CHAODA USA

ASME Classes 150 – 2500

API 594 / ASME B16.34 Design

Dual Plate Check Valves

www.chaodausa.com | 832-939-9944 | 12411 Citypark Dr. #100, Missouri City, TX 77489

CHAODA INTRODUCTION

At Chaoda, pioneering design meets efficient manufacturing for top-tier gate, globe, and check valves.

INDUSTRIES WE SERVE

The Chaoda Group is excited to introduce our **Dual Plate Check Valve** product line, which exemplifies our dedication to combining field-tested designs with cutting-edge manufacturing technology to deliver superior quality.

As a fully integrated manufacturer, we oversee every aspect of production from the initial design through to the foundry, machining, assembly, and rigorous testing phases. This complete control ensures that each Dual Plate Check Valve meets the high standards our clients expect, providing a reliable solution tailored to precise operational requirements without compromising on cost.

Established in 1984, the Chaoda Group has consistently pursued excellence in valve production, driven by a commitment to ongoing research, development, and enhancement of manufacturing processes. This approach positions us at the forefront of the industry, offering you a premier selection of Dual Plate Check Valves that truly set the standard

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Dual Plate Check Valves

CDP SERIES

API 594 Dual Plate Check Valves

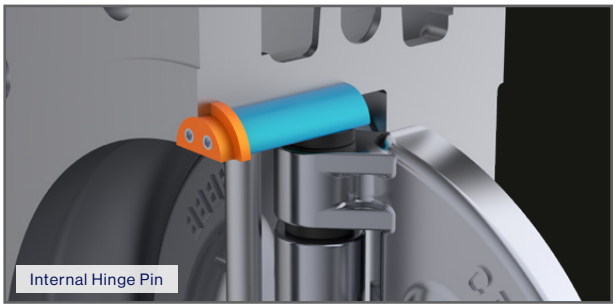
API 594 DUAL PLATE CHECK VALVES

ASME Class 150, 300, 600, 900, 1500, 2500

BASIC DESIGN	API 594
TESTING	API 598
END DIMENSION **WAFER LUG DOUBLE FLANGED**	ASME B16.5 (NPS≤24) ASME B16.47 Series A or B (NPS >24)
FACE-TO-FACE:	API 594 Table 2
P/T RATINGS:	ASME B16.34

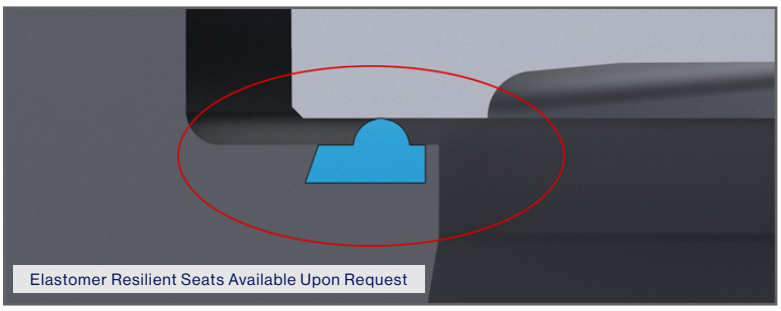
STANDARD FEATURES & OPTIONS

- All Chaoda CDP Series Dual Plate Check Valves feature an internally-retained hinge pin as a standard feature. This design eliminates all leak paths from the valve body.
- All Chaoda CDP Series Dual Plate Check Valves are equipped with Inconel X-750 torsional springs as standard. Other spring materials are available on request.
- Chaoda CDP Series Dual Plate Check Valves are equipped with metal seats as a standard. They can also be equipped optionally with elastomer or fluoropolymer resilient seats on customer request.

