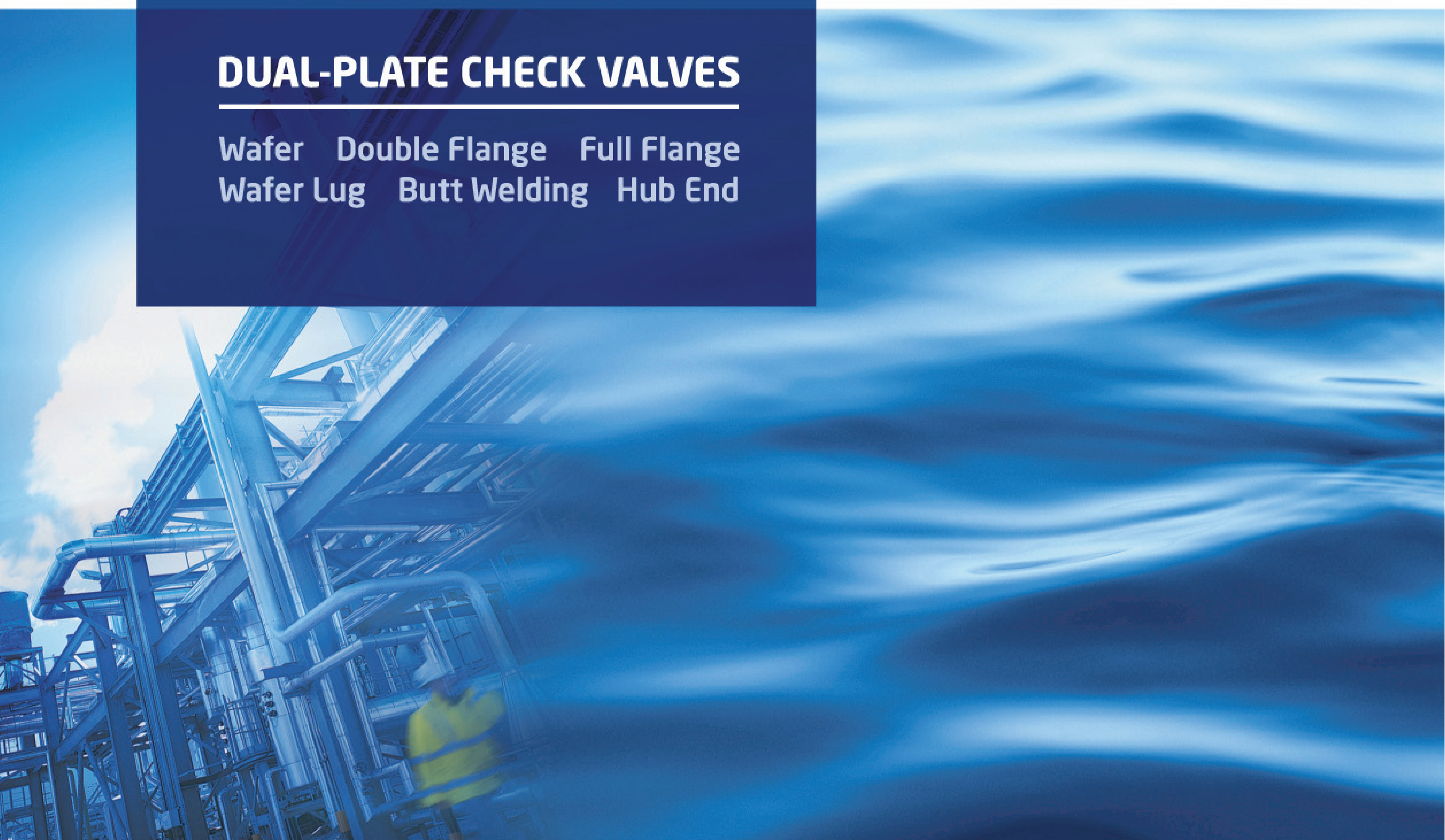
SEJIN VALVE

DUAL-PLATE CHECK VALVES

Wafer Double Flange Full Flange
Wafer Lug Butt Welding Hub End



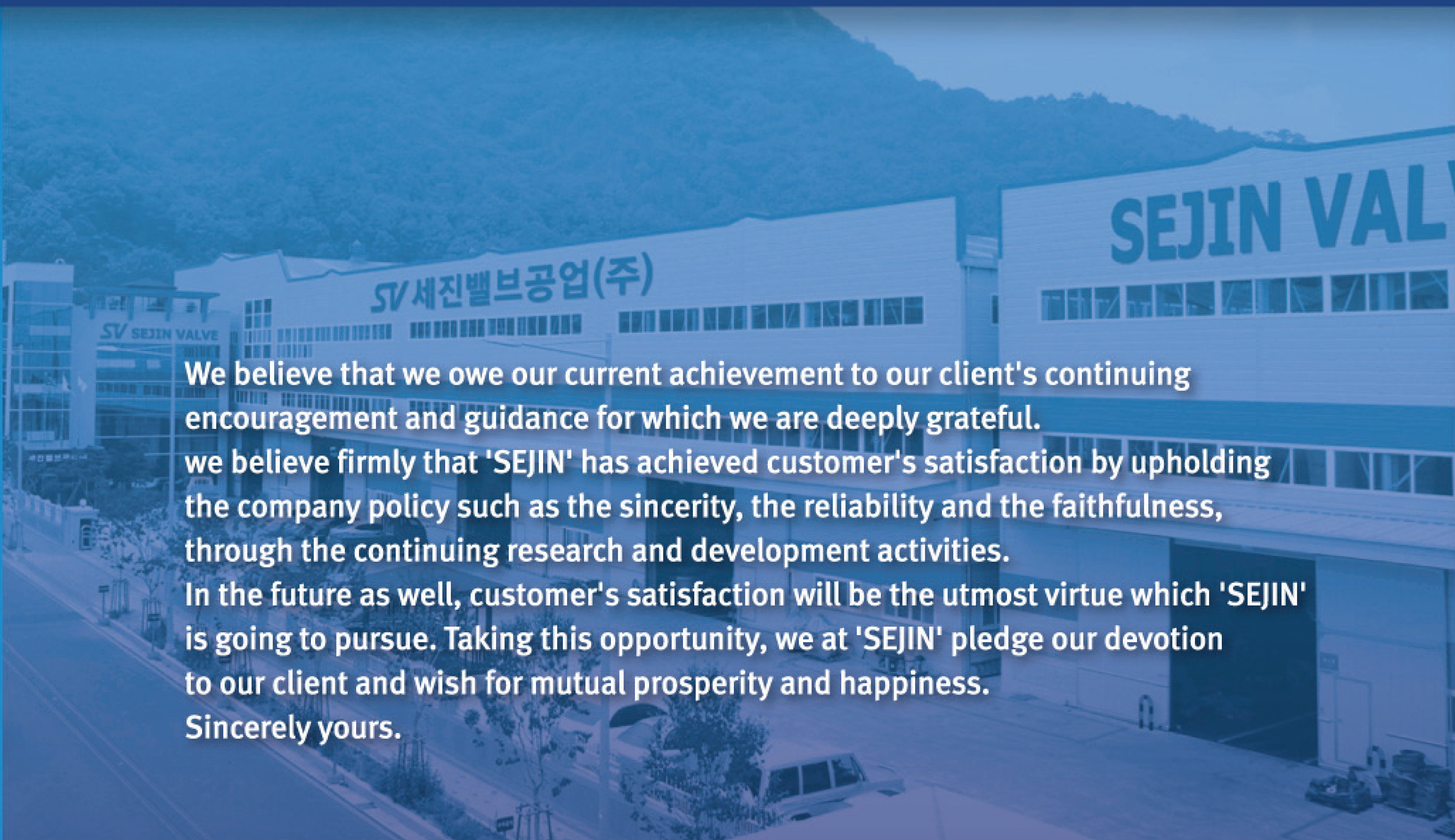
SV SEJIN VALVE IND. CO., LTD.

SEJIN VALVE

We are indeed pleased to take this opportunity to introduce SEJIN VALVE INDUSTRIAL CO., LTD. and its business activities to you.
We are Proud of our clients recognition of its quality and high performance, as reflected in our valves being widely used in service water and in power plant and the others plants as well.

HISTORY

1999	Established SEJIN VALVE CO.
	Converted to Corporation, SEJIN VALVE IND. CO., LTD.
	Obtained Licence of Trading Business (The First Grade)
	Acquired ISO 9001 Certificate from KS
2000	Subscription of a Member of Korea Valve Industry Corporation
	Registered as One of Supplying Vendors for Korea Electric Power Corporation (KEPCO).
	R-Class / 120" and smaller.
	Developed Valve for Ultralow Temperature for LNG (-196˚C)
	Developed Dual Plate Check Valve
2002	Acquired Certificate of KS (KSB 2333)
2003	Acquired Certificate of KS (KSB 2813)
	Registered as One of Supplying Vendors for Korea Hydro & Nuclear Power Corporation.
	NUCLEAR R-Class / 120" and smaller.
2004	Developed Valve for Triple Eccentric type Butterfly Valve.
2005	Moved New Factory to Songjeong-dong, Kangseo-gu, Busan, Korea.
	Acquired Certificate of CE (BUREAU VERITAS)
2006	Up-grade as One of Supplying Vendors for Korea Hydro & Nuclear Power Corporation.
	NUCLEAR T-Class / 120" and Smaller.
2013	Moved New Factory to Hwajeon-dong, Kangseo-gu, Busan, Korea.
2014	Acquired ISO 14001 Certificate from KS
2015	Moved New Factory to Noksan Industrial Complex.



We believe that we owe our current achievement to our client's continuing encouragement and guidance for which we are deeply grateful.
we believe firmly that 'SEJIN' has achieved customer's satisfaction by upholding the company policy such as the sincerity, the reliability and the faithfulness, through the continuing research and development activities.
In the future as well, customer's satisfaction will be the utmost virtue which 'SEJIN' is going to pursue. Taking this opportunity, we at 'SEJIN' pledge our devotion to our client and wish for mutual prosperity and happiness.
Sincerely yours.

Our company endeavor ceaselessly to develop new products and for quality improvement.

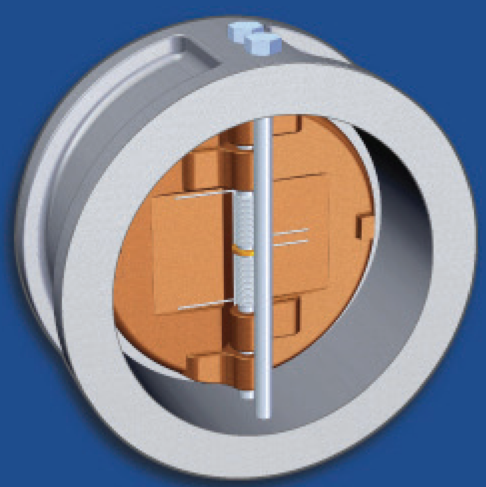
Technological Know-how of SEJIN VALVE

- KS Q 9001 : 2009 / ISO 9001 : 2008
- KS (Korean Industrial Standards) - KS B 2333 /2002
- KS (Korean Industrial Standards) - KS B 2813 /2003
- Practical Use Registration - Butterfly Valve /2003
- KS I ISO 14001 : 2009 / ISO 14001 : 2004
- Registered as Supplying Vendors for Korea -Hydro & Nuclear Power corporation (Nuclear T/R-class)
- Registered as Supplying Vendors for Korea -Electric Power Coporation (Kepco T/R-class)
- Acquired Cretificate of CE (BUREAU VERITAS)

CHECK VALVES

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

CKD-WF Series

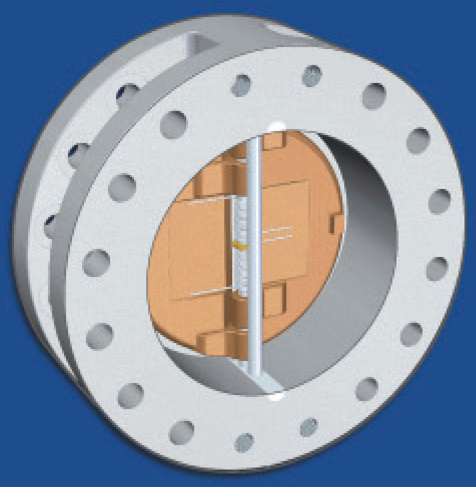


WAFER TYPE

6~9P

STANDARD FEATURES	FEATURES UPON REQUEST
END CONNECTION : Wafer Flat Face	END CONNECTION : Wafer RTJ
SEAT : NBR	SEAT : EPDM, Viton, Metal-to-Metal
SPRING : 316 Stainless Steel	SPRING : Inconel X-750, Monel
SIZE : 2"~ 60"	Retainerless Design
MATERIALS : Cabon steel, Stainless steel	MATERIALS : Nickel Alloys

CKD-DF Series

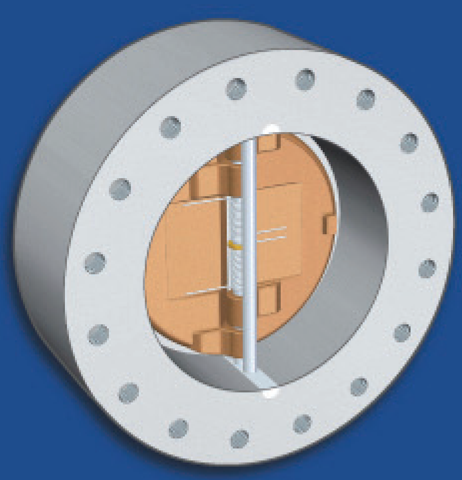


DOUBLE FLANGE TYPE

10~12P

STANDARD FEATURES	FEATURES UPON REQUEST
END CONNECTION : Raised Face	END CONNECTION : Raised Face RTJ
SEAT : NBR	SEAT : EPDM, Viton, Metal-to-Metal
SPRING : 316 Stainless Steel	SPRING : Inconel X-750, Monel
SIZE : 10"~ 60"	Retainerless Body Design
MATERIALS : Cabon steel, Stainless steel	MATERIALS : Nickel Alloys

