

JFS

BEIJING JOINT FLOW SYSTEM CO.



CHECK VALVE



DUAL FLAPPER CHECK VALVE

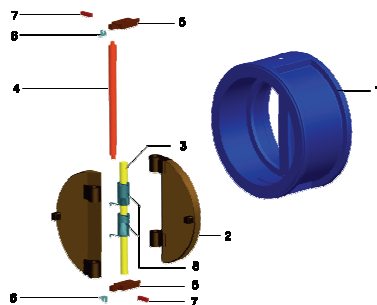
Dual Flapper Check Valve is designed as a non-return valve that is much stronger, lighter and smaller in size compared to a conventional full-body check valve, due to its success including the unique short face to face length, low purchase cost and non-slam principle of operation.

FEATURE

- 80-90% lighter than conventional full-body check valves.
- Spring-loaded, double flapper (plate) design with low cracking pressure and low valve pressure drop.
- Resilient or metal seat available.
- Inherently non-slamming, no external devices or attachments required.
- Water-hammer almost non-existent.
- Long life and trouble-free operation.
- Horizontally or vertically installation.
- Available in wafer, lug and double flange style.



PARTS LIST AND MATERIAL



No.	Parts Name	Material
1	Body	Cast Iron/Ductile Iron/Carbon Steel/Stainless Steel
2	Disc	Ductile Iron/Carbon Steel/Stainless Steel
3	Stop Pin	Carbon Steel/Stainless Steel
4	Hinge Pin	Carbon Steel/Stainless Steel
5	Holder	Carbon Steel/Stainless Steel
8	Spring	Spring Steel/Stainless Steel

*More material specifications are available on request.

STANDARD

Design and Manufacture	API 594
Inspection and Testing	API 598
End to End Dimension	ASME B16.10
Flange Dimension	ASME B16.5/ASME B16.47

*More standard specifications are available on request.

DUAL FLAPPER CHECK VALVE

APPLICATION

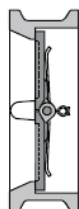
- Oil and Gas Production
- Power Generation
- Petroleum Refining
- Petrochemicals
- Chemicals
- Water and Wastewater
- Steel/Primary Metals
- Pulp and Paper
- Marine
- Hydrocarbons

OPERATION

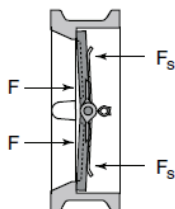
The dual-flapper (plate) design employs two spring-loaded plates (disc halves) suspended on a central vertical hinge pin.

1. As flow begins, the plates open in response to a resultant force (F) which acts as the center of the sealed surface area. The contact point of the reacting spring leg's force (F_s) acts beyond the center of the plate area, causing the heel to open first. This prevents rubbing of the seal surface prior to normal plate opening, eliminating wear.

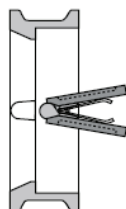
2. As the velocity of flow decreases, torsion spring action reacts automatically. This moves the plates closer to the body seats, reducing the distance and time of travel for closure. By having the plates closer to the body seats at the time of flow reversal, the valve dynamic response is greatly accelerated. This dramatically reduces the water hammer effect for non-slam performance.



Plates in closed position. Top view.



Heel opens first as flow begins.



Plates fully opened (85°)

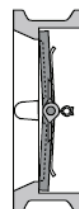
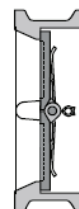
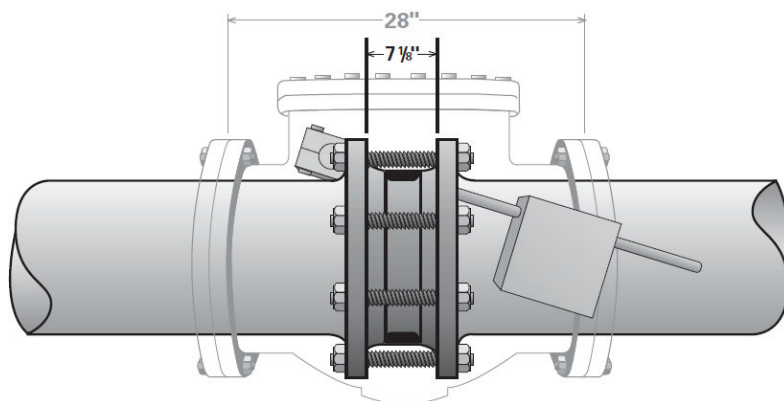


Plate toe closes first as flow decreases.