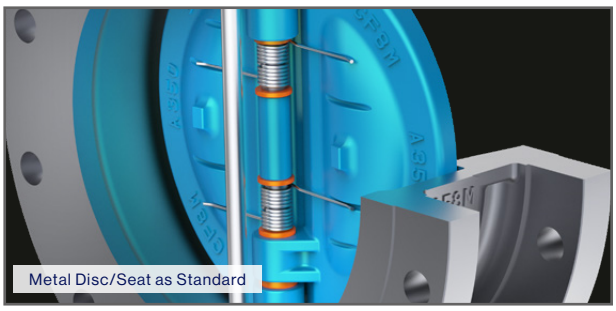


Internal Hinge Pin

Inconel X-750 Torsional Springs



Elastomer Resilient Seats Available Upon Request

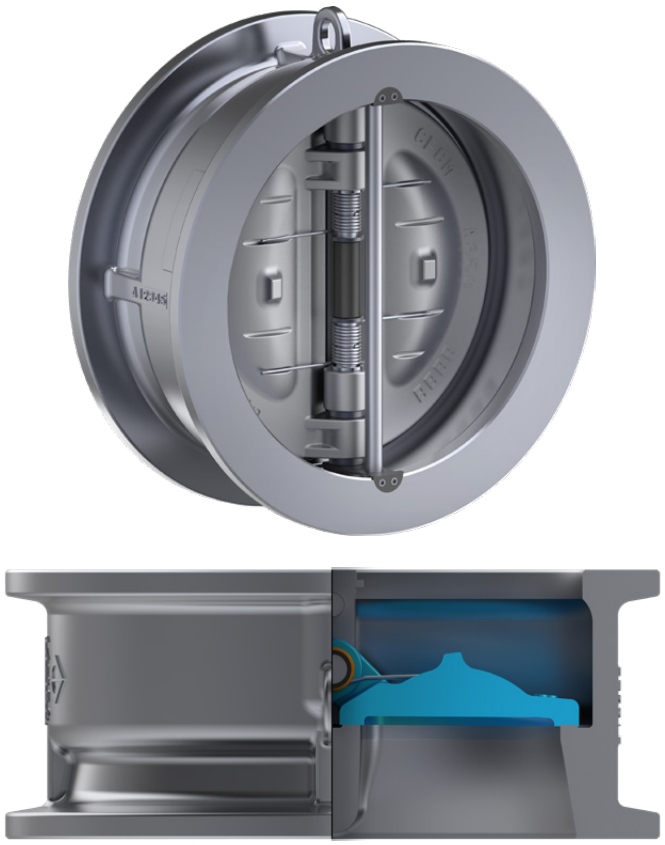


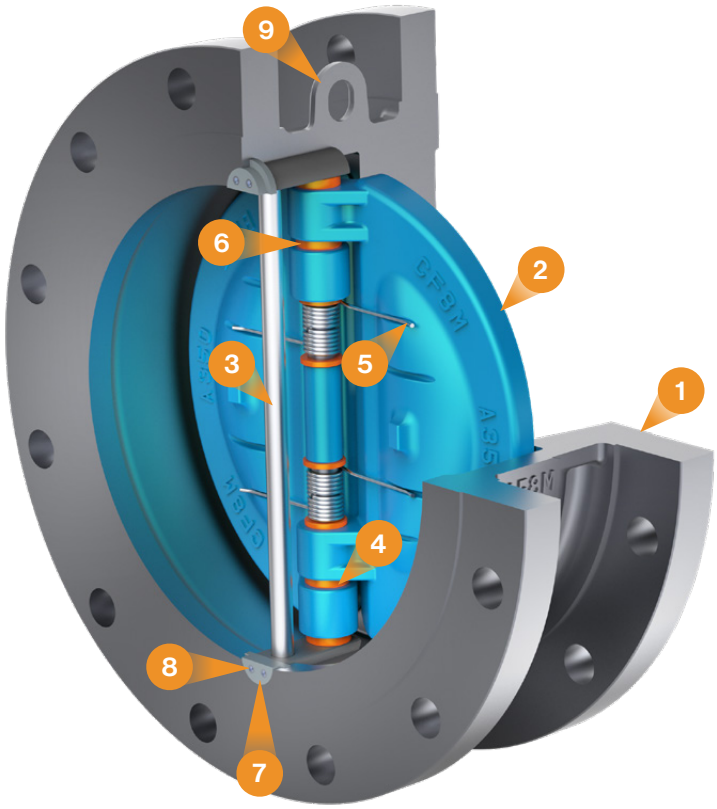
Metal Disc/Seat as Standard

CDP SERIES DUAL PLATE CHECK VALVE

ASME Class 150, 300, 600, 900, 1500, 2500

Standard Parts and Materials



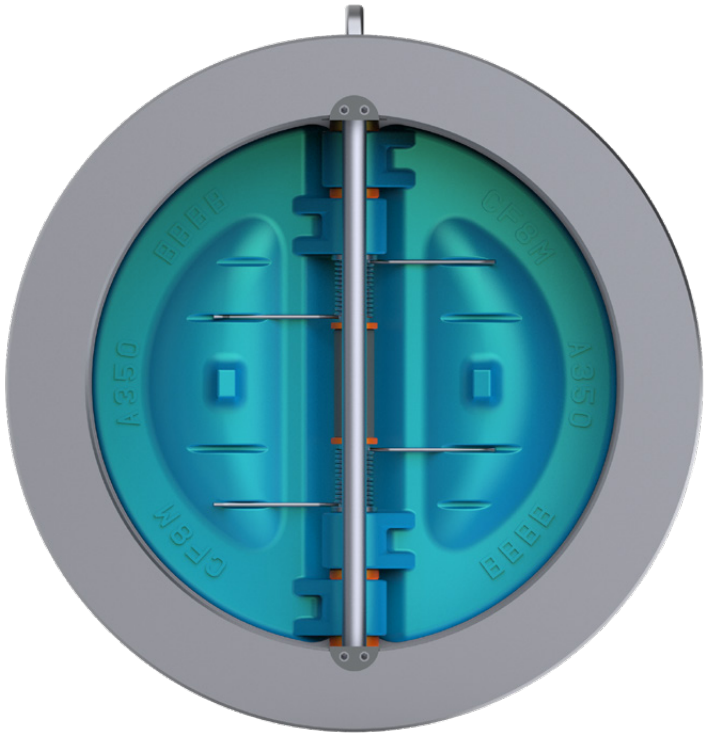


#	PART NAME	WCB BODY API Trim 10 NACE MR0103 & MR0175 Compliant	LCC BODY API Trim 12 NACE MR0103 & MR0175 Compliant	CF8M BODY API Trim 10 NACE MR0103 & MR0175 Compliant	CD3MN BODY F51 Duplex Trim NACE MR0103 & MR0175 Compliant
1	**Body**	ASTM A216 WCB + 316SS Seat Overlay	ASTM A352 LCC + Stellite 6 Seat Overlay	ASTM A351 CF8M	ASTM A995 CD3MN
2	**Plate**	ASTM A351 CF8M	ASTM A351 CF8M	ASTM A351 CF8M	ASTM A995 CD3MN
3	**Shaft**	ASTM A182 F316	ASTM A182 F316	ASTM A182 F316	ASTM A182 F51
4	**Spring Plate**	ASTM A182 F316	ASTM A182 F316	ASTM A182 F316	ASTM A182 F51
5	**Spring**	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
6	**Spacer Ring**	ASTM A182 F316	ASTM A182 F316	ASTM A182 F316	ASTM A182 F51
7	**Retainer**	ASTM A182 F316	ASTM A182 F316	ASTM A182 F316	ASTM A182 F51
8	**Retainer Bolting**	ASTM A193 B8M	ASTM A193 B8M	ASTM A193 B8M	ASTM A193 B8M
9	**Lifting Lug** (when separate from body)	AISI 1025	AISI 1025	AISI 1025	AISI 1025

CDP SERIES DUAL PLATE CHECK VALVE

ASME Class 150

Dimensional Information



CL. 150 | INCH (MM)							
NPS	DN	F	L	D	D1	D2	WT LB (KG)
1.5	40	B16.5 FLANGE SERIES	2.36 (60)	3.27 (83)	1.5 (38)	1.77 (45)	4 (2)
2	50		2.36 (60)	4.06 (103)	2.01 (51)	2.2 (56)	4 (2)
3	80		2.87 (73)	5.31 (135)	3.15 (80)	3.46 (88)	9 (4)
4	100		2.87 (73)	6.81 (173)	4.02 (102)	4.25 (108)	13 (6)
6	150		3.86 (98)	8.66 (220)	5.98 (152)	6.3 (160)	29 (13)
8	200		5 (127)	10.91 (277)	7.99 (203)	8.27 (210)	55 (25)
10	250		5.75 (146)	13.27 (337)	10 (254)	10.47 (266)	86 (39)
12	300		7.13 (181)	16.02 (407)	12.01 (305)	12.2 (310)	119 (54)
14	350		7.24 (184)	17.64 (448)	13.78 (350)	13.98 (355)	176 (80)
16	400		7.52 (191)	20.16 (512)	15.75 (400)	15.94 (405)	258 (117)
18	450		7.99 (203)	21.54 (547)	17.72 (450)	17.91 (455)	304 (138)
20	500		8.62 (219)	23.78 (604)	19.69 (500)	19.88 (505)	359 (163)
24	600		8.74 (222)	28.15 (715)	23.62 (600)	23.82 (605)	730 (331)

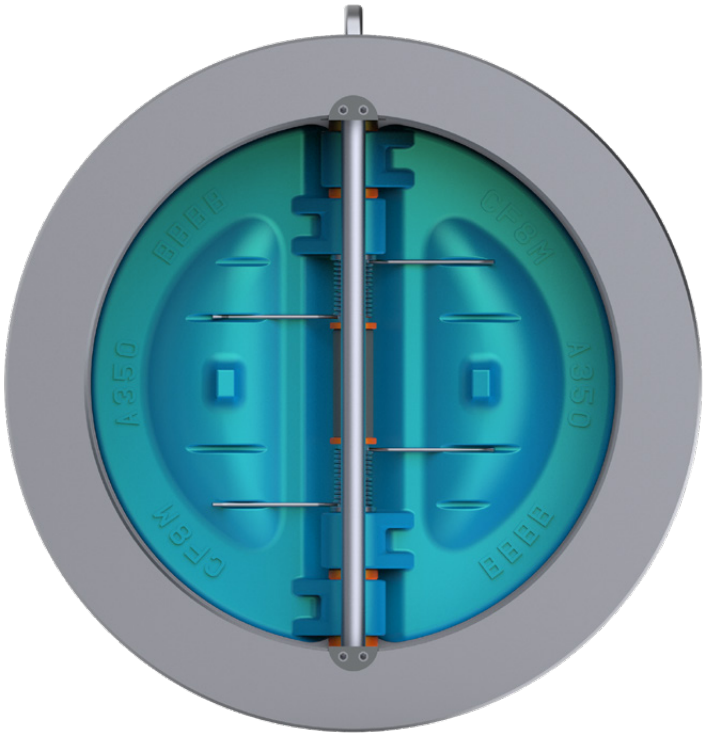
CL. 150 | INCH (MM)							
NPS	DN	F	L	D	D1	D2	WT LB (KG)
26	650	B16.47 FLANGE SERIES - SERIES A	8.74 (222)	30.31 (770)	24.92 (633)	25.59 (650)	838 (380)
28	700		12.01 (305)	32.56 (827)	27.56 (700)	27.56 (700)	882 (400)
30	750		12.01 (305)	34.57 (878)	29.37 (746)	29.53 (750)	970 (440)
32	800		12.01 (305)	36.81 (935)	31.34 (796)	31.5 (800)	1279 (580)
36	900		14.49 (368)	41.14 (1045)	34.41 (874)	35.2 (894)	1455 (660)
40	1000		17.01 (432)	45.94 (1167)	38.43 (976)	38.78 (985)	1962 (890)
42	1050		17.01 (432)	47.76 (1213)	41.34 (1050)	41.54 (1055)	2161 (980)
44	1100		17.01 (432)	50.16 (1274)	42.13 (1070)	42.13 (1070)	2580 (1170)
48	1200		20.63 (524)	55 (1397)	45.91 (1166)	47.44 (1205)	3197 (1450)
54	1350		23.27 (591)	60.83 (1545)	51.65 (1312)	51.77 (1315)	5072 (2300)
56	1400		23.27 (591)	63.07 (1602)	53.54 (1360)	53.94 (1370)	6284 (2850)
60	1500		25.98 (660)	67.32 (1710)	57.4 (1458)	57.87 (1470)	7111 (3225)

