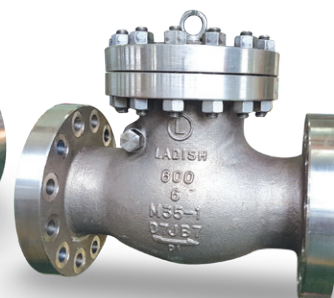




CE & ISO 9001 승인 제조업체

HANYOUNG VALVE



한영밸브
HANYOUNG VALVE

INTRODUCTION

Hanyoung valve (HY valve) was established in 2005 and HY valve has been growing up as a top quality valve manufacturer in Korea, especially stainless steel, Alloy steel materials.

HY valve is full of experienced staff & workers and well organized with drawing, casting, machining, assembling, testing and inspection based on quality systems.

HY valve has been an exclusive partner of Ladish valves (USA) since 2015 and supplying top quality valves to Oil, Gas, Petrochemical, Chemical industries and meet all required standard of API, ANSI.

HY valve is, as new growing & leading valve manufacturer, promising most competitive price and best delivery time, surely with top quality valves.

We would like to express our sincere appreciation to your support and we will do our best to achieve mutual profit with you as best partner.

Sincerely yours, **Hanlyong, Kim**





CE Cert

ISO Cert

벤처기업확인서

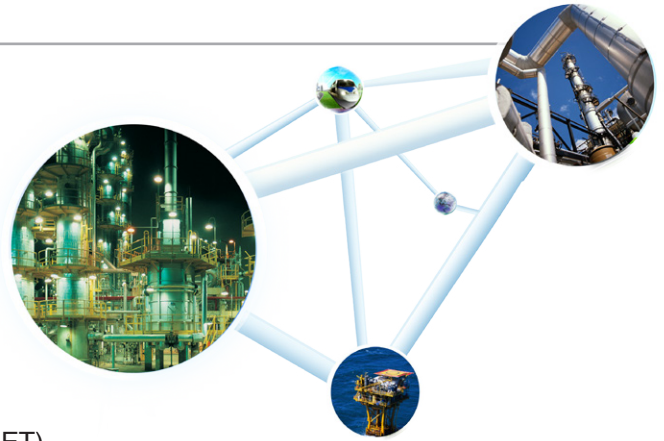
상표등록증



1M, 3M, 5M & 10M Export



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Brief History

- 2005** ▶ - HANYOUNG VALVE established
1st factory established
- 2007** ▶ - acquired ISO 9001
- Venture Business Company appointed
- 2011** ▶ - renewal of ISO 9001
- 2014** ▶ - acquired CE certificate (Cert. No. EC1282.1S140519.HYVQT93)
- supplied to DOW Chemical, USA (CT15C - applied arcmet PMI, PT & RT)
- awarded "1 Million US Dollar Export Tower
- 2015** ▶ - Supplied to USA (CG3M & CG8M - (applied PMI, PT & RT)
- Supplied 20" (ALLOY 31) to SINGAPORE
- Exclusive agreement with Ladish valves, USA
- 2017** ▶ - Moved to new current factory
- awarded "3 Million US Dollar Export Tower
- 2018** ▶ - awarded "5 Million US Dollar Export Tower
- 2019** ▶ - Supplied to USA (Cu5MCuC - applied PMI, PT)
- awarded "10 Million US Dollar Export Tower
- 2014 ~2018** ▶ - Approved by lots of end users.
oil, chemical and gas sectors.



Main Products

Gate valves

Type	150#	300#	600#	900#	1500#	2500#
BB	2" ~ 48"	2" ~ 36"	2" ~ 30"	2" ~ 24"	2" ~ 16"	2" ~ 12"
PSB	-	-	2" ~ 24"	2" ~ 24"	2" ~ 16"	2" ~ 12"
Cryogenic	2" ~ 18"	2" ~ 18"	2" ~ 18"	-	-	-

Globe valves

Type	150#	300#	600#	900#	1500#	2500#
BB	2" ~ 18"	2" ~ 16"	2" ~ 16"	2" ~ 16"	2" ~ 16"	2" ~ 12"
PSB	-	-	2" ~ 16"	2" ~ 16"	2" ~ 14"	2" ~ 12"
Cryogenic	2" ~ 8"	2" ~ 8"	2" ~ 8"	-	-	-

Check valves

Type	150#	300#	600#	900#	1500#	2500#
BB	2" ~ 36"	2" ~ 36"	2" ~ 30"	2" ~ 24"	2" ~ 24"	2" ~ 12"
PSC	-	-	2" ~ 24"	2" ~ 24"	2" ~ 24"	2" ~ 12"
Cryogenic	2" ~ 36"	2" ~ 36"	2" ~ 30"	-	-	-



주조 공정도 (Casting process diagram) & 생산 공정도 (Manufacturing process diagram)

주조 공정도 (Casting process diagram)



용해 공정 (Melting)



조 형 (Molding)



몰드 건조 (Mold dry)



중자 삽입 (Insert core)



탈 사 (Shaking out)



주 입 (Pouring)



출 탕 (Tapping)



합 형 (Assembling)



절단 (Gas cutting)
가우징 (Gouging)



쇼 트 (shot blast)



사 상 (Grinding)



열처리 (Heat treatment)



당사 입고 (Receiving to our company)



포 장 (Packing)



PT

생산 공정도 (Manufacturing process diagram)



주물 입고 검사
(Foundry receiving inspection)



PT



선반 가공 (Lathe processing)



드릴 가공 (Drill processing)



세척 (Cleaning)



디스크 가공 (Disk processing)



연마 (Grinding)



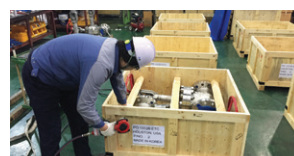
치수 검사
(Dimensional inspection)



조 립 (Assembly)



수압 검사 (Hydro-test)



포 장 (Packing)



출 고 (Released)

GATE VALVES

- Basic design : API 603, API 600, ASME B16.34, Intergral seat type
- Flange drilling : ANSI B16.5 (2"~24"), ASME B16.47 Series.A(26"over)
- Face to face : ANSI B16.10
- Test : API 598

① BODY

The body is in cast stainless steel and is carefully designed in all its details. The basic dimension, i.e. wall thickness, face to face and flanges comply with the relevant API and ANSI standards. The sealing surfaces for connection to the bonnet are flat finish in the 150lb Class, recessed in the 300lb, 600lb Class or may be ring joint in the 900lb Class and above. Bosses may be provided for drain taps or by-pass piping.

② BONNET

The bonnet is in stainless steel. It is machined to accept the yoke sleeve and incorporates a stuffing box dimension in accordance with the API standard.

③ DISC

The disc is part of the trim. It is normally supplied as flexible. It is connected to the stem by means of a T-joint. The guides on each side of the disc are casted for proper alignment with the body guides. Special attention is given to the seating surface which are ground and lapped to insure a perfectly tight seal.

④ STEM

The stem is part of the trim. A stem is provided with a T-head. A ground backseat is provided to ensure perfectly tight seal to the stuffing box when the valve is fully open. The stem is ground to minimize friction and prevent damage to gland packing. The threading is trapezoidal ACME type. Dimensions comply with the applicable standard.

⑭ YOKE SLEEVE

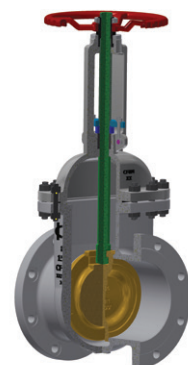
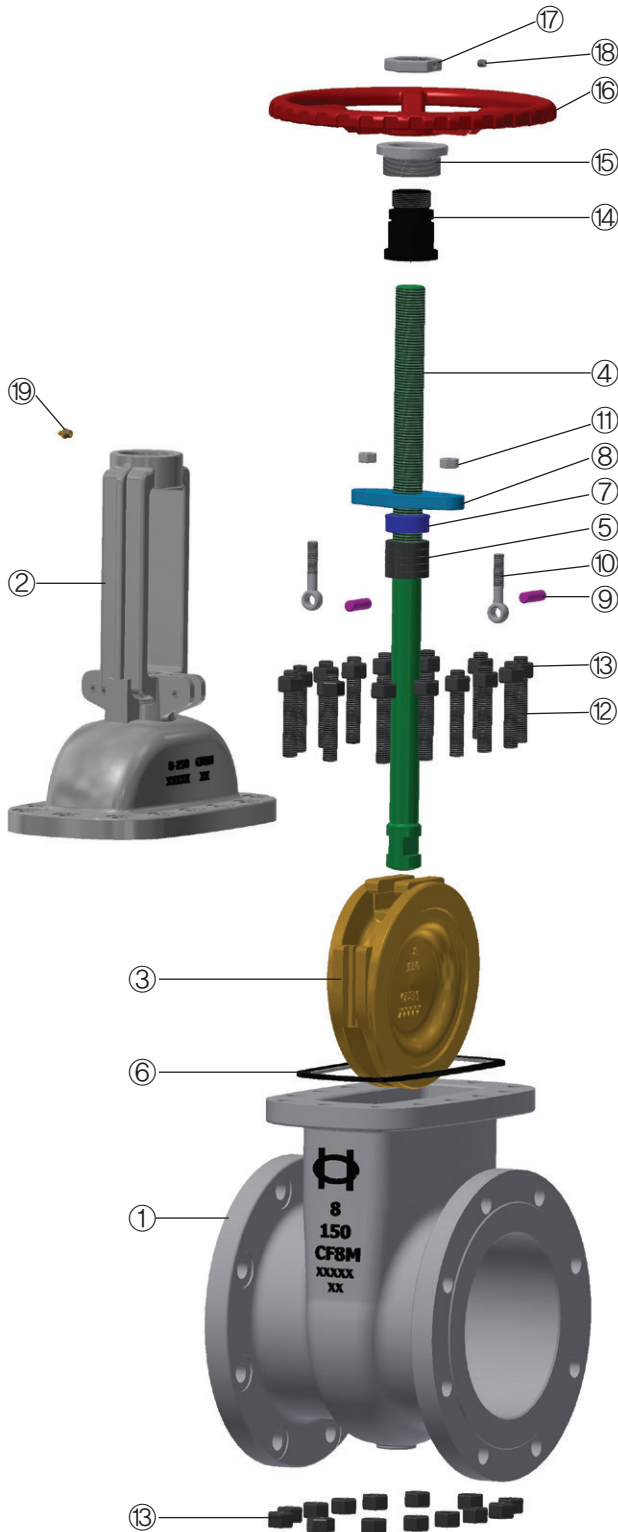
The yoke sleeve is made from stainless steel or ductile iron having high resistance to wear and a high melting point. It is designed to permit removal from the bonnet or the yoke while the valve is in service. Gate valves 6" 600lb Class and above are fitted with a ball thrust bearing.

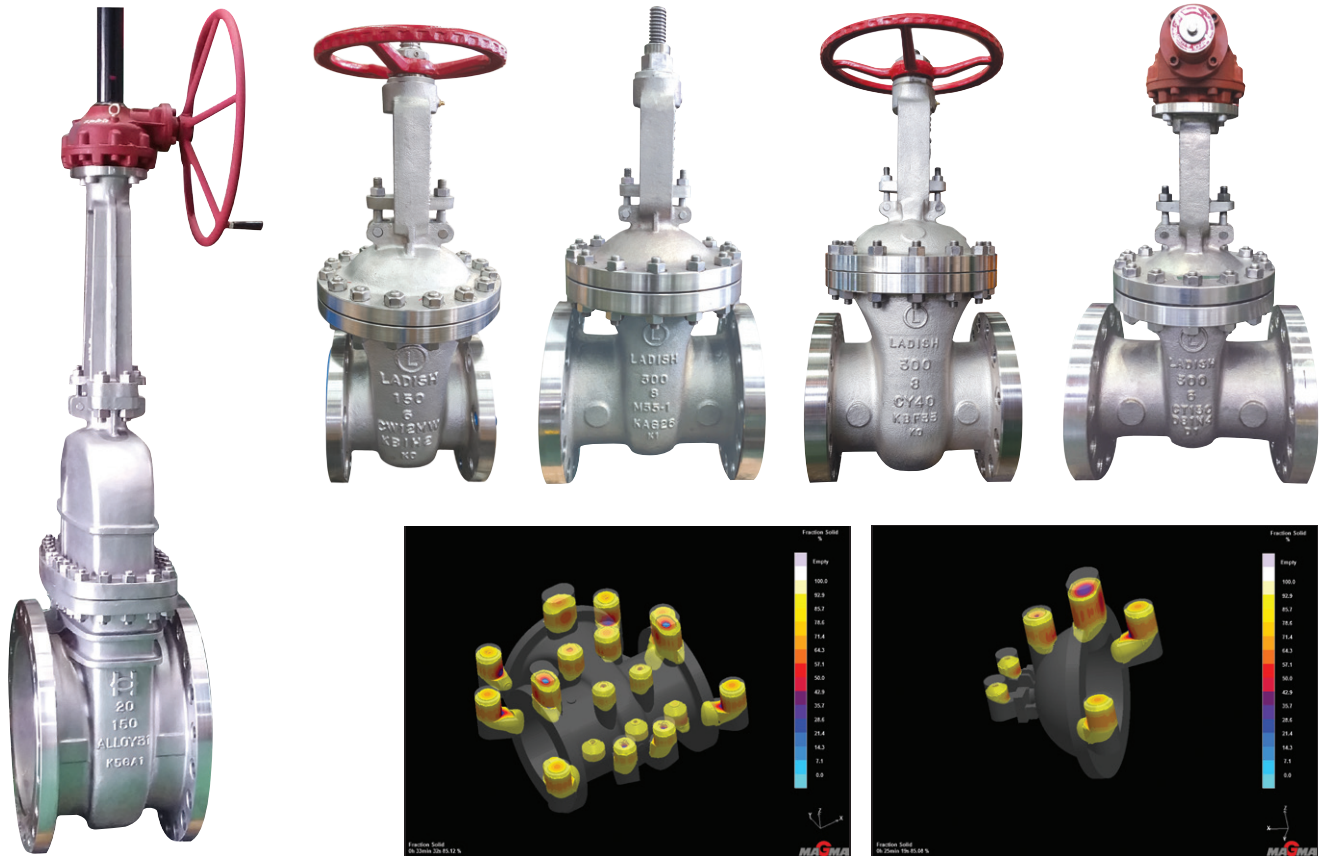
⑫, ⑬ BONNET BOLT/NUT

Bonnet studs and nuts are manufactured from alloy or stainless steel to the relevant ASTM standard.

⑯ HANDWHEEL

The steel or nodular iron handwheels are well shaped and large enough to give ease of movement when operating the valve, even under maximum differential pressure.



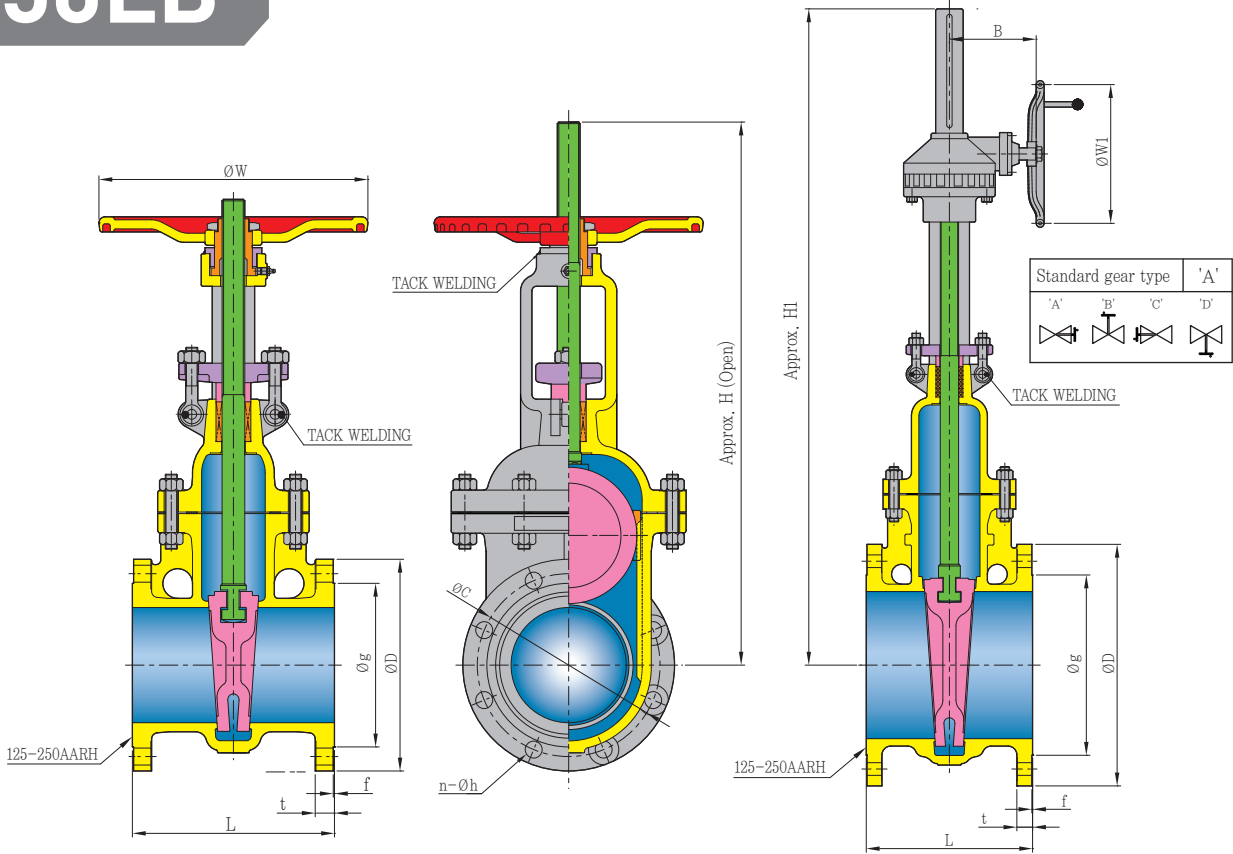


No	Name of Part	ASTM specification											
		Cast Stainless steel				Cast Duplex steel				Cast Alloy steel			
1	BODY	A351 CF8	A351 CF8M	A351 CG8M	A351 CF8C	A995 CD3MN	A995 CD4MCUN	A995 CE3MN	A995 CD3MWCUN	A351 CN7M	A494 CW6MC	A494 M35-1	A494 CW12MW
2	BONNET	A351 CF8	A351 CF8M	A351 CG8M	A351 CF8C	A995 CD3MN	A995 CD4MCUN	A995 CE3MN	A995 CD3MWCUN	A351 CN7M	A494 CW6MC	A494 M35-1	A494 CW12MW
3	DISC	A351 CF8	A351 CF8M	A351 CG8M	A351 CF8C	A995 CD3MN	A995 CD4MCUN	A995 CE3MN	A995 CD3MWCUN	A351 CN7M	A494 CW6MC	A494 M35-1	A494 CW12MW
4	STEM	A276 304	A276 316	A276 317L	A276 347	A182 F51	A182 F61	A182 F53	A182 F55	ALLOY20	ALLOY 625	K400	C276
5	PACKING	TEADIT/ PILLAR	TEADIT/ PILLAR	TEADIT/ PILLAR	TEADIT/ PILLAR	TEADIT/ PILLAR	TEADIT/ PILLAR	TEADIT/ PILLAR	TEADIT/ PILLAR	TEADIT/ PILLAR	TEADIT/ PILLAR	TEADIT/ PILLAR	TEADIT/ PILLAR
6	GASKET	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL
7	GLAND RING	A276 304	A276 316	A276 317L	A276 347	A182 F51	A182 F61	A182 F53	A182 F55	ALLOY20	ALLOY 625	K400	C276
8	GLAND FLANGE	A351 CF8 / SS304	A351 CF8 / SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304
9	HINGE PIN	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304
10	HINGE BOLT	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8
11	HINGE NUT	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8
12	BONNET BOLT	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8
13	BONNET NUT	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8
14	YOKE SLEEVE	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C
15	SLEEVE NUT	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304
16	HANDWHEEL	A536 60	A536 60	A536 60	A536 60	A536 60	A536 60	A536 60	A536 60	A536 60	A536 60	A536 60	A536 60
17	HANDLE NUT	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304
18	SET BOLT	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304
19	GREASE NIPPLE	A307 B	A307 B	A307 B	A307 B	A307 B	A307 B	A307 B	A307 B	A307 B	A307 B	A307 B	A307 B
20	BEARING	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL
21	YOKE	A351 CF8	A351 CF8	A351 CF8	A351 CF8	A351 CF8	A351 CF8	A351 CF8	A351 CF8	A351 CF8	A351 CF8	A351 CF8	A351 CF8
22	YOKE BOLT	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8
23	YOKE NUT	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8

Note. - Packing & gasket material ; customer's requirements

GATE VALVES

150LB



unit ; mm

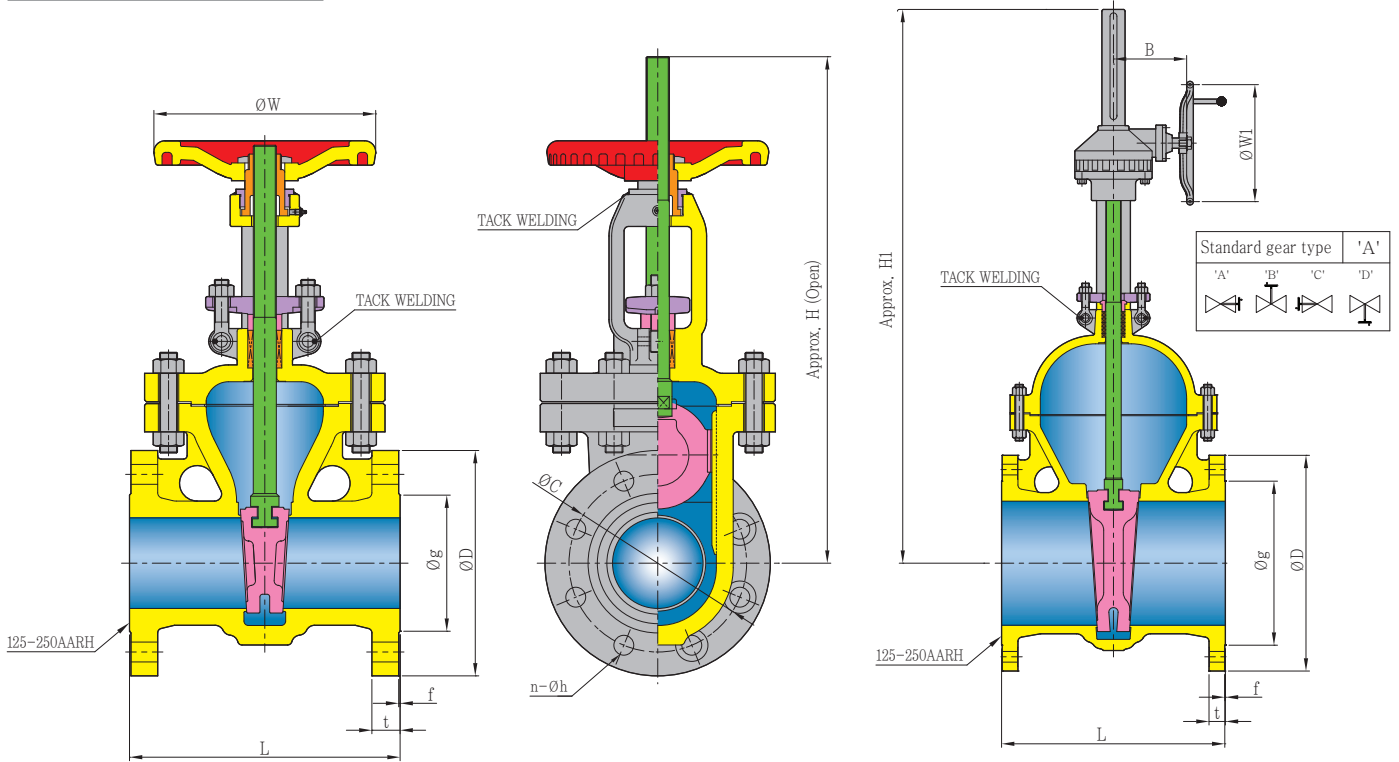
unit ; inch

Size	L		ØD	ØC	Øg	n	Øh	t	f	Handle		Gear box			Weight (kg)		Size	L		ØD	ØC	Øg	n	Øh	t	f	Handle		Gear box			Weight (lb)	
	RF	BW								ØW	H	B	ØW1	H1	RF	BW		ØW	H								B	ØW1	H1	RF	BW		
50	178	216	152.0	120.5	92.0	4	19	15.9	1.6	180	360	-	-	-	16.5	15.5	2"	7.01	8.50	5.98	4.74	3.62	4	0.75	0.63	0.06	7.09	14.17	-	-	-	36.4	34.2
65	190	241	178.0	139.5	105.0	4	19	17.5	1.6	180	410	-	-	-	24.3	20.4	2 1/2"	7.48	9.49	7.01	5.49	4.13	4	0.75	0.69	0.06	7.09	16.14	-	-	-	53.5	44.9
80	203	282	190.0	152.5	127.0	4	19	19.1	1.6	200	440	-	-	-	27.2	25.2	3"	7.99	11.10	7.48	6.00	5.00	4	0.75	0.75	0.06	7.87	17.32	-	-	-	59.9	55.6
100	229	305	229.0	190.5	157.0	8	19	23.9	1.6	224	540	-	-	-	39.8	36.9	4"	9.02	12.01	9.02	7.50	6.18	8	0.75	0.94	0.06	8.82	21.26	-	-	-	87.7	81.3
125	254	381	254.0	216.0	186.0	8	22	23.9	1.6	250	635	-	-	-	50.4	45.6	5"	10.00	15.00	10.00	8.50	7.32	8	0.87	0.94	0.06	9.84	25.00	-	-	-	111.2	100.5
150	267	403	279.0	241.5	216.0	8	22	25.4	1.6	280	735	-	-	-	66.9	58.2	6"	10.51	15.87	10.98	9.51	8.50	8	0.87	1.00	0.06	11.02	28.94	-	-	-	147.6	128.3
200	292	419	343.0	298.5	270.0	8	22	28.6	1.6	315	945	-	-	-	104.8	89.2	8"	11.50	16.50	13.50	11.75	10.63	8	0.87	1.13	0.06	12.40	37.20	-	-	-	231.0	196.7
250	330	457	406.0	362.0	324.0	12	25	30.2	1.6	355	1150	165	300	1300	157.1	136.8	10"	12.99	17.99	15.98	14.25	12.76	12	0.98	1.19	0.06	13.98	45.28	6.50	11.81	51.18	346.4	301.5
300	356	502	483.0	432.0	381.0	12	25	31.8	1.6	400	1350	165	300	1500	226.0	205.6	12"	14.02	19.76	19.02	17.01	15.00	12	0.98	1.25	0.06	15.75	53.15	6.50	11.81	59.06	498.3	453.4
350	381	572	533.0	476.0	413.0	12	29	35.0	1.6	500	1600	190	400	1600	358.9	329.8	14"	15.00	22.52	20.98	18.74	16.26	12	1.14	1.38	0.06	19.69	62.99	7.48	15.75	62.99	791.2	727.1
400	406	610	597.0	539.5	470.0	16	29	36.6	1.6	500	1750	205	500	1850	518.0	488.9	16"	15.98	24.02	23.50	21.24	18.50	16	1.14	1.44	0.06	19.69	68.90	8.07	19.69	72.83	1142.0	1077.8
450	432	660	635.0	578.0	533.0	16	32	39.7	1.6	560	1950	205	500	2050	698.4	615.0	18"	17.01	25.98	25.00	22.76	20.98	16	1.26	1.56	0.06	22.05	76.77	8.07	19.69	80.71	1539.7	1355.8
500	457	711	698.0	635.0	584.0	20	32	42.9	1.6	710	2150	225	630	2300	814.8	709.1	20"	17.99	27.99	27.48	25.00	22.99	20	1.26	1.69	0.06	27.95	84.65	8.86	24.80	90.55	1796.3	1563.2
600	508	813	749.5	692.0	620.0	20	35	47.7	1.6	710	2550	225	630	2800	1506.4	1359.9	24"	20.00	32.01	32.01	29.51	27.24	20	1.38	1.88	0.06	27.95	100.39	8.86	24.80	110.24	3321.1	2998.2
750	610	914	984.3	914.4	857.3	28	35	74.7	1.6	-	-	250	710	3250	2240.7	2163.1	30"	24.02	35.98	38.75	36.00	33.75	28	1.38	2.94	0.06	-	-	9.84	27.95	127.95	4939.9	4768.8
900	711	1016	1168.4	1085.9	1022.4	32	41	90.4	1.6	-	-	310	800	3620	4285.5	4152.6	36"	27.99	40.00	46.00	42.75	40.25	32	1.61	3.56	0.06	-	-	12.20	31.50	142.52	9447.8	9154.8
1000	762	1067	1289.1	1200.0	1124.0	36	41	90.4	1.6	-	-	335	900	4050	4561.9	4106.0	40"	30.00	42.01	50.75	47.24	44.25	36	1.61	3.56	0.06	-	-	13.19	35.43	159.45	10057.3	9052.2
1050	813	1092	1346.2	1257.3	1193.8	36	41	96.8	1.6	-	-	335	900	4350	4595.9	4390.2	42"	32.01	42.99	53.00	49.50	47.00	36	1.61	3.81	0.06	-	-	13.19	35.43	171.26	10132.1	9678.8
1200	864	1168	1511.3	1422.4	1358.9	44	41	108	1.6	-	-	380	900	5200	6896.7	6207.0	48"	34.02	45.98	59.50	56.00	53.50	44	1.61	4.25	0.06	-	-	14.96	35.43	204.72	15204.6	13684.2

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5.
 - Please contact for other sizes.

- Flange drilling 26" over is ASME B16.47 series.A
 - This dimension can be changed without notification.

300LB



unit ; mm

unit ; inch

Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box			Weight (kg)		Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box			Weight (lb)	
	RF	BW	RTJ								ϕW	H	B	$\phi W1$	H1	RF	BW		RF	BW	RTJ								ϕW	H	B	$\phi W1$	H1	RF	BW
50	216	216	232	165.0	127.0	92.0	8	19	22.3	1.6	200	360	-	-	-	22.3	20.4	2"	8.50	8.50	9.13	6.50	5.00	3.62	8	0.75	0.88	0.06	7.87	14.17	-	-	-	49.2	44.9
65	241	241	257	190.0	149.0	105.0	8	22	25.4	1.6	200	445	-	-	-	36.9	31.0	2 1/2"	9.49	9.49	10.12	7.48	5.87	4.13	8	0.87	1.00	0.06	7.87	17.52	-	-	-	81.3	68.4
80	282	282	298	210.0	168.0	127.0	8	22	28.6	1.6	250	480	-	-	-	43.7	38.8	3"	11.10	11.10	11.73	8.27	6.61	5.00	8	0.87	1.13	0.06	9.84	18.90	-	-	-	96.2	85.5
100	305	305	321	254.0	200.0	157.0	8	22	31.8	1.6	280	570	-	-	-	59.2	40.7	4"	12.01	12.01	12.64	10.00	7.87	6.18	8	0.87	1.25	0.06	11.02	22.44	-	-	-	130.4	89.8
125	381	381	397	279.0	235.0	186.0	8	22	35.0	1.6	280	700	-	-	-	97.0	78.6	5"	15.00	15.00	15.63	10.98	9.25	7.32	8	0.87	1.38	0.06	11.02	27.56	-	-	-	213.8	173.2
150	403	403	419	318.0	270.0	216.0	12	22	36.6	1.6	355	780	-	-	-	118.3	114.5	6"	15.87	15.87	16.50	12.52	10.63	8.50	12	0.87	1.44	0.06	13.98	30.71	-	-	-	260.9	252.3
200	419	419	435	381.0	330.0	270.0	12	25	41.3	1.6	400	1010	-	-	-	181.4	145.5	8"	16.50	16.50	17.13	15.00	12.99	10.63	12	0.98	1.63	0.06	15.75	39.76	-	-	-	399.9	320.8
250	457	457	473	444.0	387.5	324.0	16	29	47.7	1.6	500	1170	190	400	1300	281.3	217.3	10"	17.99	17.99	18.62	17.48	15.26	12.76	16	1.14	1.88	0.06	19.69	46.06	7.48	15.75	51.18	620.2	479.0
300	502	502	518	521.0	451.0	381.0	16	32	50.8	1.6	500	1550	190	400	1480	442.3	353.1	12"	19.76	19.76	20.39	20.51	17.76	15.00	16	1.26	2.00	0.06	19.69	61.02	7.48	15.75	58.27	975.1	778.4
350	762	762	778	584.0	514.5	413.0	20	32	54.0	1.6	630	1600	205	500	1700	701.3	532.5	14"	30.00	30.00	30.63	22.99	20.26	16.26	20	1.26	2.13	0.06	24.80	62.99	8.07	19.69	66.93	1546.1	1174.0
400	838	838	854	648.0	571.5	470.0	20	35	57.2	1.6	630	1740	205	500	1850	1052.5	839.1	16"	32.99	32.99	33.62	25.51	22.50	18.50	20	1.38	2.25	0.06	24.80	68.50	8.07	19.69	72.83	2320.3	1849.8
450	914	914	930	711.0	628.5	533.0	24	35	60.4	1.6	-	-	225	630	2150	1356.1	1161.1	18"	35.98	35.98	36.61	27.99	24.74	20.98	24	1.38	2.38	0.06	-	-	8.86	24.80	84.65	2989.6	2559.8
500	991	991	1010	775.0	686.0	584.0	24	35	63.5	1.6	-	-	225	630	2400	1548.1	1313.4	20"	39.02	39.02	39.76	30.51	27.01	22.99	24	1.38	2.50	0.06	-	-	8.86	24.80	94.49	3413.0	2895.5
600	1143	1143	1165	914.0	813.0	692.0	24	41	69.9	1.6	-	-	250	710	2800	2333.8	1953.6	24"	45.00	45.00	45.87	35.98	32.01	27.24	24	1.61	2.75	0.06	-	-	9.84	27.95	110.24	5145.2	4306.9
700	1346	1346	1372	1035.0	940.0	800.0	28	45	85.9	1.6	-	-	335	900	3200	3550.2	3020.6	28"	52.99	52.99	54.02	40.75	37.01	31.50	28	1.77	3.38	0.06	-	-	13.19	35.43	125.98	7826.9	6659.2
750	1397	1397	1422	1092.0	997.0	857.3	28	45	92.0	1.6	-	-	335	900	3600	4258.3	3890.7	30"	55.00	55.00	55.98	42.99	39.25	33.75	28	1.77	3.62	0.06	-	-	13.19	35.43	141.73	9387.9	8577.5
900	1727	1727	1756	1270.0	1168.4	1022.4	32	54	104.7	1.6	-	-	380	900	4200	6644.5	5749.2	36"	67.99	67.99	69.13	50.00	46.00	40.25	32	2.13	4.12	0.06	-	-	14.96	35.43	165.35	14648.6	12674.8

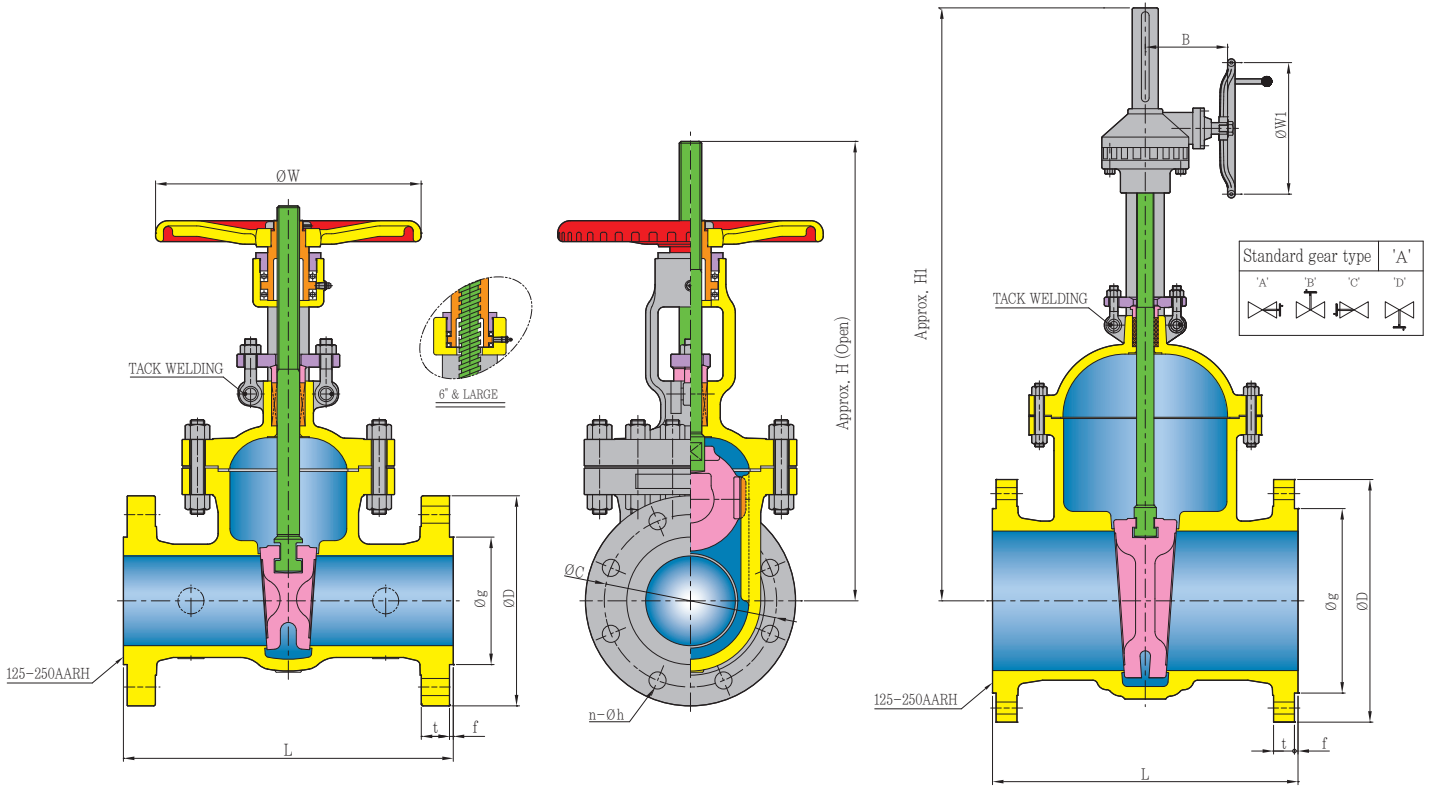
Note.

- Flange drilling 2" ~ 24" is ANSI B16.5.
- Please contact for other sizes.

- Flange drilling 26" over is ASME B16.47 series.A
- This dimension can be changed without notification.

GATE VALVES

600LB



unit ; mm

unit ; inch

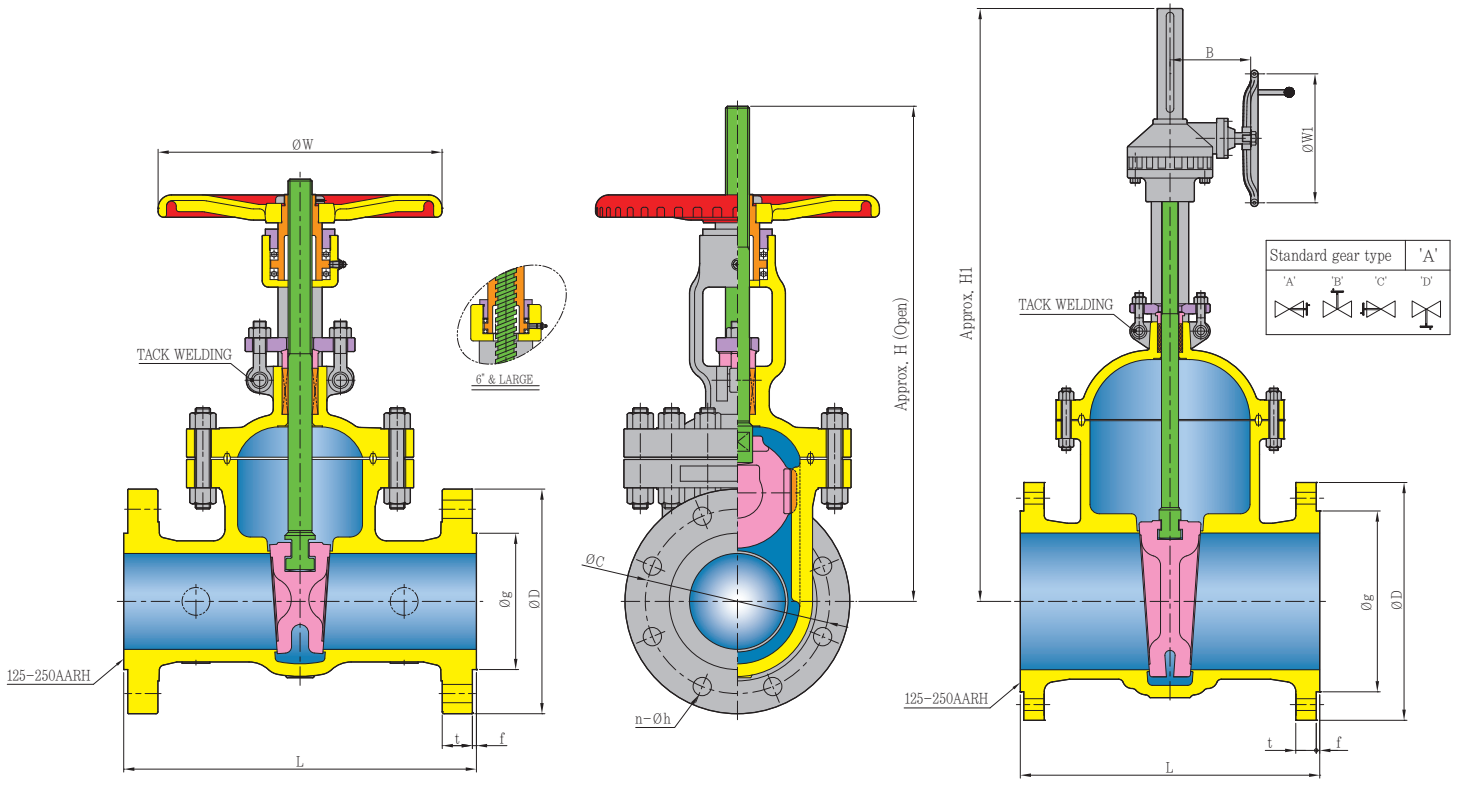
Size	L			ϕD	ϕC	ϕ_g	n	ϕh	t	f	Handle		Gear box			Weight (kg)		Size	L			ϕD	ϕC	ϕ_g	n	ϕh	t	f	Handle		Gear box			Weight (lb)	
	RF	BW	RTJ								ϕW	H	B	$\phi W1$	H1	RF	BW		ϕW	H	B								$\phi W1$	H1	RF	BW	ϕW	H	B
50	292	292	295	165.0	127.0	92.0	8	19	25.4	6.4	224	400	-	-	-	41.7	27.2	2"	11.50	11.50	11.61	6.50	5.00	3.62	8	0.75	1.00	0.25	8.82	15.75	-	-	-	92.0	59.9
65	330	330	333	190.0	149.0	105.0	8	22	28.6	6.4	224	454	-	-	-	58.2	43.7	2 1/2"	12.99	12.99	13.11	7.48	5.87	4.13	8	0.87	1.13	0.25	8.82	17.87	-	-	-	128.3	96.2
80	356	356	359	210.0	168.0	127.0	8	22	31.8	6.4	315	515	-	-	-	67.9	58.2	3"	14.02	14.02	14.13	8.27	6.61	5.00	8	0.87	1.25	0.25	12.40	20.28	-	-	-	149.7	128.3
100	432	432	435	273.0	216.0	157.0	8	25	38.1	6.4	355	630	-	-	-	130.0	100.9	4"	17.01	17.01	17.13	10.75	8.50	6.18	8	0.98	1.50	0.25	13.98	24.80	-	-	-	286.6	222.4
150	559	559	562	356.0	292.0	216.0	12	29	47.7	6.4	500	1010	-	-	-	276.5	198.9	6"	22.01	22.01	22.13	14.02	11.50	8.50	12	1.14	1.88	0.25	19.69	39.76	-	-	-	609.5	438.4
200	660	660	664	419.0	349.0	270.0	12	32	55.6	6.4	500	1160	-	-	-	434.6	303.6	8"	25.98	25.98	26.14	16.50	13.74	10.63	12	1.26	2.19	0.25	19.69	45.67	-	-	-	958.0	669.3
250	787	787	791	508.0	432.0	324.0	16	35	63.5	6.4	630	1300	205	500	1400	659.6	519.0	10"	30.98	30.98	31.14	20.00	17.01	12.76	16	1.38	2.50	0.25	24.80	51.18	8.07	19.69	55.12	1454.2	1144.1
300	838	838	841	559.0	489.0	381.0	20	35	66.7	6.4	-	-	225	630	1570	1055.4	946.7	12"	32.99	32.99	33.11	22.01	19.25	15.00	20	1.38	2.63	0.25	-	-	8.86	24.80	61.81	2326.7	2087.2
350	889	889	892	603.0	527.0	413.0	20	38	69.9	6.4	-	-	225	630	1832	1272.6	1087.4	14"	35.00	35.00	35.12	23.74	20.75	16.26	20	1.50	2.75	0.25	-	-	8.86	24.80	72.13	2805.7	2397.2
400	991	991	994	686.0	603.0	470.0	20	41	76.2	6.4	-	-	250	710	2000	1824.6	1565.6	16"	39.02	39.02	39.13	27.01	23.74	18.50	20	1.61	3.00	0.25	-	-	9.84	27.95	78.74	4022.5	3451.5
450	1092	1092	1095	743.0	654.0	533.0	20	45	82.6	6.4	-	-	310	800	2150	2295.0	1979.8	18"	42.99	42.99	43.11	29.25	25.75	20.98	20	1.77	3.25	0.25	-	-	12.20	31.50	84.65	5059.7	4364.6
500	1194	1194	1200	813.0	724.0	584.0	24	45	88.9	6.4	-	-	310	800	2350	3102.1	2701.5	20"	47.01	47.01	47.24	32.01	28.50	22.99	24	1.77	3.50	0.25	-	-	12.20	31.50	92.52	6838.9	5955.7
600	1397	1397	1406	940.0	838.0	692.0	24	51	102.0	6.4	-	-	335	900	2900	4607.5	4035.2	24"	55.00	55.00	55.35	37.01	32.99	27.24	24	2.01	4.02	0.25	-	-	13.19	35.43	114.17	10157.8	8896.1
700	1549	1549	1562	1073.2	985.2	800.0	28	54	111.3	6.4	-	-	380	900	3400	5869.5	5369.0	28"	60.98	60.98	61.50	42.25	38.79	31.50	28	2.13	4.38	0.25	-	-	14.96	35.43	133.86	12940.0	11836.5
750	1651	1651	1664	1130.3	1022.4	857.3	28	54	114.3	6.4	-	-	440	1000	3740	6736.7	5841.3	30"	65.00	65.00	65.51	44.50	40.25	33.75	28	2.13	4.50	0.25	-	-	17.32	39.37	147.24	14851.8	12877.9

Note.

- Flange drilling 2" ~ 24" is ANSI B16.5.
- Please contact for other sizes.

- Flange drilling 2" ~ 24" is ANSI B16.5.
- This dimension can be changed without notification.

900LB



unit ; mm

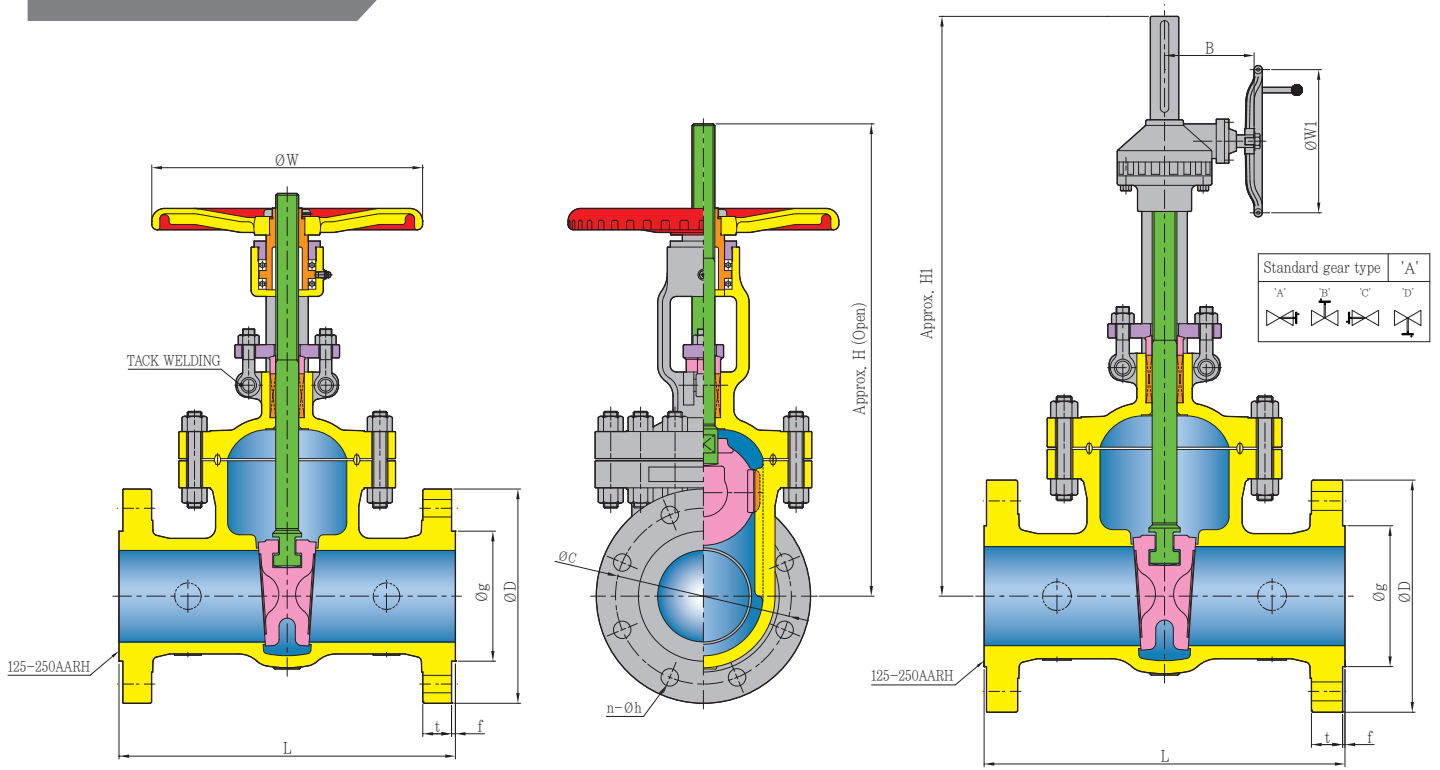
unit ; inch

Size	L			ØD	ØC	Øg	n	Øh	t	f	Handle		Gear box			Weight (kg)	
	RF	BW	RTJ								ØW	H	B	ØW1	H1	RF	BW
50	368	368	371	216	165.0	92.0	8	25	38.1	6.4	280	540	-	-	-	87.3	65.0
65	419	419	422	244	190.5	105.0	8	29	41.1	6.4	280	650	-	-	-	150.4	126.1
80	381	381	384	241	190.5	127.0	8	25	38.1	6.4	315	675	-	-	-	160.1	128.0
100	457	457	460	292	235.0	157.0	8	32	44.5	6.4	355	785	-	-	-	168.8	130.0
150	610	610	613	381	317.5	216.0	12	32	55.6	6.4	500	1080	205	500	1050	439.4	361.8
200	737	737	740	470	393.7	270.0	12	38	63.5	6.4	630	1400	205	500	1300	805.1	676.1
250	838	838	841	546	470.0	324.0	16	38	69.9	6.4	-	-	225	630	1670	1338.6	1156.2
300	965	965	968	610	533.5	381.0	20	38	79.2	6.4	-	-	225	630	1700	1495.7	1251.3
350	1029	1029	1038	641	558.8	413.0	20	41	85.9	6.4	-	-	250	710	1830	2153.4	1833.3
400	1130	1130	1140	705	616.0	470.0	20	45	88.9	6.4	-	-	250	710	2000	2910.0	2588.0
450	1219	1219	1232	787	686.0	533.0	20	51	101.6	6.4	-	-	335	900	2150	3753.9	3201.0
500	1321	1321	1334	857	749.5	584.0	20	54	108.0	6.4	-	-	380	900	2700	4714.2	3928.5
600	1549	1549	1568	1041	902.0	692.0	20	67	139.7	6.4	-	-	440	1000	3050	7081.0	5936.4
2"	14.49	14.49	14.61	8.50	6.50	3.62	8	0.98	1.50	0.25	11.02	21.26	-	-	-	192.5	143.3
2 1/2"	16.50	16.50	16.61	9.61	7.50	4.13	8	1.14	1.62	0.25	11.02	25.59	-	-	-	331.5	278.0
3"	15.00	15.00	15.12	9.49	7.50	5.00	8	0.98	1.50	0.25	12.40	26.57	-	-	-	352.8	282.3
4"	17.99	17.99	18.11	11.50	9.25	6.18	8	1.26	1.75	0.25	13.98	30.91	-	-	-	372.1	286.6
6"	24.02	24.02	24.13	15.00	12.50	8.50	12	1.26	2.19	0.25	19.69	42.52	-	-	-	968.7	797.7
8"	29.02	29.02	29.13	18.50	15.50	10.63	12	1.50	2.50	0.25	24.80	55.12	-	-	-	1774.9	1490.5
10"	32.99	32.99	33.11	21.50	18.50	12.76	16	1.50	2.75	0.25	-	-	8.86	24.80	65.75	2951.1	2549.1
12"	37.99	37.99	38.11	24.02	21.00	15.00	20	1.50	3.12	0.25	-	-	8.86	24.80	66.93	3297.5	2758.6
14"	40.51	40.51	40.87	25.24	22.00	16.26	20	1.61	3.38	0.25	-	-	9.84	27.95	72.05	4747.4	4041.7
16"	44.49	44.49	44.88	27.76	24.25	18.50	20	1.77	3.50	0.25	-	-	9.84	27.95	78.74	6415.5	5705.5
18"	47.99	47.99	48.50	30.98	27.01	20.98	20	2.01	4.00	0.25	-	-	13.19	35.43	84.65	8275.9	7057.0
20"	52.01	52.01	52.52	33.74	29.51	22.99	20	2.13	4.25	0.25	-	-	14.96	35.43	106.30	10393.0	8660.9
24"	60.98	60.98	61.73	40.98	35.51	27.24	20	2.64	5.50	0.25	-	-	17.32	39.37	120.08	15610.9	13087.5

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Pleas contact for other sizes.
 - This dimension can be changed without notification.

GATE VALVES

1500LB



unit ; mm

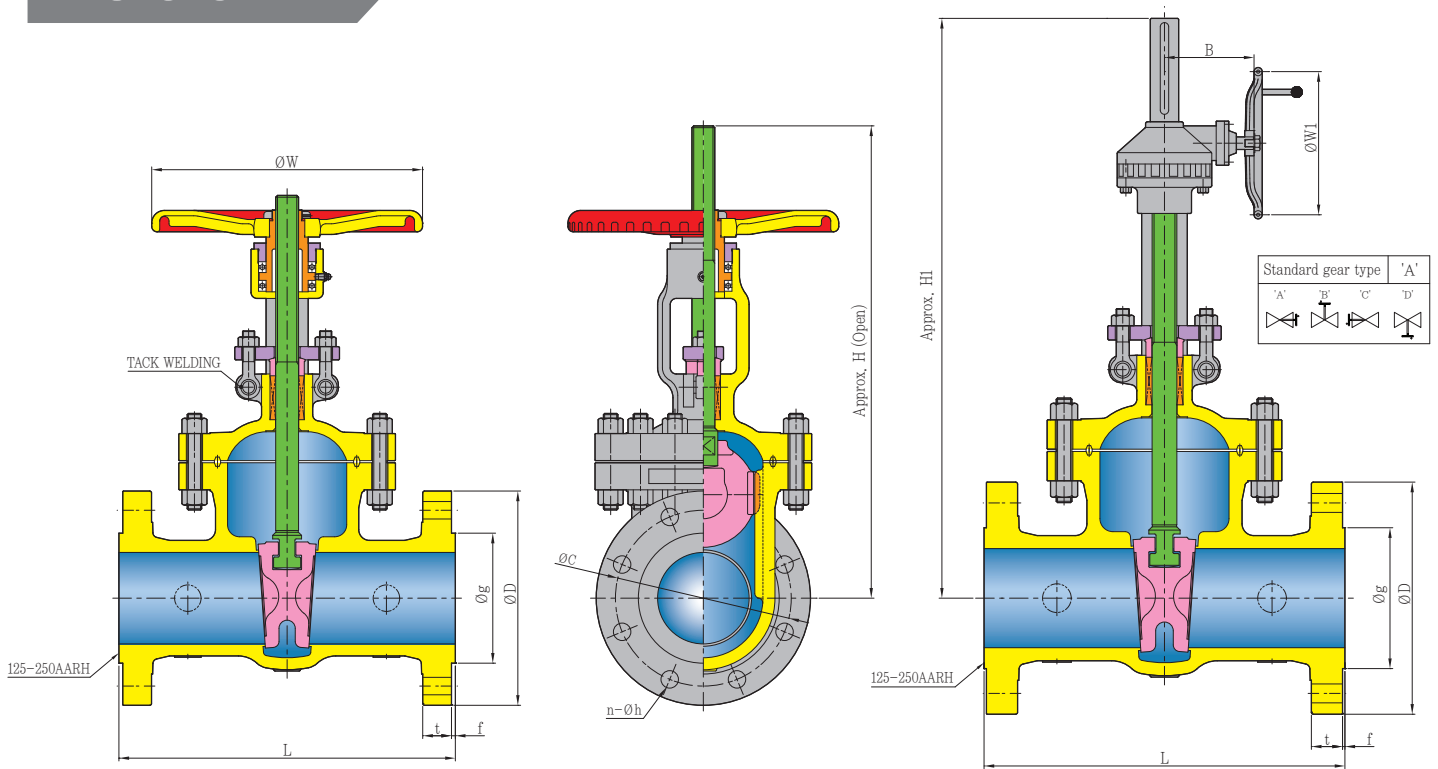
unit ; inch

Size	L			ΦD	ΦC	Φg	n	Φh	t	f	Handle		Gear box			Weight (kg)		Size	L			ΦD	ΦC	Φg	n	Φh	t	f	Handle		Gear box			Weight (lb)	
	RF	BW	RTJ								ΦW	H	B	ΦW1	H1	RF	BW		RF	BW	RF								BW	RF	BW				
50	368	368	371	216.0	165.0	92.0	8	25	38.1	6.4	280	560	-	-	-	87.3	65.0	2"	14.49	14.49	14.61	8.50	6.50	3.62	8	0.98	1.50	0.25	11.02	22.05	-	-	-	192.5	143.3
65	419	419	422	244.0	190.5	105.0	8	29	41.1	6.4	315	700	-	-	-	150.4	126.1	2 1/2"	16.50	16.50	16.61	9.61	7.50	4.13	8	1.14	1.62	0.25	12.40	27.56	-	-	-	331.5	278.0
80	470	470	473	267.0	203.0	127.0	8	32	47.8	6.4	355	730	-	-	-	164.9	140.7	3"	18.50	18.50	18.62	10.51	7.99	5.00	8	1.26	1.88	0.25	13.98	28.74	-	-	-	363.5	310.1
100	546	546	549	311.0	241.5	157.0	8	35	53.8	6.4	400	750	190	400	875	252.2	155.2	4"	21.50	21.50	21.61	12.24	9.51	6.18	8	1.38	2.12	0.25	15.75	29.53	7.48	15.75	34.45	556.0	342.2
150	705	705	711	394.0	317.5	216.0	12	38	82.6	6.4	500	1300	205	500	1310	598.5	428.7	6"	27.76	27.76	27.99	15.51	12.50	8.50	12	1.50	3.25	0.25	19.69	51.18	8.07	19.69	51.57	1319.4	945.2
200	832	832	842	483.0	393.7	270.0	12	45	91.9	6.4	710	1400	250	710	1580	1445.3	1212.5	8"	32.76	32.76	33.15	19.02	15.50	10.63	12	1.77	3.62	0.25	27.95	55.12	9.84	27.95	62.20	3186.3	2673.1
250	991	991	1000	584.0	482.6	324.0	12	51	108.0	6.4	-	-	250	710	1660	1941.0	1557.8	10"	39.02	39.02	39.37	22.99	19.00	12.76	12	2.01	4.25	0.25	-	-	9.84	27.95	65.35	4279.1	3434.4
300	1130	1130	1146	673.0	571.5	381.0	16	54	124.0	6.4	-	-	335	900	2050	3701.5	3114.7	12"	44.49	44.49	45.12	26.50	22.50	15.00	16	2.13	4.88	0.25	-	-	13.19	35.43	80.71	8160.5	6866.7
350	1257	1257	1276	749.0	635.0	413.0	16	61	133.4	6.4	-	-	380	900	2140	3991.6	3395.0	14"	49.49	49.49	50.24	29.49	25.00	16.26	16	2.40	5.25	0.25	-	-	14.96	35.43	84.25	8799.9	7484.7
400	1384	1384	1407	826.0	705.0	470.0	16	67	146.1	6.4	-	-	380	900	2440	6741.5	5820.0	16"	54.49	54.49	55.39	32.52	27.76	18.50	16	2.64	5.75	0.25	-	-	14.96	35.43	96.06	14862.5	12830.9

Note.

