



### Design

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 1868, 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.

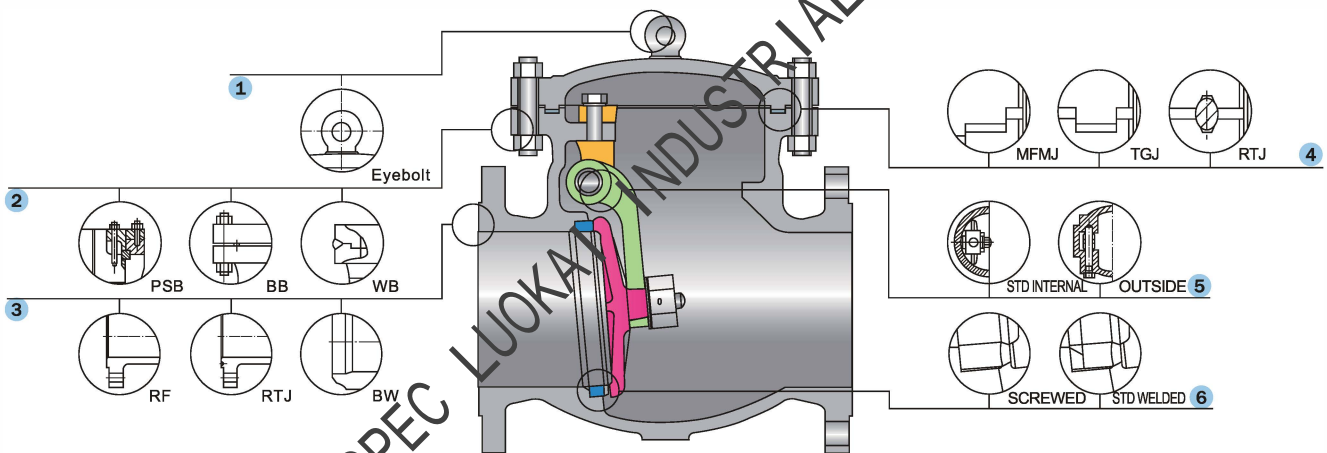
### Rang of Materials

Standard body/bonnet materials include nine 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 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



#### 1 Eyebolt

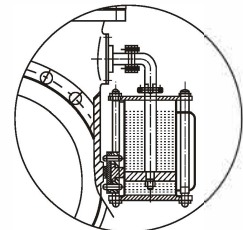
For 1580Lb-8 " ,300Lb-8 " , 600Lb-6 " ,900Lb/1500Lb/ 2500Lb-4 " & Over.

#### 3 End Connections

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

#### 5 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.



#### 2 BB

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

#### 4 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.

#### 6 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.

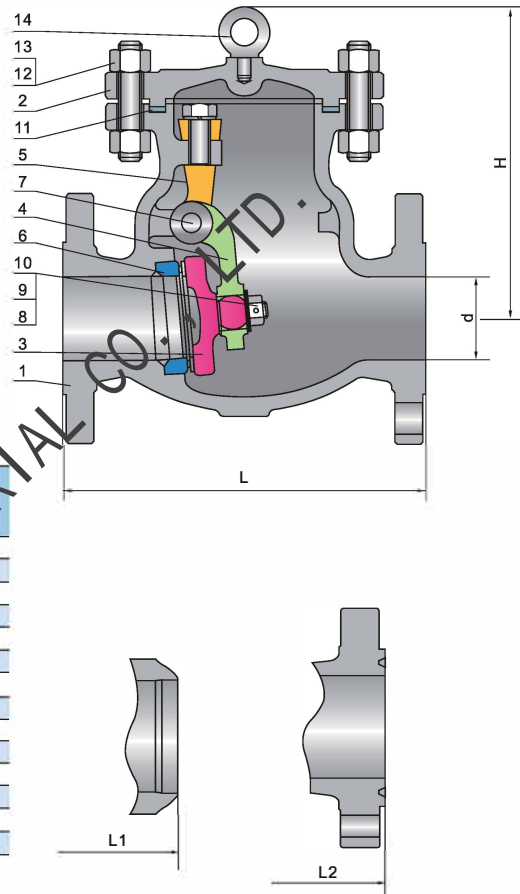
# SWING CAST STEEL CHECK VALVE 150LB

### Applicable standards:

STEEL CHECK VALVES, API 6D/BS 1868  
 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

### 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



### Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet Cap	A216-WCB	A217-WC6	A352-LCB
3	Disc <sup>1)</sup>	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	A193-B7	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 <sup>2)</sup>	Carbon Steel		

Note: 1) Cast steel disc for NPS 4" and above  
 2) NPS 6" & larger.  
 3) Disc and seat ring may either be soft facing material or a base material equal to or better than the body/bonnet material with facing as shown.

