

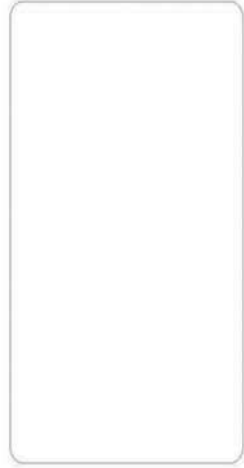
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API VALVE SERIES
OTHER VALVE SERIES

STONE VALVE GROUP LIMITED



Fully Welded Ball Valve series



Special alloy steel Series

■ Material: Titanium, Inconel, Monel, Nickel, etc.



Forged Type Valves



Casting Type Valves

- Top Entry Ball Valve Series
- Trunnion Mounted Ball Valve Series



Design

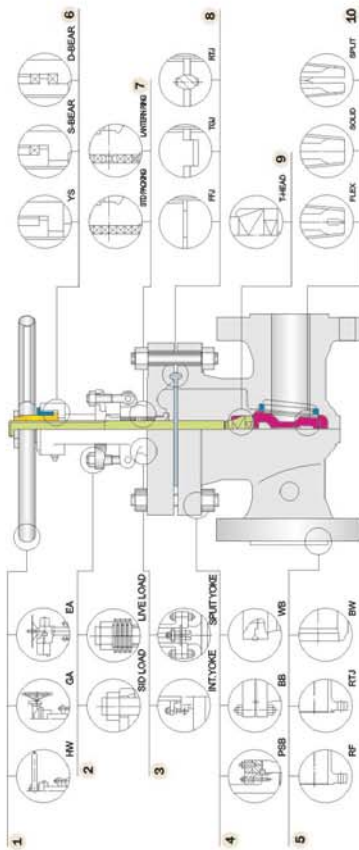
STU cast steel gate valve are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American petroleum institute Standard API 600 & API 6D, British Standard BS 1414 & BS EN 1984 and generally conform to American Society of Mechanical Engineers Standard ASME B 16.34. Valves are available in a complete range of body/bonnet materials and trims.

Available Modifications For STU Cast Steel Valves

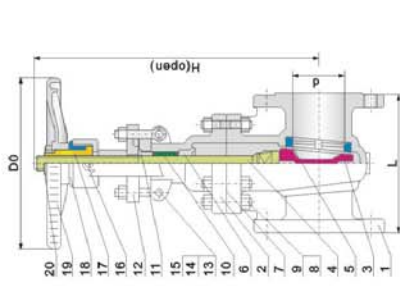
- Trim changes
- End connection Modifications
- Packing and Gasket Changes
- Operator Mounting
- Handwheel Extensions
- Pressure Equalizing
- By-pass
- Customer specified Coatings
- Weld End Bore Changes
- Oxygen & Chlorine Cleaning & Packaging

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 is a full range of trim materials to match any service. Optional packing and gasket materials are available for a full range of service conditions.



- Operating**
Large hand wheels for easy operation. Also available with gearing, motor actuators, pneumatic or hydraulic actuators for more difficult services.
- OS & Y**
Outside Screw and Yoke. Cast steel gate valve yoke, integral with bonnet for 150LB-S*, 300LB-S*, 600LB-6*, 900LB-4* & Small.
- End Connections**
A choice of Flanged, RTJ flanged or Butt welding end for piping flexibility
- OS & Y**
Outside Screw and Yoke. Cast steel gate valve yoke, integral with bonnet for 150LB-S*, 300LB-S*, 600LB-6*, 900LB-4* & Small.
- Live Load Packing**
In services requiring frequent cycling or with high pressure/temperature variations, live loading extends the service life between maintenance periods by requiring less frequent packing gland adjustments. Belleville springs are employed to provide constant packing gland stress.
- Double Packing set**
Lantern ring with leak-off fitting connection and double packing stack is optionally available for critical services.
- Stem**
All wedge gate valves are provided with upset forged T-head stems. By forging the T-head the stem at the stem-wedge connection is strengthened. This design also allows the wedge to self-align, eliminating the possibility of a bent stem jamming the wedges.
- Body-to-Bonnet Joint**
A flat face gasket joint is used in the 150LB valves. A male and female joint is used in 300LB to 600LB valves. Ring joint is used in the body to bonnet connection in 900LB & higher rated valves.
- Wedge**
Integral guide rib faces assure self-centering of wedge. Flexible wedge gate valve has a one-piece, twin-disc wedge, which is designed so that each half flexes independently. Available in solid, flex split and HIS designs.



Design description:

- FULL PORT DESIGN
- OS & Y, OUTSIDE SCREW AND YOKE
- BB, BOLTED BONNET
- FLEXIBLE WEDGE, FULLY GUIDED
- CHOICE OF SOLID OR SPLIT WEDGE
- RENEWABLE SEAT RINGS
- FORGED T-HEAD STEM
- RISING STEM AND NON-RISING HANDWHEEL
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH BG OPERATOR

Applicable standards:

- STEEL GATE VALVES, API 600/API 6D
- STEEL GATE VALVES, ISO 10434/ISO 14313
- STEEL VALVES, ASME B 16.34
- FACE TO FACE, ASME B 16.10
- END FLANGES, ASME B 16.5
- BUTTWELDING ENDS, ASME B 16.25
- INSPECTION AND TEST, API 598/API 6D

Materials of parts

No	Part Name	Carbon Steel	1 1/2" CR-1/2 Mo	ASTM Material	Carbon Steel
1	Body	A216-WCB	A217-WC6	Graphite	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A276-420	A352-LCB
3	Wedge	A216-WCB+CR13	A217-WC6+HF	Carbon Steel	A352-LCB
4	Stem	A182-F8a	CR-MO-V	Carbon Steel	A182-F8a
5	Seat Ring	A105+CR13	A182-F11+HF	Carbon Steel	A350-LF2+CR13
6	Stem Back Seat	A276-420	A276-304	Aluminum-Bronze ¹⁾	A276-420
7	Bonnet Gasket	Spiral Wound (Graphite+304)	A193-B16	Carbon Steel	A320-L7
8	Bonnet Stud	A193-B7	A193-B16	Malleable Iron	A194-4
9	Bonnet Stud Nut	A194-2H	A194-7	Carbon Steel	A194-4
10	Packing				
11	Gland	A276-420	A276-304		A276-420
12	Gland Flange	A216-WCB	A217-WC6		A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-420		Carbon Steel
14	Eyebolt	Carbon Steel	A193-B7		Carbon Steel
15	Eyebolt Nut	Carbon Steel	A194-2H		Carbon Steel
16	Grease Filling		Brass+Steel		Carbon Steel
17	Yokesleeve		Aluminum-Bronze ¹⁾		Carbon Steel
18	Yokesleeve Jam Nut		Carbon Steel		Carbon Steel
19	Handwheel		Malleable Iron		Carbon Steel
20	Handwheel Nut		Carbon Steel		Carbon Steel

Note: 1) Ductile NI-Resist optional

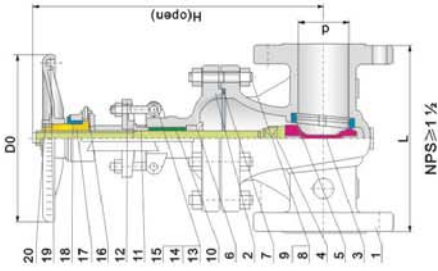
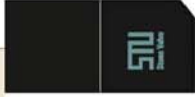
2) Wedge and seat ring may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown.

Dimensions data

NPS	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	40	42	48	In	In	mm	mm
L	7.00	7.50	8.00	9.00	10.50	11.50	13.00	14.00	15.00	16.00	17.00	18.00	20.00	22.00	24.00	24.00	28.00	28.00	32.00	32.00	32.00	42.00	42.00	42.00	42.00
(RF)	178	191	203	229	267	292	330	359	391	406	432	457	508	559	610	610	711	711	813	813	813	1067	1067	1067	1067
L1	6.5	6.50	11.12	12.00	15.88	16.80	18.00	19.75	22.50	24.00	26.00	28.00	32.00	34.00	36.00	36.00	38.00	38.00	40.00	40.00	42.00	45.00	45.00	45.00	45.00
(BW)	216	241	283	305	403	419	457	502	572	610	660	711	813	864	914	914	965	1016	1067	1067	1143	1143	1143	1143	1143
L2	7.48	7.99	8.50	9.48	10.98	12.00	13.50	14.48	15.51	16.49	17.51	18.50	20.51												
(RTJ)	190	203	216	241	279	305	343	368	394	419	445	470	521												
(OPEN)	386	434	480	565	956	1149	1508	1703	1892	2119	2500	2896	3290	3150	3290	3720	3302	3479	3962						
(d)	50	63	76	100	150	200	250	300	336	367	438	488	590	641	692	743	876								
(D)	8	8	10	12	14	16	18	20	22	24	26	29	32	32	32	38	40								
(D)	200	200	250	300	350	400	450	500	550	600	640	720	800	800	800	950	1000								
WT	18	25	32	50	77	121	178	265	363	463	621	792	1190	1521	1638	2261	2490								
(kg)	15	18	26	41	69	108	156	248	330	424	587	752	1144	1570	1900	3310	2540								
Toquire	13	13	15	27	36	63	84	131	151	235	285	341	602												

CAST STEEL GATE VALVE

300lb



Design description:

- FULL PORT DESIGN
- OS & Y, OUTSIDE SCREW AND YOKE
- BB, BOLTED BONNET
- FLEXIBLE WEDGE, FULLY GUIDED
- CHOICE OF SOLID OR SPLIT WEDGE
- END FLANGES, ASME B 16.5
- RENEWABLE SEAT RINGS
- FORGED T-HREAD STEM
- RISEING STEM AND NON-RISEING HANDWHEEL
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH BG OPERATOR

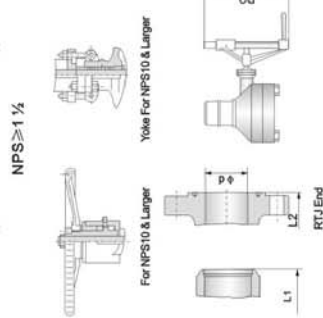
Applicable standards:

- STEEL GATE VALVES, API 600/API 6D
- STEEL GATE VALVES, ISO 10434/ISO 14313
- STEEL VALVES, ASME B 16.34
- FACE TO FACE, ASME B 16.10
- END FLANGES, ASME B 16.5
- BUTTWELDING ENDS, ASME B 16.25
- INSPECTION AND TEST, API 598/API 6D

Materials of parts

No	Part Name	Carbon Steel	ASTM Material	Carbon Steel
1	Body	A216-WCB	A217-WC8	A352-LCB
2	Bonnet	A216-WCB	A217-WC8	A352-LCB
3	Wedge	A216-WCB-CR13	A217-WC9HF	A352-LCB-CR13
4	Stem	A182-F5a	CR-MO-V	A182-F5a
5	Seat Ring	A105-CR13	A182-F11HF	A350-LF2-CR13
6	Stem Back Seat	A276-420	A276-304	A276-420
7	Bonnet Gasket	Spiral Wound (Graphiter-304)		
8	Bonnet Stud	A183-B7	A183-B16	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-7	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland Flange	A216-WCB	A217-WC8	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-420	Carbon Steel
14	Eyebolt	Carbon Steel	A193-B7	Carbon Steel
15	Eyebolt Nut	Carbon Steel	A194-2H	Carbon Steel
16	Grease Filling		Brass-Steel	
17	Yokesleeve		Aluminum-Bronze ¹⁾	
18	Yokesleeve Jam Nut		Carbon Steel	
19	Handwheel		Malleable Iron	
20	Handwheel Nut		Carbon Steel	

Note: 1) Ductile Ni-Resist optional
2) Wedge 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.

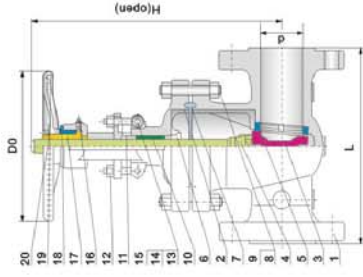


Dimensions data

NPS	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	40	42	48	In	
DN	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900	1000	1050	1200	mm	
	ANSI Class 300LB																						
L/L1	8.50	9.50	11.12	12.00	15.88	16.50	18.00	19.75	30.00	33.00	36.00	39.00	45.00	49.00	53.00	55.00	60.00	68.00	76.96	80.00	90.00	In	
(RF/BW)	216	241	283	305	403	419	457	502	762	838	914	991	1143	1245	1346	1397	1524	1727	1955	2032	2286	mm	
L2	9.12	10.12	11.75	12.62	16.50	17.12	18.62	20.38	30.62	33.62	36.62	39.75	45.88	50.00	54.00	56.00	61.12	69.12	-	-	-	In	
(RTJ)	232	257	288	321	419	435	473	518	778	854	930	1010	1165	1270	1372	1422	1553	1755	-	-	-	mm	
H	16.12	17.88	20.00	24.00	31.75	39.38	47.62	55.75	62.25	67.88	77.12	86.38	102.00	117.00	122.00	126.00	130.00	152.00	146.18	154.17	177.20	In	
(OPEN)	410	463	509	612	805	1000	1210	1415	1580	1725	1960	2195	2560	2875	3100	3200	3300	3660	3713	3916	4501	mm	
(d)	50	63	76	100	150	200	250	300	336	387	431	482	584	635	686	737	781	876	-	-	-	mm	
D0	8	10	12	14	16	18	20	22	24	26	28	32	36	38	40	42	46	48	50	54	58	mm	
D	200	200	250	300	350	400	450	500	550	600	640	720	800	800	900	950	1000	1000	1000	1000	1000	mm	
WT	23	35	50	71	144	209	322	482	683	950	1145	1635	2660	3090	3310	3595	3720	3985	6100	9750	13050	PFRTJ	
(kg)	17	26	39	53	113	164	256	390	565	805	965	1410	2305	2540	2725	3055	3360	3630	-	-	-	BW	
Toquire	16	18	21	42	86	128	215	289	423	537	649	1009	1451	-	-	-	-	-	-	-	-	mm	

CAST STEEL GATE VALVE

600lb



Design description:

- FULL PORT DESIGN
- OS & Y, OUTSIDE SCREW AND YOKE
- BB, BOLTED BONNET
- FLEXIBLE WEDGE, FULLY GUIDED
- CHOICE OF SOLID OR SPLIT WEDGE
- END FLANGES, ASME B 16.5
- RENEWABLE SEAT RINGS
- FORGED T-HREAD STEM
- RISEING STEM AND NON-RISEING HANDWHEEL
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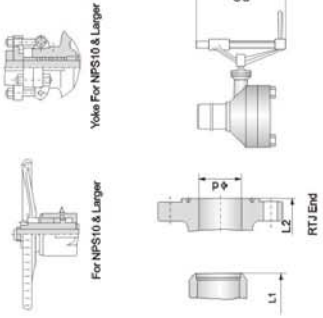
Applicable standards:

- STEEL GATE VALVES, API 600/API 6D
- STEEL GATE VALVES, ISO 10434/ISO 14313
- STEEL VALVES, ASME B 16.34
- FACE TO FACE, ASME B 16.10
- END FLANGES, ASME B 16.5
- BUTTWELDING ENDS, ASME B 16.25
- INSPECTION AND TEST, API 598/API 6D

Materials of parts

No	Part Name	Carbon Steel	ASTM Material	Carbon Steel
1	Body	A216-WCB	A217-WC8	A352-LCB
2	Bonnet	A216-WCB	A217-WC8	A352-LCB
3	Wedge	A216-WCB-CR13	A217-WC9HF	A352-LCB-CR13
4	Stem	A182-F5a	CR-MO-V	A182-F5a
5	Seat Ring	A105-CR13	A182-F11HF	A350-LF2-CR13
6	Stem Back Seat	A276-420	A276-304	A276-420
7	Bonnet Gasket	Spiral Wound (Graphiter-304)		
8	Bonnet Stud	A183-B7	A183-B16	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-7	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland Flange	A216-WCB	A217-WC8	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-420	Carbon Steel
14	Eyebolt	Carbon Steel	A193-B7	Carbon Steel
15	Eyebolt Nut	Carbon Steel	A194-2H	Carbon Steel
16	Grease Filling		Brass-Steel	
17	Yokesleeve		Aluminum-Bronze ¹⁾	
18	Yokesleeve Jam Nut		Carbon Steel	
19	Handwheel		Malleable Iron	
20	Handwheel Nut		Carbon Steel	

Note: 1) Ductile Ni-Resist optional
2) Wedge 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	32	36	40	42	48	In	
DN	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900	1000	1050	1200	mm	
	ANSI Class 600LB																						
L/L1	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	61.00	65.00	70.00	82.00	84.60	88.97	105.00	In	
(RF/BW)	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1448	1549	1651	1778	2083	2149	2280	2667	mm	
L2	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	57.50	61.50	65.50	70.62	82.62	-	-	-	In	
(RTJ)	295	333	359	435	562	664	791	841	892	994	1095	1200	1407	1461	1562	1664	1794	2098	-	-	-	mm	
H	16.50	18.75	20.38	25.50	33.00	40.38	48.38	57.00	62.00	70.62	78.00	87.00	101.50	105.00	108.50	114.00	124.00	140.00	141.73	155.51	181.10	In	
(OPEN)	416	478	518	646	840	1025	1230	1450	1575	1795	1930	2210	2560	2865	2780	2865	3160	3560	3600	3950	4600	mm	
(d)	50	63	76	100	150	199	247	298	326	374	419	463	558	603	648	695	781	876	-	-	-	mm	
D0	8	10	12	14	16	18	20	22	24	26	28	32	36	38	40	42	46	48	50	54	58	mm	
D	200	200	250	300	350	400	450	500	550	600	640	720	800	800	900	950	1000	1000	1000	1000	1000	mm	
WT	36	52	67	112	170	393	610	890	1245	1530	1965	2450	2995	3475	3725	4045	4185	4480	14300	16400	22900	PFRTJ	
(kg)	29	42	53	83	125	310	472	730	1055	1240	1625	2030	2590	2855	3065	3440	3780	4085	-	-	-	BW	
Toquire	23	-	50	68	183	270	479	650	988	1243	1512	2185	3053	-	-	-	-	-	-	-	-	mm	

CAST STEEL GATE VALVE

900lb



CAST STEEL GATE VALVE

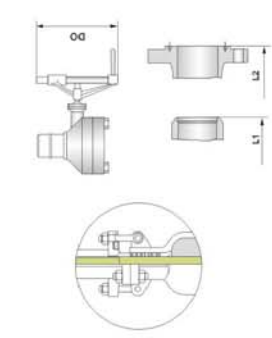
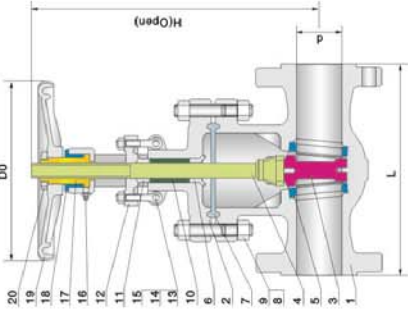
1500lb

Applicable standards:

STEEL GATE VALVES, API 600/API 6D
STEEL GATE VALVES, ISO 10434/ISO 14313
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
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Design description:

FULL PORT DESIGN
OS & Y, OUTSIDE SCREW AND YOKE
BB, BOLTED BONNET
FLEXIBLE WEDGE, FULLY GUIDED
CHOICE OF SOLID OR SPLIT WEDGE
RENEWABLE SEAT RINGS
FORGED T-HEAD STEM
RISING STEM AND NON-RISING HANDWHEEL
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR



Materials of parts

No	Part Name	ASTM Material	
		Carbon Steel	1/1Cr-1/2Mo Carbon Steel
1	Body	A216-WCB	A352-LCB
2	Bonnet	A216-WCB	A352-LCB
3	Wedge	A216-WCB+CR13	A352-LCB+CR13
4	Seat	A182-F6a	A182-F6a
5	Seat Ring	A105+CR13	A182-F11+HF
6	Stem Back Seat	A276-420	A276-420
7	Bonnet Gasket	Steel Ring	Steel Ring
8	Bonnet Stud	A193-B7	A193-B7
9	Bonnet Stud Nut	A194-2H	A194-4
10	Packing	Graphite	Graphite
11	Gland	A276-420	A276-420
12	Gland Flange	A216-WCB	A352-LCB
13	Eyebolt Pin	Carbon Steel	Carbon Steel
14	Eyebolt	A193-57	Carbon Steel
15	Eyebolt Nut	A194-2H	Carbon Steel
16	Grease Fitting	Brass/Steel	Brass/Steel
17	Yokesleeve	Aluminum-Bronze ¹⁾	Aluminum-Bronze ¹⁾
18	Yokesleeve Jam Nut	Carbon Steel	Carbon Steel
19	Handwheel	Malleable Iron	Malleable Iron
20	Handwheel Nut	Carbon Steel	Carbon Steel

Note: 1) Ductile Ni-Resist optional

2) Wedge 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

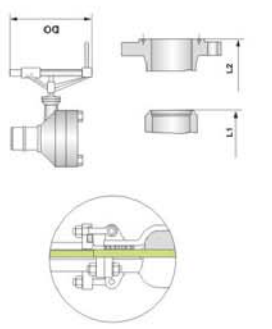
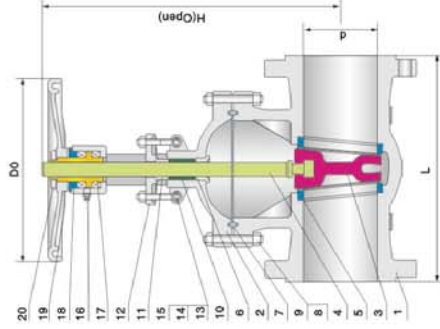
NPS	DN	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	in	mm
		50	65	80	100	150	200	250	300	350	400	450	500	600	600	mm
L1	14.50	16.50	15.50	18.00	18.00	24.00	28.00	33.00	38.00	40.50	44.50	48.00	52.00	61.00	61.00	61.00
(RF/BW)	368	419	381	457	457	610	737	838	965	1029	1130	1219	1321	1549	1549	1549
L2	14.62	16.62	15.12	18.12	18.12	24.12	29.12	33.12	38.12	40.88	44.88	48.50	52.50	61.75	61.75	61.75
(RT-1)	371	422	384	460	460	613	740	841	968	1038	1140	1232	1334	1568	1568	1568
H	19.62	21.50	22.50	26.62	26.62	35.50	43.50	53.00	60.00	74.88	81.00	87.00	101.00	104.00	104.00	104.00
(OPEN)	498	547	573	678	678	900	1103	1345	1525	1900	2055	2215	2565	2640	2640	2640
(d)	47	57	72	98	98	146	190	238	282	311	365	400	444	533	533	533
D0	10	10	12	18	18	20	24	28	29	32	32	38	38	40	40	40
D0	250	250	300	450	500	600	640	720	800	800	950	950	1000	1000	1000	1000
WT	74	131	101	172	335	640	1100	1600	2250	2850	3060	3635	4900	4900	4900	4900
(kg)	54	105	78	135	260	515	920	1380	2010	2565	2485	3250	4065	4065	4065	4065
Torque	39	56	64	118	243	427	783	1163	1331	1331	1331	1331	1331	1331	1331	1331

Applicable standards:

STEEL GATE VALVES, API 600/API 6D
STEEL GATE VALVES, ISO 10434/ISO 14313
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:

FULL PORT DESIGN
OS & Y, OUTSIDE SCREW AND YOKE
BB, BOLTED BONNET
FLEXIBLE WEDGE, FULLY GUIDED
CHOICE OF SOLID OR SPLIT WEDGE
RENEWABLE SEAT RINGS
FORGED T-HEAD STEM
RISING STEM AND NON-RISING HANDWHEEL
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR



Materials of parts

No	Part Name	ASTM Material	
		Carbon Steel	1/1Cr-1/2Mo Carbon Steel
1	Body	A216-WCB	A352-LCB
2	Bonnet	A216-WCB	A352-LCB
3	Wedge	A216-WCB+CR13	A352-LCB+CR13
4	Seat	A182-F6a	A182-F6a
5	Seat Ring	A105+CR13	A182-F11+HF
6	Stem Back Seat	A276-420	A276-420
7	Bonnet Gasket	Steel Ring	Steel Ring
8	Bonnet Stud	A193-B7	A193-B7
9	Bonnet Stud Nut	A194-2H	A194-4
10	Packing	Graphite	Graphite
11	Gland	A276-420	A276-420
12	Gland Flange	A216-WCB	A352-LCB
13	Eyebolt Pin	Carbon Steel	Carbon Steel
14	Eyebolt	A193-57	Carbon Steel
15	Eyebolt Nut	A194-2H	Carbon Steel
16	Grease Fitting	Brass/Steel	Brass/Steel
17	Yokesleeve	Aluminum-Bronze ¹⁾	Aluminum-Bronze ¹⁾
18	Yokesleeve Jam Nut	Carbon Steel	Carbon Steel
19	Handwheel	Malleable Iron	Malleable Iron
20	Handwheel Nut	Carbon Steel	Carbon Steel

Note: 1) Ductile Ni-Resist optional

2) Wedge 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

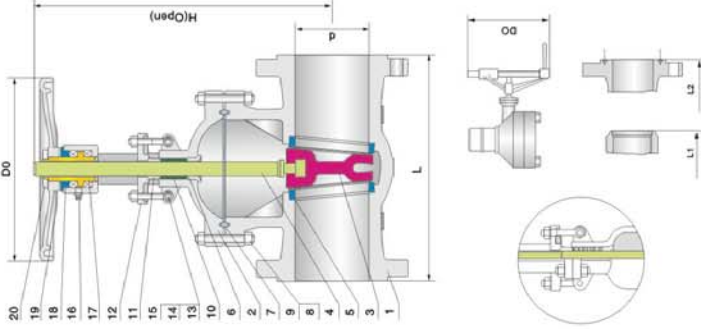
NPS	DN	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	in	mm
		50	65	80	100	150	200	250	300	350	400	450	500	600	600	mm
L1	14.50	16.50	15.50	18.00	18.00	27.75	32.75	39.00	44.50	49.50	54.50	60.50	65.50	76.50	76.50	76.50
(RF/BW)	368	419	470	546	546	705	832	991	1130	1257	1384	1537	1684	1943	1943	1943
L2	15.50	16.62	18.62	21.62	21.62	28.00	33.12	39.38	45.12	50.25	55.38	61.38	66.38	77.62	77.62	77.62
(RT-1)	371	422	473	549	549	711	841	1000	1146	1276	1407	1559	1686	1972	1972	1972
H	24.25	26.00	30.00	34.12	34.12	39.50	45.00	54.00	61.00	74.88	80.50	83.75	101.50	114.75	114.75	114.75
(OPEN)	615	668	700	868	868	1005	1145	1370	1550	1900	2050	2280	2580	2915	2915	2915
(d)	47	57	69	92	92	136	177	222	263	288	330	371	415	488	488	488
D0	10	10	12	18	18	20	24	24	24	24	24	24	24	24	24	24
D0	250	250	300	450	500	600	600	600	600	600	600	600	600	600	600	600
WT	116	166	209	296	510	920	1910	3145	4100	6200	8965	13100	15860	15860	15860	15860
(kg)	105	150	188	265	412	760	1640	2755	3200	5300	8070	11790	14275	14275	14275	14275
Torque	54	76	108	167	426	801	1268	2078	2392	2392	2392	2392	2392	2392	2392	2392

CAST STEEL GATE VALVE

2500lb

Applicable standards:
STEEL GATE VALVES, API 600/API 6D
STEEL GATE VALVES, ISO 10434/ISO 14313
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 588/API 6D

Design description:
FULL PORT DESIGN
OS & Y, OUTSIDE SCREW AND YOKE
BB, BOLTED BONNET
FLEXIBLE WEDGE, FULLY GUIDED
CHOICE OF SOLID OR SPLIT WEDGE
RENEWABLE SEAT RINGS
FORGED T-HEAD STEM
RISING STEM AND NON-RISING HANDWHEEL
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR



Materials of parts

No	Part Name	Carbon Steel	ASTM Material	1 1/2 Cr-1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB	A352-LCB
3	Wedge	A216-WCB-CR13	A217-WC6+HF	A352-LCB-CR13	A352-LCB-CR13
4	Stem	A182-F8a	CR-MO-V	A182-F8a	A182-F8a
5	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2-CR13	A276-420
6	Stem Back Seat	A276-420	A276-304	A276-420	A276-420
7	Bonnet Gasket	Steel Ring	304SS Ring	Steel Ring	Steel Ring
8	Bonnet Stud	A182-F8	A182-F8	A320-L7	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-2H	A194-4	A194-4
10	Packing		Graphite		
11	Gland	A276-420	A276-304	A276-420	A276-420
12	Gland Flange	A216-WCB	A217-WC6	A352-LCB	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-420	Carbon Steel	Carbon Steel
14	Eyebolt	Carbon Steel	A193-5T	Carbon Steel	Carbon Steel
15	Eyebolt Nut	Carbon Steel	A194-2H	Carbon Steel	Carbon Steel
16	Grease Filling		Brass-Steel		
17	Yokel sleeve		Aluminum-Bronze ²⁾		
18	Yokel sleeve Jam Nut		Carbon Steel		
19	Handwheel		Malleable Iron		
20	Handwheel Nut		Carbon Steel		

Note: 1) Ductile Ni-Resist optional
2) Wedge 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

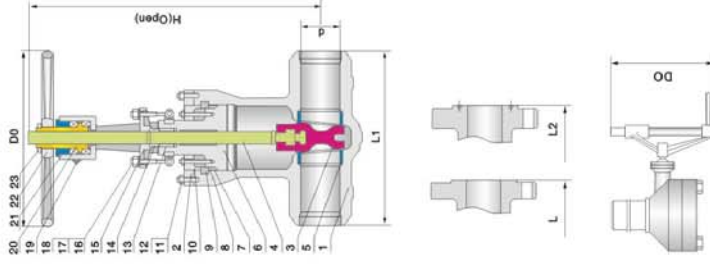
NPS	2	2 1/2	3	4	6	8	10	12	16	20	24	30	36	48	60	72	90	108	120	144	180	240	300	360	480	600	720	900	1080	1200	1440	1800	2400	3000	3600	4800	6000																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
DN	50	65	80	100	150	200	250	300	350	450	600	750	900	1050	1200	1500	1800	2100	2400	2700	3000	3300	3600	4200	4800	5400	6300	7200	8100	9000	10200	11400	12600	14400	16200	18000	21600	25200	30000	36000																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
LxL1	17.75	20.00	22.75	26.50	36.00	40.25	50.00	56.00	66.00	72.00	84.00	102.00	120.00	142.00	168.00	192.00	228.00	264.00	300.00	336.00	372.00	408.00	444.00	480.00	516.00	552.00	588.00	624.00	660.00	696.00	732.00	768.00	804.00	840.00	876.00	912.00	948.00	984.00	1020.00	1056.00	1092.00	1128.00	1164.00	1200.00	1236.00	1272.00	1308.00	1344.00	1380.00	1416.00	1452.00	1488.00	1524.00	1560.00	1596.00	1632.00	1668.00	1704.00	1740.00	1776.00	1812.00	1848.00	1884.00	1920.00	1956.00	1992.00	2028.00	2064.00	2100.00	2136.00	2172.00	2208.00	2244.00	2280.00	2316.00	2352.00	2388.00	2424.00	2460.00	2496.00	2532.00	2568.00	2604.00	2640.00	2676.00	2712.00	2748.00	2784.00	2820.00	2856.00	2892.00	2928.00	2964.00	3000.00	3036.00	3072.00	3108.00	3144.00	3180.00	3216.00	3252.00	3288.00	3324.00	3360.00	3396.00	3432.00	3468.00	3504.00	3540.00	3576.00	3612.00	3648.00	3684.00	3720.00	3756.00	3792.00	3828.00	3864.00	3900.00	3936.00	3972.00	4008.00	4044.00	4080.00	4116.00	4152.00	4188.00	4224.00	4260.00	4296.00	4332.00	4368.00	4404.00	4440.00	4476.00	4512.00	4548.00	4584.00	4620.00	4656.00	4692.00	4728.00	4764.00	4800.00	4836.00	4872.00	4908.00	4944.00	4980.00	5016.00	5052.00	5088.00	5124.00	5160.00	5196.00	5232.00	5268.00	5304.00	5340.00	5376.00	5412.00	5448.00	5484.00	5520.00	5556.00	5592.00	5628.00	5664.00	5700.00	5736.00	5772.00	5808.00	5844.00	5880.00	5916.00	5952.00	5988.00	6024.00	6060.00	6096.00	6132.00	6168.00	6204.00	6240.00	6276.00	6312.00	6348.00	6384.00	6420.00	6456.00	6492.00	6528.00	6564.00	6600.00	6636.00	6672.00	6708.00	6744.00	6780.00	6816.00	6852.00	6888.00	6924.00	6960.00	6996.00	7032.00	7068.00	7104.00	7140.00	7176.00	7212.00	7248.00	7284.00	7320.00	7356.00	7392.00	7428.00	7464.00	7500.00	7536.00	7572.00	7608.00	7644.00	7680.00	7716.00	7752.00	7788.00	7824.00	7860.00	7896.00	7932.00	7968.00	8004.00	8040.00	8076.00	8112.00	8148.00	8184.00	8220.00	8256.00	8292.00	8328.00	8364.00	8400.00	8436.00	8472.00	8508.00	8544.00	8580.00	8616.00	8652.00	8688.00	8724.00	8760.00	8796.00	8832.00	8868.00	8904.00	8940.00	8976.00	9012.00	9048.00	9084.00	9120.00	9156.00	9192.00	9228.00	9264.00	9300.00	9336.00	9372.00	9408.00	9444.00	9480.00	9516.00	9552.00	9588.00	9624.00	9660.00	9696.00	9732.00	9768.00	9804.00	9840.00	9876.00	9912.00	9948.00	9984.00	10020.00	10056.00	10092.00	10128.00	10164.00	10200.00	10236.00	10272.00	10308.00	10344.00	10380.00	10416.00	10452.00	10488.00	10524.00	10560.00	10596.00	10632.00	10668.00	10704.00	10740.00	10776.00	10812.00	10848.00	10884.00	10920.00	10956.00	10992.00	11028.00	11064.00	11100.00	11136.00	11172.00	11208.00	11244.00	11280.00	11316.00	11352.00	11388.00	11424.00	11460.00	11496.00	11532.00	11568.00	11604.00	11640.00	11676.00	11712.00	11748.00	11784.00	11820.00	11856.00	11892.00	11928.00	11964.00	12000.00	12036.00	12072.00	12108.00	12144.00	12180.00	12216.00	12252.00	12288.00	12324.00	12360.00	12396.00	12432.00	12468.00	12504.00	12540.00	12576.00	12612.00	12648.00	12684.00	12720.00	12756.00	12792.00	12828.00	12864.00	12900.00	12936.00	12972.00	13008.00	13044.00	13080.00	13116.00	13152.00	13188.00	13224.00	13260.00	13296.00	13332.00	13368.00	13404.00	13440.00	13476.00	13512.00	13548.00	13584.00	13620.00	13656.00	13692.00	13728.00	13764.00	13800.00	13836.00	13872.00	13908.00	13944.00	13980.00	14016.00	14052.00	14088.00	14124.00	14160.00	14196.00	14232.00	14268.00	14304.00	14340.00	14376.00	14412.00	14448.00	14484.00	14520.00	14556.00	14592.00	14628.00	14664.00	14700.00	14736.00	14772.00	14808.00	14844.00	14880.00	14916.00	14952.00	14988.00	15024.00	15060.00	15096.00	15132.00	15168.00	15204.00	15240.00	15276.00	15312.00	15348.00	15384.00	15420.00	15456.00	15492.00	15528.00	15564.00	15600.00	15636.00	15672.00	15708.00	15744.00	15780.00	15816.00	15852.00	15888.00	15924.00	15960.00	16000.00	16040.00	16080.00	16120.00	16160.00	16200.00	16240.00	16280.00	16320.00	16360.00	16400.00	16440.00	16480.00	16520.00	16560.00	16600.00	16640.00	16680.00	16720.00	16760.00	16800.00	16840.00	16880.00	16920.00	16960.00	17000.00	17040.00	17080.00	17120.00	17160.00	17200.00	17240.00	17280.00	17320.00	17360.00	17400.00	17440.00	17480.00	17520.00	17560.00	17600.00	17640.00	17680.00	17720.00	17760.00	17800.00	17840.00	17880.00	17920.00	17960.00	18000.00	18040.00	18080.00	18120.00	18160.00	18200.00	18240.00	18280.00	18320.00	18360.00	18400.00	18440.00	18480.00	18520.00	18560.00	18600.00	18640.00	18680.00	18720.00	18760.00	18800.00	18840.00	18880.00	18920.00	18960.00	19000.00	19040.00	19080.00	19120.00	19160.00	19200.00	19240.00	19280.00	19320.00	19360.00	19400.00	19440.00	19480.00	19520.00	19560.00	19600.00	19640.00	19680.00	19720.00	19760.00	19800.00	19840.00	19880.00	19920.00	19960.00	20000.00