CKD-FF Series

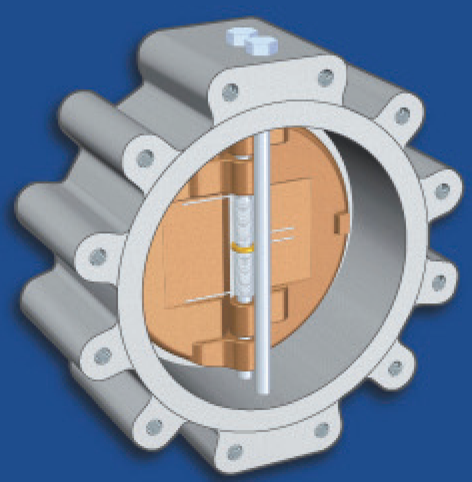


FULL FLANGE TYPE

13~15P

STANDARD FEATURES	FEATURES UPON REQUEST
END CONNECTION : Raised Face	END CONNECTION : Raised Face RTJ
SEAT : NBR	SEAT : EPDM, Viton, Metal-to-Metal
SPRING : 316 Stainless Steel	SPRING : Inconel X-750, Monel
SIZE : 2"~ 60"	Retainerless Body Design
MATERIALS : Cabon steel, Stainless steel	MATERIALS : Nickel Alloys

CKD-WL Series

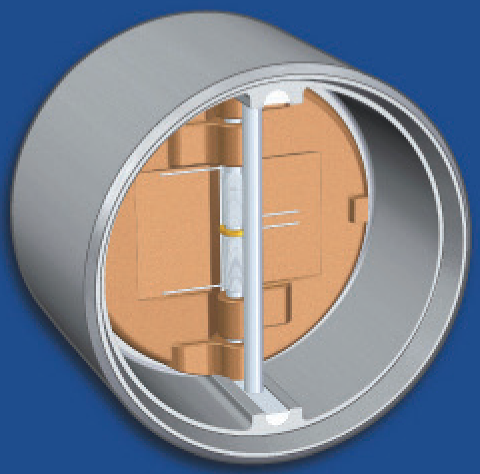


WAFER LUG TYPE

16~19P

STANDARD FEATURES	FEATURES UPON REQUEST
END CONNECTION : Raised Face	END CONNECTION : Raised Face RTJ
SEAT : NBR	SEAT : EPDM, Viton, Metal-to-Metal
SPRING : 316 Stainless Steel	SPRING : Inconel X-750, Monel
SIZE : 2"~ 60"	Retainerless Body Design
MATERIALS : Cabon steel, Stainless steel	MATERIALS : Nickel Alloys

CKD-BW Series

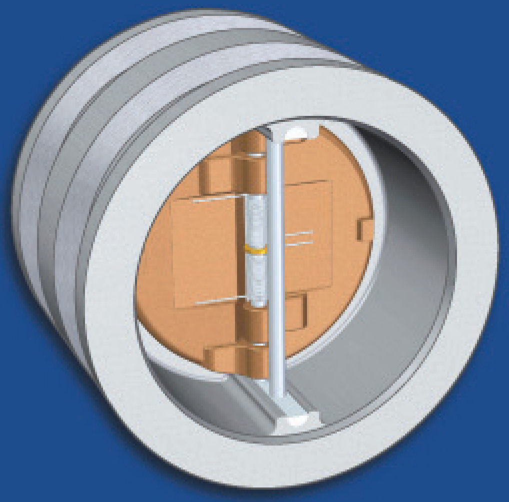


BUTT WELDING TYPE

20-21P

STANDARD FEATURES	FEATURES UPON REQUEST
END CONNECTION : Butt Welding	Retainerless Body Design
SEAT : Metal-to-Metal	Fire safe Design
SPRING : Inconel X-750, Monel	
SIZE : 4"~ 24"	
MATERIALS : Cabon steel, Stainless steel	MATERIALS : Nickel Alloys

CKD-HB Series



HUB END TYPE

22-23P

STANDARD FEATURES	FEATURES UPON REQUEST
END CONNECTION : Hub End	Retainerless Body Design
SEAT : Metal-to-Metal	Fire safe Design
SPRING : Inconel X-750, Monel	Cryogenic Design
SIZE : 4"~ 24"	
MATERIALS : Cabon steel, Stainless steel	MATERIALS : Nickel Alloys

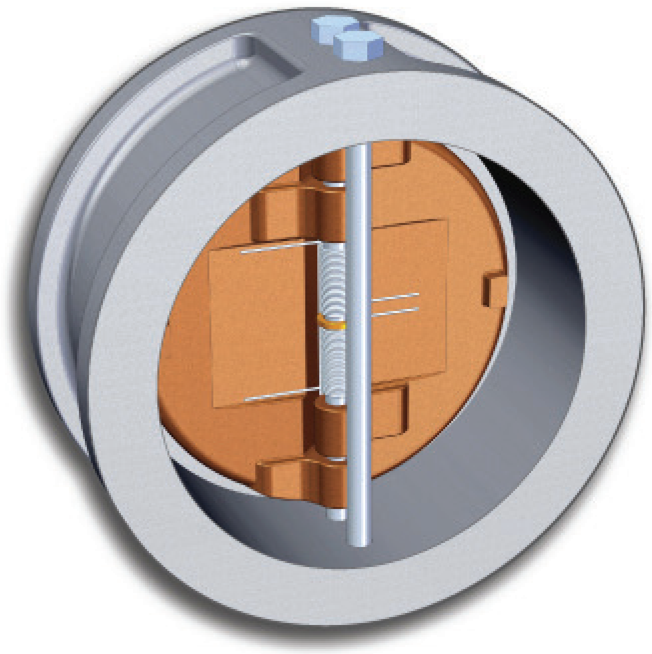
CHECK VALVES DUAL DISC

Wafer type

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

Standard Specification

- STANDARD DESIGN: API 6D, API 594
- FACE-TO-FACE DIMENSIONS: API 6D, API 594
- END FLANGE DIMENSIONS: ASME B16.5 / B16.47 Series A
- PRESSURE AND TEMPERATURE RATINGS BODY THICKNESS: ASME B16.34, API 594
- TEST & INSPECTION: API 6D, API 598
- MATERIAL: ASTM Material Specifications as per ASME B16.34



Design Features

- END CONNECTION : Wafer Flat Face, Wafer RTJ
- SEAT : NBR, Viton, EPDM, Metal-to-Metal
- SPRING : 316 Stainless Steel, Inconel X750, Monel
- Retainerless Design (option)

Product Range

- ASME B16.5 / B16.47 Series A, Class 150, 300, 600 — 2" ~ 60"
- ASME B16.5 / B16.47 Series A, Class 900 — 2" ~ 48"
- ASME B16.5, Class 1500 — 2" ~ 24"
- ASME B16.5, Class 2500 — 2" ~ 12"

Standard Trim Configurations (API 594)

TRIM NO.	TRIM NO.1	TRIM NO.5	TRIM NO.8	TRIM NO.10
NOMINAL TRIM	13Cr	Hard-faced	13Cr and Hard-faced	Type 316
MATERIAL TYPE	11-13Cr	Co-Cr-A	11-13Cr, Co-Cr-A	13Cr-18Ni-Mo
BODY SEATING SURFACE	A217 CA15	Co-Cr-A	Co-Cr-A	A351 CF8M
DISC SEATING SURFACE	A217 CA15	Co-Cr-A	A217 CA15	A351 CF8M

Materials (Applicable ASTM Specification)

- **Cabon Steel**: A105, A216 WCB, A216 WCC
- **Low Temperature Cabon Steel**: A350 LF2, A352 LCB, A352 LCC
- **Austenitic Stainless Steel**: A182 F304, A182 F316, A351 CF8, A351 CF8M
- **Duplex Stainless Steel**: A182 F51 (UNS S31803), A182 F53 (UNS S32750), A182 F55 (UNS S32760)
- **Nickel Alloys**: Inconel 625 (UNS N06625), Monel 400 (UNS N04400)

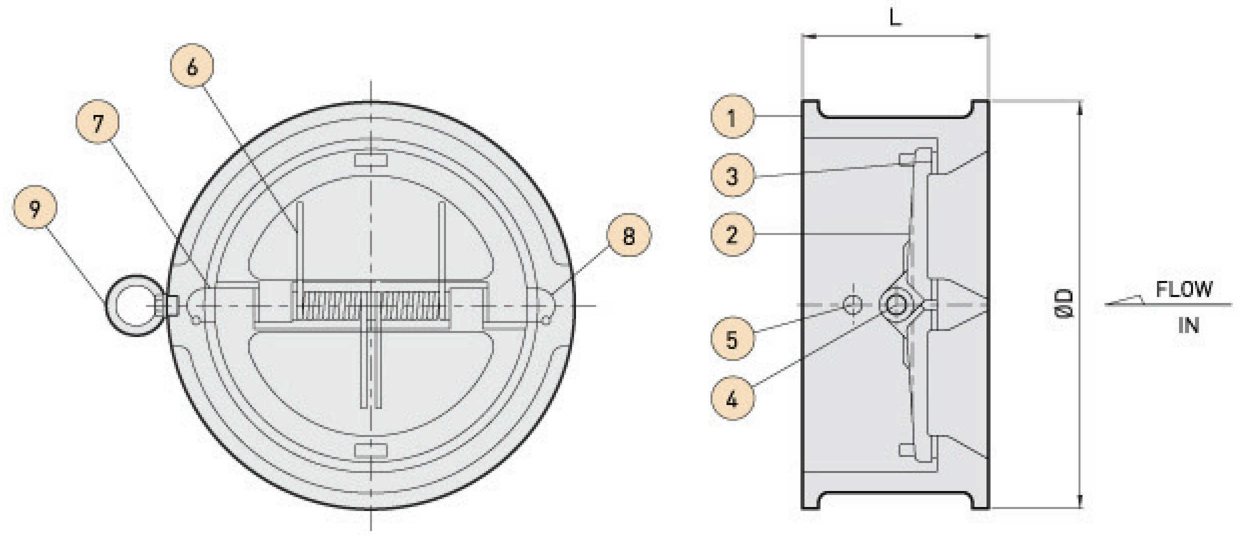
Pressure Testing (Working & Test Pressure at Ambient Temperature)

CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test	
	bar	psi	bar	psi	bar	psi	bar	psi
ASME 150	19	275	29	413	21	303	6	100
ASME 300	50	720	75	1080	56	792	6	100
ASME 600	99	1440	149	2160	109	1584	6	100
ASME 900	149	2160	224	3240	164	2376	6	100
ASME 1500	248	3600	372	5400	273	3960	6	100
ASME 2500	413	5988	620	8982	454	6587	6	100

Duration of Required Test Pressure (API 598 Standard)

Size (NPS)	Test Time (sec)
≤2	60
2½ - 6	60
8 - 12	120
≥14	120

CKD-WF Series



PARTS LIST

NO.	PART NAME	STANDARD MATERIALS SPECIFICATION	
		CARBON STEEL	STAINLESS STEEL
1	BODY	A216 WCB	A351 CF8
2	DISC	A351 CF8	A351 CF8
3	SEAT	NBR	NBR
4	HINGE PIN	A276 304	A276 304
5	STOP PIN	A276 304	A276 304
6	SPRING	Inconel X-750	Inconel X-750
7	GUIDE	A276 304	A276 304
8	WASHER	A240 304	A240 304
9	EYE BOLT	A105	A182 F304

