

GLT

VALVES



INDONESIA
VALVESOLUTIONS
FOR THE ENERGY INDUSTRY

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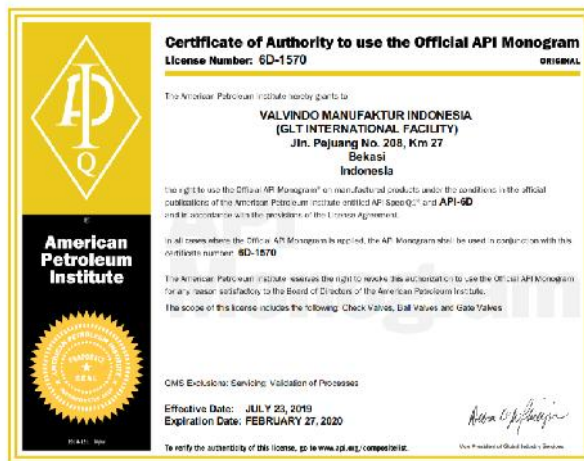


COMPANY

Valvindo Manufaktur Indonesia (VMI) products serve many different industries such as oil, gas, refinery, chemical, power, and pipeline with comprehensive range of valve products to serve every needs. These include Gate, Globe, Check, Ball Valves, Y-Strainer, Needle Valve and Butterfly Valves w are manufactured in accordance with API standards and are available in a wide range of design, pressures, and materials.

Furthermore, together with GLT International we are alw looking to improve our existing products and develop and innovative valve designs with special emphasis on quality safety, and long service life. Combining this with advanced manufacturing technology and processes, we aim to provide the highest possible quality products at the most competi prices.

Our total commitment and continued investment in research design, and production will lead VMI to maintain its leadership in the valve industry, today and into the future.



VALVINDO

DEDICATED TO YOUR NEEDS

In order to grow and develop in today's highly competitive energy industry, you need a partner who can:

- Provide high-quality valves
- Deliver on schedule
- Develop suitable products
- Maximize your profit through cost effective solution:

VMI is committed to being your preferred valve partner, providing high quality products on time with competitive solutions.

MISSION

We seek to achieve through constant innovation, excellence in the products we manufacture and prompt delivery of cost effective valves solutions to meet the needs of our customers & end users

VISION

To be the preferred valve partner for Indonesia energy market

VALUES

Customer Satisfaction is Our Main Goal
Strive for Constant Innovation in Our Products
Contribute Positively to the Environment and Community

YOUR TRUSTED VALVE PARTNER
INTODAY'S COMPETITIVE FLOWLINE
INDUSTRY



GATE VALVE

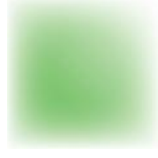
GLOBE VALVE

CHECK VALVE

BALL VALVE

Y STRAINER-NEEDLE VALVE BUTTERFLY VALVE

TECHNICAL DATA



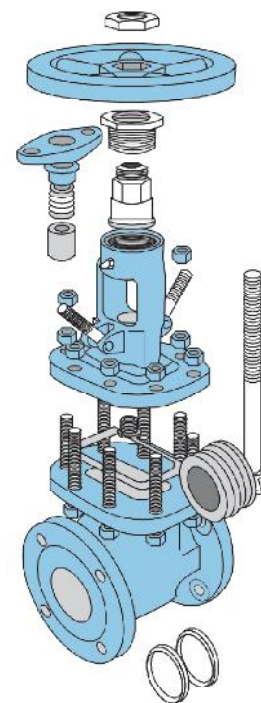
SPECIFICATION

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 turbulence 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:

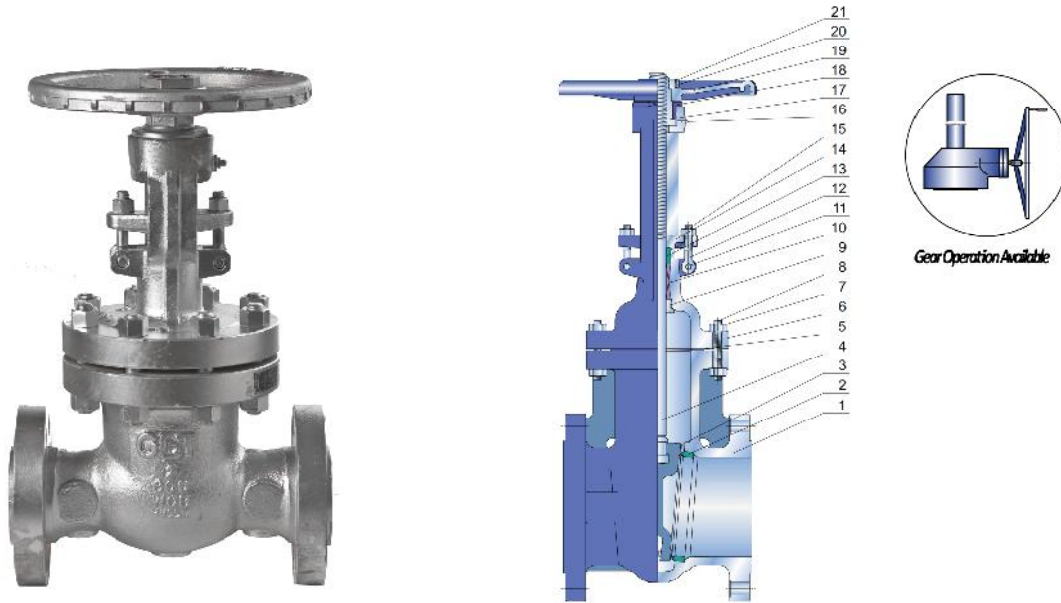
- Flange end type with Raised Face (RF), Flat Face (FF) or Ring Type Joint (RTJ) that conform to ANSI B16.5.
- Butt-welding ends (BW) that conform to ANSI B16.25.
- All face-to-face / end-to-end dimensions that conform to ANSI B16.10.

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

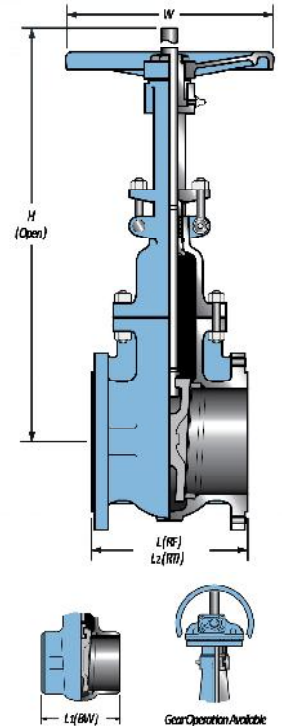
No.	Parts	CARBON STEEL		ALLOY STEEL				STAINLESS STEEL	
		WCB	LCB	WC6	WC9	C5	C12	CF8(M)	CF3(M)
1	Body	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8(M)	A351 CF3(M)
2	Seat	A105 + STL	A350 LF2 + STL	A182 F11 + STL	A182 F22 + STL	A182 F5 + STL	A182 F9 + STL	A351 CF8(M)	A351 CF3(M)
3	Disc	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 availabl

CAST STEEL GATE

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

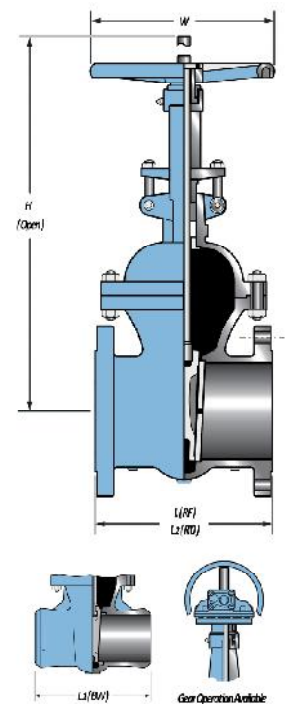
Standard Fig. No. 1A1C1



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)

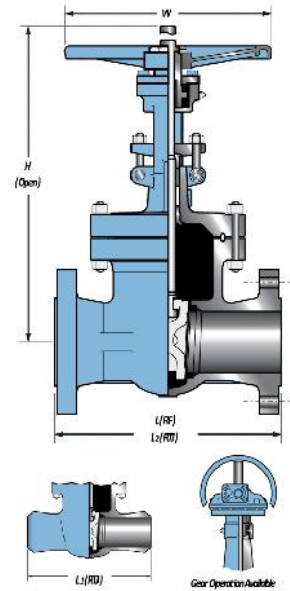


CAST STEEL GATE

CLASS 600 / 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

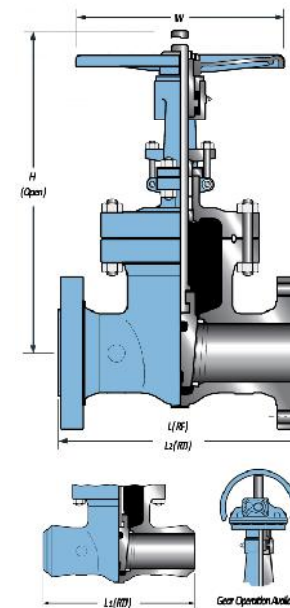


CLASS 900 / ASME B16.34

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

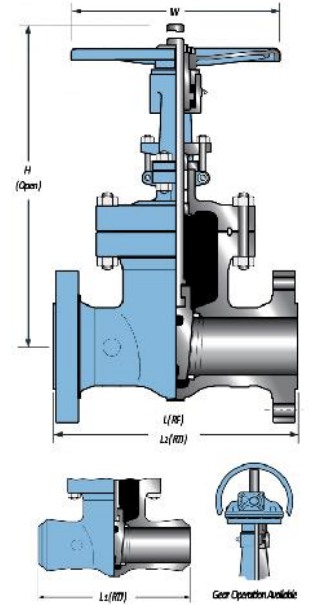
CLASS 1500 API 600 / ASME B16.34	Size (in)	W	L (RF)	L1 (BW)	L2 (RTJ)	H (Open)	Wt. (Kg)
	2	250 (10.00)	368 (14.50)	368 (14.50)	371 (15.50)	487 (19.20)	74
	2.1/2	300 (12.00)	419 (16.50)	419 (16.50)	422 (16.62)	572 (22.50)	131
	3	350 (14.00)	470 (18.50)	470 (18.50)	473 (18.62)	603 (23.70)	165
	4	500 (20.00)	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 (40.88)	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

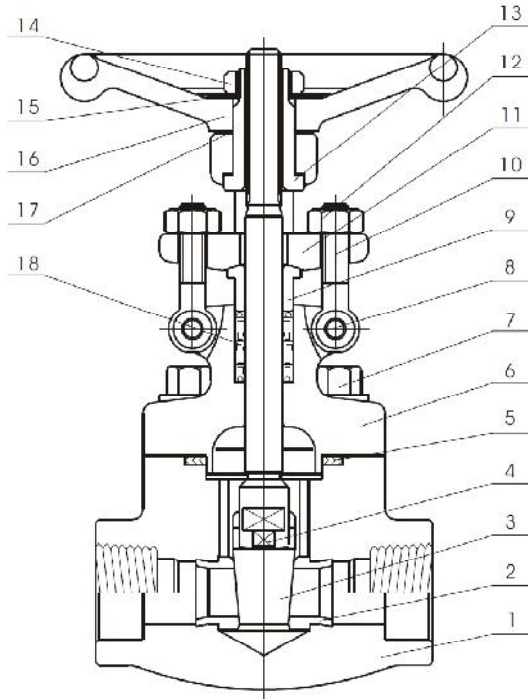
Standard Fig. No. 1A1C25

Unit : mm (inch)



FORGED STEEL GATE

BOLTED / WELDED BONNET - REDUCED / FULL PORT



STANDARD PARTS & MATERIAL

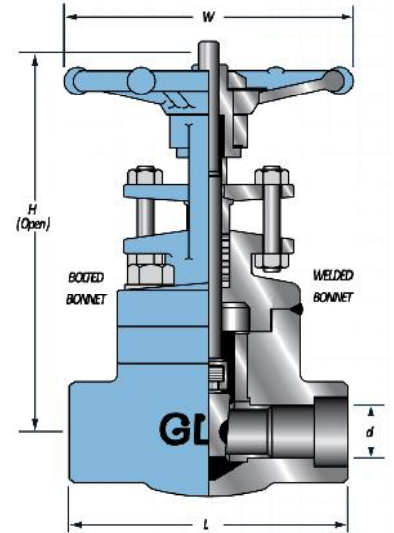
No.	Parts	A105/N	LF2	F11	F22	F304/L	F316/L	F51	
1	Body	A105/N	A350-LF2	A182-F11	A182-F22	A182-F304/L	A182-F316/L	A182-F51	
2	Seat Ring	410+STL	304+STL	410+STL	410+STL	304/L+STL	316/L+STL	F51+STL	
3	Wedge	420	304	420	420	304/L	316/L	F51	
4	Stem	410	304	410	410	304/L	316/L	F51	
5	Gasket	Flexible Graphite + 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 availabl

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
Features	Bolted Bonnet, Welded Bonnet, Pressure Seal Bonnet Outside Screw & Yoke, Rising Stem, Solid Wedge



CLASS 800 - API 602	Port	Size (In)	W	L	H (Open)	d	Wt. (Kg)
		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
		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)
		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
		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)
		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

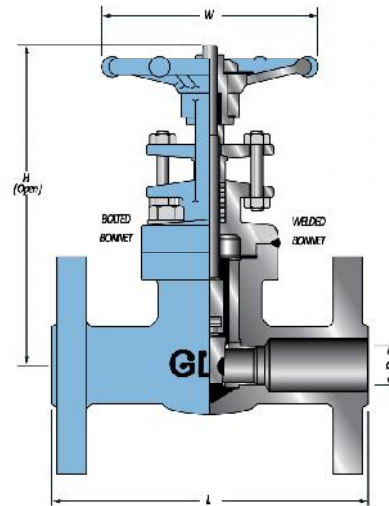
Standard Fig. No. 1A2F25

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
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

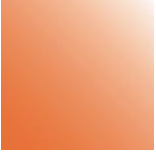
Standard Fig. No. 1A2F15

Unit : mm (inch)

GATE VALVE



GLOBE VALVE



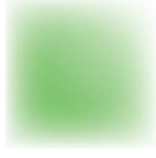
CHECK VALVE



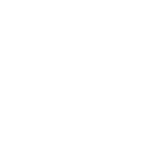
BALL VALVE



Y STRAINER - NEEDLE VALVE
BUTTERFLY VALVE



TECHNICAL DATA

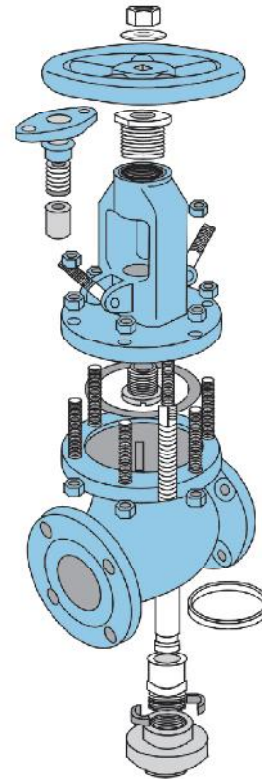


GLOBE VALVE APPLICATION

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 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
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:

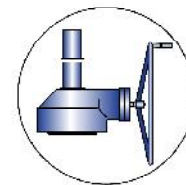
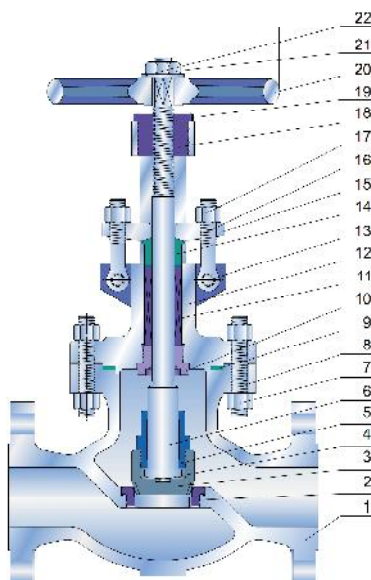
- Flange end type with Raised Face (RF), Flat Face (FF) or Ring Type Joint (RTJ) that conform to ANSI B16.5.
- Butt-welding ends (BW) that conform to ANSI B16.25.
- All face-to-face / end-to-end dimensions that conform to ANSI B16.10.

