BORE	2 x 1.1/2	451 (17.76)	454 (17.87)	451 (17.76)	140 (5.51)	100 (3.94)	86	
		3 x 2	578 (22.76)	584 (22.99)	578 (22.76)	160 (6.30)	100 (3.94)	152	
		4 x 3	673 (26.50)	683 (26.89)	673 (26.50)	181 (7.13)	140 (5.51)	282	
		6 x 4	914 (35.98)	927 (36.50)	914 (35.98)	200 (7.87)	250 (9.84)	570	
		8 x 6	1022 (40.24)	1038 (40.87)	1022 (40.24)	235 (9.25)	290 (11.42)	990	
		10 x 8	1270 (50.00)	1292 (50.87)	1270 (50.00)	393 (15.47)	385 (15.16)	2480	
		12 x 10	1422 (55.98)	1445 (56.89)	1422 (55.98)	465 (18.31)	435 (17.13)	3500	Standard Fig. No. TA1F25

Unit : mm (inch)

FULLY WELDED BALL VALVE



STANDARD PARTS & MATERIAL

No.	Parts	Standard		Low Temp Service		Stainless Steel
1	Body	A105/N		A350-LF2		A182-F316/L
2	Cover	A105/N		A350-LF2		A182-F316/L
3	Ball	A105+ENP	A182-F304 A182-F316	A350-LF2+ENP	A182-F304 A182-F316	A182-F316/L
4	Seat Ring	A105+ENP	A182-F304 A182-F316	A350-LF2+ENP	A182-F304 A182-F316	A182-F316/L
5	Seat Insert	RTFE/Nylon/PEEK/Viton				
6	O-Ring	NBR/HNBR/Viton				
7	Stem	A182-F6a	A182-F304 A182-F316	A350-LF2+ENP	A182-F304 A182-F316	A182-F316/L
8	Seat Injection	Assembly				
9	Spring	Inconel X750				
10	Alignment Pin	Stainless Steel				
11	Bleed	Assembly				
12	Stem Bearing	SS+PTFE				
13	Bolt	A193-B7		A320-L7		A193-B8M
14	Gland Gasket	Graphite				
15	Gland Cap	A105		A350-LF2		A182-F316/L
16	Trunnion Support	A105+ENP	A182-F304 A182-F316	A350-LF2+ENP	A182-F304 A182-F316	A182-F316/L
17	O-Ring	NBR/HNBR/Viton				
18	Top Flange	A105		A350-LF2		A182-F316/L
19	Stem Bearing	SS+PTFE				
20	Anti Static	Stainless Steel				

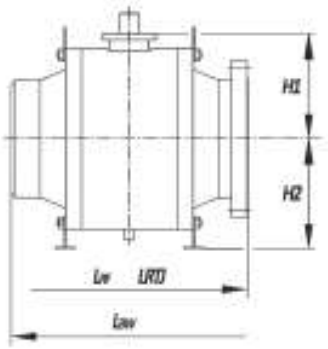
Other valve material composition are available.

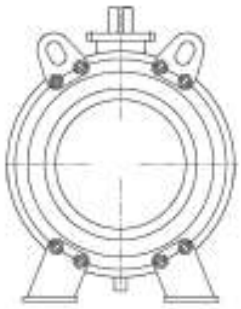
FULLY WELDED BALL

CLASS 150 - API 6D

Port	Size (In)	L			H1	H2	Wt. (Kg)
		RF	RTJ	BW			
FULL BORE	2	178 (7.00)	191 (7.52)	216 (8.50)	118 (4.65)	93 (3.66)	27
	3	203 (7.99)	216 (8.50)	283 (11.14)	133 (5.24)	108 (4.25)	45
	4	229 (9.01)	241 (9.49)	305 (12.01)	210 (8.27)	128 (5.04)	69
	6	394 (15.51)	406 (15.98)	457 (17.99)	245 (9.65)	231 (9.09)	170
	8	457 (17.99)	470 (18.50)	521 (20.51)	288 (11.34)	277 (10.91)	270
	10	533 (20.98)	548 (21.57)	559 (22.01)	331 (13.03)	310 (12.20)	354
	12	610 (24.01)	622 (24.49)	635 (25.00)	368 (14.49)	344 (13.54)	610
	14	686 (27.00)	699 (27.52)	762 (30.00)	393 (15.47)	370 (14.57)	925
	16	762 (30.00)	775 (30.51)	838 (32.99)	437 (17.20)	415 (16.34)	1206
	18	864 (34.01)	878 (34.57)	914 (35.98)	470 (18.50)	453 (17.83)	1540
	20	914 (35.98)	927 (36.50)	991 (39.02)	515 (20.28)	491 (19.33)	1832
	24	1067 (42.00)	1080 (42.52)	1143 (45.00)	605 (23.82)	598 (23.54)	2970