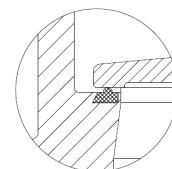
Plates fully seated for bubble-tight shutoff.

SHORT BODY & LIGHT WEIGHT

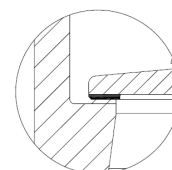


12" (300mm) CI 150 Swing Check Valve: L=28" (700mm), W=305kg
12" (300mm) CI 150 Dual Flapper Check Valve: L=7-1/8" (181mm), W=54kg

SEAT TYPE



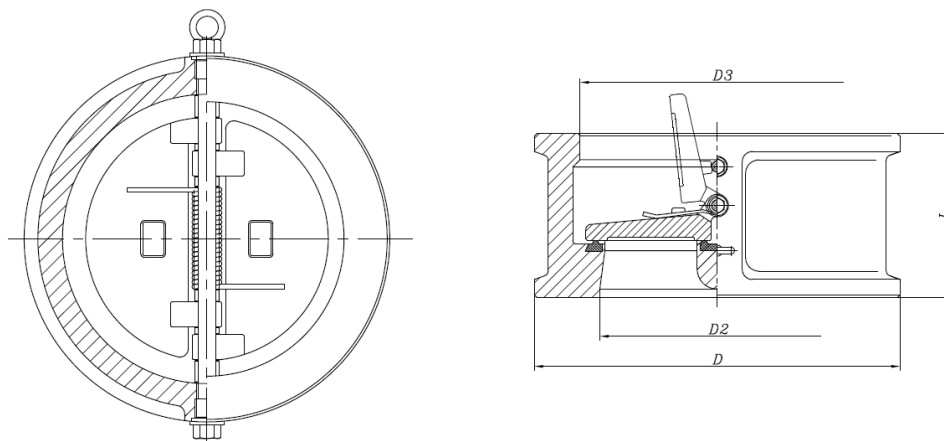
Resilient Seat



Metal Seat

DUAL FLAPPER CHECK VALVE

DIMENSION (Wafer type / 150 & 300 lb)



DN	NPS	150lb					300lb				
		L	D	D ₂	D ₃	Est. Weight (kg)	L	D	D ₂	D ₃	Est. Weight (kg)
50	2"	60	103	51	58	2.5	60	110	51	58	3
80	3"	73	135	80	88	4	73	147	80	88	6
100	4"	73	173	102	108	6	73	179	102	108	8
150	6"	98	220	152	160	13	98	249	152	160	18
200	8"	127	277	203	210	25	127	305	203	210	31
250	10"	146	337	254	266	39	146	359	254	266	51
300	12"	181	407	305	310	54	181	420	305	310	77
350	14"	184	448	350	355	80	222	483	350	355	117
400	16"	191	512	400	405	117	232	537	400	405	190
450	18"	203	547	450	455	138	264	594	450	455	200
500	20"	219	604	500	505	163	292	652	500	505	265
600	24"	222	715	600	605	331	318	772	600	605	410
650	26"	222	722	630	650	360	356	767	633	640	565
700	28"	305	773	700	700	380	368	821	685	685	585
750	30"	305	824	746	750	425	368	882	735	740	660
800	32"	305	878	796	800	560	368	936	784	784	970
900	36"	368	983	898	903	640	483	1044	873	880	1020
1000	40"	432	1090	976	985	870	546	1146	976	985	1420
1200	48"	524	1302	1200	1205	1400	629	1365	1166	1190	2260
1350	54"	591	1460	1312	1315	2245	718	1526	1312	1315	3102
1500	60"	660	1628	1458	1470	3200	838	1704	1458	1470	4315