- Flange drilling 2" ~ 24" is ANSI B16.5.
- This dimension can be changed without notification.
- Please contact for other sizes.

2500LB



unit ; mm

unit ; inch

Size	L			ΦD	ΦC	Φg	n	Φh	t	f	Handle		Gear box		Weight (kg)		Size	L			ΦD	ΦC	Φg	n	Φh	t	f	Handle		Gear box		Weight (lb)			
	RF	BW	RTJ								ΦW	H	B	ΦW1	H1	RF		BW	RF	BW								RF	BW	RF	BW				
50	451	451	454	235	171.5	92	8	29	50.8	6.4	280	615	-	-	-	90.2	56.3	2"	17.76	17.76	17.87	9.25	6.75	3.62	8	1.14	2.00	0.25	11.02	24.21	-	-	-	198.9	124.0
65	508	508	514	267	197.0	105	8	32	57.2	6.4	400	790	-	-	-	145.5	97.0	2 1/2"	20.00	20.00	20.24	10.51	7.76	4.13	8	1.26	2.25	0.25	15.75	31.10	-	-	-	320.8	213.8
80	578	578	584	305	228.5	127	8	35	66.5	6.4	400	800	-	-	-	195.0	127.1	3"	22.76	22.76	22.99	12.01	9.00	5.00	8	1.38	2.62	0.25	15.75	31.50	-	-	-	429.8	280.1
100	673	673	683	356	273.0	157	8	41	76.2	6.4	630	1050	-	-	-	587.8	476.3	4"	26.50	26.50	26.89	14.02	10.75	6.18	8	1.61	3.00	0.25	24.80	41.34	-	-	-	1295.9	1050.0
150	914	914	927	483	368.5	216	8	54	108.0	6.4	-	-	225	630	1450	1542.3	1261.0	6"	35.98	35.98	36.50	19.02	14.51	8.50	8	2.13	4.25	0.25	-	-	8.86	24.80	57.09	3400.2	2780.0
200	1022	1022	1038	552	438.0	270	12	54	127.0	6.4	-	-	250	710	1550	2366.8	1940.0	8"	40.24	40.24	40.87	21.73	17.24	10.63	12	2.13	5.00	0.25	-	-	9.84	27.95	61.02	5217.9	4277.0
250	1270	1270	1292	673	540.0	324	12	67	165.1	6.4	-	-	310	810	2050	4436.8	3686.0	10"	50.00	50.00	50.87	26.50	21.26	12.76	12	2.64	6.50	0.25	-	-	12.20	31.89	80.71	9781.4	8126.2
300	1422	1422	1445	762	619.5	381	12	73	184.2	6.4	-	-	380	900	2240	6964.6	5820.0	12"	55.98	55.98	56.89	30.00	24.39	15.00	12	2.87	7.25	0.25	-	-	14.96	35.43	88.19	15354.3	12830.9

Note.

- Flange drilling 2" ~ 24" is ANSI B16.5.
- Please contact for other sizes.
- This dimension can be changed without notification.

GLOBE VALVE

- Basic design : ASME B16.34, API 623, BS1873, Intergral seat type
- Flange drilling : ANSI B16.5 (2"~24"), ASME B16.47 Series.A (26"over)
- Face to face : ANSI B16.10
- Test : API 598

① BODY

The body is in stainless steel. The basic dimension, i.e. wall thickness, face to face and flanges comply with the relevant API and ANSI standards. The body-to-bonnet flange is circular and the sealing surface for connection to the bonnet are recessed in the 150lb, 300lb and 600lb may be ring joint in the higher classes. Bosses may be provided for drain taps or by-pass piping.

② BONNET

The bonnet is in stainless steel. It is machined to accept the yoke sleeve and incorporates a stuffing box dimension in accordance with the BS, API standard.

③ DISC

The disc is part of the trim. It is normally supplied of the flat, tapered or plug type or, on request, of the parabolic regulating type, always free to rotate on the stem. Special attention is given to the seating face which is ground and lapped for a perfectly tight seal.

④ STEM

The stem is part of the trim. A ground backseat is provided to ensure perfectly tight seal to the stuffing box when the valve is fully open. The stem is attached to the disc by means of a threaded ring which allows the disc to rotate. The stem is ground to minimize friction and prevent damage to gland packing.

⑮ YOKE BUSH

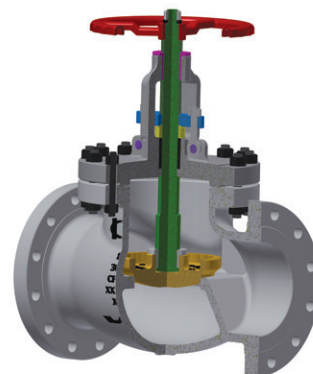
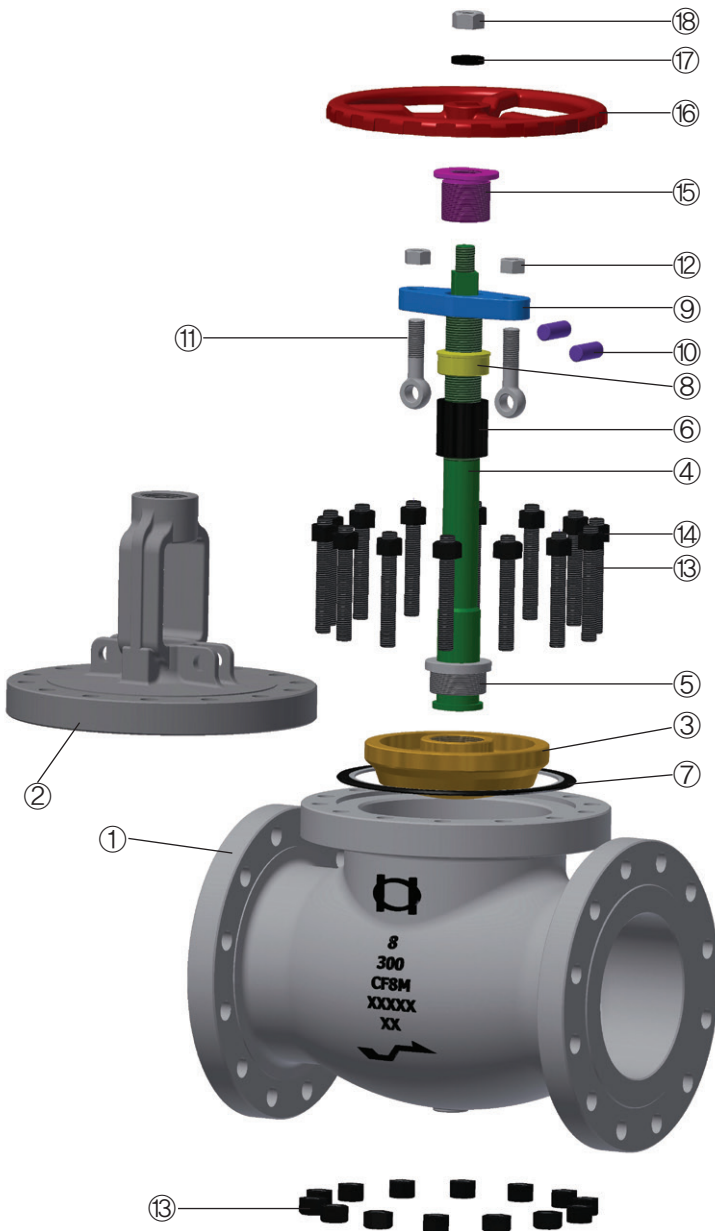
The yoke sleeve is made from stainless steel or ductile iron having high resistance to wear and a high melting point. It is screwed into the bonnet and properly sized to withstand the stresses which develop when opening and closing the valve.

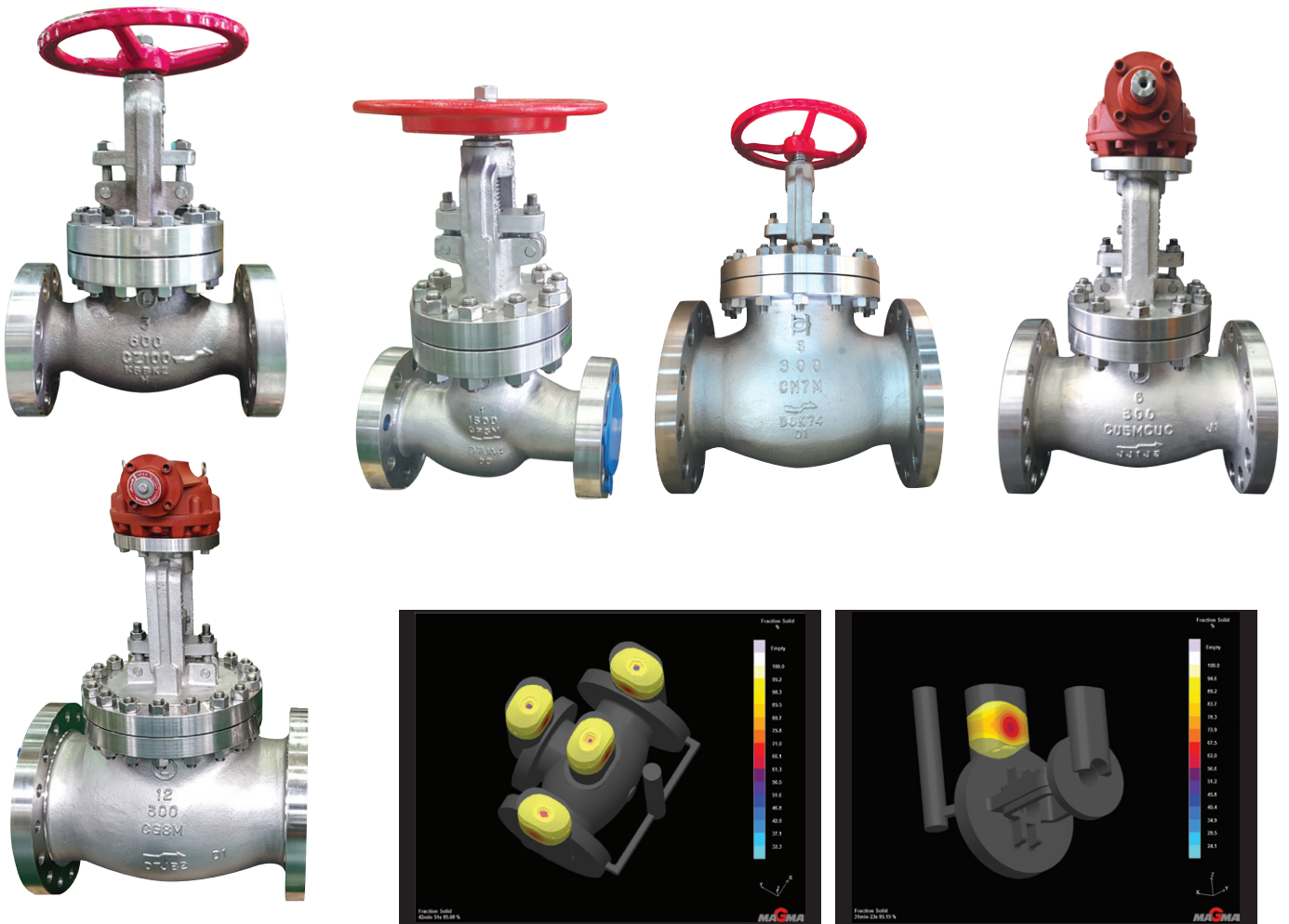
⑬, ⑭ BONNET BOLT/NUT

Bonnet studs and nuts are manufactured from alloy or stainless steel to the relevant ASTM standard.

⑯ HANDWHEEL

The steel or nodular iron handwheels are well shaped and large enough to give ease of movement when operating the valve, even under maximum differential pressure.



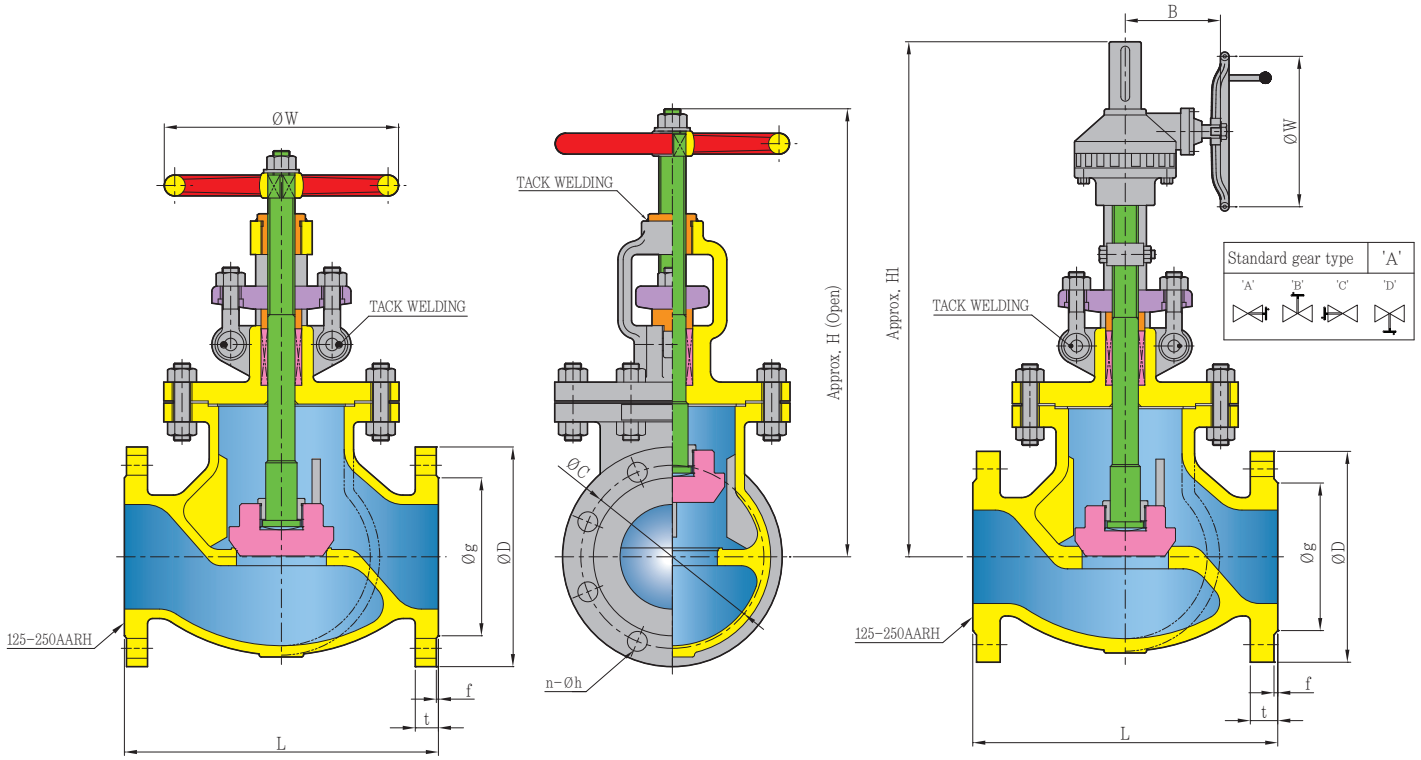


No	Name of Part	ASTM specification											
		Cast Stainless steel				Cast Duplex steel				Cast Alloy steel			
1	BODY	A351 CF8	A351 CF8M	A351 CG8M	A351 CF8C	A995 CD3MN	A995 CD4MCUN	A995 CE3MN	A995 CD3MWCUN	A351 CN7M	A494 CW6MC	A494 M35-1	A494 CW12MW
2	BONNET	A351 CF8	A351 CF8M	A351 CG8M	A351 CF8C	A995 CD3MN	A995 CD4MCUN	A995 CE3MN	A995 CD3MWCUN	A351 CN7M	A494 CW6MC	A494 M35-1	A494 CW12MW
3	DISC	A351 CF8	A351 CF8M	A351 CG8M	A351 CF8C	A995 CD3MN	A995 CD4MCUN	A995 CE3MN	A995 CD3MWCUN	A351 CN7M	A494 CW6MC	A494 M35-1	A494 CW12MW
4	STEM	A276 304	A276 316	A276 317L	A276 347	A182 F51	A182 F61	A182 F53	A182 F55	ALLOY20	ALLOY 625	K400	C276
5	DISC NUT	A276 304	A276 316	A276 317L	A276 347	A182 F51	A182 F61	A182 F53	A182 F55	ALLOY20	ALLOY 625	K400	C276
6	PACKING	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR
7	GASKET	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL
8	GLAND RING	A276 304	A276 316	A276 317L	A276 347	A182 F51	A182 F61	A182 F53	A182 F55	ALLOY20	ALLOY 625	K400	C276
9	GLAND FLANGE	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304	A351 CF8/ SS304
10	HINGE PIN	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304
11	HINGE BOLT	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8
12	HINGE NUT	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8
13	BONNET BOLT	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8
14	BONNET NUT	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8
15	YOKE BUSH	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C	A439 D2C
16	HANDWHEEL	A536 60	A536 60	A536 60	A536 60	A536 60	A536 60	A536 60	A536 60	A536 60	A536 60	A536 60	A536 60
17	PLATE WASHER	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304	A276 304
18	HANDLE NUT	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8

Note. - Packing & gasket material ; customer's requirements

GLOBE VALVE

150LB



unit ; mm

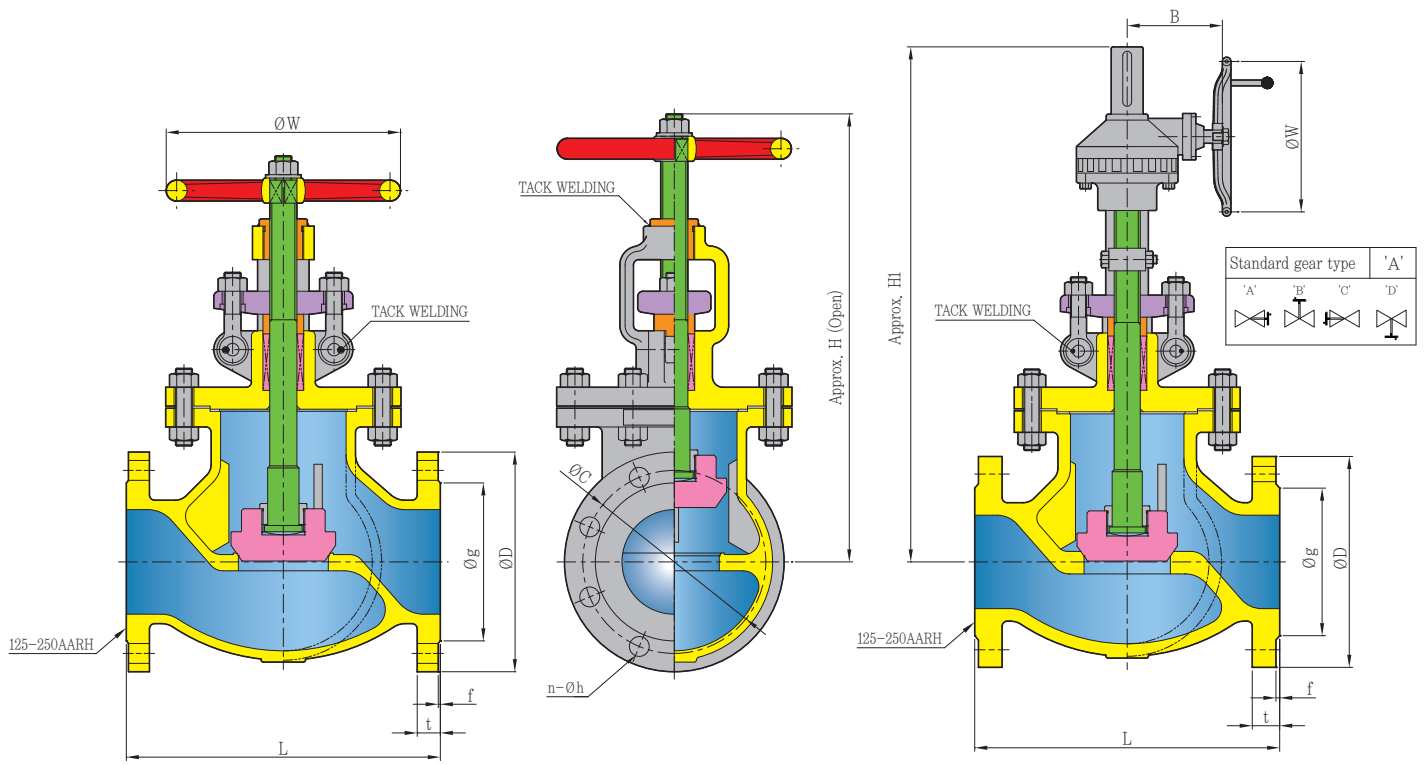
Size	L		ΦD	ΦC	Φg	n	Φh	t	f	Handle		Gear box			Weight (kg)	
	RF	BW								ΦW	H	B	$\Phi W1$	H1	RF	BW
40	165	165	127.0	98.5	73.0	4	16	15.9	1.6	180	300	-	-	-	19.4	15.5
50	203	203	152.0	120.5	92.0	4	19	15.9	1.6	180	320	-	-	-	22.3	18.4
65	216	216	178.0	139.5	105.0	4	19	17.5	1.6	180	295	-	-	-	34.0	29.1
80	241	241	190.0	152.5	127.0	4	19	19.1	1.6	200	380	-	-	-	38.8	33.0
100	292	292	229.0	190.5	157.0	8	19	23.9	1.6	250	430	-	-	-	54.3	43.7
125	356	356	254.0	216.0	186.0	8	22	23.9	1.6	250	440	-	-	-	67.9	54.3
150	406	406	279.0	241.5	216.0	8	22	25.4	1.6	280	450	-	-	-	100.9	86.3
200	495	495	343.0	298.5	270.0	8	22	28.6	1.6	315	545	165	300	560	176.5	154.2
250	622	622	406.0	362.0	324.0	12	25	30.2	1.6	355	1150	190	400	670	286.2	255.1
300	699	699	483.0	432.0	381.0	12	25	31.8	1.6	400	1350	190	400	740	397.7	353.1
350	787	787	533.0	476.0	413.0	12	29	35.0	1.6	500	1600	225	630	1340	645.1	583.9
400	914	914	597.0	539.5	470.0	16	29	36.6	1.6	500	1750	225	630	1600	869.1	791.5
450	978	978	635.0	578.0	533.0	16	32	39.7	1.6	560	1950	250	710	1850	1746.0	1711.1

unit ; inch

Size	L		ΦD	ΦC	Φg	n	Φh	t	f	Handle		Gear box			Weight (lb)	
	RF	BW								ΦW	H	B	$\Phi W1$	H1	RF	BW
1.5"	6.50	6.50	5.00	3.88	2.87	4	0.63	0.63	0.06	7.09	11.81	-	-	-	42.8	34.2
2"	7.99	7.99	5.98	4.74	3.62	4	0.75	0.63	0.06	7.09	12.60	-	-	-	49.2	40.6
2 1/2"	8.50	8.50	7.01	5.49	4.13	4	0.75	0.69	0.06	7.09	11.61	-	-	-	74.8	64.2
3"	9.49	9.49	7.48	6.00	5.00	4	0.75	0.75	0.06	7.87	14.96	-	-	-	85.5	72.7
4"	11.50	11.50	9.02	7.50	6.18	8	0.75	0.94	0.06	9.84	16.93	-	-	-	119.8	96.2
5"	14.02	14.02	10.00	8.50	7.32	8	0.87	0.94	0.06	9.84	17.32	-	-	-	149.7	119.8
6"	15.98	15.98	10.98	9.51	8.50	8	0.87	1.00	0.06	11.02	17.72	-	-	-	222.4	190.3
8"	19.49	19.49	13.50	11.75	10.63	8	0.87	1.13	0.06	12.40	21.46	6.50	11.81	22.05	389.2	340.0
10"	24.49	24.49	15.98	14.25	12.76	12	0.98	1.19	0.06	13.98	45.28	7.48	15.75	26.38	630.9	562.4
12"	27.52	27.52	19.02	17.01	15.00	12	0.98	1.25	0.06	15.75	53.15	7.48	15.75	29.13	876.8	778.4
14"	30.98	30.98	20.98	18.74	16.26	12	1.14	1.38	0.06	19.69	62.99	8.86	24.80	52.76	1422.1	1287.4
16"	35.98	35.98	23.50	21.24	18.50	16	1.14	1.44	0.06	19.69	68.90	8.86	24.80	62.99	1916.1	1745.0
18"	38.50	38.50	25.00	22.76	20.98	16	1.26	1.56	0.06	22.05	76.77	9.84	27.95	72.83	3849.3	3723.3

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

300LB



unit ; mm

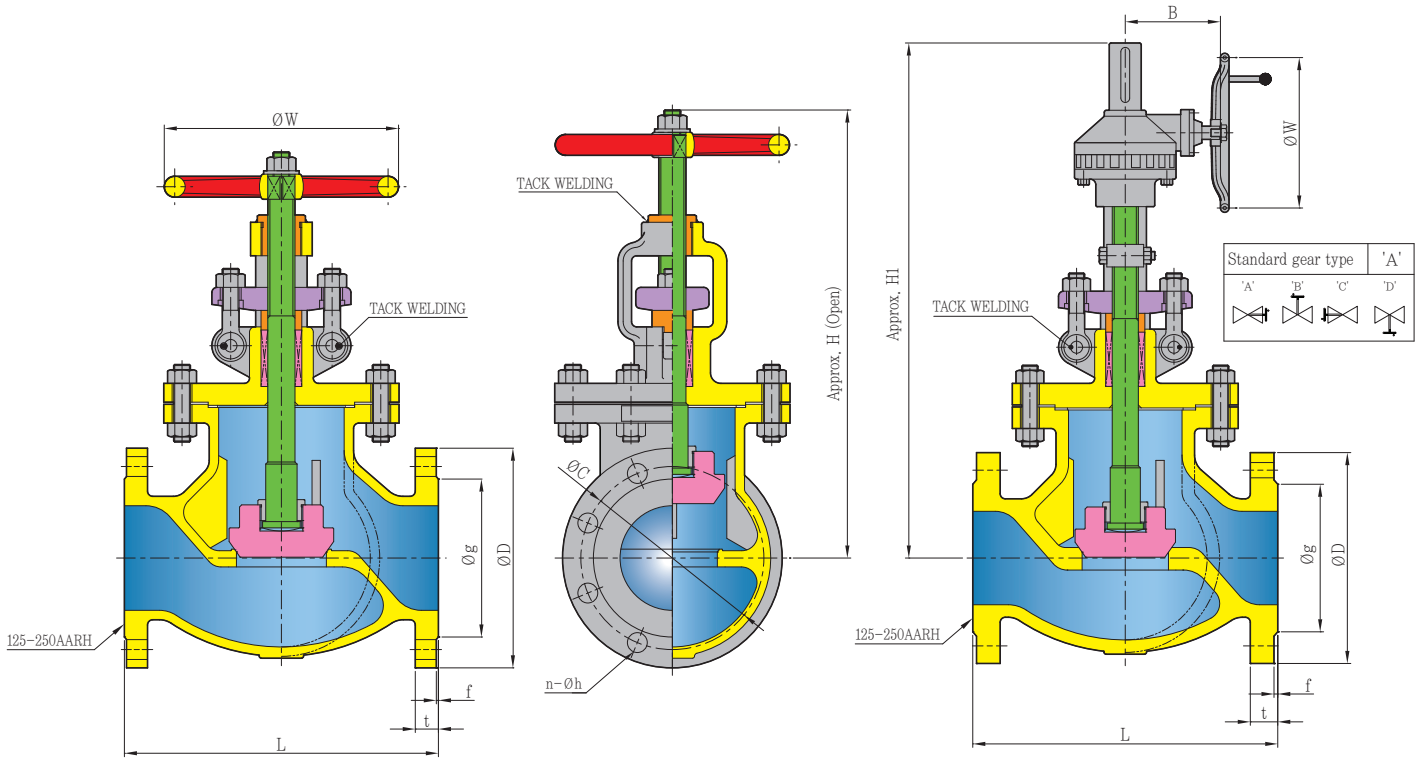
unit ; inch

Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box			Weight (kg)		Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box			Weight (lb)	
	RF	BW	RTJ								ϕW	H	B	$\phi W1$	H1	RF	BW		RF	BW	RTJ								ϕW	H	B	$\phi W1$	H1	RF	BW
50	267	267	283	165.0	127.0	92.0	8	19	22.3	1.6	180	325	-	-	-	31.0	25.2	2"	10.51	10.51	11.14	6.50	5.00	3.62	8	0.75	0.88	0.06	7.09	12.80	-	-	-	68.4	55.6
65	292	292	308	190.0	149.0	105.0	8	22	25.4	1.6	224	400	-	-	-	40.7	32.0	2 1/2"	11.50	11.50	12.13	7.48	5.87	4.13	8	0.87	1.00	0.06	8.82	15.75	-	-	-	89.8	70.6
80	318	318	333	210.0	168.0	127.0	8	22	28.6	1.6	224	410	-	-	-	62.1	50.4	3"	12.52	12.52	13.11	8.27	6.61	5.00	8	0.87	1.13	0.06	8.82	16.14	-	-	-	136.9	111.2
100	356	356	371	254.0	200.0	157.0	8	22	31.8	1.6	280	430	-	-	-	97.0	78.6	4"	14.02	14.02	14.61	10.00	7.87	6.18	8	0.87	1.25	0.06	11.02	16.93	-	-	-	213.8	173.2
125	400	400	416	279.0	235.0	186.0	8	22	35.0	1.6	280	500	-	-	-	150.4	129.0	5"	15.75	15.75	16.38	10.98	9.25	7.32	8	0.87	1.38	0.06	11.02	19.69	-	-	-	331.5	284.4
150	444	444	460	318.0	270.0	216.0	12	22	36.6	1.6	355	530	190	400	750	184.3	155.2	6"	17.48	17.48	18.11	12.52	10.63	8.50	12	0.87	1.44	0.06	13.98	20.87	7.48	15.75	29.53	406.3	342.2
200	559	559	575	381.0	330.0	270.0	12	25	41.3	1.6	355	750	190	400	900	261.9	219.2	8"	22.01	22.01	22.64	15.00	12.99	10.63	12	0.98	1.63	0.06	13.98	29.53	7.48	15.75	35.43	577.4	483.3
250	622	622	638	444.0	387.5	324.0	16	29	47.7	1.6	-	-	190	400	1050	564.5	500.5	10"	24.49	24.49	25.12	17.48	15.26	12.76	16	1.14	1.88	0.06	-	-	7.48	15.75	41.34	1244.6	1103.5
300	711	711	727	521.0	451.0	381.0	16	32	50.8	1.6	-	-	205	500	1100	1063.1	971.9	12"	27.99	27.99	28.62	20.51	17.76	15.00	16	1.26	2.00	0.06	-	-	8.07	19.69	43.31	2343.8	2142.8
350	838	838	854	584.0	514.5	413.0	20	32	54.0	1.6	-	-	380	900	1430	1120.4	995.2	14"	32.99	32.99	33.62	22.99	20.26	16.26	20	1.26	2.13	0.06	-	-	14.96	35.43	56.30	2469.9	2194.1
400	864	864	879	648.0	571.5	470.0	20	35	57.2	1.6	-	-	380	900	1510	1649.0	1492.8	16"	34.02	34.02	34.61	25.51	22.50	18.50	20	1.38	2.25	0.06	-	-	14.96	35.43	59.45	3635.4	3291.1

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

GLOBE VALVE

600LB



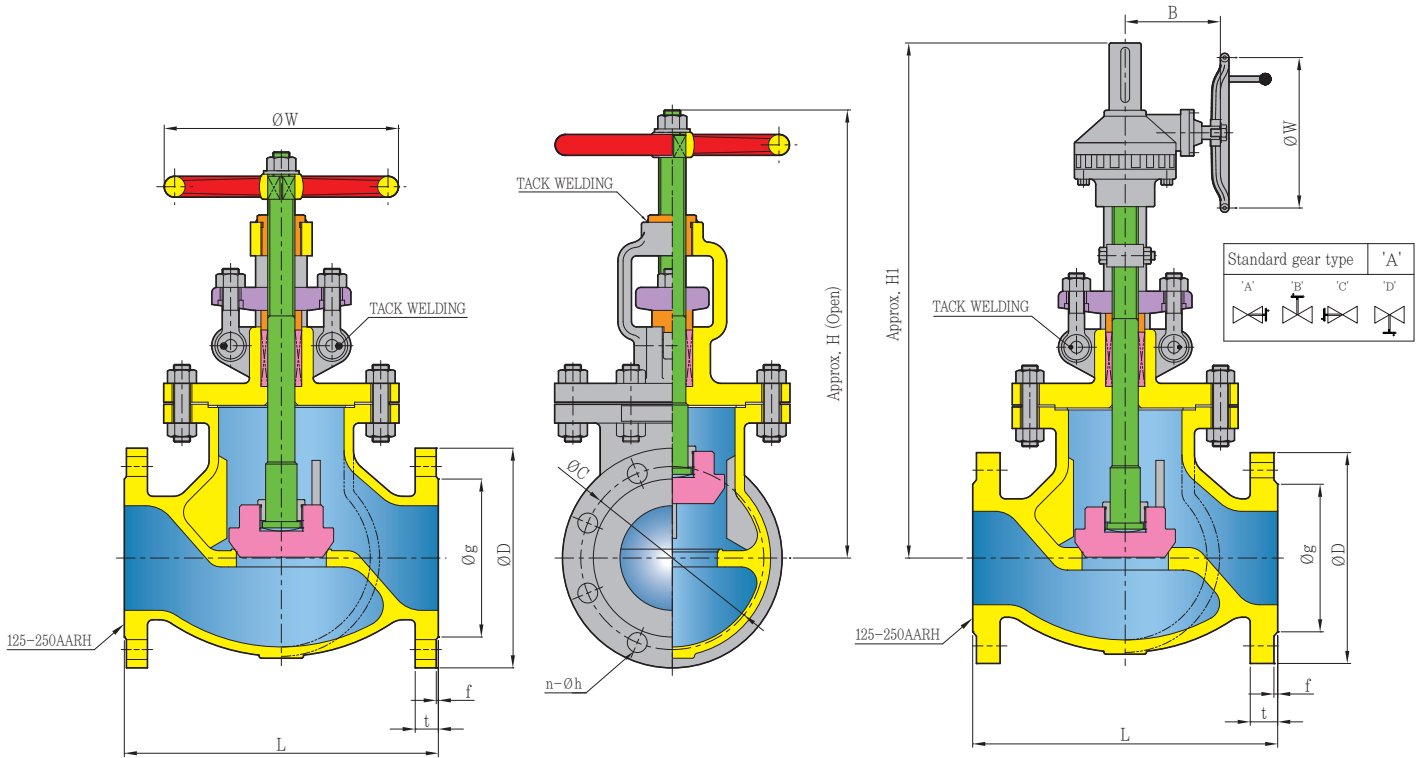
unit ; mm

unit ; inch

Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box			Weight (kg)		Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box			Weight (lb)	
	RF	BW	RTJ								ϕW	H	B	ϕW_1	H ₁	RF	BW		ϕW	H	B								ϕW_1	H ₁	RF	BW			
50	292	292	295	165.0	127.0	92.0	8	19	25.4	6.4	200	375	-	-	-	41.7	28.1	2"	11.50	11.50	11.61	6.50	5.00	3.62	8	0.75	1.00	0.25	7.87	14.76	-	-	-	92.0	62.0
65	330	330	333	190.0	149.0	105.0	8	22	28.6	6.4	280	432	-	-	-	67.9	29.1	2 1/2"	12.99	12.99	13.11	7.48	5.87	4.13	8	0.87	1.13	0.25	11.02	17.01	-	-	-	149.7	64.2
80	356	356	359	210.0	168.0	127.0	8	22	31.8	6.4	315	476	-	-	-	75.7	45.6	3"	14.02	14.02	14.13	8.27	6.61	5.00	8	0.87	1.25	0.25	12.40	18.74	-	-	-	166.8	100.5
100	432	432	435	273.0	216.0	157.0	8	25	38.1	6.4	500	700	-	-	-	131.9	95.1	4"	17.01	17.01	17.13	10.75	8.50	6.18	8	0.98	1.50	0.25	19.69	27.56	-	-	-	290.8	209.6
150	559	559	562	356.0	292.0	216.0	12	29	47.7	6.4	600	790	-	-	-	272.6	180.4	6"	22.01	22.01	22.13	14.02	11.50	8.50	12	1.14	1.88	0.25	23.62	31.10	-	-	-	600.9	397.8
200	660	660	664	419.0	349.0	270.0	12	32	55.6	6.4	-	-	205	500	1300	648.0	485.0	8"	25.98	25.98	26.14	16.50	13.74	10.63	12	1.26	2.19	0.25	-	-	8.07	19.69	51.18	1428.5	1069.2
250	787	787	791	508.0	432.0	324.0	16	35	63.5	6.4	-	-	225	630	1500	890.5	771.2	10"	30.98	30.98	31.14	20.00	17.01	12.76	16	1.38	2.50	0.25	-	-	8.86	24.80	59.06	1963.1	1700.1
300	838	838	841	559.0	489.0	381.0	20	35	66.7	6.4	-	-	225	630	1750	2570.5	1548.1	12"	32.99	32.99	33.11	22.01	19.25	15.00	20	1.38	2.63	0.25	-	-	8.86	24.80	68.90	5667.0	3413.0
350	889	889	892	603.0	527.0	413.0	20	38	69.9	6.4	-	-	380	900	1810	2619.0	2434.7	14"	35.00	35.00	35.12	23.74	20.75	16.26	20	1.50	2.75	0.25	-	-	14.96	35.43	71.26	5773.9	5367.6
400	991	991	994	686.0	603.0	470.0	20	41	76.2	6.4	-	-	440	1000	1900	3492.0	3249.5	16"	39.02	39.02	39.13	27.01	23.74	18.50	20	1.61	3.00	0.25	-	-	17.32	39.37	74.80	7698.5	7163.9

Note.
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 - This dimension can be changed without notification.

900LB



unit ; mm

unit ; inch

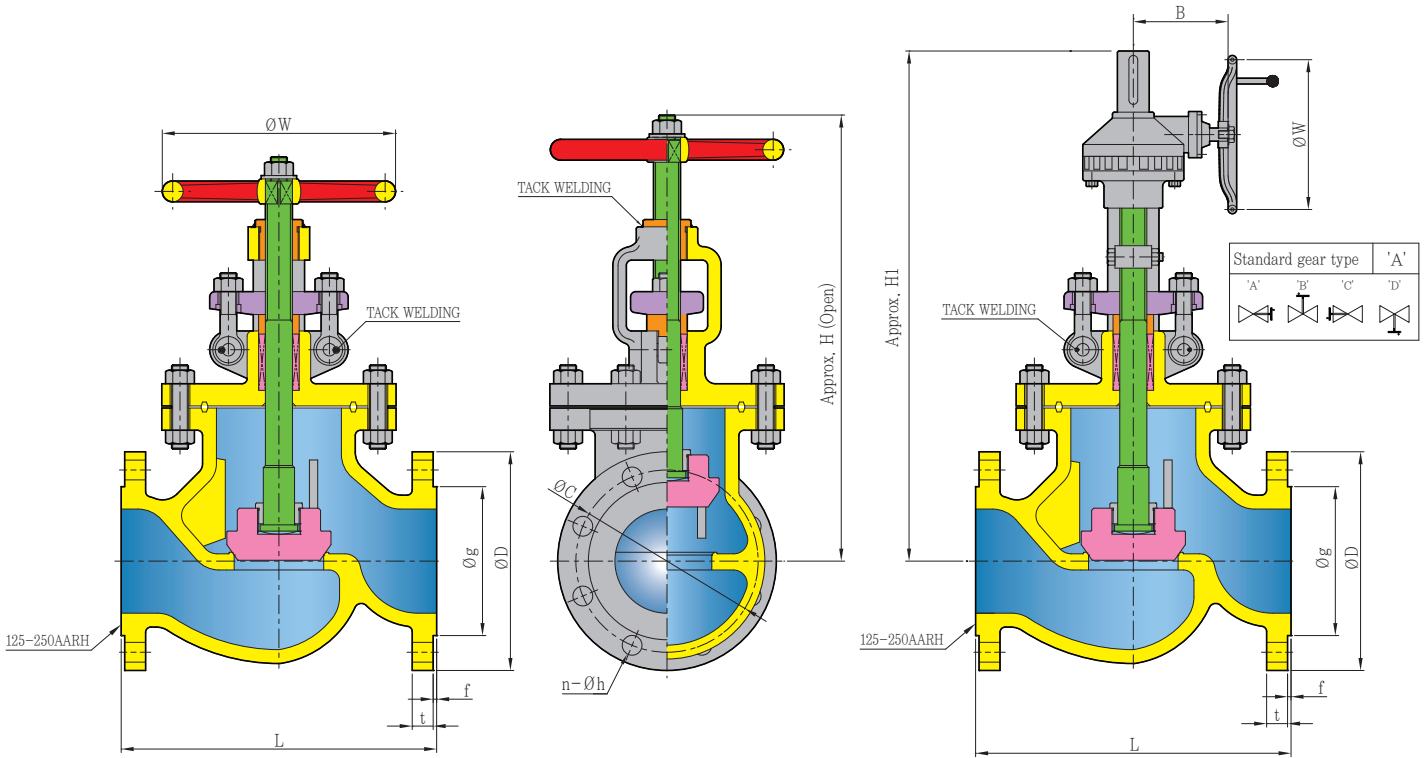
Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box		Weight (kg)		Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box		Weight (lb)			
	RF	BW	RTJ								ϕW	H	B	$\phi W1$	H1	RF		BW	RF	BW								RTJ	ϕW	H	B	$\phi W1$	H1	RF	BW
50	368	368	371	216	165.0	92.0	8	25	38.1	6.4	280	550	-	-	-	119.3	68.9	2"	14.49	14.49	14.61	8.50	6.50	3.62	8	0.98	1.50	0.25	11.02	21.65	-	-	-	263.0	151.8
65	419	419	422	244	190.5	105.0	8	29	41.1	6.4	315	590	-	-	-	150.4	116.4	2 1/2"	16.50	16.50	16.61	9.61	7.50	4.13	8	1.14	1.62	0.25	12.40	23.23	-	-	-	331.5	256.6
80	381	381	384	241	190.5	127.0	8	25	38.1	6.4	355	635	-	-	-	171.7	130.0	3"	15.00	15.00	15.12	9.49	7.50	5.00	8	0.98	1.50	0.25	13.98	25.00	-	-	-	378.5	286.6
100	457	457	460	292	235.0	157.0	8	32	44.5	6.4	400	800	-	-	-	194.0	143.6	4"	17.99	17.99	18.11	11.50	9.25	6.18	8	1.26	1.75	0.25	15.75	31.50	-	-	-	427.7	316.5
150	610	610	613	381	317.5	216.0	12	32	55.6	6.4	500	920	225	630	1150	531.6	313.3	6"	24.02	24.02	24.13	15.00	12.50	8.50	12	1.26	2.19	0.25	19.69	36.22	8.86	24.80	45.28	1171.9	690.7
200	737	737	740	470	393.7	270.0	12	38	63.5	6.4	-	-	310	800	1250	1251.3	1067.0	8"	29.02	29.02	29.13	18.50	15.50	10.63	12	1.50	2.50	0.25	-	-	12.20	31.50	49.21	2758.6	2352.3
250	838	838	841	546	470.0	324.0	16	38	69.9	6.4	-	-	335	900	1400	1988.5	1813.9	10"	32.99	32.99	33.11	21.50	18.50	12.76	16	1.50	2.75	0.25	-	-	13.19	35.43	55.12	4383.9	3999.0
300	965	965	968	610	533.5	381.0	20	38	79.2	6.4	-	-	380	900	1900	2570.5	2328.0	12"	37.99	37.99	38.11	24.02	21.00	15.00	20	1.50	3.12	0.25	-	-	14.96	35.43	74.80	5667.0	5132.4
350	1029	1029	1038	641	558.8	413.0	20	41	85.9	6.4	-	-	380	900	2200	3540.5	3249.5	14"	40.51	40.51	40.87	25.24	22.00	16.26	20	1.61	3.38	0.25	-	-	14.96	35.43	86.61	7805.5	7163.9
400	1130	1130	1140	705	616.0	470.0	20	45	88.9	6.4	-	-	440	1000	2600	4171.0	3783.0	16"	44.49	44.49	44.88	27.76	24.25	18.50	20	1.77	3.50	0.25	-	-	17.32	39.37	102.36	9195.5	8340.1

Note.

- Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
- This dimension can be changed without notification.

GLOBE VALVE

1500LB



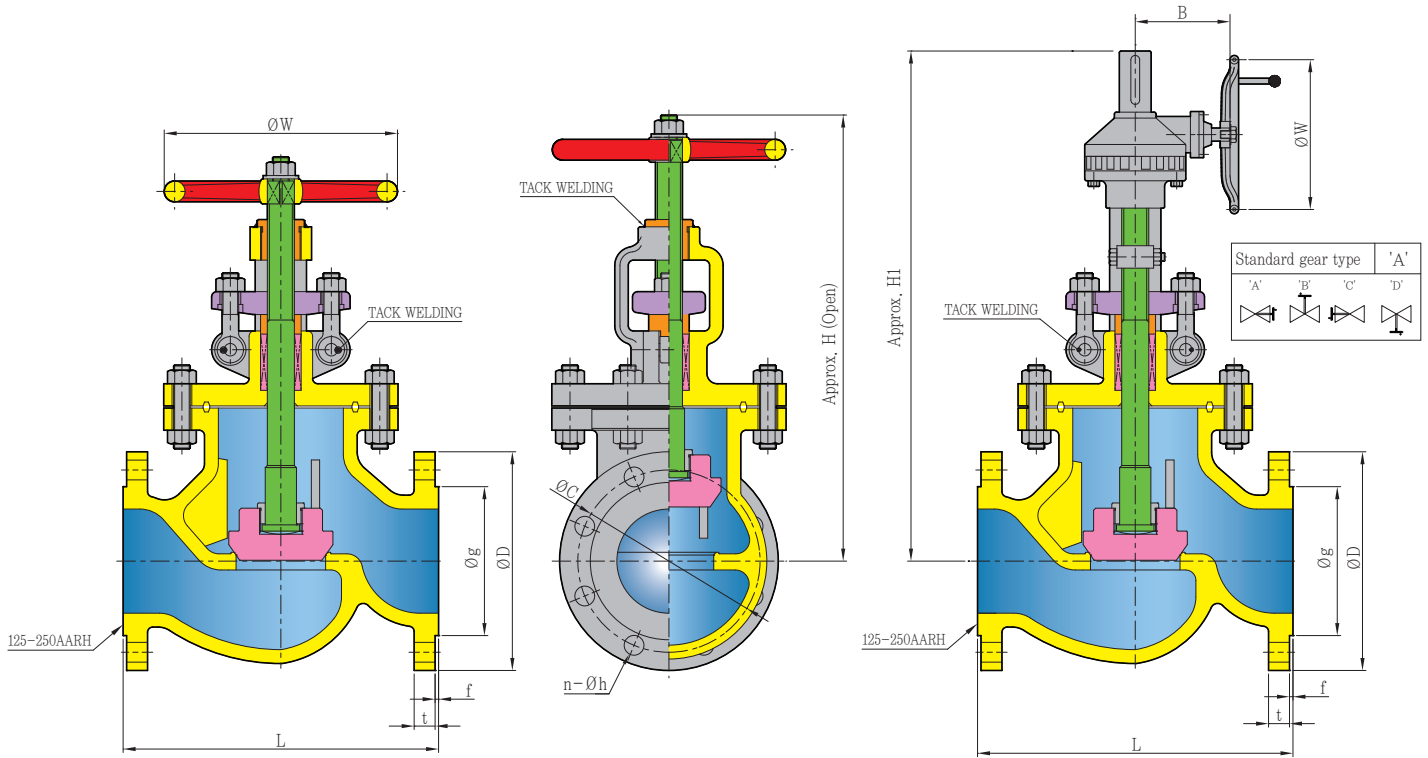
unit ; mm

unit ; inch

Size	L			ΦD	ΦC	Φg	n	Φh	t	f	Handle		Gear box			Weight (kg)		Size	L			ΦD	ΦC	Φg	n	Φh	t	f	Handle		Gear box			Weight (lb)	
	RF	BW	RTJ								ΦW	H	B	ΦW1	H1	RF	BW		RF	BW	RF								BW	RF	BW				
50	368	368	371	216.0	165.0	92.0	8	25	38.1	6.4	355	550	-	-	-	119.3	90.2	2"	14.49	14.49	14.61	8.50	6.50	3.62	8	0.98	1.50	0.25	13.98	21.65	-	-	-	263.0	198.9
65	419	419	422	244.0	190.5	105.0	8	29	41.1	6.4	355	590	-	-	-	138.7	114.5	2 1/2"	16.50	16.50	16.61	9.61	7.50	4.13	8	1.14	1.62	0.25	13.98	23.23	-	-	-	305.8	252.3
80	470	470	473	267.0	203.0	127.0	8	32	47.8	6.4	400	760	-	-	-	200.8	185.3	3"	18.50	18.50	18.62	10.51	7.99	5.00	8	1.26	1.88	0.25	15.75	29.92	-	-	-	442.7	408.5
100	546	546	549	311.0	241.5	157.0	8	35	53.8	6.4	500	785	-	-	-	329.8	273.5	4"	21.50	21.50	21.61	12.24	9.51	6.18	8	1.38	2.12	0.25	19.69	30.91	-	-	-	727.1	603.1
150	705	705	711	394.0	317.5	216.0	12	38	82.6	6.4	-	-	250	710	1640	651.8	535.4	6"	27.76	27.76	27.99	15.51	12.50	8.50	12	1.50	3.25	0.25	-	-	9.84	27.95	64.57	1437.1	1180.4
200	832	832	842	483.0	393.7	270.0	12	45	91.9	6.4	-	-	250	710	1950	2037.0	1843.0	8"	32.76	32.76	33.15	19.02	15.50	10.63	12	1.77	3.62	0.25	-	-	9.84	27.95	76.77	4490.8	4063.1
250	991	991	1000	584.0	482.6	324.0	12	51	108.0	6.4	-	-	310	800	2300	3104.0	2716.0	10"	39.02	39.02	39.37	22.99	19.00	12.76	12	2.01	4.25	0.25	-	-	12.20	31.50	90.55	6843.1	5987.8
300	1130	1130	1146	673.0	571.5	381.0	16	54	124.0	6.4	-	-	310	800	2650	4268.0	3686.0	12"	44.49	44.49	45.12	26.50	22.50	15.00	16	2.13	4.88	0.25	-	-	12.20	31.50	104.33	9409.3	8126.2
350	1257	1257	1276	749.0	635.0	413.0	16	61	133.4	6.4	-	-	335	900	3150	5238.0	4559.0	14"	49.49	49.49	50.24	29.49	25.00	16.26	16	2.40	5.25	0.25	-	-	13.19	35.43	124.02	11547.8	10050.9
400	1384	1384	1406	826.0	705.0	470.0	16	67	146.1	6.4	-	-	380	900	4000	6499.0	5626.0	16"	54.49	54.49	55.35	32.52	27.76	18.50	16	2.64	5.75	0.25	-	-	14.96	35.43	157.48	14327.8	12403.2

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

2500LB



unit ; mm

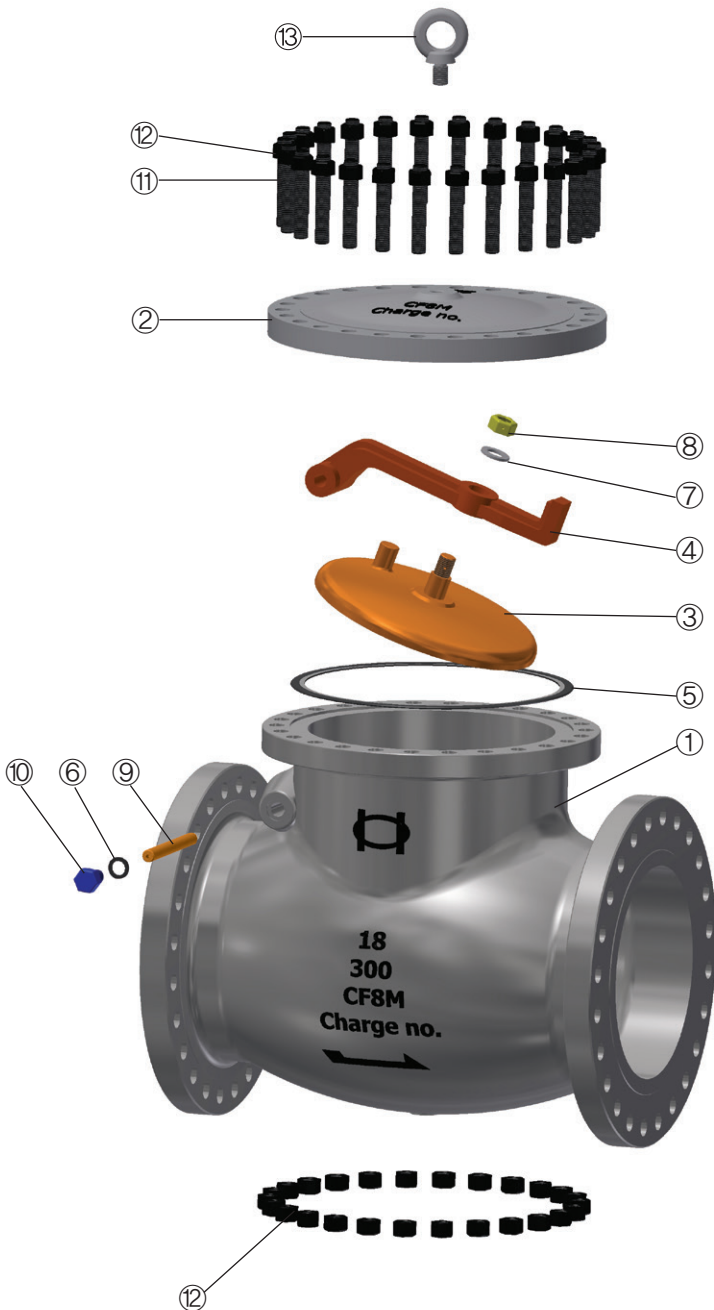
unit ; inch

Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box			Weight (kg)		Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box			Weight (lb)	
	RF	BW	RTJ								ϕW	H	B	ϕW_1	H ₁	RF	BW		RF	BW	RTJ								ϕW	H	B	ϕW_1	H ₁	RF	BW
50	451	451	454	235	171.5	92	8	29	50.8	6.4	355	640	-	-	-	184.3	155.2	2"	17.76	17.76	17.87	9.25	6.75	3.62	8	1.14	2.00	0.25	13.98	25.20	-	-	-	406.3	342.2
65	508	508	514	267	197.0	105	8	32	57.2	6.4	450	715	-	-	-	291.0	232.8	2 1/2"	20.00	20.00	20.24	10.51	7.76	4.13	8	1.26	2.25	0.25	17.72	28.15	-	-	-	641.5	513.2
80	578	578	584	305	228.5	127	8	35	66.5	6.4	500	820	-	-	-	339.5	271.6	3"	22.76	22.76	22.99	12.01	9.00	5.00	8	1.38	2.62	0.25	19.69	32.28	-	-	-	748.5	598.8
100	673	673	683	356	273.0	157	8	41	76.2	6.4	-	-	225	630	1250	814.8	669.3	4"	26.50	26.50	26.89	14.02	10.75	6.18	8	1.61	3.00	0.25	-	-	8.86	24.80	49.21	1796.3	1475.6
150	914	914	927	483	368.5	216	8	54	108.0	6.4	-	-	225	630	1900	2231.0	1940.0	6"	35.98	35.98	36.50	19.02	14.51	8.50	8	2.13	4.25	0.25	-	-	8.86	24.80	74.80	4918.5	4277.0
200	1022	1022	1038	552	438.0	270	12	54	127.0	6.4	-	-	310	800	2450	4656.0	4268.0	8"	40.24	40.24	40.87	21.73	17.24	10.63	12	2.13	5.00	0.25	-	-	12.20	31.50	96.46	10264.7	9409.3
250	1270	1270	1292	673	540.0	324	12	67	165.1	6.4	-	-	310	800	2750	6596.0	5820.0	10"	50.00	50.00	50.87	26.50	21.26	12.76	12	2.64	6.50	0.25	-	-	12.20	31.50	108.27	14541.7	12830.9
300	1422	1422	1445	762	619.5	381	12	73	184.2	6.4	-	-	310	800	3490	8245.0	7275.0	12"	55.98	55.98	56.89	30.00	24.39	15.00	12	2.87	7.25	0.25	-	-	12.20	31.50	137.40	18177.1	16038.6

Note.

- Flange drilling 2" ~ 24" is ANSI B16.5.
- Please contact for other sizes.
- This dimension can be changed without notification.

SWING CHECK VALVE



- Basic design : ASME B16.34, API 594, Integral seat type
- Flange drilling : ANSI B16.5 (2"~24"),
ASME B16.47 Series.A (26"over)
- Face to face : ANSI B16.10
- Test : API 598

① BODY

The body is in stainless steel, carefully designed to keep pressure drops to a minimum. A wide opening on top of the body permits easy inspection and maintenance. The basic dimension, i.e. wall thickness, face to face and flanges, comply with the relevant API and ANSI standards. The body-to-cover flange is circular.

Threaded bosses are incorporated to ensure correct alignment of the hinge pin. Bosses may be provided for drain taps or by-pass piping.

② COVER

The cover is in stainless steel. The sealing surface for the connection to the body are recessed in the 150lb, 300lb and 600lb and ring joint in the higher.

③ DISC

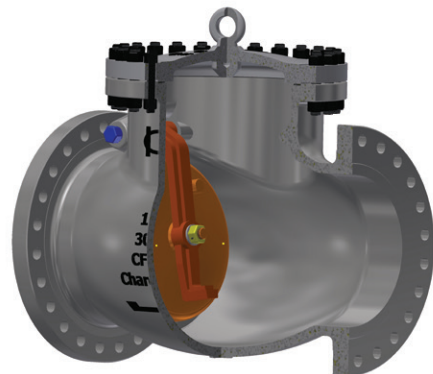
The disc is part of the trim. The back side has a threaded stud for attachment to the hinge with a stainless steel nut and split pin to insure a strong connection. The seating face is ground and lapped, for a perfectly tight seal.

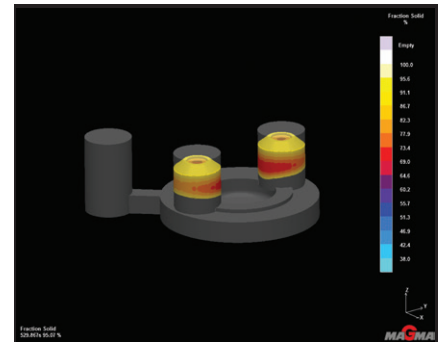
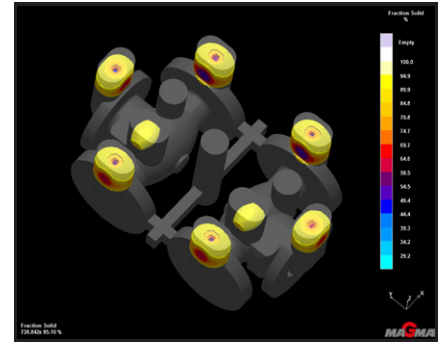
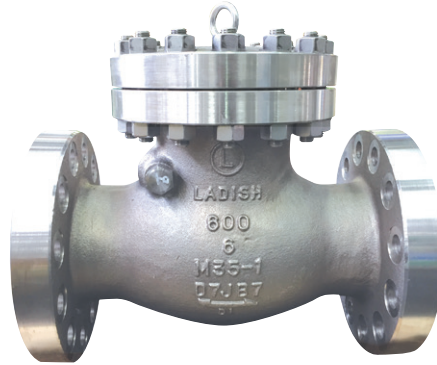
⑨ ROD PIN

The rod pin is part of the trim. The rod pin is retained in the body by one threaded plugs and sealed by metallic or non-asbestos. The pin can be easily removed for maintenance of the valve.

⑪, ⑫ COVER BOLT/NUT

The cover studs and nuts are manufactured from alloy or stainless steel to the relevant ASTM standard.