Standard Fig. No. WA1F1





CLASS 300 - API 6D

Port	Size (In)	L			H1	H2	Wt. (Kg)
		RF	RTJ	BW			
FULL BORE	2	216 (8.50)	232 (9.13)	216 (8.50)	118 (4.65)	93 (3.66)	28
	3	283 (11.14)	298 (11.73)	283 (11.14)	133 (5.24)	113 (4.45)	55
	4	305 (12.00)	321 (12.64)	305 (12.00)	225 (8.86)	130 (5.12)	78
	6	403 (15.87)	419 (16.50)	457 (17.99)	245 (9.65)	231 (9.09)	178
	8	502 (19.76)	518 (20.39)	521 (20.51)	288 (11.34)	277 (10.91)	293
	10	568 (22.36)	584 (22.99)	559 (22.01)	331 (13.03)	310 (12.20)	392
	12	648 (25.51)	664 (26.14)	635 (25.00)	368 (14.49)	344 (13.54)	660
	14	762 (30.00)	778 (30.63)	762 (30.00)	393 (15.47)	370 (14.57)	990
	16	838 (15.08)	854 (33.62)	838 (15.08)	437 (17.20)	415 (16.34)	1286
	18	914 (35.98)	930 (36.61)	914 (35.98)	470 (18.50)	453 (17.83)	1640
	20	991 (39.02)	1010 (39.76)	991 (39.02)	515 (20.28)	491 (19.33)	1928
	24	1143 (45.00)	1165 (45.87)	1143 (45.00)	605 (23.82)	598 (23.54)	3060

Standard Fig. No. WA1F3

CLASS 600 - API 6D

Port	Size (In)	L			H1	H2	Wt. (Kg)
		RF	RTJ	BW			
FULL BORE	2	292 (11.50)	295 (11.61)	292 (11.50)	125 (4.92)	93 (3.66)	31
	3	356 (14.02)	359 (14.13)	356 (14.02)	148 (5.83)	113 (4.45)	78
	4	432 (17.00)	435 (17.13)	432 (17.00)	200 (7.87)	130 (5.12)	100
	6	559 (22.00)	562 (22.13)	559 (22.00)	249 (9.80)	237 (9.33)	208
	8	660 (25.98)	664 (26.14)	660 (25.98)	297 (11.69)	277 (10.91)	378
	10	787 (30.98)	791 (31.14)	787 (30.98)	337 (13.27)	314 (12.36)	560
	12	838 (32.99)	841 (33.11)	838 (32.99)	378 (14.88)	355 (13.98)	824
	14	889 (35.00)	892 (35.12)	889 (35.00)	400 (15.75)	381 (15.00)	1080
	16	991 (39.02)	994 (39.13)	991 (39.02)	448 (17.64)	427 (16.82)	1714
	18	1092 (42.99)	1095 (43.11)	1092 (42.99)	492 (19.37)	460 (18.11)	2120
	20	1194 (47.00)	1200 (47.24)	1194 (47.00)	538 (21.18)	500 (19.69)	2664
	24	1397 (55.00)	1407 (55.39)	1397 (55.00)	615 (24.21)	615 (24.21)	4092

Standard Fig. No. WA1F6

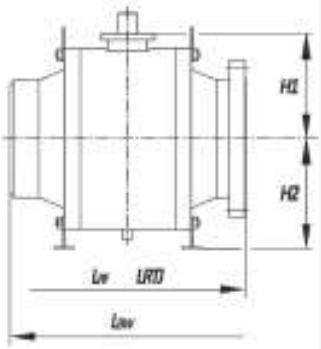
Unit : mm (inch)

