



VALVES & TECHINAL DATASHEETS CATALOGUE





**VALVE MANUFACTURER AND
SUPPLIER FOR MEGAPROJECTS**

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ABOUT US



With over 25 years of experience, Sejin Valve stands out as a premier valve manufacturer on a global scale.

- By integrating Korean technology with professional expertise, our products consistently deliver the highest levels of trust and quality.
- We have 2 factories in Korea, 1 factory in Saudi Arabia and 1 factory in Turkey.

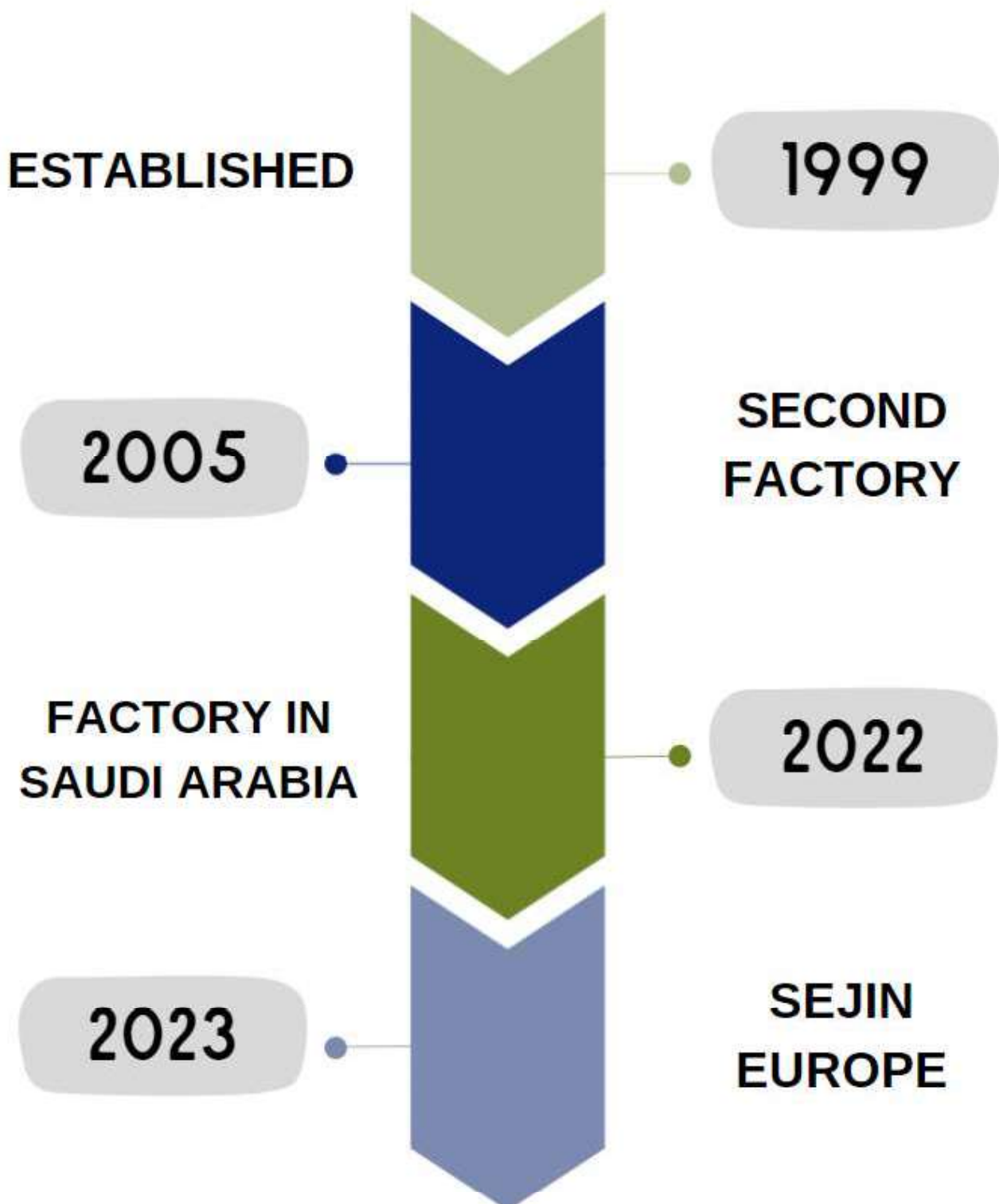
OUR VISION & VALUES

Company thinking first of human being and nature

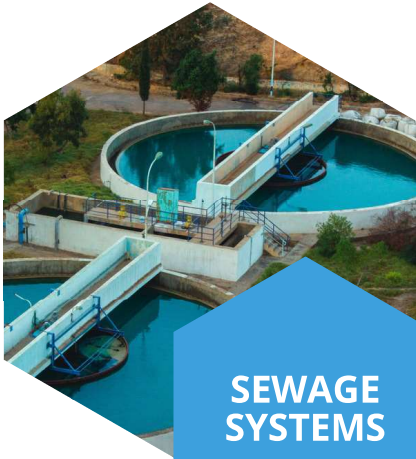
Our company endeavor ceaselessly to develop new products and for quality improvement



TIMELINE



AREAS OF APPLICATION



**SEWAGE
SYSTEMS**



**OIL AND
GAS**



**POTABLE
WATER**



**IRRIGATION
SYSTEMS**



**INDUSTRIAL
SYSTEMS**



**POWER
PLANT**



**MARINE AND
OFFSHORE**

AREAS OF APPLICATION



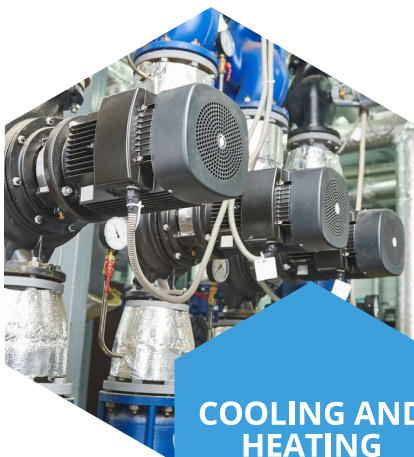
**WATER
TRANSMISSION**



**FIRE
FIGHTING
SYSTEM**



**PETROCHEMICAL
INDUSTRY**



**COOLING AND
HEATING
APPLICATIONS**



SHIPYARDS

SCOPE OF SUPPLY



GATE VALVES



BUTTERFLY VALVES



CONTROL VALVES



BALL VALVES



GLOBE VALVES



CHECK VALVES



PISTON VALVES



AIR RELEASE VALVES



SAFETY VALVES



DISMANTLING...



STEAM TRAPS



STRAINERS



TECHNICAL DATASHEETS

ANSI STANDARDS

TRIPLE - OFFSET BUTTERFLY VALVES

ASME Class 150, 300, 600

BFO-TDF Series



DOUBLE FLANGE TYPE

6~9P

standard features

Triple-offset Disc Rotation ASME Class 150, 300, 600 size : 3"~60" (Short, Long Pattern)
end connection : Raised Face
One-Piece Shaft Design Hard Faced Seat
materials : Carbon steel, Stainless steel, Aluminium Bronze

features upon request

ASME Class 900,1500 size : 66"~144"
end connection : RTJ
Fire Safe Design
Cryogenic Type Design
materials : Nickel Alloys
Actuators(Pneumatic,Hydraulic,Electric)

BFO-TLF Series



LUG TYPE

10~13P

standard features

Triple-offset Disc Rotation ASME Class 150, 300, 600 size : 3"~60"
end connection : Raised Face
One-Piece Shaft Design Hard Faced Seat
materials : Carbon steel, Stainless steel, Aluminium Bronze

features upon request

ASME Class 900,1500 size : 66"~144"
end connection : RTJ
Fire Safe Design
Cryogenic Type Design
materials : Nickel Alloys
Actuators(Pneumatic,Hydraulic,Electric)

BFO-TWF Series



WAFER TYPE

14~17P

standard features

Triple-offset Disc Rotation ASME Class 150, 300, 600 size : 3"~60"
end connection : Wafer Flat Face
One-Piece Shaft Design Hard Faced Seat
materials : Carbon steel, Stainless steel, Aluminium Bronze

features upon request

ASME Class 900,1500 size : 66"~144"
end connection : RTJ
Fire Safe Design
Cryogenic Type Design
materials : Nickel Alloys
Actuators(Pneumatic,Hydraulic,Electric)

DOUBLE - OFFSET BUTTERFLY VALVES

ASME Class 150, 300

BFO-DDF Series



DOUBLE FLANGE TYPE

18~21P

standard features

Double-offset Disc Rotation ASME Class 150, 300 size : 3"~60" (Short, Long Pattern)
end connection : Raised Face seat : Rubber
materials : Carbon steel, Stainless steel, Aluminium Bronze

features upon request

size : 66"~144"
seat : EPDM, Teflon, Metal
materials : Nickel Alloys
Actuators(Pneumatic,Hydraulic,Electric)

BFO-DLF Series



LUG TYPE

22-25P

standard features

Double-offset Disc Rotation ASME Class 150, 300 size : 3"~60" (Short, Long Pattern)
end connection : Raised Face seat : Rubber
materials : Carbon steel, Stainless steel, Aluminium Bronze

features upon request

size : 66"~144"
seat : EPDM, Teflon, Metal
materials : Nickel Alloys
Actuators(Pneumatic,Hydraulic,Electric)

BFO-DWF Series



WAFER TYPE

26-29P

standard features

Double-offset Disc Rotation ASME Class 150, 300 size : 3"~60" (Short, Long Pattern)
end connection : Raised Face seat : Rubber
materials : Carbon steel, Stainless steel, Aluminium Bronze

features upon request

size : 66"~144"
seat : EPDM, Teflon, Metal
materials : Nickel Alloys
Actuators(Pneumatic,Hydraulic,Electric)

Standard Specification

■ STANDARD DESIGN	API 609
■ FACE-TO-FACE DIMENSIONS	API 609
■ END FLANGE DIMENSIONS	ASME B16.5 / B16.47 Series A
■ PRESSURE AND TEMPERATURE RATINGS	ASME B16.34, API 609
■ BODY THICKNESS	
■ TEST & INSPECTION	API 609, API 598
■ MATERIAL	ASTM Material Specifications as per ASME B16.34



Design Features

■ TRIPLE-OFFSET DISC ROTATION	■ FIRE SAFE DESIGN
■ ONE-PIECE SHAFT DESIGN	■ CRYOGENIC TYPE DESIGN (OPTION)
■ HARD FACED SEAT	■ SPECIAL FLANGES OR END CONNECTIONS
■ METAL-TO-METAL SEAT SEALING	■ ACTUATORS (PNEUMATIC, HYDRAULIC, ELECTRIC)
■ SHORT, LONG PATTERN DESIGN	

Product Range

■ ASME B16.5 / B16.47 Series A, Class 150, 300	3" ~ 60" (SHORT PATTERN)
■ ASME B16.5 / B16.47 Series A, Class 600	3" ~ 24" (SHORT PATTERN)
■ ASME B16.5 / B16.47 Series A, Class 150, 300, 600	3" ~ 36" (LONG PATTERN)

Materials (Applicable ASTM Specification)

■ Carbon Steel	A105, A216 WCB, A216 WCC
■ Low Temperature Carbon 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)
■ Aluminium Bronze	B148 - C95800

Pressure Testing (Working & Test Pressure at Ambient Temperature)

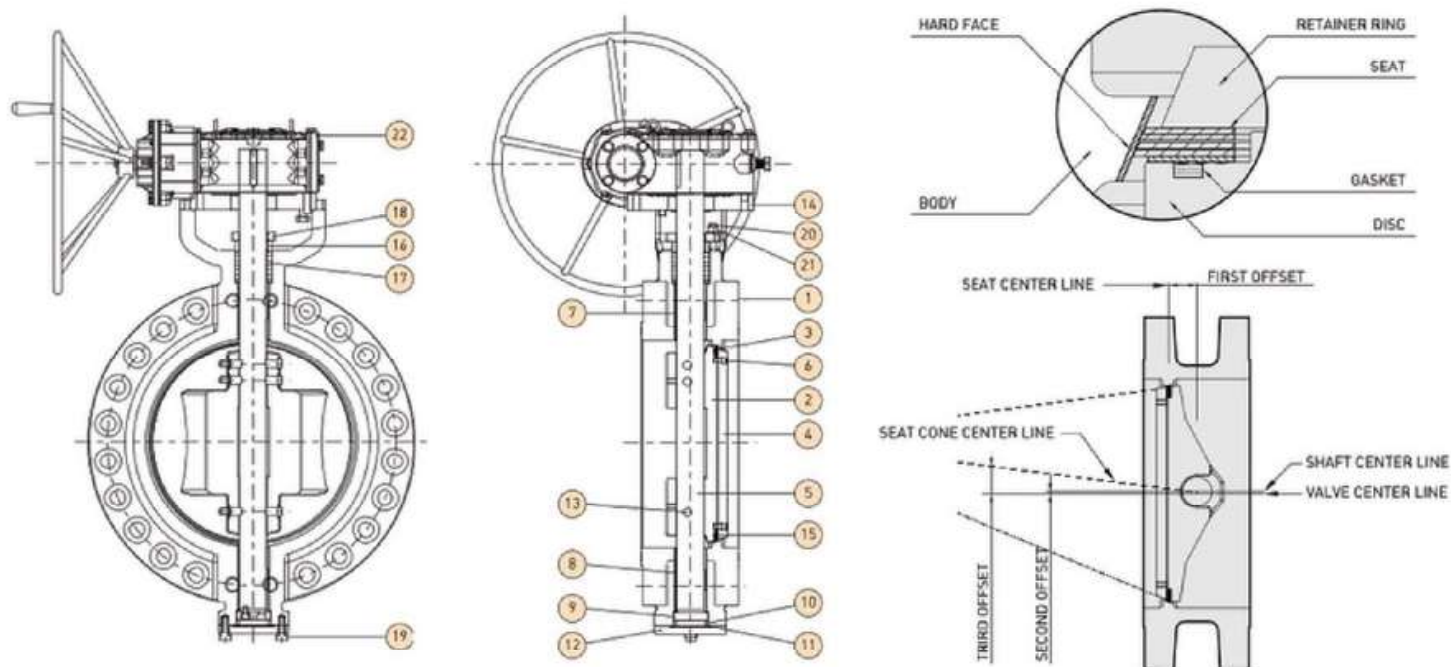
CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test		Duration of Required Test Pressure (API 598 Standard)	
	bar	psi	bar	psi	bar	psi	bar	psi		
ASME 150	19	275	29	413	21	303	6	100	size (NPS)	Test Time (sec)
ASME 300	50	720	75	1080	56	792	6	100	2" ~ 6"	60
ASME 600	99	1440	149	2160	109	1584	6	100	8" ~ 12"	120
									≥14	120

Double-Flanged Type

ASME Class 150, 300, 600

BUTTERFLY VALVES TRIPLE-OFFSET

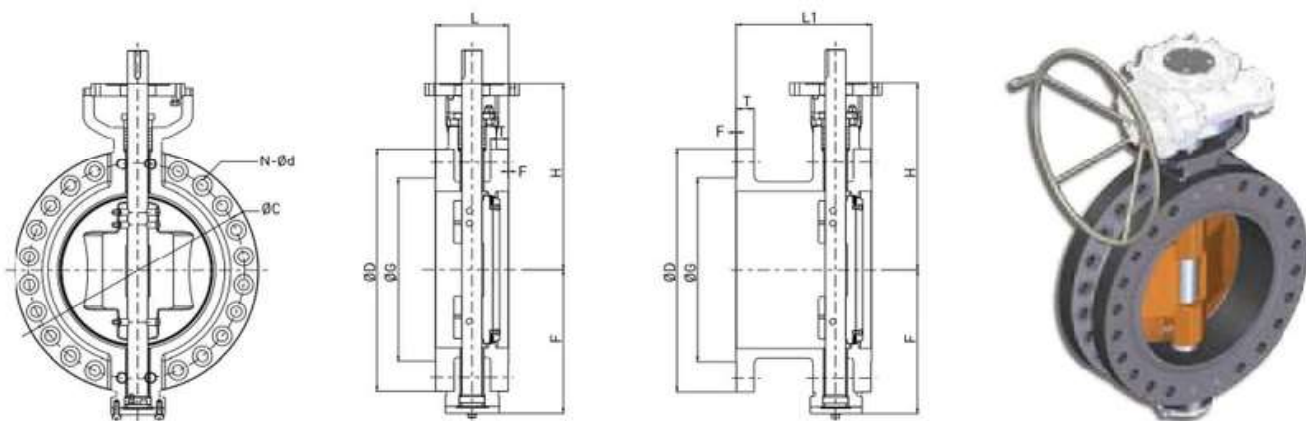
BFO-TDF Series



TRIPLE-OFFSET GEOMETRY

Parts List	No.	Parts Name	Standard Materials Specification		
			Carbon Steel	Austenitic Stainless Steel	Duplex Stainless Steel
	1	BODY	A216 WCB	A351 CF8M	A995 4A(S31803)
	2	DISC	A351 CF8	A351 CF8M	A995 4A(S31803)
	3	SEAT	SS316+GRAPHITE	SS316+GRAPHITE	DUPLEX + GRAPHITE
	4	SHAFT	A276 304A	A276 316	A182 F51
	5	RETAINER	240 304	A240 316	S31803
	6	SOCKET BOLT	A197 B8	A320 B8M	A320 B8M
	7	BUSING-TOP	A276 304	A276 316	A182 F51
	8	BUSING-BOTTOM	A276 304	A276 316	A182 F51
	9	THRUST BEARING	A276 304	A276 316	A182 F51
	10	COLLER	A276 304	A276 316	A182 F51
	11	GASKET-COVER	SS316+GRAPHITE	SS316+GRAPHITE	DUPLEX + GRAPHITE
	12	COVER	A36	A240 316	A182 F51
	13	DISC PIN	A276 304	A276 316	A182 F51
	14	FLANGE-TOP	A36	A240 316	A240 316
	15	GASKET-SEAT	SS316+GRAPHITE	SS316+GRAPHITE	DUPLEX + GRAPHITE
	16	GLAND BUSING	A276 304	A276 316	A182 F51
	17	PACKING	GRAPHITE	GRAPHITE	GRAPHITE
	18	PACKING GLAND	A276 304	A276 316	A240 316
	19	BOLT-COVER	A193 B8	A320 B8M	A193 B8M
	20	BOLT-GLAND	A193 B7	A320 B8M	A193 B8M
	21	NUT-GLAND	A194 2H	A320 8M	A194 8M
	22	GEAR BOX	-	-	-

BFO-TDF Series (Short, Long Pattern)



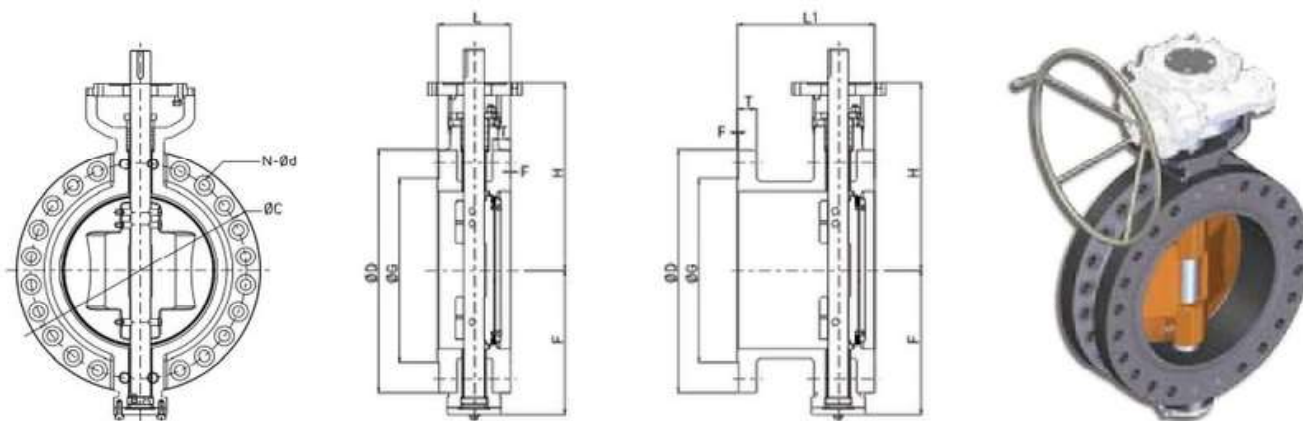
Dimensions and Weights	SIZE		CLASS	DIMENSIONS (mm)								Diameter of Bolt Circle (ϕC)	Number of Bolt (N)	Diameter of Bolt Holes (ϕd)	Diameter of Bolt	Bolt Length	Approx Weight (kg)	
	DN	NPS		L (Short)	L1 (Long)	F	H	ϕD	ϕG	T	F						Short	Long
80	3"	150	114	203	137	208	190	127	23.9	2	152.4	4	19	5/8"	105	32		
		300	180	282	139	208	210	127	28.4	2	168.3	8	23	3/4"	121	36		
		600	180	356	143	208	210	127	31.8	7	168.3	8	23	3/4"	127	43		
100	4"	150	127	229	155	213	230	157.2	23.9	2	190.5	8	19	5/8"	105	37		
		300	190	305	166	233	255	157.2	31.8	2	200	8	23	3/4"	127	46		
		600	190	432	182	275	275	157.2	38.1	7	215.9	8	26	7/8"	150	69		
150	6"	150	140	267	170	263	280	215.9	25.4	2	241.3	8	23	3/4"	115	48		
		300	210	403	203	293	320	215.9	36.6	2	269.9	12	23	3/4"	140	76		
		600	210	559	222	300	355	215.9	47.8	7	292.1	12	29	1"	175	135		
200	8"	150	152	292	210	308	345	269.7	28.4	2	298.5	8	23	3/4"	121	89		
		300	230	418	240	330	380	269.7	41.1	2	330.2	12	26	7/8"	155	93		
		600	230	660	248	350	420	269.7	55.6	7	349.2	12	32	1-1/8"	200	162		
250	10"	150	165	330	230	340	405	323.9	30.2	2	362	12	26	7/8"	127	112		
		300	250	457	264	375	445	323.9	47.8	2	387.4	16	29	1"	175	164		
		600	250	787	325	436	508	323.9	63.5	7	431.8	16	35	1-1/4"	220	268		
300	12"	150	178	356	280	394	483	381	31.8	2	431.8	12	26	7/8"	135	161		
		300	270	502	299	419	521	381	50.8	2	450.8	16	32	1-1/8"	185	222		
		600	270	838	348	455	559	381	66.5	7	489	20	35	1-1/4"	230	369		
350	14"	150	190	381	308	435	533	412.8	35.1	2	476.3	12	29	1"	150	228		
		300	290	762	349	485	584	412.8	53.8	2	514.4	20	32	1-1/8"	195	298		
		600	290	889	378	485	603	412.8	69.9	7	527	20	38	1-3/8"	235	364		
400	16"	150	216	406	345	480	597	469.9	36.6	2	539.9	16	29	1"	150	303		
		300	310	838	389	499	648	469.9	57.2	2	571.5	20	35	1-1/4"	210	357		
		600	310	991	425	515	686	469.9	76.2	7	603.2	20	42	1-1/2"	260	632		
450	18"	150	222	432	383	517	635	533.4	39.6	2	577.9	16	32	1-1/8"	160	364		
		300	330	914	430	530	711	533.4	60.5	2	628.6	24	35	1-1/4"	215	499		
		600	330	1092	458	552	743	533.4	82.6	7	654	20	45	1-5/8"	275	739		
500	20"	150	229	457	393	543	699	584.2	42.9	2	635	20	32	1-1/8"	175	499		
		300	350	991	471	597	775	584.2	63.5	2	685.8	24	35	1-1/4"	230	621		
		600	350	1194	500	658	813	584.2	88.9	7	723.9	24	45	1-5/8"	290	879		
600	24"	150	267	508	470	622	813	692.2	47.8	2	749.3	20	35	1-1/4"	185	699		
		300	390	1143	553	695	914	692.2	69.9	2	812.8	24	42	1-1/2"	260	910		
		600	390	1397	560	725	940	692.2	101.6	7	838.2	24	51	1-7/8"	335	1423		

Double-Flanged Type

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

BUTTERFLY VALVES
TRIPLE-OFFSET

BFO-TDF Series (Short, Long Pattern)



Dimensions and Weights	SIZE		CLASS	DIMENSIONS (mm)								Diameter of Bolt Circle (ØC)	Number of Bolt (N)	Diameter of Bolt Holes (Ød)	Diameter of Bolt	Bolt Length	Approx Weight (kg)	
	DN	NPS		L	L1	F	H	ØD	ØG	T	F						Short	Long
				(Short)	(Long)													
650	26"	150	292	559	490	635	820	749	68.7	2	806.5	24	35	1-1/4"				
		300	410	1245			920	749	84.6	2	876.3	28	45	1-5/8"				
		600		1448			1065	749	132.5	7	914.4	28	51	1-7/8"				
700	28"	150	292	610	555	686	925	800	71.9	2	863.6	28	35	1-1/4"		860		
		300	430	1346			1085	800	90.9	2	939.8	28	45	1-5/8"		1417		
		600		1549			1075	800	137.8	7	965.2	28	54	2"				
750	30"	150	318	610	580	711	985	857	75.1	2	914.4	28	35	1-1/4"		1085		
		300	450	1397			1080	857	95.7	2	997	28	48	1-3/4"		1715		
		600		1651	705	815	1130	857	146.7	7	1022.4	28	54	2"				
800	32"	150	318	660	620	760	1060	914	81.4	2	977.9	28	42	1-1/2"		1241		
		300	470	1524			1150	914	100.5	2	1054.1	28	51	1-7/8"		1957		
		600		1778	725	870	1195	914	154.7	7	1079.5	28	61	2-1/4"				
850	34"	150	318		660	800	1110	965	83	2	1028.7	32	42	1-1/2"				
		300					1235	965	105.2	2	1104.9	28	51	1-7/8"				
		600					1245	965	161	7	1130.3	28	61	2-1/4"				
900	36"	150	330	711	676	845	1170	1022	90.9	2	1085.9	32	42	1-1/2"		1716		
		300	510	1727			1270	1022	111.6	2	1168.4	32	54	2"		2590		
		600		2083			1315	1022	169	7	1193.8	28	67	2-1/2"				
950	38"	150	410		712	870	1240	1073	87.8	2	1149.4	32	42	1-1/2"				
		300	530				1170	1029	108.4	2	1092.2	32	42	1-1/2"				
		600					1270	1054	162	7	1162	28	61	2-1/4"				
1000	40"	150	410		757	915	1290	1124	90.9	2	1200.2	36	42	1-1/2"		2208		
		300	550				1240	1086	114.8	2	1155.7	32	45	1-5/8"		2585		
		600					1320	1111	169	7	1212.9	32	61	2-1/4"				
1050	42"	150	410		784	920	1345	1194	97.3	2	1257.3	36	42	1-1/2"		2488		
		300	570				1290	1137	119.5	2	1206.5	32	45	1-5/8"		2849		
		600					1405	1168	178.5	7	1282.7	28	67	2-1/2"				
1100	44"	150	470		824	975	1435	1245	102.1	2	1314.5	40	42	1-1/2"				
		300					1365	1194	124.3	2	1263.7	32	48	1-3/4"				
		600					1455	1226	184.8	7	1333.5	32	67	2-1/2"				
1200	48"	150	470		862	1052	1510	1359	108.4	2	1422.4	44	42	1-1/2"		3440		
		300	630				1455	1302	133.8	2	1371.6	32	51	1-7/8"		4106		
		600					1525	1334	202.3	7	1460.5	32	74	2-3/4"				

* Please contact the sales office.