CL. 150 | INCH (MM)							
NPS	DN	F	L	D	D1	D2	WT LB (KG)
26	650	B16.47 FLANGE SERIES - SERIES B	8.74 (222)	28.43 (722)	24.92 (633)	25.59 (650)	794 (360)
28	700		12.01 (305)	30.43 (773)	27.56 (700)	27.56 (700)	838 (380)
30	750		12.01 (305)	32.44 (824)	29.37 (746)	29.53 (750)	937 (425)
32	800		12.01 (305)	34.57 (878)	31.34 (796)	31.5 (800)	1235 (560)
36	900		14.49 (368)	38.7 (983)	34.41 (874)	35.2 (894)	1411 (640)
40	1000		17.01 (432)	42.91 (1090)	38.43 (976)	38.78 (985)	1918 (870)
42	1050		17.01 (432)	44.96 (1142)	41.34 (1050)	41.54 (1055)	2117 (960)
44	1100		17.01 (432)	46.97 (1193)	42.13 (1070)	42.13 (1070)	2536 (1150)
48	1200		20.63 (524)	51.26 (1302)	47.24 (1200)	47.44 (1205)	3087 (1400)
54	1350		23.27 (591)	57.48 (1460)	51.65 (1312)	51.77 (1315)	4950 (2245)
56	1400		23.27 (591)	59.53 (1512)	53.54 (1360)	53.94 (1370)	6240 (2830)
60	1500		25.98 (660)	64.09 (1628)	57.4 (1458)	57.87 (1470)	7056 (3200)

CDP SERIES DUAL PLATE CHECK VALVE

ASME Class 300

Dimensional Information



CL. 300 | INCH (MM)							
NPS	DN	F	L	D	D1	D2	WT LB (KG)
2	50	B16.5 FLANGE SERIES	2.36 (60)	4.33 (110)	2.01 (51)	2.28 (58)	7 (3)
3	80		2.87 (73)	5.79 (147)	3.15 (80)	3.46 (88)	13 (6)
4	100		2.87 (73)	7.05 (179)	4.02 (102)	4.25 (108)	18 (8)
6	150		3.86 (98)	9.8 (249)	5.98 (152)	6.3 (160)	40 (18)
8	200		5 (127)	12.01 (305)	7.99 (203)	8.27 (210)	68 (31)
10	250		5.75 (146)	14.13 (359)	10 (254)	10.47 (266)	112 (51)
12	300		7.13 (181)	16.54 (420)	12.01 (305)	12.2 (310)	170 (77)
14	350		8.74 (222)	19.02 (483)	13.78 (350)	13.98 (355)	258 (117)
16	400		9.13 (232)	21.14 (537)	15.75 (400)	15.94 (405)	419 (190)
18	450		10.39 (264)	23.39 (594)	17.72 (450)	17.91 (455)	441 (200)
20	500		11.5 (292)	25.67 (652)	19.69 (500)	19.88 (505)	584 (265)
24	600		12.52 (318)	30.39 (772)	23.62 (600)	23.94 (608)	904 (410)

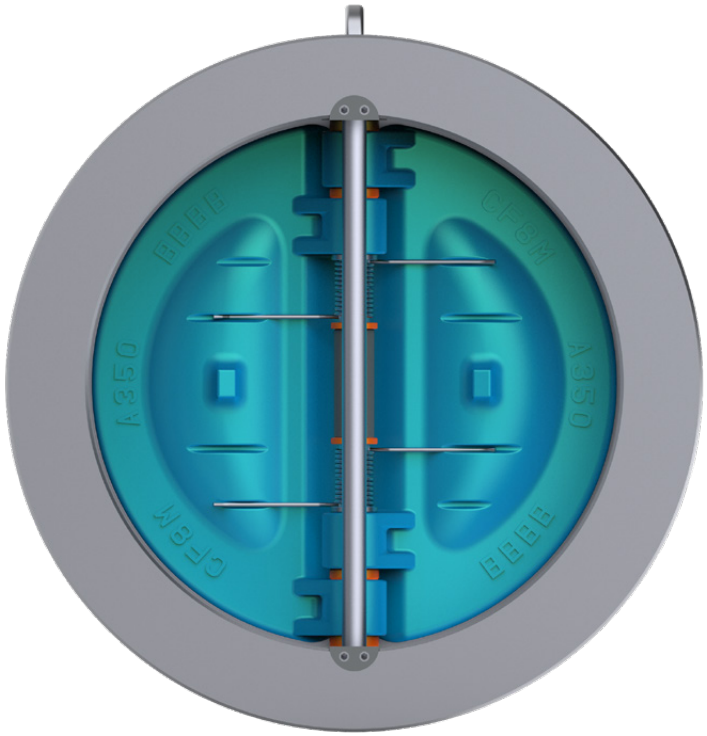
CL. 300 | INCH (MM)							
NPS	DN	F	L	D	D1	D2	WT LB (KG)
26	650	B16.47 FLANGE SERIES - SERIES A	14.02 (356)	32.72 (831)	24.92 (633)	25.2 (640)	1279 (580)
28	700		14.49 (368)	35.24 (895)	26.97 (685)	26.97 (685)	1323 (600)
30	750		14.49 (368)	37.36 (949)	28.94 (735)	29.13 (740)	1499 (680)
32	800		14.49 (368)	39.49 (1003)	30.87 (784)	30.87 (784)	2183 (990)
36	900		19.02 (483)	43.82 (1113)	34.37 (873)	34.65 (880)	2315 (1050)
40	1000		21.5 (546)	43.7 (1110)	38.43 (976)	38.78 (985)	3087 (1400)
42	1050		22.36 (568)	45.71 (1161)	40.75 (1035)	41.14 (1045)	3352 (1520)
48	1200		24.76 (629)	51.97 (1320)	45.91 (1166)	46.85 (1190)	4961 (2250)
54	1350		28.27 (718)	58.62 (1489)	51.65 (1312)	51.77 (1315)	6791 (3080)
60	1500		32.99 (838)	64.65 (1642)	57.4 (1458)	57.87 (1470)	9482 (4300)

CL. 300 | INCH (MM)							
NPS	DN	F	L	D	D1	D2	WT LB (KG)
26	650	B16.47 FLANGE SERIES - SERIES B	14.02 (356)	30.2 (767)	24.92 (633)	25.2 (640)	1246 (565)
28	700		14.49 (368)	32.32 (821)	26.97 (685)	26.97 (685)	1290 (585)
30	750		14.49 (368)	34.72 (882)	28.94 (735)	29.13 (740)	1455 (660)
32	800		14.49 (368)	36.85 (936)	30.87 (784)	30.87 (784)	2139 (970)
36	900		19.02 (483)	41.1 (1044)	34.37 (873)	34.65 (880)	2249 (1020)
40	1000		21.5 (546)	45.12 (1146)	38.43 (976)	38.78 (985)	3131 (1420)
42	1050		22.36 (568)	47.09 (1196)	40.75 (1035)	41.14 (1045)	3396 (1540)
48	1200		24.76 (629)	53.74 (1365)	45.91 (1166)	46.85 (1190)	4983 (2260)
54	1350		28.27 (718)	60.08 (1526)	51.65 (1312)	51.77 (1315)	6840 (3102)
60	1500		32.99 (838)	67.09 (1704)	57.4 (1458)	57.87 (1470)	9515 (4315)

CDP SERIES DUAL PLATE CHECK VALVE

ASME Class 600

Dimensional Information



CL. 600 | INCH (MM)							
NPS	DN	F	L	D	D1	D2	WT LB (KG)
2	50	B16.5 FLANGE SERIES	2.36 (60)	4.33 (110)	2.01 (51)	2.28 (58)	9 (4)
3	80		2.87 (73)	5.79 (147)	3.15 (80)	3.46 (88)	18 (8)
4	100		3.11 (79)	7.52 (191)	4.02 (102)	4.25 (108)	24 (11)
6	150		5.35 (136)	10.39 (264)	5.98 (152)	6.38 (162)	57 (26)
8	200		6.5 (165)	12.52 (318)	7.87 (200)	8.35 (212)	121 (55)
10	250		8.39 (213)	15.67 (398)	9.84 (250)	10.47 (266)	209 (95)
12	300		9.02 (229)	17.91 (455)	12.01 (305)	12.28 (312)	309 (140)
14	350		10.75 (273)	19.29 (490)	13.27 (337)	13.98 (355)	492 (223)
16	400		12.01 (305)	22.13 (562)	15.24 (387)	15.75 (400)	794 (360)
18	450		14.25 (362)	24.02 (610)	17.24 (438)	17.72 (450)	871 (395)
20	500		14.49 (368)	26.77 (680)	19.25 (489)	19.69 (500)	1142 (518)
24	600		17.24 (438)	30.94 (786)	23.27 (591)	23.62 (600)	1843 (836)