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



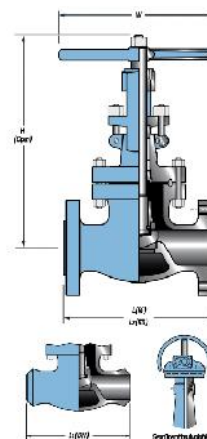
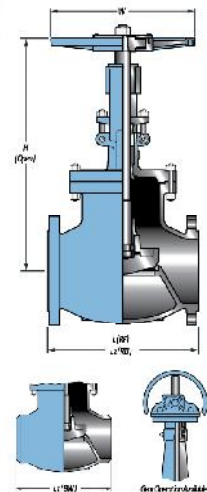
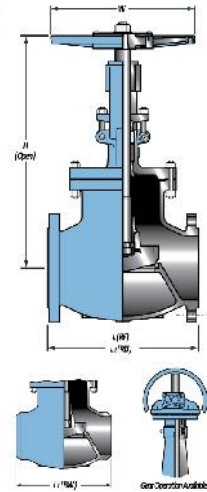
Gear Operation Available

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	

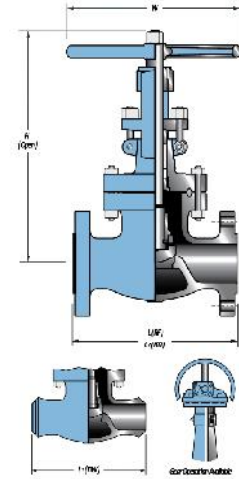
Standard Fig. No. 2A1C6

Unit : mm (inch)

CAST STEEL GLOBE

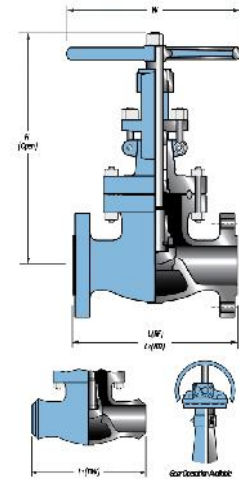
CLASS 900 API 600 / ASME B16.34	Size (In)	W	L	H (Open)	Wt. (Kg)
	2	350 (14.00)	292 (11.50)	397 (15.60)	37
	2.1/2	350 (14.00)	330 (13.00)	446 (17.60)	50
	3	450 (18.00)	356 (14.00)	496 (19.50)	62
	4	500 (20.00)	432 (17.00)	599 (23.60)	150
	6	610 (24.00)	559 (22.00)	791 (31.10)	294
	8	610 (24.00)	660 (26.00)	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

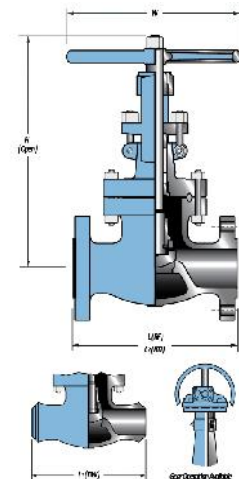
Standard Fig. No. 2A1C15



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	

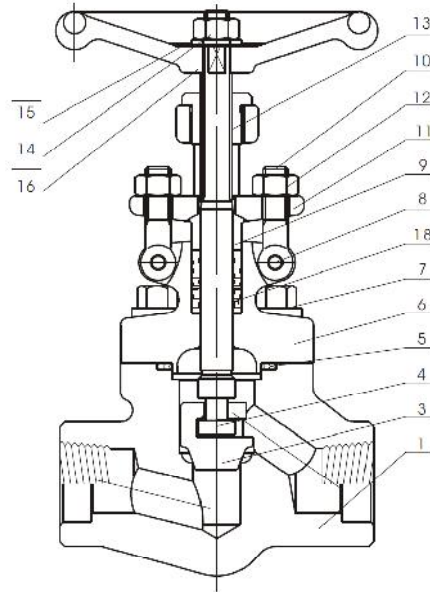
Standard Fig. No. 2A1C25

Unit : mm (inch)



FORGED STEEL GLOBE

BOLTED / WELDED BONNET - REDUCED / FULL PORT



STANDARD PARTS & MATERIAL

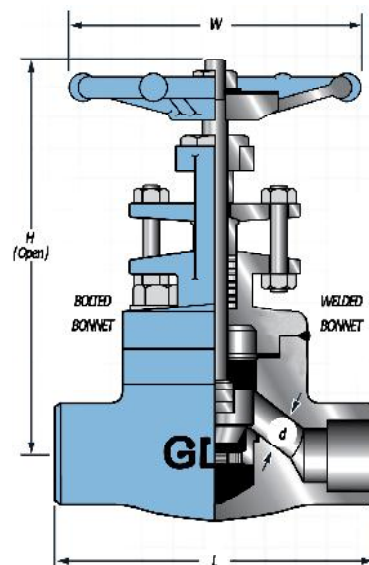
No.	Parts	A105/N	LF2	F11	F22	F304/L	F316/L	F51	
1	Body	A105/N	A350-LF2	A182-F11	A182-F22	A182-F304/L	A182-F316/L	A182-F51	
2	Seat	Integral Hardfaced Stellite							
3	Disc	410	304	410	410	304	316	F51	
4	Stem	410	304	410	410	304	316	F51	
5	Gasket	Flexible Graphite + SS304 / SS316							
6	Bonnet	A105/N	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
Features	Bolted Bonnet, Welded Bonnet, Pressure Seal 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)
		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)
		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)
		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

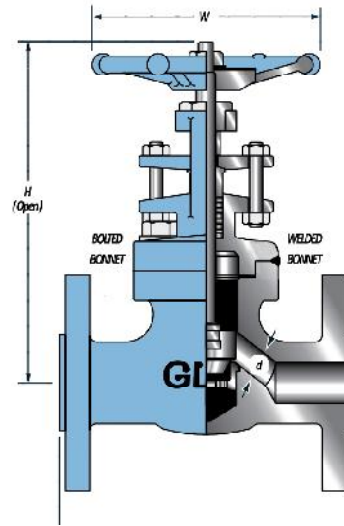
Standard Fig. No. 2A2F25

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
Features	Bolted Bonnet/Welded Bonnet, Outside Screw & Yoke, Rising Stem, Integral Flange



CLASS 150 API 602	REGULAR	Port	Size (In)	W	L	H (Open)	d	Wt. (Kg)
			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	REGULAR	Port	Size (In)	W	L	H (Open)	d	Wt. (Kg)
			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	REGULAR	Port	Size (In)	W	L	H (Open)	d	Wt. (Kg)
			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	REGULAR	Port	Size (In)	W	L	H (Open)	d	Wt. (Kg)
			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

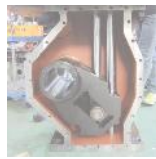
GLOBE VALVE

CHECK VALVE

BALL VALVE

Y STRAINER - NEEDLE VALVE BUTTERFLY VALVE

TECHNICAL DATA



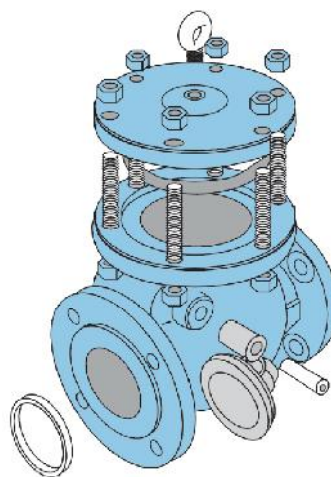
SPECIFICATION

CHECK VALVE APPLICATION

Sometimes referred to as non-return valve, check valves prevent back-flow, constantly keeping flow in one direction. Check valves 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 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 turbulence and to avoid damage due to the corrosion. Seat rings for check valves are typically made from forged steel.

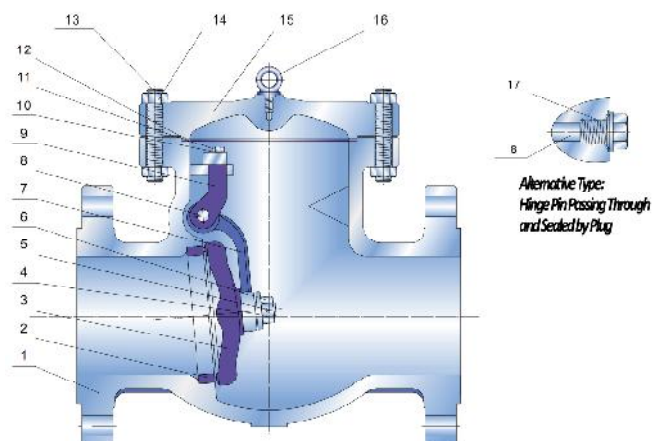
END CONNECTIONS

Our valve standard end connections 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	

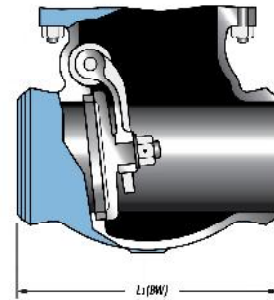
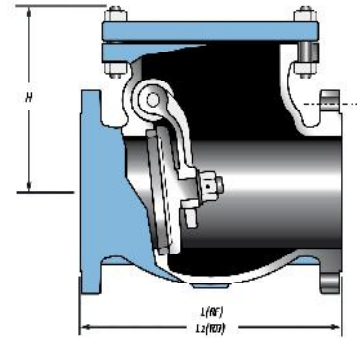
Other valve material composition are available

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

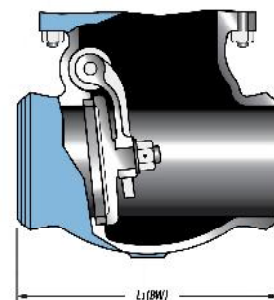
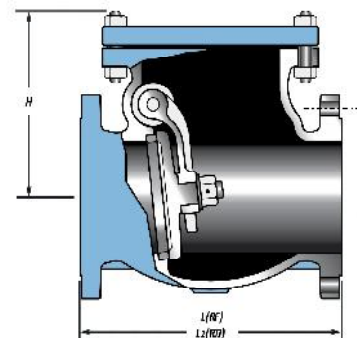


CLASS 300 API 600 / ASME B16.34

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)

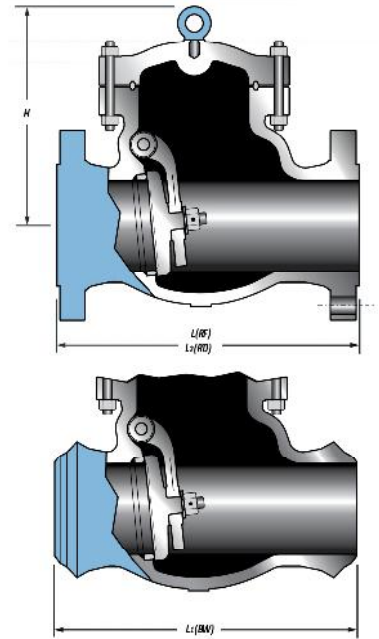


CAST STEEL SWING CHECK

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

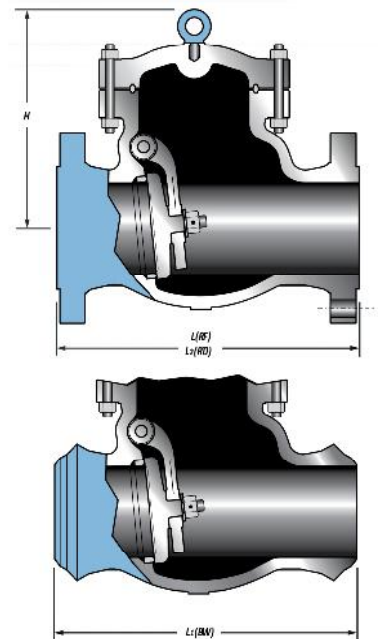


CLASS 900 API 600 / ASME B16.34

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

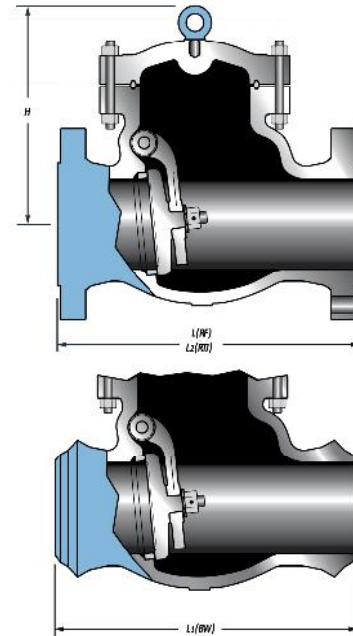
Unit : mm (inch)



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



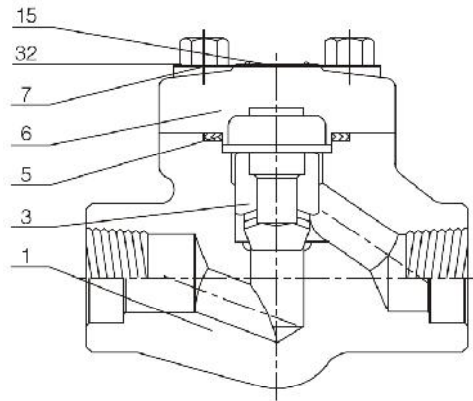
CLASS 2500 API 600 / ASME B16.34	Size (in)	L (RF)	L1 (BW)	L2 (RTJ)	H	Wt. (Kg)
	2	451 (17.75)	451 (17.75)	454 (17.91)	416 (16.40)	145
	2.1/2	508 (20.00)	508 (20.00)	514 (20.24)	419 (16.50)	240
	3	578 (22.75)	578 (22.75)	584 (23.00)	441 (17.40)	330
	4	673 (26.50)	673 (26.50)	683 (26.89)	479 (18.90)	650
	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

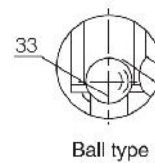
Unit : mm (inch)

FORGED STEEL LIFT CHECK

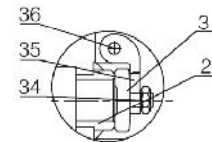
BOLTED / WELDED CAP - REDUCED / FULL PORT



Please mark in you need load spring



Ball type



Swing type

STANDARD PARTS & MATERIAL

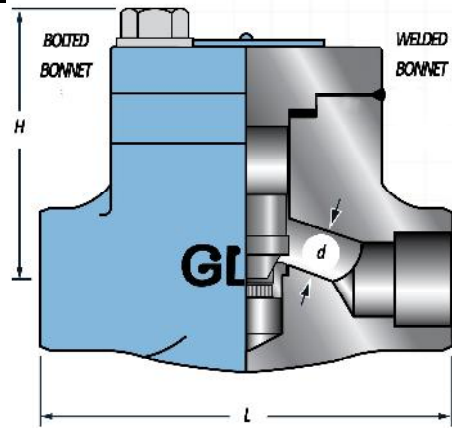
No.	Parts	A105/N	LF2	F11	F22	F304/L	F316/L	F51	
1	Body	A105/N	A350-LF2	A182-F11	A182-F22	A182-F304/L	A182-F316/L	A182-F51	
2	Seat	410+STL	304+STL	410+STL	410+STL	304+STL	316+STL	F51+STL	
3	Disc	410	304	410	410	304	316	F51	
5	Gasket	Flexible Graphite + SS Wire							
6	Cap	A105/N	A350-LF2	A182-F11	A182-F22	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 availabl

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
Features	Bolted Cap, Welded Cap, Pressure Seal Cap, Piston, Ball, 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
	FULL	2	172 (6.77)	112.0 (4.41)	35.0 (1.38)	9
		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

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)
	3/4		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

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

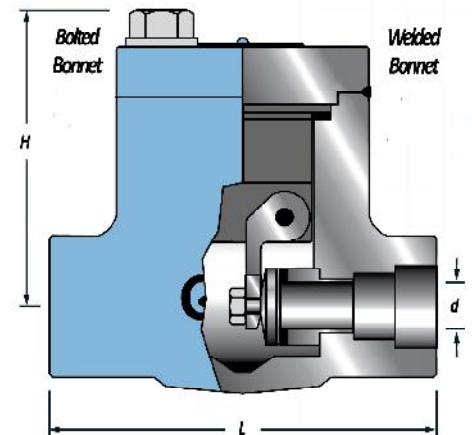
Standard Fig. No. 3A2F25

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
Features	Bolted Cap, Welded Cap, Pressure Seal 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)
		1/2	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
FULL		2	140 (5.51)	112.0 (4.41)	36.8 (1.45)	9
		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)
		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	

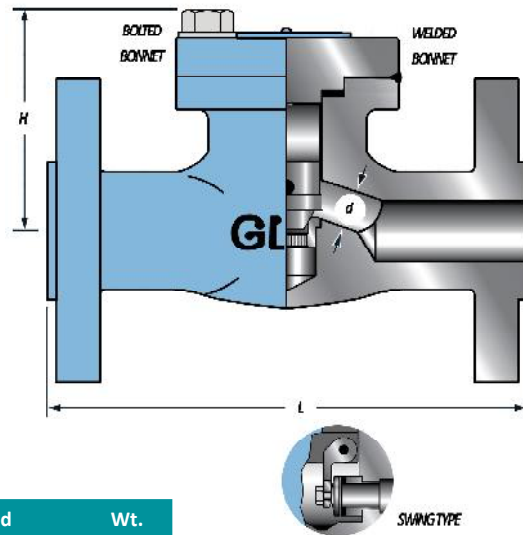
Standard Fig. No. 3A2F15

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
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)

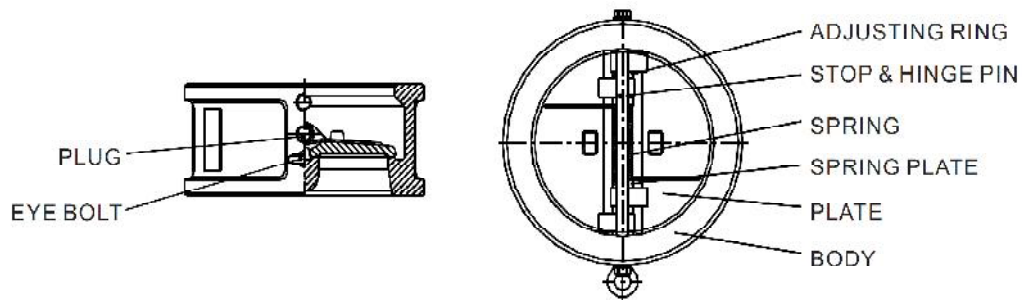
CAST STEEL WAFER CHECK

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 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 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								