BUTTERFLY VALVES TRIPLE-OFFSET

Lug Type ASME Class 150, 300, 600

Standard Specification

■ STANDARD DESIGN	API 609
■ FACE-TO-FACE DIMENSIONS	API 609
■ END FLANGE DIMENSIONS	ASME B16.5 / B16.47 Series A
■ PRESSURE AND TEMPERATURE RATINGS BODY THICKNESS	ASME B16.34, API 609
■ TEST & INSPECTION	API 609, API 598
■ MATERIAL	ASTM Material Specifications as per ASME B16.34



Design Features

■ TRIPLE-OFFSET DISC ROTATION	■ FIRE SAFE DESIGN
■ ONE-PIECE SHAFT DESIGN	■ CRYOGENIC TYPE DESIGN (OPTION)
■ HARD FACED SEAT	■ SPECIAL FLANGS OR END CONNECTIONS
■ METAL-TO-METAL SEAT SEALING	■ ACTUATORS (PNEUMATIC, HYDRAULIC, ELECTRIC)

Product Range

■ ASME B16.5 / B16.47 Series A, Class 150	3" ~ 48"
■ ASME B16.5 / B16.47 Series A, Class 300	3" ~ 36"
■ ASME B16.5 / B16.47 Series A, Class 600	3" ~ 24"

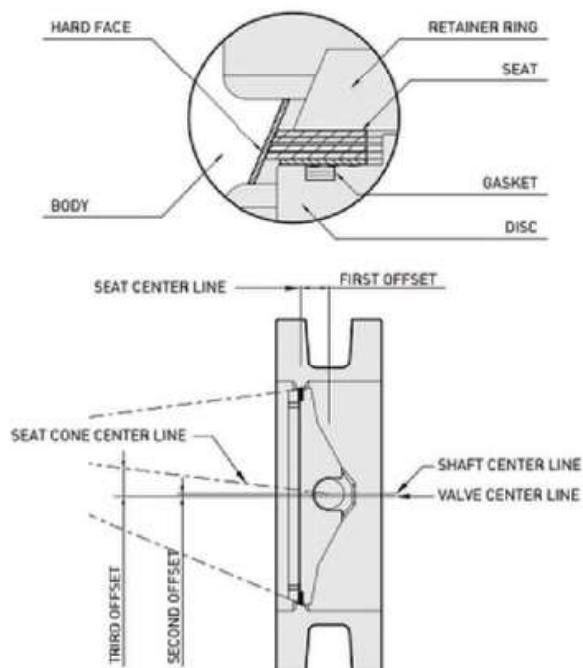
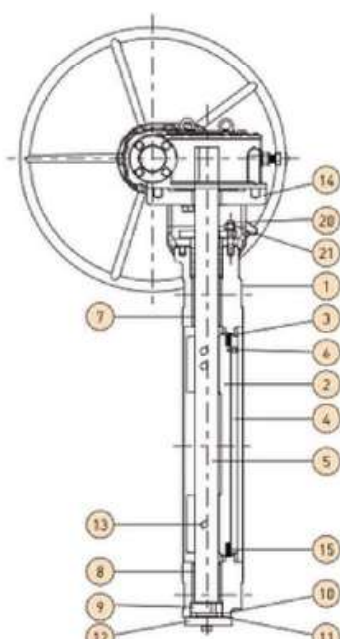
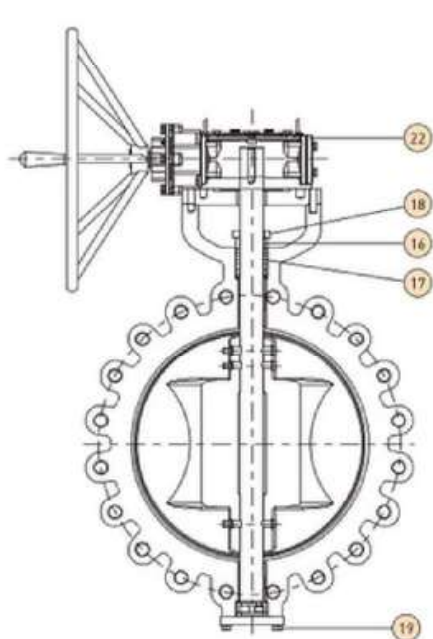
Materials (Applicable ASTM Specification)

■ Carbon Steel	A105, A216 WCB, A216 WCC
■ Low Temperature Carbon 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)
■ Aluminium Bronze	B148 - C95800

Pressure Testing (Working & Test Pressure at Ambient Temperature)

CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test		Duration of Required Test Pressure (API 598 Standard)	
	bar	psi	bar	psi	bar	psi	bar	psi	size (NPS)	Test Time (sec)
ASME 150	19	275	29	413	21	303	6	100	2" ~ 6"	60
ASME 300	50	720	75	1080	56	792	6	100	8" ~ 12"	120
ASME 600	99	1440	149	2160	109	1584	6	100	≥14	120

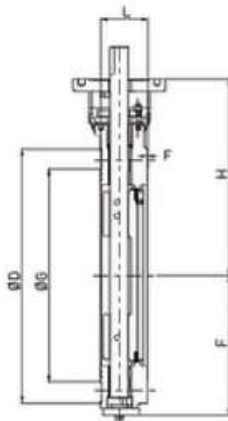
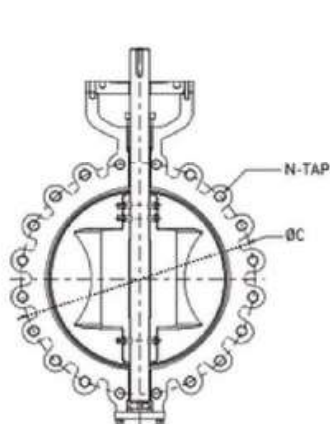
BFO-TLF Series



TRIPLE-OFFSET GEOMETRY

Parts List	No.	Parts Name	Standard Materials Specification		
			Carbon Steel	Austenitic Stainless Steel	Duplex Stainless Steel
	1	BODY	A216 WCB	A351 CF8M	A995 4A(S31803)
	2	DISC	A351 CF8	A351 CF8M	A995 4A(S31803)
	3	SEAT	SS316+GRAPHITE	SS316+GRAPHITE	DUPLEX + GRAPHITE
	4	SHAFT	A276 304	A276 316	A182 F51
	5	RETAINER	A240 304	A240 316	S31803
	6	SOCKET BOLT	A197 B8	A320 B8M	A320 B8M
	7	BUSING-TOP	A276 304	A276 316	A182 F51
	8	BUSING-BOTTOM	A276 304	A276 316	A182 F51
	9	THRUST BEARING	A276 304	A276 316	A182 F51
	10	COLLER	A276 304	A276 316	A182 F51
	11	GASKET-COVER	SS316+GRAPHITE	SS316+GRAPHITE	DUPLEX + GRAPHITE
	12	COVER	A36	A240 316	A182 F51
	13	DISC PIN	A276 304	A276 316	A182 F51
	14	FLANGE-TOP	A36	A240 316	A240 316
	15	GASKET-SEAT	SS316+GRAPHITE	SS316+GRAPHITE	DUPLEX + GRAPHITE
	16	GLAND BUSING	A276 304	A276 316	A182 F51
	17	PACKING	GRAPHITE	GRAPHITE	GRAPHITE
	18	PACKING GLAND	A276 304	A276 316	A240 316
	19	BOLT-COVER	A193 B8	A320 B8M	A193 B8M
	20	BOLT-GLAND	A193 B7	A320 B8M	A193 B8M
	21	NUT-GLAND	A194 2H	A320 8M	A194 8M
	22	GEAR BOX	-	-	-

BFO-TLF Series



Dimensions and Weights

SIZE			DIMENSIONS (mm)							Diameter of Bolt Circle (ΦC)	Number of Bolt (N)	Diameter of Bolt Holes (Φd)	Diameter of Bolt	Bolt Length	Approx Weight (kg)
DN	NPS	CLASS	L	F	H	ΦD	ΦG	T	F						
80	3"	150	48	137	208	190	127		2	152.4	4	19	5/8"	105	
		300	48	139	208	210	127		2	168.3	8	23	3/4"	121	
		600	54	143	208	210	127		7	168.3	8	23	3/4"	127	
100	4"	150	54	155	213	230	157.2		2	190.5	8	19	5/8"	105	
		300	54	166	233	255	157.2		2	200	8	23	3/4"	127	
		600	64	182	275	275	157.2		7	215.9	8	26	7/8"	150	
150	6"	150	57	170	263	280	215.9		2	241.3	8	23	3/4"	115	
		300	59	203	293	320	215.9		2	269.9	12	23	3/4"	140	
		600	78	222	300	355	215.9		7	292.1	12	29	1"	175	
200	8"	150	64	210	308	345	269.7		2	298.5	8	23	3/4"	121	
		300	73	240	330	380	269.7		2	330.2	12	26	7/8"	155	
		600	102	248	350	420	269.7		7	349.2	12	32	1-1/8"	200	
250	10"	150	71	230	340	405	323.9		2	362	12	26	7/8"	127	
		300	83	264	375	445	323.9		2	387.4	16	29	1"	175	
		600	117	325	436	508	323.9		7	431.8	16	35	1-1/4"	220	
300	12"	150	81	280	394	483	381		2	431.8	12	26	7/8"	135	
		300	92	299	419	521	381		2	450.8	16	32	1-1/8"	185	
		600	140	348	455	559	381		7	489	20	35	1-1/4"	230	
350	14"	150	92	308	435	533	412.8		2	476.3	12	29	1"	150	
		300	117	349	485	584	412.8		2	514.4	20	32	1-1/8"	195	
		600	155	378	485	603	412.8		7	527	20	38	1-3/8"	235	
400	16"	150	102	345	480	597	469.9		2	539.8	16	29	1"	150	
		300	133	389	499	648	469.9		2	571.5	20	35	1-1/4"	210	
		600	178	425	515	686	469.9		7	603.2	20	42	1-1/2"	260	
450	18"	150	114	383	517	635	533.4		2	577.9	16	32	1-1/8"	160	
		300	149	430	530	711	533.4		2	628.6	24	35	1-1/4"	215	
		600	200	458	552	743	533.4		7	654	20	45	1-5/8"	275	
500	20"	150	127	393	543	699	584.2		2	635	20	32	1-1/8"	175	
		300	159	471	597	775	584.2		2	685.8	24	35	1-1/4"	230	
		600	216	500	658	813	584.2		7	723.9	24	45	1-5/8"	290	
600	24"	150	154	470	622	813	692.2		2	749.3	20	35	1-1/4"	185	
		300	181	553	695	914	692.2		2	812.8	24	42	1-1/2"	260	
		600	232	560	725	940	692.2		7	838.2	24	51	1-7/8"	335	

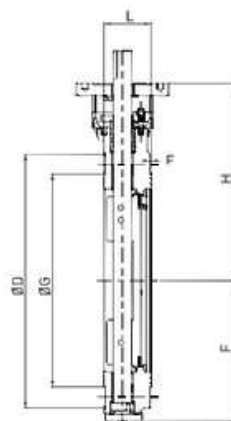
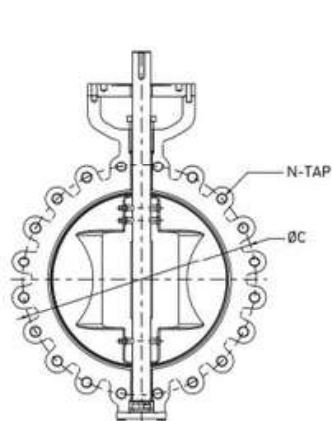
Lug Type

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

BUTTERFLY VALVES

TRIPLE-OFFSET

BFO-TLF Series



Dimensions and Weights	SIZE		CLASS	DIMENSIONS (mm)						Diameter of Bolt Circle (ØC)	Number of Bolt (N)	Diameter of Bolt Holes (Ød)	Diameter of Bolt	Bolt Length	Approx Weight (kg)
	DN	NPS		L	F	H	ØD	ØG	T						
650	26"	150	165	490	635	870	749		2	806.5	24	35	1-1/4"		
		300	209	640	800	970	749		2	876.3	28	45	1-5/8"		
		600				1015	749		7	914.4	28	51	1-7/8"		
700	28"	150	165	555	686	925	800		2	863.6	28	35	1-1/4"		
		300	209	660	810	1035	800		2	939.8	28	45	1-5/8"		
		600				1075	800		7	965.2	28	54	2"		
750	30"	150	165	580	711	985	857		2	914.4	28	35	1-1/4"		
		300	241	690	825	1090	857		2	997	28	48	1-3/4"		
		600		705	815	1130	857		7	1022.4	28	54	2"		
800	32"	150	190	620	760	1060	914		2	977.9	28	42	1-1/2"		
		300	241	720	860	1150	914		2	1054.1	28	51	1-7/8"		
		600		725	870	1195	914		7	1079.5	28	61	2-1/4"		
850	34"	150	190	660	800	1110	965		2	1028.7	32	42	1-1/2"		
		300	241	740	920	1205	965		2	1104.9	28	51	1-7/8"		
		600				1245	965		7	1130.3	28	61	2-1/4"		
900	36"	150	200	676	845	1170	1022		2	1085.9	32	42	1-1/2"		
		300	300	750	930	1270	1022		2	1168.4	32	54	2"		
		600				1315	1022		7	1193.8	28	67	2-1/2"		
950	38"	150	200	712	870	1240	1073		2	1149.4	32	42	1-1/2"		
		300				1170	1029		2	1092.2	32	42	1-1/2"		
		600				1270	1054		7	1162	28	61	2-1/4"		
1000	40"	150	216	757	915	1290	1124		2	1200.2	36	42	1-1/2"		
		300				1240	1086		2	1155.7	32	45	1-5/8"		
		600				1320	1111		7	1212.9	32	61	2-1/4"		
1050	42"	150	251	784	920	1345	1194		2	1257.3	36	42	1-1/2"		
		300				1290	1137		2	1206.5	32	45	1-5/8"		
		600				1405	1168		7	1282.7	28	67	2-1/2"		
1100	44"	150	251	824	975	1405	1245		2	1314.5	40	42	1-1/2"		
		300				1355	1194		2	1263.7	32	48	1-3/4"		
		600				1455	1226		7	1333.5	32	67	2-1/2"		
1200	48"	150	276	862	1052	1510	1359		2	1422.4	44	42	1-1/2"		
		300				1465	1302		2	1371.6	32	51	1-7/8"		
		600				1595	1334		7	1460.5	32	74	2-3/4"		

* Please contact the sales office.

Standard Specification

■ STANDARD DESIGN	API 609
■ FACE-TO-FACE DIMENSIONS	API 609
■ END FLANGE DIMENSIONS	ASME B16.5 / B16.47 Series A
■ PRESSURE AND TEMPERATURE RATINGS	ASME B16.34, API 609
■ BODY THICKNESS	
■ TEST & INSPECTION	API 609, API 598
■ MATERIAL	ASTM Material Specifications as per ASME B16.34



Design Features

■ TRIPLE-OFFSET DISC ROTATION	■ FIRE SAFE DESIGN
■ ONE-PIECE SHAFT DESIGN	■ CRYOGENIC TYPE DESIGN (OPTION)
■ HARD FACED SEAT	■ SPECIAL FLANGES OR END CONNECTIONS
■ METAL-TO-METAL SEAT SEALING	■ ACTUATORS (PNEUMATIC, HYDRAULIC, ELECTRIC)

Product Range

■ ASME B16.5 / B16.47 Series A, Class 150	3" ~ 48"
■ ASME B16.5 / B16.47 Series A, Class 300	3" ~ 36"
■ ASME B16.5 / B16.47 Series A, Class 600	3" ~ 24"

Materials (Applicable ASTM Specification)

■ Carbon Steel	A105, A216 WCB, A216 WCC
■ Low Temperature Carbon 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)
■ Aluminium Bronze	B148 - C95800

Pressure Testing (Working & Test Pressure at Ambient Temperature)

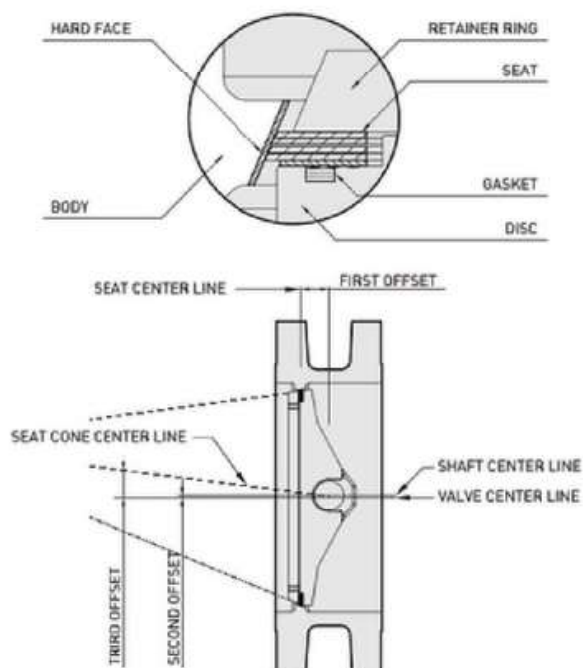
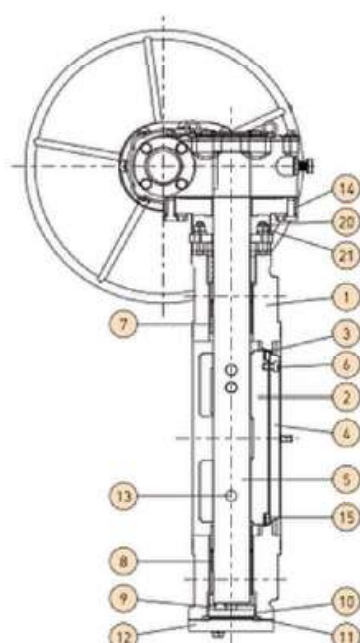
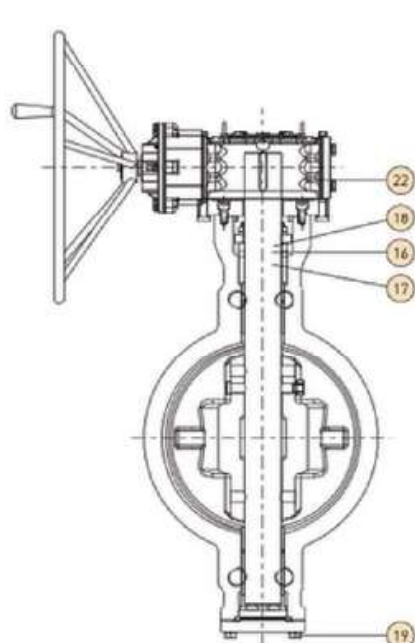
CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test		Duration of Required Test Pressure (API 598 Standard)	
	bar	psi	bar	psi	bar	psi	bar	psi		
ASME 150	19	275	29	413	21	303	6	100	size (NPS)	Test Time (sec)
ASME 300	50	720	75	1080	56	792	6	100	2" ~ 6"	60
ASME 600	99	1440	149	2160	109	1584	6	100	8" ~ 12"	120
									≥14	120

Wafer Type

ASME Class 150, 300, 600

BUTTERFLY VALVES TRIPLE-OFFSET

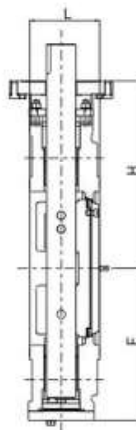
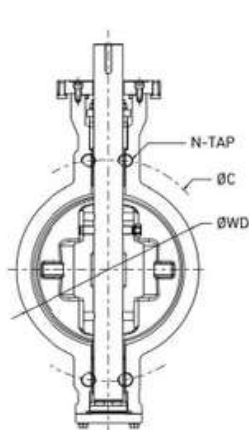
BFO-TWF Series



TRIPLE-OFFSET GEOMETRY

Parts List	No.	Parts Name	Standard Materials Specification		
			Carbon Steel	Austenitic Stainless Steel	Duplex Stainless Steel
	1	BODY	A216 WCB	A351 CF8M	A995 4A(S31803)
	2	DISC	A351 CF8	A351 CF8M	A995 4A(S31803)
	3	SEAT	SS316+GRAPHITE	SS316+GRAPHITE	DUPLEX + GRAPHITE
	4	SHAFT	A276 304	A276 316	A182 F51
	5	RETAINER	A240 304	A240 316	S31803
	6	SOCKET BOLT	A197 B8	A320 B8M	A320 B8M
	7	BUSING-TOP	A276 304	A276 316	A182 F51
	8	BUSING-BOTTOM	A276 304	A276 316	A182 F51
	9	THRUST BEARING	A276 304	A276 316	A182 F51
	10	COLLER	A276 304	A276 316	A182 F51
	11	GASKET-COVER	SS316+GRAPHITE	SS316+GRAPHITE	DUPLEX + GRAPHITE
	12	COVER	A36	A240 316	A182 F51
	13	DISC PIN	A276 304	A276 316	A182 F51
	14	FLANGE-TOP	A36	A240 316	A240 316
	15	GASKET-SEAT	SS316+GRAPHITE	SS316+GRAPHITE	DUPLEX + GRAPHITE
	16	GLAND BUSING	A276 304	A276 316	A182 F51
	17	PACKING	GRAPHITE	GRAPHITE	GRAPHITE
	18	PACKING GLAND	A276 304	A276 316	A240 316
	19	BOLT-COVER	A193 B8	A320 B8M	A193 B8M
	20	BOLT-GLAND	A193 B7	A320 B8M	A193 B8M
	21	NUT-GLAND	A194 2H	A320 8M	A194 8M
	22	GEAR BOX	-	-	-

BFO-TWF Series



Dimensions and Weights	SIZE		CLASS	DIMENSIONS (mm)						Diameter of Bolt Circle (φC)	Number of Bolt (N)	Diameter of Bolt Holes (φd)	Diameter of Bolt	Bolt Length	Approx Weight (kg)
	DN	NPS		L	F	H	φWD	φG	T	F					
80	3"	150	48	137	208					152.4	4	19	5/8"		
		300	48	139	208					168.3	4	23	3/4"		
		600	54	143	208					168.3	4	23	3/4"		
100	4"	150	54	155	213					190.5	4	19	5/8"		
		300	54	166	233					200	4	23	3/4"		
		600	64	182	275					215.9	4	26	7/8"		
150	6"	150	57	170	263					241.3	4	23	3/4"		
		300	59	203	293					269.9	4	23	3/4"		
		600	78	222	300					292.1	4	29	1"		
200	8"	150	64	210	308					296.5	4	23	3/4"		
		300	73	240	330					330.2	4	26	7/8"		
		600	102	248	350					349.2	4	32	1-1/8"		
250	10"	150	71	230	340					362	4	26	7/8"		
		300	83	264	375					387.4	4	29	1"		
		600	117	325	436					431.8	4	35	1-1/4"		
300	12"	150	81	280	394					431.8	4	26	7/8"		
		300	92	299	419					450.8	4	32	1-1/8"		
		600	140	348	455					489	4	35	1-1/4"		
350	14"	150	92	308	435					476.3	4	29	1"		
		300	117	349	485					514.4	4	32	1-1/8"		
		600	155	378	485					527	4	38	1-3/8"		
400	16"	150	102	345	480					539.8	4	29	1"		
		300	133	389	499					571.5	4	35	1-1/4"		
		600	178	425	515					603.2	4	42	1-1/2"		
450	18"	150	114	383	517					577.9	4	32	1-1/8"		
		300	149	430	530					628.6	4	35	1-1/4"		
		600	200	458	552					654	4	45	1-5/8"		
500	20"	150	127	393	543					635	4	32	1-1/8"		
		300	159	471	597					685.8	4	35	1-1/4"		
		600	216	500	658					723.9	4	45	1-5/8"		
600	24"	150	154	470	622					749.3	4	35	1-1/4"		
		300	181	553	695					812.8	4	42	1-1/2"		
		600	232	560	725					838.2	4	51	1-7/8"		

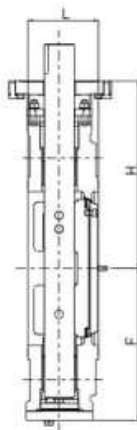
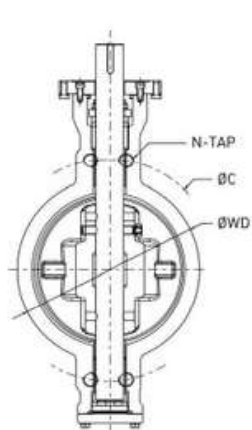
Wafer Type

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

BUTTERFLY VALVES

TRIPLE-OFFSET

BFO-TWF Series



Dimensions and Weights	SIZE		CLASS	DIMENSIONS (mm)						Diameter of Bolt Circle (ΦC)	Number of Bolt (N)	Diameter of Bolt Holes (Φd)	Diameter of Bolt	Bolt Length	Approx. Weight (kg)
	DN	NPS		L	F	H	ΦWD	ΦG	T	F					
650	26"	150	165	490	635					806.5	4	35	1-1/4"		
		300	209	640	800					876.3	4	45	1-5/8"		
		600								914.4	4	51	1-7/8"		
700	28"	150	165	555	686					863.6	4	35	1-1/4"		
		300	209	660	810					939.8	4	45	1-5/8"		
		600								965.2	4	54	2"		
750	30"	150	165	580	711					914.4	4	35	1-1/4"		
		300	241	690	825					997	4	48	1-3/4"		
		600		705	815					1027.4	4	54	2"		
800	32"	150	190	620	760					977.9	4	42	1-1/2"		
		300	241	690	825					1054.1	4	51	1-7/8"		
		600		725	870					1079.5	4	61	2-1/4"		
850	34"	150	190	660	800					1028.7	4	42	1-1/2"		
		300	241	740	920					1104.9	4	51	1-7/8"		
		600								1130.3	4	61	2-1/4"		
900	36"	150	200	676	845					1085.9	4	42	1-1/2"		
		300	300	750	930					1168.4	4	54	2"		
		600								1193.8	4	67	2-1/2"		
950	38"	150	200	712	870					1149.4	4	42	1-1/2"		
		300								1092.2	4	42	1-1/2"		
		600								1162	4	61	2-1/4"		
1000	40"	150	216	757	915					1200.2	4	42	1-1/2"		
		300								1155.7	4	45	1-5/8"		
		600								1212.9	4	61	2-1/4"		
1050	42"	150	251	784	920					1257.3	4	42	1-1/2"		
		300								1206.5	4	45	1-5/8"		
		600								1282.7	4	67	2-1/2"		
1100	44"	150	251	824	975					1314.5	4	42	1-1/2"		
		300								1263.7	4	48	1-3/4"		
		600								1333.5	4	67	2-1/2"		
1200	48"	150	276	862	1052					1422.4	4	42	1-1/2"		
		300								1371.6	4	51	1-7/8"		
		600								1460.5	4	74	2-3/4"		

* Please contact the sales office.

Standard Specification

■ STANDARD DESIGN	API 609
■ FACE-TO-FACE DIMENSIONS	API 609
■ END FLANGE DIMENSIONS	ASME B16.5 / B16.47 Series A
■ PRESSURE AND TEMPERATURE RATINGS	ASME B16.34, API 609
■ BODY THICKNESS	
■ TEST & INSPECTION	API 609, API 598
■ MATERIAL	ASTM Material Specifications as per ASME B16.34



Design Features

■ DOUBLE-OFFSET DISC ROTATION	■ SHORT, LONG PATTERN DESIGN
■ ONE-PIECE SHAFT DESIGN	■ SPECIAL FLANGES OR END CONNECTIONS
■ HARD FACED SEAT (OPTION)	■ ACTUATORS (PNEUMATIC, HYDRAULIC, ELECTRIC)
■ TEFLON, METAL-TO-METAL SEAT SEALING (OPTION)	

Product Range

■ ASME B16.5 / B16.47 Series A, Class 150, 300	3" ~ 60" (SHORT PATTERN)
■ ASME B16.5 / B16.47 Series A, Class 150, 300	3" ~ 36" (LONG PATTERN)

Materials (Applicable ASTM Specification)

■ Carbon Steel	A105, A216 WCB, A216 WCC
■ Low Temperature Carbon 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)
■ Aluminium Bronze	B148 - C95800

Pressure Testing (Working & Test Pressure at Ambient Temperature)

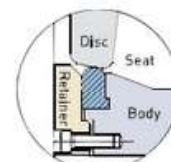
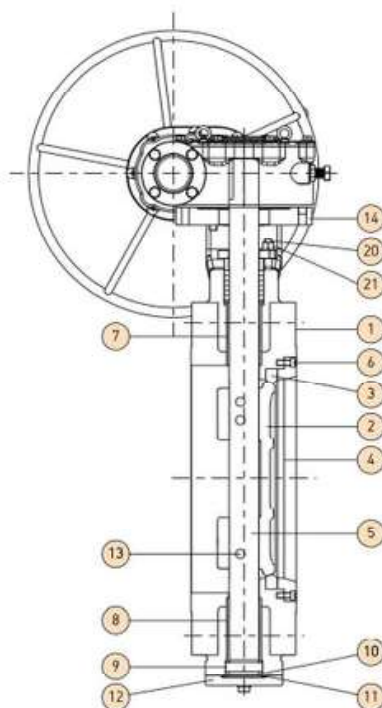
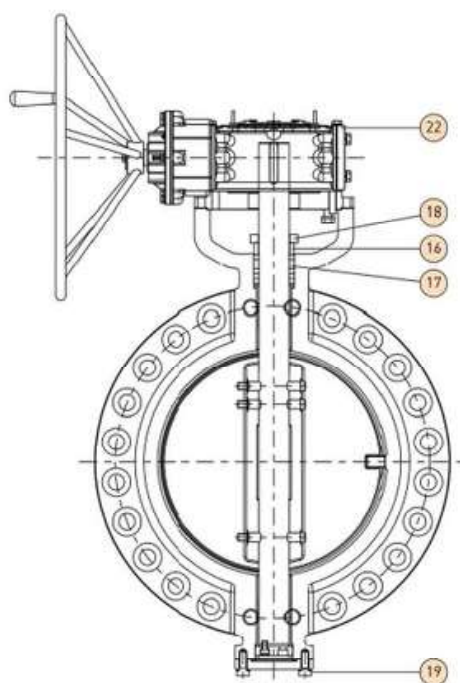
CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test		Duration of Required Test Pressure (API 598 Standard)	
	bar	psi	bar	psi	bar	psi	bar	psi		
ASME 150	19	275	29	413	21	303	6	100	size (NPS) 2" ~ 6"	Test Time (sec) 60
ASME 300	50	72	75	1080	56	792	6	100	8" ~ 12"	120
									≥14	120

Double-Flanged Type

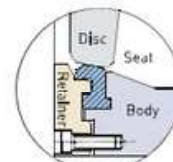
ASME Class 150, 300

BUTTERFLY VALVES DOUBLE-OFFSET

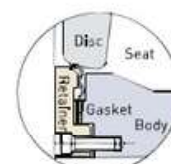
BFO-DDF Series



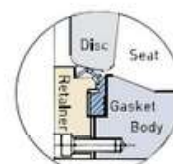
HF-R
EPDM / NBR / VITON
Rubber Seat



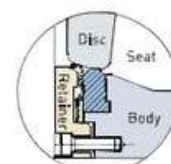
HF-T
PTFE / RTFE
Teflon Seat



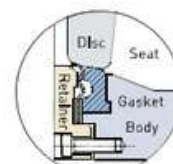
HF-FM
INCONEL 625 / St. steel 316
Flat Metal Seat



HF-SM
SF, St. steel 316 / MONEL
Solid Metal Seat



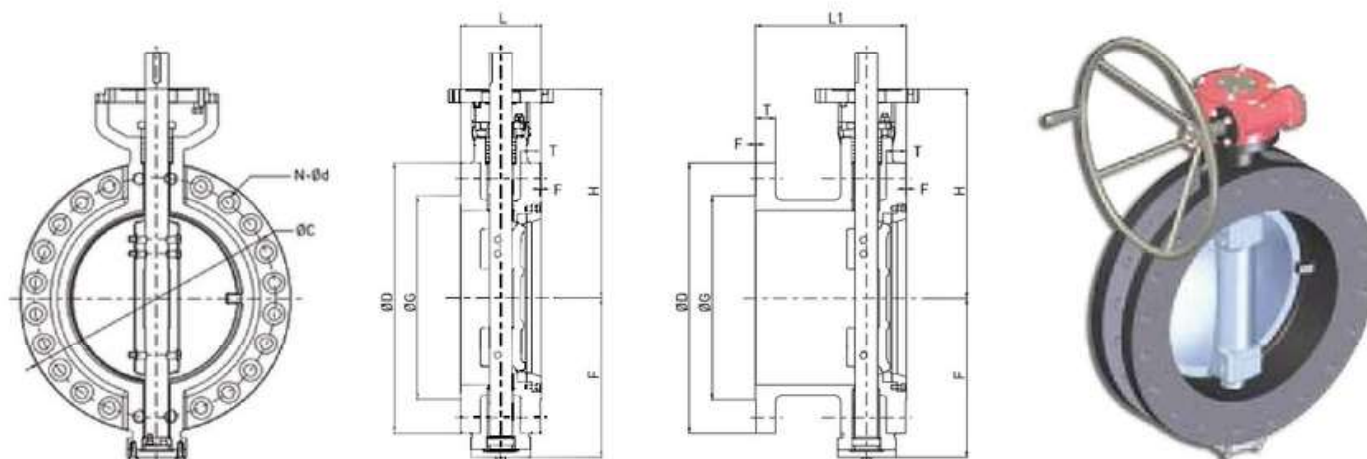
HF-RF
Rubber / St. steel 316
Fire Safe-Rubber + Metal



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

Parts List	No.	Parts Name	Standard Materials Specification		
			Carbon Steel	Austenitic Stainless Steel	Duplex Stainless Steel
	1	BODY	A216 WCB	A351 CF8M	A995 4A(S31803)
	2	DISC	A351 CF8	A351 CF8M	A995 4A(S31803)
	3	SEAT	SS316+GRAPHITE	SS316+GRAPHITE	DUPLEX + GRAPHITE
	4	SHAFT	A276 304	A276 316	A182 F51
	5	RETAINER	A240 304	A240 316	S31803
	6	SOCKET BOLT	A197 B8	A320 B8M	A320 B8M
	7	BUSING-TOP	A276 304	A276 316	A182 F51
	8	BUSING-BOTTOM	A276 304	A276 316	A182 F51
	9	THRUST BEARING	A276 304	A276 316	A182 F51
	10	COLLER	A276 304	A276 316	A182 F51
	11	GASKET-COVER	SS316+GRAPHITE	SS316+GRAPHITE	DUPLEX + GRAPHITE
	12	COVER	A36	A240 316	A182 F51
	13	DISC PIN	A276 304	A276 316	A182 F51
	14	FLANGE-TOP	A36	A240 316	A240 316
	15	GASKET-SEAT	-	-	-
	16	GLAND BUSING	A276 304	A276 316	A182 F51
	17	PACKING	GRAPHITE	GRAPHITE	GRAPHITE
	18	PACKING GLAND	A276 304	A276 316	A240 316
	19	BOLT-COVER	A193 B8	A320 B8M	A193 B8M
	20	BOLT-GLAND	A193 B7	A320 B8M	A193 B8M
	21	NUT-GLAND	A194 2H	A320 8M	A194 8M
	22	GEAR BOX	-	-	-

BFO-DDF Series (Short, Long Pattern)