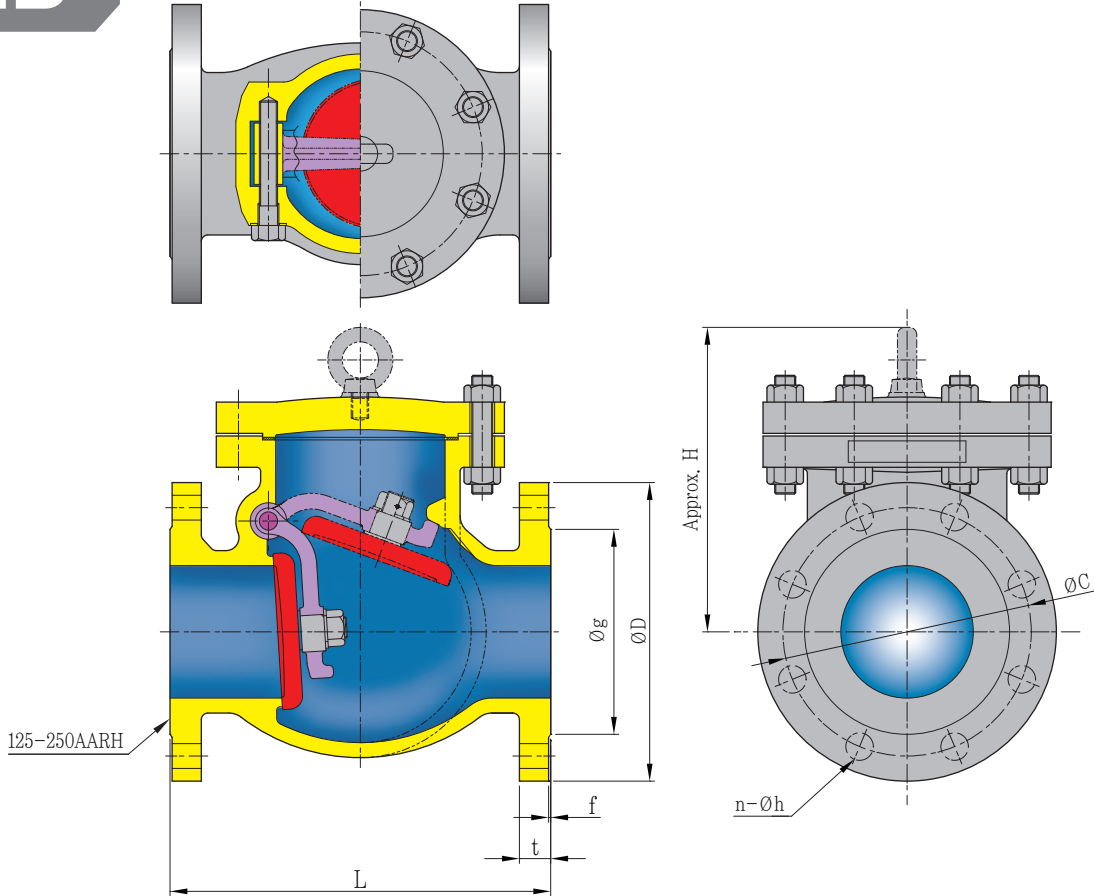


No	Name of Part	ASTM specification											
		Cast Stainless steel				Cast Duplex steel				Cast Alloy steel			
1	BODY	A351 CF8	A351 CF8M	A351 CG8M	A351 CF8C	A995 CD3MN	A995 CD4MCUN	A995 CE3MN	A995 CD3MWCUN	A351 CN7M	A494 CW6MC	A494 M35-1	A494 CW12MW
2	COVER	A351 CF8	A351 CF8M	A351 CG8M	A351 CF8C	A995 CD3MN	A995 CD4MCUN	A995 CE3MN	A995 CD3MWCUN	A351 CN7M	A494 CW6MC	A494 M35-1	A494 CW12MW
3	DISC	A351 CF8	A351 CF8M	A351 CG8M	A351 CF8C	A995 CD3MN	A995 CD4MCUN	A995 CE3MN	A995 CD3MWCUN	A351 CN7M	A494 CW6MC	A494 M35-1	A494 CW12MW
4	ARM	A351 CF8	A351 CF8M	A351 CG8M	A351 CF8C	A995 CD3MN	A995 CD4MCUN	A995 CE3MN	A995 CD3MWCUN	A351 CN7M	A494 CW6MC	A494 M35-1	A494 CW12MW
5	GASKET	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL
6	PLUG GASKET	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL
7	DISC WASHER	A276 304	A276 316	A276 317L	A276 347	A182 F51	A182 F61	A182 F53	A182 F55	ALLOY20	ALLOY 625	K400	C276
8	DISC NUT	A276 304	A276 316	A276 317L	A276 347	A182 F51	A182 F61	A182 F53	A182 F55	ALLOY20	ALLOY 625	K400	C276
9	ROD PIN	A276 304	A276 316	A276 317L	A276 347	A182 F51	A182 F61	A182 F53	A182 F55	ALLOY20	ALLOY 625	K400	C276
10	PLUG BOLT	A276 304	A276 316	A276 317L	A276 347	A182 F51	A182 F61	A182 F53	A182 F55	ALLOY20	ALLOY 625	K400	C276
11	COVER BOLT	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8
12	COVER NUT	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8	A194 8
13	EYE BOLT	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8	A193 B8

Note. - Gasket material : customer's requirements

SWING CHECK VALVE

150LB



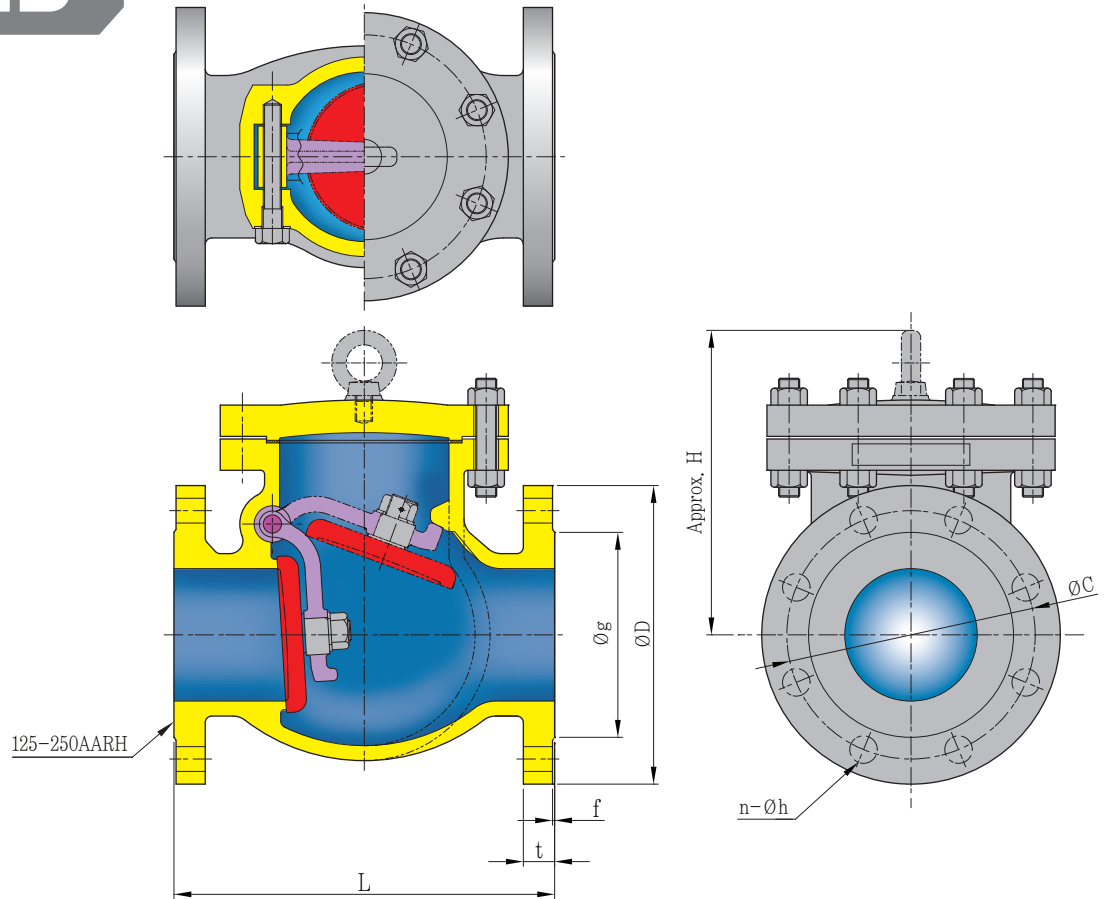
unit ; mm

unit ; inch

Size	L		ØD	ØC	Øg	n	Øh	t	f	H	Weight (kg)		Size	L		ØD	ØC	Øg	n	Øh	t	f	H	Weight (lb)	
	RF	BW									RF	BW		RF	BW										
50	203	203	152.0	120.5	92.0	4	19	15.9	1.6	135	19.4	16.5	2"	7.99	7.99	5.98	4.74	3.62	4	0.75	0.63	0.06	5.31	42.8	36.4
65	216	216	178.0	139.5	105.0	4	19	17.5	1.6	150	23.3	18.4	2 1/2"	8.50	8.50	7.01	5.49	4.13	4	0.75	0.69	0.06	5.91	51.3	40.6
80	241	241	190.0	152.5	127.0	4	19	19.1	1.6	160	29.1	20.4	3"	9.49	9.49	7.48	6.00	5.00	4	0.75	0.75	0.06	6.30	64.2	44.9
100	292	292	229.0	190.5	157.0	8	19	23.9	1.6	190	42.7	25.2	4"	11.50	11.50	9.02	7.50	6.18	8	0.75	0.94	0.06	7.48	94.1	55.6
125	330	330	254.0	216.0	186.0	8	22	23.9	1.6	250	58.2	43.7	5"	12.99	12.99	10.00	8.50	7.32	8	0.87	0.94	0.06	9.84	128.3	96.2
150	356	356	279.0	241.5	216.0	8	22	25.4	1.6	300	75.7	60.1	6"	14.02	14.02	10.98	9.51	8.50	8	0.87	1.00	0.06	11.81	166.8	132.6
200	495	495	343.0	298.5	270.0	8	22	28.6	1.6	350	114.5	88.3	8"	19.49	19.49	13.50	11.75	10.63	8	0.87	1.13	0.06	13.78	252.3	194.6
250	622	622	406.0	362.0	324.0	12	25	30.2	1.6	360	228.9	197.9	10"	24.49	24.49	15.98	14.25	12.76	12	0.98	1.19	0.06	14.17	504.7	436.3
300	698	698	483.0	432.0	381.0	12	25	31.8	1.6	380	333.7	284.2	12"	27.48	27.48	19.02	17.01	15.00	12	0.98	1.25	0.06	14.96	735.6	626.6
350	787	787	533.0	476.0	413.0	12	29	35.0	1.6	460	409.3	291.0	14"	30.98	30.98	20.98	18.74	16.26	12	1.14	1.38	0.06	18.11	902.4	641.5
400	864	864	597.0	539.5	470.0	16	29	36.6	1.6	560	615.0	561.6	16"	34.02	34.02	23.50	21.24	18.50	16	1.14	1.44	0.06	22.05	1355.8	1238.2
450	978	978	635.0	578.0	533.0	16	32	39.7	1.6	620	791.5	680.9	18"	38.50	38.50	25.00	22.76	20.98	16	1.26	1.56	0.06	24.41	1745.0	1501.2
500	978	978	698.0	635.0	584.0	20	32	42.9	1.6	700	952.5	826.4	20"	38.50	38.50	27.48	25.00	22.99	20	1.26	1.69	0.06	27.56	2100.0	1822.0
600	1295	1295	813.0	749.5	692.0	20	35	47.7	1.6	800	1726.6	1577.2	24"	50.98	50.98	32.01	29.51	27.24	20	1.38	1.88	0.06	31.50	3806.5	3477.2
700	1448	1448	927.0	863.5	800.0	28	35	71.4	1.6	900	1683.0	1418.1	28"	57.01	57.01	36.50	34.00	31.50	28	1.38	2.81	0.06	35.43	3710.3	3126.5
750	1524	1524	984.3	914.4	857.3	28	35	74.7	1.6	930	2044.8	1947.8	30"	60.00	60.00	38.75	36.00	33.75	28	1.38	2.94	0.06	36.61	4507.9	4294.1
800	1524	1524	1060.5	978.0	914.5	28	41	81.0	1.6	1000	2328.0	2182.5	32"	60.00	60.00	41.75	38.50	36.00	28	1.61	3.19	0.06	39.37	5132.4	4811.6
900	1956	1956	1168.4	1085.9	1022.4	32	41	90.4	1.6	1150	3249.5	3055.5	36"	77.01	77.01	46.00	42.75	40.25	32	1.61	3.56	0.06	45.28	7163.9	6736.2

- Note.**
- Flange drilling 2" ~ 24" is ANSI B16.5
 - Flange drilling 26" over is ASME B16.47 series.A
 - Please contact for other sizes.
 - This dimension can be changed without notification.

300LB



unit ; mm

unit ; inch

Size	L			ØD	ØC	Øg	n	Øh	t	f	H	Weight (kg)		Size	L			ØD	ØC	Øg	n	Øh	t	f	H	Weight (lb)	
	RF	BW	RTJ									RF	BW		RF	BW	RTJ									RF	BW
50	267	267	283	165.0	127.0	92.0	8	19	22.3	1.6	175	23.3	20.4	2"	10.51	10.51	11.14	6.50	5.00	3.62	8	0.75	0.88	0.06	6.89	51.3	44.9
65	292	292	308	190.0	149.0	105.0	8	22	25.4	1.6	190	35.9	29.1	2 1/2"	11.50	11.50	12.13	7.48	5.87	4.13	8	0.87	1.00	0.06	7.48	79.1	64.2
80	318	318	333	210.0	168.0	127.0	8	22	28.6	1.6	205	43.7	34.0	3"	12.52	12.52	13.11	8.27	6.61	5.00	8	0.87	1.13	0.06	8.07	96.2	74.8
100	356	356	371	254.0	200.0	157.0	8	22	31.8	1.6	220	66.0	49.5	4"	14.02	14.02	14.61	10.00	7.87	6.18	8	0.87	1.25	0.06	8.66	145.4	109.1
150	444	444	460	318.0	270.0	216.0	12	22	36.6	1.6	326	132.9	106.7	6"	17.48	17.48	18.11	12.52	10.63	8.50	12	0.87	1.44	0.06	12.83	293.0	235.2
200	533	533	549	381.0	330.0	270.0	12	25	41.3	1.6	376	213.4	176.5	8"	20.98	20.98	21.61	15.00	12.99	10.63	12	0.98	1.63	0.06	14.80	470.5	389.2
250	622	622	638	444.0	387.5	324.0	16	29	47.7	1.6	473	261.9	203.7	10"	24.49	24.49	25.12	17.48	15.26	12.76	16	1.14	1.88	0.06	18.62	577.4	449.1
300	711	711	727	521.0	451.0	381.0	16	32	50.8	1.6	530	480.2	407.4	12"	27.99	27.99	28.62	20.51	17.76	15.00	16	1.26	2.00	0.06	20.87	1058.5	898.2
350	838	838	854	584.0	514.5	413.0	20	32	54.0	1.6	580	659.6	509.3	14"	32.99	32.99	33.62	22.99	20.26	16.26	20	1.26	2.13	0.06	22.83	1454.2	1122.7
400	864	864	880	648.0	571.5	470.0	20	35	57.2	1.6	695	921.5	776.0	16"	34.02	34.02	34.65	25.51	22.50	18.50	20	1.38	2.25	0.06	27.36	2031.6	1710.8
450	978	978	994	711.0	628.5	533.0	24	35	60.4	1.6	780	1164.0	969.0	18"	38.50	38.50	39.13	27.99	24.74	20.98	24	1.38	2.38	0.06	30.71	2566.2	2136.3
500	1016	1016	1035	775.0	686.0	584.0	24	35	63.5	1.6	790	1455.0	1183.4	20"	40.00	40.00	40.75	30.51	27.01	22.99	24	1.38	2.50	0.06	31.10	3207.7	2609.0
600	1346	1346	1368	914.0	813.0	692.0	24	41	69.9	1.6	1020	2134.0	1786.7	24"	52.99	52.99	53.86	35.98	32.01	27.24	24	1.61	2.75	0.06	40.16	4704.7	3939.1
700	1499	1499	1524	1035.0	940.0	800.0	28	45	85.9	1.6	1120	2716.0	2328.0	28"	59.02	59.02	60.00	40.75	37.01	31.50	28	1.77	3.38	0.06	44.09	5987.8	5132.4
750	1594	1594	1619	1092.0	997.0	857.3	28	45	92.0	1.6	1200	3298.0	2861.5	30"	62.76	62.76	63.74	42.99	39.25	33.75	28	1.77	3.62	0.06	47.24	7270.8	6308.5
900	2083	2083	2111	1270.0	1168.4	1022.4	32	54	104.7	1.6	1250	4850.0	3987.7	36"	82.01	82.01	83.11	50.00	46.00	40.25	32	2.13	4.12	0.06	49.21	10692.4	8791.3

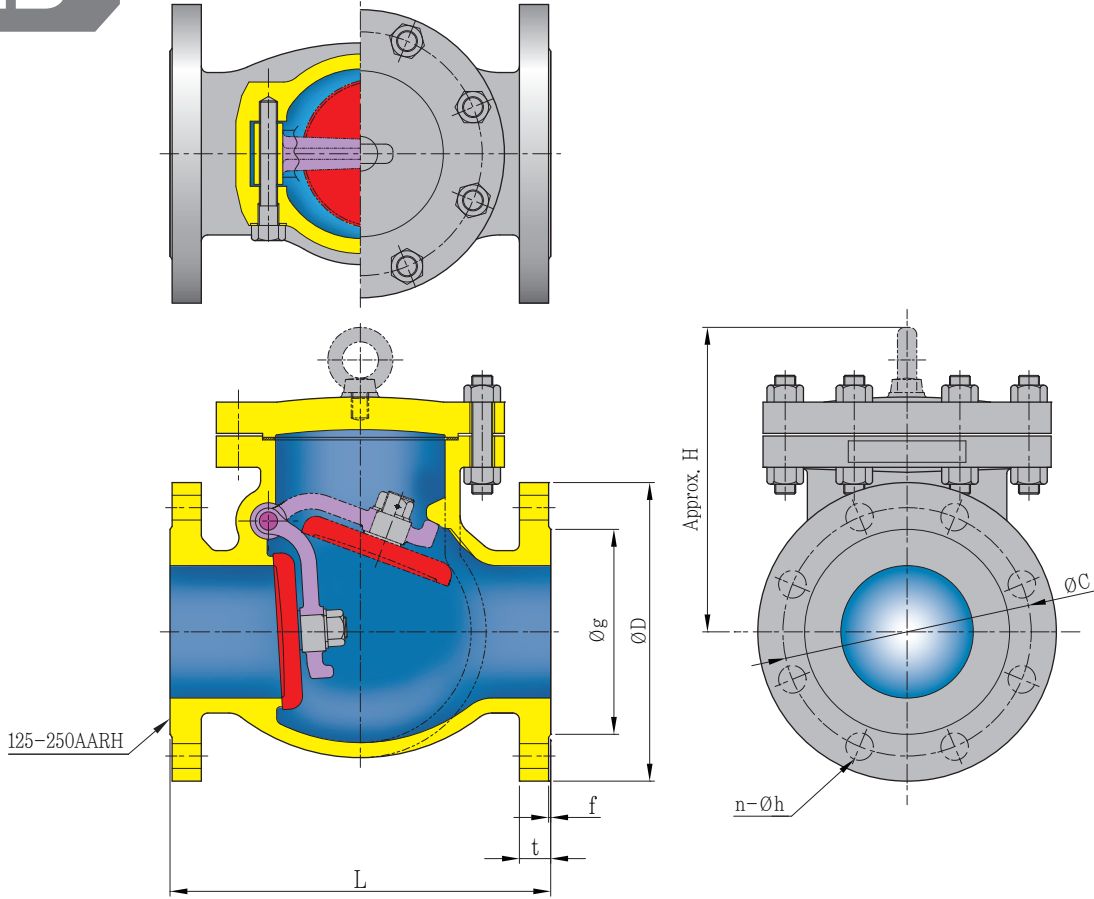
Note.

- Flange drilling 2" ~ 24" is ANSI B16.5
 - Please contact for other sizes.

- Flange drilling 26" over is ASME B16.47 series.A
 - This dimension can be changed without notification.

SWING CHECK VALVE

600LB



unit ; mm

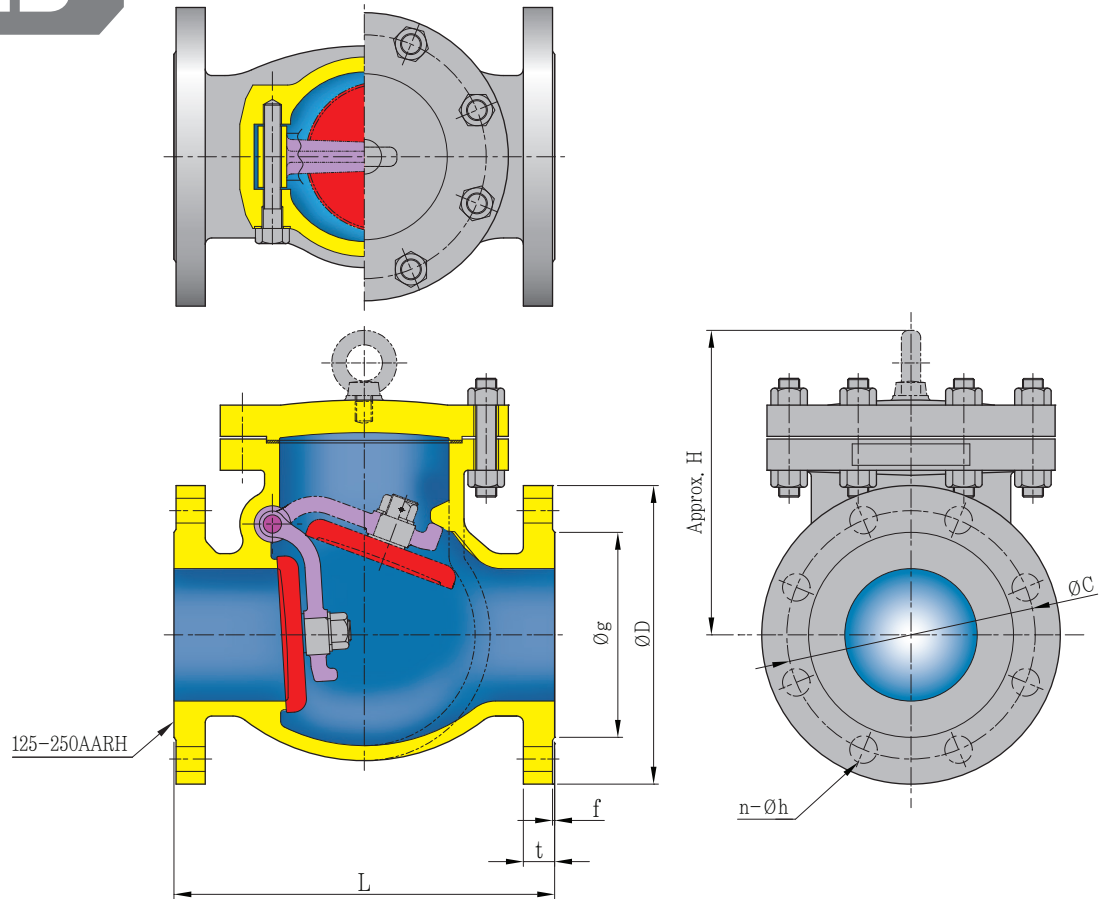
unit ; inch

Size	L			ΦD	ΦC	Φg	n	Φh	t	f	H	Weight (kg)		Size	L			ΦD	ΦC	Φg	n	Φh	t	f	H	Weight (lb)	
	RF	BW	RTJ									RF	BW		RF	BW	RTJ									RF	BW
50	292	292	295	165.0	127.0	92.0	8	19	25.4	6.4	195	38.8	36.9	2"	11.50	11.50	11.61	6.50	5.00	3.62	8	0.75	1.00	0.25	7.68	85.5	81.3
65	330	330	333	190.0	149.0	105.0	8	22	28.6	6.4	230	53.4	43.7	2 1/2"	12.99	12.99	13.11	7.48	5.87	4.13	8	0.87	1.13	0.25	9.06	117.6	96.2
80	356	356	359	210.0	168.0	127.0	8	22	31.8	6.4	250	69.8	61.1	3"	14.02	14.02	14.13	8.27	6.61	5.00	8	0.87	1.25	0.25	9.84	154.0	134.7
100	432	432	435	273.0	216.0	157.0	8	25	38.1	6.4	300	111.6	77.6	4"	17.01	17.01	17.13	10.75	8.50	6.18	8	0.98	1.50	0.25	11.81	245.9	171.1
150	559	559	562	356.0	292.0	216.0	12	29	47.7	6.4	390	242.5	198.9	6"	22.01	22.01	22.13	14.02	11.50	8.50	12	1.14	1.88	0.25	15.35	534.6	438.4
200	660	660	664	419.0	349.0	270.0	12	32	55.6	6.4	430	407.4	335.6	8"	25.98	25.98	26.14	16.50	13.74	10.63	12	1.26	2.19	0.25	16.93	898.2	739.9
250	787	787	791	508.0	432.0	324.0	16	35	63.5	6.4	525	593.6	474.3	10"	30.98	30.98	31.14	20.00	17.01	12.76	16	1.38	2.50	0.25	20.67	1308.8	1045.7
300	838	838	841	559.0	489.0	381.0	20	35	66.7	6.4	615	785.7	648.0	12"	32.99	32.99	33.11	22.01	19.25	15.00	20	1.38	2.63	0.25	24.21	1732.2	1428.5
350	889	889	892	603.0	527.0	413.0	20	38	69.9	6.4	660	873.0	853.6	14"	35.00	35.00	35.12	23.74	20.75	16.26	20	1.50	2.75	0.25	25.98	1924.6	1881.9
400	991	991	994	686.0	603.0	470.0	20	41	76.2	6.4	815	1307.6	1084.5	16"	39.02	39.02	39.13	27.01	23.74	18.50	20	1.61	3.00	0.25	32.09	2882.7	2390.8
450	1092	1092	1095	743.0	654.0	533.0	20	45	82.6	6.4	960	1957.5	1671.3	18"	42.99	42.99	43.11	29.25	25.75	20.98	20	1.77	3.25	0.25	37.80	4315.5	3684.6
500	1194	1194	1200	813.0	724.0	584.0	24	45	88.9	6.4	1025	2316.4	1952.6	20"	47.01	47.01	47.24	32.01	28.50	22.99	24	1.77	3.50	0.25	40.35	5106.7	4304.8
600	1397	1397	1406	940.0	838.0	692.0	24	51	102.0	6.4	1200	3166.1	2645.2	24"	55.00	55.00	55.35	37.01	32.99	27.24	24	2.01	4.02	0.25	47.24	6980.0	5831.6
700	1600	1600	1613	1073.2	985.2	800.0	28	54	111.3	6.4	1275	3977.0	3395.0	28"	62.99	62.99	63.50	42.25	38.79	31.50	28	2.13	4.38	0.25	50.20	8767.8	7484.7
750	1651	1651	1664	1130.3	1022.4	857.3	28	54	114.3	6.4	1375	4850.0	4075.0	30"	65.00	65.00	65.51	44.50	40.25	33.75	28	2.13	4.50	0.25	54.13	10692.4	8983.8

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5.
 - Please contact for other sizes.

- Flange drilling 26" over is ASME B16.47 series.A
 - This dimension can be changed without notification.

900LB

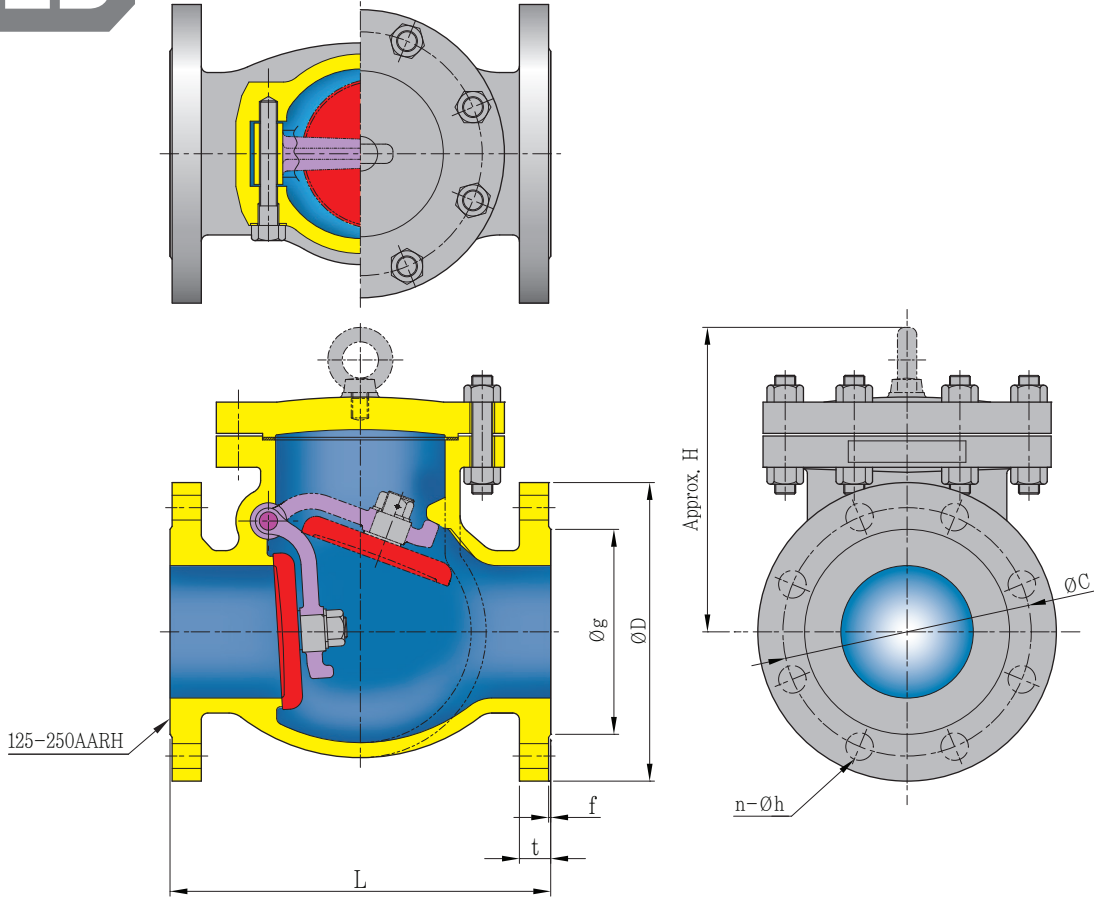


Size	unit ; mm											unit ; inch															
	L			φD	φC	φg	n	φh	t	f	H	Weight (kg)		L			φD	φC	φg	n	φh	t	f	H	Weight (lb)		
	RF	BW	RTJ									RF	BW	Size	RF	BW									RTJ	RF	BW
50	368	368	371	216	165.0	92.0	8	25	38.1	6.4	200	70.8	52.4	2"	14.49	14.49	14.61	8.50	6.50	3.62	8	0.98	1.50	0.25	7.87	156.1	115.5
65	419	419	422	244	190.5	105.0	8	29	41.1	6.4	230	79.5	60.1	2 1/2"	16.50	16.50	16.61	9.61	7.50	4.13	8	1.14	1.62	0.25	9.06	175.4	132.6
80	381	381	384	241	190.5	127.0	8	25	38.1	6.4	250	106.7	84.4	3"	15.00	15.00	15.12	9.49	7.50	5.00	8	0.98	1.50	0.25	9.84	235.2	186.0
100	457	457	460	292	235.0	157.0	8	32	44.5	6.4	360	207.6	168.8	4"	17.99	17.99	18.11	11.50	9.25	6.18	8	1.26	1.75	0.25	14.17	457.6	372.1
150	610	610	613	381	317.5	216.0	12	32	55.6	6.4	400	368.6	221.2	6"	24.02	24.02	24.13	15.00	12.50	8.50	12	1.26	2.19	0.25	15.75	812.6	487.6
200	737	737	740	470	393.7	270.0	12	38	63.5	6.4	480	605.3	479.2	8"	29.02	29.02	29.13	18.50	15.50	10.63	12	1.50	2.50	0.25	18.90	1334.4	1056.4
250	838	838	841	546	470.0	324.0	16	38	69.9	6.4	700	1115.5	921.5	10"	32.99	32.99	33.11	21.50	18.50	12.76	16	1.50	2.75	0.25	27.56	2459.3	2031.6
300	965	965	968	610	533.5	381.0	20	38	79.2	6.4	745	1406.5	1144.6	12"	37.99	37.99	38.11	24.02	21.00	15.00	20	1.50	3.12	0.25	29.33	3100.8	2523.4
350	1029	1029	1038	641	558.8	413.0	20	41	85.9	6.4	775	1697.5	1406.5	14"	40.51	40.51	40.87	25.24	22.00	16.26	20	1.61	3.38	0.25	30.51	3742.3	3100.8
400	1130	1130	1140	705	616.0	470.0	20	45	88.9	6.4	850	2347.4	1988.5	16"	44.49	44.49	44.88	27.76	24.25	18.50	20	1.77	3.50	0.25	33.46	5175.1	4383.9
450	1219	1219	1232	787	686.0	533.0	20	51	101.6	6.4	915	3152.5	2619.0	18"	47.99	47.99	48.50	30.98	27.01	20.98	20	2.01	4.00	0.25	36.02	6950.1	5773.9
500	1321	1321	1334	857	749.5	584.0	20	54	108.0	6.4	1040	3880.0	3201.0	20"	52.01	52.01	52.52	33.74	29.51	22.99	20	2.13	4.25	0.25	40.94	8553.9	7057.0
600	1549	1549	1568	1041	902.0	692.0	20	67	139.7	6.4	1185	5626.0	4365.0	24"	60.98	60.98	61.73	40.98	35.51	27.24	20	2.64	5.50	0.25	46.65	12403.2	9623.2

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

SWING CHECK VALVE

1500LB



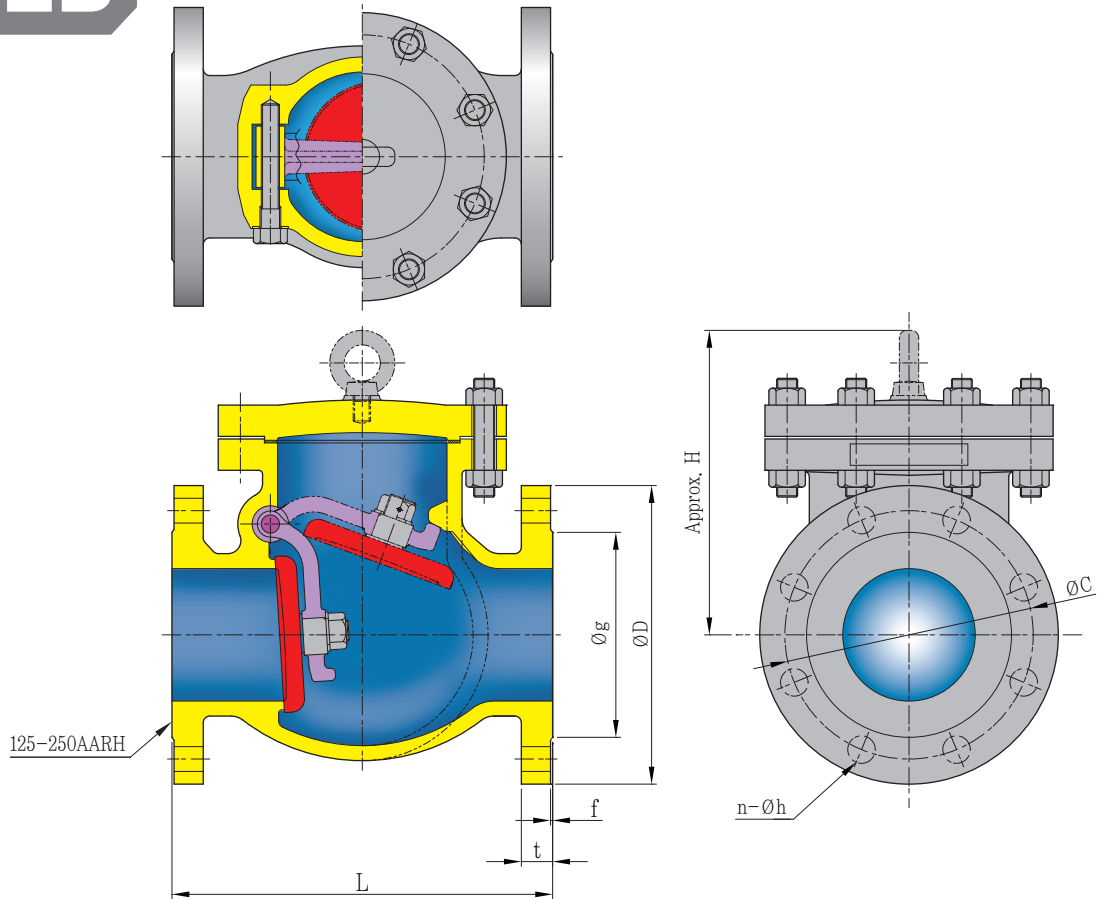
unit ; mm

unit ; inch

Size	L			ΦD	ΦC	Φg	n	Φh	t	f	H	Weight (kg)		Size	L			ΦD	ΦC	Φg	n	Φh	t	f	H	Weight (lb)	
	RF	BW	RTJ									RF	BW		RF	BW	RTJ									RF	BW
50	368	368	371	216.0	165.0	92.0	8	25	38.1	6.4	280	67.9	49.5	2"	14.49	14.49	14.61	8.50	6.50	3.62	8	0.98	1.50	0.25	11.02	149.7	109.1
65	419	419	422	244.0	190.5	105.0	8	29	41.1	6.4	350	97.0	84.4	2 1/2"	16.50	16.50	16.61	9.61	7.50	4.13	8	1.14	1.62	0.25	13.78	213.8	186.0
80	470	470	473	267.0	203.0	127.0	8	32	47.8	6.4	380	164.9	135.8	3"	18.50	18.50	18.62	10.51	7.99	5.00	8	1.26	1.88	0.25	14.96	363.5	299.4
100	546	546	549	311.0	241.5	157.0	8	35	53.8	6.4	410	232.8	186.2	4"	21.50	21.50	21.61	12.24	9.51	6.18	8	1.38	2.12	0.25	16.14	513.2	410.6
150	705	705	711	394.0	317.5	216.0	12	38	82.6	6.4	550	469.5	357.9	6"	27.76	27.76	27.99	15.51	12.50	8.50	12	1.50	3.25	0.25	21.65	1035.0	789.1
200	832	832	842	483.0	393.7	270.0	12	45	91.9	6.4	640	1154.3	936.1	8"	32.76	32.76	33.15	19.02	15.50	10.63	12	1.77	3.62	0.25	25.20	2544.8	2063.6
250	991	991	1000	584.0	482.6	324.0	12	51	108.0	6.4	750	1794.5	1435.6	10"	39.02	39.02	39.37	22.99	19.00	12.76	12	2.01	4.25	0.25	29.53	3956.2	3165.0
300	1130	1130	1146	673.0	571.5	381.0	16	54	124.0	6.4	1000	3230.1	2677.2	12"	44.49	44.49	45.12	26.50	22.50	15.00	16	2.13	4.88	0.25	39.37	7121.2	5902.2
350	1257	1257	1276	749.0	635.0	413.0	16	61	133.4	6.4	1030	3492.0	2750.0	14"	49.49	49.49	50.24	29.49	25.00	16.26	16	2.40	5.25	0.25	40.55	7698.5	6062.6
400	1384	1384	1407	826.0	705.0	470.0	16	67	146.1	6.4	1060	4753.0	3783.0	16"	54.49	54.49	55.39	32.52	27.76	18.50	16	2.64	5.75	0.25	41.73	10478.6	8340.1
450	1537	1537	1559	914.0	774.7	533.5	16	73	162.1	6.4	1190	6402.0	5092.5	18"	60.51	60.51	61.38	35.98	30.50	21.00	16	2.87	6.38	0.25	46.85	14114.0	11227.0
500	1664	1664	1686	984.0	832.0	584.2	16	79	177.8	6.4	1290	7905.5	6256.5	20"	65.51	65.51	66.38	38.74	32.76	23.00	16	3.11	7.00	0.25	50.79	17428.6	13793.2
600	1943	1943	1972	1168.0	990.5	692.2	16	92	203.2	6.4	1445	11397.5	8730.0	24"	76.50	76.50	77.64	45.98	39.00	27.25	16	3.62	8.00	0.25	56.89	25127.2	19246.4

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

2500LB



unit ; mm

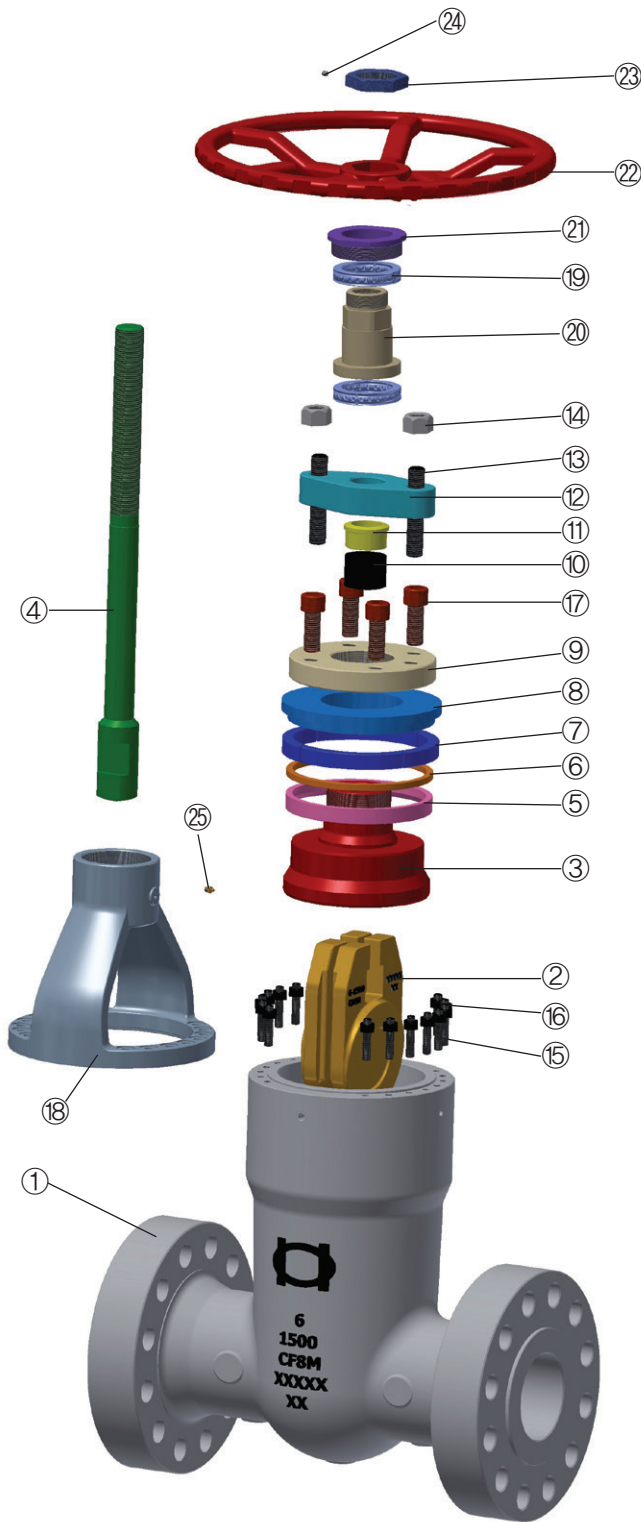
unit ; inch

Size	L			ΦD	ΦC	Φg	n	Φh	t	f	H	Weight (kg)		Size	L			ΦD	ΦC	Φg	n	Φh	t	f	H	Weight (lb)	
	RF	BW	RTJ									RF	BW		RF	BW	RTJ									RF	BW
50	451	451	454	235	171.5	92	8	29	50.8	6.4	345	145.5	116.4	2"	17.76	17.76	17.87	9.25	6.75	3.62	8	1.14	2.00	0.25	13.58	320.8	256.6
65	508	508	514	267	197.0	105	8	32	57.2	6.4	405	232.8	189.2	2 1/2"	20.00	20.00	20.24	10.51	7.76	4.13	8	1.26	2.25	0.25	15.94	513.2	417.0
80	578	578	584	305	228.5	127	8	35	66.5	6.4	420	339.5	271.6	3"	22.76	22.76	22.99	12.01	9.00	5.00	8	1.38	2.62	0.25	16.54	748.5	598.8
100	673	673	683	356	273.0	157	8	41	76.2	6.4	455	630.5	523.8	4"	26.50	26.50	26.89	14.02	10.75	6.18	8	1.61	3.00	0.25	17.91	1390.0	1154.8
150	914	914	927	483	368.5	216	8	54	108.0	6.4	545	1406.5	1164.0	6"	35.98	35.98	36.50	19.02	14.51	8.50	8	2.13	4.25	0.25	21.46	3100.8	2566.2
200	1022	1022	1038	552	438.0	270	12	54	127.0	6.4	695	2473.5	2134.0	8"	40.24	40.24	40.87	21.73	17.24	10.63	12	2.13	5.00	0.25	27.36	5453.1	4704.7
250	1270	1270	1292	673	540.0	324	12	67	165.1	6.4	780	3831.5	3055.5	10"	50.00	50.00	50.87	26.50	21.26	12.76	12	2.64	6.50	0.25	30.71	8447.0	6736.2
300	1422	1422	1445	762	619.5	381	12	73	184.2	6.4	975	5529.0	4413.5	12"	55.98	55.98	56.89	30.00	24.39	15.00	12	2.87	7.25	0.25	38.39	12189.4	9730.1

Note.

- Flange drilling 2" ~ 12" is ANSI B16.5.
- Please contact for other sizes.
- This dimension can be changed without notification.

PSB GATE VALVE



- Basic design : ASME B16.34, API 600, Integral / Renewable seat type
- Flange drilling : ANSI B16.5 (2"~24")
- Face to face : ANSI B16.10
- Test : API 598

① BODY

The body of the high pressure gate valve is designed as an one piece casting, with smooth inside contour providing maximum flow efficiency. The body has an integral casting guiding system to guide the wedge full through the valve stroke.

The pressure seal type gate valve is designed with 4 holes in the neck at the region of the segmental retainer for a proper disassembly. The contacting surface the pressure seal gasket outside has a stainless steel 18-8 inlay to assure soundness and corrosion resistance for carbon and alloy steel valves.

The body is seal welding for body seatings.

② DISC

The disc is circumferentially symmetrical in order to ensure a complete distribution of forces and to ensure that possible irregularities of alignment can be compensated.

The disc design is based upon the elasticity of the wedge material.

The disc contacting surface with deposit stellite no.6 hard facing is ensured by pressure tightness and freedom from sticking. It is connected to the stem by means of a T-joint.

Special attention is given to the seating surfaces which are ground and lapped to ensure a perfectly tight seal

③ BONNET

The bonnet is designed and manufactured in order to ensure a perfect seal, as well as to allow for easy dismantling and reassembly.

A longer packing life is ensured by a condensation chamber inserted between the backseat and the packing.

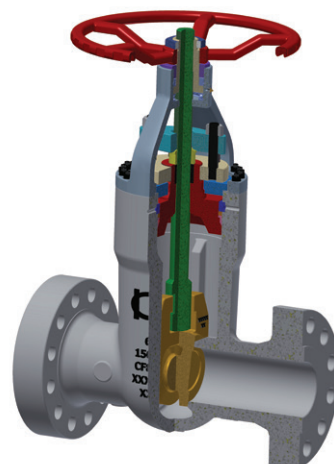
④ STEM

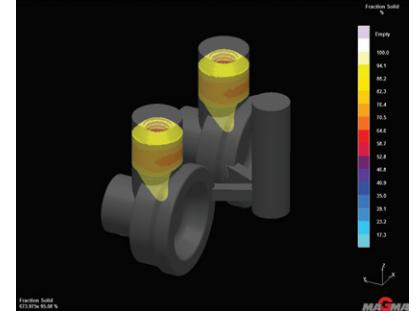
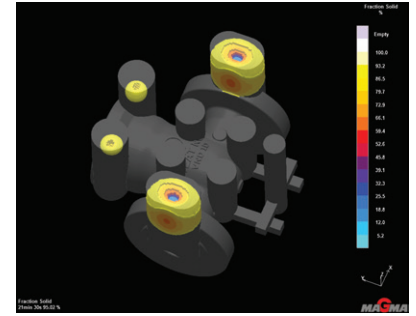
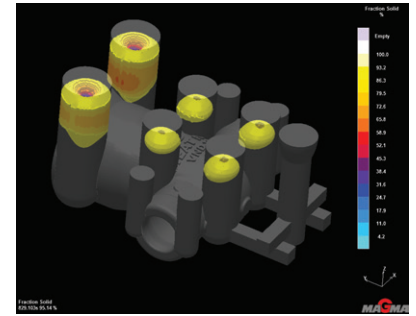
The non-rotating rising stem has trapezoidal thread.

The stem is ground to minimize friction and prevent damage to gland packing. The stem is jointed to the wedge by means of a T-connection which is an integral part of the stem itself. The stemhead has a tapered shoulder for backseating purposes.

⑫ YOKE SLEEVE

The yoke sleeve is made from cast austenitic ductile iron having high resistance to wear and a high melting point. It is designed to permit removal from the bonnet or the yoke while the valve is in service.



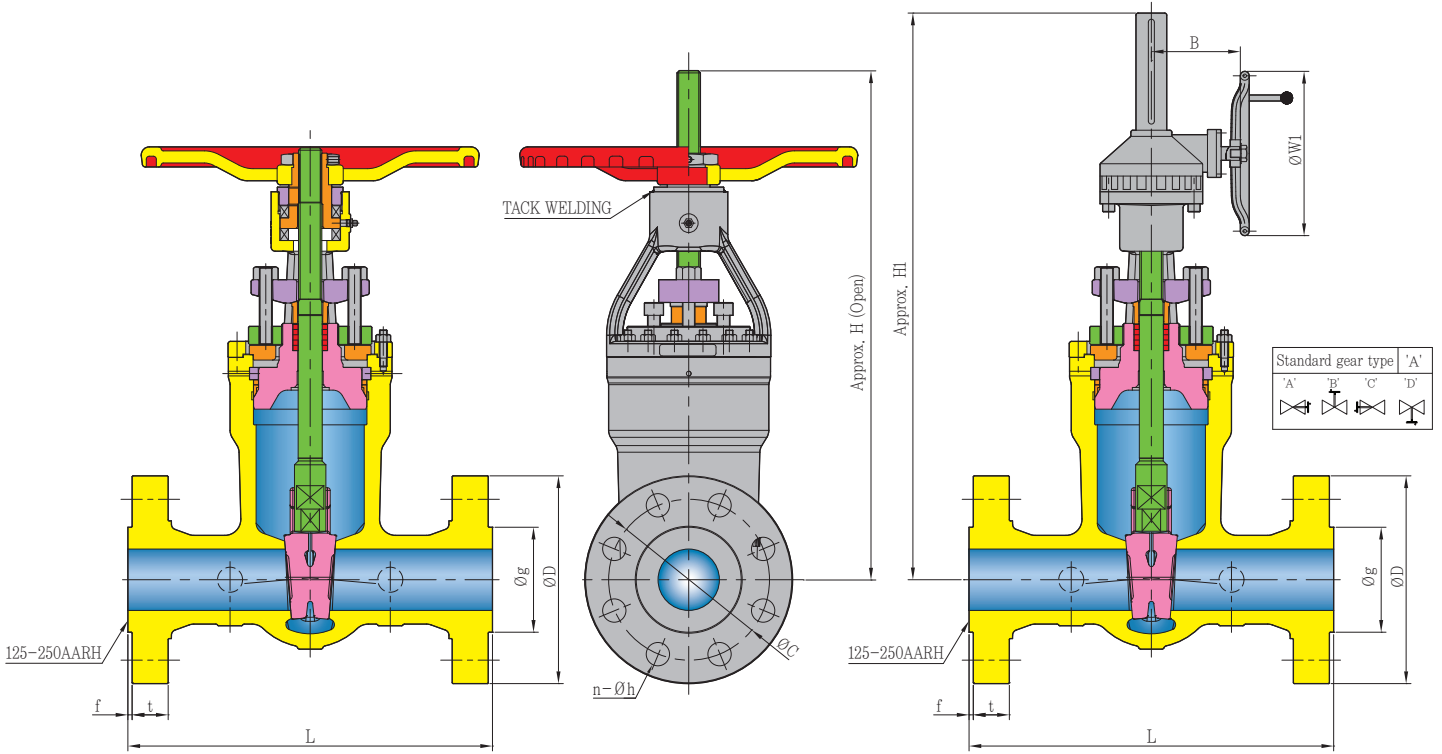


No	Name of Part	ASTM specification			
		Cast Stainless steel			
1	BODY	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
2	DISC	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
3	BONNET	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
4	STEM	A276 304	A276 304L	A276 316	A276 316L
5	PRESSURE SEAL	A240 304 / GRAPHITE + 304	A240 304L / GRAPHITE + 304L	A240 316 / GRAPHITE + 316	A240 316L / GRAPHITE + 316L
6	SPACER RING	A351 CF8 / A240 304	A351 CF3 / A240 304L	A351 CF8M / A240 316	A351 CF3M / A240 316L
7	SEGMENT RING	A351 CF8 / A240 304	A351 CF3 / A240 304L	A351 CF8M / A240 316	A351 CF3M / A240 316L
8	BONNET RETAINER	A351 CF8 / A276 304	A351 CF8 / A276 304	A351 CF8 / A276 304	A351 CF8 / A276 304
9	GLAND PLATE	A351 CF8 / A276 304	A351 CF8 / A276 304	A351 CF8 / A276 304	A351 CF8 / A276 304
10	PACKING	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR
11	GLAND RING	A276 304	A276 304L	A276 316	A276 316L
12	GLAND FLANGE	A351 CF8 / A276 304	A351 CF8 / A276 304	A351 CF8 / A276 304	A351 CF8 / A276 304
13	GLAND FLANGE BOLTS	A194 B8	A194 B8	A194 B8	A194 B8
14	GLAND FLANGE NUTS	A194 8	A194 8	A194 8	A194 8
15	YOKE BOLTS	A194 B8	A194 B8	A194 B8	A194 B8
16	YOKE NUTS	A194 B8	A194 B8	A194 B8	A194 B8
17	DRAW BOLTS	A194 B8	A194 B8	A194 B8	A194 B8
18	YOKE	A351 CF8	A351 CF8	A351 CF8	A351 CF8
19	BEARING	52100	52100	52100	52100
20	YOKE SLEEVE	A439 D2C	A439 D2C	A439 D2C	A439 D2C
21	SLEEVE NUT	A276 304	A276 304	A276 304	A276 304
22	HANDLE WHEEL	A536 60	A536 60	A536 60	A536 60
23	HANDLE NUT	A194 8	A194 8	A194 8	A194 8
24	SET BOLT	A194 B8	A194 B8	A194 B8	A194 B8
25	GREASE NIPPLE	A307 B	A307 B	A307 B	A307 B

Note. - Packing & gasket material ; customer's requirements

PSB GATE VALVE

600LB



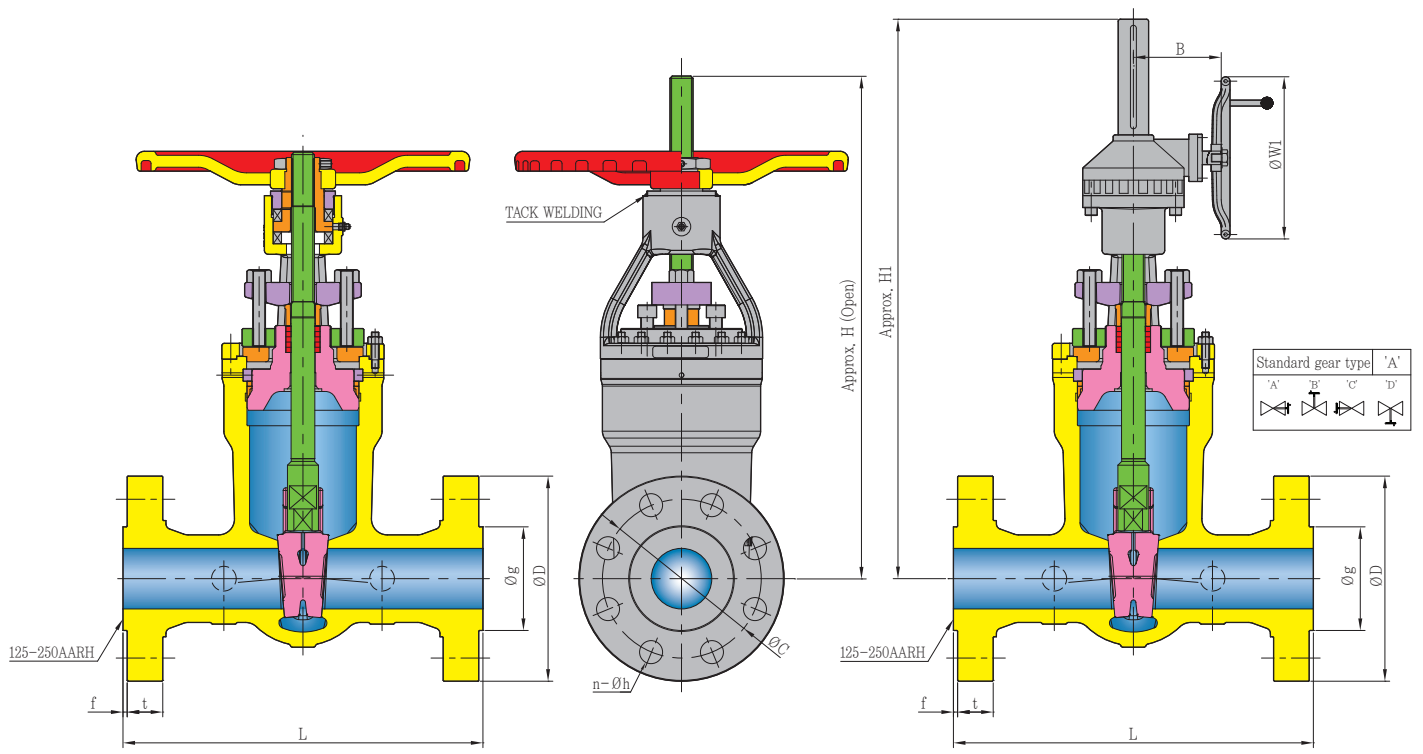
unit ; mm

unit ; inch

Size	L			ØD	ØC	Øg	n	Øh	t	f	Handle		Gear box			Weight (kg)		Size	L			ØD	ØC	Øg	n	Øh	t	f	Handle		Gear box			Weight (lb)	
	RF	BW	RTJ								ØW	H	B	ØW1	H1	RF	BW		ØW	H	B								ØW1	H1	RF	BW			
50	292	292	295	165.0	127.0	92.0	8	19	25.4	6.4	224	500	-	-	-	67.9	60.1	2"	11.50	11.50	11.61	6.50	5.00	3.62	8	0.75	1.00	0.25	8.82	19.69	-	-	-	149.7	132.6
65	330	216	333	190.0	149.0	105.0	8	22	28.6	6.4	224	530	-	-	-	92.2	77.6	2 1/2"	12.99	8.50	13.11	7.48	5.87	4.13	8	0.87	1.13	0.25	8.82	20.87	-	-	-	203.2	171.1
80	356	254	359	210.0	168.0	127.0	8	22	31.8	6.4	315	570	-	-	-	97.0	81.5	3"	14.02	10.00	14.13	8.27	6.61	5.00	8	0.87	1.25	0.25	12.40	22.44	-	-	-	213.8	179.6
100	432	305	435	273.0	216.0	157.0	8	25	38.1	6.4	355	610	-	-	-	143.6	111.6	4"	17.01	12.01	17.13	10.75	8.50	6.18	8	0.98	1.50	0.25	13.98	24.02	-	-	-	316.5	245.9
150	559	457	562	356.0	292.0	216.0	12	29	47.7	6.4	500	850	-	-	-	244.4	183.3	6"	22.01	17.99	22.13	14.02	11.50	8.50	12	1.14	1.88	0.25	19.69	33.46	-	-	-	538.9	404.2
200	660	584	664	419.0	349.0	270.0	12	32	55.6	6.4	500	1050	-	-	-	310.4	285.2	8"	25.98	22.99	26.14	16.50	13.74	10.63	12	1.26	2.19	0.25	19.69	41.34	-	-	-	684.3	628.7
250	787	711	791	508.0	432.0	324.0	16	35	63.5	6.4	630	1250	205	500	1550	471.4	428.7	10"	30.98	27.99	31.14	20.00	17.01	12.76	16	1.38	2.50	0.25	24.80	49.21	8.07	19.69	61.02	1039.3	945.2
300	838	813	841	559.0	489.0	381.0	20	35	66.7	6.4	-	-	225	630	1700	722.7	656.7	12"	32.99	32.01	33.11	22.01	19.25	15.00	20	1.38	2.63	0.25	-	-	8.86	24.80	66.93	1593.2	1447.8
350	889	889	892	603.0	527.0	413.0	20	38	69.9	6.4	-	-	225	630	1800	863.3	785.7	14"	35.00	35.00	35.12	23.74	20.75	16.26	20	1.50	2.75	0.25	-	-	8.86	24.80	70.87	1903.3	1732.2
400	991	991	994	686.0	603.0	470.0	20	41	76.2	6.4	-	-	250	710	2000	1365.8	1241.6	16"	39.02	39.02	39.13	27.01	23.74	18.50	20	1.61	3.00	0.25	-	-	9.84	27.95	78.74	3011.0	2737.3
450	1092	1092	1095	743.0	654.0	533.0	20	45	82.6	6.4	-	-	310	800	2400	1901.2	1726.6	18"	42.99	42.99	43.11	29.25	25.75	20.98	20	1.77	3.25	0.25	-	-	12.20	31.50	94.49	4191.4	3806.5
500	1194	1194	1200	813.0	724.0	584.0	24	45	88.9	6.4	-	-	310	800	2540	2560.8	2134.0	20"	47.01	47.01	47.24	32.01	28.50	22.99	24	1.77	3.50	0.25	-	-	12.20	31.50	100.00	5645.6	4704.7
600	1397	1397	1406	940.0	838.0	692.0	24	51	102.0	6.4	-	-	335	900	2750	3259.2	2716.0	24"	55.00	55.00	55.35	37.01	32.99	27.24	24	2.01	4.02	0.25	-	-	13.19	35.43	108.27	7185.3	5987.8

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

900LB



unit ; mm

unit ; inch

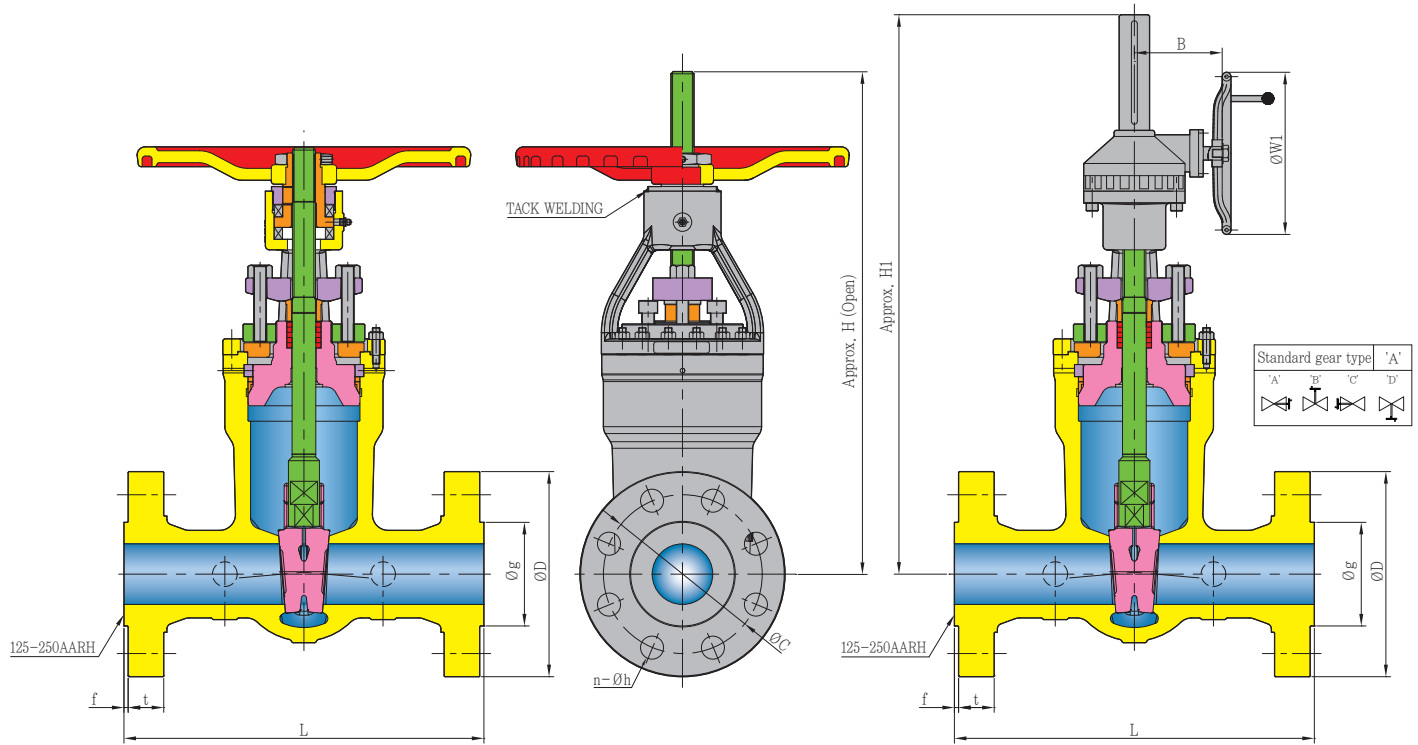
Size	L			ϕ_D	ϕ_C	ϕ_g	n	ϕ_h	t	f	Handle		Gear box			Weight (kg)		Size	L			ϕ_D	ϕ_C	ϕ_g	n	ϕ_h	t	f	Handle		Gear box			Weight (lb)	
	RF	BW	RTJ								ϕ_W	H	B	ϕ_W1	H1	RF	BW		RF	BW	RF								BW	RF	BW				
50	368	216	371	216	165.0	92.0	8	25	38.1	6.4	280	550	-	-	-	95.1	58.2	2"	14.49	8.50	14.61	8.50	6.50	3.62	8	0.98	1.50	0.25	11.02	21.65	-	-	-	209.6	128.3
65	419	254	422	244	190.5	105.0	8	29	41.1	6.4	280	590	-	-	-	111.6	70.8	2 1/2"	16.50	10.00	16.61	9.61	7.50	4.13	8	1.14	1.62	0.25	11.02	23.23	-	-	-	245.9	156.1
80	381	305	384	241	190.5	127.0	8	25	38.1	6.4	315	650	-	-	-	126.1	87.3	3"	15.00	12.01	15.12	9.49	7.50	5.00	8	0.98	1.50	0.25	12.40	25.59	-	-	-	278.0	192.5
100	457	356	460	292	235.0	157.0	8	32	44.5	6.4	355	750	-	-	-	145.5	97.0	4"	17.99	14.02	18.11	11.50	9.25	6.18	8	1.26	1.75	0.25	13.98	29.53	-	-	-	320.8	213.8
150	610	508	613	381	317.5	216.0	12	32	55.6	6.4	500	910	-	-	-	271.6	179.5	6"	24.02	20.00	24.13	15.00	12.50	8.50	12	1.26	2.19	0.25	19.69	35.83	-	-	-	598.8	395.6
200	737	660	740	470	393.7	270.0	12	38	63.5	6.4	630	1110	205	500	1350	640.2	479.2	8"	29.02	25.98	29.13	18.50	15.50	10.63	12	1.50	2.50	0.25	24.80	43.70	8.07	19.69	53.15	1411.4	1056.4
250	838	787	841	546	470.0	324.0	16	38	69.9	6.4	-	-	225	630	1580	931.2	713.0	10"	32.99	30.98	33.11	21.50	18.50	12.76	16	1.50	2.75	0.25	-	-	8.86	24.80	62.20	2052.9	1571.8
300	965	914	968	610	533.5	381.0	20	38	79.2	6.4	-	-	225	630	1750	1309.5	1018.5	12"	37.99	35.98	38.11	24.02	21.00	15.00	20	1.50	3.12	0.25	-	-	8.86	24.80	68.90	2887.0	2245.4
350	1029	991	1038	641	558.8	413.0	20	41	85.9	6.4	-	-	250	710	1860	1649.0	1358.0	14"	40.51	39.02	40.87	25.24	22.00	16.26	20	1.61	3.38	0.25	-	-	9.84	27.95	73.23	3635.4	2993.9
400	1130	1092	1140	705	616.0	470.0	20	45	88.9	6.4	-	-	250	710	2100	2328.0	1891.5	16"	44.49	42.99	44.88	27.76	24.25	18.50	20	1.77	3.50	0.25	-	-	9.84	27.95	82.68	5132.4	4170.0
450	1219	1181	1232	787	686.0	533.0	20	51	101.6	6.4	-	-	335	900	2450	3220.4	2648.1	18"	47.99	46.50	48.50	30.98	27.01	20.98	20	2.01	4.00	0.25	-	-	13.19	35.43	96.46	7099.8	5838.1
500	1321	1283	1334	857	749.5	584.0	20	54	108.0	6.4	-	-	380	900	2540	4268.0	3574.5	20"	52.01	50.51	52.52	33.74	29.51	22.99	20	2.13	4.25	0.25	-	-	14.96	35.43	100.00	9409.3	7880.3
600	1549	1511	1568	1041	902.0	692.0	20	67	139.7	6.4	-	-	440	1000	2900	6566.9	5267.1	24"	60.98	59.49	61.73	40.98	35.51	27.24	20	2.64	5.50	0.25	-	-	17.32	39.37	114.17	14475.5	11612.0

Note.

- Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
- This dimension can be changed without notification.

PSB GATE VALVE

1500LB



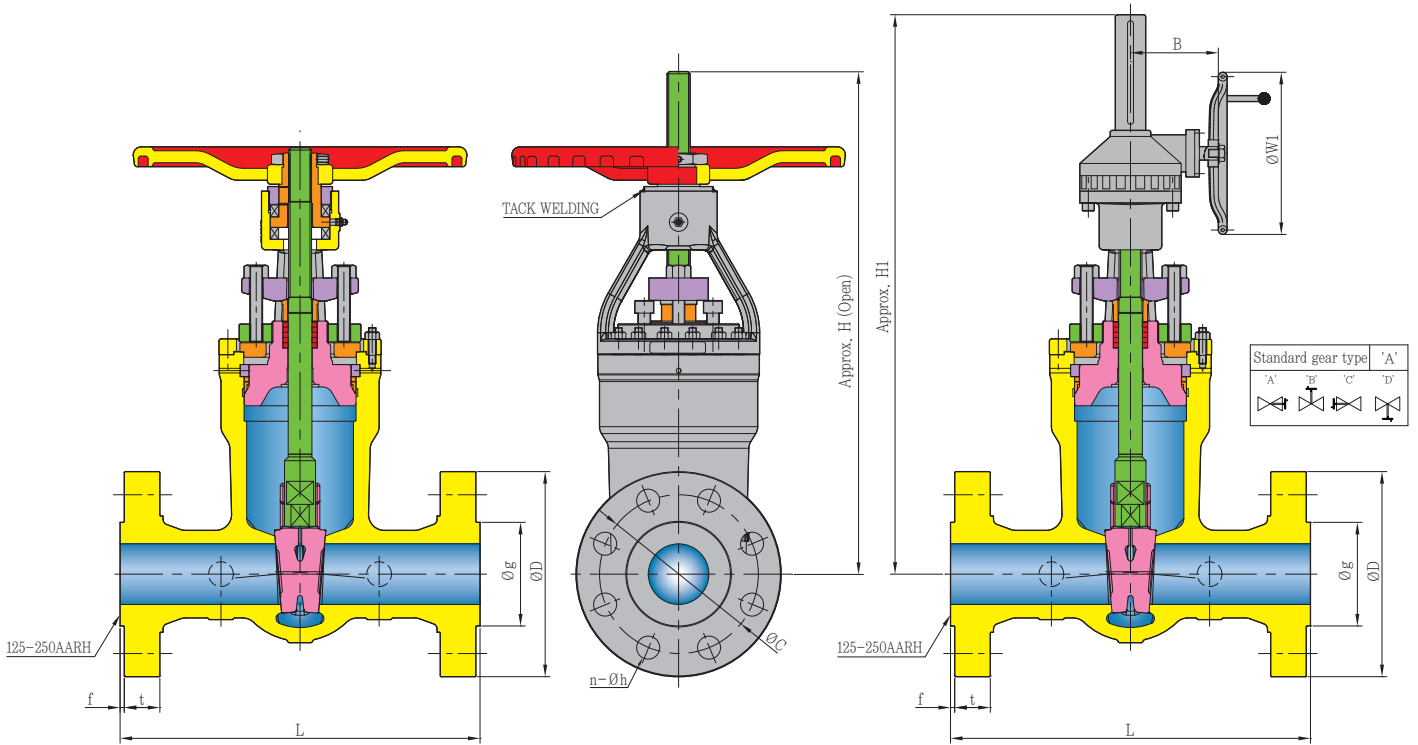
unit ; mm

unit ; inch

Size	L			ØD	ØC	Øg	n	Øh	t	f	Handle		Gear box		Weight (kg)		Size	L			ØD	ØC	Øg	n	Øh	t	f	Handle		Gear box		Weight (lb)			
	RF	BW	RTJ								ØW	H	B	ØW1	H1	RF		BW	RF	BW								ØW	H	B	ØW1	H1	RF	BW	
50	368	216	371	216.0	165.0	92.0	8	25	38.1	6.4	280	580	-	-	-	95.1	58.2	2"	14.49	8.50	14.61	8.50	6.50	3.62	8	0.98	1.50	0.25	11.02	22.83	-	-	-	209.6	128.3
65	419	254	422	244.0	190.5	105.0	8	29	41.1	6.4	315	620	-	-	-	145.5	97.0	2 1/2"	16.50	10.00	16.61	9.61	7.50	4.13	8	1.14	1.62	0.25	12.40	24.41	-	-	-	320.8	213.8
80	470	305	473	267.0	203.0	127.0	8	32	47.8	6.4	355	680	-	-	-	174.6	121.3	3"	18.50	12.01	18.62	10.51	7.99	5.00	8	1.26	1.88	0.25	13.98	26.77	-	-	-	384.9	267.3
100	546	406	549	311.0	241.5	157.0	8	35	53.8	6.4	400	780	190	400	900	201.8	145.5	4"	21.50	15.98	21.61	12.24	9.51	6.18	8	1.38	2.12	0.25	15.75	30.71	7.48	15.75	35.43	444.8	320.8
150	705	559	711	394.0	317.5	216.0	12	38	82.6	6.4	560	1020	205	500	1145	465.6	329.8	6"	27.76	22.01	27.99	15.51	12.50	8.50	12	1.50	3.25	0.25	22.05	40.16	8.07	19.69	45.08	1026.5	727.1
200	832	711	842	483.0	393.7	270.0	12	45	91.9	6.4	710	1150	250	710	1550	882.7	659.6	8"	32.76	27.99	33.15	19.02	15.50	10.63	12	1.77	3.62	0.25	27.95	45.28	9.84	27.95	61.02	1946.0	1454.2
250	991	864	1000	584.0	482.6	324.0	12	51	108.0	6.4	-	-	250	710	1650	1367.7	873.0	10"	39.02	34.02	39.37	22.99	19.00	12.76	12	2.01	4.25	0.25	-	-	9.84	27.95	64.96	3015.3	1924.6
300	1130	991	1146	673.0	571.5	381.0	16	54	124.0	6.4	-	-	335	900	1850	2017.6	1406.5	12"	44.49	39.02	45.12	26.50	22.50	15.00	16	2.13	4.88	0.25	-	-	13.19	35.43	72.83	4448.0	3100.8
350	1257	1067	1276	749.0	635.0	413.0	16	61	133.4	6.4	-	-	380	900	2020	2531.7	1746.0	14"	49.49	42.01	50.24	29.49	25.00	16.26	16	2.40	5.25	0.25	-	-	14.96	35.43	79.53	5581.4	3849.3
400	1384	1194	1407	826.0	705.0	470.0	16	67	146.1	6.4	-	-	380	900	2350	3492.0	2667.5	16"	54.49	47.01	55.39	32.52	27.76	18.50	16	2.64	5.75	0.25	-	-	14.96	35.43	92.52	7698.5	5880.8
450	1537	1346	1559	914.0	775.0	533.5	16	73	162.1	6.4	-	-	335	900	2750	5781.2	4491.1	18"	60.51	52.99	61.38	35.98	30.51	21.00	16	2.87	6.38	0.25	-	-	13.19	35.43	108.27	12745.4	9901.2
500	1664	1473	1686	984.0	832.0	584.5	16	79	177.8	6.4	-	-	380	900	2510	7148.9	5548.4	20"	65.51	57.99	66.38	38.74	32.76	23.01	16	3.11	7.00	0.25	-	-	14.96	35.43	98.82	15740.6	12232.1
600	1943	1943	1972	1168.0	990.5	692.5	16	92	203.2	6.4	-	-	380	900	2890	10291.7	7992.8	24"	76.50	76.50	77.64	45.98	39.00	27.26	16	3.62	8.00	0.25	-	-	14.96	35.43	113.78	22689.3	17621.1

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

2500LB



unit ; mm

unit ; inch

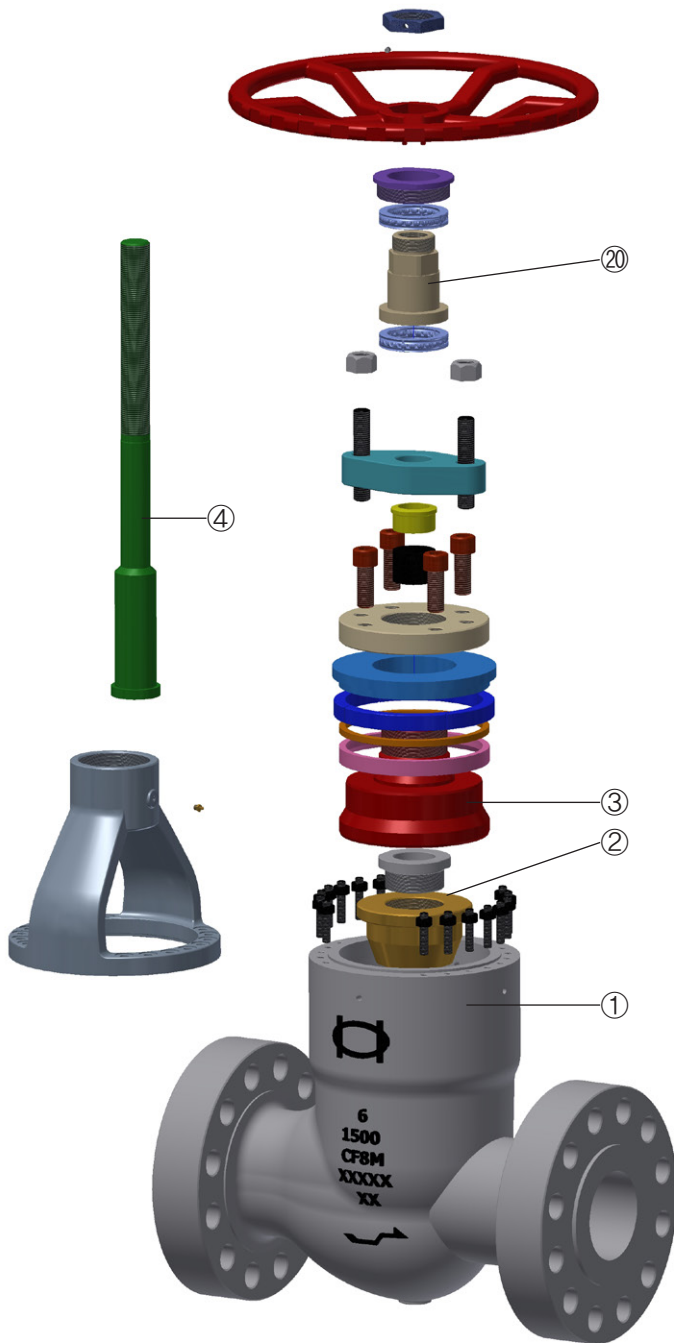
Size	L			φD	φC	φg	n	φh	t	f	Handle		Gear box			Weight (kg)		Size	L			φD	φC	φg	n	φh	t	f	Handle		Gear box			Weight (lb)	
	RF	BW	RTJ								φW	H	B	φW1	H1	RF	BW		RF	BW	RF								BW	RF	BW				
50	451	279	454	235	171.5	92	8	29	50.8	6.4	280	600	-	-	-	126.1	97.0	2"	17.76	10.98	17.87	9.25	6.75	3.62	8	1.14	2.00	0.25	11.02	23.62	-	-	-	278.0	213.8
65	508	330	514	267	197.0	105	8	32	57.2	6.4	400	635	-	-	-	174.6	135.8	2 1/2"	20.00	12.99	20.24	10.51	7.76	4.13	8	1.26	2.25	0.25	15.75	25.00	-	-	-	384.9	299.4
80	578	368	584	305	228.5	127	8	35	66.5	6.4	400	715	-	-	-	213.4	164.9	3"	22.76	14.49	22.99	12.01	9.00	5.00	8	1.38	2.62	0.25	15.75	28.15	-	-	-	470.5	363.5
100	673	457	683	356	273.0	157	8	41	76.2	6.4	630	795	-	-	-	336.6	184.3	4"	26.50	17.99	26.89	14.02	10.75	6.18	8	1.61	3.00	0.25	24.80	31.30	-	-	-	742.1	406.3
150	914	610	927	483	368.5	216	8	54	108.0	6.4	-	-	225	630	1240	785.7	504.4	6"	35.98	24.02	36.50	19.02	14.51	8.50	8	2.13	4.25	0.25	-	-	8.86	24.80	48.82	1732.2	1112.0
200	1022	762	1038	552	438.0	270	12	54	127.0	6.4	-	-	250	710	1580	1280.4	717.8	8"	40.24	30.00	40.87	21.73	17.24	10.63	12	2.13	5.00	0.25	-	-	9.84	27.95	62.20	2822.8	1582.5
250	1270	914	1292	673	540.0	324	12	67	165.1	6.4	-	-	310	810	1700	2302.8	1552.0	10"	50.00	35.98	50.87	26.50	21.26	12.76	12	2.64	6.50	0.25	-	-	12.20	31.89	66.93	5076.8	3421.6
300	1422	1041	1445	762	619.5	381	12	73	184.2	6.4	-	-	380	900	1950	3317.4	2910.0	12"	55.98	40.98	56.89	30.00	24.39	15.00	12	2.87	7.25	0.25	-	-	14.96	35.43	76.77	7313.6	6415.5

Note.

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- This dimension can be changed without notification.

PSB GLOBE VALVES

- Basic design : ASME B16.34, API 623, BS1873, Intergral seat type
- Flange drilling : ANSI B16.5
- Face to face : ANSI B16.10
- Test ; API598



① BODY

The body of the high pressure globe valve is designed as an one piece casting, with smooth inside contour providing maximum flow efficiency.

The body has an integral casting guiding system to guide the disc full throght the valve stroke.

The pressure seal type globe valve is designed with 4 holes in the neck at the region of the segment ring for a proper disassembly.

The contacting surface the pressure seal gasket outside has a stainless steel 18-8 inlay to assure soundness and corrosion resistance for carbon and alloy steel valves.

② DISC

The disc contacting surface with deposit stellite no.6 hard facing is ensured by pressure tightness and freedom from sticking. It is connected to the stem by means of a lock nut.

Special attention is given to the seating face which are ground and lapped to a perfectly tight seal.

③ BONNET

The bonnet is designed and manufactured in order to ensure a perfect seal, as well as to allow for easy dismounting and reassembly.

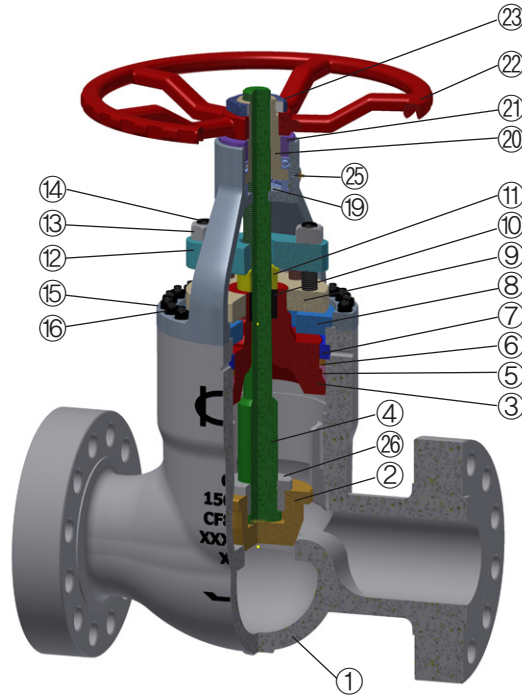
A longer packing life is ensured by a condensation chamber inserted between the backseat and the packing.

④ STEM

The non-rotating or rotating rising stem has trapezoidal thread. The stem is ground to minimize friction and prevent damage to gland packing. The stem is jointed to the disc by means of a lock nut. The stemhead has a tapered shoulder for backseating purpose.

⑳ YOKE SLEEVE

The yoke sleeve is made from cast austenitic ductile iron having high resistance to wear and a high melting point. It is designed to permit removal from the bonnet or the yoke while the valve is in service.

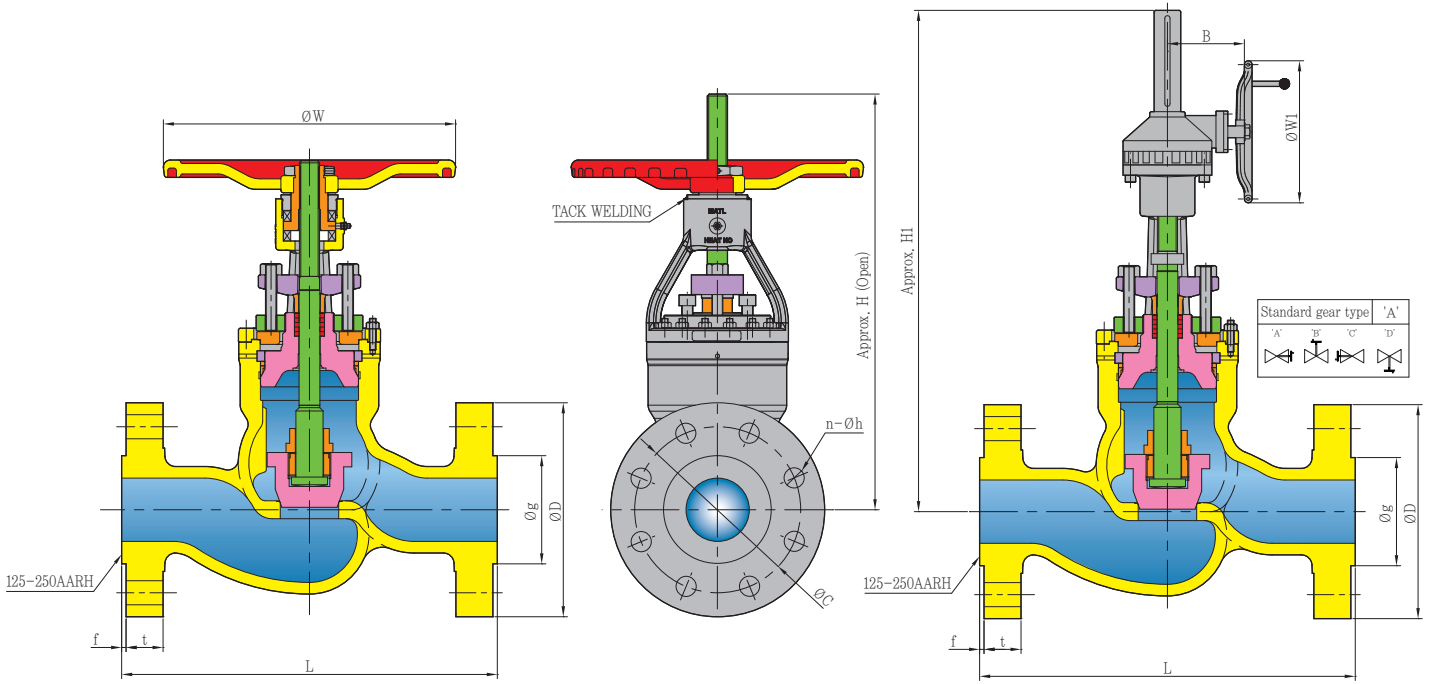


No	Name of Part	ASTM specification			
		Cast Stainless steel			
1	BODY	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
2	DISC	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
3	BONNET	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
4	STEM	A276 304	A276 304L	A276 316	A276 316L
5	PRESSURE SEAL	A240 304 / GRAPHITE + 304	A240 304L / GRAPHITE + 304L	A240 316 / GRAPHITE + 316	A240 316L / GRAPHITE + 316L
6	SPACER RING	A351 CF8 / A240 304	A351 CF3 / A240 304L	A351 CF8M / A240 316	A351 CF3M / A240 316L
7	SEGMENT RING	A351 CF8 / A240 304	A351 CF3 / A240 304L	A351 CF8M / A240 316	A351 CF3M / A240 316L
8	BONNET RETAINER	A351 CF8 / A240 304	A351 CF3 / A240 304L	A351 CF8M / A240 316	A351 CF3M / A240 316L
9	GLAND PLATE	A351 CF8 / A240 304	A351 CF3 / A240 304L	A351 CF8M / A240 316	A351 CF3M / A240 316L
10	PACKING	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR
11	GLAND RING	A276 304	A276 304L	A276 316	A276 316L
12	GLAND FLANGE	A351 CF8 / A240 304	A351 CF8 / A240 304	A351 CF8 / A240 304	A351 CF8 / A240 304
13	GLAND FLANGE BOLTS	A194 B8	A194 B8	A194 B8	A194 B8
14	GLAND FLANGE NUTS	A194 8	A194 8	A194 8	A194 8
15	YOKE BOLTS	A194 B8	A194 B8	A194 B8	A194 B8
16	YOKE NUTS	A194 B8	A194 B8	A194 B8	A194 B8
17	DRAW BOLTS	A194 B8	A194 B8	A194 B8	A194 B8
18	YOKE	A351 CF8	A351 CF8	A351 CF8	A351 CF8
19	BEARING	52100	52100	52100	52100
20	YOKE SLEEVE	A439 D2C	A439 D2C	A439 D2C	A439 D2C
21	SLEEVE NUT	A276 304	A276 304	A276 304	A276 304
22	HANDLE WHEEL	A536 60	A536 60	A536 60	A536 60
23	HANDLE NUT	A194 8	A194 8	A194 8	A194 8
24	SET BOLT	A194 B8	A194 B8	A194 B8	A194 B8
25	GREASE NIPPLE	A307 B	A307 B	A307 B	A307 B
26	DISC NUT	A276 304	A276 304L	A276 316	A276 316L

Note. - Packing & pressure seal material ; customer's requirements

PSB GLOBE VALVES

600LB



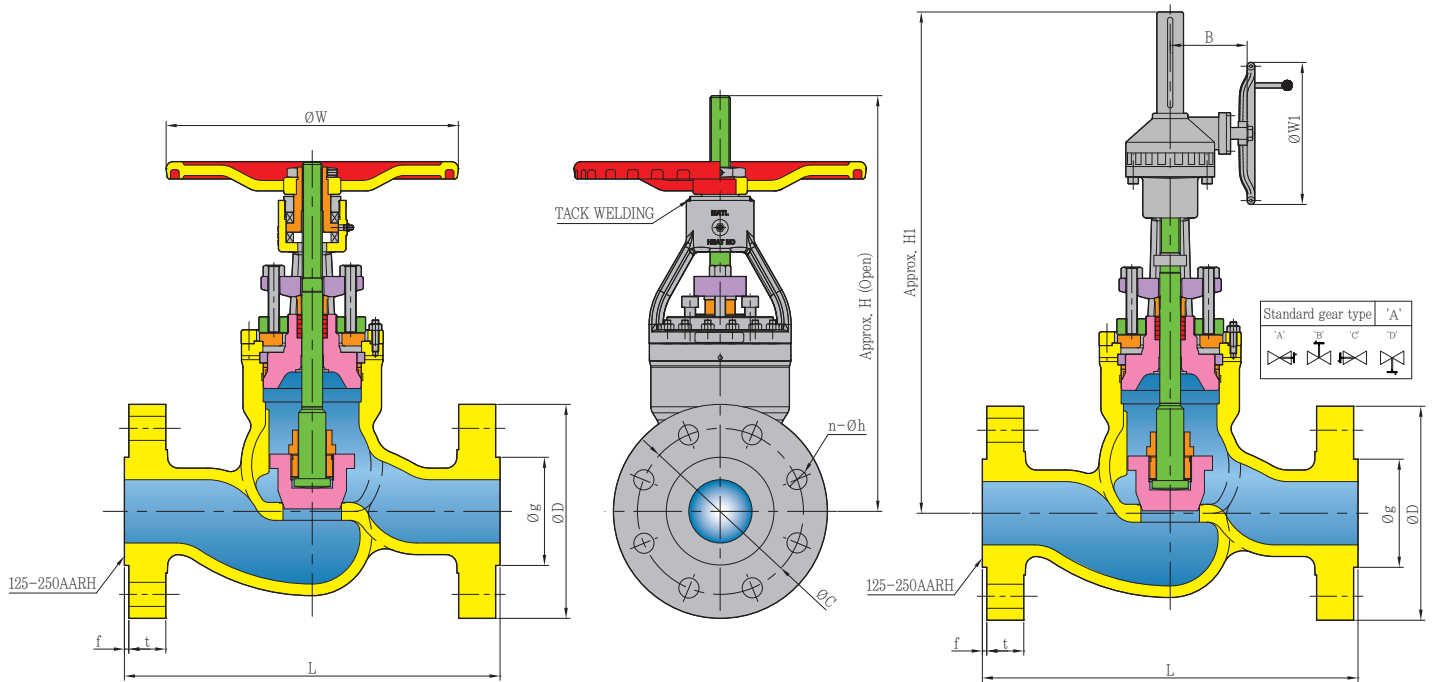
unit ; mm

unit ; inch

Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box			Weight (kg)		Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box			Weight (lb)	
	RF	BW	RTJ								ϕW	H	B	$\phi W1$	H1	RF	BW		RF	BW	RF								BW	RTJ	ϕW	H	B	$\phi W1$	H1
50	292	292	295	165.0	127.0	92.0	8	19	25.4	6.4	200	525	-	-	-	43.7	34.0	2"	11.50	11.50	11.61	6.50	5.00	3.62	8	0.75	1.00	0.25	7.87	20.67	-	-	-	96.2	74.8
65	330	330	333	190.0	149.0	105.0	8	22	28.6	6.4	280	580	-	-	-	53.4	43.7	2 1/2"	12.99	12.99	13.11	7.48	5.87	4.13	8	0.87	1.13	0.25	11.02	22.83	-	-	-	117.6	96.2
80	356	356	359	210.0	168.0	127.0	8	22	31.8	6.4	315	655	-	-	-	82.5	58.2	3"	14.02	14.02	14.13	8.27	6.61	5.00	8	0.87	1.25	0.25	12.40	25.79	-	-	-	181.8	128.3
100	432	432	435	273.0	216.0	157.0	8	25	38.1	6.4	500	700	-	-	-	131.0	92.2	4"	17.01	17.01	17.13	10.75	8.50	6.18	8	0.98	1.50	0.25	19.69	27.56	-	-	-	288.7	203.2
150	559	559	562	356.0	292.0	216.0	12	29	47.7	6.4	600	1055	-	-	-	295.9	223.1	6"	22.01	22.01	22.13	14.02	11.50	8.50	12	1.14	1.88	0.25	23.62	41.54	-	-	-	652.2	491.9
200	660	660	664	419.0	349.0	270.0	12	32	55.6	6.4	-	-	205	500	1100	601.4	523.8	8"	25.98	25.98	26.14	16.50	13.74	10.63	12	1.26	2.19	0.25	-	-	8.07	19.69	43.31	1325.9	1154.8
250	787	787	791	508.0	432.0	324.0	16	35	63.5	6.4	-	-	225	630	1450	1270.7	1115.5	10"	30.98	30.98	31.14	20.00	17.01	12.76	16	1.38	2.50	0.25	-	-	8.86	24.80	57.09	2801.4	2459.3
300	838	838	841	559.0	489.0	381.0	20	35	66.7	6.4	-	-	225	630	1500	1843.0	1668.4	12"	32.99	32.99	33.11	22.01	19.25	15.00	20	1.38	2.63	0.25	-	-	8.86	24.80	59.06	4063.1	3678.2
350	889	889	892	603.0	527.0	413.0	20	38	69.9	6.4	-	-	380	900	1800	2638.4	2454.1	14"	35.00	35.00	35.12	23.74	20.75	16.26	20	1.50	2.75	0.25	-	-	14.96	35.43	70.87	5816.7	5410.4
400	991	991	994	686.0	603.0	470.0	20	41	76.2	6.4	-	-	440	1000	2100	3055.5	2813.0	16"	39.02	39.02	39.13	27.01	23.74	18.50	20	1.61	3.00	0.25	-	-	17.32	39.37	82.68	6736.2	6201.6

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

900LB



unit ; mm

unit ; inch

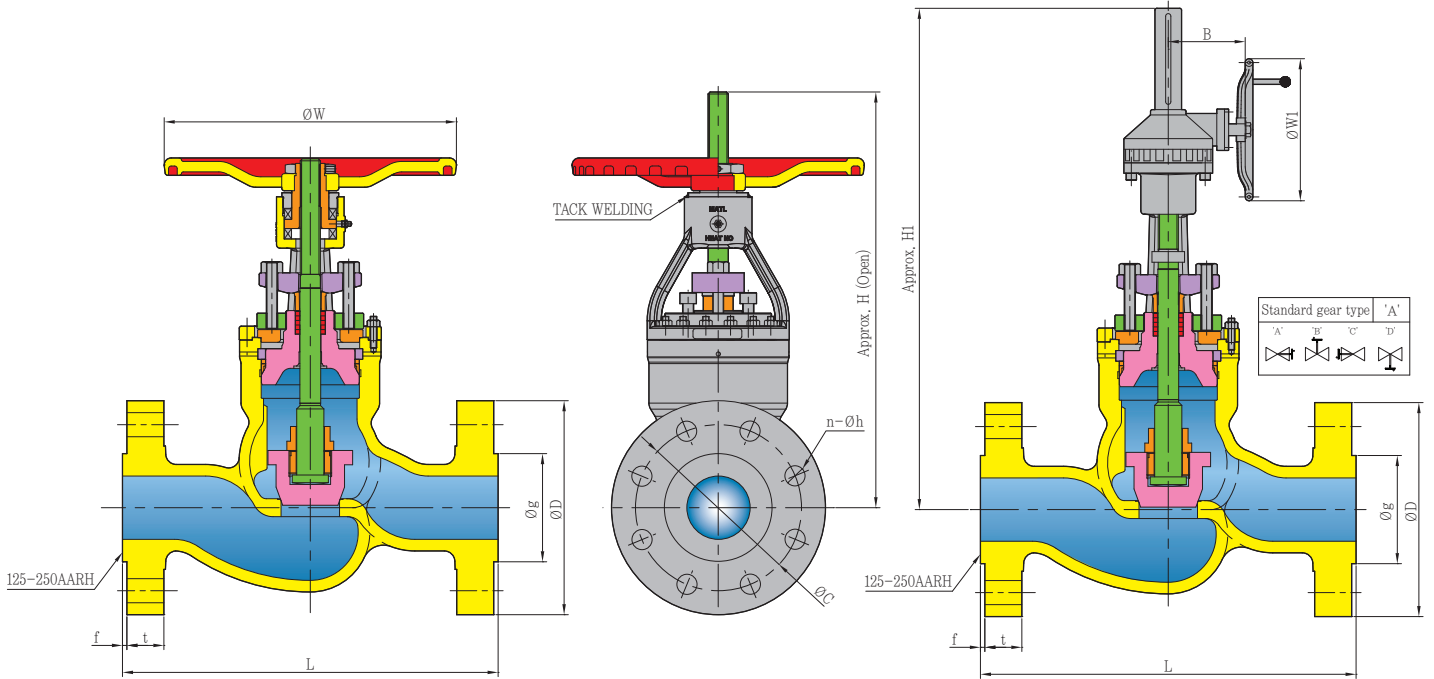
Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box			Weight (kg)		Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box			Weight (lb)	
	RF	BW	RTJ								ϕW	H	B	$\phi W1$	H1	RF	BW		RF	BW	RF								BW	RF	BW				
50	368	368	371	216	165.0	92.0	8	25	38.1	6.4	280	560	-	-	-	77.6	53.4	2"	14.49	14.49	14.61	8.50	6.50	3.62	8	0.98	1.50	0.25	11.02	22.05	-	-	-	171.1	117.6
65	419	419	422	244	190.5	105.0	8	29	41.1	6.4	315	650	-	-	-	106.7	77.6	2 1/2"	16.50	16.50	16.61	9.61	7.50	4.13	8	1.14	1.62	0.25	12.40	25.59	-	-	-	235.2	171.1
80	381	381	384	241	190.5	127.0	8	25	38.1	6.4	355	670	-	-	-	116.4	87.3	3"	15.00	15.00	15.12	9.49	7.50	5.00	8	0.98	1.50	0.25	13.98	26.38	-	-	-	256.6	192.5
100	457	457	460	292	235.0	157.0	8	32	44.5	6.4	400	760	-	-	-	164.9	126.1	4"	17.99	17.99	18.11	11.50	9.25	6.18	8	1.26	1.75	0.25	15.75	29.92	-	-	-	363.5	278.0
150	610	610	613	381	317.5	216.0	12	32	55.6	6.4	-	-	225	630	1275	407.4	349.2	6"	24.02	24.02	24.13	15.00	12.50	8.50	12	1.26	2.19	0.25	-	-	8.86	24.80	50.20	898.2	769.9
200	737	737	740	470	393.7	270.0	12	38	63.5	6.4	-	-	310	800	1300	970.0	873.0	8"	29.02	29.02	29.13	18.50	15.50	10.63	12	1.50	2.50	0.25	-	-	12.20	31.50	51.18	2138.5	1924.6
250	838	838	841	546	470.0	324.0	16	38	69.9	6.4	-	-	335	900	1500	1668.4	1474.4	10"	32.99	32.99	33.11	21.50	18.50	12.76	16	1.50	2.75	0.25	-	-	13.19	35.43	59.06	3678.2	3250.5
300	965	965	968	610	533.5	381.0	20	38	79.2	6.4	-	-	380	900	1700	2231.0	1988.5	12"	37.99	37.99	38.11	24.02	21.00	15.00	20	1.50	3.12	0.25	-	-	14.96	35.43	66.93	4918.5	4383.9
350	1029	1029	1038	641	558.8	413.0	20	41	85.9	6.4	-	-	380	900	1950	3249.5	2958.5	14"	40.51	40.51	40.87	25.24	22.00	16.26	20	1.61	3.38	0.25	-	-	14.96	35.43	76.77	7163.9	6522.4
400	1130	1130	1140	705	616.0	470.0	20	45	88.9	6.4	-	-	440	1000	2250	3880.0	3492.0	16"	44.49	44.49	44.88	27.76	24.25	18.50	20	1.77	3.50	0.25	-	-	17.32	39.37	88.58	8553.9	7698.5

Note.

- Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
- This dimension can be changed without notification.

PSB GLOBE VALVES

1500LB



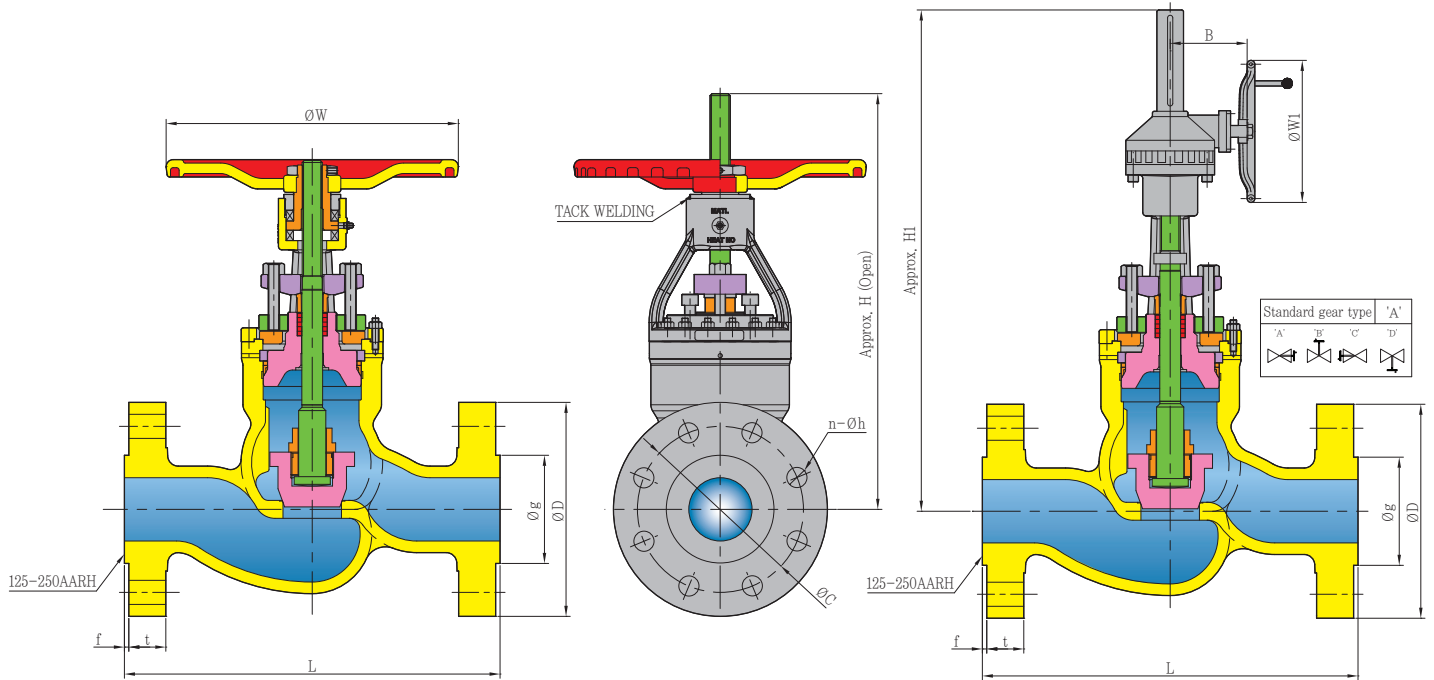
unit ; mm

unit ; inch

Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box			Weight (kg)		Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle		Gear box			Weight (lb)	
	RF	BW	RTJ								ϕW	H	B	$\phi W1$	H1	RF	BW		RF	BW	RTJ								ϕW	H	B	$\phi W1$	H1	RF	BW
50	368	368	371	216.0	165.0	92.0	8	25	38.1	6.4	355	570	-	-	-	77.6	53.4	2"	14.49	14.49	14.61	8.50	6.50	3.62	8	0.98	1.50	0.25	13.98	22.44	-	-	-	171.1	117.6
65	419	419	422	244.0	190.5	105.0	8	29	41.1	6.4	355	650	-	-	-	106.7	77.6	2 1/2"	16.50	16.50	16.61	9.61	7.50	4.13	8	1.14	1.62	0.25	13.98	25.59	-	-	-	235.2	171.1
80	470	470	473	267.0	203.0	127.0	8	32	47.8	6.4	400	760	-	-	-	131.9	92.2	3"	18.50	18.50	18.62	10.51	7.99	5.00	8	1.26	1.88	0.25	15.75	29.92	-	-	-	290.8	203.2
100	546	546	549	311.0	241.5	157.0	8	35	53.8	6.4	500	850	-	-	-	218.3	155.2	4"	21.50	21.50	21.61	12.24	9.51	6.18	8	1.38	2.12	0.25	19.69	33.46	-	-	-	481.2	342.2
150	705	705	711	394.0	317.5	216.0	12	38	82.6	6.4	-	-	250	710	1190	630.5	504.4	6"	27.76	27.76	27.99	15.51	12.50	8.50	12	1.50	3.25	0.25	-	-	9.84	27.95	46.85	1390.0	1112.0
200	832	832	842	483.0	393.7	270.0	12	45	91.9	6.4	-	-	250	710	1810	1629.6	1387.1	8"	32.76	32.76	33.15	19.02	15.50	10.63	12	1.77	3.62	0.25	-	-	9.84	27.95	71.26	3592.7	3058.0
250	991	991	1000	584.0	482.6	324.0	12	51	108.0	6.4	-	-	310	800	1950	2599.6	2211.6	10"	39.02	39.02	39.37	22.99	19.00	12.76	12	2.01	4.25	0.25	-	-	12.20	31.50	76.77	5731.1	4875.7
300	1130	1130	1146	673.0	571.5	381.0	16	54	124.0	6.4	-	-	310	800	2300	3298.0	2745.1	12"	44.49	44.49	45.12	26.50	22.50	15.00	16	2.13	4.88	0.25	-	-	12.20	31.50	90.55	7270.8	6051.9
350	1257	1257	1276	749.0	635.0	413.0	16	61	133.4	6.4	-	-	335	900	2650	4171.0	3492.0	14"	49.49	49.49	50.24	29.49	25.00	16.26	16	2.40	5.25	0.25	-	-	13.19	35.43	104.33	9195.5	7698.5

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

2500LB



unit ; mm

unit ; inch

Size	L			ØD	ØC	Øg	n	Øh	t	f	Handle		Gear box			Weight (kg)		Size	L			ØD	ØC	Øg	n	Øh	t	f	Handle		Gear box			Weight (lb)	
	RF	BW	RTJ								ØW	H	B	ØW1	H1	RF	BW		RF	BW	RTJ								ØW	H	B	ØW1	H1	RF	BW
50	451	451	454	235	171.5	92	8	29	50.8	6.4	355	625	-	-	-	97.0	67.9	2"	17.76	17.76	17.87	9.25	6.75	3.62	8	1.14	2.00	0.25	13.98	24.61	-	-	-	213.8	149.7
65	508	508	514	267	197.0	105	8	32	57.2	6.4	450	740	-	-	-	150.4	106.7	2 1/2"	20.00	20.00	20.24	10.51	7.76	4.13	8	1.26	2.25	0.25	17.72	29.13	-	-	-	331.5	235.2
80	578	578	584	305	228.5	127	8	35	66.5	6.4	500	770	-	-	-	203.7	135.8	3"	22.76	22.76	22.99	12.01	9.00	5.00	8	1.38	2.62	0.25	19.69	30.31	-	-	-	449.1	299.4
100	673	673	683	356	273.0	157	8	41	76.2	6.4	-	-	225	630	1250	485.0	339.5	4"	26.50	26.50	26.89	14.02	10.75	6.18	8	1.61	3.00	0.25	-	-	8.86	24.80	49.21	1069.2	748.5
150	914	914	927	483	368.5	216	8	54	108.0	6.4	-	-	225	630	1350	1212.5	921.5	6"	35.98	35.98	36.50	19.02	14.51	8.50	8	2.13	4.25	0.25	-	-	8.86	24.80	53.15	2673.1	2031.6
200	1022	1022	1038	552	438.0	270	12	54	127.0	6.4	-	-	310	800	2110	2328.0	1940.0	8"	40.24	40.24	40.87	21.73	17.24	10.63	12	2.13	5.00	0.25	-	-	12.20	31.50	83.07	5132.4	4277.0
250	1270	1270	1292	673	540.0	324	12	67	165.1	6.4	-	-	310	800	2500	3201.0	2425.0	10"	50.00	50.00	50.87	26.50	21.26	12.76	12	2.64	6.50	0.25	-	-	12.20	31.50	98.43	7057.0	5346.2
300	1422	1422	1445	762	619.5	381	12	73	184.2	6.4	-	-	310	800	2600	4074.0	3201.0	12"	55.98	55.98	56.89	30.00	24.39	15.00	12	2.87	7.25	0.25	-	-	12.20	31.50	102.36	8981.6	7057.0

Note.

- Flange drilling 2" ~ 12" is ANSI B16.5. - Please contact for other sizes.
- This dimension can be changed without notification.

PSC SWING CHECK VALVES

- Basic design : ASME B16.34, API 594, Integral / Renewable seat type
- Flange drilling : ANSI B16.5
- Face to face : ANSI B16.10
- Test : API598

① BODY

The body of the high pressure swing check valve is designed as an one piece casting, with smooth inside contour providing maximum flow efficiency.

The pressure seal type swing check valve is designed with 4 holes in the neck at the region of the segment ring for a proper disassembly.

The contacting surface the pressure seal gasket outside has a stainless steel 18-8 inlay to assure soundness and corrosion resistance for carbon and alloy steel valves.

The body is seal welding for body seating.

② SEAT RING

The seat ring are made of the same material as the body, and the surface have stellite no.6 hardfacing. The seat is welded into the valve body preventing leakage between seat and body.

Special attention is given to the seating surface which are ground lapped to ensure a perfectly tight seal.

③ DISC

The disc contacting surface with deposit stellite no.6 hard facing is ensured by pressure tightness and freedom from sticking. It is connected to the arm by means of a disc nut.

Special attention is given to the seating face which are ground and lapped to ensure a perfectly tight seal.

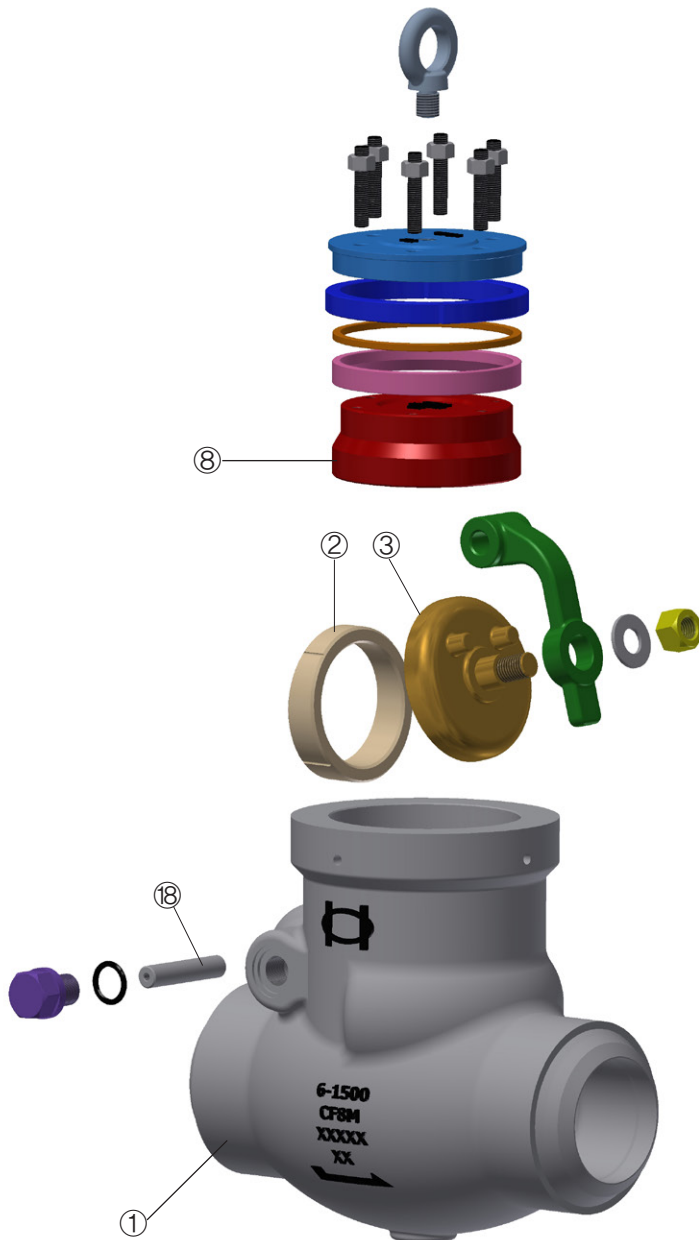
⑧ CAP

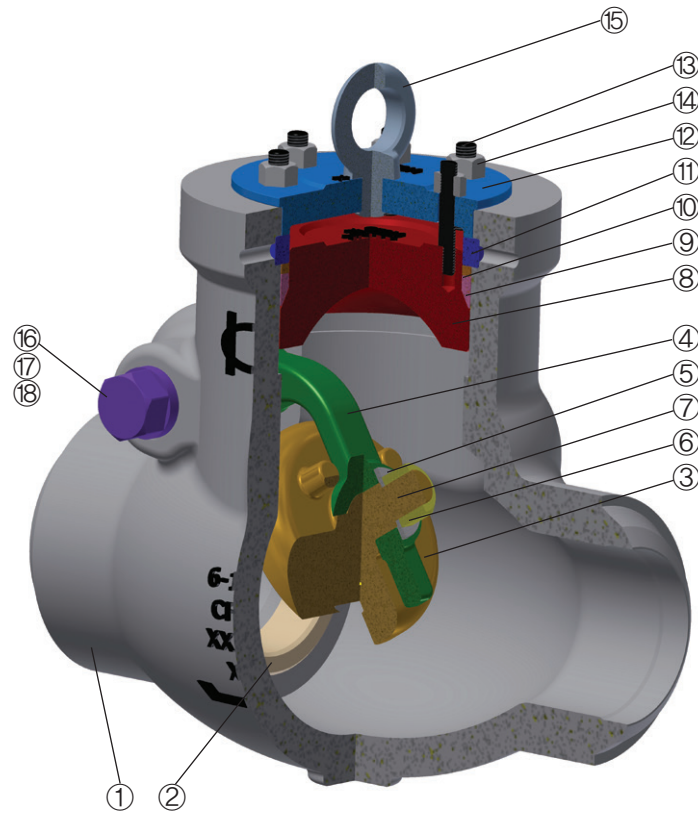
The bonnet is designed and manufactured in order to ensure a perfect seal, as well as to allow for easy dismounting and reassembly.

⑱ ROD PIN

The rod pin is part of trim. The rod pin is retained in the body a thread plug and sealed by metallic gasket.

The rod pin can be easily removed for maintenance of the valve.



