

SWING CHECK VALVE



- **Applicable Standards**

Design and Manufacture: Steel check valve to BS1868, ASME B16.34 and API 6D.

Forged steel check valve to API 602.

Inspection and test: API 598 or API 6D.

End flange dimension; ASME B16.5 (NPS ≤ 24)

ASME B16.47 series A and B, or MSS SP-44 (NPS > 24).

BW end dimension: ASME B16.25.

Socket-weld dimension: ASME B16.11.

Face to face and end to end: ASME B16.10

Pressure-temperature ratings: ASME B16.34.

Wall thickness dimension: API 600 and BS1868

- **Seat**

For carbon steel check valve, the seat is usually forged Steel. The sealing surface of the seat is spray welded with hard alloy Specified by the customer. Renewable threaded seat is used for NPS ≤ 10 check valves, and welded on seat can be also optional if being requested by the customer. Welded on seat is used for NPS ≥ 12 carbon steel check valves. For stainless steel check Valve, integral seat is usually adopted, or weld hard alloy directly integrally. Threaded or welded on seat is also optional for stainless steel check valve if being requested by the customer

- **The features of a check valve**

Bolted Bonnet;

Swing type disc;

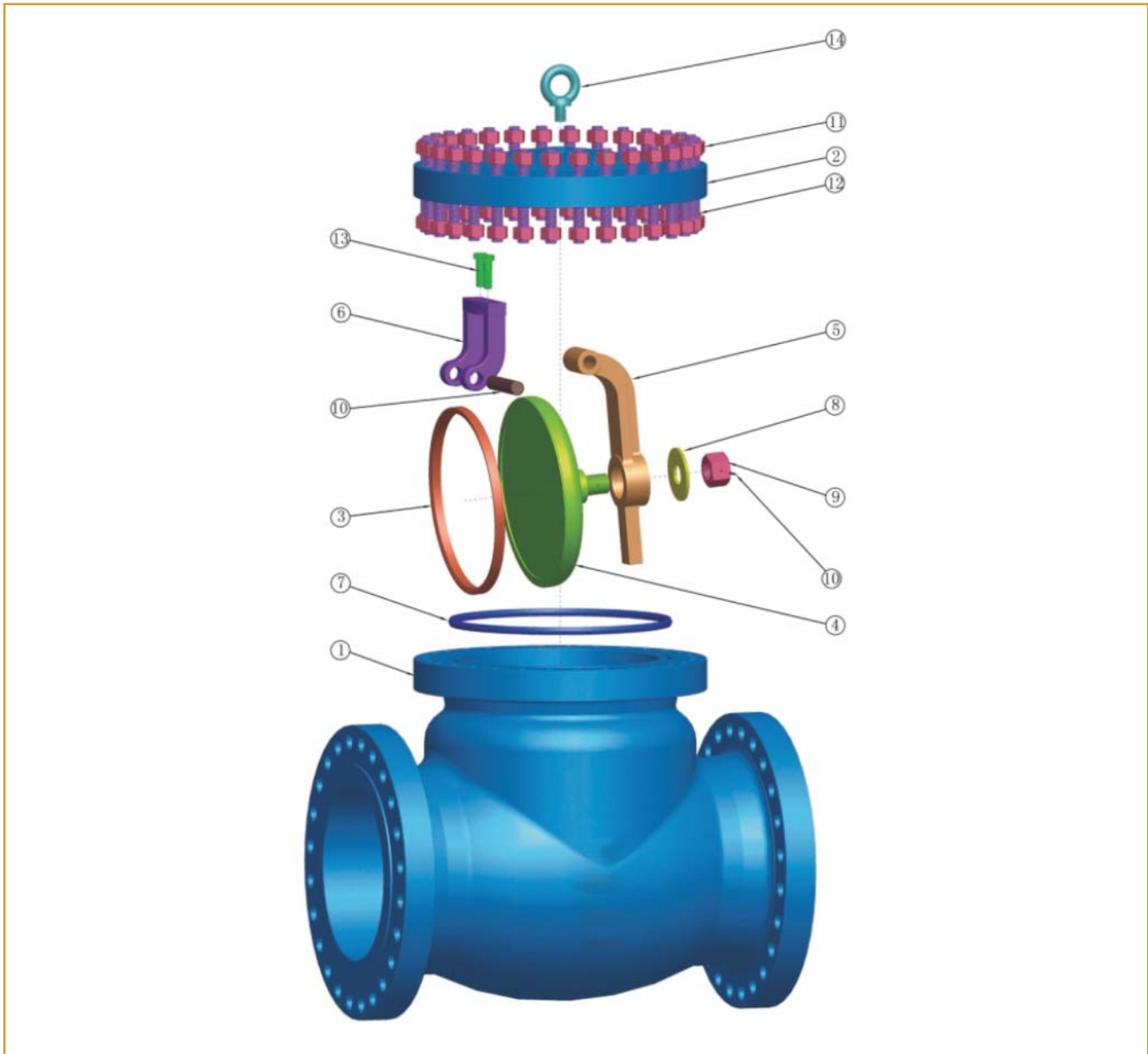
Metallic seating surfaces.