Dimensions and Weights	SIZE		CLASS	DIMENSIONS (mm)								Diameter of Bolt Circle (ØC)	Number of Bolt (N)	Diameter of Bolt Holes (Ød)	Diameter of Bolt	Bolt Length	Approx Weight (kg)	
	DN	NPS		L	L1	F	H	ØD	ØG	T	F						Short	Long
				(Short)	(Long)													
80	3"	150	114	203	137	208	190	127	23.9	2	152.4	4	19	5/8"	105	32		
			180	282	139	208	210	127	28.4	2	168.3	8	23	3/4"	121	36		
100	4"	150	127	229	155	213	230	157.2	23.9	2	190.5	8	19	5/8"	105	37		
		300	190	305	166	233	255	157.2	31.8	2	200	8	23	3/4"	127	46		
150	6"	150	140	267	170	263	280	215.9	25.4	2	241.3	8	23	3/4"	115	48		
		300	210	403	203	293	320	215.9	36.6	2	269.9	12	23	3/4"	140	76		
200	8"	150	152	292	210	308	345	269.7	28.4	2	298.5	8	23	3/4"	121	89		
		300	230	418	240	330	380	269.7	41.1	2	330.2	12	26	7/8"	155	93		
250	10"	150	165	330	230	340	405	323.9	30.2	2	362	12	26	7/8"	127	112		
		300	250	457	264	375	445	323.9	47.8	2	387.4	16	29	1"	175	164		
300	12"	150	178	356	280	394	483	381	31.8	2	431.8	12	26	7/8"	135	161		
		300	270	502	299	419	521	381	50.8	2	450.8	16	32	1-1/8"	185	222		
350	14"	150	190	381	308	435	533	412.8	35.1	2	476.3	12	29	1"	150	228		
		300	290	762	349	485	584	412.8	53.8	2	514.4	20	32	1-1/8"	195	298		
400	16"	150	216	406	345	480	597	469.9	36.6	2	539.8	16	29	1"	150	303		
		300	310	838	389	499	648	469.9	57.2	2	571.5	20	35	1-1/4"	210	357		
450	18"	150	222	432	383	517	635	533.4	39.6	2	577.9	16	32	1-1/8"	160	364		
		300	330	914	430	530	711	533.4	60.5	2	628.6	24	35	1-1/4"	215	499		
500	20"	150	229	457	393	543	699	584.2	42.9	2	635	20	32	1-1/8"	175	499		
		300	350	991	471	597	775	584.2	63.5	2	685.8	24	35	1-1/4"	230	621		
600	24"	150	267	508	470	622	813	692.2	47.8	2	749.3	20	35	1-1/4"	185	699		
		300	390	1143	553	695	914	692.2	69.9	2	812.8	24	42	1-1/2"	260	910		

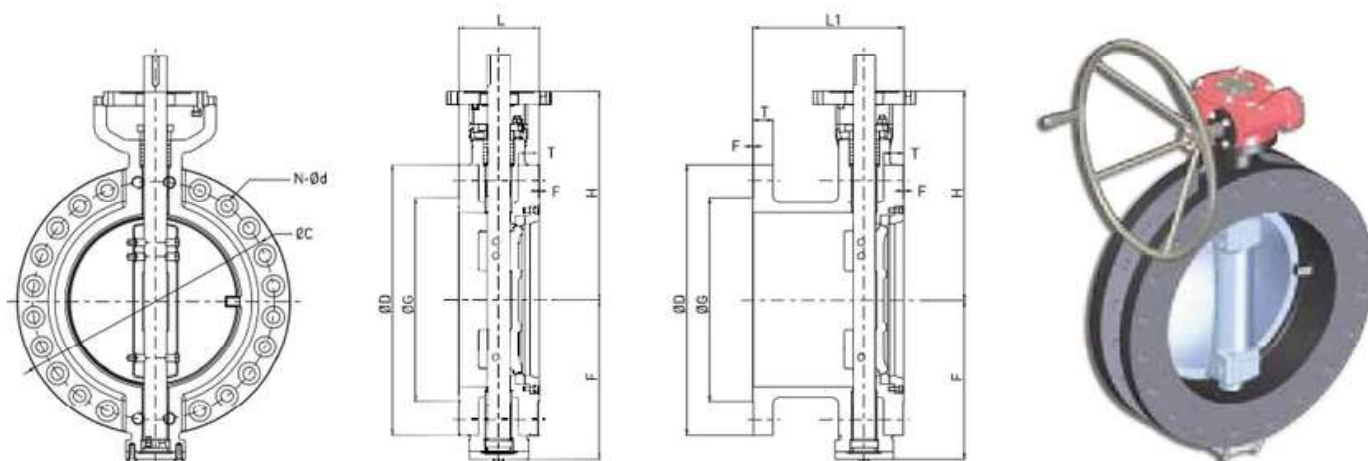
Double-Flanged Type

ASME B16.47 Series-A 150, 300

BUTTERFLY VALVES

DOUBLE-OFFSET

BFO-DDF Series (Short, Long Pattern)



Dimensions and Weights	SIZE			DIMENSIONS (mm)								Diameter of Bolt Circle (ØC)	Number of Bolt (N)	Diameter of Bolt Holes (Ød)	Diameter of Bolt	Bolt Length	Approx Weight (kg)	
	DN	NPS	CLASS	L	L1	F	H	ØD	ØG	T	F						Short	Long
				(Short)	(Long)													
650	26"	150		292	559	490	635	870	749	68.7	2	806.5	24	35	1-1/4"			
		300		410	1245			970	749	84.6	2	876.3	28	45	1-5/8"			
700	28"	150		292	610	555	686	925	800	71.9	2	863.6	28	35	1-1/4"		860	
		300		430	1346			1035	800	90.9	2	939.8	28	45	1-5/8"		1417	
750	30"	150		318	610	580	711	985	857	75.1	2	914.4	28	35	1-1/4"		1085	
		300		450	1397			1090	857	95.7	2	997	28	48	1-3/4"		1715	
800	32"	150		318	660	620	760	1060	914	81.4	2	977.9	28	42	1-1/2"		1241	
		300		470	1524			1150	914	100.5	2	1054.1	28	51	1-7/8"		1957	
850	34"	150		318		660	800	1110	965	83	2	1028.7	32	42	1-1/2"			
		300						1205	965	105.2	2	1104.9	28	51	1-7/8"			
900	36"	150		330	711	676	845	1170	1022	90.9	2	1085.9	32	42	1-1/2"		1716	
		300		510	1727			1270	1022	111.6	2	1168.4	32	54	2"		2590	
950	38"	150		410		712	870	1240	1073	87.8	2	1149.4	32	42	1-1/2"			
		300		530				1170	1029	108.4	2	1092.2	32	42	1-1/2"			
1000	40"	150		410		757	915	1290	1124	90.9	2	1200.2	36	42	1-1/2"		2208	
		300		550				1240	1086	114.8	2	1155.7	32	45	1-5/8"		2585	
1050	42"	150		410		784	920	1345	1194	97.3	2	1257.3	36	42	1-1/2"		2488	
		300		570				1290	1137	119.5	2	1206.5	32	45	1-5/8"		2849	
1100	44"	150		470		824	975	1405	1245	102.1	2	1314.5	40	42	1-1/2"			
		300						1355	1194	124.3	2	1263.7	32	48	1-3/4"			
1200	48"	150		470		862	1052	1510	1359	108.4	2	1422.4	44	42	1-1/2"		3440	
		300		630				1455	1302	133.8	2	1371.6	32	51	1-7/8"		4106	

* Please contact the sales office.

BUTTERFLY VALVES DOUBLE-OFFSET

Lug Type ASME Class 150, 300

Standard Specification

■ STANDARD DESIGN	API 609
■ FACE-TO-FACE DIMENSIONS	API 609
■ END FLANGE DIMENSIONS	ASME B16.5 / B16.47 Series A
■ PRESSURE AND TEMPERATURE RATINGS BODY THICKNESS	ASME B16.34, API 609
■ TEST & INSPECTION	API 609, API 598
■ MATERIAL	ASTM Material Specifications as per ASME B16.34

Design Features

■ DOUBLE-OFFSET DISC ROTATION	■ TEFLON, METAL-TO-METAL SEAT SEALING (OPTION)
■ ONE-PIECE SHAFT DESIGN	■ SPECIAL FLANGS OR END CONNECTIONS
■ HARD FACED SEAT (OPTION)	■ ACTUATORS (PNEUMATIC, HYDRAULIC, ELECTRIC)



Product Range

■ ASME B16.5 / B16.47 Series A, Class 150	3" ~ 48"
■ ASME B16.5 / B16.47 Series A, Class 300	3" ~ 36"

Materials (Applicable ASTM Specification)

■ Carbon Steel	A105, A216 WCB, A216 WCC
■ Low Temperature Carbon 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)
■ Aluminium Bronze	B148 - C95800

Pressure Testing (Working & Test Pressure at Ambient Temperature)

CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test		Duration of Required Test Pressure (API 598 Standard)	
	bar	psi	bar	psi	bar	psi	bar	psi		
ASME 150	19	275	29	413	21	303	6	100	size (NPS) 2" ~ 6"	Test Time (sec) 60
ASME 300	50	720	75	1080	56	792	6	100	8" ~ 12"	120
									≥14	120

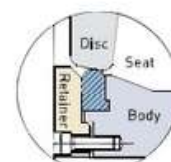
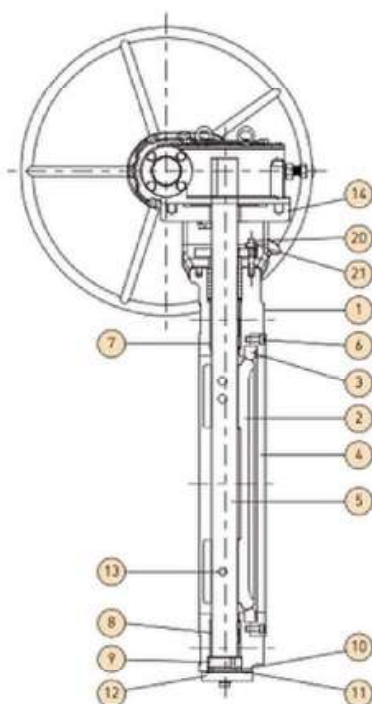
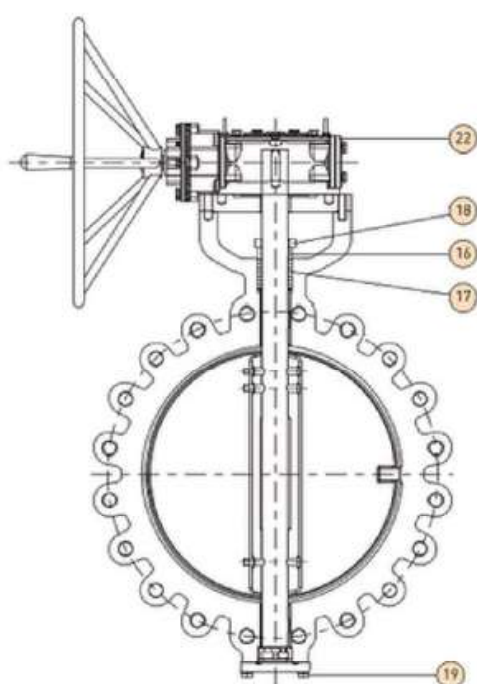
Lug Type

ASME Class 150, 300

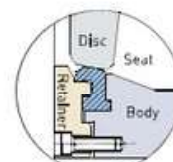
BUTTERFLY VALVES

DOUBLE-OFFSET

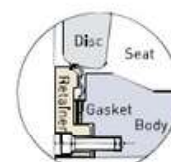
BFO-DLF Series



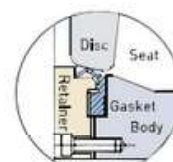
HF-R
EPDM / NBR / VITON
Rubber Seat



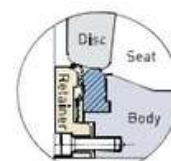
HF-T
PTFE / RTFE
Teflon Seat



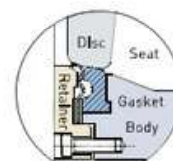
HF-FM
INCONEL 625 / St. steel 316
Flat Metal Seat



HF-SM
SF, St. steel 316 / MONEL
Solid Metal Seat



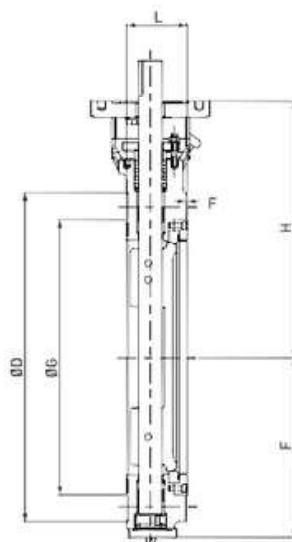
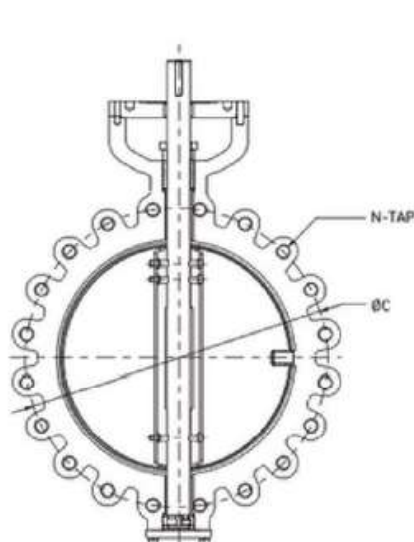
HF-RF
Rubber / St. steel 316
Fire Safe-Rubber + Metal



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

Parts List	No.	Parts Name	Standard Materials Specification		
			Carbon Steel	Austenitic Stainless Steel	Duplex Stainless Steel
	1	BODY	A216 WCB	A351 CF8M	A995 4A(S31803)
	2	DISC	A351 CF8	A351 CF8M	A995 4A(S31803)
	3	SEAT	SS316+GRAPHITE	SS316+GRAPHITE	DUPLEX + GRAPHITE
	4	SHAFT	A276 304	A276 316	A182 F51
	5	RETAINER	A240 304	A240 316	S31803
	6	SOCKET BOLT	A197 B8	A320 B8M	A320 B8M
	7	BUSING-TOP	A276 304	A276 316	A182 F51
	8	BUSING-BOTTOM	A276 304	A276 316	A182 F51
	9	THRUST BEARING	A276 304	A276 316	A182 F51
	10	COLLER	A276 304	A276 316	A182 F51
	11	GASKET-COVER	SS316+GRAPHITE	SS316+GRAPHITE	DUPLEX + GRAPHITE
	12	COVER	A36	A240 316	A182 F51
	13	DISC PIN	A276 304	A276 316	A182 F51
	14	FLANGE-TOP	A36	A240 316	A240 316
	15	GASKET-SEAT	-	-	-
	16	GLAND BUSING	A276 304	A276 316	A182 F51
	17	PACKING	GRAPHITE	GRAPHITE	GRAPHITE
	18	PACKING GLAND	A276 304	A276 316	A240 316
	19	BOLT-COVER	A193 B8	A320 B8M	A193 B8M
	20	BOLT-GLAND	A193 B7	A320 B8M	A193 B8M
	21	NUT-GLAND	A194 2H	A320 8M	A194 8M
	22	GEAR BOX	-	-	-

BFO-DLF Series



Dimensions and Weights	SIZE		CLASS	DIMENSIONS (mm)						Diameter of Bolt Circle (ØC)	Number of Bolt (N)	Diameter of Bolt Holes (Ød)	Diameter of Bolt	Bolt Length	Approx Weight (kg)
	DN	NPS		L	F	H	ØD	ØG	T						
80	3"	150	48	130	190	190	127	23.9	2	152.4	4	19	5/8"	105	
		300	48			210	127	28.4	2	168.3	8	23	3/4"	121	
100	4"	150	54	149	209	230	157.2	23.9	2	190.5	8	19	5/8"	105	
		300	54	160	230	255	157.2	31.8	2	200	8	23	3/4"	127	
150	6"	150	57	175	260	280	215.9	25.4	2	241.3	8	23	3/4"	115	
		300	59	203	288	320	215.9	36.6	2	269.9	12	23	3/4"	140	
200	8"	150	64	213	298	345	269.7	28.4	2	298.5	8	23	3/4"	121	
		300	73	240	330	380	269.7	41.1	2	330.2	12	26	7/8"	155	
250	10"	150	71	247	342	405	323.9	30.2	2	362	12	26	7/8"	127	
		300	83	275	375	445	323.9	47.8	2	387.4	16	29	1"	175	
300	12"	150	81	289	394	483	381	31.8	2	431.8	12	26	7/8"	135	
		300	92	313		521	381	50.8	2	450.8	16	32	1-1/8"	185	
350	14"	150	92	321	426	533	412.8	35.1	2	476.3	12	29	1"	150	
		300	117	349		584	412.8	53.8	2	514.4	20	32	1-1/8"	195	
400	16"	150	102	357	462	597	469.9	36.6	2	539.8	16	29	1"	150	
		300	133	390	510	648	469.9	57.2	2	571.5	20	35	1-1/4"	210	
450	18"	150	114	383	498	635	533.4	39.6	2	577.9	16	32	1-1/8"	160	
		300	149	427		711	533.4	60.5	2	628.6	24	35	1-1/4"	215	
500	20"	150	127	418	533	699	584.2	42.9	2	635	20	32	1-1/8"	175	
		300	159	457	592	775	584.2	63.5	2	685.8	24	35	1-1/4"	230	
600	24"	150	154	481	596	813	692.2	47.8	2	749.3	20	35	1-1/4"	185	
		300	181	535	680	914	692.2	69.9	2	812.8	24	42	1-1/2"	260	

Lug Type

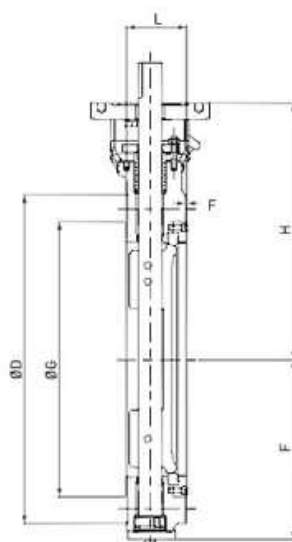
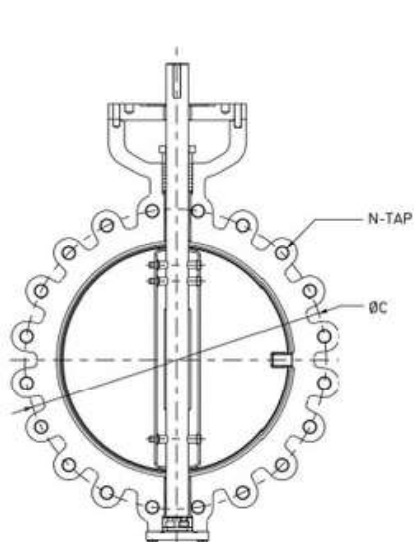
ASME B16.47 Series-A Class 150, 300

BUTTERFLY VALVES

DOUBLE-OFFSET

Lug Type

BFO-DLF Series



Dimensions and Weights	SIZE			DIMENSIONS (mm)						Diameter of Bolt Circle (ØC)	Number of Bolt (N)	Diameter of Bolt Holes (Ød)	Diameter of Bolt	Bolt Length	Approx Weight (kg)
	DN	NPS	CLASS	L	F	H	ØD	ØG	T						
650	26"	150	150	165	490	635	870	749	68.7	2	806.5	24	35	1-1/4"	
		300	300	209	640	800	970	749	84.6	2	876.3	28	45	1-5/8"	
700	28"	150	150	165	555	686	925	800	71.9	2	863.6	28	35	1-1/4"	
		300	300	209	660	810	1035	800	90.9	2	939.8	28	45	1-5/8"	
750	30"	150	150	165	580	711	985	857	75.1	2	914.4	28	35	1-1/4"	
		300	300	241	690	825	1090	857	95.7	2	997	28	48	1-3/4"	
800	32"	150	150	190	620	760	1060	914	81.4	2	977.9	28	42	1-1/2"	
		300	300	241	690	825	1150	914	100.5	2	1054.1	28	51	1-7/8"	
850	34"	150	150	190	660	800	1110	965	83	2	1028.7	32	42	1-1/2"	
		300	300	241	740	920	1205	965	105.2	2	1104.9	28	51	1-7/8"	
900	36"	150	150	200	676	845	1170	1022	90.9	2	1085.9	32	42	1-1/2"	
		300	300	300	750	930	1270	1022	111.6	2	1168.4	32	54	2"	
950	38"	150	150	200	712	870	1240	1073	87.8	2	1149.4	32	42	1-1/2"	
		300	300				1170	1029	108.4	2	1092.2	32	42	1-1/2"	
1000	40"	150	150	216	757	915	1290	1124	90.9	2	1200.2	36	42	1-1/2"	
		300	300				1240	1086	114.8	2	1155.7	32	45	1-5/8"	
1050	42"	150	150	251	784	920	1345	1194	97.3	2	1257.3	36	42	1-1/2"	
		300	300				1290	1137	119.5	2	1206.5	32	45	1-5/8"	
1100	44"	150	150	251	824	975	1405	1245	102.1	2	1314.5	40	42	1-1/2"	
		300	300				1355	1194	124.3	2	1263.7	32	48	1-3/4"	
1200	48"	150	150	276	862	1052	1510	1359	108.4	2	1422.4	44	42	1-1/2"	
		300	300				1465	1302	133.8	2	1371.6	32	51	1-7/8"	

* Please contact the sales office.

Standard Specification

■ STANDARD DESIGN	API 609
■ FACE-TO-FACE DIMENSIONS	API 609
■ END FLANGE DIMENSIONS	ASME B16.5 / B16.47 Series A
■ PRESSURE AND TEMPERATURE RATINGS BODY THICKNESS	ASME B16.34, API 609
■ TEST & INSPECTION	API 609, API 598
■ MATERIAL	ASTM Material Specifications as per ASME B16.34

Design Features

■ DOUBLE-OFFSET DISC ROTATION	■ TEFLON, METAL-TO-METAL SEAT SEALING (OPTION)
■ ONE-PIECE SHAFT DESIGN	■ SPECIAL FLANGES OR END CONNECTIONS
■ HARD FACED SEAT (OPTION)	■ ACTUATORS (PNEUMATIC, HYDRAULIC, ELECTRIC)



Product Range

■ ASME B16.5 / B16.47 Series A, Class 150	3" ~ 48"
■ ASME B16.5 / B16.47 Series A, Class 300	3" ~ 36"

Materials (Applicable ASTM Specification)

■ Carbon Steel	A105, A216 WCB, A216 WCC
■ Low Temperature Carbon 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)
■ Aluminium Bronze	B148 - C95800

Pressure Testing (Working & Test Pressure at Ambient Temperature)

CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test		Duration of Required Test Pressure (API 598 Standard)	
	bar	psi	bar	psi	bar	psi	bar	psi		
ASME 150	19	275	29	413	21	303	6	100	size (NPS) 2" ~ 6"	Test Time (sec) 60
ASME 300	50	720	75	1080	56	792	6	100	8" ~ 12"	120
									≥14	120

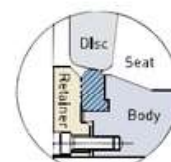
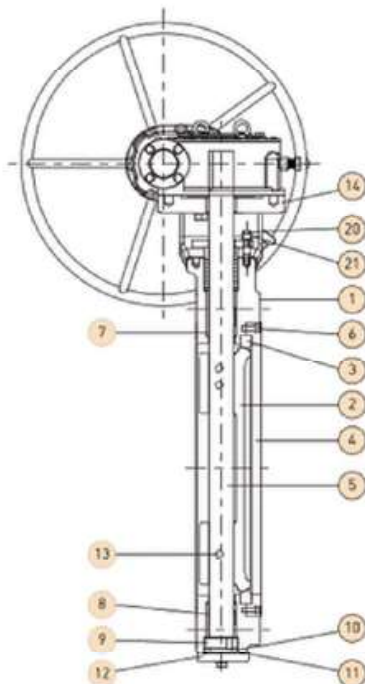
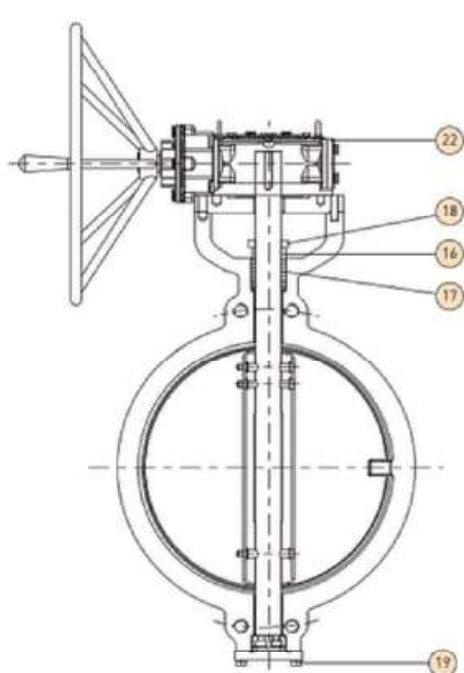
Wafer Type

ASME Class 150, 300

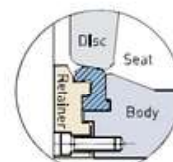
BUTTERFLY VALVES

DOUBLE-OFFSET

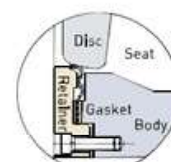
BFO-DWF Series



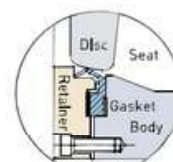
HF-R
EPDM / NBR / VITON
Rubber Seat



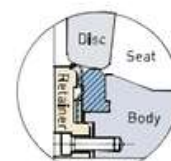
HF-T
PTFE / RTFE
Teflon Seat



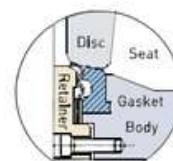
HF-FM
INCONEL 625 / St. steel 316
Flat Metal Seat



HF-SM
SF, St. steel 316 / MONEL
Solid Metal Seat



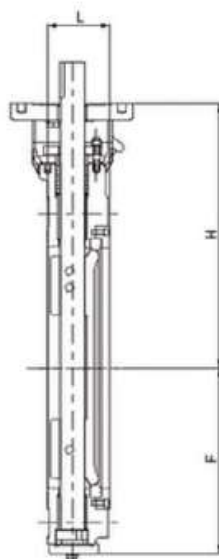
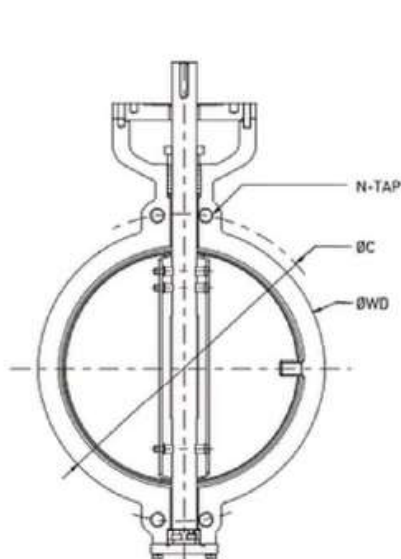
HF-RF
Rubber / St. steel 316
Fire Safe-Rubber + Metal



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

Parts List	No.	Parts Name	Standard Materials Specification		
			Carbon Steel	Austenitic Stainless Steel	Duplex Stainless Steel
	1	BODY	A216 WCB	A351 CF8M	A995 4A(S31803)
	2	DISC	A351 CF8	A351 CF8M	A995 4A(S31803)
	3	SEAT	SS316+GRAPHITE	SS316+GRAPHITE	DUPLEX + GRAPHITE
	4	SHAFT	A276 304	A276 316	A182 F51
	5	RETAINER	A240 304	A240 316	S31803
	6	SOCKET BOLT	A193 B8	A320 B8M	A320 B8M
	7	BUSING-TOP	A276 304	A276 316	A182 F51
	8	BUSING-BOTTOM	A276 304	A276 316	A182 F51
	9	THRUST BEARING	A276 304	A276 316	A182 F51
	10	COLLER	A276 304	A276 316	A182 F51
	11	GASKET-COVER	SS316+GRAPHITE	SS316+GRAPHITE	DUPLEX + GRAPHITE
	12	COVER	A36	A240 316	A182 F51
	13	DISC PIN	A276 304	A276 316A	A182 F51
	14	FLANGE-TOP	A36	240 316	A240 316
	15	GASKET-SEAT	-	-	-
	16	GLAND BUSING	A276 304	A276 316	A182 F51
	17	PACKING	GRAPHITE	GRAPHITE	GRAPHITE
	18	PACKING GLAND	A276 304	A276 316	A240 316
	19	BOLT-COVER	A193 B8	A320 B8M	A193 B8M
	20	BOLT-GLAND	A193 B7	A320 B8M	A193 B8M
	21	NUT-GLAND	A194 2H	A320 8M	A194 8M
	22	GEAR BOX	-	-	-

BFO-DWF Series



Dimensions and Weights	SIZE		CLASS	DIMENSIONS (mm)							Diameter of Bolt Circle (φC)	Number of Bolt (N)	Diameter of Bolt Holes (φd)	Diameter of Bolt	Bolt Length	Approx Weight (kg)
	DN	NPS		L	F	H	φWD	φG	T	F						
80	3"		150	48	130	190					152.4	4	19	5/8"	105	
			300	48							168.3	8	23	3/4"	121	
100	4"		150	54	149	209					190.5	8	19	5/8"	105	
			300	54	160	230					200	8	23	3/4"	127	
150	6"		150	57	175	260					241.3	8	23	3/4"	115	
			300	59	203	288					269.9	12	23	3/4"	140	
200	8"		150	64	213	298					298.5	8	23	3/4"	121	
			300	73	240	330					330.2	12	26	7/8"	155	
250	10"		150	71	247	342					362	12	26	7/8"	127	
			300	83	275	375					387.4	16	29	1"	175	
300	12"		150	81	289	394					431.8	12	26	7/8"	135	
			300	92	313						450.8	16	32	1-1/8"	185	
350	14"		150	92	321	426					476.3	12	29	1"	150	
			300	117	349						514.4	20	32	1-1/8"	195	
400	16"		150	102	357	462					539.8	16	29	1"	150	
			300	133	390	510					571.5	20	35	1-1/4"	210	
450	18"		150	114	383	498					577.9	16	32	1-1/8"	160	
			300	149	427						628.6	24	35	1-1/4"	215	
500	20"		150	127	418	533					635	20	32	1-1/8"	175	
			300	159	457	592					685.8	24	35	1-1/4"	230	
600	24"		150	154	481	596					749.3	20	35	1-1/4"	185	
			300	181	535	680					812.8	24	42	1-1/2"	260	

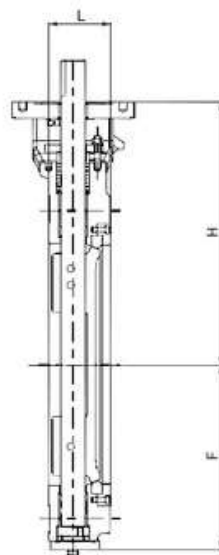
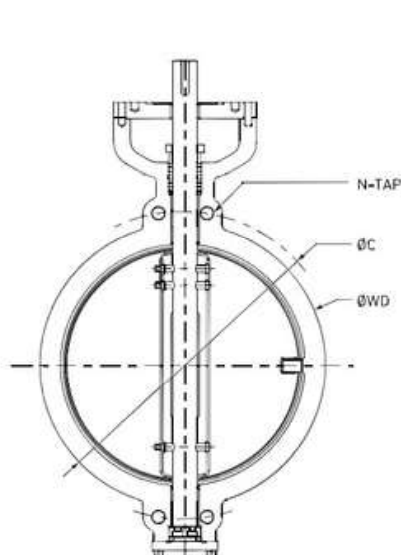
Wafer Type

ASME B16.47 Series-A Class 150, 300

BUTTERFLY VALVES

DOUBLE-OFFSET

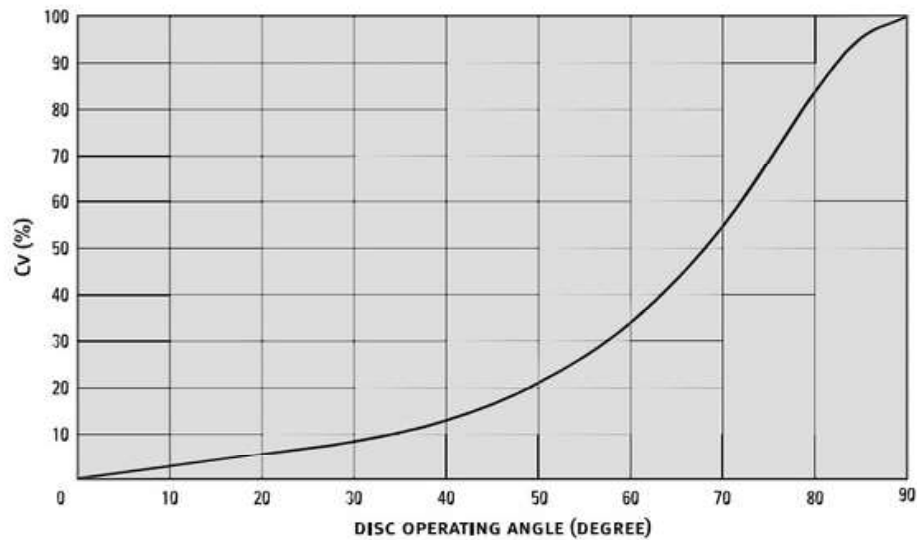
BFO-DWF Series



Dimensions and Weights	SIZE		CLASS	DIMENSIONS (mm)							Diameter of Bolt Circle (ØC)	Number of Bolt (N)	Diameter of Bolt Holes (Ød)	Diameter of Bolt	Bolt Length	Approx Weight (kg)
	DN	NPS		L	F	H	ØWD	ØG	T	F						
650	26"		150	165	490	635					806.5	24	35	1-1/4"		
			300	209	540	800					876.3	28	45	1-5/8"		
700	28"		150	165	555	686					863.6	28	35	1-1/4"		
			300	209	660	810					939.8	28	45	1-5/8"		
750	30"		150	165	580	711					914.4	28	35	1-1/4"		
			300	241	690	825					997	28	48	1-3/4"		
800	32"		150	190	620	760					977.9	28	42	1-1/2"		
			300	241	690	825					1054.1	28	51	1-7/8"		
850	34"		150	190	660	800					1026.7	32	42	1-1/2"		
			300	241	740	920					1104.9	28	51	1-7/8"		
900	36"		150	200	676	845					1065.9	32	42	1-1/2"		
			300	300	750	930					1168.4	32	54	2"		
950	38"		150	200	712	870					1149.4	32	42	1-1/2"		
			300								1092.2	32	42	1-1/2"		
1000	40"		150	216	757	915					1200.2	36	42	1-1/2"		
			300								1155.7	32	45	1-5/8"		
1050	42"		150	251	784	920					1257.3	36	42	1-1/2"		
			300								1206.5	32	45	1-5/8"		
1100	44"		150	251	824	975					1314.5	40	42	1-1/2"		
			300								1263.7	32	48	1-3/4"		
1200	48"		150	276	862	1052					1422.4	44	42	1-1/2"		
			300								1371.6	32	51	1-7/8"		

* Please contact the sales office.