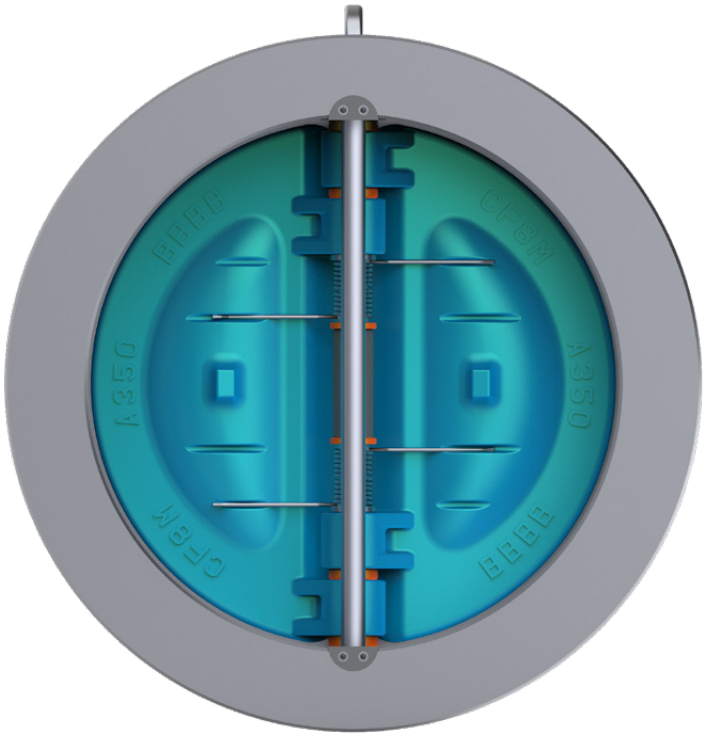
CL. 600 | INCH (MM)							
NPS	DN	F	L	D	D1	D2	WT LB (KG)
26	650	B16.47 FLANGE SERIES SERIES A	17.99 (457)	33.98 (863)	24.92 (633)	25.2 (640)	2161 (980)
28	700		19.02 (483)	35.83 (910)	26.93 (684)	27.17 (690)	2756 (1250)
30	750		19.88 (505)	38.07 (967)	28.94 (735)	29.13 (740)	3131 (1420)
32	800		20.98 (533)	40.16 (1020)	30.67 (779)	30.87 (784)	3749 (1700)
36	900		25 (635)	44.33 (1126)	34.41 (874)	34.65 (880)	4851 (2200)
40	1000		25.98 (660)	45.39 (1153)	38.43 (976)	38.78 (985)	5843 (2650)
42	1050		27.64 (702)	47.83 (1215)	40.16 (1020)	40.55 (1030)	6913 (3135)
48	1200		30.98 (787)	54.57 (1386)	45.91 (1166)	46.06 (1170)	8280 (3755)

CL. 600 | INCH (MM)							
NPS	DN	F	L	D	D1	D2	WT LB (KG)
26	650	B16.47 FLANGE SERIES - SERIES B	17.99 (457)	29.96 (761)	24.92 (633)	25.2 (640)	2095 (950)
28	700		19.02 (483)	32.09 (815)	26.93 (684)	27.17 (690)	2679 (1215)
30	750		19.88 (505)	34.45 (875)	28.94 (735)	29.13 (740)	3038 (1378)
32	800		20.98 (533)	36.54 (928)	30.67 (779)	30.87 (784)	3623 (1643)
36	900		25 (635)	41.14 (1045)	34.41 (874)	34.65 (880)	4675 (2120)

CDP SERIES DUAL PLATE CHECK VALVE

ASME Class 900

Dimensional Information



CL. 900 | INCH (MM)							
NPS	DN	F	L	D	D1	D2	WT LB (KG)
2	50	B16.5 FLANGE SERIES	2.76 (70)	5.51 (140)	2.01 (51)	2.28 (58)	18 (8)
3	80		3.27 (83)	6.5 (165)	3.15 (80)	3.54 (90)	31 (14)
4	100		4.02 (102)	8.03 (204)	4.02 (102)	4.25 (108)	44 (20)
6	150		6.26 (159)	11.26 (286)	5.91 (150)	6.38 (162)	93 (42)
8	200		8.11 (206)	14.02 (356)	7.87 (200)	8.35 (212)	185 (84)
10	250		9.49 (241)	17.01 (432)	9.84 (250)	10.47 (266)	320 (145)
12	300		11.5 (292)	19.49 (495)	12.01 (305)	12.28 (312)	485 (220)
14	350		14.02 (356)	20.39 (518)	13.27 (337)	13.98 (355)	772 (350)
16	400		15.12 (384)	22.52 (572)	15.24 (387)	15.75 (400)	1036 (470)
18	450		17.76 (451)	25 (635)	17.24 (438)	17.72 (450)	1334 (605)
20	500		17.76 (451)	27.36 (695)	19.17 (487)	19.53 (496)	1808 (820)
24	600		19.49 (495)	32.87 (835)	23.27 (591)	23.62 (600)	2315 (1050)

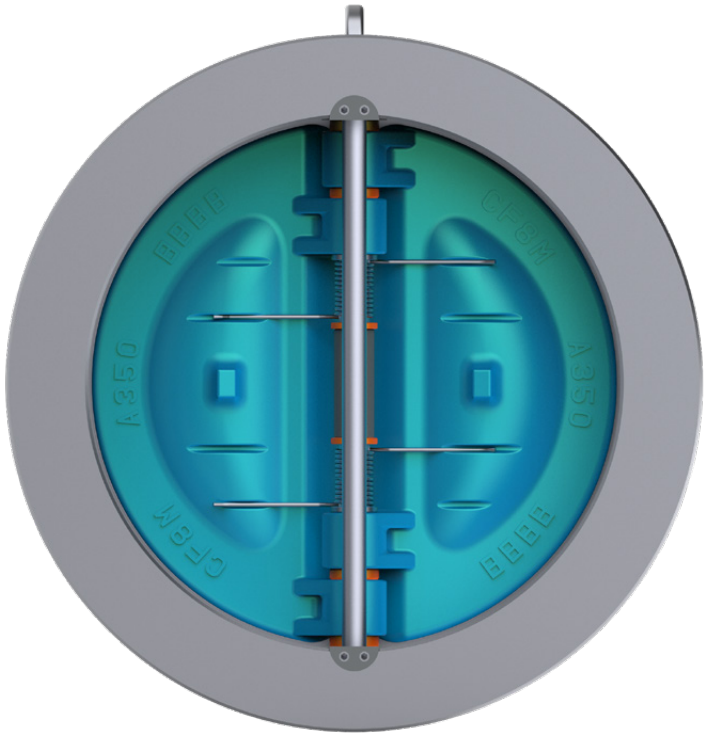
CL. 900 | INCH (MM)							
NPS	DN	F	L	D	D1	D2	WT LB (KG)
26	650	B16.47 FLANGE SERIES SERIES A	20.98 (533)	34.61 (879)	24.29 (617)	24.8 (630)	2646 (1200)
28	700		22.52 (572)	37.13 (943)	26.18 (665)	26.77 (680)	3219 (1460)
30	750		25 (635)	39.61 (1006)	28.03 (712)	28.94 (735)	3528 (1600)
32	800		25.98 (660)	42.13 (1070)	29.92 (760)	30.87 (784)	4520 (2050)
36	900		28.27 (718)	47.05 (1195)	33.66 (855)	34.06 (865)	5748 (2607)
40	1000		30 (762)	49.06 (1246)	37.4 (950)	37.99 (965)	6461 (2930)
42	1050		30.98 (787)	51.02 (1296)	39.17 (995)	39.96 (1015)	7299 (3310)
48	1200		33.5 (851)	58.39 (1483)	44.88 (1140)	45.67 (1160)	9735 (4415)

