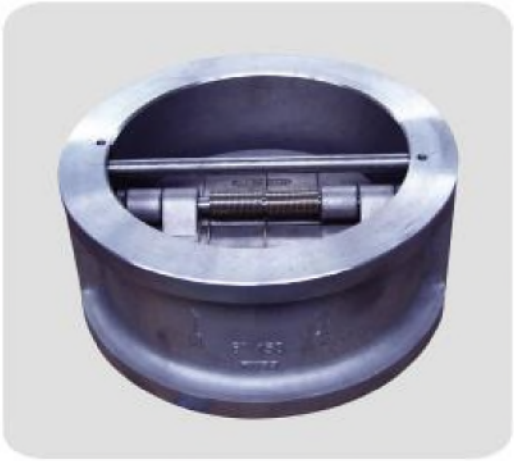
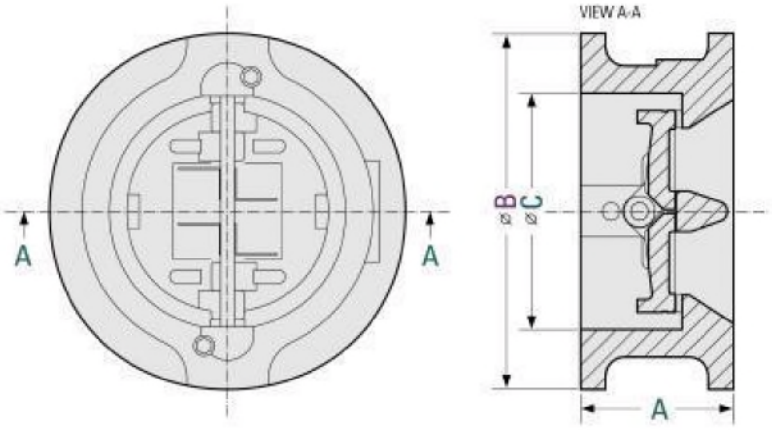
Dual Plate Check Valves

Inline Flow Specialty
Our Quality Defines Us





Dimension Data (Class 125-2500) | Stud Selection

SIZE in (mm)	ANSI Rating	End Facing	A in (mm)	B in (mm)	C in (mm)	Q'ty	Dia in (mm)	Length in (mm)	Weight kg
2(50)	125	FF	2.13(54)	4.09(104)	2.38(60)	4	0.63(16)	5.75(146)	2
	150	RF	2.38(60)	4.09(104)	2.38(60)	4	0.63(16)	6.00(152)	3.2
	300	RF/RJ-23	2.38(60)	4.38(111)	2.38(60)	8	0.63(16)	6.88(175)	3.2
	600	RF/RJ-23	2.38(60)	4.38(111)	2.38(60)	8	0.63(16)	6.88(175)	3.2
	900	RF/RJ-24	2.75(70)	5.63(143)	2.38(60)	8	0.88(22)	8.75(222)	8.2
	1500	RF/RJ-24	2.75(70)	5.63(143)	2.38(60)	8	0.88(22)	8.75(222)	8.2
	2500	RF/RJ-26	2.75(70)	5.75(146)	2.38(60)	8	1.00(25)	10.00(254)	29
2.5(65)	125	FF	2.13(54)	4.88(124)	2.95(75)	4	0.63(16)	6.00(152)	2.9
	150	RF	2.38(60)	4.88(124)	2.95(75)	4	0.63(16)	6.38(162)	5
3(80)	125	FF	2.24(57)	5.35(136)	3.74(95)	4	0.63(16)	6.25(159)	3.2
	150	RF	2.83(72)	5.38(137)	3.74(95)	8	0.63(16)	7.00(178)	5.9
	300	RF	2.83(72)	5.88(149)	3.74(95)	8	0.75(19)	8.13(207)	5.9
	600	RF	2.83(72)	5.88(149)	3.74(95)	8	0.75(19)	8.13(207)	5.9
	900	RF/RJ-31	3.27(83)	6.63(168)	3.74(95)	8	0.88(22)	9.50(241)	12
	1500	RF/RJ-35	3.27(83)	6.88(175)	3.74(95)	8	1.13(29)	10.50(267)	12.7
	2500	RF/RJ-32	3.39(86)	7.75(197)	3.74(95)	8	1.25(32)	12.25(311)	15.9
4(100)	125	FF	2.50(64)	6.38(162)	4.57(116)	8	0.63(16)	6.25(159)	5
	150	RF	2.84(72)	6.88(175)	4.57(116)	8	0.63(16)	7.00(178)	8.2
	300	RF	2.84(72)	7.13(181)	4.57(116)	8	0.75(19)	8.13(207)	8.2
	600	RF/RJ-37	3.11(79)	7.64(194)	4.57(116)	8	0.88(22)	9.50(241)	12.8
	900	RF/RJ-37	4.00(102)	8.11(206)	4.57(116)	8	1.13(29)	11.00(279)	19.1
	1500	RF/RJ-39	4.00(102)	8.27(210)	4.57(116)	8	1.25(32)	12.00(305)	20.5
	2500	RF/RJ-38	4.13(105)	9.25(235)	4.57(116)	8	1.50(38)	14.63(371)	29.1
5(125)	125	FF	3.23(70)	7.67(195)	5.71(145)	8	0.75(19)	6.8(172)	5.8
	150	RF	3.23(82)	7.67(195)	5.71(145)	8	0.75(19)	7.48(190)	6.7

Dual Plate Check Valves

Dimension Data (Class 125-2500) | Stud Selection

SIZE in (mm)	ANSI Rating	End Facing	A in (mm)	B in (mm)	C in (mm)	Q'ty	Dia in (mm)	Length in (mm)	Weight kg
6(150)	125	FF	3.03(77)	8.66(220)	6.61(168)	8	0.75(19)	8.25(210)	9.5
	150	RF	3.82(97)	8.75(222)	6.61(168)	8	0.75(19)	8.00(203)	12.3
	300	RF	3.82(97)	9.84(250)	6.61(168)	12	0.75(19)	9.63(245)	15.9
	600	RF/RJ-45	5.35(136)	10.50(267)	6.61(168)	12	1.00(25)	12.38(314)	20
	900	RF/RJ-45	6.25(159)	11.38(289)	6.61(168)	12	1.13(28)	14.00(355)	36.4
	1500	RF/RJ-46	6.25(159)	11.13(283)	6.61(168)	12	1.38(35)	16.75(425)	53
	2500	RF/RJ-47	6.25(159)	12.50(318)	6.61(168)	8	2.00(51)	20.50(520)	70
8(200)	125	FF	3.78(96)	10.90(277)	8.62(219)	8	0.75(19)	9.50(241)	22.8
	150	RF	4.92(125)	11.00(279)	8.62(219)	8	0.75(19)	9.75(248)	28.6
	300	RF	4.92(125)	12.13(308)	8.62(219)	12	0.88(22)	11.25(286)	34.5
	600	RF/RJ-49	6.50(165)	12.63(321)	8.62(219)	12	1.13(29)	14.50(368)	72.7
	900	RF/RJ-49	8.11(206)	14.13(359)	8.62(219)	12	1.37(35)	17.13(435)	123.2
	1500	RF/RJ-50	8.11(206)	13.88(353)	8.62(219)	12	1.63(41)	20.25(514)	116.8
	2500	RF/RJ-51	8.11(206)	15.25(387)	8.62(219)	12	2.00(51)	24.00(610)	133.2
10(250)	125	FF	4.25(108)	13.30(338)	10.75(273)	12	0.88(22)	10.50(267)	31.8
	150	RF	5.75(146)	13.38(340)	10.75(273)	12	0.87(22)	11.00(279)	48.2
	300	RF	5.75(146)	14.25(362)	10.75(273)	16	1.00(25)	12.75(324)	57.3
	600	RF/RJ-53	8.38(213)	15.75(400)	10.75(273)	16	1.25(32)	17.13(435)	118.2
	900	RF/RJ-53	9.50(241)	17.13(435)	10.75(273)	16	1.38(35)	19.00(483)	197.3
	1500	RF/RJ-54	9.75(248)	17.13(435)	10.75(273)	12	1.88(48)	23.50(597)	204.1
	2500	RF/RJ-55	10.00(254)	18.75(476)	10.75(273)	12	2.50(64)	30.50(775)	218.2
12(300)	125	FF	5.63(143)	16.02(407)	12.68(322)	12	0.88(22)	10.75(273)	50
	150	RF	7.13(181)	16.13(410)	12.68(322)	12	0.88(22)	12.25(311)	81.8
	300	RF	7.13(181)	16.63(422)	12.68(322)	16	1.13(29)	14.63(372)	90.9
	600	RF/RJ-57	9.00(229)	18.00(457)	12.68(322)	20	1.25(32)	18.00(457)	163.6
	900	RF/RJ-57	11.50(292)	19.60(498)	12.68(322)	20	1.38(35)	21.75(552)	292.7
	1500	RF/RJ-58	12.00(305)	20.50(521)	12.68(322)	16	2.00(51)	27.50(699)	374.5
	2500	RF/RJ-60	12.00(305)	21.63(549)	12.68(322)	12	2.75(70)	34.50(876)	395
14(350)	125	FF	7.25(184)	16.65(423)	13.70(348)	12	1.00(25)	13.00(330)	77.3
	150	RF	7.25(184)	17.75(451)	13.70(348)	12	1.00(25)	13.00(330)	122.7
	300	RF	8.75(222)	19.13(486)	13.70(348)	20	1.13(29)	16.50(419)	177.3
	600	RF/RJ-61	10.75(273)	19.37(492)	13.70(348)	20	1.38(35)	20.25(514)	186.4
	900	RF/RJ-62	14.00(356)	20.50(521)	13.70(348)	20	1.50(38)	25.50(648)	396.4
	1500	RF/RJ-63	14.00(356)	22.75(578)	13.70(348)	16	2.25(57)	31.50(800)	485.5
16(400)	125	FF	7.50(191)	20.11(511)	16.69(424)	16	1.00(25)	13.50(343)	102.3
	150	RF	7.50(191)	20.25(514)	16.69(424)	16	1.00(25)	13.50(343)	134.1
	300	RF	9.13(232)	21.25(540)	16.69(424)	20	1.25(32)	17.38(441)	208.2
	600	RF/RJ-65	12.00(305)	22.25(565)	16.69(424)	20	1.50(38)	22.25(565)	330.9
	900	RF/RJ-66	15.13(384)	22.63(575)	16.69(424)	20	1.63(38)	27.13(689)	533.6
	1500	RF/RJ-67	15.13(384)	25.25(641)	16.69(424)	16	2.50(64)	34.25(870)	588.6

Dual Plate Check Valves

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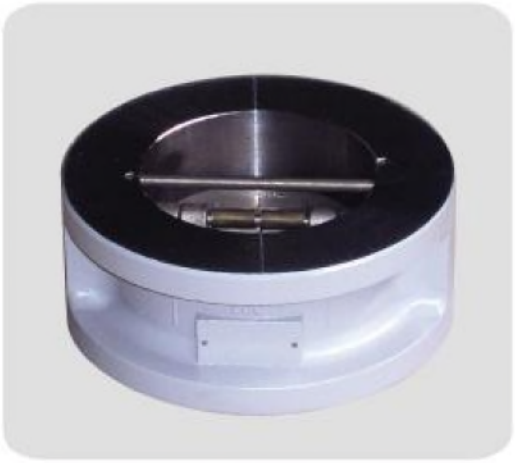

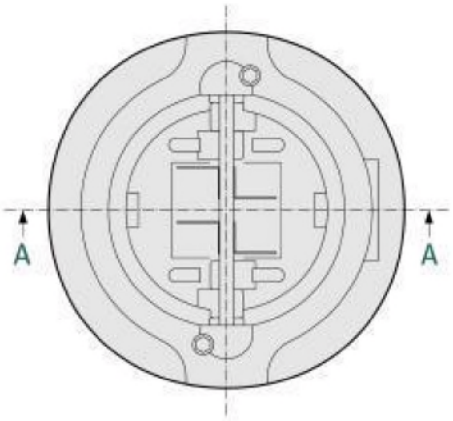

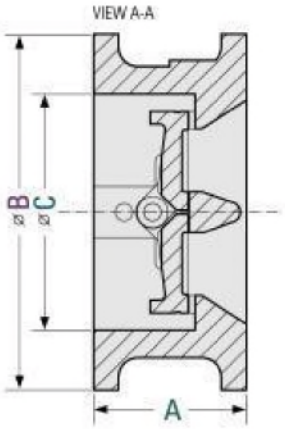

Dimension Data (Class 125-2500) | Stud Selection

SIZE in (mm)	ANSI Rating	End Facing	A in (mm)	B in (mm)	C in (mm)	Q'ty	Dia in (mm)	Length in (mm)	Weight kg
18(450)	125	FF	8.00(203)	21.61(549)	18.00(457)	16	1.13(29)	14.50(368)	127.3
	150	RF	8.00(203)	21.61(549)	18.00(457)	16	1.13(29)	14.50(368)	141.8
	300	RF	10.38(264)	23.50(597)	18.00(457)	24	1.25(32)	18.88(480)	295.5
	600	RF/RJ-69	14.25(362)	24.13(613)	18.00(457)	20	1.63(41)	25.25(641)	395.5
	900	RF/RJ-70	17.75(451)	25.13(638)	18.00(457)	20	1.88(48)	34.50(876)	610.9
	1500	RF/RJ-71	18.44(468)	27.75(705)	18.00(457)	16	2.75(70)	39.75(1010)	793.2
20(500)	125	FF	8.38(213)	23.86(606)	20.16(512)	20	1.13(29)	15.25(387)	177.3
	150	RF	8.38(213)	23.86(606)	20.16(512)	20	1.13(29)	15.13(384)	214.5
	300	RF	11.50(292)	25.51(648)	20.16(512)	24	125(32)	20.50(521)	364.1
	600	RF/RJ-73	14.50(368)	26.88(683)	20.16(512)	24	1.63(41)	26.25(667)	543.6
	900	RF/RJ-74	17.75(451)	27.50(699)	20.16(512)	20	2.00(51)	32.50(826)	639.1
	1500	RF/RJ-75	20.98(559)	29.76(902)	20.16(512)	16	3.00(76)	44.25(1124)	1278.2
24(600)	125	FF	8.75(222)	28.28(718)	23.75(603)	20	1.25(32)	16.25(413)	268.2
	150	RF	8.75(222)	28.25(718)	23.75(603)	20	1.25(32)	16.25(413)	358.2
	300	RF	12.50(318)	30.50(775)	23.75(603)	24	1.50(38)	22.75(578)	526.4
	600	RF/RJ-77	17.25(438)	31.13(791)	23.75(603)	24	1.88(48)	30.75(781)	819.1
	900	RF/RJ-78	19.50(495)	33.00(838)	23.75(603)	20	2.50(64)	38.00(965)	1233.2
	1500	RF/RJ-79	22.00(559)	35.50(902)	23.75(603)	16	3.50(89)	48.50(1232)	2712.7
26(650)	125	FF	11.26(286)	30.51(775)	24.78(629)	24	1.25(32)	20.39(518)	455
	150	RF	11.26(286)	30.51(775)	24.78(629)	24	1.25(32)	20.39(518)	455
	300	RF	14.01(356)	32.87(835)	24.78(629)	28	1.63(41)	24.75(628)	620
	600	RF/RJ-73	17.99(457)	34.13(867)	24.78(629)	28	1.87(47)	31.50(800)	978
	900	RF/RJ-100	20.98(533)	34.76(883)	24.78(629)	20	2.75(69)	38.75(984)	144.6

Dual Plate Check Valves

Dimension Data (Class 125-2500) | Stud Selection

SIZE in (mm)	ANSI Rating	End Facing	A in (mm)	B in (mm)	C in (mm)	Q'ty	Dia in (mm)	Length in (mm)	Weight kg
28(700)	125	FF	12.64(321)	32.76(832)	27.64(702)	28	1.25(32)	22.01(559)	511
	150	RF	12.64(321)	32.76(832)	27.64(702)	28	1.25(32)	22.01(559)	511
	300	RF	15.00(381)	35.39(899)	27.64(702)	28	1.62(41)	26.25(666)	769
	600	RF/RJ-94	19.00(483)	35.98(914)	27.64(702)	28	2.00(51)	33.00(838)	1073
	900	RF/RJ-101	22.52(572)	37.24(946)	27.64(702)	20	3.00(76)	41.00(1041)	1795
30(750)	125	FF	12.00(305)	34.84(885)	30.12(765)	28	1.25(32)	21.00(533)	536
	150	RF	12.00(305)	34.84(885)	30.12(765)	28	1.25(32)	21.00(533)	536
	300	RF	14.49(368)	37.52(953)	30.12(765)	28	1.75(44)	26.50(673)	835
	600	RF/RJ-95	19.88(505)	38.27(972)	30.12(765)	28	2.00(51)	34.13(867)	1269
	900	RF/RJ-102	25.00(635)	39.72(1009)	30.12(765)	20	3.00(76)	44.00(1117)	2217
32(800)	125	FF	14.01(356)	37.00(940)	30.87(784)	28	1.50(38)	24.63(626)	690
	150	RF	14.01(356)	37.00(940)	30.87(784)	28	1.50(38)	24.63(626)	690
	300	RF	15.98(406)	39.60(1006)	30.87(784)	28	1.88(48)	28.75(730)	1027
	600	RF/RJ-96	20.98(533)	40.23(1022)	30.87(784)	28	2.25(57)	36.00(914)	1418
	900	RF/RJ-105	25.98(660)	42.24(1073)	30.87(784)	28	3.25(83)	46.25(1175)	2620
36(900)	125	FF	14.50(368)	41.25(1048)	34.00(864)	32	1.50(38)	25.88(657)	840
	150	RF	14.50(368)	41.25(1048)	34.00(864)	32	1.50(38)	25.88(657)	840
	300	RF	19(483)	44(1118)	34.00(864)	32	2(51)	32.5(826)	1269
	600	RF	25(635)	44.5(1130)	34.00(864)	28	2.5(64)	45(1143)	2120
	900	RF	28.25(718)	47.25(1200)	34.00(864)	20	3.5(89)	50.75(1289)	3259
40(1000)	125	FF	15.98(406)	45.75(1162)	38.86(987)	36	1.50(38)	26.36(669)	1190
	150	RF	17.00(432)	45.75(1162)	38.86(987)	36	1.50(38)	27.38(695)	1190
	300	RF	21.5(546)	43.88(1114)	38.86(987)	32	1.625(41)	35(889)	1825
	600	RF	26(660)	45.5(1156)	38.86(987)	32	2.25(57)	44.25(1124)	3750
	900	RF	30(762)	49.25(1251)	38.86(987)	24	3.5(89)	53.75(1365)	3972
42(1050)	125	FF	17.00(432)	47.99(1219)	39.21(996)	36	1.50(38)	28.88(734)	1500
	150	RF	17.00(432)	47.99(1219)	39.21(996)	36	1.50(38)	28.88(734)	1500
	300	RF	22.28(568)	46(1262)	39.21(996)	32	1.63(41)	37(340)	2630
	600	RF	27.63(702)	48(1219)	39.21(996)	28	2.5(64)	47.13(1197)	3135
	900	RF	31(787)	51.25(1302)	39.21(996)	24	3.5(89)	59.25(1505)	3670
48(1200)	125	FF	20.63(524)	54.49(1384)	46.97(1193)	44	1.50(38)	33.38(848)	2200
	150	RF	20.63(524)	54.49(1384)	46.97(1193)	44	1.50(38)	33.38(848)	2200
	300	RF	24.75(629)	52.13(1324)	46.97(1193)	32	1.88(48)	40.5(1029)	3909
	600	RF	31(787)	54.75(1391)	46.97(1193)	32	2.75(70)	54(1372)	4416
54(1350)	125	FF	21.26(540)	60.86(1546)	47.95(1218)	44	1.75(44)	38.25(972)	2700
	150	RF	21.25(540)	60.86(1546)	47.95(1218)	44	1.75(44)	38.25(972)	2700
	300	RF	28.25(718)	58.75(1492)	47.95(1218)	28	2.25(57)	47.25(1200)	3878

Dual Plate Check Valves (2"-10")

Inline Flow Specialty
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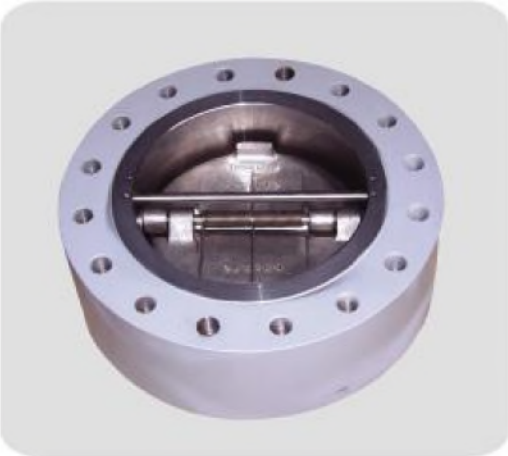

