

Swing Check Valve, BB, CS



Design

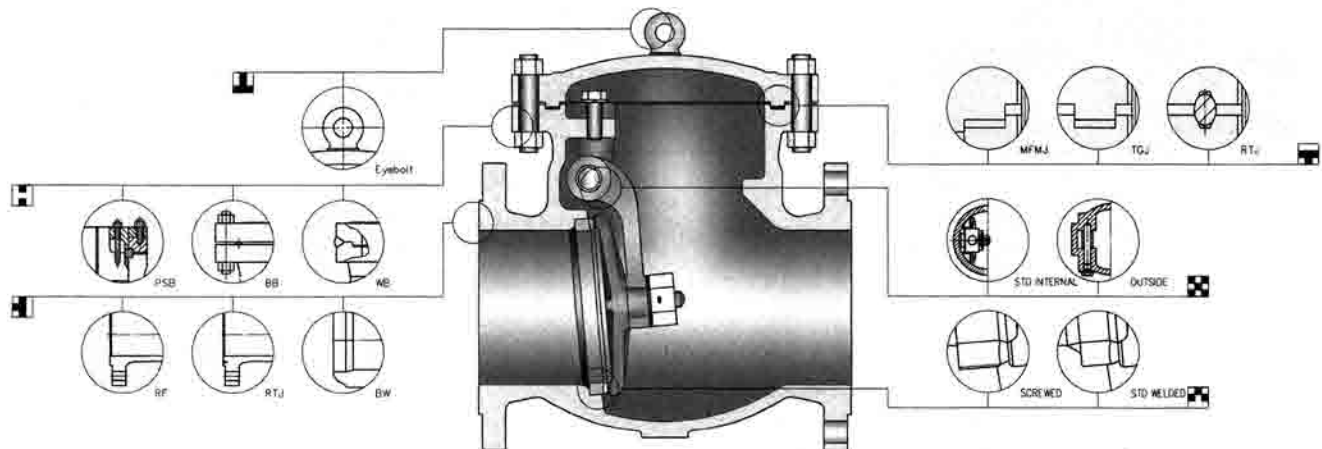
PASCO cast steel check valve are designed and manufactured to provide maximum service life and dependability. All check valves meet the design requirements of American Petroleum Institute Standard API 600 & API 6D, BS EN 13709 and generally conform to American Society of Mechanical Engineers standard ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.

Range of Materials

Standard body/bonnet materials include nine grades of carbon, low alloy and stainless steels. For special applications they can be supplied in other grades of alloy and stainless steel. There's a full range of trim materials to match any service. Optional packing and gasket materials are available for a full range of service conditions.

Available Modifications for PASCO Cast Steel Valves

- * Trim Changes
- * End Connection Modifications
- * Gasket Changes
- * Outside Lever and Weight
- * Slam Retarders
- * Pressure Equalizing
- * Outside Lever and Weight
- * Customer Specified Coatings
- * Weld End Bore Changes
- * Oxygen & Chlorine Cleaning & Packaging



Eyebolt

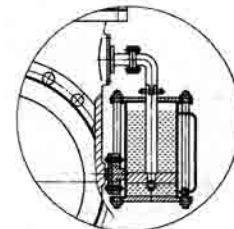
For 150Lb-8", 300Lb-8", 600Lb-6", 900Lb / 1500Lb / 2500Lb-4" & Over.

End Connections

A choice of Flanged, RTJ flanged or Buttwelding end for piping flexibility.

Outside Lever and Weight

All external hinge pin swing check valves 12" and smaller are available, with an optional outside lever and weight. Internal hinge available with all swing check valves.



BB

Bolted bonnet. Welding bonnet and pressure seal bonnet in services requiring frequent cycling or with high pressure / temperature variations.

Body-to-Bonnet Joint

A Male and Female joint or Tongue and Groove joint is used 150Lb to 600Lb valves. Ring joint is used in the body to bonnet connection in 900Lb & higher rated valves.

Seat Rings

Separate heavy duty, full ported rings for easy maintenance. Screwed or welded connection into body.

HCU Weighted Mechanical Accumulator

This design can be used to either dampen or assist closing of the check valve disc depending on orientation. By using the Hydraulic Control Unit to buffer action the disc, the valve opens at lower flow rates.



Swing

Cast Steel Check Valve

150Lb

Applicable standards:

- ★ STEEL CHECK VALVES, API 6D
- ★ STEEL CHECK VALVES, ISO 14313
- ★ STEEL VALVES, ASME B16.34
- ★ FACE TO FACE, ASME B16.10
- ★ END FLANGES, ASME B16.5
- ★ BUTTWELDING ENDS, ASME B16.25
- ★ INSPECTION AND TEST, API 598/ API 6D

Fig. No:

- C1F01A C1F05D C1F01B
- C1B01A C1B05D C1B01B

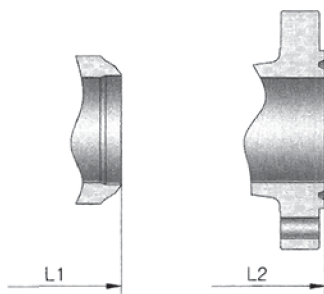
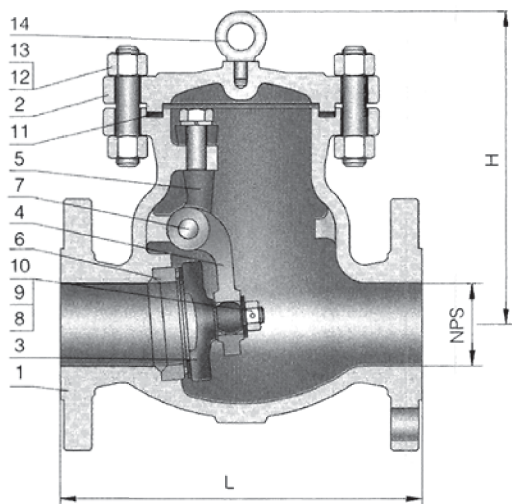
Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	1 $\frac{1}{2}$ %Cr- $\frac{1}{2}$ %Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet Cap	A216-WCB	A217-WC6	A352-LCB
3	Disc ¹⁾	A105+CR13	A182-F11+HF	A350-LF2+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Support	A216-WCB	A217-WC6	A352-LCB
6	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
7	Hinge Pin	A276-420	A276-304	A276-420
8	Disc Washer	Carbon Steel	A276-304	Carbon Steel
9	Disc Nut	Carbon Steel	A194-7	Carbon Steel
10	Disc Nut Pin	Carbon Steel	A276-420	Carbon Steel
11	Bonnet Gasket	Spiral Wound (Graphite+304)		
12	Bonnet Stud	A193-B7	A193-B16	A320-L7
13	Bonnet Stud Nut	A194-2H	A194-7	A194-4
14	Eyebolt ²⁾	Carbon Steel		

Note: 1). Cast steel disc for NPS 4" and above.