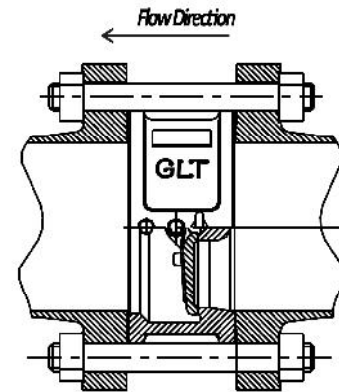
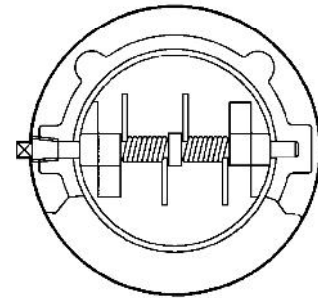
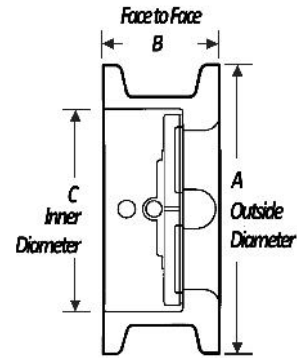
Other valve material composition are available

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

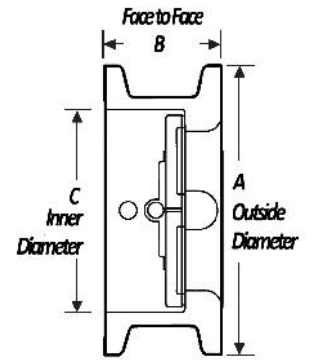
Standard Fig. No. 4A1C6

Unit : mm (inch)

CAST STEEL WAFER CHECK

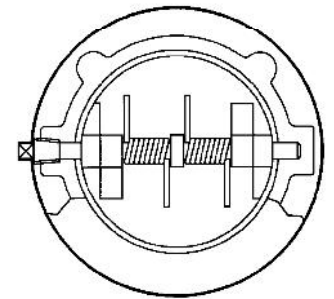
CLASS 900 API 594	Size (In)	A	B	C	STUD SELECTION (In)			Wt. (Kg)
					No.	Dia.	Length	
3	168 (5.63)	83 (3.26)	90 (3.54)	8	0.875	9.500	11	
4	206 (8.11)	102 (4.02)	110 (4.33)	8	1.125	11.000	18	
6	289 (11.38)	159 (6.25)	166 (6.54)	12	1.125	14.000	52	
8	359 (14.14)	206 (8.11)	206 (8.11)	12	1.375	17.125	104	
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	
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	

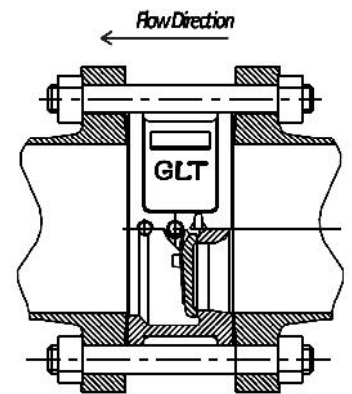
Standard Fig. No. 4A1C15



CLASS 2500 API 594	Size (In)	A	B	C	STUD SELECTION (In)			Wt. (Kg)
					No.	Dia.	Length	
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



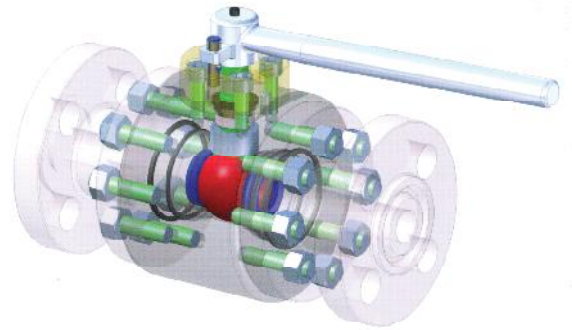
FLOATING BALL VALVE

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.

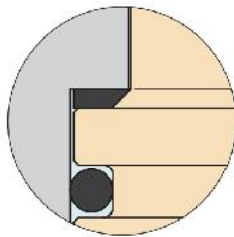
MANUFACTURING STANDARDS

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
Pressure Rating	ASME/ANSI B16.34
Inspection & Test	API 6D & API 598



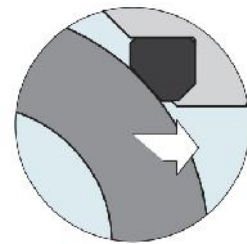
BLOW-OUT PROOF STEM

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.



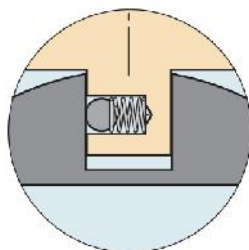
FIRE-SAFE DESIGN

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

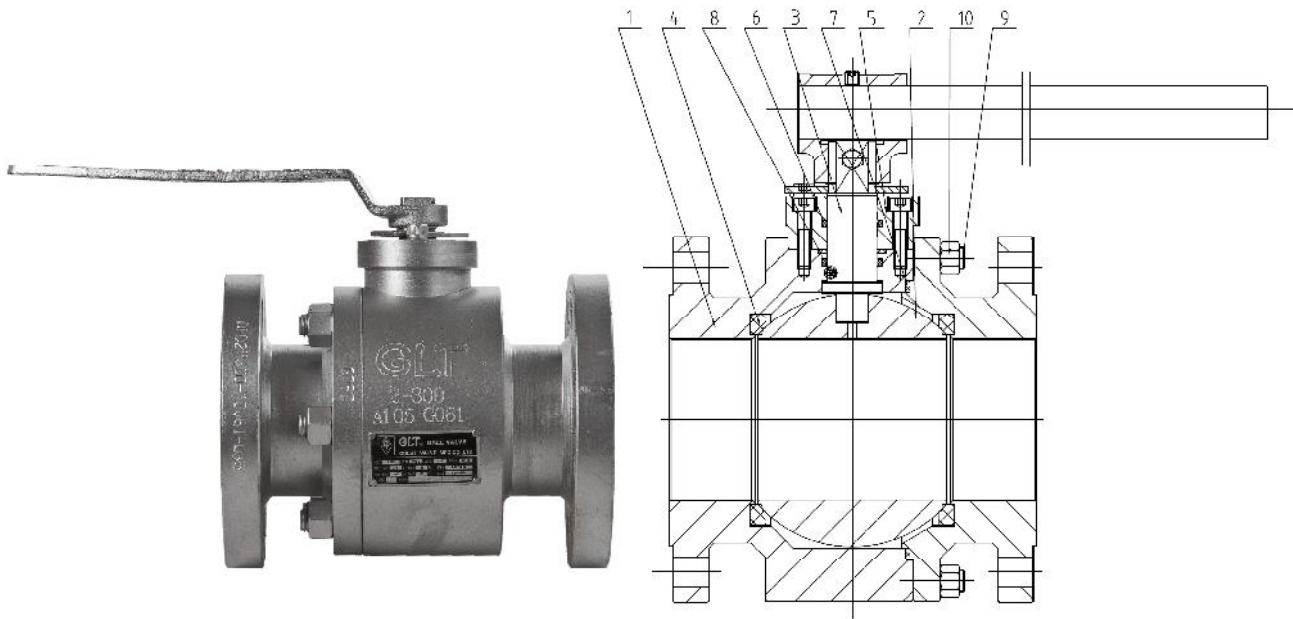
An anti-static device is built into the valve stem allow the static charges to be led to the piping, thus eliminating electrostatic charging of the ball.



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

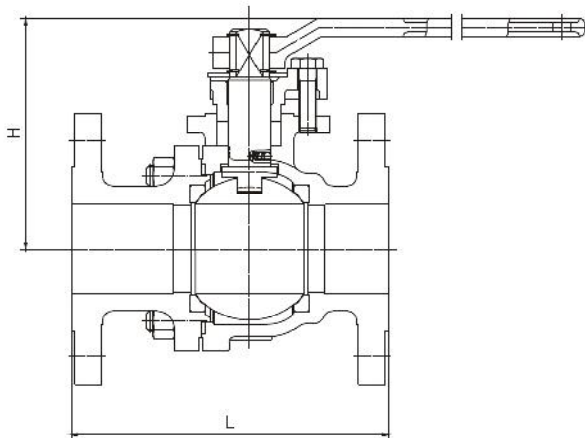


STANDARD PARTS & MATERIAL

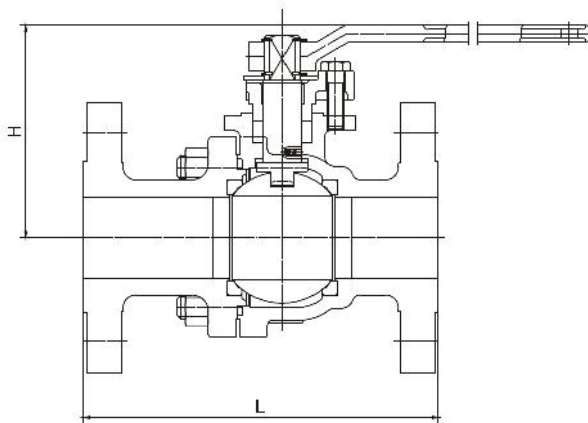
No.	Parts	Standard	SS304/L	SS316/L	Low Temp	Duplex
1	Body & Cover	A216-WCB A105/N	CF8/CF3 A182-F304/L	CF8M/CF3M A182-F316/L	A352-LCB A350-LF2	A182-F51/F53
2	Ball	A105+ENP F304/F316	A182-F304 A182-F304L	A182-F316 A182-F316L	LF2+ENP F304/F316	A182-F51/F53
3	Stem	A182-F6a	A182-F304 A182-F304L	A182-F316 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 Stat	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 availabl

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		

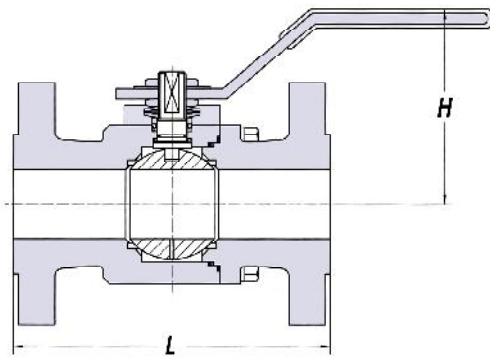
Standard Fig. No. FA1C1

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		

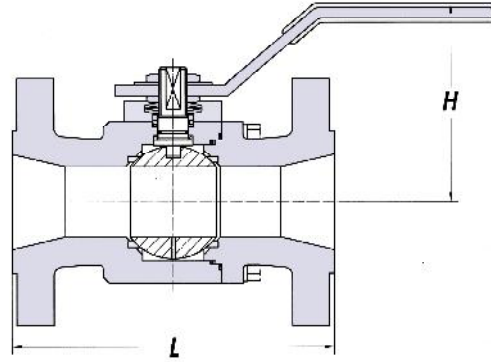
Standard Fig. No. FA1C3

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	
REDUCED BORE	8	457 (17.99)	470 (18.50)	342 (13.46)	175	
	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	
REDUCED BORE	8	502 (19.76)	518 (20.39)	342 (13.46)	200	
	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	

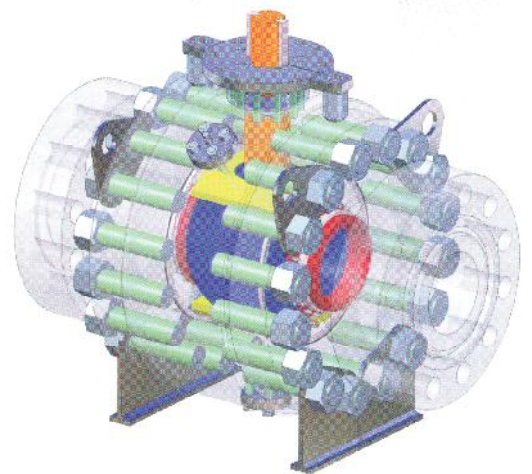
Standard Fig. No. FA1F6

Unit : mm (inch)

TRUNNION BALL VALVE

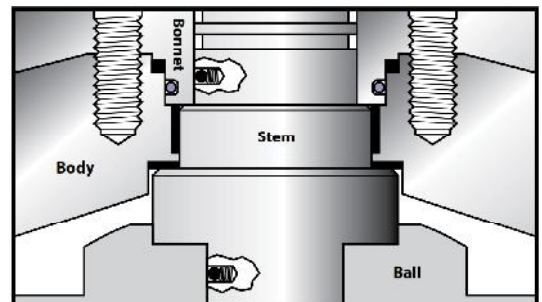
MANUFACTURING STANDARDS

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
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.

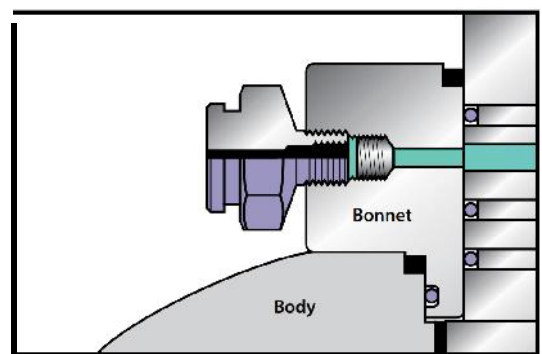
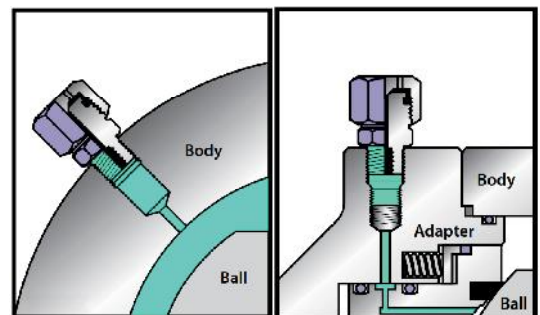


ANTI-STATIC DEVICE

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

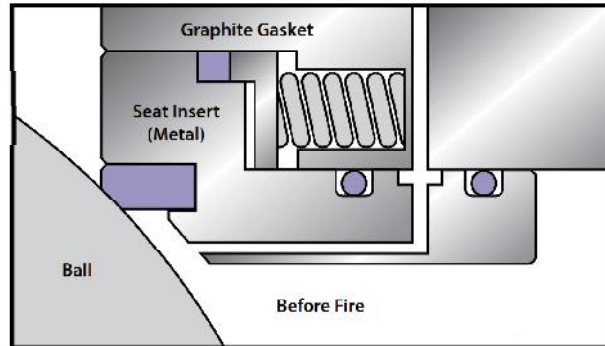
GLT Trunnion ball valves are all designed and made with devices for grease or sealant injection, both on the stem and the seat. The sealant injection system allows the lubrication of the seat and stem area to restore the sealing integrity in case of damages to the sealing surfaces until the valve is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



TRUNNION BALL VALVE

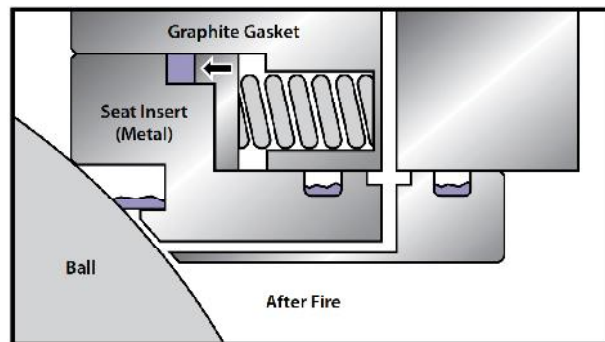
SPRING LOADED SEATS

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.



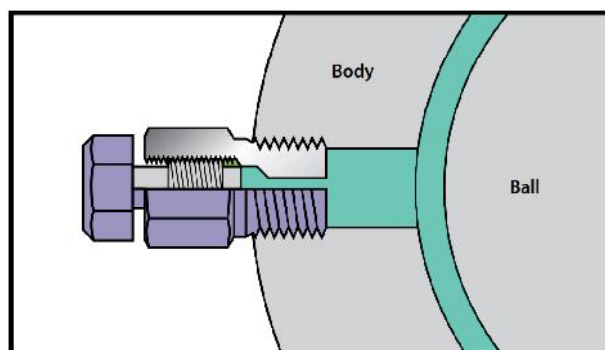
FIRE-SAFE DESIGN WITH SECONDARY METAL SEAT

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

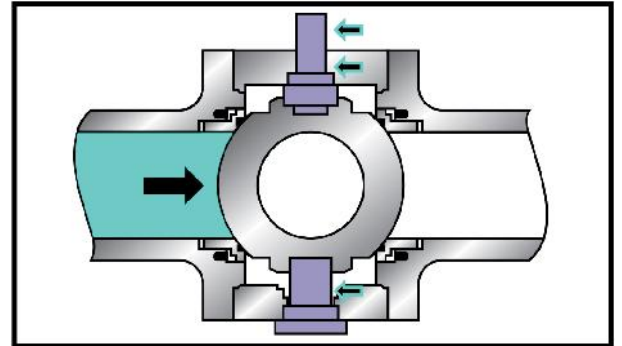
The body cavity may be vented and drain in both open and close state.



TRUNNION BALL VALVE

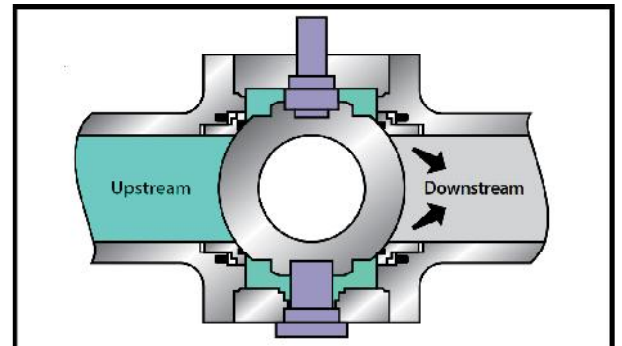
TRUNNION MOUNTED BALL

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



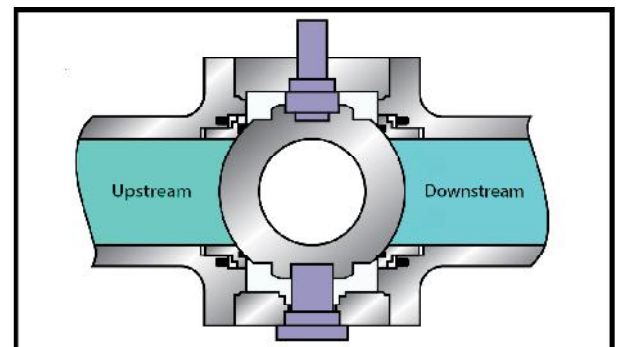
CAVITY PRESSURE SELF-RELIEF

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.