FLOW COEFFICIENTS(Cv) & CURVE



SIZE	DN	80	100	150	200	250	300	350	400	450	500	600	700	750	800	900	1000	1050	1200
	NPS	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	30"	32"	36"	40"	42"	48"
CLASS	150	95	220	625	1495	2415	3998	5124	6815	9142	11452	17654	25247	30321	36544	44135	57955	61985	81256
	300	92	210	620	1311	2245	3572	4786	6384	8562	11325	16241	23875	29156	35624	43526			
	600	90	195	585	1010	1625	2460	3395	4658	5986	8259	12235							

TORQUES Triple-Offset Butterfly Valves

	SIZE		CLASS 150				CLASS 300				CLASS 600			
	DN	NPS	Torques (Nm)	6 bar	10 bar	20 bar	Torques (Nm)	10 bar	20 bar	50 bar	Torques (Nm)	20 bar	50 bar	100 bar
Torques Triple-Offset Butter Valves	80	3"	42	25	30	34	43	26	31	34	45	27	32	36
	100	4"	52	31	37	42	55	33	40	44	58	35	42	46
	150	6"	88	53	63	70	105	63	76	84	125	75	90	100
	200	8"	135	81	97	108	195	117	140	156	236	142	170	189
	250	10"	223	134	161	178	305	183	220	244	725	435	522	580
	300	12"	345	207	248	276	495	297	356	396	1205	723	868	964
	350	14"	532	319	383	426	756	454	544	605	1763	1058	1269	1410
	400	16"	925	555	666	740	1153	692	830	922	3125	1875	2250	2500
	450	18"	1325	795	954	1060	1625	975	1170	1300	3958	2375	2850	3166
	500	20"	2242	1345	1614	1794	2845	1707	2048	2276	6125	3675	4410	4900
	600	24"	3520	2112	2534	2816	4562	2737	3285	3650	9564	5738	6886	7651
	700	28"	7980	4788	5746	6384	9865	5919	7103	7892				
	750	30"	10552	6331	7597	8442	12645	7587	9104	10116				
	800	32"	11956	7174	8608	9565	14256	8554	10264	11405				
	850	34"	13256	7954	9544	10605	16584	9950	11940	13267				
	900	36"	15255	9153	10984	12204	18623	11174	13409	14898				
	1000	40"	21865	13119	15743	17492								
	1050	42"	25863	15518	18621	20690								
	1100	44"	29540	17724	21269	23632								
	1200	48"	36254	21752	26103	29003								

CHECK VALVES

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

CKD-WF Series



WAFER TYPE

6~9P

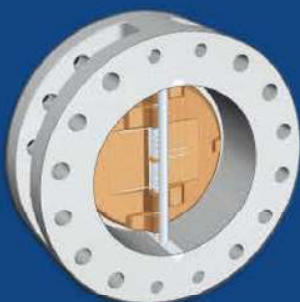
STANDARD FEATURES

END CONNECTION : Wafer Flat Face
SEAT : NBR
SPRING : 316 Stainless Steel
SIZE : 2"~ 60"
MATERIALS : Carbon steel, Stainless steel

FEATURES UPON REQUEST

END CONNECTION : Wafer RTJ
SEAT : EPDM, Viton, Metal-to-Metal
SPRING : Inconel X-750, Monel
Retainerless Design
MATERIALS : Nickel Alloys

CKD-DF Series



DOUBLE FLANGE TYPE

10~12P

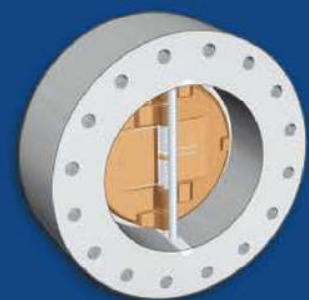
STANDARD FEATURES

END CONNECTION : Raised Face
SEAT : NBR
SPRING : 316 Stainless Steel
SIZE : 10"~ 60"
MATERIALS : Carbon steel, Stainless steel

FEATURES UPON REQUEST

END CONNECTION : Raised Face RTJ
SEAT : EPDM, Viton, Metal-to-Metal
SPRING : Inconel X-750, Monel
Retainerless Body Design
MATERIALS : Nickel Alloys

CKD-FF Series



FULL FLANGE TYPE

13~15P

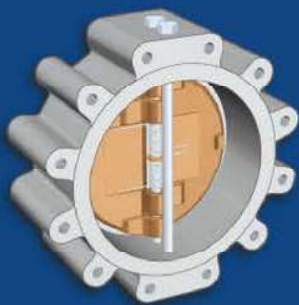
STANDARD FEATURES

END CONNECTION : Raised Face
SEAT : NBR
SPRING : 316 Stainless Steel
SIZE : 2"~ 60"
MATERIALS : Carbon steel, Stainless steel

FEATURES UPON REQUEST

END CONNECTION : Raised Face RTJ
SEAT : EPDM, Viton, Metal-to-Metal
SPRING : Inconel X-750, Monel
Retainerless Body Design
MATERIALS : Nickel Alloys

CKD-WL Series



WAFFER LUG TYPE

16~19P

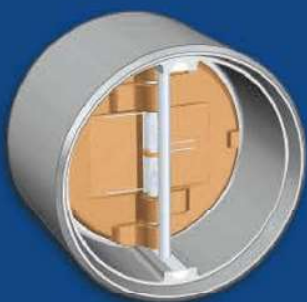
STANDARD FEATURES

END CONNECTION : Raised Face
SEAT : NBR
SPRING : 316 Stainless Steel
SIZE : 2" ~ 60"
MATERIALS : Carbon steel, Stainless steel

FEATURES UPON REQUEST

END CONNECTION : Raised Face RTJ
SEAT : EPDM, Viton, Metal-to-Metal
SPRING : Inconel X-750, Monel
Retainerless Body Design
MATERIALS : Nickel Alloys

CKD-BW Series



BUTT WELDING TYPE

20-21P

STANDARD FEATURES

END CONNECTION : Butt Welding
SEAT : Metal-to-Metal
SPRING : Inconel X-750, Monel
SIZE : 4" ~ 24"
MATERIALS : Carbon steel, Stainless steel

FEATURES UPON REQUEST

Retainerless Body Design
Fire safe Design
MATERIALS : Nickel Alloys

CKD-HB Series



HUB END TYPE

22-23P

STANDARD FEATURES

END CONNECTION : Hub End
SEAT : Metal-to-Metal
SPRING : Inconel X-750, Monel
SIZE : 4" ~ 24"
MATERIALS : Carbon steel, Stainless steel

FEATURES UPON REQUEST

Retainerless Body Design
Fire safe Design
Cryogenic Design
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	ASME B16.34, API 594
▪ BODY THICKNESS	
▪ 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, Class 1500	2" ~ 24"
▪ ASME B16.5 / B16.47 Series A, Class 900	2" ~ 48"	▪ 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)

▪ Carbon Steel	A105, A216 WCB, A216 WCC
▪ Low Temperature Carbon 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		Duration of Required Test Pressure (API 598 Standard)	
	bar	psi	bar	psi	bar	psi	bar	psi		
ASME 150	19	275	29	413	21	303	6	100	Size (NPS) Test Time (sec)	
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		

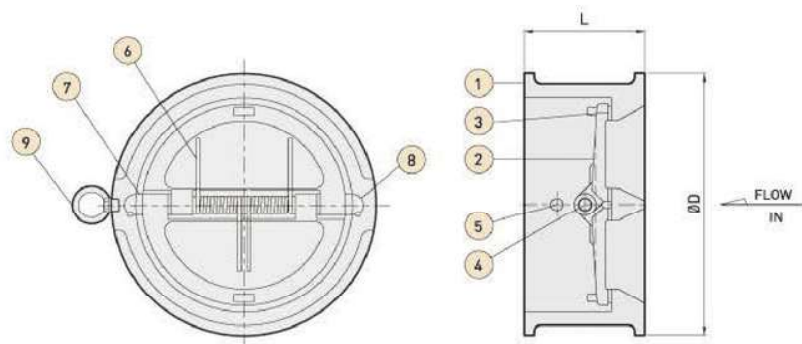
Wafer type

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

CHECK VALVES

DUAL DISC

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

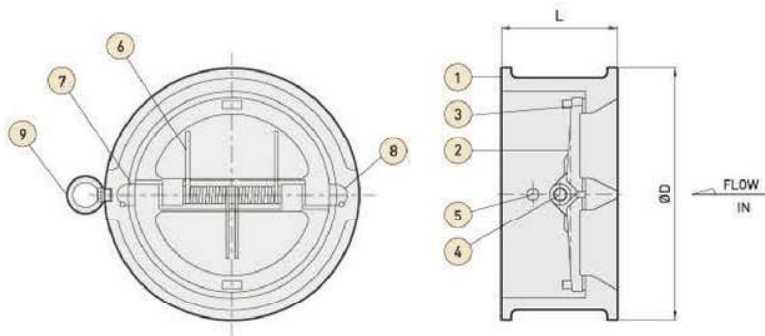
Dimensions and Weights	SIZE		CLASS	DIMENSIONS (mm)				Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt	Diameter of Bolt	Bolt Length	Approx Weight (kg)
	DN	NPS		L	φD	φG	T						
							F						
50	2"	150	60	105	-	-	-	120.7	19	4	5/8"	165	4
		300	60	110	-	-	-	127.0	19	8	5/8"	175	5
		600	60	110	-	-	-	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

CHECK VALVES DUAL DISC

Wafer type

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

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						
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
	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
300	12"		1500	305	521	-	-	-	571.5	54	16	2	720	390
			2500	305	549	-	-	-	619.1	74	12	2-3/4"	900	420
	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
	16"		1500	356	578	-	-	-	635.0	61	16	2-1/4"	810	560
			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
350	14"		900	384	575	-	-	-	616.0	45	20	1-5/8"	710	560
			1500	384	641	-	-	-	704.8	67	16	2-1/2"	890	640
	16"		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
400	16"		1500	468	705	-	-	-	774.7	74	16	2-3/4"	1010	1100
			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
	18"		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
450	20"		1500	559	901	-	-	-	990.6	92	16	3-1/2"	1240	2990
			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
	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
500	24"		1500	559	901	-	-	-	990.6	92	16	3-1/2"	1240	2990
			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
	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
600	24"		1500	559	901	-	-	-	990.6	92	16	3-1/2"	1240	2990
			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
	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

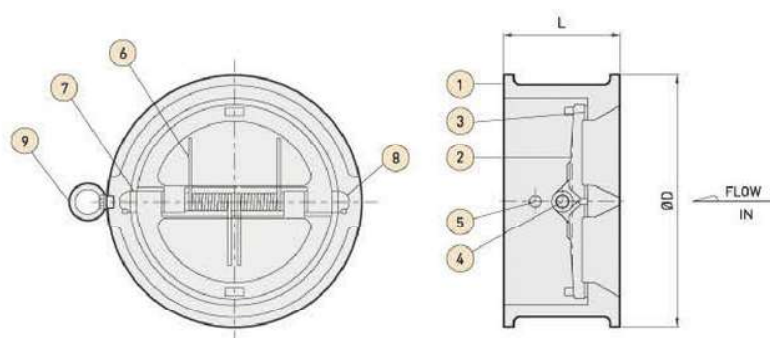
Wafer type

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

CHECK VALVES

DUAL DISC

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						
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	ASME B16.34, API 594
▪ BODY THICKNESS	
▪ 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, Class 1500	10" ~ 24"
▪ ASME B16.5 / B16.47 Series A, Class 900	10" ~ 48"	▪ 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)

▪ Carbon Steel	A105, A216 WCB, A216 WCC
▪ Low Temperature Carbon 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)

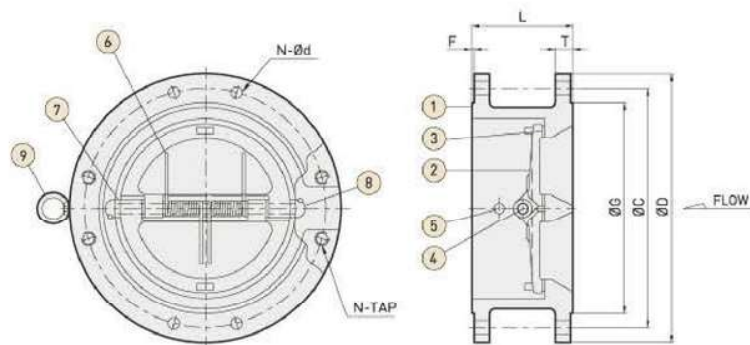
CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test		Duration of Required Test Pressure (API 598 Standard)	
	bar	psi	bar	psi	bar	psi	bar	psi		
ASME 150	19	275	29	413	21	303	6	100	Size (NPS) Test Time (sec)	
ASME 300	50	720	75	1080	56	792	6	100		
ASME 600	99	1440	149	2160	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		

Double Flange type

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

CHECK VALVES DUAL DISC

CKD-DF Series



PARTS LIST

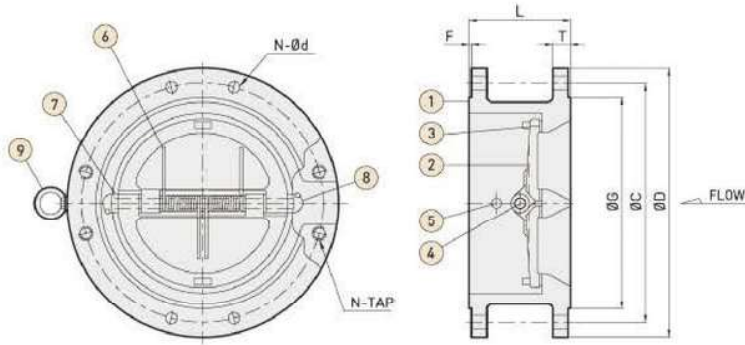
NO.	PART NAME	STANDARD MATERIALS SPECIFICATION	
		CARBON STEEL	STAINLESS STEEL
1	BODY	A216 WCB	A351 CF8
2	DISC	A351 CF8	A351 CF8
3	SEAT	NBR	NBR
4	HINGE PIN	A276 304	A276 304
5	STOP PIN	A276 304	A276 304
6	SPRING	Inconel X-750	Inconel X-750
7	GUIDE	A276 304	A276 304
8	WASHER	A240 304	A240 304
9	EYE BOLT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

CHECK VALVES DUAL DISC

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	ØD	ØG	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	500	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

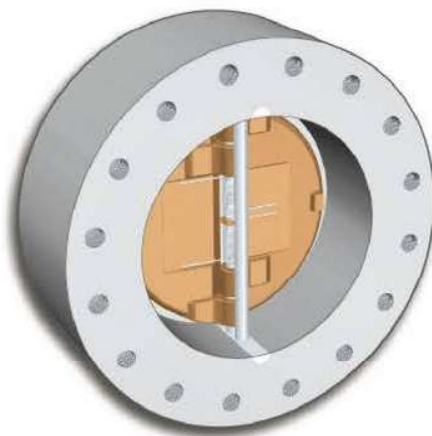
Full Flange type

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

CHECK VALVES DUAL DISC

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	ASME B16.34, API 594
BODY THICKNESS	
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, Class 1500	2" ~ 24"
ASME B16.5 / B16.47 Series A, Class 900	2" ~ 48"	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)

Carbon Steel	A105, A216 WCB, A216 WCC
Low Temperature Carbon 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)

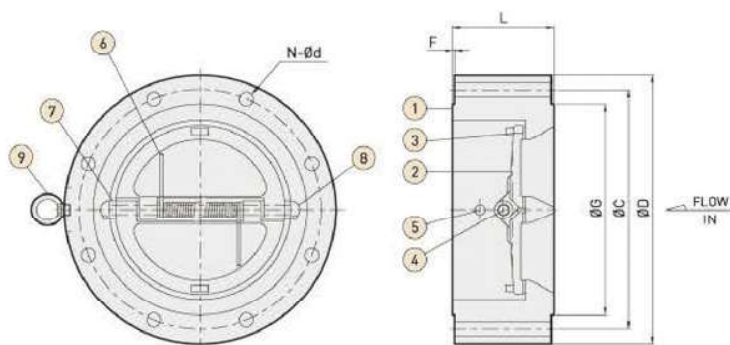
CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test		Duration of Required Test Pressure (API 598 Standard)	
	bar	psi	bar	psi	bar	psi	bar	psi		
ASME 150	19	275	29	413	21	303	6	100	Size (NPS) Test Time (sec)	
ASME 300	50	720	75	1080	56	792	6	100		
ASME 600	99	1440	149	2160	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		

CHECK VALVES DUAL DISC

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	ØD	ØG	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	

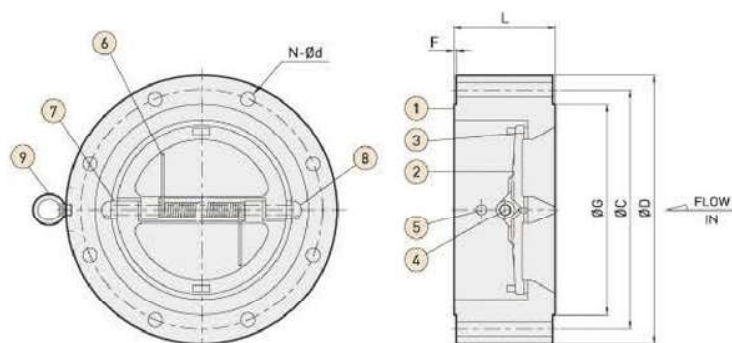
Full Flange type

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

CHECK VALVES

DUAL DISC

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	ØD	ØG	T	F						
250	10"	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	
	12"	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"	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"	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"	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"	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"	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	

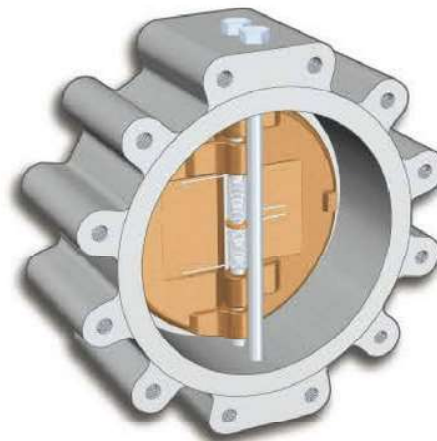
CHECK VALVES DUAL DISC

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	ASME B16.34, API 594
▪ BODY THICKNESS	
▪ 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, Class 1500	2" ~ 24"
▪ ASME B16.5 / B16.47 Series A, Class 900	2" ~ 48"	▪ 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)

▪ Carbon Steel	A105, A216 WCB, A216 WCC
▪ Low Temperature Carbon 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)

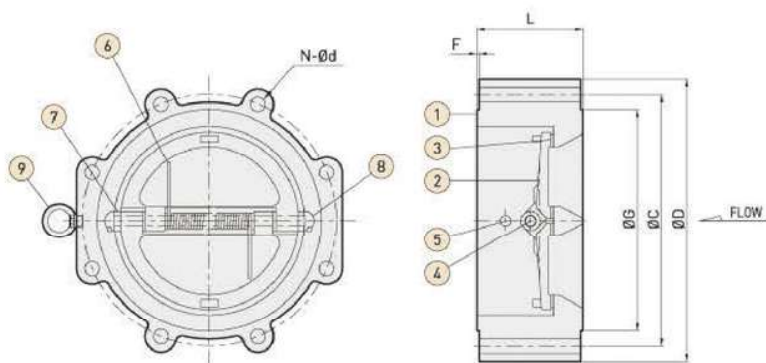
CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test		Duration of Required Test Pressure (API 598 Standard)	
	bar	psi	bar	psi	bar	psi	bar	psi		
ASME 150	19	275	29	413	21	303	6	100	Size (NPS) Test Time (sec)	
ASME 300	50	720	75	1080	56	792	6	100		
ASME 600	99	1440	149	2160	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		

Wafer Lug type

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

CHECK VALVES DUAL DISC

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

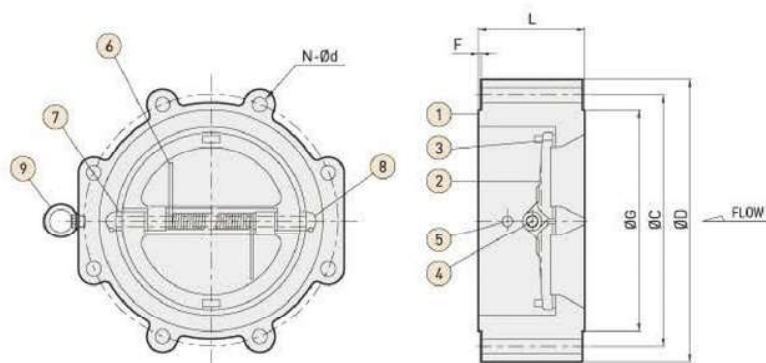
Dimensions and Weights	SIZE		CLASS	DIMENSIONS (mm)				Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolt	Diameter of Bolt	Bolt Length	Approx Weight (kg)
	DN	NPS		L	ØD	ØG	T						
							F						
50	2"	150	60	150	91.9	-	2	120.7	19	4	5/8"	165	
		300	60	165	91.9	-	2	127.0	19	8	5/8"	175	
		600	60	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	

CHECK VALVES DUAL DISC

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	ØD	ØG	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
	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

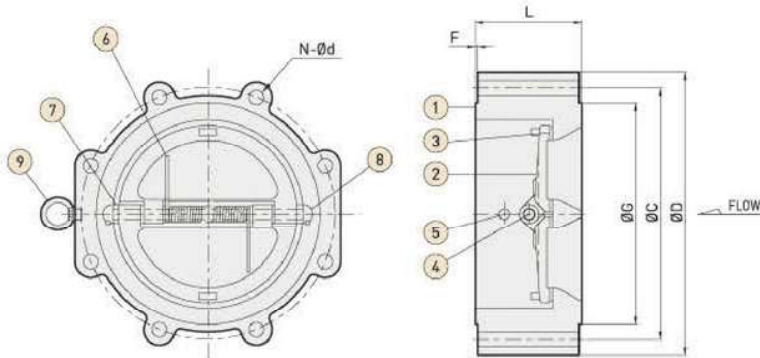
Wafer Lug type

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

CHECK VALVES

DUAL DISC

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	ØD	ØG	T						
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	ASME B16.34, API 594
▪ BODY THICKNESS	
▪ 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 1500	4" ~ 24"
▪ ASME B16.5, Class 900	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)

▪ Carbon Steel	A105, A216 WCB, A216 WCC
▪ Low Temperature Carbon 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		Duration of Required Test Pressure (API 598 Standard)	
	bar	psi	bar	psi	bar	psi	bar	psi		
ASME 150	19	275	29	413	21	303	6	100	Size (NPS)	Test Time (sec)
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		
									≤2	60
									2½ - 6	60
									8 - 12	120
									≥14	120

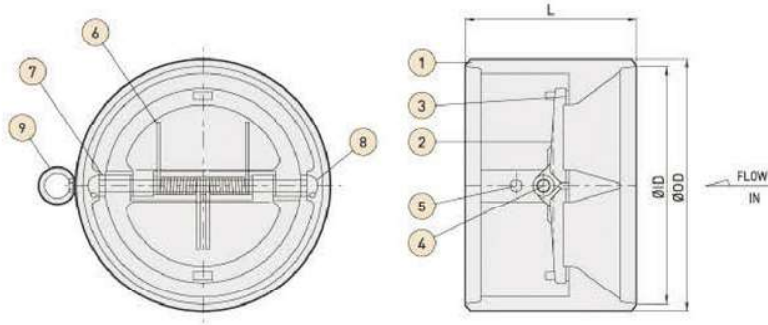
Butt Welding type

ASME Class 150, 300, 600, 900, 1500

CHECK VALVES

DUAL DISC

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	SCHD.	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	ØD	ØG						
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	ASME B16.34, API 594
▪ BODY THICKNESS	
▪ 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 1500	4" ~ 24"
▪ ASME B16.5, Class 900	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)

▪ Carbon Steel	A105, A216 WCB, A216 WCC
▪ Low Temperature Carbon 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)

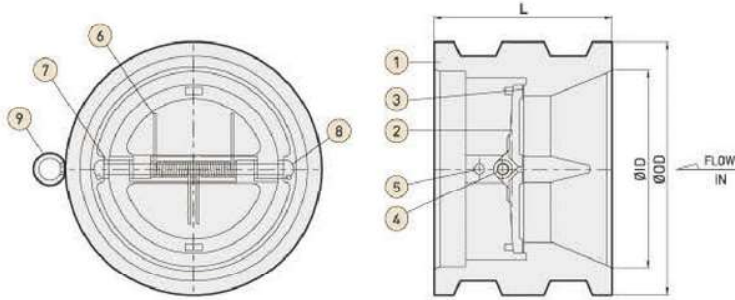
CLASS	Working Pressure		Hydrostatic Shell Test		Hydrostatic Seat Test		Air Seat Test		Duration of Required Test Pressure (API 598 Standard)		
	bar	psi	bar	psi	bar	psi	bar	psi			
ASME 150	19	275	29	413	21	303	6	100	Size (NPS) Test Time (sec)		
ASME 300	50	720	75	1080	56	792	6	100			
ASME 600	99	1440	149	2160	109	1584	6	100		≤ 2	60
ASME 900	149	2160	224	3240	164	2376	6	100		2½ - 6	60
ASME 1500	248	3600	372	5400	273	3960	6	100		8 - 12	120
ASME 2500	413	5988	620	8982	454	6587	6	100		≥14	120

Hub End type

ASME Class 150, 300, 600, 900, 1500

CHECK VALVES DUAL DISC

CKD-HB 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	SCHD.	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	ØD	ØGD						
50	2"		300	40	20	130	60.3	52.5	-	-	-	-	-	
			600	80	20	140	60.3	49.2	-	-	-	-	-	
			1500	160	20	150	60.3	42.9	-	-	-	-	-	
80	3"		300	40	27	140	88.9	77.9	-	-	-	-	-	
			600	80	27	150	88.9	73.6	-	-	-	-	-	
			1500	160	25	160	88.9	66.6	-	-	-	-	-	
100	4"		300	40	40	150	114.3	102.2	-	-	-	-	-	
			600	80	40	160	114.3	97.1	-	-	-	-	-	
			1500	160	34	170	114.3	87.3	-	-	-	-	-	
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	-	-	-	-	-	
200	8"		300	40	82	180	202.7	202.7	-	-	-	-	-	
			600	80	76	200	193.6	193.6	-	-	-	-	-	
			1500	160	72	220	173.0	173.0	-	-	-	-	-	
250	10"		300	40	102	200	273.1	254.5	-	-	-	-	-	
			600	80	97	240	273.1	242.9	-	-	-	-	-	
			1500	160	84	280	273.1	215.9	-	-	-	-	-	
300	12"		300	40	120	240	323.8	303.2	-	-	-	-	-	
			600	80	112	290	323.8	288.9	-	-	-	-	-	
			1500	160	102	340	323.8	257.2	-	-	-	-	-	
350	14"		300	40	130	290	355.6	333.3	-	-	-	-	-	
			600	80	120	350	355.6	317.5	-	-	-	-	-	
			1500	160	106	410	355.6	284.1	-	-	-	-	-	
400	16"		300	40	140	350	406.4	381.0	-	-	-	-	-	
			600	80	137	420	406.4	363.5	-	-	-	-	-	
			1500	160	120	480	406.4	325.4	-	-	-	-	-	
450	18"		300	40	170	420	457.2	428.6	-	-	-	-	-	
			600	80	162	480	457.2	409.6	-	-	-	-	-	
			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	-	-	-	-	-	



TECHNICAL DATASHEETS

EN STANDARDS

GATE VALVES

1. Resilient Seated
2. Metal Seated

Product Description

Resilient seated gate valves, also known as soft seated gate valves, are industrial valves designed for applications that require a tight shut-off, ease of operation, and resistance to contamination. They are commonly used in industries such as water supply, wastewater treatment, irrigation systems, and general process industries.

Pressure Class: PN10-PN16-PN25.

Body Material: Ductile Iron (GGG40.3-GGG50).

Paint: WRAS approved blue electrostatic Epoxy Powder Paint (RAL 5005).