2) NPS 6" & larger.

3). Disc and seat ring may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown.



Design description:

- ▲ BB, BOLTED BONNET CAP
- ▲ SWING TYPE, ANTI-ROTATION DISC
- ▲ RENEWABLE SEAT RINGS
- ▲ NON-PENETRATE DISC SHAFT
- ▲ HORIZONTAL OR VERTICAL SERVICE
- ▲ FLANGED OR BUTTWELDING ENDS

Dimensions data

NPS DN	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	36 900	in mm
ANSI Class 150Lb																		
L/L1 (RF/BW)	8.00 203	8.50 216	9.50 241	11.50 292	14.00 356	19.50 495	24.50 622	27.50 699	31.00 787	34.00 864	38.50 978	38.50 978	51.00 1295	51.00 1295	57.00 1448	60.00 1524	77.00 1956	in. mm
L2 (RTJ)	8.50 216	9.00 229	10.00 254	12.00 305	14.50 368	20.00 508	25.00 635	28.00 711	31.50 800	34.50 876	39.00 991	39.00 991	51.50 1308	-	-	-	-	in. mm
H	6.00 152	6.50 165	6.88 175	8.00 204	11.50 293	13.88 353	15.38 390	17.00 432	18.75 475	20.62 525	22.88 582	24.62 627	34.75 883	35.88 910	37.00 940	38.62 980	48.00 1220	in. mm
WT (Kg)	14 10	20 12	25 17	40 29	71 57	118 96	177 143	263 227	353 295	542 468	632 552	855 755	970 831	1275 1120	1600 1420	1990 1760	2760 2230	RF/RTJ BW

Applicable standards:

- ★ STEEL CHECK VALVES, API 6D
- ★ STEEL CHECK VALVES, ISO 14313
- ★ STEEL VALVES, ASME B16.34
- ★ FACE TO FACE, ASME B16.10
- ★ END FLANGES, ASME B16.5
- ★ BUTTWELDING ENDS, ASME B16.25
- ★ INSPECTION AND TEST, API 598/ API 6D

Fig. No:

- C3F01A C3F05D C3F01B
- C3B01A C3B05D C3B01B
- C3R01A C3R05D C3R01B

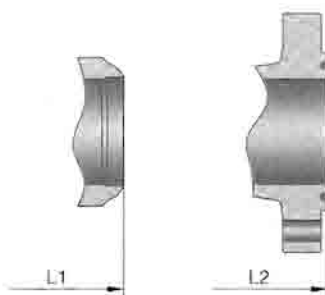
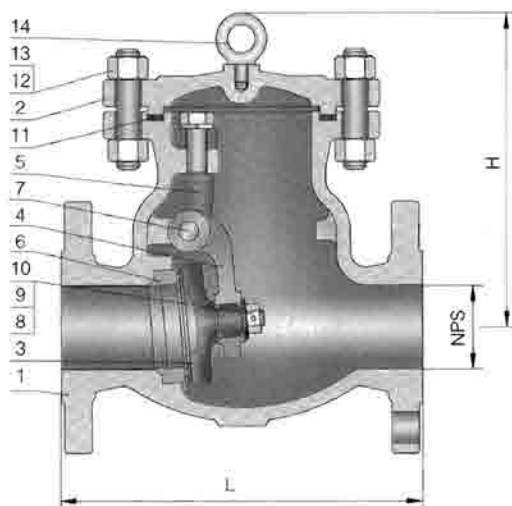
Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	1 $\frac{1}{2}$ %Cr-1 $\frac{1}{2}$ %Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet Cap	A216-WCB	A217-WC6	A352-LCB
3	Disc ¹⁾	A105+CR13	A182-F11+HF	A350-LF2+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Support	A216-WCB	A217-WC6	A352-LCB
6	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
7	Hinge Pin	A276-420	A276-304	A276-420
8	Disc Washer	Carbon Steel	A276-304	Carbon Steel
9	Disc Nut	Carbon Steel	A194-7	Carbon Steel
10	Disc Nut Pin	Carbon Steel	A276-420	Carbon Steel
11	Bonnet Gasket	Spiral Wound (Graphite+304)		
12	Bonnet Stud	A193-B7	A193-B16	A320-L7
13	Bonnet Stud Nut	A194-2H	A194-7	A194-4
14	Eyebolt [®]	Carbon Steel		

Note: 1). Cast steel disc for NPS 4" and above.

2) NPS 6" & larger.

3) Disc and seat ring may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown.

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- ▲ SWING TYPE, ANTI-ROTATION DISC
- ▲ RENEWABLE SEAT RINGS
- ▲ NON-PENETRATE DISC SHAFT
- ▲ HORIZONTAL OR VERTICAL SERVICE
- ▲ FLANGED OR BUTTWELDING ENDS

Dimensions data

NPS DN	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	36 900	in mm
ANSI Class 300Lb																		
L/L1 (RF/BW)	10.50 267	11.50 292	12.50 318	14.00 356	17.50 445	21.00 533	24.50 622	28.00 711	33.00 838	34.00 864	38.50 978	40.00 1016	53.00 1346	53.00 1346	59.00 1499	62.75 1594	82.00 2083	in. mm
L2 (RTJ)	11.12 283	12.12 308	13.12 333	14.62 371	18.12 460	21.62 549	25.12 638	28.62 727	33.62 854	34.62 879	39.12 994	40.75 1035	53.88 1368	54.00 1372	60.00 1524	63.75 1619	-	in. mm
H	6.00 152	6.50 165	6.88 175	8.00 204	11.50 292	13.88 353	15.38 390	17.00 432	18.75 475	20.62 525	22.88 582	24.62 627	34.75 883	35.88 910	37.00 940	38.62 980	48.00 1220	in. mm
WT (Kg)	16 11	23 13	29 18	46 31	82 61	136 103	204 155	302 245	405 315	625 503	730 593	985 812	1115 895	1465 1205	1840 1525	2290 1895	3180 2395	RF/RTJ BW



Swing

Cast Steel Check Valve

600Lb

Applicable standards:

- ★ STEEL CHECK VALVES, API 6D
- ★ STEEL CHECK VALVES, ISO 14313
- ★ STEEL VALVES, ASME B16.34
- ★ FACE TO FACE, ASME B16.10
- ★ END FLANGES, ASME B16.5
- ★ BUTTWELDING ENDS, ASME B16.25
- ★ INSPECTION AND TEST, API 598/ API 6D

Fig. No:

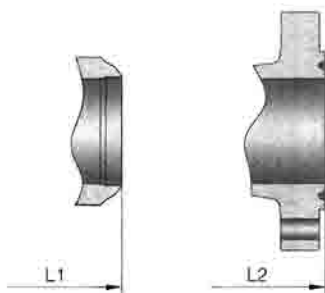
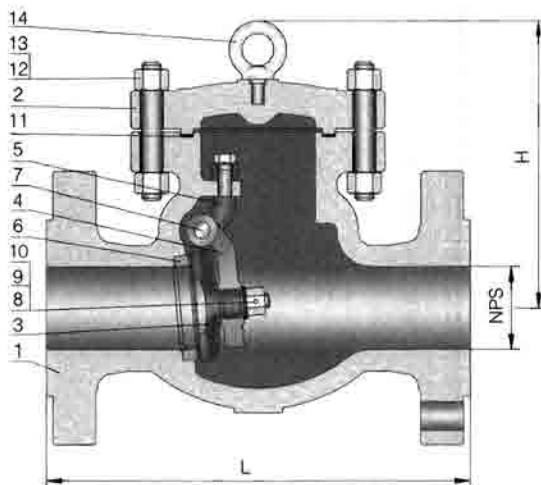
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- ☉ C6B01A C6B05D C6B01B
- ☉ C6R01A C6R05D C6R01B

Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	1 $\frac{1}{2}$ %Cr- $\frac{1}{2}$ %Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet Cap	A216-WCB	A217-WC6	A352-LCB
3	Disc ¹⁾	A216-WCB+CR13	A217-WC6+HF	A352-LCB+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Support	A216-WCB	A217-WC6	A352-LCB
6	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
7	Hinge Pin	A276-420	A276-304	A276-420
8	Disc Washer	Carbon Steel	A276-304	Carbon Steel
9	Disc Nut	Carbon Steel	A194-7	Carbon Steel
10	Disc Nut Pin	Carbon Steel	A276-420	Carbon Steel
11	Bonnet Gasket	Spiral Wound (Graphite+304)		
12	Bonnet Stud	A193-B7	A193-B16	A320-L7
13	Bonnet Stud Nut	A194-2H	A194-7	A194-4
14	Eyebolt ¹⁾	Carbon Steel		

Note: 1). NPS 6" & larger.

2). Disc and seat ring may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown



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- ▲ SWING TYPE, ANTI-ROTATION DISC
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- ▲ NON-PENETRATE DISC SHAFT
- ▲ HORIZONTAL OR VERTICAL SERVICE
- ▲ FLANGED OR BUTTWELDING ENDS

Dimensions data

NPS DN	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
ANSI Class 600Lb														
L/L1 (RF/BW)	11.50 292	13.00 330	14.00 356	17.00 432	22.00 559	26.00 660	31.00 787	33.00 838	35.00 889	39.00 991	43.00 1092	47.00 1194	55.00 1397	in. mm
L2 (RTJ)	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	26.12 664	31.12 791	33.12 841	35.12 892	39.12 994	43.12 1095	47.25 1200	55.38 1407	in. mm
H	7.50 190	8.00 205	8.75 222	10.00 255	14.50 368	17.50 445	19.25 490	21.38 540	23.38 595	25.75 655	28.75 730	31.00 785	43.50 1105	in. mm
WT (Kg)	24 16	35 19	44 26	70 44	125 87	207 147	310 220	460 350	615 452	945 720	1105 845	1495 1160	1695 1280	RF/RTJ BW ²⁾



Applicable standards:

- ★ STEEL CHECK VALVES, API 6D
- ★ STEEL CHECK VALVES, ISO 11313
- ★ STEEL VALVES, ASME B16.34
- ★ FACE TO FACE, ASME B16.10
- ★ END FLANGES, ASME B16.5
- ★ BUTTWELDING ENDS, ASME B16.25
- ★ INSPECTION AND TEST, API 598/ API 6D

Fig. No:

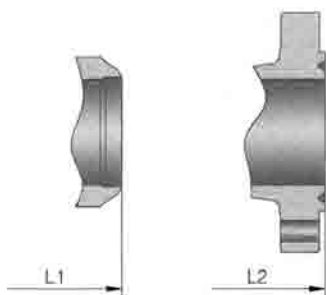
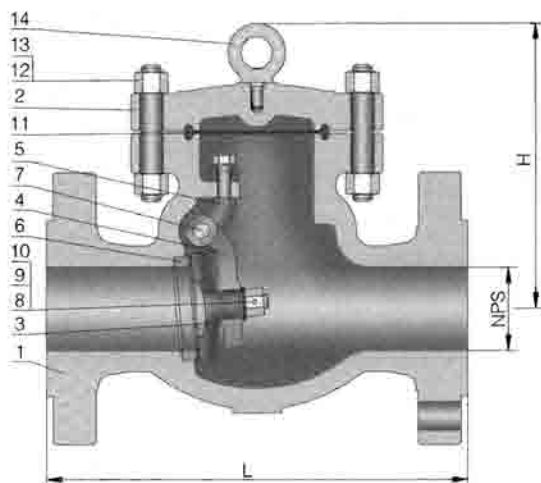
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- C9B05A C9B05D C9B05B
- C9R05A C9R05D C9R05B

Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	1 $\frac{1}{2}$ %Cr-1%Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet Cap	A216-WCB	A217-WC6	A352-LCB
3	Disc ¹⁾	A216-WCB+Cr13	A217-WC6+HF	A352-LCB+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Support	A216-WCB	A217-WC6	A352-LCB
6	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
7	Hinge Pin	A276-420	A276-304	A276-420
8	Disc Washer	Carbon Steel	A276-304	Carbon Steel
9	Disc Nut	Carbon Steel	A194-7	Carbon Steel
10	Disc Nut Pin	Carbon Steel	A276-420	Carbon Steel
11	Bonnet Gasket	Steel Ring	304SS Ring	Steel Ring
12	Bonnet Stud	A193-B7	A193-B16	A320-L7
13	Bonnet Stud Nut	A194-2H	A194-7	A194-4
14	Eyebolt ¹⁾	Carbon Steel		

Note: 1). NPS 6" & larger

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Dimensions data

NPS DN	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
ANSI Class 900Lb														
L/L1 (RF/BW)	14.50 368	18.50 419	15.00 381	18.00 457	24.00 610	29.00 737	33.00 838	38.00 965	40.50 1029	44.50 1130	48.00 1219	52.00 1321	-	in. mm
L2 (RTJ)	14.62 371	16.62 422	15.12 384	18.12 460	24.12 613	29.12 740	33.12 841	38.12 968	40.88 1038	44.88 1140	48.50 1232	52.50 1334	-	in. mm
H	9.50 240	10.00 256	11.00 278	12.50 320	18.12 460	22.00 560	24.00 610	26.50 675	29.38 745	32.00 815	33.50 850	38.75 985	-	in. mm
WT (Kg)	37 21	54 25	68 34	109 58	195 115	321 194	481 290	711 461	956 597	1468 950	1870 1210	2316 1533	-	RF/RTJ BW



Swing

Cast Steel Check Valve 1500Lb/2500Lb

Applicable standards:

- ★ STEEL CHECK VALVES, API 6D
- ★ STEEL CHECK VALVES, ISO 14313
- ★ STEEL VALVES, ASME B16.34
- ★ FACE TO FACE, ASME B16.10
- ★ END FLANGES, ASME B16.5
- ★ BUTTWELDING ENDS, ASME B16.25
- ★ INSPECTION AND TEST, API 598/ API 6D