- **Body-To-Bonnet Joint**

Stainless steel + flexible graphite wounded gasket is used for Class 150 and Class 300 check valves; Class 150, 300 and 600 ring joint joint gasket is also optional for Class600 check valves; Pressure seal design gasket is used for Class 1500 and Class 2500 check valves.

- **Body and Bonnet Connection**

The body and bonnet of Class 150 - Class 900 check valves are usually with studs and nuts. And the body and bonnet of Class 1500 - Class 2500 check valves are usually of pressure seal design.



No	Part Name	No	Part Name	No	Part Name
1	Body	6	Yoke	11	Nut
2	Cover	7	Gasket	12	Bolt
3	Seat Ring	8	Disc Washer	13	Screw
4	Disc	9	Disc Nut	14	Lifting Lug
5	Hinge	10	Pin		

ANSI SWING CHECK VALVE



API 600 Trim material			
Trim code	Seat ring surface	Wedge seat surface	Hinge Pin
1	13Cr	13Cr	A182 F6a
2	18Cr-8Ni	18Cr-8Ni	A182 F304
3	25Cr-20Ni	25Cr-20Ni	A182 F310
4	Hard 13Cr	Hard 13Cr	A182 F6a
5	Stellite	Stellite	A182 F6a
6	13Cr	Cu-Ni Alloy	Monel
7	13Cr	Hard 13Cr	A182 F6a
8	Stellite	13Cr	A182 F6a
9	Cu-Ni Alloy	Cu-Ni Alloy	Monel
10	18Cr-8Ni-Mo	18Cr-8Ni-Mo	A182 F316
11	Cu-Ni Alloy	Cu-Ni Alloy	Monel
12	Stellite	18Cr-8Ni-Mo	A182 F316
13	19Cr-29Ni	19Cr-29Ni	20 Alloy

ASTM Material list of BS1868 and API 6D Swing Check Valve

.No	Part name	Carbon Steel to ASTM		Stainless Steel to ASTM				Alloy Steel to ASTM		
		A216 WCB	A352 LCB	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A217 WC6	A217 WC9	A217 C5
1	Body	A216 WCB	A352 LCB	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A217 WC6	A217 WC9	A217 C5
2	Cover	A216 WCB	A352 LCB	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A217 WC6	A217 WC9	A217 C5
3	Seat Ring	A105N	A352 LF2	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A182 F11	A182 F22	A182 F5
4	Disc	A216 WCB	A352 LCB	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A217 WC6	A217 WC9	A217 C5
5	Hinge	A216 WCB	A352 LCB	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A217 WC6	A217 WC9	A217 C5
6	Yoke	A216 WCB	A352 LCB	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A217 WC6	A217 WC9	A217 C5
7	Gasket	Graphite+SS304+ PTFE								
8	Disc Washer	A182 F6a	A182 F6a	A182 F304	A182 F316	A182 F304L	A182 F316L	A182 F304		
9	Disc Nut	A182 F6a	A182 F304	A182 F304	A182 F316	A182 F304L	A182 F316L	A182 F304		
10	Pin	A182 F6a	A182 F304	A182 F304	A182 F316	A182 F304L	A182 F316L	A182 F304		
11	Nut	A194 2H	A194 4	A194 8M				A194 7		
12	Bolt	A193 B7	A320 L7	A193 B8M				A193 B16		
13	Screw	193 B7	A320 L7	A182 F304	A182 F316	A182 F304L	A182 F316L	A193 B16		
14	Lifting Lug	A194 2H								

Suitable for H₂S service and meet requirement of NACE MR 0175.