CL. 900 | INCH (MM)							
NPS	DN	F	L	D	D1	D2	WT LB (KG)
26	650	B16.47 FLANGE SERIES - SERIES B	20.98 (533)	32.87 (835)	24.29 (617)	24.8 (630)	2606 (1182)
28	700		22.52 (572)	35.35 (898)	26.18 (665)	26.77 (680)	3177 (1441)
30	750		25 (635)	37.6 (955)	28.03 (712)	28.94 (735)	3479 (1578)
32	800		25.98 (660)	39.84 (1012)	29.92 (760)	30.87 (784)	4476 (2030)
36	900		28.27 (718)	44.09 (1120)	33.66 (855)	34.06 (865)	5748 (2607)

CDP SERIES DUAL PLATE CHECK VALVE

ASME Class 1500 & 2500

Dimensional Information



CL. 1500 | INCH (MM)							
NPS	DN	F	L	D	D1	D2	WT LB (KG)
2	50	B16.5 FLANGE SERIES	2.76 (70)	5.51 (140)	2.01 (51)	2.28 (58)	18 (8)
3	80		3.27 (83)	6.77 (172)	3.15 (80)	3.54 (90)	42 (19)
4	100		4.02 (102)	8.15 (207)	4.02 (102)	4.25 (108)	57 (26)
6	150		6.26 (159)	11.02 (280)	5.91 (150)	6.38 (162)	150 (68)
8	200		8.11 (206)	13.78 (350)	7.87 (200)	8.35 (212)	287 (130)
10	250		9.76 (248)	17.05 (433)	10 (254)	10.47 (266)	463 (210)
12	300		12.01 (305)	20.39 (518)	12.01 (305)	12.28 (312)	847 (384)
14	350		14.02 (356)	22.68 (576)	13.27 (337)	13.98 (355)	1213 (550)
16	400		15.12 (384)	25.16 (639)	15.24 (387)	15.75 (400)	1400 (635)
18	450		18.43 (468)	27.6 (701)	16.93 (430)	17.24 (438)	1742 (790)
20	500		20.98 (533)	29.65 (753)	18.82 (478)	19.17 (487)	2811 (1275)
24	600		22.01 (559)	35.31 (897)	22.44 (570)	22.76 (578)	5976 (2710)

CL. 2500 | INCH (MM)							
NPS	DN	F	L	D	D1	D2	WT LB (KG)
2	50	B16.5 FLANGE SERIES	2.76 (70)	5.63 (143)	1.65 (42)	1.89 (48)	22 (10)
3	80		3.39 (86)	7.64 (194)	2.44 (62)	2.68 (68)	57 (26)
4	100		4.13 (105)	9.13 (232)	3.46 (88)	3.7 (94)	88 (40)
6	150		6.26 (159)	12.4 (315)	5.91 (150)	6.38 (162)	198 (90)
8	200		8.11 (206)	15.16 (385)	7.09 (180)	7.32 (186)	331 (150)
10	250		10 (254)	18.66 (474)	8.86 (225)	9.13 (232)	529 (240)
12	300		12.01 (305)	21.54 (547)	10.47 (266)	10.71 (272)	970 (440)

P/T RATINGS (PSIG)

ASME B16.34 Valves

The following pressure-temperature ratings are based on ASME B16.34 (2020 Edition). The temperatures shown are that of the pressure-containing shell, which is considered to be the same temperature as that of the fluid flowing within it.

MAXIMUM ALLOWABLE NON-SHOCK PRESSURE (PSIG)

SERVICE TEMP °F	A216 GR. WCB GROUP 1.1 (A)	A352 GR. LCC GROUP 1.2 (B)	A351 GR. CF8M GROUP 2.2 (G)	A995 GR. CD3MN GROUP 2.8 (H)	A995 GR. CD3MN GROUP 2.8 (H)
-20 to 100	150	285	290	275	290
	300	740	750	720	750
	600	1480	1500	1440	1500
	900	2220	2250	2160	2250
	1500	3705	3750	3600	3750
	2500	6170	6250	6000	6250
200	150	260	260	235	260
	300	680	750	620	745
	600	1360	1500	1240	1490
	900	2035	2250	1860	2230
	1500	3395	3750	3095	3720
	2500	5655	6250	5160	6200
300	150	230	230	215	230
	300	655	730	560	665
	600	1310	1455	1120	1335
	900	1965	2185	1680	2000
	1500	3270	3640	2795	3335
	2500	5450	6070	4660	5560
400	150	200	200	195	200
	300	635	705	515	615
	600	1265	1405	1025	1230
	900	1900	2110	1540	1845
	1500	3170	3520	2570	3070
	2500	5280	5865	4280	5120
500	150	170	170	170	170
	300	605	665	480	580
	600	1205	1330	955	1160
	900	1810	1995	1435	1740
	1500	3015	3325	2390	2905
	2500	5025	5540	3980	4840
600	150	140	140	140	140
	300	570	605	450	555
	600	1135	1210	900	1115
	900	1705	1815	1355	1670
	1500	2840	3025	2255	2785
	2500	4730	5040	3760	4640
650	150	125	125	125	-
	300	550	590	440	-
	600	1100	1175	885	-
	900	1650	1765	1325	-
	1500	2745	2940	2210	-
	2500	4575	4905	3680	-
700	150	110	-	110	-
	300	530	-	435	-
	600	1060	-	870	-
	900	1590	-	1305	-
	1500	2655	-	2170	-
	2500	4425	-	3620	-

SERVICE TEMP °F	A216 GR. WCB GROUP 1.1 (A)	A352 GR. LCC GROUP 1.2 (B)	A351 GR. CF8M GROUP 2.2 (G)	A995 GR. CD3MN GROUP 2.8 (H)	A995 GR. CD3MN GROUP 2.8 (H)
750	150	95	-	95	-
	300	505	-	425	-
	600	1015	-	855	-
	900	1520	-	1280	-
	1500	2535	-	2135	-
	2500	4230	-	3560	-
800	150	80	-	80	-
	300	410	-	420	-
	600	825	-	845	-
	900	1235	-	1265	-
	1500	2055	-	2110	-
	2500	3430	-	3520	-
850	150	65	-	65	-
	300	320	-	420	-
	600	640	-	835	-
	900	955	-	1255	-
	1500	1595	-	2090	-
	2500	2655	-	3480	-
900	150	50	-	50	-
	300	230	-	415	-
	600	460	-	830	-
	900	690	-	1245	-
	1500	1150	-	2075	-
	2500	1915	-	3460	-
950	150	35	-	35	-
	300	135	-	385	-
	600	275	-	775	-
	900	410	-	1160	-
	1500	685	-	1930	-
	2500	1145	-	3220	-
1000	150	20	-	20	-
	300	85	-	365	-
	600	170	-	725	-
	900	255	-	1090	-
	1500	430	-	1820	-
	2500	715	-	3030	-
1050	150	-	-	20	-
	300	-	-	360	-
	600	-	-	720	-
	900	-	-	1080	-
	1500	-	-	1800	-
	2500	-	-	3000	-
1100	150	-	-	20 (f)	-
	300	-	-	305	-
	600	-	-	610	-
	900	-	-	915	-
	1500	-	-	1525	-
	2500	-	-	2545	-