### Dimensions data

NPS	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	36	in
DN	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	900	mm

#### ANSI Class 150Lb

L L 1 (RF/BW)	8.00	8.50	9.50	11.50	14.00	19.50	24.50	27.50	31.00	34.00	38.50	38.50	51.00	51.00	57.00	60.00	77.00	in
	203	216	241	292	356	495	622	699	787	864	978	978	1295	1295	1448	1524	1956	mm
L 2 (RTJ)	8.50	9.00	10.00	12.00	14.50	20.00	25.00	28.00	31.50	34.50	39.00	39.00	51.50	-	-	-	-	in
	216	229	254	305	368	508	635	711	800	876	991	991	1308	-	-	-	-	mm
H	6.00	6.50	6.88	8.00	11.50	13.88	15.38	17.00	18.75	20.62	22.88	24.62	34.75	35.88	37.00	38.62	48.00	in
	152	165	175	204	293	353	390	432	475	525	582	627	883	910	940	980	1220	mm
(d)	50	63	76	100	150	200	250	300	336	387	438	488	590	641	692	743	876	mm
WT (kg)	14	20	25	40	71	118	177	263	353	542	632	855	970	1275	1600	1990	2760	RF
	10	12	17	29	57	96	143	227	295	468	552	755	831	1120	1420	1760	2230	BW

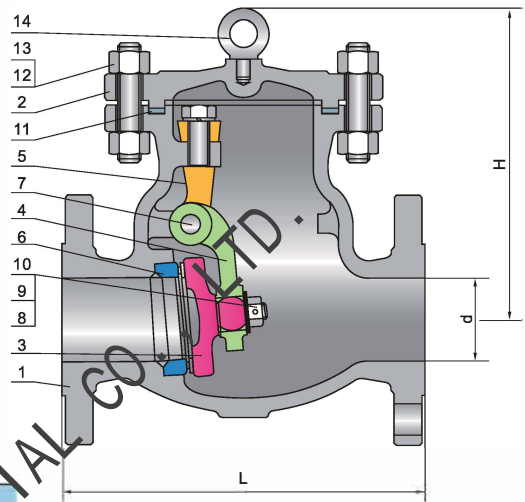
# SWING CAST STEEL CHECK VALVE 300LB

### Applicable standards:

STEEL CHECK VALVES, API 6D/BS1868  
 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

### Design description:

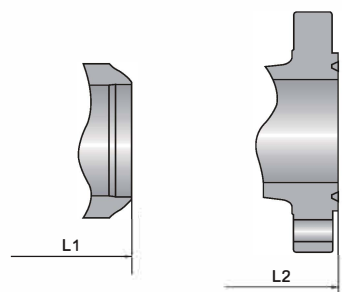
BB, BOLTED BONNET CAP  
 SWING TYPE, ANTI-ROTATION DISC  
 RENEWABLE SEAT RINGS  
 NON-PENETRATE DISC SHAFT  
 HORIZONTAL OR VERTICAL SERVICE  
 FLANGED OR BUTTWELDING ENDS



### Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet Cap	A216-WCB	A217-WC6	A352-LCB
3	Disc <sup>1)</sup>	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 <sup>2)</sup>	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.