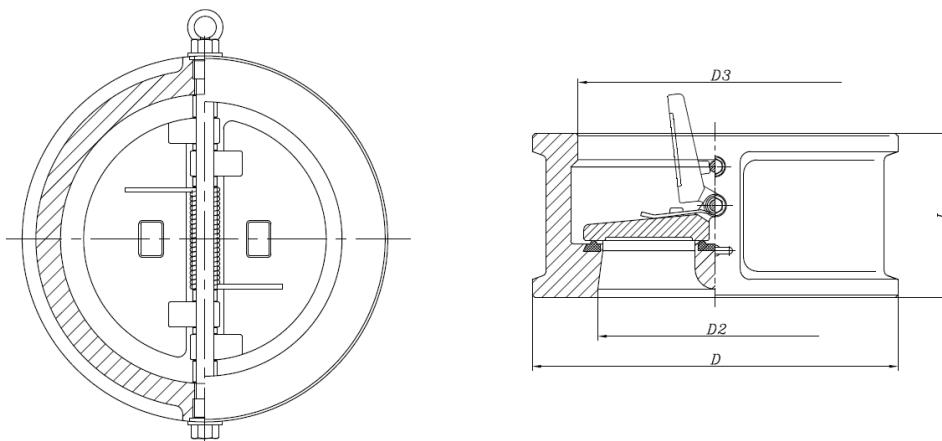
*Face to face dimensions (L) herein are according to ASME B16.10.

*Flange dimensions (D) herein for sizes above DN600 (NPS24") are according to ASME B16.47 Series B, Series A dimensions are available on request.

*More dimension specifications are available on request.

DUAL FLAPPER CHECK VALVE

DIMENSION (Wafer type / 600 & 900 lb)



DN	NPS	600lb					900lb				
		L	D	D ₂	D ₃	Est. Weight (kg)	L	D	D ₂	D ₃	Est. Weight (kg)
50	2"	60	110	51	58	4	70	140	51	58	8
80	3"	73	147	80	88	8	86	165	80	90	14
100	4"	79	191	102	108	11	102	204	102	108	20
150	6"	136	264	152	162	26	159	286	150	162	42
200	8"	165	318	200	212	55	206	356	200	212	84
250	10"	213	398	250	266	95	241	432	250	266	145
300	12"	229	455	305	312	140	292	495	305	312	220
350	14"	273	490	337	355	223	356	518	337	355	350
400	16"	305	562	387	400	360	384	572	387	400	470
450	18"	362	610	438	450	395	451	635	438	450	605
500	20"	368	680	489	500	518	451	695	487	496	820
600	24"	438	786	591	600	836	495	835	591	600	1050
650	26"	457	761	633	640	950	533	835	617	630	1182
700	28"	483	815	684	690	1215	572	898	665	680	1441
750	30"	505	875	735	740	1378	635	955	712	75	1578
800	32"	533	928	779	784	1643	660	1012	760	784	2030
900	36"	635	1045	874	880	2120	718	1120	855	865	2607

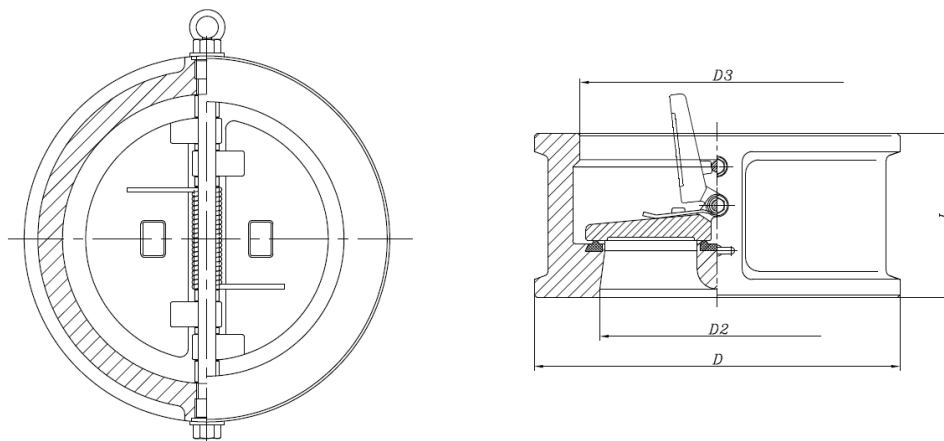
*Face to face dimensions (L) herein are according to ASME B16.10.