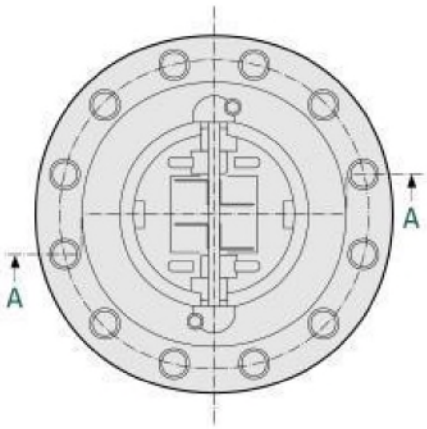

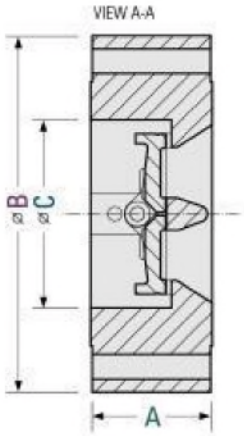

Dimension Data (Class 150-2500) | Stud Selection

SIZE in (mm)	ANSI Rating	End Facing	A in (mm)	B in (mm)	C in (mm)	Q'ty	Dia in (mm)	Length in (mm)	Weight kg
2(50)	150	RF	2.38(60)	5.98(152)	2.38(60)	4	0.63(16)	6.00(152)	7
	300	RF/RJ-23	2.38(60)	6.49(165)	2.38(60)	8	0.63(16)	6.88(175)	8
	600	RF/RJ-23	2.38(60)	6.49(165)	2.38(60)	8	0.63(16)	6.88(175)	8
	900	RF/RJ-24	2.75(70)	8.50(216)	2.38(60)	8	0.88(22)	8.75(222)	16
	1500	RF/RJ-24	2.75(70)	8.50(216)	2.38(60)	8	0.88(22)	8.75(222)	16
	2500	RF/RJ-26	2.75(70)	9.25(235)	2.38(60)	8	1.00(25)	10.00(254)	19
2.5(65)	150	RF	2.38(60)	7.00(178)	2.95(75)	4	0.63(16)	6.38(162)	12
3(80)	150	RF	2.83(72)	7.52(191)	3.74(95)	8	0.63(16)	7.00(178)	12
	300	RF	2.83(72)	8.26(210)	3.74(95)	8	0.75(19)	8.13(207)	14
	600	RF	2.83(72)	8.26(210)	3.74(95)	8	0.75(19)	8.13(207)	14
	900	RF/RJ-31	3.27(83)	9.48(241)	3.74(95)	8	0.88(22)	9.50(241)	25
	1500	RF/RJ-35	3.27(83)	10.51(267)	3.74(95)	8	1.13(29)	10.50(267)	29
	2500	RF/RJ-32	3.39(86)	12.00(305)	3.74(95)	8	1.25(32)	12.25(311)	38
4(100)	150	RF	2.84(72)	9.01(229)	4.57(116)	8	0.63(16)	7.00(178)	19
	300	RF	2.84(72)	10.00(254)	4.57(116)	8	0.75(19)	8.13(207)	23
	600	RF/RJ-37	3.11(79)	10.75(273)	4.57(116)	8	0.88(22)	9.50(241)	30
	900	RF/RJ-37	4.00(102)	11.49(292)	4.57(116)	8	1.13(29)	11.00(279)	45
	1500	RF/RJ-39	4.00(102)	12.24(311)	4.57(116)	8	1.25(32)	12.00(305)	51
	2500	RF/RJ-38	4.13(105)	14.01(356)	4.57(116)	8	1.50(38)	14.63(371)	69
5(125)	150	RF	3.23(82)	10.00(254)	5.71(145)	8	0.75(19)	7.48(190)	
6(150)	150	RF	3.82(97)	10.98(279)	6.61(168)	8	0.75(19)	8.00(203)	32
	300	RF	3.82(97)	12.52(318)	6.61(168)	12	0.75(19)	9.63(245)	45
	600	RF/RJ-45	5.35(136)	14.01(356)	6.61(168)	12	1.00(25)	12.38(314)	81
	900	RF/RJ-45	6.25(159)	15.00(381)	6.61(168)	12	1.13(28)	14.00(355)	115
	1500	RF/RJ-46	6.25(159)	15.51(394)	6.61(168)	12	1.38(35)	16.75(425)	119
	2500	RF/RJ-47	6.25(159)	19.01(483)	6.61(168)	8	2.00(51)	20.50(520)	184
8(200)	150	RF	4.92(125)	13.50(343)	8.62(219)	8	0.75(19)	9.75(248)	49
	300	RF	4.92(125)	15.00(381)	8.62(219)	12	0.88(22)	11.25(286)	78
	600	RF/RJ-49	6.50(165)	16.49(419)	8.62(219)	12	1.13(29)	14.50(368)	134
	900	RF/RJ-49	8.11(206)	18.50(470)	8.62(219)	12	1.37(35)	17.13(435)	217
	1500	RF/RJ-50	8.11(206)	19.01(483)	8.62(219)	12	1.63(41)	20.25(514)	283
	2500	RF/RJ-51	8.11(206)	21.73(552)	8.62(219)	12	2.00(51)	24.00(610)	283
10(250)	150	RF	5.75(146)	15.98(406)	10.75(273)	12	0.87(22)	11.00(279)	82
	300	RF	5.75(146)	17.52(445)	10.75(273)	16	1.00(25)	12.75(324)	115
	600	RF/RJ-53	8.38(213)	20.00(508)	10.75(273)	16	1.25(32)	17.13(435)	183
	900	RF/RJ-53	9.50(241)	21.49(546)	10.75(273)	16	1.38(35)	19.00(483)	330
	1500	RF/RJ-54	9.75(248)	22.99(584)	10.75(273)	12	1.88(48)	23.50(597)	361
	2500	RF/RJ-55	10.00(254)	26.49(673)	10.75(273)	12	2.50(64)	30.50(775)	489

Inline Flow Specialty
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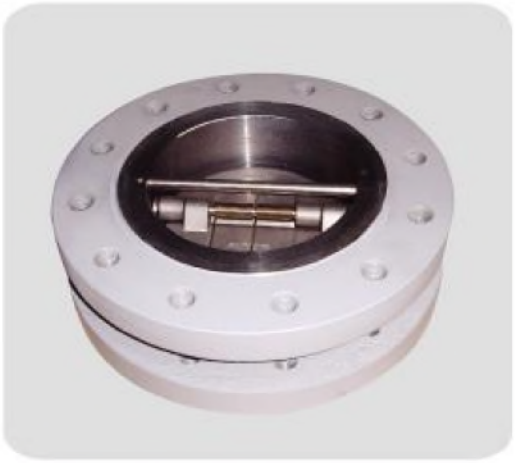
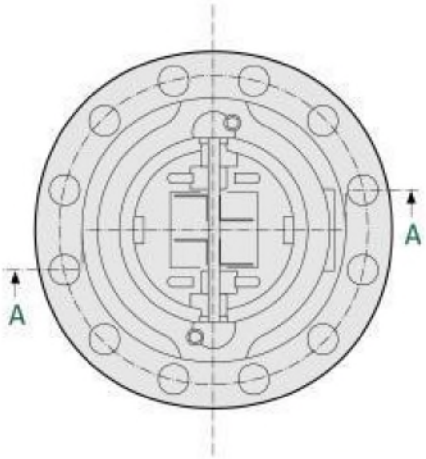
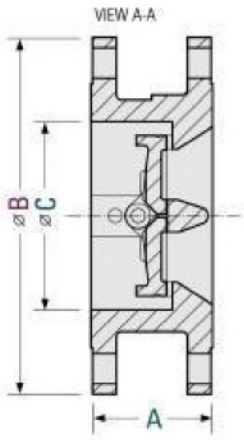
Dual Plate Check Valves (12"-larger)







Dimension Data (Class 150-2500) | Stud Selection

SIZE in (mm)	ANSI Rating	End Facing	A in (mm)	B in (mm)	C in (mm)	Q'ty	Dia in (mm)	Length in (mm)	Weight kg
12(300)	150	RF	7.13(181)	19.01(483)	12.68(322)	12	0.88(22)	5.5(140)	125
	300	RF	7.13(181)	20.51(521)	12.68(322)	16	1.13(29)	7.5(191)	153
	600	RF/RJ-57	9.00(229)	22.00(559)	12.68(322)	20	1.25(32)	9(229)	239
	900	RF/RJ-57	11.50(292)	24.01(610)	12.68(322)	20	1.38(35)	10.25(260)	347
	1500	RF/RJ-58	12.00(305)	26.49(673)	12.68(322)	16	2.00(51)	23.5(600)	637
	2500	RF/RJ-60	12.00(305)	30.00(762)	12.68(322)	12	2.75(70)	34.5(876)	747
14(350)	150	RF	7.25(184)	20.98(533)	13.70(348)	12	1.00(25)	6(152)	144
	300	RF	8.75(222)	22.99(584)	13.70(348)	20	1.13(29)	7.75(197)	207
	600	RF/RJ-61	10.75(273)	23.74(603)	13.70(348)	20	1.38(35)	9.5(241)	378
	900	RF/RJ-62	14.00(356)	25.23(641)	13.70(348)	20	1.50(38)	11.25(286)	560
	1500	RF/RJ-63	14.00(356)	29.48(749)	13.70(348)	16	2.25(57)	31.5(800)	1097
16(400)	150	RF	7.50(191)	23.50(597)	16.69(424)	16	1.00(25)	6(152)	176
	300	RF	9.13(232)	25.51(648)	16.69(424)	20	1.25(32)	8.25(210)	301
	600	RF/RJ-65	12.00(305)	27.00(686)	16.69(424)	20	1.50(38)	10.25(260)	451
	900	RF/RJ-66	15.13(384)	27.75(705)	16.69(424)	20	1.63(38)	11.75(298)	547
	1500	RF/RJ-67	15.13(384)	32.52(826)	16.69(424	16	2.50(64)	34.25(870)	1152
18(450)	150	RF	8.00(203)	25.00(635)	18.00(457)	16	1.13(29)	6.5(165)	210
	300	RF	10.38(264)	27.99(711)	18.00(457)	24	1.25(32)	8.5(216)	392
	600	RF/RJ-69	14.25(362)	29.25(743)	18.00(457)	20	1.63(41)	11(279)	598
	900	RF/RJ-70	17.75(451)	30.98(787)	18.00(457)	20	1.88(48)	13.5(343)	835
	1500	RF/RJ-71	18.44(468)	35.98(914)	18.00(457)	16	2.75(70)	39.75(1010)	1775
20(500)	150	RF	8.38(213)	27.52(699)	20.16(512)	20	1.13(29)	7(178)	270
	300	RF	11.50(292)	30.51(775)	20.16(512)	24	125(32)	9(229)	489
	600	RF/RJ-73	14.50(368)	32.00(813)	20.16(512)	24	1.63(41)	11.75(298)	762
	900	RF/RJ-74	17.75(451)	33.74(857)	20.16(512)	20	2.00(51)	14.5(368)	1783
	1500	RF/RJ-75	20.98(533)	38.74(984)	20.16(512)	16	3.00(76)	44.25(1124)	2675
24(600)	150	RF	8.75(222)	32.00(813)	23.75(603)	20	1.25(32)	7.5(191)	520
	300	RF	12.50(318)	35.98(914)	23.75(603)	24	1.50(38)	10.25(260)	756
	600	RF/RJ-77	17.25(438)	37.00(940)	23.75(603)	24	1.88(48)	13.5(343)	1143
	900	RF/RJ-78	19.50(495)	40.98(1041)	23.75(603)	20	2.50(64)	18.25(464)	1888
	1500	RF/RJ-79	22.00(559)	45.98(1168)	23.75(603)	16	3.50(89)	48.5(1232)	3280

Dual Plate Check Valves (12"-larger)

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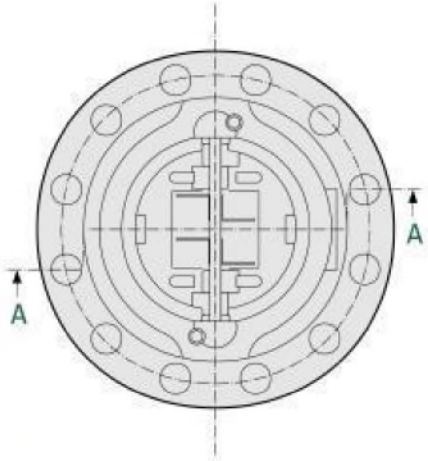
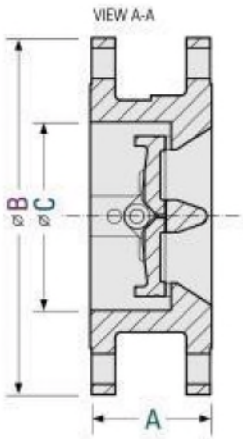
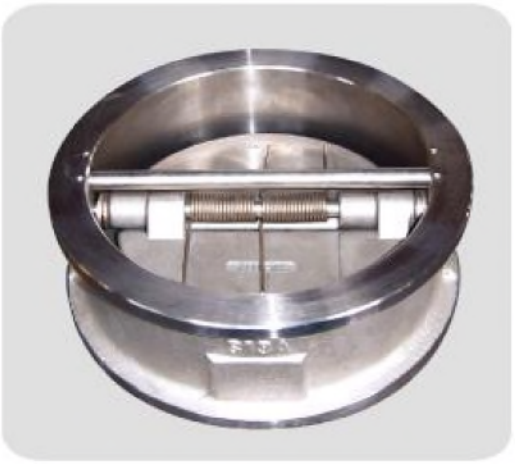
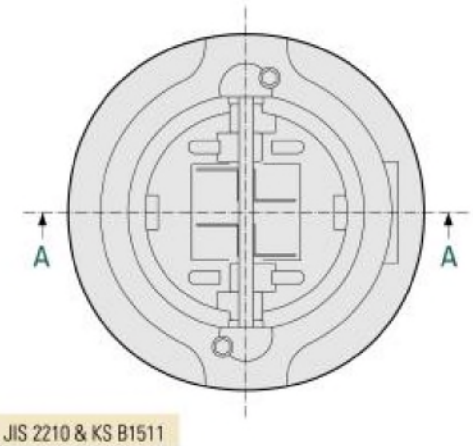


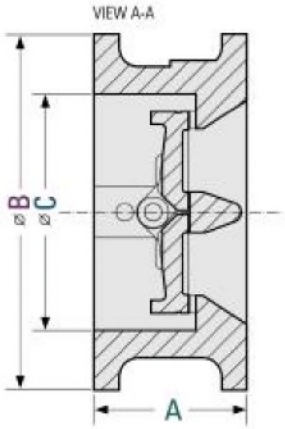


Dimension Data (Class 150-2500) | Stud Selection

SIZE in (mm)	ANSI Rating	End Facing	A in (mm)	B in (mm)	C in (mm)	Q'ty	Dia in (mm)	Length in (mm)	Weight kg
26(650)	150	RF	11.26(286)	34.25(870)	24.78(629)	24	1.25(32)	9(229)	1007
	300	RF	14.01(356)	38.25(972)	24.78(629)	28	1.63(41)	11(279)	1238
	600	RF/RJ-73	17.99(457)	40(1016)	24.78(629)	28	1.87(47)	14.63(372)	1418
	900	RF/RJ-100	20.98(533)	42.75(1086)	24.78(629)	20	2.75(69)	19.13(486)	1991
28(700)	150	RF	12.64(321)	36.5(927)	27.64(702)	28	1.25(32)	9.25(235)	1025
	300	RF	15.00(381)	40.75(1035)	27.64(702)	28	1.62(41)	11.5(292)	1120
	600	RF/RJ-94	19.00(483)	42.25(1073)	27.64(702)	28	2.00(51)	15.38(391)	1467
	900	RF/RJ-101	22.52(572)	46(1168)	27.64(702)	20	3.00(76)	20.5(521)	2426
30(750)	150	RF	12.00(305)	38.75(984)	30.12(765)	28	1.25(32)	9.5(241)	793
	300	RF	14.49(368)	43(1092)	30.12(765)	28	1.75(44)	12(305)	1603
	600	RF/RJ-95	19.88(505)	44.5(1130)	30.12(765)	28	2.00(51)	16(406)	2445
	900	RF/RJ-102	25.00(635)	48.5(1232)	30.12(765)	20	3.00(76)	21.38(543)	3080
32(800)	150	RF	14.01(356)	41.75(1060)	30.87(784)	28	1.50(38)	10.5(268)	844
	300	RF	15.98(406)	45.25(1149)	30.87(784)	28	1.88(48)	12.63(321)	1331
	600	RF/RJ-96	20.98(533)	47(1194)	30.87(784)	28	2.25(57)	17.13(435)	1747
	900	RF/RJ-105	25.98(660)	51.75(1314)	30.87(784)	28	3.25(83)	22.75(578)	2620
36(900)	150	RF	14.50(368)	46(1168)	34.00(864)	32	1.50(38)	11.25(286)	1060
	300	RF	19(483)	50(1270)	34.00(864)	32	2(51)	13.75(349)	2137
	600	RF/RJ-98	25(635)	51.75(1314)	34.00(864)	28	2.5(64)	18.75(476)	4735
	900	RF/RJ-105	28.25(718)	57.5(1461)	34.00(864)	20	3.5(89)	24.88(632)	6120
40(1000)	150	RF	17.00(432)	50.75(1289)	38.86(987)	36	1.50(38)	11.25(286)	1423
	300	RF	21.5(546)	48.75(1238)	38.86(987)	32	1.625(41)	13.25(337)	3073
	600	RF	26(660)	52(1321)	38.86(987)	32	2.25(57)	18.25(464)	6314
	900	RF	30(762)	59.5(1511)	38.86(987)	24	3.5(89)	25.63(651)	6688
42(1050)	150	RF	17.00(432)	53(1346)	39.21(996)	36	1.50(38)	11.63(295)	1651
	300	RF	22.28(568)	50.75(1289)	39.21(996)	32	1.63(41)	13.63(346)	4429
	600	RF	27.63(702)	55.25(1403)	39.21(996)	28	2.5(64)	19.5(495)	5278
	900	RF	31(787)	61.5(1562)	39.21(996)	24	3.5(89)	26.25(667)	6317
48(1200)	150	RF	20.63(524)	59.8(1511)	46.97(1193)	44	1.50(38)	12.5(318)	2524
	300	RF	24.75(629)	57.75(1467)	46.97(1193)	32	1.88(48)	15.25(387)	5010
	600	RF	31(787)	62.75(1594)	46.97(1193)	32	2.75(70)	22(559)	6029
54(1350)	150	RF	21.25(540)	66.25(1683)	47.95(1218)	44	1.75(44)	14(356)	3227
	300	RF	28.25(718)	65.25(1581)	47.95(1218)	28	2.25(57)	17.5(446)	4217







JIS 2210 & KS B1511

Dimension Data (JIS 10K-20K)

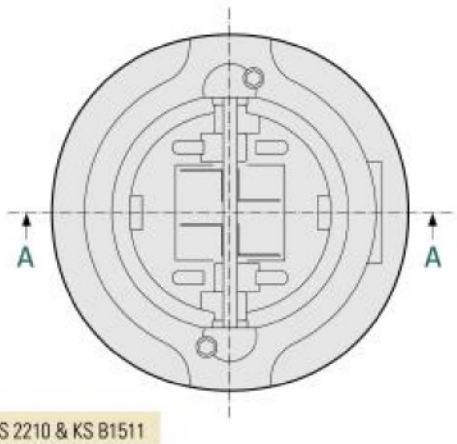
Stud Selection

SIZE in (mm)	Series	End Facing	A in (mm)	B in (mm)	C in (mm)	Q'ty	Dia in (mm)	Length in (mm)	Weight kg
2(50)	10K	RF	60	104	60	4	M16	150	2.3
	20K	RF	60	104	60	8	M16	150	2.4
2.5(65)	10K	RF	60	124	75	4	M16	160	3.2
	20K	RF	60	124	75	8	M16	160	3.9
3(80)	10K	RF	72	134	95	4	M16	168	4.1
	20K	RF	72	134	95	8	M20	180	4.3
4(100)	10K	RF	72	159	116	8	M16	165	6.1
	20K	RF	72	162	116	8	M20	185	8.2
5(125)	10K	RF	82	190	145	8	M20	190	9.1
	20K	RF	82	200	145	8	M22	200	12.1
6(150)	10K	RF	97	220	168	8	M20	205	13
	20K	RF	97	238	168	12	M22	215	13.3
8(200)	10K	RF	125	270	219	12	M20	235	22
	20K	RF	125	282	219	12	M22	250	29.2
10(250)	10K	RF	146	333	273	12	M22	265	43
	20K	RF	146	356	273	12	M24	275	44
12(300)	10K	RF	181	378	322	16	M22	300	67
	20K	RF	181	406	322	16	M24	315	70
14(350)	10K	RF	184	423	348	16	M22	305	81
	20K	RF	222	447	348	16	M30	375	83
16(400)	10K	RF	191	486	424	16	M24	320	104
	20K	RF	232	510	424	16	M30	395	135
18(450)	10K	RF	203	539	457	20	M24	335	132
	20K	RF	264	575	457	20	M30	435	183
20(500)	10K	RF	213	596	512	20	M24	350	170
	20K	RF	292	630	512	20	M30	465	246
24(600)	10K	RF	222	697	603	24	M30	370	230
	20K	RF	318	734	603	24	M36	510	423
28(700)	10K	RF	321	807	702	24	M30	460	510
	20K	RF	381	852	702	24	M45	625	576
30(750)	10K	RF	305	867	765	24	M30	465	536
	20K	RF	368	914	765	24	M52	634	718
32(800)	10K	RF	356	917	784	28	M30	515	690
	20K	RF	406	974	784	24	M52	680	900
36(900)	10K	RF	368	1017	864	28	M30	530	840
	20K	RF	483	1084	864	28	M52	765	1300
40(1000)	10K	RF	432	1121	987	28	M36	585	1190
48(1200)	10K	RF	524	1341	1193	32	M36	710	2200
54(1350)	10K	RF	540	1495	1281	36	M42	800	2700

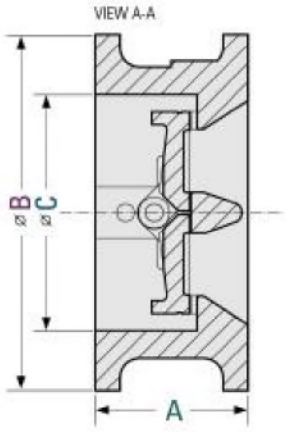
Dual Plate Check Valves

Cast Iron
Douctile Iron

Wafer Body (Type B) Dimension



JIS 2210 & KS B1511



Dimension Data (JIS 10K-20K)