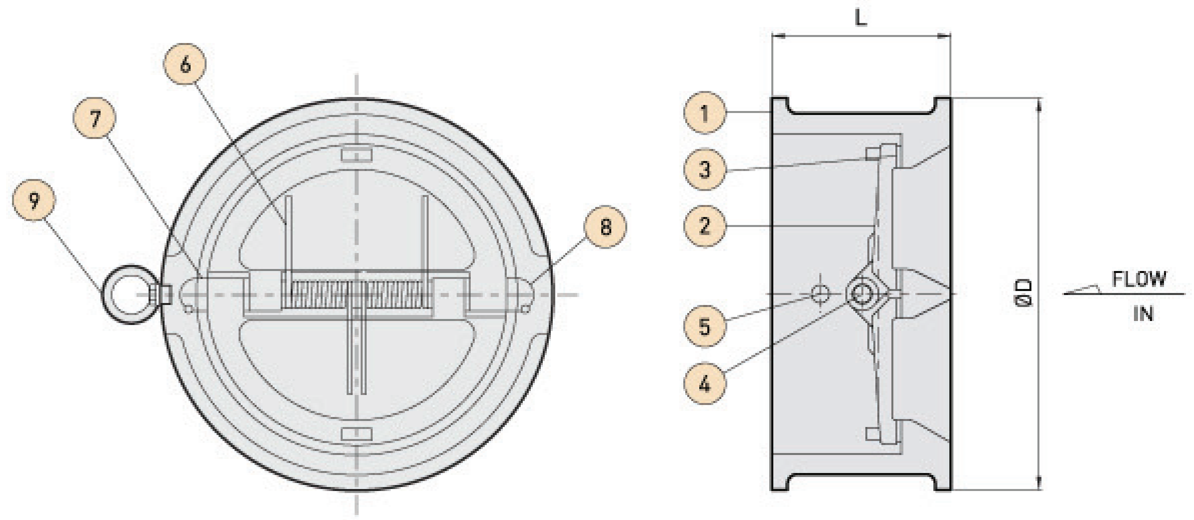
Dimensions and Weights

SIZE		CLASS	DIMENSIONS (mm)					Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt	Diameter of Bolt	Bolt Length	Approx Weight (kg)
DN	NPS		L	ϕD	ϕG	T	F						
50	2"	150	60	105	-	-	-	120.7	19	4	5/8"	165	4
		300	60	110	-	-	-	127.0	19	8	5/8"	175	5
		600	60	110	-	-	-	127.0	19	8	5/8"	195	6
		900	70	142	-	-	-	165.1	26	8	7/8"	240	9
		1500	70	142	-	-	-	165.1	26	8	7/8"	240	14
		2500	70	145	-	-	-	171.4	29	8	1"	275	15
65	2.5"	150	67	124	-	-	-	139.7	19	4	5/8"	175	6
		300	67	130	-	-	-	149.2	19	8	5/8"	175	7
		600	67	130	-	-	-	149.2	19	8	5/8"	205	8
		900	83	165	-	-	-	190.5	23	8	7/8"	250	10
		1500	83	165	-	-	-	190.5	23	8	7/8"	250	15
		2500	83	168	-	-	-	196.8	29	8	1"	285	20
80	3"	150	73	137	-	-	-	152.4	19	4	5/8"	185	7
		300	73	149	-	-	-	168.3	23	8	3/4"	205	9
		600	73	149	-	-	-	168.3	23	8	3/4"	230	10
		900	83	168	-	-	-	190.5	26	8	7/8"	255	13
		1500	83	175	-	-	-	203.2	32	8	1-1/8"	285	25
		2500	86	197	-	-	-	228.6	35	8	1-1/4"	335	29
100	4"	150	73	175	-	-	-	190.5	19	8	5/8"	185	10
		300	73	180	-	-	-	200.0	23	8	3/4"	210	12
		600	79	193	-	-	-	215.9	26	8	7/8"	255	15
		900	102	205	-	-	-	235.0	32	8	1-1/8"	300	39
		1500	102	210	-	-	-	241.3	35	8	1-1/4"	325	41
		2500	105	235	-	-	-	273.0	42	8	1-1/2"	395	42
150	6"	150	98	222	-	-	-	241.3	23	8	3/4"	240	19
		300	98	250	-	-	-	269.9	23	12	3/4"	245	30
		600	136	266	-	-	-	292.1	29	12	1"	340	40
		900	159	288	-	-	-	317.5	32	12	1-1/8"	380	55
		1500	159	282	-	-	-	317.5	38	12	1-3/8"	455	70
		2500	159	317	-	-	-	368.3	54	8	2"	540	95
200	8"	150	127	279	-	-	-	298.5	23	8	3/4"	255	35
		300	127	308	-	-	-	330.2	26	12	7/8"	290	45
		600	165	320	-	-	-	349.2	32	12	1-1/8"	385	70
		900	206	358	-	-	-	393.7	38	12	1-3/8"	455	135
		1500	206	351	-	-	-	393.7	45	12	1-5/8"	530	138
		2500	206	386	-	-	-	438.2	54	12	2"	630	148

Wafer type

ASME B16.5 Class 150, 300, 600, 900, 1500, 2500

CKD-WF Series



PARTS LIST

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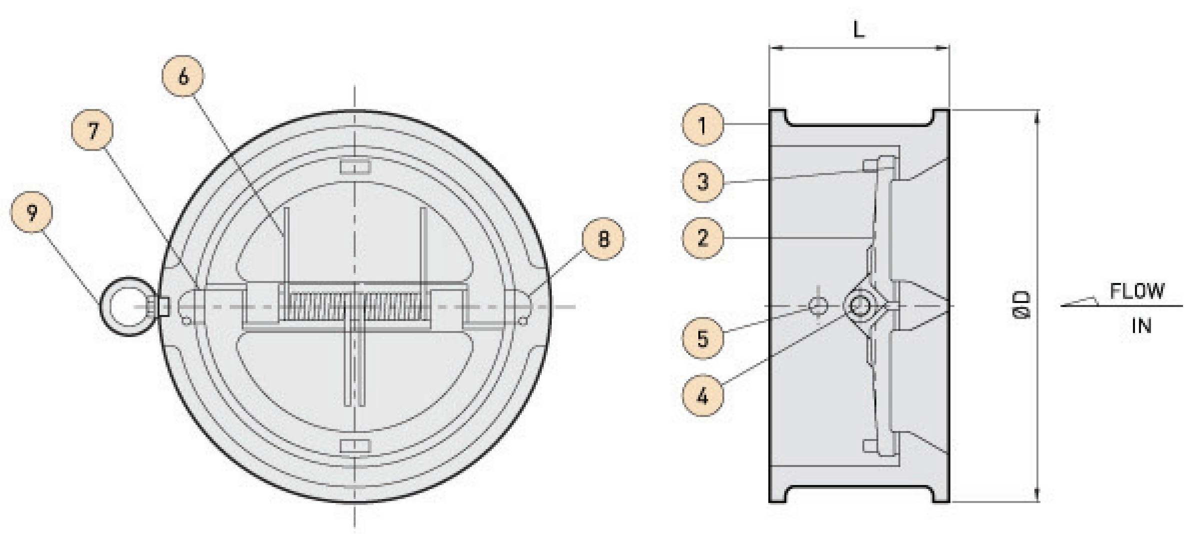
1	BODY	A216 WCB	A351 CF8
2	DISC	A351 CF8	A351 CF8
3	SEAT	NBR	NBR
4	HINGE PIN	A276 304	A276 304
5	STOP PIN	A276 304	A276 304
6	SPRING	Inconel X-750	Inconel X-750
7	GUIDE	A276 304	A276 304
8	WASHER	A240 304	A240 304
9	EYE BOLT	A105	A182 F304

Dimensions and Weights

SIZE DN	NPS	CLASS	DIMENSIONS (mm) L	ϕD	ϕG	T	F	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt	Diameter of Bolt	Bolt Length	Approx Weight (kg)
250	10"	150	146	340	-	-	-	362.0	26	12	7/8"	290	65
		300	146	362	-	-	-	387.4	29	16	1"	330	70
		600	213	400	-	-	-	431.8	35	16	1-1/4"	460	150
		900	241	435	-	-	-	469.9	38	16	1-3/8"	510	210
		1500	248	435	-	-	-	482.6	51	12	1-7/8"	620	220
		2500	254	476	-	-	-	539.8	67	12	2-1/2"	790	230
300	12"	150	181	410	-	-	-	431.8	26	12	7/8"	330	95
		300	181	422	-	-	-	450.8	32	16	1-1/8"	380	110
		600	229	457	-	-	-	489.0	35	20	1-1/4"	480	180
		900	292	498	-	-	-	533.4	38	20	1-3/8"	580	380
		1500	305	521	-	-	-	571.5	54	16	2	720	390
		2500	305	549	-	-	-	619.1	74	12	2-3/4"	900	420
350	14"	150	184	451	-	-	-	476.3	29	12	1"	340	110
		300	222	486	-	-	-	514.4	32	20	1-1/8"	430	170
		600	273	492	-	-	-	527.0	38	20	1-3/8"	540	230
		900	356	541	-	-	-	558.8	42	20	1-1/2"	660	460
		1500	356	578	-	-	-	635.0	61	16	2-1/4"	810	560
400	16"	150	191	514	-	-	-	539.8	29	16	1"	350	150
		300	232	540	-	-	-	571.5	35	20	1-1/4"	450	210
		600	305	565	-	-	-	603.2	42	20	1-1/2"	590	360
		900	384	575	-	-	-	616.0	45	20	1-5/8"	710	560
		1500	384	641	-	-	-	704.8	67	16	2-1/2"	890	640
450	18"	150	203	549	-	-	-	577.9	32	16	1-1/8"	380	180
		300	264	597	-	-	-	628.6	35	24	1-1/4"	490	310
		600	362	613	-	-	-	654.0	45	20	1-5/8"	670	480
		900	451	638	-	-	-	685.8	51	20	1-7/8"	820	760
		1500	468	705	-	-	-	774.7	74	16	2-3/4"	1010	1100
500	20"	150	219	606	-	-	-	635.0	32	20	1-1/8"	400	210
		300	292	654	-	-	-	685.8	35	24	1-1/4"	520	390
		600	368	683	-	-	-	723.9	45	24	1-5/8"	690	650
		900	451	699	-	-	-	749.3	54	20	2"	840	890
		1500	533	755	-	-	-	831.8	80	16	3"	1130	1510
600	24"	150	222	718	-	-	-	749.3	35	20	1-1/4"	440	320
		300	318	775	-	-	-	812.8	42	24	1-1/2"	590	610
		600	438	791	-	-	-	838.2	51	24	1-7/8"	800	970
		900	495	838	-	-	-	901.7	67	20	2-1/2"	980	1520
		1500	559	901				990.6	92	16	3-1/2"	1240	2990

CKD-WF Series



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4	HINGE PIN	A276 304	A276 304
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6	SPRING	Inconel X-750	Inconel X-750
7	GUIDE	A276 304	A276 304
8	WASHER	A240 304	A240 304
9	EYE BOLT	A105	A182 F304

Dimensions and Weights

SIZE		CLASS	DIMENSIONS (mm)					Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt	Diameter of Bolt	Bolt Length	Approx Weight (kg)
DN	NPS		L	ϕD	ϕG	T	F						
650	26"	150	279	772	-	-	-	806.5	35	24	1-1/4"	610	480
		300	356	833	-	-	-	876.3	45	28	1-5/8"	660	720
		600	457	865	-	-	-	914.4	51	28	1-7/8"	850	930
700	28"	150	305	830	-	-	-	863.6	35	28	1-1/4"	640	560
		300	368	896	-	-	-	939.8	45	28	1-5/8"	690	780
		600	483	912	-	-	-	965.2	54	28	2"	895	1220
750	30"	150	305	880	-	-	-	914.4	35	28	1-1/4"	570	650
		300	368	950	-	-	-	997.0	48	28	1-3/4"	690	940
		600	505	970	-	-	-	1022.4	54	28	2"	925	1510
800	32"	150	356	937	-	-	-	977.9	42	28	1-1/2"	650	750
		300	406	1005	-	-	-	1054.1	51	28	1-7/8"	750	1240
		600	533	1020	-	-	-	1079.5	61	28	2-1/4"	970	1720
850	34"	150	356	987	-	-	-	1028.7	42	32	1-1/2"	680	860
		300	455	1055	-	-	-	1104.9	51	28	1-7/8"	790	1490
		600	580	1070	-	-	-	1130.3	61	28	2-1/4"	990	1950
900	36"	150	368	1045	-	-	-	1085.9	42	32	1-1/2"	680	960
		300	483	1115	-	-	-	1168.4	54	32	2"	850	1670
		600	635	1130	-	-	-	1193.8	67	28	2-1/2"	1100	2650
1000	40"	150	419	1160	-	-	-	1200.2	42	36	1-1/2"	730	1280
		300	546	1112	-	-	-	1155.7	45	32	1-5/8"	920	2090
		600	660	1153	-	-	-	1212.9	61	32	2-1/4"	1150	3590
1050	42"	150	432	1217	-	-	-	1257.3	42	36	1-1/2"	760	1420
		300	568	1163	-	-	-	1206.5	45	32	1-5/8"	940	2550
		600	701	1217	-	-	-	1282.7	67	28	2-1/2"	1230	
1100	44"	150	432	1275	-	-	-	1314.5	42	40	1-1/2"	870	
		300	568	1217	-	-	-	1263.7	48	32	1-3/4"		
		600	701	1270	-	-	-	1333.5	67	32	2-1/2"		
1200	48"	150	524	1382	-	-	-	1422.4	42	44	1-1/2"	890	2190
		300	629	1321	-	-	-	1371.6	51	32	1-7/8"	1100	2970
		600	787	1390	-	-	-	1460.5	74	32	2-3/4"		
1350	54"	150	591	1547	-	-	-	1593.9	48	44	1-3/4"		
		300	718	1490	-	-	-	1549.4	61	28	2-1/4"		
		600	889	1553	-	-	-	1632.0	80	32	3"		
1500	60"	150	660	1712	-	-	-	1759.0	48	52	1-3/4"	1070	4360
		300	838	1642	-	-	-	1701.8	61	32	2-1/4"	1340	5330
		600	991	1732	-	-	-	1822.5	92	28	3-1/2"	1695	

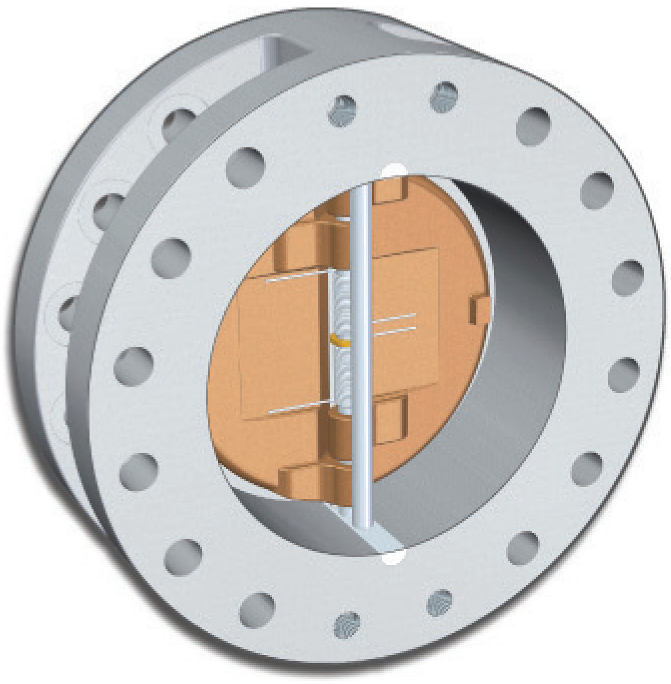
CHECK VALVES
DUAL DISC

Double Flange type

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

Standard Specification

- STANDARD DESIGN: API 6D, API 594
- FACE-TO-FACE DIMENSIONS: API 6D, API 594
- END FLANGE DIMENSIONS: ASME B16.5 / B16.47 Series A
- PRESSURE AND TEMPERATURE RATINGS BODY THICKNESS: ASME B16.34, API 594
- TEST & INSPECTION: API 6D, API 598
- MATERIAL: ASTM Material Specifications as per ASME B16.34