SERVICE TEMP °F	A216 GR. WCB GROUP 1.1 (A)	A352 GR. LCC GROUP 1.2 (B)	A351 GR. CF8M GROUP 2.2 (G)	A995 GR. CD3MN GROUP 2.8 (H)	A995 GR. CD3MN GROUP 2.8 (H)
1150	150	-	-	20 (f)	-
	300	-	-	235	-
	600	-	-	475	-
	900	-	-	710	-
	1500	-	-	1185	-
	2500	-	-	1970	-
1200	150	-	-	20 (f)	-
	300	-	-	185	-
	600	-	-	370	-
	900	-	-	555	-
	1500	-	-	925	-
	2500	-	-	1545	-
1250	150	-	-	20 (f)	-
	300	-	-	145	-
	600	-	-	295	-
	900	-	-	440	-
	1500	-	-	735	-
	2500	-	-	1230	-
1300	150	-	-	20 (f)	-
	300	-	-	115	-
	600	-	-	235	-
	900	-	-	350	-
	1500	-	-	585	-
	2500	-	-	970	-
1350	150	-	-	20 (f)	-
	300	-	-	95	-
	600	-	-	190	-
	900	-	-	290	-
	1500	-	-	480	-
	2500	-	-	800	-
1400	150	-	-	20 (f)	-
	300	-	-	75	-
	600	-	-	150	-
	900	-	-	225	-
	1500	-	-	380	-
	2500	-	-	630	-
1450	150	-	-	20 (f)	-
	300	-	-	60	-
	600	-	-	115	-
	900	-	-	175	-
	1500	-	-	290	-
	2500	-	-	485	-
1500	150	-	-	15 (f)	-
	300	-	-	40	-
	600	-	-	85	-
	900	-	-	125	-
	1500	-	-	205	-
	2500	-	-	345	-

P/T GUIDE NOTES

(a) Upon prolonged exposure to temperatures above 800°F (425°C), the carbide phase of steel may be converted to graphite. Permissible, but not recommended for prolonged use above this temperature.

(b) Not to be used over 650°F (345°C).

(f) Flanged-end valve ratings terminate at 1000°F (538°C).

(g) At temperatures above 1000°F (538°C), use only when the carbon content is 0.04% or higher.

(h) This steel may become brittle after service at moderately elevated temperatures. Not to be used over 600°F (315°C).

P/T RATINGS (BAR)

ASME B16.34 Valves

The following pressure-temperature ratings are based on ASME B16.34 (2020 Edition). The temperatures shown are that of the pressure-containing shell, which is considered to be the same temperature as that of the fluid flowing within it.

MAXIMUM ALLOWABLE NON-SHOCK PRESSURE (BAR)

SERVICE TEMP °C	PRESSURE CLASS	A216 GR. WCB GROUP 1.1 (A)	A352 GR. LCC GROUP 1.2 (B)	A351 GR. CF8M GROUP 2.2 (G)	A995 GR. CD3MN GROUP 2.8 (H)
-29 to 38	150	19.6	19.8	19	20
	300	51.1	51.7	49.6	51.7
	600	102.1	103.4	99.3	103.4
	900	153.2	155.1	148.9	155.1
	1500	255.3	258.6	248.2	258.6
	2500	425.5	430.9	413.7	430.9
50	150	19.2	19.5	18.4	19.5
	300	50.1	51.7	48.1	51.7
	600	100.2	103.4	96.2	103.4
	900	150.4	155.11	144.3	155.1
	1500	250.6	258.6	240.6	258.6
	2500	417.7	430.9	400.9	430.9
100	150	17.7	17.7	16.2	17.7
	300	46.6	51.5	42.2	50.7
	600	93.2	103	84.4	101.3
	900	139.8	154.6	126.6	152
	1500	233	257.6	211	253.3
	2500	388.3	429.4	351.6	422.2
150	150	15.8	15.8	14.8	15.8
	300	45.1	50.2	38.5	45.9
	600	90.2	100.3	77	91.9
	900	135.2	150.5	115.5	137.8
	1500	225.4	250.8	192.5	229.6
	2500	375.6	418.1	320.8	382.7
200	150	13.8	13.8	13.7	13.8
	300	43.8	48.6	35.7	42.7
	600	87.6	97.2	71.3	85.3
	900	131.4	145.8	107	128
	1500	219	243.2	178.3	2133
	2500	365	405.4	297.2	355.4
250	150	12.1	12.1	12.1	12.1
	300	41.9	46.3	33.4	40.5
	600	83.9	92.7	66.8	80.9
	900	125.8	139	100.1	121.4
	1500	209.7	231.8	166.9	202.3
	2500	349.5	386.2	278.1	337.2
300	150	10.2	10.2	10.2	10.2
	300	39.8	42.9	31.6	38.9
	600	79.6	85.7	63.2	77.7
	900	119.5	128.6	94.9	116.6
	1500	199.1	214.4	158.1	194.3
	2500	331.8	357.1	263.5	323.8
325	150	9.3	9.3	9.3	9.3
	300	38.7	41.4	30.9	38.2
	600	77.4	82.6	61.8	76.3
	900	116.1	124	92.7	114.5
	1500	193.6	206.6	154.4	190.8
	2500	322.6	344.3	257.4	318
350	150	8.4	-	8.4	8.4
	300	37.6	-	30.3	37.6
	600	75.1	-	60.7	75.3
	900	112.7	-	91	112.9
	1500	187.8	-	151.6	188.2
	2500	313	-	252.7	313.7
375	150	7.4	-	7.4	7.4
	300	36.4	-	29.9	37.4
	600	72.7	-	59.8	74.7
	900	109.1	-	89.6	112.1
	1500	181.8	-	149.4	186.8
	2500	303.1	-	249	311.3
400	150	6.5	-	6.5	6.5
	300	34.7	-	29.4	36.5
	600	69.4	-	58.9	73.3
	900	104.2	-	88.3	109.8
	1500	173.6	-	147.2	183.1
	2500	289.3	-	245.3	304.9
425	150	5.5	-	5.5	-
	300	28.8	-	29.1	-
	600	57.5	-	58.3	-
	900	86.3	-	87.4	-
	1500	143.8	-	145.7	-
	2500	239.7	-	242.9	-
450	150	4.6	-	4.6	-
	300	23	-	28.8	-
	600	46	-	57.7	-
	900	69	-	86.5	-
	1500	115	-	144.2	-
	2500	191.7	-	240.4	-
475	150	3.7	-	3.7	-
	300	17.4	-	28.7	-
	600	34.9	-	57.3	-
	900	52.3	-	86	-
	1500	87.2	-	143.4	-
	2500	145.3	-	238.9	-
500	150	2.8	-	2.8	-
	300	11.8	-	28.2	-
	600	23.5	-	56.5	-
	900	35.3	-	84.7	-
	1500	58.8	-	140.9	-
	2500	97.9	-	235	-
538	150	1.4	-	1.4	-
	300	5.9	-	25.2	-
	600	11.8	-	50	-
	900	17.7	-	75.2	-
	1500	29.5	-	125.5	-
	2500	49.2	-	208.9	-
550	150	-	-	1.4 (f)	-
	300	-	-	25	-
	600	-	-	49.8	-
	900	-	-	74.8	-
	1500	-	-	124.9	-
	2500	-	-	208	-
575	150	-	-	1.4 (f)	-
	300	-	-	24	-
	600	-	-	47.9	-
	900	-	-	71.8	-
	1500	-	-	119.7	-
	2500	-	-	199.5	-
600	150	-	-	1.4 (f)	-
	300	-	-	19.9	-
	600	-	-	39.8	-
	900	-	-	59.7	-
	1500	-	-	99.5	-
	2500	-	-	165.9	-
625	150	-	-	1.4 (f)	-
	300	-	-	15.8	-
	600	-	-	31.6	-
	900	-	-	47.4	-
	1500	-	-	79.1	-
	2500	-	-	131.8	-
650	150	-	-	1.4 (f)	-
	300	-	-	12.7	-
	600	-	-	25.3	-
	900	-	-	38	-
	1500	-	-	63.3	-
	2500	-	-	105.5	-
675	150	-	-	1.4 (f)	-
	300	-	-	10.3	-
	600	-	-	20.6	-
	900	-	-	31	-
	1500	-	-	51.6	-
	2500	-	-	86	-
700	150	-	-	1.4 (f)	-
	300	-	-	8.4	-
	600	-	-	16.8	-
	900	-	-	25.1	-
	1500	-	-	41.9	-
	2500	-	-	69.8	-
725	150	-	-	1.4 (f)	-
	300	-	-	7	-
	600	-	-	14	-
	900	-	-	21	-
	1500	-	-	34.9	-
	2500	-	-	58.2	-
750	150	-	-	1.4 (f)	-
	300	-	-	5.9	-
	600	-	-	11.7	-
	900	-	-	17.6	-
	1500	-	-	29.3	-
	2500	-	-	48.9	-
775	150	-	-	1.4 (f)	-
	300	-	-	4.6	-
	600	-	-	9	-
	900	-	-	13.7	-
	1500	-	-	22.8	-
	2500	-	-	38	-
800	150	-	-	1.2 (f)	-
	300	-	-	3.5	-
	600	-	-	7	-
	900	-	-	10.5	-
	1500	-	-	17.4	-
	2500	-	-	29.2	-
816	150	-	-	1 (f)	-
	300	-	-	2.8	-
	600	-	-	5.9	-
	900	-	-	8.6	-
	1500	-	-	14.1	-
	2500	-	-	23.8	-

P/T GUIDE NOTES

(a) Upon prolonged exposure to temperatures above 800°F (425°C), the carbide phase of steel may be converted to graphite. Permissible, but not recommended for prolonged use above this temperature.