Fields of Application

It can be used in cold and hot water (max. +80°C) installations, non-acid and non-alkaline fluids, irrigation networks, locations with differential pressures up to 16 bars and with flow rate of 5 m/sec.

Relevant Standards

EN558+A1 Series 14, Series 15, DIN3202 F4-F5, EN1171, EN1092-2.

Operation

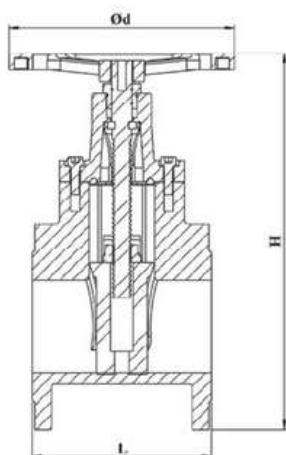
Handwheel or Actuator: Resilient seated gate valves can be manually operated using a handwheel or automated using pneumatic, hydraulic, or electric actuators. The operator or actuator moves the gate up or down to control the fluid flow.

Other Technical Details

- All connection elements (bolts, nuts, washers) are used as galvanized with 8.8 quality (A2-70 quality stainless steel is used optionally).
- All sealing elements (o-ring, gasket) are EPDM.

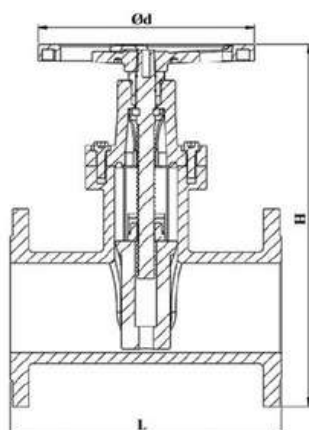


No	Part Name	Material
01	Body	GGG40 - GGG50
02	Cover	
03	Handwheel	GG25
04	Slider guide	P.O.M
05	Slide	Epdm Coated GGG40
06	Slide Nut	Brass
07	Shaft	SS 420-SS 316L
08	Shaft Centering Bed	Bronze
09	Cover Nut	Brass



DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
L	150	170	180	190	200	210	230	250	270	290	310	330	350	390
H	200	230	280	310	325	380	510	630	630	700	810	1035	1150	1300
Ød	180	180	220	220	220	275	315	500	500	500	500	615	615	615

* Length measurements are given in " mm"



DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
L	250	270	280	300	325	350	400	450	500	550	600	650	700	800
H	200	230	280	310	325	380	510	630	630	700	810	1035	1150	1300
Ød	180	180	220	220	220	275	315	500	500	500	500	615	615	615

* Length measurements are given in " mm"

Product Description

Metal seated gate valves are industrial valves designed for applications that require reliable shut-off and control of high-temperature, abrasive, or corrosive fluids. They are commonly used in industries such as oil and gas, chemical processing, power generation, and mining.

Pressure Class: PN10-PN16-PN25

Body Material: Ductile Iron (GGG40.3)

Paint: WRAS approved blue electrostatic Epoxy Powder Paint (RAL 5005).

Fields of Application

Metal seated gate valves are commonly used in applications involving high-temperature fluids, abrasive slurries, or corrosive media. They find application in industries such as oil and gas, chemical processing, power generation, mining, and refining.

Relevant Standards

EN558+A1 Series 14, Series 15, DIN3202 F4-F5, EN1171, EN1092-2.

Operation

Handwheel or Actuator: Metal seated gate valves can be manually operated using a handwheel or automated using pneumatic, hydraulic, or electric actuators. The operator or actuator moves the gate up or down to control the fluid flow.

Other Technical Details

- All connection elements (bolts, nuts, washers) are used as galvanized with 8.8 quality (A2-70 quality stainless steel is used optionally).
- All sealing elements (o-ring, gasket) are EPDM.

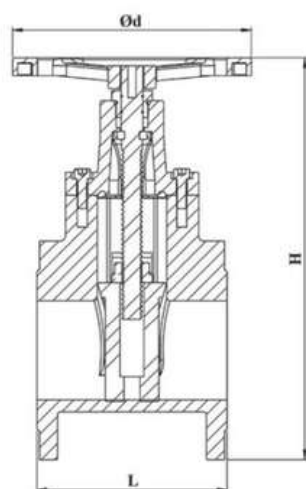
Special Production Diameters DN700 to - DN1200

Gate Valve

Metal Seated

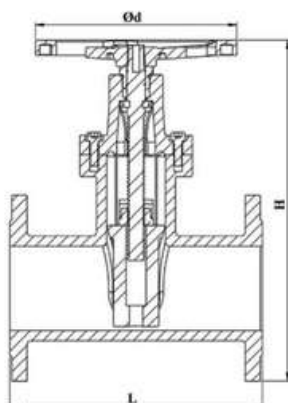


No	Part Name	Material
01	Body	GGG40-GGG50
02	Body seat	Bronze
03	Slide seat	Bronze
04	Slide	GGG40-GGG50
05	Slide nut	Bronze
06	Cover	GGG40-GGG50
07	Shaft	SS 420 / SS 316L
08	Cover nut	Bronze
09	Handwheel	GGG40-GGG50



DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
L	150	170	180	190	200	210	230	250	270	290	310	330	350	390
H	200	230	280	310	325	380	510	630	630	700	810	1035	1150	1300
Ød	180	180	220	220	220	275	315	500	500	500	500	615	615	615

* Length measurements are given in "mm"



DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
L	250	270	280	300	325	350	400	450	500	550	600	650	700	800
H	200	230	280	310	325	380	510	630	630	700	810	1035	1150	1300
Ød	180	180	220	220	220	275	315	500	500	500	500	615	615	615

* Length measurements are given in "mm"

BUTTERFLY VALVES

1. Lug Type
2. Wafer Type
3. Double Eccentric &
Double Flanged

Product Description

Lug type butterfly valves are a type of quarter-turn valve commonly used in industrial applications to regulate or isolate the flow of fluids. They have a unique design that allows for easy installation and maintenance.

Pressure Class: PN10-PN16-PN25.

Body Material: Cast Iron (GG25), Ductile Iron (GGG40.3).

Working Temperature: Max: 110 °C.

Fields of Application

Lug type butterfly valves are commonly used in various industries, including water treatment, wastewater management, HVAC systems, chemical processing, and power generation. They are suitable for both on/off and throttling applications, where tight shut-off is not always required.

Relevant Standards

DIN2501, DIN EN1092, DIN3202-K1.

Operation

Lug type butterfly valves can be operated manually or with the help of an actuator. Manual operation is typically achieved through a handle or gear mechanism, while automated operation can use electric, pneumatic, or hydraulic actuators. The actuator provides the necessary torque to rotate the disc and control the flow.

Other Technical Details

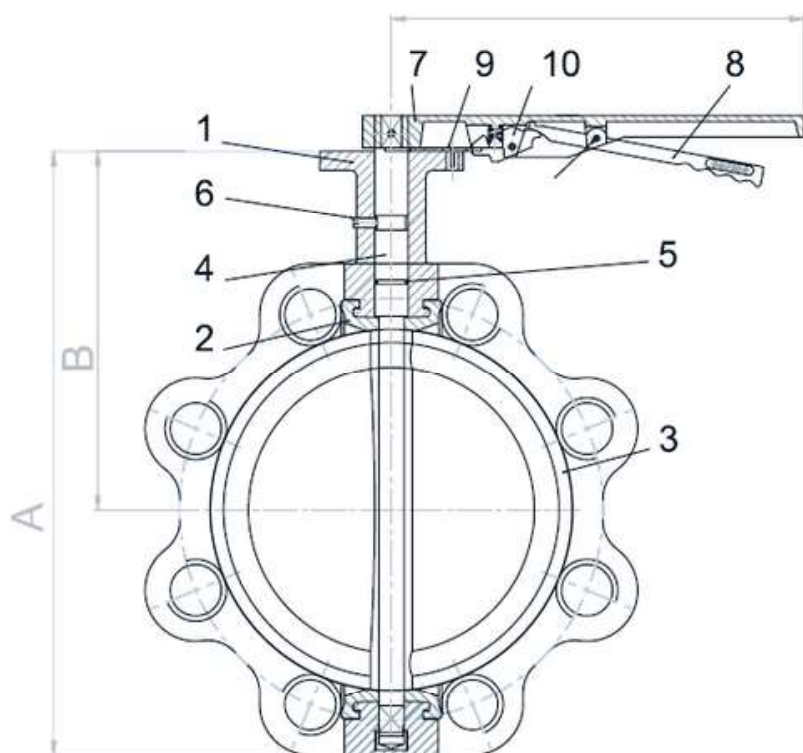
Applications: Water, sea water, waste water, air, oil, powder, gas, etc.

Ends: Lug type, between two flanges acc. to DIN 2501 (DIN EN 1092)

Face to Face: DIN 3202-K1

Butterfly Valve

Lug Type



No	Part Name	Material
01	Body	Cast Iron EN-JL 1040 / GG25
02	Seat	EPDM
03	Disc	Stainless Steel 1.4021 / 1.4301 / 1.4411
04	Spindle	Stainless Steel 1.4021 / 1.4301
05	O-Ring	EPDM - NBR
06	Setscrew	DIN 417
07	Lever	Sheet Forming - Cast Iron ST 42 GG25
08	Lever Pin	Sheet Forming - Cast Iron ST 42 GG25
09	Locking Plate	Stainless Steel 1.4301
10	Locking Spring	Spring Steel 1.4310

Dimensions

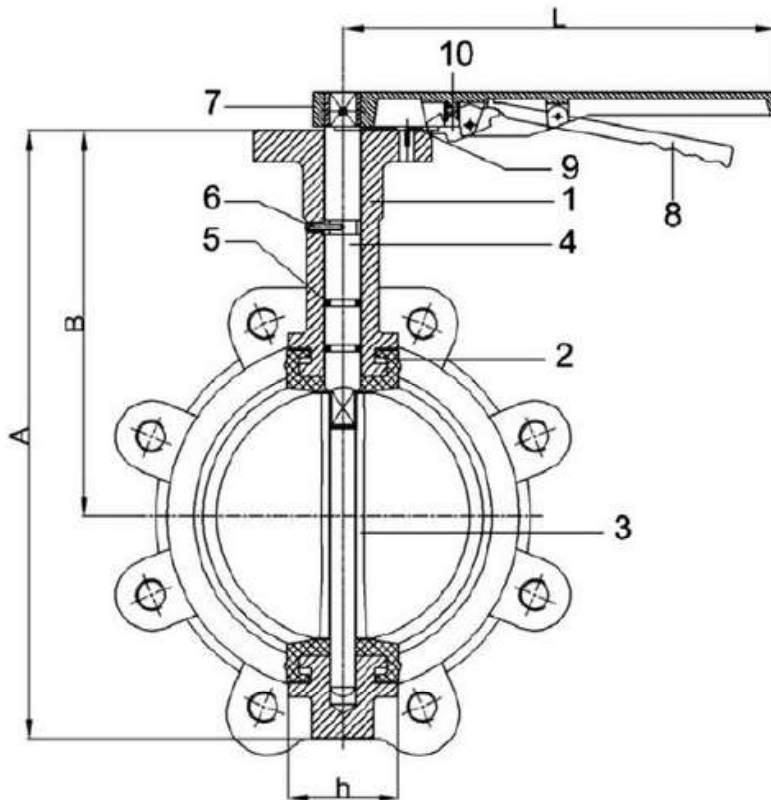
PN 16												
DN Size	40	50	65	80	100	125	150	200	250	300	350	400
DN Size	½"	2"	2 ½"	3"	4"	5"	6"	8"	10"	12"	14"	16"
A	210	228	252	265	301	329	355	411	501	545	635	740
B	146	163	178	181	201	214	226	261	293	310	368	422
L	33	43	46	46	52	56	56	60	68	78	78	86
C	230	230	230	230	230	267	267	345	345	345	-	-
Weight (kg)	2,8	4,2	5,2	5,5	7,8	10	11,2	19	28	43,5	73,5	-

DN / Size	40	50	65	80	100	125	150	200	250	300
Kvs-m³/h	58	73	134	213	422	807	1270	2970	4565	6570
ξ	1,2	1,1	1,1	1,2	0,7	0,4	0,3	0,2	0,15	0,15

L: Face to face

Butterfly Valve

Lug Type



No	Part Name	Material
01	Body	Ductile Iron GGG 40.3 EN-JS 1049
02	Seat	EPDM - NBR
03	Disc	Bronze
04	Spindle	Stainless Steel 1.4021 / 1.4301
05	O-Ring	EPDM - NBR
06	Setscrew	DIN 417
07	Lever	Sheet Forming - Cast Iron ST 42 GG25
08	Lever Pin	Sheet Forming - Cast Iron ST 42 GG25
09	Locking Plate	Stainless Steel 1.4301
10	Locking Spring	Spring Steel 1.4310

Dimensions

PN 16										
DN Size	40	50	65	80	100	125	150	200	250	300
DN Size	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"
A	206	226	246	264	291	327	352	411	498	539
B	146	163	178	181	201	214	226	261	293	300
L	33	43	46	46	52	56	56	60	68	78
C	230	230	230	230	230	267	267	345	345	369
Weight (kg)	2,4	3,2	3,8	4,8	6	8	10	15	26	37

DN / Size	40	50	65	80	100	125	150	200	250	300
Kvs-m³/h	58	73	134	213	422	807	1270	2970	4565	6570
ξ	1,2	1,1	1,1	1,2	0,7	0,4	0,3	0,2	0,15	0,15

L: Face to face

Product Description

Wafer type butterfly valves are a popular type of quarter-turn valve used in a wide range of industrial applications for regulating or isolating the flow of fluids. They are known for their compact design and ease of installation.

Pressure Class: PN10-PN16-PN25.

Body Material: Cast Iron (GG25), Ductile Iron (GGG40.3).

Working Temperature: Max: 110 °C.

Fields of Application

Wafer type butterfly valves are widely used in industries such as water treatment, HVAC systems, chemical processing, food and beverage, and oil and gas. They are commonly used for on/off and throttling applications, where tight shut-off is not always required.

Relevant Standards

DIN2501, DIN EN1092, DIN3202-K1.

Operation

Wafer type butterfly valves can be operated manually or with the help of an actuator. Manual operation is typically achieved through a handle or gear mechanism, while automated operation can use electric, pneumatic, or hydraulic actuators. The actuator provides the necessary torque to rotate the disc and control the flow.

Other Technical Details

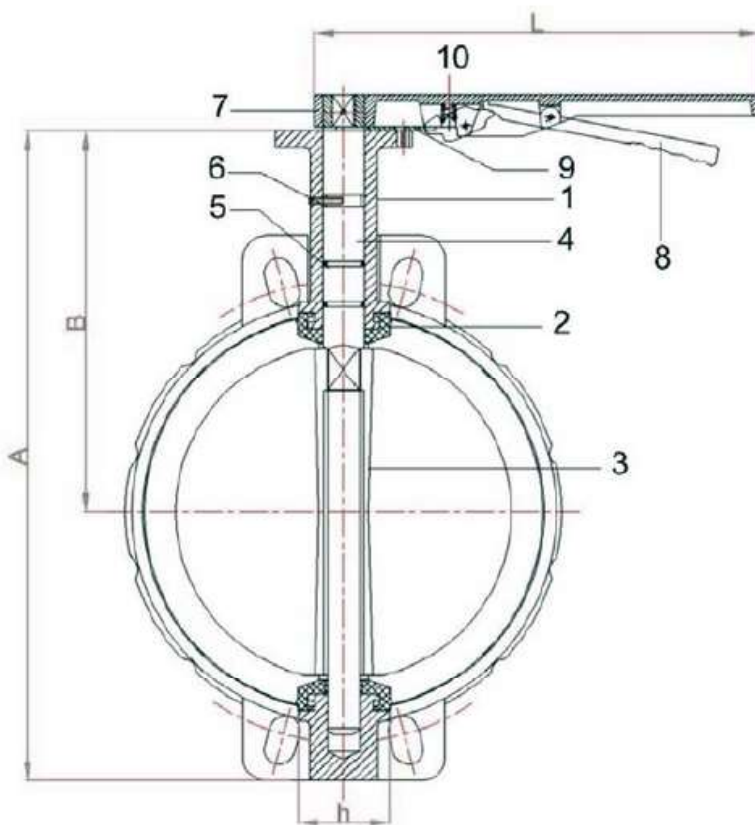
Applications: Water, sea water, waste water, air, oil, powder, gas, etc.

Ends: Wafer type, between two flanges acc. to DIN 2501 (DIN EN 1092)

Face to Face: DIN 3202-K1

Butterfly Valve

Wafer Type



No	Part Name	Material
01	Body	Ductile Iron GGG 40.3 EN-JS 1049
02	Seat	EPDM
03	Disc	Bronze
04	Spindle	Stainless Steel 1.4021 / 1.4301
05	O-Ring	EPDM - NBR
06	Setscrew	DIN 417
07	Lever	Sheet Forming - Cast Iron ST 42 GG25
08	Lever Pin	Sheet Forming - Cast Iron ST 42 GG25
09	Locking Plate	Stainless Steel 1.4301
10	Locking Spring	Spring Steel 1.4310

Dimensions

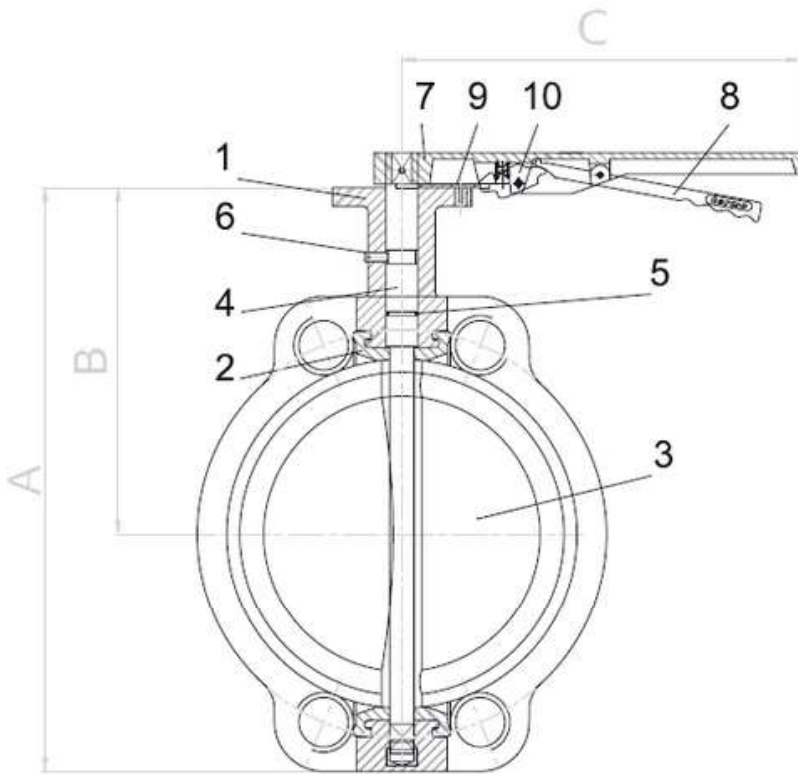
PN 16										
DN Size	40	50	65	80	100	125	150	200	250	300
DN Size	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"
A	206	226	246	264	291	327	352	411	498	539
B	146	163	178	181	201	214	226	261	293	300
h	33	43	46	46	52	56	56	60	68	78
L	230	230	230	230	230	267	267	345	345	369
Weight (kg)	2,4	3,2	3,8	4,8	6	8	10	15	26	37

DN / Size	40	50	65	80	100	125	150	200	250	300
Kvs-m³/h	58	73	134	213	422	807	1270	2970	4565	6570
ξ	1,2	1,1	1,1	1,2	0,7	0,4	0,3	0,2	0,15	0,15

L: Face to face

Butterfly Valve

Wafer Type



No	Part Name	Material
01	Body	Cast Iron EN-JL 1040 / GG25
02	Seat	EPDM
03	Disc	Stainless Steel 1.4021 / 1.4301 / 1.4411
04	Spindle	Stainless Steel 1.4021 / 1.4301
05	O-Ring	EPDM - NBR
06	Setscrew	DIN 417
07	Lever	Sheet Forming - Cast Iron ST 42 GG25
08	Lever Pin	Sheet Forming - Cast Iron ST 42 GG25
09	Locking Plate	Stainless Steel 1.4301
10	Locking Spring	Spring Steel 1.4310

Dimensions

PN 16																
DN Size	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700
DN Size	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"
A	210	228	252	265	301	329	355	411	501	545	635	698	740	829	972	1.149
B	146	163	178	181	201	214	226	261	293	310	368	400	422	480	562	629
L	33	43	46	46	52	56	56	60	68	78	78	86	106	130	152	165
C	230	230	230	230	230	230	230	369	369	369	-	-	-	-	-	-
Weight (kg)	2.4	3.1	3.5	3.8	5	6.1	7.8	12.6	20	34	39.6	72	90	108	195	395
TORK (Nm)	16	17	25	38	56	90	120	230	310	420	636	987	1.230	1.600	-	-

DN / Size	40	50	65	80	100	125	150	200	250	300
Kvs-m³/h	58	73	134	213	422	807	1270	2970	4565	6570
ξ	1,2	1,1	1,1	1,2	0,7	0,4	0,3	0,2	0,15	0,15

L: Face to face

Butterfly Valve

Double Eccentric Double Flanged

Product Description

Butterfly valves; the body consists of a compact gearbox, which is designed in accordance with the capacity of the valve and the opening and closing torque integrated on the housing.

Pressure Class: PN10-PN16-PN25.

Body Material: Cast Iron (GG25), Ductile Iron (GGG40.3).

Working Temperature: Max: 110 °C.

Fields of Application

Pumping stations, high level reservoirs, filter systems, oil and other liquid transfer systems, irrigation networks and power plants.

Relevant Standards

EN 558 series I4 , DIN3202 F4 ,EN 593+A2 ,EN 1092-2

Accessory

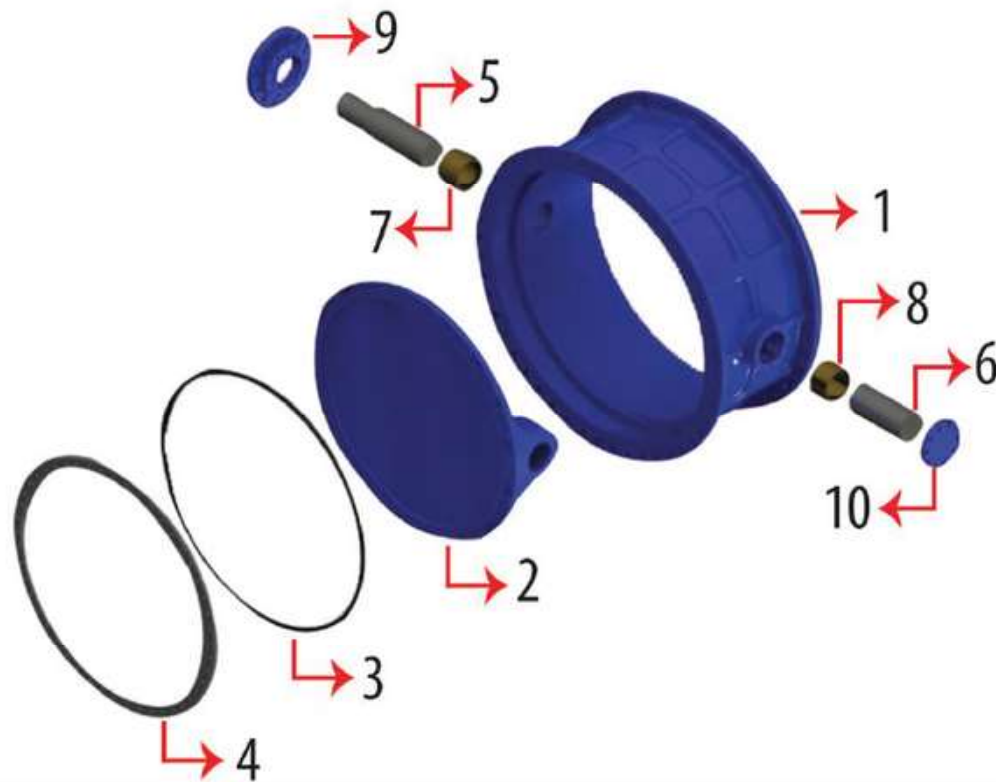
Electric actuator, Hydraulic actuator, Pneumatic actuator

Other Technical Details

- A2-70 quality stainless steel is used for all fasteners (bolt, nut, washer).
- All sealing elements (o-ring, gasket) are made of EPDM.

Butterfly Valve

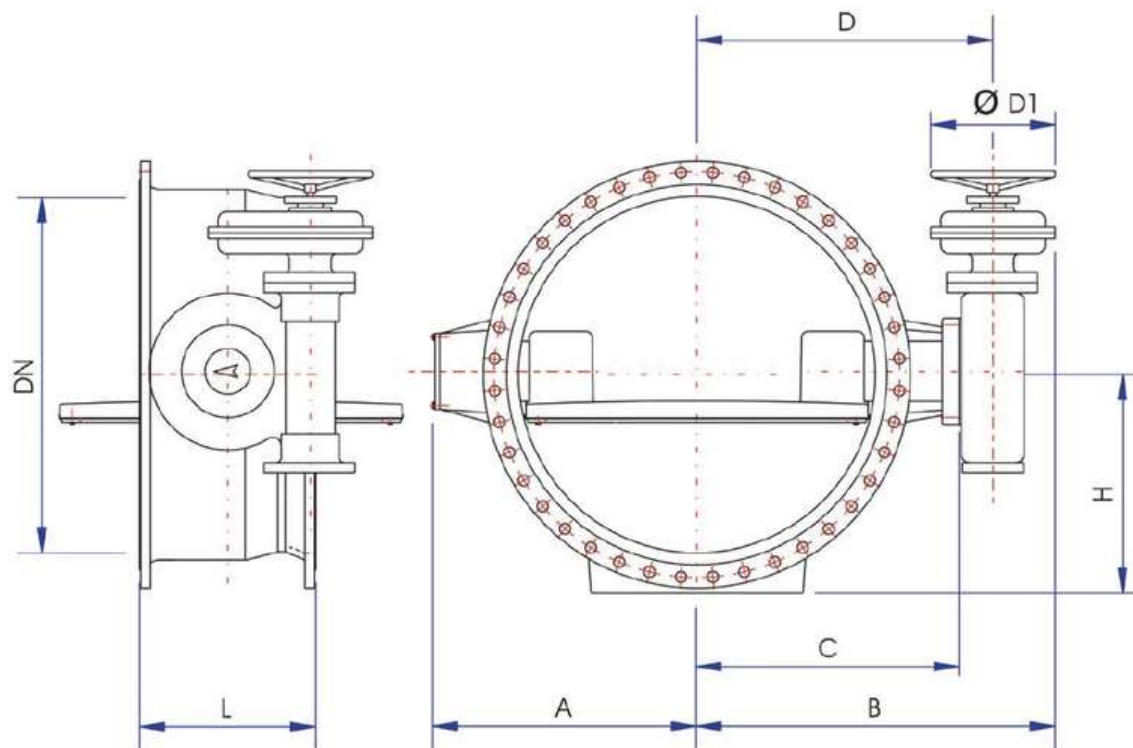
Double Eccentric Double Flanged



No	Part Name	Material
01	Body	GGG40 - GGG50
02	Disc	GGG40 - GGG50
03	Sealing Ring	EPDM
04	Retaining Ring	GGG40 - SS 304
05	Drive Shaft	SS 420 - SS 304
06	Free Shaft	SS 420 - SS 304
07	Drive Shaft Bush	Bronze
08	Free Shaft Bush	Bronze
09	Key	St-50 - SS 304
10	Free Shaft Cover	GGG40 - GGG50

Butterfly Valve

Double Eccentric Double Flanged



DN	L	A	B	C	D	H	ØD1	Gearbox
100	190	125	265	140	195	115	250	ADK-01
125	200	135	270	150	200	140	250	ADK-01
150	210	155	275	160	210	150	250	ADK-01
200	230	170	320	200	257	175	250	ADK-01
250	250	200	350	225	290	210	250	ADK-01
300	270	235	400	275	340	235	250	ADK-02
350	290	265	430	290	370	270	250	ADK-02
400	310	295	465	325	420	300	250	ADK-02
450	330	340	515	360	450	330	380	ADK-02
500	350	360	550	395	490	370	480	ADK-03
600	390	430	610	460	545	430	480	ADK-03
700	430	475	640	490	575	465	480	ADK-03
800	470	550	865	585	695	520	480	ADK-03
900	510	615	910	630	740	570	480	ADK-03
1000	550	675	975	690	805	630	480	ADK-04
1100	590	760	1050	770	875	730	480	ADK-04
1200	630	805	1170	815	950	750	480	ADK-04
1300	670	850	1235	880	1020	805	480	ADK-04
1400	710	920	1260	915	1050	850	600	ADK-05
1500	750	975	1305	995	1135	920	600	ADK-05
1600	790	1075	1420	1055	1200	1000	600	ADK-05
1800	870	1195	1535	1170	1325	1070	600	ADK-06
2000	950	1290	1725	1270	1470	1185	600	ADK-06
2200	1030	1445	1880	1425	1620	1295	600	ADK-06

* Length measurements are given in "mm".

GLOBE VALVES

1. Standard Globe Valve
2. Bellows Sealed Globe Valve

Product Description

Globe valves are a type of linear motion valve commonly used in fluid control systems. They are designed to regulate, start, or stop the flow of fluid in a pipeline.

Pressure Class: PN10-PN16-PN25-PN40.

Body Material: Grey Iron/Cast Iron (GG25), Ductile Iron (GGG40.3), Steel (GS-C25), Stainless Steel SS 304/316

Working Temperature: 300°C (10 BAR), 350°C (14 BAR), 400°C (21 BAR)

Fields of Application

Globe valves are commonly used in various industries, including oil and gas, petrochemical, power generation, water treatment, and HVAC systems. They are often preferred for applications requiring precise flow control and where throttling is necessary.

Relevant Standards

DIN2401, DIN3202 M9, DIN2501, DIN EN1092, DIN2533(PN16), DIN 2534(PN25), DIN2545(PN40), DIN3202-FI, DIN EN558-1.

Operation

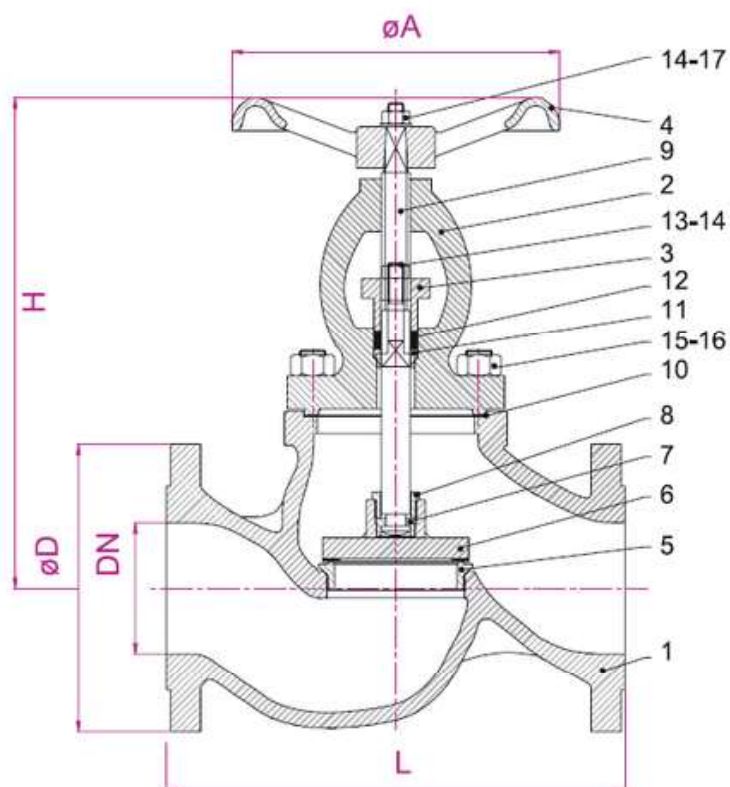
Handwheel or Actuator: Globe valves can be manually operated using a handwheel or automated using pneumatic, hydraulic, or electric actuators. The operator or actuator rotates the stem to move the disc against the seat and control the fluid flow.