Stud Selection

SIZE in (mm)	KS/JIS Rating	End Facing	A in (mm)	B in (mm)	C in (mm)	Q'ty	Dia in (mm)	Length in (mm)	Weight kg
2(50)	10K	RF/FF	54	104	60	4	0.625	145	2
2.5(65)	10K	RF/FF	54	124	75	4	0.625	155	2.9
3(80)	10K	RF/FF	57	134	95	4	0.625	153	3.2
4(100)	10K	RF/FF	64	159	116	8	0.625	157	5
5(125)	10K	RF/FF	70	190	145	8	0.75	178	6.7
6(150)	10K	RF/FF	77	220	168	8	0.75	185	9.5
8(200)	10K	RF/FF	96	270	219	8	0.75	205	16.6
10(250)	10K	RF/FF	108	333	273	12	0.875	228	28.3
12(300)	10K	RF/FF	143	378	322	12	0.875	264	46
14(350)	10K	RF/FF	184	423	348	12	1.00	305	72
16(400)	10K	RF/FF	191	486	424	16	1.00	320	96
18(450)	10K	RF/FF	203	539	457	26	1.125	335	132
20(500)	10K	RF/FF	213	596	512	20	1.125	350	170
24(600)	10K	RF/FF	222	697	603	20	1.125	370	230
28(700)	10K	RF/FF	321	807	702	28	1.25	560	511
30(750)	10K	RF/FF	305	867	765	28	1.25	465	536
32(800)	10K	RF/FF	356	917	784	28	1.50	515	690
36(900)	10K	RF/FF	368	1017	864	32	1.50	530	840
40(1000)	10K	RF/FF	406	1121	987	36	1.50	585	1190
48(1200)	10K	RF/FF	524	1314	1193	44	1.50	710	2200
54(1350)	10K	RF/FF	540	1495	1281	44	1.75	800	2700

DIN 2501

Dimension Data (DIN PN10-PN40) | Stud Selection

SIZE in (mm)	Pressure Rating	End Facing	A in (mm)	B in (mm)	C in (mm)	Q'ty	Dia in (mm)	Length in (mm)	Weight kg
2(50)	PN10		60.3	109	60	4	M16		3.2
	PN16		60.3	109	60	4	M16		3.2
	PN25		60.3	109	60	4	M16		3.2
	PN40		60.3	109	60	4	M16		3.2
3(80)	PN10		73.0	144	95	8	M16		7.7
	PN16		73.0	144	95	8	M16		7.7
	PN25		73.0	144	95	8	M16		7.7
	PN40		73.0	144	95	8	M16		7.7
4(100)	PN10		73.0	164	116	8	M16		9
	PN16		73.0	164	116	8	M16		9.5
	PN25		73.0	170	116	8	M20		10
	PN40		73.0	170	116	8	M20		10.5
6(150)	PN10		98.4	220	168	8	M20		15.5
	PN16		98.4	220	168	8	M20		16
	PN25		98.4	226	168	8	M24		19.4
	PN40		98.4	226	168	8	M24		20
8(200)	PN10		127.0	275	219	8	M20		35
	PN16		127.0	275	219	12	M20		36
	PN25		127.0	286	219	12	M24		38
	PN40		127.0	293	219	12	M27		40
10(250)	PN10		146.1	330	273	12	M20		51
	PN16		146.1	331	273	12	M24		52
	PN25		146.1	343	273	12	M27		54
	PN40		146.1	355	273	12	M30		56
12(300)	PN10		181.0	380	322	12	M20		94
	PN16		181.0	386	322	12	M24		97
	PN25		181.0	403	322	16	M27		98
	PN40		181.0	420	322	16	M30		99
14(350)	PN10		184.2	440	348	16	M20		122
	PN16		184.2	446	348	16	M24		123
	PN25		222.3	460	348	16	M30		174
	PN40		222.3	477	348	16	M33		176
16(400)	PN10		190.5	491	424	16	M24		131
	PN16		190.5	498	424	16	M27		133
	PN25		231.8	517	424	16	M33		204
	PN40		231.8	549	424	16	M36		207
18(450)	PN10		203.2	541	457	20	M24		141
	PN16		263.5	558	457	20	M27		284
	PN25								
	PN40		263.5	574	457	20	M36		294
20(500)	PN10		219.1	596	512	20	M24		215
	PN16		292.1	620	512	20	M30		354
	PN25		292.1	627	512	20	M33		359
	PN40		292.1	631	512	20	M39		363
24(600)	PN10		222.3	698	603	20	M27		358
	PN16		317.5	737	603	20	M33		518
	PN25		317.5	734	603	20	M36		516
	PN40		317.5	750	603	20	M45		521

Dual Plate Check Valves

VALVE TYPE

- SW WAFER
- SF FLANGED
- SL SOLID LUG

VALVE SIZE

- INCHES : For ANSI, AWWA & API Standars
- MILIMETERS : For KS, JIS Standars

BODY SEAT/PLATE OVERLAY MATERIAL

FIG	MATERIAL	OPERATING TEMP RANGE(℃)
P	Same as Body/Plate	-AS Body /Plate
E	410 Stainless Steel	-29 to 538
S	316 Stainless Steel	-267 to 815
F	316L Stainless Steel	-316L
U	Stellite No6	-267 to 815
J	Viton GLT	-30 to 204
V	Viton A	-40 to 204
N	Buna-N	-57 to 121
T	Neoprene	-40 to 121
K	Teflon	-129 to 232
D	EPDM	-10 to 110

ANSI/JIS,KS PRESSURE RATINGS

FIG	PRESSURE RATINGS
015	ANSI150
030	ANSI300
060	ANSI600
090	ANSI900
150	ANSI1500
K05	JIS,KS5K
K10	JIS,KS10K
K20	JIS,KS20K
K40	JIS,KS40K

SPRING MATERIAL

FIG	MATERIAL
S	316 Stainless Steel
Y	Inconel X750
I	Inconel 625
M	Monel K500
C	Carpenter 20
X	To Be Specified

END CONNECTION

FIG	CONNECTION
R	Raised Face 125-250 AARH
S	Stock Finish 250-500 AARH
J	Ring Type Joint
F	Flat Face
H	Clamped End
X	To Be Specified

SPECIAL FEATURES

FIG	MATERIAL
-	No Special Features
/	To be specified in order and inquiry text
S	Super Torque Spring
L	Low Torque Spring

FLANGE STADRARD

FIG	STANDARD
A	ANSI B16.47 Series B
D	AWWA C207 Class D
E	AWWA C207 Class E
J	JIS 2210, KSB 1511

High Performance Check Valves

The enterprise which advance on the world with technique of best

Upper Temperature Limits

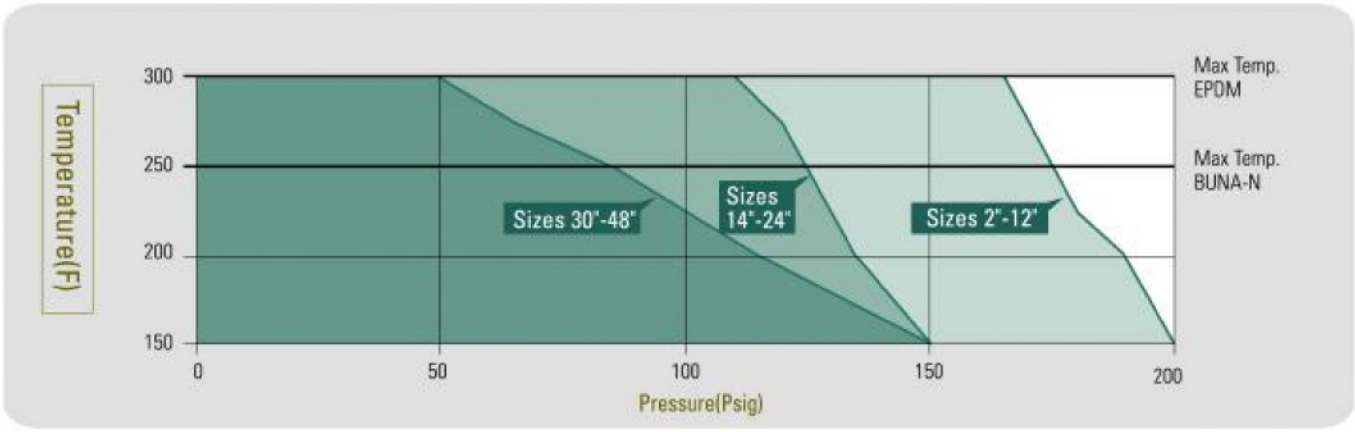
Spring Material	Upper Limit F(℃)
316 SS	250[121]
Inconel X750	1000[537]
Monel	400[204]
Hastelloy	800[426]
Alloy 20	250[121]

Seat Material	Upper Limit F(℃)
Buna-N[NBR]	250[121]
EPDM	300[149]
PTFE	450[232]
Metal Overlay	As Body
Metal to Metal	As Body

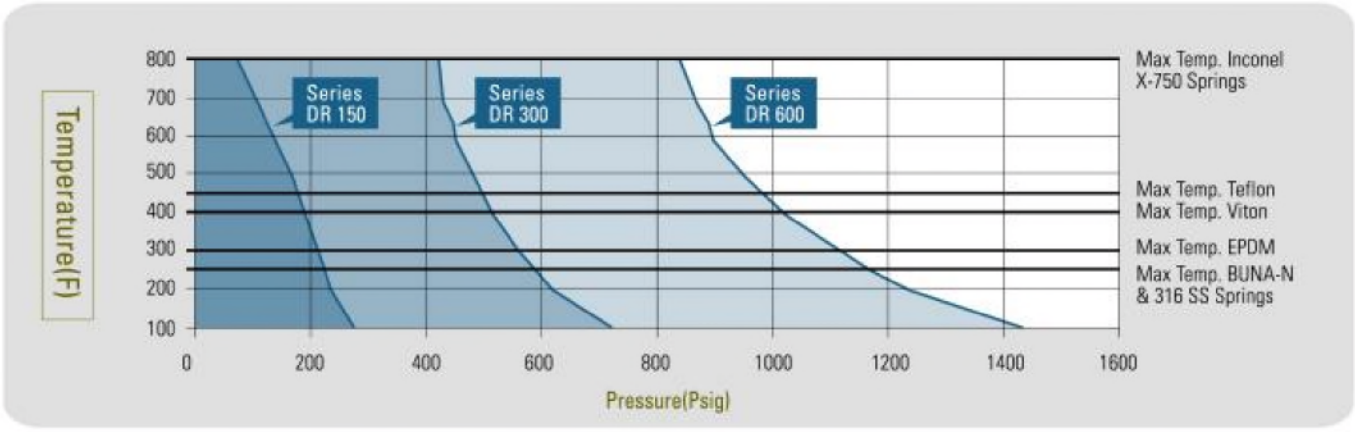
Lower Temperature Limits

Material	Lower Limit F(℃)
A126/ WCB	-20[-28.9]
LCC	-50[-45.6]
CF8M	-450[-268]
Buna-N[NBR]	-70[-56.7]
EPDM	-14[-11.4]
Viton	-40[-40]
PTFE	-200[-129]
Metal	As Body

Pressure Temperature Chart In Accordance with ASME B16.1,A126-B

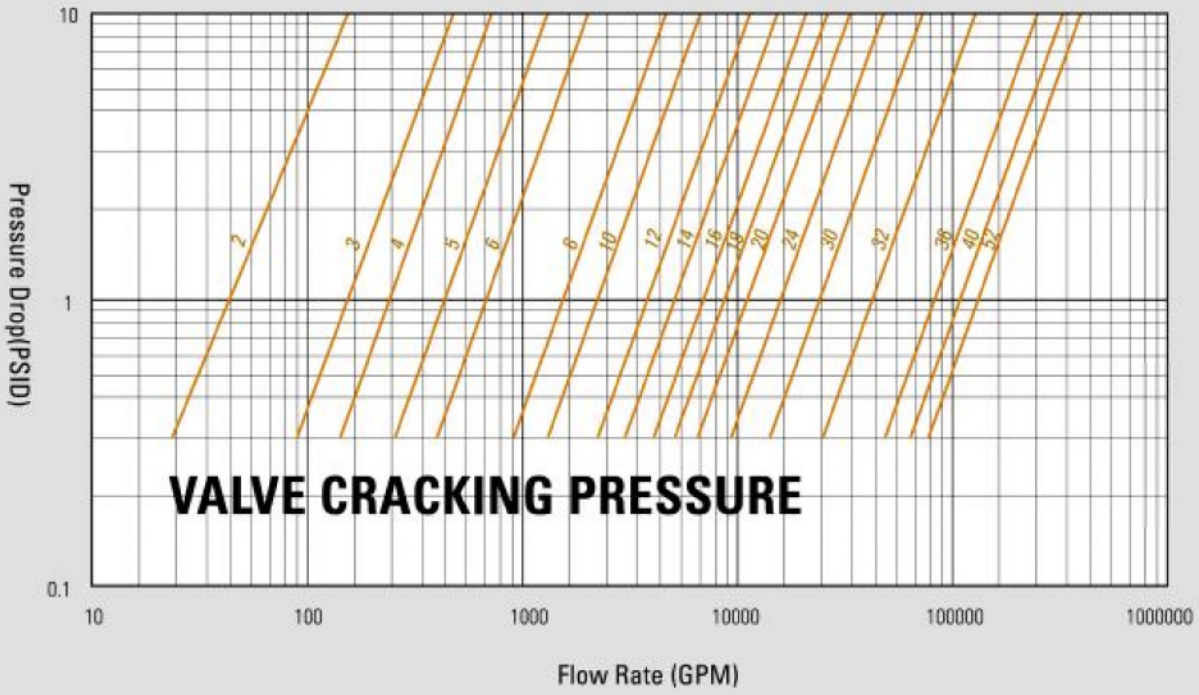


Pressure Temperature Chart In Accordance with ASME B16.34,CF8M



Note Upon prolonged exposure to temperatures above 800℉, the carbide phase of carbon steel may be converted to graphite.

Dual Plate Check Valve Pressure Drop-Air (Sizes 2"-52")



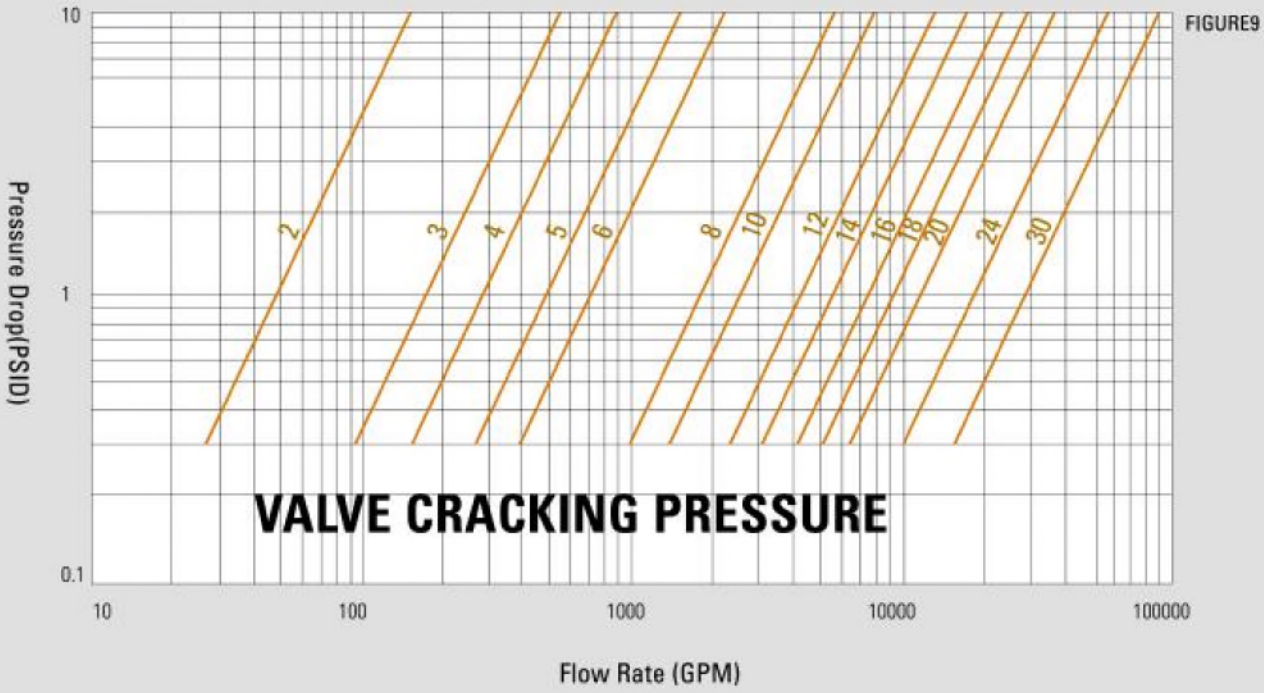
Note

1. Pressure drop curves are based on air flow at 60°F and I ATM pressure.
2. Valve cracking pressure is equal to or less then 0.3 psid.
3. Valve cracking pressure increases to between 0.75 and 1.25 psid when installed vertically with flow upwards.

Cv Values (US-GPM @ 1PSID)

Valve Size -in(mm)	Cv	Valve Size -in(mm)	Cv
2"(50)	48	20"(500)	12,004
3"(80)	181	24"(600)	17,804
4"(100)	291	26"(650)	30,000
5"(125)	494	28"(700)	33,600
6"(150)	705	30"(750)	38,400
8"(200)	1,795	32"(800)	48,000
10"(250)	2,563	36"(900)	55,200
12"(300)	4,259	40"(1000)	84,000
14"(350)	5,436	42"(1050)	96,000
16"(400)	7,355	48"(1200))	117,600
18"(450)	9,537	52"(1300)	141,300

Dual Plate Check Valve Pressure Drop-Liquids (Sizes 2"-30")



Note

1. Pressure drop curves are based on water flow.
2. Valve cracking pressure is equal to or less then 0.3 psid.
3. Valve cracking pressure increases to between 0.75 and 1.25 psid when installed vertically with flow upwards.

Method of Calculating Flow

Liquid Flow

$$C_V = Q\sqrt{\frac{G}{\Delta P}} \qquad Q = C_V\sqrt{\frac{\Delta P}{G}} \qquad \Delta P = G\left(\frac{Q}{C_V}\right)^2$$

Gas Flow

$$C_V = \frac{Q}{963}\sqrt{\frac{GT}{\Delta P\,(P_1 + P_2)}} \qquad Q = 963\,C_V\sqrt{\frac{\Delta P\,(P_1 + P_2)}{GT}}$$

Saturated Vapour

$$C_V = \frac{W}{K}\sqrt{\frac{1}{\Delta P\,(P_1 + P_2)}} \qquad W = C_V K\sqrt{\Delta P\,(P_1 + P_2)}$$

Superheated Vapour

$$C_V = \frac{W(1+0.0007T_{SH})}{K}\sqrt{\frac{1}{\Delta P\,(P_1 + P_2)}} \qquad C_V = \frac{C_V K}{(1+0.0007T_{SH})}\sqrt{\Delta P\,(P_1 + P_2)}$$

Variables

- C_V = Valve Coefficient
- ΔP = $(P_1 - P_2)$ Pressure Drop
- P_1 = Inlet Pressure (PSIA)
- P_2 = Outlet Pressure (PSIA)
- G = Specific Gravity
- Water = 1.0 at 60°F and I ATM
- Air = 1.0 at 60°F and I ATM
- Q = Flow
- Liquid = USGPM
- Gas = SCFH
- T = Absolute Temperature (°F + 460)
- K = Constant For Vapours
- T_{SH} = Superheat (°F) / Total Temperature Minus Saturation Temperature
- W = lbs. Per Hour (LB/H)

A-Recommended, B-May Be Acceptable (Testing Recommended), N-Not Recommended

CORROSIVE MEDIA	BODY / DISC MATERIALS			SEAT MATERIALS		
	AB	CS	316	EPDM	BUNA-N	VITON
Acetaldehyde	A	B	A	A	N	N
Acetone	A	A	A	B	N	N
Acetylene	N	A	A	A		A
Air	A	A	A	A	A	A
Aluminum Acetate	A	A	A	A	B	N
Aluminum Nitrate	N	N	A	A	A	A
Amino Acids	N		A	N	N	A
Ammonia Gas		A	A	B	70	N
Ammonium Bicarbonate		B	A	A	N	N
Ammonium Phosphate		N	A	A	A	A
Arsenic Acid	N	N	A	A	A	A
Beer-Breweries	N	N	A	A	A	A
Beet Sugar Liquors	A	N	A	A	A	A
Benzene	A	A	A	N	N	70
Brine	B	N	A	S	A	A
Bromire - Anhydrous	N	N	N	N	N	A
Bromire - Wet	N	N	N	N	N	A
Butane	A	A	A	N	A	A
Butanoic Acid			A			
Butyl Alcohol	A	A	A	B	A	A
Butylene (Gas)	A	A	A	N	N	A
Calcium Chlorate	N	A	A	A	A	A
Calcium Hydroxide	B	B	A	A	A	A
Carbonated Water	N	B	A	A	A	A
Carbon Monoxide	A	A	A	A	A	B
Carbonic Acid	N	B	A	A	A	A
Caster Oil	A	A	A	B	A	A
Chlorine (Wet or Dry)	N	70	N	N	N	A
Cider	A	N	A	A	B	A
Citric Acid	B	N	A	A	A	A
Citric Juices	B	N	A	A	A	A
Corn Oil	B	A	A	N	A	A
Diacetone Alcohol	A	A	A	A	N	N
Dibutyl Phthalate	A	A	A	B	N	N
Dichloroethane			A	N	N	A
Diesel Fuel		A	A	N	A	A
Diedfamine	A	A	A	N	B	A
Diphenyl Oxide	N	A	A	N	N	A
Dowthem	B	A	A	N	N	A
Ethanol	A	A	A	A	A	N
Ether	A	A	A	N	N	N
Ethyl Acetate	B	A	A	B	N	N
Ethyl Chloride	B	200	A	A	A	A
Ehylene Glycol	A	A	A	A	A	A
Ehylene Oxide	N	A	A	N	N	N
Fatty Acids	N	N	A	N	A	A
Ferrous Chloride	N	N	N	A	A	A
Fish Oils	B	B	A		A	
Gas-Natural	A	A	A	N	A	A
Gasoline-Ethyl	A	A	A	N	N	A
Gasoline-Regular	A	A	A	N	A	A
Glucose	A	A	A	A	A	A
Glycerine	A	A	A	A	A	A
Helium Gas	A	A	A	A	A	A
Hydraulic Fluid (Pydraul)	A	A	A	N	N	A
Hydrocarbons (Aromatic)	N	A	A	N	N	A
Hydrogen Penxide	N	N	A	A	N	A
Hydrogen Sulfide	N	B	A	A	70	N
Iodine	N	N	N	N	N	A
Isopropyl Acetate			B	B	N	N
Kerosene	A	A	A	N	A	A