(b) Not to be used over 650°F (345°C).

(f) Flanged-end valve ratings terminate at 1000°F (538°C).

(g) At temperatures above 1000°F (538°C), use only when the carbon content is 0.04% or higher.

(h) This steel may become brittle after service at moderately elevated temperatures. Not to be used over 600°F (315°C).

TRIM CHART & FLOW COEFFICIENT DATA

For Reference

API 594 TRIM CHART

API TRIM NUMBER	NOMINAL TRIM	DISC SURFACE	SEATING SURFACE	HINGE PIN
1	F6	13%Cr	13%Cr	410SS
2	304	304SS	304SS	304SS
5	Hardfaced	HF (CoCr-A)	HF (CoCr-A)	410SS
5A	Hardfaced	HF (NiCr)	HF (NiCr)	410SS
8	F6 and Hardfaced	13%Cr	HF (CoCr-A)	410SS
9	Monel®	Monel®	Monel®	Monel®
10	316	316SS	316SS	316SS
12	316 and Hardfaced	316SS	HF (CoCr-A)	316SS
13	Alloy 20	Alloy 20	Alloy 20	Alloy 20
14	Alloy 20 and Hardfaced	Alloy 20	HF (CoCr-A)	Alloy 20
16	Hardfaced	HF (CoCr-A)	HF (CoCr-A)	316SS
AA	Bronze	Bronze	Bronze	Bronze

CDP SERIES DUAL PLATE CHECK
CRACKING PRESSURE & FLOW COEFFICIENTS

SIZE (NPS)	SIZE (DN)	FLOW HORIZONTAL		FLOW VERTICAL / UPWARD		FLOW COEFFICIENT	
		PSI	KPA	PSI	KPA	C_v	K_v
NPS 2	DN50	0.15	1	0.29	2	74	63
NPS 3	DN80	0.15	1	0.29	2	201	172
NPS 4	DN100	0.15	1	0.29	2	338	289
NPS 6	DN150	0.15	1	0.29	2	878	750
NPS 8	DN200	0.15	1	0.29	2	1,675	1,432
NPS 10	DN250	0.15	1	0.29	2	2,726	2,330
NPS 12	DN300	0.15	1	0.29	2	4,301	3,676
NPS 14	DN350	0.15	1	0.29	2	6,171	5,274
NPS 16	DN400	0.15	1	0.44	3	8,548	7,306
NPS 18	DN450	0.15	1	0.44	3	10,818	9,246
NPS 20	DN500	0.15	1	0.44	3	13,356	11,415
NPS 24	DN600	0.15	1	0.44	3	20,560	17,573
NPS 28	DN700	0.15	1	0.58	4	27,985	23,919
NPS 30	DN750	0.15	1	0.58	4	32,126	27,458
NPS 32	DN800	0.15	1	0.58	4	36,552	31,241
NPS 36	DN900	0.15	1	0.58	4	46,261	39,539
NPS 40	DN1000	0.15	1	0.58	4	57,112	48,814
NPS 42	DN1050	0.15	1	0.58	4	62,966	53,817
NPS 48	DN1200	0.15	1	0.58	4	82,242	70,292

TECHNICAL NOTES

C_v

- C_v is related to the flow capacity of a given valve or fitting.
- C_v is defined as the flow rate of water at 60°F (in US gallons per minute, GPM) that will flow through a valve with a pressure drop of 1 psi across the valve.
- Given the valve Cv, one can solve for other flow factors by using the following equation:
- $C_v = Q\sqrt{\frac{SG}{\Delta P}}$
- **Where:**
  - Q = Flow Rate (GPM)
  - SG = Specific Gravity (Water=1.0 SG)
  - ΔP = Pressure Drop Across Valve (psi)

K_v

- K_v is related to the flow capacity of a given valve or fitting.
- K_v is defined as the volume of water at 16°C (in cubic meters per hour, m3/h) that will flow through a valve with a pressure drop of 1 bar across the valve.
- Given the valve Kv, one can solve for other flow factors by using the following equation:
- $K_v = Q\sqrt{\frac{SG}{\Delta P}}$
- **Where:**
  - Q = Flow Rate (m^3/h)
  - SG = Specific Gravity Water=1.0 SG
  - ΔP = Pressure Drop Across Valve (bar)

For further information regarding flow through valves, refer to Crane's Technical Paper **TP-410**, Flow of Fluid Through Valves, Pipes, Pumps and Fittings.

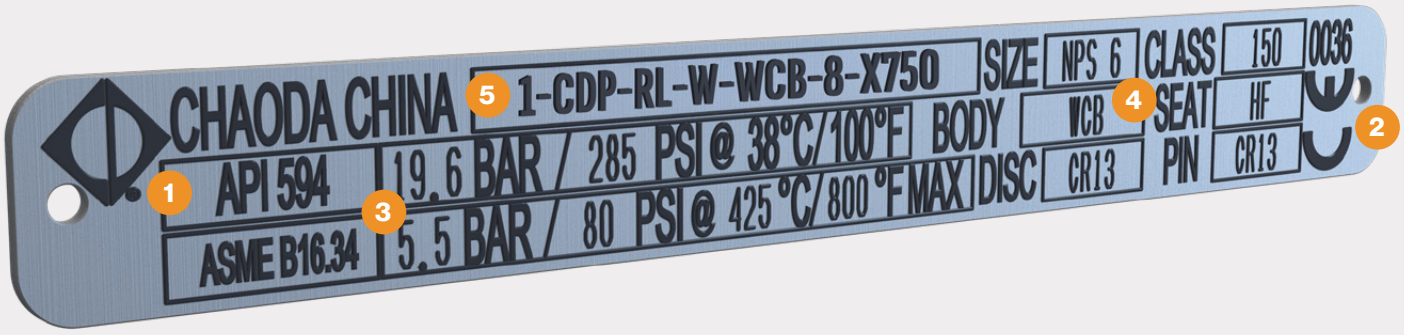
NAMEPLATES & CERTIFICATIONS

API 594 Valves

NAMEPLATE

Chaoda's nameplate conventions are prominently displayed on their valves, providing customers with all essential information, including pressure and temperature ranges, and materials for critical valve components.