*Flange dimensions (D) herein for sizes above DN600 (NPS24") are according to ASME B16.47 Series B, Series A dimensions are available on request.

*More dimension specifications are available on request.

DUAL FLAPPER CHECK VALVE

DIMENSION (Wafer type / 1500 & 2500 lb)



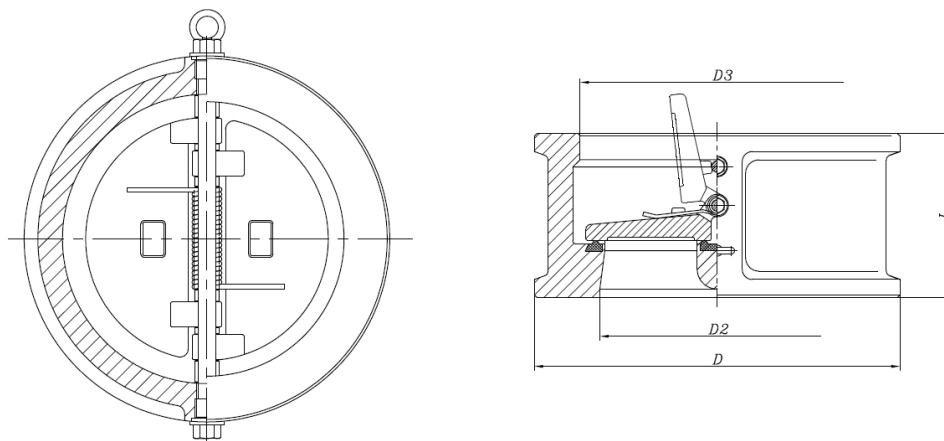
DN	NPS	1500lb					2500lb				
		L	D	D ₂	D ₃	Est. Weight (kg)	L	D	D ₂	D ₃	Est. Weight (kg)
50	2"	70	140	51	58	8	70	143	42	48	8
80	3"	83	172	80	90	19	86	194	62	68	8
100	4"	102	207	102	108	26	105	232	88	94	8
150	6"	159	280	150	162	68	159	315	150	162	8
200	8"	206	350	200	212	130	206	385	180	186	12
250	10"	248	433	254	266	210	254	474	225	232	12
300	12"	305	518	305	312	384	305	547	266	272	12
350	14"	356	576	337	355	550	-	-	-	-	-
400	16"	384	639	387	400	635	-	-	-	-	-
450	18"	468	701	430	438	790	-	-	-	-	-
500	20"	533	753	478	487	1275	-	-	-	-	-
600	24"	559	897	570	578	2710	-	-	-	-	-

*Face to face dimensions (L) herein are according to ASME B16.10.

*More dimension specifications are available on request.

DUAL FLAPPER CHECK VALVE

DIMENSION (Wafer type / PN 10 & 16)