Fig. No:

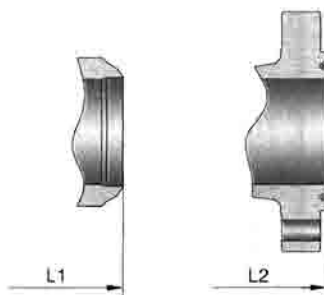
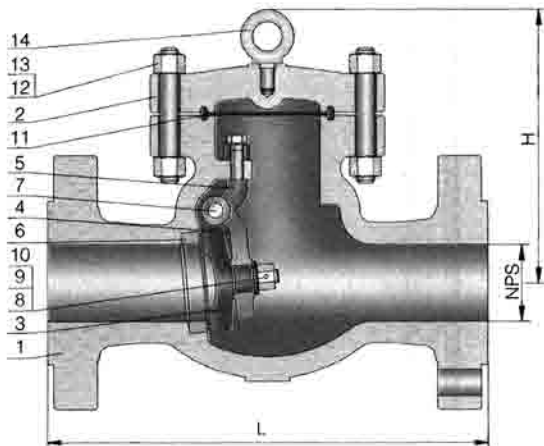
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| ○ C15R05A | ○ C15R05D | ○ C15R05B | ○ C25R05A | ○ C25R05D | ○ C25R05B |

Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	1 $\frac{1}{2}$ %Cr- $\frac{1}{2}$ %Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet Cap	A216-WCB	A217-WC6	A352-LCB
3	Disc ¹⁾	A216-WCB+CR13	A217-WC6+HF	A352-LCB+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Support	A216-WCB	A217-WC6	A352-LCB
6	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
7	Hinge Pin	A276-420	A276-304	A276-420
8	Disc Washer	Carbon Steel	A276-304	Carbon Steel
9	Disc Nut	Carbon Steel	A194-7	Carbon Steel
10	Disc Nut Pin	Carbon Steel	A276-420	Carbon Steel
11	Bonnet Gasket	Steel Ring	304SS Ring	Steel Ring
12	Bonnet Stud	A193-B7	A193-B16	A320-L7
13	Bonnet Stud Nut	A194-2H	A194-7	A194-4
14	Eyebolt ¹⁾	Carbon Steel		

Note: 1) NPS 6" & larger.

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Dimensions data

NPS	DN	L/L1 (RF/BW)		L2 (RTJ)		H		WT (Kg)		L/L1 (RF/BW)		L2 (RTJ)		H		WT (Kg)	
		ANSI Class 1500Lb								ANSI Class 2500Lb							
2	50	14.50	368	14.62	371	9.50	240	40	29	17.75	451	17.88	454	10.75	275	50	35
2½	65	16.50	419	16.62	422	10.00	256	63	47	20.00	508	20.25	514	13.25	335	76	55
3	80	18.50	470	18.62	473	13.00	330	70	49	22.75	578	23.00	584	13.75	350	85	68
4	100	21.50	546	21.62	549	14.75	375	115	84	26.50	673	26.88	683	15.12	385	165	115
6	150	27.75	705	28.00	711	18.88	480	250	152	36.00	914	36.50	927	19.50	495	460	225
8	200	32.75	832	33.12	841	23.50	595	470	310	40.25	1022	40.88	1038	24.62	625	900	580
10	250	39.00	991	39.38	1000	26.00	660	740	470	50.00	1270	50.88	1292	28.00	712	1300	860
12	300	44.50	1130	45.12	1146	29.12	740	1100	710	56.00	1422	56.88	1445	35.62	905	1800	1150
14	350	49.50	1257	50.25	1276	30.88	785	1410	910	-	-	-	-	-	-	-	-
16	400	54.50	1384	55.38	1407	32.88	835	1600	1100	-	-	-	-	-	-	-	-
in.	mm	in.	mm	in.	mm	in.	mm	RF/RTJ	BW	in.	mm	in.	mm	in.	mm	RF/RTJ	BW

800Lb Compact Steel Check Valve



Applicable standards:

- ★ STEEL CHECK VALVES, API 602
- ★ STEEL VALVES, ASME B16.34
- ★ FACE TO FACE, MANUFACTURER STANDARD
- ★ FACE TO FACE, FLANGED, ASME B16.10
- ★ END FLANGES, ASME B16.5
- ★ BUTTWELDING ENDS, ASME B16.25
- ★ SOCKET-WELDING ENDS, ASME B16.11
- ★ SCREWED ENDS, ASME B1.20.1
- ★ INSPECTION AND TEST, API 598

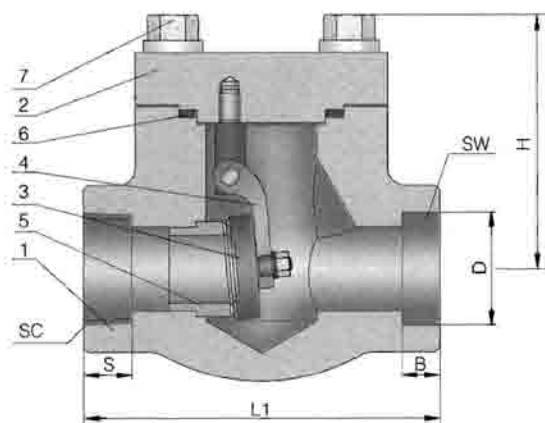
Fig. No:

SWING

○C8F01FA	C8B01FA	C8S01FA	C8T01FA
○C8F01FD	C8B01FD	C8S01FD	C8T01FD
○C8F01FN	C8B01FN	C8S01FN	C8T01FN

LIFT

○CL8F01FA	CL8B01FA	CL8S01FA	CL8T01FA
○CL8F01FD	CL8B01FD	CL8S01FD	CL8T01FD
○CL8F01FN	CL8B01FN	CL8S01FN	CL8T01FN



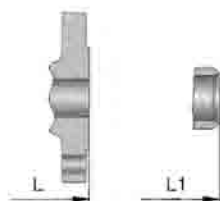
Materials of parts

NO	Part Name	ASTM Material		
		C-Si	16Cr-12Ni-2Mo	1 1/2Cr-1/2Mo-Si
1	Body	A105	A182-F316	A182-F11
2	Bonnet	A105	A182-F316	A182-F11
3	Disc	A182-F6a	A182-F316	A182-F6a+HF
4	Hinge	A276-410	A276-316	A276-410
5	Seat1)	A276-410	A182-F316+HF	A276-410+HF
6	Bonnet Gasket ²⁾	Graphite+304	Graphite+316	Graphite+304
7	Bonnet Stud	A193-B7	A193-B8M	A193-B16

Note: 1). Lift type check valve seal ring integral with body.
2). Spiral wound construction.