CAST STEEL GATE VALVE

900lb

Applicable standards:
STEEL GATE VALVES, API 600/API 6D
STEEL GATE VALVES, ISO 10434/ISO 14313
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 588/API 6D

Design description:
PSB, PRESSURE SEAL BONNET
FLEXIBLE WEDGE, FULLY GUIDED
CHOICE OF SOLID OR SPLIT WEDGE
RENEWABLE SEAT RINGS
FORGED T-HEAD STEM
RISING STEM AND NON-RISING HANDWHEEL
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR



Materials of parts

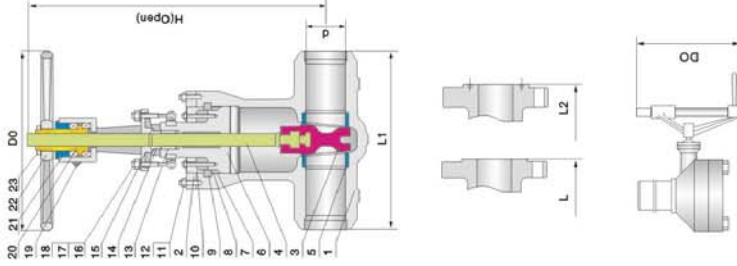
No	Part Name	Carbon Steel	ASTM Material	1 1/2 Cr-1/2 Mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC6	A351-CF8M	A351-CF8M
2	Yoke	A216-WCB	A217-WC6	A351-CF8M	A351-CF8M
3	Wedge	A216-WCB+HF	CR-MO-V	A182-F11+HF	A240-316+HF
4	Stem	A182-F8a	A182-F11+HF	A240-316+HF	A240-316
5	Seat Ring	A105+HF	A182-F11	304+Graphite	A276-316
6	Bonnet	A105	A182-F11	A276-420	A276-316
7	Bonnet Gasket ¹⁾	Carbon Steel	Graphite	Alloy Steel	Stainless Steel
8	Adapter Ring	Carbon Steel	A276-420	A193-B16	A193-B16
9	Retainer	Carbon Steel	A193-B16	A194-2H	A194-8M
10	Yoke Cap	Carbon Steel	A193-B16	A194-2H	A194-8M
11	Bonnet Stud	Carbon Steel	A193-B16	A194-2H	A194-8M
12	Bonnet Stud Nut	Carbon Steel	A194-2H	A194-2H	A194-8M
13	Packing		Graphite		
14	Gland	A276-420	A276-304	A276-420	A276-316
15	Gland Flange	A216-WCB	A217-WC6	A351-CF8M	A351-CF8M
16	Eyebolt Pin	Carbon Steel	A276-420	Carbon Steel	A276-316
17	Eyebolt	Carbon Steel	A193-5T	Carbon Steel	A193-5B
18	Eyebolt Nut	Carbon Steel	A194-2H	Carbon Steel	A194-5
19	Grease Filling		Brass-Steel		
20	Yokel sleeve		Aluminum-Bronze ²⁾		
21	Yokel sleeve Jam Nut		Carbon Steel		
22	Handwheel		Malleable Iron		
23	Handwheel Nut		Carbon Steel		

Note: 1) Graphite optional
2) Ductile Ni-Resist optional
3) Wedge 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
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**PRESSURE SEAL
CAST STEEL GATE VALVE
1500lb**



Applicable standards:
STEEL GATE VALVES, API 600/API 6D
STEEL GATE VALVES, ISO 10434/ISO 14313
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:
PSB, PRESSURE SEAL BONNET
FLEXIBLE WEDGE, FULLY GUIDED
CHOICE OF SOLID OR SPLIT WEDGE
RENEWABLE SEAT RINGS
FORGED T-HEAD STEM
RISING STEM AND NON-RISING HANDWHEEL
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

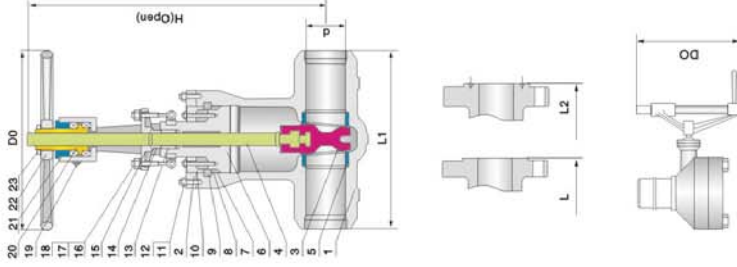
No	Part Name	Carbon Steel	ASTM Material 1 1/2Cr-1/2Mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC8	A351-CF8M
2	Yoke	A216-WCB	A217-WC8	A351-CF8M
3	Wedge	A216-WCB+HF	A217-WC9+HF	A351-CF8M+HF
4	Stem	A182-F8a	CR-MO-V	A182-316
5	Seat Ring	A105+HF	A182-F11+HF	A240-316+HF
6	Bonnet	A105	A182-F11	A240-316
7	Bonnet Gasket ¹⁾		304+Graphite	A276-316
8	Adapter Ring		A276-420	A276-316
9	Retainer	Carbon Steel	A276-420	A276-316
10	Yoke Cap	Carbon Steel	Alloy Steel	Stainless Steel
11	Bonnet Stud	Carbon Steel	A193-B7	A193-B8M
12	Bonnet Stud Nut	Carbon Steel	A194-7	A194-8M
13	Packing		Graphite	
14	Gland	A276-420	A276-304	A276-316
15	Gland Flange	A216-WCB	A217-WC8	A351-CF8M
16	Eyebolt Pin	Carbon Steel	A276-420	A276-316
17	Eyebolt	Carbon Steel	A193-B7	A193-B8
18	Eyebolt Nut	Carbon Steel	A194-2H	A194-5
19	Grease Filling		Carbon Steel	
20	Yokestays		Aluminum-bronze ²⁾	
21	Yokestays Jam Nut		Carbon Steel	
22	Handwheel Iron		Malleable Iron	
23	Handwheel Nut		Carbon Steel	

Note: 1) Graphite optional
2) Ductile Ni-Resist optional
3) Wedge 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	ANSI Class 1500Lb																		
		2	3	4	6	8	10	12	14	16	18	20	24	26	28	32	34	36	in	mm
L1	8.50	10.00	12.00	16.00	22.00	28.00	34.00	30.00	42.00	47.00	52.99	57.99	76.49	80.00	86.96	90.00	95.00	100.96	in	mm
(BW)	216	254	305	406	559	711	864	991	1067	1194	1346	1473	1943	2033	2209	2286	2413	2565	mm	
L	14.50	16.50	18.50	21.50	27.75	32.75	38.00	44.50	49.50	54.50	60.51	65.51	76.49	80.00	86.96	90.00	95.00	100.96	in	
(RF)	368	419	470	546	705	832	991	1130	1257	1384	1537	1664	1943	2033	2209	2286	2413	2565	mm	
L2	14.62	16.62	18.62	21.62	28.00	33.12	39.38	45.12	50.25	55.38	61.37	66.37	77.63						in	
(RTJ)	371	422	473	549	711	841	1000	1146	1276	1407	1559	1686	1972						mm	
H	17.62	17.62	21.62	25.25	33.5	38.62	46.5	62.25	70.5	78	86.96	93.97	110.00	121.96	133.97	147.48	120.00	127.99	in	
(OPEN)	448	448	550	640	850	960	1160	1560	1790	1980	2209	2387	2794	3068	3403	3746	3048	3251	mm	
D0	14	14	14	18	24	28	34	34	34	34	33.85	33.85	33.85	40.15	40.15	40.15	40.15	40.15	in	
D1	350	350	350	450	600	700	850	850	850	850	850	850	860	860	860	860	860	860	mm	
WT	39	45	55	77	175	323	540	795	1115	1556	4000	4800	7500	8900	10000	13500	16000	18900	BW	
(kg)	69	80	95	123	263	481	795	1148	1626	2195	5225	6310	9050	9604	11174	14852	17443	21246	RF/RTJ	

**PRESSURE SEAL
CAST STEEL GATE VALVE
2500lb**



Applicable standards:
STEEL GATE VALVES, API 600/API 6D
STEEL GATE VALVES, ISO 10434/ISO 14313
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:
PSB, PRESSURE SEAL BONNET
FLEXIBLE WEDGE, FULLY GUIDED
CHOICE OF SOLID OR SPLIT WEDGE
RENEWABLE SEAT RINGS
FORGED T-HEAD STEM
RISING STEM AND NON-RISING HANDWHEEL
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

No	Part Name	Carbon Steel	ASTM Material 1 1/2Cr-1/2Mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC8	A351-CF8M
2	Yoke	A216-WCB	A217-WC8	A351-CF8M
3	Wedge	A216-WCB+HF	A217-WC9+HF	A351-CF8M+HF
4	Stem	A182-F8a	CR-MO-V	A182-316
5	Seat Ring	A105+HF	A182-F11+HF	A240-316+HF
6	Bonnet	A105	A182-F11	A240-316
7	Bonnet Gasket ¹⁾		304+Graphite	A276-316
8	Adapter Ring		A276-420	A276-316
9	Retainer	Carbon Steel	A276-420	A276-316
10	Yoke Cap	Carbon Steel	Alloy Steel	Stainless Steel
11	Bonnet Stud	Carbon Steel	A193-B7	A193-B8M
12	Bonnet Stud Nut	Carbon Steel	A194-2H	A194-8M
13	Packing		Graphite	
14	Gland	A276-420	A276-304	A276-316
15	Gland Flange	A216-WCB	A217-WC8	A351-CF8M
16	Eyebolt Pin	Carbon Steel	A276-420	A276-316
17	Eyebolt	Carbon Steel	A193-B7	A193-B8
18	Eyebolt Nut	Carbon Steel	A194-2H	A194-5
19	Grease Filling		Carbon Steel	
20	Yokestays		Aluminum-bronze ²⁾	
21	Yokestays Jam Nut		Carbon Steel	
22	Handwheel Iron		Malleable Iron	
23	Handwheel Nut		Carbon Steel	

Note: 1) Graphite optional
2) Ductile Ni-Resist optional
3) Wedge 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	ANSI Class 2500Lb																		
		2	3	4	6	8	10	12	14	16	18	20	24	26	28	32	34	36	in	mm
L1	11.00	13.00	14.50	18.00	24.00	30.00	36.00	41.00	44.01	49.01	55.00	63.97	70.00	75.00	80.00	85.96	95.00	in		
(BW)	279	330	368	457	610	762	914	1041	1118	1245	1397	1625	1778	1905	2032	2184	2413	mm		
L	17.75	20.00	22.75	26.50	36.00	40.25	50.00	56.00										in		
(RF)	451	508	578	673	914	1022	1270	1422										mm		
L2	17.88	20.50	23.00	26.88	36.50	40.88	50.88	56.88										in		
(RTJ)	454	514	584	683	927	1038	1292	1445										mm		
H	22.5	22.5	25.62	30	36.62	41.38	44.88	60.25	64.29	65.00	71.29	75.00	80.00	82.99	92.99	96.96	120.59	in		
(OPEN)	570	570	650	760	990	1050	1140	1530	1379	1481	1651	1811	1905	2032	2108	2362	2463	3083	mm	
D0	14	14	14	18	24	28	34	34	34	34	34	34	40.15	40.15	40.15	40.15	40.15	in		
D1	350	350	350	450	600	700	850	850	850	850	850	850	860	860	860	860	860	mm		
WT	110	110	150	175	380	575	980	1570	3200	4100	5200	6800	9500	11000	13100	17200	19300	25000	BW	
(kg)	165	195	235	316	635	910	1780	2880											RF/RTJ	

CAST STEEL DOUBLE DISC METAL SEAL PARALLEL GATE VALVE

Design

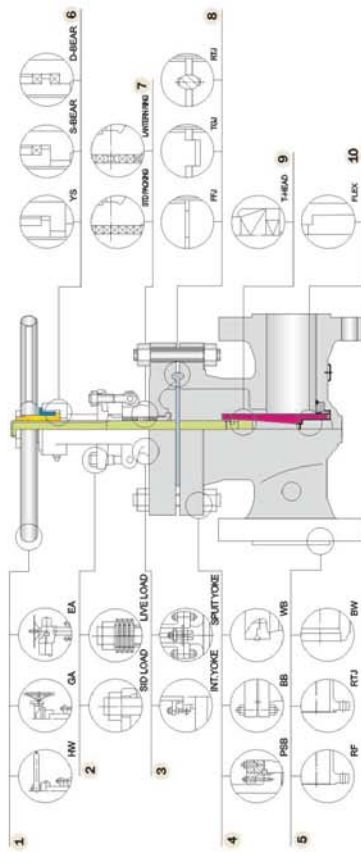
STV Cast steel gate valve are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American petroleum institute Standard API 600 & API 6D, British Standard BS 1414 & BS EN 1989 and generally conform to American Society of Mechanical Engineers Standard ASME B 16.34. Valves are available in a complete range of body/bonnet materials and flanges.

Available Modifications For STV Cast Steel Valves

- Trim changes
- End connection Modifications
- Packing and Gasket Changes
- Operator Mounting
- Handwheel Extensions
- Pressure Equalizing
- By-pass
- Customer specified Coatings
- Weld End Bore Changes
- Oxygen & Chlorine Cleaning & Packaging

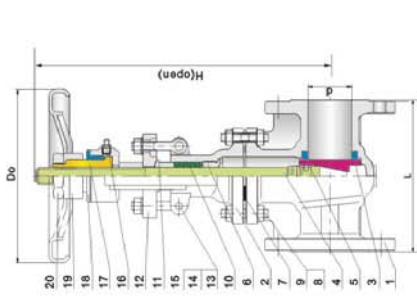
Range of Materials

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 is a full range of trim materials to match any service. Optional packing and gasket materials are available for a full range of service conditions.



- 1 Operating**
Large hand wheels for easy operation. Also available with gearing, motor actuators, pneumatic or hydraulic actuators for more difficult services.
- 2 Live Load Packing**
In services requiring frequent cycling or with high pressure/temperature variations, live loading extends the service life between maintenance periods by requiring less frequent packing gland adjustments. Belleville springs are employed to provide constant packing gland stress.
- 3 OS & Y**
Outside Screw and Yoke. Cast steel gate valve yoke, integral with bonnet for 150LB-S*, 300LB-S*, 600LB-S*, 900LB-S* & Small.
- 4 BB**
Bolted bonnet. Welding bonnet and pressure seal bonnet in services requiring frequent cycling or with high pressure/temperature variations.
- 5 End Connections**
A choice of Flanged, RTJ flanged or Butt welding end for piping flexibility
- 6 Yoke Sleeve**
Extra long thread engagement between yoke sleeve and stem provide long thread life. Valves of sizes larger than 150LB-12", 300LB-10", 600LB-6", 900LB/1500LB/2500LB-4" are regularly provided with roll bearing yokes.
- 7 Lantern Ring and Double Packing set**
Lantern ring with leak-off fitting connection and double packing stack is optionally available for critical services.
- 8 Body-to-Bonnet Joint**
A flat face gasket joint is used in the 150LB valves. A male and female joint is used in 300LB to 600LB valves. Ring joint is used in the body to bonnet connection in 900LB & higher rated valves.
- 9 Stem**
All wedge gate valves are provided with upset forged T-head stems. By forging the T-head the stem at the stem-wedge connection is strengthened. This design also allows the wedge to self-align, eliminating the possibility of a bent stem jamming the wedges.
- 10 Wedge**
The sealing construction of Double disc parallel gate valve is adopt the type of "v" with leading to disc, the special of this type is service to high temperature

CAST STEEL DOUBLE DISC METAL SEAL PARALLEL GATE VALVE 150LB



Design description:

- FULL PORT DESIGN
- OS & Y, OUTSIDE SCREW AND YOKE
- BB, BOLTED BONNET
- "V" WITH LEADING TO DISC
- CHOICE OF SOLID OR SPLIT WEDGE
- RENEWABLE SEAT RINGS
- FORGED T-HEAD STEM
- RISEING STEM AND NON-RISEING HANDWHEEL
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH BG OPERATOR

Applicable standards:

- STEEL GATE VALVES, API 600/API 6D
- STEEL GATE VALVES, ISO 10434/ISO 14313
- STEEL VALVES, ASME B 16.34
- FACE TO FACE, ASME B 16.10
- END FLANGES, ASME B 16.5
- BUTTWELDING ENDS, ASME B 16.25
- INSPECTION AND TEST, API 598/API 6D

Materials of parts

No	Part Name	Carbon Steel	ASTM Material	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Wedge	A216-WCB+CR13	A217-WC6+HF	A352-LCB+CR13
4	Stem	A182-F8a	CR-MO-V	A182-F8a
5	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
6	Stem Back Seat	A276-420	A276-304	A276-420
7	Bonnet Gasket		Spiral Wound (Graphite+304)	
8	Bonnet Stud	A193-B7	A193-B16	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-7	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland Flange	A216-WCB	A217-WC6	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-420	Carbon Steel
14	Eyebolt	Carbon Steel	A193-B7	Carbon Steel
15	Eyebolt Nut	Carbon Steel	A194-2H	Carbon Steel
16	Grease Filling		Brass+Steel	
17	Yokesleeve		Aluminum-Bronze ¹⁾	
18	Yokesleeve Jam Nut		Carbon Steel	
19	Handwheel		Malleable Iron	
20	Handwheel Nut		Carbon Steel	

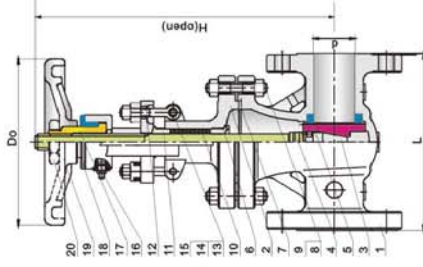
Note:1) Ductile NI-Resist optional

2) Wedge 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

ANSI Class 150LB	ANSI Class 150LB																					
	L	L1	L2	H	H1	H2	D	WT	Toque	RTJ END												
DN 50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900	1000	1050	1200	1200	mm
DN 80	75	90	110	160	210	260	310	360	410	460	510	610	660	710	760	810	910	1010	1060	1210	1210	mm
DN 100	85	100	120	170	220	270	320	370	420	470	520	620	670	720	770	820	920	1020	1070	1220	1220	mm
DN 150	110	125	145	195	245	295	345	395	445	495	545	645	695	745	795	845	945	1045	1095	1245	1245	mm
DN 200	130	145	165	215	265	315	365	415	465	515	565	665	715	765	815	865	965	1065	1115	1265	1265	mm
DN 250	145	160	180	230	280	330	380	430	480	530	580	680	730	780	830	880	980	1080	1130	1280	1280	mm
DN 300	160	175	195	245	295	345	395	445	495	545	595	695	745	795	845	895	995	1095	1145	1295	1295	mm
DN 350	175	190	210	260	310	360	410	460	510	560	610	710	760	810	860	910	1010	1110	1160	1310	1310	mm
DN 400	190	205	225	275	325	375	425	475	525	575	625	725	775	825	875	925	1025	1125	1175	1325	1325	mm
DN 450	205	220	240	290	340	390	440	490	540	590	640	740	790	840	890	940	1040	1140	1190	1340	1340	mm
DN 500	220	235	255	305	355	405	455	505	555	605	655	755	805	855	905	955	1055	1155	1205	1355	1355	mm
DN 600	240	255	275	325	375	425	475	525	575	625	675	775	825	875	925	975	1075	1175	1225	1375	1375	mm
DN 700	260	275	295	345	395	445	495	545	595	645	695	795	845	895	945	995	1095	1195	1245	1395	1395	mm
DN 800	280	295	315	365	415	465	515	565	615	665	715	815	865	915	965	1015	1115	1215	1265	1415	1415	mm
DN 900	300	315	335	385	435	485	535	585	635	685	735	835	885	935	985	1035	1135	1235	1285	1435	1435	mm
DN 1000	320	335	355	405	455	505	555	605	655	705	755	855	905	955	1005	1055	1155	1255	1305	1455	1455	mm
DN 1100	340	355	375	425	475	525	575	625	675	725	775	875	925	975	1025	1075	1175	1275	1325	1475	1475	mm
DN 1200	360	375	395	445	495	545	595	645	695	745	795	895	945	995	1045	1095	1195	1295	1345	1495	1495	mm

CAST STEEL DOUBLE DISC METAL SEAL PARALLEL GATE VALVE 300lb



Design description:

FULL PORT DESIGN
OS & Y, OUTSIDE SCREW AND YOKE
BB, BOLTED BONNET
"V" WITH LEADING TO DISC
CHOICE OF SOLID OR SPLIT WEDGE
RENEWABLE SEAT RINGS
FORGED T-HEAD STEM
RISING STEM AND NON-RISING HANDWHEEL
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR

Applicable standards:

STEEL GATE VALVES, API 600/API 6D
STEEL GATE VALVES, ISO 10434/ISO 14313
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

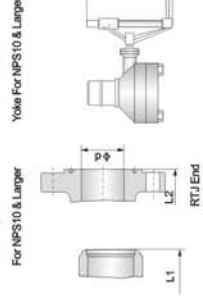
Materials of parts

No	Part Name	Carbon Steel	ASTM Material	Carbon Steel
1	Body	A216-WCB	A217-WCB	A352-LCB
2	Bonnet	A216-WCB	A217-WCB	A352-LCB
3	Wedge	A216-WCB-CR13	A217-WCB-HF	A352-LCB-CR13
4	Stem	A182-F5a	CR-MO-V	A182-F5a
5	Seat Ring	A105-CR13	A182-F11-HF	A350-LF2-CR13
6	Stem Back Seat	A276-420	A276-304	A276-420
7	Bonnet Gasket	Spiral Wound (Graphite-304)		A320-L7
8	Bonnet Stud	A193-B7	A193-B16	A194-4
9	Bonnet Stud Nut	A194-2H	A194-7	A194-4
10	Packing	Graphite	Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland Flange	A216-WCB	A217-WCB	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-420	Carbon Steel
14	Eyebolt	A193-B7	A193-B7	Carbon Steel
15	Eyebolt Nut	Carbon Steel	A194-2H	Carbon Steel
16	Grease Filling	Brass-Steel		
17	Yokesleeve	Aluminum-Bronze ¹⁾		
18	Yokesleeve Jam Nut	Carbon Steel		
19	Handwheel	Malleable Iron		
20	Handwheel Nut	Carbon Steel		

Note: 1) Ductile Ni-Resist optional

2) Wedge 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.

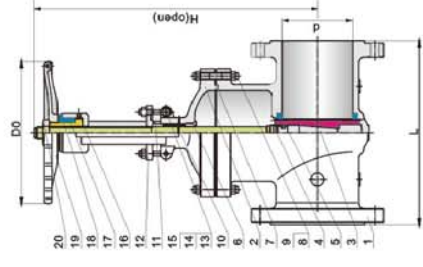
For NPS10 & Larger



Dimensions data

NPS	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	40	42	48	in
DN	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900	1000	1050	1200	mm
ANSI Class 300LB																						
L/L1	8.50	9.50	11.12	12.00	15.88	16.50	18.00	19.75	20.00	22.00	23.00	24.00	26.00	27.00	28.00	29.00	30.00	32.00	33.00	34.00	36.00	90.00
(RF/BW)	216	241	283	305	403	419	457	502	524	562	584	612	660	672	696	720	756	816	840	864	888	2286
L2	9.12	10.12	11.75	12.62	16.50	17.12	18.62	20.38	20.62	22.62	23.62	24.62	26.62	27.62	28.62	29.62	30.62	32.62	33.62	34.62	36.62	91.12
(RT-L)	232	257	298	321	419	435	473	518	541	578	594	621	669	685	702	720	750	810	834	858	882	2262
H	16.12	17.88	20.00	24.00	31.75	33.38	36.38	40.38	42.38	46.38	48.38	52.38	60.38	62.38	64.38	66.38	68.38	74.38	76.38	78.38	80.38	181.10
(OPEN)	410	453	509	612	805	850	900	1000	1050	1100	1150	1200	1300	1350	1400	1450	1500	1600	1650	1700	1750	4401
(D)	50	63	76	100	150	200	250	300	336	387	431	482	584	636	688	737	781	876	924	972	1016	2540
D0	200	200	250	300	350	400	450	500	550	600	640	720	800	800	800	800	800	800	800	800	800	2032
WT	33	35	50	71	144	209	322	482	683	950	1145	1635	2660	3090	3310	3595	3720	3985	4100	4200	4300	10350
(kg)	17	26	39	53	113	164	256	390	565	805	965	1410	2305	2540	2725	3055	3360	3630	3720	3800	3880	24339
Torque	16	18	21	42	86	128	215	289	423	537	648	1009	1451	-	-	3140	-	-	-	-	-	4239

CAST STEEL DOUBLE DISC METAL SEAL PARALLEL GATE VALVE 600lb



Design description:

FULL PORT DESIGN
OS & Y, OUTSIDE SCREW AND YOKE
BB, BOLTED BONNET
"V" WITH LEADING TO DISC
CHOICE OF SOLID OR SPLIT WEDGE
RENEWABLE SEAT RINGS
FORGED T-HEAD STEM
RISING STEM AND NON-RISING HANDWHEEL
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR

Applicable standards:

STEEL GATE VALVES, API 600/API 6D
STEEL GATE VALVES, ISO 10434/ISO 14313
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

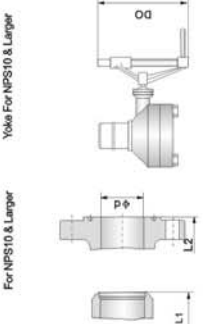
Materials of parts

No	Part Name	Carbon Steel	ASTM Material	Carbon Steel
1	Body	A216-WCB	A217-WCB	A352-LCB
2	Bonnet	A216-WCB	A217-WCB	A352-LCB
3	Wedge	A216-WCB-CR13	A217-WCB-HF	A352-LCB-CR13
4	Stem	A182-F5a	CR-MO-V	A182-F5a
5	Seat Ring	A105-CR13	A182-F11-HF	A350-LF2-CR13
6	Stem Back Seat	A276-420	A276-304	A276-420
7	Bonnet Gasket	Spiral Wound (Graphite-304)		A320-L7
8	Bonnet Stud	A193-B7	A193-B16	A194-4
9	Bonnet Stud Nut	A194-2H	A194-7	A194-4
10	Packing	Graphite	Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland Flange	A216-WCB	A217-WCB	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-420	Carbon Steel
14	Eyebolt	A193-B7	A193-B7	Carbon Steel
15	Eyebolt Nut	Carbon Steel	A194-2H	Carbon Steel
16	Grease Filling	Brass-Steel		
17	Yokesleeve	Aluminum-Bronze ¹⁾		
18	Yokesleeve Jam Nut	Carbon Steel		
19	Handwheel	Malleable Iron		
20	Handwheel Nut	Carbon Steel		

Note: 1) Ductile Ni-Resist optional

2) Wedge 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.

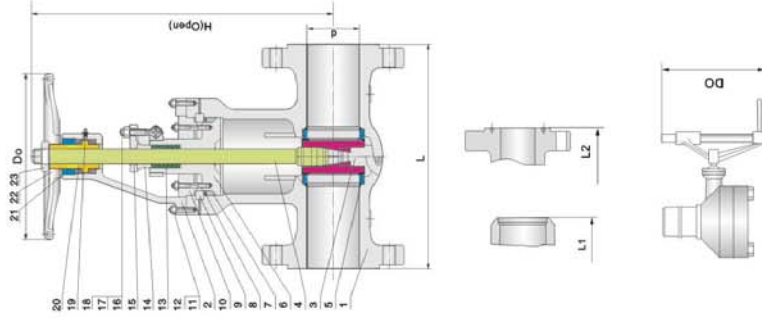
For NPS10 & Larger



Dimensions data

NPS	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	40	42	48	in
DN	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900	1000	1050	1200	mm
ANSI Class 600LB																						
L/L1	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	61.00	65.00	70.00	82.00	84.00	88.97	105.00	
(RF/BW)	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1448	1549	1651	1778	2093	2149	2260	2667	
L2	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	57.50	61.50	65.50	70.62	82.62	84.62	89.62	105.62	
(RT-L)	295	333	359	435	562	664	791	841	892	994	1095	1200	1407	1461	1562	1664	1794	2098	2152	2262	2667	
H	16.50	18.75	20.38	25.38	33.00	40.38	48.38	57.00	62.00	70.62	78.00	87.00	101.50	105.00	108.50	114.00	124.00	140.00	141.73	155.51	181.10	
(OPEN)	418	476	518	646	840	1025	1250	1450	1575	1795	1930	2210	2590	2685	2780	2885	3160	3560	3650	3950	4600	
(D)	50	63	76	100	150	199	247	298	326	374	419	463	558	603	648	695	781	876	924	972	1016	
D0	200	200	250	300	350	400	450	500	550	600	640	720	800	800	800	800	800	800	800	800	800	
WT	36	52	67	112	170	393	610	890	1245	1530	1965	2450	3995	3475	3725	4045	4480	4480	4300	16400	22900	
(kg)	29	42	53	83	125	310	472	730	1055	1240	1625	2030	2590	2855	3065	3440	3780	4085	-	-	-	
Torque	23	-	50	68	183	270	479	650	988	1243	1512	2185	3053	-	-	5452	-	-	-	-	-	

**PRESSURE SEAL
CAST STEEL DOUBLE DISC METAL
SEAL PARALLEL GATE VALVE
900LB**



Applicable standards:
STEEL GATE VALVES, API 600/API 6D
STEEL GATE VALVES, ISO 10434/ISO 14313
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:
PSB, PRESSURE SEAL BONNET
"V" WITH LEADING TO DISC
RENEWABLE SEAT RINGS
FORGED T-HEAD STEM
RISING STEM AND NON-RISING HANDWHEEL
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

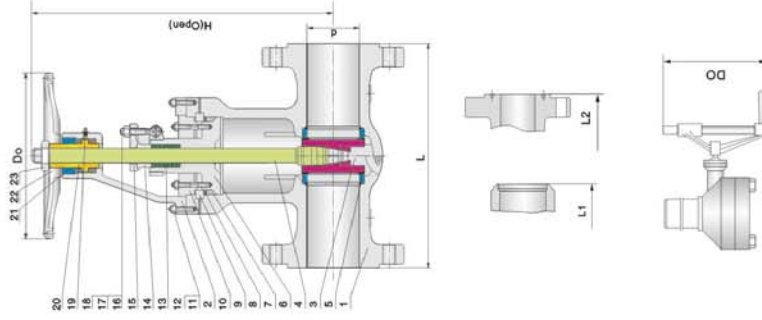
No	Part Name	Carbon Steel	ASTM Material 1/1Cr-1/2Mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC6	A351-CF8M
2	Yoke	A216-WCB	A217-WC6	A351-CF8M
3	Wedge	A216-WCB+HF	A217-WC6+HF	A351-CF8M+HF
4	Stem	A182-F6a	CR-MO-V	A182-316
5	Seat Ring	A105+HF	A182-F11+HF	A240-316+HF
6	Bonnet	A105	A182-F11	A240-316
7	Bonnet Gasket ¹⁾	Steel Ring	304SS Ring	316SS Ring
8	Adapter Ring	Carbon Steel	A276-420	A276-316
9	Retainer	Carbon Steel	A276-420	A276-316
10	Yoke Cap	Carbon Steel	Alloy Steel	Stainless Steel
11	Bonnet Stud	A193-B7	A193-B16	A193-B8M
12	Bonnet Stud Nut	A194-2H	A194-7	A194-8M
13	Packing		Graphite	
14	Gland	A276-420	A276-304	A276-316L
15	Gland Flange	A216-WCB	A217-WC6	A351-CF8M
16	Eyebolt Pin	Carbon Steel	A276-420	A276-316
17	Eyebolt	Carbon Steel	A193-B7	A193-B8
18	Eyebolt Nut	Carbon Steel	A194-2H	A194-5
19	Grease Filling		Brass-Steel	
20	Yokesleeve		Aluminum-Bronze ²⁾	
21	Yokesleeve Jam Nut		Carbon Steel	
22	Handwheel		Malleable Iron	
23	Handwheel Nut		Carbon Steel	

Note: 1) Graphite optional
2) Ductile Ni-Resist optional
3) Wedge 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	50	65	80	100	150	200	250	300	350	400	450	500	600	700	800	850	900	mm	in
L1	8.50	10.00	12.00	14.00	20.00	26.00	31.00	36.00	39.00	43.00	47.99	52.00	60.96	61.96	65.47	70.00	72.99	80.00		
(BW)	216	254	305	356	508	660	787	914	991	1082	1219	1321	1549	1574	1663	1778	1854	2032		
L	14.50	16.50	18.50	20.00	29.00	33.00	38.00	40.50	47.50	52.00	60.98	61.96	65.47	70.00	72.99	80.00				
(RF)	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549	1574	1663	1778	1854	2032		
L2	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12	40.88	44.88	48.50	52.51	61.73	-	-	-	-	-		
(RTJ)	371	422	384	460	613	740	841	969	1038	1140	1232	1334	1568	-	-	-	-	-		
H	17.62	17.62	19.5	22.86	32.62	37.62	45.5	53.12	59	70.5	93.74	96.49	116.96	131.96	145.47	157.48	163.97	180.96		
(OPEN)	448	448	495	580	830	955	1155	1350	1500	1790	2381	2451	2971	3352	3695	4000	4165	4597		
D0	14	14	14	18	24	28	34	34	34	29.92	29.92	35.43	35.43	35.43	35.43	35.43	35.43	35.43		
D0	350	350	350	350	600	600	700	850	850	760	760	900	900	900	900	900	900	900		
WT	39	39	48	69	158	289	482	710	998	1390	2340	2800	3420	4270	5454	7392	9042	10874	BW	
(kg)	69	69	72	110	253	430	710	1025	1452	1980	2750	3400	4400	5500	6900	9000	11000	13500	RF/RTJ	

**PRESSURE SEAL
CAST STEEL DOUBLE DISC METAL
SEAL PARALLEL GATE VALVE
1500LB**



Applicable standards:
STEEL GATE VALVES, API 600/API 6D
STEEL GATE VALVES, ISO 10434/ISO 14313
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:
PSB, PRESSURE SEAL BONNET
"V" WITH LEADING TO DISC
RENEWABLE SEAT RINGS
FORGED T-HEAD STEM
RISING STEM AND NON-RISING HANDWHEEL
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