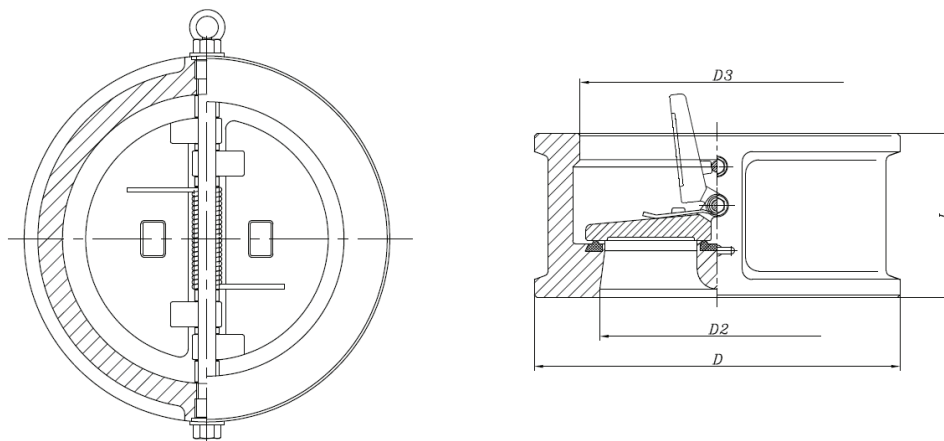


DN	NPS	PN 10					PN 16				
		L	D	D ₂	D ₃	Est. Weight (kg)	L	D	D ₂	D ₃	Est. Weight (kg)
50	2"	60	108	51	58	2	60	108	51	58	2
80	3"	73	142	80	88	4	73	142	80	88	4
100	4"	73	162	102	108	6	73	162	102	108	6
150	6"	98	218	152	160	13	98	218	152	160	13
200	8"	127	273	203	210	24	127	273	203	210	24
250	10"	146	328	254	266	37	146	328	254	266	37
300	12"	181	378	305	310	50	181	378	305	310	50
350	14"	184	438	350	355	76	184	438	350	355	76
400	16"	191	489	400	405	110	191	489	400	405	110
450	18"	203	539	450	455	135	203	539	450	455	135
500	20"	219	594	500	505	158	219	594	500	505	158
600	24"	222	696	600	605	320	222	696	600	605	320
700	28"	305	811	695	700	380	305	811	695	700	380
800	32"	305	918	796	800	560	305	918	796	800	560
900	36"	368	1018	898	903	640	368	1018	898	903	640
1000	40"	432	1124	976	985	900	432	1124	976	985	900
1200	48"	524	1340	1200	1205	1400	524	1340	1200	1205	1400

*More dimension specifications are available on request.

DUAL FLAPPER CHECK VALVE

DIMENSION (Wafer type / PN 25 & 40)

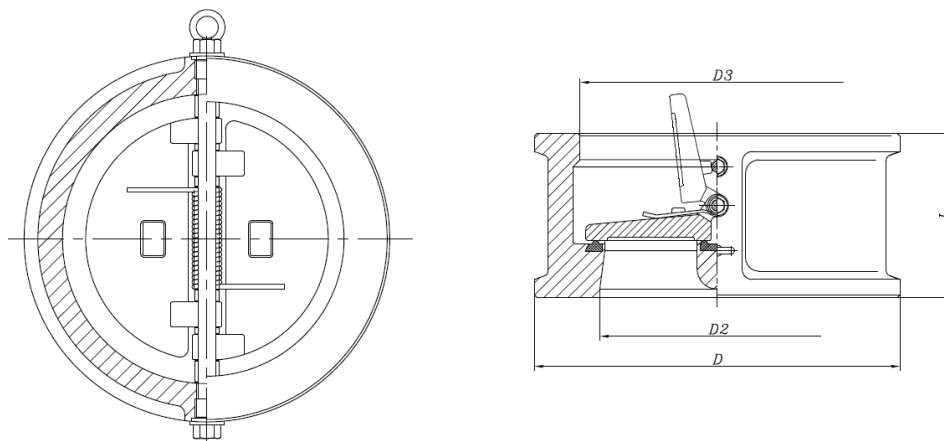


DN	NPS	PN 25					PN 40				
		L	D	D ₂	D ₃	Est. Weight (kg)	L	D	D ₂	D ₃	Est. Weight (kg)
50	2"	60	108	51	58	2	60	108	51	58	3
80	3"	73	142	80	88	4	73	142	80	88	6
100	4"	73	168	102	108	6	73	168	102	108	8
150	6"	98	224	152	160	14	98	224	152	160	16
200	8"	127	284	203	210	27	127	291	203	210	28
250	10"	146	341	254	266	42	146	353	254	266	49
300	12"	181	401	305	310	54	181	418	305	310	76
350	14"	184	458	350	355	86	222	475	350	355	114
400	16"	191	515	400	405	120	232	547	400	405	190
450	18"	203	565	450	455	148	264	572	450	455	200
500	20"	219	622	500	505	165	292	626	500	505	260
600	24"	222	732	600	605	340	318	745	600	608	404
700	28"	305	831	695	700	400	-	-	-	-	-
800	32"	305	942	796	800	580	-	-	-	-	-
900	36"	368	1040	898	903	660	-	-	-	-	-
1000	40"	432	1155	976	985	960	-	-	-	-	-
1200	48"	524	1365	1200	1205	1440	-	-	-	-	-

*More dimension specifications are available on request.