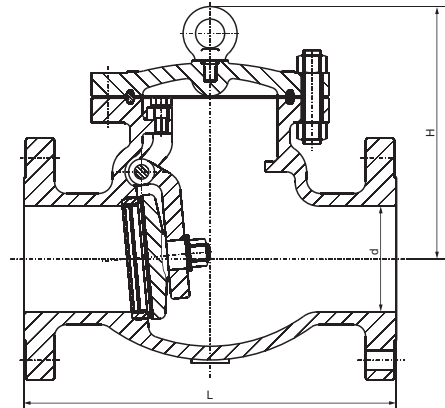
Class ANSI 150 and 300
Series 48
Series 53 (Full Bore / AP6D)

• Construction feature

- Bolted cover
- Renewable seat
(Threaded or welded seat ring)

• API 598 Pressure Test

- Pressure ratings: Class 150, Class 300
- Hydraulic Shell test: 3.2 MPa, 7.8 MPa
- Hydraulic Seat test: 2.2 MPa, 5.7 MPa
- Air test: 0.6 MPa

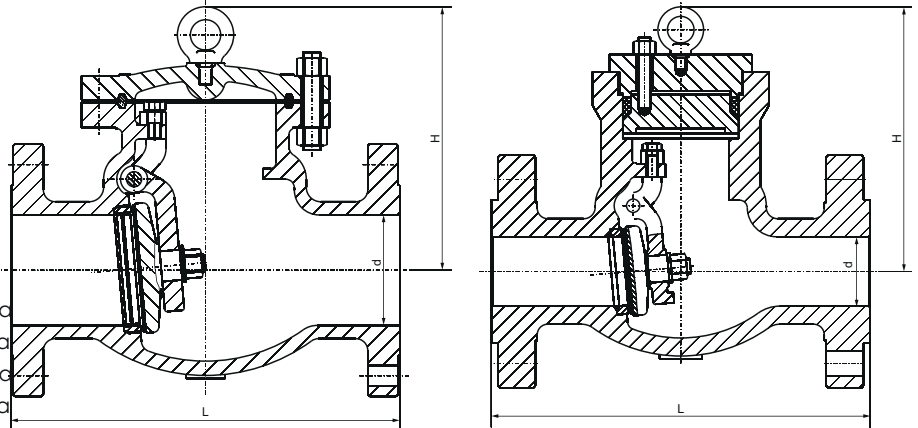


Size		Class 150						Class 300					
NPS	DN	L			d	H	Weight (Kg)	L			d	H	Weight (Kg)
		RF	RTJ	BW				RF	RTJ	BW			
2	50	203	216	203	51	132	15	267	283	267	51	144	20
2½	65	216	229	216	64	147	20	292	308	292	64	169	35
3	80	241	254	241	76	176	27	318	333	318	76	210	40
4	100	292	305	292	102	198	45	356	371	356	102	260	61
5	125	330	343	330	127	255	58	400	416	400	127	295	80
6	150	356	368	356	152	320	69	445	460	445	152	326	130
8	200	495	508	495	203	380	131	533	549	533	203	380	190
10	250	622	635	622	254	440	219	622	638	622	254	440	296
12	300	699	711	699	305	480	321	711	727	711	305	520	450
14	350	787	800	787	337	530	380	838	854	838	337	540	640
16	400	864	876	864	387	580	560	864	879	864	387	588	850
18	450	978	991	978	438	618	630	978	994	978	432	670	1030
20	500	978	991	978	489	657	770	1016	1035	1016	483	720	1330
24	600	1295	1308	1295	591	760	960	1346	1368	1346	584	850	1950
26	650	1295	-	1295	633	840	1250	1346	1372	1346	633	920	2300
28	700	1448	-	1448	684	920	1580	1499	1524	1499	684	1150	2600
30	750	1524	1537	1524	735	980	1950	1594	1619	1594	735	1260	3200
32	800	1727	-	1727	779	1016	2800	1727	-	1727	779	1380	3700
36	900	1956	1969	1956	874	1092	3200	2083	-	2083	874	1540	4300

**Class ANSI 600 and 900
Series 48 and 49
Series 53 and 53P(Full Bore / API 6D)**

- Construction feature
 - Bolted cover and pressure seal
 - Renewable seat
 - (Threaded or welded seat ring)