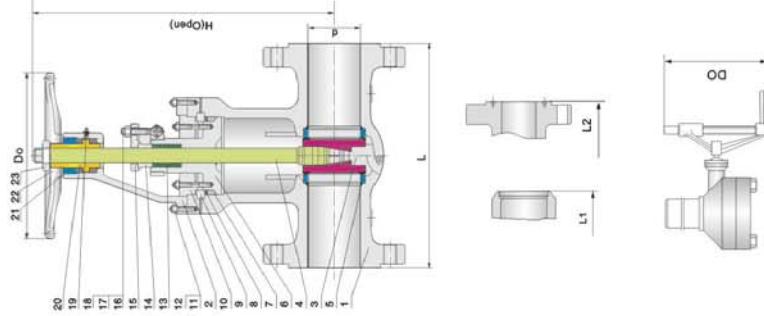
No	Part Name	Carbon Steel	ASTM Material 1/1Cr-1/2Mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC6	A351-CF8M
2	Yoke	A216-WCB	A217-WC6	A351-CF8M
3	Wedge	A216-WCB+HF	A217-WC6+HF	A351-CF8M+HF
4	Stem	A182-F6a	CR-MO-V	A182-316
5	Seat Ring	A105+HF	A182-F11+HF	A240-316+HF
6	Bonnet	A105	A182-F11	A240-316
7	Bonnet Gasket ¹⁾	Steel Ring	304SS Ring	316SS Ring
8	Adapter Ring	Carbon Steel	A276-420	A276-316
9	Retainer	Carbon Steel	A276-420	A276-316
10	Yoke Cap	Carbon Steel	Alloy Steel	Stainless Steel
11	Bonnet Stud	A193-B7	A193-B16	A193-B8M
12	Bonnet Stud Nut	A194-2H	A194-7	A194-8M
13	Packing		Graphite	
14	Gland	A276-420	A276-304	A276-316L
15	Gland Flange	A216-WCB	A217-WC6	A351-CF8M
16	Eyebolt Pin	Carbon Steel	A276-420	A276-316
17	Eyebolt	Carbon Steel	A193-B7	A193-B8
18	Eyebolt Nut	Carbon Steel	A194-2H	A194-8
19	Grease Filling		Brass-Steel	
20	Yokesleeve		Aluminum-Bronze ²⁾	
21	Yokesleeve Jam Nut		Carbon Steel	
22	Handwheel		Malleable Iron	
23	Handwheel Nut		Carbon Steel	

Note: 1) Graphite optional
2) Ductile Ni-Resist optional
3) Wedge 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	50	65	80	100	150	200	250	300	350	400	450	500	600	700	800	850	900	mm	in	
																					ANSI Class 1500LB
L1	8.50	10.00	12.00	14.00	20.00	26.00	31.00	34.00	39.00	42.00	47.00	52.99	57.99	76.49	80.00	86.96	90.00	95.00	100.98		
(BW)	216	254	305	356	508	660	787	914	991	1067	1184	1346	1473	1943	2033	2209	2286	2413	2565		
L	14.50	16.50	18.50	21.50	27.75	32.75	38.00	44.50	49.50	54.50	60.51	65.51	76.48	80.00	86.96	90.00	95.00	100.98			
(RF)	368	419	470	546	705	832	991	1130	1257	1384	1537	1664	1943	2033	2209	2286	2413	2565			
L2	14.62	16.62	18.62	21.62	28.00	33.12	39.38	45.12	50.25	55.38	61.37	66.37	77.63	-	-	-	-	-			
(RTJ)	371	422	473	549	711	841	1000	1146	1276	1407	1559	1696	1972	-	-	-	-	-			
H	17.62	17.62	19.62	25.25	33.5	38.62	46.5	62.25	70.5	78	86.96	93.97	110.00	121.96	133.97	147.48	120.00	127.99			
(OPEN)	448	448	500	640	850	980	1180	1580	1790	1980	2209	2387	2794	3068	3403	3746	3048	3251			
D0	14	14	14	18	24	28	34	34	34	34	33.85	33.85	40.15	40.15	40.15	40.15	40.15	40.15			
D0	350	350	350	450	600	700	850	850	850	850	850	850	850	850	850	850	850	850			
WT	39	45	55	77	175	323	540	795	1115	1556	4000	4800	7500	8900	10000	13500	16000	18900	BW		
(kg)	69	80	95	123	283	481	795	1148	1626	2195	5225	6310	9050	9854	11174	14852	17443	21246	RF/RTJ		

**PRESSURE SEAL
CAST STEEL DOUBLE DISC METAL
SEAL PARALLEL GATE VALVE
2500LB**



Applicable standards:
STEEL GATE VALVES, API 600/API 6D
STEEL GATE VALVES, ISO 10434/ISO 14313
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTT WELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:
PSB, PRESSURE SEAL BONNET
"V" WITH LEADING TO DISC
REMOVABLE SEAT RINGS
FORGED HEAD STEM
RISING STEM AND NON-RISING HANDWHEEL
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

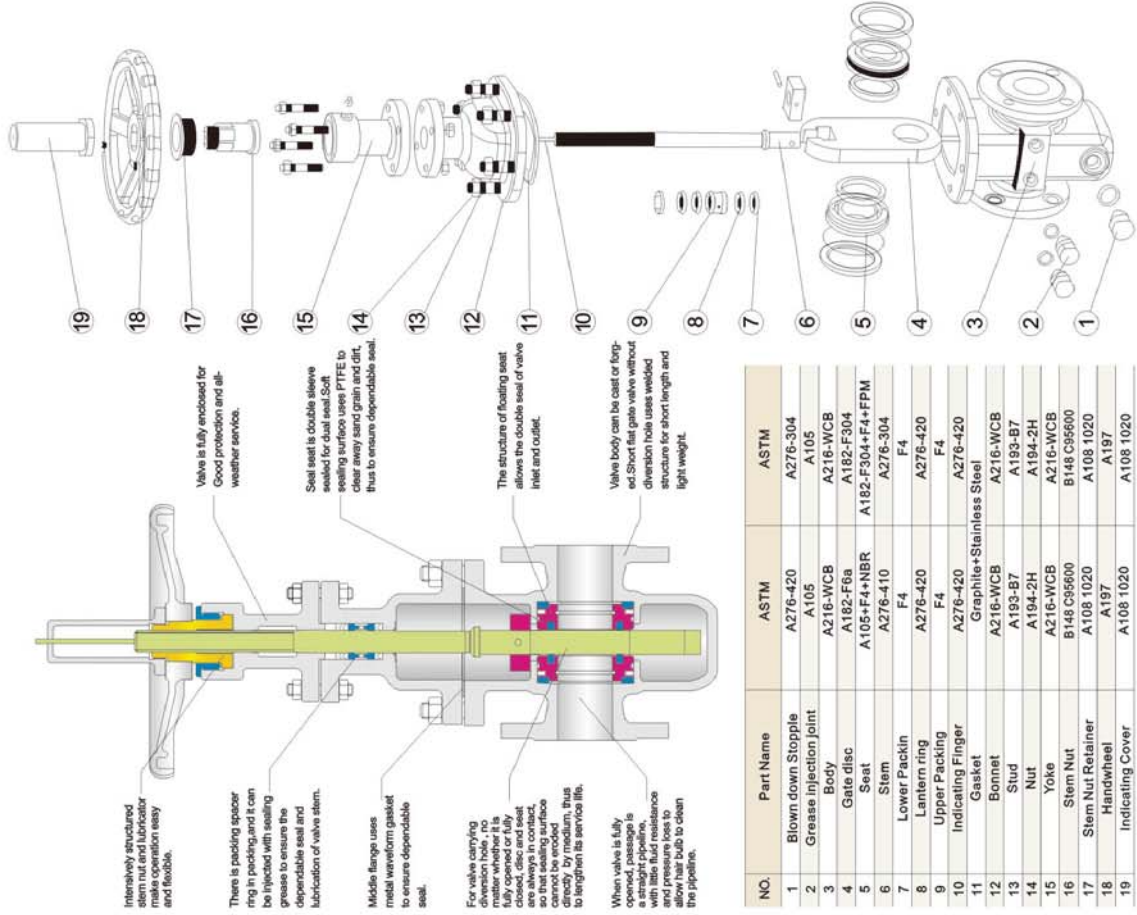
No	Part Name	Carbon Steel	ASTM Material	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC8	A351-CF8M
2	Yoke	A216-WCB	A217-WC8	A351-CF8M
3	Wedge	A216-WCB-HF	A217-WC8-HF	A351-CF8M-HF
4	Stem	A182-F6a	CR-MO-V	A182-316
5	Seat Ring	A105+HF	A182-F11+HF	A240-316+HF
6	Bonnet	A105	A182-F11	A240-316
7	Bonnet Gasket ¹⁾	Steel Ring	304SS Ring	316SS Ring
8	Adapter Ring	Carbon Steel	A276-420	A276-316
9	Retainer	Carbon Steel	A276-420	A276-316
10	Yoke Cap	Carbon Steel	Alloy Steel	Stainless Steel
11	Bonnet Stud	A193-B7	A193-B16	A193-B5M
12	Bonnet Stud Nut	A194-2H	A194-7	A194-8M
13	Packing		Graphite	
14	Gland	A276-420	A276-304	A276-316L
15	Gland Flange	A216-WCB	A217-WC8	A351-CF8M
16	Eyebolt Pin	Carbon Steel	A276-420	A276-316
17	Eyebolt	Carbon Steel	A193-B7	A193-B8
18	Eyebolt Nut	Carbon Steel	A194-2H	A194-3
19	Grease Filling		Brass-Steel	
20	Yokesleeve		Aluminum-Bronze ²⁾	
21	Yokesleeve Jam Nut		Carbon Steel	
22	Handwheel		Malleable Iron	
23	Handwheel Nut		Carbon Steel	

Note: 1), Graphite optional
2), Ductile NI-Resist optional
3), Wedge 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

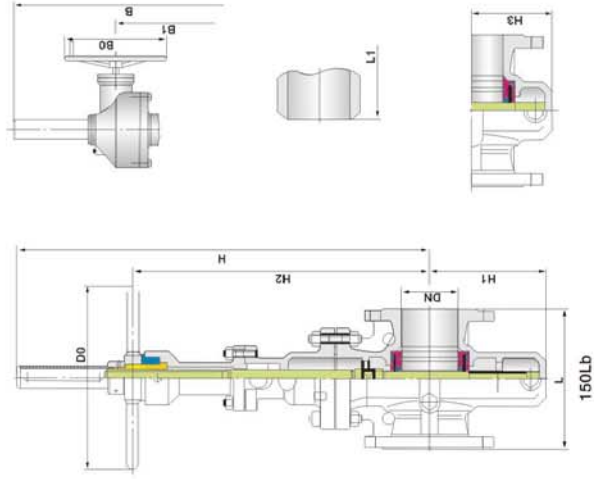
NPS	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	32	34	36	in	mm
DN	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	800	850	900		
L1	11,00	13,00	14,50	18,00	24,00	30,00	36,00	41,00	44,01	49,01	55,00	63,97	70,00	75,00	80,00	85,98	95,00			
(BW)	279	330	368	457	610	762	914	1041	1118	1245	1397	1625	1778	1905	2032	2184	2413			
L	17,75	20,00	22,75	26,50	36,00	40,25	50,00	56,00	-	-	-	-	-	-	-	-	-	-	in	mm
(RF)	451	508	578	673	914	1022	1270	1422	-	-	-	-	-	-	-	-	-	-		
L2	17,88	20,50	23,00	26,88	36,50	40,88	50,88	56,88	-	-	-	-	-	-	-	-	-	-	in	mm
(RTJ)	454	514	584	683	927	1038	1292	1445	-	-	-	-	-	-	-	-	-	-		
H	22,5	22,5	25,62	30	36,62	41,38	44,88	60,25	64,29	68,30	85,00	71,29	75,00	80,00	82,99	92,99	96,96	120,59		
(OPEN)	570	570	650	760	930	1050	1140	1530	1379	1481	1651	1811	1905	2032	2108	2362	2463	3083		
D0	350	350	450	600	700	850	950	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020	in	mm
WT	110	110	150	175	380	575	980	1570	3200	4100	5200	6800	9500	11000	13100	17200	19300	25000		
(kg)	165	195	235	316	635	910	1780	2680	-	-	-	-	-	-	-	-	-	-		

FLAT GATE VALVE



NO.	Part Name	ASTM	ASTM
1	Blown down Stopple	A276-420	A276-304
2	Grease injection joint	A105	A105
3	Body	A216-WCB	A216-WCB
4	Gate disc	A182-F6a	A182-F304
5	Seat	A105+F4+NBR	A182-F304+F4+FPM
6	Stem	A276-410	A276-304
7	Lower Packin	F4	F4
8	Lantern ring	A276-420	A276-420
9	Upper Packing	F4	F4
10	Indicating Finger	A276-420	A276-420
11	Gasket	A216-WCB	Graphite+Stainless Steel
12	Bonnet	A193-B7	A193-B7
13	Stud	A194-2H	A194-2H
14	Nut	A216-WCB	A216-WCB
15	Yoke	B148 C95600	B148 C95600
16	Stem Nut	A108 1020	A108 1020
17	Stem Nut Retainer	A197	A197
18	Handwheel	A108 1020	A108 1020
19	Indicating Cover	A108 1020	A108 1020

FLAT GATE VALVE 150lb/300lb



Applicable standards:

STEEL GATE VALVES, AAPI 6D
STEEL GATE VALVES, ISO 14313
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 6D

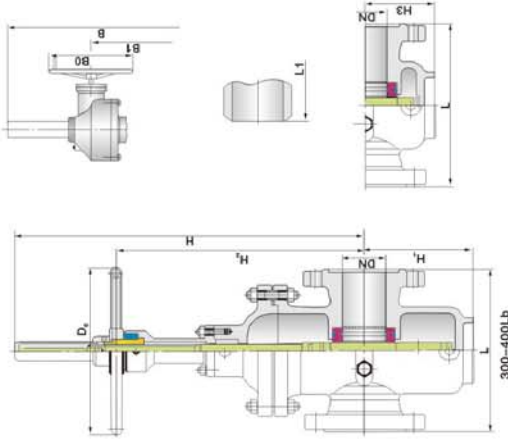
Design description:

FULL PATH DESIGN
OS & Y, OUTSIDE SCREW AND YOKE
BB, BOLTED BONNET
PARALLEL SINGLE OR DOUBLE DISC TYPE
"K" TYPE OR "V" TYPE OPEN DOUBLE WEDGE DISC
RENEWABLE SEAT RINGS
FORGED T-HEAD STEM
RISING STEM AND NON-RISING HANDWHEEL
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR
CONDUCTION CURRENT OR NO CONDUCTION CURRENT PATTERN

Dimensions data

NPS DN	ANSI Class 150Lb																			
	1	1 1/4	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	28	32	36	40	1000
L	127	14	165	178	190	203	229	267	292	330	356	381	406	432	457	508	610	660	711	811
L1	127	140	165	216	241	263	305	403	419	457	502	572	610	660	711	813	914	965	1016	-
L2	-	-	-	-	-	150	150	150	180	180	200	200	218	218	229	246	286	286	-	-
H	360	375	410	450	550	610	700	895	1130	1290	1480	1660	1850	2080	2300	2680	3080	3491	3897	4317
H2	250	260	290	315	420	428	494	625	764	937	1080	1283	1417	1489	1672	2012	2250	2550	2850	3250
D0	180	180	250	250	300	300	300	350	350	400	450	500	500	600	700	800	800	1000	1000	1200
B	-	-	-	-	-	770	965	1200	1360	1560	1740	1930	2160	2420	2800	3200	3640	4050	4467	-
B1	-	-	-	-	-	650	800	960	1080	1200	1350	1500	1680	1850	2120	2450	2800	3080	3400	-
B0	-	-	-	-	-	310	310	310	310	310	310	460	460	460	460	460	460	460	600	600
Geared driving	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H3	60	71	75	85	91	109	121	178	211	215	245	280	310	346	363	442	505	560	610	715
H1	85	103	115	122	154	169	193	283	352	440	514	602	678	785	855	1045	1190	1350	1510	1715

FLAT GATE VALVE 400lb/600lb



Applicable standards:

STEEL GATE VALVES, AAPI 6D
STEEL GATE VALVES, ISO 14313
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 6D

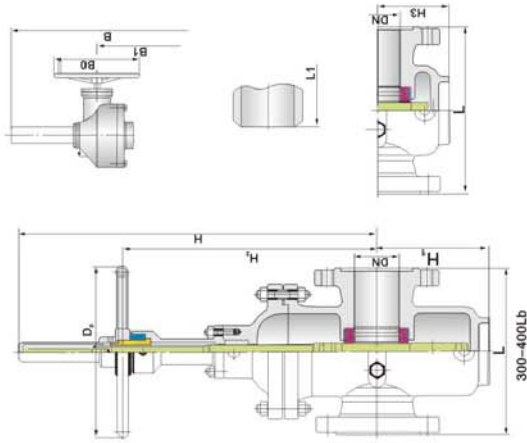
Design description:

FULL PATH DESIGN
OS & Y, OUTSIDE SCREW AND YOKE
BB, BOLTED BONNET
PARALLEL SINGLE OR DOUBLE DISC TYPE
"K" TYPE OR "V" TYPE OPEN DOUBLE WEDGE DISC
RENEWABLE SEAT RINGS
FORGED T-HEAD STEM
RISING STEM AND NON-RISING HANDWHEEL
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR
CONDUCTION CURRENT OR NO CONDUCTION CURRENT PATTERN

Dimensions data

NPS DN	ANSI Class 300Lb												ANSI Class 400Lb											
	1	1 1/4	1 1/2	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	28	32	36	900				
L	165	178	190	216	241	283	305	403	419	457	502	562	622	682	742	838	914	991	1143	1346	1524	1727		
L1	165	178	190	216	241	283	305	403	419	457	502	562	622	682	742	838	914	991	1143	1346	1524	1727		
L2	-	-	-	-	-	150	150	150	180	180	200	200	218	218	229	246	286	286	-	-	-	-		
H	370	385	420	458	555	615	710	900	1135	1401	1580	-	-	-	-	-	-	-	-	-	-	-		
H2	260	270	300	325	420	430	500	625	790	1040	1150	-	-	-	-	-	-	-	-	-	-	-		
D0	180	180	250	250	300	300	300	350	350	400	450	-	-	-	-	-	-	-	-	-	-	-		
B	-	-	-	-	-	770	965	1200	1360	1560	1740	1930	2160	2420	2800	3200	3640	4050	-	-	-	-		
B1	-	-	-	-	-	650	800	960	1080	1200	1350	1540	1700	1850	2120	2460	2800	3080	-	-	-	-		
B0	-	-	-	-	-	310	310	310	310	310	310	460	460	460	460	460	460	600	600	-	-	-		
Geared driving	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
H3	70	80	85	100	106	124	146	206	241	251	281	325	360	400	430	497	560	620	610	-	-	-		
H1	90	115	130	137	169	164	1218	311	362	478	545	645	728	800	930	1100	1260	1420	1510	-	-	-		
L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
L1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
H2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
D0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
B1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
B0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Geared driving	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
H3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
H1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

FLAT GATE VALVE 900Lb



Applicable standards:

STEEL GATE VALVES: API 6D
STEEL GATE VALVES: ISO 14313
STEEL VALVES: ASME B 16.34
FACE TO FACE: ASME B 16.10
END FLANGES: ASME B 16.5
BUTTWELDING ENDS: ASME B 16.25
INSPECTION AND TEST: API 6D

Design description:

FULL PATH DESIGN
OS & Y, OUTSIDE SCREW AND YOKE
BB, BOLTED BONNET
PARALLEL SINGLE OR DOUBLE DISC TYPE
"K" TYPE OR "V" TYPE OPEN DOUBLE WEDGE DISC
RENEWABLE SEAT RINGS
FORGED T-HEAD STEM
RISING STEM AND NON-RISING HANDWHEEL
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR
CONDUCTION CURRENT OR NO CONDUCTION CURRENT PATTERN

NPS	1	1 1/4	1 1/2	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24
DN	25	32	40	50	65	80	100	150	200	250	300	350	400	450	500	600
L	292	330	356	432	559	660	787	838	889	991	1092	1194				
L1	292	330	356	432	559	660	787	838	889	991	1092	1194				
H	468	565	625	720	910	1145	1411	1590	-	-	-	-	-	-	-	-
H2	335	430	440	510	630	800	1050	1160	-	-	-	-	-	-	-	-
Dc	300	300	350	350	400	500	500	600	600	600	600	600	600	600	600	600
B	505	590	610	770	965	1200	1370	1560	1740	1970	2290	2420				
B1	430	470	510	650	800	960	1090	1200	1350	1540	1700	1850				
B2	310	310	310	310	310	310	310	460	460	460	460	460				
Geared driving	BA-0	BA-0	BA-0	BA-0	BA-0	BA-0	BA-1	BA-1	BA-1	BA-2	BA-2	BA-2				
H3	108	125	145	165	220	280	330	380	430	480	530	580				
H1	158	190	225	255	330	410	490	570	650	735	810	905				

ANSI Class 900Lb																
L(RF)	254	279	305	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549
L(BW)	254	279	305	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549
H	325	405	503	550	618	693	810	1052	1263	1593	1698	-	-	-	-	-
H2	253	312	387	416	491	531	618	791	942	1136	1271	-	-	-	-	-
D	250	300	300	350	400	500	600	650	700	800	1000	-	-	-	-	-
B	-	-	-	-	-	833	950	1212	1423	1813	1928	2230	-	-	-	-
B1	-	-	-	-	-	616	703	886	1037	1276	1411	1585	-	-	-	-
B2	-	-	-	-	-	305	305	458	458	458	458	458	-	-	-	-
H3	73	85	91	97	110	121	133	176	206	255	290	321	351	385	436	515
H1	100	128	147	184	216	266	418	508	600	726	775	871	966	1060	1416	

GLOBE VALVE, BB, CS

Design

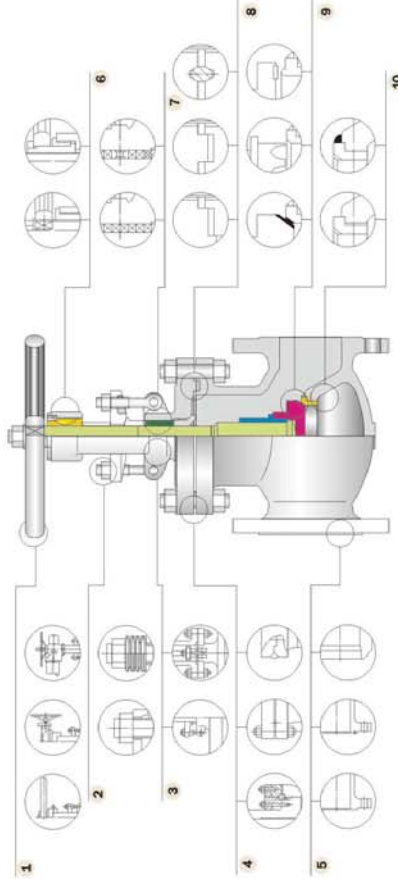
STU cast steel globe valve designed and manufactured to provide maximum service life and dependability. All globe valves are full ported and meet the design requirements of American Petroleum Institute Standard API 600, RS1873, RSEN13709 and generally conform to American Society of Mechanical Engineers standard ASME B 16.34. 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 is 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 STU Cast Steel Valves

- *Trim Change
- *End Connection Modifications
- *Packing and Gasket Changes
- *Operator Mounting
- *Handwheel Extensions
- *Pressure Equalizing
- *By-pass
- *Customer Specified Coatings
- *Weld End Bore Changes
- *Oxygen & Chlorine Cleaning & Packaging



1. Operating

Large handwheels for easy operation. Also available with gearing, motor actuators, pneumatic or hydraulic actuators for more difficult services.

3 OS & Y

Outside Screw and Yoke. Cast steel globe valve yoke integral with bonnet for 10" and smaller.

5 End Connections

A choice of Flanged, RFJ flanged or Butt welding end for piping flexibility.

7 Lantern ring and double packing set

Lantern ring with leak-off fitting connection and double packing stack is optionally available for critical services.

9 Disc

Plug disc is storm guided on all sizes. Disc has a differential angle front the seat to provide a line contact for maximum sealing. The bottom of Y-port disc is filled by the body seat ring for maximum disc stability in throttling applications. The soft TEFLON ring is excellent for lower temperature service where light shutoff is required.

4 BB

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

6 Yokesleeve

Furnished in aluminum or bronze to reduce operating torque. Most sizes furnished with ball bearing yokesleeves.

8 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.

10 Seat Rings

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

CAST STEEL GLOBE VALVE

1500lb/2500lb



Applicable standards:

STEEL GLOBE VALVES, BS BS1873/AP1600
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

Design description:

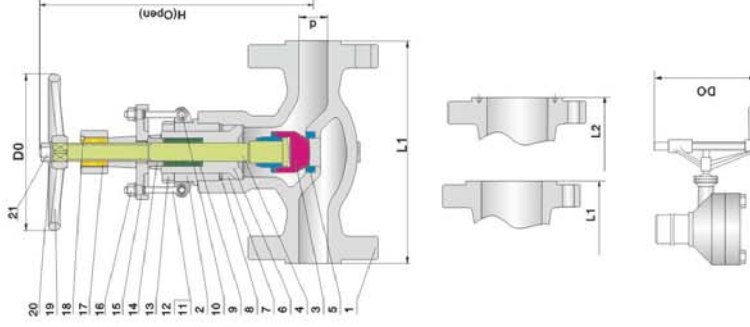
STRAIGHT PATTERN BODY DESIGN
OS & Y OUTSIDE SCREW AND YOKE
BB BOLTED BONNET
YOKE INTEGRAL WITH BONNET
RISING STEM AND HANDWHEEL
LOOSE DISC, CHOICE OF PLUG OR BALL
RENEWABLE SEAT RING
IMPACT HANDWHEEL FOR 10" & ABOVE
HORIZONTAL SERVICE
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR

Applicable standards:

STEEL GLOBE VALVES, BS BS1873/AP1600
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

Design description:

STRAIGHT PATTERN BODY DESIGN
OS & Y OUTSIDE SCREW AND YOKE
PSB PRESSURE SEAL BONNET
YOKE INTEGRAL WITH BONNET
RISING STEM AND HANDWHEEL
LOOSE DISC, CHOICE OF PLUG OR BALL
RENEWABLE SEAT RING
IMPACT HANDWHEEL FOR 10" & ABOVE
HORIZONTAL SERVICE
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR



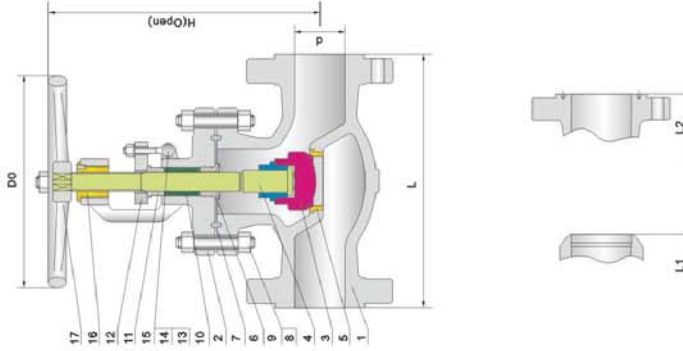
Materials of parts

NO	Part Name	Carbon Steel	1 1/2Cr-1/2Mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC6	A351-CF8M
2	Bonnet	A216-WCB	A217-WC6	A351-CF8M
3	Disc	A216-WCB+HF	A217-WC6+HF	A351-CF8M+HF
4	Stem	A182-F6a	CR-MO-V	A182-316
5	Seat Ring	A105+HF	A182-F11+HF	A240-316+HF
6	Bonnet Gasket ¹⁾	A105	A182-F11	A240-316
7	Adapter Ring	Carbon Steel	A276-420	A276-316
8	Packing	Carbon Steel	A276-420	A276-316
9	Eye Bolt Pin	Carbon Steel	A193-B7	A193-B8
10	Eye Bolt Nut	Carbon Steel	A194-2H	A194-3
11	Locking Nut	Carbon Steel	A276-304	Stainless Steel
12	Gland	A216-WCB	A217-WC6	A351-CF8M
13	Washer	Aluminum-Bronze ²⁾	Carbon Steel	Carbon Steel
14	Stem Nut	Carbon Steel	Carbon Steel	Carbon Steel
15	Bolt	Malleable Iron	Carbon Steel	Carbon Steel
16	Handwheel	Carbon Steel	Carbon Steel	Carbon Steel
17	Handwheel Washer	Carbon Steel	Carbon Steel	Carbon Steel
18	Handwheel Nut	Carbon Steel	Carbon Steel	Carbon Steel
19	Handwheel Nut	Carbon Steel	Carbon Steel	Carbon Steel
20	Handwheel Nut	Carbon Steel	Carbon Steel	Carbon Steel
21	Handwheel Nut	Carbon Steel	Carbon Steel	Carbon Steel

Note: 1) Graphite optional
2) Ductile Ni-Resist optional
3) Wedge 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	16
DN	50	65	80	100	150	200	250	300	400
L1	8.50	10.00	12.00	14.00	20.00	26.00	31.00	36.00	46.00
(BW)	216	254	305	356	508	660	787	914	1193
L	14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00	48.00
(RF)	368	419	381	457	610	737	838	965	1244
L2	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12	48.12
(RTJ)	371	422	384	460	613	740	841	968	1247
H	22	22	22	27	36.38	43.38	50.62	57	72
(OPEN)	557	557	557	685	925	1100	1285	1450	1850
D0	16	16	16	16	28	28	36	36	48
D	400	400	400	400	700	700	900	900	1100
WT	46	53	68	100	270	450	740	1150	1900
(Kg)	75	82	95	135	355	680	1050	1480	2400



Applicable standards:

STEEL GLOBE VALVES, BS BS1873/AP1600
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

Design description:

STRAIGHT PATTERN BODY DESIGN
OS & Y OUTSIDE SCREW AND YOKE
BB BOLTED BONNET
YOKE INTEGRAL WITH BONNET
RISING STEM AND HANDWHEEL
LOOSE DISC, CHOICE OF PLUG OR BALL
RENEWABLE SEAT RING
IMPACT HANDWHEEL FOR 10" & ABOVE
HORIZONTAL SERVICE
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

NO	Part Name	Carbon Steel	1 1/2Cr-1/2Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Disc	A105+CR13	A182-F11+HF	A351DLF2+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
6	Bonnet Gasket	A276-420	A276-304	A276-420
7	Stem Ring	Steel Ring	Steel Ring	Steel Ring
8	Bonnet Stud	A193-B7	A193-B16	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-7	A194-4
10	Packing	A276-420	Graphite	A276-420
11	Gland	A216-WCB	A217-WC6	A352-LCB
12	Eye Bolt Pin	Carbon Steel	A193-B7	Carbon Steel
13	Eye Bolt Nut	Carbon Steel	A194-2H	Carbon Steel
14	Locking Nut	Carbon Steel	A194-2H	Carbon Steel
15	Yokesleeve	Aluminum-Bronze ¹⁾	Malleable Iron	Malleable Iron
16	Handwheel	Carbon Steel	Carbon Steel	Carbon Steel
17	Handwheel	Carbon Steel	Carbon Steel	Carbon Steel

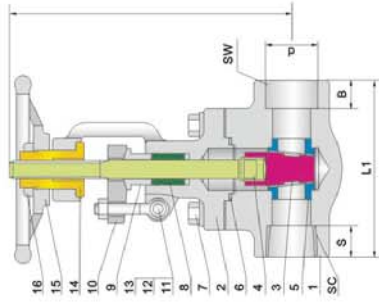
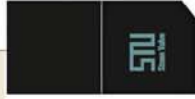
Note: 1) Ductile Ni-Resist optional
2) Wedge and seat ring may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown.

Dimensions data

NPS	2	2 1/2	3	4	6	8	10	12	16
DN	50	65	80	100	150	200	250	300	400
L1/L1	14.50	16.50	18.50	21.50	27.75	32.75	40.00	46.00	56.00
(RF/BW)	368	419	470	546	705	832	973	1114	1414
L2	14.62	16.62	18.62	21.62	28.00	33.12	40.00	46.00	56.00
(RTJ)	371	422	473	549	711	841	982	1123	1423
H	22.00	23.25	29.50	36.00	48.62	65.00	81.50	98.00	124.50
(OPEN)	560	590	750	915	1235	1650	2065	2480	3145
(d)	47	47	47	57	72	87	102	117	142
D0	13	16	18	20	24	28	36	42	48
D	320	400	450	500	600	700	800	900	1100
WT	68	97	116	215	445	795	138	167	333
(Kg)	57	81	95	184	347	635	108	136	261

FORGED STEEL GATE VALVE

800LB



Applicable standards:
STEEL GATE VALVES, API 602
STEEL VALVES, ASME B16.34
END TO END, MANUFACTURER STANDARD
FACE TO FACE, FLANGED, ASME B 16.11
END FLANGES, ASME B16.5
BUTT WELDING ENDS, ASME B16.25
SOCKET-WELDING ENDS, ASME B 1.20.1
SCREWED ENDS, ASME B 1.20.1
INSPECTION AND TEST API 598

Design description:
OUTSIDE SCREW AND YOKE (OS&Y)
BOLTED BONNET
CHOICE OF WR. WELDING BONNET
SINGLE WEDGE, FULLY GUIDED
RENEWABLE SEAT RINGS
YOKE INTEGRAL WITH BONNET
RISING STEM AND NON-RISING HANDWHEEL
SW, SOCKET-WELDING ENDS
SC, SCREWED ENDS
BW, BUTT WELDING ENDS
FLANGED ENDS

Materials of parts

No	Part Name	C-Si	ASTM Material	1/1Cr-1/2Mo-Si
1	Body	A105	16Cr-12Ni-2Mo	A182-F316
2	Bonnet	A105		A182-F11
3	Wedge	A182-F6a		A182-F316
4	Stem	A276-410		A276-F316
5	Seat Ring	A276-410		A276-F316
6	Bonnet Gasket ¹⁾	Graphite+304		Graphite+316
7	Bonnet Stud	A193-B7		A193-B8M
8	Packing	Graphite		A276-410
9	Gland	A276-410		A276-F316
10	Gland Flange	A105		A182-F11
11	Eyebolt Pin	A276-410		A276-316
12	Eyebolt	A193-B7		A193-B8M
13	Eyebolt Nut	A194-2H		A194-3M
14	Yokesleeve	A276-410		A276-F316
15	Handwheel	Malleable Iron		
16	Handwheel Nut	Carbon Steel		

Note: 1). Spiral wound construction.