### Dimensions data

NPS	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	36	in
DN	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	900	mm

#### ANSI Class 300Lb

L/L1 (RF/BW)	10.50	11.50	12.50	14.00	17.50	21.00	24.50	28.00	33.00	34.00	38.50	40.00	53.00	53.00	59.00	62.75	82.00	in
	267	292	318	356	445	533	622	711	838	864	978	1016	1346	1346	1499	1594	2083	mm
L2 (RTJ)	11.12	12.12	13.12	14.62	18.12	21.62	25.12	28.62	33.62	34.62	39.12	40.75	53.88	54.00	60.00	63.75	-	in
	283	308	333	371	460	549	638	727	854	879	994	1035	1368	1372	1524	1619	-	mm
H	6.00	6.50	6.88	8.00	11.50	13.88	15.38	17.00	18.75	20.62	22.88	24.62	34.75	35.88	37.00	38.62	48.00	in
	152	165	175	204	292	353	390	432	475	525	582	627	883	910	940	980	1220	mm
(d)	50	63	76	100	150	200	250	300	336	387	431	482	584	635	686	737	876	mm
WT (kg)	16	23	29	46	82	136	204	302	405	625	730	985	1115	1465	1840	2290	3180	RF
	11	13	18	31	61	103	155	245	315	503	593	812	895	1205	1525	1895	2395	BW

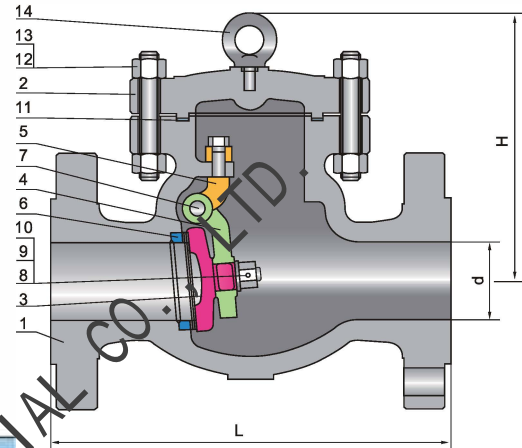
# SWING CAST STEEL CHECK VALVE 600LB

### Applicable standards:

STEEL CHECK VALVES, API 6D/BS1868  
 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

### 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

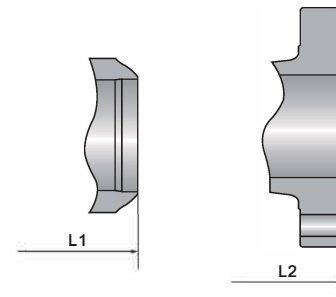


### Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet Cap	A216-WCB	A217-WC6	A352-LCB
3	Disc <sup>1)</sup>	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 <sup>2)</sup>	Carbon Steel		

Note: 1) NPS 6" & larger.

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



### Dimensions data

NPS	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	in
DN	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	mm

#### ANSI Class 600Lb

L/L1 (RF/BW)	11.50	13.00	14.00	17.00	22.00	26.00	31.00	33.00	35.00	39.00	43.00	47.00	55.00	57.00	62.99	65.00	in
	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1448	1600	1651	mm
L2 (RTJ)	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12	43.12	47.25	55.38	57.51	63.50	65.51	in
	295	333	359	435	562	664	791	841	892	994	1095	1200	1407	1461	1613	1664	mm
H	7.50	8.00	8.75	10.00	14.50	17.50	19.25	21.38	23.38	25.75	28.75	31.00	43.50	40.00	40.00	45.98	in
	190	205	222	255	368	445	490	540	595	655	730	785	1105	1016	1066	1168	mm
(d)	50	63	76	100	150	199	247	298	326	374	419	463	558	603	648	695	mm
WT (kg)	24	35	44	70	125	207	310	460	615	945	1105	1495	1695	3800	4600	5500	RF
	16	19	26	44	87	147	220	350	452	720	845	1160	1280	3010	3724	4528	BW

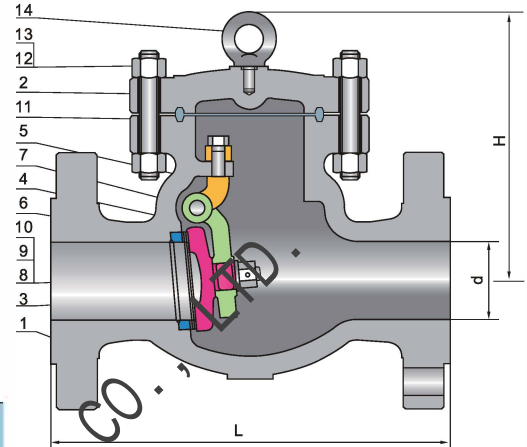
# SWING CAST STEEL CHECK VALVE 900Lb

### Applicable standards:

STEEL CHECK VALVES, API 6D/BS1868  
 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