CORROSIVE MEDIA	BODY / DISC MATERIALS			SEAT MATERIALS		
	AB	CS	316	EPDM	BUNA-N	VITON
Lactic Acid	N		A	70	70	A
Lime	A		A	A	B	A
Liquefied Petroleum Gas	A	A	A	N	A	A
Mercuric Chloride	B	N	B	A	A	A
Mercury	N	A	A	A	A	A
Methane	A	A	A	N	A	A
Methyl Acohol	A	A	A	A	B	N
Methyl Acetate		B	A	B	N	N
Methyl Chloride	A	A	A	N	N	A
Naphtha	A	A	A	N	N	A
Natural Gas	A	A	A	N	A	A
Nitrogen-Gas	A	A	A	A	A	A
Nitrous Oxide	B	B	A		B	
Oil-Crude (sweet)	A	A	A	N	A	A
Oil-Crude (sour)	A	A	A	N	B	A
Oil - Vegetable	B	N	A	B	A	A
Oleic Acid		B	A	N	N	B
Olive Oil	B	B	A	A	A	A
Oxalic Acid			A	A	B	A
Oxygen-Gas	A	A	A	A	B	A
Palm Oil		N	A		A	A
Paint-Thinner/Remover	A	A	A	N	N	A
Phenol	B	B	A	B	N	A
Plating Solutions	N	A	N	A	N	A
Potassium Acetate		N	A	A	B	N
Potassium Bisulfate			A			
Potassium Chlorate		N	A	A	B	A
Potassium Cyanide	A	A	A	A	A	A
Potassium Sulfide	N	A	A	B	N	A
Potassium Sulfate	A	A	A	A	A	A
Propylene Glycol		N	A	A	A	A
Propylene Oxide	N		A	A	B	
Pyridene	B	A	A	B	N	N
Shellac	B	A	A	A	A	
Silver Nitrate	N	N	A	A	N	A
Sodium Bicarbonate	A	A	A	A	A	A
Sodium Carbonate	N	B	A	A	A	A
Sodium Chlorate	N		A	A	B	A
Sodium Chloride	N	B	B	A	A	A
Sodium Nitrite	B	A	A	A	A	
Sodium Sulfate	A	B	A	A	A	A
Sodium Sulfide	B	A	A	A	A	A
Sodium Thiosulfate		B	A	A	B	A
Soybean Oil	B	B	A	N	A	A
Steam and Hot Water	A	B	A	A	N	
Sulfur	N	B	A	A	N	N
Sulfurit Acid	N	N	B	A	N	A
Sulfurous Acid	N	N	B	N	N	A
Tararic Arid		B	A	N	A	A
Terachloroethane	B	75	A	B	N	A
Turpentine	A	A	A	N	A	A
Varnish	A	A	A	N	N	A
Vinegar	N	N	A	N	B	A
Water, Carborated	N	B	A	A	A	A
Water, Chilled	A	B	A	A	A	A
Water, Distilled	N	B	A	A	A	A
Water, Salt, Sea	A	N	A	A	A	B
Wine	B	N	A	A	A	A
Zinc Bromide	N		A	A	A	
Zinc Cyanide	N	N	A		A	
Zinc Sulfate	N	N	A	A	A	A

Note

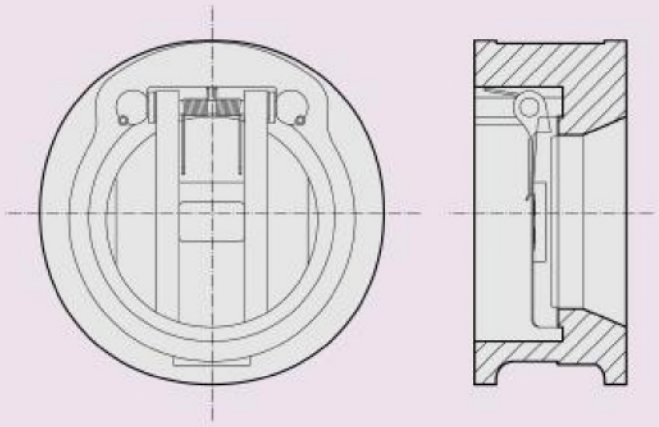
1. If # appears material is recommended for use up to indicated temperature (°F).
2. AB = Aluminum Bronze, CS = Carbon Steel,316 = 316 Stainless Steel.
3. If uncertain please contact factory concerning valve compatibility.

No representation, warranty or guarantee of compatibility, expressed or implied, is made by this Selection Guide due to the complexity and almost infinite variations of mixtures, concentrations, temperatures and flow conditions possible in actual service. As a result, the end user must assume all responsibility for ultimate determination of value compatiblility.

Wafer Type _ Code No. SWS

Performance Standard

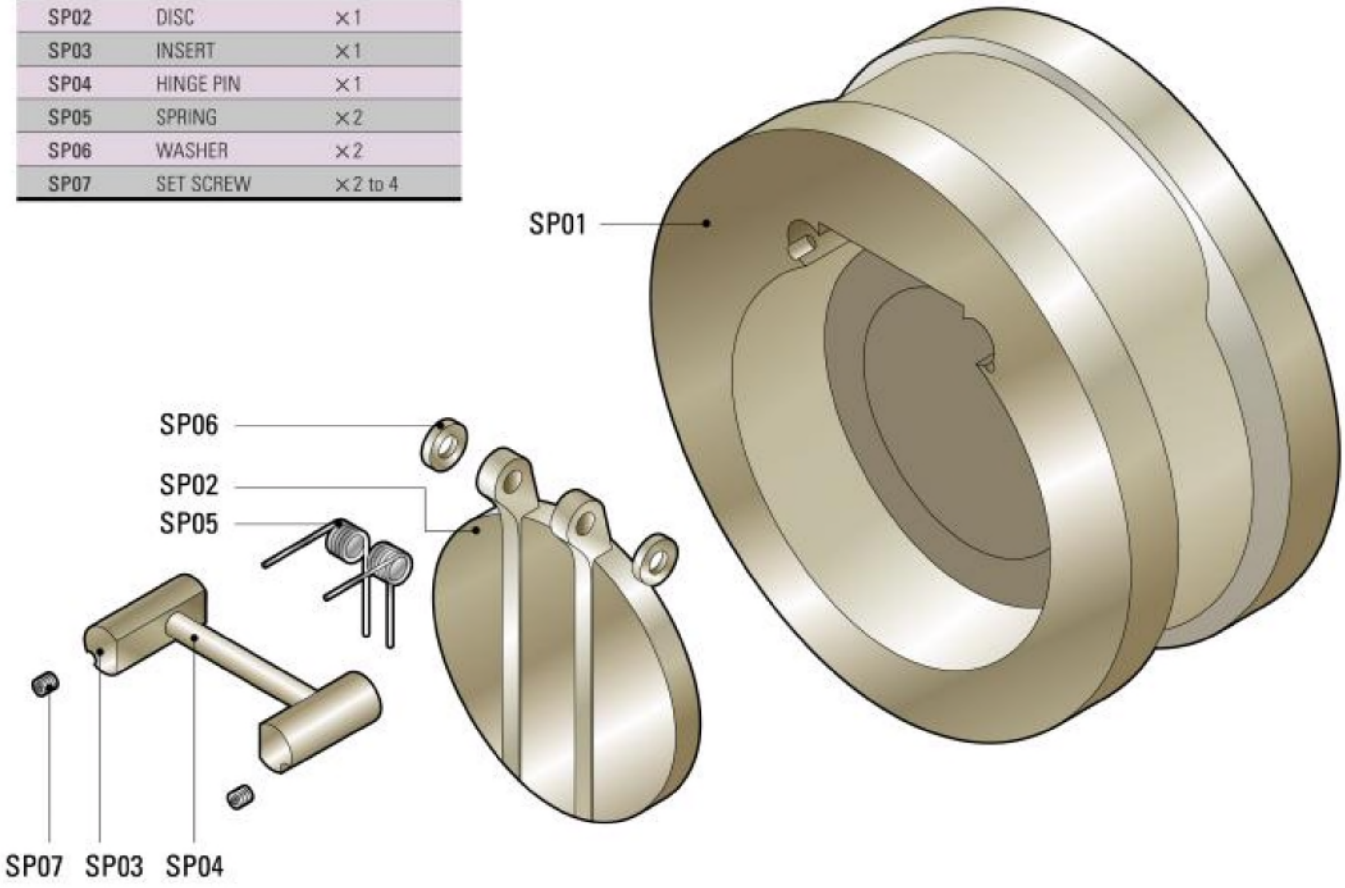
_ANSI B16.5[1.5" up to 24"]- Flange Dimension
_API 6A- Face to Face Dimension
_API 598-Testing, Allowable leakage rate
_ANSI B16.34- Wall Thickness



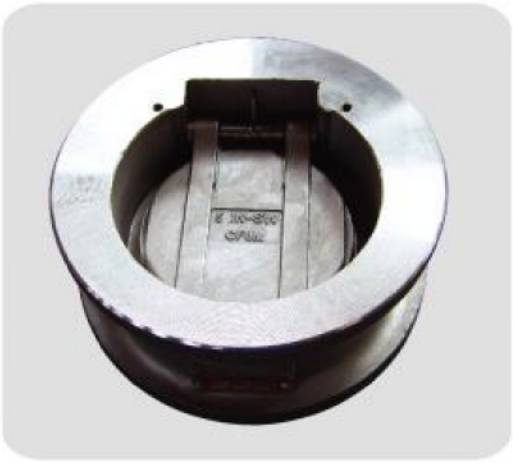
Retainerless Design

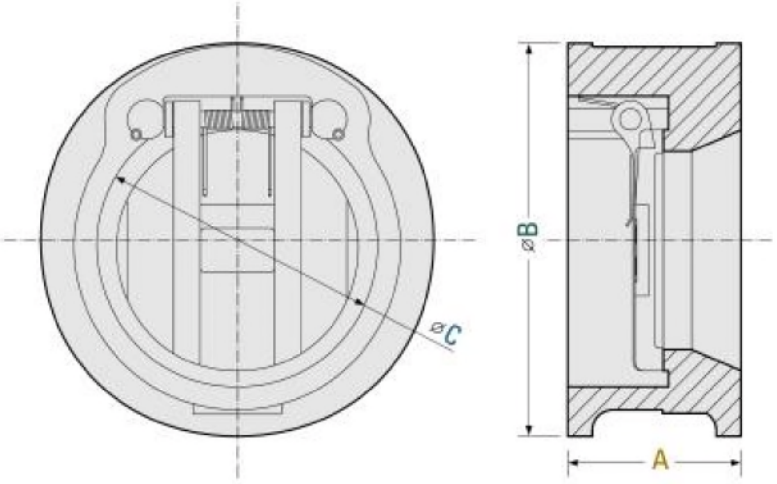
IFC unique Design doesn't have any holes bored through the body wall being different from many competitors. This unique design prohibits shell leakage originally and functions perfectly in large size of valves and high rating valve's application.

Valve's components		
SP01	BODY	×1
SP02	DISC	×1
SP03	INSERT	×1
SP04	HINGE PIN	×1
SP05	SPRING	×2
SP06	WASHER	×2
SP07	SET SCREW	×2 to 4



Single Plate Check Valve (Swing Check valve)

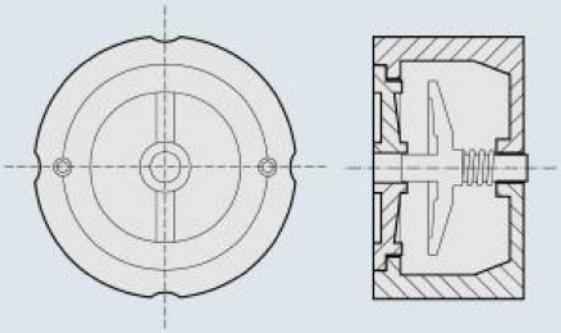




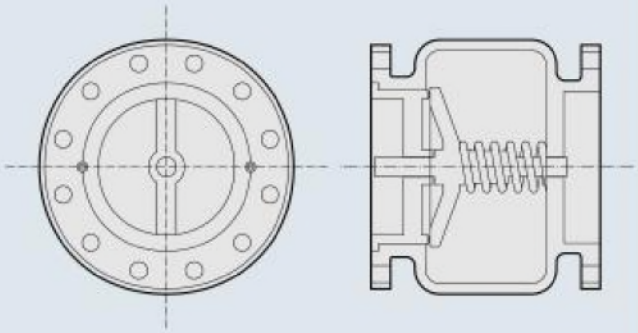
Dimension Data (ANSI Class 150-300) | Stud Selection

SIZE in (mm)	ANSI Rating	End Facing	A in (mm)	B in (mm)	C in (mm)	Q'ty	Dia in (mm)	Length in (mm)	Weight kg
2(50)	150	RF	60	104	57	4	16	152	2.3
	300	RF	60	111	57	4	16	152	3.2
3(80)	150	RF	72	137	82	8	16	178	4.1
	300	RF	72	149	82	8	19	207	5.9
4(100)	150	RF	72	175	110	8	16	178	8.6
	300	RF	72	181	110	8	16	178	12.8
6(150)	150	RF	97	222	158	8	19	203	13
	300	RF	97	250	158	12	19	245	16.2
8(200)	150	RF	125	279	180	8	19	248	23
	300	RF	125	308	180	12	22	286	32.1
10(250)	150	RF	146	340	241	12	22	279	43
	300	RF	146	362	241	16	25	324	24.3
12(300)	150	RF	181	410	314	12	22	311	71
	300	RF	181	422	314	16	29	372	80.9
14(350)	150	RF	184	451	336	12	25	330	81.6
	300	RF	222	486	336	20	29	419	102.7
16(400)	150	RF	191	514	390	16	25	343	104
	300	RF	232	540	390	20	32	441	187.9

Wafer Type _ SWSC-W



Flange Type _ SWSC-F

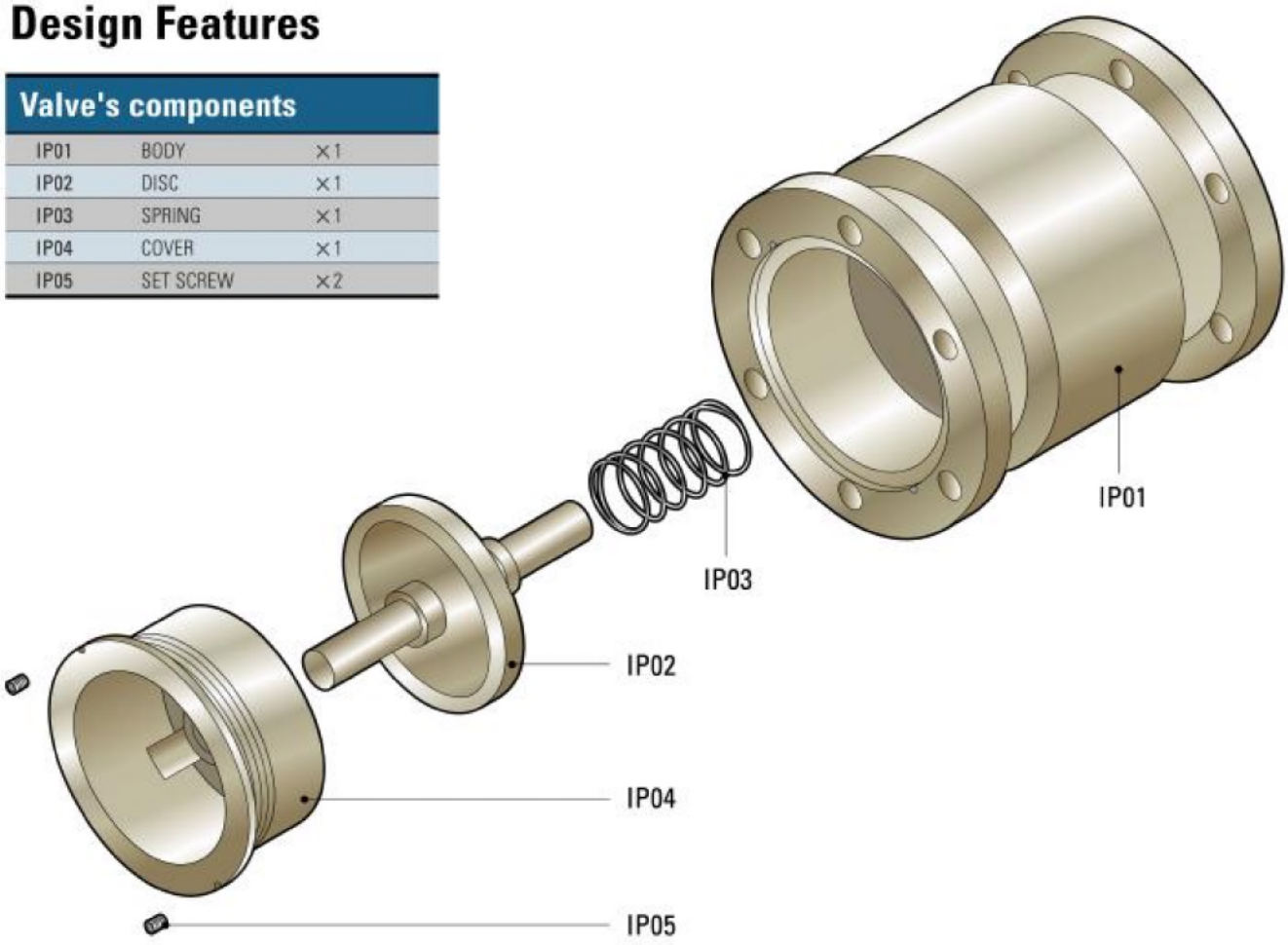


Performance Standard

_ANSI B16.5- Flange Dimension
_API 594- Material, Face to Face
_JIS 2210 & KS B1511 Flange Dimension
_ANSI B16.34- Wall Thickness

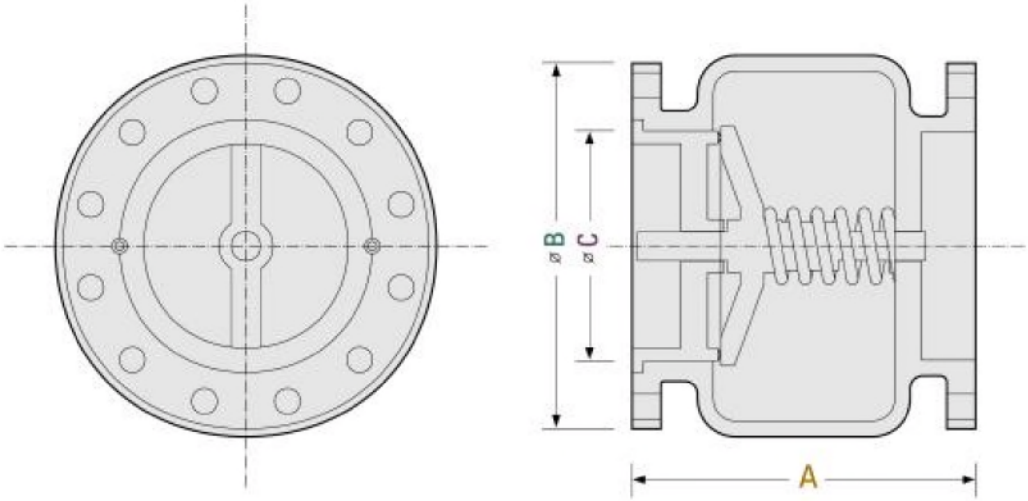
Design Features

Valve's components		
IP01	BODY	×1
IP02	DISC	×1
IP03	SPRING	×1
IP04	COVER	×1
IP05	SET SCREW	×2



Silent Flange Body Dimension

Silent Check Valve (Smlensky Check Valve)



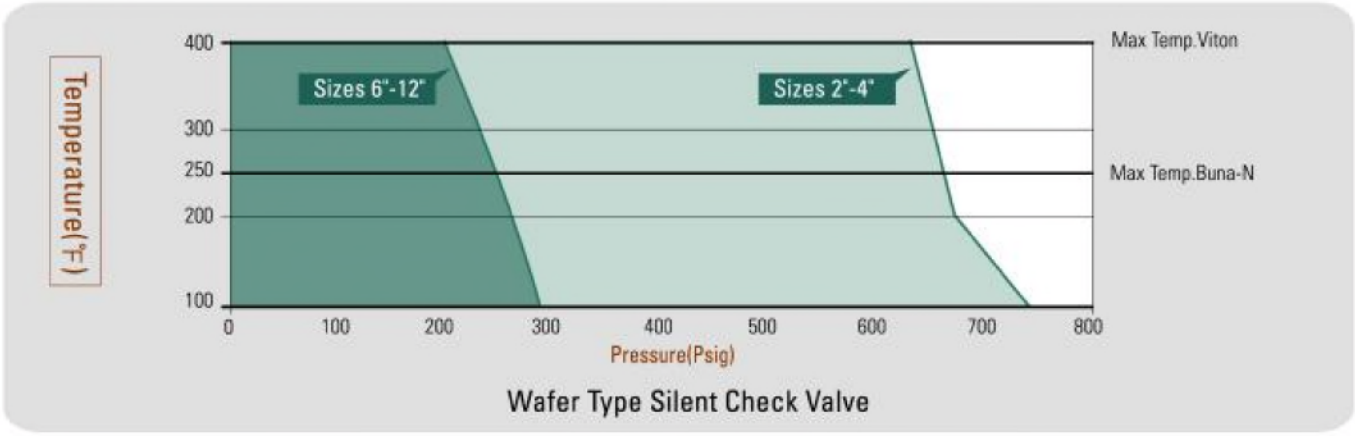
JIS 2210 & KS B1511

Dimension Data (JIS 10K, 20K)