Design Features

- END CONNECTION : Flat Face, Raised Face, RTJ, Flanged
- SEAT : NBR, Viton, EPDM, Metal-to-Metal
- SPRING : 316 Stainless Steel, Inconel X750, Monel
- Retainerless Design (option)

Product Range

- ASME B16.5 / B16.47 Series A, Class 150, 300, 600 10" ~ 60"
- ASME B16.5 / B16.47 Series A, Class 900 10" ~ 48"
- ASME B16.5, Class 1500 10" ~ 24"
- ASME B16.5, Class 2500 10" ~ 12"

Standard Trim Configurations (API 594)

TRIM NO.	TRIM NO.1	TRIM NO.5	TRIM NO.8	TRIM NO.10
NOMINAL TRIM	13Cr	Hard-faced	13Cr and Hard-faced	Type 316
MATERIAL TYPE	11-13Cr	Co-Cr-A	11-13Cr, Co-Cr-A	13Cr-18Ni-Mo
BODY SEATING SURFACE	A217 CA15	Co-Cr-A	Co-Cr-A	A351 CF8M
DISC SEATING SURFACE	A217 CA15	Co-Cr-A	A217 CA15	A351 CF8M

Materials (Applicable ASTM Specification)

- **Cabon Steel**: A105, A216 WCB, A216 WCC
- **Low Temperature Cabon Steel**: A350 LF2, A352 LCB, A352 LCC
- **Austenitic Stainless Steel**: A182 F304, A182 F316, A351 CF8, A351 CF8M
- **Duplex Stainless Steel**: A182 F51 (UNS S31803), A182 F53 (UNS S32750), A182 F55 (UNS S32760)
- **Nickel Alloys**: Inconel 625 (UNS N06625), Monel 400 (UNS N04400)

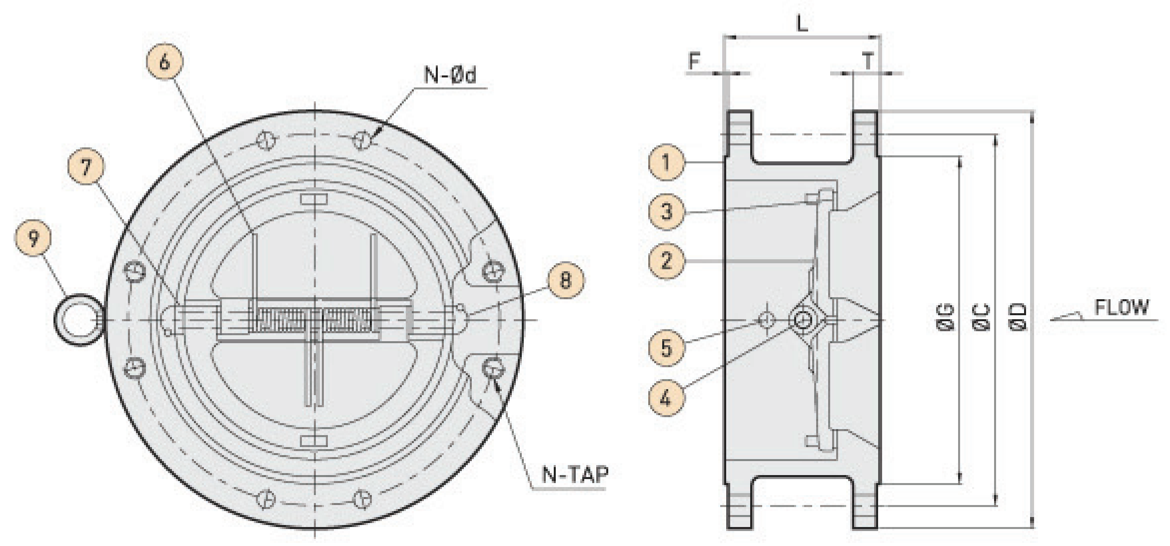
Pressure Testing (Working & Test Pressure at Ambient Temperature)

CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test	
	bar	psi	bar	psi	bar	psi	bar	psi
ASME 150	19	275	29	413	21	303	6	100
ASME 300	50	720	75	1080	56	792	6	100
ASME 600	99	1440	149	2160	109	1584	6	100
ASME 900	149	2160	224	3240	164	2376	6	100
ASME 1500	248	3600	372	5400	273	3960	6	100
ASME 2500	413	5988	620	8982	454	6587	6	100

Duration of Required Test Pressure (API 598 Standard)

Size (NPS)	Test Time (sec)
≤2	60
2½ - 6	60
8 - 12	120
≥14	120

CKD-DF Series



PARTS LIST

NO.	PART NAME	STANDARD MATERIALS SPECIFICATION	
		CARBON STEEL	STAINLESS STEEL
1	BODY	A216 WCB	A351 CF8
2	DISC	A351 CF8	A351 CF8
3	SEAT	NBR	NBR
4	HINGE PIN	A276 304	A276 304
5	STOP PIN	A276 304	A276 304
6	SPRING	Inconel X-750	Inconel X-750
7	GUIDE	A276 304	A276 304
8	WASHER	A240 304	A240 304
9	EYE BOLT	A105	A182 F304

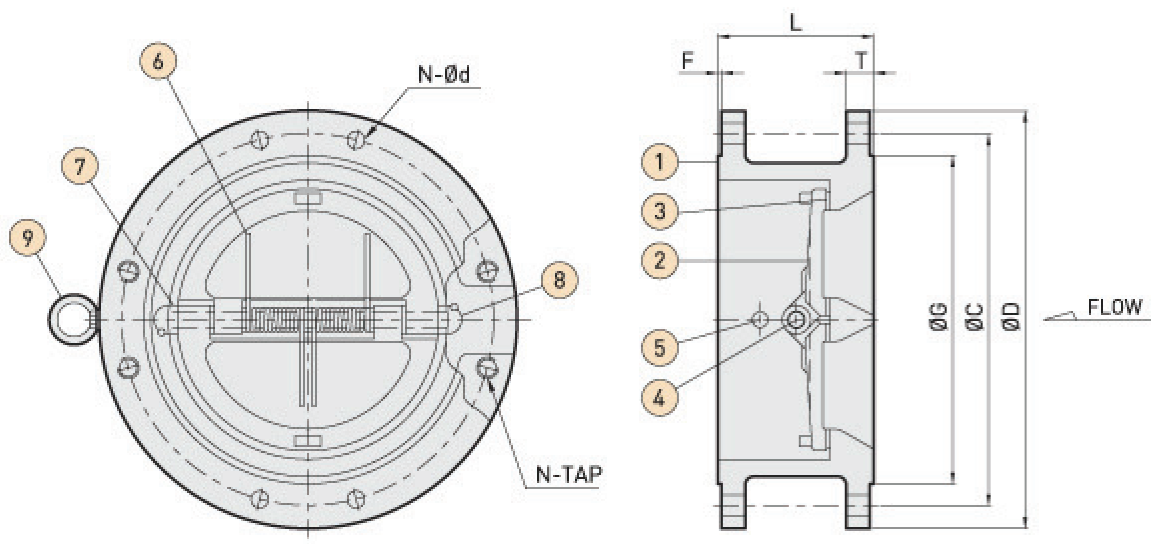
Dimensions and Weights

SIZE		CLASS	DIMENSIONS (mm)					Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt	Diameter of Bolt	Bolt Length	Approx Weight (kg)
DN	NPS		L	ϕD	ϕG	T	F						
250	10"	150	146	405	323.9	30.2	2	362.0	26	12	7/8"	127	95
		300	146	445	323.9	47.8	2	387.4	29	16	1"	175	205
		600	213	508	323.9	63.5	7	431.8	35	16	1-1/4"	220	220
		900	241	546	323.9	69.9	7	469.9	38	16	1-3/8"	235	310
		1500	248	584	323.9	108.0	7	482.6	51	12	1-7/8"	340	360
		2500	254	673	323.9	165.1	7	539.8	67	12	2-1/2"	490	430
300	12"	150	181	483	381.0	31.8	2	431.8	26	12	7/8"	135	140
		300	181	521	381.0	50.8	2	450.8	32	16	1-1/8"	185	160
		600	229	559	381.0	66.5	7	489.0	35	20	1-1/4"	230	260
		900	292	610	381.0	79.2	7	533.4	38	20	1-3/8"	260	350
		1500	305	673	381.0	124.0	7	571.5	54	16	2	380	480
		2500	305	762	381.0	184.2	7	619.1	74	12	2-3/4"	540	610
350	14"	150	184	533	412.8	35.1	2	476.3	29	12	1"	150	150
		300	222	584	412.8	53.8	2	514.4	32	20	1-1/8"	195	220
		600	273	603	412.8	69.9	7	527.0	38	20	1-3/8"	235	390
		900	356	641	412.8	85.9	7	558.8	42	20	1-1/2"	280	490
		1500	356	749	412.8	133.4	7	635.0	61	16	2-1/4"	410	620
400	16"	150	191	597	469.9	36.6	2	539.8	29	16	1"	150	170
		300	232	648	469.9	57.2	2	571.5	35	20	1-1/4"	210	290
		600	305	686	469.9	76.2	7	603.2	42	20	1-1/2"	260	450
		900	384	705	469.9	88.9	7	616.0	45	20	1-5/8"	290	560
		1500	384	826	469.9	146.1	7	704.8	67	16	2-1/2"	450	840
450	18"	150	203	635	533.4	39.6	2	577.9	32	16	1-1/8"	160	210
		300	264	711	533.4	60.5	2	628.6	35	24	1-1/4"	215	390
		600	362	743	533.4	82.6	7	654.0	45	20	1-5/8"	275	560
		900	451	787	533.4	101.6	7	685.8	51	20	1-7/8"	330	850
		1500	468	914	533.4	162.1	7	774.7	74	16	2-3/4"	500	1030
500	20"	150	219	699	584.2	42.9	2	635.0	32	20	1-1/8"	175	290
		300	292	775	584.2	63.5	2	685.8	35	24	1-1/4"	230	505
		600	368	813	584.2	88.9	7	723.9	45	24	1-5/8"	290	780
		900	451	857	584.2	108.0	7	749.3	54	20	2"	355	1780
		1500	533	984	584.2	177.8	7	831.8	80	16	3"	545	2220
600	24"	150	222	813	692.2	47.8	2	749.3	35	20	1-1/4"	185	420
		300	318	914	692.2	69.9	2	812.8	42	24	1-1/2"	260	770
		600	438	940	692.2	101.6	7	838.2	51	24	1-7/8"	335	1160
		900	495	1041	692.2	139.7	7	901.7	67	20	2-1/2"	440	1890
		1500	559	1168	692.2	203.2	7	990.6	92	16	3-1/2"	620	3060

Double Flange type

ASME B16.47 Series A Class 150, 300, 600

CKD-DF Series



PARTS LIST

NO.	PART NAME	STANDARD MATERIALS SPECIFICATION	
		CARBON STEEL	STAINLESS STEEL
1	BODY	A216 WCB	A351 CF8
2	DISC	A351 CF8	A351 CF8
3	SEAT	NBR	NBR
4	HINGE PIN	A276 304	A276 304
5	STOP PIN	A276 304	A276 304
6	SPRING	Inconel X-750	Inconel X-750
7	GUIDE	A276 304	A276 304
8	WASHER	A240 304	A240 304
9	EYE BOLT	A105	A182 F304

Dimensions and Weights

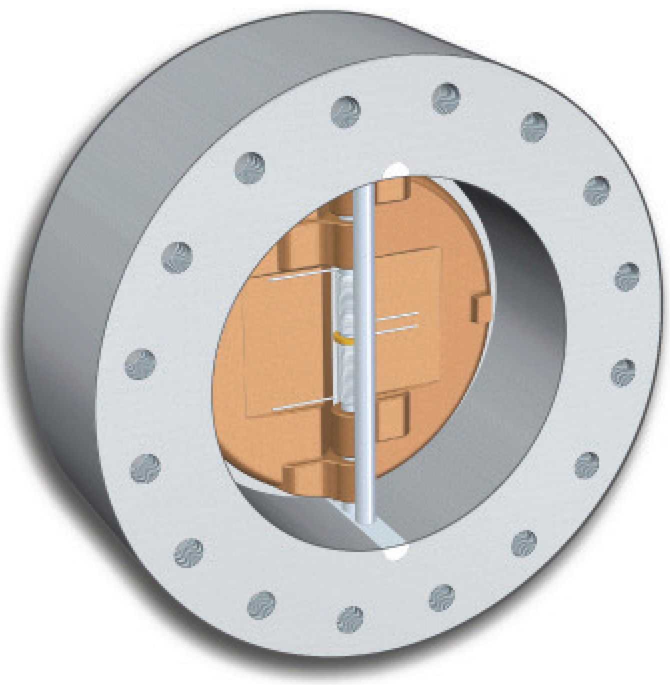
SIZE		CLASS	DIMENSIONS (mm)					Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt	Diameter of Bolt	Bolt Length	Approx Weight (kg)
DN	NPS		L	ϕD	ϕG	T	F						
650	26"	150	279	870	749.0	68.7	2	806.5	35	24	1-1/4"		720
		300	356	970	749.0	84.6	2	876.3	45	28	1-5/8"		1260
		600	457	1015	749.0	132.5	7	914.4	51	28	1-7/8"		1430
700	28"	150	305	925	800.0	71.9	2	863.6	35	28	1-1/4"		870
		300	368	1035	800.0	90.9	2	939.8	45	28	1-5/8"		1350
		600	483	1075	800.0	137.8	7	965.2	54	28	2"		1620
750	30"	150	305	985	857.0	75.1	2	914.4	35	28	1-1/4"		950
		300	368	1090	857.0	95.7	2	997.0	48	28	1-3/4"		1430
		600	505	1130	857.0	146.7	7	1022.4	54	28	2"		1700
800	32"	150	356	1060	914.0	81.4	2	977.9	42	28	1-1/2"		1150
		300	406	1150	914.0	100.5	2	1054.1	51	28	1-7/8"		1490
		600	533	1195	914.0	154.7	7	1079.5	61	28	2-1/4"		2150
850	34"	150	356	1110	965.0	83.0	2	1028.7	42	32	1-1/2"		1240
		300	455	1205	965.0	105.2	2	1104.9	51	28	1-7/8"		1750
		600	580	1245	965.0	161.0	7	1130.3	61	28	2-1/4"		1450
900	36"	150	368	1170	1022.0	90.9	2	1085.9	42	32	1-1/2"		1320
		300	483	1270	1022.0	111.6	2	1168.4	54	32	2"		2140
		600	635	1315	1022.0	169.0	7	1193.8	67	28	2-1/2"		2870
1000	40"	150	419	1290	1124.0	90.9	2	1200.2	42	36	1-1/2"		1590
		300	546	1240	1086.0	114.8	2	1155.7	45	32	1-5/8"		2740
		600	660	1320	1111.0	169.0	7	1212.9	61	32	2-1/4"		3750
1050	42"	150	432	1345	1194.0	97.3	2	1257.3	42	36	1-1/2"		2160
		300	568	1290	1137.0	119.5	2	1206.5	45	32	1-5/8"		3970
		600	701	1405	1168.0	178.5	7	1282.7	67	28	2-1/2"		4520
1100	44"	150	432	1405	1245.0	102.1	2	1314.5	42	40	1-1/2"		2460
		300	568	1355	1194.0	124.3	2	1263.7	48	32	1-3/4"		4650
		600	701	1455	1226.0	184.8	7	1333.5	67	32	2-1/2"		5520
1200	48"	150	524	1510	1359.0	108.4	2	1422.4	42	44	1-1/2"		2890
		300	629	1465	1302.0	133.8	2	1371.6	51	32	1-7/8"		5220
		600	787	1595	1334.0	202.3	7	1460.5	74	32	2-3/4"		6430
1350	54"	150	591	1685	1511.0	121.1	2	1593.9	48	44	1-3/4"		3670
		300	718	1660	1467.0	152.9	2	1549.4	61	28	2-1/4"		5860
		600	889	1780	1492.0	224.5	7	1632.0	80	32	3"		8640
1500	60"	150	660	1855	1676.0	132.2	2	1759.0	48	52	1-3/4"		4850
		300	838	1810	1626.0	164.0	2	1701.8	61	32	2-1/4"		6120
		600	991	1995	1657.0	249.9	7	1822.5	92	28	3-1/2"		11850