Other Technical Details

Applications: Steam, hot water, sea water, air and other neutral fluids

Working Conditions: As per DIN 2401

Face to Face: DIN 3202 M9



No	Part Name	Material
01	Body	Cast Iron
02	Bonnet	EN-JL 1040 / GG 25
03	Gland	Cast Iron EN-JL 1040 / GG 25
04	Handwheel	Cast iron / Steel GG 25 / St 37
05	Seat	Stainless Steel 1.4057
06	Disc	Stainless Steel DN 15-50 1.4021 DN 65-300 st42+1.4021
07	Two part ring	Steel St 42
08	Disc nut	Stainless Steel 1.4021
09	Spindle	Stainless Steel 1.4021 / 1.4301
10	Gasket	Reinforced Graphite
11	Spindle guide	MS 58 / Brass
12	Ring	Pure graphite
13	T stud	Steel St37
14	Nut	TS 1026/2
15	Stud	Steel St37
16	Nut	Steel
17	Washer	Steel

PN 16														
DN / Size	15	20	25	32	40	50	65	80	100	125	150	200	250	300
DN / Size	½"	¾"	1"	1 ¼"	1½"	2"	2 ½"	3"	4"	5"	6"	8"	10"	12"
L	130	150	160	180	200	230	290	310	350	400	480	600	730	850
H	211	211	226	240	256	260	299	330	387	441	480	564	720	740
øA	125	125	160	160	200	200	200	193	250	315	315	360	515	515
øD	95	105	115	140	150	165	185	200	220	250	285	340	405	460
Weight (kg)	4,4	5	6,6	8,8	12	14,2	21	27	40	65	85	142	254	374

DN / Size	15	20	25	32	40	50	65	80	100	125	150	200	250	300
Kvs-m³/h	5,4	9,6	15	24	37	57	95	141	218	316	430	723	1077	1575
ξ	4,7	4,6	4,7	4,6	4,8	4,7	4,8	5	4,9	4,9	4,9	5,2	5,4	5,8

Product Description

Bellows sealed globe valves are a type of industrial valve that incorporates a bellows element in the valve stem to provide a hermetic seal and prevent fluid leakage. They are commonly used in applications that require reliable sealing and control of fluids in piping systems, particularly in environments where leakage must be minimized.

Pressure Class: PN10-PN16-PN25-PN40.

Body Material: Grey Iron/Cast Iron (GG25), Ductile Iron (GGG40.3), Steel (GS-C25), Stainless Steel SS 304/316 etc.

Working Temperature: 300°C (10 BAR), 350°C (14 BAR), 400°C (21 BAR)

Fields of Application

Bellows sealed globe valves are commonly used in applications involving high temperatures, corrosive fluids, or toxic/hazardous media. They are suitable for systems requiring a high level of leak-tightness, such as petrochemical plants, refineries, power plants, and pharmaceutical industries.

Relevant Standards

DIN2401, DIN3202 M9, DIN2501, DIN EN1092, DIN2533(PN16), DIN 2534(PN25), DIN2545(PN40), DIN3202-F1, DIN EN558-1, DIN EN552-1.

Operation

Handwheel or Actuator: Bellows sealed globe valves can be manually operated using a handwheel or automated using pneumatic, hydraulic, or electric actuators. The operator or actuator rotates the stem to move the disc against the seat and control the fluid flow

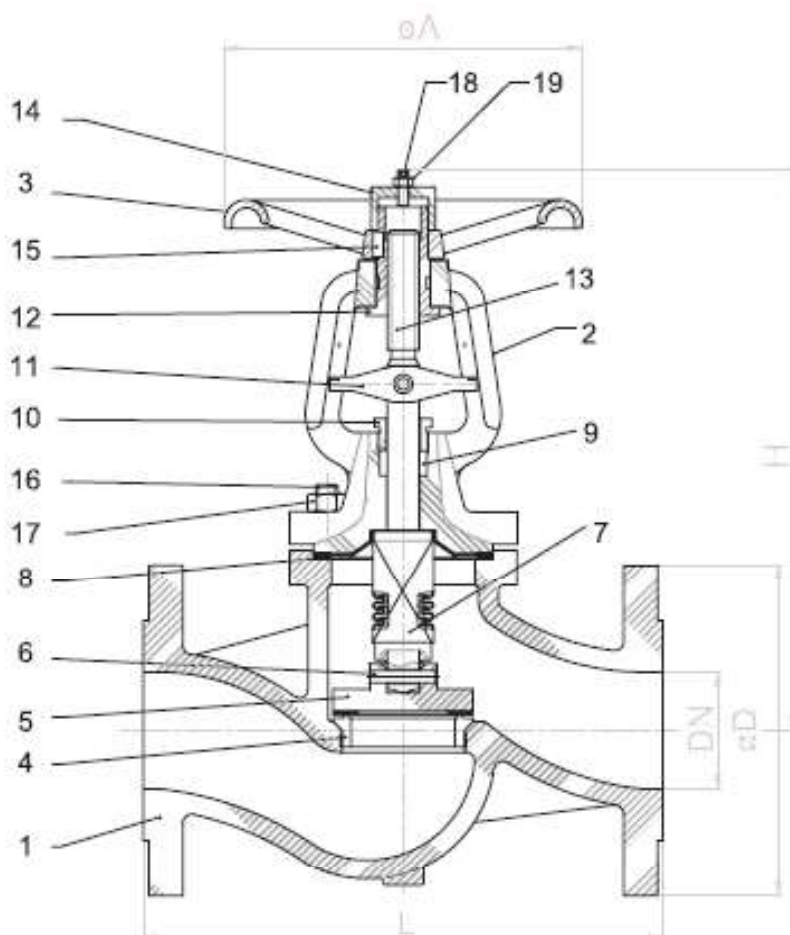
Other Technical Details

Applications: Steam, hot water, hot oil, air and other neutral fluids

Working Conditions: As per DIN 2401

Ends: Flanged as per DIN 2501 (DIN EN 1092) PN 16 (DIN 2533)

Face to Face: DIN 3202-F1 (DIN EN 552-1)/ DIN 3202-F1 (DIN EN 558-1)



No	Part Name	Material
01	Body	Cast Iron
02	Bonnet	GG 25 EN-JL 1040
03	Handwheel	Cast Iron / Steel GG 25 / St 37
04	Seat	Stainless Steel 1.4057
05	Disc	Stainless Steel DN 15-50 1.4021 DN 65-300 St42+1.4021
06	Disc Pin	Stainless Steel 1.4301 / 1.4401
07	Bellows	Stainless Steel 1.4571 / 1.4541
08	Gasket	Reinforced Graphite
09	Ring	Pure Graphite
10	Gland	Steel St 37
11	Indicator	Cast Steel GP 240 GH / GS-C25
12	Stem Nut	Free Cutting Steel
13	Spindle	Stainless Steel 1.4021 / 1.4301
14	Stopper	Steel St 37
15	Wedge	Stainless Steel 1.4301
16	Stud	Steel ST 37
17	Nut	TS 1026/2 / Steel
18	Setscrew	Steel
19	Adjusting Screw	TS 1026/2 / Steel

PN 16														
DN / Size	15	20	25	32	40	50	65	80	100	125	150	200	250	300
DN / Size	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"
L	130	150	160	180	200	230	290	310	350	400	480	600	730	850
H	243	255	260	315	320	325	370	385	410	525	585	600	720	740
ϕA	125	125	160	200	200	193	250	250	315	360	360	515	515	515
ϕD	95	105	115	140	150	165	185	200	235	270	300	375	450	515
Weight (kg)	4.8	5.6	7.4	11.8	13.4	19	32	38	55	85	104	166	280	464

DN / Size	15	20	25	32	40	50	65	80	100	125	150	200	250	300
Kvs-m³/h	5.4	9.6	15	24	37	57	95	141	218	316	430	723	1077	1575
ξ	4.7	4.6	4.7	4.6	4.8	4.7	4.8	5	4.9	4.9	4.9	5.2	5.4	5.8



BALL VALVES

1. Full Bore Ball Valve
2. Reduced Bore Ball Valves

Product Description

Ball valves are mechanical devices used to control the flow of fluids or gases by utilizing a spherical ball with a bore (hole) through its center.

Pressure Class: PN10-PN16-PN25-PN40.

Body Material: Cast Iron (GG25-ENJL1040), Ductile Iron (GGG40.3- EN JS1049), Cast Steel (GP 240 GH/GS-C25), A216WCB etc.

Working Temperature: -29 / +180°C

Fields of Application

Ball valves are used in various industries such as oil and gas, petrochemicals, power generation, and utilities. They are employed in natural gas pipelines, distribution networks, storage facilities, processing plants, and residential or commercial gas supply systems. The selection of the appropriate ball valve depends on factors such as pressure rating, pipe size, temperature range, material compatibility, and specific application requirements.

Relevant Standards

DIN2401, DIN2501, DIN EN1092, DIN2534(PN25), DIN3202-F1(DN15-100), DIN EN558-1, DIN3202-F7(DN125-250), DIN EN558-1, DIN2545(PN40), DIN2999, DIN EN10226-1, DIN3202-M3, DIN3202-F4, DIN3202-F5, ASME B16.5, ASME B16.10.

Operation

Ball valves can be manually operated or equipped with various actuation mechanisms for remote or automated control. Actuation options include lever handles, gear operators, pneumatic actuators, electric actuators, or hydraulic actuators. Actuation allows for easier operation and control of the valve.

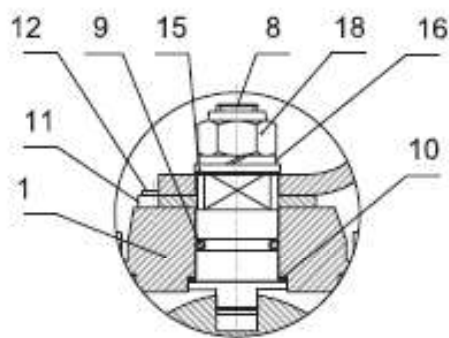
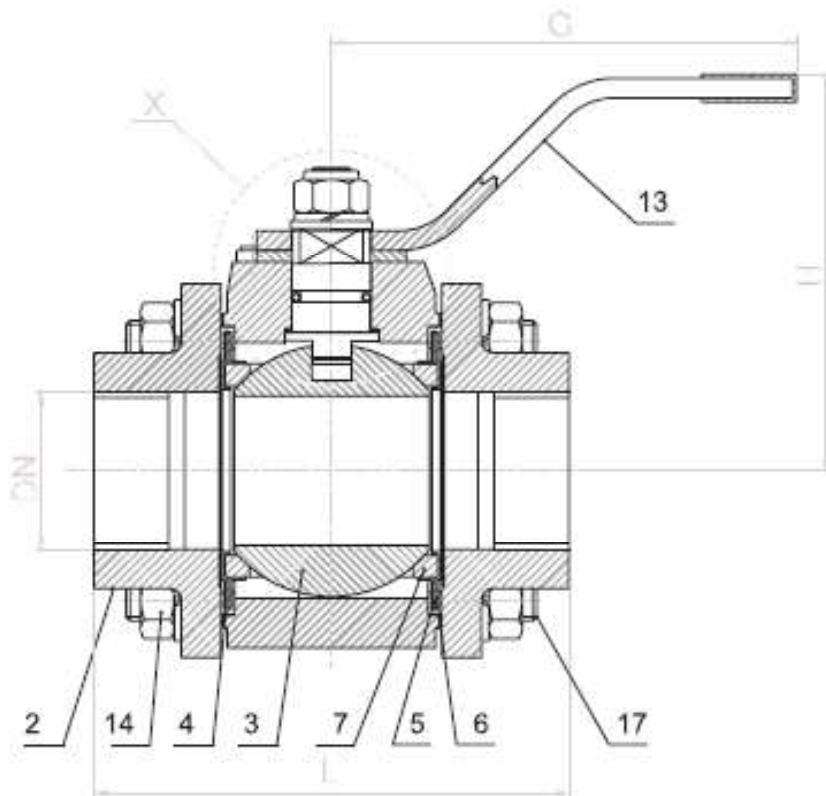
Other Technical Details

Applications: Steam, hot water, air and other neutral fluids

Working Conditions: As per DIN 2401

Ends: Screwed as per DIN 2999 (DIN EN 10226-1)

Face to Face: DIN 3202-M3



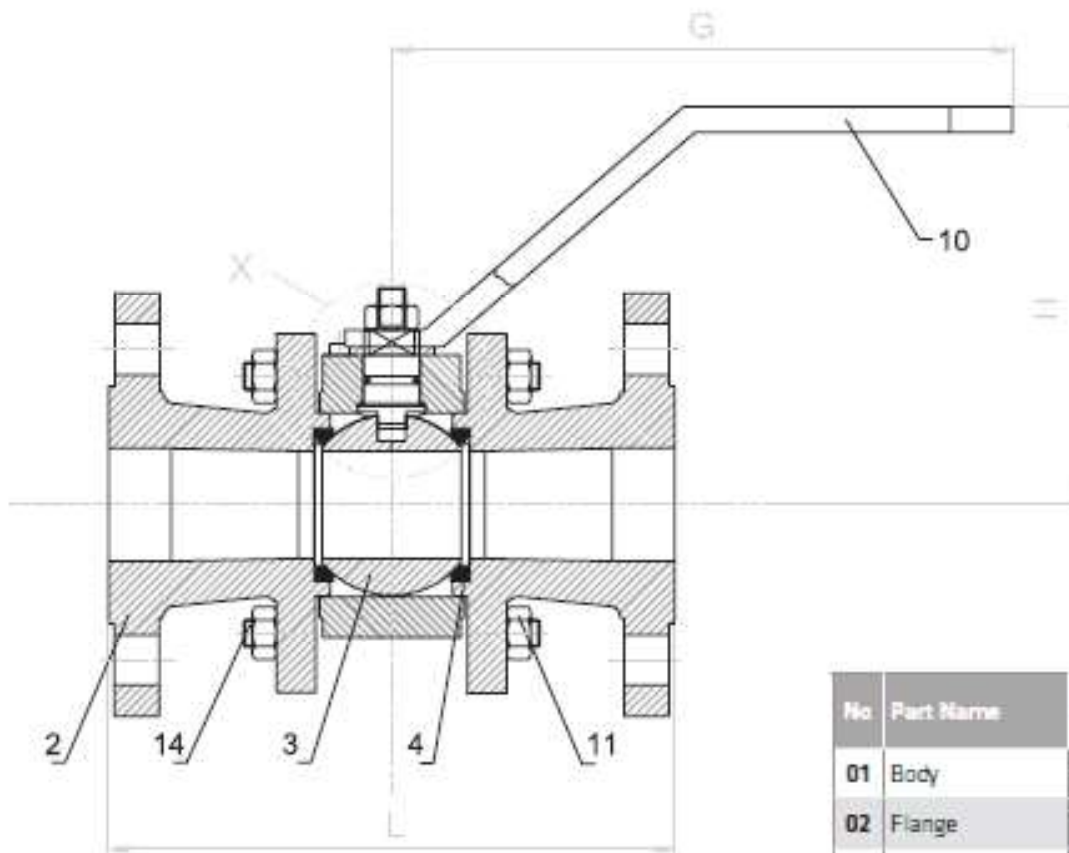
X DETAIL

No	Part Name	Material
01	Body	Cast Iron
02	Screwed End	GG25 EN JL 1040
03	Ball	Stainless Steel 1.4301/1.4021/1.4401/1.4057
04	Flange Seal	PTFE
05	Disk Spring	Stainless Steel AISI 304/316
06	Disk Spring (Outside)	Stainless Steel AISI 304/316
07	Ball Seal	PTFE
08	Ball Stem	Stainless Steel 1.4301/1.4021
09	O-Ring	EPDM
10	Stem Seal	PTFE
11	Locking Plate	Steel St 37
12	Limiting Pin	Steel
13	Lever	Steel St 37
14	Nut	TS 1026/2
15	Washer	Steel
16	Spring Washer	DIN127
17	Stud	Steel
18	Secure Nut	DIN 985

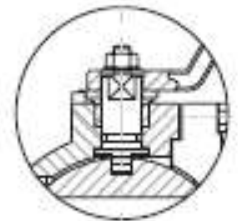
PN 16							
DN / Size	15	20	25	32	40	50	65
DN / Size	½"	¾"	1"	1 ¼"	1½"	2"	2 ½"
L	75	80	90	110	120	140	185
H	91	115	118	135	141	141	153
G	143	143	172	172	220	220	280
Weight (kg)	0,84	1,47	2,34	3,77	4,7	7,6	13

Ball Valve

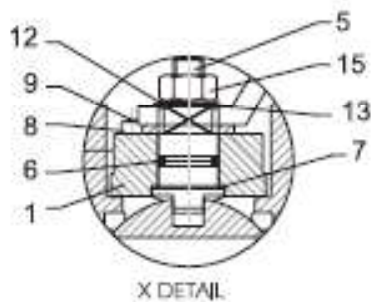
Full Bore Ball Valves



15-40 mil dizayn™



50-65 mil dizayn™



No	Part Name	Material
01	Body	Ductile Iron
02	Flange	GGG40.3 EN JS 1049
03	Ball	Stainless Steel 1.4021/ 1.4057/1.4301/1.4401
04	Ball Seal	PTFE
05	Ball Spindle	Stainless Steel 1.4021
06	O-Ring	EPDM
07	Spindle Seal	PTFE
08	Locking Plate	Steel St 37
09	Limiting Pin	Steel St 37
10	Lever	Steel St 42
11	Nut	Steel
12	Washer	Steel
13	Spring Washer	DIN 127
14	Stud	Steel
15	Secure Nut	DIN 985

PN 25														
DN / Size	15	20	25	32	40	50	65	80	100	125	150	200	250	300
DN / Size	½"	¾"	1"	1 ¼"	1 ½"	2"	2 ½"	3"	4"	5"	6"	8"	10"	12"
L	130	150	160	180	200	230	290	310	350	325	350	400	450	500
H	86	93	110	114	129	138	141	152	188	241	241	254	287	302
G	143	143	172	172	220	220	280	280	450	710	710	856	1000	1250
Weight (kg)	2.2	3.2	4.1	6.4	8.2	12.2	20	28	46	62	89	116	188	304

Product Description

Reduced bore ball valves are a type of ball valve where the bore diameter of the ball is smaller than the pipeline diameter. They are designed to reduce the flow capacity while still providing reliable shut-off capabilities.

Pressure Class: PN10-PN16-PN25-PN40.

Body Material: Cast Iron (GG25-ENJL1040), Ductile Iron (GGG40.3-EN JS1049), Cast Steel (GP 240 GH/GS-C25), A216WCB etc.

Working Temperature: -29 / +180°C

Fields of Application

Reduced bore ball valves are commonly used in applications where a lower flow capacity is acceptable or desired. They find application in various industries, including oil and gas, petrochemicals, water treatment, HVAC (heating, ventilation, and air conditioning), and process industries. Typical applications include shut-off or control applications where the reduced flow capacity does not impact the system's performance.

Relevant Standards

DIN2401, DIN2501, DIN EN1092, DIN2533(PN16), DIN2534(PN25), DIN3202-F1(DN15-100), DIN EN558-1, DIN3202-F5(DN125-300), DIN EN558-1, DIN2545(PN40), DIN2999, DIN EN10226-1, DIN3202-M3, DIN3202-F4

Operation

Ball valves can be manually operated or equipped with various actuation mechanisms for remote or automated control. Actuation options include lever handles, gear operators, pneumatic actuators, electric actuators, or hydraulic actuators. Actuation allows for easier operation and control of the valve.

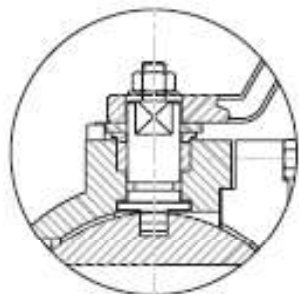
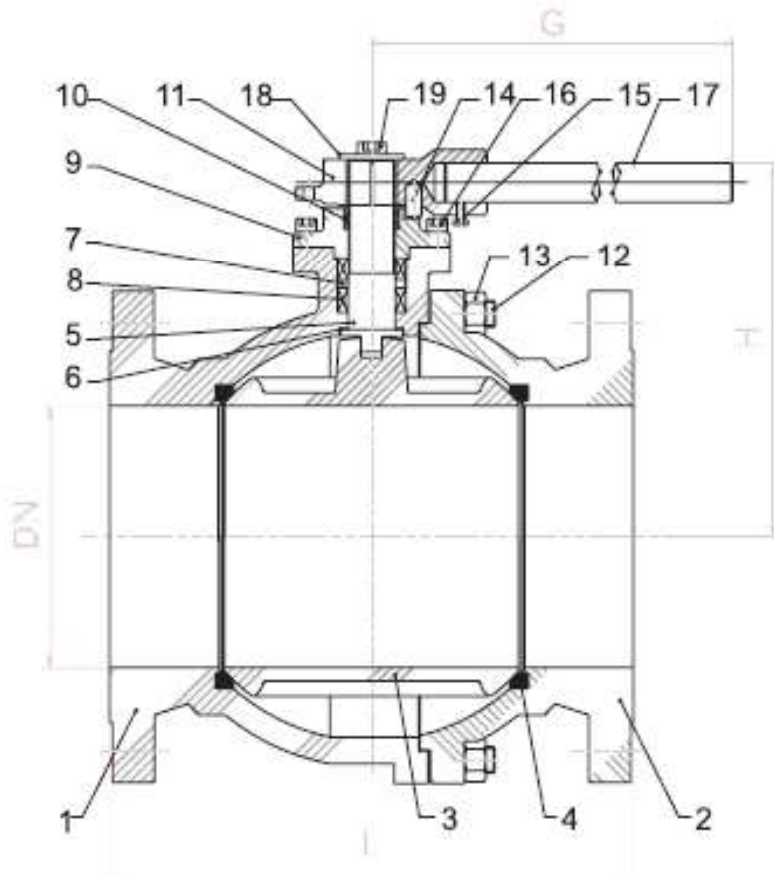
Other Technical Details

Applications: Steam, hot water, air and other neutral fluids

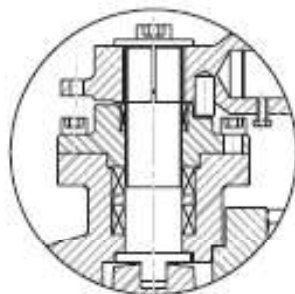
Working Conditions: As per DIN 2401

Ends: Flanged as per DIN 2501 (DIN EN 1092) PN 40 (DIN 2545)

Face to Face: DIN 3202-F1 (DN15-100 DIN EN 558-1) PN 40 (DIN 2545)



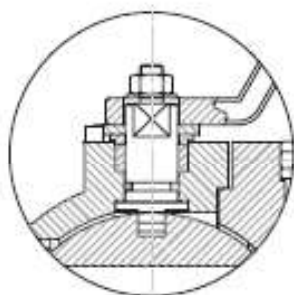
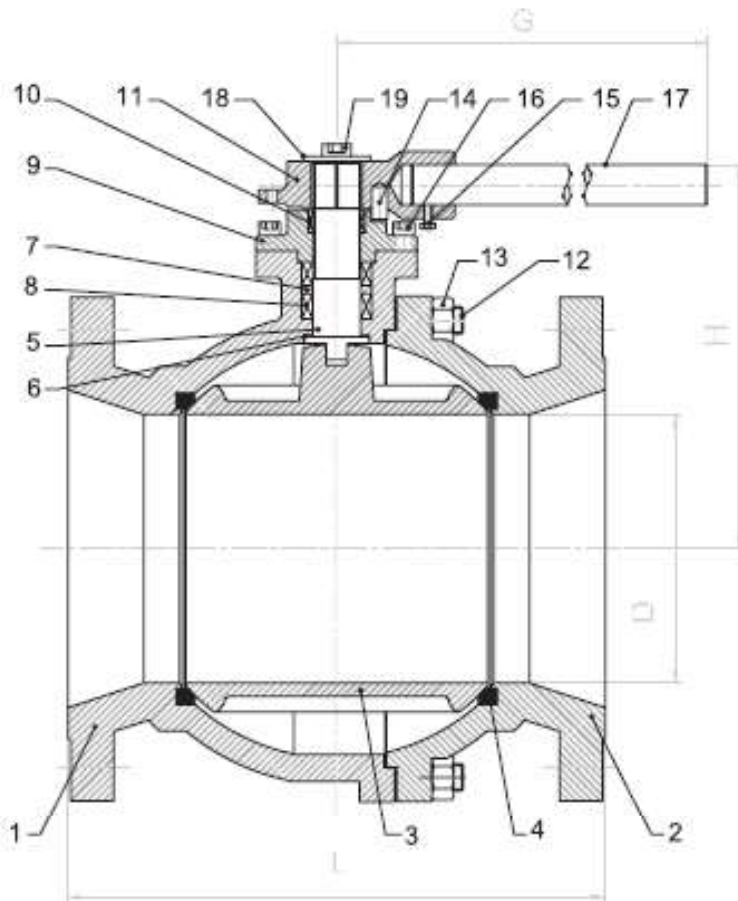
100-125 mil dizayn*



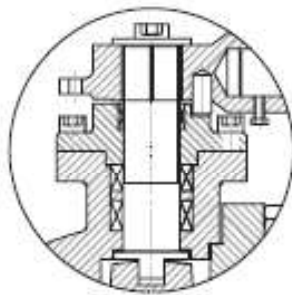
150-250 mil dizayn*

No	Part Name	Material
01	Body	Cast Steel
02	Flange	GP 240 GH /G-SC25
03	Ball	Stainless Steel 1.4021/ 1.4057/1.4301/1.4401
04	Ball Seal	PTFE
05	Ball Spindle	Stainless Steel 1.4021
06	Spindle Seal	PTFE
07	O-ring	EPDM
08	Packing	Pure Graphite
09	Limiting Body	Cast Iron EN-JL 1040/CG25
10	Stem Seal	PTFE
11	Lever Body	Cast Iron EN-JL 1040/CG25
12	Stud	Steel
13	Nut	TS 1026/2
14	Pin	Steel St40
15	Hex Bolt	Steel
16	Hex.Socked Bolt	DIN 912
17	Lever	Steel St37
18	Washer	Steel
19	Hex.Socked Bolt	DIN 912

PN 40					
DN / Size	100	125	150	200	250
DN / Size	4"	5"	6"	8"	10"
L	350	325	350	400	450
H	199	241	254	287	335
G	450	710	856	1000	1000
Weight (kg)	37	54	78	150	231



65-150 mm dizayn



200-300 mm dizayn

No	Part Name	Material
01	Body	Cast Iron
02	Flange	EN-JL 1040/GG25
03	Ball	Stainless Steel 1.4021/ 1.4057/1.4301
04	Ball Seal	PTFE
05	Ball Spindle	Stainless Steel 1.4301
06	Spindle Seal	PTFE
07	O-ring	EPDM
08	Ring	Pure Graphite
09	Limiting Body	Cast Iron EN-JL 1040/GG25
10	Spindle Seal	PTFE
11	Lever Body	Cast Iron EN-JL 1040/GG25
12	Stud	Steel
13	Nut	TS 1026/2
14	Pin	Steel ST40
15	Hex Nut	Steel
16	Hex.Socked Bolt	DIN 912
17	Lever	Steel ST37
18	Washer	Steel
19	Bolt	DIN 912

PN 16								
DN / Size	65	80	100	125	150	200	250	300
DN / Size	2 ½"	3"	4"	5"	6"	8"	10"	12"
L	290	310	350	325	350	400	450	500
H	141	152	188	241	241	254	287	335
G	280	280	450	710	710	856	1000	1000
Weight (kg)	17,4	21,8	30,6	40,4	56,8	92,8	141	174



CHECK VALVES

1. Lift Type Check Valve
2. Tilting Check Valves
3. Swing Check Valve
4. Disc Check Valve

Product Description

It is an installation equipment used to prevent fluid level turn by minimizing pressure loss due to its Y type design when there is any change in characteristic of the fluid in the line. Due to its spring design, it prevents damage that may occur in the system by minimizing possibility of shock effect.

Pressure Class: PN10-PN16-PN25-PN40.

Body Material: Ductile Iron (GGG40-GGG50)

Paint: WRAS approved blue electrostatic epoxy powder paint (RAL 5005).

Fields of Application

At pump lift stations, in cases that do not require backflow.

Paint: WRAS approved blue electrostatic epoxy powder paint (RAL 5005)



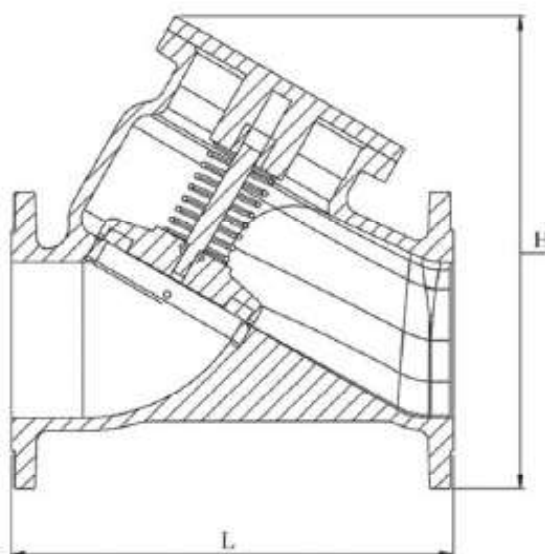
No	Part Name	Material
01	Main Body	GGG40 – GGG50
02	Seat ring	Bronze
03	Disc Seal	EPDM
04	Disc	GGG40/SS 304
05	Shaft	SS 304
06	Spring	SS 304
07	Cover Bush	Bronze
08	Cover	GGG40 – GGG50

• All connection elements (bolts, nuts, washers) are used as galvanized with 8.8 quality (A2-70 quality stainless steel is used optionally).

• All sealing elements (o-ring, gasket) are EPDM.



1



DN	50	65	80	100	125	150	200	250	300	350	400	500	600
L	205	205	250	320	370	415	500	605	725	733	990	1250	1450
H	165	485	200	220	250	285	340	405	460	520	680	1200	1440
weight	10	14	18	30	45	65	140	210	240	320	680	1100	1650

* Length measurements are given in "mm", weight measurements are given in "kg".

Product Description

Tilting check valve consists of a cylindrical body, disc, a shaft which holds and carries the disc in the valve, weight handle and weight and occupies smaller place than swing check valves. It is not recommended to be used for waste water.

Pressure Class: PN10-PN16-PN25.

Body Material: Ductile Iron (GGG40-GGG50)

Paint: WRAS approved blue electrostatic epoxy powder paint (RAL 5005).

Fields of Application

At pump lift stations, in cases that do not require backflow.

Relevant Standards

EN 558 series14, DIN3202 F4 ,EN 1092-2.

Operation

Accessory: Hydraulic brake unit.