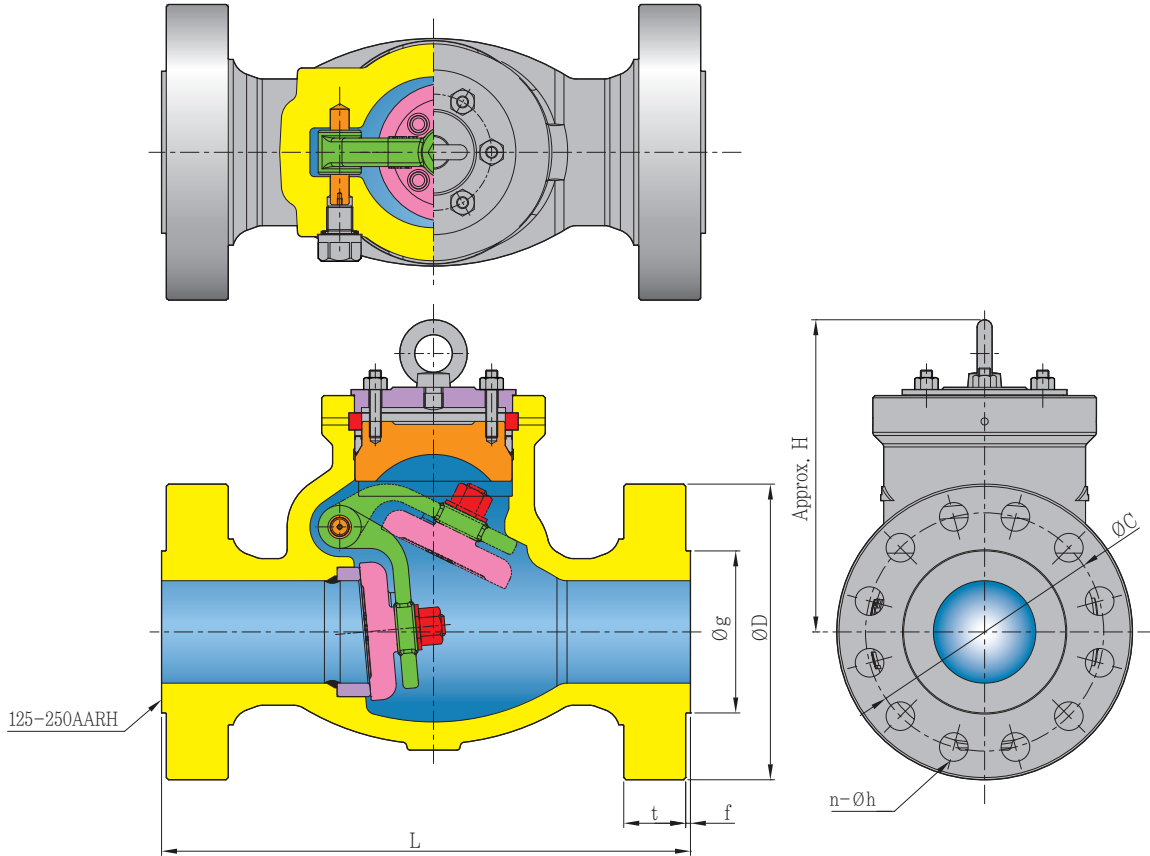


No	Name of Part	ASTM specification			
		Cast Stainless steel			
1	BODY	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
2	SEAT RING	A240 T304	A240 T304L	A240 T316	A240 T316L
3	DISC	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
4	ARM	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
5	DISC WASHER	A194 B8	A194 B8	A194 B8M	A194 B8M
6	DISC NUT	A194 B8	A194 B8	A194 B8M	A194 B8M
7	DISC PIN	A276 304	A276 304L	A276 316	A276 316L
8	CAP	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
9	PRESSURE SEAL	A240 304 / GRAPHITE + 304	A240 304L / GRAPHITE + 304L	A240 316 / GRAPHITE + 316	A240 316L / GRAPHITE + 316L
10	SPACER RING	A240 304	A240 304L	A240 316	A240 316L
11	SEGMENT RING	A276 304	A276 304L	A276 316	A276 316L
12	CAP RETAINER	A351 CF8 / A276 304	A351 CF8 / A276 304	A351 CF8 / A276 304	A351 CF8 / A276 304
13	CAP RETAINER BOLT	A194 B8	A194 B8	A194 B8	A194 B8
14	CAP RETAINER NUT	A194 8	A194 8	A194 8	A194 8
15	I-BOLT	A194 B8	A194 B8	A194 B8	A194 B8
16	PLUG BOLT	A276 304	A276 304L	A276 316	A276 316L
17	GASKET	GRAPHITE + 304	GRAPHITE + 304L	GRAPHITE + 316	GRAPHITE + 316L
18	ROD PIN	A276 304	A276 304L	A276 316	A276 316L

Note. - Packing & gasket material ; customer's requirements

PSC SWING CHECK VALVES

600LB



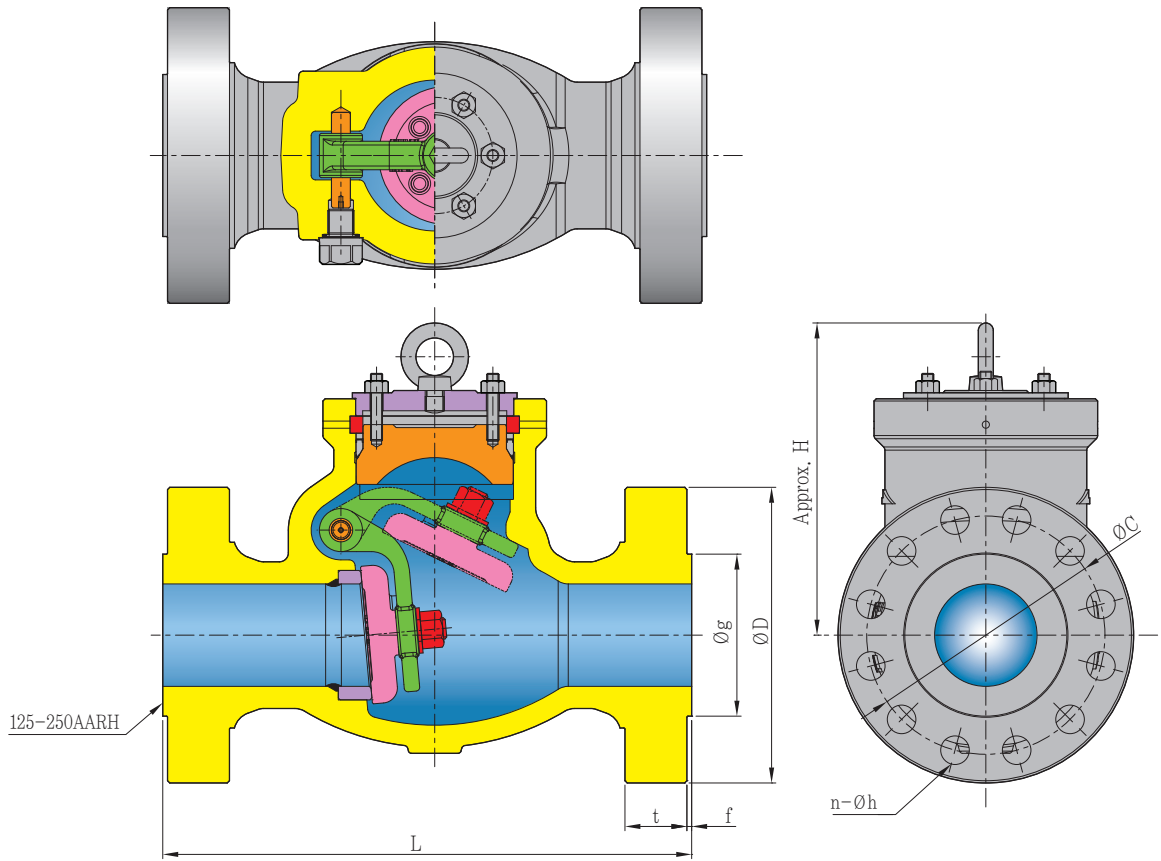
unit ; mm

unit ; inch

Size	L			ØD	ØC	Øg	n	Øh	t	f	H	Weight (kg)		Size	L			ØD	ØC	Øg	n	Øh	t	f	H	Weight (lb)	
	RF	BW	RTJ									RF	BW		RF	BW	RF									BW	
50	292	292	295	165.0	127.0	92.0	8	19	25.4	6.4	250	26.2	17.5	2"	11.50	11.50	11.61	6.50	5.00	3.62	8	0.75	1.00	0.25	9.84	57.7	38.5
65	330	330	333	190.0	149.0	105.0	8	22	28.6	6.4	270	34.0	24.3	2 1/2"	12.99	12.99	13.11	7.48	5.87	4.13	8	0.87	1.13	0.25	10.63	74.8	53.5
80	356	254	359	210.0	168.0	127.0	8	22	31.8	6.4	275	43.7	31.0	3"	14.02	10.00	14.13	8.27	6.61	5.00	8	0.87	1.25	0.25	10.83	96.2	68.4
100	432	305	435	273.0	216.0	157.0	8	25	38.1	6.4	290	82.5	49.5	4"	17.01	12.01	17.13	10.75	8.50	6.18	8	0.98	1.50	0.25	11.42	181.8	109.1
150	559	457	562	356.0	292.0	216.0	12	29	47.7	6.4	325	184.3	119.3	6"	22.01	17.99	22.13	14.02	11.50	8.50	12	1.14	1.88	0.25	12.80	406.3	263.0
200	660	584	664	419.0	349.0	270.0	12	32	55.6	6.4	430	339.5	252.2	8"	25.98	22.99	26.14	16.50	13.74	10.63	12	1.26	2.19	0.25	16.93	748.5	556.0
250	787	711	791	508.0	432.0	324.0	16	35	63.5	6.4	600	485.0	358.9	10"	30.98	27.99	31.14	20.00	17.01	12.76	16	1.38	2.50	0.25	23.62	1069.2	791.2
300	838	813	841	559.0	489.0	381.0	20	35	66.7	6.4	690	649.9	475.3	12"	32.99	32.01	33.11	22.01	19.25	15.00	20	1.38	2.63	0.25	27.17	1432.8	1047.9
350	889	889	892	603.0	527.0	413.0	20	38	69.9	6.4	720	853.6	640.2	14"	35.00	35.00	35.12	23.74	20.75	16.26	20	1.50	2.75	0.25	28.35	1881.9	1411.4
400	991	991	994	686.0	603.0	470.0	20	41	76.2	6.4	750	1115.5	824.5	16"	39.02	39.02	39.13	27.01	23.74	18.50	20	1.61	3.00	0.25	29.53	2459.3	1817.7
450	1092	1092	1095	743.0	654.0	533.0	20	45	82.6	6.4	780	1435.6	1067.0	18"	42.99	42.99	43.11	29.25	25.75	20.98	20	1.77	3.25	0.25	30.71	3165.0	2352.3
500	1194	1194	1200	813.0	724.0	584.0	24	45	88.9	6.4	820	1823.6	1445.3	20"	47.01	47.01	47.24	32.01	28.50	22.99	24	1.77	3.50	0.25	32.28	4020.3	3186.3
600	1397	1397	1406	940.0	838.0	692.0	24	51	102.0	6.4	950	2522.0	1978.8	24"	55.00	55.00	55.35	37.01	32.99	27.24	24	2.01	4.02	0.25	37.40	5560.1	4362.5

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

900LB



unit ; mm

unit ; inch

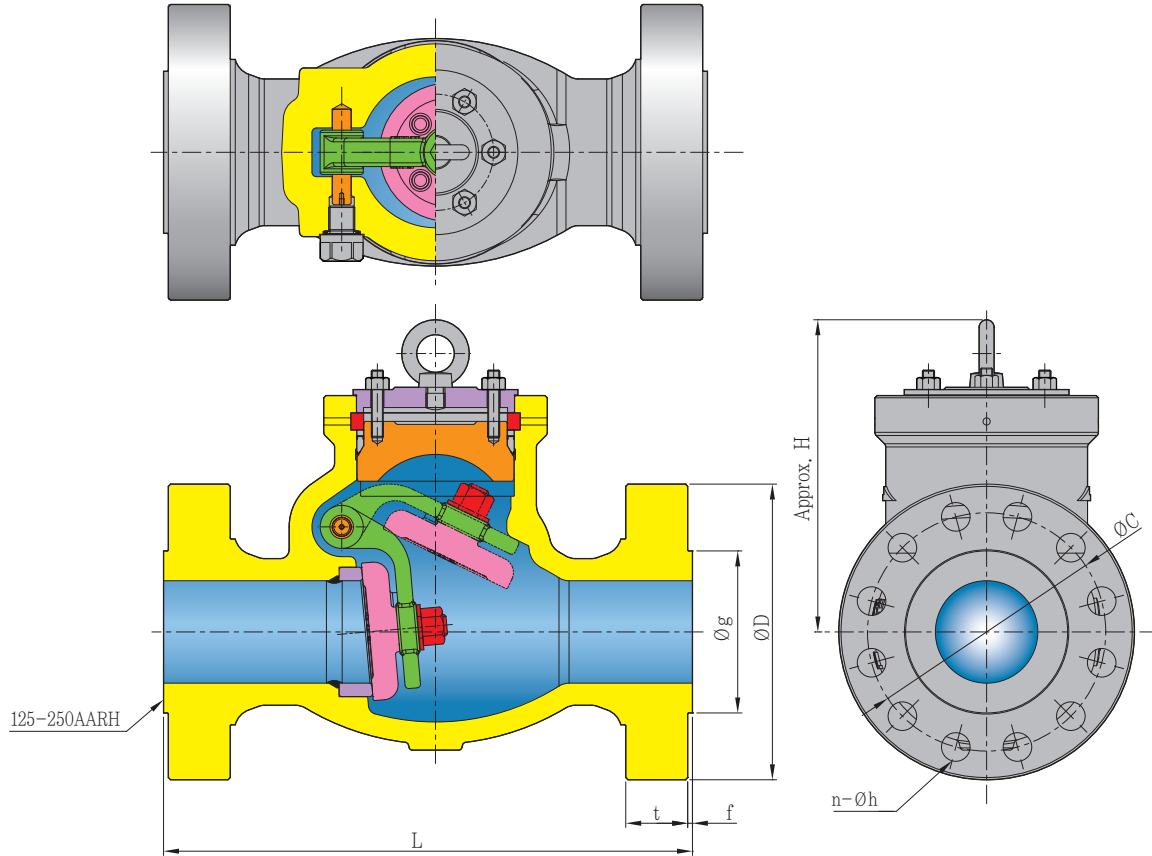
Size	L			ØD	ØC	Øg	n	Øh	t	f	H	Weight (kg)		Size	L			ØD	ØC	Øg	n	Øh	t	f	H	Weight (lb)	
	RF	BW	RTJ									RF	BW		RF	BW	RTJ									RF	BW
50	368	368	371	216	165.0	92.0	8	25	38.1	6.4	265	38.8	24.3	2"	14.49	14.49	14.61	8.50	6.50	3.62	8	0.98	1.50	0.25	10.43	85.5	53.5
65	419	419	422	244	190.5	105.0	8	29	41.1	6.4	295	58.2	36.9	2 1/2"	16.50	16.50	16.61	9.61	7.50	4.13	8	1.14	1.62	0.25	11.61	128.3	81.3
80	381	305	384	241	190.5	127.0	8	25	38.1	6.4	340	89.2	55.3	3"	15.00	12.01	15.12	9.49	7.50	5.00	8	0.98	1.50	0.25	13.39	196.7	121.9
100	457	356	460	292	235.0	157.0	8	32	44.5	6.4	380	101.9	63.1	4"	17.99	14.02	18.11	11.50	9.25	6.18	8	1.26	1.75	0.25	14.96	224.5	139.0
150	610	508	613	381	317.5	216.0	12	32	55.6	6.4	400	223.1	155.2	6"	24.02	20.00	24.13	15.00	12.50	8.50	12	1.26	2.19	0.25	15.75	491.9	342.2
200	737	660	740	470	393.7	270.0	12	38	63.5	6.4	550	552.9	426.8	8"	29.02	25.98	29.13	18.50	15.50	10.63	12	1.50	2.50	0.25	21.65	1218.9	940.9
250	838	787	841	546	470.0	324.0	16	38	69.9	6.4	600	824.5	669.3	10"	32.99	30.98	33.11	21.50	18.50	12.76	16	1.50	2.75	0.25	23.62	1817.7	1475.6
300	965	914	968	610	533.5	381.0	20	38	79.2	6.4	650	1261.0	989.4	12"	37.99	35.98	38.11	24.02	21.00	15.00	20	1.50	3.12	0.25	25.59	2780.0	2181.3
350	1029	991	1038	641	558.8	413.0	20	41	85.9	6.4	725	1503.5	1164.0	14"	40.51	39.02	40.87	25.24	22.00	16.26	20	1.61	3.38	0.25	28.54	3314.6	2566.2
400	1130	1092	1140	705	616.0	470.0	20	45	88.9	6.4	740	1600.5	1309.5	16"	44.49	42.99	44.88	27.76	24.25	18.50	20	1.77	3.50	0.25	29.13	3528.5	2887.0
450	1219	1181	1232	787	686.0	533.0	20	51	101.6	6.4	820	2231.0	1794.5	18"	47.99	46.50	48.50	30.98	27.01	20.98	20	2.01	4.00	0.25	32.28	4918.5	3956.2
500	1321	1283	1334	857	749.5	584.0	20	54	108.0	6.4	840	2910.0	2328.0	20"	52.01	50.51	52.52	33.74	29.51	22.99	20	2.13	4.25	0.25	33.07	6415.5	5132.4
600	1549	1511	1568	1041	902.0	692.0	20	67	139.7	6.4	935	3977.0	2813.0	24"	60.98	59.49	61.73	40.98	35.51	27.24	20	2.64	5.50	0.25	36.81	8767.8	6201.6

Note.

- Flange drilling 2" ~ 24" is ANSI B16.5.
- Please contact for other sizes.
- This dimension can be changed without notification.

PSC SWING CHECK VALVES

1500LB



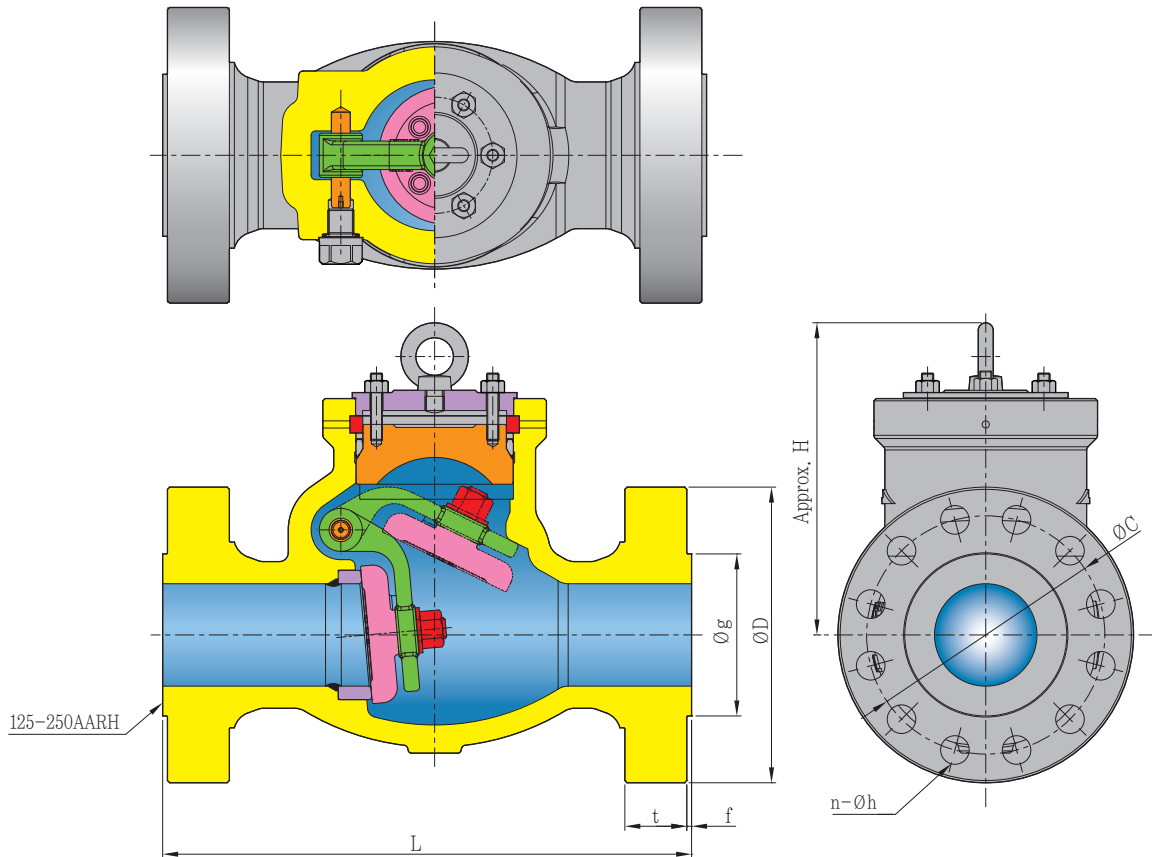
unit ; mm

unit ; inch

Size	L			ØD	ØC	Øg	n	Øh	t	f	H	Weight (kg)		Size	L			ØD	ØC	Øg	n	Øh	t	f	H	Weight (lb)	
	RF	BW	RTJ									RF	BW		RF	BW	RF									BW	
50	368	368	371	216.0	165.0	92.0	8	25	38.1	6.4	280	58.2	34.9	2"	14.49	14.49	14.61	8.50	6.50	3.62	8	0.98	1.50	0.25	11.02	128.3	77.0
65	419	419	422	244.0	190.5	105.0	8	29	41.1	6.4	305	87.3	52.4	2 1/2"	16.50	16.50	16.61	9.61	7.50	4.13	8	1.14	1.62	0.25	12.01	192.5	115.5
80	470	470	473	267.0	203.0	127.0	8	32	47.8	6.4	355	133.9	80.5	3"	18.50	18.50	18.62	10.51	7.99	5.00	8	1.26	1.88	0.25	13.98	295.1	177.5
100	546	406	549	311.0	241.5	157.0	8	35	53.8	6.4	380	155.2	93.1	4"	21.50	15.98	21.61	12.24	9.51	6.18	8	1.38	2.12	0.25	14.96	342.2	205.3
150	705	559	711	394.0	317.5	216.0	12	38	82.6	6.4	435	388.0	271.6	6"	27.76	22.01	27.99	15.51	12.50	8.50	12	1.50	3.25	0.25	17.13	855.4	598.8
200	832	711	842	483.0	393.7	270.0	12	45	91.9	6.4	515	756.6	465.6	8"	32.76	27.99	33.15	19.02	15.50	10.63	12	1.77	3.62	0.25	20.28	1668.0	1026.5
250	991	864	1000	584.0	482.6	324.0	12	51	108.0	6.4	570	1018.5	717.8	10"	39.02	34.02	39.37	22.99	19.00	12.76	12	2.01	4.25	0.25	22.44	2245.4	1582.5
300	1130	991	1146	673.0	571.5	381.0	16	54	124.0	6.4	650	1503.5	1067.0	12"	44.49	39.02	45.12	26.50	22.50	15.00	16	2.13	4.88	0.25	25.59	3314.6	2352.3
350	1257	1067	1276	749.0	635.0	413.0	16	61	133.4	6.4	725	2037.0	1367.7	14"	49.49	42.01	50.24	29.49	25.00	16.26	16	2.40	5.25	0.25	28.54	4490.8	3015.3
400	1384	1194	1407	826.0	705.0	470.0	16	67	146.1	6.4	765	2522.0	1552.0	16"	54.49	47.01	55.39	32.52	27.76	18.50	16	2.64	5.75	0.25	30.12	5560.1	3421.6
450	1537	1346	1559	914.0	775.0	533.5	16	73	162.1	6.4	855	3201.0	2037.0	18"	60.51	52.99	61.38	35.98	30.51	21.00	16	2.87	6.38	0.25	33.66	7057.0	4490.8
500	1664	1473	1686	984.0	832.0	584.5	16	79	177.8	6.4	905	4074.0	2522.0	20"	65.51	57.99	66.38	38.74	32.76	23.01	16	3.11	7.00	0.25	35.63	8981.6	5560.1
600	1943	1943	1972	1168.0	990.5	692.5	16	92	203.2	6.4	1025	5820.0	3395.0	24"	76.50	76.50	77.64	45.98	39.00	27.26	16	3.62	8.00	0.25	40.35	12830.9	7484.7

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

2500LB



unit ; mm

unit ; inch

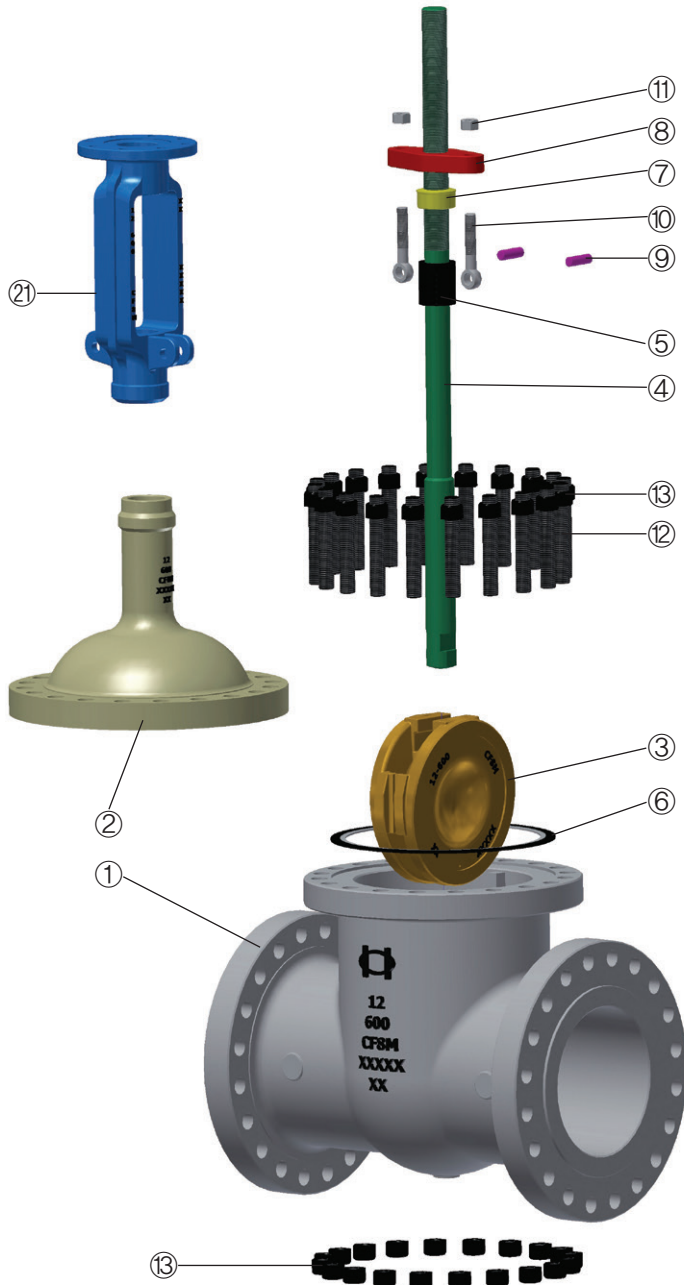
Size	L			ØD	ØC	Øg	n	Øh	t	f	H	Weight (kg)		Size	L			ØD	ØC	Øg	n	Øh	t	f	H	Weight (lb)	
	RF	BW	RTJ									RF	BW		RF	BW	RTJ									RF	BW
50	451	451	454	235	171.5	92	8	29	50.8	6.4	280	82.5	51.4	2"	17.76	17.76	17.87	9.25	6.75	3.62	8	1.14	2.00	0.25	11.02	181.8	113.3
65	508	508	514	267	197.0	105	8	32	57.2	6.4	290	114.5	69.8	2 1/2"	20.00	20.00	20.24	10.51	7.76	4.13	8	1.26	2.25	0.25	11.42	252.3	154.0
80	578	578	584	305	228.5	127	8	35	66.5	6.4	370	150.4	93.1	3"	22.76	22.76	22.99	12.01	9.00	5.00	8	1.38	2.62	0.25	14.57	331.5	205.3
100	673	457	683	356	273.0	157	8	41	76.2	6.4	400	276.5	168.8	4"	26.50	17.99	26.89	14.02	10.75	6.18	8	1.61	3.00	0.25	15.75	609.5	372.1
150	914	610	927	483	368.5	216	8	54	108.0	6.4	510	727.5	446.2	6"	35.98	24.02	36.50	19.02	14.51	8.50	8	2.13	4.25	0.25	20.08	1603.9	983.7
200	1022	762	1038	552	438.0	270	12	54	127.0	6.4	580	1309.5	873.0	8"	40.24	30.00	40.87	21.73	17.24	10.63	12	2.13	5.00	0.25	22.83	2887.0	1924.6
250	1270	914	1292	673	540.0	324	12	67	165.1	6.4	640	2085.5	1261.0	10"	50.00	35.98	50.87	26.50	21.26	12.76	12	2.64	6.50	0.25	25.20	4597.7	2780.0
300	1422	1041	1445	762	619.5	381	12	73	184.2	6.4	685	2910.0	1746.0	12"	55.98	40.98	56.89	30.00	24.39	15.00	12	2.87	7.25	0.25	26.97	6415.5	3849.3

Note.

- Flange drilling 2" ~ 12" is ANSI B16.5.
- Please contact for other sizes.
- This dimension can be changed without notification.

CRYOGENIC GATE VALVE

- Basic design : API 603, API 600, ASME B16.34, MS-SP134, BS6364, Integral seat type
- Flange drilling : ANSI B16.5 (2"~24")
- Face to face : ANSI B16.10
- Test : API 598



① BODY

The body is in cast stainless steel and is carefully designed in all its details. The basic dimension, i.e. wall thickness, face to face and flanges comply with the relevant API and ANSI standards. The sealing surfaces for connection to the bonnet are flat finish in the 150lb Class, recessed in the 300lb, 600lb Class or may be ring joint in the 900lb Class and above. Bosses may be provided for drain taps or by-pass piping.

② EXTENDED BONNET

The extended bonnet is in stainless steel. It is machined to accept the yoke sleeve and incorporates a stuffing box dimension in accordance with the API standard.

③ DISC

The disc is part of the trim. It is normally supplied as flexible. It is connected to the stem by means of a T-joint. The guides on each side of the disc are casted for proper alignment with the body guides. Special attention is given to the seating surface which are ground and lapped to insure a perfectly tight seal.

④ STEM

The stem is part of the trim. A stem is provided with a T-head. A ground backseat is provided to ensure perfectly tight seal to the stuffing box when the valve is fully open. The stem is ground to minimize friction and prevent damage to gland packing. The threading is trapezoidal ACME type. Dimensions comply with the applicable standard.

⑭ YOKE SLEEVE

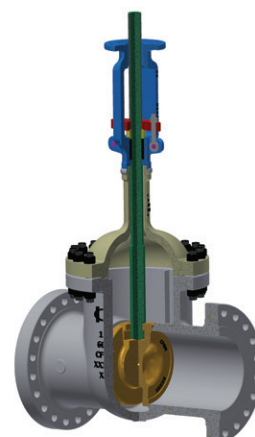
The yoke sleeve is made from stainless steel or ductile iron having high resistance to wear and a high melting point. It is designed to permit removal from the bonnet or the yoke while the valve is in service. Gate valves 6" 600lb Class and above are fitted with a ball thrust bearing.

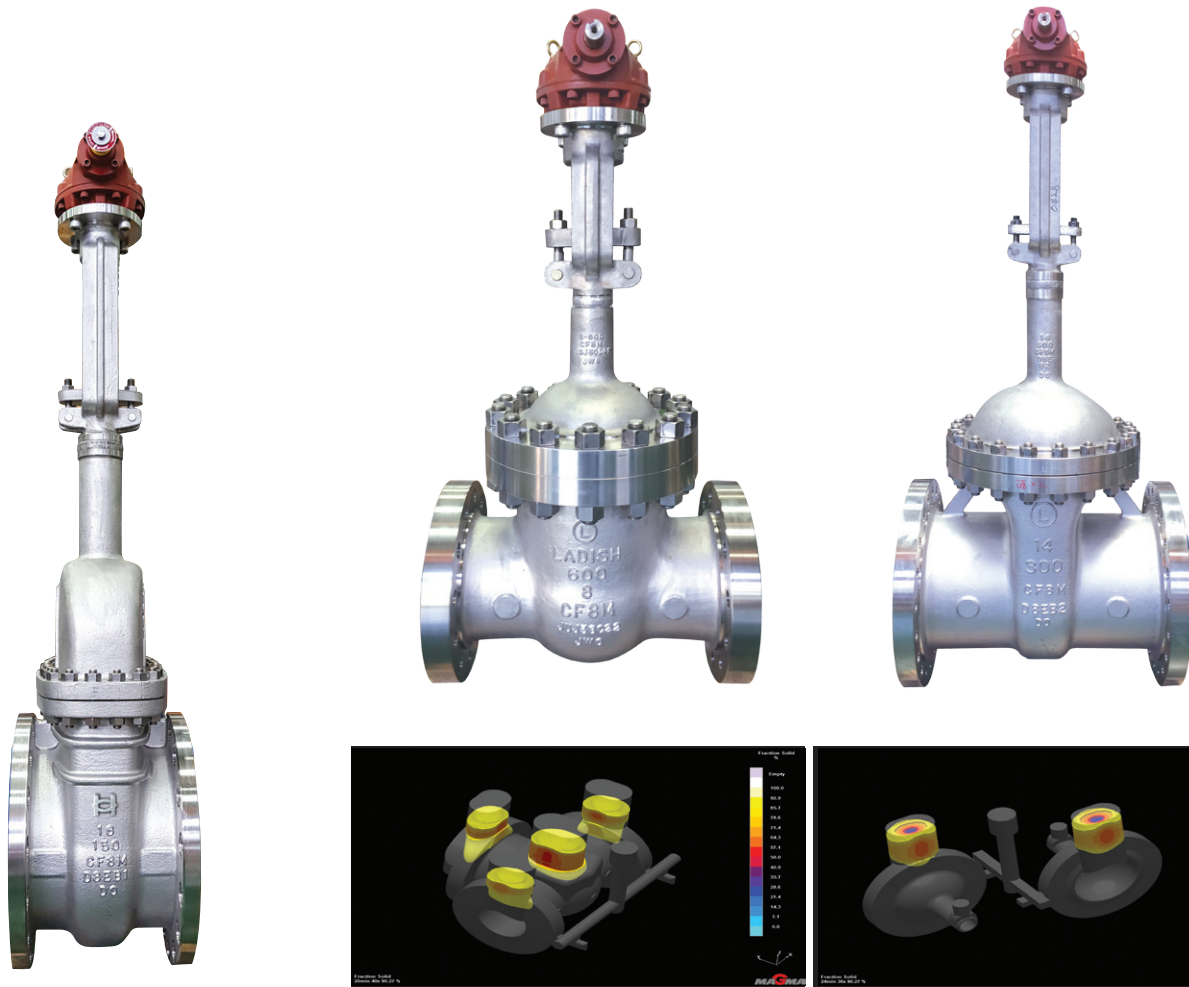
⑫, ⑬ BONNET BOLT/NUT

Bonnet studs and nuts are manufactured from alloy or stainless steel to the relevant ASTM standard.

⑯ HANDWHEEL

The steel or nodular iron handwheels are well shaped and large enough to give ease of movement when operating the valve, even under maximum differential pressure.



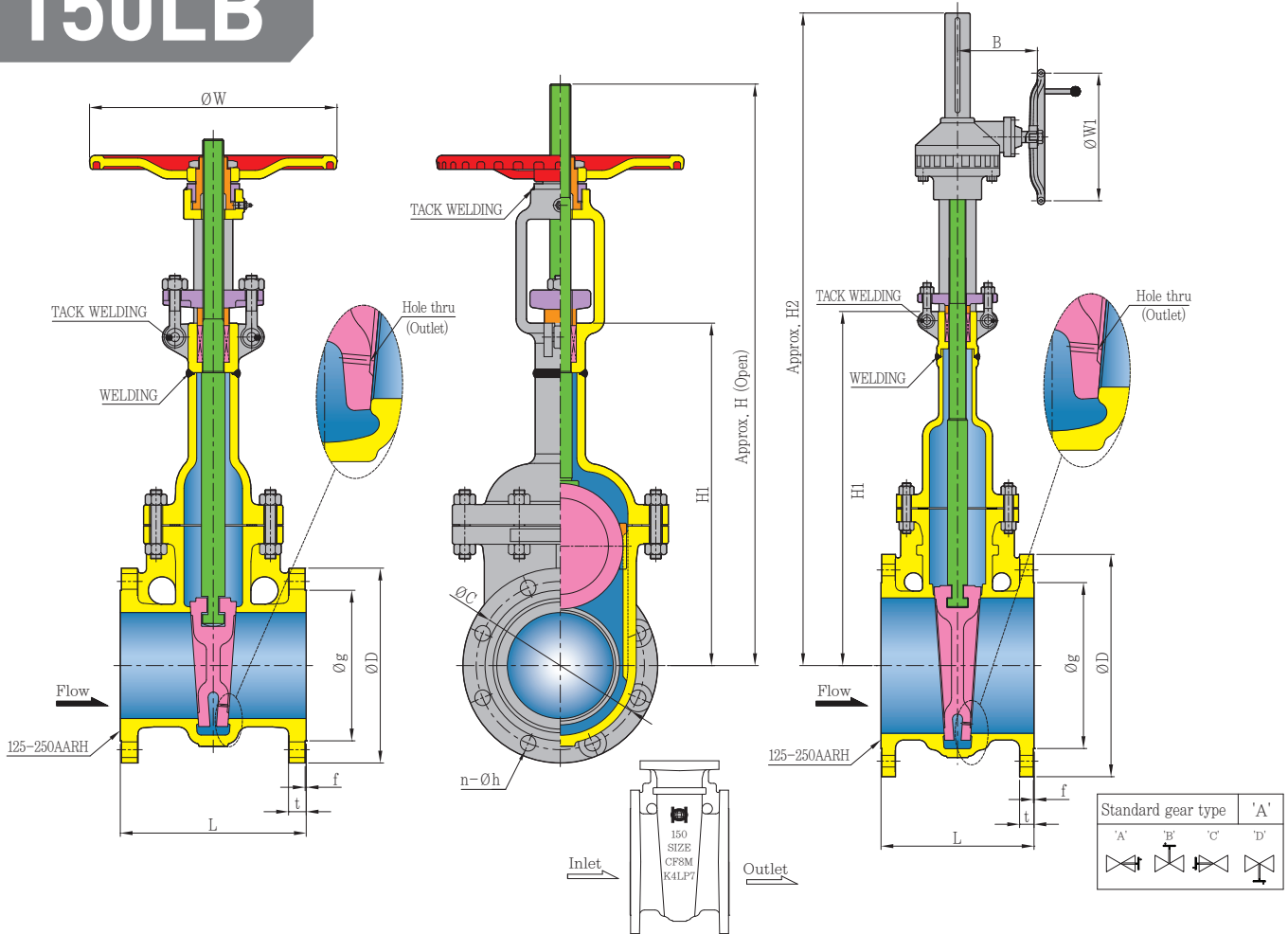


No	Name of Part	ASTM specification			
		Cast Stainless steel			
1	BODY	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
2	BONNET	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
3	DISC	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
4	STEM	A276 304	A276 304L	A276 316	A276 316L
5	PACKING	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR
6	GASKET	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL
7	GLAND RING	A276 304	A276 304L	A276 316	A276 316L
8	GLAND FLANGE	A351 CF8 / A240 304	A351 CF8 / A240 304	A351 CF8 / A240 304	A351 CF8 / A240 304
9	HINGE PIN	A276 304	A276 304	A276 304	A276 304
10	HINGE BOLT	A193 B8	A193 B8	A193 B8	A193 B8
11	HINGE NUT	A194 8	A194 8	A194 8	A194 8
12	BONNET BOLT	A193 B8	A193 B8	A193 B8	A193 B8
13	BONNET NUT	A194 8	A194 8	A194 8	A194 8
14	YOKE SLEEVE	A439 D2C	A439 D2C	A439 D2C	A439 D2C
15	SLEEVE NUT	A276 304	A276 304	A276 304	A276 304
16	HANDWHEEL	A536 60	A536 60	A536 60	A536 60
17	HANDLE NUT	A276 304	A276 304	A276 304	A276 304
18	SET BOLT	A194 B8	A276 304	A276 304	A276 304
19	GREASE NIPPLE	A307 B	A307 B	A307 B	A307 B
20	BEARING	52100	52100	52100	52100
21	YOKE	A351 CF8	A351 CF3	A351 CF8M	A276 316L

Note. - Packing & gasket material ; customer's requirements

CRYOGENIC GATE VALVE

150LB



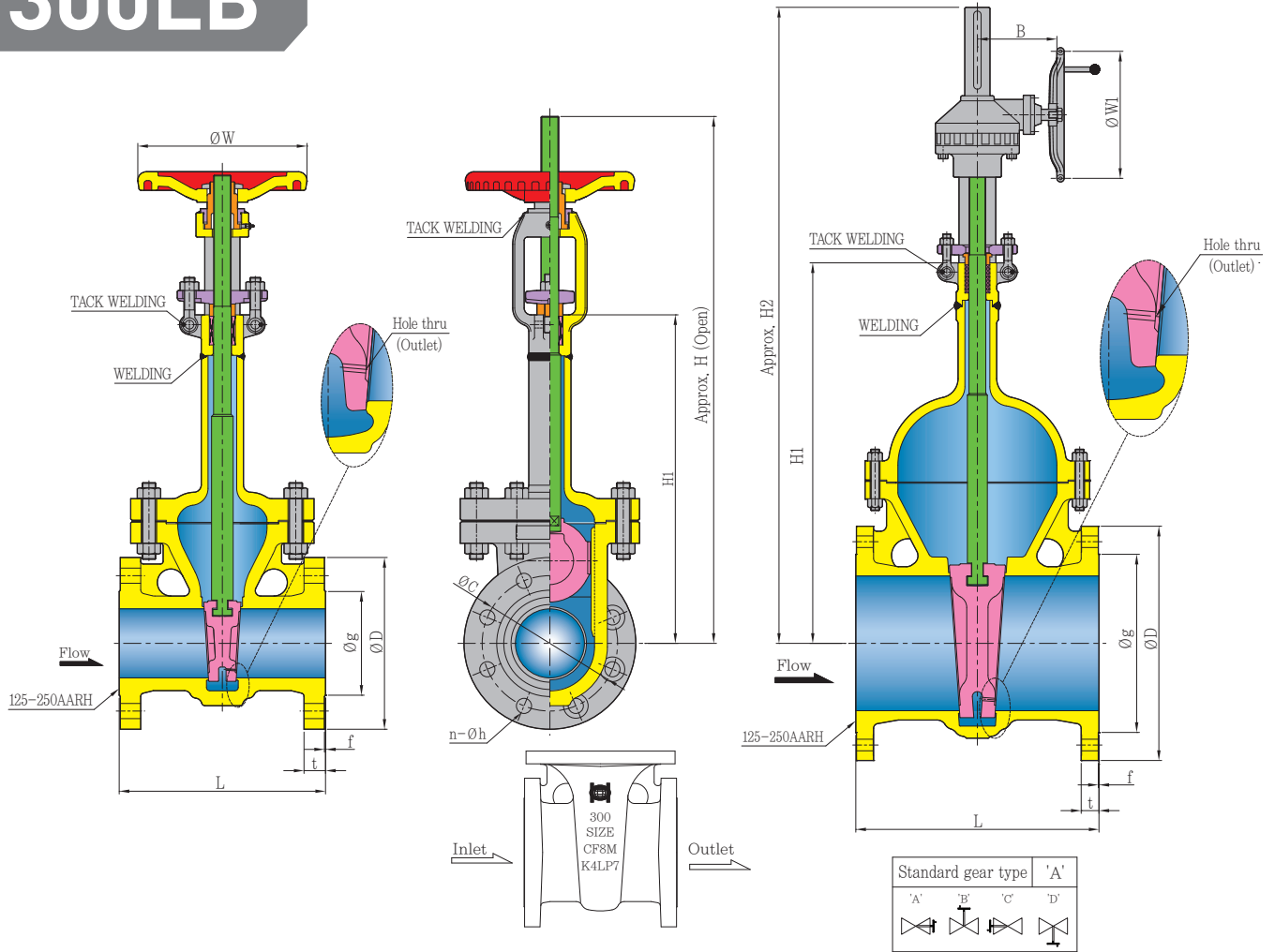
unit ; mm

unit ; inch

Size	L		ØD	ØC	Øg	n	Øh	t	f	Handle			Gear box			Weight (kg)		Size	L		ØD	ØC	Øg	n	Øh	t	f	Handle			Gear box			Weight (lb)			
	RF	BW								ØW	H1	H	B	ØW1	H1	H2	RF		BW	RF								BW	ØW	H1	H	B	ØW1	H1	H2	RF	BW
50	178	216	152.0	120.5	92.0	4	19	15.9	1.6	180	410	630	-	-	-	-	34.9	29.1	2"	7.01	8.50	5.98	4.74	3.62	4	0.75	0.63	0.06	7.09	16.14	24.80	-	-	-	-	77.0	64.2
80	203	282	190.0	152.5	127.0	4	19	19.1	1.6	200	460	730	-	-	-	-	46.6	38.8	3"	7.99	11.10	7.48	6.00	5.00	4	0.75	0.75	0.06	7.87	18.11	28.74	-	-	-	-	102.6	85.5
100	229	305	229.0	190.5	157.0	8	19	23.9	1.6	224	560	880	-	-	-	-	69.8	58.2	4"	9.02	12.01	9.02	7.50	6.18	8	0.75	0.94	0.06	8.82	22.05	34.65	-	-	-	-	154.0	128.3
150	267	403	279.0	241.5	216.0	8	22	25.4	1.6	280	620	1070	-	-	-	-	128.0	116.4	6"	10.51	15.87	10.98	9.51	8.50	8	0.87	1.00	0.06	11.02	24.41	42.13	-	-	-	-	282.3	256.6
200	292	419	343.0	298.5	270.0	8	22	28.6	1.6	315	690	1300	-	-	-	-	190.1	167.8	8"	11.50	16.50	13.50	11.75	10.63	8	0.87	1.13	0.06	12.40	27.17	51.18	-	-	-	-	419.1	370.0
250	330	457	406.0	362.0	324.0	12	25	30.2	1.6	355	820	1545	165	300	820	1650	268.7	242.5	10"	12.99	17.99	15.98	14.25	12.76	12	0.98	1.19	0.06	13.98	32.28	60.83	6.50	11.81	32.28	64.96	592.4	534.6
300	356	502	483.0	432.0	381.0	12	25	31.8	1.6	400	920	1730	165	300	920	1800	397.7	368.6	12"	14.02	19.76	19.02	17.01	15.00	12	0.98	1.25	0.06	15.75	36.22	68.11	6.50	11.81	36.22	70.87	876.8	812.6
350	381	572	533.0	476.0	413.0	12	29	35.0	1.6	500	1000	1880	190	400	1000	2000	486.9	455.9	14"	15.00	22.52	20.98	18.74	16.26	12	1.14	1.38	0.06	19.69	39.37	74.02	7.48	15.75	39.37	78.74	1073.5	1005.1
400	406	610	597.0	539.5	470.0	16	29	36.6	1.6	-	-	-	205	500	1060	2190	629.5	591.7	16"	15.98	24.02	23.50	21.24	18.50	16	1.14	1.44	0.06	-	-	-	8.07	19.69	41.73	86.22	1387.9	1304.5
450	432	660	635.0	578.0	533.0	16	32	39.7	1.6	-	-	-	205	500	1130	2350	870.1	831.3	18"	17.01	25.98	25.00	22.76	20.98	16	1.26	1.56	0.06	-	-	-	8.07	19.69	44.49	92.52	1918.2	1832.7

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

300LB



unit ; mm

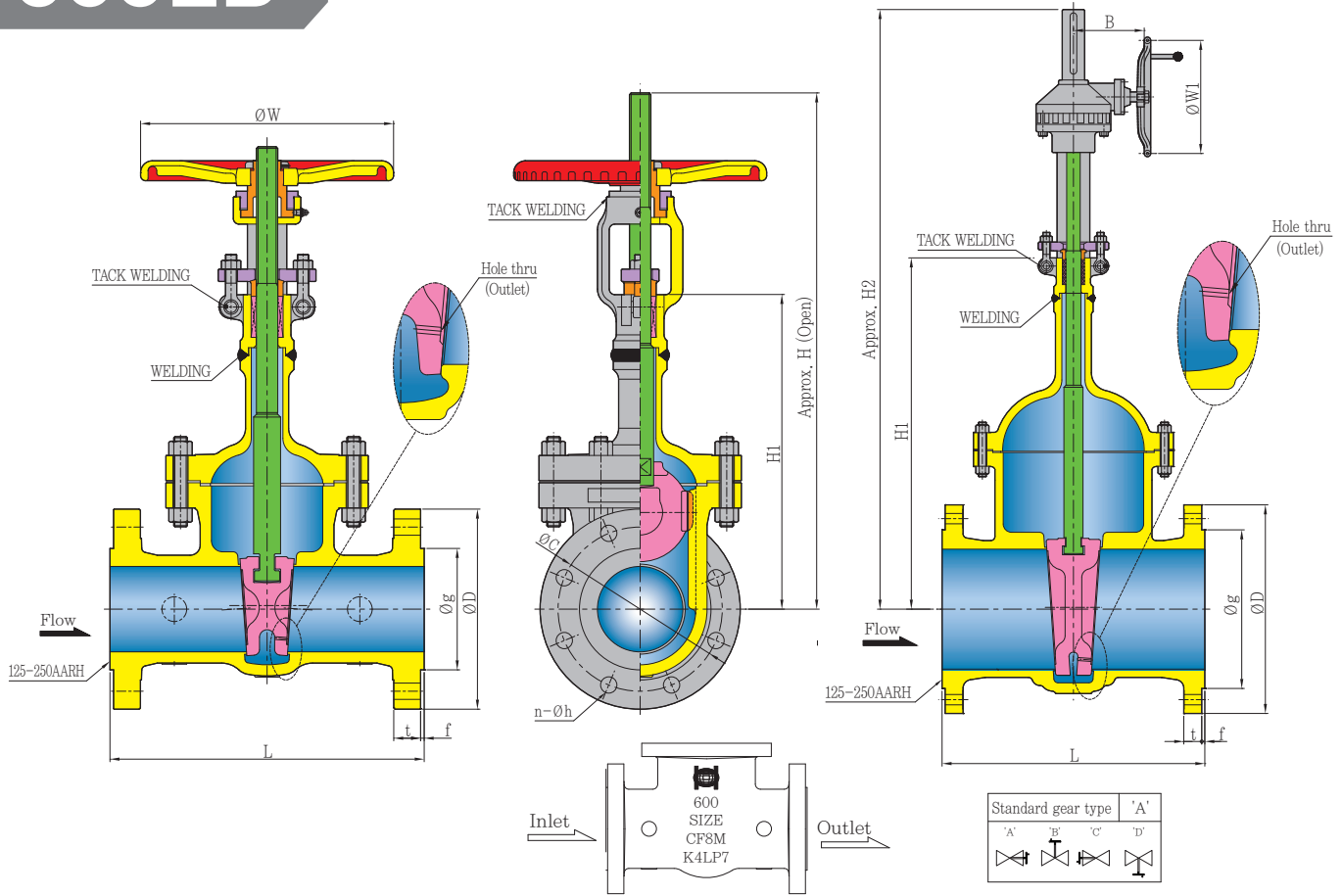
unit ; inch

Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle			Gear box			Weight (kg)		Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle			Gear box			Weight (lb)			
	RF	BW	RTJ								ϕW	H1	H	B	$\phi W1$	H1	H2	RF		BW	2"	3"								4"	6"	8"	10"	12"	14"	16"	18"	ϕW	H1
50	216	216	232	165.0	127.0	92.0	8	19	22.3	1.6	200	410	630	-	-	-	-	38.8	34.0	2"	8.50	8.50	9.13	6.50	5.00	3.62	8	0.75	0.88	0.06	7.87	16.14	24.80	-	-	-	-	85.5	74.8
80	282	282	298	210.0	168.0	127.0	8	22	28.6	1.6	250	460	735	-	-	-	-	61.1	50.4	3"	11.10	11.10	11.73	8.27	6.61	5.00	8	0.87	1.13	0.06	9.84	18.11	28.94	-	-	-	-	134.7	111.2
100	305	305	321	254.0	200.0	157.0	8	22	31.8	1.6	280	560	900	-	-	-	-	90.2	79.5	4"	12.01	12.01	12.64	10.00	7.87	6.18	8	0.87	1.25	0.06	11.02	22.05	35.43	-	-	-	-	198.9	175.4
150	403	403	419	318.0	270.0	216.0	12	22	36.6	1.6	355	620	1100	-	-	-	-	165.9	155.2	6"	15.87	15.87	16.50	12.52	10.63	8.50	12	0.87	1.44	0.06	13.98	24.41	43.31	-	-	-	-	365.7	342.2
200	419	419	435	381.0	330.0	270.0	12	25	41.3	1.6	400	690	1350	-	-	-	-	280.3	261.9	8"	16.50	16.50	17.13	15.00	12.99	10.63	12	0.98	1.63	0.06	15.75	27.17	53.15	-	-	-	-	618.0	577.4
250	457	457	473	444.0	387.5	324.0	16	29	47.7	1.6	500	825	1550	190	400	825	1700	415.2	389.0	10"	17.99	17.99	18.62	17.48	15.26	12.76	16	1.14	1.88	0.06	19.69	32.48	61.02	7.48	15.75	32.48	66.93	915.3	857.5
300	502	502	518	521.0	451.0	381.0	16	32	50.8	1.6	500	920	1770	190	400	920	1900	564.5	545.1	12"	19.76	19.76	20.39	20.51	17.76	15.00	16	1.26	2.00	0.06	19.69	36.22	69.69	7.48	15.75	36.22	74.80	1244.6	1201.8
350	762	762	778	584.0	514.5	413.0	20	32	54.0	1.6	630	1000	1925	205	500	1000	2050	776.0	755.6	14"	30.00	30.00	30.63	22.99	20.26	16.26	20	1.26	2.13	0.06	24.80	39.37	75.79	8.07	19.69	39.37	80.71	1710.8	1665.9
400	838	838	854	648.0	571.5	470.0	20	35	57.2	1.6	-	-	-	205	500	1100	2240	1213.5	1067.0	16"	32.99	32.99	33.62	25.51	22.50	18.50	20	1.38	2.25	0.06	-	-	-	8.07	19.69	43.31	88.19	2675.2	2352.3
450	914	914	930	711.0	628.5	533.0	24	35	60.4	1.6	-	-	-	225	630	1165	2400	1456.0	1367.7	18"	35.98	35.98	36.61	27.99	24.74	20.98	24	1.38	2.38	0.06	-	-	-	8.86	24.80	45.87	94.49	3209.9	3015.3

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

CRYOGENIC GATE VALVE

600LB



unit ; mm

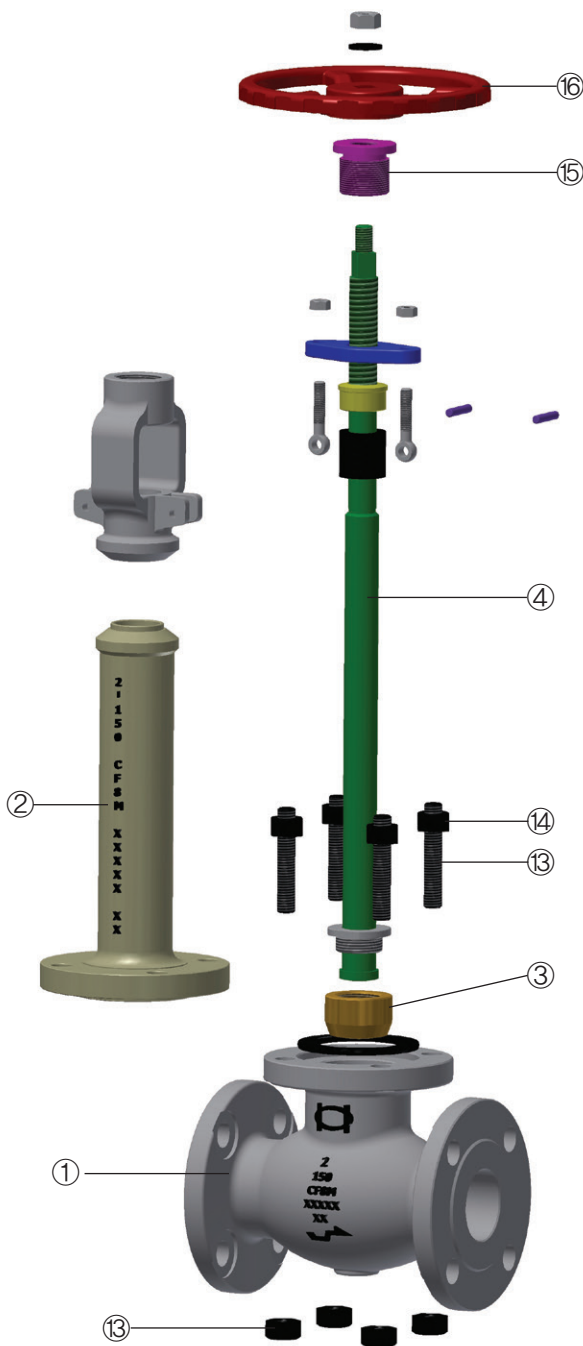
unit ; inch

Size	L			ØD	ØC	Øg	n	φh	t	f	Handle			Gear box				Weight (kg)		Size	L			ØD	ØC	Øg	n	φh	t	f	Handle			Gear box				Weight (lb)	
	RF	BW	RTJ								ØW	H1	H	B	ØW1	H1	H2	RF	BW		RF	BW	RTJ								ØW	H1	H	B	ØW1	H1	H2	RF	BW
50	292	292	295	165.0	127.0	92.0	8	19	25.4	6.4	224	410	690	-	-	-	-	51.4	43.7	2"	11.50	11.50	11.61	6.50	5.00	3.62	8	0.75	1.00	0.25	8.82	16.14	27.17	-	-	-	-	113.3	96.2
80	356	356	359	210.0	168.0	127.0	8	22	31.8	6.4	315	460	760	-	-	-	-	79.5	67.9	3"	14.02	14.02	14.13	8.27	6.61	5.00	8	0.87	1.25	0.25	12.40	18.11	29.92	-	-	-	-	175.4	149.7
100	432	432	435	273.0	216.0	157.0	8	25	38.1	6.4	355	560	950	-	-	-	-	140.7	126.1	4"	17.01	17.01	17.13	10.75	8.50	6.18	8	0.98	1.50	0.25	13.98	22.05	37.40	-	-	-	-	310.1	278.0
150	559	559	562	356.0	292.0	216.0	12	29	47.7	6.4	500	620	1120	-	-	-	-	296.8	261.9	6"	22.01	22.01	22.13	14.02	11.50	8.50	12	1.14	1.88	0.25	19.69	24.41	44.09	-	-	-	-	654.4	577.4
200	660	660	664	419.0	349.0	270.0	12	32	55.6	6.4	500	690	1380	-	-	-	-	489.9	470.5	8"	25.98	25.98	26.14	16.50	13.74	10.63	12	1.26	2.19	0.25	19.69	27.17	54.33	-	-	-	-	1079.9	1037.2
250	787	787	791	508.0	432.0	324.0	16	35	63.5	6.4	630	825	1600	205	500	825	1740	814.8	800.3	10"	30.98	30.98	31.14	20.00	17.01	12.76	16	1.38	2.50	0.25	24.80	32.48	62.99	8.07	19.69	32.48	68.50	1796.3	1764.2
300	838	838	841	559.0	489.0	381.0	20	35	66.7	6.4	-	-	-	225	630	925	1950	1213.5	1185.3	12"	32.99	32.99	33.11	22.01	19.25	15.00	20	1.38	2.63	0.25	-	-	-	8.86	24.80	36.42	76.77	2675.2	2613.2
350	889	889	892	603.0	527.0	413.0	20	38	69.9	6.4	-	-	-	225	630	1050	2100	1464.7	1251.3	14"	35.00	35.00	35.12	23.74	20.75	16.26	20	1.50	2.75	0.25	-	-	-	8.86	24.80	41.34	82.68	3229.1	2758.6
400	991	991	994	686.0	603.0	470.0	20	41	76.2	6.4	-	-	-	250	710	1180	2350	2098.1	1800.3	16"	39.02	39.02	39.13	27.01	23.74	18.50	20	1.61	3.00	0.25	-	-	-	9.84	27.95	46.46	92.52	4625.5	3969.0
450	1092	1092	1095	743.0	654.0	533.0	20	45	82.6	6.4	-	-	-	310	800	1225	2450	2639.4	2276.6	18"	42.99	42.99	43.11	29.25	25.75	20.98	20	1.77	3.25	0.25	-	-	-	12.20	31.50	48.23	96.46	5818.8	5019.0

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

CRYOGENIC GLOBE VALVE

- Basic design : ASME B16.34, API 623, BS1873, MSS-SP134, Integral seat type
- Flange drilling : ANSI B16.5 (2" ~ 24")
- Face to face : ANSI B16.10
- Test : API 598



① BODY

The body is in stainless steel. The basic dimension, i.e. wall thickness, face to face and flanges comply with the relevant API and ANSI standards. The body-to-bonnet flange is circular and the sealing surface for connection to the bonnet are recessed in the 150lb, 300lb, 600lb may be ring joint in the higher classes. Bosses may be provided for drain taps or by-pass piping.

② EXTENDED BONNET

The extended bonnet is in stainless steel. It is machined to accept the yoke sleeve and incorporates a stuffing box dimension in accordance with the BS, API standard.

③ DISC

The disc is part of the trim. It is normally supplied of the flat, tapered or plug type or, on request, of the parabolic regulating type, always free to rotate on the stem. Special attention is given to the seating face which is ground and lapped for a perfectly tight seal.

④ STEM

The stem is part of the trim. A ground backseat is provided to ensure perfectly tight seal to the stuffing box when the valve is fully open. The stem is attached to the disc by means of a threaded ring which allows the disc to rotate. The stem is ground to minimize friction and prevent damage to gland packing.

⑤ YOKE BUSH

The yoke sleeve is made from stainless steel or ductile iron having high resistance to wear and a high melting point. It is screwed into the bonnet and properly sized to withstand the stresses which develop when opening and closing the valve.

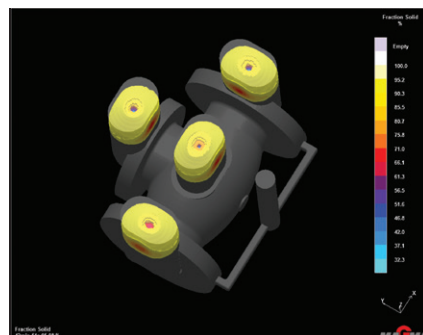
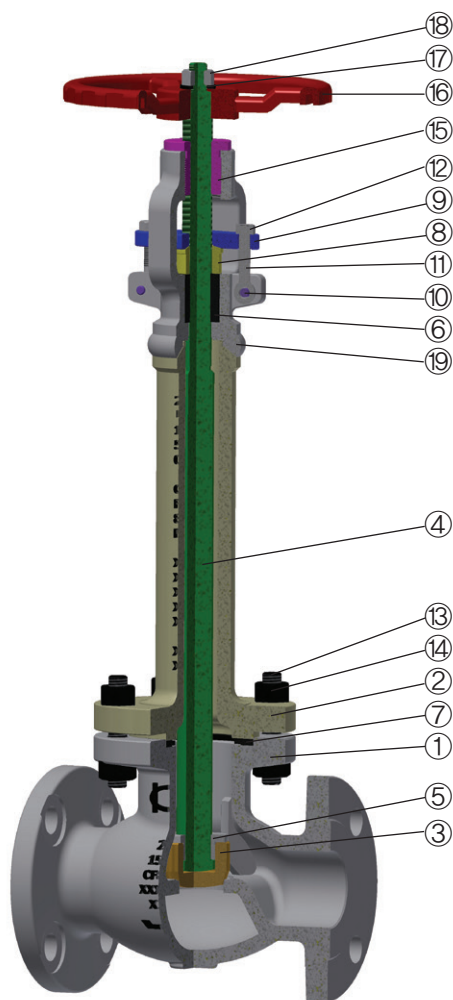
⑬, ⑭ BONNET BOLT/NUT

Bonnet studs and nuts are manufactured from alloy or stainless steel to the relevant ASTM standard.

⑮ HANDWHEEL

The steel or nodular iron handwheels are well shaped and large enough to give ease of movement when operating the valve, even under maximum differential pressure.