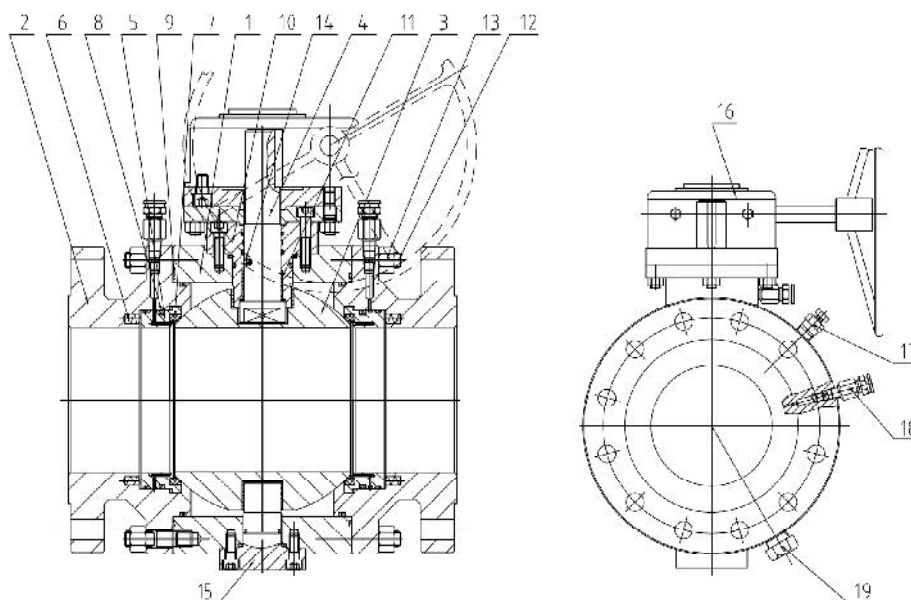


DOUBLE BLOCK AND BLEED FUNCTION

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

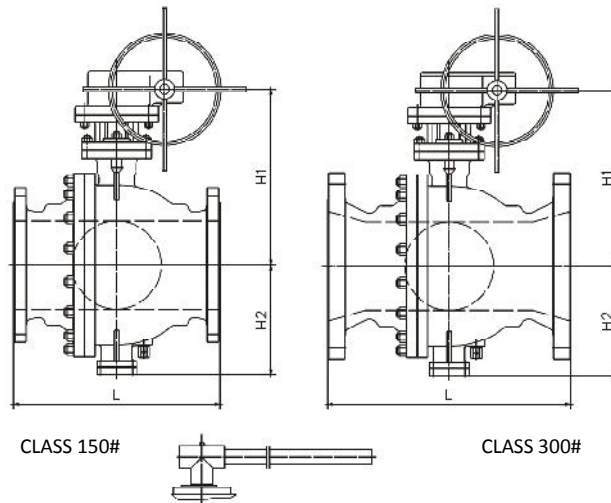


STANDARD PARTS & MATERIAL

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+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 Stat	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 Injectio	Assembly				
19	Plug	Assembly				

Other valve material composition are availabl

CAST STEEL TRUNNION BALL



CLASS 150 - API 6D	Port	Size (In)	L			H1	H2	Wt. (Kg)
			RF	RTJ	BW			
			FULL BORE	2	178 (7.01)			
	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	

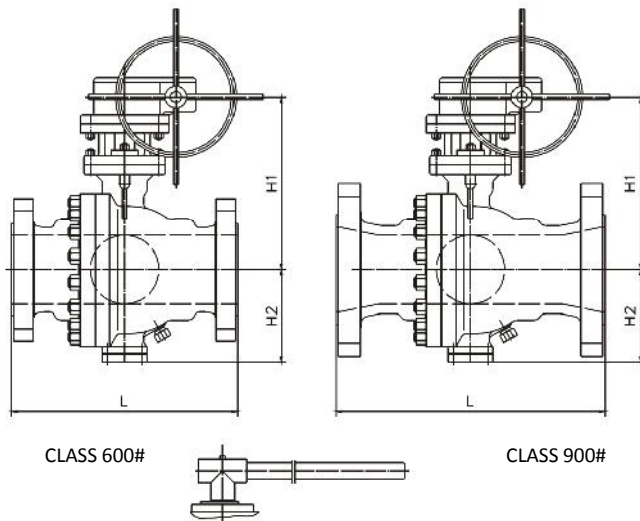
Standard Fig. No. TA1C1

CLASS 300 - API 6D	Port	Size (In)	L			H1	H2	Wt. (Kg)
			RF	RTJ	BW			
			FULL BORE	2	216 (8.50)			
	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 (39.65)	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 - 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

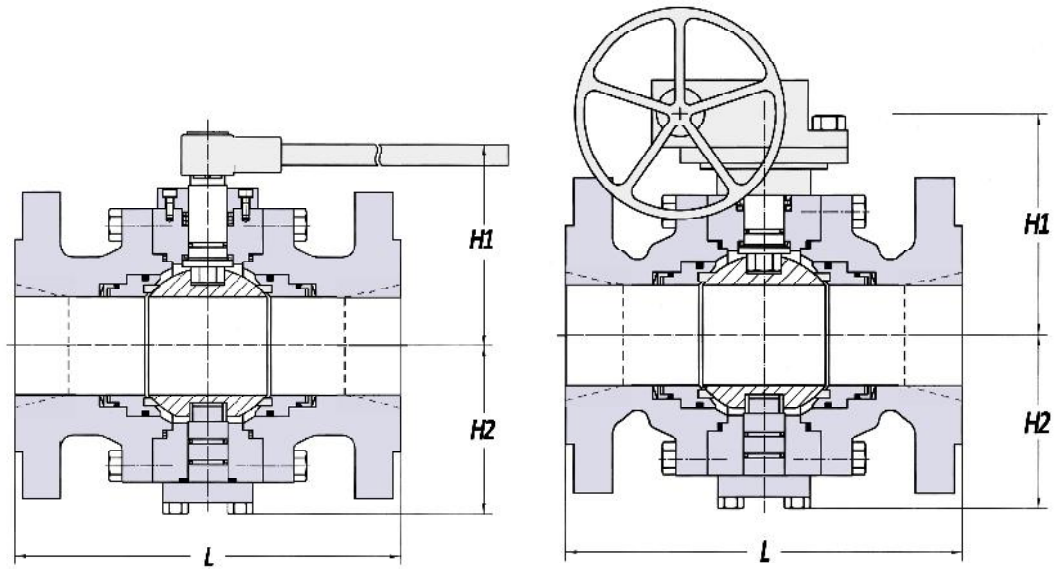
Standard Fig. No. TA1C6

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

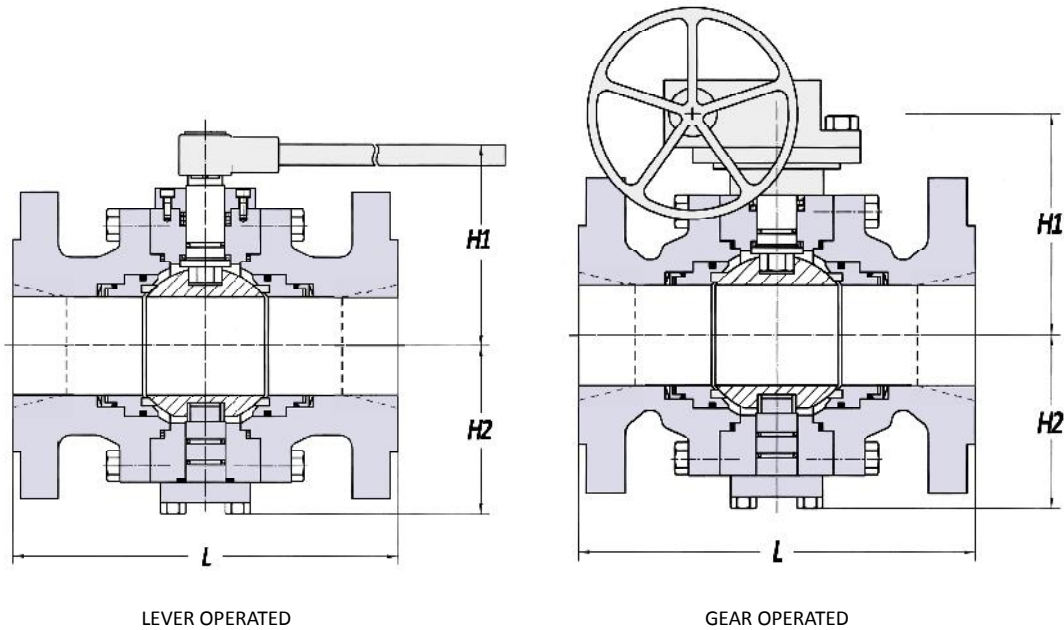
GEAR OPERATED

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

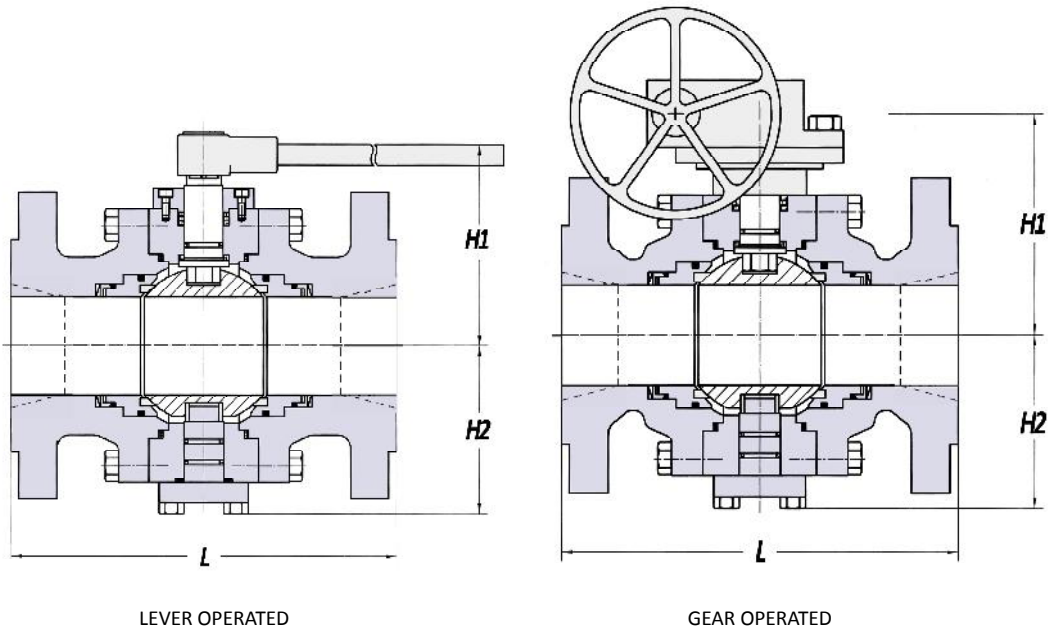


CLASS 300 - API 6D	Port	Size (In)	L			H1	H2	Wt. (Kg)
			RF	RTJ	BW			
FULL BORE	2	216 (8.50)	232 (9.13)	216 (8.50)	105 (4.13)	100 (3.94)	29	
	3	283 (11.14)	299 (11.77)	283 (11.14)	155 (6.10)	125 (4.92)	57	
	4	305 (12.00)	321 (12.64)	305 (12.00)	200 (7.87)	160 (6.30)	95	
	6	403 (15.87)	419 (16.50)	457 (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

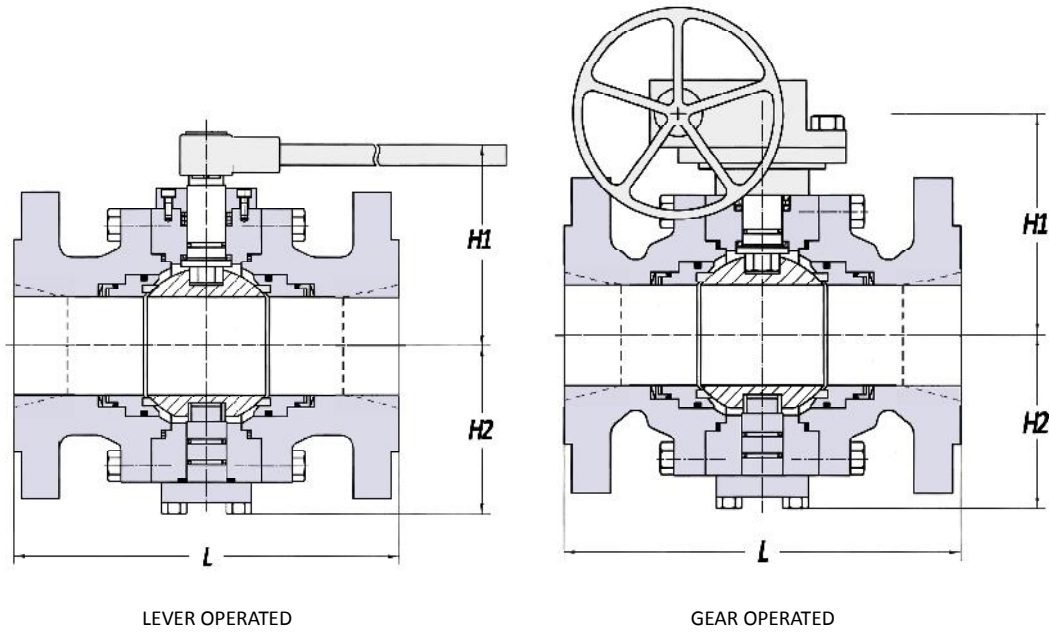


Port	Size (in)	L			H1	H2	Wt. (Kg)
		RF	RTJ	BW			
FULL BORE	2	292 (11.50)	295 (11.61)	292 (11.50)	105 (4.13)	100 (3.94)	33
	3	356 (14.02)	359 (14.13)	356 (14.02)	165 (6.50)	165 (6.50)	64
	4	432 (17.00)	435 (17.13)	432 (17.01)	210 (8.27)	210 (8.27)	114
	6	559 (22.00)	562 (22.13)	559 (22.01)	253 (9.96)	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