- API 598 Pressure Test
 - Pressure ratings: Class: 600 - 900
Class: 1500 - 2500
 - Hydraulic Shell test: 15.6 MPa 23.3 MPa
38.8 MPa 63.8 MPa
 - Hydraulic Seat test: 11.4 MPa 17.1 MPa
28.5 MPa 46.9 MPa
 - Air test: 0.6 MPa



Size		Class 600						Class 900					
NPS	DN	L			d	H	Weight (Kg)	L			d	H	Weight (Kg)
		RF	RTJ	BW				RF	RTJ	BW			
2	50	292	295	292	51	170	28	368	371	368	47	200	48
2½	65	330	333	330	64	178	40	419	422	419	57	220	75
3	80	356	359	356	76	246	68	381	384	381	73	280	95
4	100	432	435	432	102	290	117	457	460	457	98	320	135
5	125	508	511	508	127	320	155	559	562	559	121	360	200
6	150	559	562	559	152	360	192	610	613	610	146	400	264
8	200	660	664	660	200	430	340	737	740	737	190	480	424
10	250	787	791	787	248	502	515	838	841	838	234	560	730
12	300	838	841	838	298	554	750	965	968	965	282	632	1070
14	350	889	892	889	327	595	890	1029	1038	1029	311	680	1180
16	400	991	994	991	375	680	1303	1130	1140	1130	354	780	1790
18	450	1092	1095	1092	419	778	1800	1219	1232	1219	400	880	2500
20	500	1194	1200	1194	464	970	2150	1321	1334	1321	444	1050	3080
24	600	1397	1407	1397	559	1100	3200	1549	1568	1549	533	1200	4600

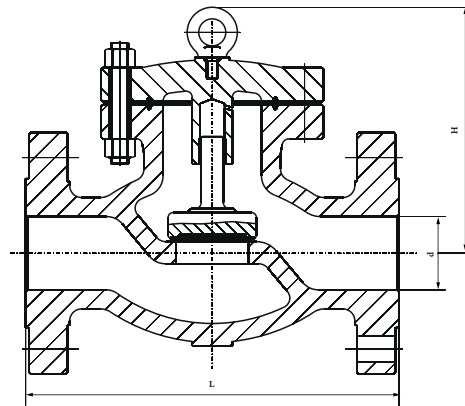
Size		Class 1500						Class 2500					
NPS	DN	L			d	H	Weight (Kg)	L			d	H	Weight (Kg)
		RF	RTJ	BW				RF	RTJ	BW			
2	50	368	371	368	47	210	48	451	454	451	35	230	68
2½	65	419	422	419	57	240	75	508	514	508	47	260	100
3	80	470	473	470	70	303	120	578	584	578	57	330	165
4	100	546	549	546	92	340	180	673	683	673	73	370	260
5	125	673	676	673	111	380	294	794	807	794	92	410	440
6	150	705	711	705	136	430	385	914	927	914	111	460	580
8	200	832	841	832	174	500	634	1022	1038	1022	146	530	970
10	250	991	1000	991	222	590	1140	1270	1292	1270	184	620	1700
12	300	1130	1146	1130	263	660	1650	1422	1445	1422	219	690	2600
14	350	1257	1276	1257	289	710	2000	-	-	-	-	-	-
16	400	1384	1407	1384	330	820	2700	-	-	-	-	-	-

Class ANSI 150/300/600/900 Series 54

- Construction feature
Bolted cover and pressure seal
Renewable seat
(Threaded or welded seat ring)

- API 598 Pressure Test

Pressure ratings: Class: 150 - 300
Class: 600 - 900
Hydraulic Shell test: 3.2 MPa 7.8 MPa
15.6 MPa 23.3 MPa
Hydraulic Seat test: 2.2 MPa 5.7 MPa
11.4 MPa 17.1 MPa
Air test: 0.6 MPa