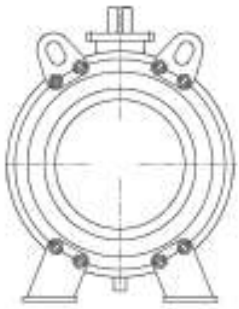
FULLY WELDED BALL

CLASS 900 - API 6D

Port	Size (In)	L			H1	H2	Wt. (Kg)
		RF	RTJ	BW			
FULL BORE	2	368 (14.49)	371 (14.61)	368 (14.49)	135 (5.31)	102 (4.02)	63
	3	381 (15.00)	384 (15.12)	381 (15.00)	148 (5.83)	113 (4.45)	83
	4	457 (17.99)	460 (18.11)	457 (17.99)	225 (8.86)	130 (5.12)	157
	6	610 (24.02)	613 (24.13)	610 (24.02)	255 (10.04)	288 (11.34)	286
	8	737 (29.02)	740 (29.13)	737 (29.02)	295 (11.61)	333 (13.11)	440
	10	838 (32.99)	841 (33.11)	838 (32.99)	357 (14.06)	376 (14.80)	720
	12	965 (37.99)	968 (38.11)	965 (37.99)	386 (15.20)	419 (16.50)	990
	14	1029 (40.51)	1038 (40.87)	1029 (40.51)	420 (16.54)	453 (17.83)	1220
	16	1130 (44.49)	1140 (44.88)	1130 (44.49)	471 (18.54)	487 (19.17)	1610
	18	1219 (47.99)	1232 (48.50)	1219 (47.99)	509 (20.04)	524 (20.63)	2600
	20	1321 (52.01)	1334 (52.52)	1321 (52.01)	547 (21.54)	565 (22.24)	3480
	24	1549 (60.98)	1568 (61.73)	1549 (60.98)	644 (25.35)	670 (26.38)	5230

Standard Fig. No. WA1F9





CLASS 1500 - API 6D

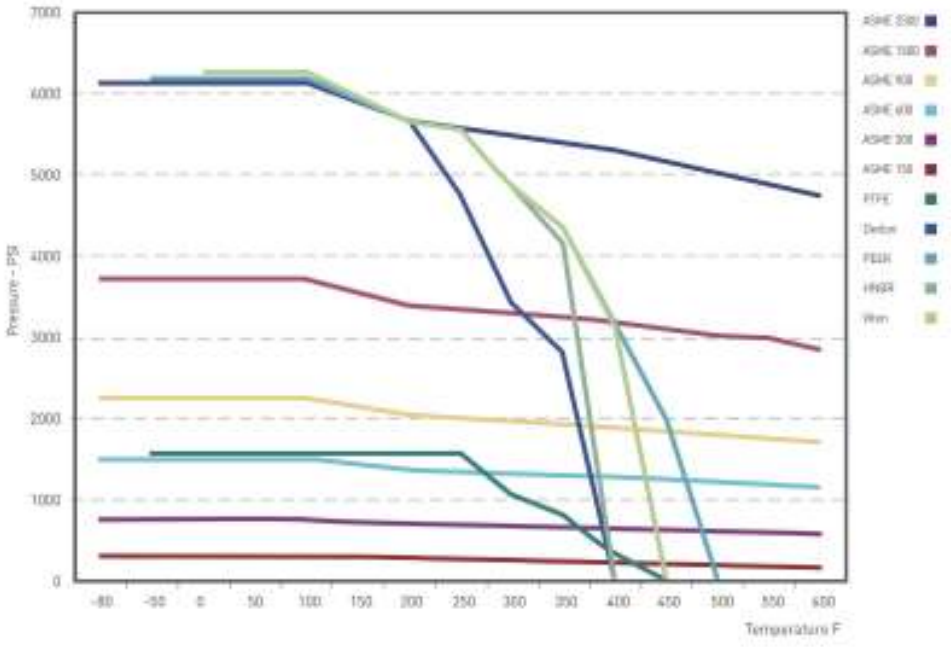
Port	Size (In)	L			H1	H2	Wt. (Kg)
		RF	RTJ	BW			
FULL BORE	2	368 (15.67)	371 (14.61)	368 (15.67)	135 (5.31)	102 (4.02)	99
	3	470 (18.50)	473 (18.62)	470 (18.50)	158 (6.22)	125 (4.92)	115
	4	546 (21.50)	549 (21.61)	546 (21.50)	203 (8.23)	152 (5.98)	180
	6	705 (27.76)	711 (27.99)	705 (27.76)	300 (11.81)	333 (13.11)	400
	8	832 (32.76)	841 (33.11)	832 (32.76)	350 (13.78)	388 (15.28)	735
	10	991 (39.02)	1000 (39.37)	991 (39.02)	427 (16.81)	446 (17.56)	1120
	12	1130 (44.49)	1146 (45.12)	1130 (44.49)	470 (18.50)	503 (19.80)	1550
	14	1257 (49.49)	1276 (50.24)	1257 (49.49)	522 (20.55)	569 (22.40)	1915
	16	1384 (54.49)	1407 (55.39)	1384 (54.49)	598 (23.43)	629 (24.76)	2350
	18	1537 (60.51)	1559 (61.38)	1537 (60.51)	650 (25.59)	680 (26.77)	3300
	20	1664 (65.51)	1686 (66.38)	1664 (65.51)	692 (27.24)	725 (28.54)	4455
	24	1943 (76.50)	1972 (77.64)	1943 (76.50)	817 (32.16)	858 (33.78)	6660