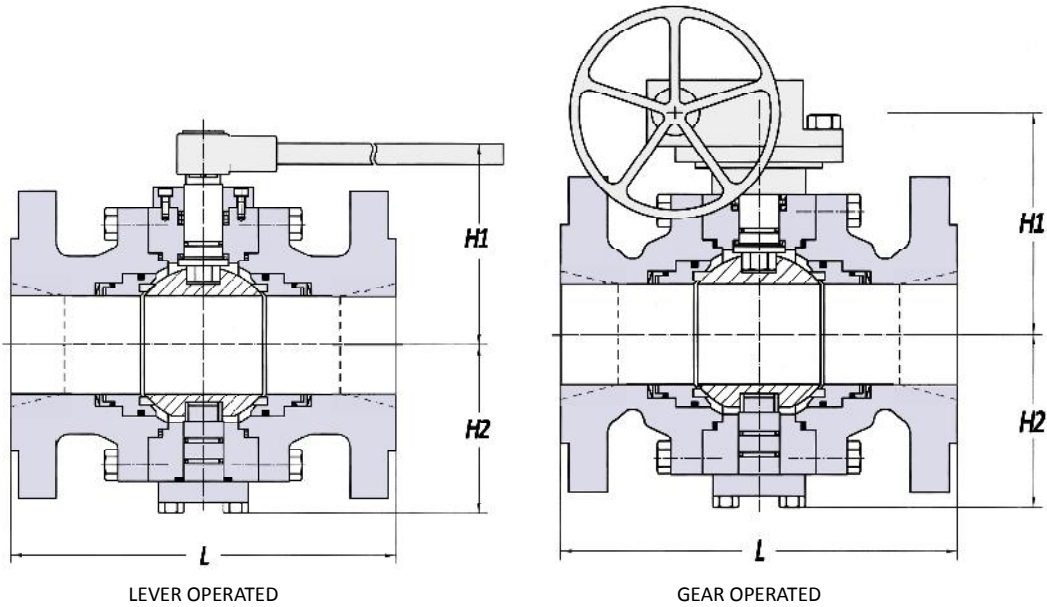
CLASS 900 - API 6D

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



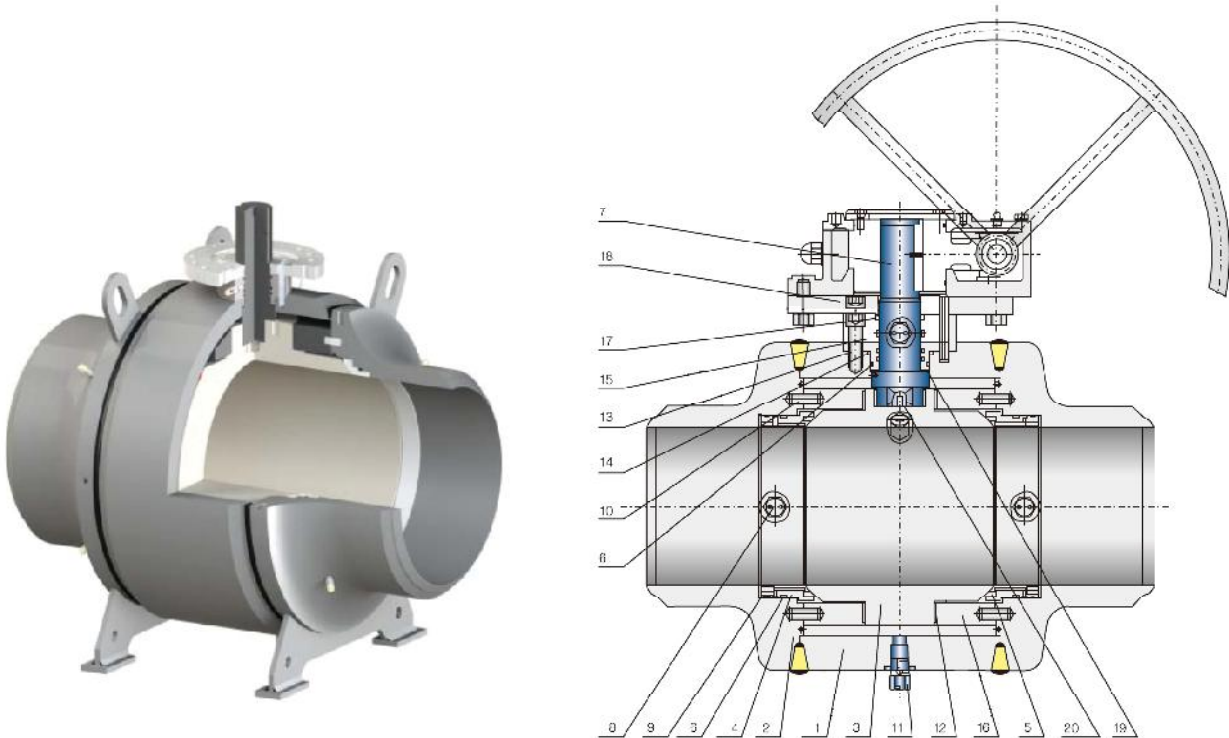
Port	Size (In)	L			H1	H2	Wt. (Kg)	
		RF	RTJ	BW				
CLASS 1500 - API 6D	FULL BORE	2	368 (15.67)	371 (14.61)	368 (15.67)	105 (4.13)	105 (4.13)	53
		3	470 (18.50)	473 (18.62)	470 (18.50)	165 (6.50)	130 (5.12)	98
		4	546 (21.50)	549 (21.61)	546 (21.50)	215 (8.46)	167 (6.57)	200
		6	705 (27.76)	711 (27.99)	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	
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
		14 x 12	1257 (49.49)	1276 (50.24)	1257 (49.49)	440 (17.32)	430 (16.93)	3280
	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. TA1F15

Standard Fig. No. TA1F25

Unit : mm (inch)

FULLY WELDED BALL VALVE



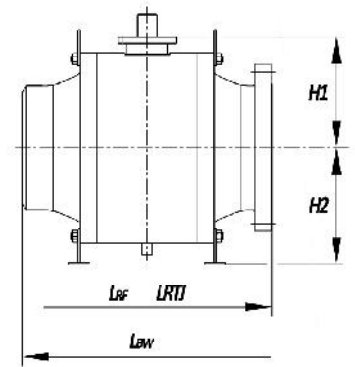
STANDARD PARTS & MATERIAL

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 AED				
6	O-Ring	NBR/HNBR/Viton AED				
7	Stem	A182-F6a	A182-F304 A182-F316	A350-LF2+ENP	A182-F304 A182-F316	A182-F316/L
8	Seat Injectio	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 AED				
18	Top Flange	A105		A350-LF2		A182-F316/L
19	Stem Bearing	SS+PTFE				
20	Anti Stati	Stainless Steel				

Other valve material composition are availabl

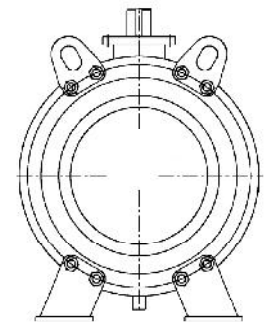
FULLY WELDED BALL

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. WTA1F1

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. WTA1F3

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	

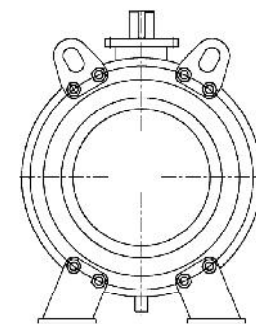
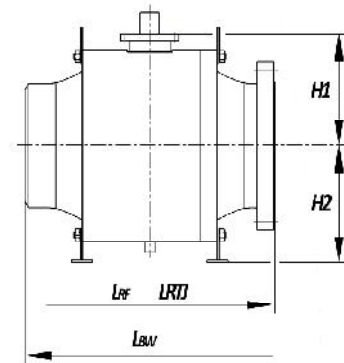
Standard Fig. No. WTA1F6

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. WTA1F9



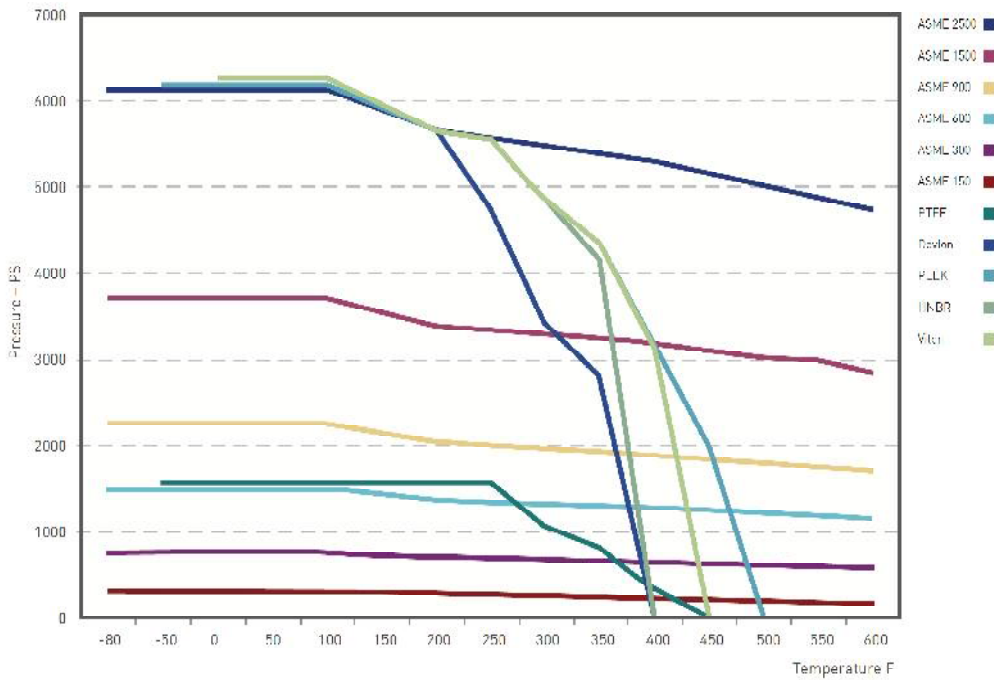
CLASS 1500 - API 6D	Port	Size (In)	L			H1	H2	Wt. (Kg)
			RF	RTJ	BW			
			FULL BORE					
2	368 (15.67)	371 (14.61)	368 (15.67)	135 (5.31)	102 (4.02)	99		
3	470 (18.50)	473 (18.62)	470 (18.50)	158 (6.22)	125 (4.92)	115		
4	546 (21.50)	549 (21.61)	546 (21.50)	203 (8.23)	152 (5.98)	180		
6	705 (27.76)	711 (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. WTA1F15

Unit : mm (inch)

BALL VALVE TECHNICAL DATA

BALL valve pRESSURE TEMPERATURE RANGE



BALL valve TORQUE DATA

Size (in)	tr union 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	-	-	-	-	-	-	-	-

SMALL BALL SERIES

1 PC SERIES BALL VALVE

MANUFACTURING STANDARDS

General Design	ASME B16.34 / API 608
Construction	Cast steel 1PC body
Features	Reduced port Teflon seats Blow-out proof stem ISO Mounting pad Locking handle
Fire Safe Design	API 607 / API 6FA
Pressure Ratings	2000PSI Working Pressure
Connection	Threaded NPT to ASME B1.20.1



STANDARD PARTS & MATERIAL

No.	Parts	Carbon Steel 1FA2C20-T	Stainless Steel 1FA28M20-T
1	Body	A216 WCB	A351 CF8M
2	Ball	A351 CF8M	
3	Seat	PTFE/TFM 1600	
4	Stem	SS 316	
5	Stem Seal	PTFE	

Other valve material composition are available

Port	Size (In)	Bore Size	End to End (L)	Center to Lever (H)	Length of Handle (mm)	Weight (kgs)
FULL BORE	1/4	9.2 (0.36)	58.5 (2.30)	46 (1.81)	98	98
	3/8	9.2 (0.36)	58.5 (2.30)	46 (1.81)	98	98
	1/2	9.2 (0.36)	66.0 (2.60)	54 (2.13)	102	102
	3/4	12.5 (0.49)	70.0 (2.76)	56 (2.20)	102	102
	1	15.5 (0.61)	80.0 (3.15)	63 (2.48)	102	102
	1.1/4	20.0 (0.79)	95.0 (3.74)	67 (2.64)	104	104
	1.1/2	25.0 (0.98)	101.0 (3.98)	69 (2.72)	156	156
	2	32.0 (1.26)	114.0 (4.49)	77 (3.03)	156	156

Unit : mm (inch)

SMALL BALL SERIES

2 PCS SERIES BALL VALVE

MANUFACTURING STANDARDS

General Design	ASME B16.34 / API 608
Construction	Cast steel 2PC body
Features	Full port upto 1.1/2" DELTRIN seats Blow-out proof stem ISO Mounting pad Locking handle
Fire Safe Design	API 607 / API 6FA
Pressure Ratings	3600PSI Working Pressure
Connection	Threaded NPT to ASME B1.20.1



STANDARD PARTS & MATERIAL

No.	Parts	Carbon Steel 2FA1C36-T	Stainless Steel 2FA18M36-T
1	Body	A216 WCB	A351 CF8M
2	Ball	SS 316	
3	Seat	DELTRIN	
4	Stem	SS 316	
5	Stem Seal	DELTRIN	

Other valve material composition are availabl

Port	Size (In)	Bore Size	End to End (L)	Center to Lever (H)	Length of Handle (mm)
FULL BORE	1/4	6.4 (0.25)	76.2 (3.00)	60.4 (2.38)	125
	1/2	12.7 (0.50)	101.6 (4.00)	60.4 (2.38)	125
	3/4	19.1 (0.75)	108.0 (4.25)	70.8 (2.79)	146
	1	19.1 (0.75)	108.0 (4.25)	70.8 (2.79)	146
	1.1/2	38.1 (1.50)	134.4 (5.29)	110.7 (4.36)	349
	2	38.1 (1.50)	158.7 (6.25)	110.7 (4.36)	349

Unit : mm (inch)

SMALL BALL SERIES

2 PCS SERIES BALL VALVE

MANUFACTURING STANDARDS

General Design	ASME B16.34 / API 608
Construction	Cast steel 2PC body
Features	Full port upto 1.1/2" PEEK seats, Blow-out proof stem ISO Mounting Pad Locking handle
Fire Safe Design	API 607 / API 6FA
Pressure Ratings	6000PSI Working Pressure
Connection	Threaded NPT to ASME B1.20.1



STANDARD PARTS & MATERIAL

No.	Parts	Carbon Steel 2FA1C60-T	Stainless Steel 2FA18M69-T
1	Body	A216 WCB	A351 CF8M
2	Ball	SS 316	
3	Seat	PEEK	
4	Stem	SS 316	
5	Stem Seal	PEEK	

Other valve material composition are availabl

Port	Size (In)	Bore Size	End to End (L)	Center to Lever (H)	Length of Handle (mm)
FULL BORE	1/4	6.4 (0.25)	76.2 (3.00)	60.4 (2.38)	125
	1/2	12.7 (0.50)	101.6 (4.00)	60.4 (2.38)	125
	3/4	19.1 (0.75)	108.0 (4.25)	70.8 (2.79)	146
	1	19.1 (0.75)	108.0 (4.25)	70.8 (2.79)	146
	1.1/2	38.1 (1.50)	134.4 (5.29)	110.7 (4.36)	353
	2	38.1 (1.50)	158.7 (6.25)	110.7 (4.36)	353

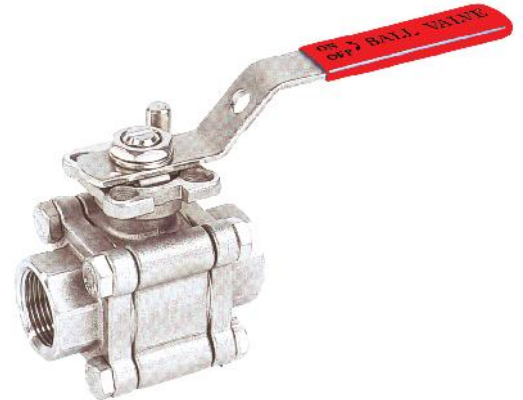
Unit : mm (inch)

SMALL BALL SERIES

3 PCS SERIES BALL VALVE

MANUFACTURING STANDARDS

General Design	ASME B16.34 / API608
Construction	Cast/Forged steel bolted 3pcs body
Features	Full port (red port option), Teflon seats Blow-out proof stem ISO Mounting Pad Locking handle
Fire Safe Design	API 607 / API 6FA
Pressure Ratings	2000PSI Working Pressure
Connection	Threaded NPT to ASME B1.20.1 Socket Weld to ASME B16.1.1



STANDARD PARTS & MATERIAL

No.	Parts	Carbon Steel 3FA1C20	Carbon Steel 3FA1F20	Stainless Steel 3FA18M20	Stainless Steel 3FA1F31620
1	Body	A216 WCB	A105	A351 CF8M	A182-F316
2	Ball	SS 316			
3	Seat	RTFE			
4	Stem	SS 316			
5	Stem Seal	PTFE			

Other valve material composition are availabl

Port	Size (In)	Bore Size	End to End (L)	Center to Lever (H)	Length of Handle (mm)
FULL BORE	1/4	11.0 (0.43)	65 (2.56)	58 (2.28)	104
	3/8	12.5 (0.49)	65 (2.56)	58 (2.28)	104
	1/2	16.0 (0.63)	75 (2.95)	62 (2.44)	104
	3/4	20.0 (0.79)	80 (3.15)	66 (2.60)	104
	1	25.0 (0.98)	90 (3.54)	75 (2.95)	112
	1.1/4	32.0 (1.26)	110 (4.33)	80 (3.15)	135
	1.1/2	38.0 (1.50)	120 (4.72)	95 (3.74)	180
	2	50.0 (1.97)	140 (5.51)	104 (4.09)	250

Unit : mm (inch)

GATE VALVE



GLOBE VALVE



CHECK VALVE



BALL VALVE



Y STRAINER - NEEDLE VALVE
BUTTERFLY VALVE



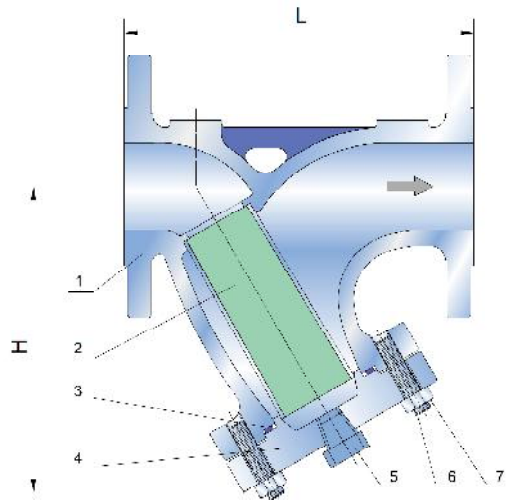
TECHNICAL DATA



SPECIFICATION

MANUFACTURING STANDARDS

General Design	ASME/ANSI B16.34
Face To Face	ASME/ANSI B16.10
Flange End	ASME/ANSI B16.5 & B16.47
Inspection & Test	API 598
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	

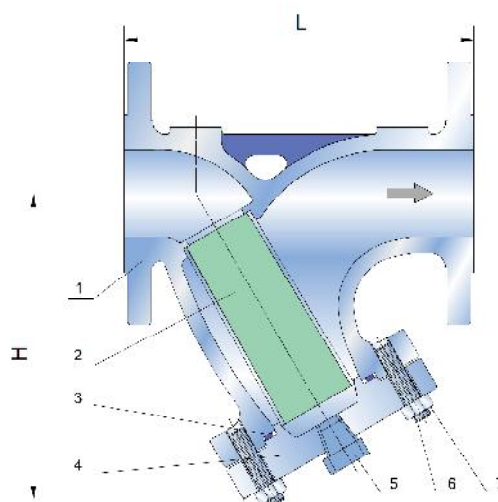
Standard Fig. No. 9A1C1

Unit : mm (inch)

SPECIFICATION

MANUFACTURING STANDARDS

General Design	ASME/ANSI B16.34
Face To Face	ASME/ANSI B16.10
Flange End	ASME/ANSI B16.5 & B16.47
Inspection & Test	API 598
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 607 / API 6FA
Rating:	6000 PSI / 10000 PSI
Connector	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	DELTRIN / 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)



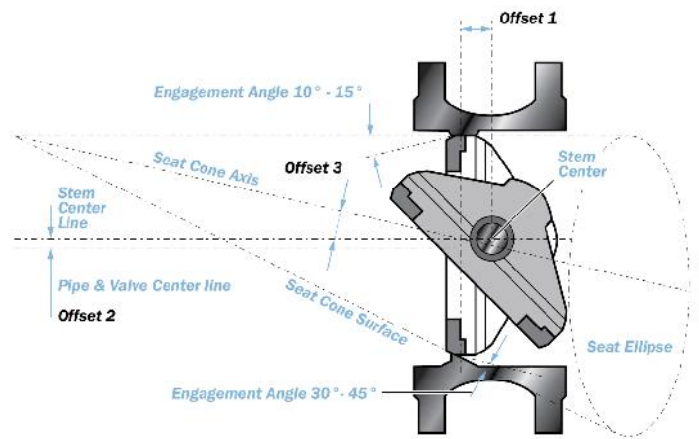
SPECIFICATION

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.