DUAL FLAPPER CHECK VALVE

DIMENSION (Wafer type / PN 63 & 100)

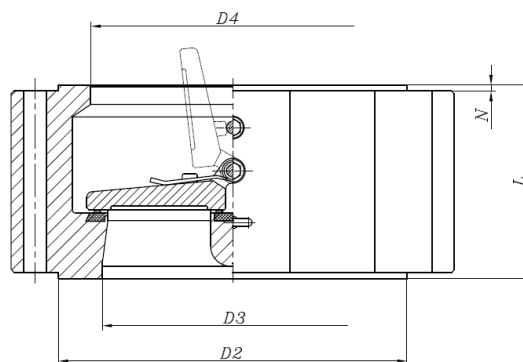
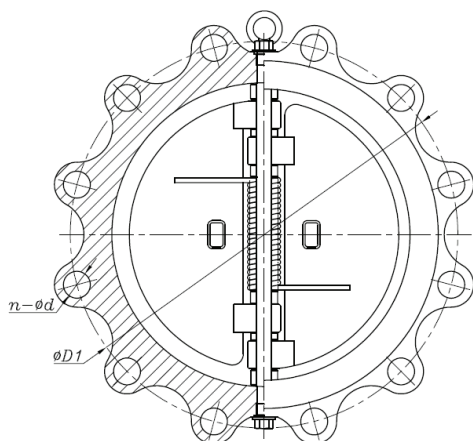


DN	NPS	PN 63					PN 100				
		L	D	D ₂	D ₃	Est. Weight (kg)	L	D	D ₂	D ₃	Est. Weight (kg)
50	2"	60	114	51	58	4	60	120	51	58	5
80	3"	73	148	80	88	7	73	154	80	88	10
100	4"	79	174	102	108	10	79	181	102	108	12
150	6"	136	248	152	162	20	136	218	152	162	25
200	8"	165	310	200	212	38	165	258	200	212	56
250	10"	213	362	250	266	62	213	324	250	266	94
300	12"	229	422	305	310	100	229	392	305	312	142
350	14"	273	487	350	355	160	273	456	350	355	230
400	16"	305	541	400	405	260	305	510	400	405	366

*More dimension specifications are available on request.

DUAL FLAPPER CHECK VALVE

DIMENSION (Lug type / 150 & 300 lb)



DN	NPS	150lb				300lb			
		L	D ₃	D ₄	Est. Weight	L	D ₂	D ₃	Est. Weight
50	2"	60	51	58	4	60	51	58	8
80	3"	73	80	88	4	73	80	88	8
100	4"	73	102	108	8	73	102	108	8
150	6"	98	152	160	8	98	152	160	12
200	8"	127	203	210	8	127	203	210	12
250	10"	146	254	266	12	146	254	266	16
300	12"	181	305	310	12	181	305	310	16
350	14"	184	350	355	12	222	350	355	20
400	16"	191	400	405	16	232	400	405	20
450	18"	203	450	455	16	264	450	455	24
500	20"	219	500	505	20	292	500	505	24
600	24"	222	600	605	20	318	600	605	24
750	30"	305	746	750	44	368	735	740	36
900	36"	368	898	903	44	483	873	880	32
1050	42"	432	1050	1055	48	568	1035	1045	36
1200	48"	524	1200	1205	44	629	1179	1190	40

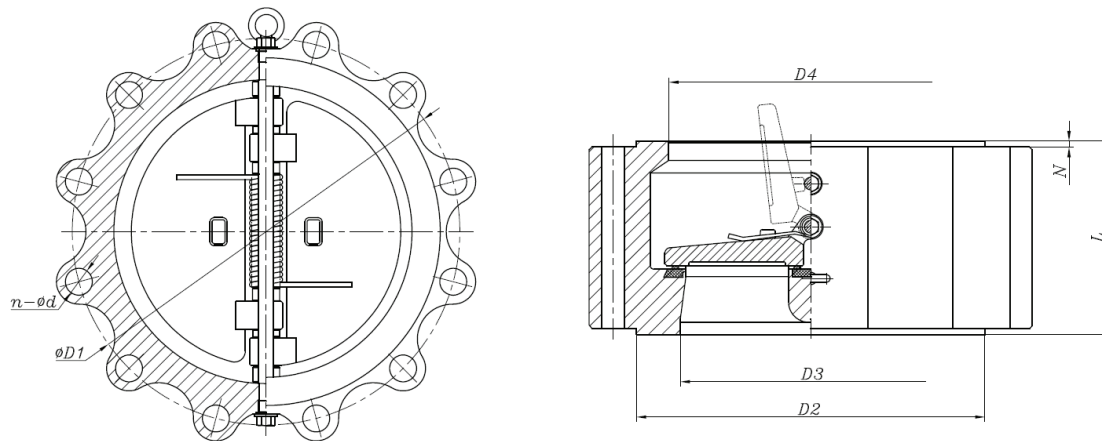
*Face to face dimensions (L) herein are according to ASME B16.10.