Standard Fig. No. WA1F15

Unit : mm (inch)

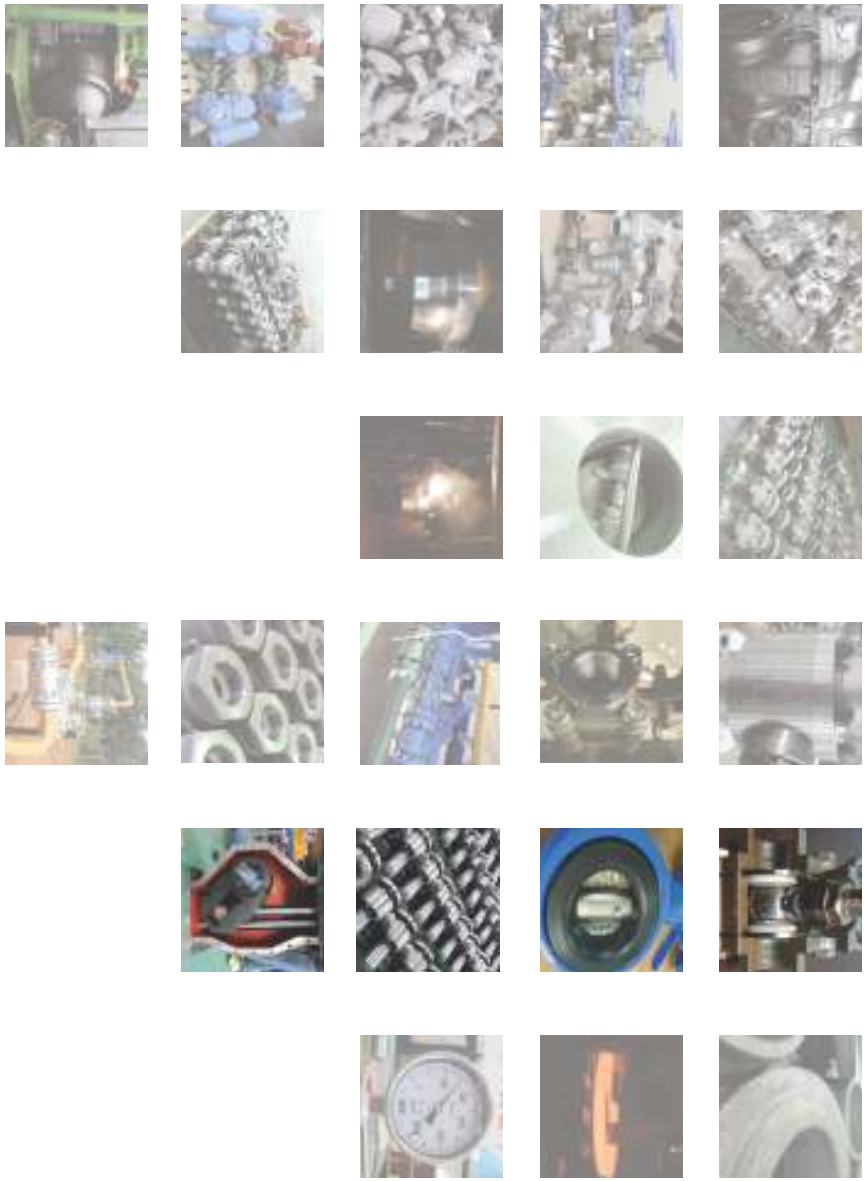
BALL VALVE TECHNICAL DATA

BALL VALVE PRESSURE TEMPERATURE RANGE



BALL VALVE TORQUE DATA

Size (In)	TRUNNION BALL VALVE						FLOATING BALL VALVE				
	CLASS						CLASS				
	150 (N.m)	300 (N.m)	600 (N.m)	900 (N.m)	1500 (N.m)	2500 (N.m)	150 (N.m)	300 (N.m)	600 (N.m)	900 (N.m)	1500 (N.m)
1/2	-	-	-	-	-	-	12	17	30	38	51
3/4	-	-	-	-	-	-	14	23	38	56	71
1	-	-	-	-	-	-	27	48	66	98	130
1.1/2	-	-	-	-	-	-	55	89	120	189	238
2	42	80	115	150	468	790	75	100	160	240	350
2.1/2	-	-	-	-	-	-	125	141	233	390	550
3	140	220	334	440	810	1390	162	216	308	610	980
4	220	360	460	830	1500	3520	234	476	635	-	-
6	380	680	1000	1880	3750	5160	804	1338	1944	-	-
8	629	1180	2000	3600	5501	7235	1410	3100	-	-	-
10	1200	2120	3580	5281	7561	11218	-	-	-	-	-
12	1654	2489	5391	7381	9801	15187	-	-	-	-	-
14	2793	4217	6521	8825	17520	-	-	-	-	-	-
16	3755	5639	8689	11738	28882	-	-	-	-	-	-
18	5089	8244	13348	18453	37822	-	-	-	-	-	-
20	6406	11025	18499	25973	48665	-	-	-	-	-	-
24	12296	19398	30888	42379	69810	-	-	-	-	-	-
26	13998	22857	34540	-	-	-	-	-	-	-	-
28	15698	26379	38191	-	-	-	-	-	-	-	-
30	17402	29945	41810	-	-	-	-	-	-	-	-
36	22939	36160	51528	-	-	-					



GATE VALVE

GLOBE VALVE