Lift Type



150-600Lb

Design description:

- ▲ BOLTED BONNET CAP
- ▲ CHOICE OF WB, WELDING BONNET
- ▲ LIFT OR SWING TYPE
- ▲ SEAT RINGS INTEGRAL WITH BODY OF LIFT
- ▲ HORIZONTAL OR VERTICAL SERVICE
- ▲ SOCKET WELD ENDS
- ▲ SW, SOCKET-WELDING ENDS
- ▲ SC, SCREWED ENDS
- ▲ BW, BUTTWELDING ENDS
- ▲ FLANGED ENDS

Dimensions data

NPS DN	Unit	L1 ¹⁾	L (Flanged Ends)				d	SW	SC	H	WT ²⁾ (Kg)
			150Lb	300Lb	600Lb						
3/8	in.	3.12	4.00	6.00	6.50	0.354	0.693	0.378			
10	mm	79	102	152	165	9	17.6	9.6	3/8	0.540	2.40
1/2	in.	3.12	4.25	6.00	6.50	0.354	0.858	0.378			
15	mm	79	108	152	165	10	21.8	9.6	1/2	0.535	2.40
3/4	in.	3.62	4.62	7.00	7.50	0.512	1.067	0.500			
20	mm	92	117	178	190	13	27.1	12.7	3/4	0.547	2.40
1	in.	4.38	5.00	8.00	8.50	0.689	1.331	0.500			
25	mm	111	127	203	216	17.5	33.8	12.7	1	0.681	3.07
1 1/4	in.	4.75	5.50	8.50	9.00	0.906	1.677	0.500			
32	mm	120	140	216	229	23	42.6	12.7	1 1/4	0.709	3.31
1 1/2	in.	4.75	6.50	9.00	9.50	1.142	1.917	0.500			
40	mm	120	165	229	241	30	48.7	12.7	1 1/2	0.724	10.25
2	in.	5.50	8.00	10.50	11.50	1.378	2.406	0.626			
50	mm	140	203	267	292	35	61.1	15.9	2	0.756	4.72
										19.2	120

NOTES: 1) BW, SW or SC.
2) 600Lb-RF/800Lb-(BW/SW/SC).

Butterfly Dual-plate

150Lb/300Lb

Cast Steel Check Valve



Applicable standards:

- ★ STEEL CHECK VALVES, API 594/API 6D
- ★ STEEL CHECK VALVES, ISO 14313
- ★ STEEL VALVES, ASME B16.34
- ★ FACE TO FACE, ASME B16.10
- ★ END FLANGES, ASME B16.5
- ★ INSPECTION AND TEST, API 598/ API 6D

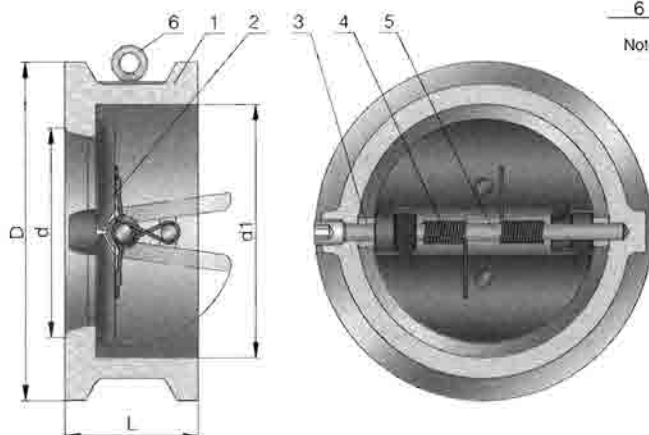
Fig. No:

- CD1W01A CD1W05D CD1W01B CD3W01A CD3W05D CD3W01B
- CD1F01A CD1F05D CD1F01B CD3F01A CD3F05D CD3F01B

Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Plate	A216-WCB+CR13	A351-CF8M+HF	A352-LCB+CR13
3	Stop Pin	A276-420	A276-304	A276-420
4	Back Spring	A313-304	A313-316	A313-304
5	Hinge Pin	A276-420	A276-304	A276-420
6	Eyebolt ¹⁾	Carbon Steel		

Note: 1), NPS 8" & larger.



Design description:

- ▲ ONE PIECE BODY
- ▲ BUTTERFLY SWING TYPE
- ▲ DUAL-PLATE DISC, LONG-PATTERN
- ▲ RENEWABLE SPLIT DISC
- ▲ HORIZONTAL OR VERTICAL SERVICE
- ▲ WAFFER ENDS
- ▲ AVAILABLE WITH FLANGED ENDS

Dimensions data

NPS DN	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
ANSI Class 150Lb														
L	2.38	2.62	2.88	2.88	3.88	5.00	5.75	7.12	7.25	7.50	8.00	8.62	8.75	in.
	60	67	73	73	98	127	146	181	184	191	203	219	222	mm
D	4.00	4.88	5.38	6.75	8.62	10.88	13.25	16.00	17.62	20.12	21.50	23.75	28.12	in.
	103	122	135	173	220	277	337	407	448	512	547	604	715	mm
d	2.00	2.50	3.25	4.00	6.00	8.00	10.00	12.00	13.75	15.75	17.75	19.75	23.62	in.
	51	65	80	102	152	203	254	305	350	400	450	500	600	mm
d1	2.25	2.88	3.50	4.25	6.25	8.25	10.50	12.12	14.00	16.00	18.00	19.88	23.75	in.
	56	73	88	108	160	210	266	310	355	405	455	505	605	mm
WT	2	3	4	6	13	25	39	54	80	117	138	163	331	Kg
ANSI Class 300Lb														
L	2.38	2.62	2.88	2.88	3.88	5.00	5.75	7.12	8.75	9.12	10.38	11.50	12.50	in.
	60	67	73	73	98	127	146	181	222	232	264	292	318	mm
D	4.25	5.00	5.75	7.00	9.88	12.00	14.12	16.50	19.00	21.12	23.38	25.62	30.38	in.
	110	128	147	179	249	305	359	420	483	537	594	652	772	mm
d	2.00	2.50	3.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	24.00	in.
	51	65	80	102	152	203	254	305	350	400	450	500	600	mm
d1	2.25	2.88	3.50	4.25	6.38	8.25	10.50	12.25	14.00	16.00	18.00	20.00	24.00	in.
	58	73	88	108	160	210	266	310	355	405	455	505	608	mm
WT	3	4	6	8	18	31	51	77	117	190	200	265	410	Kg



Butterfly Dual-plate Cast Steel Check Valve

600Lb/900Lb

Applicable standards:

- ★ STEEL CHECK VALVES, API 594/API 6D
- ★ STEEL CHECK VALVES, ISO 14313
- ★ STEEL VALVES, ASME B16.34
- ★ FACE TO FACE, ASME B16.10
- ★ END FLANGES, ASME B16.5
- ★ INSPECTION AND TEST, API 598/ API 6D

Fig. No:

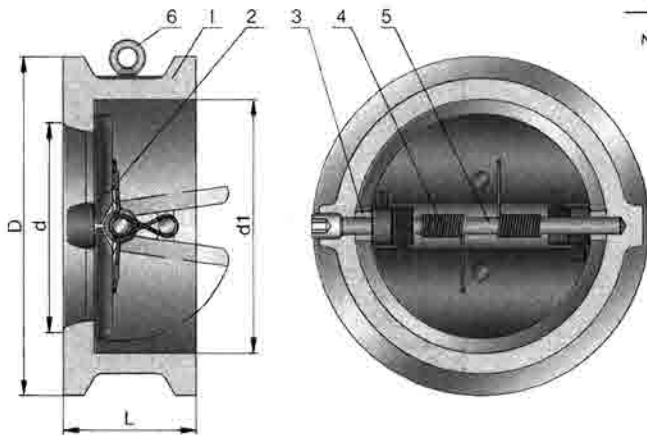
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○ CD6F01A CD6F05D CD6F01B

○ CD9W05A CD9W05D CD9W05B
○ CD9F05A CD9F05D CD9F05B

Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Plate	A216-WCB+CR13	A351-CF8M+HF	A352-LCB+CR13
3	Stop Pin	A276-420	A276-304	A276-420
4	Back Spring	A313-304	A313-316	A313-304
5	Hinge Pin	A276-420	A276-304	A276-420
6	Eyebolt ¹⁾	Carbon Steel		

Note: 1) NPS 8 & large



Design description:

- ▲ ONE PIECE BODY
- ▲ BUTTERFLY SWING TYPE
- ▲ DUAL-PLATE DISC, LONG-PATTERN
- ▲ RENEWABLE SPLIT DISC
- ▲ HORIZONTAL OR VERTICAL SERVICE
- ▲ WAFER ENDS
- ▲ AVAILABLE WITH FLANGED ENDS

Dimensions data

NPS	DN	L		D		d		d1		WT	L		D		d		d1		WT		
		ANSI Class 600Lb										ANSI Class 900Lb									
2	50	2.38	60	4.38	110	2.00	51	2.25	58	4	2.75	70	5.50	140	2.00	51	2.25	58	8		
2½	65	2.62	67	5.00	128	2.50	65	2.88	73	5	3.25	83	6.38	162	2.50	65	2.88	73	11		
3	80	2.88	73	5.75	147	3.00	80	3.50	88	8	3.25	83	6.50	165	3.00	80	3.50	88	14		
4	100	3.12	79	7.50	191	4.00	102	4.25	108	11	4.00	102	8.00	204	4.00	102	4.25	108	20		
6	150	5.38	137	10.38	264	6.00	152	6.38	162	26	6.25	159	11.25	286	6.00	152	6.38	162	42		
8	200	6.50	165	12.50	318	7.88	200	8.38	212	55	8.12	206	14.00	356	7.88	200	8.38	212	84		
10	250	8.38	213	15.62	398	9.88	250	10.50	266	95	9.50	241	17.00	432	9.88	250	10.50	266	145		
12	300	9.00	229	17.88	455	12.00	305	12.25	312	140	11.50	292	19.50	495	12.00	305	12.25	312	220		
14	350	10.75	273	19.25	490	13.25	337	14.00	355	223	-	-	-	-	-	-	-	-	-		
16	400	12.00	305	22.12	562	15.25	387	15.75	400	360	-	-	-	-	-	-	-	-	-		
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	Kg	in.	mm	in.	mm	in.	mm	in.	mm	Kg		

API 603 Corrosion-Resistant Valves

150Lb Cast Stainless Steel Swing Check Valve



Applicable standards:

- ★ STEEL CHECK VALVES, API 603
- ★ STEEL VALVES, ASME B16.34
- ★ FACE TO FACE, ASME B16.10
- ★ END FLANGES, ASME B16.5
- ★ BUTTWELDING ENDS, ASME B16.25
- ★ INSPECTION AND TEST, API 598

Fig. No:

- C1F02K C1F10L C1F10N
- C1B02K C1B10L C1B10N

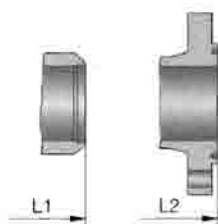
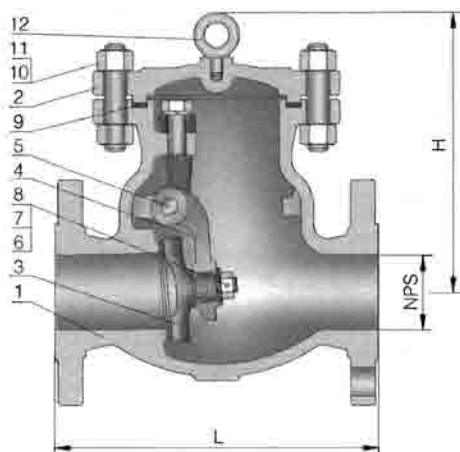
Materials of parts

NO	Part Name	ASTM Material		
		18Cr-18Ni	18Cr-9Ni-2Mo	17Cr-9Ni-2Mo
1	Body	A351-CF8	A351-CF8M	A351-CF3M
2	Bonnet Cap	A351-CF8	A351-CF8M	A351-CF3M
3	Disc	A351-CF8	A351-CF8M	A351-CF3M
4	Hinge	A351-CF8	A351-CF8M	A351-CF3M
5	Hinge Pin	A276-304	A276-316	A276-316L
6	Disc Washer	A276-304	A276-316	A276-316L
7	Disc Nut	A193-B8	A193-B8M	A193-B8M
8	Disc Nut Pin	A276-304	A276-316	A276-316L
9	Bonnet Gasket ¹⁾	Graphite+304	Graphite+316	Graphite+316L
10	Bonnet Stud	A193-B8	A193-B8M	A193-B8M
11	Bonnet Stud Nut	A194-8	A194-8M	A194-8M
12	Eyebolt ²⁾	A194-8	A194-8	A194-8

Note 1) Spiral wound construction, Teflon optional.

2) NPS 6" & larger.

3) Disc and seat (Integral with body) may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown.