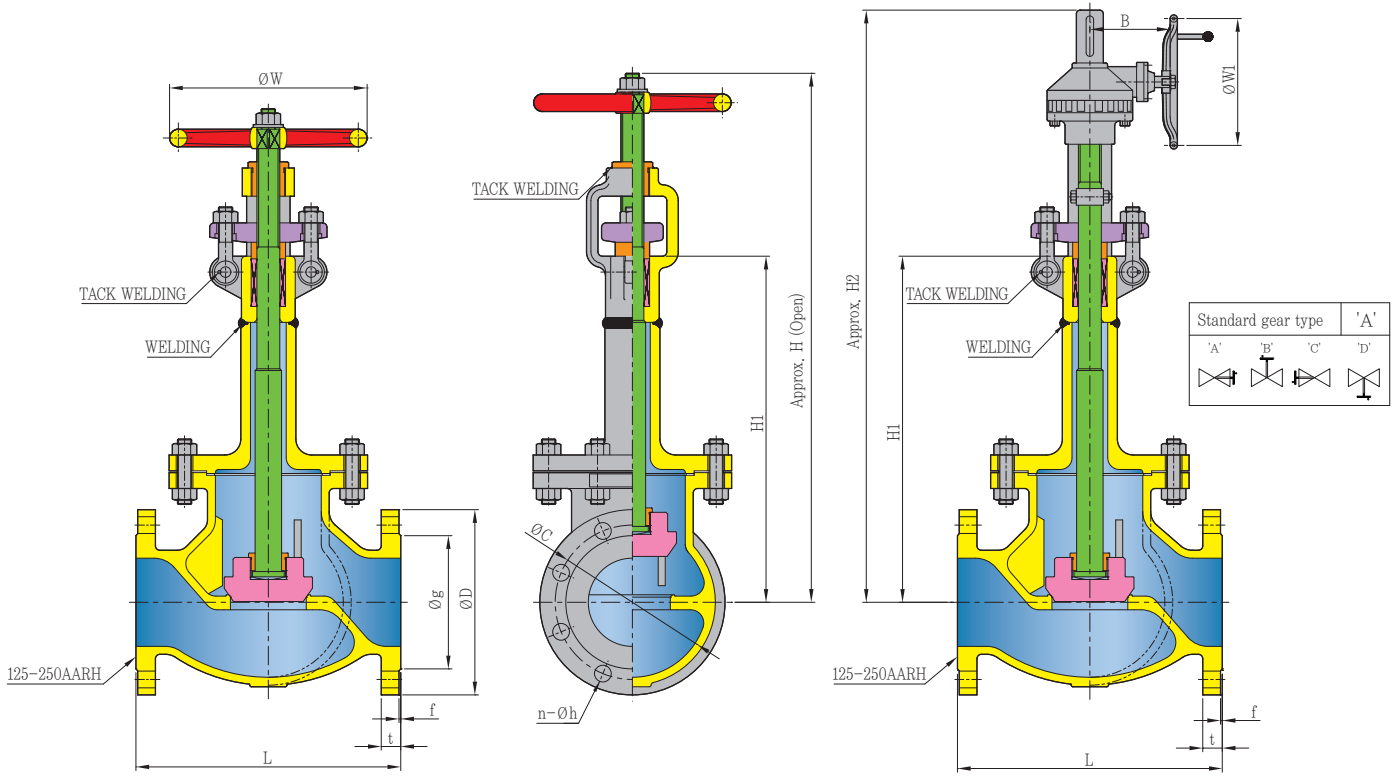
CRYOGENIC GLOBE VALVE



No	Name of Part	ASTM specification			
		Cast Stainless steel			
1	BODY	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
2	BONNET	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
3	DISC	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
4	STEM	A276 304	A276 304L	A276 316	A276 316L
5	DISC NUT	A276 304	A276 304L	A276 316	A276 316L
6	PACKING	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR	TEADIT / PILLAR
7	GASKET	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL
8	GLAND FLANGE	A276 304	A276 304L	A276 316	A276 316L
9	GLAND FLANGE	A351 CF8 / A240 304	A351 CF8 / A240 304	A351 CF8 / A240 304	A351 CF8 / A240 304
10	HINGE PIN	A276 304	A276 304	A276 304	A276 304
11	HINGE BOLT	A193 B8	A193 B8	A193 B8	A193 B8
12	HINGE NUT	A194 8	A194 8	A194 8	A194 8
13	BONNET BOLT	A193 B8	A193 B8	A193 B8	A193 B8
14	BONNET NUT	A194 8	A194 8	A194 8	A194 8
15	YOKE BUSH	A439 D2C	A439 D2C	A439 D2C	A439 D2C
16	HANDWHEEL	A536 60	A536 60	A536 60	A536 60
17	PLATE WASHER	A276 304	A276 304	A276 304	A276 304
18	HANDLE NUT	A194 8	A194 8	A194 8	A194 8
19	YOKE	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M

Note. - Packing & gasket material ; customer's requirements

150LB



unit ; mm

unit ; inch

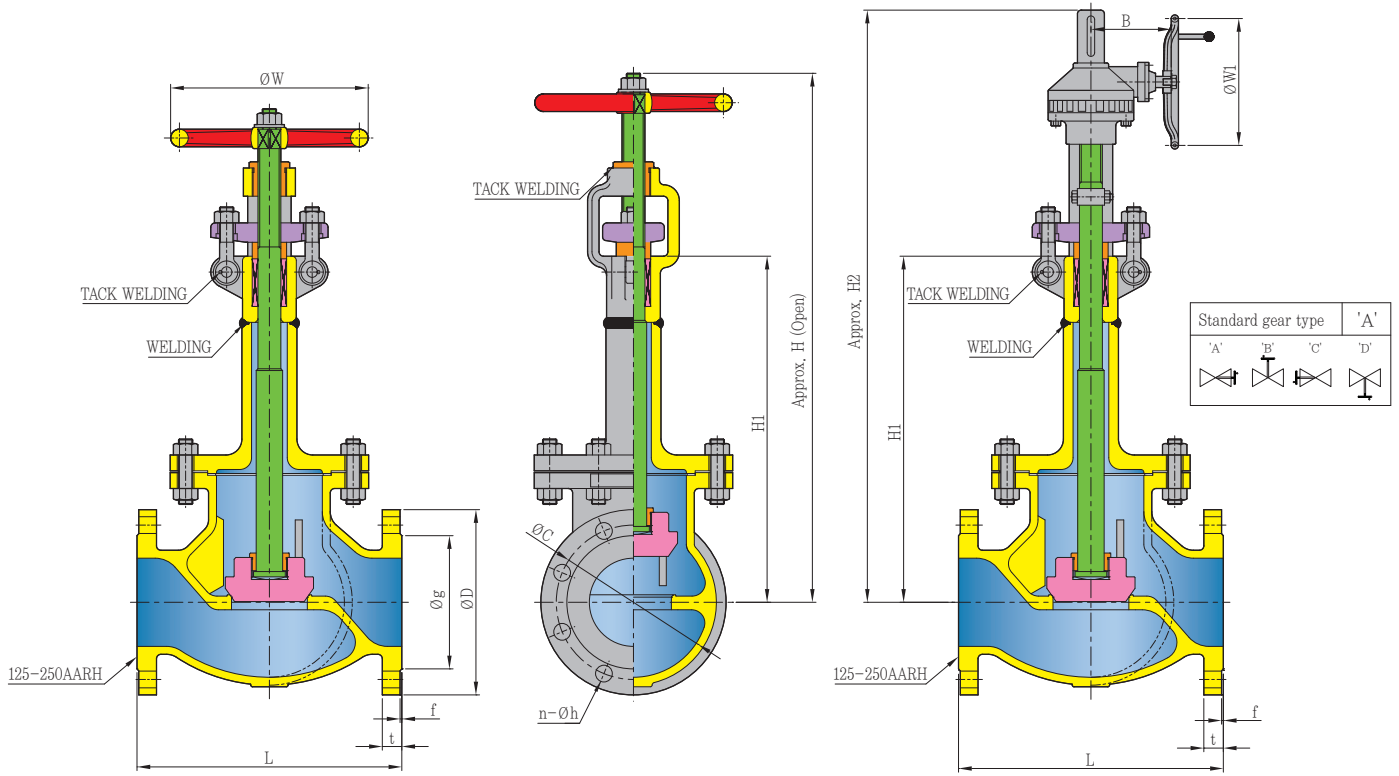
Size	L		ϕD	ϕC	ϕg	n	ϕh	t	f	Handle			Gear box			Weight (kg)		Size	L		ϕD	ϕC	ϕg	n	ϕh	t	f	Handle			Gear box			Weight (lb)			
	RF	BW								ϕW	H1	H	B	$\phi W1$	H1	H2	RF		BW	1.5"								RF	BW	2"	RF	BW	3"	RF	BW	4"	RF
40	165	165	127.0	98.5	73.0	4	16	15.9	1.6	180	360	530	-	-	-	-	29.1	25.2	1.5"	6.50	6.50	5.00	3.88	2.87	4	0.63	0.63	0.06	7.09	14.17	20.87	-	-	-	-	64.2	55.6
50	203	203	152.0	120.5	92.0	4	19	15.9	1.6	180	410	580	-	-	-	-	33.0	28.1	2"	7.99	7.99	5.98	4.74	3.62	4	0.75	0.63	0.06	7.09	16.14	22.83	-	-	-	-	72.7	62.0
80	241	241	190.0	152.5	127.0	4	19	19.1	1.6	200	460	670	-	-	-	-	52.4	43.7	3"	9.49	9.49	7.48	6.00	5.00	8	0.75	0.75	0.06	7.87	18.11	26.38	-	-	-	-	115.5	96.2
100	292	292	229.0	190.5	157.0	8	19	23.9	1.6	250	560	800	-	-	-	-	81.5	69.8	4"	11.50	11.50	9.02	7.50	6.18	8	0.75	0.94	0.06	9.84	22.05	31.50	-	-	-	-	179.6	154.0
150	406	406	279.0	241.5	216.0	8	22	25.4	1.6	280	620	930	-	-	-	-	138.7	127.1	6"	15.98	15.98	10.98	9.51	8.50	12	0.87	1.00	0.06	11.02	24.41	36.61	-	-	-	-	305.8	280.1
200	495	495	343.0	298.5	270.0	8	22	28.6	1.6	315	690	1010	165	300	690	1250	189.2	169.8	8"	19.49	19.49	13.50	11.75	10.63	12	0.87	1.13	0.06	12.40	27.17	39.76	6.50	11.81	27.17	49.21	417.0	374.2

Note.

- Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
- This dimension can be changed without notification.

CRYOGENIC GLOBE VALVE

300LB



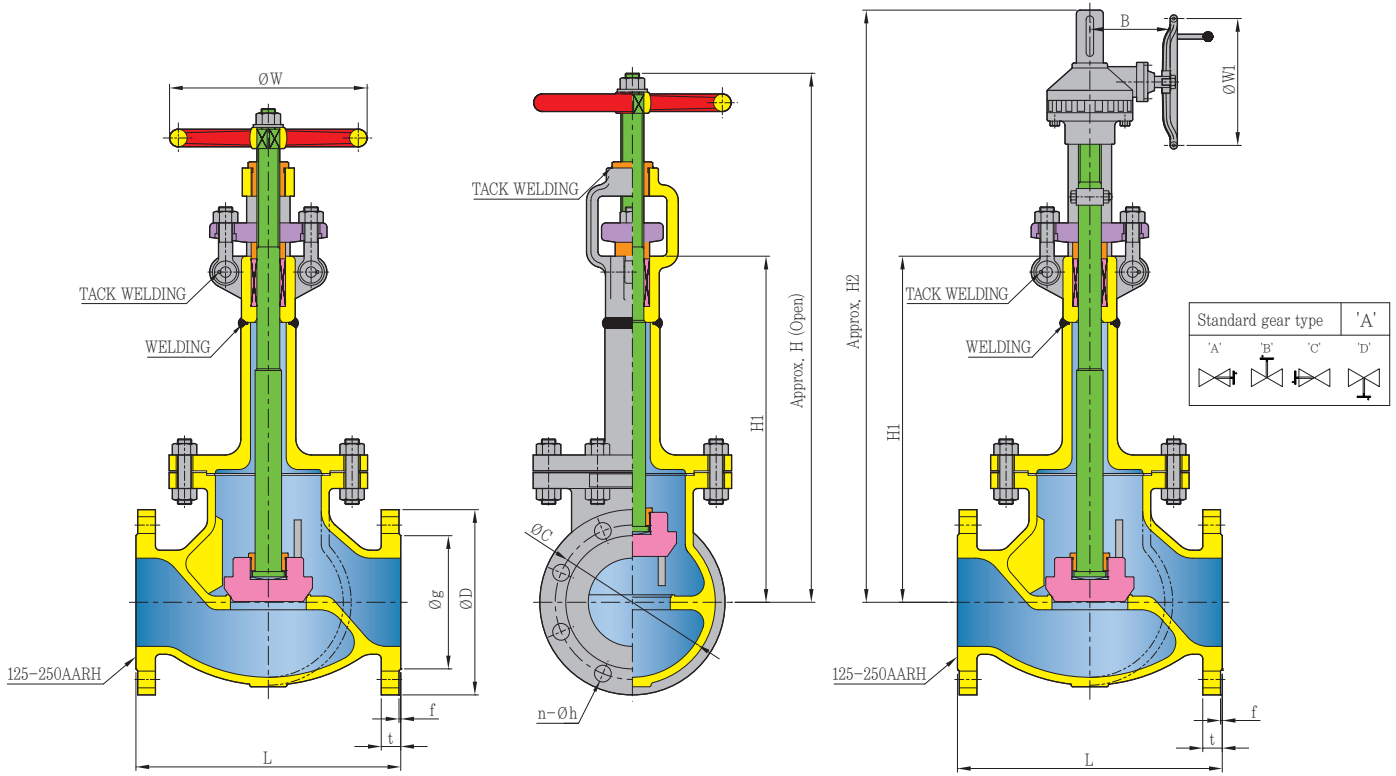
unit ; mm

unit ; inch

Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle			Gear box			Weight (kg)		Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle			Gear box			Weight (lb)			
	RF	BW	RTJ								ϕW	H1	H	B	$\phi W1$	H1	H2	RF		BW	ϕW	H1								H	B	$\phi W1$	H1	H2	RF	BW			
50	267	267	283	165.0	127.0	92.0	8	19	22.3	1.6	180	410	600	-	-	-	36.9	29.1	2"	10.51	10.51	11.14	6.50	5.00	3.62	8	0.75	0.88	0.06	7.09	16.14	23.62	-	-	-	-	81.3	64.2	
80	318	318	333	210.0	168.0	127.0	8	22	28.6	1.6	224	460	675	-	-	-	62.1	53.4	3"	12.52	12.52	13.11	8.27	6.61	5.00	8	0.87	1.13	0.06	8.82	18.11	26.57	-	-	-	-	136.9	117.6	
100	356	356	371	254.0	200.0	157.0	8	22	31.8	1.6	280	560	820	-	-	-	180.4	164.9	4"	14.02	14.02	14.61	10.00	7.87	6.18	12	0.87	1.25	0.06	11.02	22.05	32.28	-	-	-	-	397.8	363.5	
150	444	444	460	318.0	270.0	216.0	12	22	36.6	1.6	355	620	900	190	400	620	1105	197.9	179.5	6"	17.48	17.48	18.11	12.52	10.63	8.50	12	0.87	1.44	0.06	13.98	24.41	35.43	7.48	15.75	24.41	43.50	436.3	395.6
200	559	559	575	381.0	330.0	270.0	12	25	41.3	1.6	355	690	1085	190	400	690	1285	242.5	218.3	8"	22.01	22.01	22.64	15.00	12.99	10.63	16	0.98	1.63	0.06	13.98	27.17	42.72	7.48	15.75	27.17	50.59	534.6	481.2

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

600LB



unit ; mm

unit ; inch

Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle			Gear box			Weight (kg)		Size	L			ϕD	ϕC	ϕg	n	ϕh	t	f	Handle			Gear box			Weight (lb)			
	RF	BW	RTJ								ϕW	H1	H	B	$\phi W1$	H1	H2	RF		BW	RF	BW								RTJ	ϕW	H1	H	B	$\phi W1$	H1	H2	RF	BW
50	292	292	295	165.0	127.0	92.0	8	19	25.4	6.4	200	410	620	-	-	-	-	67.9	53.4	2"	11.50	11.50	11.61	6.50	5.00	3.62	8	0.75	1.00	0.25	7.87	16.14	24.41	-	-	-	-	149.7	117.6
80	356	356	359	210.0	168.0	127.0	8	22	31.8	6.4	280	460	695	-	-	-	-	87.3	75.7	3"	14.02	14.02	14.13	8.27	6.61	5.00	8	0.87	1.25	0.25	11.02	18.11	27.36	-	-	-	-	192.5	166.8
100	432	432	435	273.0	216.0	157.0	8	25	38.1	6.4	315	560	860	-	-	-	-	149.4	131.0	4"	17.01	17.01	17.13	10.75	8.50	6.18	12	0.98	1.50	0.25	12.40	22.05	33.86	-	-	-	-	329.3	288.7
150	559	559	562	356.0	292.0	216.0	12	29	47.7	6.4	500	620	1025	-	-	-	-	329.8	310.4	6"	22.01	22.01	22.13	14.02	11.50	8.50	12	1.14	1.88	0.25	19.69	24.41	40.35	-	-	-	-	727.1	684.3
200	660	660	664	419.0	349.0	270.0	12	32	55.6	6.4	600	690	1085	205	500	690	1375	698.4	552.9	8"	25.98	25.98	26.14	16.50	13.74	10.63	16	1.26	2.19	0.25	23.62	27.17	42.72	8.07	19.69	27.17	54.13	1539.7	1218.9

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5. - Please contact for other sizes.
 - This dimension can be changed without notification.

CRYOGENIC CHECK VALVE

- Basic design : ASME B16.34, API 594, Intergral seat type
- Flange drilling : ANSI B16.5 (2" ~ 24"),
ASME B16.47 Series.A (26" over)
- Face to face : ANSI B16.10
- Test : API 598

① BODY

The body is in stainless steel, carefully designed to keep pressure drops to a minimum. A wide opening on top of the body permits easy inspection and maintenance. The basic dimension, i.e. wall thickness, face to face and flanges, comply with the relevant API and ANSI standards. The body-to-cover flange is circular.

Threaded bosses are incorporated to ensure correct alignment of the hinge pin. Bosses may be provided for drain taps or bypass piping.

② COVER

The cover is in stainless steel. The sealing surface for the connection to the body are recessed in the 150lb, 300lb and 600lb and ring joint in the higher.

③ DISC

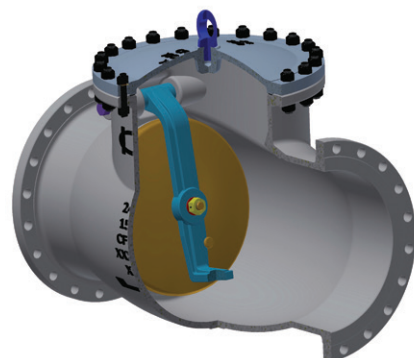
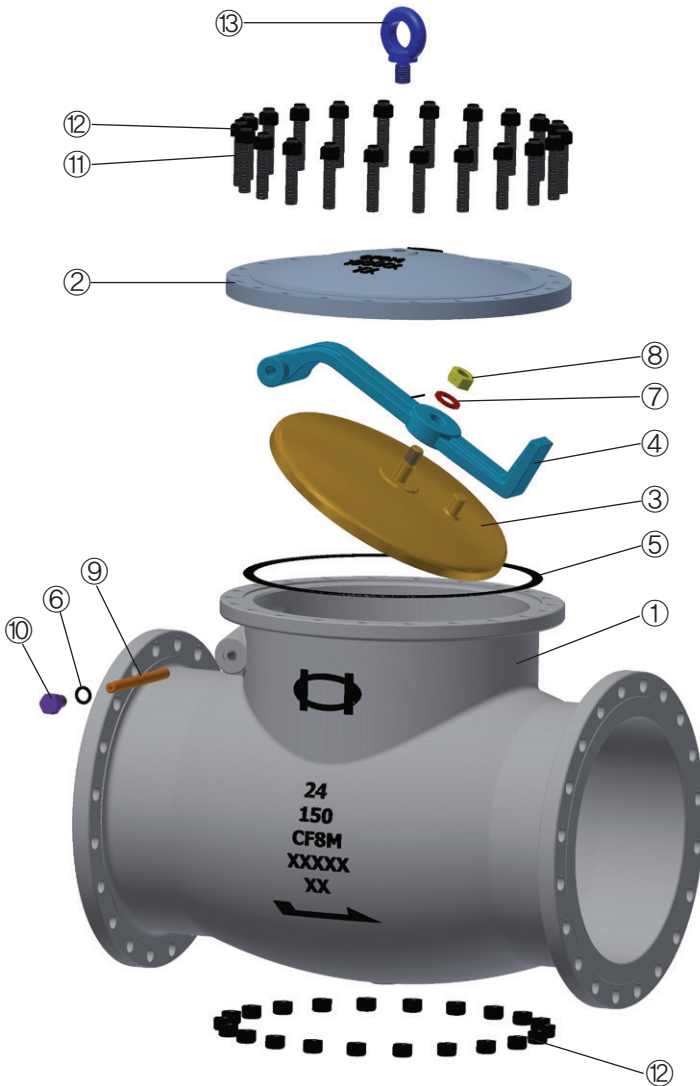
The disc is part of the trim. The back side has a threaded stud for attachment to the hinge with a stainless steel nut and split pin to insure a strong connection. The seating face is ground and lapped, for a perfectly tight seal.

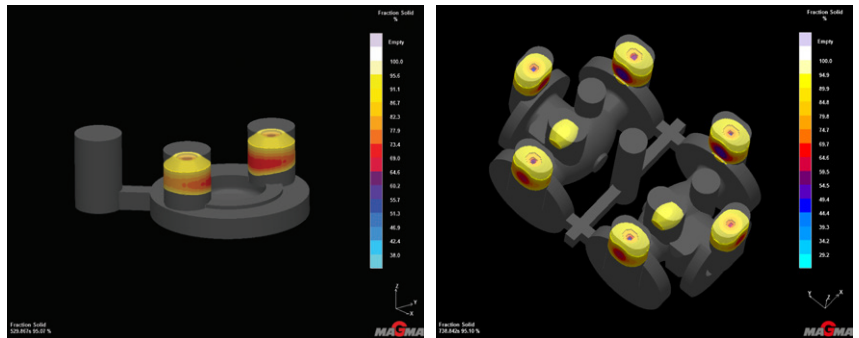
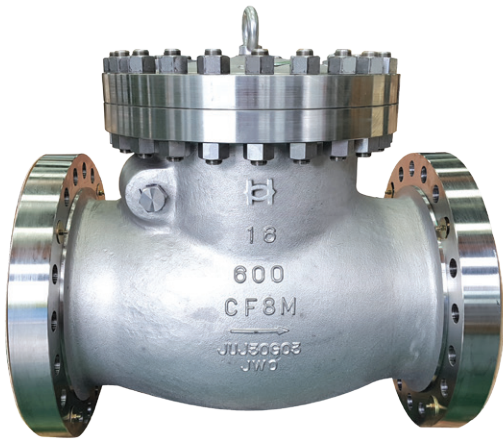
⑨ ROD PIN

The rod pin is part of the trim. The rod pin is retained in the body by one threaded plugs and sealed by metallic or non-asbestos. The pin can be easily removed for maintenance of the valve.

⑪,⑫ COVER BOLT/NUT

The cover studs and nuts are manufactured from alloy or stainless steel to the relevant ASTM standard.



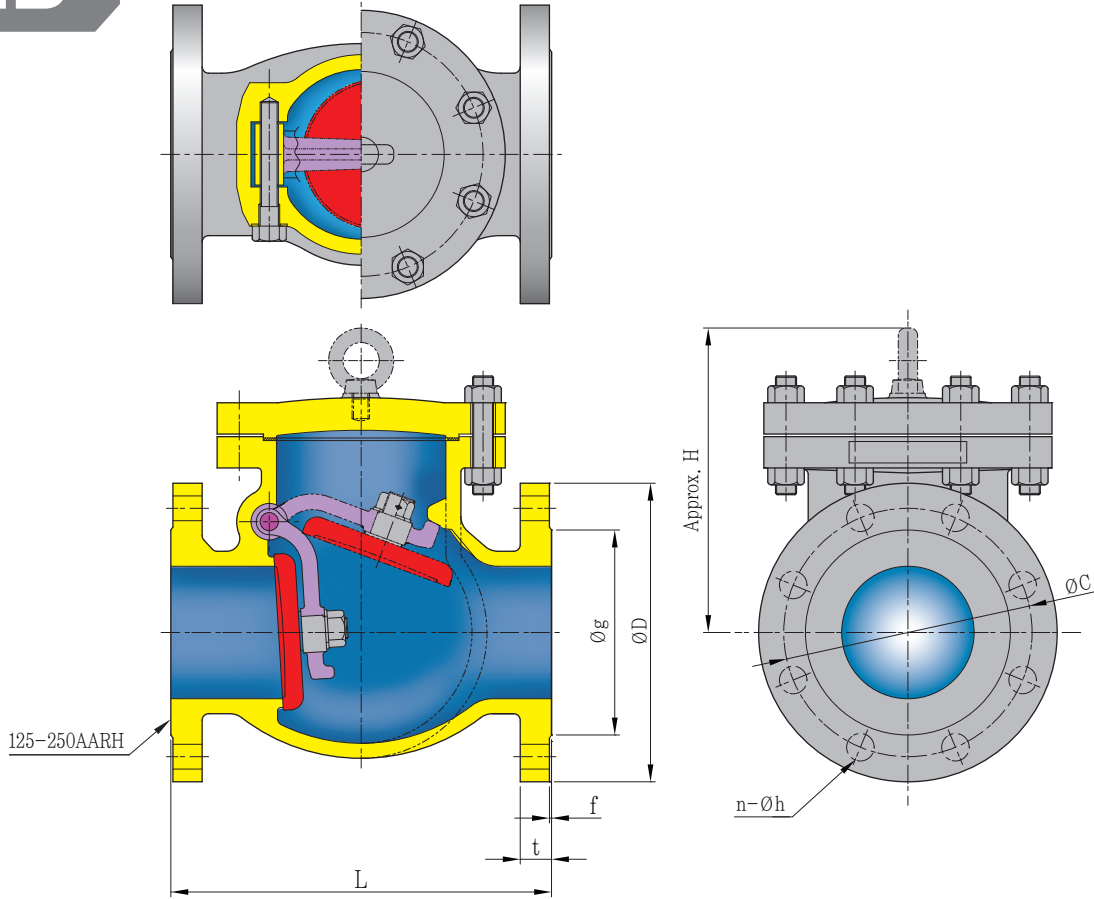


No	Name of Part	ASTM specification			
		Cast Stainless steel			
1	BODY	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
2	COVER	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
3	DISC	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
4	ARM	A351 CF8	A351 CF3	A351 CF8M	A351 CF3M
5	GASKET	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL
6	PLUG GASKET	COMMERCIAL	COMMERCIAL	COMMERCIAL	COMMERCIAL
7	DISC WASHER	A276 304	A276 304L	A276 316	A276 316L
8	DISC NUT	A276 304	A276 304L	A276 316	A276 316L
9	ROD PIN	A276 304	A276 304L	A276 316	A276 316L
10	PLUG BOLT	A276 304	A276 304L	A276 316	A276 316L
11	COVER BOLT	A193 B8	A193 B8	A193 B8	A193 B8
12	COVER NUT	A194 8	A194 8	A194 8	A194 8
13	EYE BOLT	A193 B8	A193 B8	A193 B8	A193 B8

Note. - Gasket material ; customer's requirements

CRYOGENIC CHECK VALVE

150LB



unit ; mm

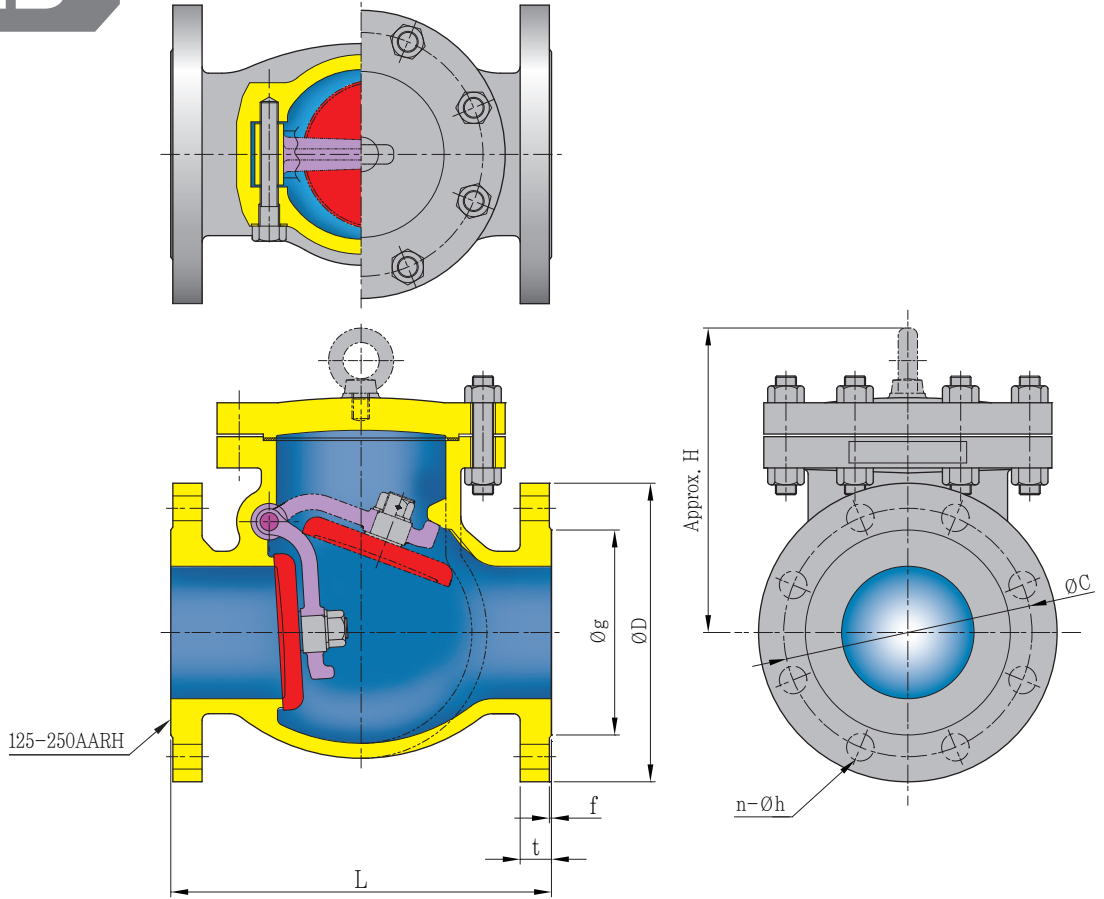
unit ; inch

Size	L		ØD	ØC	Øg	n	Øh	t	f	H	Weight (kg)		Size	L		ØD	ØC	Øg	n	Øh	t	f	H	Weight (lb)	
	RF	BW									RF	BW		RF	BW										
50	203	203	152.0	120.5	92.0	4	19	15.9	1.6	135	19.4	16.5	2"	7.99	7.99	5.98	4.74	3.62	4	0.75	0.63	0.06	5.31	42.8	36.4
65	216	216	178.0	139.5	105.0	4	19	17.5	1.6	150	23.3	18.4	2 1/2"	8.50	8.50	7.01	5.49	4.13	4	0.75	0.69	0.06	5.91	51.3	40.6
80	241	241	190.0	152.5	127.0	4	19	19.1	1.6	160	29.1	20.4	3"	9.49	9.49	7.48	6.00	5.00	4	0.75	0.75	0.06	6.30	64.2	44.9
100	292	292	229.0	190.5	157.0	8	19	23.9	1.6	190	42.7	25.2	4"	11.50	11.50	9.02	7.50	6.18	8	0.75	0.94	0.06	7.48	94.1	55.6
125	330	330	254.0	216.0	186.0	8	22	23.9	1.6	250	58.2	43.7	5"	12.99	12.99	10.00	8.50	7.32	8	0.87	0.94	0.06	9.84	128.3	96.2
150	356	356	279.0	241.5	216.0	8	22	25.4	1.6	300	75.7	60.1	6"	14.02	14.02	10.98	9.51	8.50	8	0.87	1.00	0.06	11.81	166.8	132.6
200	495	495	343.0	298.5	270.0	8	22	28.6	1.6	350	114.5	88.3	8"	19.49	19.49	13.50	11.75	10.63	8	0.87	1.13	0.06	13.78	252.3	194.6
250	622	622	406.0	362.0	324.0	12	25	30.2	1.6	360	228.9	197.9	10"	24.49	24.49	15.98	14.25	12.76	12	0.98	1.19	0.06	14.17	504.7	436.3
300	698	698	483.0	432.0	381.0	12	25	31.8	1.6	380	333.7	284.2	12"	27.48	27.48	19.02	17.01	15.00	12	0.98	1.25	0.06	14.96	735.6	626.6
350	787	787	533.0	476.0	413.0	12	29	35.0	1.6	460	409.3	291.0	14"	30.98	30.98	20.98	18.74	16.26	12	1.14	1.38	0.06	18.11	902.4	641.5
400	864	864	597.0	539.5	470.0	16	29	36.6	1.6	560	615.0	561.6	16"	34.02	34.02	23.50	21.24	18.50	16	1.14	1.44	0.06	22.05	1355.8	1238.2
450	978	978	635.0	578.0	533.0	16	32	39.7	1.6	620	791.5	680.9	18"	38.50	38.50	25.00	22.76	20.98	16	1.26	1.56	0.06	24.41	1745.0	1501.2
500	978	978	698.0	635.0	584.0	20	32	42.9	1.6	700	952.5	826.4	20"	38.50	38.50	27.48	25.00	22.99	20	1.26	1.69	0.06	27.56	2100.0	1822.0
600	1295	1295	813.0	749.5	692.0	20	35	47.7	1.6	800	1726.6	1577.2	24"	50.98	50.98	32.01	29.51	27.24	20	1.38	1.88	0.06	31.50	3806.5	3477.2
700	1448	1448	927.0	863.5	800.0	28	35	71.4	1.6	900	1683.0	1418.1	28"	57.01	57.01	36.50	34.00	31.50	28	1.38	2.81	0.06	35.43	3710.3	3126.5
750	1524	1524	984.3	914.4	857.3	28	35	74.7	1.6	930	2044.8	1947.8	30"	60.00	60.00	38.75	36.00	33.75	28	1.38	2.94	0.06	36.61	4507.9	4294.1
800	1524	1524	1060.5	978.0	914.5	28	41	81.0	1.6	1000	2328.0	2182.5	32"	60.00	60.00	41.75	38.50	36.00	28	1.61	3.19	0.06	39.37	5132.4	4811.6
900	1956	1956	1168.4	1085.9	1022.4	32	41	90.4	1.6	1150	3249.5	3055.5	36"	77.01	77.01	46.00	42.75	40.25	32	1.61	3.56	0.06	45.28	7163.9	6736.2

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5.
 - Please contact for other sizes.

- Flange drilling 26" over is ASME B16.47 series.A
 - This dimension can be changed without notification.

300LB



unit ; mm

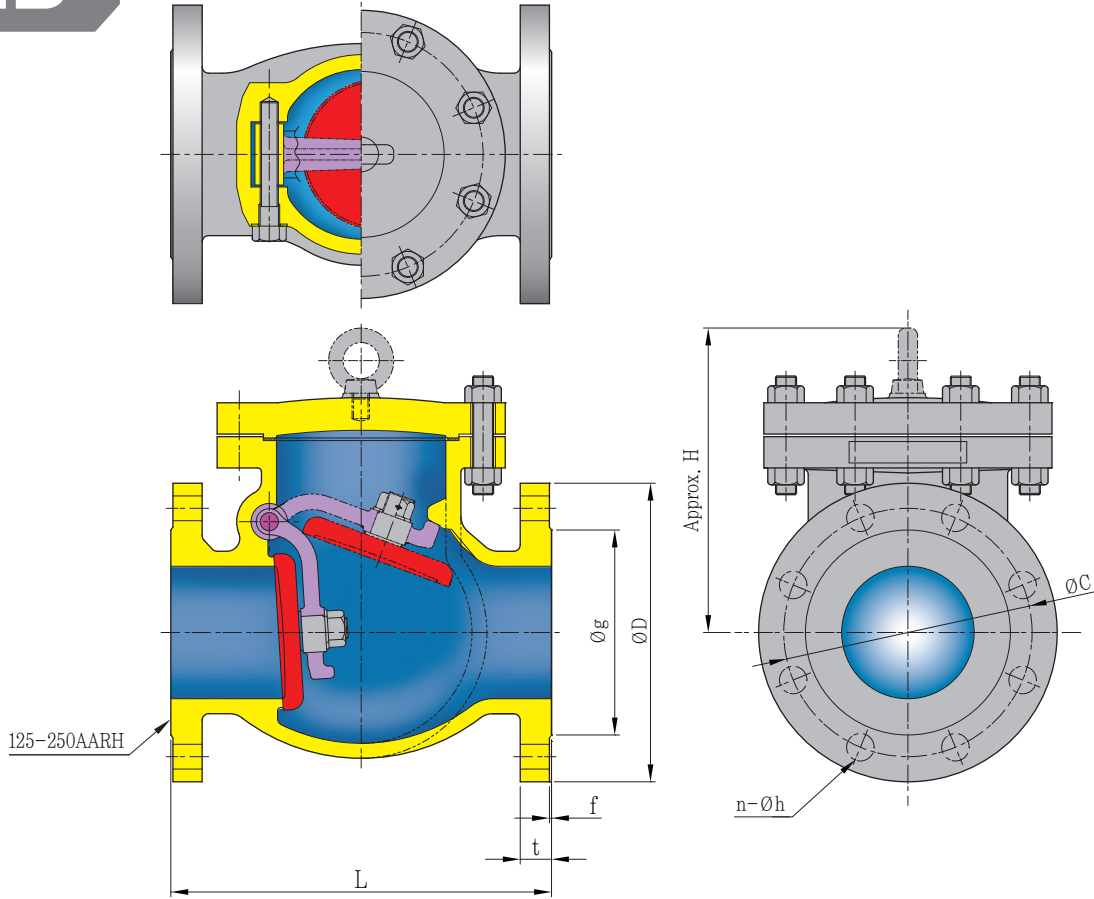
unit ; inch

Size	L			ØD	ØC	Øg	n	Øh	t	f	H	Weight (kg)		Size	L			ØD	ØC	Øg	n	Øh	t	f	H	Weight (lb)	
	RF	BW	RTJ									RF	BW		RF	BW	RTJ									RF	BW
50	267	267	283	165.0	127.0	92.0	8	19	22.3	1.6	175	23.3	20.4	2"	10.51	10.51	11.14	6.50	5.00	3.62	8	0.75	0.88	0.06	6.89	51.3	44.9
65	292	292	308	190.0	149.0	105.0	8	22	25.4	1.6	190	35.9	29.1	2 1/2"	11.50	11.50	12.13	7.48	5.87	4.13	8	0.87	1.00	0.06	7.48	79.1	64.2
80	318	318	333	210.0	168.0	127.0	8	22	28.6	1.6	205	43.7	34.0	3"	12.52	12.52	13.11	8.27	6.61	5.00	8	0.87	1.13	0.06	8.07	96.2	74.8
100	356	356	371	254.0	200.0	157.0	8	22	31.8	1.6	220	66.0	49.5	4"	14.02	14.02	14.61	10.00	7.87	6.18	8	0.87	1.25	0.06	8.66	145.4	109.1
150	444	444	460	318.0	270.0	216.0	12	22	36.6	1.6	326	132.9	106.7	6"	17.48	17.48	18.11	12.52	10.63	8.50	12	0.87	1.44	0.06	12.83	293.0	235.2
200	533	533	549	381.0	330.0	270.0	12	25	41.3	1.6	376	213.4	176.5	8"	20.98	20.98	21.61	15.00	12.99	10.63	12	0.98	1.63	0.06	14.80	470.5	389.2
250	622	622	638	444.0	387.5	324.0	16	29	47.7	1.6	473	261.9	203.7	10"	24.49	24.49	25.12	17.48	15.26	12.76	16	1.14	1.88	0.06	18.62	577.4	449.1
300	711	711	727	521.0	451.0	381.0	16	32	50.8	1.6	530	480.2	407.4	12"	27.99	27.99	28.62	20.51	17.76	15.00	16	1.26	2.00	0.06	20.87	1058.5	898.2
350	838	838	854	584.0	514.5	413.0	20	32	54.0	1.6	580	659.6	509.3	14"	32.99	32.99	33.62	22.99	20.26	16.26	20	1.26	2.13	0.06	22.83	1454.2	1122.7
400	864	864	880	648.0	571.5	470.0	20	35	57.2	1.6	695	921.5	776.0	16"	34.02	34.02	34.65	25.51	22.50	18.50	20	1.38	2.25	0.06	27.36	2031.6	1710.8
450	978	978	994	711.0	628.5	533.0	24	35	60.4	1.6	780	1164.0	969.0	18"	38.50	38.50	39.13	27.99	24.74	20.98	24	1.38	2.38	0.06	30.71	2566.2	2136.3
500	1016	1016	1035	775.0	686.0	584.0	24	35	63.5	1.6	790	1455.0	1183.4	20"	40.00	40.00	40.75	30.51	27.01	22.99	24	1.38	2.50	0.06	31.10	3207.7	2609.0
600	1346	1346	1368	914.0	813.0	692.0	24	41	69.9	1.6	1020	2134.0	1786.7	24"	52.99	52.99	53.86	35.98	32.01	27.24	24	1.61	2.75	0.06	40.16	4704.7	3939.1
700	1499	1499	1524	1035.0	940.0	800.0	28	45	85.9	1.6	1120	2716.0	2328.0	28"	59.02	59.02	60.00	40.75	37.01	31.50	28	1.77	3.38	0.06	44.09	5987.8	5132.4
750	1594	1594	1619	1092.0	997.0	857.3	28	45	92.0	1.6	1200	3298.0	2861.5	30"	62.76	62.76	63.74	42.99	39.25	33.75	28	1.77	3.62	0.06	47.24	7270.8	6308.5
900	2083	2083	2111	1270.0	1168.4	1022.4	32	54	104.7	1.6	1250	4850.0	3987.7	36"	82.01	82.01	83.11	50.00	46.00	40.25	32	2.13	4.12	0.06	49.21	10692.4	8791.3

- Note.**
- Flange drilling 2" ~ 24" is ANSI B16.5.
 - Flange drilling 26" over is ASME B16.47 series.A
 - Please contact for other sizes.
 - This dimension can be changed without notification.

CRYOGENIC CHECK VALVE

600LB



unit ; mm

unit ; inch

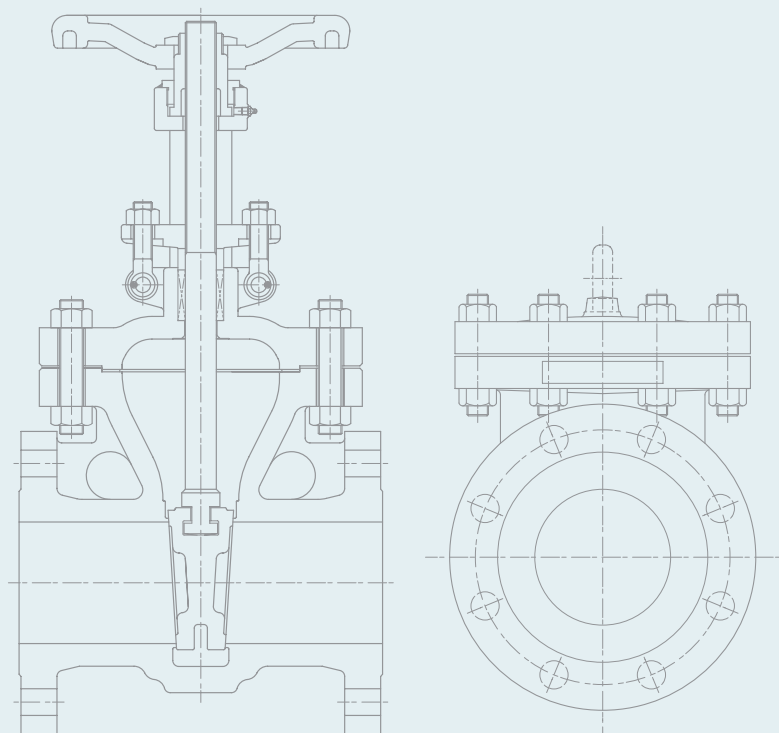
Size	L			ΦD	ΦC	Φg	n	Φh	t	f	H	Weight (kg)		Size	L			ΦD	ΦC	Φg	n	Φh	t	f	H	Weight (kg)	
	RF	BW	RTJ									RF	BW		RF	BW	RTJ									RF	BW
50	292	292	295	165.0	127.0	92.0	8	19	25.4	6.4	195	38.8	36.9	2"	11.50	11.50	11.61	6.50	5.00	3.62	8	0.75	1.00	0.25	7.68	85.5	81.3
65	330	330	333	190.0	149.0	105.0	8	22	28.6	6.4	230	53.4	43.7	2 1/2"	12.99	12.99	13.11	7.48	5.87	4.13	8	0.87	1.13	0.25	9.06	117.6	96.2
80	356	356	359	210.0	168.0	127.0	8	22	31.8	6.4	250	69.8	61.1	3"	14.02	14.02	14.13	8.27	6.61	5.00	8	0.87	1.25	0.25	9.84	154.0	134.7
100	432	432	435	273.0	216.0	157.0	8	25	38.1	6.4	300	111.6	77.6	4"	17.01	17.01	17.13	10.75	8.50	6.18	8	0.98	1.50	0.25	11.81	245.9	171.1
150	559	559	562	356.0	292.0	216.0	12	29	47.7	6.4	390	242.5	198.9	6"	22.01	22.01	22.13	14.02	11.50	8.50	12	1.14	1.88	0.25	15.35	534.6	438.4
200	660	660	664	419.0	349.0	270.0	12	32	55.6	6.4	430	407.4	335.6	8"	25.98	25.98	26.14	16.50	13.74	10.63	12	1.26	2.19	0.25	16.93	898.2	739.9
250	787	787	791	508.0	432.0	324.0	16	35	63.5	6.4	525	593.6	474.3	10"	30.98	30.98	31.14	20.00	17.01	12.76	16	1.38	2.50	0.25	20.67	1308.8	1045.7
300	838	838	841	559.0	489.0	381.0	20	35	66.7	6.4	615	785.7	648.0	12"	32.99	32.99	33.11	22.01	19.25	15.00	20	1.38	2.63	0.25	24.21	1732.2	1428.5
350	889	889	892	603.0	527.0	413.0	20	38	69.9	6.4	660	873.0	853.6	14"	35.00	35.00	35.12	23.74	20.75	16.26	20	1.50	2.75	0.25	25.98	1924.6	1881.9
400	991	991	994	686.0	603.0	470.0	20	41	76.2	6.4	815	1307.6	1084.5	16"	39.02	39.02	39.13	27.01	23.74	18.50	20	1.61	3.00	0.25	32.09	2882.7	2390.8
450	1092	1092	1095	743.0	654.0	533.0	20	45	82.6	6.4	960	1957.5	1671.3	18"	42.99	42.99	43.11	29.25	25.75	20.98	20	1.77	3.25	0.25	37.80	4315.5	3684.6
500	1194	1194	1200	813.0	724.0	584.0	24	45	88.9	6.4	1025	2316.4	1952.6	20"	47.01	47.01	47.24	32.01	28.50	22.99	24	1.77	3.50	0.25	40.35	5106.7	4304.8
600	1397	1397	1406	940.0	838.0	692.0	24	51	102.0	6.4	1200	3166.1	2645.2	24"	55.00	55.00	55.35	37.01	32.99	27.24	24	2.01	4.02	0.25	47.24	6980.0	5831.6
700	1600	1600	1613	1073.2	985.2	800.0	28	54	111.3	6.4	1275	3977.0	3395.0	28"	62.99	62.99	63.50	42.25	38.79	31.50	28	2.13	4.38	0.25	50.20	8767.8	7484.7
750	1651	1651	1664	1130.3	1022.4	857.3	28	54	114.3	6.4	1375	4850.0	4075.0	30"	65.00	65.00	65.51	44.50	40.25	33.75	28	2.13	4.50	0.25	54.13	10692.4	8983.8

Note.
 - Flange drilling 2" ~ 24" is ANSI B16.5.
 - Please contact for other sizes.

- Flange drilling 26" over is ASME B16.47 series.A
 - This dimension can be changed without notification.

ENGINEERING DATA

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RELATIONSHIP BETWEEN NOMINAL PIPE SIZE AND INSIDE DIAMETER NONMANDATORY APPENDIX A

The relationship between wall thickness and inside diameter shown in Table 3 is the basis for pressure rating of valves. By interpolation, a definitive design can be determined for any pressure-diameter-material combination.

Following the evolution of standard dimensions for flanges in a series of rating classes, corresponding standard relationships were established between nominal pipe sizes and the inside diameter of fittings matching the rating class of the flanges. These provided a useful design basis for the corresponding flanged end valves, subsequently extended in application to welding end valves, which in many cases are identical except for the pipe ends. Table A-1 is based on the dimensions given in B16.5 dimensional tables as "Inside Diameter of Fitting."

The values for sizes greater than NPS 24 for the lower pressure classes and greater than NPS 12 for Class 2500 were obtained by linear extrapolation.

Table A-1 Inside Diameter, d

ASME B16.34-2019

Size		Class 150		Class 300		Class 600		Class 900		Class 1500		Class 2500	
DN	NPS	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
15	½	12.7	0.50	12.7	0.50	12.7	0.50	12.7	0.50	12.7	0.50	11.2	0.44
20	¾	19.1	0.75	19.1	0.75	19.1	0.75	17.5	0.69	17.5	0.69	14.2	0.56
25	1	25.4	1.00	25.4	1.00	25.4	1.00	22.1	0.87	22.1	0.87	19.1	0.75
32	1¼	31.8	1.25	31.8	1.25	31.8	1.25	28.4	1.12	28.4	1.12	25.4	1.00
40	1½	38.1	1.50	38.1	1.50	338.1	1.50	34.8	1.37	34.8	1.37	28.4	1.12
50	2	50.8	2.00	50.8	2.00	50.8	2.00	47.5	1.87	47.5	1.87	38.1	1.50
65	2½	63.5	2.50	63.5	2.50	63.5	2.50	57.2	2.25	57.2	2.25	47.5	1.87
80	3	76.2	3.00	76.2	3.00	76.2	3.00	72.9	2.87	69.9	2.75	57.2	2.25
100	4	101.6	4.00	101.6	4.00	101.6	4.00	98.3	3.87	91.9	3.62	72.9	2.87
125	5	127.0	5.00	127.0	5.00	127.0	5.00	120.7	4.75	111.0	4.37	91.9	3.62
150	6	152.4	6.00	152.4	6.00	152.4	6.00	146.1	5.75	136.4	5.37	111.0	4.37
200	8	203.2	8.00	203.2	8.00	199.9	7.87	190.5	7.50	177.8	7.00	146.1	5.75
250	10	254.0	10.00	254.0	10.00	247.7	9.75	238.0	9.37	222.3	8.75	184.2	7.25
300	12	304.8	12.00	304.8	12.00	298.5	11.75	282.4	11.12	263.4	10.37	218.9	8.62
350	14	336.6	13.25	336.6	13.25	326.9	12.87	311.2	12.25	288.8	11.37	241.3	9.50
400	16	387.4	15.25	387.4	15.25	374.7	14.75	355.6	14.00	330.2	13.00	276.1	10.87
450	18	438.2	17.25	431.8	17.00	419.1	16.50	400.1	15.75	371.3	14.62	311.2	12.25
500	20	489.0	19.25	482.6	19.00	463.6	18.25	444.5	17.50	415.8	16.37	342.9	13.50
550	22	539.8	21.25	533.4	21.00	511.0	20.12	489.0	19.25	457.2	18.00	377.7	14.87
600	24	590.6	23.25	584.2	23.00	558.8	22.00	533.4	21.00	498.3	19.62	412.8	16.25
650	26	641.4	25.25	635.0	25.00	603.3	23.75	577.9	22.75	539.8	21.25	447.5	17.62
700	28	692.2	27.25	685.8	27.00	647.7	25.50	622.3	24.50	584.2	23.00	482.6	19.00
750	30	743.0	29.25	736.6	29.00	695.2	27.37	666.8	26.25	625.3	24.62	517.4	20.37

VALVE BODY MINIMUM LIGHT WALL THICKNESS

ASME B16.34 - 2009

Inside Dia.		Class 150		Class 300		Class 600		Class 900		Class 1500		Class 2500		Class 4500	
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
3	0.12	2.5	0.10	2.8	0.11	2.8	0.11	2.7	0.11	3.1	0.12	3.6	0.14	4.9	0.19
6	0.24	2.7	0.11	2.8	0.11	3.1	0.12	3.2	0.13	3.6	0.14	4.6	0.18	7.2	0.28
9	0.35	2.9	0.11	3.0	0.12	3.3	0.13	3.6	0.14	4.2	0.17	5.6	0.22	9.6	0.38
12	0.47	3.1	0.12	3.3	0.13	3.6	0.14	4.1	0.16	4.8	0.19	6.6	0.26	12.0	0.47
15	0.59	3.3	0.13	3.5	0.14	3.8	0.15	4.5	0.18	5.3	0.21	7.7	0.30	14.3	0.56
18	0.71	3.5	0.14	3.7	0.15	4.1	0.16	5.0	0.20	5.9	0.23	8.7	0.34	16.7	0.66
21	0.83	3.7	0.15	4.0	0.16	4.3	0.17	5.4	0.21	6.4	0.25	9.7	0.38	19.0	0.75
24	0.94	3.9	0.15	4.2	0.17	4.6	0.18	5.9	0.23	7.0	0.28	10.7	0.42	21.4	0.84
27	1.06	4.1	0.16	4.4	0.17	4.9	0.19	6.4	0.25	7.5	0.30	11.7	0.46	23.7	0.93
31	1.22	4.3	0.17	4.7	0.19	5.1	0.20	6.7	0.26	8.3	0.33	13.1	0.52	26.9	1.06
35	1.38	4.6	0.18	5.0	0.20	5.3	0.21	6.9	0.27	9.0	0.35	14.5	0.57	30.0	1.18
40	1.57	4.9	0.19	5.3	0.21	5.6	0.22	7.2	0.28	9.9	0.39	16.2	0.64	33.9	1.33
45	1.77	5.2	0.20	5.7	0.22	5.9	0.23	7.5	0.30	10.8	0.43	17.9	0.70	37.9	1.49
50	1.97	5.5	0.22	6.0	0.24	6.2	0.24	7.8	0.31	11.8	0.46	19.6	0.77	41.8	1.65
55	2.17	5.6	0.22	6.2	0.24	6.5	0.26	8.3	0.33	12.7	0.50	21.3	0.84	45.7	1.80
60	2.36	5.7	0.22	6.4	0.25	6.8	0.27	8.8	0.35	13.6	0.54	23.0	0.91	49.6	1.95
65	2.56	5.8	0.23	6.5	0.26	7.2	0.28	9.3	0.37	14.5	0.57	24.7	0.97	53.6	2.11
70	2.76	5.9	0.23	6.7	0.26	7.5	0.30	9.9	0.39	15.5	0.61	26.4	1.04	57.5	2.26
75	2.95	6.0	0.24	6.9	0.27	7.9	0.31	10.4	0.41	16.4	0.65	28.1	1.11	61.4	2.42
80	3.15	6.1	0.24	7.0	0.28	8.2	0.32	10.9	0.43	17.3	0.68	29.8	1.17	65.3	2.57
85	3.35	6.2	0.24	7.2	0.28	8.5	0.33	11.4	0.45	18.2	0.72	31.5	1.24	69.3	2.73
90	3.54	6.3	0.25	7.4	0.29	8.9	0.35	11.9	0.47	19.1	0.75	33.2	1.31	73.2	2.88
95	3.74	6.4	0.25	7.5	0.30	9.2	0.36	12.5	0.49	20.1	0.79	34.9	1.37	77.1	3.04
100	3.94	6.5	0.26	7.7	0.30	9.5	0.37	13.0	0.51	21.0	0.83	36.6	1.44	81.0	3.19
110	4.33	6.5	0.26	8.0	0.31	10.2	0.40	14.0	0.55	22.8	0.90	40.0	1.57	88.9	3.50
120	4.72	6.7	0.26	8.4	0.33	10.9	0.43	15.1	0.59	24.7	0.97	43.4	1.71	96.7	3.81
130	5.12	6.8	0.27	8.7	0.34	11.6	0.46	16.1	0.63	26.5	1.04	46.9	1.85	104.6	4.12
140	5.51	7.0	0.28	9.0	0.35	12.2	0.48	17.2	0.68	28.4	1.12	50.3	1.98	112.4	4.43
150	5.91	7.1	0.28	9.4	0.37	12.9	0.51	18.2	0.72	30.2	1.19	53.7	2.11	120.3	4.74
160	6.30	7.3	0.29	9.7	0.38	13.6	0.54	19.3	0.76	32.0	1.26	57.1	2.25	128.1	5.04
170	6.69	7.5	0.30	10.0	0.39	14.3	0.56	20.3	0.80	33.9	1.33	60.5	2.38	136.0	5.35
180	7.09	7.6	0.30	10.3	0.41	14.9	0.59	21.3	0.84	35.7	1.41	63.9	2.52	143.8	5.66
190	7.48	7.8	0.31	10.7	0.42	15.6	0.61	22.4	0.88	37.6	1.48	67.3	2.65	151.7	5.97
200	7.87	8.0	0.31	11.0	0.43	16.3	0.64	23.4	0.92	39.4	1.55	70.7	2.78	159.5	6.28
210	8.27	8.1	0.32	11.3	0.44	17.0	0.67	24.5	0.96	41.3	1.63	74.1	2.92	167.4	6.59
220	8.66	8.3	0.33	11.7	0.46	17.6	0.69	25.5	1.00	43.1	1.70	77.5	3.05	175.2	6.90
230	9.06	8.4	0.33	12.0	0.47	18.3	0.72	26.6	1.05	45.0	1.77	80.9	3.19	183.1	7.21
240	9.45	8.6	0.34	12.3	0.48	19.0	0.75	27.6	1.09	46.8	1.84	84.4	3.32	190.9	7.52
250	9.84	8.8	0.35	12.7	0.50	19.7	0.78	28.7	1.13	48.6	1.91	87.8	3.46	198.8	7.83

VALVE BODY MINIMUM LIGHT WALL THICKNESS

ASME B16.34 - 2009

Inside Dia.		Class 150		Class 300		Class 600		Class 900		Class 1500		Class 2500		Class 4500	
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
260	10.24	8.9	0.35	13.0	0.51	20.3	0.80	29.7	1.17	50.5	1.99	91.2	3.59	206.6	8.13
270	10.63	9.1	0.36	13.3	0.52	21.0	0.83	30.8	1.21	52.3	2.06	94.6	3.72	214.5	8.44
280	11.02	9.3	0.37	13.6	0.54	21.7	0.85	31.8	1.25	54.2	2.13	98.0	3.86	222.3	8.75
290	11.42	9.4	0.37	14.0	0.55	22.4	0.88	32.8	1.29	56.0	2.20	101.4	3.99	230.2	9.06
300	11.81	9.6	0.38	14.3	0.56	23.0	0.91	33.9	1.33	57.9	2.28	104.8	4.13	238.0	9.37
310	12.20	9.8	0.39	14.6	0.57	23.7	0.93	34.9	1.37	59.7	2.35	108.2	4.26	245.9	9.68
320	12.60	9.9	0.39	15.0	0.59	24.4	0.96	36.0	1.42	61.6	2.43	111.6	4.39	253.7	9.99
330	12.99	10.1	0.40	15.3	0.60	25.1	0.99	37.0	1.46	63.4	2.50	115.0	4.53	261.6	10.30
340	13.39	10.2	0.40	15.6	0.61	25.7	1.01	38.1	1.50	65.2	2.57	118.4	4.66	269.4	10.61
350	13.78	10.4	0.41	16.0	0.63	26.4	1.04	39.1	1.54	67.1	2.64	121.9	4.80	277.2	10.91
360	14.17	10.6	0.42	16.3	0.64	27.1	1.07	40.2	1.58	68.9	2.71	125.3	4.93	285.1	11.22
370	14.57	10.7	0.42	16.6	0.65	27.8	1.09	41.2	1.62	70.8	2.79	128.7	5.07	292.9	11.53
380	14.96	10.9	0.43	16.9	0.67	28.4	1.12	42.2	1.66	72.6	2.86	132.1	5.20	300.8	11.84
390	15.35	11.1	0.44	17.3	0.68	29.1	1.15	43.3	1.70	74.5	2.93	135.5	5.33	308.6	12.15
400	15.75	11.2	0.44	17.6	0.69	29.8	1.17	44.3	1.74	76.3	3.00	138.9	5.47	316.5	12.46
410	16.14	11.4	0.45	17.9	0.70	30.5	1.20	45.4	1.79	78.2	3.08	142.3	5.60	324.3	12.77
420	16.54	11.5	0.45	18.3	0.72	31.1	1.22	46.4	1.83	80.0	3.15	145.7	5.74	332.2	13.08
430	16.93	11.7	0.46	18.6	0.73	31.8	1.25	47.5	1.87	81.8	3.22	149.1	5.87	340.0	13.39
440	17.32	11.9	0.47	18.9	0.74	32.5	1.28	48.5	1.91	83.7	3.30	152.5	6.00	347.9	13.70
450	17.72	12.0	0.47	19.3	0.76	33.2	1.31	49.6	1.95	85.5	3.37	155.9	6.14	355.7	14.00
460	18.11	12.2	0.48	19.6	0.77	33.8	1.33	50.6	1.99	87.4	3.44	159.4	6.28	363.6	14.31
470	18.50	12.4	0.49	19.9	0.78	34.5	1.36	51.7	2.04	89.2	3.51	162.8	6.41	371.4	14.62
480	18.90	12.5	0.49	20.2	0.80	35.2	1.39	52.1	2.05	91.1	3.59	166.2	6.54	379.3	14.93
490	19.29	12.7	0.50	20.6	0.81	35.9	1.41	53.7	2.11	92.9	3.66	169.6	6.68	387.1	15.24
500	19.69	12.9	0.51	20.9	0.82	36.5	1.44	54.8	2.16	94.8	3.73	173.0	6.81	395.0	15.55
510	20.08	13.0	0.51	21.2	0.83	37.2	1.46	55.8	2.20	96.6	3.80	176.4	6.94	402.8	15.86
520	20.47	13.2	0.52	21.6	0.85	37.9	1.49	56.9	2.24	98.4	3.87	179.8	7.08	410.7	16.17
530	20.87	13.3	0.52	21.9	0.86	38.6	1.52	57.9	2.28	100.3	3.95	183.2	7.21	418.5	16.48
540	21.26	13.5	0.53	22.2	0.87	39.2	1.54	59.0	2.32	102.1	4.02	186.6	7.35	426.4	16.79
550	21.65	13.7	0.54	22.6	0.89	39.9	1.57	60.0	2.36	104.0	4.09	190.0	7.48	434.2	17.09
560	22.05	13.8	0.54	22.9	0.90	40.6	1.60	61.1	2.41	105.8	4.17	193.4	7.61	442.1	17.41
570	22.44	14.0	0.55	23.2	0.91	41.3	1.63	62.1	2.44	107.7	4.24	196.9	7.75	449.9	17.71
580	22.83	14.2	0.56	23.5	0.93	41.9	1.65	63.1	2.48	109.5	4.31	200.3	7.89	457.8	18.02
590	23.23	14.3	0.56	23.9	0.94	42.6	1.68	64.2	2.53	111.4	4.39	203.7	8.02	465.6	18.33
600	23.62	14.5	0.57	24.2	0.95	43.3	1.70	65.2	2.57	113.2	4.46	207.1	8.15	473.5	18.64
610	24.02	14.6	0.57	24.5	0.96	44.0	1.73	66.3	2.61	115.0	4.53	210.5	8.29	481.3	18.95
620	24.41	14.8	0.58	24.9	0.98	44.6	1.76	67.3	2.65	116.9	4.60	213.9	8.42	489.2	19.26
630	24.80	15.0	0.59	25.2	0.99	45.3	1.78	68.4	2.69	118.7	4.67	217.3	8.56	497.0	19.57
640	25.20	15.1	0.59	25.5	1.00	46.0	1.81	69.4	2.73	120.6	4.75	220.7	8.69	504.9	19.88
650	25.59	15.3	0.60	25.9	1.02	46.7	1.84	70.5	2.78	122.4	4.82	224.1	8.82	512.7	20.19