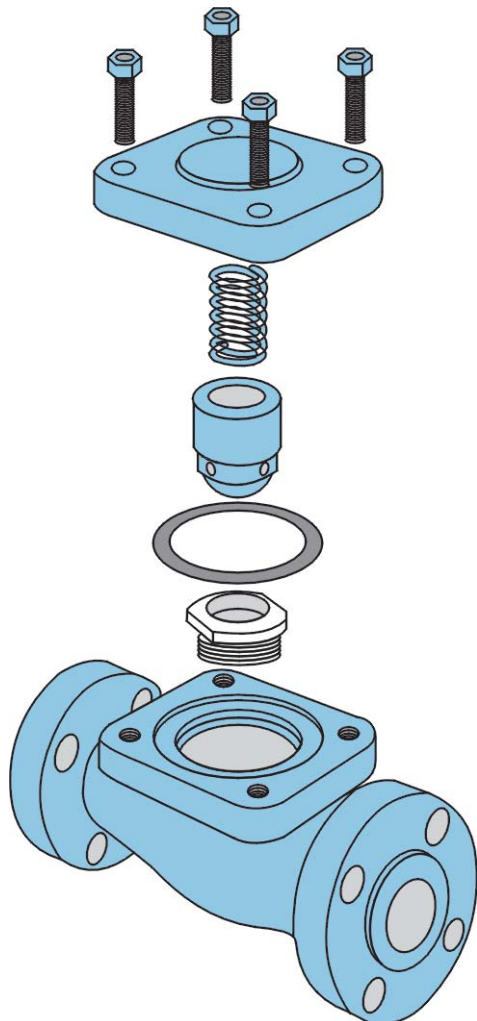


Class 900

Size		Class 150						Class 300					
NPS	DN	L			d	H	Weight (Kg)	L			d	H	Weight (Kg)
		RF	RTJ	BW				RF	RTJ	BW			
1/2	15	108	119	108	13	76	3	152	162	152	13	78	5
3/4	20	117	130	117	19	76	4	178	191	178	19	82	6
1	25	127	140	127	25	98	5	203	216	203	25	102	8
1 1/4	32	140	153	140	32	102	7	216	229	216	32	106	11
1 1/2	40	165	178	165	38	115	8	229	242	229	38	118	13
2	50	203	216	203	51	140	15	267	283	267	51	140	26
2 1/2	65	216	229	216	64	162	22	292	308	292	64	164	33
3	80	241	254	241	76	168	28	318	333	318	76	178	50
4	100	292	305	292	102	194	42	356	371	356	102	195	86
5	125	356	368	356	127	210	60	400	416	400	127	223	120
6	150	406	419	406	152	226	75	445	460	445	152	245	180
8	200	495	508	495	203	250	118	533	549	533	203	280	220
10	250	622	635	622	254	275	194	622	638	622	254	336	310
12	300	699	711	699	305	332	320	711	727	711	305	380	510

Size		Class 600						Class 900					
NPS	DN	L			d	H	Weight (Kg)	L			d	H	Weight (Kg)
		RF	RTJ	BW				RF	RTJ	BW			
2	50	292	295	292	51	152	32	368	371	368	47	180	50
2 1/2	65	330	333	330	64	167	45	419	422	419	57	200	65
3	80	356	359	356	76	178	68	381	384	381	73	235	88
4	100	432	435	432	102	215	98	457	460	457	98	270	140
5	125	508	511	508	127	240	155	559	562	559	121	300	210
6	150	559	562	559	152	279	230	610	613	610	146	350	300
8	200	660	664	660	200	328	300	737	740	737	190	400	390

Forged Steel Check Valves

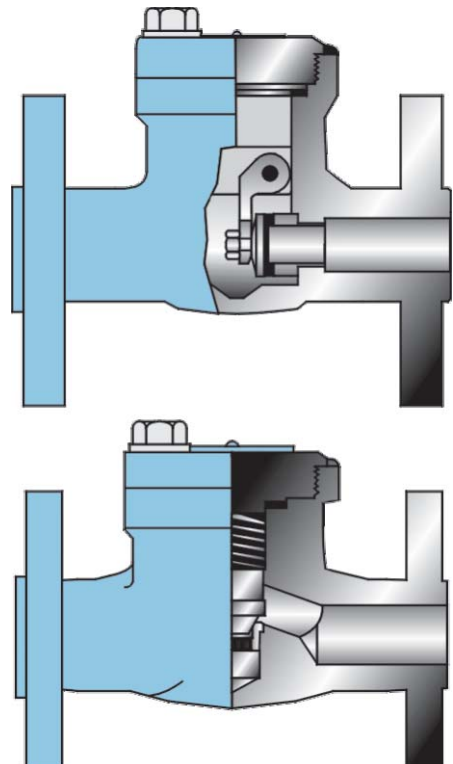


- Forged steel check valves

Are available in three bonnet designs. The first design is the Bolted Bonnet, with male-female joint, spiral wound gasket, made in F304L/graphite, Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint. The check valves are also available in three different design configurations. These are piston check, ball check, and swing checks.