Full Flange type

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

Standard Specification

- STANDARD DESIGN — API 6D, API 594
- FACE-TO-FACE DIMENSIONS — API 6D, API 594
- END FLANGE DIMENSIONS — ASME B16.5 / B16.47 Series A
- PRESSURE AND TEMPERATURE RATINGS BODY THICKNESS — ASME B16.34, API 594
- TEST & INSPECTION — API 6D, API 598
- MATERIAL — ASTM Material Specifications as per ASME B16.34



Design Features

- END CONNECTION : Flat Face, Raised Face, RTJ, Flanged
- SEAT : NBR, Viton, EPDM, Metal-to-Metal
- SPRING : 316 Stainless Steel, Inconel X750, Monel
- Retainerless Design (option)

Product Range

- ASME B16.5 / B16.47 Series A, Class 150, 300, 600 — 2" ~ 60"
- ASME B16.5 / B16.47 Series A, Class 900 — 2" ~ 48"
- ASME B16.5, Class 1500 — 2" ~ 24"
- ASME B16.5, Class 2500 — 2" ~ 12"

Standard Trim Configurations (API 594)

TRIM NO.	TRIM NO.1	TRIM NO.5	TRIM NO.8	TRIM NO.10
NOMINAL TRIM	13Cr	Hard-faced	13Cr and Hard-faced	Type 316
MATERIAL TYPE	11-13Cr	Co-Cr-A	11-13Cr, Co-Cr-A	13Cr-18Ni-Mo
BODY SEATING SURFACE	A217 CA15	Co-Cr-A	Co-Cr-A	A351 CF8M
DISC SEATING SURFACE	A217 CA15	Co-Cr-A	A217 CA15	A351 CF8M

Materials (Applicable ASTM Specification)

- **Cabon Steel** — A105, A216 WCB, A216 WCC
- **Low Temperature Cabon Steel** — A350 LF2, A352 LCB, A352 LCC
- **Austenitic Stainless Steel** — A182 F304, A182 F316, A351 CF8, A351 CF8M
- **Duplex Stainless Steel** — A182 F51 (UNS S31803), A182 F53 (UNS S32750), A182 F55 (UNS S32760)
- **Nickel Alloys** — Inconel 625 (UNS N06625), Monel 400 (UNS N04400)

Pressure Testing (Working & Test Pressure at Ambient Temperature)

CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test	
	bar	psi	bar	psi	bar	psi	bar	psi
ASME 150	19	275	29	413	21	303	6	100
ASME 300	50	720	75	1080	56	792	6	100
ASME 600	99	1440	149	2160	109	1584	6	100
ASME 900	149	2160	224	3240	164	2376	6	100
ASME 1500	248	3600	372	5400	273	3960	6	100
ASME 2500	413	5988	620	8982	454	6587	6	100

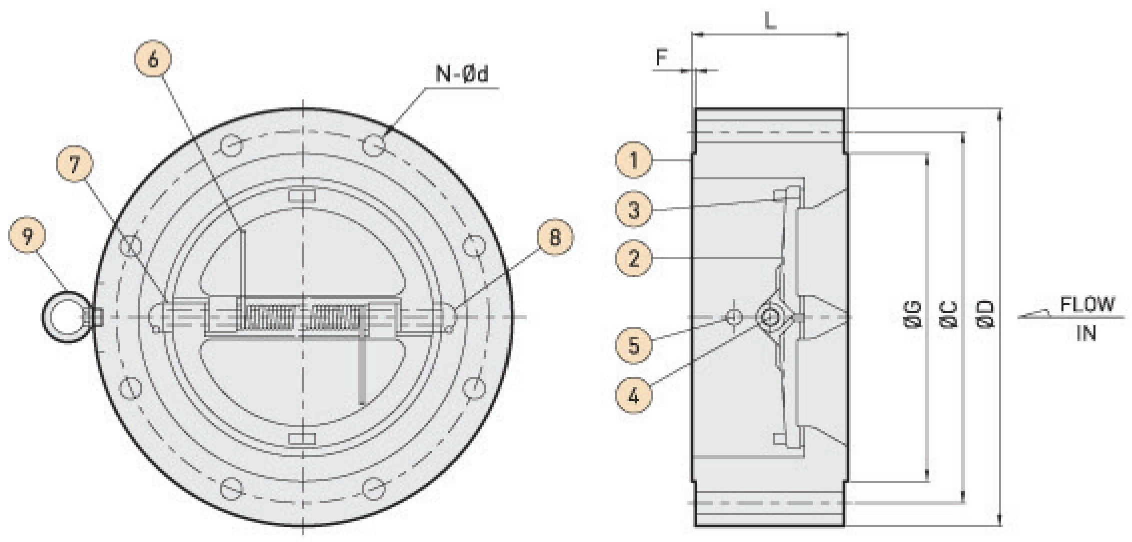
Duration of Required Test Pressure (API 598 Standard)

Size (NPS)	Test Time (sec)
≤2	60
2½ - 6	60
8 - 12	120
≥14	120

Full Flange type

ASME B16.5 Class 150, 300, 600, 900, 1500, 2500

CKD-FF Series



PARTS LIST

NO.	PART NAME	STANDARD MATERIALS SPECIFICATION	
		CARBON STEEL	STAINLESS STEEL
1	BODY	A216 WCB	A351 CF8
2	DISC	A351 CF8	A351 CF8
3	SEAT	NBR	NBR
4	HINGE PIN	A276 304	A276 304
5	STOP PIN	A276 304	A276 304
6	SPRING	Inconel X-750	Inconel X-750
7	GUIDE	A276 304	A276 304
8	WASHER	A240 304	A240 304
9	EYE BOLT	A105	A182 F304

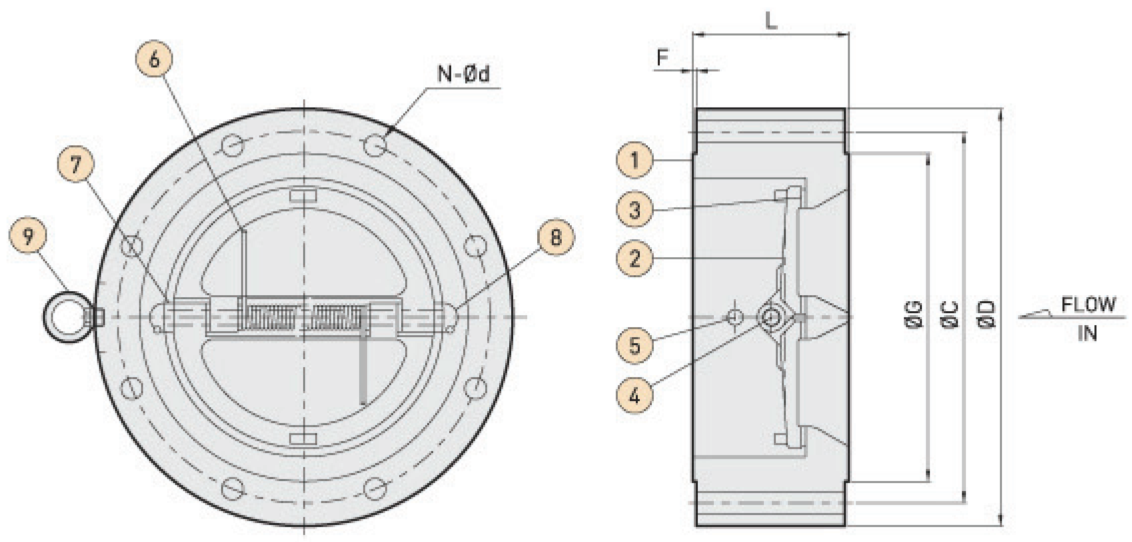
Dimensions and Weights

SIZE		CLASS	DIMENSIONS (mm)					Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt	Diameter of Bolt	Bolt Length	Approx Weight (kg)
DN	NPS		L	ϕD	ϕG	T	F						
50	2"	150	60	150	91.9	-	2	120.7	19	4	5/8"	165	
		300	60	165	91.9	-	2	127.0	19	8	5/8"	175	
		600	60	165	91.9	-	7	127.0	19	8	5/8"	195	
		900	70	215	91.9	-	7	165.1	26	8	7/8"	240	
		1500	70	215	91.9	-	7	165.1	26	8	7/8"	240	
		2500	70	235	91.9	-	7	171.4	29	8	1"	275	
65	2.5"	150	67	180	104.6	-	2	139.7	19	4	5/8"	175	
		300	67	190	104.6	-	2	149.2	19	8	5/8"	175	
		600	67	190	104.6	-	7	149.2	19	8	5/8"	205	
		900	83	245	104.6	-	7	190.5	23	8	7/8"	250	
		1500	83	245	104.6	-	7	190.5	23	8	7/8"	250	
		2500	83	265	104.6	-	7	196.8	29	8	1"	285	
80	3"	150	73	190	127.0	-	2	152.4	19	4	5/8"	185	
		300	73	210	127.0	-	2	168.3	23	8	3/4"	205	
		600	73	210	127.0	-	7	168.3	23	8	3/4"	230	
		900	83	240	127.0	-	7	190.5	26	8	7/8"	255	
		1500	83	265	127.0	-	7	203.2	32	8	1-1/8"	285	
		2500	86	305	127.0	-	7	228.6	35	8	1-1/4"	335	
100	4"	150	73	230	157.2	-	2	190.5	19	8	5/8"	185	
		300	73	255	157.2	-	2	200.0	23	8	3/4"	210	
		600	79	275	157.2	-	7	215.9	26	8	7/8"	255	
		900	102	290	157.2	-	7	235.0	32	8	1-1/8"	300	
		1500	102	310	157.2	-	7	241.3	35	8	1-1/4"	325	
		2500	105	355	157.2	-	7	273.0	42	8	1-1/2"	395	
150	6"	150	98	280	215.9	-	2	241.3	23	8	3/4"	240	
		300	98	320	215.9	-	2	269.9	23	12	3/4"	245	
		600	136	355	215.9	-	7	292.1	29	12	1"	340	
		900	159	380	215.9	-	7	317.5	32	12	1-1/8"	380	
		1500	159	395	215.9	-	7	317.5	38	12	1-3/8"	455	
		2500	159	485	215.9	-	7	368.3	54	8	2"	540	
200	8"	150	127	345	269.7	-	2	298.5	23	8	3/4"	255	
		300	127	380	269.7	-	2	330.2	26	12	7/8"	290	
		600	165	420	269.7	-	7	349.2	32	12	1-1/8"	385	
		900	206	470	269.7	-	7	393.7	38	12	1-3/8"	455	
		1500	206	485	269.7	-	7	393.7	45	12	1-5/8"	530	
		2500	206	550	269.7	-	7	438.2	54	12	2"	630	

Full Flange type

ASME B16.5 Class 150, 300, 600, 900, 1500, 2500

CKD-FF Series



PARTS LIST

NO.	PART NAME	STANDARD MATERIALS SPECIFICATION	
		CARBON STEEL	STAINLESS STEEL
1	BODY	A216 WCB	A351 CF8
2	DISC	A351 CF8	A351 CF8
3	SEAT	NBR	NBR
4	HINGE PIN	A276 304	A276 304
5	STOP PIN	A276 304	A276 304
6	SPRING	Inconel X-750	Inconel X-750
7	GUIDE	A276 304	A276 304
8	WASHER	A240 304	A240 304
9	EYE BOLT	A105	A182 F304