Design description:

- ▲ BB, BOLTED BONNET CAP
- ▲ SWING TYPE, ANTI-ROTATION DISC
- ▲ SEAT RINGS INTEGRAL WITH BODY
- ▲ NON-PENETRATE DISC SHAFT
- ▲ HORIZONTAL OR VERTICAL SERVICE
- ▲ FLANGED OR BUTTWELDING ENDS

Dimensions data

NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	in mm
ANSI Class 150Lb																			
L/L1 (RF/BW)	4.25 108	4.62 117	5.00 127	6.50 165	8.00 203	8.50 216	9.50 241	11.50 292	14.00 356	19.50 495	24.50 622	27.50 699	31.00 787	34.00 864	38.50 978	38.50 978	51.00 1295	-	in. mm
L2 (RTJ)	-	-	-	-	8.50 216	9.00 229	10.00 254	12.00 305	14.50 368	20.00 508	25.00 635	28.00 711	31.50 800	34.50 876	39.00 991	39.00 991	51.50 1308	-	in. mm
H	3.12 80	3.38 85	3.88 100	4.38 110	6.00 152	6.50 165	6.88 175	8.00 204	11.50 293	13.88 353	15.38 390	17.00 432	18.75 475	20.62 525	22.88 582	24.62 627	34.75 883	-	in. mm
WT (Kg)	2.5 2	3.5 3	5 3.5	7.5 5.5	14 10	20 12	25 17	40 29	71 57	118 96	177 143	263 227	353 295	542 468	632 552	855 755	970 831	-	BW RF/RTJ



API 603 Corrosion-Resistant Valves

Cast Stainless Steel Swing Check Valve 300Lb

Applicable standards:

- ★ STEEL CHECK VALVES, API 603
- ★ STEEL VALVES, ASME B16.34
- ★ FACE TO FACE, ASME B16.10
- ★ END FLANGES, ASME B16.5
- ★ BUTTWELDING ENDS, ASME B16.25
- ★ INSPECTION AND TEST, API 598

Fig. No:

○ C3F02K	C3F10L	C3F10N
○ C3B02K	C3B10L	C3B10N
○ C3R02K	C3R10L	C3R10N

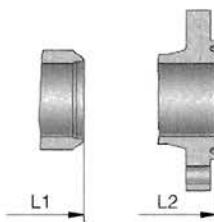
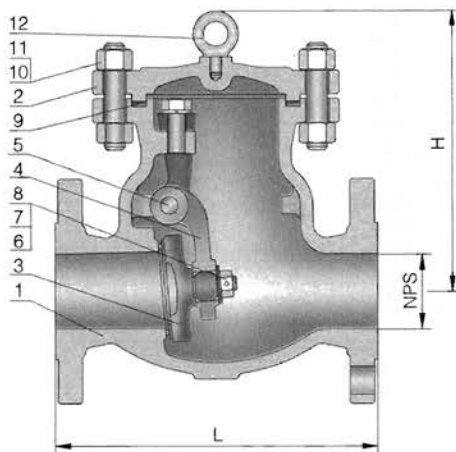
Materials of parts

NO	Part Name	ASTM Material		
		18Cr-18Ni	18Cr-9Ni-2Mo	17Cr-9Ni-2Mo
1	Body	A351-CF8	A351-CF8M	A351-CF3M
2	Bonnet Cap	A351-CF8	A351-CF8M	A351-CF3M
3	Disc	A351-CF8	A351-CF8M	A351-CF3M
4	Hinge	A351-CF8	A351-CF8M	A351-CF3M
5	Hinge Pin	A276-304	A276-316	A276-316L
6	Disc Washer	A276-304	A276-316	A276-316L
7	Disc Nut	A193-B8	A193-B8M	A193-B8M
8	Disc Nut Pin	A276-304	A276-316	A276-316L
9	Bonnet Gasket ¹⁾	Graphite+304	Graphite+316	Graphite+316L
10	Bonnet Stud	A193-B8	A193-B8M	A193-B8M
11	Bonnet Stud Nut	A194-8	A194-8M	A194-8M
12	Eyebolt ²⁾	A194-8	A194-8	A194-8

Note: 1) Spiral wound construction, Teflon optional.

2) NPS 6" & larger.

3) Disc and seat (integral with body) may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown.



Design description:

- ▲ BB, BOLTED BONNET CAP
- ▲ SWING TYPE, ANTI-ROTATION DISC
- ▲ SEAT RINGS INTEGRAL WITH BODY
- ▲ NON-PENETRATE DISC SHAFT
- ▲ HORIZONTAL OR VERTICAL SERVICE
- ▲ FLANGED OR BUTTWELDING ENDS

Dimensions data

NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	in mm
ANSI Class 300Lb																			
L/L1 (RF/BW)	6.00 152	7.00 178	8.00 203	9.00 229	10.50 267	11.50 292	12.50 318	14.00 356	17.50 445	21.00 533	24.50 622	28.00 711	33.00 838	34.00 864	38.50 978	40.00 1016	53.00 1346	-	in. mm
L2 (RTJ)	-	-	-	-	11.12 283	12.12 308	13.12 333	14.62 371	18.12 460	21.62 549	25.12 638	28.62 727	33.62 854	34.62 879	39.12 994	40.75 1035	53.88 1368	-	in. mm
H	3.12 80	3.38 85	3.88 100	4.38 110	6.00 152	6.50 165	6.88 175	8.00 204	11.50 293	13.88 353	15.38 390	17.00 432	18.75 475	20.62 525	22.88 582	24.62 627	34.75 883	-	in. mm
WT (Kg)	3 2.5	4 3.5	6 5	10 7	16 11	23 13	29 18	46 31	82 61	136 103	204 155	302 245	405 315	625 503	730 593	985 812	1115 895	-	BW RF/RTJ

API 603 Corrosion-Resistant Valves

600Lb Cast Stainless Steel Swing Check Valve



Applicable standards:

- ★ STEEL CHECK VALVES, API 603
- ★ STEEL VALVES, ASME B16.34
- ★ FACE TO FACE, ASME B16.10
- ★ END FLANGES, ASME B16.5
- ★ BUTTWELDING ENDS, ASME B16.25
- ★ INSPECTION AND TEST, API 598

Fig. No:

○ C6F05K	C6F12L	C6F12N
○ C6B05K	C6B12L	C6B12N
○ C6R05K	C6R12L	C6R12N

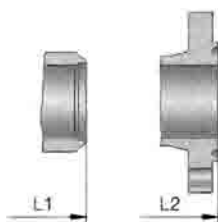
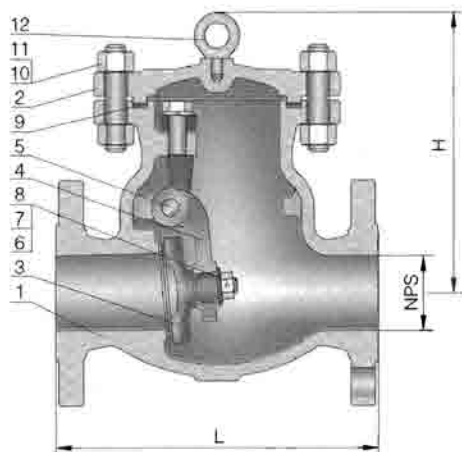
Materials of parts

NO	Part Name	ASTM Material		
		18Cr-18Ni	18Cr-9Ni-2Mo	17Cr-9Ni-2Mo
1	Body	A351-CF8	A351-CF8M	A351-CF3M
2	Bonnet Cap	A351-CF8	A351-CF8M	A351-CF3M
3	Disc	A351-CF8	A351-CF8M	A351-CF3M
4	Hinge	A351-CF8	A351-CF8M	A351-CF3M
5	Hinge Pin	A276-304	A276-316	A276-316L
6	Disc Washer	A276-304	A276-316	A276-316L
7	Disc Nut	A193-B8	A193-B8M	A193-B8M
8	Disc Nut Pin	A276-304	A276-316	A276-316L
9	Bonnet Gasket ¹⁾	Graphite+304	Graphite+316	Graphite+316L
10	Bonnet Stud	A193-B8	A193-B8M	A193-B8M
11	Bonnet Stud Nut	A194-8	A194-8M	A194-8M
12	Eyebolt ²⁾	A194-8	A194-8	A194-8

Note: 1) Spiral wound construction; Teflon optional.