- Construction is as follows

- Full port or conventional port
- Lift type check valves
- Ball type check valves
- Swing type check valves
- Bolted bonnet with spiral-wound gasket, threaded and seal welded bonnet or threaded and pressure seal bonnet
- Socket weld ends to ASME B16.11
- Screwed ends (NPT) to ASME B1.20.1



- Applicable standards

1 Design and manufacture conform
BS 5352 MSS SP-118

2 Connection ends conform to

1) Socket welded ends conform to
ANSI B16.11

2) Screw ends conform to ASME B1.20.1

3) Butt-welded ends conform to ASME
B16.25

4) Flanged ends conform to ANSI B16.5

3 Test and inspection conform to API 598

4 Structure features

Bolted bonnet and pressure seal

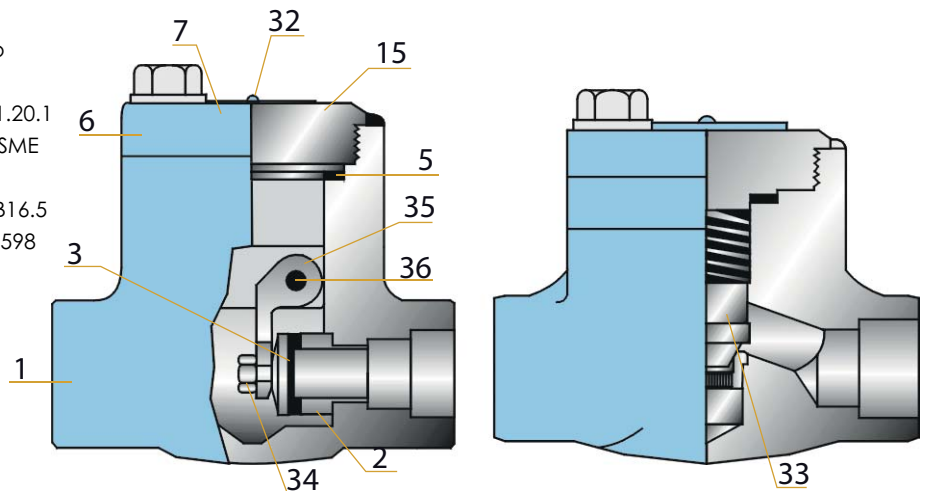
5 Materials conform to ASTM.

6 Main materials

A105 LF2 F5 F11 F22 304(L)

316(L) F347 F321 F51

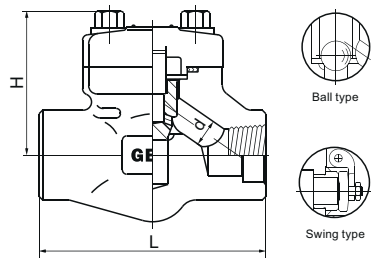
Monel Alloy Steel.



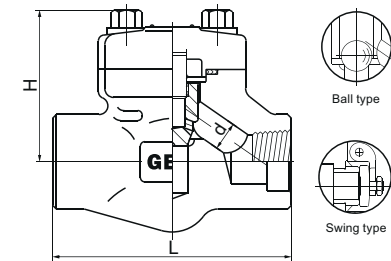
Main part materials list

NO.	Part name	A105/F6a	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	A105	A105	LF2	F11	F304(L)	F316(L)	F51
2	Seat ring	410	410HF	304	410HF	304(L)	316(L)	F51
3	Disc	F6a	F6a	F304	F6aHF	F304(L)	F316(L)	F51
5	Gasket	304+Graphite	304+Graphite	304+Graphite	304+Graphite	304+Graphite	316+Graphite	316+Graphite
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F51
7	Bolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
15	Nameplate	AL	AL	AL	AL	AL	AL	AL
32	Revit	AL	AL	AL	AL	AL	AL	AL
33	Steel ball	430	430	304	STL	316(L)	316(L)	STL
34	Disc nut	2H	2H	8	8	8(M)	8(M)	8M
35	Hinge	410	410	304	410	316(L)	316(L)	F51
36	Pin	410	410	304	410	304(L)	316(L)	F51