VALVE BODY MINIMUM LIGHT WALL THICKNESS

ASME B16.34 - 2009

Inside Dia.		Class 150		Class 300		Class 600		Class 900		Class 1500		Class 2500		Class 4500	
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
660	25.98	15.5	0.61	26.2	1.03	47.3	1.86	71.5	2.81	124.3	4.89	227.5	8.96	520.6	20.50
670	26.38	15.6	0.61	26.5	1.04	48.0	1.89	72.5	2.85	126.1	4.96	230.9	9.09	528.4	20.80
680	26.77	15.8	0.62	26.8	1.06	48.7	1.92	73.6	2.90	128.0	5.04	234.4	9.23	536.3	21.11
690	27.17	15.9	0.63	27.2	1.07	49.4	1.94	74.6	2.94	129.8	5.11	237.8	9.36	544.1	21.42
700	27.56	16.1	0.63	27.5	1.08	50.0	1.97	75.7	2.98	131.6	5.18	241.2	9.50	552.0	21.73
710	27.95	16.3	0.64	27.8	1.09	50.7	2.00	76.1	3.00	133.5	5.26	244.6	9.63	559.8	22.04
720	28.35	16.4	0.65	28.2	1.11	51.4	2.02	77.8	3.06	135.3	5.33	248.0	9.76	567.7	22.35
730	28.74	16.6	0.65	28.5	1.12	52.1	2.05	78.8	3.10	137.2	5.40	251.4	9.90	575.5	22.66
740	29.13	16.8	0.66	28.8	1.13	52.7	2.07	79.9	3.15	139.0	5.47	254.8	10.03	583.4	22.97
750	29.53	16.9	0.67	29.2	1.15	53.4	2.10	80.9	3.19	140.9	5.55	258.2	10.17	591.2	23.28
760	29.92	17.1	0.67	29.5	1.16	54.1	2.13	82.0	3.23	142.7	5.62	261.6	10.30	599.0	23.58
770	30.31	17.3	0.68	29.8	1.17	54.8	2.16	83.0	3.27	144.6	5.69	265.0	10.43	606.9	23.89
780	30.71	17.4	0.69	30.1	1.19	55.4	2.18	84.0	3.31	146.4	5.76	268.4	10.57	614.7	24.20
790	31.10	17.6	0.69	30.5	1.20	56.1	2.21	85.1	3.35	148.2	5.83	271.9	10.70	622.6	24.51
800	31.50	17.7	0.70	30.8	1.21	56.8	2.24	86.1	3.39	150.1	5.91	275.3	10.84	630.4	24.82
820	32.28	18.1	0.71	31.5	1.24	58.1	2.29	88.2	3.47	153.8	6.06	282.1	11.11	646.1	25.44
840	33.07	18.4	0.72	32.1	1.26	59.5	2.34	90.3	3.56	157.5	6.20	288.9	11.37	661.8	26.06
860	33.86	18.7	0.74	32.8	1.29	60.8	2.39	92.4	3.64	161.1	6.34	295.7	11.64	677.5	26.67
880	34.65	19.0	0.75	33.4	1.31	62.2	2.45	94.5	3.72	164.8	6.49	302.5	11.91	693.2	27.29
900	35.43	19.4	0.76	34.1	1.34	63.5	2.50	96.6	3.80	168.5	6.63	309.4	12.18	708.9	27.91
920	36.22	19.7	0.78	34.8	1.37	64.9	2.56	98.7	3.89	172.2	6.78	316.2	12.45	724.6	28.53
940	37.01	20.0	0.79	35.4	1.39	66.2	2.61	100.8	3.97	175.9	6.93	323.0	12.72	740.3	29.15
960	37.80	20.3	0.80	36.1	1.42	67.6	2.66	102.9	4.05	179.6	7.07	329.6	12.98	756.0	29.76
980	38.58	20.7	0.81	36.7	1.44	68.9	2.71	104.9	4.13	183.3	7.22	336.6	13.25	771.7	30.38
1000	39.37	21.0	0.83	37.4	1.47	70.3	2.77	107.0	4.21	187.0	7.36	343.5	13.52	787.4	31.00
1020	40.16	21.3	0.84	38.1	1.50	71.6	2.82	109.1	4.30	190.7	7.51	350.3	13.79	803.1	31.62
1040	40.94	21.7	0.85	38.7	1.52	73.0	2.87	111.2	4.38	194.3	7.65	357.1	14.06	818.8	32.24
1060	41.73	22.0	0.87	39.4	1.55	74.3	2.93	113.3	4.46	198.0	7.80	363.9	14.33	834.5	32.85
1080	42.52	22.3	0.88	40.0	1.57	75.7	2.98	115.4	4.54	201.7	7.94	370.7	14.59	850.2	33.47
1100	43.31	22.6	0.89	40.7	1.60	77.0	3.03	117.5	4.63	205.4	8.09	377.5	14.86	865.9	34.09
1120	44.09	23.0	0.91	41.4	1.63	78.4	3.09	119.6	4.71	209.1	8.23	384.4	15.13	881.6	34.71
1140	44.88	23.3	0.92	42.0	1.65	79.7	3.14	121.7	4.79	212.8	8.38	391.2	15.40	897.3	35.33
1160	45.67	23.6	0.93	42.7	1.68	81.1	3.19	123.7	4.87	216.5	8.52	398.0	15.67	913.0	35.94
1180	46.46	23.9	0.94	43.3	1.70	82.4	3.24	125.8	4.95	220.2	8.67	404.8	15.94	928.7	36.56
1200	47.24	24.3	0.96	44.0	1.73	83.8	3.30	127.9	5.04	223.9	8.81	411.6	16.20	944.4	37.18
1220	48.03	24.6	0.97	44.7	1.76	85.1	3.35	130.0	5.12	227.5	8.96	418.5	16.48	960.1	37.80
1240	48.82	24.9	0.98	45.3	1.78	86.5	3.41	132.1	5.20	231.2	9.10	425.3	16.74	975.8	38.42
1260	49.61	25.2	0.99	46.0	1.81	87.8	3.46	134.2	5.28	234.9	9.25	432.1	17.01	991.5	39.04
1280	50.39	25.6	1.01	46.6	1.83	89.2	3.51	136.3	5.37	238.6	9.39	438.9	17.28	1007.2	39.65
1300	51.18	25.9	1.02	47.3	1.86	90.5	3.56	138.4	5.45	242.3	9.54	445.7	17.55	1022.9	40.27

VALVE BODY MINIMUM HEAVY WALL THICKNESS FOR BODY AND BONNET

API600 - 2015

Nominal Size		Class 150		Class 300		Class 600		Class 900		Class 1500		Class 2500	
DN	NPS	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
25	1"	6.4	0.25	6.4	0.25	7.9	0.31	12.7	0.50	12.7	0.50	15.0	0.59
32	1 1/4"	6.4	0.25	6.4	0.25	8.6	0.34	14.2	0.56	14.2	0.56	17.5	0.69
40	1 1/2"	6.4	0.25	7.9	0.31	9.4	0.37	15.0	0.59	15.0	0.59	19.1	0.75
50	2"	8.6	0.34	9.7	0.38	11.2	0.44	19.1	0.75	19.1	0.75	22.4	0.88
65	2 1/2"	9.7	0.38	11.2	0.44	11.9	0.47	22.4	0.88	22.4	0.88	25.4	1.00
80	3"	10.4	0.41	11.9	0.47	12.7	0.50	19.1	0.75	23.9	0.94	30.2	1.19
100	4"	11.2	0.44	12.7	0.50	16.0	0.63	21.3	0.84	28.7	1.13	35.8	1.41
150	6"	11.9	0.47	16.0	0.63	19.1	0.75	26.2	1.03	38.1	1.50	48.5	1.91
200	8"	12.7	0.50	17.5	0.69	25.4	1.00	31.8	1.25	47.8	1.88	62.0	2.44
250	10"	14.2	0.56	19.1	0.75	28.7	1.13	36.6	1.44	57.2	2.25	67.6	2.66
300	12"	16.0	0.63	20.6	0.81	31.8	1.25	42.2	1.66	66.8	2.63	86.6	3.41
350	14"	16.8	0.66	22.4	0.88	35.1	1.38	46.0	1.81	69.9	2.75	-	-
400	16"	17.5	0.69	23.9	0.94	38.1	1.50	52.3	2.06	79.5	3.13	-	-
450	18"	18.3	0.72	25.4	1.00	41.4	1.63	57.2	2.25	88.9	3.50	-	-
500	20"	19.1	0.75	26.9	1.06	44.5	1.75	63.5	2.50	98.6	3.88	-	-
600	24"	20.6	0.81	30.2	1.19	50.8	2.00	73.2	2.88	114.3	4.50	-	-
650	26"	21.4	0.84	31.6	1.24	-	-	-	-	-	-	-	-
700	28"	22.2	0.87	33.3	1.31	-	-	-	-	-	-	-	-
750	30"	23.0	0.91	34.9	1.37	-	-	-	-	-	-	-	-
800	32"	23.8	0.94	36.0	1.42	-	-	-	-	-	-	-	-
850	34"	24.6	0.97	38.1	1.50	-	-	-	-	-	-	-	-
900	36"	25.3	1.00	39.6	1.56	-	-	-	-	-	-	-	-
950	38"	26.1	1.03	41.3	1.63	-	-	-	-	-	-	-	-
1000	40"	27.0	1.06	43.0	1.69	-	-	-	-	-	-	-	-
1050	42"	27.7	1.09	44.4	1.75	-	-	-	-	-	-	-	-

Hydrostatic Test Pressures

ASME B16.34-2009(Unit = psi)

Seq	ASTM	Form	class 150		class 300		class 600		class 900		class 1500		class 2500		class 4500	
			Seat	Shell	Seat	Shell	Seat	Shell	Seat	Shell	Seat	Shell	Seat	Shell	Seat	Shell
0	A216 WCB PHOSPHATE,	Cast	325	450	825	1125	1650	2225	2450	3350	4075	5575	6800	9275	12225	16650
1	A217 C12,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
2	A217 CA15,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
3	A217 WC6,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
4	A351 CF10,	Cast	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
5	A351 CF10M,	Cast	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
6	A351 CF3,	Cast	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
7	A351 CF3/CF8,	Cast	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
8	A351 CF3M 2Per MAG PERM,	Cast	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
9	A351 CF3M,	Cast	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
10	A351 CF8,	Cast	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
11	A351 CF8C,	Cast	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
12	A351 CF8M 2Per MAG PERM,	Cast	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
13	A351 CF8M,	Cast	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
14	A351 CG3M,	Cast	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
15	A351 CG3M/CG8M,	Cast	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
16	A351 CG8M,	Cast	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
17	A351 CH20,	Cast	300	400	750	1025	1500	2025	2225	3025	3700	5050	6175	8400	11100	15125
18	A351 CK20,	Cast	300	400	750	1025	1500	2025	2225	3025	3700	5050	6175	8400	11100	15125
19	A351 CK3MCuN,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
20	A351 CN3MN,	Cast	300	400	750	1025	1500	2025	2225	3025	3700	5050	6175	8400	11100	15125
21	A351 CN7M,	Cast	275	350	675	900	1325	1800	2000	2700	3300	4500	5500	7500	9900	13500
22	A351 CT15C,	Cast	275	350	675	900	1325	1800	2000	2700	3300	4500	5500	7500		
23	A352 CA6NM,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375		
24	A352 LCC PHOSPHATE,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
25	A487 CA6NM CLB,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375		
26	A494 CU5MCuC,	Cast	325	425	800	1100	1600	2200	2400	3275	4000	5450	6675	9100		
27	A494 CW-12MW,	Cast	275	350	675	900	1325	1800	2000	2700	3300	4500	5500	7500	9900	13500
28	A494 CW2M,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875

Hydrostatic Test Pressures

ASME B16.34-2009(Unit = psi)

Seq	ASTM	Form	class 150		class 300		class 600		class 900		class 1500		class 2500		class 4500	
			Seat	Shell	Seat	Shell	Seat	Shell	Seat	Shell	Seat	Shell	Seat	Shell	Seat	Shell
29	A494 CW6M,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375		
30	A494 CW6-MC,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375		
31	A494 CX-2MW,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375		
32	A494 CY40 CL.2,	Cast	275	350	675	900	1325	1800	2000	2700	3300	4500	5500	7500		
33	A494 CY40,	Cast	275	350	675	900	1325	1800	2000	2700	3300	4500	5500	7500		
34	A494 CZ100,	Cast	150	200	400	525	775	1050	1150	1575	1900	2600	3175	4325		
35	A494 M35-1,	Cast	275	350	675	900	1325	1800	2000	2700	3300	4500	5500	7500	9900	13500
36	A494 M35-2,	Cast	275	350	675	900	1325	1800	2000	2700	3300	4500	5500	7500	9900	13500
37	A494 N-12MV,	Cast	275	350	675	900	1325	1800	2000	2700	3300	4500	5500	7500	9900	13500
38	A743 CA6NM,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375		
39	A744 CN7M,	Cast	275	350	675	900	1325	1800	2000	2700	3300	4500	5500	7500	9900	13500
40	A890 CD3MCuN Gr.1C,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
41	A890 CD3MW/CuN Gr.6A,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
42	A990 CN3MCu,	Cast	275	350	675	900	1325	1800	2000	2700	3300	4500	5500	7500	9900	13500
43	A995 CD3MN Gr.4A,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375		
44	A995 CD3MW/CuN Gr.6A,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
45	A995 CD4MCuN Gr.1B,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
46	A995 CE3MN Gr.5A,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375		
47	A995 CE8MN Gr.2A,	Cast	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
48	B367 Gr.C2,	Cast	225	325	600	825	1200	1625	1775	2425	2950	4025	4925	6700		
49	B367 Gr.C3,	Cast	300	400	775	1050	1550	2100	2300	3150	3850	5225	6400	8725		
50	B367 GR.C7,	Cast	225	325	600	825	1200	1625	1775	2425	2950	4025	4925	6700		
51	B752 GR.702C,	Cast	250	350	650	900	1300	1775	1950	2675	3250	4425	5425	7375		
52	A105,	Forged	325	450	825	1125	1650	2225	2450	3350	4075	5575	6800	9275	1225	1675
53	A182 F11 CL2,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
54	A182 F22 CL3,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
55	A182 F304,	Forged	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
56	A182 F304DC,	Forged	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
57	A182 F304H,	Forged	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200

Hydrostatic Test Pressures

ASME B16.34-2009(Unit = psi)

Seq	ASTM	Form	class 150		class 300		class 600		class 900		class 1500		class 2500		class 4500	
			Seat	Shell	Seat	Shell	Seat	Shell	Seat	Shell	Seat	Shell	Seat	Shell	Seat	Shell
58	A182 F304L,	Forged	275	350	675	900	1325	1800	2000	2700	3300	4500	5500	7500	9900	13500
59	A182 F304L/F304,	Forged	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
60	A182 F310,	Forged	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11100	15125
61	A182 F316,	Forged	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
62	A182 F316DC,	Forged	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
63	A182 F316H,	Forged	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
64	A182 F316L,	Forged	275	350	675	900	1325	1800	2000	2700	3300	4500	5500	7500	9900	13500
65	A182 F316L/F316,	Forged	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
66	A182 F317DC,	Forged	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
67	A182 F317L,	Forged	275	350	675	900	1325	1800	2000	2700	3300	4500	5500	7500	9900	13500
68	A182 F321,	Forged	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
69	A182 F347H,	Forged	325	425	800	1100	1600	2175	2400	3250	3975	5400	6600	9000	11900	16200
70	A182 F44,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
71	A182 F5,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
72	A182 F51,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
73	A182 F53,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
74	A182 F55,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
75	A182 F60,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
76	A182 F9,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
77	A182 F91,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
78	B462 N08020,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
79	B462 N08367,	Forged	300	400	750	1025	1500	2025	2225	3025	3700	5050	6175	8400	11100	15125
80	B462 N10276,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
81	B493 R60702,	Forged	250	350	650	900	1300	1775	1950	2675	3250	4425	5425	7375		
82	B564 N04400,	Forged	275	350	675	900	1325	1800	2000	2700	3300	4500	5500	7500	9900	13500
83	B564 N06600,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
84	B564 N06625,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
85	B564 N08825,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875
86	B564 N10276,	Forged	325	450	825	1125	1650	2250	2475	3375	4125	5625	6875	9375	12375	16875

PRESSURE / TEMPERATURE CHART

ASME B16.34 Standard Class

ASME 16.34 -2009 (Unit ; psi)

Group	Material	150	300	600	900	1500	Max Temp.
2.1	CF8 (304)	275	720	1440	2160	3600	1000°F
2.1	CF10 (304H)	275	720	1440	2160	3600	1500°F
2.2	CF8M (316)	275	720	1440	2160	3600	1000°F
2.2	CF10M (316L)	275	720	1440	2160	3600	1500°F
2.2	CG8M (317)	275	720	1440	2160	3600	1000°F
2.2	CG3M (317L)	275	720	1440	2160	3600	850°F
2.3	CF3 (304L)	275	720	1440	2160	3600	650°F
2.3	CF3M (316L)	275	720	1440	2160	3600	800°F
2.11	CF8C (347)	275	720	1440	2160	3600	1000°F
2.8	CK3MCuN (254SMO)	290	750	1500	2250	3750	750°F
2.8	CD3MWCuN (Zeron 100)	290	750	1500	2250	3750	750°F
2.8	CD4MCuN (Ferralium 255)	290	750	1500	2250	3750	600°F
2.8	CE8MN (Escology 45D)	290	750	1500	2250	3750	600°F
2.10	CH20 (309)	260	670	1345	2015	3360	1000°F
2.12	CK20 (310)	260	670	1345	2015	3360	1000°F
3.4	M35-1 (Monel)	230	600	1200	1800	3000	900°F
3.4	M35-2 (Monel)	230	600	1200	1800	3000	900°F
3.12	CN3MN (AL6XN)	260	670	1345	2015	3360	800°F
3.15	CW12MW (Hastelloy C)	230	600	1200	1800	3000	1000°F
3.15	N12MW (Hastelloy B)	230	600	1200	1800	3000	1000°F
3.17	CN7M (Alloy 20)	230	600	1200	1800	3000	600°F
NL-Ref 2.8	CD3MN (Duplex 2205)	290	750	1500	2250	3750	500°F
NL-Ref 2.8	CE3MN (Duplex 2207)	290	750	1500	2250	3750	500°F
NL-Ref 3.2	CZ100 (Nickel)	188	480	960	1440	2400	600°F
NL-Ref 3.7	N7M (Hastelloy B2)	290	750	1500	2250	3750	800°F
NL-Ref 3.5	CY40 (Inconel 600)	290	750	1500	2250	3750	1000°F
NL-Ref 3.8	CW6MC (Inconel 625)	290	750	1500	2250	3750	1000°F
NL-Ref 3.6	CT15C (Inconel 800)	275	720	1440	2160	3600	850°F
NL-Ref 3.8	CU5MCuC (Inconel 825)	290	750	1500	2250	3750	1000°F
Not listed	CW6M (Hastelloy C Mod)	290	750	1500	2250	3750	1000°F
NL-Ref 3.8	CX2MW (Hastelloy C22)	290	750	1500	2250	3750	1250°F
Not listed	B367-C2 (Titanium Gr.2)	267	696	1393			500°F
Not listed	B367-C3 (Titanium Gr.3)	267	696	1393			500°F
Not listed	B367-C7 (Titanium Gr.7)	267	696	1393			500°F
Not listed	B752-702C (Zirconium)	226	589	1179			700°F

Pressure - Temperature Ratings of Stainless Steel Valves

(ASME B16.34 -2009)

Pressure Class	Service Temperature		Material														
			CF3 CF8	CF3M CF8M	CG3M CG8M	CK3M/CuN CD3MW/CuN	CF8C	CK20	MS35-1	CN3MN	N12MV	CW12MW	CN7M				
	°C	°F	Grp 2.1	Grp 2.2	Grp 2.2	Grp 2.8	Grp 2.11	Grp 2.12	Grp 3.4	Grp 3.12	Grp 3.15	Grp 3.15	Grp 3.17				
Class 150	29 to +38	-20 to +100	275	275	275	290	275	275	275	260	230	230	230	230	230	230	230
	93	200	230	235	235	260	255	255	210	240	200	210	210	210	210	210	200
	149	300	205	215	195	230	230	230	195	225	190	200	200	200	200	180	180
	204	400	190	195	185	200	200	200	185	200	180	190	190	190	190	160	160
	260	500	170	170	170	170	170	170	170	170	170	170	170	170	170	150	150
	316	600	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
	343	650	125	125	125	125	125	125	125	125	125	125	125	125	125	125	X
	371	700	110	110	110	110	110	110	110	110	110	110	110	110	110	110	X
	399	750	95	95	95	95	95	95	95	95	95	95	95	95	95	95	X
	427	800	80	80	80	80	80	80	80	80	80	80	80	80	80	80	X
	454	850	65	65	65	65	65	65	65	65	65	65	65	65	65	65	X
	482	900	50	50	50	50	50	50	50	50	50	50	50	50	50	50	X
	510	950	35	35	35	35	35	35	35	35	35	35	35	35	35	35	X
	538	1000	20	20	20	20	20	20	20	20	20	20	20	20	20	20	X
	566	1050	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	X
	593	1100	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	X
	621	1150	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	X
649	1200	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	X	
677	1250	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	X	
704	1300	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	X	
732	1350	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	X	
760	1400	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	20*	X	
788	1450	20*	20*	20*	20*	20*	20*	20*	15*	20*	20*	20*	20*	20*	20*	X	
816	1500	15*	15*	15*	15*	10*	10*	10*	10*	15*	15*	15*	15*	15*	15*	X	
Class 300	Service Temperature		Material														
	CF3 CF8	CF3M CF8M	CG3M CG8M	CK3M/CuN CD3MW/CuN	CF8C	CK20	MS35-1	CN3MN	N12MV	CW12MW	CN7M						
	Grp 2.1	Grp 2.2	Grp 2.2	Grp 2.8	Grp 2.11	Grp 2.12	Grp 3.4	Grp 3.12	Grp 3.15	Grp 3.15	Grp 3.17						
	°C	°F	PRESSURE (PSIG)														
	-29 to +38	-20 to +100	720	720	720	750	720	720	670	600	600	600					
	93	200	600	620	620	745	660	660	660	550	525	525					
	149	300	540	560	560	665	615	615	615	505	490	490					
	204	400	495	515	515	615	540	540	540	485	475	475					
	260	500	465	480	480	580	540	540	540	470	475	475					
	316	600	440	450	450	555	515	515	515	445	475	475					
	343	650	430	440	440	545	505	505	505	445	475	475					
	371	700	420	435	435	540	495	495	495	435	470	470					
	399	750	415	425	425	530	490	490	490	420	465	465					
	427	800	405	420	420	520	485	485	485	410	460	460					
	454	850	395	420	420	510	485	485	485	400	455	455					
	482	900	390	415	415	500	485	485	485	395	455	455					
	510	950	380	385	385	495	485	485	485	385	455	455					
538	1000	355	365	365	490	485	485	485	370	455	455						
566	1050	325	360	360	485	485	485	485	360	455	455						
593	1100	255	305	305	480	485	485	485	350	455	455						
621	1150	205	235	235	475	485	485	485	325	455	455						
649	1200	165	185	185	470	485	485	485	275	455	455						
677	1250	135	145	145	465	485	485	485	205	455	455						
704	1300	115	115	115	460	485	485	485	180	455	455						
732	1350	95	95	95	455	485	485	485	140	455	455						
760	1400	75	75	75	450	485	485	485	105	455	455						
788	1450	60	60	60	445	485	485	485	75	455	455						
816	1500	40	40	40	440	485	485	485	40	455	455						

Pressure - Temperature Ratings of Stainless Steel Valves

(ASME B16.34 -2009)

Pressure Class	Service Temperature		Material											
	°C	°F	CF3 CF8	CF3M CF8M	CG3M CG8M	CK3MCuN CD3MWCuN	CF8C	CK20	M95-1	CN3MN	N12MV	CW12MW	CN7M	
	Grp 2.1	Grp 2.2	Grp 2.2	Grp 2.2	Grp 2.2	Grp 2.8	Grp 2.11	Grp 2.12	Grp 3.4	Grp 3.12	Grp 3.15	Grp 3.15	Grp 3.17	
Class 600	-29 to +38	-20 to +100	1440	1440	1440	1500	1440	1440	1345	1200	1345	1200	1200	1200
	93	200	1200	1240	1240	1490	1490	1240	1100	1050	1245	1105	1105	1035
	149	300	1075	1120	1120	1335	1335	1015	1015	980	1165	1040	1040	930
	204	400	995	1025	1025	1230	1230	1150	970	945	1075	980	980	845
	260	500	930	955	955	1160	1160	1085	940	945	1000	925	925	780
	316	600	885	900	900	1115	1115	1030	910	945	1000	880	880	720
	343	650	865	885	885	1095	1095	1015	895	945	920	860	860	X
	371	700	845	870	870	1085	1085	995	870	940	900	835	835	X
	399	750	825	855	855	1065	1065	985	845	930	885	820	820	X
	427	800	810	845	845	X	X	975	820	915	865	800	800	X
	454	850	790	835	835	X	X	970	795	755	820	785	785	X
	482	900	780	830	830	X	X	900	770	550	X	775	775	X
	510	950	765	775	775	X	X	775	740	X	X	760	760	X
	538	1000	710	725	725	X	X	725	675	X	X	725	725	X
	566	1050	650	720	720	X	X	720	650	X	X	700	700	X
	593	1100	515	610	610	X	X	625	585	X	X	645	645	X
	621	1150	410	475	475	X	X	420	500	X	X	550	550	X
	649	1200	330	370	370	X	X	300	410	X	X	410	410	X
677	1250	265	295	295	X	X	225	330	X	X	365	365	X	
704	1300	225	235	235	X	X	150	240	X	X	275	275	X	
732	1350	185	190	190	X	X	105	165	X	X	205	205	X	
760	1400	150	150	150	X	X	60	110	X	X	150	150	X	
788	1450	115	115	115	X	X	60	75	X	X	115	115	X	
816	1500	85	85	85	X	X	55	55	X	X	85	85	X	
Class 900	-29 to +38	-20 to +100	2160	2160	2160	2250	2160	2160	2015	1800	2015	1800	1800	1800
	93	200	1800	1860	1860	2230	1860	1860	1650	1575	1865	1655	1655	1555
	149	300	1615	1680	1680	2000	1680	1680	1520	1470	1750	1560	1560	1395
	204	400	1490	1540	1540	1845	1540	1730	1455	1420	1615	1470	1470	1265
	260	500	1395	1435	1435	1740	1435	1625	1410	1420	1500	1390	1390	1165
	316	600	1325	1355	1355	1670	1355	1550	1370	1420	1420	1320	1320	1080
	343	650	1295	1325	1325	1640	1325	1520	1340	1420	1380	1290	1290	X
	371	700	1265	1305	1305	1625	1305	1490	1305	1410	1355	1255	1255	X
	399	750	1240	1280	1280	1595	1280	1475	1265	1395	1325	1230	1230	X
	427	800	1215	1265	1265	X	X	1460	1230	1375	1295	1200	1200	X
	454	850	1190	1255	1255	X	X	1455	1195	1130	X	1180	1180	X
	482	900	1165	1245	1245	X	X	1350	1150	825	X	1160	1160	X
	510	950	1145	1160	1160	X	X	1160	1110	X	X	1140	1140	X
	538	1000	1065	1090	1090	X	X	1090	1015	X	X	1090	1090	X
	566	1050	975	1080	1080	X	X	1080	975	X	X	1050	1050	X
	593	1100	770	915	915	X	X	935	875	X	X	965	965	X
	621	1150	615	710	710	X	X	625	750	X	X	825	825	X
	649	1200	495	555	555	X	X	455	615	X	X	620	620	X
677	1250	400	440	440	X	X	340	495	X	X	545	545	X	
704	1300	340	350	350	X	X	225	360	X	X	410	410	X	
732	1350	280	290	290	X	X	155	245	X	X	310	310	X	
760	1400	225	225	225	X	X	125	165	X	X	225	225	X	
788	1450	175	175	175	X	X	95	115	X	X	175	175	X	
816	1500	125	125	125	X	X	80	80	X	X	125	125	X	

Pressure - Temperature Ratings of Stainless Steel Valves

(ASME B16.34 -2009)

Pressure Class	Service Temperature		Material														
			CF3 CF8	CF3M CF8M	CG3M CG8M	CK3MCuN CB3MWCuN	CF8C	CK20	M35-1	CN3MN	N12MV	CW12MW	CN7M				
	Grp 2.1	Grp 2.2	Grp 2.2	Grp 2.8	Grp 2.11	Grp 2.12	Grp 3.4	Grp 3.12	Grp 3.15	Grp 3.15	Grp 3.17						
Class 1500	°C		PRESSURE (PSIG)														
	-29 to +38	-20 to +100	3600	3600	3600	3750	3600	3600	3600	3600	3360	3000	3360	3000	3000	3000	
	93	200	3000	3095	3095	3720	3310	3310	3310	2750	2630	2630	3110	2760	2760	2590	
	149	300	2690	2795	2795	3335	3085	3085	2530	2450	2450	2605	2605	2605	2330	2330	
	204	400	2485	2570	2570	3070	2880	2880	2425	2365	2365	2450	2450	2450	2110	2110	
	260	500	2390	2390	2390	2905	2710	2710	2350	2365	2365	2315	2315	2315	1945	1945	
	316	600	2210	2255	2255	2785	2580	2580	2280	2365	2365	2195	2195	2195	1800	1800	
	343	650	2160	2210	2210	2735	2530	2530	2230	2365	2365	2150	2150	2150	X	X	
	371	700	2110	2170	2170	2710	2485	2485	2170	2350	2350	2090	2090	2090	X	X	
	399	750	2065	2135	2135	2660	2460	2460	2110	2330	2330	2050	2050	2050	2050	X	X
	427	800	2030	2110	2110	2610	2435	2435	2050	2290	2290	2005	2005	2005	2005	X	X
	454	850	1980	2090	2090	2585	2425	2425	1990	1885	1885	1970	1970	1970	1970	X	X
	482	900	1945	2075	2075	2545	2445	2445	1920	1370	1370	1930	1930	1930	1930	X	X
	510	950	1910	1930	1930	2530	2430	2430	1850	X	X	1895	1895	1895	1895	X	X
	538	1000	1770	1820	1820	2520	2420	2420	1820	X	X	1820	1820	1820	1820	X	X
	566	1050	1630	1800	1800	2510	2410	2410	1800	X	X	1750	1750	1750	1750	X	X
	593	1100	1285	1525	1525	2500	2400	2400	1780	X	X	1700	1700	1700	1700	X	X
	621	1150	1030	1185	1185	2490	2390	2390	1760	X	X	1610	1610	1610	1610	X	X
	649	1200	825	925	925	2480	2380	2380	1750	X	X	1560	1560	1560	1560	X	X
	677	1250	670	735	735	2470	2370	2370	1740	X	X	1550	1550	1550	1550	X	X
704	1300	565	585	585	2460	2360	2360	1730	X	X	1540	1540	1540	1540	X	X	
732	1350	465	480	480	2450	2350	2350	1720	X	X	1530	1530	1530	1530	X	X	
760	1400	380	380	380	2440	2340	2340	1710	X	X	1520	1520	1520	1520	X	X	
788	1450	290	290	290	2430	2330	2330	1700	X	X	1510	1510	1510	1510	X	X	
816	1500	205	205	205	2420	2320	2320	1690	X	X	1500	1500	1500	1500	X	X	

* Applies to welding End valves only. Flanged End valve ratings terminate at 1000°F.
 CF3 and CF3M is not recommended for service above 800°F.
 CG3M is not recommended for service over 850°F.
 CG8M is not recommended for service over 1000°F.

API 600 TRIM NUMBER CHART

Nominal Seating Surface, Stem and Backseat Bushing or Weld-deposit Materials and Hardness

API 600-2015

Trim Number	Nominal Trim	Seat Surface Hardness (HB) Minimum ^a	Seat Surface Material Type ^b	Seat Surface Typical Specifications Grade			Stem / Bushing		Backseat Bushing Hardness (HB)
				Cast	Forged	Welded In	Material Type ^b	Typical Specifications Type	
1	F6			TRIM NUMBER 1 IS OBSOLETE					
2	304			TRIM NUMBER 2 IS OBSOLETE					
3	F310	Note ^d	25Cr-20Ni	NA	ASTM A182 (F310)	AWS A5.9 ER310	25Cr-20Ni	ASTM A276-T310	Note ^d
4	Hard F6	750 ^e	Hard 13Cr	NA	Note ^f	NA	13Cr	ASTM A276-T410 or T420	200 min 275 max
5	Hardfaced	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A	13Cr	ASTM A276-T410 or T420	200 min 275 max
5A	Hardfaced	350 ^e	Ni-Cr	NA	NA	Note ^h	13Cr	ASTM A276-T410 or T420	200 min 275 max
6	F6 and Cu-Ni	250 ⁱ 175 ⁱ	13Cr Cu-Ni	ASTM A217 (CA 15) NA	ASTM A182 (F6a) Note ^k	AWS A5.9 ER410 NA	13Cr	ASTM A276-T410 or T420	200 min 275 max
	F6 and Hard F6	250 ⁱ 750 ⁱ	13Cr Hard 13Cr	ASTM A217 (CA 15) NA	ASTM A182 (F6a) Note ^f	AWS A5.9 ER410 NA	13Cr	ASTM A276-T410 or T420	200 min 275 max
8	F6 and Hardfaced	250 ⁱ 350 ⁱ	13Cr Co-Cr A ^g	ASTM A217 (CA 15) NA	ASTM A182 (F6a) NA	AWS A5.9 ER410 AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A	13Cr	ASTM A276-T410 or T420	200 min 275 max
	F6 and Hardfaced	250 ⁱ 350 ⁱ	13Cr Ni-Cr	ASTM A217 (CA 15) NA	ASTM A182 (F6a) NA	AWS A5.9 ER410 Note ^h	13Cr	ASTM A276-T410 or T420	200 min 275 max
9	Monel TM	Note ^d	Ni-Cu Alloy	NA	MFG Standard	NA	Ni-Cu Alloy	MFG Standard	Note ^d
10	316	Note ^d	18Cr-8Ni	ASTM A351 (CF8M)	ASTM A182 (F316)	AWS A5.9 ER316	18Cr-8Ni-Mo	ASTM A276-T316	Note ^d

Nominal Seating Surface, Stem and Backseat Bushing or Weld-deposit Materials and Hardness

API 600-2015

Trim Number	Nominal Trim	Seat Surface Hardness (HB) Minimum ^a	Seat Surface Material Type ^b	Seat Surface Typical Specifications Grade			Stem / Bushing			Backseat Bushing Hardness (HB)
				Cast	Forged	Welded ^m	Material Type ^b	Typical Specifications Type	Stem Hardness (HB)	
11	Monel™* and	Note ^d	Ni-Cu Alloy	NA	MFG Standard	NA	Ni-Cu Alloy	MFG Standard	Note ^d	Note ^d
	Hardfaced	350 ⁱ	Trim 5 or 5A	NA	NA	See Trim 5 or 5A				
12	316 and	Note ^d	18Cr-8Ni-Mo	ASTM A351 (CF8M)	ASTM A182 (F316)	AWS A5.9 ER316	18Cr-8Ni-Mo	ASTM A276-T316	Note ^d	Note ^d
	Hardfaced	350 ⁱ	Trim 5 or 5A	NA	NA	See Trim 5 or 5A				
13	Alloy 20	Note ^d	19Cr-29Ni	ASTM A351 (CN7M)	ASTM B473	AWS A5.9 ER320	19Cr-29Ni	ASTM B473	Note ^d	Note ^d
14	Alloy 20 and	Note ^d	19Cr-29Ni	ASTM A351 (CN7M)	ASTM B473	AWS A5.9 ER320	19Cr-29Ni	ASTM B473	Note ^d	Note ^d
	Hardfaced	350 ⁱ	Trim 5 or 5A	NA	NA	See Trim 5 or 5A				
15	Hardfaced	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A	18Cr-8Ni	ASTM A276-T304	Note ^d	Note ⁿ
16	Hardfaced	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A	18Cr-8Ni-Mo	ASTM A276-T316	Note ^d	Note ⁿ
17	Hardfaced	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A	18Cr-10Ni-Cb	ASTM A276-T347	Note ^d	Note ⁿ
18	Hardfaced	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A	19Cr-29Ni	ASTM B473	Note ^d	Note ⁿ
19	Nickel ¹	Note ^d	Ni Alloy	MFG Standard ¹	MFG Standard ¹	MFG Standard	Ni Alloy ¹	MFG Standard ¹	Note ^d	Note ⁿ
19A	Alloy 625	Note ^d	Alloy 625	ASTM A494 (CW6MC)	ASTM B564 UNS N06625	AWS A5.14 ERNiCrMo-3	Alloy 625	ASTM B564 UNS N06625	Note ^d	Note ⁿ
19B	Alloy C276	Note ^d	Alloy C276	ASTM A494 (CW2M)	ASTM B564 UNS N10276	AWS A5.14 ERNiCrMo-4	Alloy C276	ASTM B564 UNS N10276	Note ^d	Note ⁿ
19C	Alloy 825	Note ^d	Alloy 825	ASTM A494 (CU5MCoC)	ASTM B564 UNS N08825	AWS A5.14 ERNiCrMo-3	Alloy 825	ASTM B564 UNS N08825	Note ^d	Note ⁿ
20	Nickel ¹ and	Note ^d	Ni Alloy	MFG Standard ¹	MFG Standard ¹	MFG Standard ¹	Ni Alloy ¹	MFG Standard ¹	Note ^d	Note ⁿ
	Hardfaced	350 ⁱ	Co-Cr-A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A				
20A	Alloy 625 and	Note ^d	Alloy 625	ASTM A494 (CW6MC)	ASTM B564 UNS N06625	AWS A5.14 ERNiCrMo-3	Alloy 625	ASTM B564 UNS N06625	Note ^d	Note ⁿ
	Hardfaced	350 ⁱ	Co-Cr-A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A				

Nominal Seating Surface, Stem and Backseat Bushing or Weld-deposit Materials and Hardness

API 600-2015

Trim Number	Nominal Trim	Seat Surface Hardness (HB) Minimum ^a	Seat Surface Material Type ^b	Seat Surface Typical Specifications Grade			Stem / Bushing			Backseat Bushing Hardness (HB)
				Cast	Forged	Welded ^m	Material Type ^b	Typical Specifications Type	Stem Hardness (HB)	
20B	Alloy C276 and Hardfaced	Note ^d	Alloy C276	ASTM A494 (CW2M)	ASTM B564 UNS N10276	AWS A5.14 ERNiCrMo-4	Alloy C276	ASTM B564 UNS N10276	Note ^d	Note ⁿ
		350 ⁱ	Co-Cr-A ⁹	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A				
20C	Alloy 825 and Hardfaced	Note ^d	Alloy 825	ASTM A494 (CUSM(Cu))	ASTM B564 UNS N08825	AWS A5.14 ERNiCrMo-3	Alloy 825	ASTM B564 UNS N08825	Note ^d	Note ⁿ
		350 ⁱ	Co-Cr-A ⁹	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A				
21	Hardfaced ¹	350 ^e	Co-Cr A ⁹	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A	Ni Alloy ¹	MFG Standard ¹	Note ^d	Note ⁿ

Note.

Cr = Chromium; Ni = Nickel; Co = Cobalt; Cu = Copper; NA = Not Applicable.

1. Trim materials, including stem and base material for HF trim items, shall have a corrosion resistance and temperature limit at least equal to the valve body's corrosion resistance and pressure temperature rating.

a HB (formerly BHN) is the symbol for the Brinell hardness per ASTM E10.

b Free machining grades of 13Cr are prohibited.

c Body and disc seat surfaces should be 250 HB minimum with a 50 HB minimum differential between the body and disc seat surfaces.

d Manufacturer's standard hardness.

e Differential hardness between the body and disc seat surfaces is not required.

f Case hardness by nitriding to a thickness of 0.13 mm (0.005 in.) minimum.

g AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A : This classification includes such trademark materials as Stellite 6TM*, Stoody6TM* and Wallex 6TM*.

For Plasma Transfer Arc Welding (PTAW) process powder with the metallurgy equivalent to UNS R 30006 can also be used.

CoCr-E (Stellite 21TM* or equal) may be used only with purchaser approval and typical CoCr-E alloys include AWS A5.13 ECoCr-E or AWS A5.21 ECoCr-E.

h Manufacturer's standard hardfacing with a maximum iron content of 25 %

i Hardness differential between the body and disc seat surfaces shall be the manufacturer's standard.

j Not used.

k Manufacturer's standard with 30 Ni minimum.

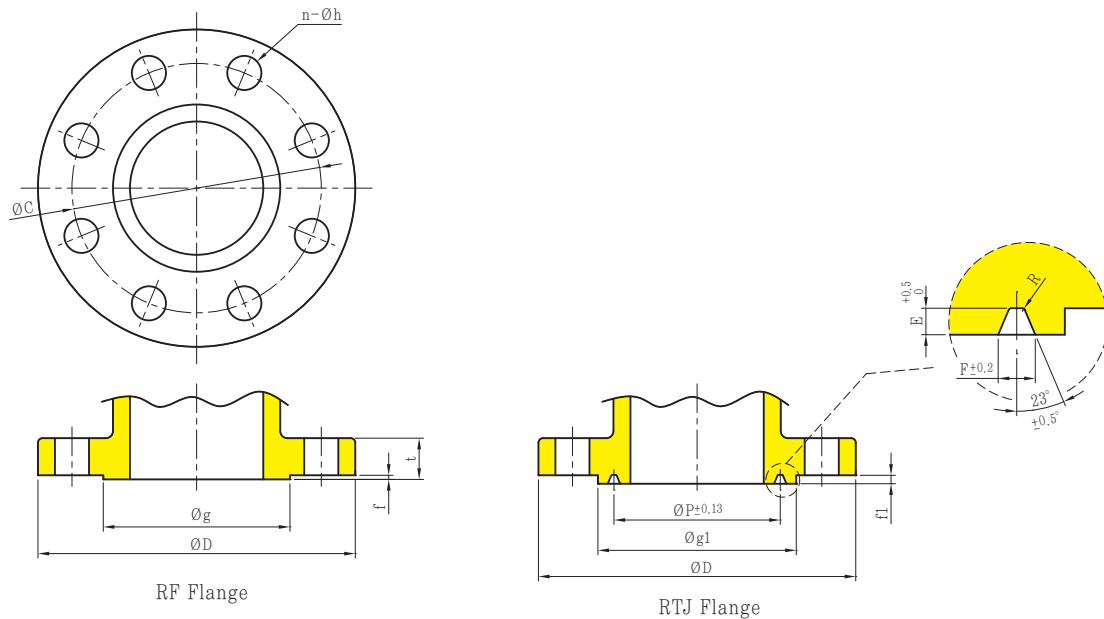
l Not used.

m Typical backseat weld deposit material.

n Per manufacturer's standard if not hardfaced. 250 HB minimum if hardfaced.

¹ This term is used as an example only, and does not constitute an endorsement of this product by API.

ANSI B16.5 CLASS 150LB RF & RTJ FLANGE DIMENSION



unit ; mm

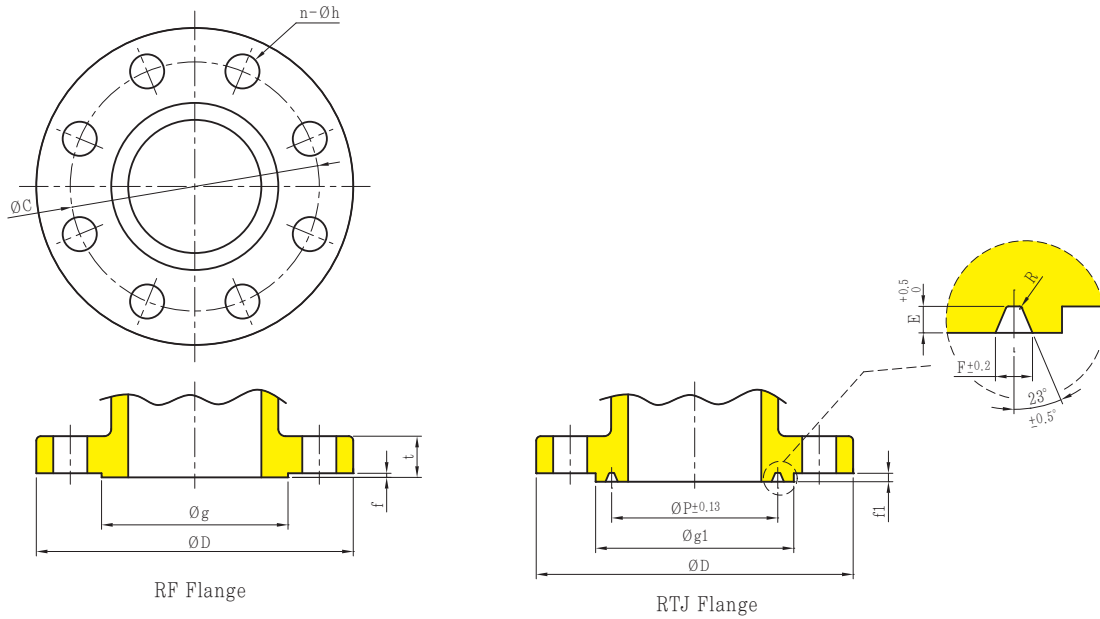
Size	ΦD	ΦC	Φg	n	Φh	t	f	Bolt	Ring No.	P	Φg1	f1	E	F	R
50	152.0	120.5	92.0	4	19	19.1 (15.9)	1.6	5/8"	R22	82.6	101.6	6.4	6.35	8.74	0.8
65	178.0	139.5	105.0	4	19	22.3 (17.5)	1.6	5/8"	R25	101.6	120.7	6.4	6.35	8.74	0.8
80	190.0	152.5	127.0	4	19	23.9 (19.1)	1.6	5/8"	R29	114.3	133.4	6.4	6.35	8.74	0.8
100	229.0	190.5	157.0	8	19	23.9	1.6	5/8"	R36	149.2	171.5	6.4	6.35	8.74	0.8
125	254.0	216.0	186.0	8	22	23.9	1.6	3/4"	R40	171.5	193.6	6.4	6.35	8.74	0.8
150	279.0	241.5	216.0	8	22	25.4	1.6	3/4"	R43	193.7	219.0	6.4	6.35	8.74	0.8
200	343.0	298.5	270.0	8	22	28.6	1.6	3/4"	R48	247.7	273.1	6.4	6.35	8.74	0.8
250	406.0	362.0	324.0	12	25	30.2	1.6	7/8"	R52	304.8	330.2	6.4	6.35	8.74	0.8
300	483.0	432.0	381.0	12	25	31.8	1.6	7/8"	R56	381.0	406.4	6.4	6.35	8.74	0.8
350	533.0	476.0	413.0	12	29	35.0	1.6	1"	R59	396.9	425.5	6.4	6.35	8.74	0.8
400	597.0	539.5	470.0	16	29	36.6	1.6	1"	R64	454.0	482.6	6.4	6.35	8.74	0.8
450	635.0	578.0	533.0	16	32	39.7	1.6	1 1/8"	R68	517.5	546.1	6.4	6.35	8.74	0.8
500	698.0	635.0	584.0	20	32	42.9	1.6	1 1/8"	R72	558.8	596.9	6.4	6.35	8.74	0.8
600	813.0	749.5	692.0	20	35	47.7	1.6	1 1/4"	R76	673.1	711.2	6.4	6.35	8.74	0.8

unit ; inch

Size	ΦD	ΦC	Φg	n	Φh	t	f	Bolt	Ring No.	P	Φg1	f1	E	F	R
2"	5.98	4.74	3.62	4	0.75	0.75 (0.62)	0.06	5/8"	R22	3.25	4.00	0.25	0.25	0.34	0.03
2 1/2"	7.01	5.49	4.13	4	0.75	0.88 (0.69)	0.06	5/8"	R25	4.00	4.75	0.25	0.25	0.34	0.03
3"	7.48	6.00	5.00	4	0.75	0.94 (0.75)	0.06	5/8"	R29	4.50	5.25	0.25	0.25	0.34	0.03
4"	9.02	7.50	6.18	8	0.75	0.94	0.06	5/8"	R36	5.88	6.75	0.25	0.25	0.34	0.03
5"	10.00	8.50	7.32	8	0.87	0.94	0.06	3/4"	R40	6.75	7.62	0.25	0.25	0.34	0.03
6"	10.98	9.51	8.50	8	0.87	1.00	0.06	3/4"	R43	7.63	8.62	0.25	0.25	0.34	0.03
8"	13.50	11.75	10.63	8	0.87	1.13	0.06	3/4"	R48	9.75	10.75	0.25	0.25	0.34	0.03
10"	15.98	14.25	12.76	12	0.98	1.19	0.06	7/8"	R52	12.00	13.00	0.25	0.25	0.34	0.03
12"	19.02	17.01	15.00	12	0.98	1.25	0.06	7/8"	R56	15.00	16.00	0.25	0.25	0.34	0.03
14"	20.98	18.74	16.26	12	1.14	1.38	0.06	1"	R59	15.63	16.75	0.25	0.25	0.34	0.03
16"	23.50	21.24	18.50	16	1.14	1.44	0.06	1"	R64	17.88	19.00	0.25	0.25	0.34	0.03
18"	25.00	22.76	20.98	16	1.26	1.56	0.06	1 1/8"	R68	20.38	21.50	0.25	0.25	0.34	0.03
20"	27.48	25.00	22.99	20	1.26	1.69	0.06	1 1/8"	R72	22.00	23.50	0.25	0.25	0.34	0.03
24"	32.01	29.51	27.24	20	1.38	1.88	0.06	1 1/4"	R76	26.50	28.00	0.25	0.25	0.34	0.03

Note. - Dimension in () are for valve flanges.