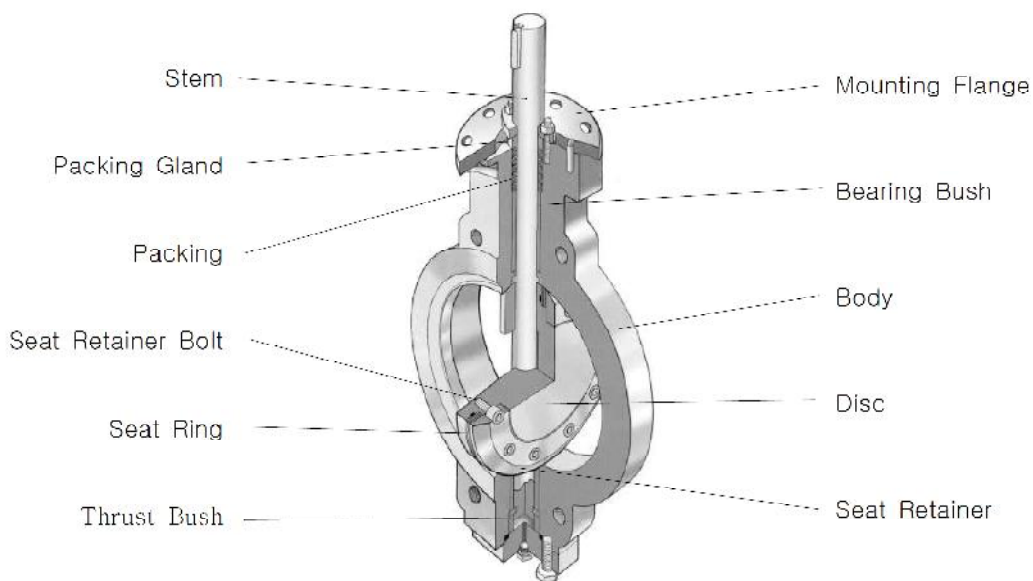
2. Double Offset

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 away 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

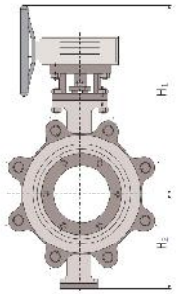


STANDARD PARTS & MATERIAL

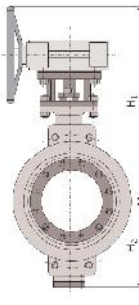
No.	Parts	Material		
		Carbon Steel	SS304	SS316
1	Body	A 216 WCB	A351-CF8	A351-CF8M
2	Disc	WCB/CF8/CF8M	A351-CF8	A351-CF8M
3	Seat Ring	Soft (NBR/EPDM/PTFE), Metal (SS304/SS316/Stellite)		
4	Seat Retainer	A105/F304/F316	A182-F304	A182-F316
5	Seat Retainer Bolt	Stainless Steel		
6	Stem	17-4PH/A182-F6a/SS304/SS316		
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

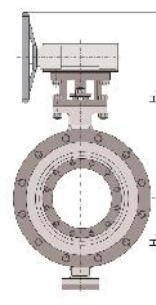
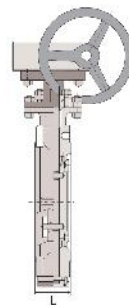
SPECIFICATION



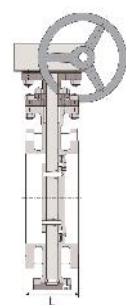
LUG TYPE



WAFER TYPE



FLANGE TYPE



CLASS 150	SIZE (In)	H1	H2	L			Weight (Kg)		
				Lug	Wafer	Fig.	Lug	Wafer	Fig.
	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	Fig.	Lug	Wafer	Fig.
	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)

GATE VALVE



GLOBE VALVE



CHECK VALVE



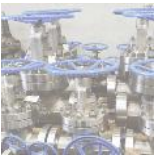
BALL VALVE



VALVE DEVELOPMENT



TECHNICAL DATA



PRESSURE TEMPERATURE RATING

CLASS 150 - ASME / ANSI B16.34

SERVICE TEMP.		ASTM MATERIALS											
°F	°C	A216 WCB	A217 C5	A217 C12	A217 WC6	A217 WC9	A351 CF8	A351 CF8M	A 351 CF3	A351 CF3M	A351 CN7M	A352 LCB	A352 LC3
		A105	A182 F5	A182 F9	A182 F11	A182 F22	A182 F304	A182 F316	A182 F304L	A182 F316L		A350 LF2	A 352 LF3
WORKING PRESSURES, PSIG													
-20 TO 100	-29 TO 38	285	290	290	290	290	275	275	275	275	230	265	290
200	93	260	260	260	260	260	235	240	235	240	215	250	260
300	149	230	230	230	230	230	205	215	205	215	200	230	230
400	204	200	200	200	200	200	180	195	180	195	-	200	200
500	260	170	170	170	170	170	170	170	170	170	-	170	170
600	316	140	140	140	140	140	140	140	140	140	-	140	140
650	343	125	125	125	125	125	125	125	125	125	-	125	125
700	371	110	110	110	110	110	110	110	110	110	-	-	-
750	399	95	95	95	95	95	95	95	95	95	-	-	-
800	427	80	80	80	80	80	80	80	80	80	-	-	-
850	454	65(1)	65	65	65	65	65	65	-	65	-	-	-
900	482	50(1)	50	50	50	50	50	50	-	-	-	-	-
950	510	35(1)	35	35	35	35	35	35	-	-	-	-	-
1000	538	20(1)	20	20	20	20	20	20	-	-	-	-	-
1050	566	-	20(2)	20(2)	20(2)	20(2)	20(2)	20(2)	-	-	-	-	-
1100	593	-	20(2)	20(2)	20(2)	20(2)	20(2)	20(2)	-	-	-	-	-
1150	621	-	20(2)	20(2)	-	-	20(2)	20(2)	-	-	-	-	-
1200	649	-	20(2)	20(2)	-	-	20(2)	20(2)	-	-	-	-	-
SHELL TEST		450	450	450	450	450	425	425	425	425	345	400	450
CLOSURE TEST	LIQUID	315	320	320	320	320	305	305	305	305	255	295	320
	GAS	80	80	80	80	80	80	80	80	80	80	80	80

(1) - Permissible, but not recommended for prolonged usage above about 800°F (427°C)
 (2) - For welding end valves only, flanged end ratings terminate at 1000°F (538°C)

PRESSURE TEMPERATURE RATING

SERVICE TEMP.		ASTM MATERIALS											
°F	°C	A216 WCB	A217 C5	A217 C12	A217 WC6	A217 WC9	A351 CF8	A351 CF8M	A 351 CF3	A351 CF3M	A351 CN7M	A352 LCB	A352 LC3
		A105	A182 F5	A182 F9	A182 F11	A182 F22	A182 F304	A182 F316	A182 F304L	A182 F316L		A350 LF2	A 352 LF3
WORKING PRESSURES, PSIG													
-20 TO 100	-29 TO 38	740	750	750	750	750	720	720	720	720	600	695	750
200	93	675	750	750	750	710	600	620	600	620	555	655	750
300	149	655	730	730	730	675	530	560	530	560	525	640	730
400	204	635	705	705	705	660	470	515	470	515	-	620	705
500	260	600	665	665	665	640	435	480	435	480	-	585	665
600	316	550	605	605	605	605	415	450	415	450	-	535	605
650	343	535	590	590	590	590	410	445	410	445	-	525	590
700	371	535	570	570	570	570	405	430	405	430	-	-	-
750	399	505	530	530	530	530	400	425	400	425	-	-	-
800	427	410	500	510	510	510	395	415	395	415	-	-	-
850	454	270 ⁽¹⁾	440	485	485	485	390	405	-	405	-	-	-
900	482	170 ⁽¹⁾	355	450	450	450	385	395	-	-	-	-	-
950	510	105 ⁽¹⁾	260	370	380	380	375	385	-	-	-	-	-
1000	538	50 ⁽¹⁾	190	290	225	270	325	368	-	-	-	-	-
1050	566	-	140	190	140	200	310	360	-	-	-	-	-
1100	593	-	105	115	95	115	260	325	-	-	-	-	-
1150	621	-	70	75	-	-	195	275	-	-	-	-	-
1200	649	-	45	50	-	-	155	205	-	-	-	-	-

SHELL TEST		1125	1125	1125	1125	1125	1100	1100	1100	1100	900	1050	1125
CLOSURE TEST	LIQUID	815	825	825	825	825	795	795	795	795	660	765	825
	GAS	80	80	80	80	80	80	80	80	80	80	80	80

(1) - Permissible, but not recommended for prolonged usage above about 800°F (427°C)

CLASS 300 - ASME / ANSI B16.34

PRESSURE TEMPERATURE RATING

SERVICE TEMP.		ASTM MATERIALS											
°F	°C	A216 WCB	A217 C5	A217 C12	A217 WC6	A217 WC9	A351 CF8	A351 CF8M	A 351 CF3	A351 CF3M	A351 CN7M	A352 LCB	A352 LC3
		A105	A182 F5	A182 F9	A182 F11	A182 F22	A182 F304	A182 F316	A182 F304L	A182 F316L		A350 LF2	A 352 LF3
WORKING PRESSURES, PSIG													
-20 TO 100	-29 TO 38	1480	1500	1000	1500	1500	1440	1440	1440	1440	1200	1390	1500
200	93	1350	1500	1000	1425	1430	1200	1240	1200	1240	1115	1315	1500
300	149	1315	1455	970	1345	1355	1055	1120	1055	1120	1045	1275	1455
400	204	1270	1410	940	1315	1295	940	1030	940	1030	-	1235	1410
500	260	1200	1330	885	1285	1280	875	955	875	955	-	1165	1330
600	316	1095	1210	805	1210	1210	830	905	830	905	-	1065	1210
650	343	1075	1175	785	1175	1175	815	890	815	890	-	1045	1175
700	371	1065	1135	755	1135	1135	805	865	805	865	-	-	1440
750	399	1010	1065	710	1065	1065	795	845	795	845	-	-	-
800	427	825	995	675	1015	1015	790	830	790	830	-	-	-
850	454	535 ⁽¹⁾	880	650	975	975	780	810	-	810	-	-	-
900	482	345 ⁽¹⁾	705	600	900	900	770	790	-	-	-	-	-
950	510	205 ⁽¹⁾	520	495	755	755	750	775	-	-	-	-	-
1000	538	105 ⁽¹⁾	385	390	445	535	645	725	-	-	-	-	-
1050	566	-	280	250	275	400	620	720	-	-	-	-	-
1100	593	-	205	150	190	225	515	645	-	-	-	-	-
1150	621	-	140	100	-	-	390	550	-	-	-	-	-
1200	649	-	90	70	-	-	310	410	-	-	-	-	-
SHELL TEST		2225	2250	2250	2250	2250	2175	2175	2175	2175	1800	2100	2250
CLOSURE TEST	LIQUID	1630	1650	1650	1650	1650	1585	1585	1585	1585	1320	1530	1650
	GAS	80	80	80	80	80	80	80	80	80	80	80	80

(1) - Permissible, but not recommended for prolonged usage above about 800°F (427°C)

CLASS 600 - ASME / ANSI B16.34

PRESSURE TEMPERATURE RATING

SERVICE TEMP.		ASTM MATERIALS											
		A216 WCB	A217 C5	A217 C12	A217 WC6	A217 WC9	A351 CF8	A351 CF8M	A 351 CF3	A351 CF3M	A351 CN7M	A352 LCB	A352 LC3
°F	°C	A105	A182 F5	A182 F9	A182 F11	A182 F22	A182 F304	A182 F316	A182 F304L	A182 F316L		A350 LF2	A 352 LF3
WORKING PRESSURES, PSIG													
-20 TO 100	-29 TO 38	1975	2000	-	2000	2000	1920	1920	1600	1600	-	1975	-
200	93	1800	2000	-	1900	1900	1600	1655	1350	1350	-	1800	-
300	149	1750	1940	-	1795	1795	1410	1495	1210	1210	-	1750	-
400	204	1690	1880	-	1755	1755	1255	1370	1100	1100	-	1690	-
500	260	1595	1775	-	1710	1710	1165	1275	1020	1020	-	1595	-
600	316	1460	1615	-	1615	1615	1105	1205	960	960	-	1460	-
650	343	1430	1570	-	1570	1570	1090	1185	935	935	-	1430	-
700	371	1420	1515	-	1515	1515	1075	1150	915	915	-	1420	-
750	399	1345	1420	-	1420	1420	1060	1130	895	895	-	1345	-
800	427	1100	1325	-	1355	1355	1050	1105	875	875	-	1100	-
850	454	715 ⁽¹⁾	1170	-	1300	1300	1035	1080	860	860	-	-	-
900	482	460 ⁽¹⁾	940	-	1200	1200	1025	1050	-	-	-	-	-
950	510	275 ⁽¹⁾	695	-	1005	1005	1000	1030	-	-	-	-	-
1000	538	140 ⁽¹⁾	510	-	595	715	860	970	-	-	-	-	-
1050	566	-	375	-	365	530	825	960	-	-	-	-	-
1100	593	-	275	-	225	300	685	860	-	-	-	-	-
1150	621	-	185	-	140	275	520	735	-	-	-	-	-
1200	649	-	120	-	95	145	415	550	-	-	-	-	-
SHELL TEST		2975	3000	-	3000	3000	2900	2900	2400	2400	-	2975	-
CLOSURE TEST	LIQUID	2175	2200	-	2200	2200	2115	2115	1760	1760	-	2175	-
	GAS	80	80	-	80	80	80	80	80	80	-	80	-

(1) - Permissible, but not recommended for prolonged usage above about 800°F (427°C)

CLASS 800 - ASME / ANSI B16.34

PRESSURE TEMPERATURE RATING

SERVICE TEMP.		ASTM MATERIALS											
°F	°C	A216 WCB	A217 C5	A217 C12	A217 WC6	A217 WC9	A351 CF8	A351 CF8M	A 351 CF3	A351 CF3M	A351 CN7M	A352 LCB	A352 LC3
		A105	A182 F5	A182 F9	A182 F11	A182 F22	A182 F304	A182 F316	A182 F304L	A182 F316L		A350 LF2	A 352 LF3
WORKING PRESSURES, PSIG													
-20 TO 100	-29 TO 38	2220	2250	2250	2250	2250	2160	2160	2160	2160	1800	2085	2250
200	93	2025	2250	2250	2135	2150	1800	1860	1800	1860	1670	1970	2250
300	149	1970	2185	2185	2020	2030	1410	1540	1410	1540	1570	1915	2185
400	204	1900	2115	2115	1975	1945	1410	1540	1410	1540	-	1850	2115
500	260	1795	1995	1995	1925	1920	1310	1435	1310	1435	-	1745	1995
600	316	1640	1815	1815	1815	1815	1245	1355	1245	1355	-	1600	1815
650	343	1610	1765	1765	1765	1765	1225	1330	1225	1330	-	1570	1765
700	371	1600	1705	1705	1705	1705	1210	1295	1210	1295	-	-	-
750	399	1510	1595	1595	1595	1595	1195	1270	1195	1270	-	-	-
800	427	1235	1490	1460	1525	1525	1180	1245	1180	1245	-	-	-
850	454	805 ⁽¹⁾	1315	1350	1460	1460	1165	1215	-	1215	-	-	-
900	482	515 ⁽¹⁾	1060	1110	1350	1350	1150	1180	-	-	-	-	-
950	510	310 ⁽¹⁾	780	875	1130	1130	1125	1160	-	-	-	-	-
1000	538	155 ⁽¹⁾	575	565	670	805	965	1090	-	-	-	-	-
1050	566	-	420	340	410	595	925	1080	-	-	-	-	-
1100	593	-	310	225	290	340	770	965	-	-	-	-	-
1150	621	-	205	155	-	-	585	825	-	-	-	-	-
1200	649	-	135	-	-	-	465	620	-	-	-	-	-
SHELL TEST		3350	3375	3375	3375	3375	3250	3250	3250	3250	2700	3150	3375
CLOSURE TEST	LIQUID	2445	2475	2475	2475	2475	2380	2380	2380	2380	1980	2295	2475
	GAS	80	80	80	80	80	80	80	80	80	80	80	80

(1) - Permissible, but not recommended for prolonged usage above about 800°F (427°C)