2) NPS 6" & larger.

3) Disc and seat (Integral with body) may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown.



Design description:

- ▲ BB, BOLTED BONNET CAP
- ▲ SWING TYPE, ANTI-ROTATION DISC
- ▲ SEAT RINGS INTEGRAL WITH BODY
- ▲ NON-PENETRATE DISC SHAFT
- ▲ HORIZONTAL OR VERTICAL SERVICE
- ▲ FLANGED OR BUTTWELDING ENDS

Dimensions data

NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	in mm
ANSI Class 600Lb																			
L/L1 (RF/BW)	6.50 165	7.50 190	8.50 216	9.50 241	11.50 292	13.00 330	14.00 356	17.00 432	22.00 559	26.00 660	31.00 787	33.00 838	35.00 889	39.00 991	43.00 1092	47.00 1194	55.00 1397	-	in. mm
L2 (RTJ)	-	-	-	-	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	26.12 664	31.12 791	33.12 841	35.12 892	39.12 994	43.12 1095	47.25 1200	55.38 1407	-	in. mm
H	3.38 85	3.50 90	4.50 115	5.50 140	7.50 190	8.00 205	8.75 222	10.00 255	14.50 368	17.50 445	19.25 490	21.38 540	23.38 595	25.75 655	28.75 730	31.00 785	43.50 1105	-	in. mm
WT (Kg)	5.5 4	7.5 6	12 8	18 12.5	24 16	35 19	44 26	70 44	125 87	207 147	310 220	460 350	615 452	945 720	1105 845	1495 1160	1695 1280	-	BW RF/RTJ

800Lb Compact Steel Check Valve



Applicable standards:

- ★ STEEL CHECK VALVES, API 602
- ★ STEEL VALVES, ASME B16.34
- ★ FACE TO FACE, MANUFACTURER STANDARD
- ★ FACE TO FACE, FLANGED, ASME B16.10
- ★ END FLANGES, ASME B16.5
- ★ BUTTWELDING ENDS, ASME B16.25
- ★ SOCKET-WELDING ENDS, ASME B16.11
- ★ SCREWED ENDS, ASME B1.20.1
- ★ INSPECTION AND TEST, API 598

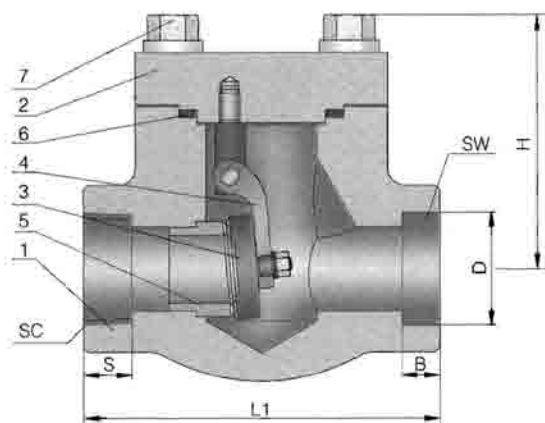
Fig. No:

SWING

○C8F01FA	C8B01FA	C8S01FA	C8T01FA
○C8F01FD	C8B01FD	C8S01FD	C8T01FD
○C8F01FN	C8B01FN	C8S01FN	C8T01FN

LIFT

○CL8F01FA	CL8B01FA	CL8S01FA	CL8T01FA
○CL8F01FD	CL8B01FD	CL8S01FD	CL8T01FD
○CL8F01FN	CL8B01FN	CL8S01FN	CL8T01FN



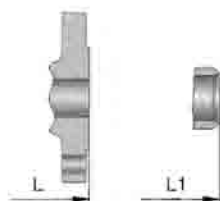
Materials of parts

NO	Part Name	ASTM Material		
		C-Si	16Cr-12Ni-2Mo	1 1/2Cr-1/2Mo-Si
1	Body	A105	A182-F316	A182-F11
2	Bonnet	A105	A182-F316	A182-F11
3	Disc	A182-F6a	A182-F316	A182-F6a+HF
4	Hinge	A276-410	A276-316	A276-410
5	Seat1)	A276-410	A182-F316+HF	A276-410+HF
6	Bonnet Gasket ²⁾	Graphite+304	Graphite+316	Graphite+304
7	Bonnet Stud	A193-B7	A193-B8M	A193-B16

Note: 1). Lift type check valve seal ring integral with body.
2). Spiral wound construction.



Lift Type



150-600Lb

Design description:

- ▲ BOLTED BONNET CAP
- ▲ CHOICE OF WB, WELDING BONNET
- ▲ LIFT OR SWING TYPE
- ▲ SEAT RINGS INTEGRAL WITH BODY OF LIFT
- ▲ HORIZONTAL OR VERTICAL SERVICE
- ▲ SOCKET WELD ENDS
- ▲ SW, SOCKET-WELDING ENDS
- ▲ SC, SCREWED ENDS
- ▲ BW, BUTTWELDING ENDS
- ▲ FLANGED ENDS

Dimensions data

NPS DN	Unit	L1"	L (Flanged Ends)				d	SW	SC	H	WT ⁿ (Kg)
			150Lb	300Lb	600Lb						
3/8	in.	3.12	4.00	6.00	6.50	0.354	0.693	0.378			
10	mm	79	102	152	165	9	17.6	9.6	3/8	0.540	2.40
1/2	in.	3.12	4.25	6.00	6.50	0.354	0.858	0.378			
15	mm	79	108	152	165	10	21.8	9.6	1/2	0.535	2.40
3/4	in.	3.62	4.62	7.00	7.50	0.512	1.067	0.500			
20	mm	92	117	178	190	13	27.1	12.7	3/4	0.547	2.40
1	in.	4.38	5.00	8.00	8.50	0.689	1.331	0.500			
25	mm	111	127	203	216	17.5	33.8	12.7	1	0.681	3.07
1 1/4	in.	4.75	5.50	8.50	9.00	0.906	1.677	0.500			
32	mm	120	140	216	229	23	42.6	12.7	1 1/4	0.709	3.31
1 1/2	in.	4.75	6.50	9.00	9.50	1.142	1.917	0.500			
40	mm	120	165	229	241	30	48.7	12.7	1 1/2	0.724	10.25
2	in.	5.50	8.00	10.50	11.50	1.378	2.406	0.626			
50	mm	140	203	267	292	35	61.1	15.9	2	0.756	4.72
										19.2	120
											38.8/18.9