ANSI B16.5 CLASS 300LB RF & RTJ FLANGE DIMENSION



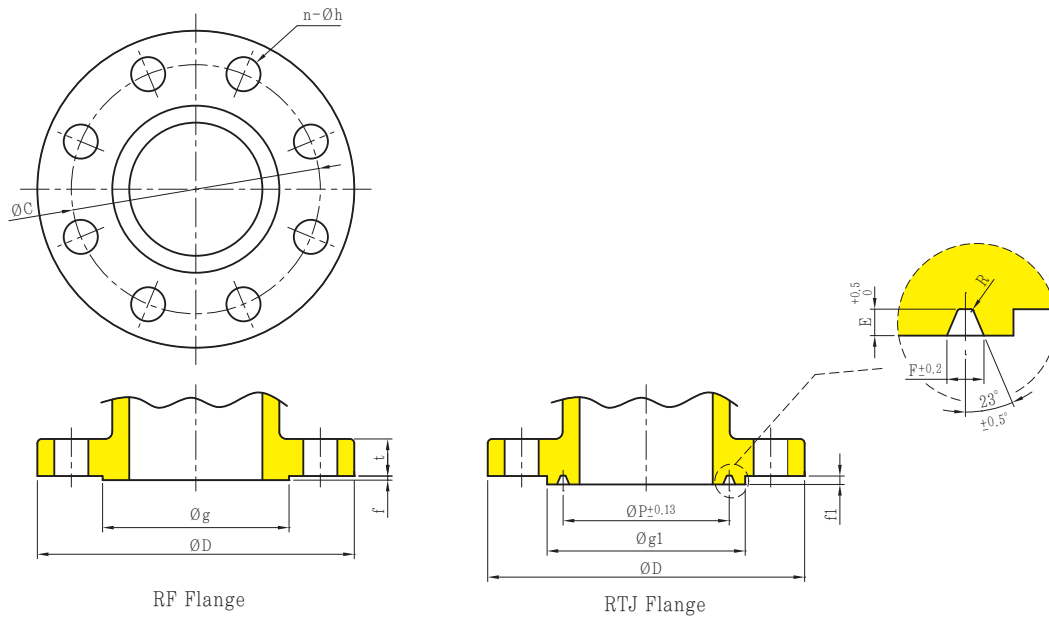
unit ; mm

Size	ΦD	ΦC	Φg	n	Φh	t	f	Bolt	Ring No.	P	Φg1	f1	E	F	R
50	165.0	127.0	92.0	8	19	22.3	1.6	5/8"	R23	82.6	108.0	7.9	7.9	11.9	0.8
65	190.0	149.0	105.0	8	22	25.4	1.6	3/4"	R26	101.6	127.0	7.9	7.9	11.9	0.8
80	210.0	168.0	127.0	8	22	28.6	1.6	3/4"	R31	123.8	146.1	7.9	7.9	11.9	0.8
100	254.0	200.0	157.0	8	22	31.8	1.6	3/4"	R37	149.2	174.8	7.9	7.9	11.9	0.8
125	279.0	235.0	186.0	8	22	35.0	1.6	3/4"	R41	181.0	209.6	7.9	7.9	11.9	0.8
150	318.0	270.0	216.0	12	22	36.6	1.6	3/4"	R45	211.1	241.3	7.9	7.9	11.9	0.8
200	381.0	330.0	270.0	12	25	41.3	1.6	7/8"	R49	269.9	301.8	7.9	7.9	11.9	0.8
250	444.0	387.5	324.0	16	29	47.7	1.6	1"	R53	323.9	355.6	7.9	7.9	11.9	0.8
300	521.0	451.0	381.0	16	32	50.8	1.6	1 1/8"	R57	381.0	421.8	7.9	7.9	11.9	0.8
350	584.0	514.5	413.0	20	32	54.0	1.6	1 1/8"	R61	419.1	457.2	7.9	7.9	11.9	0.8
400	648.0	571.5	470.0	20	35	57.2	1.6	1 1/4"	R65	469.9	508.0	7.9	7.9	11.9	0.8
450	711.0	628.5	533.0	24	35	60.4	1.6	1 1/4"	R69	533.4	574.6	7.9	7.9	11.9	0.8
500	775.0	686.0	584.0	24	35	63.5	1.6	1 1/4"	R73	584.2	635.0	9.5	9.5	13.5	1.5
600	914.0	813.0	692.0	24	41	69.9	1.6	1 1/2"	R77	692.2	749.3	11.1	11.1	16.7	1.5

unit ; inch

Size	ΦD	ΦC	Φg	n	Φh	t	f	Bolt	Ring No.	P	Φg1	f1	E	F	R
2"	6.50	5.00	3.62	8	0.75	0.88	0.06	5/8"	R23	3.25	4.25	0.31	0.31	0.47	0.03
2 1/2"	7.48	5.87	4.13	8	0.87	1.00	0.06	3/4"	R26	4.00	5.00	0.31	0.31	0.47	0.03
3"	8.27	6.61	5.00	8	0.87	1.13	0.06	3/4"	R31	4.88	5.75	0.31	0.31	0.47	0.03
4"	10.00	7.87	6.18	8	0.87	1.25	0.06	3/4"	R37	5.88	6.88	0.31	0.31	0.47	0.03
5"	10.98	9.25	7.32	8	0.87	1.38	0.06	3/4"	R41	7.13	8.25	0.31	0.31	0.47	0.03
6"	12.52	10.63	8.50	12	0.87	1.44	0.06	3/4"	R45	8.31	9.50	0.31	0.31	0.47	0.03
8"	15.00	12.99	10.63	12	0.98	1.63	0.06	7/8"	R49	10.63	11.88	0.31	0.31	0.47	0.03
10"	17.48	15.26	12.76	16	1.14	1.88	0.06	1"	R53	12.75	14.00	0.31	0.31	0.47	0.03
12"	20.51	17.76	15.00	16	1.26	2.00	0.06	1 1/8"	R57	15.00	16.60	0.31	0.31	0.47	0.03
14"	22.99	20.26	16.26	20	1.26	2.13	0.06	1 1/8"	R61	16.50	18.00	0.31	0.31	0.47	0.03
16"	25.51	22.50	18.50	20	1.38	2.25	0.06	1 1/4"	R65	18.50	20.00	0.31	0.31	0.47	0.03
18"	27.99	24.74	20.98	24	1.38	2.38	0.06	1 1/4"	R69	21.00	22.62	0.31	0.31	0.47	0.03
20"	30.51	27.01	22.99	24	1.38	2.50	0.06	1 1/4"	R73	23.00	25.00	0.37	0.37	0.53	0.06
24"	35.98	32.01	27.24	24	1.61	2.75	0.06	1 1/2"	R77	27.25	29.50	0.44	0.44	0.66	0.06

ANSI B16.5 CLASS 600LB RF & RTJ FLANGE DIMENSION



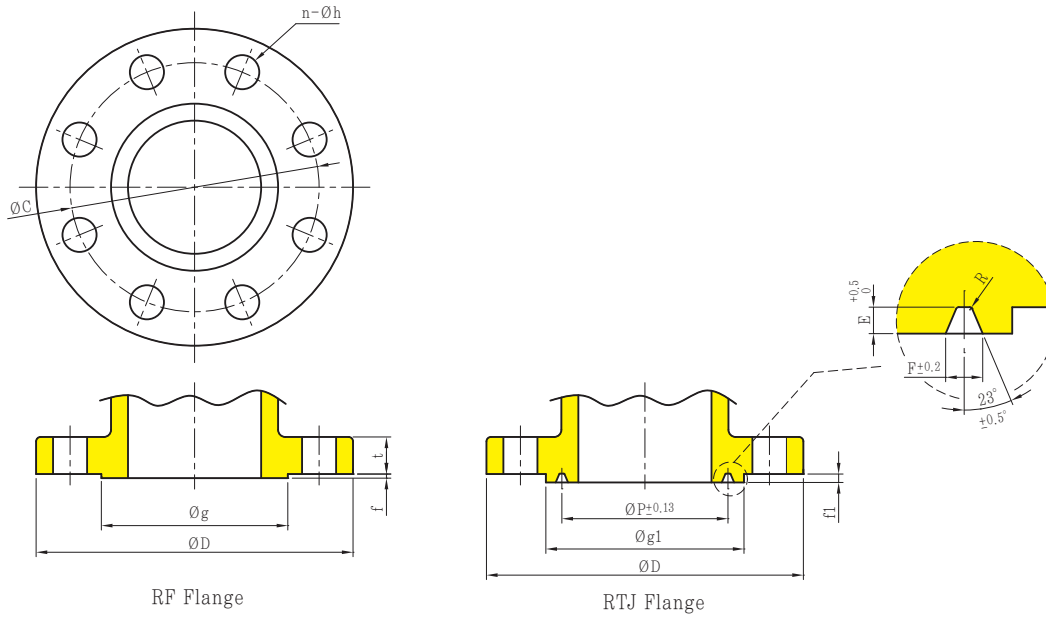
unit ; mm

Size	ØD	ØC	Øg	n	Øh	t	f	Bolt	Ring No.	P	Øg1	f1	E	F	R
50	165.0	127.0	92.0	8	19	25.4	6.4	5/8"	R23	82.6	108.0	7.9	7.9	11.9	0.8
65	190.0	149.0	105.0	8	22	28.6	6.4	3/4"	R26	101.6	127.0	7.9	7.9	11.9	0.8
80	210.0	168.0	127.0	8	22	31.8	6.4	3/4"	R31	123.8	146.1	7.9	7.9	11.9	0.8
100	273.0	216.0	157.0	8	25	38.1	6.4	7/8"	R37	149.2	174.8	7.9	7.9	11.9	0.8
125	330.0	266.5	186.0	8	29	44.5	6.4	1"	R41	181.0	209.6	7.9	7.9	11.9	0.8
150	356.0	292.0	216.0	12	29	47.7	6.4	1"	R45	211.1	241.3	7.9	7.9	11.9	0.8
200	419.0	349.0	270.0	12	32	55.6	6.4	1 1/8"	R49	269.9	301.8	7.9	7.9	11.9	0.8
250	508.0	432.0	324.0	16	35	63.5	6.4	1 1/4"	R53	323.9	355.6	7.9	7.9	11.9	0.8
300	559.0	489.0	381.0	20	35	66.7	6.4	1 1/4"	R57	381.0	421.8	7.9	7.9	11.9	0.8
350	603.0	527.0	413.0	20	38	69.9	6.4	1 3/8"	R61	419.1	457.2	7.9	7.9	11.9	0.8
400	686.0	603.0	470.0	20	41	76.2	6.4	1 1/2"	R65	469.9	508.0	7.9	7.9	11.9	0.8
450	743.0	654.0	533.0	20	45	82.6	6.4	1 5/8"	R69	533.4	574.6	7.9	7.9	11.9	0.8
500	813.0	724.0	584.0	24	45	88.9	6.4	1 5/8"	R73	584.2	635.0	9.5	9.5	13.5	1.5
600	940.0	838.0	692.0	24	51	102.0	6.4	1 7/8"	R77	692.2	749.3	11.1	11.1	16.7	1.5

unit ; inch

Size	ØD	ØC	Øg	n	Øh	t	f	Bolt	Ring No.	P	Øg1	f1	E	F	R
2"	6.50	5.00	3.62	8	0.75	1.00	0.25	5/8"	R23	3.25	4.25	0.31	0.31	0.47	0.03
2 1/2"	7.48	5.87	4.13	8	0.87	1.13	0.25	3/4"	R26	4.00	5.00	0.31	0.31	0.47	0.03
3"	8.27	6.61	5.00	8	0.87	1.25	0.25	3/4"	R31	4.88	5.75	0.31	0.31	0.47	0.03
4"	10.75	8.50	6.18	8	0.98	1.50	0.25	7/8"	R37	5.88	6.88	0.31	0.31	0.47	0.03
5"	12.99	10.49	7.32	8	1.14	1.75	0.25	1"	R41	7.13	8.25	0.31	0.31	0.47	0.03
6"	14.02	11.50	8.50	12	1.14	1.88	0.25	1"	R45	8.31	9.50	0.31	0.31	0.47	0.03
8"	16.50	13.74	10.63	12	1.26	2.19	0.25	1 1/8"	R49	10.63	11.88	0.31	0.31	0.47	0.03
10"	20.00	17.01	12.76	16	1.38	2.50	0.25	1 1/4"	R53	12.75	14.00	0.31	0.31	0.47	0.03
12"	22.01	19.25	15.00	20	1.38	2.63	0.25	1 1/4"	R57	15.00	16.60	0.31	0.31	0.47	0.03
14"	23.74	20.75	16.26	20	1.50	2.75	0.25	1 3/8"	R61	16.50	18.00	0.31	0.31	0.47	0.03
16"	27.01	23.74	18.50	20	1.61	3.00	0.25	1 1/2"	R65	18.50	20.00	0.31	0.31	0.47	0.03
18"	29.25	25.75	20.98	20	1.77	3.25	0.25	1 5/8"	R69	21.00	22.62	0.31	0.31	0.47	0.03
20"	32.01	28.50	22.99	24	1.77	3.50	0.25	1 5/8"	R73	23.00	25.00	0.37	0.37	0.53	0.06
24"	37.01	32.99	27.24	24	2.01	4.02	0.25	1 7/8"	R77	27.25	29.50	0.44	0.44	0.66	0.06

ANSI B16.5 CLASS 900LB RF & RTJ FLANGE DIMENSION



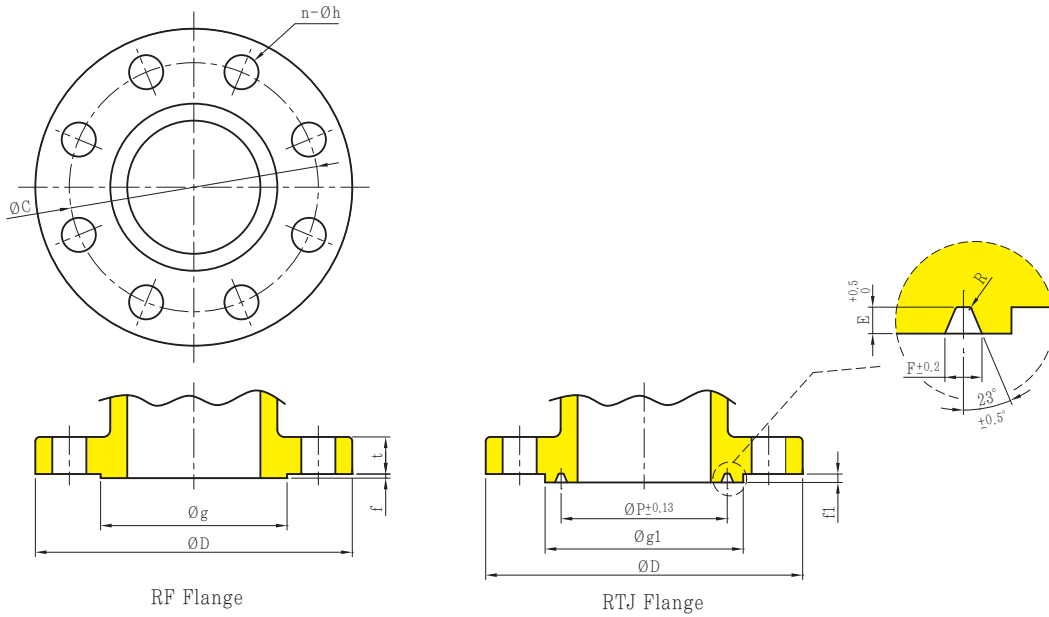
unit ; mm

Size	ØD	ØC	Øg	n	Øh	t	f	Bolt	Ring No.	P	Øg1	f1	E	F	R
50	216	165.0	92.0	8	25	38.1	6.4	7/8"	R24	95.3	124.0	7.9	7.9	11.9	0.8
65	244	190.5	105.0	8	29	41.1	6.4	1"	R27	108.0	136.7	7.9	7.9	11.9	0.8
80	241	190.5	127.0	8	25	38.1	6.4	7/8"	R31	123.8	155.5	7.9	7.9	11.9	0.8
100	292	235.0	157.0	8	32	44.5	6.4	1 1/8"	R37	149.2	174.8	7.9	7.9	11.9	0.8
125	349.0	279.4	185.7	8	35	50.8	6.4	1 1/4"	R41	181.0	209.6	7.9	7.9	11.9	0.8
150	381	317.5	216.0	12	32	55.6	6.4	1 1/8"	R45	211.1	241.3	7.9	7.9	11.9	0.8
200	470	393.7	270.0	12	38	63.5	6.4	1 3/8"	R49	269.9	301.8	7.9	7.9	11.9	0.8
250	546	470.0	324.0	16	38	69.9	6.4	1 3/8"	R53	323.9	355.6	7.9	7.9	11.9	0.8
300	610	533.5	381.0	20	38	79.2	6.4	1 3/8"	R57	381.0	421.8	7.9	7.9	11.9	0.8
350	641	558.8	413.0	20	41	85.9	6.4	1 1/2"	R62	419.1	466.9	11.1	11.1	16.7	1.5
400	705	616.0	470.0	20	45	88.9	6.4	1 5/8"	R66	469.9	523.8	11.1	11.1	16.7	1.5
450	787	686.0	533.0	20	51	101.6	6.4	1 7/8"	R70	533.4	593.9	12.7	12.7	19.8	1.5
500	857	749.5	584.0	20	54	108.0	6.4	2"	R74	584.2	647.7	12.7	12.7	19.8	1.5
600	1041	902.0	692.0	20	67	139.7	6.4	2 1/2"	R78	692.2	771.7	15.9	15.9	27.0	2.4

unit ; inch

Size	ØD	ØC	Øg	n	Øh	t	f	Bolt	Ring No.	P	Øg1	f1	E	F	R
2"	8.50	6.50	3.62	8	0.98	1.50	0.25	7/8"	R24	3.75	4.88	0.31	0.31	0.47	0.03
2 1/2"	9.61	7.50	4.13	8	1.14	1.62	0.25	1"	R27	4.25	5.38	0.31	0.31	0.47	0.03
3"	9.49	7.50	5.00	8	0.98	1.50	0.25	7/8"	R31	4.88	6.12	0.31	0.31	0.47	0.03
4"	11.50	9.25	6.18	8	1.26	1.75	0.25	1 1/8"	R37	5.88	6.88	0.31	0.31	0.47	0.03
5"	13.74	11.00	7.31	8	1.38	2.00	0.25	1 1/4"	R41	7.13	8.25	0.31	0.31	0.47	0.03
6"	15.00	12.50	8.50	12	1.26	2.19	0.25	1 1/8"	R45	8.31	9.50	0.31	0.31	0.47	0.03
8"	18.50	15.50	10.63	12	1.50	2.50	0.25	1 3/8"	R49	10.63	11.88	0.31	0.31	0.47	0.03
10"	21.50	18.50	12.76	16	1.50	2.75	0.25	1 3/8"	R53	12.75	14.00	0.31	0.31	0.47	0.03
12"	24.02	21.00	15.00	20	1.50	3.12	0.25	1 3/8"	R57	15.00	16.60	0.31	0.31	0.47	0.03
14"	25.24	22.00	16.26	20	1.61	3.38	0.25	1 1/2"	R62	16.50	18.38	0.44	0.44	0.66	0.06
16"	27.76	24.25	18.50	20	1.77	3.50	0.25	1 5/8"	R66	18.50	20.62	0.44	0.44	0.66	0.06
18"	30.98	27.01	20.98	20	2.01	4.00	0.25	1 7/8"	R70	21.00	23.38	0.50	0.50	0.78	0.06
20"	33.74	29.51	22.99	20	2.13	4.25	0.25	2"	R74	23.00	25.50	0.50	0.50	0.78	0.06
24"	40.98	35.51	27.24	20	2.64	5.50	0.25	2 1/2"	R78	27.25	30.38	0.63	0.63	1.06	0.09

ANSI B16.5 CLASS 1500LB RF & RTJ FLANGE DIMENSION



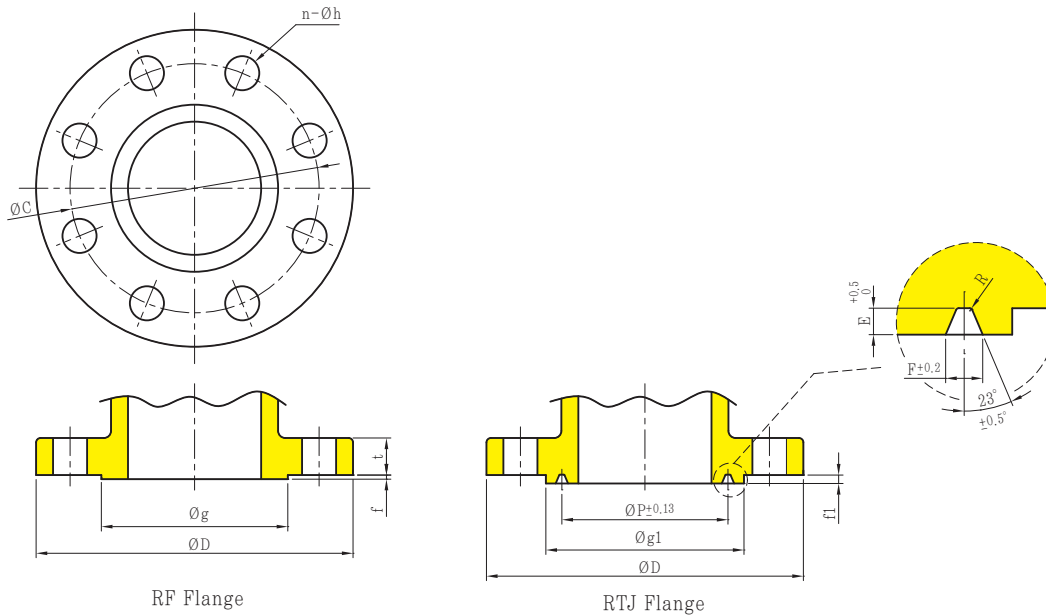
unit ; mm

Size	ØD	ØC	Øg	n	Øh	t	f	Bolt	Ring No.	P	Øg1	f1	E	F	R
50	216.0	165.0	92.0	8	25	38.1	6.4	7/8"	R24	95.3	124.0	7.9	7.9	11.9	0.8
65	244.0	190.5	105.0	8	29	41.1	6.4	1"	R27	108.0	136.7	7.9	7.9	11.9	0.8
80	267.0	203.0	127.0	8	32	47.8	6.4	1 1/8"	R35	136.5	168.2	7.9	7.9	11.9	0.8
100	311.0	241.5	157.0	8	35	53.8	6.4	1 1/4"	R39	161.9	161.9	7.9	7.9	11.9	0.8
125	375.0	292.1	185.7	8	41	73.2	6.4	1 1/2"	R44	194	229	7.9	7.9	11.9	0.8
150	394.0	317.5	216.0	12	38	82.6	6.4	1 3/8"	R46	211.1	247.7	9.5	9.5	13.5	1.5
200	483.0	393.7	270.0	12	45	91.9	6.4	1 5/8"	R50	269.9	317.5	11.1	11.1	16.7	1.5
250	584.0	482.6	324.0	12	51	108.0	6.4	1 7/8"	R54	323.9	371.4	11.1	11.1	16.7	1.5
300	673.0	571.5	381.0	16	54	124.0	6.4	2"	R58	381.0	438.2	14.3	14.3	23.0	1.5
350	749.0	635.0	413.0	16	61	133.4	6.4	2 1/4"	R63	419.1	489.0	15.9	15.9	27.0	2.4
400	826.0	705.0	470.0	16	67	146.1	6.4	2 1/2"	R67	469.9	546.1	17.5	17.5	30.2	2.4
450	914.0	774.7	533.5	16	73	162.1	6.4	2 3/4"	R71	533.4	612.7	17.5	17.5	30.2	2.4
500	984.0	832.0	584.2	16	79	177.8	6.4	3"	R75	584.2	673.1	17.5	17.5	33.3	2.4
600	1168.0	990.5	692.2	16	92	203.2	6.4	3 1/2"	R79	692.2	793.8	20.6	20.6	36.5	2.4

unit ; inch

Size	ØD	ØC	Øg	n	Øh	t	f	Bolt	Ring No.	P	Øg1	f1	E	F	R
2"	8.50	6.50	3.62	8	0.98	1.50	0.25	7/8"	R24	3.75	4.88	0.31	0.31	0.47	0.03
2 1/2"	9.61	7.50	4.13	8	1.14	1.62	0.25	1"	R27	4.25	5.38	0.31	0.31	0.47	0.03
3"	10.51	7.99	5.00	8	1.26	1.88	0.25	1 1/8"	R35	5.38	6.62	0.31	0.31	0.47	0.03
4"	12.24	9.51	6.18	8	1.38	2.12	0.25	1 1/4"	R39	6.38	6.38	0.31	0.31	0.47	0.03
5"	14.76	11.50	7.31	8	1.61	2.88	0.25	1 1/2"	R44	7.63	9.00	0.31	0.31	0.47	0.03
6"	15.51	12.50	8.50	12	1.50	3.25	0.25	1 3/8"	R46	8.31	9.75	0.37	0.37	0.53	0.06
8"	19.02	15.50	10.63	12	1.77	3.62	0.25	1 5/8"	R50	10.63	12.50	0.44	0.44	0.66	0.06
10"	22.99	19.00	12.76	12	2.01	4.25	0.25	1 7/8"	R54	12.75	14.62	0.44	0.44	0.66	0.06
12"	26.50	22.50	15.00	16	2.13	4.88	0.25	2"	R58	15.00	17.25	0.56	0.56	0.91	0.06
14"	29.49	25.00	16.26	16	2.40	5.25	0.25	2 1/4"	R63	16.50	19.25	0.63	0.63	1.06	0.09
16"	32.52	27.76	18.50	16	2.64	5.75	0.25	2 1/2"	R67	18.50	21.50	0.69	0.69	1.19	0.09
18"	35.98	30.50	21.00	16	2.87	6.38	0.25	2 3/4"	R71	21.00	24.12	0.69	0.69	1.19	0.09
20"	38.74	32.76	23.00	16	3.11	7.00	0.25	3"	R75	23.00	26.50	0.69	0.69	1.31	0.09
24"	45.98	39.00	27.25	16	3.62	8.00	0.25	3 1/2"	R79	27.25	31.25	0.81	0.81	1.44	0.09

ANSI B16.5 CLASS 2500LB RF & RTJ FLANGE DIMENSION



unit ; mm

Size	ØD	ØC	Øg	n	Øh	t	f	Bolt	Ring No.	P	Øg1	f1	E	F	R
50	235	171.5	92	8	29	50.8	6.4	1"	R26	101.6	127.0	7.9	7.9	11.9	0.8
65	267	197.0	105	8	32	57.2	6.4	1 1/8"	R28	111.1	149.4	9.5	9.5	13.5	1.5
80	305	228.5	127	8	35	66.5	6.4	1 1/4"	R32	127.0	168.2	9.5	9.5	13.5	1.5
100	356	273.0	157	8	41	76.2	6.4	1 1/2"	R38	157.2	203.2	11.1	11.1	16.7	1.5
125	419.0	323.9	185.7	8	48	91.9	6.4	1 3/4"	R42	191	241	12.7	12.7	19.8	1.5
150	483	368.5	216	8	54	108.0	6.4	2"	R47	228.6	279.4	12.7	12.7	19.8	1.5
200	552	438.0	270	12	54	127.0	6.4	2"	R51	279.4	339.9	14.3	14.3	23.0	1.5
250	673	540.0	324	12	67	165.1	6.4	2 1/2"	R55	342.9	425.5	17.5	17.5	30.2	2.4
300	762	619.5	381	12	73	184.2	6.4	2 3/4"	R60	406.4	495.3	17.5	17.5	33.3	2.4

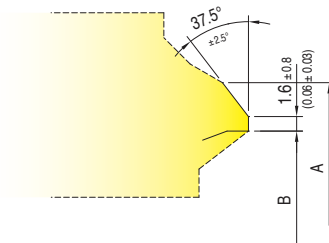
unit ; inch

Size	ØD	ØC	Øg	n	Øh	t	f	Bolt	Ring No.	P	Øg1	f1	E	F	R
2"	9.25	6.75	3.62	8	1.14	2.00	0.25	1"	R26	4.00	5.00	0.31	0.31	0.47	0.03
2 1/2"	10.51	7.76	4.13	8	1.26	2.25	0.25	1 1/8"	R28	4.38	5.88	0.37	0.37	0.53	0.06
3"	12.01	9.00	5.00	8	1.38	2.62	0.25	1 1/4"	R32	5.00	6.62	0.37	0.37	0.53	0.06
4"	14.02	10.75	6.18	8	1.61	3.00	0.25	1 1/2"	R38	6.19	8.00	0.44	0.44	0.66	0.06
5"	16.50	12.75	7.31	8	1.89	3.62	0.25	1 3/4"	R42	7.50	9.50	0.50	0.50	0.78	0.06
6"	19.02	14.51	8.50	8	2.13	4.25	0.25	2"	R47	9.00	11.00	0.50	0.50	0.78	0.06
8"	21.73	17.24	10.63	12	2.13	5.00	0.25	2"	R51	11.00	13.38	0.56	0.56	0.91	0.06
10"	26.50	21.26	12.76	12	2.64	6.50	0.25	2 1/2"	R55	13.50	16.75	0.69	0.69	1.19	0.09
12"	30.00	24.39	15.00	12	2.87	7.25	0.25	2 3/4"	R60	16.00	19.50	0.69	0.69	1.31	0.09

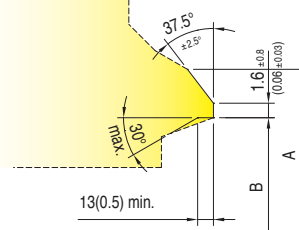
BUTT-WELDING ENDS

ASME B16.25 -2012

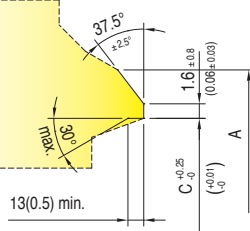
Bevels for Wall Thickness Over 3 mm (0.21 in.) to 22 mm (0.88 in.), Inclusive



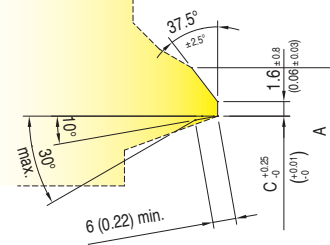
(a) Weld End Detail for Joint Without Backing Ring



(b) Weld End Detail for Joint Using Split Rectangular Backing Ring

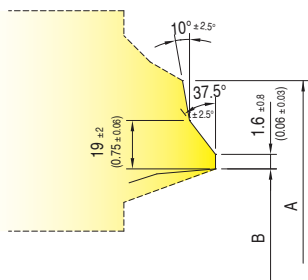


(c) Weld End Detail for Joint Using Continuous Rectangular Backing Ring

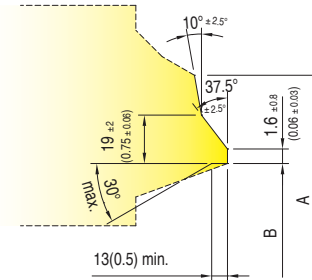


(d) Weld End Detail for Joint Using Continuous Tapered Backing Ring

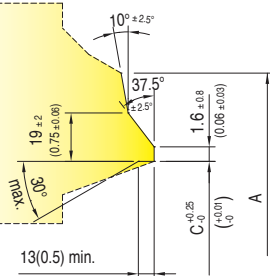
Weld Bevel Details for Wall Thickness Over 22 mm (0.88 in.)



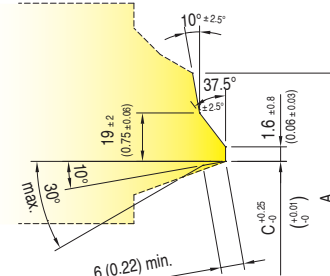
(a) Weld End Detail for Joint Without Backing Ring



(b) Weld End Detail for Joint Using Split Rectangular Backing Ring



(c) Weld End Detail for Joint Using Continuous Rectangular Backing Ring



(d) Weld End Detail for Joint Using Continuous Tapered Backing Ring

DIMENSIONS OF WELDING ENDS

ASME B16.25-2012

Nominal Pipe Size (NPS)	Schedule No.	O.D. at Welding Ends		B	C	t
		Wrought or Fabricated Components, A	Cast Components, A			
2½	30	73.0	75	63.50	63.60	4.78
	40	73.0	75	62.50	62.93	5.16
	80	73.0	75	59.00	59.69	7.01
	160	73.0	75	54.00	55.28	9.53
	XX5	73.0	75	45.00	47.43	14.02
3	30	88.9	91	79.50	79.50	4.78
	40	88.9	91	78.00	78.25	5.49
	80	88.9	91	73.50	74.53	7.62
	160	88.9	91	66.50	68.38	11.13
	XXS	88.9	91	58.50	61.19	15.24
3½	30	101.6	105	92.00	92.20	4.78
	40	101.6	105	90.00	90.52	5.74
	80	101.6	105	85.50	86.42	8.08
4	30	114.3	117	104.50	104.90	4.78
	40	114.3	117	102.00	102.73	6.02
	80	114.3	117	97.00	98.28	8.56
	120	114.3	117	92.00	93.78	11.13
	160	114.3	117	87.50	89.65	13.49
	XXS	114.3	117	80.00	83.30	17.12
5	40	141.3	144	128.00	128.80	6.55
	80	141.3	144	122.00	123.58	9.53
	120	141.3	144	116.00	118.04	12.70
	160	141.3	144	109.50	112.47	15.88
	XXS	141.3	144	103.00	106.92	19.05
6	40	168.3	172	154.00	154.82	7.11
	80	168.3	172	146.50	148.06	10.97
	120	168.3	172	140.00	142.29	14.27
	160	168.3	172	132.00	135.31	18.06
	XXS	168.3	172	124.50	128.85	21.95
8	20	219.1	223	206.50	206.95	6.35
	30	219.1	223	205.00	205.74	7.04
	40	219.1	223	203.00	203.75	8.18
	60	219.1	223	198.50	200.02	10.31
	80	219.1	223	193.50	195.84	12.70
	100	219.1	223	189.00	191.65	15.09
	120	219.1	223	182.50	186.11	18.26
	140	219.1	223	178.00	181.98	20.62
	XXS	219.1	223	174.50	179.16	22.23
	160	219.1	223	173.00	177.79	23.01
	10	20	273.0	278	260.50	260.85
30		273.0	278	257.50	258.31	7.80
40		273.0	278	254.50	255.74	9.27
60		273.0	278	247.50	249.74	12.70
80		273.0	278	243.00	245.55	15.09
100		273.0	278	236.50	240.01	18.26

DIMENSIONS OF WELDING ENDS

ASME B16.25-2012

Nominal Pipe Size (NPS)	Schedule No.	O.D. at Welding Ends		B	C	t	
		Wrought or Fabricated Components, A	Cast Components, A				
10 (Cont'd)	120	273.0	278	230.00	234.44	21.44	
	140	273.0	278	222.00	227.51	25.40	
	160	273.0	278	216.00	221.95	28.58	
12	20	323.8	329	311.00	311.65	6.35	
	30	323.8	329	307.00	308.10	8.38	
	STD	323.8	329	305.00	306.08	9.53	
	40	323.8	329	303.00	304.72	10.31	
	XS	323.8	329	298.50	300.54	12.70	
	60	323.8	329	295.00	297.79	14.27	
	80	323.8	329	289.00	292.17	17.48	
	100	323.8	329	281.00	285.24	21.44	
	120	323.8	329	273.00	278.31	25.40	
	140	323.8	329	266.00	272.75	28.58	
	160	323.8	329	257.00	264.45	33.32	
14	20	355.6	362	340.00	340.70	7.92	
	STD	355.6	362	336.50	337.88	9.53	
	40	355.6	362	333.50	335.08	11.13	
	XS	355.6	362	330.00	332.34	12.70	
	60	355.6	362	325.50	328.15	15.09	
	80	355.6	362	371.50	321.22	19.05	
	100	355.6	362	308.00	312.86	23.83	
	120	355.6	362	300.00	305.93	27.79	
	140	355.6	362	292.00	299.00	31.75	
	160	355.6	362	284.00	292.07	35.71	
	16	20	406.4	413	390.50	391.50	7.92
STD		406.4	413	387.50	388.68	9.53	
40		406.4	413	381.00	383.14	12.70	
60		406.4	413	373.00	376.21	16.66	
80		406.4	413	363.50	367.84	21.44	
100		406.4	413	354.00	359.53	26.19	
120		406.4	413	344.50	351.18	30.96	
140		406.4	413	333.50	341.43	36.53	
160		406.4	413	325.50	334.50	40.49	
18		20	457.2	464	441.50	442.30	7.92
		30	457.2	464	435.00	436.68	11.13
	STD	457.2	464	438.00	439.48	9.53	
	XS	457.2	464	432.00	433.94	12.70	
	40	457.2	464	428.00	431.19	14.27	
	60	457.2	464	419.00	442.82	19.05	
	80	457.2	464	409.50	414.46	23.83	
	100	457.2	464	398.50	404.78	29.36	
	120	457.2	464	387.50	395.03	34.93	
	140	457.2	464	378.00	386.77	39.67	
	160	457.2	464	366.50	376.99	45.24	

DIMENSIONS OF WELDING ENDS

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Nominal Pipe Size (NPS)	Schedule No.	O.D. at Welding Ends		B	C	t
		Wrought or Fabricated Components, A	Cast Components, A			
20	STD	508.0	516	489.00	490.28	9.53
	XS	508.0	516	482.50	484.74	12.70
	40	508.0	516	478.00	480.55	15.09
	60	508.0	516	467.00	470.88	20.62
	80	508.0	516	455.50	461.13	26.19
	100	508.0	516	443.00	450.02	32.54
	120	508.0	516	432.00	440.29	38.10
	140	508.0	516	419.00	429.17	44.45
22	160	508.0	516	408.00	419.44	50.01
	STD	558.8	567	539.00	541.08	9.53
	XS	558.8	567	533.00	535.54	12.70
	60	558.8	567	514.00	518.86	22.23
	80	558.8	567	501.00	507.75	28.58
	100	558.8	567	488.50	496.63	34.93
	120	558.8	567	476.00	485.52	41.28
	140	558.8	567	463.00	474.41	47.63
24	160	558.8	567	450.50	463.30	53.98
	STD	609.6	619	590.50	591.88	9.53
	XS	609.6	619	584.00	586.34	12.70
	30	609.6	619	581.00	583.59	14.27
	40	609.6	619	574.50	577.97	17.48
	60	609.6	619	560.50	565.49	24.61
	80	609.6	619	547.50	554.38	30.96
	100	609.6	619	532.00	540.49	38.89
26	120	609.6	619	517.50	528.03	46.02
	140	609.6	619	505.00	516.91	52.37
	160	609.6	619	490.50	504.37	59.54
28	10	660.4	670	645.50	645.50	7.92
	STD	660.4	670	641.34	642.68	9.53
	20	660.4	670	635.00	637.14	12.70
	30	711.2	721	695.50	696.30	7.92
30	STD	711.2	721	692.14	693.48	9.53
	20	711.2	721	686.00	687.94	12.70
	30	711.2	721	679.50	682.37	15.88
	10	762.0	772	746.00	747.10	7.92
32	STD	762.0	772	742.94	744.28	9.53
	20	762.0	772	736.50	738.74	12.70
	30	762.0	772	730.00	733.17	15.88
	10	812.8	825	797.00	797.90	7.92
32	STD	812.8	825	793.74	795.08	9.53
	20	812.8	825	787.50	789.54	12.70
	30	812.8	825	781.00	783.97	15.88
	40	812.8	825	778.00	781.17	17.48

DIMENSIONS OF WELDING ENDS

ASME B16.25-2012

Nominal Pipe Size (NPS)	Schedule No.	O.D. at Welding Ends		B	C	t
		Wrought or Fabricated Components, A	Cast Components, A			
34	10	863.6	876	848.00	848.70	7.92
	STD	863.6	876	844.54	845.88	9.53
	20	863.6	876	838.00	840.34	12.70
	30	863.6	876	832.00	834.77	15.88
	40	863.6	876	828.50	831.97	17.48
36	10	914.4	927	898.50	899.50	7.92
	STD	914.4	927	895.34	896.68	9.53
	20	914.4	927	889.00	891.14	12.70
	30	914.4	927	882.50	885.57	15.88
	40	914.4	927	876.50	880.02	19.05
38	STD	965.2	978	946.00	947.48	9.53
	XS	965.2	978	940.00	941.94	12.70
40	STD	1016.0	1029	997.00	998.28	9.53
	XS	1016.0	1029	990.50	992.74	12.70
42	STD	1066.8	1079	1047.50	1049.08	9.53
	XS	1066.8	1079	1041.50	1043.54	12.70
44	STD	1117.6	1130	1098.50	1099.88	9.53
	XS	1117.6	1130	1092.00	1094.34	12.70
46	STD	1168.4	1181	1149.50	1150.68	9.53
	XS	1168.4	1181	1143.00	1145.14	12.70
48	STD	1219.2	1232	1200.00	1201.48	9.53
	XS	1219.2	1232	1194.00	1195.94	12.70

Notes.

- STD = standard wall thickness
- XS = extra strong wall thickness
- XXS = double, extra strong wall thickness

ACCESSORIES

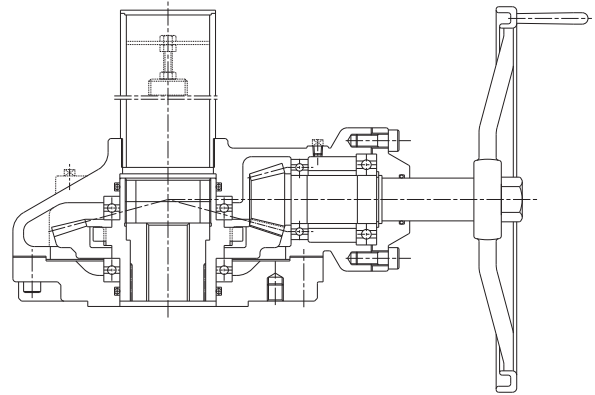
Bevel Gear Actuator

Auxiliary gearing is often desirable to facilitate the operation of large size valves required to close against high pressure.

Namsung Cast Steel Valves can be furnished with a fully enclosed light weight and maintenance free bevel gear actuators.

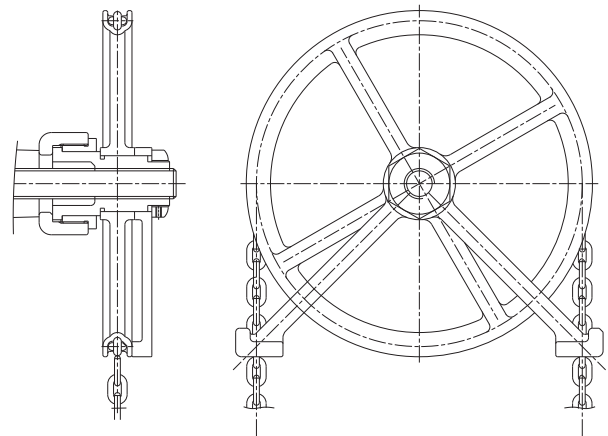
Inquiries or order for valves with gear actuators should include the following information:

- Size and figure number of valve
- Service media, pressure and temperature
- Maximum pressure against which valve must close
- Any handwheel torque or rim pull limitation
- Desired orientation of handwheel to stem
- Desired orientation of handwheel to pipe run
- Limitations, if any, on the type or brand of actuator



Chainwheels

Chainwheels can be furnished complete with chainwheel and chain guide. They are means of safe and convenient floor operation of valves in overhead or inaccessible locations.



Electric Motor Actuators

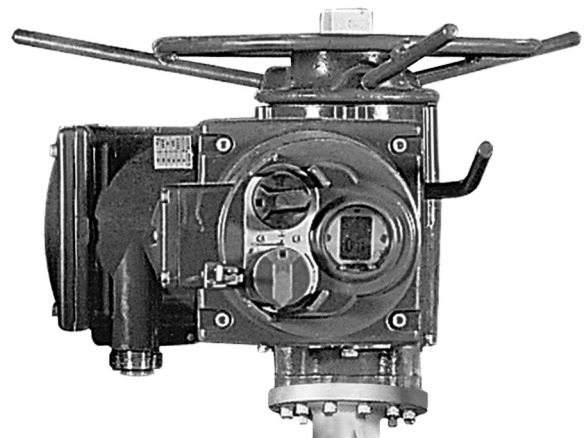
Electric Motor Actuators are available for valves which are in accessibly located, or where emergency may require rapid, positive operation from a remote point.

Namsung can supplies electric motor actuators for each type of Namsung Cast Steel Valves when required.

Show on this page are examples of various available actuators.

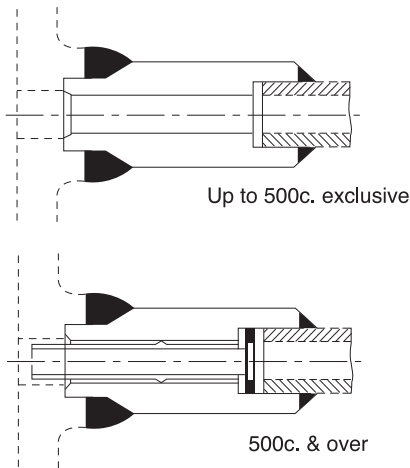
Inquiries or orders for electric motor actuated valves should include the following information:

- Size and figure number of valve
- Service media, pressure and temperature
- Maximum pressure against which valve must close
- Desired stem speed or closing time
- Frequency of operation
- Electric power available(voltage, frequency & phases)
- Nema type of electrical enclosure
- Reversing controller specifications
- Control station specifications
- Accessories(Position indicator, dial position indicator, etc.)



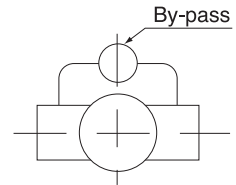
BY-PASS AND DRAIN CONNECTION

By-pass Locations

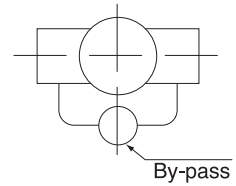


By-pass Connections

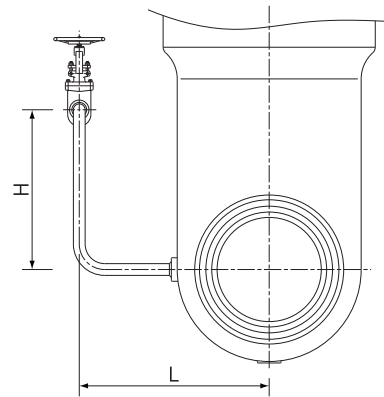
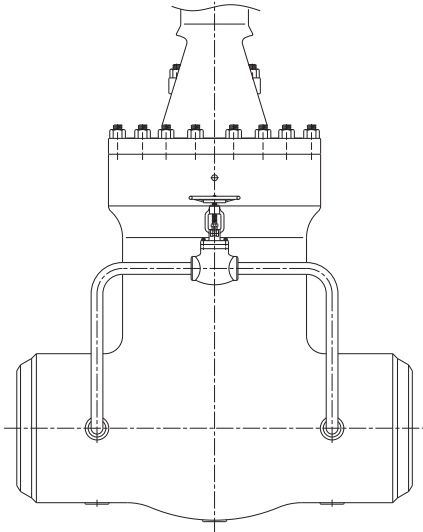
Type A →



Type B →

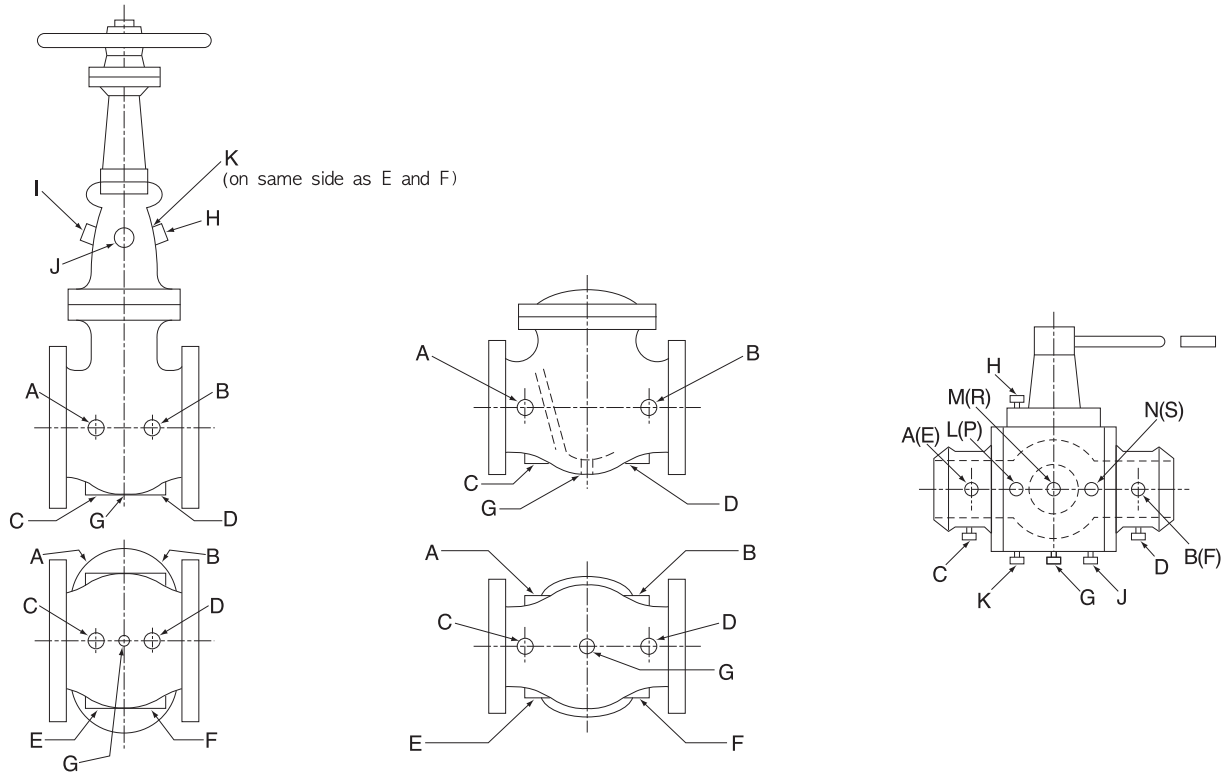


By-pass Sizes & Dimensions



CLASS		1500						2500							
Main Valve Size		8	10	12	14	16	18	20	6	8	10	12	14	16	18
L	mm	305	335	370	390	445	500	560	290	350	390	450	450	500	550
	inch	12.01	13.19	14.57	15.35	17.52	19.69	22.05	11.42	13.78	16.35	17.72	17.72	19.69	21.65
H	mm	400	420	520	570	650	670	700	420	430	510	600	700	750	800
	inch	15.75	16.54	20.47	22.44	25.59	26.38	27.56	16.54	16.93	20.08	23.62	27.56	29.53	31.50
By-pass Size (NPS)		3/4	1	1	1	1	1	1	3/4	3/4	1	1	1	1	1

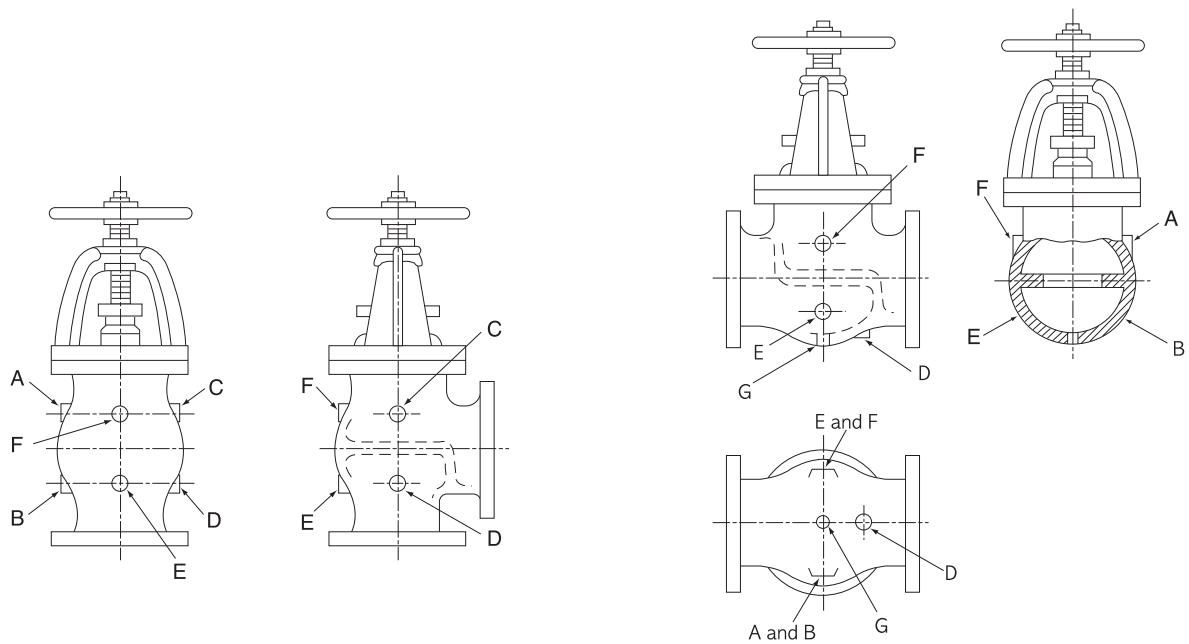
BY-PASS AND DRAIN CONNECTION



(a) Gate Valve

(b) Check Valve

(c) Ball Valve

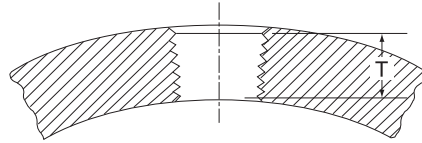


(d) Angle Valve

(e) Globe Valve

METHOD OF DESIGNATING LOCATION OF AUXILIARY CONNECTIONS WHEN SPECIFIED

BY-PASS AND DRAIN CONNECTION

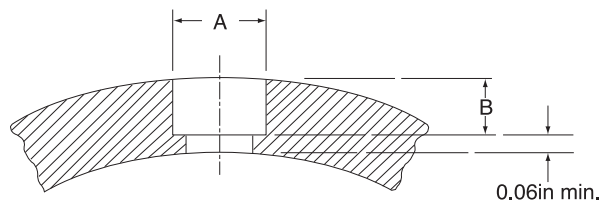


Conn. Size, NPS	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Length of Thread T, in. [Note (1)]	0.41	0.53	0.55	0.68	0.71	0.72	0.76

Note.

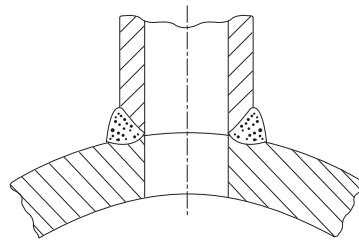
(1) In no case shall the effective length of thread T be less than that shown in table above. These lengths are equal to the effective thread length of American National Standard External Pipe Threads(ANSI/ASME B1.20.1).

THREAD LENGTH FOR AUXILIARY CONNECTIONS

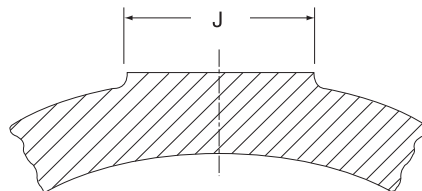


Conn. Size, NPS	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Min. Dia. of Socket A, in.	0.690	0.855	1.065	1.330	1.675	1.915	2.406
Min. Depth. of Socket B, in.	0.19	0.19	0.25	0.25	0.25	0.25	0.31

SOCKET WELDING FOR AUXILIARY CONNECTIONS



BUTT WELDING FOR AUXILIARY CONNECTIONS



Conn. Size, NPS	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Dia. of Boss, J, in	1.25	1.50	1.75	2.12	2.50	2.75	3.38

THREAD LENGTH FOR AUXILIARY CONNECTIONS

CORROSION TABLES

CARBON STEEL AND BRONZE ARE SHOWN FOR COMPARISON PURPOSES

MEDIA	CARBON STEEL	BRONZE	AISI 304	AISI 316, 347, 321	ALLOY 20	HASTELLOY	MONEL-INCONEL	MEDIA	CARBON STEEL	BRONZE	AISI 304	AISI 316, 347, 321	ALLOY 20	HASTELLOY	MONEL-INCONEL
acetaldehyde	O	O	E	E	E	E		borac acid	O	G	G	G		E	G
acetic acid aerated	O	O	E	E	E	E		bromine(dry)	O	O	O	O	E	E	E
acetic acid(air free)	O	O	E	E	E	E		bromine(wet)	O	O	O	O	O	E	E
acetic anhydride	O	F	G	G	E	E		butadiene	F	O	G	O			
acetone	E	E	E	E	E	E	E	butane	G	E	G	G	G	E	G
acetylene	E	G	E	E	E	E	E	buttermilk	O	O	E	E		E	
air	E	E	E	E	E			butyric acid	O	O	G	G	E	E	G
alcohols	G	G	E	E	E	E	E	calcium bisulfite	O	G	F	G	E		
aluminium acetate	O	O	E	E	E	E	G	calcium carbonate	O	F	E	E	E	E	G
aluminium chloride 10%	O	O	O	O	E	O	E	calcium chloride	F	G	F	G	G	E	G
aluminium chloride 10%	O	O	O	O	F	O	E	calcium hydroxide	F	O	E	E	E	E	E
aluminium fluoride	O	O	G	G	E	G	E	calcium hypochlorite	O	O	F	F	F	E	
aluminium hydroxide	O	O	E	E	E	G		calcium sulfate	O	E	E	E	E	G	G
aluminium oxalate	O	O			E	G	E	carbolic acid	O	G	G	G	E	E	G
aluminium potassium sulphate	O	O	E	E	E	G	G	carbon bisulfide	G	F	G	G	E		G
aluminium sulfate(alums)	O	F	F	G	E	E	F	carbon tetrachloride(dry)	F	F	G	E	E		G
amines	G	O	E	E	E			carbonated water	O	G	E	E	E		G
ammonia(aqueous)	E	E	E	E	E	G	E	carbonic acid	O	O	G	G	E		E
ammonia(anhydrous liquid)	G	O	G	G	G	G	E	castor oil	G	E	E	E	E		E
ammonium bicarbonate	F	O	G	G	G			china wood oil(tung)	F	F	E	E	E		E
ammonium carbonate	G	O	G	G	G	G		chlorinated solvents	F	F	E	E	E		G
ammonium chloride	O	O	F	F	E	G	G	chlorine gas(dry)	G	F	G	G	E		G
ammonium hydroxide(28%)	O	O	G	G	E	E		chloroacetic acid	O	O	O	O	O		G
ammonium hydroxide(conc)	O	O	G	G	E	E		chlorobenzene(dry)	F	F	E	E	F		F
ammonium monophosphate	O	O	G	G	E	E		chloroform(dry)	O	G	E	E	E		E
ammonium nitrate	O	O	G	G	E	E		chromic acid	O	O	E	E	E		
ammonium phosphate	O	O	G	G	E	E		citrus juices	O	O	E	E	E		G
ammonium sulfate	F	G	G	G	E	G	G	coca-cola syrup(pure)	O	O	E	E			
amyl acetate	F	G	G	G	E	G	G	coconut oil	O	O	G	G	G		G
aniline	F	F	G	G	G	G	G	copper chloride	O	F	O	O	E		G
aniline dyes	F	O	E	E	E			cooking oil	O	G	E	E	E		
antimony trichloride	O	O	O	O	O	E	G	copper nitrate	O	O	E	E	E		O
apple juice	O	O	G	O	O			copper sulfate	O	O	G	G	E	G	E
arsenic acid	O	O	G	G	G			corn oil	F		G	G	G	G	E
asphalt emulsion	G	G	E	E	E	E		cottonseed oil	F		G	G	G	G	E
asphalt liquid	G	G	E	E	E			creosote oil	G	G	G	G	G		E
barium carbonate	G	G	E	E	E	E		creylic acid	F	F	G	G	G	G	G
barium chloride	F	G	G	G	F	E	G	cupric chloride	O	O	O	O	O	O	E
barium hydroxide	F	O	G	G	E	E		diesel fuels	E	E	E	E			E
barium sulfate	F	F	E	E	E		G	dowtherm	G		E	E			
barium sulfide	F	F	G	G	G		F	drying oil			G	G	G	G	
beer	O	E	E	E	G	E	E	epsom salt	F	G	G	G	G		
beet sugar liquors	G	E	E	E	G		E	ethers	G	G	E	E	E	G	E
benzene(benzol)	G	G	E	E	E	G	G	ethyl acetate	G	F	G	G	G	E	G
benzoid acid	O	O	E	E	E	E	G	ethyl alcohol	G	G	G	G	G	G	G
borax liquors	F	O	E	E	E	E	G	ethyl chloride(dry)	G	G	E	E	E	G	G

CODE

E - Excellent

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CORROSION TABLES

CARBON STEEL AND BRONZE ARE SHOWN FOR COMPARISON PURPOSES

MEDIA	CARBON STEEL	BRONZE	AISI 304	AISI 316, 347, 321	ALLOY 20	HASTELLOY	MONEL-INCONEL	MEDIA	CARBON STEEL	BRONZE	AISI 304	AISI 316, 347, 321	ALLOY 20	HASTELLOY	MONEL-INCONEL
ethylene glycol	G	G	G	G	E	G		lactic acid	O	G	E	E	E	G	E
ethylene oxide	G	E	G	G	G			large oil		E	E	G	G	G	
fatty acids	O		G	E	E	G	E	lead acetate	O		E	E	E	G	E
ferric chloride	O	O	O	O	O	O	E	linseed oil	E	G	E	E	E	E	E
ferric nitrate	O		G	G	E	O	E	lubricating oil	E						
ferric sulfate	O	O	G	G	E		E	magnesium chloride	G	G	F	E	E	G	E
ferrous chloride	O	G	O	O	O	O	G	magnesium hydroxide	G	G	E	E	E	G	E
ferrous sulfate	O	G	E	E	E	G	G	magnesium sulfate	G	G	E	E	E	E	E
fish oils				G				maleic acid		G	G	G	E		E
fluorine							E	malic acid			E	E	E	G	E
formaldehyde	O	F	O	F	F	F	E	mayonnaise			E	E		G	
formic acid	O	G	F	G	G	G	E	mercury	E	O	E	E	E	G	E
fruit juices		G	E	E	E	E	E	methyl alcohol	G	G	G	G	G	E	
fuel oil		G	E	E	E	G	E	methyl chloride	G	E	G	E	E	G	G
furfural	G	F	G	E	E	G	E	methyl ethyl ketone	E	E	E	E	E	E	
gallic acid	O	F	E	E	E	E	E	milk	O	E	E	E		G	E
gas-manufactured	G	G						mine waters(acid)		F	G	G	E	O	E
gas-natural	G	G	E	E	E			mineral oil			E				
gasoline(lead)	E	E	E	E	E	E		molasses, edible	F		E	E	E	G	E
gasoline(unlead)	E	E	E	E	E	E		molasses, crude	E	E	E	E	E	E	
gelatin			E	E	E			mustard	O	O	F	E		G	E
glucose		E	E	E				mercuric chloride					F		E
glue	E	G	G	G	G	G		naphtha	G	G	E	E	E	E	E
glycerin	F	G	E	E	E	E	E	naphthalene	E	G	G	G	G	G	E
heptane	O	O	O	O	E	G	E	nickel chloride	O		G	G	G	G	E
hydrochloric acid(air free)	O	O	O	O	O	F	G	nickel nitrate			G	G	G		G
hydrogen chloride								nickel sulfate	O		G	G	G	G	G
hydrochloric acid	O	O	O	O	O	O	E	nitric acid(10%)	O	O	E	E	E	O	G
hydrofluoric acid	O	O	O	O	O	G	G	nitric acid(30%)	O	O	E	E	E	O	G
hydrogen fluoride	O	O	O	F	F	E		nitric acid(100%)	O	O	E	E	E	O	G
hydrogen			E	E	E		E	nitrobenzene	G		G	G	E	G	
hydroxide	O	O	E	E	E	G		nitrous acid(10%)	O	O	G	G	G	O	
hydrogen peroxide	O		G	G	E	G	E	nitrous oxide	G		G	G	G	O	
hydrogen sulfite(dry)	G	F	E	E	E		G	oleic acid	F	G	G	E	E	G	G
hydrogen sulfide(wet)	F		E	E	E		E	oleum	G		G	G	G	G	G
hypo(sodium thiosulfate)	O	F	E	E	E	G		olive oil			E	E			
hypochlorites - sodium		O	F	E	E	G	E	oxalate	O	O			E	G	E
ink			G	E	E	G	G	oxalic acid	O	G	E	E	E	G	G
iodine(wet)		O	O	O	O	F	E	palmitic acid		G	G	G	G	G	
iodoform	G		O			F	E	palm oil			G	G			
isopropyl alcohol			G	G	G	G		paraffin	G	E	E	E	E	E	E
JP-4			E	E	E	E		paraformaldehyde	G	G	G	G	G	G	
JP-5 fuel			E	E	E	E		penicilin	O	O	O	G	O	E	
kerosene	G	E	E	E	E	G	E	pentane	G	E	E	E	G	G	G
ketchup	O	O	E	E	E	G	E	petrolatum			G	G	G		
lacquers(and solvents)	F	E		E		E		phenol	O	E	E	E	E	E	E

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CORROSION TABLES

CARBON STEEL AND BRONZE ARE SHOWN FOR COMPARISON PURPOSES

MEDIA	CARBON STEEL	BRONZE	AISI 304	AISI 316, 347, 321	ALLOY 20	HASTELLOY	MONEL-INCONEL	MEDIA	CARBON STEEL	BRONZE	AISI 304	AISI 316, 347, 321	ALLOY 20	HASTELLOY	MONEL-INCONEL
phosphoric acid(10%)	O		G	G	E	G	E	sodium phosphate	F	F	G	G	G		G
phosphoric acid(25%)	O		G	G	E	G	E	sodium silicate	G	G	G	G	G	G	
phthalic acid			G	G	G			sodium sulfate	G	G	G	E	E	E	E
picric acid	O		E	E	E	G	E	sodium sulfide	G	O	G	G	G		E
pine oil	G		E	E				sodium thiosulfate			E	E	E		
pineapple juice				E				soybean oil	F		E	E	E	E	
potassium bisulfite	O		G	G	G	O		stannic chloride	O	O	O	E	E	F	G
potassium bromide	O		E	E		G		stannous chloride	O	O	O	E	E	F	G
potassium carbonate	G	G	G	G	G	G		starch				G			
potassium chlorate	G		G	G	G			steam(212°F)	E	E	E	E	E	E	
potassium chloride	F	G	F	F	F	G	G	stearic acid		F	E	E	E	G	E
potassium cyanide	G	O	G	G	G	G	G	sugar liquids	O	O	E	E	E	E	E
potassium dichromate	F	O	G	G	G		E	sulfate - black liquor		F	G	G	G	G	E
potassium diphosphate				E				sulfate - green liquor			G	G	G	G	E
potassium ferricyanide	F	O	G	G	G	G	G	sulfate - white liquor			G	G	G	F	E
potassium ferrocyanide	F	G	G	G	G	G	G	sulfur dioxide(dry)	G	F	G	G	G	G	E
potassium hydroxide	F	G	G	G	G	E	E	sulfur trioxide(dry)	G	G	G	G	G	G	E
potassium iodide	F		G	G	G	G		sulfuric acid(20%)	O	G	O	O	E	E	E
potassium nitrate	E		G	G	G	G	G	sulfuric acid(50%)	O	G	O	O	E	E	E
potassium permanganate	G		G	G	G	E	E	sulfuric acid(100%)	F	E	O	G	E	O	G
potassium sulfate	G	G	G	G	G	G	G	sulfurous acid	O	F	F	O	E	O	
propane	G	E	G	G	G	G		tall oil				G			G
pyrogalllic acid	G		E	E	E	G	E	tannic acid	F	G	E	E	E	G	E
rosin emulsion	F	G	G	G	G	E		tartaric acid	O	E	E	E	E	G	
salad oil	F	G	G	G	G	G		tetraethyl lead				G	G		
salicylic acid	O	G	G	G	G	G	G	toluene	E	E	E	E	E	E	
sea water	O	F	E	E	E	E	G	tomato juice			F	E	E	G	E
silver nitrate	O	O	G	G	G	O	G	trichloroethylene	G	G	G	G	G	E	E
sodium acetate	F		G	G	G	F	G	tung oil				G			
sodium aluminate			G	G	G	G	G	turpentine	G	G	G	G	G	G	
sodium bicarbonate	F	G	G	G	E	G	G	titanium "E"							
sodium bisulfate(10%)	O	G	E	E	E	G	G	urea			G	G			
sodium bisulfite	O	G	E	E	E	G	G	varnish	O	O	E	E		G	E
sodium borate			G	G	G	G	G	vegetable oil, edible			E	E	E	G	E
sodium bromide(10%)	G		F	G	G	G	G	vegetable oil, non - edible			E	E	E	G	E
sodium carbonate	G	G	G	G	G		G	vinegar	O	E	E	E			
sodium chlorate		G	G	G	G		G	vitamins	O	O	O	G	O	E	
sodium chloride	F	G	G	G	G	G	G	water - distilled(aerated)	O	E	E	E	E	E	E
sodium chromate	G	F				G		water - fresh		F	E	E	E	E	E
sodium cyanide	G	O	G	G	G	G		water - sea	O	F	E	E	E	E	
sodium fluoride	O		F	G		E	F	whiskey	O		E	E		E	
sodium hydroxide	F	G	G	G	G	E	E	wine	O		E	E			
sodium hypochlorite	O	O	O	G	E	O	E	xylene(dry)	G		E	E			
sodium nitrate	G	G	G	G	G	G	G	zinc chloride	O	O	O	O	G	G	G
sodium perborate	G		G	G	G	G	G	zinc hydrosulfite	E		E	E	E	G	G
sodium peroxide	F	O	G	G	G	G	G	zinc sulfate	O	G	G	G	G	G	G

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