PRESSURE TEMPERATURE RATING

SERVICE TEMP.		ASTM MATERIALS											
°F	°C	A216 WCB	A217 C5	A217 C12	A217 WC6	A217 WC9	A351 CF8	A351 CF8M	A 351 CF3	A351 CF3M	A351 CN7M	A352 LCB	A352 LC3
		A105	A182 F5	A182 F9	A182 F11	A182 F22	A182 F304	A182 F316	A182 F304L	A182 F316L		A350 LF2	A 352 LF3
WORKING PRESSURES, PSIG													
-20 TO 100	-29 TO 38	3705	3750	3750	3750	3750	3600	3600	3600	3600	3000	3470	3750
200	93	3375	3750	3750	3560	3580	3000	3095	3000	3095	2785	3280	3750
300	149	3280	3640	3640	3365	3385	2640	2795	2640	2795	2615	3190	3640
400	204	3170	3530	3530	3290	3240	2350	2570	2350	2570	-	3085	3530
500	260	2995	3325	3325	3210	3200	2185	2390	2185	2390	-	2910	3325
600	316	2735	3025	3025	3025	3025	2075	2255	2075	2255	-	2665	3025
650	343	2685	2940	2940	2940	2940	2040	2220	2040	2220	-	2615	2940
700	371	2665	2840	2840	2840	2840	2015	2160	2015	2160	-	-	-
750	399	2520	2660	2660	2660	2660	1990	2110	1990	2110	-	-	-
800	427	2060	2485	2540	2540	2540	1970	2075	1970	2075	-	-	-
850	454	1340 ⁽¹⁾	2195	2435	2435	2435	1945	2030	-	2030	-	-	-
900	482	860 ⁽¹⁾	1765	2245	2245	2245	1920	1970	-	-	-	-	-
950	510	515 ⁽¹⁾	1305	1850	1885	1885	1870	1930	-	-	-	-	-
1000	538	260 ⁽¹⁾	960	1460	1115	1340	1610	1820	-	-	-	-	-
1050	566	-	705	945	685	995	1545	1800	-	-	-	-	-
1100	593	-	515	565	480	565	1285	1610	-	-	-	-	-
1150	621	-	345	380	-	-	980	1370	-	-	-	-	-
1200	649	-	225	260	-	-	770	1030	-	-	-	-	-

SHELL TEST		5575	5625	5625	5625	5625	5400	5400	5400	5400	4500	5225	5625
CLOSURE TEST	LIQUID	4075	4125	4125	4125	4125	3960	3960	3960	3960	3300	3820	4125
	GAS	80	80	80	80	80	80	80	80	80	80	80	80

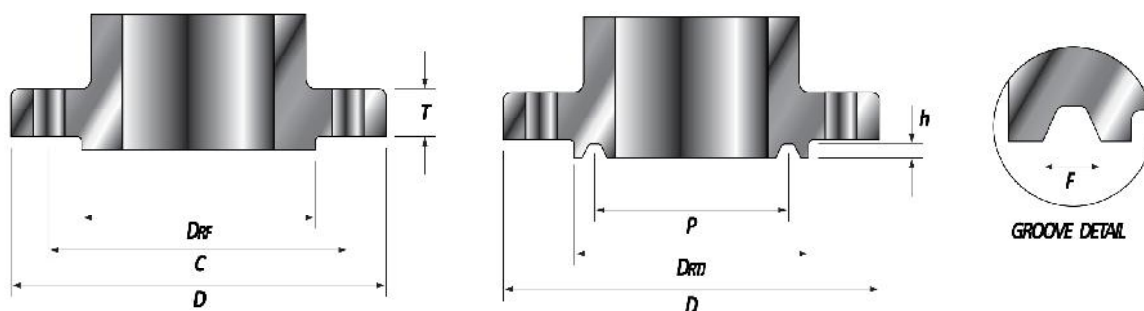
(1) - Permissible, but not recommended for prolonged usage above about 800°F (427°C)

PRESSURE TEMPERATURE RATING

SERVICE TEMP.		ASTM MATERIALS											
°F	°C	A216 WCB	A217 C5	A217 C12	A217 WC6	A217 WC9	A351 CF8	A351 CF8M	A 351 CF3	A351 CF3M	A351 CN7M	A352 LCB	A352 LC3
		A105	A182 F5	A182 F9	A182 F11	A182 F22	A182 F304	A182 F316	A182 F304L	A182 F316L		A350 LF2	A 352 LF3
WORKING PRESSURES, PSIG													
-20 TO 100	-29 TO 38	6170	6250	6250	6250	6250	6000	6000	6000	6000	5000	5785	6250
200	93	5625	6250	6250	5930	5965	5000	5160	5000	5160	4640	5470	6250
300	149	5470	6070	6070	5605	5640	4500	4660	4500	4660	4360	5315	6070
400	204	5280	5880	5880	5485	5400	3920	4280	3920	4280	-	5145	5880
500	260	4990	5540	5540	5350	5430	3640	3980	3640	3980	-	4850	5540
600	316	4560	5040	5040	5040	5040	3460	3760	3460	3760	-	4440	5040
650	343	4475	4905	4905	4905	4905	3400	3700	3400	3700	-	4355	4905
700	371	4440	4730	4730	4730	4730	3360	3600	3360	3600	-	-	-
750	399	4200	4430	4430	4430	4430	3320	3520	3320	3520	-	-	-
800	427	3430	4145	4230	4230	4230	3280	3460	3280	3460	-	-	-
850	454	2230 ⁽¹⁾	3660	4060	4060	4060	3240	3320	-	-	-	-	-
900	482	1430 ⁽¹⁾	2945	3745	3745	3745	3200	3280	-	-	-	-	-
950	510	860 ⁽¹⁾	2170	3085	3145	3145	3120	3220	-	-	-	-	-
1000	538	430 ⁽¹⁾	1660	2430	1860	1860	2685	3030	-	-	-	-	-
1050	566	-	1170	1570	1145	1145	2570	3000	-	-	-	-	-
1100	593	-	860	945	800	800	2145	2685	-	-	-	-	-
1150	621	-	570	630	-	-	1630	2285	-	-	-	-	-
1200	649	-	370	430	-	-	1285	1715	-	-	-	-	-
SHELL TEST		9275	9375	9375	9375	9375	9000	9000	9000	9000	7500	8700	9375
CLOSURE TEST	LIQUID	6790	6875	6875	6875	6875	6600	6600	6600	6600	5500	6365	6875
	GAS	80	80	80	80	80	80	80	80	80	80	80	80

(1) - Permissible, but not recommended for prolonged usage above about 800°F (427°C)

FLANGES DIMENSION

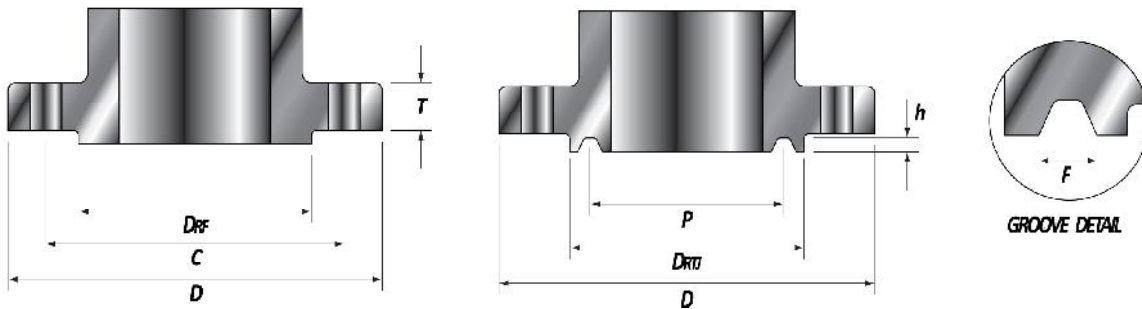


CLASS 150 - ASME / ANSI B16.5

SIZE	FLG. DIA.	FLG. THK.	RF DIA.	DRILLING				RING JOINT				RING No.
				BOLT CIRCLE DIA.	HOLE DIA.	BOLT		RTJ DIA.	PITCH DIA.	GRV. DEPTH	GRV. WIDTH	
						NO.	Dia.					
D	T	Drf	C									
15 (0.50)	89 (3.50)	10.0 (0.38)	35 (1.38)	60.5 (2.38)	15 (0.63)	4	1/2					
20 (0.75)	98 (3.88)	10.5 (0.41)	43 (1.69)	70.0 (2.75)	15 (0.63)	4	1/2					
25 (1.00)	108 (4.25)	11.5 (0.44)	51 (2.00)	79.5 (3.13)	15 (0.63)	4	1/2	64 (2.50)	48 (1.88)	6.35 (0.25)	8.74 (0.34)	R15
40 (1.50)	127 (5.00)	14.5 (0.56)	73 (2.88)	98.5 (3.88)	15 (0.63)	4	1/2	83 (3.25)	65 (2.56)	6.35 (0.25)	8.74 (0.34)	R19
50 (2.00)	152 (6.00)	15.9 (0.62)	92 (3.62)	120.5 (4.75)	19 (0.75)	4	5/8	102 (4.00)	83 (3.25)	6.35 (0.25)	8.74 (0.34)	R22
65 (2.50)	178 (7.00)	17.5 (0.69)	105 (4.12)	139.5 (5.50)	19 (0.75)	4	5/8	121 (4.75)	102 (4.00)	6.35 (0.25)	8.74 (0.34)	R25
80 (3.00)	190 (7.50)	19.1 (0.75)	127 (5.00)	152.5 (6.00)	19 (0.75)	4	5/8	133 (5.25)	114 (4.50)	6.35 (0.25)	8.74 (0.34)	R29
100 (4.00)	229 (9.00)	23.9 (0.94)	157 (6.19)	190.5 (7.50)	19 (0.75)	8	5/8	171 (6.75)	149 (5.88)	6.35 (0.25)	8.74 (0.34)	R36
125 (5.00)	254 (10.00)	23.9 (0.94)	186 (7.31)	216.0 (8.50)	22 (0.88)	8	3/4	194 (7.62)	171 (6.75)	6.35 (0.25)	8.74 (0.34)	R40
150 (6.00)	279 (11.00)	25.4 (1.00)	216 (8.50)	241.5 (9.50)	22 (0.88)	8	3/4	219 (8.62)	194 (7.63)	6.35 (0.25)	8.74 (0.34)	R43
200 (8.00)	343 (13.50)	28.6 (1.12)	270 (10.62)	298.5 (11.75)	22 (0.88)	8	3/4	273 (10.75)	248 (9.75)	6.35 (0.25)	8.74 (0.34)	R48
250 (10.00)	406 (16.00)	30.2 (1.19)	324 (12.75)	362.0 (14.25)	25 (1.00)	12	7/8	330 (13.00)	305 (12.00)	6.35 (0.25)	8.74 (0.34)	R52
300 (12.00)	483 (19.00)	31.8 (1.25)	381 (15.00)	432.0 (17.00)	25 (1.00)	12	7/8	406 (16.00)	381 (15.00)	6.35 (0.25)	8.74 (0.34)	R56
350 (14.00)	533 (21.00)	35.0 (1.38)	413 (16.25)	476.0 (18.75)	29 (1.12)	16	1	425 (16.75)	397 (15.63)	6.35 (0.25)	8.74 (0.34)	R59
400 (16.00)	597 (23.50)	36.6 (1.44)	470 (18.50)	539.5 (21.25)	29 (1.12)	16	1	483 (19.00)	454 (17.88)	6.35 (0.25)	8.74 (0.34)	R64
450 (18.00)	635 (25.00)	40.0 (1.56)	533 (21.00)	577.9 (22.75)	32 (1.25)	16	1.1/8	546 (21.50)	518 (20.38)	6.35 (0.25)	8.74 (0.34)	R68
500 (20.00)	699 (27.50)	43.0 (1.69)	584 (23.00)	635.0 (25.00)	32 (1.25)	20	1.1/8	597 (23.5)	559 (22.00)	6.35 (0.25)	8.74 (0.34)	R72
600 (24.00)	813 (32.00)	48.0 (1.88)	692 (27.25)	749.3 (29.50)	35 (1.38)	20	1.1/4	711 (28.00)	673 (26.50)	6.35 (0.25)	8.74 (0.34)	R76

Unit : mm (inch)

FLANGES DIMENSION



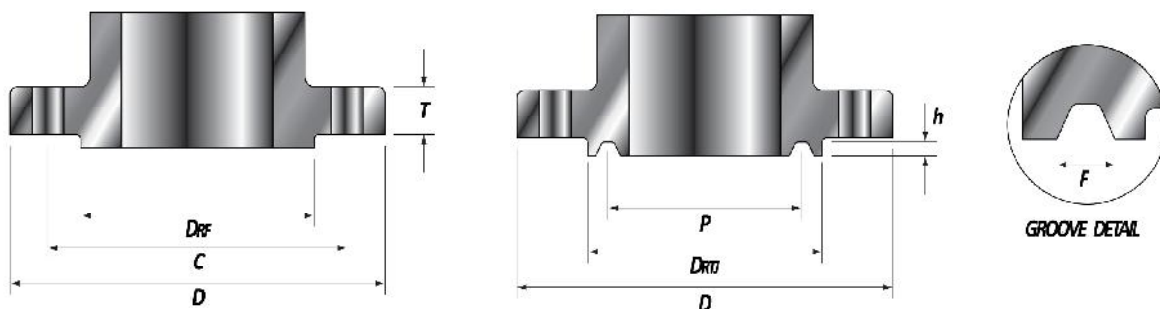
SIZE	FLG. DIA.	FLG. THK.	RF DIA.	DRILLING				RING JOINT				RING No.			
				D	T	DRF	C	HOLE DIA.	BOLT		RTJ DIA.		PITCH DIA.	GRV. DEPTH	GRV. WIDTH
									NO.	Dia.					
15 (0.50)	95 (3.75)	15.0 (0.57)	35 (1.38)	66.5 (2.63)	15 (0.63)	4	1/2	51 (2.00)	34 (1.34)	7.92 (0.31)	11.91 (0.47)	R11			
20 (0.75)	117 (4.63)	16.0 (0.63)	43 (1.69)	82.5 (3.25)	19 (0.75)	4	5/8	64 (2.50)	43 (1.69)	7.92 (0.31)	11.91 (0.47)	R13			
25 (1.00)	124 (4.88)	18.0 (0.69)	51 (2.00)	89.0 (3.50)	19 (0.75)	4	5/8	70 (2.75)	51 (2.00)	7.92 (0.31)	11.91 (0.47)	R16			
40 (1.50)	156 (6.13)	21.0 (0.81)	73 (3.38)	114.5 (4.50)	22 (0.88)	4	5/8	90 (3.56)	60 (2.38)	7.92 (0.31)	11.91 (0.47)	R20			
50 (2.00)	165 (6.50)	22.3 (0.88)	92 (3.62)	127.0 (5.00)	19 (0.75)	8	5/8	108 (4.25)	83 (3.25)	7.92 (0.31)	11.91 (0.47)	R23			
65 (2.50)	190 (7.50)	25.4 (1.00)	105 (4.12)	149.0 (5.88)	22 (0.88)	8	3/4	127 (5.00)	102 (4.00)	7.92 (0.31)	11.91 (0.47)	R26			
80 (3.00)	210 (8.25)	28.6 (1.12)	127 (5.00)	168.0 (6.62)	22 (0.88)	8	3/4	146 (5.75)	124 (4.88)	7.92 (0.31)	11.91 (0.47)	R31			
100 (4.00)	254 (10.00)	31.8 (1.25)	157 (6.19)	200.0 (7.88)	22 (0.88)	8	3/4	175 (6.88)	149 (5.88)	7.92 (0.31)	11.91 (0.47)	R37			
125 (5.00)	279 (11.00)	35.0 (1.38)	186 (7.31)	235.0 (9.25)	22 (0.88)	8	3/4	210 (8.25)	181 (7.13)	7.92 (0.31)	11.91 (0.47)	R41			
150 (6.00)	318 (12.50)	36.6 (1.44)	216 (8.50)	270.0 (10.62)	22 (0.88)	12	3/4	241 (9.50)	211 (8.31)	7.92 (0.31)	11.91 (0.47)	R45			
200 (8.00)	381 (15.00)	41.3 (1.62)	270 (10.62)	330.0 (13.00)	25 (1.00)	12	7/8	302 (11.88)	270 (10.63)	7.92 (0.31)	11.91 (0.47)	R49			
250 (10.00)	444 (17.50)	47.7 (1.88)	324 (12.75)	387.5 (15.25)	29 (1.12)	16	1	356 (14.00)	324 (12.75)	7.92 (0.31)	11.91 (0.47)	R53			
300 (12.00)	521 (20.50)	50.8 (2.00)	381 (15.00)	451.0 (17.75)	32 (1.25)	16	1.1/8	413 (16.25)	381 (15.00)	7.92 (0.31)	11.91 (0.47)	R57			
350 (14.00)	584 (23.00)	54.0 (2.12)	413 (16.25)	514.5 (20.25)	32 (1.25)	20	1.1/8	457 (18.00)	419 (16.50)	7.92 (0.31)	11.91 (0.47)	R61			
400 (16.00)	648 (25.50)	57.2 (2.25)	470 (18.50)	571.5 (22.50)	35 (1.38)	20	1.1/4	508 (20.00)	470 (18.50)	7.92 (0.31)	11.91 (0.47)	R65			
450 (18.00)	711 (28.00)	60.5 (2.38)	533 (21.00)	628.7 (24.75)	35 (1.38)	24	1.1/4	575 (22.62)	533 (21.00)	7.92 (0.31)	11.91 (0.47)	R69			
500 (20.00)	775 (30.50)	63.5 (2.50)	584 (23.00)	685.8 (27.00)	35 (1.38)	24	1.1/4	635 (25.00)	584 (23.00)	9.53 (0.38)	13.49 (0.53)	R73			
600 (24.00)	914 (36.00)	70.0 (2.75)	692 (27.25)	812.8 (32.00)	51 (1.62)	24	1.1/2	749 (29.50)	692 (27.25)	11.13 (0.44)	16.66 (0.66)	R77			