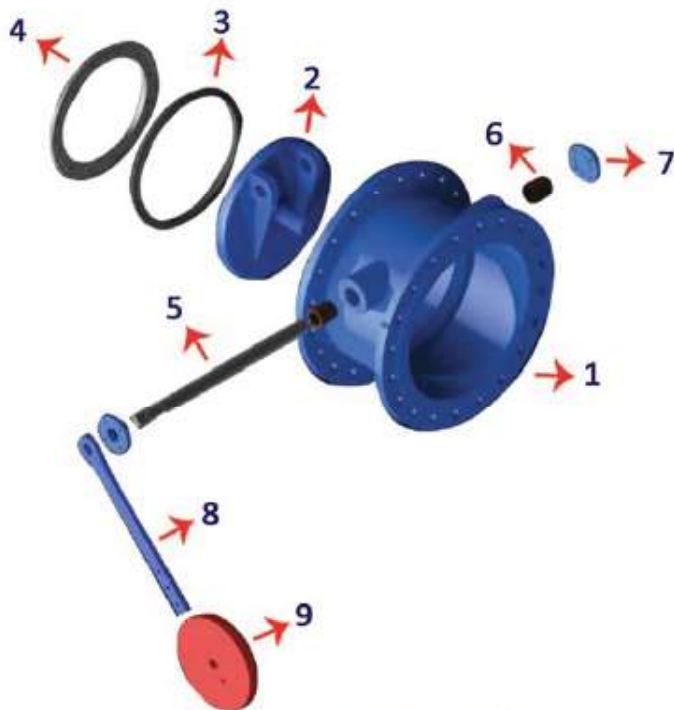
Other Technical Details

Production Range: DN200-DN1200

Pressure Class: PN10 - PN16 - PN25

Check Valve

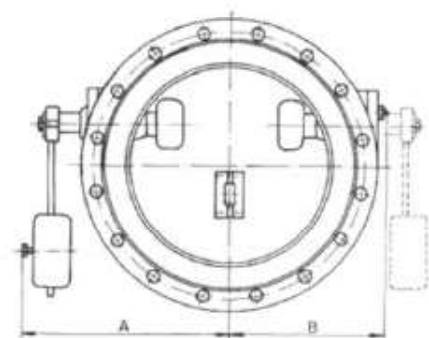
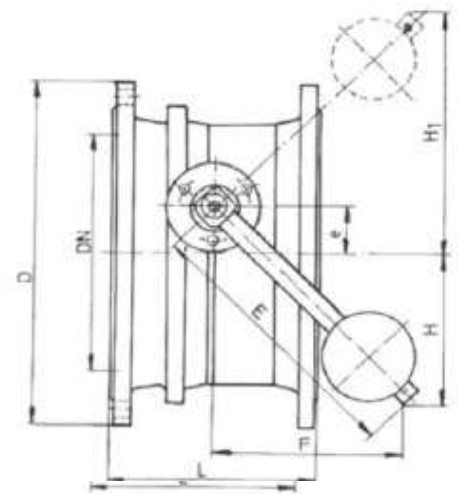
Tilting Check Valve



No	Part Name	Material
01	Main Body	GGG40-GGG50
02	Disc	GGG40-GGG50
03	Disc Seal	EPDM
04	Retaining Ring	GGG40/SS 304
05	Shaft	SS 304
06	Shaft Bush	Bronze
07	Shaft Cover	GGG40-GGG50
08	Counterweight Handle	St-37
09	Counterweight	GGG40

• All connection elements (bolts, nuts, washers) are used as galvanized with 8.8 quality (A2-70 quality stainless steel is used optionally).

• All sealing elements (o-ring, gasket) are EPDM.



DN mm	L mm	A mm	B mm	F mm	E mm	H mm	H ₁ mm
200	230	250	240	142	200	175	215
250	250	310	290	178	250	192	240
300	12	270	340	320	212	300	270
350	290	380	350	248	350	270	340
400	310	410	380	283	400	299	380
450	330	420	390	318	450	330	420
500	350	490	440	355	500	380	480
600	390	555	500	425	600	446	570
700	430	630	570	495	700	515	660
800	470	700	650	566	800	605	770
900	510	770	720	638	900	675	860
1000	550	840	790	708	1000	747	950
1200	630	915	795	900	1050	802	1000

* Length measurements are given in "mm".

Product Description

Swing check valve is a type of industrial valve that allows the flow of fluid in one direction while preventing backflow in the opposite direction. It operates based on the swinging motion of a disc or flap, which opens to allow flow and closes to prevent reverse flow.

Pressure Class: PN10-PN16.

Body Material: Grey Iron/Cast Iron (GG25) etc.

Working Temp. Max: 90°C

Fields of Application

Swing check valves are commonly used in various industries, including Water Supply Systems, Wastewater and Sewage Systems, Oil and Gas Industry, Chemical Processing, Marine Shipbuilding and HVAC Systems. They ensure the flow of water, fuel, and other fluids in the desired direction, preventing reverse flow and maintaining system efficiency.

Relevant Standards

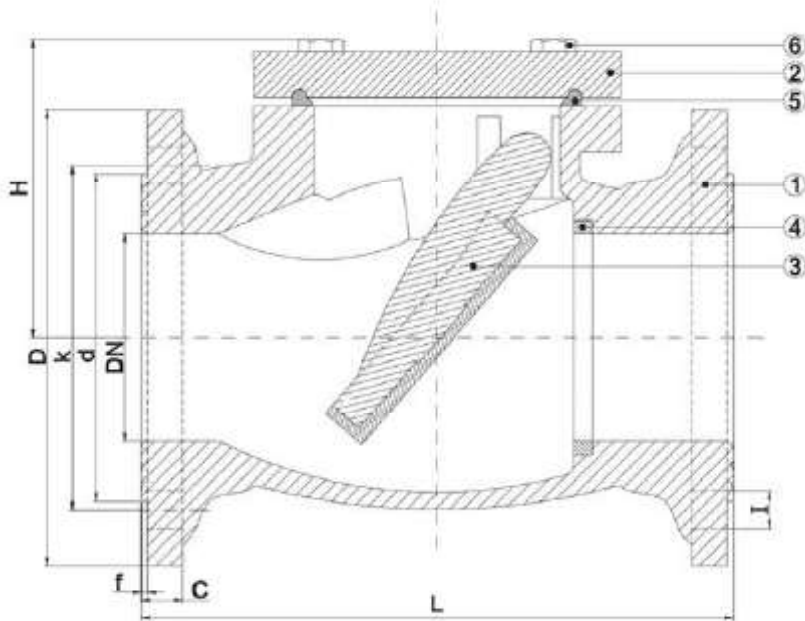
DIN 2533.

Operation

The swing check valve operates by the swinging motion of the disc or flap. When there is forward flow, the fluid pressure pushes the disc away from the seat, allowing the fluid to pass through. When the flow direction reverses or stops, the disc swings back due to gravity and fluid pressure, blocking the flow and preventing backflow.

Check Valve

Swing Check Valve



No	Part Name	Material
01	Body	EN-GJS-400(GGG40)
02	Bonnet	EN-GJS-500(GGG50)
03	Disc	EN-GJS-400-500+EPDM KAPLI
04	Bushing	MS58
05	Cover Gasket	EPDM
06	Stud	8.8 GALVANİZ

PN 10 - PN 16									
DN (mm)	D (mm)	k (mm)	d (mm)	f (mm)	C (mm)	I×n	L (mm)	H (mm)	Weight (kg)
Ø50(PN10-16-25)	165	125	99	3	20	Ø19×4	200	124	13
Ø65(PN10-16-25)	185	145	118	3	20	Ø19×4	240	153	18
Ø80(PN10-16-25)	200	160	132	3	22	Ø19×8	260	150	23
Ø100(PN10-16)	220	180	156	3	24	Ø19×8	300	144	27
Ø100(PN25)	235	190	156	3	28	Ø23×8	300	144	27
Ø125(PN10-16)	250	210	184	3	26	Ø19×8	350	165	40
Ø125(PN25)	270	220	184	3	30	Ø28×8	350	165	44
Ø150(PN10-16)	285	240	211	3	26	Ø23×8	400	198	55
Ø150(PN25)	300	250	211	3	34	Ø28×8	400	198	60
Ø200(PN10)	340	295	266	4	26	Ø23×8	500	227	90
Ø200(PN16)	340	295	266	4	30	Ø23×12	500	227	90
Ø200(PN25)	360	310	274	4	34	Ø28×12	500	227	99
Ø250(PN10)	395	350	319	4	28	Ø23×12	600	240	140
Ø250(PN16)	405	355	319	4	32	Ø28×12	600	240	140
Ø250(PN25)	425	370	330	4	36	Ø31×12	600	240	154
Ø300(PN10)	445	400	370	4	28	Ø23×12	700	245	190
Ø300(PN16)	460	410	370	4	32	Ø28×12	700	245	190
Ø300(PN25)	485	430	389	4	40	Ø31×16	700	245	209

Product Description

Disc check valves, also known as swing check valves, are a type of check valve that utilize a hinged disc or flap to control the flow of fluid and prevent backflow. Here are the technical details of disc check valves.

Pressure Class: PN10-PN16-PN25-PN40.

Working Temperature Range: -40 °C to 120 °C (16 BAR), -40 °C to 180°C (14 BAR), -40°C to 250 °C (13 BAR).

Body: Grey Iron/Cast Iron (GG25), Stainless Steel AISI 316 1.4408/1.4301 etc.

Fields of Application

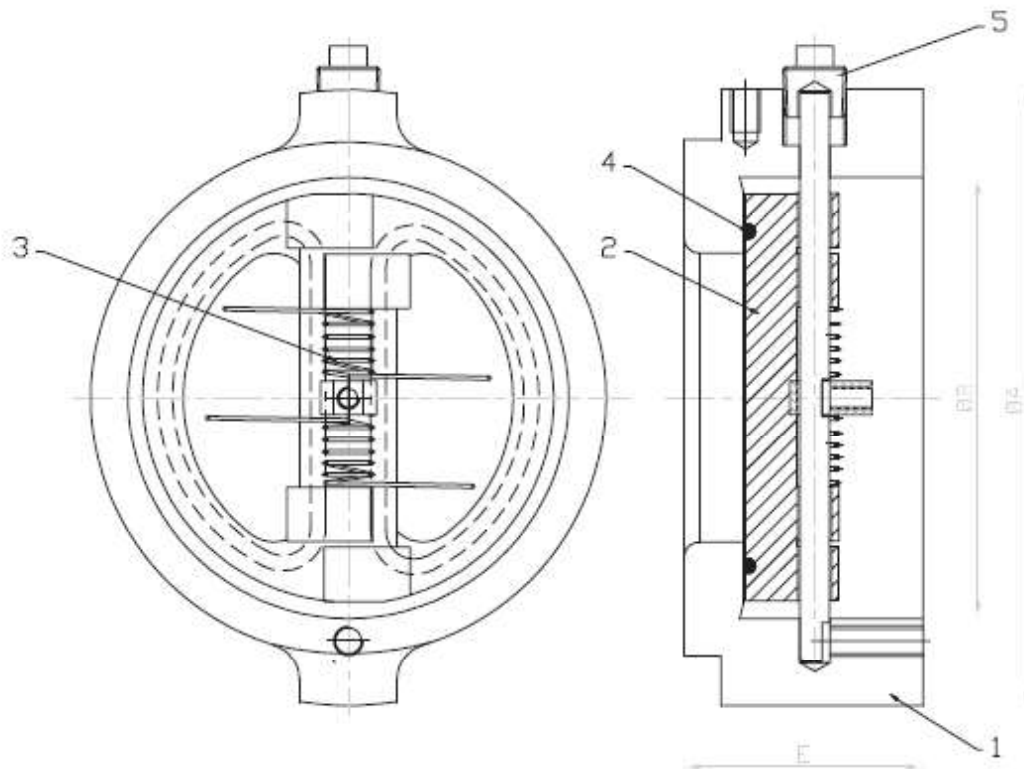
Disc check valves are commonly used in applications where backflow prevention and flow control are crucial, such as water supply systems, wastewater treatment plants, oil and gas processing, chemical plants, HVAC systems, and power generation facilities.

Relevant Standards

DIN2501, DIN EN1092, DIN 3202-K4.

Operation

Swing Action: The disc check valve operates by the swinging motion of the disc or flap. When there is forward flow, the fluid pressure pushes the disc away from the seat, allowing the fluid to pass through. When the flow direction reverses or stops, the disc swings back due to gravity and fluid pressure, blocking the flow and preventing backflow.

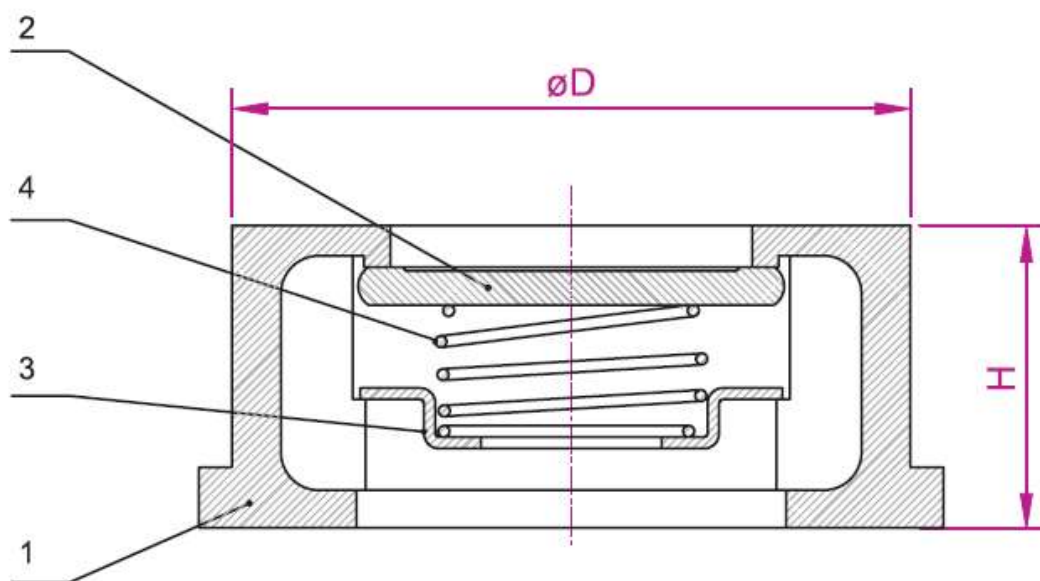


No	Part Name	Material
01	Body	Cast Iron EN-JL 1040 / GG 25
02	Disc	
03	Spring Plate	
04	Spring	Stainless Spring Steel
05	Seat	EPDM
06	Securing Ring	Stainless Spring Steel
05	Sleeve	Stainless Steel 1.4021/1.4301

Applications: Water, hot water (up to 90°C) and other neutral fluids to be used in heating, cooling & ventilating system.

Ends: Wafer type, between two flanges acc to DIN 2501 (DIN EN 1092)

Face to Face: DIN 3202-K4



Dimensions

PN 16				
DN / Size	A	B	E	Weight (Kg)
40	-	-	-	1
50	107	65	43	1.3
65	127	80	46	1.9
80	142	94	64	3
100	162	117	64	4
125	192	145	70	6
150	218	170	76	7.5
200	273	224	89	12
250	328	265	114	-
300	382	310	114	-



CONTROL VALVES

1. Control Valves 973 Serial
2. Control Valves 968 Serial
3. Needle Plunger Valves

Product Description

This series of hydraulic control valves are designed as type “y” so as to create minimum pressure loss effect at maximum flow. Control valves have a diaphragm actuator, disc closure and double control chamber. While the first chamber is controlled by pilot mechanism, it enables opening and closing by operating in a controlled manner and smoothly due to valve shaft steadily mounted on the valve body. The second chamber allows the valve to close slowly and in a leakproof manner without shock depending on pressure and flow rates of the fluid. Due to extra port attached to disc, stability of the flow is ensured even at low flow rates.

Technical Details

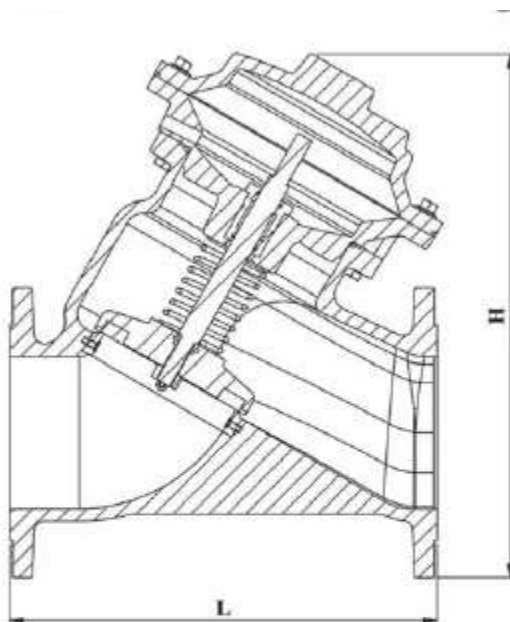
Pressure Class: PN10-PN16-PN25-PN40.

Paint: WRAS approved blue electrostatic epoxy powder paint (RAL 5005).

Relevant Standards

EN 1092 - 2, EN 558 + AI SERIES 1- SERIES 48

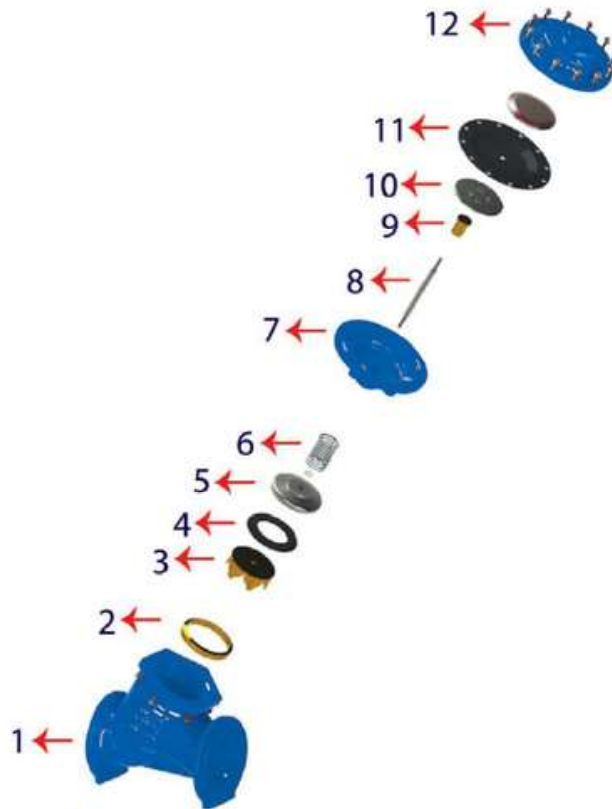




DN		50	65	80	100	125	150	200	250	300	350	400	500	600	700	800
L		205	205	250	320	370	415	500	605	725	733	990	1250	1450	1650	1855
H		295	315	325	340	415	500	575	740	810	890	950	1420	1743	1580	1700
Flat Disc	Kv	58	80	135	215	420	540	930	1488	1785	1925	3215	3650	4800	5800	6720
	Cv	66	92	155	247	483	621	1070	1711	2050	2213	3697	4197	5520	6670	7720
V-Port Disc	Kv	44	62	104	165	323	415	715	1144	1373	1480	2473	-	-	-	-
	Cv	51	71	120	190	371	477	822	1315	1579	1702	2844	-	-	-	-
weight		9	14	25	35	45	68	95	175	250	395	500	1040	1810	2200	3200

* Length Measurements are given in "mm" and weight measurements are given in "kg".

* The values of Kv and Cv are given in "m³/h".



No	Part Name	Material
01	Valve Main Body	GGG40 - GGG50
02	Seat Ring	BRONZE/ SS 304
03	V- ort / A- ort / U- ort	BRONZE/ SS 304
04	Sealing Ring	EPDM
05	Piston Head	GGG40 / SS 304
06	Spring	SS 304
07	Intermediate Body	GGG40 - GGG50
08	Shaft	SS 304
09	Shaft Centering Sign	BRONZE
10	Diaphragm Plate	GGG40 / SS 304
11	Diaphragm	NBR
12	Cover	GGG40 - GGG50

- All connection elements (bolts, nuts, washers) are used as galvanized with 8.8 quality (A2-70 quality stainless steel is used optionally).
- All sealing elements (o-ring, gasket) are EPDM.

Product Description

Hydraulic control valves are designed as valves with diaphragm actuator and closed diaphragm. Valve enables to obtain more favorable flow with higher flow rate by creating minimum friction resistance on the fluid due to harmony of the body and diaphragm.

Body: Ductile Iron (GGG40-GGG50).

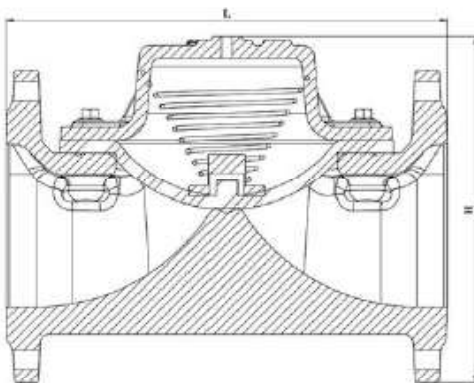
Technical Details

Pressure Class: PN10-PN16.

Paint: WRAS approved blue electrostatic epoxy powder paint (RAL 5005).

Relevant Standards

EN 1092-2, EN 558 + AI.



ON	50	65	80	100	125	150	200	250	300
L	200	270	280	310	370	40	490	600	720
H	150	160	170	180	210	320	400	450	475
Kv	70	100	130	290	405	490	790	1400	1800
Cv	80	115	149	333	465	563	908	1610	2070
weight	11	15	17	25	30	52	102	127	140

* Length Measurements are given in "mm" and weight measurements are in "kg"; values of Kv and Cv are given in "m³/h".

No	Part Name	Material
01	Valve Main Body	GGG40 - GGG50
02	Diaphragm	Reinforced Natural Rubber/EPDM
03	Spring Retaining Ring	HDPE
04	Spring	55-304
05	Valve Main Body Cover	GGG40 - GGG50

- All connection elements (bolts, nuts, washers) are used as galvanized with 8.8 quality (A2-70 quality stainless steel is used optionally).
- All sealing elements (o-ring, gasket) are EPDM.



Product Description

A needle (plunger) valve is a type of valve used to control the flow of fluid or gas with high precision. It is designed with a slender, tapered needle-shaped plunger that slides into a conical seat to regulate the flow through the valve.

Pressure Class: PN10-PN16-PN25-PN40.

Paint: WRAS approved blue electrostatic epoxy powder paint (RAL 5005).

Body: Ductile Iron (GGG40-GGG50) etc.

Fields of Application

Irrigation lines, high pressure drinking water lines, drinking water treatment plants, tank entrances, turbine bypass lines.

Relevant Standards

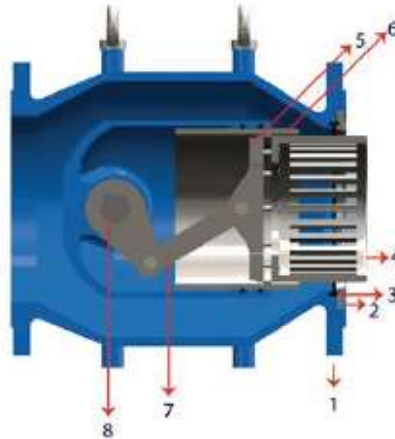
EN 1092-2.

Operation

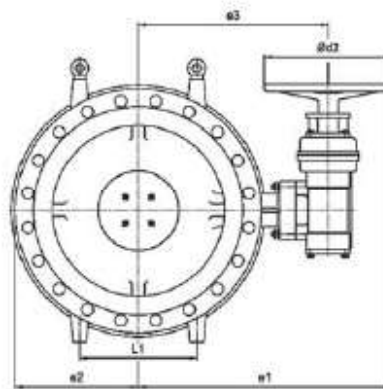
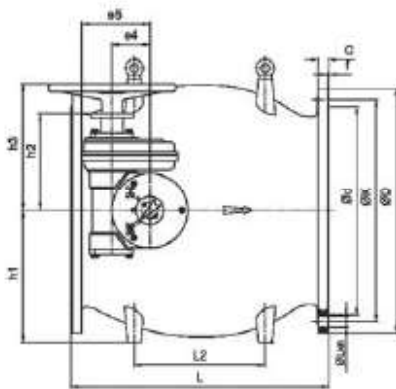
Needle valves are commonly used in industries such as oil and gas, chemical processing, pharmaceuticals, laboratories, and instrumentation. They are often employed in situations where precise control of flow rates, shut-off capabilities, and resistance to leakage are essential.

Other Technical Details

Accessory: Electric Actuator, slotted cylinder



No	Part Name	Material
01	Main body	GGG40 - GGG50
02	Retaining Ring	SS-304
03	Piston Sealing Ring	EPDM
04	Slotted Cylinder	SS-304
05	Disc	SS-304
06	Piston	SS-304
07	Push Rod	SS-304
08	Push Crank	SS-304



- A2-70 quality stainless steel is used for all connection elements (bolt, nut, washer).
- All sealing elements (o-ring, gasket) are EPDM.

DN	L	L1	L2	e1	e2	e3	e4	e5	Ød2	h1	h2	h3
200	400	140	200	445	188	312	95	158	245	198	163	239
250	450	170	230	480	200	357	95	158	245	235	163	239
300	500	200	250	518	230	395	95	158	245	268	163	239
350	550	240	280	558	260	435	95	158	245	300	163	239
400	600	270	300	656	296	471	110	175	370	340	184	271
450	650	300	330	495	330	510	110	175	370	353	184	271
500	750	340	380	736	370	551	110	198	370	388	285	372
600	900	400	450	821	440	636	156	245	370	455	334	420
700	1050	470	530	908	510	723	190	313	370	520	397	484
800	1200	540	600	978	580	793	190	313	370	590	397	484
900	1350	600	680	1048	655	863	190	313	370	670	397	484
1000	1500	670	750	1131	730	946	142	365	370	750	432	519
1200	1800	800	900	1277	865	1092	242	365	370	880	432	519
1400	2100	940	1050	1442	1015	1257	242	365	370	1030	432	519
1600	2400	1070	1200	1680	1153	1437	290	515	485	1180	538	625

AIR RELEASE VALVES

1. Double Ball Air Release Valves
2. Dynamic Ball Air Release Valves
3. Single Ball Air Release Valves

Product Description

A double ball air release valve is a type of valve used in fluid systems to release air or gas pockets from the system while preventing the entry of liquid. It is commonly employed in pipelines, water distribution networks, and other fluid handling applications to maintain efficient operation and prevent issues such as air locking or pressure surges.

Pressure Class: PN10-PN16-PN25-PN40.

Paint: WRAS approved blue electrostatic epoxy powder paint (RAL 5005).

Body: Ductile Iron (GGG40)

Fields of Application

At pump outputs, at the peak of pipeline, every 500 meters on flat pipeline.

Relevant Standards

EN 1074-4, EN 1092-2.

Operation

The double ball air release valve functions based on the difference in density between air and liquid. When the system is initially filled with liquid, air or gas pockets are present within the pipeline. As liquid enters the valve chamber, the buoyant sealing balls rise to the top of their respective chambers, allowing the air or gas to escape through the valve's vent.

Product Description

Dynamic air release valves, also known as automatic air release valves or air/vacuum valves, are essential components in fluid systems that allow the release of air or gas from pipelines while preventing the entry of air or vacuum into the system. These valves help maintain system efficiency, prevent damage to pipelines, and reduce the risk of water hammer.

Pressure Class: PN10-PN16-PN25-PN40.

Paint: WRAS approved blue electrostatic epoxy powder paint (RAL 5005).

Body: Ductile Iron (GGG40.3)

Fields of Application

Dynamic air release valves are commonly used in water supply systems, wastewater treatment plants, irrigation systems, and other fluid handling systems. They are essential in systems where the presence of air or gas can disrupt flow, reduce efficiency, cause water hammer, or damage pipelines. At pump outputs, at the peak of pipeline, every 500 meters on flat pipeline

Relevant Standards

EN 1074-4, EN 1092-2.

Operation

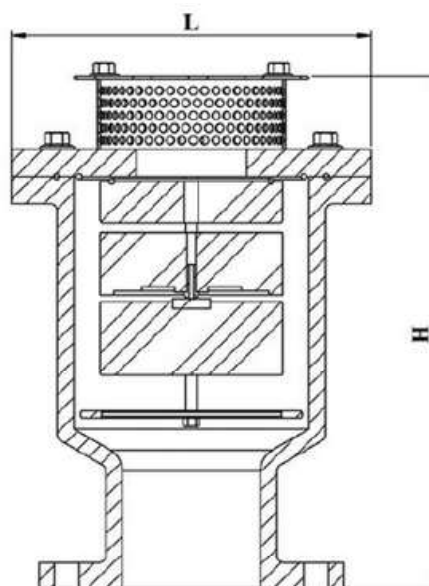
Air Release: When air or gas accumulates in the pipeline, the float mechanism rises, causing the valve to open. The accumulated air or gas is released through an orifice or vent at the top of the valve. **Water Seal:** When the fluid level rises and reaches the valve, the float mechanism falls due to buoyancy. This closes the valve, preventing the entry of water into the system. **Vacuum Release:** In the event of a vacuum forming within the system, the valve will open to allow air to enter and break the vacuum, preventing collapse or damage to the pipeline.



No	Part Name	Material
01	Main Body	GGG40-GGG50
02	Cover	SS-304/SS 316 L-GGG40
03	Protective Filter	SS 304
04	Filter Cover	SS 304
05	Ring	SS 304
06	Upper Float	HDPE
06a	Dynamic Float	HDPE
06b	Down Float	HDPE
07	Small Orifice Seal	EPDM
08	Float Guide	SS 304

• All connection elements (bolts, nuts, washers) are used as galvanized with 8.8 quality (A2-70 quality stainless steel is used optionally).

• All sealing elements (o-ring, gasket) are EPDM.



DN	50	65	80	100	125	150	200	250	300	350	400
L	190	190	250	250	310	310	440	480	630	650	650
H	350	350	420	420	460	460	580	620	730	760	800
weight	17	19	25	28	42	67	98	113	145	155	170

Product Description

A single ball air release valve is a type of valve used in fluid systems to release air or gas pockets from the system while preventing the entry of liquid. It operates on similar principles as a double ball air release valve but consists of a single sealing ball instead of two.

Pressure Class: PN10-PN16-PN25-PN40.

Paint: WRAS approved blue electrostatic epoxy powder paint (RAL 5005).

Body: Ductile Iron (GGG40.3)

Fields of Application

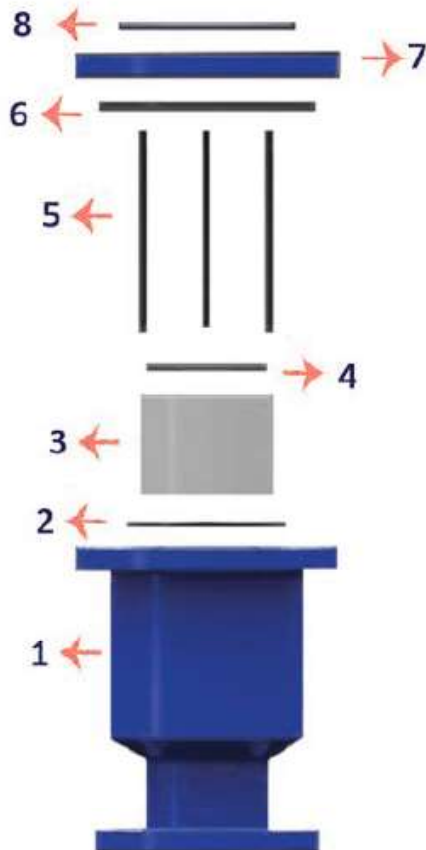
At pump outputs, at the peak of pipeline, every 500 meters on flat pipeline.