Dimensions data

NPS	DN	Unit	L1 ^b	L (Flanged Ends)	300LB	600LB	d	SW	SC	H (Open)	D0	WT ^a (Kg)
3/8	in	mm	3.12	4.00	5.50	6.50	0.394	0.893	0.378	6.00	4.00	4.5/4
10	mm	mm	79	102	140	165	10	17.6	9.6	151	100	100
1/2	in	mm	3.12	4.25	5.50	6.50	0.394	0.858	0.378	6.00	4.00	5.1/4
15	mm	mm	79	108	140	165	10	21.8	9.6	151	100	100
3/4	in	mm	2.63	4.62	6.00	7.50	0.531	1.067	0.500	6.25	4.00	8.2/4.3
20	mm	mm	92	117	152	190	13.5	27.1	12.7	158	100	100
1	in	mm	4.38	5.00	6.50	8.50	0.709	1.331	0.500	7.25	5.00	10.5/6.6
25	mm	mm	111	127	165	216	18	33.8	12.7	173	125	125
1 1/4	in	mm	4.75	5.50	7.00	9.00	0.945	1.677	0.500	9.38	6.25	12.4/9.5
32	mm	mm	120	140	178	229	24	42.8	12.7	18	239	160
1 1/2	in	mm	4.75	6.50	7.50	9.50	1.181	1.917	0.500	9.50	6.25	20.1/11
40	mm	mm	120	165	190	241	30	48.7	12.7	18.4	243	160
2	in	mm	5.50	7.00	8.50	11.50	1.437	2.406	0.626	11.00	7.00	28/14.5
50	mm	mm	140	178	216	292	36.5	61.1	15.9	19.2	279	180

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

FORGED STEEL GATE VALVE

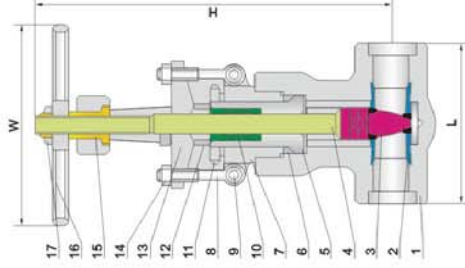
900LB/1500LB/2500LB

Technical Specification

STEEL GATE VALVES, API 602
STEEL VALVES, ASME B16.34
END TO END, MANUFACTURER STANDARD
FACE TO FACE, FLANGED, ASME B 16.10
END FLANGES, ASME B16.5
BUTT WELDING ENDS, ASME B16.25
SOCKET-WELDING ENDS, ASME B 1.20.1
SCREWED ENDS, ASME B 1.20.1
INSPECTION AND TEST API 598

Design description:

OUTSIDE SCREW AND YOKE (OS&Y)
PRESSURE SEAL BONNET
SINGLE WEDGE, FULLY GUIDED
RENEWABLE SEAT RINGS
RISING STEM AND NON-RISING HANDWHEEL
SW, SOCKET-WELDING ENDS
SC, SCREWED ENDS
BW, BUTT WELDING ENDS
FLANGED ENDS



Form of Major Part Material

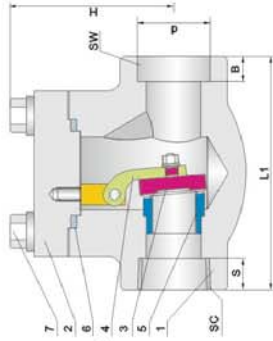
NO.	Part Name	CS to ASTM		AS to ASTM		SS to ASTM	
		Type A 105N	Type F22	Type F304(L)	Type F316(L)	Type F304(L)	Type F316(L)
1	Body	A105N	A182 F22	A182 F304(L)	A182 F316(L)	A182 F304(L)	A182 F316(L)
2	Seat Ring	A276 420	A276 304	A276 304(L)	A276 316(L)	A276 304(L)	A276 316(L)
3	Wedge	A182/F304-STL	A182 F304+STL	A182 F304(L)-STL	A182 F316(L)-STL	A182 F304(L)	A182 F316(L)
4	Stem	A182 F6a/A276-410	A182 F22	A182 F304(L)	F316(L)	A182 F304(L)	F316(L)
5	From Seal Place	A105N	A182 F304	A182 F304(L)	A182 F316(L)	A182 F304(L)	A182 F316(L)
6	From Packing Ring	F182 F304	A182 F304 F22	A276 304(L)	A276 316(L)	A182 F304(L)	A276 316(L)
7	Bonnet	A105N	A182 F22	A182 F304(L)	A182 F316(L)	A182 F304(L)	A182 F316(L)
8	Gland Eyebolt	A193 B7	A193 B16	A193 B8	A193 B8M	A182 F304	A182 F304
9	Cylindrical Pin	A276 F420	A276 F420	A182 F304	A182 F304	Graphite+316	Graphite+316
10	Stem Packing	Graphite+304	Graphite+304	A194 8	A194 8M	A194 8	A194 8M
11	Promotes the Nut	A194 2H	A194 4	A194 8	A194 8M	A194 8	A194 8M
12	Gland	A276 F420	A276 F420	A182 F304	A182 F304	A182 F304	A182 F304
13	Gland Flange	A105	F22	A182 F304	A182 F304	A182 F304	A182 F304
14	Gland Nut	A194 2H	A194 4	A194 8	A194 8M	A194 8	A194 8M
15	Yoke Nut	A276-410	A276-410	A276 F410	A276 F410	A276 F410	A276 F410
16	Hand Wheel	A197	A197	A197	A197	A197	A197
17	Lock Nut	A194-2H	A194-4	A194 8	A194 8M	A194 8	A194 8M

Class 900~2500 Main Outline Dimension & Weight Pressure seal bonnet, outside screw stem & yoke (OS&Y). Designs according to ASME B16.34

NPS	Class	3/8	1/2	3/4	1	1 1/4	1 1/2	2
L	900-1500	140	140	140	140	178	178	216
	2500	186	186	186	186	232	232	279
W	900-1500	200	200	200	200	280	280	300
	2500	200	200	200	200	280	280	300
H	900-1500	318	318	318	322	467	467	540
	2500	325	325	325	327	467	467	540
d	900-1500	14	14	14	14	25	25	30
	2500	14	14	14	14	25	25	30
Weight(kg)	900-1500	11.5	11.5	10.8	10.5	19.6	21.0	55.4
	2500	12.3	12.3	11.6	10.8	26.0	28.4	60.0

FORGED STEEL CHECK VALVE

800LB



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, BUTT WELDING ENDS
FLANGED ENDS

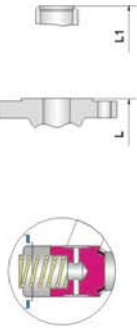
Applicable standards:

STEEL CHECK VALVES, API 602
STEEL VALVES, ASME B16.34
END TO END, MANUFACTURER STANDARD
FACE TO FACE, FLANGED, ASME B 16.11
END FLANGES, ASME B16.5
BUTT WELDING ENDS, ASME B16.25
SOCKET-WELDING ENDS, ASME B16.11
SC, SCREWED ENDS
BW, BUTT WELDING ENDS
INSPECTION AND TEST API 598

Materials of parts

NO	Part Name	ASTM Material		
		C-Si	16Cr-12Ni-2Mo	1/4Cr-1/2Mo-Si
1	Body	A105	A182-F318	A182-F11
2	Bonnet	A105	A182-F316	A182-F11
3	Disc	A182-F6a	A182-F316	A182-F11
4	Hing	A276-410	A182-F6a+HF	A182-F316
5	Seat ¹⁾	A276-410	A276-410+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 seat ring integral with body.
2) Spiral wound graphite.



Lift Type

150-600Lb

Dimensions data

NPS DN	Unit	L1 ¹⁾	L (Flanged Ends)		d	SW	B	D	H (Open)	SC	NPT	S	W ²⁾ (Kg)
			150Lb	300Lb									
3/8	in	3.12	4.00	6.00	0.354	0.693	0.378	0.540	2.40		3/8	0.540	3.8/2.8
10	mm	79	102	152	9	17.6	9.6	13.6	61		1/2	13.6	5.6/3.4
1/2	in	3.12	4.25	6.00	0.354	0.858	0.378	1.025	2.40		1/2	0.535	5.6/3.4
15	mm	79	108	152	9	21.8	9.6	26.2	61		1/2	13.6	5.6/3.4
3/4	in	3.62	4.62	7.00	0.512	1.067	0.500	1.547	2.40		3/4	0.547	7.8/4.7
20	mm	92	117	178	13	27.1	12.7	39.3	61		1	13.9	12.5/9.2
1	in	4.38	5.00	8.00	0.689	1.331	0.500	2.071	3.07		1	17.3	12.5/9.2
25	mm	111	127	203	17.5	33.8	12.7	52.1	78		1	17.3	12.5/9.2
1/4	in	4.75	5.50	8.50	0.906	1.677	0.500	2.547	3.31		1/4	0.709	17/10.5
32	mm	120	140	216	23	42.6	12.7	65.1	84		1/4	18	17/10.5
1/2	in	4.75	6.50	9.00	1.142	1.917	0.500	3.071	10.25		1/2	0.724	23.5/13.3
40	mm	120	165	229	24	48.7	12.7	78.1	39.8		1/2	18.4	23.5/13.3
2	in	5.50	8.00	10.50	1.378	2.406	0.626	3.626	4.72		2	0.756	38.8/18.9
50	mm	140	203	267	35	61.1	15.9	91.1	120		2	19.2	38.8/18.9

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

FORGED STEEL CHECK VALVE

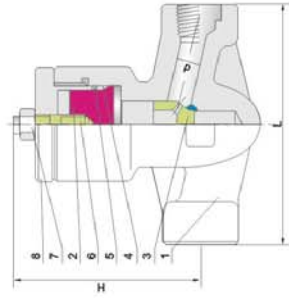
900Lb/1500Lb/2500Lb

Technical Specification

STEEL CHECK VALVES, API 602
STEEL VALVES, ASME B16.34
END TO END, MANUFACTURER STANDARD
FACE TO FACE, FLANGED, ASME B 16.10
END FLANGES, ASME B16.5
BUTT WELDING ENDS, ASME B16.25
SOCKET-WELDING ENDS, ASME B16.11
SC, SCREWED ENDS
BW, BUTT WELDING ENDS
INSPECTION AND TEST API 598

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, BUTT WELDING ENDS
FLANGED ENDS



Form of Major Part Material

No. Part name	ASTM Material							
	Carbon Steel	F11	F22	304 Type	316 Type	304L Type	316L Type	20 Alloy
1 Body	A105	A182 F11	A182 F22	A182 F304	A182 F316	A182 F304L	A182 F316L	20-Alloy
2 From Seal Place	A105	A182 F11	A182 F22	A182 F304	A182 F316	A182 F304L	A182 F316L	20-Alloy
3 Disc	A182 F6a	A182 F11HF	A182 F22HF	A182 F304	A182 F316	A182 F304L	A182 F316L	20-Alloy
4 From Packing Ring	A182 F6a	A182 F11	A182 F22	A182 F304	A182 F316	A182 F304L	A182 F316L	20-Alloy
5 Promotes Gasket	A182 F6a	A182 F11	A182 F22	A182 F304	A182 F316	A182 F304L	A182 F316L	20-Alloy
6 Bonnet Bolt	A193 B7	A193 B7	A193 B7	A193 B8	A193 B8M	A193 B8	A193 B8M	A193 B8M
7 Bonnet Nut	A194-2H	A194-2H	A194-2H	A194-8	A194-8M	A194-8	A194-8M	A194-8M
8 Bonnet	A105	A182 F11	A182 F22	A182 F304	A182 F316	A182 F304L	A182 F316L	20-Alloy

Class900-1500 Main Outline Dimensions & Weight Pressure seal bonnet. Designs according to BS 5352.

R.P	1/2	3/4	1	1 1/4	1 1/2	2
F.P	3/8	1/2	3/4	1	1 1/4	1 1/2
L	140	140	140	178	216	216
H	117	117	117	152	195	195
d	12	15	20	28	28	40
Weight (kg)	7.5	7.0	6.8	18.5	18.5	22

Class2500 Main Outline Dimensions & Weight Pressure seal bonnet. Designs according to BS 5352.

R.P	1/2	3/4	1	1 1/4	1 1/2	2
L	186	186	186	232	232	279
H	117	117	117	152	150	195
d	11	11	14	25	28	35
Weight (kg)	11.8	11	11	23	26.4	39

FORGED STEEL GLOBE VALVE

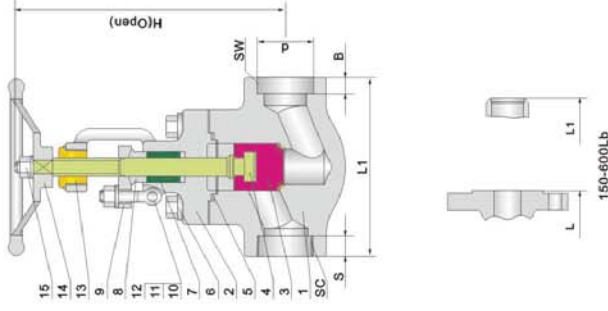
800LB

Applicable standards:

STEEL GLOBE VALVES, API 602
STEEL VALVES, ASME B16.34
END TO END, MANUFACTURER STANDARD
FACE TO FACE, FLANGED, ASME B 16.11
END FLANGES, ASME B16.5
BUTTWELDING ENDS, ASME B16.25
SOCKET-WELDING ENDS, ASME B16.11
SOREWED ENDS, ASME B 1,20.1
INSPECTION AND TEST API 598

Design description:

OUTSIDE SCREW AND YOKE (OS&Y)
BOLTED BONNET
CHOICE OF WB, WELDING BONNET
LOOSE DISC, CHOICE OF PLUG OR BALL
SEAT RINGS INTEGRAL WITH BODY
YOKE INTEGRAL WITH BONNET
RISING STEM AND HANDWHEEL
HORIZONTAL SERVICE
SW, SOCKET-WELDING ENDS
SC, SCREWED ENDS
BW, BUTTWELDING ENDS



Materials of parts

No	Part Name	C-Si	ASTM Material	16Cr-12Ni-2Mo	1/4Cr-1/4Mo-Si
1	Body	A105	A182-F316	A182-F11	A182-F11
2	Bonnet	A105	A182-F316	A182-F11	A182-F11
3	Disc	A162-F6a	A182-F316	A162-F6a+HF	A182-F316
4	Stem	A276-410	Graphite-316	Graphite-304	Graphite-316
5	Bonnet Gasket ¹⁾	A193-B7	A193-B8M	A193-B16	A193-B16
6	Bonnet Stud	A193-B7	A193-B8M	A193-B16	A193-B16
7	Packing	A276-410	Graphite	A276-316	A276-316
8	Gland	A105	A182-F316	A182-F11	A182-F11
9	Gland Flange	A276-410	A276-316	A276-410	A276-410
10	Eyebolt Pin	A193-B7	A193-B8M	A193-B16	A193-B16
11	Eyebolt	A194-2H	A194-3M	A194-2H	A194-2H
12	Eyebolt Nut	A194-2H	A194-3M	A194-2H	A194-2H
13	Yokestee	A276-410	Malleable Iron	A276-410	A276-410
14	Handwheel	A194-2H	Carbon Steel	A194-2H	A194-2H
15	Handwheel Nut	A194-2H	Carbon Steel	A194-2H	A194-2H

Note: 1) Seat integral with body.
2) Spiral wound graphite.

Dimensions data

NPS DN	Unit	L1 ¹⁾	L (Flanged Ends)		d	SW	B	D	SC	NPT	S	H (Open)	D0	W ²⁾ (Kg)
			150Lb	300Lb										
3/8	in	3.12	4.00	6.00	0.354	0.693	0.378	0.540	3/8	3/8	6.50	6.50	4.00	3.82.8
10	mm	79	102	152	9	17.6	9.6	13.6	100	100	164	164	100	3.82.8
1/2	in	3.12	4.25	6.00	0.354	0.858	0.378	0.535	1/2	1/2	6.50	6.50	4.00	5.65.4
15	mm	79	108	152	9	21.8	9.6	13.6	164	164	164	164	100	5.65.4
3/4	in	3.62	4.62	7.00	0.512	1.067	0.500	0.547	3/4	3/4	6.50	6.50	4.00	7.84.7
20	mm	92	117	178	13	27.1	12.7	13.9	164	164	164	164	100	7.84.7
1	in	4.38	5.00	8.00	0.689	1.331	0.500	0.661	1	1	8.00	8.00	5.00	12.56.2
25	mm	111	127	203	17.5	33.8	12.7	17.3	203	203	125	125	125	12.56.2
1 1/4	in	4.75	5.50	8.50	0.906	1.877	0.500	0.709	1 1/4	1 1/4	8.88	8.88	6.25	17.10.5
32	mm	120	140	216	23	42.6	12.7	18	224	224	160	160	160	17.10.5
1 1/2	in	6.00	6.50	9.00	1.142	1.917	0.500	0.724	1 1/2	1 1/2	10.25	10.25	6.25	23.513.3
40	mm	152	165	229	29	48.7	12.7	18.4	260	260	160	160	160	23.513.3
2	in	3.75	8.00	10.50	1.378	2.406	0.626	0.756	11.88	11.88	7.00	7.00	180	38.818.9
50	mm	172	203	267	35	61.1	15.9	19.2	300	300	180	180	180	38.818.9

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

FORGED STEEL GLOBE VALVE

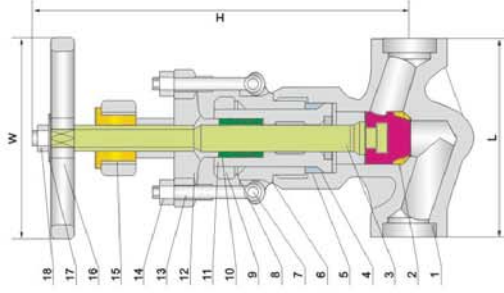
900LB/1500LB/2500LB

Technical Specification

STEEL CHECK VALVES, API 602
STEEL VALVES, ASME B16.34
END TO END, MANUFACTURER STANDARD
FACE TO FACE, FLANGED, ASME B 16.10
BUTTWELDING ENDS, ASME B16.25
SOCKET-WELDING ENDS, ASME B16.11
SOREWED ENDS, ASME B 1,20.1
INSPECTION AND TEST API 598

Design description:

OUTSIDE SCREW AND YOKE (OS&Y)
PRESSURE SEAL BONNET
PRESSURE SEAL PLUG
LOOSE DISC, CHOICE OF PLUG OR BALL
SEAT RINGS INTEGRAL WITH BODY
YOKE INTEGRAL WITH BONNET
RISING STEM AND HANDWHEEL
HORIZONTAL SERVICE
SW, SOCKET-WELDING ENDS
SC, SCREWED ENDS
BW, BUTTWELDING ENDS



Form of Major Part Material

NO.	Part Name	CS to ASTM		AS to ASTM		SS to ASTM	
		Type A 105N	Type F22	Type F304(L)	Type F316(L)	Type F304(L)	Type F316(L)
1	Body	A105N	A182 F22	A182 F304(L)	A182 F316(L)	A182 F304(L)	A182 F316(L)
2	Disc	A276 420+STL	A276 304+STL	A276 304(L)+STL	A276 316(L)+STL	A276 304(L)+STL	A276 316(L)+STL
3	Stem	A276-410	A182 F22	A182 F304(L)	A182 F316(L)	A182 F304(L)	A182 F316(L)
4	Seal Piece	A105	A182 F22	A182 F304(L)	A182 F316(L)	A182 F304(L)	A182 F316(L)
5	Seal Ring	A182 F304	A182 F304	A182 F304(L)	A182 F316(L)	A182 F304(L)	A182 F316(L)
6	Bonnet	A105N	A182 F22	A182 F304(L)	A182 F316(L)	A182 F304	A182 F316(L)
7	Pin	A276 420	A276 420	A182 F304	A182 F304	A182 F304	A182 F304
8	Gasket	A105N	A182 F22	A182 F304(L)	A182 F316(L)	A182 F304(L)	A182 F316(L)
9	Promotes the Nut	A194 2H	A194 4	A194 8	A194 8M	A194 8	A194 8M
10	Stem Packing	Flexible graphite-304	Flexible graphite-304	Flexible graphite-316	Flexible graphite-316	Flexible graphite-316	Flexible graphite-316
11	Gland	A276 420	A276 420	A182 F304	A182 F304	A182 F304	A182 F304
12	Gland Flange	A105	A105	A182 F304	A182 F304	A182 F304	A182 F304
13	Gland Eyebolt	A193 B7	A193 B8	A193 B8M	A193 B8M	A193 B8M	A193 B8M
14	Gland Nut	A194 2H	A194 4	A194 8	A194 8M	A194 8M	A194 8M
15	Yoke Nut	A276 420	A276 420	A276 420	A276 420	A276 420	A276 420
16	Hand Wheel	A197	A194 4	A197	A197	A197	A197
17	Name plate	SS	SS	SS	SS	SS	SS
18	Handwheel Nut	CS	CS	CS	CS	CS	CS

Class 900~1500 Main Outline Dimensions & Weight

Pressure seal bonnet, reduced port.
outside screw stem & yoke (OS&Y), BS 5352

F.P	1/2	3/4	1	1 1/4	1 1/2	2
L	140	140	140	178	178	216
W	200	200	200	280	280	300
H	320	320	320	440	440	490
d	12	15	20	28	32	40
Weight (kg)	11.5	10.8	10.5	19.6	21.1	55.4

Class 2500 Main Outline Dimensions & Weight

Pressure port (OS&Y).
The terminal connection for receives inserts welds,
designs according to ASME B16.34

F.P	1/2	3/4	1	1 1/4	1 1/2	2
L	186	186	186	232	232	279
W	200	200	200	280	280	300
H	375	378	380	490	490	540
d	11	14	19	25	28	35
Weight (kg)	12.3	11.5	10.8	26.0	28.4	60

Design

STU cast steel check valve are designed and manufactured to provide maximum service life and dependability. All check valves are designed to meet the requirements of American Petroleum Institute Standard API 600 & API 6D, BS 1888, 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.

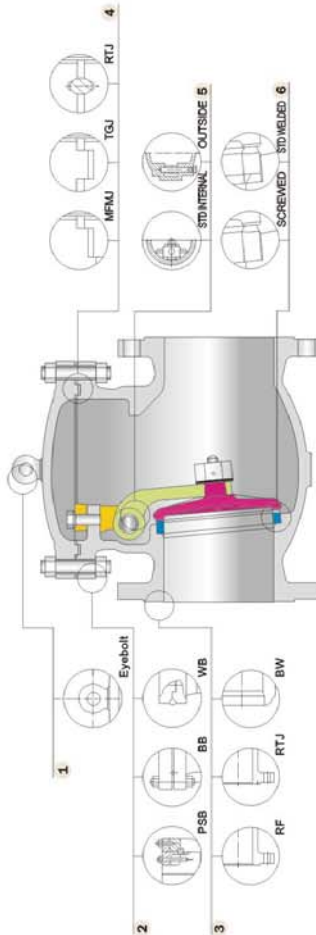
Available Modifications for STU Cast Steel Valves

- *Trim Changes
- *End Connection Modifications
- *Gasket Changes
- *Outside Lever and Weight
- *Stem Retainers

Range 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 is a full range of trim materials to match any service. Optional packing and gasket materials are available for a full range of service conditions.

- *Pressure Equalizing
- *Outside Lever and Weight
- *Customer Specified Coatings
- *Weld End Bore Changes
- *Oxygen & Chlorine Cleaning & Packaging



1 Eyebolt

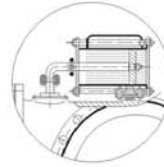
For 1500LB-8", 3000LB-8", 6000LB-6", 9000LB/1500LB/25000LB-4" & Over.

3 End Connections

A choice of Flanged, RTJ flanged or Butt-welding 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

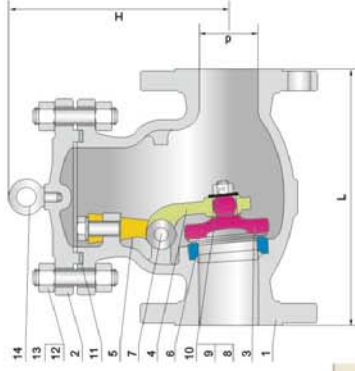
A Male and Female joint or Tongue and Groove joint is used 1500LB to 9000LB valves. Ring joint is used in the body to bonnet connection in 9000LB & higher rated valves.

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.



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

Applicable standards:
STEEL CHECK VALVES, API 600/BS 1888
STEEL VALVES, ISO 14313
FACE TO FACE, ASME B16.34
END FLANGES, ASME B16.5
BUTTWELDING ENDS, ASME B16.25
INSPECTION AND TEST, API 598/API 6D

Materials of parts

NO	Part Name	Carbon Steel	1/4"Cr-1/2Mo	ASTM Material	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB	Carbon Steel
2	Bonnet Cap	A216-WCB	A217-WC6	A352-LCB	Carbon Steel
3	Disc ¹⁾	A182-F1+HF	A182-F1+HF	A350-LF2+CR13	Carbon Steel
4	Hinge	A216-WCB	A217-WC6	A352-LCB	Carbon Steel
5	Support	A216-WCB	A217-WC6	A352-LCB	Carbon Steel
6	Seat Ring	A182-F1+HF	A182-F1+HF	A350-LF2+CR13	Carbon Steel
7	Hinge Pin	A276-304	A276-304	A276-420	Carbon Steel
8	Disc Washer	Carbon Steel	A276-304	Carbon Steel	Carbon Steel
9	Disc Nut	Carbon Steel	A194-7	Carbon Steel	Carbon Steel
10	Disc Nut Pin	Carbon Steel	A276-420	Carbon Steel	Carbon Steel
11	Bonnet Gasket	Spiral Wound (Graphite+304)	A193-B7	A320-L7	Carbon Steel
12	Bonnet Stud	A193-B7	A193-B7	A320-L7	Carbon Steel
13	Bonnet Stud Nut	A194-2H	A194-2H	A194-7	Carbon Steel
14	Eyebolt ²⁾	Carbon Steel	Carbon Steel	A194-4	Carbon Steel

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

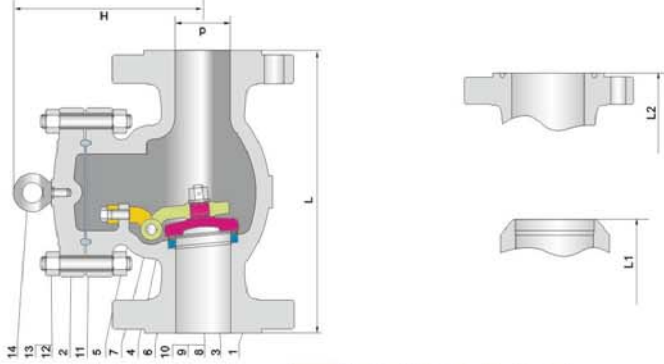
2) NPS 6" & larger.

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	48	60	72	90	108	120	144	168	192	216	240	270	300	360	420	480	540	600	720	840	960	1080	1200	1440	1680	1920	2160	2400	2700	3000	3600	4200	4800	5400	6000	7200	8400	9600	10800	12000	14400	16800	19200	21600	24000	27000	30000	36000	42000	48000	54000	60000	72000	84000	96000	108000	120000	144000	168000	192000	216000	240000	270000	300000	360000	420000	480000	540000	600000	720000	840000	960000	1080000	1200000	1440000	1680000	1920000	2160000	2400000	2700000	3000000	3600000	4200000	4800000	5400000	6000000	7200000	8400000	9600000	10800000	12000000	14400000	16800000	19200000	21600000	24000000	27000000	30000000	36000000	42000000	48000000	54000000	60000000	72000000	84000000	96000000	108000000	120000000	144000000	168000000	192000000	216000000	240000000	270000000	300000000	360000000	420000000	480000000	540000000	600000000	720000000	840000000	960000000	1080000000	1200000000	1440000000	1680000000	1920000000	2160000000	2400000000	2700000000	3000000000	3600000000	4200000000	4800000000	5400000000	6000000000	7200000000	8400000000	9600000000	10800000000	12000000000	14400000000	16800000000	19200000000	21600000000	24000000000	27000000000	30000000000	36000000000	42000000000	48000000000	54000000000	60000000000	72000000000	84000000000	96000000000	108000000000	120000000000	144000000000	168000000000	192000000000	216000000000	240000000000	270000000000	300000000000	360000000000	420000000000	480000000000	540000000000	600000000000	720000000000	840000000000	960000000000	1080000000000	1200000000000	1440000000000	1680000000000	1920000000000	2160000000000	2400000000000	2700000000000	3000000000000	3600000000000	4200000000000	4800000000000	5400000000000	6000000000000	7200000000000	8400000000000	9600000000000	10800000000000	12000000000000	14400000000000	16800000000000	19200000000000	21600000000000	24000000000000	27000000000000	30000000000000	36000000000000	42000000000000	48000000000000	54000000000000	60000000000000	72000000000000	84000000000000	96000000000000	108000000000000	120000000000000	144000000000000	168000000000000	192000000000000	216000000000000	240000000000000	270000000000000	300000000000000	360000000000000	420000000000000	480000000000000	540000000000000	600000000000000	720000000000000	840000000000000	960000000000000	1080000000000000	1200000000000000	1440000000000000	1680000000000000	1920000000000000	2160000000000000	2400000000000000	2700000000000000	3000000000000000	3600000000000000	4200000000000000	4800000000000000	5400000000000000	6000000000000000	7200000000000000	8400000000000000	9600000000000000	10800000000000000	12000000000000000	14400000000000000	16800000000000000	19200000000000000	21600000000000000	24000000000000000	27000000000000000	30000000000000000	36000000000000000	42000000000000000	48000000000000000	54000000000000000	60000000000000000	72000000000000000	84000000000000000	96000000000000000	108000000000000000	120000000000000000	144000000000000000	168000000000000000	192000000000000000	216000000000000000	240000000000000000	270000000000000000	300000000000000000	360000000000000000	420000000000000000	480000000000000000	540000000000000000	600000000000000000	720000000000000000	840000000000000000	960000000000000000	1080000000000000000	1200000000000000000	1440000000000000000	1680000000000000000	1920000000000000000	2160000000000000000	2400000000000000000	2700000000000000000	3000000000000000000	3600000000000000000	4200000000000000000	4800000000000000000	5400000000000000000	6000000000000000000	7200000000000000000	8400000000000000000	9600000000000000000	10800000000000000000	12000000000000000000	14400000000000000000	16800000000000000000	19200000000000000000	21600000000000000000	24000000000000000000	27000000000000000000	30000000000000000000	36000000000000000000	42000000000000000000	48000000000000000000	54000000000000000000	60000000000000000000	72000000000000000000	84000000000000000000	96000000000000000000	108000000000000000000	120000000000000000000	144000000000000000000	168000000000000000000	192000000000000000000	216000000000000000000	240000000000000000000	270000000000000000000	300000000000000000000	360000000000000000000	420000000000000000000	480000000000000000000	540000000000000000000	600000000000000000000	720000000000000000000	840000000000000000000	960000000000000000000	1080000000000000000000	1200000000000000000000	1440000000000000000000	1680000000000000000000	1920000000000000000000	2160000000000000000000	2400000000000000000000	2700000000000000000000	3000000000000000000000	3600000000000000000000	4200000000000000000000	4800000000000000000000	5400000000000000000000	6000000000000000000000	7200000000000000000000	8400000000000000000000	9600000000000000000000	10800000000000000000000	12000000000000000000000	14400000000000000000000	16800000000000000000000	19200000000000000000000	21600000000000000000000	24000000000000000000000	27000000000000000000000	30000000000000000000000	36000000000000000000000	42000000000000000000000	48000000000000000000000	54000000000000000000000	60000000000000000000000	72000000000000000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**SWING
CAST STEEL CHECK VALVE
900LB**



Applicable standards:

STEEL CHECK VALVES, API 598/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	Carbon Steel	ASTM Material	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-B7	A320-L7
13	Bonnet Stud Nut	A194-2H	A194-7	A194-4
14	Eyebolt ²⁾	Carbon Steel	Carbon Steel	Carbon Steel

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

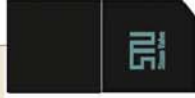
2) NPS 6" & larger.

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	2½	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	60	72	90	108	120	144	180	240	300	360	420	480	600	720	900	1080	1200	1440	1800	2400	3000	3600	4200	4800	6000	7200	9000	10800	12000	14400	18000	24000	30000	36000	42000	48000	60000	72000	90000	108000	120000	144000	180000	240000	300000	360000	420000	480000	600000	720000	900000	1080000	1200000	1440000	1800000	2400000	3000000	3600000	4200000	4800000	6000000	7200000	9000000	10800000	12000000	14400000	18000000	24000000	30000000	36000000	42000000	48000000	60000000	72000000	90000000	108000000	120000000	144000000	180000000	240000000	300000000	360000000	420000000	480000000	600000000	720000000	900000000	1080000000	1200000000	1440000000	1800000000	2400000000	3000000000	3600000000	4200000000	4800000000	6000000000	7200000000	9000000000	10800000000	12000000000	14400000000	18000000000	24000000000	30000000000	36000000000	42000000000	48000000000	60000000000	72000000000	90000000000	108000000000	120000000000	144000000000	180000000000	240000000000	300000000000	360000000000	420000000000	480000000000	600000000000	720000000000	900000000000	1080000000000	1200000000000	1440000000000	1800000000000	2400000000000	3000000000000	3600000000000	4200000000000	4800000000000	6000000000000	7200000000000	9000000000000	10800000000000	12000000000000	14400000000000	18000000000000	24000000000000	30000000000000	36000000000000	42000000000000	48000000000000	60000000000000	72000000000000	90000000000000	108000000000000	120000000000000	144000000000000	180000000000000	240000000000000	300000000000000	360000000000000	420000000000000	480000000000000	600000000000000	720000000000000	900000000000000	1080000000000000	1200000000000000	1440000000000000	1800000000000000	2400000000000000	3000000000000000	3600000000000000	4200000000000000	4800000000000000	6000000000000000	7200000000000000	9000000000000000	10800000000000000	12000000000000000	14400000000000000	18000000000000000	24000000000000000	30000000000000000	36000000000000000	42000000000000000	48000000000000000	60000000000000000	72000000000000000	90000000000000000	108000000000000000	120000000000000000	144000000000000000	180000000000000000	240000000000000000	300000000000000000	360000000000000000	420000000000000000	480000000000000000	600000000000000000	720000000000000000	900000000000000000	1080000000000000000	1200000000000000000	1440000000000000000	1800000000000000000	2400000000000000000	3000000000000000000	3600000000000000000	4200000000000000000	4800000000000000000	6000000000000000000	7200000000000000000	9000000000000000000	10800000000000000000	12000000000000000000	14400000000000000000	18000000000000000000	24000000000000000000	30000000000000000000	36000000000000000000	42000000000000000000	48000000000000000000	60000000000000000000	72000000000000000000	90000000000000000000	108000000000000000000	120000000000000000000	144000000000000000000	180000000000000000000	240000000000000000000	300000000000000000000	360000000000000000000	420000000000000000000	480000000000000000000	600000000000000000000	720000000000000000000	900000000000000000000	1080000000000000000000	1200000000000000000000	1440000000000000000000	1800000000000000000000	2400000000000000000000	3000000000000000000000	3600000000000000000000	4200000000000000000000	4800000000000000000000	6000000000000000000000	7200000000000000000000	9000000000000000000000	10800000000000000000000	12000000000000000000000	14400000000000000000000	18000000000000000000000	24000000000000000000000	30000000000000000000000	36000000000000000000000	42000000000000000000000	48000000000000000000000	60000000000000000000000	72000000000000000000000	90000000000000000000000	108000000000000000000000	120000000000000000000000	144000000000000000000000	180000000000000000000000	240000000000000000000000	300000000000000000000000	360000000000000000000000	420000000000000000000000	480000000000000000000000	600000000000000000000000	720000000000000000000000	900000000000000000000000	1080000000000000000000000	1200000000000000000000000	1440000000000000000000000	1800000000000000000000000	2400000000000000000000000	3000000000000000000000000	3600000000000000000000000	4200000000000000000000000	4800000000000000000000000	6000000000000000000000000	7200000000000000000000000	9000000000000000000000000	10800000000000000000000000	12000000000000000000000000	14400000000000000000000000	18000000000000000000000000	24000000000000000000000000	30000000000000000000000000	36000000000000000000000000	42000000000000000000000000	48000000000000000000000000	60000000000000000000000000	72000000000000000000000000	90000000000000000000000000	108000000000000000000000000	120000000000000000000000000	144000000000000000000000000	180000000000000000000000000	240000000000000000000000000	300000000000000000000000000	360000000000000000000000000	420000000000000000000000000	480000000000000000000000000	600000000000000000000000000	720000000000000000000000000	900000000000000000000000000	1080000000000000000000000000	1200000000000000000000000000	1440000000000000000000000000	1800000000000000000000000000	2400000000000000000000000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**PRESSURE SEAL
CAST STEEL SWING CHECK VALVE
900LB**

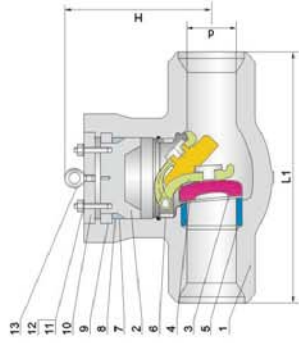


Applicable standards:

STEEL CHECK VALVES, API 608/BS 1888
STEEL CHECK VALVES, ISO 14313
STEEL VALVES, ASME B16.34
FACE TO FACE, ASME B16.10
END FLANGES, ASME B16.5
BUTT WELDING ENDS, ASME B16.25
INSPECTION AND TEST, API 598/API 608

Design description:

PRESSURE SEAL BONNET CAP
SWING TYPE ANTI-ROTATION DISC
RENEWABLE SEAT RINGS
NON-PENETRATE DISC SHAFT
HORIZONTAL OR VERTICAL SERVICE
FLANGED OR BUTT WELDING ENDS



Materials of parts

NO	Part Name	Carbon Steel	ASTM Material 1 1/2Cr-1/2Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A351-CF8M
2	Bonnet Cap	A216-WCB	A217-WC6	A351-CF8M
3	Disc	A105+HF	A182-F11+HF	A351-CF8M+HF
4	Hinge	A216-WCB	A217-WC6	A351-CF8M
5	Seat Ring	A105+HF	A182-F11+HF	A240-316+HF
6	Hinge Pin	A276-420	A276-304	A276-316
7	Bonnet Gasket ¹⁾	Steel Ring	304SS Ring	316SS Ring
8	Adapter Ring	Carbon Steel	A276-420	A276-316
9	Retainer	Carbon Steel	A276-420	A276-316
10	Bonnet Clamp	Carbon Steel	Alloy Steel	Stainless Steel
11	Bonnet Stud	A193-B7	A193-B7	A193-B8M
12	Bonnet Stud Nut	A194-2H	A194-2H	A194-8M
13	Eyebolt	Carbon Steel		

Note: 1) Graphite optional

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.