CHECK VALVE

BALL VALVE

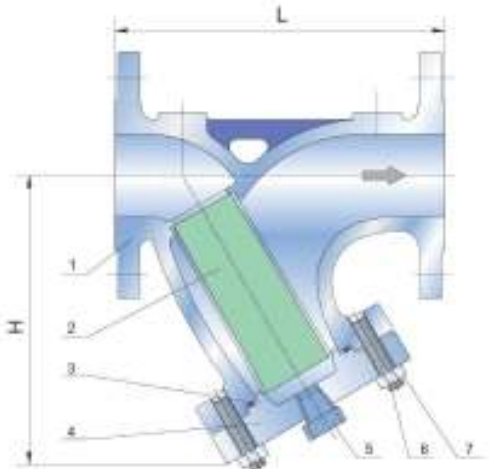
Y STRAINER - NEEDLE VALVE
BUTTERFLY VALVE

TECHNICAL DATA

SPECIFICATION

MANUFACTURING STANDARDS

General Design	ASME/ANSI B16.34
Fire Safe Design	API 6FA
Face To Face	ASME/ANSI B16.10
Flange End	ASME/ANSI B16.5 & B16.47
Inspection & Test	API 598 / API 6D
Features	Perforated Screen, Drain Plug



STANDARD PARTS & MATERIAL

No.	Parts	Carbon Steel	Stainless Steel	
1	Body	A216 WCB	A351 CF8	A351 CF8M
2	Cover	A216 WCB	A351 CF8	A351 CF8M
3	Screen	SS304/SS316	SS304	SS316
4	Gasket	Graphite		
5	Plug	A105	SS304	SS316
6	Cover Bolt	A193 B7	A193 B8	A193 B8M
7	Cover Nut	A194 2H	A194 8	A194 8M

Other valve material composition are available.

CLASS 150
ASME B16.34

Size (In)	L	H	Plug Size (In)	Wt. (Kg)
2	200 (7.87)	133 (5.23)	0.50	8
2.1/2	248 (9.76)	165 (6.50)	1.00	13
3	256 (10.08)	178 (7.01)	1.00	15
4	308 (12.13)	210 (8.27)	1.50	25
5	397 (15.63)	286 (11.26)	2.00	40
6	470 (18.50)	343 (13.50)	2.00	69
8	543 (21.37)	394 (15.51)	2.00	100
10	660 (25.98)	470 (18.50)	2.00	145
12	759 (29.88)	565 (22.24)	2.00	250
14	914 (35.98)	635 (25.00)	2.00	442
16	1056 (41.57)	673 (26.50)	2.00	741

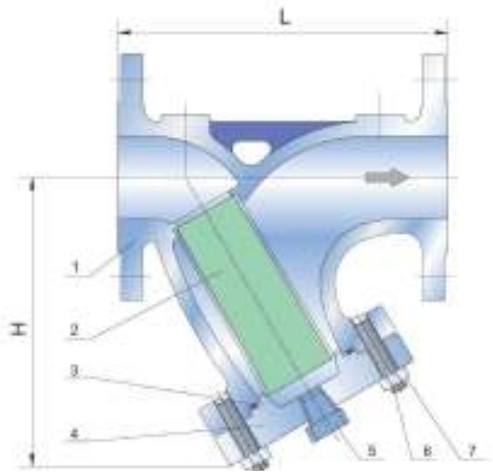
Standard Fig. No. 9A1C1

Unit : mm (inch)