Dimensions and Weights

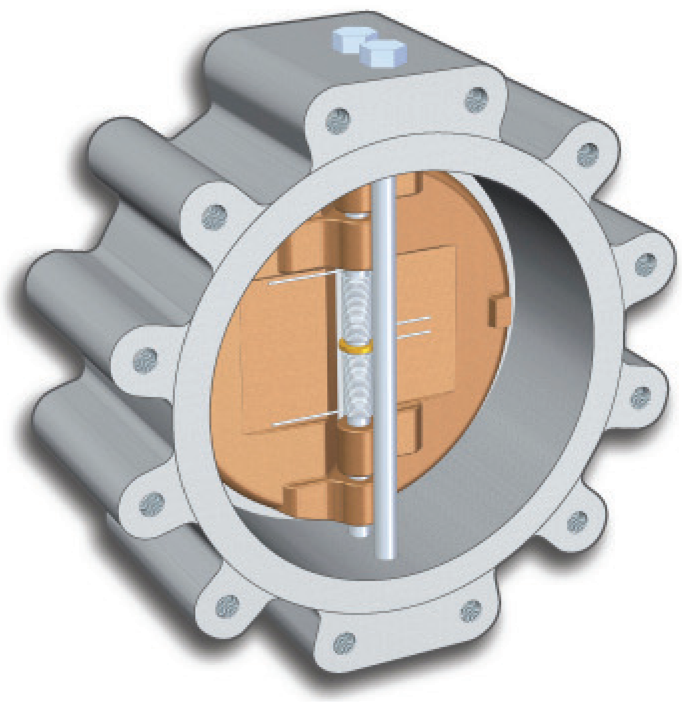
SIZE		CLASS	DIMENSIONS (mm)					Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt	Diameter of Bolt	Bolt Length	Approx Weight (kg)
DN	NPS		L	ϕD	ϕG	T	F						
250	10"	150	146	405	323.9	30.2	2	362.0	26	12	7/8"	290	
		300	146	445	323.9	47.8	2	387.4	29	16	1"	330	
		600	213	508	323.9	63.5	7	431.8	35	16	1-1/4"	460	
		900	241	546	323.9	69.9	7	469.9	38	16	1-3/8"	510	
		1500	248	584	323.9	108.0	7	482.6	51	12	1-7/8"	620	
		2500	254	673	323.9	165.1	7	539.8	67	12	2-1/2"	790	
300	12"	150	181	483	381.0	31.8	2	431.8	26	12	7/8"	330	
		300	181	521	381.0	50.8	2	450.8	32	16	1-1/8"	380	
		600	229	559	381.0	66.5	7	489.0	35	20	1-1/4"	480	
		900	292	610	381.0	79.2	7	533.4	38	20	1-3/8"	580	
		1500	305	673	381.0	124.0	7	571.5	54	16	2	720	
		2500	305	762	381.0	184.2	7	619.1	74	12	2-3/4"	900	
350	14"	150	184	533	412.8	35.1	2	476.3	29	12	1"	340	
		300	222	584	412.8	53.8	2	514.4	32	20	1-1/8"	430	
		600	273	603	412.8	69.9	7	527.0	38	20	1-3/8"	540	
		900	356	641	412.8	85.9	7	558.8	42	20	1-1/2"	660	
		1500	356	749	412.8	133.4	7	635.0	61	16	2-1/4"	810	
400	16"	150	191	597	469.9	36.6	2	539.8	29	16	1"	350	
		300	232	648	469.9	57.2	2	571.5	35	20	1-1/4"	450	
		600	305	686	469.9	76.2	7	603.2	42	20	1-1/2"	590	
		900	384	705	469.9	88.9	7	616.0	45	20	1-5/8"	710	
		1500	384	826	469.9	146.1	7	704.8	67	16	2-1/2"	890	
450	18"	150	203	635	533.4	39.6	2	577.9	32	16	1-1/8"	380	
		300	264	711	533.4	60.5	2	628.6	35	24	1-1/4"	490	
		600	362	743	533.4	82.6	7	654.0	45	20	1-5/8"	670	
		900	451	787	533.4	101.6	7	685.8	51	20	1-7/8"	820	
		1500	468	914	533.4	162.1	7	774.7	74	16	2-3/4"	1010	
500	20"	150	219	699	584.2	42.9	2	635.0	32	20	1-1/8"	400	
		300	292	775	584.2	63.5	2	685.8	35	24	1-1/4"	520	
		600	368	813	584.2	88.9	7	723.9	45	24	1-5/8"	690	
		900	451	857	584.2	108.0	7	749.3	54	20	2"	840	
		1500	533	984	584.2	177.8	7	831.8	80	16	3"	1130	
600	24"	150	222	813	692.2	47.8	2	749.3	35	20	1-1/4"	440	
		300	318	914	692.2	69.9	2	812.8	42	24	1-1/2"	590	
		600	438	940	692.2	101.6	7	838.2	51	24	1-7/8"	800	
		900	495	1041	692.2	139.7	7	901.7	67	20	2-1/2"	980	
		1500	559	1168	692.2	203.2	7	990.6	92	16	3-1/2"	1240	

CHECK VALVES
DUAL DISC

Wafer Lug type
ASME Class 150, 300, 600, 900, 1500, 2500

Standard Specification

- STANDARD DESIGN: API 6D, API 594
- FACE-TO-FACE DIMENSIONS: API 6D, API 594
- END FLANGE DIMENSIONS: ASME B16.5 / B16.47 Series A
- PRESSURE AND TEMPERATURE RATINGS BODY THICKNESS: ASME B16.34, API 594
- TEST & INSPECTION: API 6D, API 598
- MATERIAL: ASTM Material Specifications as per ASME B16.34



Design Features

- END CONNECTION : Flat Face, Raised Face, RTJ, Flanged
- SEAT : NBR, Viton, EPDM, Metal-to-Metal
- SPRING : 316 Stainless Steel, Inconel X750, Monel
- Retainerless Design (option)

Product Range

- ASME B16.5 / B16.47 Series A, Class 150, 300, 600 — 2" ~ 60"
- ASME B16.5 / B16.47 Series A, Class 900 — 2" ~ 48"
- ASME B16.5, Class 1500 — 2" ~ 24"
- ASME B16.5, Class 2500 — 2" ~ 12"

Standard Trim Configurations (API 594)

TRIM NO.	TRIM NO.1	TRIM NO.5	TRIM NO.8	TRIM NO.10
NOMINAL TRIM	13Cr	Hard-faced	13Cr and Hard-faced	Type 316
MATERIAL TYPE	11-13Cr	Co-Cr-A	11-13Cr, Co-Cr-A	13Cr-18Ni-Mo
BODY SEATING SURFACE	A217 CA15	Co-Cr-A	Co-Cr-A	A351 CF8M
DISC SEATING SURFACE	A217 CA15	Co-Cr-A	A217 CA15	A351 CF8M

Materials (Applicable ASTM Specification)

- **Cabon Steel**: A105, A216 WCB, A216 WCC
- **Low Temperature Cabon Steel**: A350 LF2, A352 LCB, A352 LCC
- **Austenitic Stainless Steel**: A182 F304, A182 F316, A351 CF8, A351 CF8M
- **Duplex Stainless Steel**: A182 F51 (UNS S31803), A182 F53 (UNS S32750), A182 F55 (UNS S32760)
- **Nickel Alloys**: Inconel 625 (UNS N06625), Monel 400 (UNS N04400)

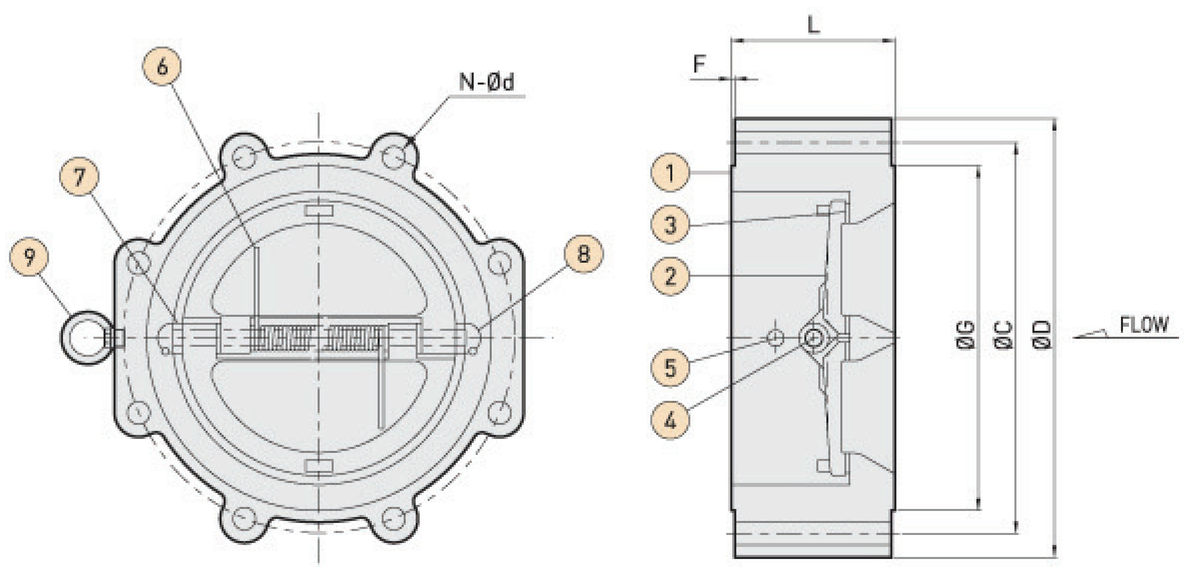
Pressure Testing (Working & Test Pressure at Ambient Temperature)

CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test	
	bar	psi	bar	psi	bar	psi	bar	psi
ASME 150	19	275	29	413	21	303	6	100
ASME 300	50	720	75	1080	56	792	6	100
ASME 600	99	1440	149	2160	109	1584	6	100
ASME 900	149	2160	224	3240	164	2376	6	100
ASME 1500	248	3600	372	5400	273	3960	6	100
ASME 2500	413	5988	620	8982	454	6587	6	100

Duration of Required Test Pressure (API 598 Standard)

Size (NPS)	Test Time (sec)
≤2	60
2½ - 6	60
8 - 12	120
≥14	120

CKD-WL Series



PARTS LIST

NO.	PART NAME	STANDARD MATERIALS SPECIFICATION CARBON STEEL	STAINLESS STEEL
1	BODY	A216 WCB	A351 CF8
2	DISC	A351 CF8	A351 CF8
3	SEAT	NBR	NBR
4	HINGE PIN	A276 304	A276 304
5	STOP PIN	A276 304	A276 304
6	SPRING	Inconel X-750	Inconel X-750
7	GUIDE	A276 304	A276 304
8	WASHER	A240 304	A240 304
9	EYE BOLT	A105	A182 F304

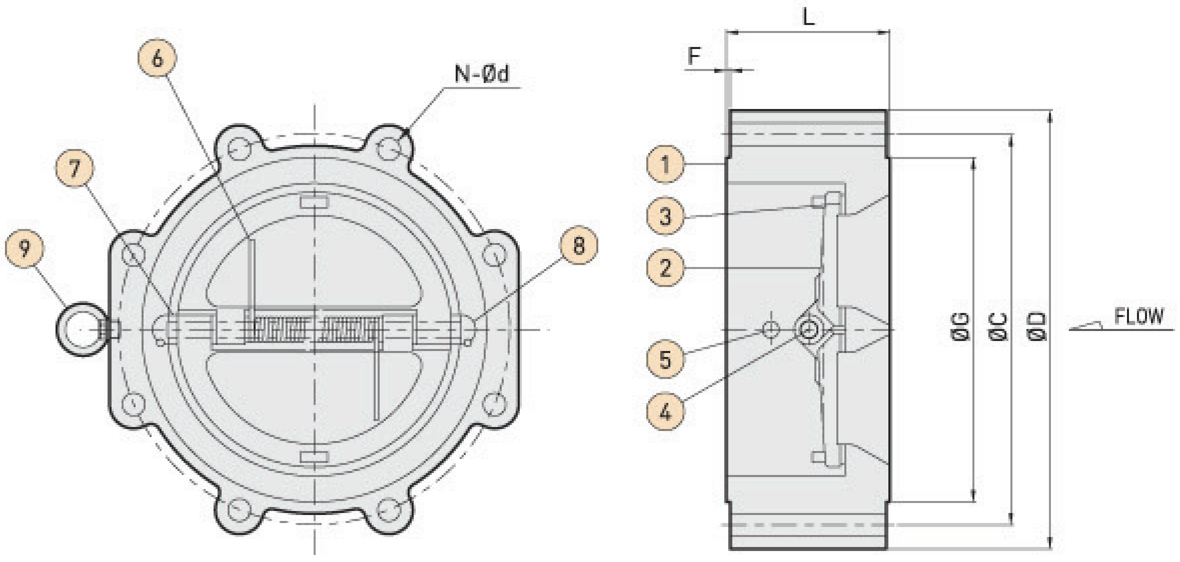
Dimensions and Weights

SIZE DN	NPS	CLASS	DIMENSIONS (mm) L	ϕD	ϕG	T	F	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt	Diameter of Bolt	Bolt Length	Approx Weight (kg)
50	2"	150	60	150	91.9	-	2	120.7	19	4	5/8"	165	
		300	60	165	91.9	-	2	127.0	19	8	5/8"	175	
		600	60	165	91.9	-	7	127.0	19	8	5/8"	195	
		900	70	215	91.9	-	7	165.1	26	8	7/8"	240	
		1500	70	215	91.9	-	7	165.1	26	8	7/8"	240	
		2500	70	235	91.9	-	7	171.4	29	8	1"	275	
65	2.5"	150	67	180	104.6	-	2	139.7	19	4	5/8"	175	
		300	67	190	104.6	-	2	149.2	19	8	5/8"	175	
		600	67	190	104.6	-	7	149.2	19	8	5/8"	205	
		900	83	245	104.6	-	7	190.5	23	8	7/8"	250	
		1500	83	245	104.6	-	7	190.5	23	8	7/8"	250	
		2500	83	265	104.6	-	7	196.8	29	8	1"	285	
80	3"	150	73	190	127.0	-	2	152.4	19	4	5/8"	185	
		300	73	210	127.0	-	2	168.3	23	8	3/4"	205	
		600	73	210	127.0	-	7	168.3	23	8	3/4"	230	
		900	83	240	127.0	-	7	190.5	26	8	7/8"	255	
		1500	83	265	127.0	-	7	203.2	32	8	1-1/8"	285	
		2500	86	305	127.0	-	7	228.6	35	8	1-1/4"	335	
100	4"	150	73	230	157.2	-	2	190.5	19	8	5/8"	185	
		300	73	255	157.2	-	2	200.0	23	8	3/4"	210	
		600	79	275	157.2	-	7	215.9	26	8	7/8"	255	
		900	102	290	157.2	-	7	235.0	32	8	1-1/8"	300	
		1500	102	310	157.2	-	7	241.3	35	8	1-1/4"	325	
		2500	105	355	157.2	-	7	273.0	42	8	1-1/2"	395	
150	6"	150	98	280	215.9	-	2	241.3	23	8	3/4"	240	
		300	98	320	215.9	-	2	269.9	23	12	3/4"	245	
		600	136	355	215.9	-	7	292.1	29	12	1"	340	
		900	159	380	215.9	-	7	317.5	32	12	1-1/8"	380	
		1500	159	395	215.9	-	7	317.5	38	12	1-3/8"	455	
		2500	159	485	215.9	-	7	368.3	54	8	2"	540	
200	8"	150	127	345	269.7	-	2	298.5	23	8	3/4"	255	
		300	127	380	269.7	-	2	330.2	26	12	7/8"	290	
		600	165	420	269.7	-	7	349.2	32	12	1-1/8"	385	
		900	206	470	269.7	-	7	393.7	38	12	1-3/8"	455	
		1500	206	485	269.7	-	7	393.7	45	12	1-5/8"	530	
		2500	206	550	269.7	-	7	438.2	54	12	2"	630	