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
L1	8.50	10.00	12.00	14.00	20.00	26.00	31.00	36.00	39.00	43.00	47.99	52.00	60.98	66.96	71.96	80.00	in
(BW)	216	254	305	356	508	660	787	914	991	1092	1219	1321	1549	1701	1828	2032	mm
L	14.50	16.50	18.50	21.50	24.00	29.00	33.00	38.00	40.5	44.5	47.99	52.00	60.98	66.96	71.96	80.00	in
(RF)	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549	1701	1828	2032	mm
L2	14.62	16.62	15.12	18.12	24.12	39.12	33.12	38.12	40.88	44.88	48.50	52.51	61.73	67.83	72.83	80.88	in
(RTJ)	371	422	384	460	613	740	841	968	1038	1140	1232	1334	1568	1723	1850	2054	mm
H	9.50	10.00	13.38	15.75	18.12	21.62	24.00	27.00	29.50	33.97	36.96	41.96	45.00	46.96	50.00	in	
(d)	240	240	255	340	400	460	550	610	685	750	863	939	1066	1143	1193	1270	mm
(d)	47	57	72	98	146	190	238	282	311	355	400	444	533	*	*	*	mm
WT	22	34	38	71	176	485	761	1125	1345	1490	2940	3756	6000	6375	7229	8232	RF
(kg)	44	55	61	116	255	630	940	1433	1710	1820	2000	2700	4100	5100	5750	6510	BW

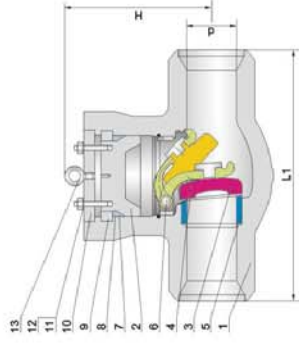
**PRESSURE SEAL
CAST STEEL SWING CHECK VALVE
1500LB**

Applicable standards:

STEEL CHECK VALVES, API 608/BS 1888
STEEL CHECK VALVES, ISO 14313
STEEL VALVES, ASME B16.34
FACE TO FACE, ASME B16.10
END FLANGES, ASME B16.5
BUTT WELDING ENDS, ASME B16.25
INSPECTION AND TEST, API 598/API 608

Design description:

PRESSURE SEAL BONNET CAP
SWING TYPE ANTI-ROTATION DISC
RENEWABLE SEAT RINGS
NON-PENETRATE DISC SHAFT
HORIZONTAL OR VERTICAL SERVICE
FLANGED OR BUTT WELDING ENDS



Materials of parts

NO	Part Name	Carbon Steel	ASTM Material 1 1/2Cr-1/2Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A351-CF8M
2	Bonnet Cap	A216-WCB	A217-WC6	A351-CF8M
3	Disc	A105+HF	A182-F11+HF	A351-CF8M+HF
4	Hinge	A216-WCB	A217-WC6	A351-CF8M
5	Seat Ring	A105+HF	A182-F11+HF	A240-316+HF
6	Hinge Pin	A276-420	A276-304	A276-316
7	Bonnet Gasket ¹⁾	Steel Ring	304SS Ring	316SS Ring
8	Adapter Ring	Carbon Steel	A276-420	A276-316
9	Retainer	Carbon Steel	A276-420	A276-316
10	Bonnet Clamp	Carbon Steel	Alloy Steel	Stainless Steel
11	Bonnet Stud	A193-B7	A193-B7	A193-B8M
12	Bonnet Stud Nut	A194-2H	A194-2H	A194-8M
13	Eyebolt	Carbon Steel		

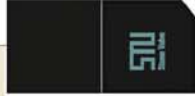
Note: 1) Graphite optional

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.

Dimensions data

NPS	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	in
DN	50	65	80	100	150	200	250	300	350	400	450	500	600	mm
L1	8.50	10.00	12.00	16.00	22.00	28.00	34.00	39.00	42.00	42.99	47.99	52.00	60.98	in
(BW)	216	254	305	406	559	711	864	991	1067	1092	1219	1321	1549	mm
L	14.50	16.50	18.50	21.50	27.75	32.75	39	44.5	48.5	48.5	47.99	52.00	60.98	in
(RF)	368	419	470	546	705	832	991	1130	1257	1130	1219	1321	1549	mm
L2	14.62	16.62	18.62	21.62	28.00	33.12	39.38	45.12	50.25	44.88	48.50	52.51	61.73	in
(RTJ)	371	422	473	549	711	842	1000	1146	1276	1140	1232	1334	1568	mm
H	9.50	9.50	11.88	15.38	18.00	20.62	24.00	27.00	30.00	30.00	33.97	36.96	41.96	in
(d)	47	57	69	92	136	177	222	263	288	330	371	415	498	mm
WT	22	37	45	78	245	530	815	1213	1585	3250	3960	4400	6900	RF
(kg)	44	61	110	155	378	675	1160	1710	2315	2200	2600	2700	4100	BW

**PRESSURE SEAL
CAST STEEL SWING CHECK VALVE
2500lb**

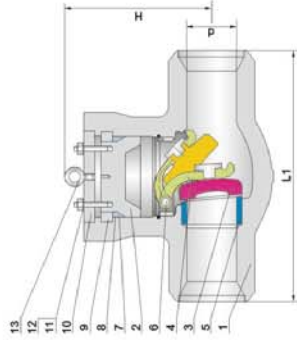


Applicable standards:

STEEL CHECK VALVES, API 598/BS1888
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:

PRESSURE SEAL 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	Carbon Steel	ASTM Material 1 1/2Cr-1/2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	Carbon Steel
2	Bonnet Cap	A217-WC6	A351-CF8M	
3	Disc	A105-HF	A182-F11+HF	A351-CF8M+HF
4	Hinge	A216-WCB	A182-F11+HF	A351-CF8M
5	Seat Ring	A105-HF	A182-F11+HF	A240-316+HF
6	Hinge Pin	A276-420	A276-304	A276-316
7	Bonnet Gasket ¹⁾	Steel Ring	304SS Ring	316SS Ring
8	Adapter Ring	Carbon Steel	A276-420	A276-316
9	Retainer	Carbon Steel	A276-420	A276-316
10	Bonnet Clamp	Carbon Steel	A193-B7	Stainless Steel
11	Bonnet Stud	Carbon Steel	A193-B7	A193-B6M
12	Bonnet Stud Nut	Carbon Steel	A194-2H	A194-8M
13	Eyebolt	Carbon Steel		

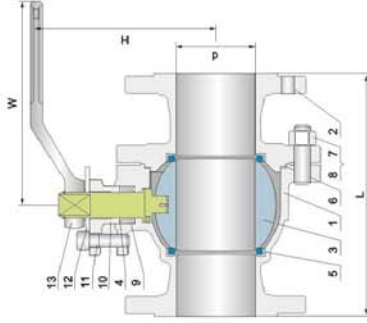
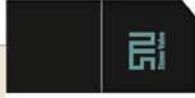
Note: 1) Graphite optional

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.

Dimensions data

NPS	2	2 1/2	3	4	6	8	10	12	16	20	24	30	36	42	48	60	72	84	96	108	120	144	168	192	216	240	288	336	384	432	480	528	576	624	672	720	768	816	864	912	960	1008	1056	1104	1152	1200	1248	1296	1344	1392	1440	1488	1536	1584	1632	1680	1728	1776	1824	1872	1920	1968	2016	2064	2112	2160	2208	2256	2304	2352	2400	2448	2496	2544	2592	2640	2688	2736	2784	2832	2880	2928	2976	3024	3072	3120	3168	3216	3264	3312	3360	3408	3456	3504	3552	3600	3648	3696	3744	3792	3840	3888	3936	3984	4032	4080	4128	4176	4224	4272	4320	4368	4416	4464	4512	4560	4608	4656	4704	4752	4800	4848	4896	4944	4992	5040	5088	5136	5184	5232	5280	5328	5376	5424	5472	5520	5568	5616	5664	5712	5760	5808	5856	5904	5952	6000	6048	6096	6144	6192	6240	6288	6336	6384	6432	6480	6528	6576	6624	6672	6720	6768	6816	6864	6912	6960	7008	7056	7104	7152	7200	7248	7296	7344	7392	7440	7488	7536	7584	7632	7680	7728	7776	7824	7872	7920	7968	8016	8064	8112	8160	8208	8256	8304	8352	8400	8448	8496	8544	8592	8640	8688	8736	8784	8832	8880	8928	8976	9024	9072	9120	9168	9216	9264	9312	9360	9408	9456	9504	9552	9600	9648	9696	9744	9792	9840	9888	9936	9984	10032	10080	10128	10176	10224	10272	10320	10368	10416	10464	10512	10560	10608	10656	10704	10752	10800	10848	10896	10944	10992	11040	11088	11136	11184	11232	11280	11328	11376	11424	11472	11520	11568	11616	11664	11712	11760	11808	11856	11904	11952	12000	12048	12096	12144	12192	12240	12288	12336	12384	12432	12480	12528	12576	12624	12672	12720	12768	12816	12864	12912	12960	13008	13056	13104	13152	13200	13248	13296	13344	13392	13440	13488	13536	13584	13632	13680	13728	13776	13824	13872	13920	13968	14016	14064	14112	14160	14208	14256	14304	14352	14400	14448	14496	14544	14592	14640	14688	14736	14784	14832	14880	14928	14976	15024	15072	15120	15168	15216	15264	15312	15360	15408	15456	15504	15552	15600	15648	15696	15744	15792	15840	15888	15936	15984	16032	16080	16128	16176	16224	16272	16320	16368	16416	16464	16512	16560	16608	16656	16704	16752	16800	16848	16896	16944	16992	17040	17088	17136	17184	17232	17280	17328	17376	17424	17472	17520	17568	17616	17664	17712	17760	17808	17856	17904	17952	18000	18048	18096	18144	18192	18240	18288	18336	18384	18432	18480	18528	18576	18624	18672	18720	18768	18816	18864	18912	18960	19008	19056	19104	19152	19200	19248	19296	19344	19392	19440	19488	19536	19584	19632	19680	19728	19776	19824	19872	19920	19968	20016	20064	20112	20160	20208	20256	20304	20352	20400	20448	20496	20544	20592	20640	20688	20736	20784	20832	20880	20928	20976	21024	21072	21120	21168	21216	21264	21312	21360	21408	21456	21504	21552	21600	21648	21696	21744	21792	21840	21888	21936	21984	22032	22080	22128	22176	22224	22272	22320	22368	22416	22464	22512	22560	22608	22656	22704	22752	22800	22848	22896	22944	22992	23040	23088	23136	23184	23232	23280	23328	23376	23424	23472	23520	23568	23616	23664	23712	23760	23808	23856	23904	23952	24000	24048	24096	24144	24192	24240	24288	24336	24384	24432	24480	24528	24576	24624	24672	24720	24768	24816	24864	24912	24960	25008	25056	25104	25152	25200	25248	25296	25344	25392	25440	25488	25536	25584	25632	25680	25728	25776	25824	25872	25920	25968	26016	26064	26112	26160	26208	26256	26304	26352	26400	26448	26496	26544	26592	26640	26688	26736	26784	26832	26880	26928	26976	27024	27072	27120	27168	27216	27264	27312	27360	27408	27456	27504	27552	27600	27648	27696	27744	27792	27840	27888	27936	27984	28032	28080	28128	28176	28224	28272	28320	28368	28416	28464	28512	28560	28608	28656	28704	28752	28800	28848	28896	28944	28992	29040	29088	29136	29184	29232	29280	29328	29376	29424	29472	29520	29568	29616	29664	29712	29760	29808	29856	29904	29952	30000
DN	50	65	80	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050	3100	3150	3200	3250	3300	3350	3400	3450	3500	3550	3600	3650	3700	3750	3800	3850	3900	3950	4000	4050	4100	4150	4200	4250	4300	4350	4400	4450	4500	4550	4600	4650	4700	4750	4800	4850	4900	4950	5000	5050	5100	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850	5900	5950	6000	6050	6100	6150	6200	6250	6300	6350	6400	6450	6500	6550	6600	6650	6700	6750	6800	6850	6900	6950	7000	7050	7100	7150	7200	7250	7300	7350	7400	7450	7500	7550	7600	7650	7700	7750	7800	7850	7900	7950	8000	8050	8100	8150	8200	8250	8300	8350	8400	8450	8500	8550	8600	8650	8700	8750	8800	8850	8900	8950	9000	9050	9100	9150	9200	9250	9300	9350	9400	9450	9500	9550	9600	9650	9700	9750	9800	9850	9900	9950	10000																																																																																																																																																																																																																																																																																																																																																																																																																																																												
L1	11.0	13.00	14.50	18.00	24.00	30.00	36.00	41.00	48.00	54.00	60.00	66.00	72.00	78.00	84.00	90.00	96.00	102.00	108.00	114.00	120.00	126.00	132.00	138.00	144.00	150.00	156.00	162.00	168.00	174.00	180.00	186.00	192.00	198.00	204.00	210.00	216.00	222.00	228.00	234.00	240.00	246.00	252.00	258.00	264.00	270.00	276.00	282.00	288.00	294.00	300.00	306.00	312.00	318.00	324.00	330.00	336.00	342.00	348.00	354.00	360.00	366.00	372.00	378.00	384.00	390.00	396.00	402.00	408.00	414.00	420.00	426.00	432.00	438.00	444.00	450.00	456.00	462.00	468.00	474.00	480.00	486.00	492.00	498.00	504.00	510.00	516.00	522.00	528.00	534.00	540.00	546.00	552.00	558.00	564.00	570.00	576.00	582.00	588.00	594.00	600.00	606.00	612.00	618.00	624.00	630.00	636.00	642.00	648.00	654.00	660.00	666.00	672.00	678.00	684.00	690.00	696.00	702.00	708.00	714.00	720.00	726.00	732.00	738.00	744.00	750.00	756.00	762.00	768.00	774.00	780.00	786.00	792.00	798.00	804.00	810.00	816.00	822.00	828.00	834.00	840.00	846.00	852.00	858.00	864.00	870.00	876.00	882.00	888.00	894.00	900.00	906.00	912.00	918																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

CAST STEEL BALL VALVE 150LB



Applicable standards:
STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10494/ISO 14313
FIRE DURABLE, API 607
ANTI-STATIC, API 608
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:
FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
FLOATING BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI-STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

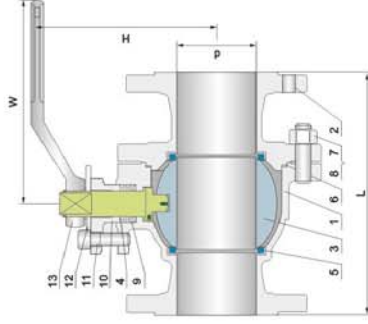
No	Part Name	Carbon Steel	ASTM Material	Carbon Steel
1	Body	A216-WCB	18Cr-9Ni-2Mo	Carbon Steel
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ^b	A351-CF8M	A352-LCB
4	Stem	A276-304	A182-F316	A182-F304 ^b
5	Seat Ring	A276-304	A276-316	A276-304
6	Bonnet Gasket	Graphite+304 ^a	PTFE	Graphite+304 ^a
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-2H	A194-4
9	Packing	A216-WCB	PTFE	A352-LCB
10	Gland Flange	A193-B7	A351-CF8M	A193-B7
11	Gland Bolt	Carbon Steel	A193-B8	Carbon Steel
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle	Carbon Steel	Carbon Steel	Carbon Steel

Note: 1). A105+ENP optional
2). Spiral wound construction.

Dimensions data

NPS DN	1/2	3/4	1	1 1/2	2	2 1/2	3	4	6	8	10	12	150LB	ANSI Class 150LB	
														21 1/2	24
L	4.25	4.62	5.00	6.50	7.00	7.50	8.00	9.00	15.50	18.00	21.00	24.00	in	24.00	in
(RF)	1.08	1.17	1.27	1.65	1.78	1.90	2.03	2.29	3.94	4.57	5.33	6.10	mm	610	mm
L1	5.50	6.00	6.50	7.50	8.50	12.00	18.00	22.00	20.50	20.50	22.00	25.00	in	25.00	in
(BW)	1.40	1.52	1.65	1.90	2.16	2.41	2.83	3.05	4.57	5.21	5.59	6.35	mm	635	mm
H	2.12	2.12	2.75	3.50	4.12	6.12	7.25	8.00	10.00	11.00	13.50	16.50	in	16.50	in
(d)	55	55	70	90	105	155	185	205	255	280	345	420	mm	420	mm
(D)	13	19	25	38	49	62	74	100	150	201	252	303	mm	303	mm
W	5	5	6	8	14	16	20	20	24	32	32	32	in	32	in
(W)	130	130	160	200	350	400	500	600	800	800	800	800	mm	800	mm
WT	2.3	3	4.5	7	9.5	15	19	33	93	160	200	280	kg	280	kg
(kg)	1.8	2.8	3.7	6.2	8.5	14	21	35	98	170	225	295	BW	295	BW

FLOATING CAST STEEL BALL VALVE 300LB



Applicable standards:
STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10494/ISO 14313
FIRE DURABLE, API 607
ANTI-STATIC, API 608
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:
FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
FLOATING BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI-STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR

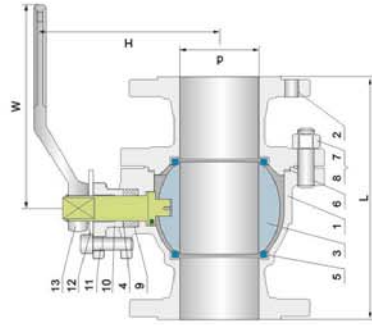
Materials of parts

No	Part Name	Carbon Steel	ASTM Material	Carbon Steel
1	Body	A216-WCB	18Cr-9Ni-2Mo	Carbon Steel
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ^b	A351-CF8M	A352-LCB
4	Stem	A276-304	A182-F316	A182-F304 ^b
5	Seat Ring	A276-304	A276-316	A276-304
6	Bonnet Gasket	Graphite+304 ^a	PTFE	Graphite+304 ^a
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-2H	A194-4
9	Packing	A216-WCB	PTFE	A352-LCB
10	Gland Flange	A193-B7	A351-CF8M	A193-B7
11	Gland Bolt	Carbon Steel	A193-B8	Carbon Steel
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle	Carbon Steel	Carbon Steel	Carbon Steel

Note: 1). A105+ENP optional
2). Spiral wound construction.

Dimensions data

NPS DN	1/2	3/4	1	1 1/2	2	2 1/2	3	4	6	8	10	12	150LB	ANSI Class 300LB	
														21 1/2	24
L	5.50	6.00	6.50	7.50	8.50	9.50	11.12	12.00	15.88	19.75	22.38	25.50	in	25.50	in
(RF)	1.40	1.52	1.65	1.90	2.16	2.41	2.83	3.05	4.03	5.02	5.68	6.48	mm	648	mm
L1	5.50	6.00	6.50	7.50	8.50	9.50	11.12	12.00	18.00	20.50	22.00	25.00	in	25.00	in
(BW)	1.40	1.52	1.65	1.90	2.16	2.41	2.83	3.05	4.57	5.21	5.59	6.35	mm	635	mm
H	2.12	2.12	2.75	3.50	4.12	6.12	7.25	8.00	10.00	11.00	13.50	16.50	in	16.50	in
(d)	55	55	70	90	105	153	187	206	255	280	345	420	mm	420	mm
(D)	13	19	25	38	49	62	74	100	150	201	252	303	mm	303	mm
W	5	5	6	8	14	16	20	20	24	32	32	32	in	32	in
(W)	130	130	160	200	350	400	500	600	800	800	800	800	mm	800	mm
WT	2.5	3.5	5.5	10.5	14.5	23.5	30	55	118	200	250	330	kg	330	kg
(kg)	1.8	2	3.2	5.5	8.7	15	18	36	85	152	182	232	BW	232	BW



Design description:

- FULL PORT DESIGN
- BB, BOLTED BONNET, SPLIT BODY
- FLOATING BALL TYPE
- BLOW-OUT PROOF STEM
- FIRE DURABLE CONSTRUCTION
- ANTI STATIC DEVICE
- STOPPER DEVICE
- ISO211 MOUNTING PAD
- FLANGED OR BUTT WELDING ENDS
- AVAILABLE WITH BG OPERATOR

Applicable standards:

- STEEL BALL VALVES, API 608/API 6D
- STEEL BALL VALVES, ISO 10494/ISO 14313
- FIRE DURABLE, API 607
- ANTI STATIC, API 608
- STEEL VALVES, ASME B 16.34
- FACE TO FACE, ASME B 16.10
- END FLANGES, ASME B 16.5
- BUTT WELDING ENDS, ASME B 16.25
- INSPECTION AND TEST, API 598/API 6D

Materials of parts

No	Part Name	Carbon Steel	ASTM Material	Carbon Steel
1	Body	A216-WCB	18Cr-9Ni-2Mo	Carbon Steel
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ^h	A351-CF8M	A352-LCB
4	Stem	A276-304	A182-F304 ^h	A276-304
5	Seat Ring	Graphite+304 ^h	R.PTFE	A276-304
6	Bonnet Gasket	Graphite+304 ^h	PTFE	Graphite+304 ^h
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-2H	A194-4
9	Packing	PTFE	PTFE	PTFE
10	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle	Carbon Steel	Carbon Steel	Carbon Steel

Note: 1) A105+ENP optional
2) Spiral wound construction.

Dimensions data

NPS	1/2	3/4	1	1 1/2	2	2 1/2	3	4	6	In
DN	15	20	25	40	50	80	100	150	mm	
L	6.50	7.50	8.50	9.50	11.50	13.00	14.00	17.00	22.00	In
(RF)	165	190	216	241	292	330	356	432	559	mm
L1	-	-	-	-	11.62	13.12	14.12	17.12	22.12	In
(BW)	-	-	-	-	295	333	359	435	562	mm
H	2.38	2.38	3.00	4.00	4.75	6.88	8.38	9.25	11.38	In
(G)	61.5	61.5	78	101	120	174	212	234	289	mm
(d)	13	19	25	38	49	62	74	100	150	mm
W	130	160	200	350	400	500	600	800	800	mm
WT	3.3	4.5	7.2	13.5	19	31	39	71	153	RF
(kg)	2.6	3.1	4.8	8	13	22	27	53	120	BW

Design

STU cast steel ball valve are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American petroleum Institute Standard API 600 & API 6D, British Standard BS 5331 and generally conform to American Society of Mechanical Engineers Standard ASME B 16.34. Valves are available in a complete range of body/bonnet materials and trims.

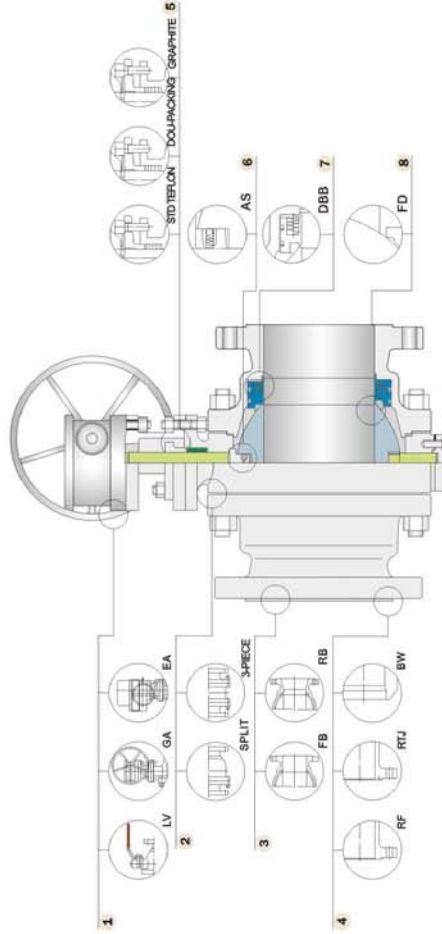
Available Modifications For STU Cast Steel Valves

- Trim changes
- End connection Modifications
- Packing and Gasket Changes
- Operator Mounting
- Handwheel Extensions

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 is a full range of trim materials to match any service. Optional packing and gasket materials are available for a full range of service conditions.

- Pressure Equalizing
- AS or FD
- Customer specified Coatings
- Weld End Bore Changes
- Oxygen & Chlorine Cleaning & Packaging



1 Operating

Extended lever for easy operation. Also available with gearing, motor actuators, pneumatic or hydraulic actuators for more difficult services.

3 BORE

Full Bore or Reduced Bore. Full-bore design provides exceptional flow control

5 Packing

STD Packing Multiple V-TEFLON packing, combined with live loading, maintains packing compression under high-cycle and severe service applications. Graphite packing use situation for high-temperature.

7 DBB

Double Block & Bleed. The body cavity is isolated when the ball is in either fully closed or fully opened position. The medium entrapped in it can easily be bled to avoid over pressure.

8 FD

Fire Durable. Designed to API 607 or BS 6755 to grant their operation suitability in case of fire. Secondary metal-to-metal seal acts as backup if primary seal is destroyed by fire. Valves ordered for compliance with API 607 will be provided with graphite packing and gaskets.

2 BODY & BONNET

Split or 3-piece, split body & bonnet for 12" & Small. Disassembles easily for repair or replacement of internal components.

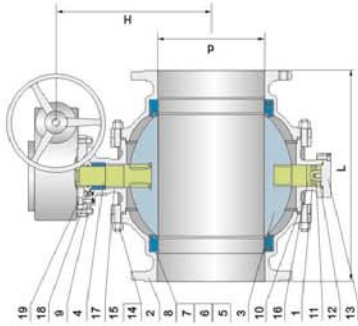
4 End Connections

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

6 AS

Anti Static. A metallic contact is always granted between ball and stem/body to discharge eventual static build-up during service.

**TRUNNION MOUNTED
CAST STEEL BALL VALVE
150LB**



Applicable standards:
STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

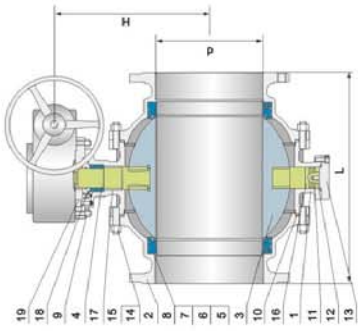
No	Part Name	Carbon Steel	ASTM Material	Carbon Steel
1	Body	A216-WCB	18Cr-9Ni-2Mo	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ^b	A351-CF8M	A182-F304 ^b
4	Stem	A276-304	A182-F316	A182-F304 ^b
5	Seat	A105+ENP	A276-316	A276-304
6	Seat Insert		Glass Filled PTFE	A350-LF2+ENP
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NBR	Viton	NBR
9	Stem O-Ring	NBR	Viton	NBR
10	Bonnet Gasket	Graphite+304 ^a	Graphite+316 ^c	Graphite+304 ^a
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Grounding Plunger	A216-WCB	A182-F316	A182-F304
14	Bonnet Stud	A193-B7	A193-B8	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion Bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland Bolt	A193-B7	A193-B8	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel	Carbon Steel	Carbon Steel

Note: 1). A105+ENP optional
2). Spiral wound construction.

Dimensions data

NPS	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	in
DN	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900	mm
L	7.00	7.50	8.00	9.00	15.50	18.00	21.00	24.00	27.00	30.00	34.00	36.00	42.00	45.00	48.00	51.00	54.00	60.00	in
(RF)	178	190	203	229	394	457	533	610	696	762	864	914	1067	1143	1245	1295	1372	1524	mm
L1	8.50	9.50	11.12	12.00	18.00	20.50	22.00	25.00	30.00	33.00	36.00	39.00	45.00	49.00	53.00	55.00	60.00	68.00	in
(BW)	216	241	283	305	457	521	559	635	762	838	914	991	1143	1245	1346	1397	1524	1727	mm
H	7.00	7.50	8.25	9.25	20.88	24.62	25.62	30.75	31.00	36.25	38.25	43.38	45.25	50.75	55.12	64.12	70.88	80.75	in
(d)	177	190	210	235	530	625	650	780	790	920	970	1100	1150	1290	1400	1630	1840	2050	mm
W	49	62	74	100	150	201	252	303	334	385	436	487	589	633	684	735	779	874	mm
WT	15	19	27	38	81	140	160	205	260	390	510	750	1200	1400	1860	2100	2530	2970	RF
(kg)	13.5	15.5	24.5	32.5	76	132	147	182	241	370	495	726	1125	1250	1640	1930	2380	2760	BW

**TRUNNION MOUNTED
CAST STEEL BALL VALVE
300LB**



Applicable standards:
STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

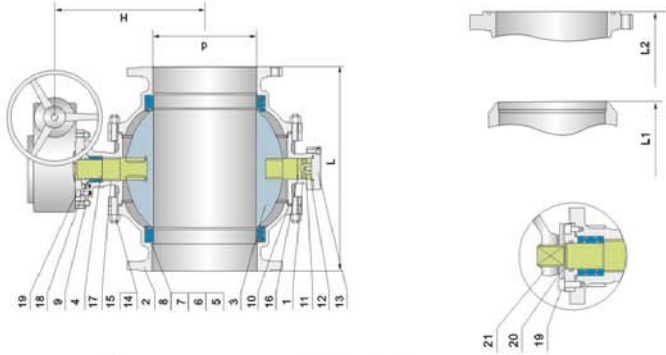
No	Part Name	Carbon Steel	ASTM Material	Carbon Steel
1	Body	A216-WCB	18Cr-9Ni-2Mo	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ^b	A351-CF8M	A182-F304 ^b
4	Stem	A276-304	A182-F316	A182-F304
5	Seat	A105+ENP	A276-316	A276-304
6	Seat Insert		Glass Filled PTFE	A350-LF2+ENP
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NBR	Viton	NBR
9	Stem O-Ring	NBR	Viton	NBR
10	Bonnet Gasket	Graphite+304 ^a	Graphite+316 ^c	Graphite+304 ^a
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Grounding Plunger	A216-WCB	A182-F316	A182-F304
14	Bonnet Stud	A193-B7	A193-B8	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion Bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland Bolt	A193-B7	A193-B8	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel	Carbon Steel	Carbon Steel

Note: 1). A105+ENP optional
2). Spiral wound construction.

Dimensions data

NPS	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	in
DN	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900	mm
L	8.50	9.50	11.12	12.00	15.88	19.75	22.38	25.50	30.00	33.00	36.00	39.00	45.00	48.00	53.00	55.00	60.00	68.00	in
(RF)	216	241	283	305	403	502	568	648	762	838	914	991	1143	1245	1346	1397	1524	1724	mm
L1	8.50	9.50	11.12	12.00	18.00	20.50	22.00	25.00	30.00	33.00	36.00	39.00	45.00	49.00	53.00	55.00	60.00	68.00	in
(BW)	216	241	283	305	403	521	559	635	762	838	914	991	1143	1245	1346	1397	1524	1724	mm
H	7.00	7.50	8.25	9.25	20.88	24.62	25.62	30.75	31.00	36.25	38.25	43.38	45.25	50.75	55.12	64.12	70.88	80.75	in
(d)	177	190	210	235	530	625	650	780	790	920	970	1100	1150	1290	1400	1630	1800	2000	mm
W	49	62	74	100	150	201	252	303	334	385	436	487	589	633	684	735	779	874	mm
WT	19	24	34	48	101	175	200	265	325	485	635	935	1500	1750	2225	2450	2870	3280	RF
(kg)	14	16	25	34	82	145	165	218	238	375	516	782	1280	1375	1825	2180	2560	2960	BW

**TRUNNION MOUNTED
CAST STEEL BALL VALVE
600LB**



Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR

Design description:

FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

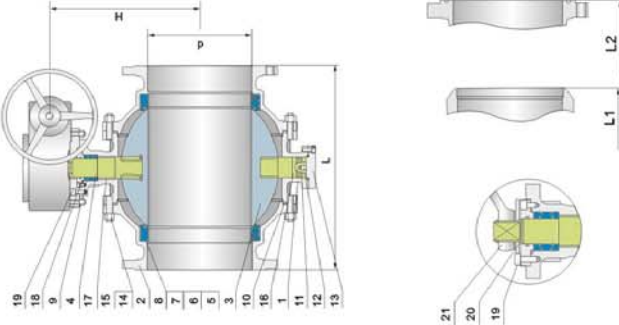
No	Part Name	Carbon Steel	ASTM Material	Carbon Steel
1	Body	A216-WCB	18Cr-9Ni-2Mo	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ^b	A182-F316	A182-F304 ^b
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105-HENP	Glass Filled PTFE	A350-LF2+ENP
6	Seat Insert	A313-304	Inconel X-750	A313-304
7	Seat Spring	NBR	Viton	Viton
8	Seat O-Ring	NBR	Viton	Viton
9	Bonnet O-Ring	Graphite+304 ^a	Graphite+316 ^b	Graphite+304 ^a
10	Bonnet Gasket	NBR	Viton	Viton
11	Antistatic Spring	A313-304	A313-316	A313-304
12	Grounding Plunger	A216-WCB	A182-F316	A182-F304
13	Bonnet Stud	A193-B7	A193-B8	A320-L7
14	Bonnet Stud Nut	A194-2H	A194-8	A194-4
15	Trunnion	A276-304	A276-316	A276-304
16	Trunnion Bearing	304+PTFE	316+PTFE	304+PTFE
17	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
18	Gland Bolt	A193-B7	A193-B8	A193-B7
19	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
20	Handle	Carbon Steel	Carbon Steel	Carbon Steel
21				

Note: 1) A105-HENP optional
2) Spiral wound construction.