SPECIFICATION

MANUFACTURING STANDARDS

General Design	ASME/ANSI B16.34
Fire Safe Design	API 6FA
Face To Face	ASME/ANSI B16.10
Flange End	ASME/ANSI B16.5 & B16.47
Inspection & Test	API 598 / API 6D
Features	Perforated Screen, Drain Plug



CLASS 300 ASME B16.34

Size (In)	L	H	Plug Size (In)	Wt. (Kg)
2	219 (8.62)	133 (5.24)	0.50	10
2.1/2	269 (10.59)	165 (6.50)	1.00	14
3	305 (12.00)	178 (7.00)	1.00	22
4	368 (14.49)	210 (8.27)	1.50	40
5	491 (19.33)	343 (13.50)	2.00	79
6	491 (19.33)	343 (13.50)	2.00	79
8	594 (23.39)	400 (15.75)	2.00	136
10	695 (27.36)	470 (18.50)	2.00	200
12	813 (32.00)	565 (22.24)	2.00	295
14	914 (35.98)	635 (25.00)	2.00	619
16	1056 (41.57)	673 (26.50)	2.00	878

Standard Fig. No. 9A1C3

CLASS 600 ASME B16.34

Size (In)	L	H	Plug Size (In)	Wt. (Kg)
2	279 (10.98)	178 (7.00)	0.50	18
2.1/2	305 (12.00)	210 (8.27)	1.00	27
3	343 (13.50)	235 (9.25)	1.25	35
4	456 (17.95)	318 (12.52)	1.50	73
5	565 (22.24)	381 (15.00)	2.00	115
6	651 (25.63)	508 (20.00)	2.00	165
8	806 (31.73)	610 (24.02)	2.00	304
10	957 (37.67)	724 (28.50)	2.00	495
12	1156 (45.51)	876 (34.49)	2.00	708

Standard Fig. No. 9A1C6

Unit : mm (inch)

SPECIFICATION

MANUFACTURING STANDARDS

General Design	ASME/ANSI B16.34
Construction	Investment Cast / Bar stock Body
Features	Soft or metal seat Bonnet with locking pin O-ring seal
Fire Safe Design	API 6FA
Ratings	6000 PSI / 10000 PSI
Connection	Threaded ASME B1.20.1 Male / Female x Female NPT

STANDARD PARTS & MATERIAL

No.	Parts	6000 WOG Series NA28M60	10000 WOG Series NA28M100
1	Body	SS 316	
2	Bonnet	SS 316	
3	Stem	SS 316 / NITRONIC 60	
4	Seat	DELRIN / PEEK / SS 316	SS 316
5	Stem Seal	PTFE	
6	Stem Packing	NYLON	
7	O-ring	VITON	

Other valve material composition are available.

6000 PSI WOG	Port	Size (In)	Bore Size	End to End (L)	Center to Lever (H)	Length of Handle (mm)
	FULL BORE	1/4	4.7 (0.19)	50.8 (2.00)	83.5 (3.29)	65
		1/2	7.0 (0.28)	63.5 (2.50)	96.8 (3.81)	91
		3/4	9.5 (0.37)	75.0 (2.95)	114.0 (4.49)	100
		1	11.8 (0.46)	100.0 (3.94)	133.9 (5.27)	120

Unit : mm (inch)

10000 PSI WOG	Port	Size (In)	Bore Size	End to End (L)	Center to Lever (H)	Length of Handle (mm)
	FULL BORE	1/4	4.8 (0.19)	73.2 (2.89)	78.6 (3.09)	72
		1/2	4.8 (0.19)	73.2 (2.89)	78.6 (3.09)	72

Unit : mm (inch)

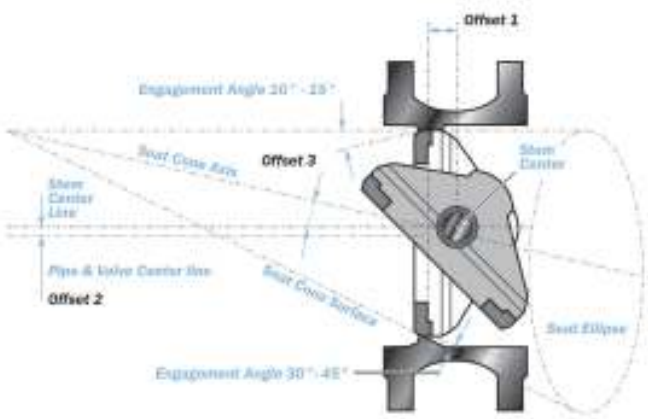
SPECIFICATION

BUTTERFLY VALVE APPLICATION

Butterfly valve derives its name from the action of its disc which operates at right angle to flow. It is designed for flow isolation. The disc impinges against a seat liner to provide sealing with low operating torque. Compact and with simple construction, butterfly valves facilitate easy pipe arrangement. Butterfly valves are quick acting with good regulating characteristics. Compact and light with low pressure isolation. They range in a wide range of size and can be controlled by a notched handle, gear, or pneumatic or electric actuators.