Wafer Lug type

ASME B16.5 Class 150, 300, 600, 900, 1500, 2500

CKD-WL Series



PARTS LIST

NO.	PART NAME	STANDARD MATERIALS SPECIFICATION	
		CARBON STEEL	STAINLESS STEEL
1	BODY	A216 WCB	A351 CF8
2	DISC	A351 CF8	A351 CF8
3	SEAT	NBR	NBR
4	HINGE PIN	A276 304	A276 304
5	STOP PIN	A276 304	A276 304
6	SPRING	Inconel X-750	Inconel X-750
7	GUIDE	A276 304	A276 304
8	WASHER	A240 304	A240 304
9	EYE BOLT	A105	A182 F304

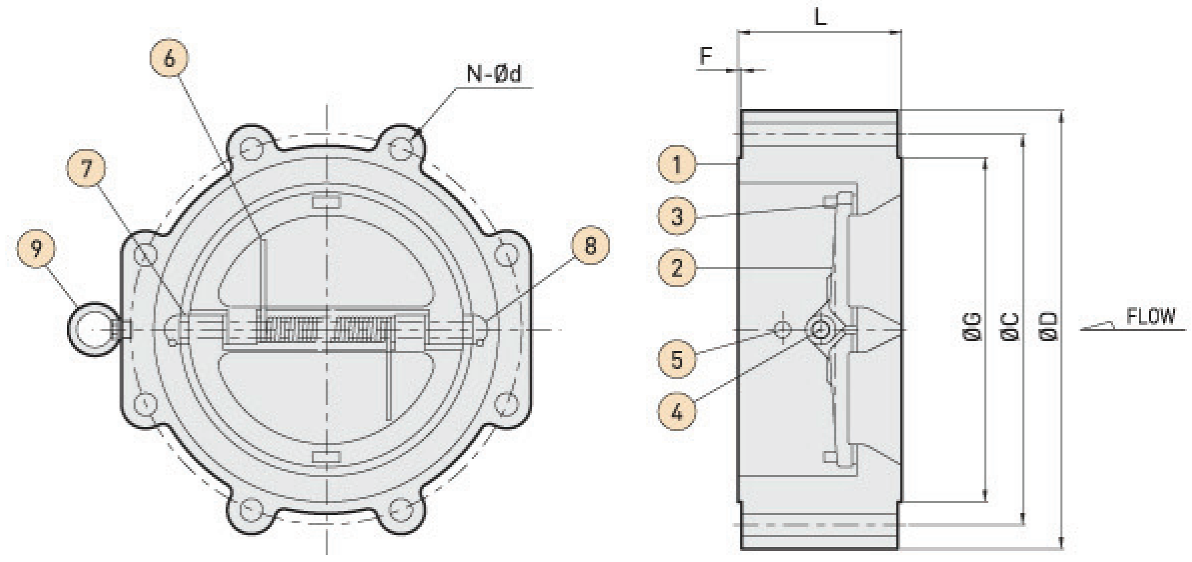
Dimensions and Weights

SIZE		CLASS	DIMENSIONS (mm)					Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt	Diameter of Bolt	Bolt Length	Approx Weight (kg)
DN	NPS		L	ϕD	ϕG	T	F						
250	10"	150	146	405	323.9	30.2	2	362.0	26	12	7/8"	290	
		300	146	445	323.9	47.8	2	387.4	29	16	1"	330	
		600	213	508	323.9	63.5	7	431.8	35	16	1-1/4"	460	
		900	241	546	323.9	69.9	7	469.9	38	16	1-3/8"	510	
		1500	248	584	323.9	108.0	7	482.6	51	12	1-7/8"	620	
		2500	254	673	323.9	165.1	7	539.8	67	12	2-1/2"	790	
300	12"	150	181	483	381.0	31.8	2	431.8	26	12	7/8"	330	
		300	181	521	381.0	50.8	2	450.8	32	16	1-1/8"	380	
		600	229	559	381.0	66.5	7	489.0	35	20	1-1/4"	480	
		900	292	610	381.0	79.2	7	533.4	38	20	1-3/8"	580	
		1500	305	673	381.0	124.0	7	571.5	54	16	2	720	
		2500	305	762	381.0	184.2	7	619.1	74	12	2-3/4"	900	
350	14"	150	184	533	412.8	35.1	2	476.3	29	12	1"	340	
		300	222	584	412.8	53.8	2	514.4	32	20	1-1/8"	430	
		600	273	603	412.8	69.9	7	527.0	38	20	1-3/8"	540	
		900	356	641	412.8	85.9	7	558.8	42	20	1-1/2"	660	
		1500	356	749	412.8	133.4	7	635.0	61	16	2-1/4"	810	
400	16"	150	191	597	469.9	36.6	2	539.8	29	16	1"	350	
		300	232	648	469.9	57.2	2	571.5	35	20	1-1/4"	450	
		600	305	686	469.9	76.2	7	603.2	42	20	1-1/2"	590	
		900	384	705	469.9	88.9	7	616.0	45	20	1-5/8"	710	
		1500	384	826	469.9	146.1	7	704.8	67	16	2-1/2"	890	
450	18"	150	203	635	533.4	39.6	2	577.9	32	16	1-1/8"	380	
		300	264	711	533.4	60.5	2	628.6	35	24	1-1/4"	490	
		600	362	743	533.4	82.6	7	654.0	45	20	1-5/8"	670	
		900	451	787	533.4	101.6	7	685.8	51	20	1-7/8"	820	
		1500	468	914	533.4	162.1	7	774.7	74	16	2-3/4"	1010	
500	20"	150	219	699	584.2	42.9	2	635.0	32	20	1-1/8"	400	
		300	292	775	584.2	63.5	2	685.8	35	24	1-1/4"	520	
		600	368	813	584.2	88.9	7	723.9	45	24	1-5/8"	690	
		900	451	857	584.2	108.0	7	749.3	54	20	2"	840	
		1500	533	984	584.2	177.8	7	831.8	80	16	3"	1130	
600	24"	150	222	813	692.2	47.8	2	749.3	35	20	1-1/4"	440	
		300	318	914	692.2	69.9	2	812.8	42	24	1-1/2"	590	
		600	438	940	692.2	101.6	7	838.2	51	24	1-7/8"	800	
		900	495	1041	692.2	139.7	7	901.7	67	20	2-1/2"	980	
		1500	559	1168	692.2	203.2	7	990.6	92	16	3-1/2"	1240	

Wafer Lug type

ASME B16.47 Series A Class 150, 300, 600

CKD-WL Series



PARTS LIST

NO.	PART NAME	STANDARD MATERIALS SPECIFICATION	
		CARBON STEEL	STAINLESS STEEL
1	BODY	A216 WCB	A351 CF8
2	DISC	A351 CF8	A351 CF8
3	SEAT	NBR	NBR
4	HINGE PIN	A276 304	A276 304
5	STOP PIN	A276 304	A276 304
6	SPRING	Inconel X-750	Inconel X-750
7	GUIDE	A276 304	A276 304
8	WASHER	A240 304	A240 304
9	EYE BOLT	A105	A182 F304

Dimensions and Weights

SIZE		CLASS	DIMENSIONS (mm)					Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt	Diameter of Bolt	Bolt Length	Approx Weight (kg)
DN	NPS		L	ϕD	ϕG	T	F						
650	26"	150	279	870	749.0	68.7	2	806.5	35	24	1-1/4"	610	
		300	356	970	749.0	84.6	2	876.3	45	28	1-5/8"	660	
		600	457	1015	749.0	132.5	7	914.4	51	28	1-7/8"	850	
700	28"	150	305	925	800.0	71.9	2	863.6	35	28	1-1/4"	640	
		300	368	1035	800.0	90.9	2	939.8	45	28	1-5/8"	690	
		600	483	1075	800.0	137.8	7	965.2	54	28	2"	895	
750	30"	150	305	985	857.0	75.1	2	914.4	35	28	1-1/4"	570	
		300	368	1090	857.0	95.7	2	997.0	48	28	1-3/4"	690	
		600	505	1130	857.0	146.7	7	1022.4	54	28	2"	925	
800	32"	150	356	1060	914.0	81.4	2	977.9	42	28	1-1/2"	650	
		300	406	1150	914.0	100.5	2	1054.1	51	28	1-7/8"	750	
		600	533	1195	914.0	154.7	7	1079.5	61	28	2-1/4"	970	
850	34"	150	356	1110	965.0	83.0	2	1028.7	42	32	1-1/2"	680	
		300	455	1205	965.0	105.2	2	1104.9	51	28	1-7/8"	790	
		600	580	1245	965.0	161.0	7	1130.3	61	28	2-1/4"	990	
900	36"	150	368	1170	1022.0	90.9	2	1085.9	42	32	1-1/2"	680	
		300	483	1270	1022.0	111.6	2	1168.4	54	32	2"	850	
		600	635	1315	1022.0	169.0	7	1193.8	67	28	2-1/2"	1100	
1000	40"	150	419	1290	1124.0	90.9	2	1200.2	42	36	1-1/2"	730	
		300	546	1240	1086.0	114.8	2	1155.7	45	32	1-5/8"	920	
		600	660	1320	1111.0	169.0	7	1212.9	61	32	2-1/4"	1150	
1050	42"	150	432	1345	1194.0	97.3	2	1257.3	42	36	1-1/2"	760	
		300	568	1290	1137.0	119.5	2	1206.5	45	32	1-5/8"	940	
		600	701	1405	1168.0	178.5	7	1282.7	67	28	2-1/2"		
1100	44"	150	432	1405	1245.0	102.1	2	1314.5	42	40	1-1/2"	870	
		300	568	1355	1194.0	124.3	2	1263.7	48	32	1-3/4"		
		600	701	1455	1226.0	184.8	7	1333.5	67	32	2-1/2"		
1200	48"	150	524	1510	1359.0	108.4	2	1422.4	42	44	1-1/2"	890	
		300	629	1465	1302.0	133.8	2	1371.6	51	32	1-7/8"	1100	
		600	787	1595	1334.0	202.3	7	1460.5	74	32	2-3/4"		
1350	54"	150	591	1685	1511.0	121.1	2	1593.9	48	44	1-3/4"		
		300	718	1660	1467.0	152.9	2	1549.4	61	28	2-1/4"		
		600	889	1780	1492.0	224.5	7	1632.0	80	32	3"		
1500	60"	150	660	1855	1676.0	132.2	2	1759.0	48	52	1-3/4"	1070	
		300	838	1810	1626.0	164.0	2	1701.8	61	32	2-1/4"	1340	
		600	991	1995	1657.0	249.9	7	1822.5	92	28	3-1/2"		

CHECK VALVES
DUAL DISC

Butt Welding type
ASME Class 150, 300, 600, 900, 1500, 2500

Standard Specification

- STANDARD DESIGN — API 6D, API 594
- FACE-TO-FACE DIMENSIONS — Manufacture's Standard
- END FLANGE DIMENSIONS — ASME B16.5 / B16.25
- PRESSURE AND TEMPERATURE RATINGS BODY THICKNESS — ASME B16.34, API 594
- TEST & INSPECTION — API 6D, API 598
- MATERIAL — ASTM Material Specifications as per ASME B16.34

Design Features

- END CONNECTION : SCH. 40
- SEAT : NBR, Viton, EPDM, Metal-to-Metal
- SPRING : 316 Stainless Steel, Inconel X750, Monel
- Retainerless Design

Product Range

- ASME B16.5, Class 150, 300, 600 4" ~ 24"
- ASME B16.5, Class 900 4" ~ 24"
- ASME B16.5, Class 1500 4" ~ 24"
- ASME B16.5, Class 2500 4" ~ 12"

Standard Trim Configurations (API 594)

TRIM NO.	TRIM NO.1	TRIM NO.5	TRIM NO.8	TRIM NO.10
NOMINAL TRIM	13Cr	Hard-faced	13Cr and Hard-faced	Type 316
MATERIAL TYPE	11-13Cr	Co-Cr-A	11-13Cr, Co-Cr-A	13Cr-18Ni-Mo
BODY SEATING SURFACE	A217 CA15	Co-Cr-A	Co-Cr-A	A351 CF8M
DISC SEATING SURFACE	A217 CA15	Co-Cr-A	A217 CA15	A351 CF8M