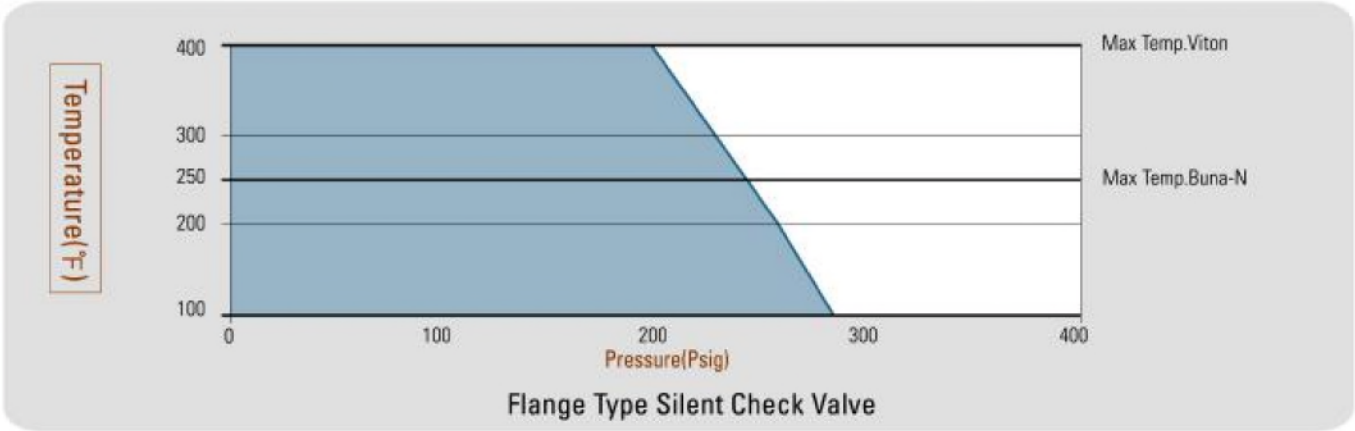
Stud Selection

SIZE in (mm)	ANSI Rating	End Facing	A in (mm)	B in (mm)	C in (mm)	Q'ty	Dia in (mm)	Length in (mm)	Weight kg
2(50)	10K	RF	159	155	51	4	M16	83	8
	20K	RF	159	155	51	8	M16	83	8
2.5(65)	10K	RF	178	175	64	4	M16	89	11
	20K	RF	178	175	64	8	M16	89	11
3(80)	10K	RF	191	185	76	4	M16	95	15
	20K	RF	191	200	76	8	M20	95	18
4(100)	10K	RF	216	210	102	8	M16	95	27
	20K	RF	216	225	102	8	M20	95	33
5(125)	10K	RF	241	250	127	8	M20	102	35
	20K	RF	241	270	127	8	M22	102	41
6(150)	10K	RF	267	280	152	8	M20	102	43
	20K	RF	267	305	152	12	M22	102	51
8(200)	10K	RF	310	330	203	12	M20	108	80
	20K	RF	310	350	203	12	M22	108	97
10(250)	10K	RF	413	400	254	12	M22	121	127
	20K	RF	413	430	254	12	M24	121	153
12(300)	10K	RF	514	445	305	16	M22	121	204
	20K	RF	514	480	305	16	M24	121	244
14(350)	10K	RF	578	490	337	16	M22	133	258
	20K	RF	578	540	337	16	M30	133	310
16(400)	10K	RF	629	560	400	16	M24	140	381
	20K	RF	629	605	400	16	M30	140	458

Pressure Temperature Chart (In Accordance with ASME B16.34)

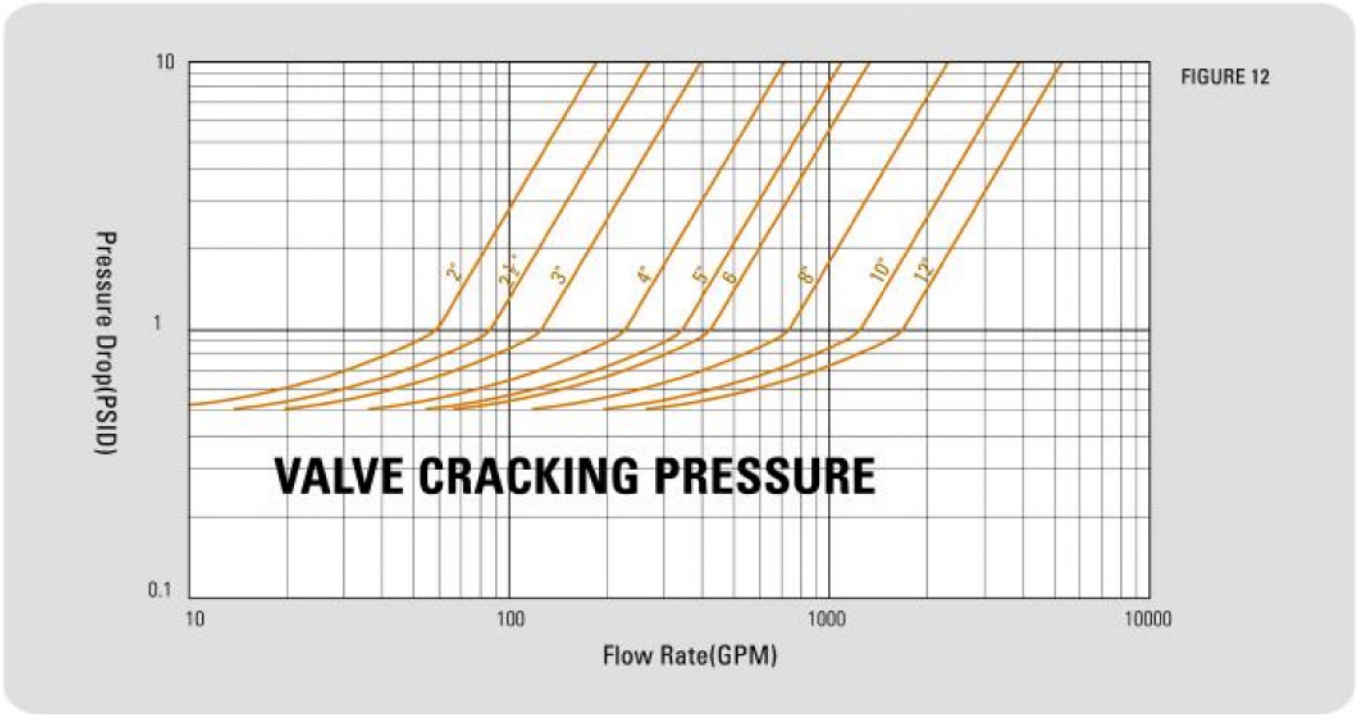


Wafer Type Silent Check Valve

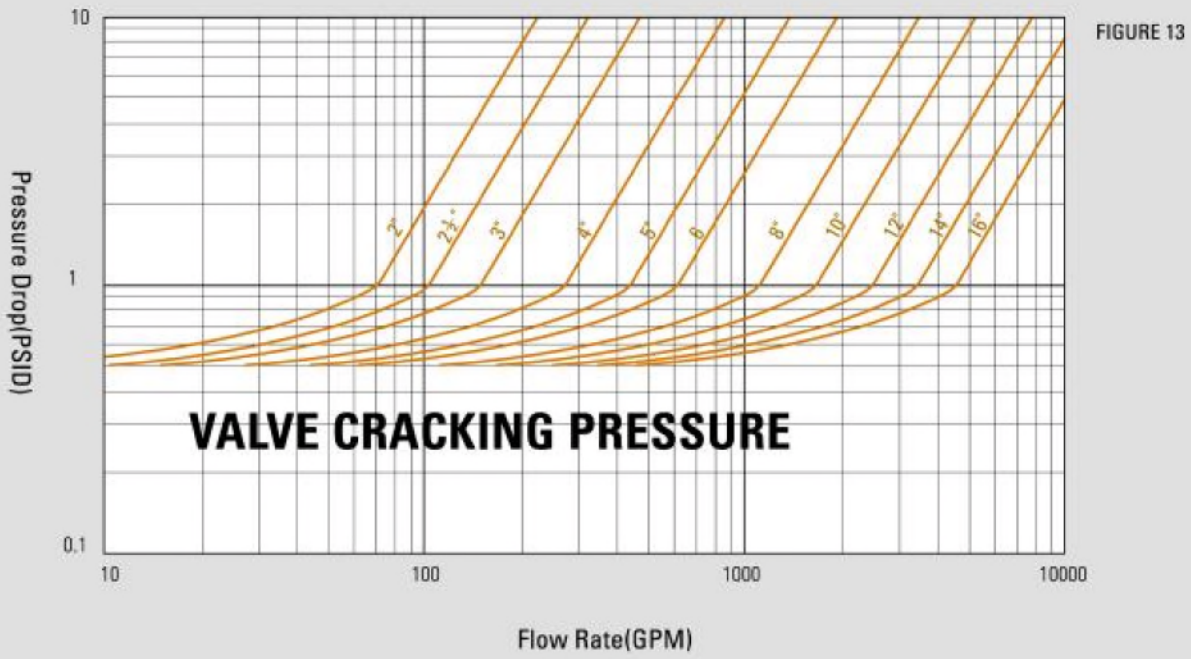


Flange Type Silent Check Valve

Wafer Silent Check Valve Pressure Drop-Liquids (Sizes 2"-12")



Flanged Silent Check Valve Pressure Drop-Liquids (Sizes 2"-16")



Note

1. Pressure drop curves are based on water flow.
2. Valve cracking pressure is equal to or less then 0.5 psid.
3. Valve cracking pressure increases to between 0.75 and 1.25 psid when installed vertically with flow upwards.

Method of Calculating Flow

Liquid Flow

$$C_V = Q\sqrt{\frac{G}{\Delta P}} \qquad Q = C_V\sqrt{\frac{\Delta P}{G}} \qquad \Delta P = G\left(\frac{Q}{C_V}\right)^2$$

Gas Flow

$$C_V = \frac{Q}{963}\sqrt{\frac{GT}{\Delta P\,(P_1 + P_2)}} \qquad Q = 963\,C_V\sqrt{\frac{\Delta P\,(P_1 + P_2)}{GT}}$$

Saturated Vapour

$$C_V = \frac{W}{K}\sqrt{\frac{1}{\Delta P\,(P_1 + P_2)}} \qquad W = C_V K\sqrt{\Delta P\,(P_1 + P_2)}$$

Superheated Vapour

$$C_V = \frac{W(1+0.0007T_{SH})}{K}\sqrt{\frac{1}{\Delta P\,(P_1 + P_2)}} \qquad C_V = \frac{C_V K}{(1+0.0007T_{SH})}\sqrt{\Delta P\,(P_1 + P_2)}$$

Variables

- C_V = Valve Coefficient
- ΔP = (P_1 -P_2) Pressure Drop
- P_1 = Inlet Pressure (PSIA)
- P_2 = Outlet Pressure (PSIA)
- G = Specific Gravity
- Water = 1.0 at 60°F and I ATM
- Air = 1.0 at 60°F and I ATM
- Q = Flow
- Liquid = USGPM
- Gas = SCFH
- T = Absolute Temperature (°F + 460)
- K = Constant For Vapours
- T_{SH} = Superheat (°F) / Total Temperature Minus Saturation Temperature
- W = lbs. Per Hour (LB/H)

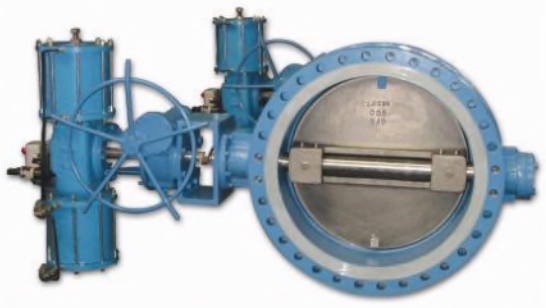
STANDARD ACTUATOR TYPE

MANUAL GEAR OPERATION

IFS valves adopt a worm gear operation served as a standard of Inline Valve Group (IVG). This type of valve has advantages of large output and easy operation due to high gear ratio, so that it is used extensively for quarter turn valves. The gear constructed by self-locking mechanism is suitable for triple offset valves which require torque seating. Clockwise turning of the handwheel makes the valve closed and counter clockwise turning makes the valve opened.

ELECTRIC MOTOR ACTUATOR OPERATION

This valve is operated by an electric signal coming from the electric motor to open, close, or stop the valve in the process of operation. The position limit switch or torque switch signals stop at full open or close. The electric motor actuator is applied mainly to large size or high pressure valves because of greater torque over pneumatic actuator.
This type has advantages of simple wiring and good response. In addition, a remote control is available, and therefore the valve can be applied to a dangerous or limited space where it is difficult to access.



PNEUMATIC ACTUATOR OPERATION

This type of valve is operated by a signal of air pressure, which is normally 2~9kgf/cm©˜ in control parts. There are two operating methods: single acting and double acting.
The single acting actuator is divided into full close and full open according to spring acting orientation. It is useful for control valve by virtue of its characteristics of safety and easy handling. Furthermore, the construction is more responsive than electric motor or hydraulic actuator. The double acting actuator is served as IFS standard with air regulator, solenoid valve, and position indicator types. However,
IFS is able to make whatever the customer need.

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SPECIFICATIONS – TRIPLE OFFSET METAL SEAT

DESIGN FEATURE

- Designed in accordance with ASME B16.34 or other customer requirements.
- Fire safe design.

STANDARD	OPTION
FACE TO FACE DIMENSIONS	
WAFER AND LUG TYPE	
API 609 Table 2./MSS-SP-68 Table 1 Class 150 & 300:3" ~ 24" Class 600:3" ~ 12"	ISO 5752 Table 5 Class 150 & 300:28" ~ 48" Class 600:14" ~ 24"
DOUBLE FLANGE	
ISO 5752 Table 4, BS 5155 Table 6 (short) Class 150 & 300:3" ~ 24" ISO 5752 Table 4, BS 5155 Table 6 (long) Class 600:3" ~ 12"	ISO 5752 Table 4, BS 5155 Table 6 (short) Class 150 & 300:28" ~ 80" ISO 5752 Table 4, BS 5155 Table 6 (long) Class 150 & 300:3" ~ 80" Class 600:14" ~ 24" ASME B16.10 Class 150 & 300:3" ~ 24" Class 600 :3" ~ 24"
BUTT WELDING	
	ISO 5752 Table 4, BS 5155 Table 6 (long) Class 150 & 300: 3" ~ 80" Class 600:3" ~ 24"
END FLANGE	
ASME B16.5 : Class 150, 300, 600 JIS B2210: 10K,16K,20K,30K,40K DIN,ISO PN10, PN16,PN20,PN25,PN40	ASME B16.47 series A: Class 150, 300 MSS-SP-44: Class 150, 300, 600 BS 3293: Class 150, 300
OPERATING	
MANUAL WORM GEAR	ELECTRIC, PNEUMATIC & HYDRAULIC ACTUATOR LOCK LEVER
MOUNTING FLANGE	
ISO 5211	
TESTING	
API 598	MSS-SP-61, ANSI B16.104

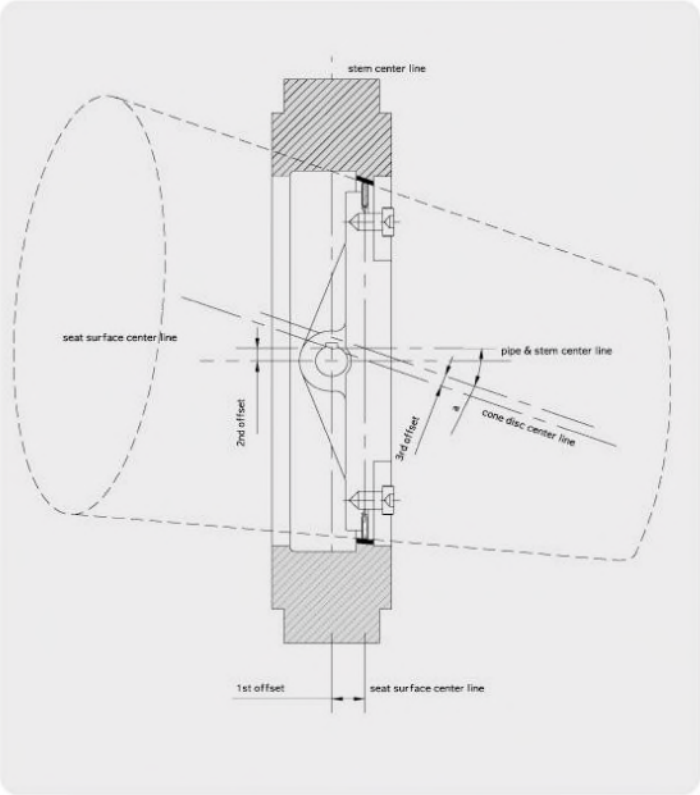
DESIGN PRINCIPLES – TRIPLE OFFSET METAL SEAT

TRIPLE OFFSET DESIGN PRINCIPLES

IFS triple offset metal seat butterfly valves provide a bi-direc-tional and bubble-tight shutoff which is attributed to the geometry of triple offset seat.

The valve stem is offset by seat (1st offset) and the valve seat surface center line is offs-set against the center line of pipe (2nd offset) and the conical axis is offset by valve center line (3rd offset: inclined cone). The 3rd offset completely eliminates rubbing.

The seat surfaces of body and seal ring in triple offset valve contact with the inclined "cone-in-cone" and this design requires excellent sealing and seat part durability by slight wedging effect.In addition, the angle of contact between body and seal ring has a good sealing performance by low torque because the angle travels the initial torque from actuator to seat parts without any loss by jamming. This valve is characteristic of concentric, offset and double offset construction with remarkable sealing performance and seat part durability, and moreover it hardly ever needs repair.



CHARACTERISTICS AND MERITS

- Excellent durability of seat part and low operating torque by non-rubbing characteristics with triple offset construction.
- Bi-directional zero leakage service by resilient metal sealing and torque seating.
- Unrestricted selection of face to face dimensions for API,ASME(ANSI),BS,ISO.etc. and perfect interchangeability of gate, ball, plug, high performance butterfly, and other valves.
- Low emission by quarter turn construction and good performance at automation by virtue of low operating torque and low cost.

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COMPONENT CHARACTERISTICS

BODY

- The valve body shall be one piece cast or fabrication.
- The body can be supplied with different types of materials in wafer, lug, or flanged and butt welding end connections to satisfy all installation requirements.

BODY SEAT

- The valve seat shall be integrated with the body.
- Stellite or stainless steel shall be applied on the seating surfaces of valve body.
- The valve seat is designed for inclined cone to ensure non-rubbing, non-jamming, bi-directional shutoff, and zero leakage.

DISC

- The valve disc shall be the same material as the valve body. It is supported by a laminated seal ring, which is kept in place by a seat retainer ring bolted to the disc and can be replaced easily.
- The spiral wound gasket shall be provided between laminated seal ring and disc.

SEAL RING (LAMINATED)

- The seal ring shall be resilient stainless steel lamella alternated by graphite, aramid fiber and ceramic fiber layers.
- The surface contacting between seal ring and body seat is an inclined cone type and the inclined angle generates a slight wedging effect.
- With a seat retainer ring bolted to the disc, the seal ring is fixed to disc not too tightly to be replaced easily.

STEM

- The stem shall be stainless steel and one piece and two piece construction.
- The stem shall be fixed to the disc by pin or in combination of pin and key. It can be protected by internal thrust bush and bush bearing.
- The thrust bush and bush bearing shall be provided to locate the valve disc in a proper position.
- The retainer ring shall be installed to avoid blowing out the stem.

PACKING

- The packing shall consist of two braided rings in the top and bottom of valve and three die formed graphite rings in the middle.
- The lantern ring may be provided as required by customer.

ACTUATORS

- All valves shall be self-locking manual gear operation type which is served as standard.
- Electric, pneumatic or hydraulic actuator may be provided as required by customer.