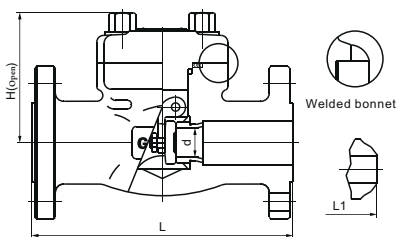
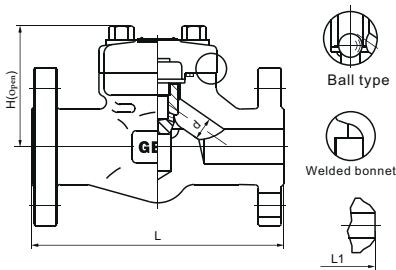
Series 56



Spring-load acc. to client's requirement



Spring-load acc. to client's requirement



CL800

BB, Full Bore or Red. Bore, THD or BW or SW ends, Design Standard: BS5352

Specification	R.P	-	1/2	3/4	1	1 ¹ / ₄	1 ¹ / ₂	2	2 ¹ / ₂
	F.P	-	3/8	1/2	3/4	1	1 ¹ / ₄	1 ¹ / ₂	2
Face to face	L	Lift	79	92	111	120	152	172	200
		Swing	79	92	111	120	120	140	178
Height	H	Lift	61	61	78	84	84	118	132
		Swing	61	61	78	84	84	120	133
Flow port dimension	d	Lift	9	13	17.5	23	30	35	46
		Swing	10.5	13.5	18	24	29	36.5	45
Weight(Kg)		Lift	1.5	1.7	3.3	4.2	4.2	10.5	12.5
		Swing	1.5	1.7	3.3	4.2	4.2	8.5	10.9

CL900-CL1500

BB, Full Bore or Red. Bore, THD or BW or SW ends, Design Standard: BS5352

Specification	R.P	-	1/2	3/4	1	1 ¹ / ₄	1 ¹ / ₂	2	2 ¹ / ₂
	F.P	-	3/8	1/2	3/4	1	1 ¹ / ₄	1 ¹ / ₂	2
Face to face	L	Lift	92	111	111	120	152	172	200
		Swing	92	111	111	120	120	140	178
Height	H	Lift	61	78	78	84	103	118	132
		Swing	61	78	78	84	101	120	133
Flow port dimension	d	Lift	7	12	15	20	28	32	40
		Swing	8	10.5	13.5	18	24	29	45
Weight(Kg)		Lift	1.5	3.4	3.3	4.2	6.3	10.5	12.5
		Swing	1.5	3.4	3.3	4.2	5.0	8.5	10.9

CL150-300-600

BB, Red. Bore, Flanged or BW ends, Design Standard: BS5352

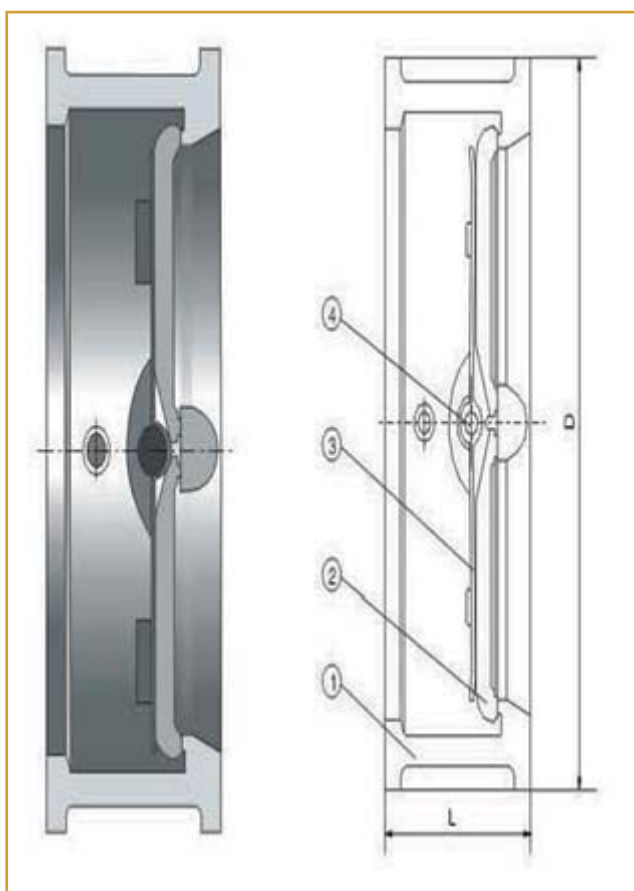
Specification		R.P	1/2	3/4	1	1 ¹ / ₄	1 ¹ / ₂	2
Face to face	CL150	L(RF) L1(BW)	108	118	127	140	165	203
	CL300		153	178	203	216	229	267
	CL600		165	191	216	229	241	292
Height	CL150	H	77	81	93	95	103	118
	CL300/600		61	78	84	101	120	133
Flow port dimension(mm)		d	10	13	17.5	23	30	35
Weight (Kg)	CL150	RF	3.6	4.6	8.5	9.2	12.5	14.8
		BW	3.0	3.6	7.6	8.5	11.3	13.6
	CL300	RF	3.7	4.8	8.8	9.6	13.7	17.8
		BW	3.2	4.3	8.0	8.6	12.7	16.2
	CL600	RF	4.0	5.8	9.5	10.4	15.6	24.5
		BW	3.4	5.1	8.8	9.2	14.8	22.5