Materials (Applicable ASTM Specification)

- **Cabon Steel** — A105, A216 WCB, A216 WCC
- **Low Temperature Cabon Steel** — A350 LF2, A352 LCB, A352 LCC
- **Austenitic Stainless Steel** — A182 F304, A182 F316, A351 CF8, A351 CF8M
- **Duplex Stainless Steel** — A182 F51 (UNS S31803), A182 F53 (UNS S32750), A182 F55 (UNS S32760)
- **Nickel Alloys** — Inconel 625 (UNS N06625), Monel 400 (UNS N04400)

Pressure Testing (Working & Test Pressure at Ambient Temperature)

CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test	
	bar	psi	bar	psi	bar	psi	bar	psi
ASME 150	19	275	29	413	21	303	6	100
ASME 300	50	720	75	1080	56	792	6	100
ASME 600	99	1440	149	2160	109	1584	6	100
ASME 900	149	2160	224	3240	164	2376	6	100
ASME 1500	248	3600	372	5400	273	3960	6	100
ASME 2500	413	5988	620	8982	454	6587	6	100

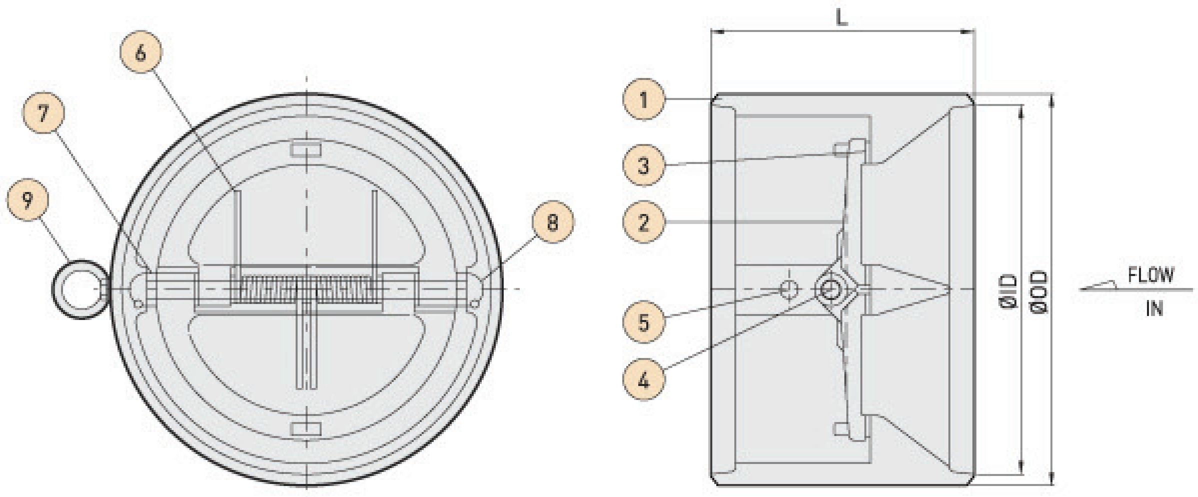
Duration of Required Test Pressure (API 598 Standard)

Size (NPS)	Test Time (sec)
≤2	60
2½ - 6	60
8 - 12	120
≥14	120

Butt Welding type

ASME Class 150, 300, 600, 900, 1500

CKD-BW Series



PARTS LIST

NO.	PART NAME	STANDARD MATERIALS SPECIFICATION	
		CARBON STEEL	STAINLESS STEEL
1	BODY	A216 WCB	A351 CF8
2	DISC	A351 CF8	A351 CF8
3	SEAT	Co-Cr-A	Co-Cr-A
4	HINGE PIN	A276 304	A276 304
5	STOP PIN	A276 304	A276 304
6	SPRING	Inconel X-750	Inconel X-750
7	GUIDE	A276 304	A276 304
8	WASHER	A240 304	A240 304
9	EYE BOLT	A105	A182 F304

Dimensions and Weights

SIZE		CLASS	SCHED.	Ring Number	DIMENSIONS (mm)			Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt	Diameter of Bolt	Bolt Length	Approx Weight (kg)
DN	NPS				L	ϕD	ϕG						
50	2"	300	40	-	130	60.3	52.5	-	-	-	-	-	
		600	80	-	140	60.3	49.2	-	-	-	-	-	
		1500	160	-	150	60.3	42.9	-	-	-	-	-	
80	3"	300	40	-	140	88.9	77.9	-	-	-	-	-	
		600	80	-	150	88.9	73.6	-	-	-	-	-	
		1500	160	-	160	88.9	66.6	-	-	-	-	-	
100	4"	300	40	-	150	114.3	102.2	-	-	-	-	-	
		600	80	-	160	114.3	97.1	-	-	-	-	-	
		1500	160	-	170	114.3	87.3	-	-	-	-	-	
150	6"	300	40	-	160	168.2	154.0	-	-	-	-	-	
		600	80	-	180	168.2	146.3	-	-	-	-	-	
		1500	160	-	200	168.2	131.8	-	-	-	-	-	
200	8"	300	40	-	180	202.7	202.7	-	-	-	-	-	
		600	80	-	200	193.6	193.6	-	-	-	-	-	
		1500	160	-	220	173.0	173.0	-	-	-	-	-	
250	10"	300	40	-	200	273.1	254.5	-	-	-	-	-	
		600	80	-	240	273.1	242.9	-	-	-	-	-	
		1500	160	-	280	273.1	215.9	-	-	-	-	-	
300	12"	300	40	-	240	323.8	303.2	-	-	-	-	-	
		600	80	-	290	323.8	288.9	-	-	-	-	-	
		1500	160	-	340	323.8	257.2	-	-	-	-	-	
350	14"	300	40	-	290	355.6	333.3	-	-	-	-	-	
		600	80	-	350	355.6	317.5	-	-	-	-	-	
		1500	160	-	410	355.6	284.1	-	-	-	-	-	
400	16"	300	40	-	350	406.4	381.0	-	-	-	-	-	
		600	80	-	420	406.4	363.5	-	-	-	-	-	
		1500	160	-	480	406.4	325.4	-	-	-	-	-	
450	18"	300	40	-	420	457.2	428.6	-	-	-	-	-	
		600	80	-	480	457.2	409.6	-	-	-	-	-	
		1500	160	-	540	457.2	366.7	-	-	-	-	-	
500	20"	300	40	-	480	508.0	477.8	-	-	-	-	-	
		600	80	-	540	508.0	455.6	-	-	-	-	-	
		1500	160	-	610	508.0	408.0	-	-	-	-	-	
600	24"	300	40	-	540	609.6	574.8	-	-	-	-	-	
		600	80	-	610	609.6	547.7	-	-	-	-	-	
		1500	160	-	660	609.6	490.5	-	-	-	-	-	

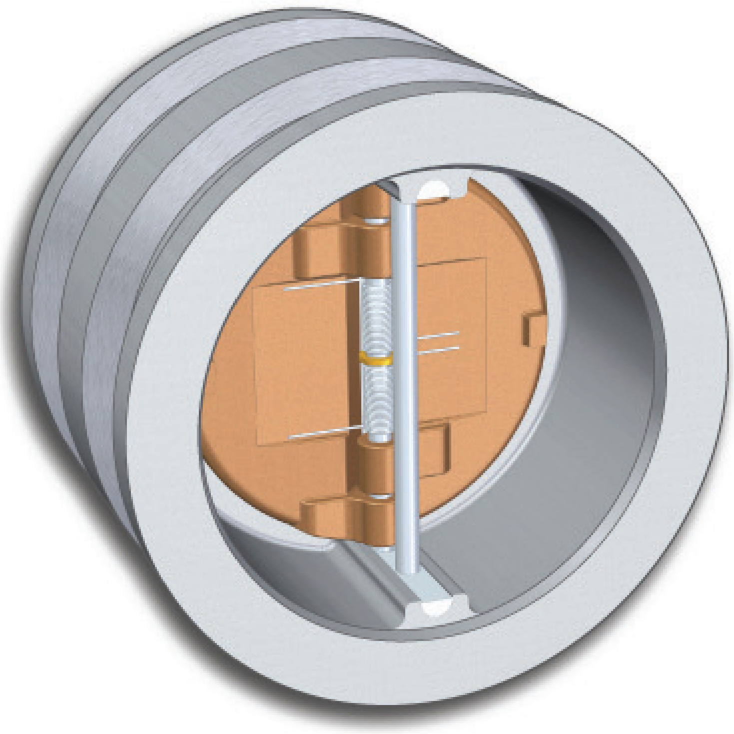
CHECK VALVES DUAL DISC

Hub End type

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

Standard Specification

- STANDARD DESIGN — API 6D, API 594
- FACE-TO-FACE DIMENSIONS — Manufacture's Standard
- END FLANGE DIMENSIONS
- PRESSURE AND TEMPERATURE RATINGS BODY THICKNESS — ASME B16.34, API 594
- TEST & INSPECTION — API 6D, API 598
- MATERIAL — ASTM Material Specifications as per ASME B16.34



Design Features

- END CONNECTION :
- SEAT : NBR, Viton, EPDM, Metal-to-Metal
- SPRING : 316 Stainless Steel, Inconel X750, Monel
- Retainerless Design

Product Range

- ASME B16.5, Class 150, 300, 600 4" ~ 24"
- ASME B16.5, Class 900 4" ~ 24"
- ASME B16.5, Class 1500 4" ~ 24"
- ASME B16.5, Class 2500 4" ~ 12"

Standard Trim Configurations (API 594)

TRIM NO.	TRIM NO.1	TRIM NO.5	TRIM NO.8	TRIM NO.10
NOMINAL TRIM	13Cr	Hard-faced	13Cr and Hard-faced	Type 316
MATERIAL TYPE	11-13Cr	Co-Cr-A	11-13Cr, Co-Cr-A	13Cr-18Ni-Mo
BODY SEATING SURFACE	A217 CA15	Co-Cr-A	Co-Cr-A	A351 CF8M
DISC SEATING SURFACE	A217 CA15	Co-Cr-A	A217 CA15	A351 CF8M

Materials (Applicable ASTM Specification)

- **Cabon Steel** — A105, A216 WCB, A216 WCC
- **Low Temperature Cabon Steel** — A350 LF2, A352 LCB, A352 LCC
- **Austenitic Stainless Steel** — A182 F304, A182 F316, A351 CF8, A351 CF8M
- **Duplex Stainless Steel** — A182 F51 (UNS S31803), A182 F53 (UNS S32750), A182 F55 (UNS S32760)
- **Nickel Alloys** — Inconel 625 (UNS N06625), Monel 400 (UNS N04400)

Pressure Testing (Working & Test Pressure at Ambient Temperature)

CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test	
	bar	psi	bar	psi	bar	psi	bar	psi
ASME 150	19	275	29	413	21	303	6	100
ASME 300	50	720	75	1080	56	792	6	100
ASME 600	99	1440	149	2160	109	1584	6	100
ASME 900	149	2160	224	3240	164	2376	6	100
ASME 1500	248	3600	372	5400	273	3960	6	100
ASME 2500	413	5988	620	8982	454	6587	6	100

Duration of Required Test Pressure (API 598 Standard)

Size (NPS)	Test Time (sec)
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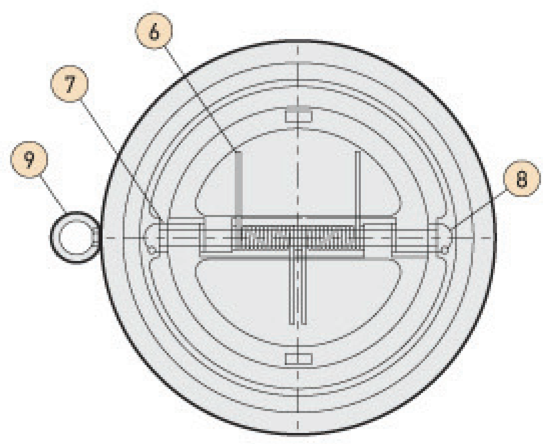
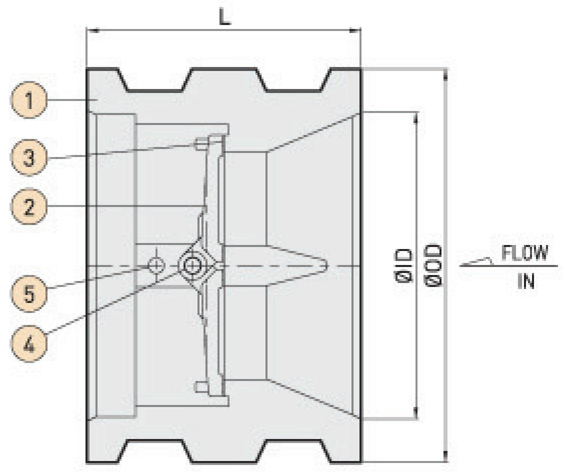
CKD-HB Series





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		1500	160	25	160	88.9	66.6	-	-	-	-	-	
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150	6"	300	40	62	160	168.2	154.0	-	-	-	-	-	
		600	80	62	180	168.2	146.3	-	-	-	-	-	
		1500	160	52	200	168.2	131.8	-	-	-	-	-	
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250	10"	300	40	102	200	273.1	254.5	-	-	-	-	-	
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		1500	160	152	540	457.2	366.7	-	-	-	-	-	
500	20"	300	40	180	480	508.0	477.8	-	-	-	-	-	
		600	80	162	540	508.0	455.6	-	-	-	-	-	
		1500	160	-	610	508.0	408.0	-	-	-	-	-	
600	24"	300	40	220	540	609.6	574.8	-	-	-	-	-	
		600	80	180	610	609.6	547.7	-	-	-	-	-	
		1500	160	-	660	609.6	490.5	-	-	-	-	-	

SEJIN VALVE

Our company endeavor ceaselessly to develop new products and for quality improvement.

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