STANDARD MATERIAL LIST – TRIPLE OFFSET METAL SEAT

STANDARD MATERIAL LIST

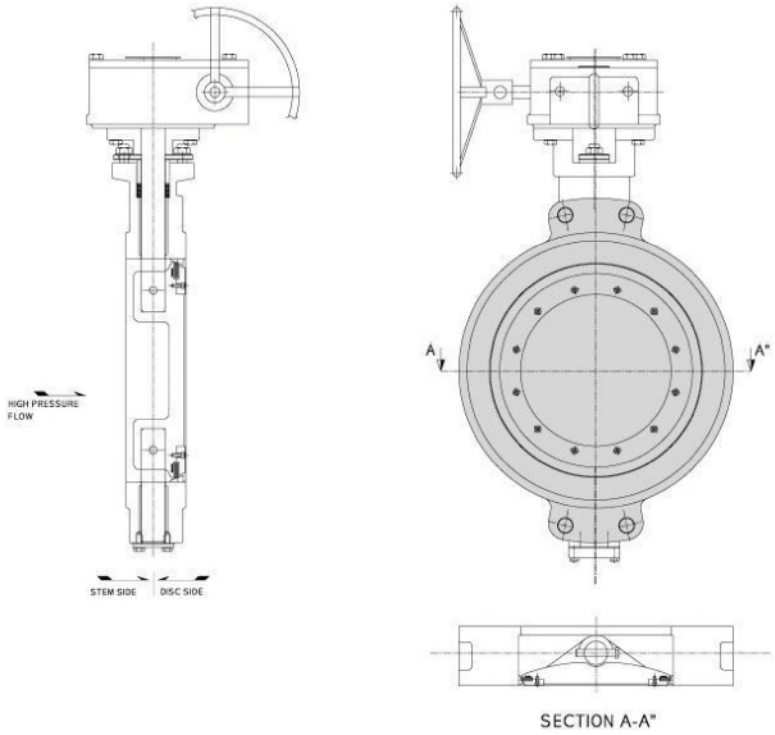
	MATERIAL ACCORDING TO ASTM						
	NO	PART NAME	MATERIAL			QTY	REMARK
STANDARD	1	BODY	A216-WCB	A217-WC9	A351-CF8M		
	2	SEAT SURFACE	316 SS Faced	STELLITE NO.6 Faced	Intergral	1	NOTE 2
	3	DISC	A216-WCB + ENP	A217-WC9 + ENP	A351-CF8M	1	NOTE 1
	4	STEM	A479-410	A479-410A	A564-630	1	
	5	RETAINER RING	A479-410	A479-410A	A479-316	1	
	6	PACKING	Graphite	Graphite	Graphite	1	Set
	7	PAKING BLAND	A576-1020+Cr	A479-410A	A479-316	1	
	8	GLAND FLANGE	A105 or A576-1020 (S20C)	A105 or A576-1020(S20C)	A351-CF8	2/4	
	9	GLAND BOLT	A193-B7	A193-B7	A193-B8	2/4	
	10	NUT	A194-2H	A194-2H	A194-8	1	
	11	BUSH BEARING	A479-304 + Nitr.	A479-316 + Nitr.	A479-316+HCr.Plating	1	Note 1
	12	KEY	A479-410	A479-410	A564-630	1	
	13	SEAL RING	316SS + Graphite	316SS + Graphite	316ss + Graphite	1	Laminated
	14	TAPER PIN	410SS	410SS	A564-630	1	
	15	YOKE	A576-1020(S20C)	A576-1020 (S20C)	A576-1020+Zn.Plating		
	16	YOKE BOLT	A193-B7	A193-B7	A193-B8		
	17	YOKE NUT	A194-2H	A194-2H	A194-8		
	18	MOUNTING BOLT	A194-B7 or EQ.	A193-B7 or EQ	A193-B7 or EQ		
	19	SPRING WASHER	Steel	Steel	304SS		
	20	KEY	A576-1045	A576-1045	A576-1045		
	21	GEAR BOX	Ductile	Ductile	Ductile	1	
	22	CAP	A576-1020(S20C)	A240-304	A240-316	1	
	23	GASKET(CAP)	304SS +Graphite	304SS + Graphite	304SS+Graphite	1	Spiral wound
	24	THRUST BUSH	A479-410	A479-410	A479-316		
	25	SEAT RETAINER	A576-1020 + ENP	A240-304	A240-316		
	26	RETAINER BOLT	A193-B8	A193-B8	A193-B8M		
	27	BUSH BEARING	A479-304 + Nitr.	A479-304 +Nitr.	A479-316+HCr.Plating	1	Note 1
	28	CASKET	304SS + Graphite	304SS +Graphite	304SS +Graphite	1	Spiral wound
	29	HANDWHEEL	A53	A53	A53	1	
	30	CAP BOLT	A193-B7	A193-B16	A193-B8	4/8	
	31	CAP NUT	A194-2H	A194-4	A194-8	4/8	
	32	SEAL RING PIN	A479-304	A479-304	A479-316	1	
	33	SPACER	A479-304	A479-304	A479-316	1	
OPTION	2	SEAT SURFACE	Stellite No. 6 Faced	Stellite No. 6 Faced	Stellite No. 6 Faced	1	
	13	SEAL RING	Duplex SS + GRAPHITE 316SS + ARAMID 316SS + CERMIC A564-630 or 316SS + Nitr	Duplex SS + GRAPHITE 316SS + ARAMID 316SS + CERMIC A564-630 or 316SS + Nitr	Duplex SS + GRAPHITE 316SS + ARAMID 316SS + CERMIC A564-630 or 316SS + Nitr	1 1	Laminated Solid Metal Ring
	34	LANTRN RING	410SS	410SS	316SS	1	
	35	PLUG GREASE FITTING	A105 Carbon Steel + Cr.Plating	410SS 316SS	316SS 316SS	1 1	
	36	DRAIN PLUG	A105	410SS	316SS	1	

NOTE

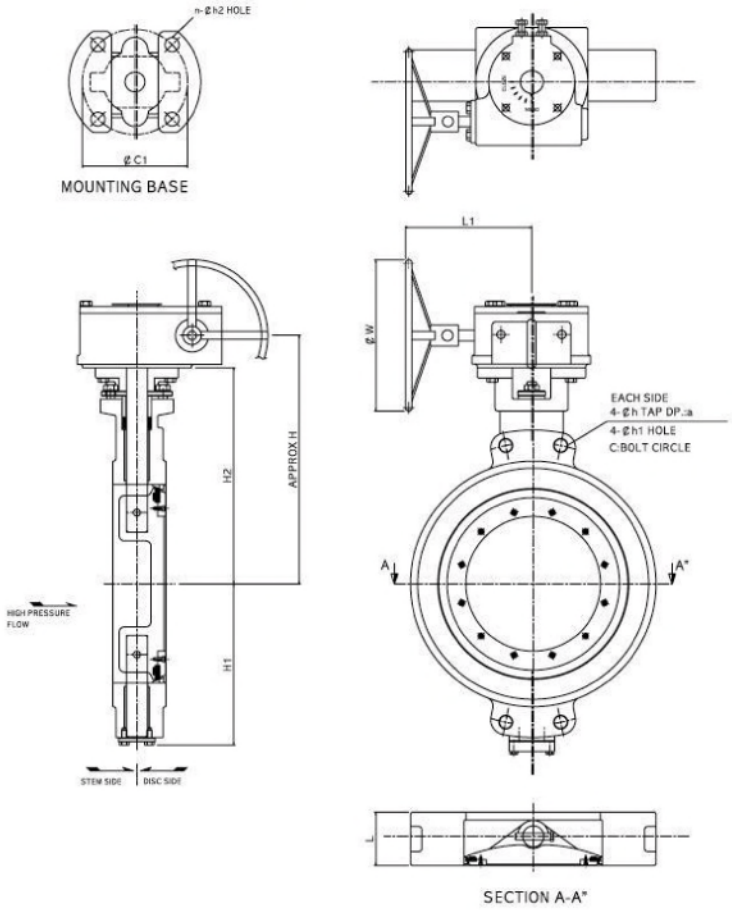
1. Nitr : Hardened by Nitriding : Hcr : Hard Cr Plating: ENP : Electroless Nickel Plating
2. Class 150 & 300 : 316SS Faced and Integral
   Class 600 & over : Stellite No. 6 Faced
3. Recommended Spare Parts: Part No. 6, 13, 23, 28

SECTIONAL DRAWING – TRIPLE OFFSET METAL SEAT

SECTIONAL DRAWING



TOB VALVE : WAFER TYPE – OUTDRAWING



TOB VALVE : WAFER TYPE

TOB VALVE : WAFER TYPE – DIMENSIONS

TOB VALVE : WAFER TYPE – DIMENSIONS																UNIT: mm
CLASS 150																
SIZE			FLANGE DIMENSION									MOUNTING BASE				Weight
Inch	mm	L	C	h	a	h1	H	H1	H2	W	L1	TYPE	C1	n	h2	(kgf)
3	80	48	152.4	-	-	19.1	282	142	258	200	165	F07	70	4	9	21
4	100	54	190.5	-	-	19.1	294	162	270	200	165	F07	70	4	9	27
5	125	57	215.9	-	-	22.2	319	170	295	200	165	F07	70	4	9	32
6	150	57	241.3	-	-	22.2	340	179	316	200	165	F07	70	4	9	35
8	200	64	298.4	-	-	22.2	384	208	344	300	270	F10	102	4	11	53
10	250	71	361.9	-	-	25.4	434	241	394	300	270	F10	102	4	11	74
12	300	81	431.8	-	-	25.4	520	267	470	400	335	F14	140	4	18	95
14	350	92	476.3	-	-	28.6	544	316	494	400	335	F14	140	4	18	131
16	400	102	539.7	-	-	28.6	643	349	578	500	375	F16	165	4	22	165
18	450	114	577.8	-	-	31.8	660	381	595	500	375	F16	165	4	22	230
20	500	127	635.0	1-1/8-8	28.6	-	695	412	630	500	375	F16	165	4	22	280
24	600	154	749.3	1-1/4-8	31.8	-	813	473	743	600	485	F25	254	8	18	450
CLASS 300																
SIZE			FLANGE DIMENSION									MOUNTING BASE				Weight
Inch	mm	L	C	h	a	h1	H	H1	H2	W	L1	TYPE	C1	n	h2	(kgf)
3	80	48	168.2	-	-	22.2	282	142	258	200	165	F07	70	4	9	21
4	100	54	200.0	-	-	22.2	294	162	270	200	165	F07	70	4	9	27
5	125	59	234.9	-	-	22.2	319	170	295	300	270	F10	102	4	11	38
6	150	59	269.8	-	-	22.2	375	199	336	300	270	F10	102	4	11	45
8	200	73	330.2	-	-	25.4	450	227	400	400	335	F14	140	4	18	72
10	250	83	387.3	1-8	25.4		499	265	449	400	335	F14	140	4	18	135
12	300	92	450.8	1-1/8-8	28.6		562	302	497	500	375	F16	165	4	22	148
14	350	117	514.3	1-1/8-8	28.6		616	328	551	500	375	F16	165	4	22	208
16	400	133	571.5	1-1/4-8	31.8		676	367	606	600	485	F25	254	8	18	298
18	450	149	628.6	1-1/4-8	31.8		711	402	641	600	485	F25	254	8	18	382
20	500	159	685.8	1-1/4-8	31.8		798	432	721	700	520	F30	298	8	22	450
24	600	181	812.8	1-1/2-8	38.1		914	530	837	700	515	F30	298	8	22	680
CLASS 600																
SIZE			FLANGE DIMENSION									MOUNTING BASE				Weight
Inch	mm	L	C	h	a	h1	H	H1	H2	W	L1	TYPE	C1	n	h2	(kgf)
3	80	54	168.2	-	-	22.2	289	148	265	200	165	F07	70	4	9	29
4	100	64	215.9	-	-	25.4	370	180	330	300	270	F10	102	4	11	38
5	125	78	266.7	-	-	28.6	405	195	355	400	335	F14	140	4	18	55
6	150	78	292.1	1-8	25.4		420	225	370	400	335	F14	140	4	18	75
8	200	102	349.2	1-1/8-8	28.6		490	255	425	500	375	F16	165	4	22	136
10	250	117	431.8	1-1/4-8	31.8		545	310	480	500	375	F16	165	4	22	200
12	300	140	488.9	1-1/4-8	31.8		630	330	560	600	485	F25	254	8	18	295

*NOT SPECIFIED CLASS AND SIZE, PLEASE CONTACT SALES DEPARTMENT

NOTE

1. Valve Design : ASME B16.34
2. Face to Face Dimension : API 609 (Wafer Type)
3. End Flange Dimension: ASME B16.5

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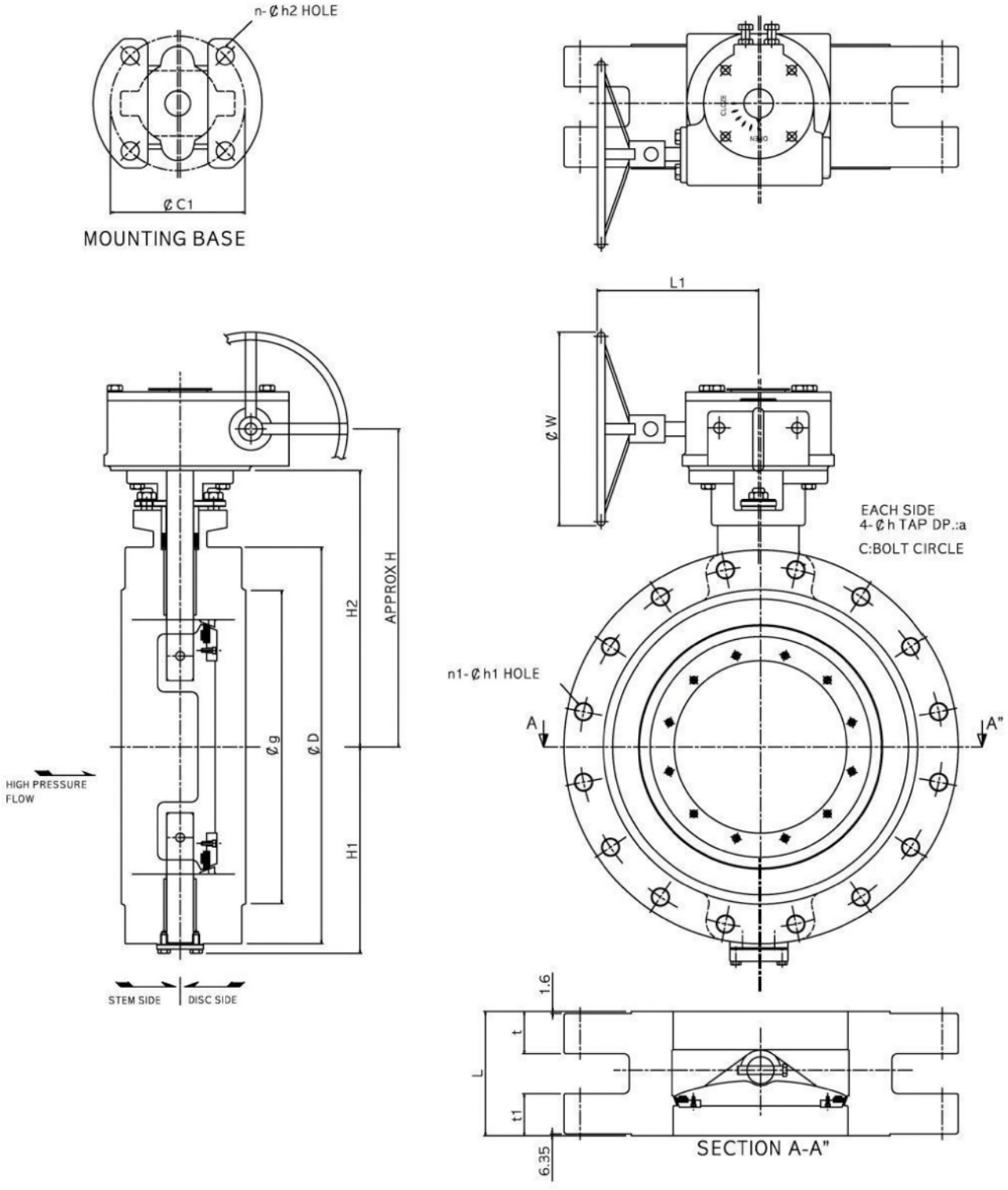
TOB VALVE : DOUBLE FLANGE (SHORT) TYPE

TOB VALVE : DOUBLE FLANGE (SHORT) TYPE – OUTDRAWING



TOB VALVE : DOUBLE FLANGE (SHORT) TYPE

TOB VALVE : DOUBLE FLANGE (SHORT) TYPE – DIMENSIONS

TOB VALVE : WAFER TYPE – DIMENSIONS — UNIT: mm

CLASS 150

SIZE			FLANGE DIMENSION														MOUNTING BASE				Weight
Inch	mm	L	D	g	c	t	h	a	n1	h1	H	H1	H2	W	L1	TYPE	C1	n	h2	(kgf)
3	80	114	191	127.0	152.4	19.1	5/8-11	15.8	4	19.1	282	142	258	200	165	F07	70	4	9	27
4	100	127	229	157.2	190.5	24.0	5/8-11	15.8	8	19.1	294	162	270	200	165	F07	70	4	9	35
5	125	140	254	185.7	215.9	24.0	3/4-10	19.1	8	22.2	319	170	295	200	165	F07	70	4	9	41
6	150	140	279	215.9	241.3	25.4	3/4-10	19.1	8	22.2	340	179	316	200	165	F07	70	4	9	45
8	200	152	343	269.7	298.4	28.5	3/4-10	19.1	8	22.2	384	208	344	300	270	F10	102	4	11	68
10	250	165	406	323.9	361.9	30.3	7/8-9	22.2	12	25.4	434	241	394	300	270	F10	102	4	11	97
12	300	178	483	381.0	431.8	31.8	7/8-9	22.2	12	25.4	520	267	470	400	335	F14	140	4	18	133
14	350	190	533	412.8	476.3	35.1	1-8	25.4	12	28.6	544	316	494	400	335	F14	140	4	18	188
16	400	216	597	469.9	539.7	36.6	1-8	25.4	16	28.6	643	349	578	500	375	F16	165	4	22	238
18	450	222	635	533.4	577.8	39.7	1-1/8-8	28.6	16	31.8	660	381	595	500	375	F16	165	4	22	302
20	500	229	699	584.2	635.0	43.0	1-1/8-8	28.6	20	31.8	695	412	630	500	375	F16	165	4	22	380
24	600	267	813	692.2	749.3	47.8	1-1/4-8	31.8	20	35.1	813	473	743	600	485	F25	254	8	18	599

CLASS 300

SIZE			FLANGE DIMENSION														MOUNTING BASE				Weight
Inch	mm	L	D	g	c	t	h	a	n1	h1	H	H1	H2	W	L1	TYPE	C1	n	h2	(kgf)
3	80	114	210	127.0	168.2	28.5	3/4-10	19.1	8	22.2	282	142	258	200	165	F07	70	4	9	29
4	100	127	254	157.2	200.0	31.8	3/4-10	19.1	8	22.2	294	162	270	200	165	F07	70	4	9	39
5	125	140	279	185.7	234.9	35.0	3/4-10	19.1	8	22.2	319	170	295	300	270	F10	102	4	11	52
6	150	140	318	215.9	269.8	36.6	3/4-10	19.1	12	22.2	375	199	336	300	270	F10	102	4	11	63
8	200	152	381	269.7	330.2	41.2	7/8-9	22.2	12	25.4	450	227	400	400	335	F14	140	4	18	101
10	250	165	445	323.9	387.3	47.8	1-8	25.4	16	28.6	499	265	449	400	335	F14	140	4	18	176
12	300	178	521	381.0	450.8	50.8	1-1/8-8	28.6	16	31.8	562	302	497	500	375	F16	165	4	22	210
14	350	190	584	412.8	514.3	53.9	1-1/8-8	28.6	20	31.8	616	328	551	500	375	F16	165	4	22	315
16	400	216	648	469.9	571.5	57.2	1-1/4-8	31.8	20	35.1	676	367	606	600	485	F25	254	8	18	440
18	450	222	711	533.4	628.6	60.5	1-1/4-8	31.8	24	35.1	711	402	641	600	485	F25	254	8	18	558
20	500	229	775	584.2	685.8	63.5	1-1/4-8	31.8	24	35.1	798	432	721	700	520	F30	298	8	22	670
24	600	267	814	692.2	812.8	69.9	1-1/2-8	38.1	24	41.2	914	530	837	700	515	F30	298	8	22	1025

CLASS 600

SIZE			FLANGE DIMENSION														MOUNTING BASE				Weight
Inch	mm	L	D	g	c	t	h	a	n1	h1	H	H1	H2	W	L1	TYPE	C1	n	h2	(kgf)
3	80	180	210	127.0	168.2	31.8	3/4-10	19.1	8	22.2	289	148	265	200	165	F07	70	4	9	37
4	100	190	273	157.2	215.9	38.1	7/8-9	22.2	8	25.4	370	180	330	300	270	F10	102	4	11	55
5	125	200	330	185.7	266.7	44.5	1-8	25.4	12	28.6	405	195	335	400	335	F14	140	4	18	86
6	150	210	356	215.9	292.1	47.8	1-8	25.4	12	28.6	420	225	370	400	335	F14	140	4	18	109
8	200	230	419	269.7	349.2	55.7	1-1/8-8	28.6	12	31.8	490	255	425	500	375	F16	165	4	22	192
10	250	250	508	323.9	431.8	63.5	1-1/4-8	31.8	16	35.1	545	310	480	500	375	F16	165	4	22	296
12	300	270	559	381.0	488.9	66.6	1-1/4-8	31.8	20	35.1	630	330	560	600	485	F25	254	8	18	390

*NOT SPECIFIED CLASS AND SIZE, PLEASE CONTACT SALES DEPARTMENT

NOTE

1. Valve Design : ASME B16.34
2. Face to Face Dimension: ISO 5752 (Short Type)
3. End Flange Dimension: ASME B16.5

Inline Flow Specialty
Our Quality Defines Us

TOB VALVE : TECHNICAL DATA

PRESSURE/TEMPERATURE RATING (REF. ASME B16.34)

TEMPERATURE (℃)	MAXIMUM WORKING PRESSURE, kgf/cxA								
	CLASS 150			CLASS 300			CLASS 600		
	WCB	CF8M	WC9	WCB	CF8M	WC9	WCB	CF8M	WC9
-29 to 38	20.0	19.3	20.4	52.0	50.6	52.7	104.1	101.2	105.5
93	18.3	16.9	18.3	47.5	43.6	50.3	94.9	87.2	100.5
149	16.2	15.1	16.2	46.1	39.4	47.5	92.5	78.8	95.3
204	14.1	13.7	14.1	44.7	36.2	45.7	89.3	72.4	91.1
260	12.0	12.0	12.0	42.2	33.8	45.0	84.4	67.1	90.0
316	9.8	9.8	9.8	38.7	31.6	42.5	75.6	62.6	82.6
343	8.8	8.8	8.8	37.6	31.3	41.5	77.0	63.6	82.6
371	7.7	7.7	7.7	37.6	32.3	40.1	74.9	60.8	79.8
399	6.7	6.7	6.7	35.5	29.9	35.9	71.0	59.4	74.9
427	5.6	5.6	5.6	28.8	29.2	35.9	58.0	58.4	71.4
454	4.6	4.6	4.6	19.0	28.5	34.1	37.6	57.0	68.6
482	3.5	3.5	3.5	12.0	27.8	31.6	24.3	55.5	63.3
510	2.5	2.5	2.5	7.4	27.1	26.7	14.4	54.5	53.1
538	1.4	1.4	1.4	3.5	25.7	19.1	7.4	51.0	37.6
566		1.4(1)	1.4(1)		25.3	14.1		50.6	28.1
593		1.4(1)	1.4(1)		22.9	8.1		45.4	15.8
624		1.4(1)	1.4(1)		19.3	7.4		38.7	14.4
649		1.4(1)	1.4(1)		14.4	3.9		28.8	110.0

NOTE

(1) For weld valve only, the temperature rating of flanged end terminates t 538°…