*Flange dimensions (D₁, D₂) refer to Catalogue of Accessory: Series 8 – Flange.

*More dimension specifications are available on request.

DUAL FLAPPER CHECK VALVE

DIMENSION (Lug type / 600 & 900 lb)



DN	NPS	600lb				900lb			
		L	D ₃	D ₄	Est. Weight	L	D ₂	D ₃	Est. Weight
50	2"	60	51	58	8	70	51	58	13
80	3"	73	80	88	8	86	80	90	21
100	4"	79	102	108	8	102	102	108	36
150	6"	136	152	162	12	159	150	162	92
200	8"	165	200	212	12	206	200	212	174
250	10"	213	250	266	16	241	250	266	264
300	12"	229	305	312	20	292	305	312	450
350	14"	273	337	355	20	356	337	355	612
400	16"	305	387	400	20	384	387	400	712
450	18"	362	438	450	20	451	438	450	1160
500	20"	368	489	500	24	451	487	496	1568
600	24"	438	591	600	24	495	591	600	1881

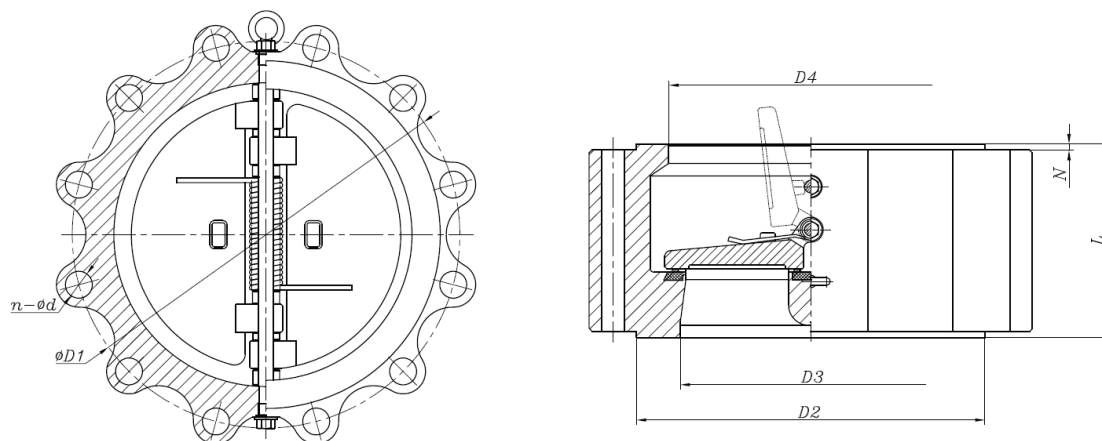
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*Flange dimensions (D₁, D₂) refer to Catalogue of Accessory: Series 8 – Flange.

*More dimension specifications are available on request.

DUAL FLAPPER CHECK VALVE

DIMENSION (Lug type / 1500 & 2500 lb)



DN	NPS	1500lb				2500lb			
		L	D ₃	D ₄	Est. Weight	L	D ₂	D ₃	Est. Weight
50	2"	60	51	58	8	70	42	48	8
80	3"	73	80	90	8	86	62	68	8
100	4"	79	102	108	8	105	88	94	8
150	6"	136	150	162	12	159	150	162	8
200	8"	165	200	212	12	206	180	186	12
250	10"	213	254	266	12	254	225	232	12
300	12"	229	305	312	16	305	266	272	12
350	14"	273	337	355	16	-	-	-	-
400	16"	305	387	400	16	-	-	-	-

*Face to face dimensions (L) herein are according to ASME B16.10.

*Flange dimensions (D₁, D₂) refer to Catalogue of Accessory: Series 8 – Flange.

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