MANUFACTURING STANDARDS

General Design	API 609, BS 5155, ASME B16.34
Fire Safe Design	API 607 / API 6FA
Flange End	ASME/ANSI B16.5 & B16.47
Inspection & Test	API 598
Type	Wafer, Lug, Flanged
Operation	Lever , Gear , Actuators



1. Single Offset

The center of rotation is moved back from the centerline of the valve disc. The seat and seal are designed conically and on center. This design relies on a frictional, interference seal.

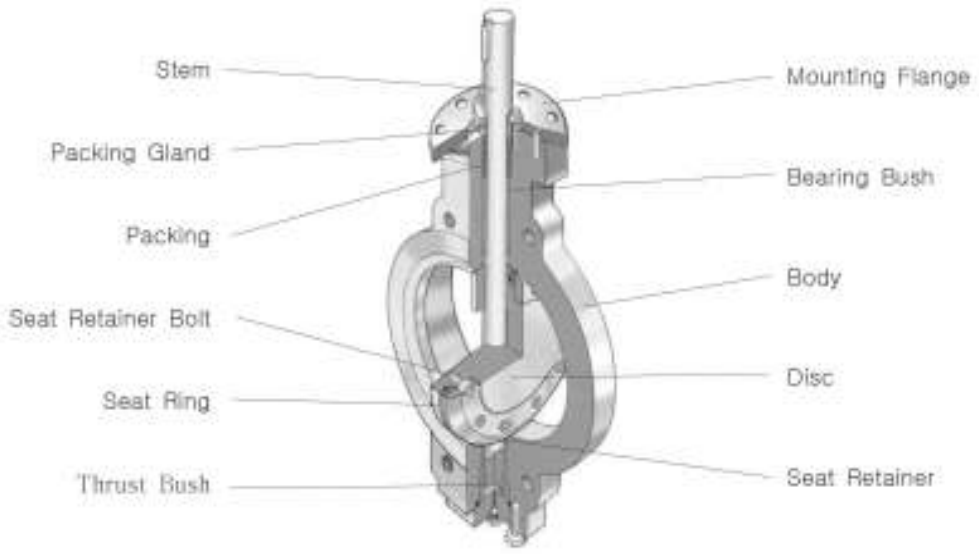
2. Double Offset

The center of rotation is moved back from the centerline of the valve body. The seat and seal design remains conically and on center. This provided eccentric rotation of the disc which swung the seal ring completely off the seat upon opening.

3. Triple Offset

The centerline of the cone is rotated awat from the valve centerline resulting in an ellipsoidal profile, providing the third offset. Seat seal interference is completely eliminated ensuring long sealing life. The triple offset design is ideally suited to metal sealing providing high performance on multiple applications

SPECIFICATION

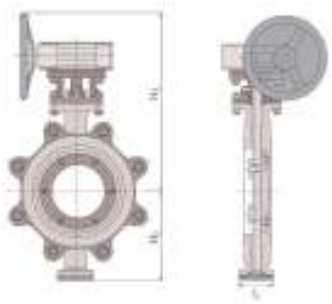


STANDARD PARTS & MATERIAL

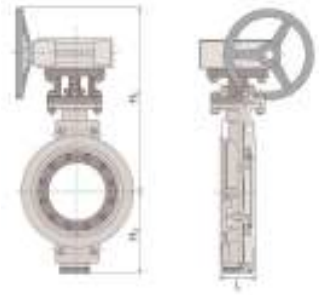
No.	Parts	Material		
		Carbon Steel	SS304	SS316
1	Body	A 216 WCB	A351-CF8	A351-CF8M
2	Disc	WCB/CF8/CF8M	A351-CF8	A351-CF8M
3	Seat Ring	Soft (NBR/EPDM/PTFE), Metal (SS304/SS316/Stellite)		
4	Seat Retainer	A105/F304/F316	A182-F304	A182-F316
5	Seat Retainer Bolt	Stainless Steel		
6	Stem	17-4PH/A182-F6a/SS304/SS316		
7	Bearing Bush	SS+PTFE/Graphite		
8	Packing	PTFE/Graphite		
9	Packing Gland	A105/F304/F316	A182-F304	A182-F316
10	Mounting Flange	A105	A105/F304	A104/F316
11	Thrust Bushing	SS+PTFE/Graphite		

Other valve material composition are available.