FLOW DATA

Valve flow coefficient Cv is defined as the flow of water at 60¢µ in gallons per minute (GPM) at a pressure of one pound per square inch (1 psi) across the valve.

$$Q = Cv \sqrt{(\triangle P (62.4/\rho)}$$

WHERE

Q = Flow rate (GPM)
Cv = Flow coefficient
△P = Pressure drop (psi)
ρ = Density of fluid (ρ = 62.4, water at 60°F)

THEREFORE

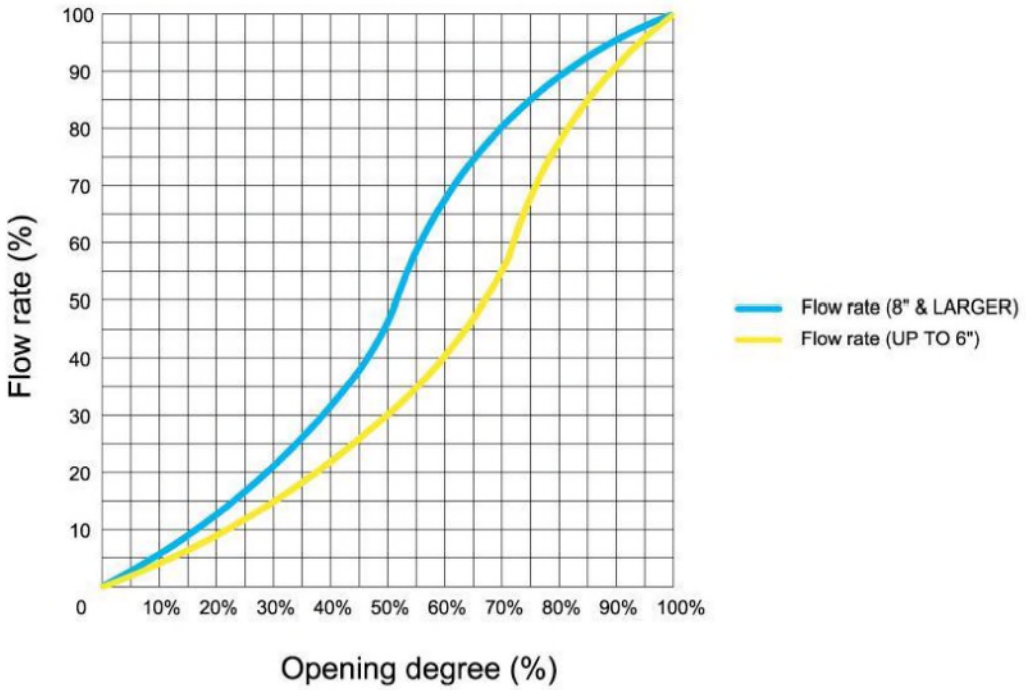
$$Q = Cv \sqrt{\triangle P}$$

FLOW COEFFICIENT VALUE(Cv)

Class	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
150#	195	345	500	827	1523	2698	4032	5674	7880	10594	13292	19604
300#	195	345	500	786	1447	2563	3830	5390	7486	10064	12627	18624
600#	195	345	475	746	1374	2435	3640					

TOB VALVE : TECHNICAL DATA

FLOW CHARACTERISTIC CURVE



TORQUE DATA

Max △P (kdf/㎠)	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
10.5 (150PSIG)	2.8	4.9	6.8	11.0	19.3	29.8	51.2	61.7	86.5	143.7	181.8	272.5
20.0 (285PSIG)	5.4	9.3	13.0	20.8	36.5	56.4	96.8	116.5	163.1	271.0	342.1	510.7
28.1(400PSIG)	7.6	13.0	18.2	29.1	52.3	81.5	134.2	169.3	236.8	386.0	495.1	735.1
42.2 (600PSIG)	11.3	19.3	27.3	43.7	78.4	122.1	201.0	253.6	354.5	578.0	741.0	1098.9
52.0 (740PSIG)	14.0	24.1	33.6	53.9	96.7	150.5	247.8	312.6	436.8	712.3	913.1	1353.5
104.1 (1480PSIG)	36.4	66.2	90.1	14.9	286.6	449.4	642.5					

APPLICATION

- Nuclear Power Plants and Power Plants
- Oil Refineries and Chemical Plants
- Pulp and Paper, Steel Mills
- Offshore Plants
- Ship Building

INSTALLATION CAUTIONS

- The valve is bi-directional and can be mounted in any position. However, it is recommended that the valve is horizontal to the stem and the inclined cone edge of disc taces toward the downstream (refer to directional arrows and stem side).
- If you want to use at a temperature below -48°… or above 426°…, the extension design shall be applied. In such cases, please contact the Sales Department.

SPECIFICATIONS – HIGH PERFORMANCE (Double Offset)

DESIGN FEATURE

- Designed in accordance with ASME B16.34 or other customer requirements.
- Fire afe design.

DOUBLE ECCENTRIC TYPE

(HIGH PERFORMANCE)

FACE TO FACE DIMENSIONS

WAFER AND LUG TYPE

API 609 / MSS-SP-68 / ISO 5752
Class 150 : 2" ~ 48"
Class 300 : 2" ~ 48"
Class 600 : 3" ~ 24"

API 609 / MSS-SP-68 / ISO 5752
Class 150 : 2" ~ 48"

DOUBLE FLANGE

ISO 5752, BS 5155
Class 150 : 2" ~ 48"
Class 300 : 2" ~ 48"
Class 600 : 3" ~ 24"

ISO 5752, BS 5155
Class 150 : 2" ~ 48"

END FLANGE

ASME B16.5 : Class 150,300,600
JIS B2210 : 10K,16,20K
DIN, ISO PN10, PN16, PN25, PN40

ASME B16.47 A/B: Class 150,300,600
API 605, MSS-SP-44 : Class 150,300,600
BS 3293 : Class 150,300

OPERATING

MANUAL WORM GEAR
LEVER HANDLE

ELECTRIC, PNEUMATIC & HYDRAULIC
ACTUATOR

MOUNTING FLANGE

ISO 5211

MSS-SP-102

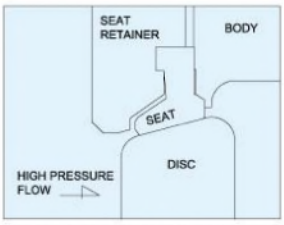
TESTING

API 598

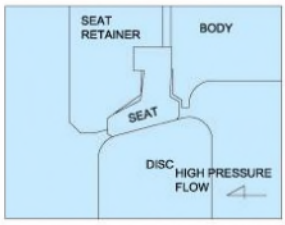
MSS-SP-61, ANSI B16.104

SEAT DESIGN PRINCIPLES – HIGH PERFORMANCE (Double Offset)

STANDARD DESIGN



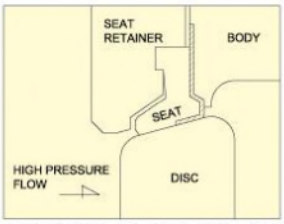
FOWARD FLOW



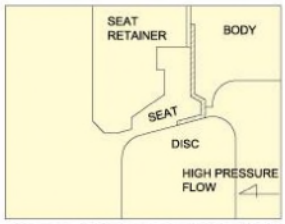
REVERSE FLOW

- Bi-directional flow and shut-off are easily acommodated.
- As pressure increases, aeal becomes tighter.

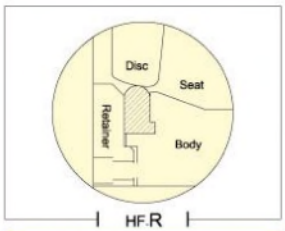
FIRE SAFETY DESIGN



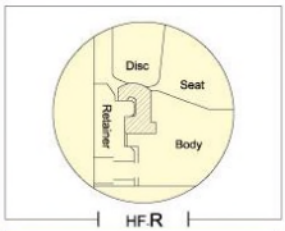
BEFORE FIRE TEST



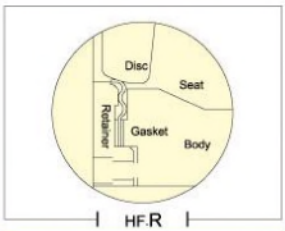
AFTER FIRE TEST



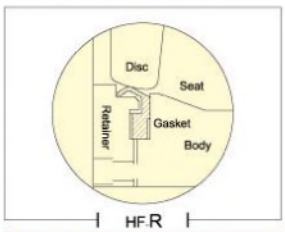
EPDM / NBR / VITON
Rubber Seat



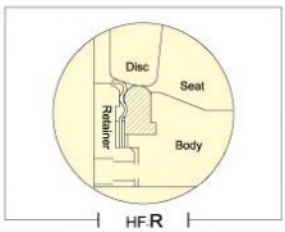
PTFE / RTFE
Teflon Seat



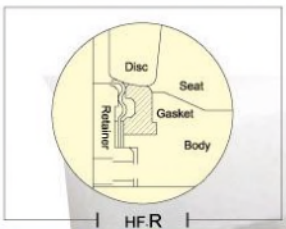
INCONEL 625 / St.steel 316
Flat Metal Seat



SF.St.steel 316 / MONEL
Solid Metal Seat



Rubber / St.steel 316
Fire Safe-Rubber+Metal



Teflon / St.steel 316
Fire Safe-Teflon+Metal

SEAT MATERIAL AND WORKING TEMPERATURE

STANDARD MATERIAL	MAX. WORKING TEMPERATURE ℃(°F)
PTFE	200 (392)
PTFE	250 (482)

SEAT LEAKAGE

- Leakage soft seated version (PTFE, RTFE) is zero.

STANDARD LIST – HIGH PERFORMANCE (Double Offset)

STANDARD LIST

	MATERIAL ACCORDING TO ASTM						
	NO	PART NAME	MATERIAL			QTY	REMARK
STANDARD	1	BODY	A216 WCB	A351 CF8	A351 CF8M	1	
	2	DISC	CF8	A351 CF8	A351 CF8M	1	
	3	SEAT	VITON , EPDM , Buna-N , PTFE , RTFE , METAL			1	
	4	SEAT RETAINER	A216 WCB	A351 CF8	A351 CF8M	1	
	5	BOLT	A193 B7	A193 B8	A193 B8M	8	
	6	SHAFT	A276 T304	A276 T304	A276 T316	1	
	7	LOCK PIN	A276 T304	A276 T304	A276 T316	1	
	8	BUSH	OILLESS B/R			1	
	9	BUSH	OILLESS B/R			1	
	10	GASKET	TEFLON			1	
	11	END COVER	A216 WCB	A351 CF8	A351 CF8M	1	
	12	BOLT	A193 B7	A193 B8	A193 B8M	1	
	13	PACKING	TEFLON			4	
	14	BOLT	A193 B7	A193 B8	A193 B8M	1SET	
	15	PAC. B/N	A193 B7	A193 B8	A193 B8M	2	
	16	PAC. GLAND	A216 WCB	A351 CF8	A351 CF8M	2	
	17	GLAND RING	A276 T304	A276 T304	A276 T316	1	

NOTE :

1. RTFE : Reinforced PTFE

FEATURES :

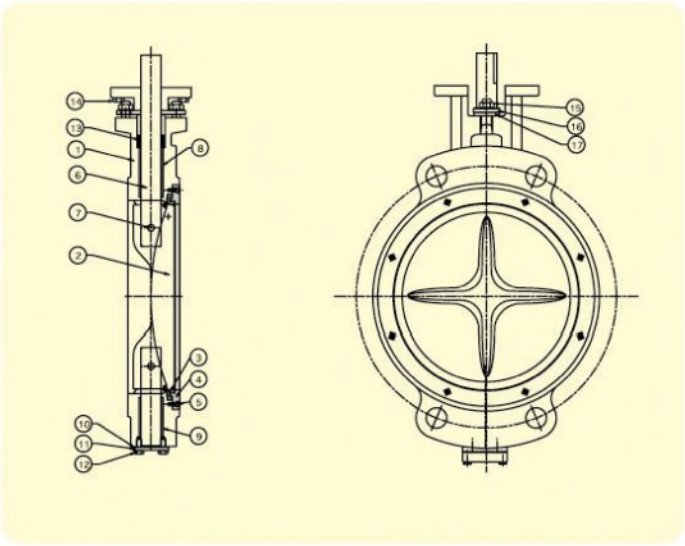
- Bubble tight shut-off
- Light weight, compact size and easy installation
- General application valve
- Easy replaceable seat
- Application : - Chemical processing
  - Power plant
  - Hydrocarbon processing

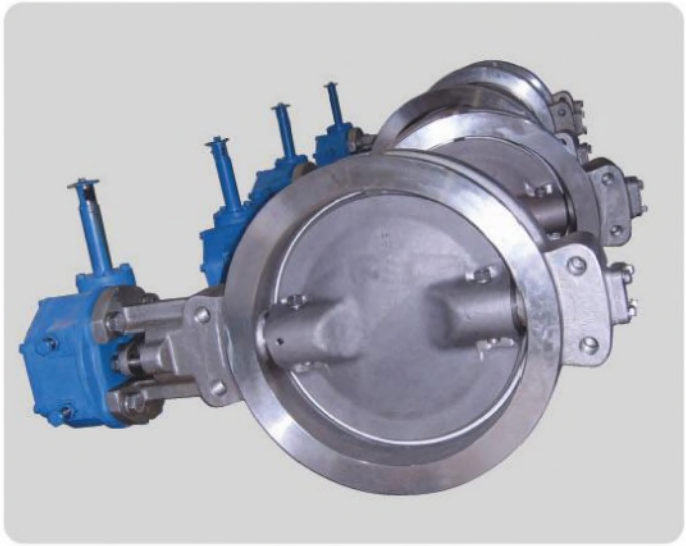
Standard Specifications

Model Designation		HF-R	HF-T	HF-FM	HF-SM	HF-RF	HF-TF
Seat Ring		Rubber	Teflon	Flat Metal	Solid Metal	Rubber+Metal	Teflon+Metal
Size Range		DN50 to DN1200		DN50 to DN1200		DN50 to DN1200	
Press, Rating		ANSI CLASS 150 &300		ANSI CLASS 150 &300		ANSI CLASS 150 &300	
Body Conection		WAFER / LUG / FLANGED / BUTT WELD END					
Applicable Flange		ANSI CLASS 150 & 300 /JIS 10K, 16K, 20K / ISO / BS / DIN PN10, PN16, PN25, PN40					
Geometry		Double Offset Giving Low Unseting and Seating Torque.					
Safety Feature		Anti Blow Out Device To API 609					
Face to Face		LUG and WAFER type : API std. 609 category B / ISO 5752(25 Series)					
Design Base		API std.609 / BS 5155 / ANSI B 16.34 / ASME SEC Ⅷ					
Seat Leak(Water)		None	None	Tight shut Ⅴ	Tight shut Ⅴ	None	None
Working Temp.		-10 to + 120℃	-50 to + 200℃	-80 to + 300℃	-80 to + 450℃	-10 to + 120℃	-10 to + 200℃
STD.Material	Body / Disc	STD ; ASTM A216 WCB / ASTM A351 CF8M / ASTM B148 / DUPLEX St.steel					
	Stem	ASTM A479 Ty.304 / 316. ASTM A564 Ty.630. AISI 420J2 / 403 DUPLEX St.steel					
	Seat Ring	EPDM, VITON	PTFE, RTFE	316 St.steel/Inconel	316 St.steel	EPDM/VITON +316St.	EPDM/VITON+Teflon
	Packing	PTFE / GRAPHITE / GRAFOIL / NON-ASBESTOS PACKING					
	Bearing	RTFE+316 St.steel / RTFE+Fiberglass composite / Bronze / 316 St.steel / Steel					
Pressure tests		API std.598	API std.598	API std.598 / ANSI B16.104		API std.607 / BS 6755 Part2	
Seat lea test		MAX.2.2523kg/cm2G) as per API 598. Low Pressure test is available upon request					
Marking		API std.609 / MSS SP-25					
Top Flange		ISO 5211					
Actuator		Lever / Gear / Pneumatic Cylinder / Hydraulic Cylinder / Electric Motor					

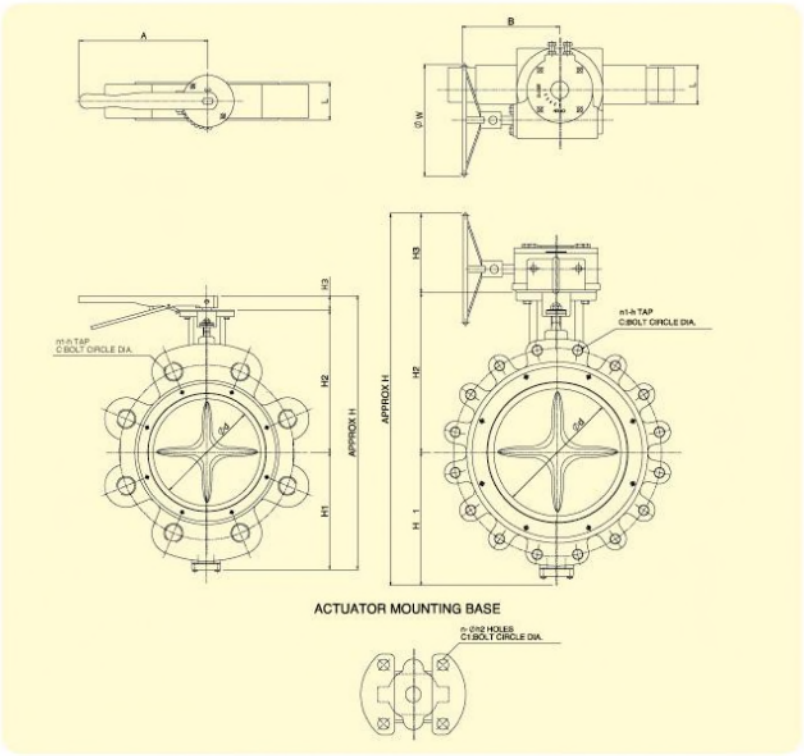
SECTIONAL DRAWING – HIGH PERFORMANCE (Double Offset)

SECTIONAL DRAWING





HIGH PERFORMANCE – OUTDRAWING



DIMENSIONS – HIGH PERFORMANCE (Double Offset)

HIGH PERFORMANCE – DIMENSIONS

HIGH PERFORMANCE BUTTERFLY VALVE – DIMENSIONS																				UNIT: mm	
ANSI CLASS 150																					
SIZE											FLANGE DIMENSION				MOUNTING BASE				Weight	
Inch	mm	H	H1	H2	H3	¢d	L	A	B	¢W	C	n1	h	h1	TYPE	n	h2	c1	WAFER	LUG
2″	50	330	80	148	102	55	43	267	150	145	120.7	4	5/8″	19.1	F07	4	10	70	6.3	6.5
3″	80	344	85	157	102	84	48	267	150	145	152.4	4	5/8″	19.3	F07	4	10	70	12	16
4″	100	402	134	166	102	104	54	267	150	145	190.5	8	5/8″	19.5	F07	4	10	70	20	22
6″	150	458	158	195	102	155	57	267	150	145	241.3	8	3/4″	22.4	F07	4	10	70	26	29
8″	200	580	198	250	132	205	64	267	255	200	298.5	8	3/4″	22.4	F10	4	12	102	32	36
10″	250	731	223	281	227	255	71	-	255	200	362.0	12	7/8″	25.4	F14	4	18	140	51	58
12″	300	813	266	320	227	305	81	-	210	350	431.8	12	7/8″	25.4	F14	4	18	140	72	87
14″	350	899	292	380	227	340	92	-	210	350	476.3	12	1″	28.4	F14	4	18	140	85	98
16″	400	986	333	418	235	380	102	-	230	350	539.8	16	1″	28.4	F16	4	22	165	116	143
18″	450	1012	347	430	235	430	114	-	230	350	577.9	16	1-1/8″	31.8	F16	4	22	165	160	210
20″	500	1091	383	468	240	480	127	-	240	350	635.0	20	1-1/8″	31.8	F16	4	22	165	207	260
24″	600	1192	427	525	240	590	154	-	240	350	749.3	20	1-1/4″	35.1	F16	4	22	165	320	400
26″	650	1375	545	570	260	607	165	-	350	400	806.5	24	1-1/4″	35.1	F25	8	19	254	350	430
28″	700	1440	580	600	260	654	165	-	350	400	863.6	28	1-1/4″	35.1	F25	8	19	254	370	460
30″	750	1590	600	625	365	698	190	-	390	605	914.4	28	1-1/4″	35.1	F25	8	19	254	465	520
32″	800	1625	615	645	365	755	190	-	390	605	977.9	28	1-1/2″	41.1	F25	8	19	254	490	580
36″	900	1780	695	720	365	825	203	-	390	605	1085.9	32	1-1/2″	41.1	F25	8	19	254	750	805
40″	1000	1940	775	800	365	950	216	-	390	605	1200.2	36	1-1/2″	41.1	F25	8	19	254	920	1105
44″	1100	2100	855	880	365	1040	241	-	440	605	1314.5	40	1-1/2″	41.1	F30	8	23	298	1105	1230
48″	1200	2180	890	925	365	1162	254	-	440	605	1422.4	44	1-1/2″	41.1	F30	8	23	298	1250	1320