Dimensions data

NPS	DN	ANSI Class 600LB														
		2	3	4	6	8	10	12	14	16	18	20	24	26	28	
L	11.50	13.00	14.00	17.00	22.00	26.00	31.00	35.00	39.00	43.00	47.00	55.00	57.00	61.00	61.00	in
(RF)	292	330	366	432	559	680	787	838	889	991	1092	1194	1397	1448	1549	mm
L1	11.62	13.12	14.12	17.12	22.12	26.12	31.12	35.12	39.12	43.12	47.25	56.38	57.50	61.50	61.50	in
(BW)	295	333	359	435	562	664	791	841	892	994	1095	1200	1407	1461	1562	mm
H	7.12	7.62	8.50	9.50	21.25	25.00	26.12	31.12	31.88	36.38	38.75	44.50	46.62	52.50	57.00	in
(d)	180	193	215	241	190	241	252	303	334	385	436	487	599	633	684	mm
W	14	16	20	20	24	24	24	32	32	32	32	32	32	32	32	in
	350	400	500	500	600	600	600	800	800	800	800	800	800	800	800	mm
WT	26	35	58	81	142	287	540	780	1000	1300	1700	2100	3400	3800	4500	RF
(kg)	19	25	42	51	85	200	395	610	805	1010	1350	1656	2775	3125	3790	BW

**TRUNNION MOUNTED
CAST STEEL BALL VALVE
900LB**



Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR

Design description:

FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

No	Part Name	Carbon Steel	ASTM Material	Carbon Steel
1	Body	A216-WCB	18Cr-9Ni-2Mo	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ^b	A182-F316	A182-F304 ^b
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105-HENP	Glass Filled PTFE	A350-LF2+ENP
6	Seat Insert	A313-304	Inconel X-750	A313-304
7	Seat Spring	NBR	Viton	Viton
8	Seat O-Ring	NBR	Viton	Viton
9	Bonnet O-Ring	Graphite+304 ^a	Graphite+316 ^b	Graphite+304 ^a
10	Bonnet Gasket	NBR	Viton	Viton
11	Antistatic Spring	A313-304	A313-316	A313-304
12	Grounding Plunger	A216-WCB	A182-F316	A182-F304
13	Bonnet Stud	A193-B7	A193-B8	A320-L7
14	Bonnet Stud Nut	A194-2H	A194-8	A194-4
15	Trunnion	A276-304	A276-316	A276-304
16	Trunnion Bearing	304+PTFE	316+PTFE	304+PTFE
17	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
18	Gland Bolt	A193-B7	A193-B8	A193-B7
19	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
20	Handle	Carbon Steel	Carbon Steel	Carbon Steel
21				

Note: 1) A105-HENP optional
2) Spiral wound construction.

Dimensions data

NPS	DN	ANSI Class 900LB													
		2	3	4	6	8	10	12	14	16	18	20	24		
L	14.50	16.50	15.00	18.00	24.00	29.00	33.00	36.00	40.50	44.50	48.00	52.00	61.00	61.00	in
(RF)	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549	1549	mm
L1	14.62	16.62	15.12	18.12	24.12	29.12	33.12	36.12	40.88	44.88	48.50	52.50	61.75	61.75	in
(BW)	371	422	384	460	613	740	841	968	1038	1140	1232	1334	1568	1568	mm
H	8.62	9.25	10.25	15.38	25.75	30.25	31.75	38.00	38.50	45.00	47.00	53.50	56.00	56.00	in
(d)	49	62	74	100	150	201	252	303	322	373	423	471	570	570	mm
W	20	20	20	24	24	24	24	32	32	32	32	32	32	32	in
	500	500	500	600	600	600	600	800	800	800	800	800	800	800	mm
WT	31	43	68	98	171	345	650	940	1205	1565	2050	2535	3950	3950	RF
(kg)	23	31	51	61	102	240	480	735	985	1215	1625	1995	3335	3335	BW

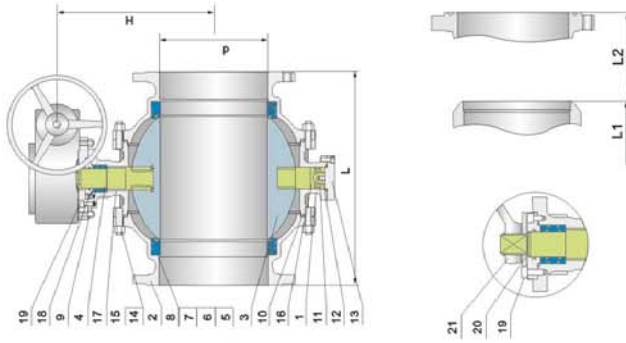


Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTT WELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:

FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR



Materials of parts

No	Part Name	Carbon Steel	ASTM Material	Carbon Steel
1	Body	A351-CF8M	18Cr-9Ni-2Mo	Carbon Steel
2	Bonnet	A216-WCB	A352-LCB	Carbon Steel
3	Ball	A182-F304 ^b	A182-F304 ^b	A352-LCB
4	Stem	A276-304	A182-F316	A182-F304 ^b
5	Seat	A105+ENP	A276-304	A276-304
6	Seat Insert		A182-F316	A350-LF2+ENP
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Stem O-Ring	NBR	Viton	NBR
9	Bonnet Gasket	Graphite+304 ^a	Viton	Viton
10	Bonnet O-Ring	Graphite+304 ^a	Graphite+316 ^b	Graphite+304 ^a
11	Antistatic Spring	A313-304	Viton	Viton
12	Bonnet Stud	A216-WCB	A182-F316	A313-304
13	Grounding Plunger	A193-B7	A182-F304	A182-F304
14	Bonnet Nut	A194-8	A193-B8	A320-L7
15	Trunnion	A276-304	A194-8	A194-8
16	Gland Flange	304+PTFE	A276-316	A276-304
17	Gland Bolt	A351-CF8M	316+PTFE	304+PTFE
18	Stop Plate	A193-B7	A351-CF8M	A352-LCB
19	Handle	Carbon Steel	A193-B7	Carbon Steel
20		Carbon Steel	Carbon Steel+Zn	Carbon Steel
21			Carbon Steel	Carbon Steel

Note: 1), A105+ENP optional
2), Spiral wound construction.

Dimensions data

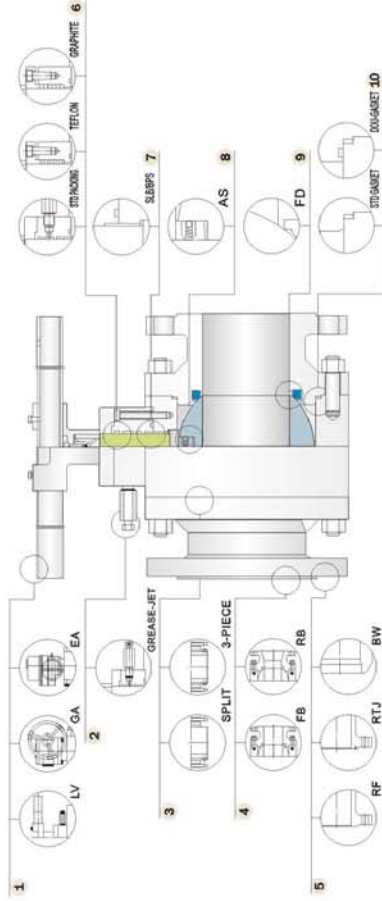
NPS DN	ANSI Class 1500LB										ANSI Class 2500LB										
	2	2 1/2	3	4	6	8	10	12	14	16	2	2 1/2	3	4	6	8	10	12	14	16	
L L1	14.50	16.50	18.50	21.50	27.75	32.75	39.00	44.50	49.50	54.50	17.75	20.00	22.75	26.50	36.00	40.25	50.00	56.00			
(R ₁) (BW)	368	419	470	546	705	832	991	1130	1257	1384	451	508	578	673	914	1022	1270	1422			
L2	14.62	16.62	18.62	21.62	28.00	33.12	39.38	45.12	50.25	55.38	17.88	21.25	23.00	26.88	36.50	40.88	50.88	56.88			
(R ₂) (J)	371	422	473	549	711	841	1000	1146	1276	1407	454	504	584	683	927	1038	1292	1445			
H	11.25	12.00	13.25	20.00	33.50	39.38	41.12	49.38	50.00	58.50	12.00	12.88	14.25	21.25	35.88	42.12	44.00	53.00			
(d)	49	62	74	100	144	192	249	287	315	360	42	62	87	131	179	223	265				
W	20	20	24	24	24	32	32	32	32	32	20	24	24	24	32	32	32				
WT	49	67	106	153	298	540	1020	1475	1895	2455	55	76	120	173	302	612	1150	1665			
(kg)	33	44	73	87	145	345	685	1050	1385	1735	41	55	91	110	182	430	855	1315			

Design

STU cast steel ball valve are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American petroleum institute Standard API 600 & API 601. British Standard BS 5351 and generally conform to American Society of Mechanical Engineers Standard ASME B 16.34. Valves are available in a complete range of body/joint materials and trims.

Available Modifications For STU Cast Steel Valves

- Trim changes
- End connection Modifications
- Packing and Gasket Changes
- Operator Mounting
- Handwheel Extensions
- Pressure Equalizing
- AS or FD
- Customer specified Coatings
- Weld End Bore Changes
- Oxygen & Chlorine Cleaning & Packaging



1 Operating

Extended lever for easy operation. Also available with gearing, motor actuators, pneumatic or hydraulic actuators for more difficult services.

3 BODY & BONNET

Split or 3-piece, split body & bonnet for 8" & Small. Disassembles easily for repair or replacement of internal components.

5 End Connections

A choice of Flanged, RTJ flanged or Butt-welding end for piping flexibility

7 SLB

Self-Lubrication Bearing. Non-maintenance, easy operation, low torque and longer life.

9 FD

Fire Durable. Designed to API 607 or BS 6755 to grant their operation suitability in case of fire. Secondary metal-to-metal seal acts as backup if primary seal is destroyed by fire. Valves ordered for compliance with API 607 will be provided with graphite packing and gaskets.

2 Grease-Jet Joint

Installed in prescriptive part accord with the apply and satisfied with economical situations and realize seal in spot with maintenance easily.

4 BORE

Full Bore or Reduced Bore. Full-bore design provides exceptional flow control.

6 Packing

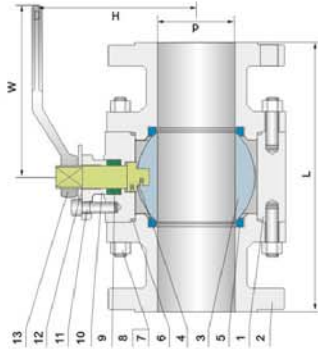
STD Packing adopt high-performance rubber seal ring. STD Packing and TEFON use situation for smooth pressure. With snugging apply high-pressure situation. Graphite packing use situation for high-temperature.

8 AS

Anti Static. A metallic contact is always granted between ball and stem body to discharge eventual static build-up during service.

10 GASKET

STD Gasket or Dou-Gasket STD Gasket adopt high-performance rubber seal ring. Dou-Gasket adopt high-performance rubber seal ring and spiral wound graphite.



Applicable standards:
STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10454/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTT WELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:
FULL PORT DESIGN
BB BOLTED BONNET, SPLIT BODY
FLOATING BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5271 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR

No	Part Name	Carbon Steel		ASTM Material		Carbon Steel	
		3/4	1	1 1/2	2	2 1/2	3
1	Body	7.50	8.50	9.50	11.50	13.00	14.00
2	Bonnet	1.90	2.16	2.41	2.92	3.30	3.56
3	Ball	-	-	-	11.62	13.12	14.12
4	Stem	-	-	-	2.95	3.33	3.59
5	Seat Ring	2.25	2.62	3.50	4.12	6.25	7.50
6	Bonnet Gasket	58	68	89	105	158	190
7	Bonnet Stud	19	25	32	49	62	74
8	Bonnet Stud Nut	8	12	16	24	32	40
9	Packing	4.5	5.5	8	12.5	18	27
10	Gland	3.8	4.1	5.6	7	12	18
11	Gland Bolt	-	-	-	-	-	-
12	Stop Plate	-	-	-	-	-	-
13	Handle	-	-	-	-	-	-

Note: 1). A105+ENP optional
2). Spiral wound construction.

Dimensions data

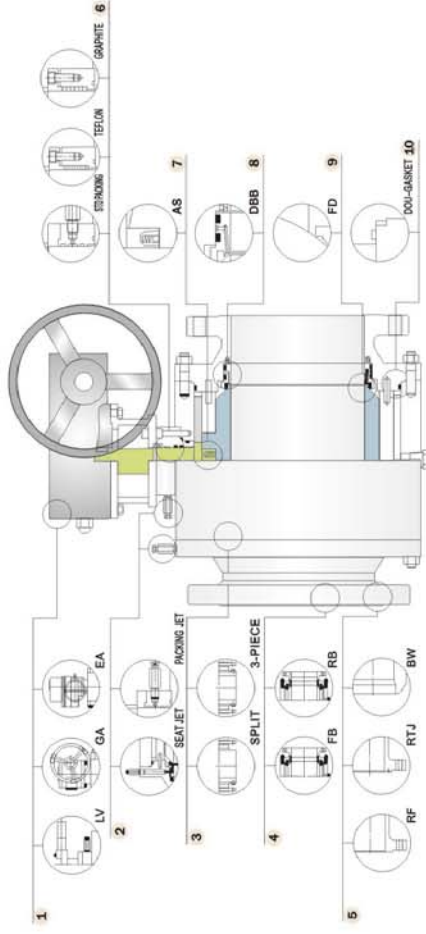
NPS	1/2	3/4	1	1 1/2	2	2 1/2	3	4	6	in
DN	15	20	25	40	50	80	100	150	150	mm
L	6.50	7.50	8.50	9.50	11.50	13.00	14.00	17.00	22.00	in
(RF)	1.65	1.90	2.16	2.41	2.92	3.30	3.56	4.32	5.59	mm
L1	-	-	-	-	11.62	13.12	14.12	17.12	22.12	in
(BW)	-	-	-	-	2.95	3.33	3.59	4.35	5.62	mm
H	2.25	2.62	3.50	4.12	6.25	7.50	9.75	10.38	10.38	in
(d)	58	68	89	105	158	190	247	282	282	mm
(d)	13	19	25	32	49	62	74	100	150	mm
W	8	12	16	24	32	40	60	80	800	mm
WT	4.5	5.5	8	12.5	18	27	35	61	172	kg
(kg)	3.8	4.1	5.6	7	12	18	23	43	139	BW

Design

STU steel ball valve are designed and manufactured to provide maximum service life and dependability. All ball valves are full ported and meet the design requirements for American Petroleum Institute Standard API 607 & API 6D, British Standard BS 6391 and generally conform to American Society of Mechanical Engineers standard ASME B 16.34. Valves are available in a complete range of body/bonnet materials and trims.

Available Modifications for STU Cast Steel Valves

- *Trim changes
- *End Connection Modifications
- *Packing and Gasket Changes
- *Operator Mounting
- *Handwheel Extensions
- *Pressure Equalizing
- *AS or FD
- *Customer Specified Coatings
- *Weld End Bore Changes
- *Oxygen & Chlorine Cleaning & Packaging



1 Operating

Extended lever for easy operation. Also available with gear, motor actuators, pneumatic or hydraulic actuators for more difficult services.

3 BODY & BONNET

Split or 3-piece split body & bonnet for 4" & Small Disassembles easily for repair or replacement of internal components.

5 End Connections

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

7 AS

Anti Static-A metallic contact is always granted between ball and stem/body to discharge eventual static build-up during service.

9 FD

Fire Durable. Designed to API 607 or BS 6755 to grant their operation suitability in case of fire. Secondary metal-to-metal seal acts as backup if primary seal is destroyed by fire. Valves ordered for compliance with API 607 will be provided with graphite packing and gaskets.

2 Grease - Jet Joint 4 BORE

Installed in prescriptive part accord with the apply and sealed with exceptional flow control. Full Bore or R reduced Bore. Full-bore design provides exceptional flow control.

6 Packing

STD Packing adopt high-performance rubber seal ring. STD Packing and TEFLON use situation for smooth pressure. With a snap ring apply high-pressure situation. Graphite packing use situation for high-temperature.

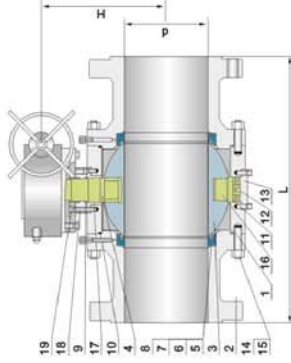
8 DDB

Double Block & Bleed. The body cavity is isolated when the ball is in either fully closed or fully opened position. The medium entrapped in it can easily be bled to avoid overpressure.

10 GASKET

Adopt high-performance rubber seal ring and spiral wound graphite.

**TRUNNION MOUNTED
FORGED STEEL BALL VALVE
150LB**



Design description

FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FOR DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH WG OPERATOR

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 14313
FIRE STATIC, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B16.34
FACE TO FACE, ASME B16.10
END FLANGES, ASME B16.5
BURRWELDING ENDS, ASME B16.25
INSPECTION AND TEST, API 598/API 6D

Materials of parts

NO	Part Name	ASTM Material	
		Carbon Steel	18Cr-9Ni-2Mo
1	Body	A105	A350-LF2
2	Bonnet	A105	A350-LF2
3	Ball	A182-F304 ^h	A182-F304 ^h
4	Stem	A276-304	A276-304
5	Seat	A105+ENP	A350-LF2+ENP
6	Seat Insert		Glass Filled PTFE
7	Seat Spring	A313-304	A313-304
8	Seat O-Ring	NBR	Viton
9	Stem O-Ring	NBR	Viton
10	Bonnet Gasket	Graphite+304 ^h	Graphite+304 ^h
11	Bonnet O-Ring	NBR	Viton
12	Antistatic Spring	A313-304	A313-304
13	Grounding Plunger	A182-F304	A182-F304
14	Bonnet Stud	A193-B7	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-4
16	Trunnion	A276-304	A276-304
17	Trunnion Bearing	304+PTFE	304+PTFE
18	Gland Bolt	A105	A182-F316
19	Gland Bolt	A193-B7	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel
21	Handle	Carbon Steel	Carbon Steel

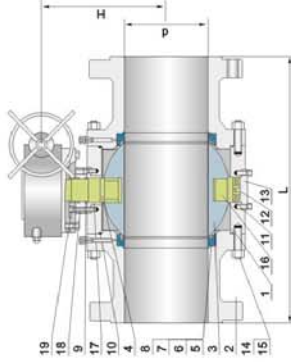
Note:1) .A105+ENP optional.

2) .Spiral wound construction.

Dimensions data

NPS	DN	ANSI Class 150LB																		
		2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	in	mm
L	7.00	7.50	8.00	9.00	15.50	18.00	21.00	24.00	27.00	30.00	34.00	36.00	42.00	45.00	48.00	51.00	54.00	60.00	in	mm
(RF)	178	190	203	229	394	457	533	610	696	762	864	914	1067	1143	1245	1295	1372	1524	mm	mm
L1	8.50	9.50	11.12	12.00	18.00	20.50	22.00	25.00	30.00	33.00	36.00	39.00	45.00	48.00	53.00	55.00	60.00	68.00	in	mm
(BW)	216	241	283	305	457	521	559	635	702	762	838	914	991	1143	1245	1346	1397	1524	1727	mm
H	4.00	6.00	7.00	9.25	9.88	11.00	12.62	15.38	16.50	21.88	23.62	25.00	28.00	29.50	31.50	34.00	36.00	38.50	in	mm
(d)	120	150	180	235	250	280	320	390	420	555	600	635	710	750	800	865	915	980	mm	mm
W	16	16	24	24	24	24	32	32	32	32	32	32	40	40	40	40	40	40	in	mm
WT	28	35	55	80	190	290	445	570	780	1520	2300	2500	3950	4890	6300	7100	8950	13500	RF	mm
(kg)	25	28	49	71	182	277	423	553	747	1481	2286	2460	3904	4939	6362	8149	9000	13570	BW	mm

**TRUNNION MOUNTED
FORGED STEEL BALL VALVE
300LB**



Design description

FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FOR DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH WG OPERATOR

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 14313
FIRE STATIC, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B16.34
FACE TO FACE, ASME B16.10
END FLANGES, ASME B16.5
BURRWELDING ENDS, ASME B16.25
INSPECTION AND TEST, API 598/API 6D

Materials of parts

NO	Part Name	ASTM Material	
		Carbon Steel	18Cr-9Ni-2Mo
1	Body	A105	A350-LF2
2	Bonnet	A105	A350-LF2
3	Ball	A182-F304 ^h	A182-F304 ^h
4	Stem	A276-304	A276-304
5	Seat	A105+ENP	A350-LF2+ENP
6	Seat Insert		Glass Filled PTFE
7	Seat Spring	A313-304	A313-304
8	Seat O-Ring	NBR	Viton
9	Stem O-Ring	NBR	Viton
10	Bonnet Gasket	Graphite+316 ^h	Graphite+304 ^h
11	Bonnet O-Ring	NBR	Viton
12	Antistatic Spring	A313-304	A313-304
13	Grounding Plunger	A182-F304	A182-F304
14	Bonnet Stud	A193-B7	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-4
16	Trunnion	A276-304	A276-304
17	Trunnion Bearing	304+PTFE	304+PTFE
18	Gland Bolt	A105	A182-F316
19	Gland Bolt	A193-B7	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel
21	Handle	Carbon Steel	Carbon Steel

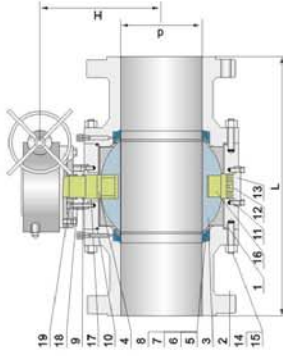
Note:1) .A105+ENP optional.

2) .Spiral wound construction.

Dimensions data

NPS	DN	ANSI Class 300LB																		
		2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	in	mm	
L	8.50	9.50	11.12	12.00	15.88	19.75	22.38	25.50	30.00	33.00	36.00	39.00	45.00	48.00	53.00	55.00	60.00	in	mm	
(RF)	216	241	283	305	403	502	568	648	762	838	914	991	1143	1245	1346	1397	1524	mm	mm	
L1	8.50	9.50	11.12	12.00	18.00	20.50	22.00	25.00	30.00	33.00	36.00	39.00	45.00	48.00	53.00	55.00	60.00	in	mm	
(BW)	216	241	283	305	403	521	559	635	702	762	838	914	991	1143	1245	1346	1397	1524	mm	mm
H	4.00	6.00	7.00	9.25	9.88	11.00	12.62	15.38	16.50	21.88	23.62	25.00	28.00	29.50	31.50	34.00	36.00	in	mm	
(d)	120	150	180	235	250	280	320	390	420	555	600	635	710	750	800	865	915	mm	mm	
W	16	16	24	24	24	24	32	32	32	32	32	32	40	40	40	40	40	in	mm	
WT	30	40	60	90	200	325	490	690	990	1810	2620	2860	4430	5430	6810	7655	9580	RF	mm	
(kg)	24	31	49	72	169	280	424	598	872	1665	2440	2635	4075	4980	6225	7115	9230	BW	mm	

**TRUNNION MOUNTED
FORGED STEEL BALL VALVE
600LB**



Applicable standards:
STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 14313
FIRE STATIC, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B16.34
FACE TO FACE, ASME B16.10
BLOW-OUT PROOF STEM
FOR DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH WG OPERATOR

Design description
FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FOR DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH WG OPERATOR

Materials of parts

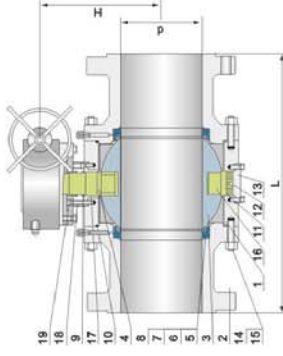
NO	Part Name	ASTM Material	
		Carbon Steel	18Cr-9Ni-2Mo
1	Body	A105	A350-LF2
2	Bonnet	A105	A350-LF2
3	Ball	A182-F304 ¹⁾	A182-F304 ¹⁾
4	Stem	A276-304	A276-304
5	Seat	A105+ENP	A350-LF2+ENP
6	Seat Insert		Glass Filled PTFE
7	Seat Spring	A313-304	A313-304
8	Seat O-Ring	NBR	Viton
9	Stem O-Ring	NBR	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton
12	Antistatic Spring	A313-304	A313-304
13	Grounding Plunger	A182-F304	A182-F304
14	Bonnet Stud	A193-B7	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-4
16	Trunnion	A276-304	A276-304
17	Trunnion Bearing	304+PTFE	304+PTFE
18	Gland	A105	A182-F316
19	Gland Bolt	A193-B7	A193-87
20	Stop Plate	Carbon Steel	Carbon Steel
21	Handle		Carbon Steel

Note:1) .A105+ENP optional.
2) .Spiral wound construction.

Dimensions data

NPS	DN	ANSI Class 600LB														
		2	3	4	6	8	10	12	14	16	18	20	24	26	28	30
L	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	61.00	61.00
(RF)	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1448	1549	1549
L1	11.82	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12	43.12	47.25	55.38	57.50	61.50	61.50
(BW)	295	333	359	435	562	664	791	841	892	994	1095	1200	1407	1461	1562	1562
H	6.50	7.00	7.88	11.00	12.25	14.00	16.12	18.00	19.25	21.00	24.88	25.62	30.12	31.88	34.62	34.62
(d)	165	180	200	280	310	355	410	455	490	535	630	650	765	810	860	860
W	16	24	24	24	32	32	32	32	32	40	40	40	40	40	40	40
WT	34	53	65	125	245	505	640	910	1390	2250	3400	3850	4900	6700	8300	8300
(kg)	27	43	49	95	188	418	495	740	1185	1960	3050	3408	4275	6025	7590	7590

**TRUNNION MOUNTED
FORGED STEEL BALL VALVE
900LB**



Applicable standards:
STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 14313
FIRE STATIC, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B16.34
FACE TO FACE, ASME B16.10
BLOW-OUT PROOF STEM
FOR DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH WG OPERATOR

Design description
FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FOR DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH WG OPERATOR

Materials of parts

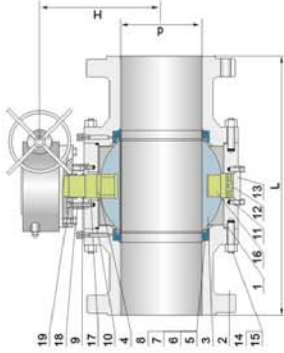
NO	Part Name	ASTM Material	
		Carbon Steel	18Cr-9Ni-2Mo
1	Body	A105	A350-LF2
2	Bonnet	A105	A350-LF2
3	Ball	A182-F304 ¹⁾	A182-F304 ¹⁾
4	Stem	A276-304	A276-304
5	Seat	A105+ENP	A350-LF2+ENP
6	Seat Insert		Glass Filled PTFE
7	Seat Spring	A313-304	A313-304
8	Seat O-Ring	NBR	Viton
9	Stem O-Ring	NBR	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton
12	Antistatic Spring	A313-304	A313-304
13	Grounding Plunger	A182-F304	A182-F304
14	Bonnet Stud	A193-B7	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-4
16	Trunnion	A276-304	A276-304
17	Trunnion Bearing	304+PTFE	304+PTFE
18	Gland	A105	A182-F316
19	Gland Bolt	A193-B7	A193-87
20	Stop Plate	Carbon Steel	Carbon Steel
21	Handle		Carbon Steel

Note:1) .A105+ENP optional.
2) .Spiral wound construction.

Dimensions data

NPS	DN	ANSI Class 900LB											
		2	3	4	6	8	10	12	14	16	18	20	24
L	14.50	16.50	15.00	18.00	24.00	29.00	33.00	36.00	40.50	44.50	48.00	52.00	61.00
(RF)	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549
L1	14.82	16.62	15.12	18.12	24.12	29.12	33.12	38.12	40.88	44.88	48.50	52.50	61.75
(BW)	371	422	384	460	613	740	841	968	1038	1140	1232	1334	1568
H	6.72	7.50	8.25	11.38	12.62	15.98	17.00	18.50	20.88	24.00	26.00	27.50	30.75
(d)	49	62	74	100	150	201	252	303	322	373	423	471	570
W	24	24	24	32	32	32	32	32	32	40	40	40	40
WT	45	65	73	135	360	650	930	1350	1890	3100	4300	4950	7100
(kg)	37	53	56	98	291	545	760	1145	1650	2750	3875	4410	6485

TRUNNION MOUNTED FORGED STEEL BALL VALVE 1500LB/2500LB



Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 14313
FIRE STATIC, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B16.34
FACE TO FACE, ASME B16.10
END FLANGES, ASME B16.5
BURRWELDING ENDS, ASME B16.25
INSPECTION AND TEST, API 598/API 6D

Design description

FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FOR DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH WG OPERATOR

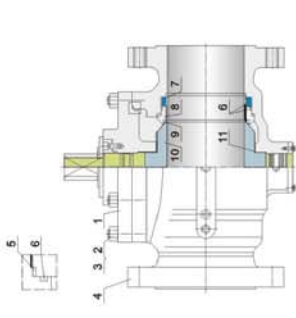
NO	Part Name	ASTM Material	
		Carbon Steel	18Cr-9Ni-2Mo
1	Body	A105	A182-F316
2	Bonnet	A105	A182-F316
3	Ball	A182-F304 ¹⁾	A182-F304 ¹⁾
4	Stem	A276-304	A276-304
5	Seat	A105+ENP	A182-F316
6	Seat Insert	A313-304	Glass Filled PTFE
7	Seat Spring	A193-B7	Inconel X-750
8	Seat O-Ring	NBR	Viton
9	Stem O-Ring	NBR	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton
12	Antistatic Spring	A313-304	A313-304
13	Grounding Plunger	A182-F304	A182-F304
14	Bonnet Stud	A193-B7	A193-B7
15	Bonnet Stud Nut	A194-4	A194-4
16	Trunnion	A276-304	A276-304
17	Trunnion Bearing	304+PTFE	304+PTFE
18	Gland	A105	A182-F316
19	Gland Bolt	A193-B7	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel
21	Handle	Carbon Steel	Carbon Steel

Note: 1) A105+ENP optional.
2) Spiral wound construction.

Dimensions data

NPS DN	ANSI Class 1500LB					ANSI Class 2500LB									
	2	3	4	6	8	2 1/2	3	4	6	8					
LL1 (RP)(BW)	14.50	16.50	18.50	21.50	27.75	32.75	39.00	44.50	49.50	54.50	17.75	20.00	22.75	26.50	36.00
L2	368	419	470	548	705	832	991	1130	1257	1384	451	508	578	673	914
(RTJ)	14.62	16.62	18.62	21.62	28.00	33.12	39.38	45.12	50.25	55.38	17.88	21.25	23.00	26.88	36.50
H	6.75	7.50	8.25	11.38	13.00	15.75	17.38	22.00	25.25	27.12	7.50	9.00	11.00	14.12	15.75
(d)	49	62	74	100	144	192	239	287	315	360	42	62	87	131	179
W	24	24	32	32	32	32	32	40	40	40	24	32	32	32	40
WT (kg)	55	75	95	150	540	880	1390	1980	3100	4650	68	95	120	185	675
	40	55	65	115	420	685	1025	1555	2600	3930	54	74	91	122	555

TOP ENTRY BALL VALVE 150lb/300lb



Design description

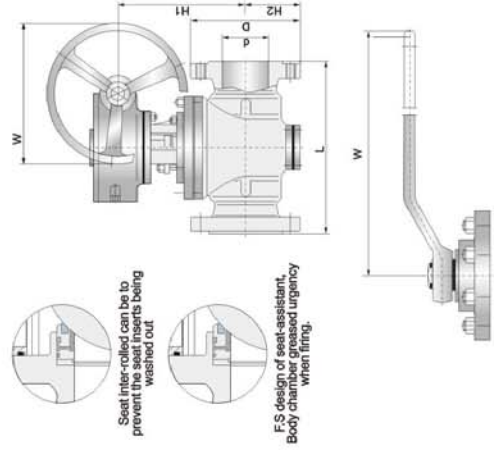
FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FOR DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH WG OPERATOR

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 14313
FIRE STATIC, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B16.34
FACE TO FACE, ASME B16.10
END FLANGES, ASME B16.5
BURRWELDING ENDS, ASME B16.25
INSPECTION AND TEST, API 598/API 6D

Main Types and Connecting Dimension

Size	Class 150				Class 300			
	G	L	H1	H2	G	L	H1	H2
2	mm	mm	mm	mm	mm	mm	mm	mm
2	in	mm	mm	mm	mm	mm	mm	mm
3	76	356	21	95	285	46	83	156
4	102	432	250	115	400	156	453	203
6	152	559	265	140	*400	256	*600	622
8	203	660	355	172	*400	453	*600	747
10	254	787	385	203	*600	622	*600	747
12	305	838	400	242	*600	959	*600	1220
14	337	889	450	267	*600	1220	*600	1640
16	387	991	510	299	*600	1640	*600	2118
18	438	1092	565	318	*600	2118	*600	2550
20	489	1194	620	349	*600	2550	*600	3100
24	591	1397	680	407	*700	3100	*700	3100

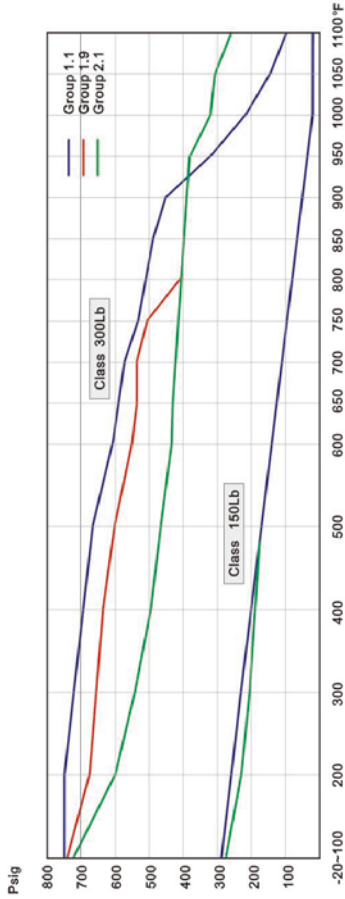


Seat inner-rolled can be to prevent the seat inserts being washed out

F.S design of seat-assistant, Body chamber greatest urgency when fitting.

Form of Major Part Material

Parts No.	Parts name	Materials	
		Carbon Steel	Stainless Steel
1	Body	ASTM A216-WCB	ASTM A351-CF8/CF8M
2	Bonnet	ASTM A216-WCB	ASTM A351-CF8/CF8M
3	Nut	ASTM A194-2H/2HM	ASTM A194-2HM6
4	Bolt	ASTM A193-B7/B7M	ASTM A193-B7M/B8
5	Gasket	304+PTFE	304+PTFE
6	O-ring	VITON	VITON
7	Spring	INCONELX-750	INCONELX-750
8	Seat ring	ASTM A105	ASTM A182 F304/F316
9	Seat insert	RPTFE	RPTFE
10	Ball	ASTM A182-F6a	ASTM A182 F304/F316
11	Stem bearing	304+PTFE	304+PTFE



ASME B16.34 Maximum Allowable Non-shock Pressure

TEMPERATURE	ASTM MATERIALS											
	ANSI Class 150LB						ANSI Class 300LB					
°F	Group 1.1	Group 1.9	Group 2.1	Group 1.1	Group 1.9	Group 2.1	Group 1.1	Group 1.9	Group 2.1	Group 1.1	Group 1.9	Group 2.1
-20-100	285	290	265	280	290	275	275	275	275	275	275	275
100	260	260	250	260	260	235	260	260	235	260	260	235
200	230	230	230	230	230	205	215	215	215	215	215	215
300	200	200	200	200	200	185	195	195	195	195	195	195
400	170	170	170	170	170	160	170	170	170	170	170	170
500	140	140	140	140	140	140	150	150	150	150	150	150
600	125	125	125	125	125	125	135	135	135	135	135	135
700	110	110	110	110	110	110	120	120	120	120	120	120
800	95	95	95	95	95	95	105	105	105	105	105	105
900	80	80	80	80	80	80	90	90	90	90	90	90
1000	65	65	65	65	65	65	75	75	75	75	75	75
1100	50	50	50	50	50	50	60	60	60	60	60	60

TEST PRESSURE BY API 598

Hydrostatic Shell Test	450	450	400	450	450	450	425	425	425	1125	1125	1125
Hydrostatic Seal Test	315	320	295	320	320	320	305	305	305	815	815	815

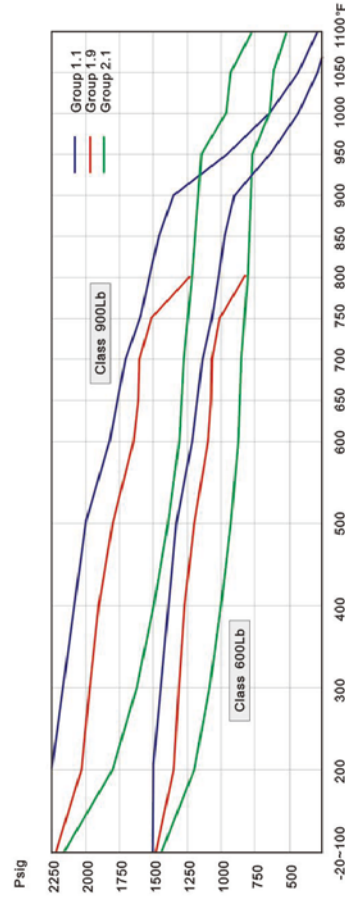
80±20

METRIC CONVERSIONS by API STD 2564
 ◆ PRESSURE: 1 Pound Per Square Inch (Psig) = 0.06894757 bar = 0.006894757 Mpa ◆ TEMPERATURE: °C = (°F - 32) / 1.8

ASME B16.34 Materials Group

Group 1.1	A105 ^{a)}	A216-WCB ^{b)}
Group 1.2	A216-WCC ^{c)}	A352-LCC ^{d)}
Group 1.3	A352-LCB ^{e)}	
Group 1.9	A217-WC9 ^{f)}	
Group 1.10	A217-WC9 ^{g)}	
Group 1.13	A217-C5	
Group 2.1	A182-F304	A351-CF3 ^{h)}
Group 2.2	A182-F316	A351-CF3M ⁱ⁾

- a) Not to be used over 650 °F (343 °C).
- b) Not to be used over 800 °F (427 °C).
- c) Not to be used over 1000 °F (538 °C).
- d) Not to be used over 1100 °F (593 °C).
- e) Permissible but not recommended for prolonged use above 800 °F (427 °C).
- f) For welding end valve only. Flanged end rating terminates at 1000 °F (538 °C).
- g) For prolonged use above 800 °F (427 °C).
- h) For prolonged use above 800 °F (427 °C).
- i) For prolonged use above 800 °F (427 °C).