### 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



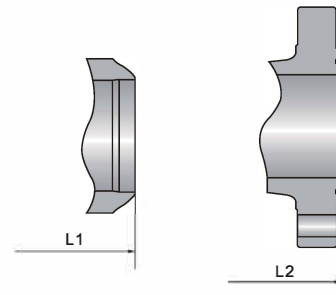
### Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet Cap	A216-WCB	A217-WC6	A352-LCB
3	Disc <sup>1)</sup>	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-B7	A320-L7
13	Bonnet Stud Nut	A194-2H	A194-L7	A194-4
14	Eyebolt <sup>2)</sup>		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.



### Dimensions data

NPS DN	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	in mm
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#### ANSI Class 900Lb

L/L1 (RF/BW)	14.50 368	16.50 419	15.50 381	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
(d)	47	57	72	98	146	190	238	282	311	355	400	444	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 BW

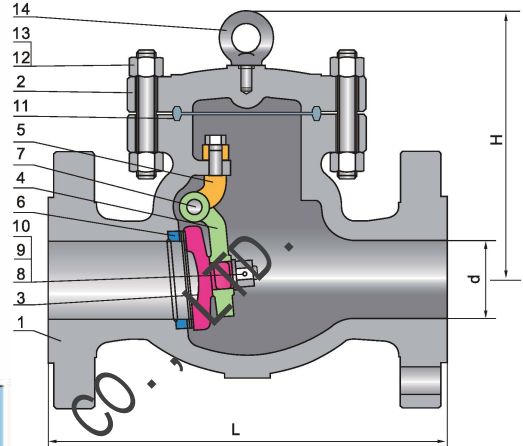
# SWING CAST STEEL CHECK VALVE 1500Lb/2500Lb

### Applicable standards:

STEEL CHECK VALVES, API 6D/BS 1868  
 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

### 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



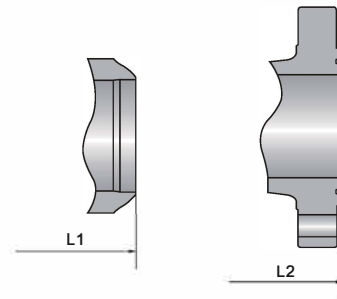
### Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet Cap	A216-WCB	A217-WC6	A352-LCB
3	Disc <sup>1)</sup>	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	A350N-F2+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	Eye bolt <sup>2)</sup>		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.



### Dimensions data

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
	<b>ANSI Class 1500Lb</b>										<b>ANSI Class 2500Lb</b>								
LL1 (RF/BW)	14.50 368	16.50 419	18.50 470	21.50 546	27.75 705	32.75 832	39.00 991	44.50 1130	49.50 1257	54.50 1384	17.75 451	20.00 508	22.75 578	26.50 673	36.00 914	40.25 1022	50.00 1270	56.00 1422	in mm
L2 (RTJ)	14.62 371	16.62 422	18.62 473	21.62 549	28.00 711	33.12 841	39.38 1000	45.12 1146	50.25 1276	55.38 1407	17.88 454	20.25 514	23.00 584	26.88 683	36.50 927	40.88 1038	50.88 1292	56.88 1445	in mm
H	9.50 240	10.00 256	13.00 330	14.75 375	18.88 480	23.50 595	26.00 660	29.12 740	30.88 785	32.88 835	10.75 275	13.25 335	13.75 350	15.12 385	19.50 495	24.62 625	28.00 712	35.62 905	in mm
(d)	47	57	69	92	136	177	222	263	288	330	38	47	57	72	111	146	184	218	mm
WT (kg)	40 29	63 47	70 49	115 84	250 152	470 310	740 470	1100 710	1410 910	1600 1100	50 35	76 55	85 68	165 115	460 225	900 580	1300 860	1800 1150	RF BW