Relevant Standards

EN 1074-4, EN 1092-2.

Operation

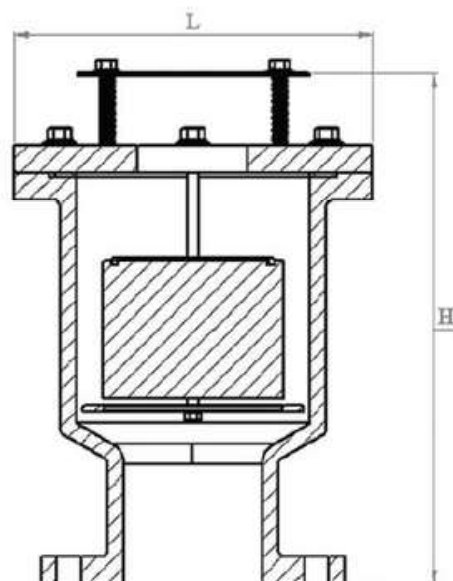
The single ball air release valve functions based on the difference in density between air and liquid. Initially, when the system is filled with liquid, air or gas pockets may be present within the pipeline. As liquid enters the valve chamber, the buoyant sealing ball rises to the top of the chamber, allowing the air or gas to escape through the valve's vent.



No	Part Name	Material
01	Body	GGG40
02	Float Ring	SS 304
03	Float	HDPE
04	O-Ring	EPDM
05	Float Guide	SS 304
06	Sealing Ring	EPDM
07	Body Cover	GGG40
08	Protective Cover	SS 304

• All connection elements (bolts, nuts, washers) are used as galvanized with 8.8 quality (A2-70 quality stainless steel is used optionally).

• All sealing elements (o-ring, gasket) are EPDM.



DN	50	65	80	100	125	150
L	190	190	250	250	280	280
H	350	350	420	420	430	440
weight	14	16	23	25	35	40

STRAINERS

1. Basket Type Strainer
2. Y-Type Strainer

Product Description

A basket type strainer is a mechanical filtration device used in piping systems to remove solid particles from fluids such as liquids or gases. It consists of a basket-shaped strainer element that captures and retains debris while allowing the fluid to pass through. Basket type strainers consist of manometers located at entrance and exit sections in order to understand whether body, cover, strainer, gasket, bolt, nut and filter are blocked or not.

Pressure Class: PN10-PN16-PN25.

Paint: WRAS approved blue electrostatic epoxy powder paint (RAL 5005).

Fields of Application

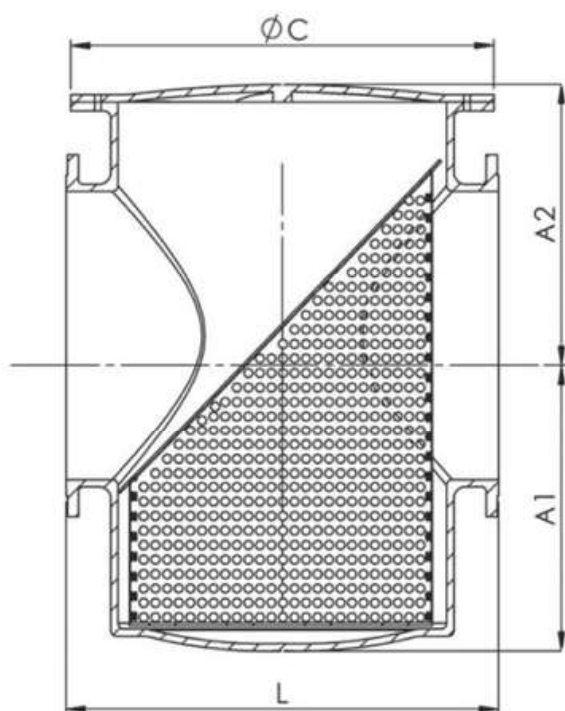
Basket type strainers are commonly used in industrial applications where it is necessary to protect pumps, valves, meters, and other equipment from damage caused by solid particles or debris in the fluid. They are widely utilized in water treatment plants, oil and gas pipelines, chemical processing plants, power plants, and HVAC systems.

Relevant Standards

EN 558+A1 Series 15, EN 1092-2.

Operation

The basket element, which is a perforated or meshed metal insert in the shape of a basket, captures and retains solid particles as the fluid passes through it. The openings or mesh sizes of the basket element are designed to allow the desired fluid flow while effectively trapping particles of a specific size or larger.



DN	L	A1	A2	C
250	530	340	356	479
300	630	397	407	537
350	690	454	459	606
400	750	511	510	675
450	810	568	561	732
500	880	625	613	796
600	1000	739	715	922
650	1065	796	766	988
700	1130	853	818	1054
750	1190	910	869	1135
800	1250	967	920	1192
900	1380	1081	1023	1307
1000	1500	1195	1126	1440
1050	1575	1252	1177	1504
1100	1650	1309	1228	1569
1200	1800	1423	1331	1698

Product Description

A Y-type strainer is a type of mechanical filtration device used in piping systems to remove solid particles from fluids such as liquids or gases. It is named after its shape, which resembles the letter "Y". The strainer is designed to capture and retain debris while allowing the fluid to pass through.

Pressure Class: PN10-PN16-PN25-PN40.

Paint: WRAS approved blue electrostatic epoxy powder paint (RAL 5005).

Body: Ductile Iron (GGG40-GGG50) etc.

Fields of Application

Y-type strainers are commonly used in industrial applications where it is necessary to protect pumps, valves, meters, and other equipment from damage caused by solid particles or debris in the fluid. They are widely utilized in water treatment plants, oil and gas pipelines, chemical processing plants, power plants, and HVAC systems.

Relevant Standards

EN 1092-2.

Operation

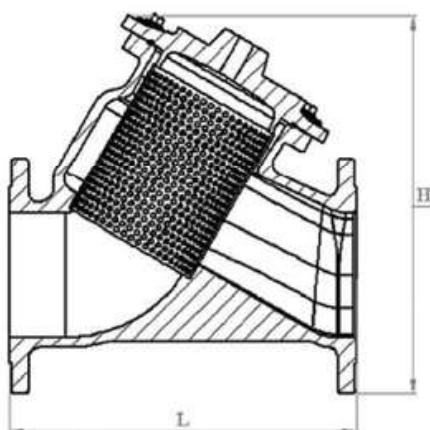
The operating principle of a Y-type strainer involves the capture and retention of solid particles using a strainer screen, while allowing the filtered fluid to pass through. The Y-shaped design and blowoff or drain connection enhance the strainer's performance and ease of maintenance in various industrial applications.



No	Part Name	Material
01	Main body	GGG40 - GGG50
02	Filter	SS-304/SS 316L
03	Main Body Cover	GGG40 - GGG50
04	Discharge Cap	Brass

• All connection elements (bolts, nuts, washers) are used as galvanized with 8.8 quality (A2-70 quality stainless steel is used optionally).

• All sealing elements (o-ring, gasket) are EPDM.



DN	50	65	80	100	125	150	200	250	300	350	400	500	600	700	800
L	205	205	250	320	370	415	500	605	725	733	990	1250	1450	1650	1855
H	295	315	325	340	415	500	575	740	810	890	950	1100	1210	1320	1420
weight	8	12	22	28	38	57	83	160	233	370	460	570	910	1300	1600

* Length measurements are given in "mm", weight measurements are given in "kg".



DISMANTLING JOINTS

www.sejineurope.com

Dismantling Joints

Product Description

Dismantling joint is an equipment consisting of interior flanged pipes, flange, o-ring, bolts and nuts. It is used to simplify assembly and disassembly of flanged valves in all pipe systems. It allows for simplified disassembly by taking axial forces applied to the valve in the pipeline on itself. Length of the dismantling joint is shortened by ± 25 mm to create required working area during the assembly and disassembly. Our dismantling joints are manufactured as semi-rigid. Fully rigid and telescopic types are manufactured if requested.

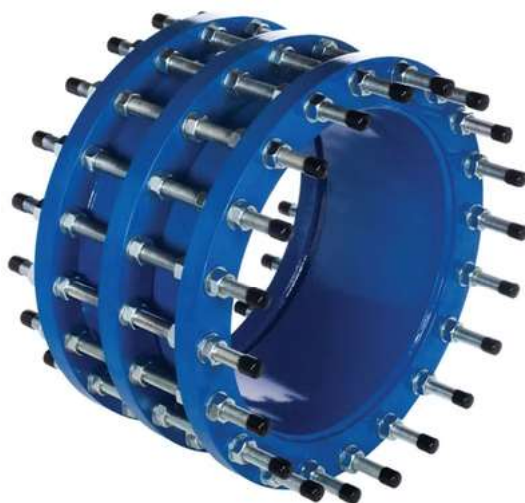
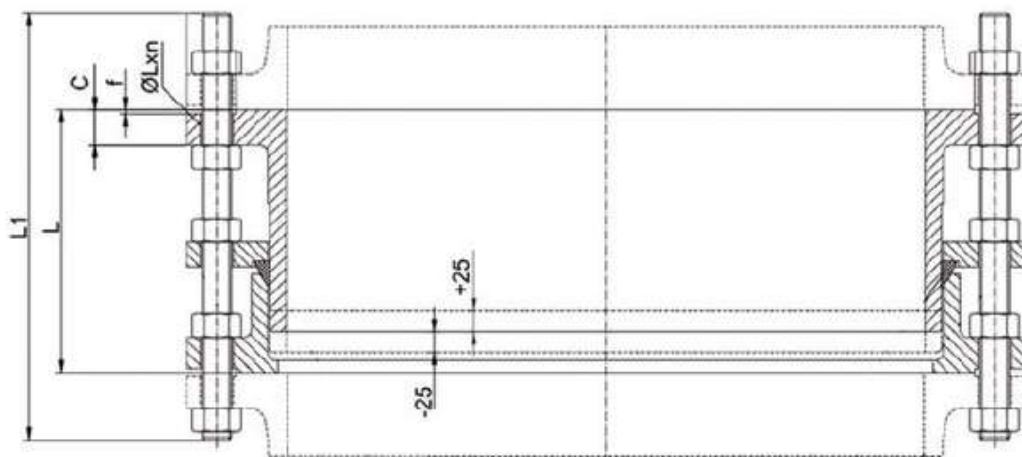
Pressure Class: PN10-PN16-PN25-PN40.

Paint: WRAS approved blue electrostatic epoxy powder paint (RAL 5005).

Body: Ductile Iron (GGG40-GGG50) etc.

Fields of Application

Dismantling joints are commonly used in applications where regular maintenance, inspection, or repair of valves and piping is required. They are often found in water supply systems, sewage systems, chemical processing plants, power plants, and other industrial installations.



Dismantling Joints

DN	PN10					PN16		
	L	L1	ØD	Øk	ØLxn	D	k	Lxn
50	180	280	165	125	19x4	165	120	19x4
65	180	280	185	145	19x4	185	145	19x4
80	200	330	200	160	19x8	200	160	19x8
100	200	330	220	180	19x8	220	180	19x8
125	200	330	250	210	19x8	250	210	19x8
150	200	330	285	240	23x8	285	240	23x8
200	200	330	340	295	23x8	340	295	23x12
250	220	360	400	350	23x12	405	355	28x12
300	220	360	455	400	23x12	460	410	28x12
350	230	360	505	460	23x16	520	470	28x16
400	230	370	565	515	28x16	580	525	31x16
450	250	390	615	565	28x20	640	585	31x20
500	260	390	670	620	28x20	715	650	34x20
600	260	410	780	725	31x20	840	770	37x20
700	260	410	895	840	31x24	910	840	37x24
800	290	460	1015	950	34x24	1025	950	41x24
900	290	460	1115	1050	34x28	1125	1050	41x28
1000	290	500	1230	1160	37x28	1255	1170	44x28
1100	300	510	1340	1270	37x32	1355	1270	44x32
1200	320	520	1455	1380	41x32	1485	1390	50x32
1300	370	630	1585	1490	42x32	1585	1490	50x32
1400	360	660	1675	1590	44x36	1685	1590	50x36
1500	380	690	1785	1700	44x36	1820	1710	57x36
1600	390	700	1915	1820	50x40	1930	1820	57x40
1800	450	710	2115	2020	50x44	2130	2020	57x44
2000	450	740	2325	2230	50x48	2345	2230	62x48

- A2-70 quality stainless steel is used for all connection elements (bolt, nut, washer).
- All sealing elements (o-ring, gasket) are EPDM.

SOME OF OUR COMPLETED PROJECTS

COUNTRY	END USER	CLIENT	PROJECT NAME	VALVE TYPE	FLANGE RATING	BODY MATERIAL	DISC MATERIAL	SIZE	YEAR
SAUDI ARABIA	ARAMCO	SAMSUNG C&T	Tanajib ISPP project	Butterfly valve (MOV)	150#	A216 WCB	A351 CF8M	3" ~ 52"	2023
INDONESIA	Lotte Chemical Co., Ltd.	Hyundai Engineering	LINE Project	Butterfly valve	150#	B148 C95800	B148 C95800	3" ~ 54"	2023
GUAM	KEPCO&EWP	Doosan Heavey Ind. Co.,Ltd.	Guam Ukudu combined Cycle Power Plant(WT&WWT)	Butterfly Valve/ Non Return valve	150#	A216 WCB	A351 CF3M	8" ~ 36"	2023
TAIWAN	TAIWAN POWER COMPANY	Hyundai Engineering	Datan Combined Cycle Expansion Project Unit 7 Add On	Butterfly valve (MOV)	150#	A536 Gr.65-45-12+R.L	A351 CF3M + R.L	30"-104"	2022
OMAN	GS INIMA	VCF	BARKA V IWO - RO DESALINATION PLANT	DUAL Check Valve	PN6 PN10 600#	A995 5A A351 CF8M	A995 5A A351 CF8M	DN80~DN900	2022
INDONESIA	PT INDO RAYA TENAGA	EPC Energy Singapore - HK	JAWA 9 & 10 COAL FIRED STEAM POWER PLANT PROJECT	Butterfly valve / Non Return valve	AWWA C207 CLASS D 75B	A536Gr.65-45-12+Ebonite Lining	A536Gr.65-45-12+Ebonite Lining	DN800~DN3500	2022
MALAYSIA	PULAU INDAH POWER PLANT SDN BHD	POSCO E&C	PULAU INDAH COMBINED CYCLE POWER PLANT	Butterfly valve / Non Return valve	150#	A216 WCB A351 CF3M A536 Gr.65-45-12+R.L	A351 CF8 A351 CF3M A536 Gr.65-45-12+R.L	2"-104"	2022



SOME OF OUR COMPLETED PROJECTS

KOREA	Cheonga Energy Korea Western Power GS Energy	SUNG JIN CONTROL CO., LTD.	Gimpo Combined Heat & Power Plant	Butterfly valve / Non Return valve	150#	A536 Gr.65-45- 12+R.L	A351 CF3M	30"~78"	2022
USA	U.S Arnold Air Force Base	Water Technology Resources	Jet Engine Combustion	Butterfly valve	AWWA C 207 CLASS D	A516 Gr.70	A156 Gr.70	156"	2022
UAE	FUJAIRAH POWER COMPANY	SAMSUNG C&T	Fujairah 3 IPP PROJECT	Butterfly valve / Non Return valve	150#	A216WCB+R/L	A890 5A A216WCB+R/ L	16" ~ 90"	2021
VIETNAM	Van Phong Power Company Limited	CTCI Corporation	Van Phong 1 BOT Thermal Power Plant Project	Butterfly valve / Non Return valve	AWWA C 207 CLASS D	A216WCB+R/L	A536Gr.65-45- 12+R/L	104"	2021
BANGLADESH	RELIANCE BANGLADESH LNG & POWER LIMITED	SAMSUNG C&T	Meghnaghat 718MW CCPP	Butterfly valve / Non Return valve	PN6 #150	A536Gr 65-45- 12+R.L A216WCB	A536Gr 65-45- 12+R.L A351CF8	12" ~ DN2000	2021
SINGAPORE	EXXON MOBIL	SBM OFFSHORE	LIZA UNITY PHASE 3	DUAL Check Valve	150# ~ 2500#	A216WCB A352 LCC A9954A B62 C83600 A351CF8M	A351CF8M A9954A B62 C83600 A351CF8M A9955A	2" ~ 20"	2021
SAUDI ARABIA	SWCC	SASAKURA	Construction of MED- TVC unit and Water Production	Butterfly Valve	150#	A351CF3M	A351CF3M	24"	2021



SOME OF OUR COMPLETED PROJECTS

SINGAPORE	PETRO BRAS	MOWE Marine & Offshore	FPSO ANNA NERY	Butterfly Valve	150#	A216WCB	B148C95800	6" ~ 24"	2020
ITALY	SAIPEM	CDB ENGINEERING	Cooling water side stream filter package	Pneumatic Butterfly Valve	150# ~ 300#	A536GR.60-40-18	B148C95800	8" ~ 10"	2020
AUSTRALIA	Chevron Australia Pty Ltd	Chevron Australia Pty Ltd	CHEVRON AUSTRALIA PTY LTD	Butterfly Valve	300#	BS1400 LG2	BS1400 LG2	4" ~ 6"	2020
QATAR	QATAR CHEMICAL	QATAR CHEMICAL	Q2 SW DISCHARGE	DUAL Check Valve	150#	A395+EPDM	B148 C95800	36"	2019
KUWAIT	KNPC	KNPC(WAA)	MAA DC BUTTERFLY VALVE FOR MPD-II	Butterfly Valve	150#	A216WCB+R.L	B148C95800	4"~30"	2019
ALGERIA	Sonelgaz Electricity Production Company (SPE)	SAMSUNG TRD. CONT. CO., LTD	ALGERIA MOSTAGHANEM CCPP	Butterfly Valve	150#	A536+R/L	A536+R/L	3"~114"	2018
IRAN	MINES & METALTECHNOLOGICAL ENGINEERING CO.	HJ MetalKorea Co., Ltd	KOWSAR GISD MEGA MODULE	Butterfly Valve	150#	A216WCB	A216WCB	16"~ 72"	2021



SOME OF OUR COMPLETED PROJECTS

MOROCCO	Safi Energy Company	Safi Energy Company / Daewoo E&C	Safi Independent Power Project / Morocco	Butterfly Valve	150#	A536+R/L	A351CF8M A536+R/L	4" ~ 40"	2017
Kazakhstan	Karabatan Utility Solution LLP	Karabatan Utility Solution LLP / Doosan Heavy Industries & Construction	Karabatan Power Plant	Butterfly Valve	150#	A216WCB A351CF8	A351CF8	3" ~ 20"	2017
PANAMA	Gas Natural Atlantico S. de R.L	Gas Natural Atlantico S. de R.L / Posco E&C	Panama Colon Power	Butterfly Valve	150#	A536+R/L	A536+R/L	12" ~ 76"	2017
MALAYSIA	JIMAH EAST POWER SDN BHD	JIMAH EAST POWER SDN BHD / Hyundai Engineering Co., Ltd.	JIMAH EAST POWER 2 X 1000MW CFPP	Butterfly Valve	150#	A536+R/L A216WCB	A536+R/L A351CF3M	3" ~ 112"	2016
ALGERIA	Mostaganem CCPP	SAMSUNG TRD. CONT. CO., LTD	Algeria Mostaganem CCPP 1,450MW and 1,163MW combined-cycle power plant	Butterfly Valve	150#	A216WCB	A351CF8	4" ~ 114"	2016
TURKEY	ACWA	SAMSUNG TRD. CONT. CO., LTD	KIRIKKALE IPP	Butterfly Valve	150#~600#	A536-65-45-12 A217WC6	A351CF8 A743CF8	14" ~ 72"	2016
KENYA	THE KENYA ELECTRICITY GENE.	THE KENYA ELECTRICITY GENE. - HYUNDAI ENGINEERING CO., LTD.	OLKARIA IV GEOTHERMAL POWER PLANT	Butterfly Valve	150#	A216WCB	A351CF8M	32"	2013



SOME OF OUR COMPLETED PROJECTS

CHINA	CMC INTERNATIONAL	CMC INTERNATIONAL / NEWMANS - CHINA	District Heating Project	Butterfly Valve	PN25	A216WCB	A216WCB	12" ~ 40"	2012
EGYPT	ENPPI	PHOCEENINE (FRANCE)	-	DUAL Check Valve	150#	A216 WCB	A351 CF8	2" ~ 44"	2004
THAILAND	-	THAILAND (HWAKS CORP.)	PONG PAISAN Power Station	Butterfly Valve	150LB~300L B	A351 CF8M	A351 CF8M	20" ~ 60"	2002
GERMANY	-	LURGI Engineering CO.,Ltd. -Germany	SHANGHAI- BASF	Butterfly Valve	150#~300#	A351 CF8MA352 LCB	A351 CF8M	2" ~ 48"	2006



APPROVALS AND CERTIFICATES



APPROVALS AND CERTIFICATES



TEST CERTIFICATE

ORIGINAL

Certificate No. : B-50/2016-0023/015-02
Page 1 of 1

Date: June 28, 2017

Applicant / Manufacturer : Sejin Valve Ind. Co., Ltd.
24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea

Date and place of test : May 29 - June 12, 2017 at the manufacturer's premises in Busan, Korea

Kind of test : **Type Acceptance Testing according to MESC SPE 77/300**

Test valve : **Butterfly Valve**
- Triple-Offset, Double Flange, DN 600, Class 300, ASTM A351 CF8M

Applicable drawing : A1800

Test standard : MESC SPE 77/300 December 2012

Test condition :
- Test Sequence No. : 16
- Emission Tightness Class : B
- Test Medium : Helium
- Test Temperature : High/Elevated Temperature : 200°C
Low Temperature : - 196°C

Extension of qualification : As per Appendix C of MESC SPE 77/300

This is to certify that the test was performed by the manufacturer under witness and reviewed the EVADOCs as per MESC SPE 77/300, and the result was satisfied within acceptance criteria specified in MESC SPE 77/300.

Note
The details of the test condition and data are as per manufacturer's Test Report No. SV-TAT-BF-600300-01, which was verified and endorsed.

This certificate is valid from June 27, 2017 until June 27, 2022.

In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

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SGS Korea Co., Ltd.
J. J. Jun
Manager, Industrial Division

SHJ/jhs



FUGITIVE EMISSION TEST CERTIFICATE

ORIGINAL

Certificate No. B-50/2016-0023/004-1
Page 1 of 1

Date : 15 June, 2016

Applicant / Manufacturer : Sejin Valve Industrial Co., Ltd.
Date and place of test : 30 May, 2016-2 June, 2016 at the manufacturer's premises in Busan, Korea

Kind of test : Witness of Fugitive Emission Test

Test valve : **Butterfly Valve (ASTM A216 WCB)**
- 10", CL300

Applicable drawing : TOM3B-10BA Rev.0

Test standard : ISO 15848 Part1, 2015 Edition

Test condition :
- Test Medium : Helium
- Test Pressure : 56.0 Bar at Ambient Temperature, 46.0 Bar at 200°C
- Tightness Class : BH
- Mechanical-Cycle Class : 1500 Cycles / CO2
- Number of Thermal Cycles : 3
- Number of Stem Seal Adjustment : 0
- Temperature Class : 1200°C

Performance Class : **ISO FE BH-CO2-t(RT, 200 °C)-CL300-ISO 15848-1**

Extension of Qualification : As per Para.8 of ISO 15848-1

This is to certify that the Fugitive Emission Test was performed by the manufacturer under our witness as above, and the results were satisfied within acceptance criteria specified for the target performance class.

Note
The details of the test condition and data are as per manufacturer's Test Report No. SV-FET-10300-1, which were verified and endorsed by us.

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SGS Korea Co., Ltd.
B. I. Lim
Team Lead, Industrial Division

SHJ/yjp



FUGITIVE EMISSION TEST CERTIFICATE

ORIGINAL

Certificate No. B-50/2016-0023/004-2
Page 1 of 1

Date : 15 June, 2016

Applicant / Manufacturer : Sejin Valve Industrial Co., Ltd.
Date and place of test : 30 May, 2016-3 June, 2016 at the manufacturer's premises in Busan, Korea

Kind of test : Witness of Fugitive Emission Test

Test valve : **Butterfly Valve (ASTM A216 WCB)**
- 24", CL300

Applicable drawing : TOM3B-24BA Rev.0

Test standard : ISO 15848 Part1, 2015 Edition

Test condition :
- Test Medium : Helium
- Test Pressure : 56.0 Bar at Ambient Temperature, 46.0 Bar at 200°C
- Tightness Class : BH
- Mechanical-Cycle Class : 1500 Cycles / CO2
- Number of Thermal Cycles : 3
- Number of Stem Seal Adjustment : 1
- Temperature Class : 1200°C

Performance Class : **ISO FE BH-CO2-SSA1-t(RT, 200 °C)-CL300-ISO 15848-1**

Extension of Qualification : As per Para.8 of ISO 15848-1

This is to certify that the Fugitive Emission Test was performed by the manufacturer under our witness as above, and the results were satisfied within acceptance criteria specified for the target performance class.

Note
The details of the test condition and data are as per manufacturer's Test Report No. SV-FET-24300-1, which were verified and endorsed by us.

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SGS Korea Co., Ltd.
B. I. Lim
Team Lead, Industrial Division

SHJ/yjp



FIRE TEST CERTIFICATE

Certificate No. KR-5000-50007040
Page 1 of 1

Date: April 05, 2017

Applicant / Manufacturer : Sejin Valve Industrial Co., Ltd.
24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea

Date and place of test : April 10, 2018 at the Manufacturer's Premises in Busan, Korea

Kind of test : Witness of Fire Test

Test valve : **Butterfly Valve**
- 2", Class 150, ASTM A216 WCB

Design standard : API 609 Category B - 8th Edition, February 2016

Applicable drawing : A0392-15002-CS Rev.0

Test standard : API STANDARD 607 - 7th Edition, June, 2016

This is to conform that the fire test was performed by the manufacturer under witness, and the results were satisfied with the requirements in API 607, so we hereby confirm that the coverage of the qualification ranges Class150 through Class300 rating with 2" and below through 4" size for the Ferritic Material.

Note
The details of the test condition and data are as per Manufacturer's Test Report No. SV-FST-15002-CS-01 dated 10 April, 2018, which were verified and endorsed by us.

In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

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SGS Korea Co., Ltd.
Michael Kang
Business Manager, Industrial Division

SHJ/dsk

APPROVALS AND CERTIFICATES

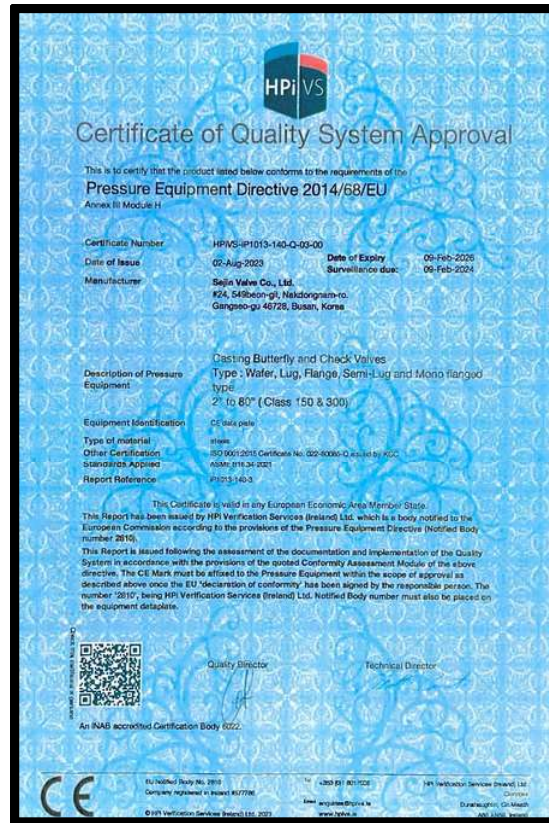
SGS		FIRE TEST CERTIFICATE	
		Date: April 05, 2021 Certificate No. KR-5000-50007040-3 Page 1 of 1	
Applicant / Manufacturer	: Sejin Valve Industrial Co., Ltd. 24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea		
Date and place of test	: February 24, 2017 at the Manufacturer's Premises in Busan Korea		
Kind of test	: Witness of Fire Test		
Test valve	: Butterfly Valve - 3", Class 150, ASTM A216 WCB		
Design standard	: API 609 Category B - 8 th Edition, February 2016		
Applicable drawing	: A0392-15003-CS Rev.0		
Test standard	: API STANDARD 607 - 7 th Edition, June, 2016		
This is to conform that the fire test was performed by the manufacturer under witness, and the results were satisfied with the requirements in API 607, so we hereby confirm that the coverage of the qualification ranges Class150 through Class300 rating with 3" through 6" size for the Ferritic Material.			
Note The details of the test condition and data are as per Manufacturer's Test Report No. SV-FST-15003-CS-01 dated 24 Feb., 2017, which were verified and endorsed by us.			
In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.			
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SHJ/dsk		 Michael Kang Business Manager, Industrial Division	

SGS		FIRE TEST CERTIFICATE	
		Date: April 05, 2021 Certificate No. KR-5000-50007040-3 Page 1 of 1	
Applicant / Manufacturer	: Sejin Valve Industrial Co., Ltd. 24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea		
Date and place of test	: February 24, 2017 at the Manufacturer's Premises in Busan Korea		
Kind of test	: Witness of Fire Test		
Test valve	: Butterfly Valve - 3", Class 150, ASTM A351 CF8M		
Design standard	: API 609 Category B - 8 th Edition, February 2016		
Applicable drawing	: A0392-15003-SS Rev.0		
Test standard	: API STANDARD 607 - 7 th Edition, June, 2016		
This is to conform that the fire test was performed by the manufacturer under witness, and the results were satisfied with the requirements in API 607, so we hereby confirm that the coverage of the qualification ranges Class150 through Class300 rating with 3" through 6" size for the Austenitic Material.			
Note The details of the test condition and data are as per Manufacturer's Test Report No. SV-FST-15003-SS-01 dated 24 Feb., 2017, which were verified and endorsed by us.			
In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.			
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SHJ/dsk		 Michael Kang Business Manager, Industrial Division	

SGS		FIRE TEST CERTIFICATE	
		Date: April 05, 2021 Certificate No. KR-5000-50007040-2 Page 1 of 1	
Applicant / Manufacturer	: Sejin Valve Industrial Co., Ltd. 24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea		
Date and place of test	: February 23, 2017 at the Manufacturer's Premises in Busan, Korea		
Kind of test	: Witness of Fire Test		
Test valve	: Butterfly Valve - 8", Class 150, ASTM A351 CF8M		
Design standard	: API 609 Category B - 8 th Edition, February 2016		
Applicable drawing	: A0392-15008-SS Rev.0		
Test standard	: API STANDARD 607 - 7 th Edition, June 2016		
This is to conform that the fire test was performed by the manufacturer under witness, and the results were satisfied with the requirements in API 607, so we hereby confirm that the coverage of the qualification ranges Class150 through Class300 rating with 8" and above size for the Austenitic Material.			
Note The details of the test condition and data are as per Manufacturer's Test Report No. SV-FST-15008-SS-01 dated 23 Feb., 2017, which were verified and endorsed by us.			
In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.			
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SHJ/dsk		 Michael Kang Business Manager, Industrial Division	

SGS		FIRE TEST CERTIFICATE	
		Date: April 05, 2021 Certificate No. KR-5000-50007040-2 Page 1 of 1	
Applicant / Manufacturer	: Sejin Valve Industrial Co., Ltd. 24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea		
Date and place of test	: February 23, 2017 at the Manufacturer's Premises in Busan, Korea		
Kind of test	: Witness of Fire Test		
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Test standard	: API STANDARD 607 - 7 th Edition, June 2016		
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