ASME B16.34 Maximum Allowable Non-shock Pressure

TEMPERATURE	ASTM MATERIALS											
	ANSI Class 600LB						ANSI Class 900LB					
°F	Group 1.1	Group 1.9	Group 2.1	Group 1.1	Group 1.9	Group 2.1	Group 1.1	Group 1.9	Group 2.1	Group 1.1	Group 1.9	Group 2.1
-20-100	1480	1500	1390	1500	1500	1440	1440	1440	1440	1440	1440	1440
100	1350	1350	1315	1500	1500	1490	1200	1240	2025	1970	2250	2250
200	1190	1190	1175	1445	1445	1430	1080	1120	1970	2185	1915	2185
300	1040	1040	1025	1385	1385	1410	995	1025	1900	2115	1850	2115
400	900	900	885	1235	1235	1330	930	955	1795	1995	1745	1995
500	780	780	765	1115	1115	1210	875	900	1640	1815	1600	1815
600	680	680	665	1005	1005	1100	820	845	1510	1705	1510	1705
700	600	600	585	915	915	1010	775	800	1400	1600	1400	1600
800	530	530	515	845	845	940	730	755	1300	1500	1300	1500
900	480	480	465	795	795	890	695	720	1225	1425	1225	1425
1000	430	430	415	755	755	850	665	690	1160	1360	1160	1360
1050	410	410	395	735	735	830	645	670	1125	1325	1125	1325
1100	390	390	375	715	715	810	630	655	1095	1295	1095	1295

TEST PRESSURE BY API 598

Hydrostatic Shell Test	2225	2225	2100	2250	2250	2175	2175	2175	2175	3350	3375	3375
Hydrostatic Seal Test	1630	1650	1530	1650	1650	1650	1650	1650	1650	2445	2475	2475

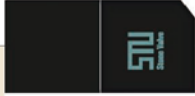
80±20

METRIC CONVERSIONS by API STD 2564
 ◆ PRESSURE: 1 Pound Per Square Inch (Psig) = 0.06894757 bar = 0.006894757 Mpa ◆ TEMPERATURE: °C = (°F - 32) / 1.8

ASME B16.34 Materials Group

Group 1.1	A105 ^{a)}	A216-WCB ^{b)}
Group 1.2	A216-WCC ^{c)}	A352-LCC ^{d)}
Group 1.3	A352-LCB ^{e)}	
Group 1.9	A217-WC9 ^{f)}	
Group 1.10	A217-WC9 ^{g)}	
Group 1.13	A217-C5	
Group 2.1	A182-F304	A351-CF3 ^{h)}
Group 2.2	A182-F316	A351-CF3M ⁱ⁾

- a) Not to be used over 650 °F (343 °C).
- b) Not to be used over 800 °F (427 °C).
- c) Not to be used over 1000 °F (538 °C).
- d) Not to be used over 1100 °F (593 °C).
- e) Permissible but not recommended for prolonged use above 800 °F (427 °C).
- f) For prolonged use above 800 °F (427 °C).
- g) For prolonged use above 800 °F (427 °C).
- h) For prolonged use above 800 °F (427 °C).
- i) For prolonged use above 800 °F (427 °C).



NACE Valves:

For servicing four gases or other Hydrogen Sulfide bearing hydrocarbon fluids, STU offers NACE valves made of component materials specially heat-treated and hardness-controlled in conformity with NACE MR 0175 standard. Typical NACE material configuration is shown below for STU cast steel valve. A note should be taken on the fact that NACE hardness requirement conflicts with the one of valve seating surface specified by API 600, Table 13. STU NACE steel valves are available only at user option.

**The demands about Resist SSC (Sulfur Stress Crack) material
That be used for the equipment that the working medium include H2S Carbon-Hydride compound**

No	Part Name	ASTM Material	NACE Hardness	API 600 Hardness
1	Body	A216-WCB	≤HRC 22 (237 HB)	-
2	Bonnet/York	A216-WCB	≤HRC 22 (237 HB)	≥250HB*
3	Seat Ring	A105 with 13CR overlay	≤HRC 22 (237 HB)	≥250HB*
4	Wedge/Disc	A216-WCB/A105 with 13CR overlay	≤HRC 22 (237 HB)	≥250HB*
5	Stem	AISI Type 410/A182-F8a	≤HRC 22 (237 HB)	≥250HB*
6	Backseat Bushing	AISI Type 410/A182-F8a	≤HRC 22 (237 HB)	-
7	Lantern Ring	AISI Type 410/A182-F8a	≤HRC 22 (237 HB)	-
8	Gland	316SS+Graphite	-	-
9	Bonnet Gasket	316SS(RTJ)	≤HRC 22	-
10	Bonnet Bolt	A193-B7	≤HRC 22	-
11	Bonnet Nut	A194-2H	≤HRC 22	-

*Minimum Hardness differential of 50 HB between the seats.

**The demands about Resist SSC (Sulfur Stress Crack) material
That be used for the equipment that the working medium include H2S Carbon-Hydride compound**

- a). All NACE valves meet API standard, except as modified to meet a HRC 22 maximum hardness requirements of NACE specification.
- b). Standard body and bonnet ASTM A216-WCB have the maximum carbon equivalent 0.43%.
- c). Seat rings are screwed in to eliminate potential hardness problem with welds and HAZ (Heat Affected Zones).
- d). Bonnet gasket for ANSI Class 150LB gate valve only, bonnet gasket in flexible graphite with stainless steel 316 sheet reinforcement. For ANSI Class 300LB gate valve and ANSI Class 150LB and 300LB globe and check valve, bonnet gasket in stainless steel 316 spiral wound with graphite filler.
- e). Standard trim is hardness controlled 13%Cr steel with Hard faced seats (API trim No.8).
- f). Standard bonnet bolting is Class I nut and bolt.
- g). All NACE valves are further identified by additional words "NACE MR 0175" shown on the nameplate for traceability and certification of conformance.

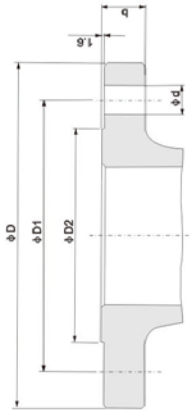
Typical NACE material specifications shown in above table and other material application are available at customer's option.

International Materials Standards

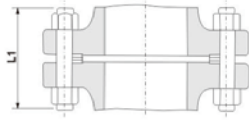
Materials	America		Germany		United Kingdom		China	
	ASTM/AISI/SAE/ASME	DIN No.	DIN TYPE	MATERIAL NUMBER	BS NUMBER	BS GRADE		
Carbon Steel	A216-WCA	1681	GS-38	1.042	1504-161	430		Cast Steel
	A216-WCB	17245	GS-C25	1.0619	1504-161	480		WCA
	A216-WCC							WCB
Chrome-Molydenum Steel	A217-WC1	17245	GS-Z2Mo4	1.5419				Cast Steel
	A217-WC6	17245	GS-17CrMo55	1.7357				ZG20Mo
	A217-WC9	17245	GS-18CrNiMo010	1.7379				15CrMo
	A217-C5	VDEH SPW 595	GS-12CrMo195	1.7363	1504	625E		12Cr1Mo1V
	A217-C12	VDEH SPW 595	G-X12CrMo101	1.7389	1504	629E		10Cr1Mo
Ni Alloy Steel	A484 M-35-1							Cast Steel
	A484 CW-6M							
	A484 CY-40							
Stainless Steel	A351-CF8	17445	G-X6CrNi189	1.4308	1504-304	C15		Cast Steel
	A351-CF8M	17445	G-X6CrNiMo1810	1.4408	1504-316	C16		0Cr18Ni9
	A351-CF3	17440	G-X2CrNi189	1.4306	970/1	304S11		1Cr18Ni12Mo2Ti
	A351-CF3M	17440	G-X2CrNiMo1810	1.4404	2056	316S12		00Cr18Ni10
Carbon Steel	A352-LCB	SPW 685	GS-Z1Mo5	1.1138				Cast Steel
	A352-LCC	17173	GS-Z6CrMo4	1.7219				LCB
	A352-LC1				1504	246LT50		LCC
	A352-LC2							ZG0CrMnVA1
	A352-LC3	SEW 685	GS10Ni14	1.5638	1504-503	Li60		Forged Steel
Carbon Steel	A105(N)	17100	St50-2	1.005	1903	221-490		25
	A350-LF1	SEW 680	TTSH41	1.0487				
	A350-LF2	17155	19Mn5	1.0462				
	A350-LF3	17173	10Ni14	1.5637	1503	503Gr-490		
	A350-LF9							
Stainless Steel	A182-F304	17440	X5CrNi189	1.4301	1503	304S31		Forged Steel
	A182-F316	17440	X5CrNiMo1810	1.4401	1503	316S31		0Cr18Ni9
	A182-F304L	17440	X2CrNi1810	1.4311				0Cr17Ni12Mo2
	A182-F316L	17440	X2CrNiMo1810	1.4404	1503	316S11		00Cr17Ni14Mo2
TiMn	A276-304	ASTM A276-304						Component Part
	A276-316	ASTM A276-316						0Cr18Ni9
	A276-410	ASTM A276-410						0Cr17Ni12Mo2
	A276-420	ASTM 276-420						1Cr13
	A182-F8a	ASTM A182-F8a						2Cr13
								2Cr13
Stainless Steel	A193-B7	ASTM A193 GRAD B7	40CrMoV47	1.7711	1506-630	790		Fastening Piece
	A193-B7M	ASTM A193 GRAD B7M						35CrMo4
	A193-B8	ASTM A193 GRAD B8						0Cr18Ni9
	A193-B8A							
	A193-B8M	ASTM A193 GRAD B8M						0Cr17Ni12Mo2
	A320-L7	ASTM A320 GR L7						42CrMo
	A194-2H	ASTM A194 GRAD 2H	CK 35	1.1181	1506-162			45
	A194-2HM	ASTM A194 GRAD 2HM						
	A194-7	ASTM A194 GRAD 7						20CrMo
	A194-8	ASTM A194 GRAD 8						0Cr18Ni9
A194-8M	ASTM A194 GR8M						0Cr17Ni12Mo	

STEEL PIPE FLANGES 150lb/300lb

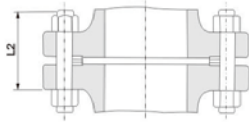
STEEL PIPE FLANGES ASME B 16.5 RF



Class 150 & Class 300 RF Flanges



Length of Stud Bolt

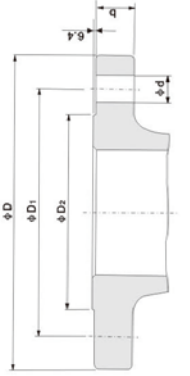


Length of Machine Bolt

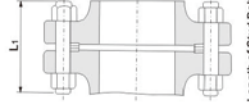
Class	Nominal Size		D	D1		D2		b		d		Bolt		L1		L2		
	NPS	DN		in	mm	in	mm	in	mm	in	mm	in	mm	NO.	Diam	in	mm	in
150	1/2	15	3.50	89	2.75	69.5	1.38	35	0.38	10	0.62	16	4	1/2	2.25	57	2.00	51
	3/4	20	3.88	99	3.12	79.2	1.69	43	0.41	10.5	0.62	16	4	1/2	2.50	64	2.00	51
	1	25	4.25	108	3.50	88.9	2.00	51	0.44	11.5	0.62	16	4	1/2	2.50	64	2.25	57
	1 1/4	32	4.62	117	3.88	98.6	2.50	64	0.50	13	0.62	16	4	1/2	2.75	70	2.25	57
	1 1/2	40	5.00	127	4.25	108	3.00	76	0.56	14.5	0.62	16	4	1/2	2.75	70	2.50	64
	2	50	6.00	152	4.75	120.7	3.62	92	0.62	16	0.75	19	4	5/8	3.25	83	2.75	70
	2 1/2	65	7.00	178	5.50	139.7	4.12	105	0.69	18	0.75	19	4	5/8	3.50	89	3.00	76
	3	80	7.50	191	6.00	152.4	5.00	127	0.75	19.5	0.75	19	4	5/8	3.50	89	3.00	76
	4	100	9.00	229	7.50	190.5	6.19	157	0.94	24	0.75	19	4	5/8	3.50	89	3.00	76
	5	125	10.00	254	8.50	215.9	7.31	186	0.94	24	0.88	22	8	3/4	3.75	95	3.25	83
	6	150	11.00	279	9.50	241.3	8.50	216	1.00	25.5	0.88	22	8	3/4	4.00	102	3.25	83
	8	200	13.50	343	11.75	298.5	10.62	270	1.12	28.5	0.88	22	8	3/4	4.25	108	3.50	89
300	10	250	16.00	406	14.25	362.0	12.75	324	1.19	30.5	1.00	25	12	7/8	4.50	114	4.00	102
	12	300	19.00	483	17.00	431.8	15.00	381	1.25	32	1.00	25	12	7/8	4.75	121	4.00	102
	14	350	21.00	533	18.75	476.3	16.25	413	1.38	35.5	1.12	28	12	1	5.25	133	4.50	114
	16	400	23.50	597	21.25	539.8	18.50	470	1.44	37	1.12	28	16	1 1/8	5.75	146	5.00	127
	18	450	25.00	635	22.75	577.9	21.00	533	1.56	40	1.25	32	16	1 1/8	6.25	159	5.50	140
	20	500	27.50	699	25.00	635.0	23.00	584	1.69	43	1.25	32	20	1 1/8	6.25	159	5.50	140
	24	600	32.00	813	29.50	749.3	27.25	692	1.88	48	1.38	35	20	1 1/4	6.75	171	6.00	152
	1/2	15	3.75	95	2.62	66.5	1.38	35	-	-	0.62	16	4	1/2	2.50	64	2.25	57
	3/4	20	4.62	117	3.25	82.6	1.69	43	-	-	0.75	19	4	5/8	3.00	76	2.50	64
	1	25	5.00	127	3.50	88.9	2.00	51	0.69	18	0.75	19	4	5/8	3.00	76	2.50	64
	1 1/4	32	5.25	133	3.88	98.6	2.50	64	0.75	19.5	0.75	19	4	5/8	3.25	83	2.75	70
	1 1/2	40	6.12	155	4.50	114.3	2.88	73	0.88	22	0.88	22	4	3/4	3.50	89	3.00	76
2	50	6.50	165	5.00	127.0	3.62	92	0.88	22.5	0.88	22	4	3/4	3.50	89	3.00	76	
2 1/2	65	7.50	191	6.00	152.4	5.00	127	1.00	25.5	0.88	22	8	3/4	3.75	95	3.25	83	
3	80	8.25	210	6.62	168.1	5.00	127	1.25	32	0.88	22	8	3/4	4.00	102	3.25	83	
4	100	10.75	273	8.50	215.9	6.19	157	1.50	38.5	1.00	25	8	7/8	5.00	127	3.50	89	
5	125	13.00	330	10.50	266.7	7.31	186	1.75	44.5	1.12	28	8	1	5.50	140	4.00	102	
6	150	14.00	356	11.50	292.1	8.50	216	1.88	48	1.12	28	12	1 1/8	6.75	171	4.50	114	
8	200	16.50	419	13.75	349.3	10.62	270	2.19	56	1.25	32	12	1 1/8	7.50	191	5.00	127	
10	250	20.00	508	17.00	431.8	12.75	324	2.50	63.5	1.38	35	16	1 1/4	8.50	216	5.50	140	
12	300	22.00	559	19.25	489.0	15.00	381	2.62	67	1.38	35	20	1 1/4	8.75	222	6.00	152	
14	350	23.75	603	20.75	527.1	16.25	413	2.75	70	1.50	38	20	1 1/4	9.25	235	6.50	165	
16	400	27.00	686	23.75	603.3	18.50	470	3.00	76.5	1.62	41	20	1 1/2	10.00	254	7.00	178	
18	450	29.25	743	25.75	654.1	21.00	533	3.25	83	1.75	44	20	1 1/2	10.75	273	7.50	191	
20	500	32.00	813	28.50	723.9	23.00	584	3.50	89	1.75	44	24	1 1/2	11.25	286	8.00	203	
24	600	37.00	940	33.00	838.2	27.25	692	4.00	102	2.00	51	24	1 1/2	13.00	330	9.00	225	
1/2	15	4.75	121	3.25	82.6	1.38	35	0.88	22.5	0.88	22	4	3/4	4.25	108	4.25	108	
3/4	20	5.12	130	3.50	88.9	1.69	43	1.00	25.5	0.88	22	4	3/4	4.50	114	4.50	114	
1	25	5.88	149	4.00	101.6	2.00	51	1.12	28.5	1.00	25	4	7/8	5.00	127	5.00	127	
1 1/4	32	6.25	159	4.38	111.3	2.50	64	1.12	28.5	1.00	25	4	7/8	5.00	127	5.00	127	
1 1/2	40	7.00	178	4.88	124.0	2.88	73	1.25	32	1.12	28	4	1	5.50	140	5.50	140	
2	50	8.50	216	6.50	165.1	3.62	92	1.50	38.5	1.00	25	8	7/8	5.75	146	6.25	159	
2 1/2	65	9.62	244	7.50	190.5	4.12	105	1.62	41.5	1.12	28	8	1	6.25	159	6.25	159	
3	80	9.50	241	7.50	190.5	5.00	127	1.50	38.5	1.00	25	8	7/8	5.75	146	6.25	159	
4	100	11.50	292	9.25	235.0	6.19	157	1.75	44.5	1.25	32	8	1 1/8	6.75	171	7.00	178	
5	125	13.75	349	11.00	279.4	7.31	186	2.00	51	1.38	35	8	1 1/8	7.50	191	7.50	191	
6	150	15.00	381	12.50	317.5	8.50	216	2.19	56	1.25	32	12	1 1/8	8.75	222	8.00	203	
8	200	18.50	470	15.50	393.7	10.62	270	2.50	63.5	1.50	38	12	1 1/8	9.25	235	8.50	216	
10	250	21.50	546	18.50	469.9	12.75	324	2.75	70	1.50	38	16	1 3/8	9.25	235	9.00	225	
12	300	24.00	610	21.00	533.4	15.00	381	3.12	79.5	1.50	38	20	1 3/8	10.00	254	9.50	241	
14	350	25.25	641	22.00	558.8	16.25	413	3.38	86	1.62	41	20	1 1/4	10.75	273	10.00	254	
16	400	27.75	705	24.25	616.0	18.50	470	3.50	89	1.75	44	20	1 1/4	11.25	286	10.50	267	
18	450	31.00	787	27.00	685.8	21.00	533	4.00	102	2.00	51	20	1 1/2	12.75	324	11.50	294	
20	500	33.75	857	29.50	749.3	23.00	584	4.25	108	2.12	54	20	1 1/2	13.75	349	12.50	318	
24	600	41.00	1041	35.50	901.7	27.25	692	5.50	140	2.62	67	20	2 1/2	17.25	438	15.50	394	

STEEL PIPE FLANGES 600lb/900lb

STEEL PIPE FLANGES ASME B 16.5 RF



Class 600-900 RF Flanges

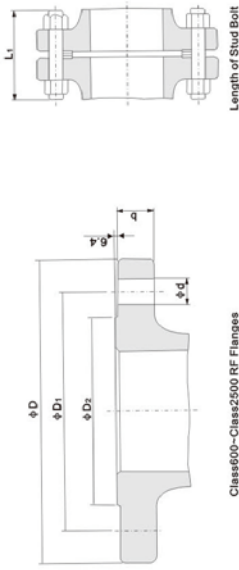


Length of Stud Bolt

Class	Nominal Size		D	D1		D2		b		d		Bolt		L1		
	NPS	DN		in	mm	in	mm	in	mm	in	mm	Number	Diam	in	mm	
600	1/2	15	3.75	95	2.62	66.5	1.38	35	0.56	14.5	0.62	16	4	1/2	3.00	76
	3/4	20	4.62	117	3.25	82.6	1.69	43	0.62	16	0.75	19	4	5/8	3.50	89
	1	25	4.88	124	3.50	88.9	2.00	51	0.69	18	0.75	19	4	5/8	3.50	89
	1 1/4	32	5.25	133	3.88	98.6	2.50	64	0.81	21	0.75	19	4	5/8	3.75	95
	1 1/2	40	6.12	155	4.50	114.3	2.88	73	0.88	22.5	0.88	22	4	3/4	4.25	108
	2	50	6.													

STEEL PIPE FLANGES 1500lb/2500lb

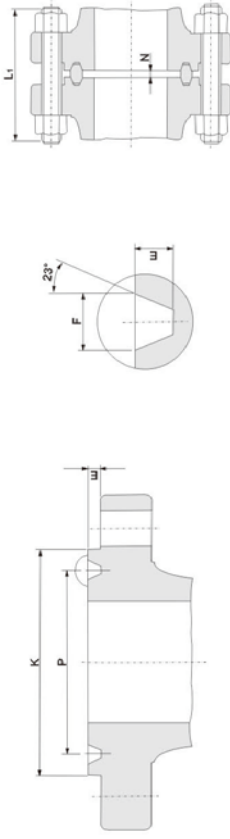
STEEL PIPE FLANGES ASME B 16.5 RF



Class	Nominal Size		D		D1		D2		b		d		Bolt		L1	
	NPS	DN	in	mm	in	mm	in	mm	in	mm	in	mm	Number	Diam	in	mm
1500	1/2	15	4.75	121	3.25	82.6	1.38	35	0.88	22.5	0.88	22	4	3/4	4.25	108
	3/4	20	5.12	130	3.50	88.9	1.69	43	1.00	25.5	0.88	22	4	3/4	4.50	114
	1	25	5.88	149	4.00	101.6	2.00	51	1.12	28.5	1.00	25	4	7/8	5.00	127
	1 1/2	32	6.25	159	4.38	111.3	2.50	64	1.12	28.5	1.00	25	4	7/8	5.00	127
	2	50	7.00	178	4.88	124.0	2.88	73	1.25	32	1.12	28	4	1	5.50	140
	2 1/2	65	8.25	216	6.50	165.1	3.62	92	1.50	38.5	1.00	25	8	7/8	5.75	146
	3	80	10.25	267	8.00	203.2	5.00	127	1.88	48	1.25	32	8	1 1/8	7.00	178
	4	100	12.25	311	9.50	241.3	6.19	157	2.12	54	1.38	35	8	1 1/4	7.75	197
	5	125	14.75	375	11.50	292.1	7.31	186	2.88	73.5	1.62	41	8	1 1/2	9.25	248
	6	150	16.50	394	12.50	317.5	8.50	216	3.25	83	1.50	38	12	1 3/8	10.25	280
	8	200	19.00	483	15.50	393.7	10.62	270	3.62	92	1.75	44	12	1 5/8	11.50	292
	10	250	23.00	584	19.00	482.6	12.75	324	4.25	108	2.00	51	12	1 7/8	13.25	337
12	300	26.50	673	22.50	571.5	15.00	381	4.88	124	2.12	54	16	2	14.75	375	
14	350	29.50	749	25.00	635.0	16.25	413	5.25	133.5	2.38	60	16	2 1/2	16.00	406	
16	400	32.50	828	27.75	704.9	18.50	470	5.75	146.5	2.62	67	16	2 1/2	17.50	445	
18	450	36.00	914	30.50	774.7	21.00	533	6.38	162	2.88	73	16	2 3/4	19.50	495	
20	500	38.75	984	32.75	831.9	23.00	584	7.00	178	3.12	79	16	3	21.25	540	
24	600	46.00	1168	39.00	990.6	27.25	692	8.00	203.5	3.62	92	16	3 1/2	24.25	616	
2500	1/2	15	5.25	133	3.50	88.9	1.38	35	1.19	30.5	0.88	22	4	3/4	4.75	121
	3/4	20	5.50	140	3.75	95.3	1.69	43	1.25	32	0.88	22	4	3/4	5.00	127
	1	25	6.25	159	4.25	108.0	2.00	51	1.38	35.5	1.00	25	4	7/8	5.50	140
	1 1/2	32	7.25	184	5.12	130.0	2.50	64	1.50	38.5	1.12	28	4	1	6.00	152
	2	50	8.00	203	5.75	146.1	2.88	73	1.75	44.5	1.25	32	4	1 1/8	6.75	171
	2 1/2	65	10.25	267	7.75	196.9	4.12	105	2.25	57.5	1.25	32	8	1 1/8	7.75	197
	3	80	12.00	305	9.00	228.6	5.00	127	2.62	67	1.38	35	8	1 1/4	8.75	222
	4	100	14.00	356	10.75	273.1	6.19	157	3.00	76.5	1.62	41	8	1 1/2	10.00	254
	5	125	16.50	419	12.75	323.9	7.31	186	3.62	92	1.68	48	8	1 1/2	11.75	298
	6	150	19.00	483	14.50	368.3	8.50	216	4.25	108	2.12	54	8	2	13.50	343
	8	200	21.75	552	17.25	438.2	10.62	270	5.00	127	2.12	54	12	2	15.00	381
	10	250	26.50	673	21.25	539.8	12.75	324	6.50	165.5	2.62	67	12	2 1/2	19.25	489
12	300	30.00	762	24.38	619.3	15.00	381	7.25	184.5	2.88	73	12	2 3/4	21.25	540	

RING-JOINT FLANGED ENDS

STEEL PIPE FLANGES ASME B 16.5 RTJ



Class	Nominal Size		Ring Number		P		E		F		K		N		L1	
	NPS	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
150	1	25	R15	1.875	47.63	0.25	6.35	0.344	8.74	2.50	64	0.16	4	3.00	76	
	1 1/4	32	R17	2.250	57.15	0.25	6.35	0.344	8.74	2.88	73	0.16	4	3.25	83	
	1 1/2	40	R19	2.562	65.07	0.25	6.35	0.344	8.74	3.25	83	0.16	4	3.25	83	
	2	50	R22	3.250	82.55	0.25	6.35	0.344	8.74	4.00	102	0.16	4	3.75	95	
	2 1/2	65	R25	4.000	101.60	0.25	6.35	0.344	8.74	4.75	121	0.16	4	4.00	102	
	3	80	R29	4.500	114.30	0.25	6.35	0.344	8.74	5.25	133	0.16	4	4.00	102	
	4	100	R36	5.625	142.88	0.25	6.35	0.344	8.74	6.75	171	0.16	4	4.00	102	
	5	125	R40	6.750	171.45	0.25	6.35	0.344	8.74	7.62	194	0.16	4	4.25	108	
	6	150	R43	7.625	193.68	0.25	6.35	0.344	8.74	8.62	219	0.16	4	4.50	114	
	8	200	R48	9.750	247.65	0.25	6.35	0.344	8.74	10.75	273	0.16	4	4.75	121	
	10	250	R52	12.000	304.80	0.25	6.35	0.344	8.74	13.00	330	0.16	4	5.00	127	
	12	300	R56	15.000	381.00	0.25	6.35	0.344	8.74	16.00	406	0.16	4	5.25	133	
14	350	R59	15.625	396.88	0.25	6.35	0.344	8.74	16.75	425	0.12	3	5.75	146		
16	400	R64	17.875	454.03	0.25	6.35	0.344	8.74	19.00	483	0.12	3	5.75	146		
18	450	R68	20.375	517.53	0.25	6.35	0.344	8.74	21.50	546	0.12	3	6.25	159		
20	500	R72	22.000	558.80	0.25	6.35	0.344	8.74	23.50	597	0.12	3	6.75	171		
24	600	R76	26.500	673.10	0.25	6.35	0.344	8.74	28.00	711	0.12	3	7.25	184		
300	1	25	R16	2.000	50.80	0.25	6.35	0.344	8.74	2.75	70	0.16	4	3.50	89	
	1 1/4	32	R18	2.375	60.33	0.25	6.35	0.344	8.74	3.12	79	0.16	4	3.75	95	
	1 1/2	40	R20	2.688	68.28	0.25	6.35	0.344	8.74	3.56	90	0.16	4	4.00	102	
	2	50	R23	3.250	82.55	0.312	7.92	0.469	11.91	4.25	108	0.22	6	4.00	102	
	2 1/2	65	R26	4.000	101.60	0.312	7.92	0.469	11.91	5.00	127	0.22	6	4.50	114	
	3	80	R31	4.875	123.83	0.312	7.92	0.469	11.91	5.75	146	0.22	6	4.75	121	
	4	100	R37	5.875	149.23	0.312	7.92	0.469	11.91	6.88	175	0.22	6	5.00	127	
	5	125	R41	7.125	180.98	0.312	7.92	0.469	11.91	8.25	210	0.22	6	5.25	133	
	6	150	R45	8.312	211.12	0.312	7.92	0.469	11.91	9.50	241	0.22	6	5.50	140	
	8	200	R49	10.625	269.88	0.312	7.92	0.469	11.91	11.88	302	0.22	6	6.00	152	
	10	250	R53	12.750	323.85	0.312	7.92	0.469	11.91	14.00	366	0.22	6	6.75	171	
	12	300	R57	15.000	381.00	0.312	7.92	0.469	11.91	16.25	413	0.22	6	7.25	184	
14	350	R61	16.500	419.10	0.312	7.92	0.469	11.91	18.00	457	0.22	6	7.50	191		
16	400	R65	18.500	469.90	0.312	7.92	0.469	11.91	20.00	508	0.22	6	8.00	203		
18	450	R69	21.000	533.40	0.312	7.92	0.469	11.91	22.62	575	0.22	6	8.25	210		
20	500	R73	23.000	584.20	0.375	9.53	0.531	13.49	25.00	635	0.22	6	8.75	222		
24	600	R77	27.250	692.15	0.438	11.13	0.656	16.66	29.50	749	0.25	6	10.00	254		