HIGH PERFORMANCE – DIMENSIONS

HIGH PERFORMANCE BUTTERFLY VALVE – DIMENSIONS																				UNIT: mm	
ANSI CLASS 300																					
SIZE											FLANGE DIMENSION				MOUNTING BASE				Weight	
Inch	mm	H	H1	H2	H3	¢d	L	A	B	¢W	C	n1	h	h1	TYPE	n	h2	c1	WAFER	LUG
2″	50	339	87	155	102	55	43	267	150	145	127.0	8	3/4″	19.1	F07	4	10	70	6.3	7
3″	80	364	95	167	102	84	48	267	150	145	168.1	8	3/4″	22.4	F07	4	10	70	12	16
4″	100	426	146	178	102	104	54	267	150	145	200.2	8	3/4″	22.4	F07	4	10	70	20	22
6″	150	495	177	216	102	155	59	267	150	145	269.7	12	3/4″	22.4	F07	4	10	70	27	37
8″	200	618	217	269	132	205	73	267	255	200	330.2	12	7/8″	25.4	F10	4	12	102	45	63
10″	250	711	243	301	227	255	83	-	255	200	387.4	16	1″	28.4	F14	4	18	140	67	103
12″	300	847	280	340	227	305	92	-	210	350	450.9	16	1-1/8″	31.8	F14	4	18	140	85	112
14″	350	949	317	405	227	340	118	-	210	350	514.4	20	1-1/8″	31.8	F14	4	18	140	105	220
16″	400	1009	346	428	235	380	134	-	230	350	571.5	20	1-1/4″	35.1	F16	4	22	165	180	280
18″	450	1076	385	456	235	430	150	-	230	350	628.7	24	1-1/4″	35.1	F16	4	22	165	270	360
20″	500	1167	421	506	240	480	159	-	240	350	685.8	24	1-1/4″	35.1	F16	4	22	165	320	450
24″	600	1300	481	579	240	590	181	-	240	350	812.8	24	1-1/2″	41.1	F16	4	22	165	410	700
26″	650	1505	540	600	365	607	210	-	390	605	876.3	28	1-5/8″	44.5	F25	8	19	254	480	810
28″	700	1565	580	620	365	654	229	-	440	605	939.8	28	1-5/8″	44.5	F25	8	19	254	540	960
30″	750	1695	660	670	365	698	230	-	440	605	997.0	28	1-3/4″	47.8	F25	8	19	254	610	1110
32″	800	1730	675	690	365	755	241	-	440	605	1054.1	28	1-7/8″	50.8	F25	8	19	254	670	1205
36″	900	1925	770	790	365	825	241	-	440	605	1168.4	32	2″	53.8	F30	8	23	298	806	1310
40″	1000	2125	870	890	365	950	300	-	440	605	1155.7	32	1-5/8″	44.5	F30	8	23	298	980	1425

DIMENSIONS – HIGH PERFORMANCE

HIGH PERFORMANCE – TORQUE & Cv

TORQUE VALUE

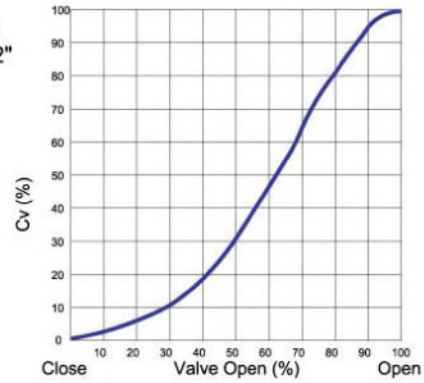
Cv VALUE

SIZE Inch	mm	MAX. DIFFERENTIAL PRESSURE (kgf/㎠) 10.5 (150PSI)	20 (285PSI)	28.1 (400PSI)	42.2 (600PSI)	49.2 (700PSI)	104.1 (1480PSI)	FULL OPEN CLASS 150	300	600
2″	50	3.1	3.5	4.4	4.6	4.7	-	92	92	-
2-1/2″	65	3.3	3.8	4.5	4.8	4.9	-	150	150	-
3″	80	3.5	4.3	4.8	5.3	5.5	11.8	260	260	155
4″	100	4.6	6.2	7.1	7.9	8.7	21.0	460	460	255
5″	125	6.2	8.8	9.4	11.0	12.2	27.8	760	760	710
6″	150	8.2	10.2	12.2	14.3	14.9	37.0	1150	1100	740
8″	200	14.3	17.3	19.4	22.4	24.5	67.8	2100	1900	1350
10″	250	20.9	29.1	34.7	40.8	45.6	105.0	3200	3000	2050
12″	300	29.9	43.8	53.5	64.2	69.1	160.6	4700	4500	2700
14″	350	44.7	72.2	100.9	126.4	138.7	254.9	5800	5500	3900
16″	400	63.7	106.0	138.7	168.2	185.1	328.3	8000	7600	5100
18″	450	86.2	137.7	185.1	218.7	235.5	408.4	10500	9900	5500
20″	500	130.0	197.3	246.8	291.6	314.1	547.1	14000	13000	7900
22″	550	161.6	242.2	295.7	358.9	381.4	-	-	-	-
24″	600	197.3	296.2	358.9	444.1	475.7	948.3	21000	19500	11100
26″	650	224.3	336.5	413.0	520.5	565.4	-	25000	-	-
28″	700	255.9	394.6	475.7	646.5	708.7	-	29000	-	-
30″	750	304.9	448.7	556.2	735.7	807.6	-	33500	-	-
32″	800	368.1	556.2	-	-	-	-	41000	-	-
34″	850	430.8	646.5	-	-	-	-	-	-	-
36″	900	493.5	744.4	-	-	-	-	55000	-	-
38″	950	565.9	843.3	-	-	-	-	-	-	-
40″	1000	655.7	987.1	-	-	-	-	70000	-	-
42″	1050	717.9	1076.8	-	-	-	-	-	-	-
44″	1100	781.1	1166.5	-	-	-	-	87000	-	-
46″	1150	852.5	1346.0	-	-	-	-	-	-	-
48″	1200	987.1	1480.6	-	-	-	-	104000	-	-

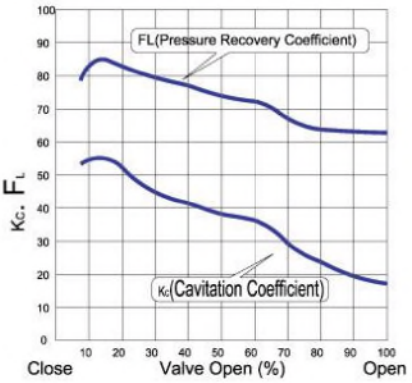
FLOW COEFFICIENTS FOR HF–Series

Cv(Coefficient of Volume) is the number of U.S.gallons per minute of water required to pass through a valve with a pressure drop of 1 psi.

Representative size : 150LB-12"



Flow Characteristics



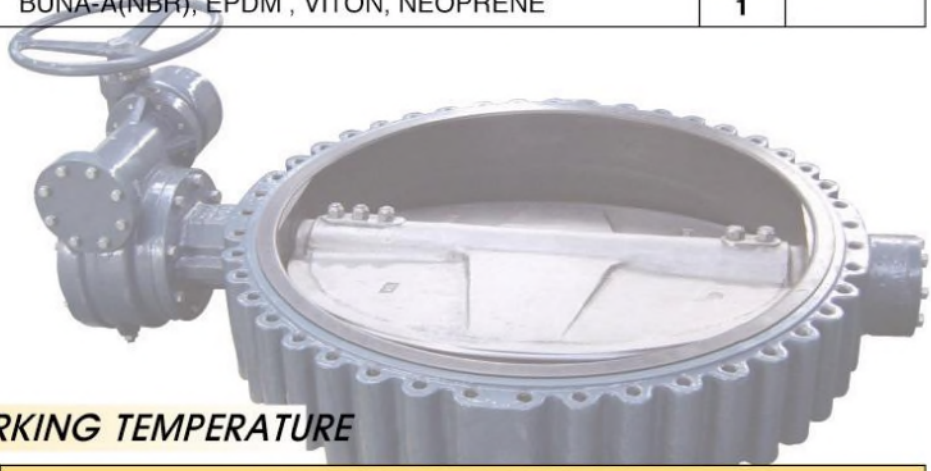
◎ Kc & FL Valves

Inline Flow Specialty
Our Quality Defines Us

STANDARD MATERIAL LIST – RESILIENT SEATED

STANDARD MATERIAL LIST

	MATERIAL ACCORDING TO ASTM								
	NO	PART NAME	MATERIAL					QTY	REMARK
STANDARD	1	BODY	A126 CI . B	A395	A216-WCB	A351-CF8	A351-CF8M	1	
	2	DISC	A351-CF8, A351 CF8M, B148					1	
	3	SEAT RING	BUNA-A(NBR), EPDM , VITON, NEOPRENE					1	
	4	STEM	A276-304, A276-316, A276-410, A564-630					1	
	5	DISC BOLT/NUT	A193-B7, A193-B8, A193-B8M					2	
	6	PACKING	TEFLON					2	
	7	O-RING	BUNA-A(NBR), EPDM , VITON, NEOPRENE					3	
	8	O-RING HOLDER	ACETAL					1	
	9	END COVER	A126 CI . B	A395	A216-WCB	A351-CF8	A351-CF8M	1	
	10	BOLT	A193-B7, A193-B8, A193-B8M					4	
	11	O-RING	BUNA-A(NBR), EPDM , VITON, NEOPRENE					1	



SEAT MATERIAL AND WORKING TEMPERATURE

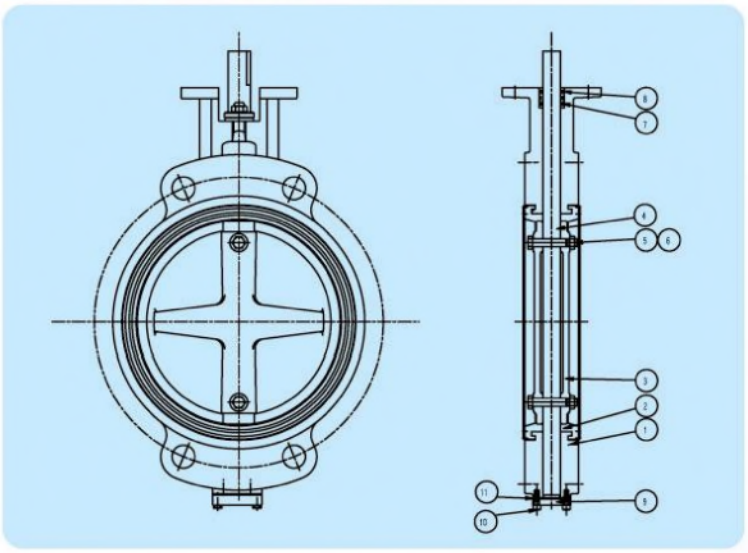
SEAT MATERIAL	MAX. WORKING TEMPERATURE ℃	
	CONTINUOUS	INTERMITTENT
BUNA-N (NBR)	-18℃ ~ 93℃	-18℃ ~ 100℃
EPDM	-40℃ ~ 130℃	-40℃ ~ 140℃
VITON	-18℃ ~ 200℃	-18℃ ~ 210℃
NEOPRENE	-16℃ ~ 90℃	-16℃ ~ 100℃

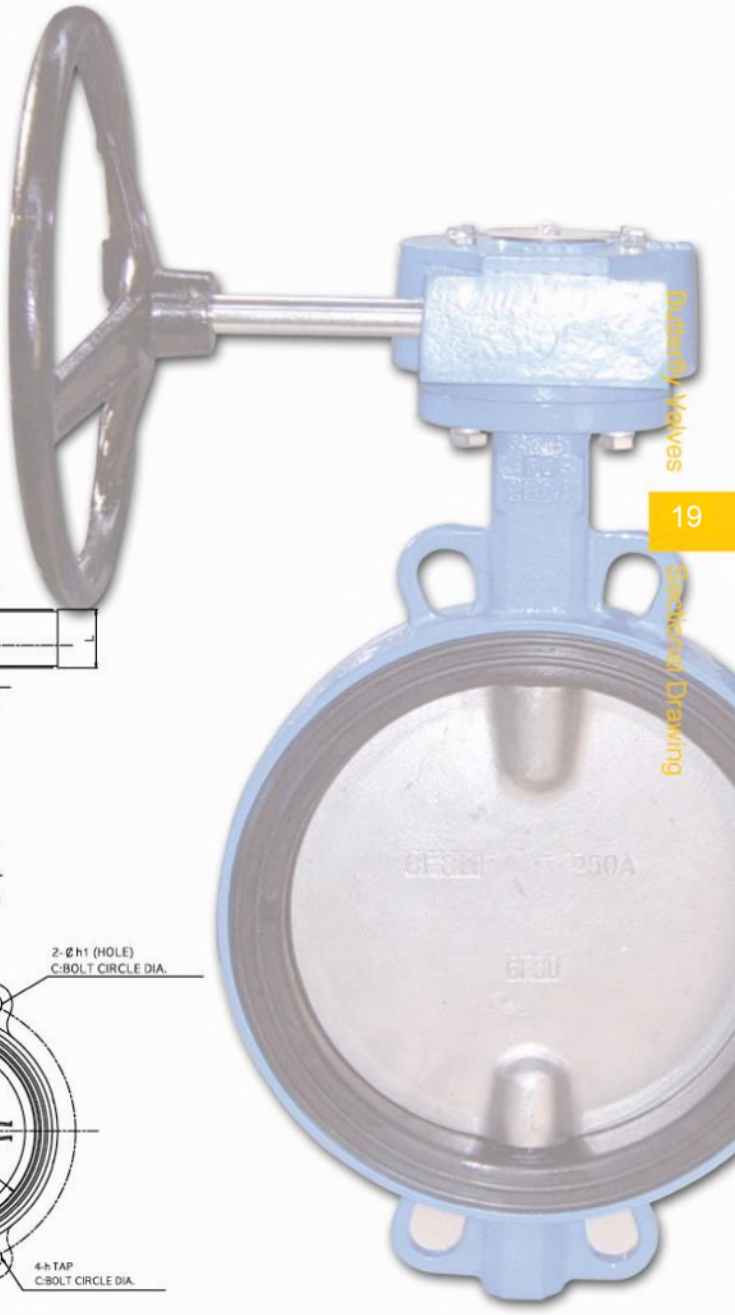
FEATURES :

- Bubble tight shut-off
- Light weight, compact size and easy installation
- General application valve
- Bi-directional mounting
- Easy replaceable seat
- Application : - Chemical processing
  - Oil field
  - Power plant
  - Hydrocarbon processing

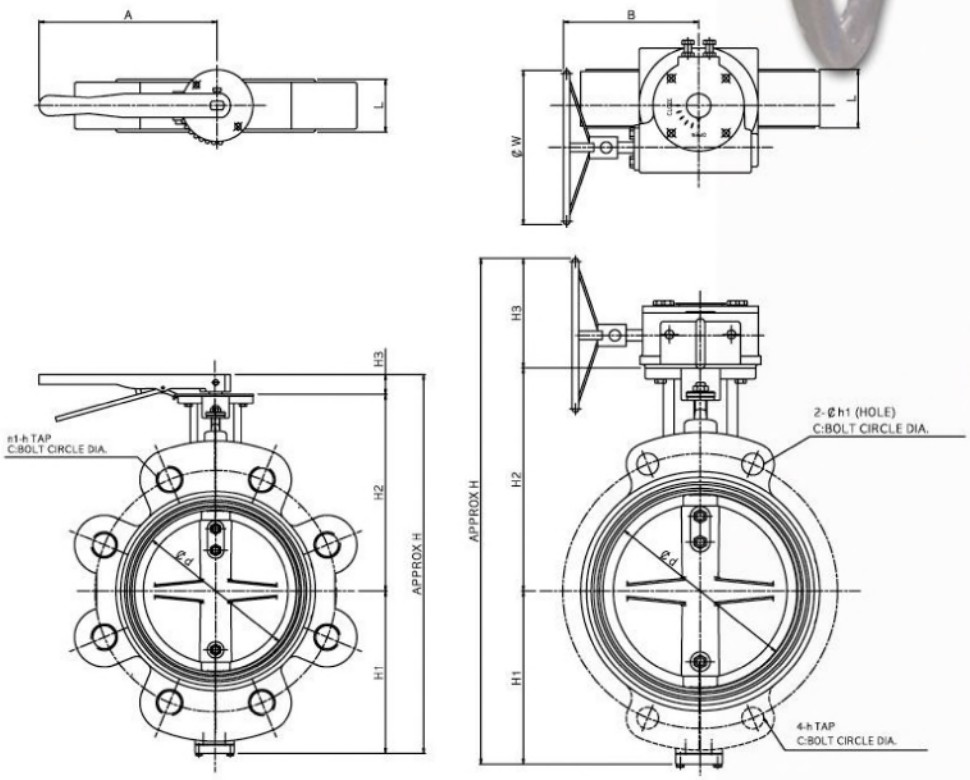
SECTIONAL DRAWING – RESILENT SEATED

SECTIONAL DRAWING

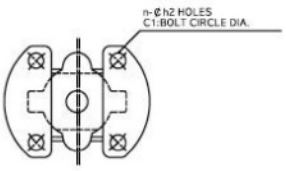




HIGH PERFORMANCE – OUTDRAWING



ACTUATOR MOUNTING BASE



Inline Flow Specialty
Our Quality Defines Us

DIMENSIONS – RESILIENT SEATED

RESILIENT SEATED – DIMENSIONS

RESILIENT SEATED – DIMENSIONS — UNIT: mm

ANSI CLASS 150

SIZE											FLANGE DIMENSION				MOUNTING BASE			Weight	
Inch	mm	H	H1	H2	H3	¢d	L	A	B	¢W	C	n1	h	h1	n	h2	c1	WAFER	LUG
2″	50	330	65	130	105	50	43	260	180	150	127.7	4	5/8″X11unc	19	4	10	83	2.9	3.7
2-1/2″	65	324	74	145	105	64	46	260	180	150	139.7	4	5/8″X11unc	19	4	10	83	4	4.4
3″	80	343	90	148	105	80	46	260	160	150	152.4	4	5/8″X11unc	19	4	10	83	4.8	5.1
4″	100	390	110	175	105	100	52	330	180	150	190.5	8	5/8″X11unc	19	4	10	83	6.8	8.5
5″	125	418	125	188	105	124	56	330	180	150	215.9	8	3/4″X10unc	22.5	4	10	83	8.2	12.1
6″	150	443	138	200	105	150	56	330	180	150	241.3	8	3/4″X10unc	22.5	4	10	83	11.5	13
8″	200	559	165	230	164	200	60	470	260	260	298.5	8	3/4″X10unc	22.5	4	14	125	16	21
10″	250	629	200	265	164	250	68	-	260	260	362.0	12	7/8″X9unc	25.5	4	14	125	22	31
12″	300	704	235	305	164	300	78	-	260	260	431.8	12	3/4″X10unc	22.5	4	14	125	38	46
14″	350	762	268	330	164	334	78	-	260	260	476.3	12	1″X8unc	28.5	4	14	125	50	62
16″	400	926	362	310	254	390	102	-	300	400	539.8	16	1″X8unc	28.5	4	23	165	80	106
18″	450	981	337	390	254	434	108	-	300	400	577.9	16	1-1/8″X8unc	-	4	23	165	100	120
20″	500	1074	380	440	254	486	127	-	300	400	635.0	20	1-1/8″X8unc	-	4	23	165	142	172
22″	550	1130	415	455	260	526	154	-	350	400	692.2	20	1-1/4″X8unc	-	8	19	192	206	252
24″	600	1182	447	475	260	582	154	-	350	400	749.3	20	1-1/4″X8unc	-	8	19	192	234	290
26″	650	1260	475	525	260	622	165	-	350	400	806.5	24	1-1/4″X8unc	-	8	19	192	262	325
28″	700	1325	500	565	260	674	165	-	350	400	863.6	28	1-1/4″X8unc	-	8	19	192	310	385
30″	750	1505	540	600	365	724	165	-	390	605	914.4	28	1-1/4″X8unc	-	8	19	254	395	488
32″	800	1600	615	620	365	774	190	-	390	605	977.9	28	1-1/2″X8unc	-	8	19	254	470	582
34″	850	1680	640	675	365	836	200	-	390	605	1028.7	32	1-1/2″X8unc	-	8	19	254	522	655
36″	900	1740	670	705	365	872	200	-	390	605	1085.9	32	1-1/2″X8unc	-	8	19	254	583	725
40″	1000	1850	750	735	365	964	216	-	390	605	1200.0	36	1-1/2″X8unc	-	8	19	254	660	822

RESILIENT SEATED – TORQUE & Cv

TORQUE VALUE

Cv VALUE

SIZE		MAX. DIFFERENTIAL PRESSURE (kgf/㎠)		FULL OPEN
Inch	mm	5.3 (75 PSI)	105 (150 PSI)	
2″	50	2.0	2.5	115
2-1/2″	65	2.3	3.1	221
3″	80	3.4	4.1	425
4″	100	4.8	6.5	792
5″	125	7.3	9.0	1290
6″	150	11.2	14.6	2175
8″	200	14.6	19.1	3984
10″	250	29.2	35.9	4900
12″	300	43.8	53.8	8710
14″	350	57.1	91.8	11460
16″	400	78.5	117.3	13702
18″	450	123.4	173.3	18302
20″	500	157.0	246.8	22903
22″	550	208.0	342.6	27479
24″	600	241.7	432.3	32096
26″	650	314.1	550.6	34944
28″	700	403.8	656.7	37791
30″	750	471.1	780.1	42988
32″	800	527.2	874.9	48185
34″	850	605.7	987.1	54543
36″	900	683.2	1099.2	60901
40″	1000	1088.0	1884.4	60901

BUTTERFLY VALVES-C SERIES, TORQUE VALVES

IFS C series butterfly valves are manufactured as easy re-assembling, compact and high quality to be applied oil, gas, sea water and many application industry range.

Anticipated Seating & Unseating Torque Values-Nm(Fully Rated)

Shut Pressure kg/㎠ (PSI)									
Valve (mm)	Normal Service				Valve (mm)	Normal Service			
	0	3	6	10		0	3	6	10
	(0)	(50)	(85)	(150)		(0)	(50)	(85)	(150)
40	8	8	12	15	550	1050	1210	1850	3040
50	25	25	25	26	600	1150	1950	2700	3800
65	31	32	32	33	650	1320	2800	3100	4650
80	36	37	38	39	700	1450	3180	3940	5840
100	54	56	58	61	750	1695	3320	4050	6940
125	73	77	81	86	800	2870	3700	5050	7850
150	102	107	112	130	850	3350	4200	5790	8700
200	170	181	191	206	900	3750	4600	6100	9700
250	260	282	303	332	950	4250	5600	8700	9950
300	350	382	413	480	1000	7320	8500	9250	10500
350	486	570	653	820	1050	8600	8800	9950	10830
400	622	751	879	1050	1100	10500	9500	15300	14500
450	780	968	1155	1550	1200	11300	12300	17200	19100
500	961	1225	1490	2220					