Unit : mm (inch)

CLASS 300 - ASME / ANSI B16.5

GLT VALVES

FLANGE DIMENSION

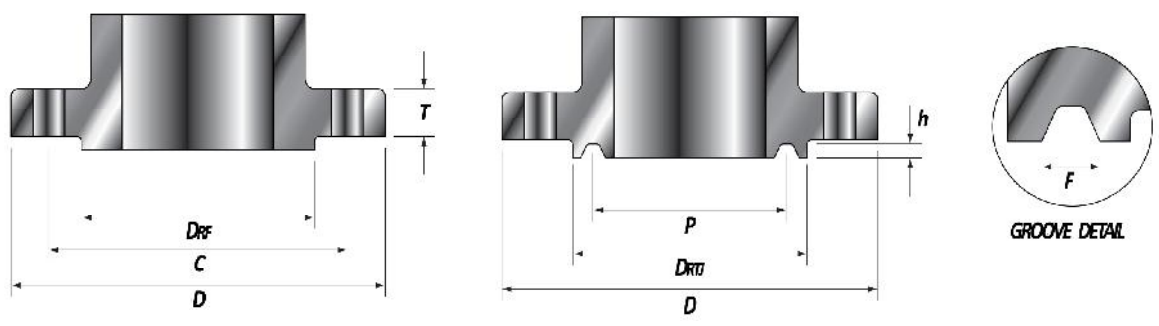


CLASS 600 - ASME / ANSI B16.5

SIZE	FLG. DIA.	FLG. THK.	RF DIA.	DRILLING				RING JOINT				RING No.
				BOLT CIRCLE DIA.	HOLE DIA.	BOLT		RTJ DIA.	PITCH DIA.	GRV. DEPTH	GRV. WIDTH	
						NO.	Dia.					
D	T	DRF	C									
15 (0.50)	95 (3.75)	15 (0.57)	35 (1.38)	66.5 (2.63)	15 (0.63)	4	1/2	51 (2.00)	34.13 (1.34)	5.56 (0.22)	7.14 (0.28)	R11
20 (0.75)	118 (4.63)	16 (0.63)	43 (1.69)	82.5 (3.25)	19 (0.75)	4	5/8	64 (2.50)	42.88 (1.68)	6.35 (0.25)	8.74 (0.34)	R13
25 (1.00)	124 (4.88)	18 (0.69)	51 (2.00)	89 (3.50)	19 (0.75)	4	5/8	70 (2.75)	50.8 (2.00)	6.35 (0.25)	8.74 (0.34)	R16
40 (1.50)	156 (6.13)	23 (0.88)	73 (3.38)	114.5 (4.50)	22 (0.88)	4	5/8	90 (3.56)	68.27 (2.69)	6.35 (0.25)	8.74 (0.34)	R20
50 (2.00)	165 (6.50)	25.4 (1.00)	92 (3.62)	127 (5.00)	19 (0.75)	8	5/8	108 (4.25)	82.55 (3.25)	8 (0.31)	11.91 (0.47)	R23
65 (2.50)	190 (7.50)	28.6 (1.12)	105 (4.12)	149 (5.88)	22 (0.88)	8	3/4	127 (5.00)	101.6 (4.00)	8 (0.31)	11.91 (0.47)	R26
80 (3.00)	210 (8.25)	31.8 (1.25)	127 (5.00)	168 (6.62)	22 (0.88)	8	3/4	146 (5.75)	123.82 (4.88)	8 (0.31)	11.91 (0.47)	R31
100 (4.00)	273 (10.75)	38.1 (1.50)	157 (6.19)	216 (8.50)	25 (1.00)	8	7/8	175 (6.88)	149.22 (5.88)	8 (0.31)	11.91 (0.47)	R37
125 (5.00)	330 (13.00)	44.5 (1.75)	186 (7.31)	266.5 (10.50)	29 (1.12)	8	1	210 (8.25)	180.98 (7.13)	8 (0.31)	11.91 (0.47)	R41
150 (6.00)	356 (14.00)	47.7 (1.88)	216 (8.50)	292 (11.50)	29 (1.12)	12	1	241 (9.50)	211.12 (8.31)	8 (0.31)	11.91 (0.47)	R45
200 (8.00)	419 (16.50)	55.6 (2.19)	270 (10.62)	349 (13.75)	32 (1.25)	12	1.1/8	302 (11.88)	269.88 (10.83)	8 (0.31)	11.91 (0.47)	R49
250 (10.00)	508 (20.00)	63.5 (2.50)	324 (12.75)	432 (17.00)	35 (1.38)	16	1.1/4	356 (14.00)	323.85 (12.75)	8 (0.31)	11.91 (0.47)	R53
300 (12.00)	559 (22.00)	66.7 (2.62)	381 (15.00)	489 (19.25)	35 (1.38)	20	1.1/4	413 (16.25)	381 (15.00)	8 (0.31)	11.91 (0.47)	R57
350 (14.00)	603 (23.75)	69.9 (2.75)	413 (16.25)	527 (20.75)	38 (1.50)	20	1.3/8	457 (18.00)	419.1 (16.50)	8 (0.31)	11.91 (0.47)	R61
400 (16.00)	686 (27.00)	76.2 (3.00)	470 (18.50)	603 (23.75)	41 (1.62)	20	1.1/2	508 (20.00)	469.9 (18.50)	8 (0.31)	11.91 (0.47)	R65
450 (18.00)	743 (29.25)	82.6 (3.25)	533 (21.00)	654 (25.75)	44 (1.75)	20	1.5/8	575 (22.62)	533 (21.00)	8 (0.31)	11.91 (0.47)	R69
500 (20.00)	813 (32.00)	88.9 (3.50)	584 (23.00)	724 (28.50)	44 (1.75)	24	1.5/8	635 (25.00)	584 (23.00)	9.5 (0.38)	13.49 (0.53)	R73
600 (24.00)	940 (37.00)	101.6 (4.00)	692 (27.25)	838 (33.00)	51 (2.00)	24	1.7/8	749 (29.50)	692 (27.25)	11.0 (0.44)	16.74 (0.66)	R77

Unit : mm (inch)

FLANGE DIMENSION



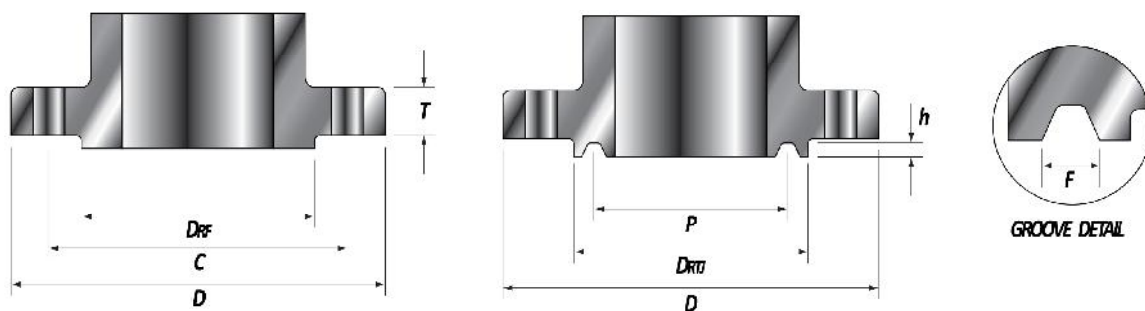
SIZE	FLG. DIA.	FLG. THK.	RF DIA.	DRILLING				RING JOINT					RING No.
				BOLT CIRCLE DIA.	HOLE DIA.	BOLT		RTJ DIA.	PITCH DIA.	GRV. DEPTH	GRV. WIDTH		
						NO.	Dia.					DRTJ	
D	T	Drf	C										
15 (0.50)	121 (4.75)	22.5 (0.88)	35 (1.38)	82.6 (3.25)	22 (0.88)	4	3/4	60.3 (2.38)	39.67 (1.56)	6.35 (0.25)	8.74 (0.34)	R12	
20 (0.75)	130 (5.12)	25.5 (1.00)	43 (1.69)	88.9 (3.50)	22 (0.88)	4	3/4	66.7 (2.62)	44.45 (1.75)	6.35 (0.25)	8.74 (0.34)	R14	
25 (1.00)	149 (5.88)	28.5 (1.12)	51 (2.00)	101.6 (4.00)	25 (1.00)	4	7/8	71 (2.81)	50.8 (2.00)	6.35 (0.25)	8.74 (0.34)	R16	
40 (1.50)	178 (7.00)	32 (1.25)	73 (2.88)	124 (4.88)	28 (1.12)	4	1	92 (3.62)	68.28 (2.69)	6.35 (0.25)	8.74 (0.34)	R20	
50 (2.00)	216 (8.50)	38.5 (1.50)	92 (3.62)	165 (6.50)	25 (1.00)	8	7/8	124 (4.88)	95.25 (3.75)	8 (0.31)	11.91 (0.47)	R24	
65 (2.50)	244 (9.62)	41.5 (1.63)	105 (4.12)	190.5 (7.50)	28 (1.12)	8	1	137 (5.38)	107.95 (4.25)	8 (0.31)	11.91 (0.47)	R27	
80 (3.00)	241 (9.50)	38.5 (1.50)	127 (5.00)	190.5 (7.50)	26 (1.00)	8	7/8	156 (6.12)	123.83 (4.88)	8 (0.31)	11.91 (0.47)	R31	
100 (4.00)	292 (11.50)	44.5 (1.75)	157 (6.19)	235 (9.25)	32 (1.25)	8	1.1/8	181 (7.25)	149.2 (5.88)	8 (0.31)	11.91 (0.47)	R37	
125 (5.00)	349 (13.75)	51 (2.00)	186 (7.31)	279.5 (11.00)	35 (1.37)	8	1.1/4	216 (8.50)	180.98 (7.13)	8 (0.31)	11.91 (0.47)	R41	
150 (6.00)	381 (15.00)	56 (2.19)	216 (8.50)	317.5 (12.50)	32 (1.25)	12	1.1/8	241 (9.50)	211.12 (8.31)	8 (0.31)	11.91 (0.47)	R45	
200 (8.00)	470 (18.50)	63.5 (2.50)	270 (10.62)	393.5 (15.50)	39 (1.50)	12	1.3/8	308 (12.25)	269.88 (10.63)	8 (0.31)	11.91 (0.47)	R49	
250 (10.00)	545 (21.50)	70 (2.75)	324 (12.75)	469.9 (18.50)	39 (1.50)	16	1.3/8	362 (14.25)	323.85 (12.75)	8 (0.31)	11.91 (0.47)	R53	
300 (12.00)	610 (24.00)	79.5 (3.13)	381 (15.00)	533.4 (21.00)	39 (1.50)	20	1.3/8	419 (16.50)	381 (15.00)	8 (0.31)	11.91 (0.47)	R57	
350 (14.00)	640 (25.25)	86 (3.38)	413 (16.25)	558.8 (22.00)	41 (1.62)	20	1.1/2	467 (18.38)	419.1 (16.50)	11.13 (0.44)	16.66 (11.13)	R62	
400 (16.00)	705 (27.75)	89 (3.50)	47 (18.50)	615.9 (24.25)	44 (1.75)	20	1.5/8	524 (20.62)	469.9 (18.50)	11.13 (0.44)	16.66 (11.13)	R66	
450 (18.00)	787 (31.00)	102 (4.00)	533 (21.00)	686 (27.00)	51 (2.00)	20	1.7/8	594 (23.38)	533 (21.00)	12.70 (0.50)	19.84 (0.78)	R70	
500 (20.00)	857 (33.75)	108 (4.25)	584 (23.00)	749 (29.50)	54 (2.12)	20	2	648 (25.50)	584 (23.00)	12.70 (0.50)	19.84 (0.78)	R74	
600 (24.00)	1041 (41.00)	140 (5.50)	692 (27.25)	902 (35.50)	67 (2.62)	20	2.1/2	772 (30.38)	692 (27.25)	15.88 (0.63)	26.97 (1.06)	R78	

Unit : mm (inch)

CLASS 900 - ASME / ANSI B16.5

GLT VALVES

FLANGE DIMENSION



SIZE	FLG. DIA.	FLG. THK.	RF DIA.	DRILLING				RING JOINT				RING No.
				BOLT CIRCLE DIA.	HOLE DIA.	BOLT		RTJ DIA.	PITCH DIA.	GRV. DEPTH	GRV. WIDTH	
						NO.	Dia.					
D	T	DRF	C									
15 (0.50)	121 (4.75)	22.5 (0.88)	35 (1.38)	82.6 (3.25)	22 (0.88)	4	3/4	60.3 (2.38)	39.67 (1.56)	6.35 (0.25)	8.74 (0.34)	R12
20 (0.75)	130 (5.12)	25.5 (1.00)	43 (1.69)	88.9 (3.50)	22 (0.88)	4	3/4	66.7 (2.62)	44.45 (1.75)	6.35 (0.25)	8.74 (0.34)	R14
25 (1.00)	149 (5.88)	28.5 (1.12)	51 (2.00)	101.6 (4.00)	25 (1.00)	4	7/8	71 (2.81)	50.80 (2.00)	6.35 (0.25)	8.74 (0.34)	R16
40 (1.50)	178 (7.00)	32.0 (1.25)	73 (2.88)	124 (4.88)	28 (1.12)	4	1	92 (3.62)	68.28 (2.69)	6.35 (0.25)	8.74 (0.34)	R20
50 (2.00)	216 (8.50)	38.5 (1.50)	92 (3.62)	165 (6.50)	25 (1.00)	8	7/8	124 (4.88)	95.25 (3.75)	8 (0.31)	11.91 (0.47)	R24
65 (2.50)	244 (9.62)	41.5 (1.63)	105 (4.12)	190.5 (7.50)	28 (1.12)	8	1	137 (5.38)	107.95 (4.25)	8 (0.31)	11.91 (0.47)	R27
80 (3.00)	267 (10.50)	48 (1.87)	127 (5.00)	203 (8.00)	32 (1.25)	8	1.1/8	168 (6.63)	136.52 (5.38)	8 (0.31)	11.91 (0.47)	R35
100 (4.00)	311 (12.25)	54 (2.12)	157 (6.19)	241.5 (9.50)	35 (1.38)	8	1.1/4	194 (7.63)	161.92 (6.38)	8 (0.31)	11.91 (0.47)	R39
150 (6.00)	394 (15.50)	83 (3.25)	216 (8.50)	317.5 (12.50)	39 (1.50)	12	1.3/8	248 (9.75)	211.12 (8.31)	9.6 (0.37)	13.49 (0.53)	R46
200 (8.00)	483 (19.00)	92 (3.62)	270 (10.62)	393.5 (15.50)	45 (1.75)	12	1.5/8	318 (12.50)	269.88 (10.63)	11.13 (0.44)	16.66 (0.66)	R50
250 (10.00)	585 (23.00)	108 (4.25)	324 (12.75)	482.6 (19.00)	51 (2.00)	12	1.7/8	371 (14.63)	323.85 (12.75)	11.13 (0.44)	16.66 (0.66)	R54
300 (12.00)	675 (26.50)	124 (4.87)	381 (15.00)	571.5 (22.50)	54 (2.13)	16	2	438 (17.25)	381 (15.00)	14.3 (0.56)	23.01 (0.91)	R58
350 (14.00)	750 (29.50)	133.5 (5.25)	413 (16.25)	635 (25.00)	61 (2.38)	16	2.1/4	489 (19.25)	419.1 (16.50)	15.9 (0.62)	26.98 (1.06)	R63
400 (16.00)	825 (32.50)	146.5 (5.75)	470 (18.50)	704.8 (27.75)	67 (2.63)	16	2.1/2	546 (21.50)	469.9 (18.50)	17.5 (0.69)	30.18 (1.19)	R67
50 (2.00)	235 (9.25)	51 (2.00)	92 (3.62)	171.5 (6.75)	28 (1.12)	8	1	133 (5.25)	101.6 (4.00)	7.92 (0.31)	11.94 (0.47)	R26
65 (2.50)	267 (10.50)	57.5 (2.25)	105 (4.12)	196.9 (7.75)	32 (1.25)	8	1.1/8	149 (5.88)	111.13 (4.38)	9.53 (0.38)	13.49 (0.53)	R28
80 (3.00)	305 (12.00)	67 (2.62)	127 (5.00)	228.6 (9.00)	35 (1.38)	8	1.1/4	168 (6.62)	127 (5.00)	9.53 (0.38)	13.49 (0.53)	R32
100 (4.00)	356 (14.00)	76.5 (3.00)	157 (6.19)	273.1 (10.75)	41 (1.62)	8	1.1/2	203 (8.00)	157.18 (6.19)	11.13 (0.44)	16.66 (0.66)	R38
150 (6.00)	483 (19.00)	108 (4.25)	216 (8.50)	368.3 (14.50)	54 (2.12)	8	2	279 (11.00)	228.6 (9.00)	12.7 (0.50)	19.84 (0.78)	R47
200 (8.00)	552 (21.75)	127 (5.00)	270 (10.62)	438.2 (17.25)	54 (2.12)	12	2	340 (13.38)	279.4 (11.00)	14.27 (0.56)	23.01 (0.91)	R51
250 (10.00)	673 (26.50)	165.5 (6.50)	324 (12.75)	539.8 (21.25)	67 (2.62)	12	2.1/2	425 (16.75)	342.9 (13.50)	17.48 (0.69)	30.18 (1.19)	R55
300 (12.00)	762 (30.00)	184.5 (7.25)	381 (15.00)	619.3 (24.38)	73 (2.88)	12	2.3/4	495 (19.50)	406.4 (16.00)	17.48 (0.69)	30.32 (1.31)	R60

Unit : mm (inch)

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