CL150-300-600

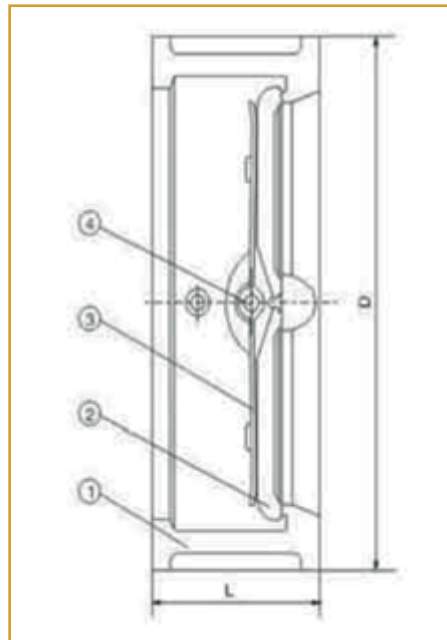
BB, Red. Bore, Flanged or BW ends, Design Standard: BS5352

Specification		R.P	1/2	3/4	1	1 ¹ / ₄	1 ¹ / ₂	2
Face to face	CL150	L(RF) L1(BW)	108	118	127	140	165	203
	CL300		153	178	203	216	229	267
	CL600		165	191	216	229	241	292
Height	CL150	H	77	81	93	95	103	118
	CL300/600		61	78	84	101	120	133
Flow port dimension(mm)		d	10.5	13.5	18	24	29	36.5
Weight (Kg)	CL150	RF	3.6	4.6	8.5	9.2	12.5	14.8
		BW	3.0	3.6	7.6	8.5	11.3	13.6
	CL300	RF	3.7	4.8	8.8	9.6	13.7	17.8
		BW	3.2	4.3	8.0	8.6	12.7	16.2
	CL600	RF	4.0	5.8	9.5	10.4	15.6	24.5
		BW	3.4	5.1	8.8	9.2	14.8	22.5

Series 51 and 55



Series 51 and 55



Size	Dimensions (mm)														
	Class 150			Class 300			Class 600			Class 900			Class 1500		
Inch	L	D	Wt	L	D	Wt	L	D	Wt	L	D	Wt	L	D	Wt
2	60	103	2	60	110	3	60	110	4	70	140	8	70	140	8
3	73	135	4	73	147	6	73	147	8	83	165	14	83	172	19
4	73	173	6	73	179	8	79	191	11	102	204	20	102	207	26
6	98	220	13	86	249	18	136	264	26	159	286	42	159	280	68
8	127	277	25	98	305	31	165	318	55	206	356	84	206	350	130
10	146	337	39	127	359	51	213	398	95	241	432	145	248	433	210
12	181	407	54	146	420	77	229	455	140	292	495	220	305	518	384
14	184	448	80	181	483	117	273	490	223	356	518	350	356	576	550
16	191	512	117	222	537	190	305	562	360	384	572	470	384	639	635
18	203	547	138	264	594	200	362	610	395	451	635	605			
20	219	604	163	292	652	265	368	680	518	451	695	820			
24	222	715	331	318	772	410	438	786	836	495	835	1050			
28	305	773	380												
30	305	824	425	368	882	660									
32	305	878	560												

For detailed dimensions and configurations, please ask us for our detailed drawing arrangements.



KASKO DEMİRÇELİK MAKİNE VE İNŞAAT SANAYİ TİCARET LİMİTED ŞİRKETİ

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