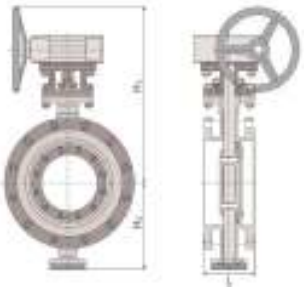
SPECIFICATION



LUG TYPE



WAFERTYPE



FLANGE TYPE

CLASS 150

SIZE (In)	H1	H2	L			Weight (Kg)		
			Lug	Wafer	Flg.	Lug	Wafer	Flg.
2	305 (12.00)	105 (4.13)	43 (1.69)	43 (1.69)	108 (4.25)	5	4	8
2.1/2	315 (12.40)	115 (4.53)	46 (1.81)	46 (1.81)	112 (4.41)	7	5	10
3	330 (12.99)	125 (4.92)	48 (1.89)	48 (1.89)	114 (4.49)	9	7	12
4	360 (14.17)	150 (5.91)	54 (2.13)	54 (2.13)	127 (5.00)	12	10	16
5	450 (17.71)	160 (6.30)	64 (2.52)	64 (2.52)	140 (5.51)	16	14	21
6	475 (18.70)	185 (7.28)	57 (2.25)	57 (2.25)	140 (5.51)	14	11	21
8	525 (20.67)	245 (9.65)	64 (2.52)	64 (2.52)	152 (9.98)	32	25	54
10	520 (20.47)	275 (10.83)	71 (2.80)	71 (2.80)	165 (6.50)	48	39	82
12	660 (25.98)	315 (12.40)	81 (3.12)	81 (3.12)	178 (7.00)	70	51	136
14	670 (26.38)	330 (12.99)	92 (3.62)	92 (3.62)	190 (7.48)	102	80	151
16	730 (28.74)	365 (14.37)	102 (4.02)	102 (4.02)	216 (8.50)	144	104	213
18	810 (31.89)	390 (15.35)	114 (4.49)	114 (4.49)	222 (8.74)	188	153	313
20	885 (34.84)	430 (16.93)	127 (5.00)	127 (5.00)	229 (9.02)	244	192	386
24	940 (37.00)	470 (18.50)	154 (6.06)	154 (6.06)	267 (10.51)	378	288	552

Standard Fig. No. BA1C1

CLASS 300

SIZE (In)	H1	H2	L			Weight (Kg)		
			Lug	Wafer	Flg.	Lug	Wafer	Flg.
2	305 (12.00)	105 (4.13)	43 (1.69)	43 (1.69)	108 (4.25)	10	6	13
2.1/2	315 (12.40)	115 (4.53)	46 (1.81)	46 (1.81)	112 (4.41)	11	7	15
3	330 (12.99)	125 (4.92)	48 (1.89)	48 (1.89)	114 (4.49)	13	9	17
4	360 (14.17)	150 (5.91)	54 (2.13)	54 (2.13)	127 (5.00)	16	12	21
5	450 (17.71)	160 (6.30)	64 (2.52)	64 (2.52)	140 (5.51)	19	15	28
6	475 (18.70)	185 (7.28)	59 (2.32)	57 (2.25)	140 (5.51)	24	19	34
8	525 (20.67)	245 (9.65)	73 (2.87)	64 (2.52)	152 (9.98)	45	33	63
10	520 (20.47)	275 (10.83)	83 (3.27)	71 (2.80)	165 (6.50)	69	54	93
12	660 (25.98)	315 (12.40)	92 (3.62)	81 (3.12)	178 (7.00)	98	72	158
14	670 (26.38)	330 (12.99)	117 (4.61)	92 (3.62)	190 (7.48)	164	125	254
16	730 (28.74)	365 (14.37)	133 (5.24)	102 (4.02)	216 (8.50)	245	139	335
18	810 (31.89)	390 (15.35)	149 (5.87)	114 (4.49)	222 (8.74)	393	252	533
20	885 (34.84)	430 (16.93)	159 (6.26)	127 (5.00)	229 (9.02)	490	284	674
24	940 (37.00)	470 (18.50)	181 (7.13)	154 (6.06)	267 (10.51)	834	509	1121

Standard Fig. No. BA1C3

Unit : mm (inch)