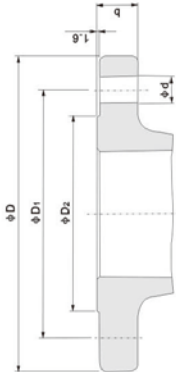
RING-JOINT FLANGED ENDS

Class	Nominal Size		Ring Number	P		E		F		K		N		L1	
	NPS	DN		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
600	1	25	R18	2.000	50.80	0.250	6.35	0.344	8.74	2.75	70	0.16	4	3.50	89
	1 1/2	32	R21	2.375	60.33	0.250	6.35	0.344	8.74	3.12	79	0.16	4	3.75	95
	2	40	R23	2.688	68.28	0.250	6.35	0.344	8.74	3.56	90	0.16	4	4.25	108
	2 1/2	50	R26	3.250	82.55	0.312	7.92	0.469	11.91	4.25	108	0.19	5	4.75	121
	3	60	R28	4.000	101.60	0.312	7.92	0.469	11.91	5.00	127	0.19	5	4.75	121
	3 1/2	80	R32	4.875	123.83	0.312	7.92	0.469	11.91	5.75	146	0.19	5	5.00	127
	4	100	R38	5.875	148.23	0.312	7.92	0.469	11.91	6.88	175	0.19	5	5.75	146
	5	125	R42	7.125	180.98	0.312	7.92	0.469	11.91	8.25	210	0.19	5	6.50	165
	6	150	R47	8.312	211.12	0.312	7.92	0.469	11.91	9.25	241	0.19	5	7.75	197
	8	200	R51	10.825	269.88	0.312	7.92	0.469	11.91	11.88	302	0.19	5	8.50	216
	10	250	R55	12.750	323.85	0.312	7.92	0.469	11.91	14.00	356	0.19	5	8.75	222
	12	300	R60	15.000	381.00	0.312	7.92	0.469	11.91	16.25	413	0.19	5	9.25	235
	14	350	R66	16.500	419.10	0.312	7.92	0.469	11.91	18.00	457	0.19	5	9.25	235
	16	400	R72	18.500	469.90	0.312	7.92	0.469	11.91	20.00	508	0.19	5	10.00	254
	18	450	R78	21.000	533.40	0.312	7.92	0.469	11.91	22.62	575	0.19	5	10.75	273
	20	500	R84	23.000	584.20	0.375	9.35	0.531	13.49	25.00	635	0.19	6	11.50	292
	24	600	R96	27.250	692.15	0.438	11.13	0.656	16.66	29.50	749	0.22	6	13.25	337
	1	25	R31	2.000	50.80	0.250	6.35	0.344	8.74	2.81	71	0.16	4	5.00	127
	1 1/2	32	R37	2.375	60.33	0.250	6.35	0.344	8.74	3.19	81	0.16	4	5.00	127
	2	40	R41	2.688	68.28	0.250	6.35	0.344	8.74	3.62	92	0.16	4	5.50	140
2 1/2	50	R45	3.250	82.55	0.312	7.92	0.469	11.91	4.88	124	0.16	4	5.75	146	
3	60	R49	4.250	107.95	0.312	7.92	0.469	11.91	5.38	137	0.16	4	5.75	146	
4	100	R57	5.875	148.23	0.312	7.92	0.469	11.91	6.12	155	0.16	4	6.75	171	
5	125	R61	7.125	180.98	0.312	7.92	0.469	11.91	7.12	181	0.16	4	7.50	191	
6	150	R65	8.312	211.12	0.312	7.92	0.469	11.91	8.50	216	0.16	4	7.75	197	
8	200	R69	10.825	269.88	0.312	7.92	0.469	11.91	11.21	288	0.16	4	8.75	222	
10	250	R73	12.750	323.85	0.312	7.92	0.469	11.91	14.25	362	0.16	4	9.25	235	
12	300	R77	15.000	381.00	0.312	7.92	0.469	11.91	16.50	419	0.16	4	10.00	254	
14	350	R81	16.500	419.10	0.312	7.92	0.469	11.91	18.38	467	0.16	4	11.00	279	
16	400	R87	18.500	469.90	0.312	7.92	0.469	11.91	20.62	524	0.16	4	11.50	292	
18	450	R93	21.000	533.40	0.312	7.92	0.469	11.91	23.38	594	0.19	5	13.25	337	
20	500	R99	23.000	584.20	0.375	9.35	0.531	13.94	26.50	648	0.19	5	14.25	362	
24	600	R111	27.250	692.15	0.438	11.13	0.656	16.66	30.38	772	0.22	6	18.00	457	
1	25	R31	2.000	50.80	0.250	6.35	0.344	8.74	2.81	71	0.16	4	5.00	127	
1 1/2	32	R37	2.375	60.33	0.250	6.35	0.344	8.74	3.19	81	0.16	4	5.00	127	
2	40	R41	2.688	68.28	0.250	6.35	0.344	8.74	3.62	92	0.16	4	5.00	140	
2 1/2	50	R45	3.250	82.55	0.312	7.92	0.469	11.91	4.88	124	0.12	3	5.75	146	
3	60	R49	4.250	107.95	0.312	7.92	0.469	11.91	5.38	137	0.12	3	6.25	159	
4	100	R57	5.875	148.23	0.312	7.92	0.469	11.91	6.12	155	0.12	3	7.00	178	
5	125	R61	7.125	180.98	0.312	7.92	0.469	11.91	7.62	194	0.12	3	7.75	197	
6	150	R65	8.312	211.12	0.312	7.92	0.469	11.91	9.00	229	0.12	3	9.75	248	
8	200	R73	12.750	323.85	0.312	7.92	0.469	11.91	13.94	349	0.12	3	10.50	267	
10	250	R77	15.000	381.00	0.312	7.92	0.469	11.91	16.50	419	0.12	3	12.75	324	
12	300	R81	16.500	419.10	0.312	7.92	0.469	11.91	18.38	467	0.12	3	13.50	343	
14	350	R87	18.500	469.90	0.312	7.92	0.469	11.91	20.62	524	0.16	4	15.25	387	
16	400	R93	21.000	533.40	0.312	7.92	0.469	11.91	23.38	594	0.16	4	16.75	425	
18	450	R99	23.000	584.20	0.375	9.35	0.531	13.94	26.50	648	0.16	4	18.50	470	
20	500	R111	27.250	692.15	0.438	11.13	0.656	16.66	30.38	772	0.16	4	20.25	565	
24	600	R123	31.750	806.55	0.438	11.13	0.656	16.66	34.12	868	0.16	4	22.50	665	
1	25	R31	2.000	50.80	0.250	6.35	0.344	8.74	3.25	83	0.16	4	5.50	140	
1 1/2	32	R37	2.375	60.33	0.250	6.35	0.344	8.74	3.62	92	0.16	4	5.50	140	
2	40	R41	2.688	68.28	0.250	6.35	0.344	8.74	4.00	102	0.12	3	6.00	152	
2 1/2	50	R45	3.250	82.55	0.312	7.92	0.469	11.91	4.50	114	0.12	3	6.75	171	
3	60	R49	4.250	107.95	0.312	7.92	0.469	11.91	5.00	127	0.12	3	7.00	178	
4	100	R57	5.875	148.23	0.312	7.92	0.469	11.91	5.75	146	0.12	3	7.75	197	
5	125	R61	7.125	180.98	0.312	7.92	0.469	11.91	6.50	165	0.12	3	8.00	203	
6	150	R65	8.312	211.12	0.312	7.92	0.469	11.91	7.25	184	0.12	3	8.75	222	
8	200	R73	12.750	323.85	0.312	7.92	0.469	11.91	8.75	222	0.12	3	9.75	248	
10	250	R77	15.000	381.00	0.312	7.92	0.469	11.91	10.25	267	0.12	3	10.50	267	
12	300	R81	16.500	419.10	0.312	7.92	0.469	11.91	11.75	296	0.12	3	12.75	324	
14	350	R87	18.500	469.90	0.312	7.92	0.469	11.91	13.25	337	0.12	3	13.50	343	
16	400	R93	21.000	533.40	0.312	7.92	0.469	11.91	14.75	371	0.16	4	15.25	387	
18	450	R99	23.000	584.20	0.375	9.35	0.531	13.94	16.25	419	0.16	4	16.75	425	
20	500	R111	27.250	692.15	0.438	11.13	0.656	16.66	17.75	458	0.16	4	18.50	470	
24	600	R123	31.750	806.55	0.438	11.13	0.656	16.66	20.25	514	0.16	4	20.25	565	
1	25	R31	2.000	50.80	0.250	6.35	0.344	8.74	3.62	92	0.12	3	6.75	171	
1 1/2	32	R37	2.375	60.33	0.250	6.35	0.344	8.74	4.00	102	0.12	3	7.00	178	
2	40	R41	2.688	68.28	0.250	6.35	0.344	8.74	4.50	114	0.12	3	7.75	197	
2 1/2	50	R45	3.250	82.55	0.312	7.92	0.469	11.91	5.00	127	0.12	3	8.00	203	
3	60	R49	4.250	107.95	0.312	7.92	0.469	11.91	5.50	140	0.12	3	8.75	222	
4	100	R57	5.875	148.23	0.312	7.92	0.469	11.91	6.00	152	0.12	3	9.25	235	
5	125	R61	7.125	180.98	0.312	7.92	0.469	11.91	6.50	165	0.12	3	9.75	248	
6	150	R65	8.312	211.12	0.312	7.92	0.469	11.91	7.00	178	0.12	3	10.25	260	
8	200	R73	12.750	323.85	0.312	7.92	0.469	11.91	8.00	203	0.16	4	10.25	260	
10	250	R77	15.000	381.00	0.312	7.92	0.469	11.91	9.00	229	0.16	4	12.25	316	
12	300	R81	16.500	419.10	0.312	7.92	0.469	11.91	10.00	254	0.16	4	14.00	356	
14	350	R87	18.500	469.90	0.312	7.92	0.469	11.91	11.00	279	0.16	4	15.50	394	
16	400	R93	21.000	533.40	0.312	7.92	0.469	11.91	12.00	309	0.16	4	16.75	425	
18	450	R99	23.000	584.20	0.375	9.35	0.531	13.94	13.00	334	0.16	4	18.50	470	
20	500	R111	27.250	692.15	0.438	11.13	0.656	16.66	14.00	359	0.16	4	20.00	508	
24	600	R123	31.750	806.55	0.438	11.13	0.656	16.66	15.00	384	0.16	4	22.00	559	

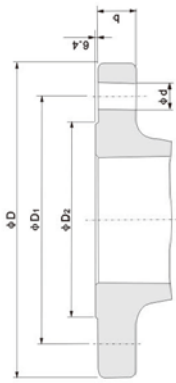
STEEL PIPE FLANGES

150lb/300lb/600lb/900lb

STEEL PIPE FLANGES ASME B 16.47 SERIES A & MSS SP 44 THEREFORE



Class 150 & Class 300 RF Flanges

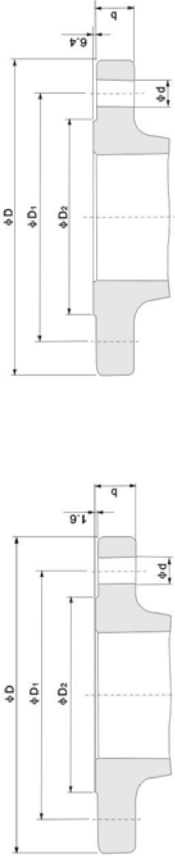


Class 600 & Class 2500 RF Flanges

Class	Nominal Size		D		D1		D2		b		d		Bolt	
	NPS	DN	in	mm	in	mm	in	mm	in	mm	in	mm	Number	Diam
150	28	650	34.25	870	31.75	806.5	29.50	749	2.69	68.5	1.38			

STEEL PIPE FLANGES
150lb/300lb/600lb/900lb

STEEL PIPE FLANGES ASME B 16.47 SERIES B & API 605RF



Class 150 & Class 300 RF Flanges

Class 600 & Class 2500 RF Flanges

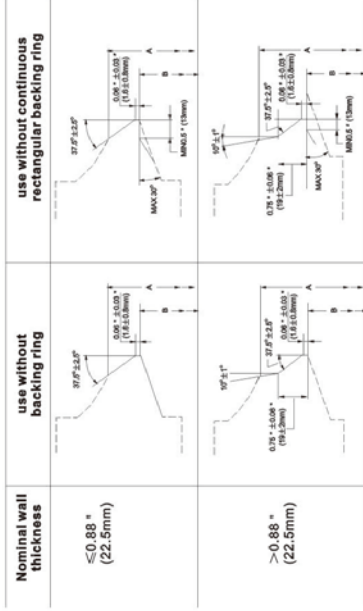
Class	Nominal Size		D		D1		D2		b		d		Bolt	
	NPS	DN	in	mm	in	mm	in	mm	in	mm	in	mm	Number	Diam
150	28	650	30.94	786	29.31	744.5	28.00	711	1.62	41.5	0.88	22	36	¾
	26	700	32.94	837	31.31	795.3	30.00	762	1.75	44.5	0.88	22	40	¾
	30	750	34.94	887	33.31	846.1	32.00	813	1.75	44.5	0.88	22	44	¾
	32	800	37.06	941	35.44	900.2	34.00	864	1.81	46	0.88	22	48	¾
	34	850	39.56	1005	37.69	957.3	36.25	921	1.94	49.5	1.00	25	40	7/8
	36	900	41.62	1057	39.75	1009.7	38.25	972	2.06	52.5	1.00	25	44	7/8
	38	950	44.25	1124	42.12	1069.8	40.25	1022	2.12	54	1.12	28	40	1
	40	1000	46.25	1175	44.12	1120.6	42.50	1080	2.19	56	1.12	28	44	1
	42	1050	48.25	1226	46.12	1171.4	44.50	1130	2.31	59	1.12	28	48	1
	44	1200	54.81	1392	52.56	1335.0	50.75	1289	2.56	65.5	1.25	32	44	1 1/8
48	1350	61.00	1549	58.75	1492.3	56.75	1441	2.81	71.5	1.25	32	56	1 1/8	
56	1400	63.00	1600	60.75	1543.1	58.75	1492	2.88	73.5	1.25	32	60	1 1/8	
60	1500	67.94	1726	65.44	1662.2	63.00	1600	3.00	76.5	1.38	35	52	1 1/4	
26	650	34.12	867	31.62	803.1	29.00	737	3.50	89	1.38	35	32	1 1/4	
28	700	36.25	921	33.75	857.3	31.00	787	3.50	89	1.38	35	36	1 1/4	
30	750	39.00	991	36.25	920.8	33.25	845	3.69	94	1.50	38	36	1 3/8	
32	800	41.50	1054	38.50	977.9	35.50	902	4.06	103.5	1.62	41	32	1 1/2	
34	850	43.62	1108	40.62	1031.7	37.50	953	4.06	103.5	1.62	41	36	1 1/2	
36	900	46.12	1171	42.88	1098.2	39.75	1010	4.06	103.5	1.75	44	32	1 5/8	
38	950	48.12	1222	44.88	1140.0	41.75	1060	4.38	111.5	1.75	44	36	1 5/8	
40	1000	50.12	1273	46.88	1190.8	43.88	1115	4.56	116	1.75	44	40	1 5/8	
42	1050	52.50	1334	49.00	1244.6	46.00	1168	4.69	119.5	1.88	48	36	1 1/2	
48	1200	59.50	1511	55.75	1416.1	52.25	1327	5.06	129	2.00	51	40	1 7/8	
26	650	35.00	889	31.75	806.5	28.62	727	4.38	111.5	1.75	44	28	1 5/8	
28	700	37.50	953	34.00	863.6	30.88	784	4.56	116	1.88	48	28	1 1/2	
30	750	40.25	1022	36.50	927.1	33.12	841	4.94	125.5	2.00	51	28	1 7/8	
32	800	42.75	1086	38.75	984.3	35.25	895	5.12	130.5	2.12	54	28	2	
34	850	45.75	1163	41.50	1054.1	37.5	953	5.56	141.5	2.38	60	24	2 1/4	
36	900	47.75	1213	43.50	1104.9	39.75	1010	5.75	146.5	2.38	60	28	2 1/4	
26	650	40.25	1022	35.50	901.7	30.00	762	5.31	135	2.62	67	20	2 1/2	
28	700	43.50	1105	38.25	971.6	32.25	819	5.81	148	2.88	73	20	2 1/2	

BUTT-WELDING ENDS

Class 150 and 300 valve which size equal to 12 inch and smaller and 12 inch valves which contract with standard wall pipe (0.375" thickness) are regularly machined. Unless have other requirement.

Ord for class 150 and 300 butt-welding valves which size equal to 14 and larger and class 400 and higher valve for all sizes. It should specified the diameter of the pipe that contract with valves. If need backing ring, indicate specification.

Other types of weld and preparation would be furnished of specified.



ASME B16.25-Butt-Welding Ends

Nominal Pipe Diameter NPS In.	DN mm	Wall Thickness of Pipe Number	2		3		4		5		6		7	
			A	B	A	B	A	B	C	t				
2 1/2	65	40	2.96	75	2.88	73.0	2.469	62.5	2.479	62.93	2.479	62.93	0.203	5.16
		80	2.96	75	2.88	73.0	2.323	59	2.351	59.69	2.351	59.69	0.276	7.01
3	80	XXS	2.96	75	2.88	73.0	2.125	54	2.178	55.28	2.178	55.28	0.375	9.53
		40	3.59	91	3.50	88.9	3.068	78	3.081	78.25	3.081	78.25	0.216	5.49
3 1/2	90	80	3.59	91	3.50	88.9	2.900	73.5	2.934	74.53	2.934	74.53	0.300	7.62
		160	3.59	91	3.50	88.9	2.964	76.5	2.992	76.93	2.992	76.93	0.300	7.62
4	100	XXS	4.12	105	4.00	101.6	3.548	90	3.564	90.52	3.564	90.52	0.226	5.74
		40	4.62	117	4.50	114.3	4.026	102	4.044	102.73	4.044	102.73	0.237	6.02
4	100	80	4.62	117	4.50	114.3	3.926	97	3.969	98.28	3.969	98.28	0.337	8.56
		120	4.62	117	4.50	114.3	3.624	92	3.692	93.78	3.692	93.78	0.438	11.13
5	125	XXS	4.62	117	4.50	114.3	3.438	87.5	3.530	89.65	3.530	89.65	0.531	13.49
		40	5.69	144	5.56	141.3	5.047	128	5.070	128.80	5.070	128.80	0.258	6.55
6	150	80	5.69	144	5.56	141.3	4.813	122	4.866	123.58	4.866	123.58	0.375	9.53
		120	5.69	144	5.56	141.3	4.563	116	4.647	118.04	4.647	118.04	0.500	12.70
6	150	XXS	5.69	144	5.56	141.3	4.063	103	4.209	106.92	4.209	106.92	0.750	19.05
		40	6.78	172	6.62	168.3	6.085	154	6.094	154.82	6.094	154.82	0.280	7.11
8	200	80	6.78	172	6.62	168.3	5.761	146.5	5.828	148.06	5.828	148.06	0.432	10.97
		120	6.78	172	6.62	168.3	5.501	140	5.600	142.29	5.600	142.29	0.562	14.27
8	200	XXS	6.78	172	6.62	168.3	5.187	134.5	5.326	136.31	5.326	136.31	0.719	18.26
		40	7.78	198	7.62	194.0	7.081	174.5	7.092	175.75	7.092	175.75	0.375	9.53
10	250	80	7.78	198	7.62	194.0	7.813	198.5	7.823	200.03	7.823	200.03	0.406	10.31
		120	8.78	223	8.62	219.1	7.625	193.5	7.709	195.84	7.709	195.84	0.500	12.70
10	250	XXS	8.78	223	8.62	219.1	7.437	189	7.544	191.65	7.544	191.65	0.694	15.09
		40	8.78	223	8.62	219.1	7.001	178	7.163	181.98	7.163	181.98	0.812	20.62
10	250	80	8.78	223	8.62	219.1	6.875	174.5	7.053	179.16	7.053	179.16	0.875	22.23
		120	10.94	278	10.75	273.0	10.020	254.5	10.070	255.74	10.070	255.74	0.965	23.01
10	250	XXS	10.94	278	10.75	273.0	9.750	247.5	9.834	249.74	9.834	249.74	0.500	12.70
		40	10.94	278	10.75	273.0	9.362	243	9.562	245.55	9.562	245.55	0.694	15.09
10	250	80	10.94	278	10.75	273.0	9.362	243	9.451	240.01	9.451	240.01	0.719	18.26
		120	10.94	278	10.75	273.0	9.062	230	9.232	234.44	9.232	234.44	0.844	21.44
10	250	XXS	10.94	278	10.75	273.0	8.750	222	8.959	227.51	8.959	227.51	1.000	25.40
		40	10.94	278	10.75	273.0	8.500	216	8.740	221.95	8.740	221.95	1.125	28.58

BUTT-WELDING ENDS

BUTT-WELDING ENDS

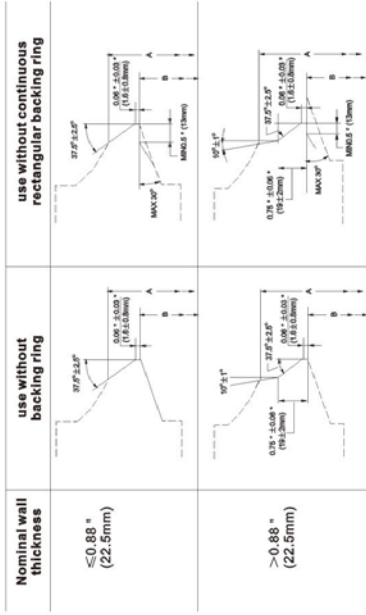
ASME B16.25-Butt-Welding Ends

1 Nominal Pipe Diameter NPS in.	2 Wall Thickness of Pipe Number	3 Outside Diameter of Welding End Steel Valve		4 Forged ¹⁾		5 Nominal Inside Diameter of Pipe		6 Machined Inside Diameter of Pipe		7 Nominal Wall Thickness	
		A in.	A mm	A ₁ in.	A ₁ mm	B in.	B mm	C in.	C mm	t in.	t mm
12	STD	12.97	329	12.75	323.8	12.000	305	12.053	306.08	0.375	9.53
	XS	12.97	329	12.75	323.8	11.988	303	11.999	304.72	0.406	10.31
	40	12.97	329	12.75	323.8	11.760	298.5	11.834	300.54	0.500	12.70
	60	12.97	329	12.75	323.8	11.626	295	11.725	297.79	0.562	14.27
	80	12.97	329	12.75	323.8	11.374	289	11.505	292.17	0.688	17.48
	100	12.97	329	12.75	323.8	11.062	281	11.232	285.24	0.844	21.44
	120	12.97	329	12.75	323.8	10.750	273	10.959	278.31	1.000	25.40
	140	12.97	329	12.75	323.8	10.500	265.5	10.740	272.75	1.125	28.58
	160	12.97	329	12.75	323.8	10.126	257	10.413	264.45	1.312	33.32
	STD	14.25	362	14.00	355.6	13.200	337.88	13.303	337.88	0.375	9.53
	XS	14.25	362	14.00	355.6	13.124	335.08	13.192	335.08	0.438	11.13
	40	14.25	362	14.00	355.6	13.004	330	13.064	332.34	0.500	12.70
60	14.25	362	14.00	355.6	12.812	325.5	12.920	328.15	0.594	15.09	
80	14.25	362	14.00	355.6	12.500	317.5	12.646	321.22	0.750	19.05	
100	14.25	362	14.00	355.6	12.124	308	12.318	312.86	0.938	23.83	
120	14.25	362	14.00	355.6	11.812	300	12.044	305.93	1.094	27.79	
140	14.25	362	14.00	355.6	11.500	292	12.044	305.93	1.250	31.75	
160	14.25	362	14.00	355.6	11.188	284	11.498	292.07	1.406	35.71	
STD	16.25	413	16.00	406.4	15.250	387.5	15.303	388.68	0.375	9.53	
XS	16.25	413	16.00	406.4	15.000	381	15.084	383.14	0.500	12.70	
40	16.25	413	16.00	406.4	14.688	373	14.811	376.21	0.656	16.66	
60	16.25	413	16.00	406.4	14.312	363.6	14.482	367.84	0.844	21.44	
80	16.25	413	16.00	406.4	13.938	354	14.155	359.53	1.031	26.19	
100	16.25	413	16.00	406.4	13.562	344.5	13.826	351.18	1.219	30.96	
120	16.25	413	16.00	406.4	13.124	333.5	13.442	341.43	1.438	36.53	
140	16.25	413	16.00	406.4	12.812	325.5	13.170	334.50	1.594	40.49	
160	16.25	413	16.00	406.4	12.500	317.5	12.903	329.48	1.750	44.52	
STD	18.25	464	18.00	457.2	17.000	432	17.043	433.94	0.500	12.70	
XS	18.25	464	18.00	457.2	16.876	428.5	16.975	431.19	0.562	14.27	
40	18.25	464	18.00	457.2	16.500	419	16.646	422.82	0.750	19.05	
60	18.25	464	18.00	457.2	16.124	409.5	16.318	414.46	0.938	23.83	
80	18.25	464	18.00	457.2	15.748	400	15.996	404.78	1.156	29.36	
100	18.25	464	18.00	457.2	15.372	390.5	15.553	395.03	1.375	34.93	
120	18.25	464	18.00	457.2	14.996	380.5	15.225	386.77	1.562	39.67	
140	18.25	464	18.00	457.2	14.620	370.5	14.842	376.99	1.750	44.52	
160	18.25	464	18.00	457.2	14.244	360.5	14.458	367.21	1.938	49.26	
STD	20.31	516	20.00	508.0	19.250	489	19.303	490.28	0.375	9.53	
XS	20.31	516	20.00	508.0	19.000	483	19.094	484.74	0.500	12.70	
40	20.31	516	20.00	508.0	18.812	477	18.920	480.55	0.594	15.09	
60	20.31	516	20.00	508.0	18.376	468	18.538	470.88	0.812	20.62	
80	20.31	516	20.00	508.0	17.938	458.5	18.155	461.13	1.031	26.19	
100	20.31	516	20.00	508.0	17.438	443	17.713	450.02	1.250	31.75	
120	20.31	516	20.00	508.0	17.000	432	17.334	440.29	1.500	38.10	
140	20.31	516	20.00	508.0	16.500	419	16.896	429.17	1.750	44.52	
160	20.31	516	20.00	508.0	16.062	408	16.513	419.44	1.969	50.01	
STD	22.34	567	22.00	558.8	21.250	520	21.303	541.08	0.375	9.53	
XS	22.34	567	22.00	558.8	21.000	513	21.094	535.54	0.500	12.70	
40	22.34	567	22.00	558.8	20.750	506	20.846	529.99	0.594	15.09	
60	22.34	567	22.00	558.8	20.250	494	20.428	518.86	0.875	22.23	
80	22.34	567	22.00	558.8	19.996	502	19.996	507.75	1.125	28.58	
100	22.34	567	22.00	558.8	19.250	488.5	19.553	496.65	1.375	34.93	
120	22.34	567	22.00	558.8	18.750	476	19.115	485.52	1.625	41.28	
140	22.34	567	22.00	558.8	18.250	464	18.676	474.41	1.875	47.63	
160	22.34	567	22.00	558.8	17.750	450.5	18.240	463.30	2.215	55.98	

NOTE: 1) Forged or Machined Component Part
a.STD=Standard Wall Thickness.
b.XS=Intensifying Wall Thickness.
c.XXS=Double Intensifying Wall Thickness.

Class 150 and 300 valve which size equal to 12 inch and smaller and 12 inch valves which contract with standard wall pipe(0.375" thick-ness) are regularly machined. Unless have other requirement.
Ord for class 150 and 300 butt-welding valves which size equal to 14 and larger and class 400 and higher valve for all sizes. It should specified the diameter of the pipe that contract with valves. If need backing ring, indicate specification.

Other types of weld and preparation would be furnished of specified.



ASME B16.25-Butt-Welding Ends

1 Nominal Pipe Diameter NPS in.	2 Wall Thickness of Pipe Number	3 Outside Diameter of Welding End Steel Valve		4 Forged ¹⁾		5 Nominal Inside Diameter of Pipe		6 Machined Inside Diameter of Pipe		7 Nominal Wall Thickness	
		A in.	A mm	A ₁ in.	A ₁ mm	B in.	B mm	C in.	C mm	t in.	t mm
24	STD	24.38	619	24.00	609.6	23.250	590.5	23.303	591.88	0.375	9.53
	XS	24.38	619	24.00	609.6	23.000	584	23.094	586.34	0.500	12.70
	40	24.38	619	24.00	609.6	22.750	578	22.846	582.79	0.688	17.48
	60	24.38	619	24.00	609.6	22.062	560.5	22.263	565.49	0.989	24.81
	80	24.38	619	24.00	609.6	21.582	547.5	21.828	554.38	1.219	30.96
	100	24.38	619	24.00	609.6	20.938	532	21.280	540.49	1.531	38.89
	120	24.38	619	24.00	609.6	20.376	517.5	20.788	528.03	1.812	46.02
	140	24.38	619	24.00	609.6	19.876	505	20.350	516.91	2.092	52.37
	160	24.38	619	24.00	609.6	19.312	490.5	19.857	504.37	2.344	59.54
	180	24.38	619	24.00	609.6	18.748	475.5	19.312	492.81	2.596	65.89
	200	24.38	619	24.00	609.6	18.184	460.5	18.767	480.25	2.848	72.14
	220	24.38	619	24.00	609.6	17.620	445.5	18.222	467.69	3.100	78.39
28	STD	28.38	721	28.00	711.2	27.000	686	27.043	687.30	0.312	7.92
	XS	28.38	721	28.00	711.2	26.750	679.5	26.865	682.37	0.500	12.70
	40	28.38	721	28.00	711.2	26.500	673	26.615	676.44	0.688	17.48
	60	28.38	721	28.00	711.2	25.812	655.5	25.233	660.34	0.989	24.81
	80	28.38	721	28.00	711.2	25.332	642.5	24.785	647.23	1.219	30.96
	100	28.38	721	28.00	711.2	24.688	627.5	24.237	632.14	1.531	38.89
	120	28.38	721	28.00	711.2	24.124	612.5	23.690	617.05	1.843	46.82
	140	28.38	721	28.00	711.2	23.560	600	23.143	601.96	2.105	53.17
	160	28.38	721	28.00	711.2	23.000	585	22.596	586.87	2.367	59.52
	180	28.38	721	28.00	711.2	22.436	570.5	22.050	571.78	2.629	65.87
	200	28.38	721	28.00	711.2	21.872	555.5	21.503	556.69	2.891	72.22
	220	28.38	721	28.00	711.2	21.308	540.5	20.957	541.60	3.153	78.57
30	STD	30.38	772	30.00	762.0	29.000	736.5	29.043	737.6	0.312	7.92
	XS	30.38	772	30.00	762.0	28.750	730	28.846	732.07	0.500	12.70
	40	30.38	772	30.00	762.0	28.500	724	28.649	726.54	0.688	17.48
	60	30.38	772	30.00	762.0	27.812	706.5	27.230	711.44	0.989	24.81
	80	30.38	772	30.00	762.0	27.332	693.5	26.783	706.33	1.219	30.96
	100	30.38	772	30.00	762.0	26.688	678.5	26.235	691.24	1.531	38.89
	120	30.38	772	30.00	762.0	26.124	663.5	25.688	676.15	1.843	46.82
	140	30.38	772	30.00	762.0	25.560	648.5	25.141	661.06	2.105	53.17
	160	30.38	772	30.00	762.0	25.000	633.5	24.594	645.97	2.367	59.52
	180	30.38	772	30.00	762.0	24.43					

HOW TO ORDER

Example:

Sample	8	G	P	9	B	05	A	-	B
Code	I	II	III	IV	V	VI	VII	VIII	

I	Valve NPS.	Design Standard
NPS	Nominal Pipe Size	API/ANSI
DN	Nominal Diameter	BS/EN/DIN

II	Valve Type
G	Gate Valve
B	Ball Valve
C	Check Valve
GL	Globe Valve
P	Plug Valve
S	Strainer

III	Special Code ¹⁾	Suitable Valve
R	Reduced Port	
C	Cryogenic	
P	Pressure Seal	
N	Non-Rising Stem	GIC/GL Valve
B	Belows Type	GIGL Valve
A	Adjustment-type Disc	
M	Trunnion Mounted	Globe valve
T	Top Entry	
W	API-Welded	
V	Vertical	Ball Valve
H	Horizontal	
D	Dual-plate, Butterfly Type	Check Valve
S	Single-plate	
Y	Y-type	Strainer

NOTE: 1) More codes can be used simultaneously.

IV	ANSI, Pound Class	PN, Nominal Pressure
0		PN 1.6MPa
1	ANSI Class 150LB	PN 2.0MPa
2	ANSI Class 300LB	PN 2.5MPa
3	ANSI Class 600LB	PN 5.0MPa
4	ANSI Class 900LB	PN 4.0MPa
5	ANSI Class 1500LB	PN 6.3MPa
6	ANSI Class 2500LB	PN 10.0MPa
8	ANSI Class 400LB	PN 15.0MPa
9	ANSI Class 800LB	PN 25.0MPa
15	ANSI Class 1500LB	PN 42.0MPa
25	ANSI Class 2500LB	PN 100.0MPa

STU valve figure numbers is comprised of significant numbers and letters that describe the configurations of valve. When ordering, we recommend you to select figure numbers to make your requirements more distinct. However a detailed description must accompany any special orders.

V	Type of Connection	Stand. Code
F	Raised Face Flange End	RF
L	Flat Face Flange End	FF
R	Ring Joint Flange End	RTJ
B	Butt Welding End	BW
S	Socket Welding End	SW
T	Screwed End, Internal Thread, NPT	SC
W	Water Type	WF

VI	Trim Material	Surface	Seal	Brinell Hardness	Stem Material
01	13Cr	13Cr	13Cr	250 HB min.	13Cr
02	18Cr-8Ni	18Cr-8Ni	18Cr-8Ni	Not Specified	18Cr-8Ni
03	20Cr-20Ni	20Cr-20Ni	20Cr-20Ni	Not Specified	20Cr-20Ni
04	13Cr	13Cr	13Cr	750 HB min.	13Cr
05	HF	HF	HF	350 HB min.	13Cr
06	13Cr	CuNi	250 HB/75 HB min.	13Cr	13Cr
07	13Cr	13Cr	250 HB/750 HB min.	13Cr	13Cr
08	13Cr	HF	250 HB/350 HB min.	13Cr	13Cr
09	NiCu alloy	NiCu alloy	Not Specified	Not Specified	NiCu alloy
10	18Cr-8Ni-Mo	18Cr-8Ni-Mo	18Cr-8Ni-Mo	Not Specified	18Cr-8Ni-Mo
11	NiCu alloy	HF	350 HB min.	Not Specified	NiCu alloy
12	18Cr-8Ni-Mo	HF	350 HB min.	Not Specified	18Cr-8Ni-Mo
13	18Cr-29Ni	18Cr-29Ni	Not Specified	Not Specified	18Cr-29Ni
14	18Cr-29Ni	HF	350 HB min.	Not Specified	18Cr-29Ni
50	A105+ENP ²⁾	Soft Seat ³⁾	Not Specified	Not Specified	13Cr
55	13Cr	Soft Seat ³⁾	Not Specified	Not Specified	13Cr
56	18Cr-8Ni	Soft Seat ³⁾	Not Specified	Not Specified	13Cr
57	18Cr-8Ni	Soft Seat ³⁾	Not Specified	Not Specified	18Cr-8Ni
58	18Cr-8Ni-Mo	Soft Seat ³⁾	Not Specified	Not Specified	13Cr
59	18Cr-8Ni-Mo	Soft Seat ³⁾	Not Specified	Not Specified	18Cr-8Ni-Mo
00 ¹⁾	/	/	/	/	/

NOTES:
1) Soft seat including PTFE, NYLON and PEEK, see part list for details.
2) ENP=Electroless Nickel Plating.
3) Applicable to Strainer.

a. Cr=Chromium; Ni=Nickel; Co=Cobalt; Mo=Molybdenum.
b. HF=Hard Facing using CoCr welding alloy.
c. Other materials can be used upon discussion between buyer and manufacturer.

HOW TO ORDER

SHELL MATERIAL

VII	CODE	ASTM Spec. Grade	Nominal Designation	Service Recommendations	Min. TEMP °F	Min. TEMP °C
A	A216-WCB	Cast Carbon Steel	W.O.G(Water, Oil & Gas) Steam and General Service	-20	-29	800
B	A352-LCB	Cast Carbon Steel	Low Temperature and General Service	-50	-46	650
C	A352-LCC	Cast Carbon Steel	Low Temperature and General Service	-50	-46	650
D	A217-WC6	Chrome-Molybdenum Steel 11/4Cr-1/2Mo	High Temperature, Steam Oil vapour and General Service	-20	-29	1100
E	A217-WC9	Chrome-Molybdenum Steel 21/4Cr-1Mo	High Temperature, Steam Oil vapour and General Service	-20	-29	1100
F	A217-C5	Chrome-Molybdenum Steel 5Cr-1/2Mo	Erosive Oil Refinery Service	-20	-29	1200
G	A217-C12	Chrome-Molybdenum Steel 9Cr-1Mo	Erosive Oil Refinery Service	-20	-29	1200
K	A351-CF8	Cast Stainless Steel 18Cr-10Ni, 304 SS		-20	-29	1100
L	A351-CF8M	Cast Stainless Steel 18Cr-10Ni-2Mo, 316 SS	Composive of extremely high temperature non-comosive services between -450°F(-268°F) and 1200°F(649°F). Above 100°F(540°F) specify carbon content of 0.04% or greater.	-20	-29	1100
M	A351-CF3	Cast Low Carbon Stainless Steel 18Cr-10Ni, 304L SS		-20	-29	800
N	A351-CF3M	Cast Low Carbon Stainless Steel 18Cr-10Ni-2Mo, 316L SS		-20	-29	850
P	A351-CN7M	Cast Stainless Steel 19Cr-29Ni, Alloy-20	Comosion Resistance	-20	-29	800
R	A494 M-35-1	Cast Ni Alloy Steel Monel	Weldable grade, Good resistance to comosion by all common organic acids and salt water. Good resistance to strong oxidation conditions. Good properties at high temperatures, high resistance to formic, phosphoric, sulphurous and sulfuric acids.	-20	-29	750
U	A494 CW-6M	Cast Ni Alloy Steel Hastelloy C	Weldable grade, Good resistance to comosion by all common organic acids and salt water. Good resistance to strong oxidation conditions. Good properties at high temperatures, high resistance to formic, phosphoric, sulphurous and sulfuric acids.	-20	-29	1200
V	A494 CY-40	Cast Ni Alloy Steel Inconel	Very good for high temperature service. Good resistance to strongly comosive media.	-20	-29	1200
FA	A105(N)	Forged Carbon steel	W.O.G(Water, Oil & Gas) Steam and General Service	-40	-40	800
FB	A350-LF2	Forged Carbon steel	W.O.G(Water, Oil & Gas) and General Service	-50	-46	650
FD	A182-F11	Chrome-Molybdenum Steel 11/4Cr-1/2Mo-Si	High Temperature, Steam Oil vapour and General Service	-40	-40	1100
FK	A182-F304	Forged Stainless steel 18Cr-10Ni, 304 SS		-20	-29	1100
FL	A182-F316	Forged Stainless Steel 18Cr-10Ni-2Mo, 316 SS	Comosive or extremely high temperature non-comosive services between -450°F(-268°F) and 1200°F(649°F). Above 100°F(540°F) specify carbon content of 0.04% or greater.	-20	-29	1100
FM	A182-F304L	Forged Low Carbon Stainless Steel 18Cr-10Ni, 304L SS		-20	-29	800
FN	A182-F316L	Forged Low Carbon Stainless Steel 18Cr-10Ni-2Mo, 316L SS		-20	-29	850

NOTE: The soft seal valve maximum working temperature depending upon the seat material.

VIII	Actuator Device
B	Bevel Gear Actuator
W	Worm Gear Actuator
E	General Electric Actuator
EX	Explosion-Proof Electric Actuator
P	Double Pneumatic Actuator
PS	Single Pneumatic Actuator
H	Hydraulic Actuator
PH	Pneumatic-Hydraulic Actuator

NOTES: a. N/A for Handwheel or Lever operated.
b. N/A for Check valve and Strainer.

You reliable business partner