1. API Standard
2. CE Mark
3. P/T Range
4. Part Materials
5. Figure Number



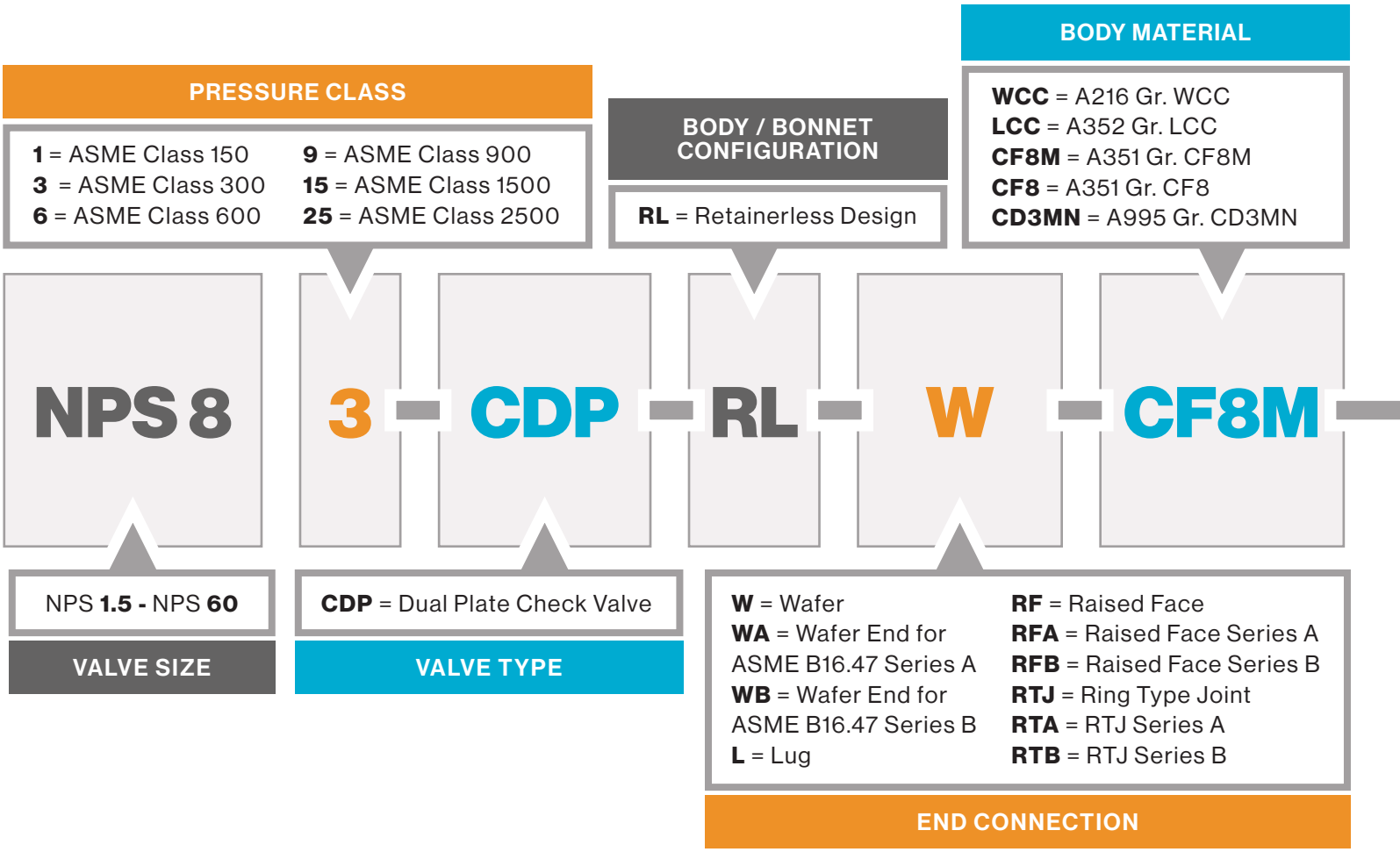
CERTIFICATIONS

Chaoda maintains a broad array of product and manufacturing certifications, which is crucial for ensuring compliance with industry standards, guaranteeing product quality and safety, and building trust with our clients and various international regulatory bodies.

1. API 594 Monogram License
2. ISO 9001:2015
3. ISO 14001:2015
4. ISO 45001:2018
5. PED/CE

VALVE FIGURE NUMBER SYSTEM

How-To-Order Guide



Example Figure Number

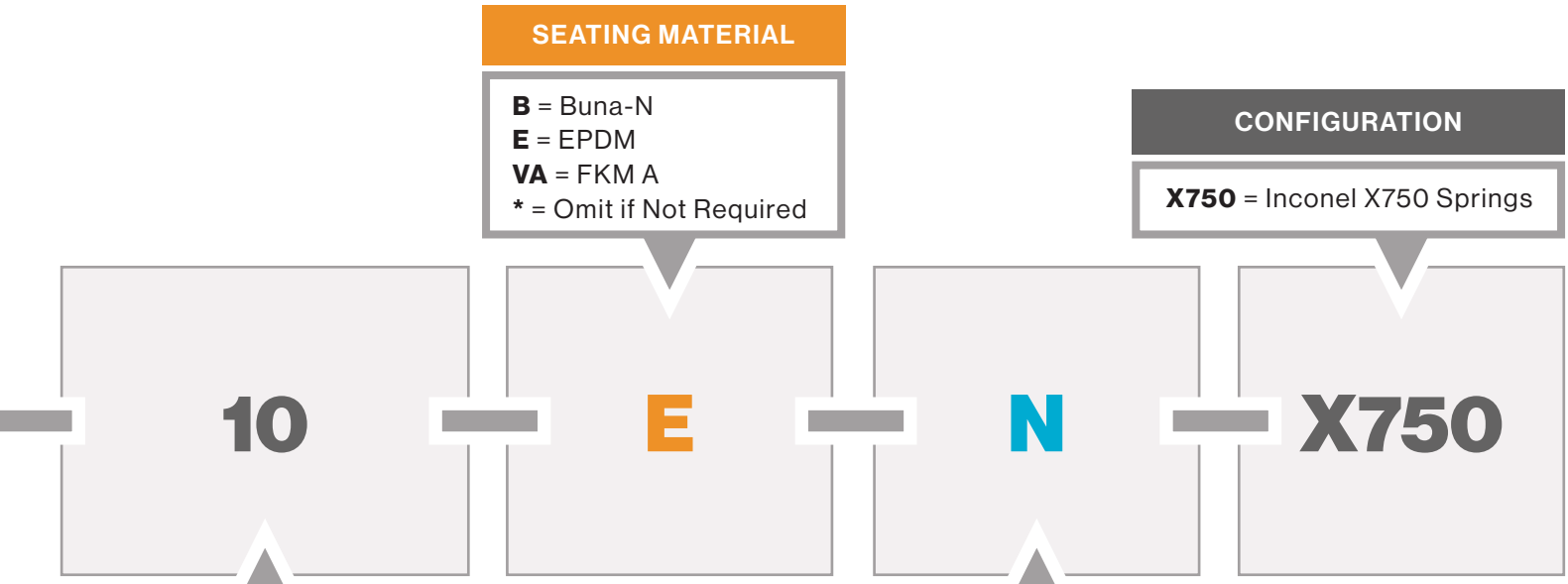
NPS 8 3-CDP-RL-W-CF8M-10-E-N-X750

Example: NPS 8 Dual Plate Check, CL 150, Retainerless, Wafer, CF8M Body, Trim 10, EPDM Seats, NACE, X750 Springs, Design: API594, Test: API598

This unique Valve Figure Number system is arranged to cover the basic valve design features.

When ordering, please include this basic Figure Number and add any additional design requirements and features in a complete valve description. Valve designs, materials, trims and other features are not limited to those listed here.

*API Trims are as listed in API Standard 594



SEATING MATERIAL

B = Buna-N
E = EPDM
VA = FKM A
***** = Omit if Not Required

CONFIGURATION

X750 = Inconel X750 Springs

00 = Trim same nominal chemistry as body material
HF = Trim base materials same nominal chemistry as body material, hardfacing on one seating surface
FHF = Trim base materials same nominal chemistry as body materials, hardfacing on both seating surfaces
40 = API Trim 1 / 410SS Trim
T2 =API Trim 2
3 = API Trim 3
4 = API Trim 4
5 = API Trim 5
5A = API Trim 5A
6 = API Trim 6
7 = API Trim 7
8 = API Trim 8
8A = API Trim 8A
9 = API Trim 9
10 = API Trim 10
11 = API Trim 11
12 = API Trim 12
13 = API Trim 13
14 = API Trim 14
15 = API Trim 15
16 = API Trim 16
17 = API Trim 17
18 = API Trim 18
19 = API Trim 19
19A = API Trim 19A
19B = API Trim 19B
19C = API Trim 19C
20 = API Trim 20
20A = API Trim 20A
20B = API Trim 20B
20C = API Trim 20C
21 = API Trim 21
X = Special Trim

TRIM MATERIAL

N = NACE MR0103 & MR0175 Compliant
N3 = NACE MR0103 Compliant
N5 = NACE MR0175 Compliant
***** = Omit if Not Required

NACE

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