



ASPEN INTERNATIONAL



The quality first user is supreme
The development innovation strives for perfection

PRODUCT EXHIBITION



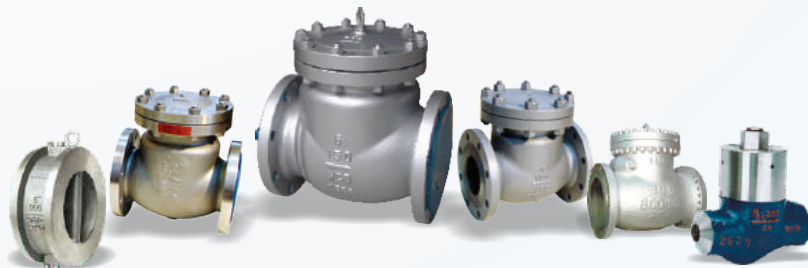
Gate valve series



Globe valve series



Ball valve series



Check valve series



Forged valve series



Stainless steel valve series

Contents

Gate Valve,BB,CS	01
-------------------------	----

Steel Gate Valves

■Class 150Lb	02
■Class 300Lb	03
■Class 600Lb	04
■Class 900Lb	05
■Class 1500Lb	06
■Class 2500Lb	07

Ball Valve,CS,FL	08
-------------------------	----

Steel Ball Balves

Cast steel,floating

■Class 150Lb	09
■Class 300Lb	10
■Class 600Lb	11

Ball Valve CS,TM	12
-------------------------	----

Cast steel,trunnion mounted

■Class 150Lb	13
■Class 300Lb	14
■Class 600Lb	15
■Class 900Lb	16
■Class 1500/2500Lb	17

Ball Valve FS,FL	18
-------------------------	----

Forged steel,floating

■Class 150Lb	19
■Class 300Lb	20
■Class 600Lb	21

Ball Valve FS,TM	22
-------------------------	----

Forged steel,trunnion mounted

■Class 150Lb	23
■Class 300Lb	24
■Class 600Lb	25
■Class 900Lb	26
■Class 1500/2500Lb	27

Swing Check Valve,BC,CS	28
--------------------------------	----

Cast Steel Check Valves

Swing

■Class 150Lb	29
■Class 300Lb	30
■Class 600Lb	31
■Class 900Lb	32
■Class 1500Lb/2500Lb	33

Dual-Plate

■Class 150Lb/300Lb	34
■Class 600Lb/900Lb	35

Globe Valve,BB,CS	36
--------------------------	----

Cast steel golbe valves

■Class 150Lb/300Lb	37
■Class 600Lb/900Lb	38
■Class 1500Lb/2500Lb	39

Cast Steel Plug Valves

■Class 150Lb/300Lb	40
■Class 600Lb/900Lb	41

Cast Steel Y-Strainer

■Class 150Lb/300Lb	42
--------------------	----

API 602 Compact Steel Valves

■Gate valve class 800Lb	43
■Check valve class 800Lb	44
■Globe valve class 800Lb	45

API 603 Corrosion-Resistant Valves

Gate valves

■Class 150Lb	46
■Class 300Lb	47
■Class 600Lb	48

Golbe valve

■Class 150Lb	49
■Class 300Lb	50
■Class 600Lb	51

Swing check valves

■Class 150Lb	52
■Class 300Lb	53
■Class 600Lb	54

Pressure Seal Steel Valves

Gate valves

■Class 900Lb	55
■Class 1500Lb/2500Lb	56

Swing check valves

■Class 900Lb	57
■Class 1500Lb/2500Lb	58

Globe valves

■Class 900Lb	59
■Class 1500Lb/2500Lb	60

Pressure-Temperature Ratings

■Class 150Lb/300Lb	61
■Class 600Lb/900Lb	62
■Class 1500Lb/2500Lb	63

Materials Characteristic	64
---------------------------------	----

Nace Resist Ssc Valves Nace MRO175	65
---	----

International Materials Standards	66
--	----

Flanged Ends

■Class 150Lb/300Lb	67
■Class 600Lb/900Lb	68
■Class 1500Lb/2500Lb	69

Ring-joint Flanged Ends	70
--------------------------------	----

Buttwelding Ends	74
-------------------------	----

Cast Steel Valves	77
Gate Globe & Check Valves	



Gate Valve, BB, CS

Design

ASPEN cast steel gate valves 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 API600&API 6D, British standard BS1414& BS EN 1984 and generally, conform to American Society of Mechanical Engineers standard ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.

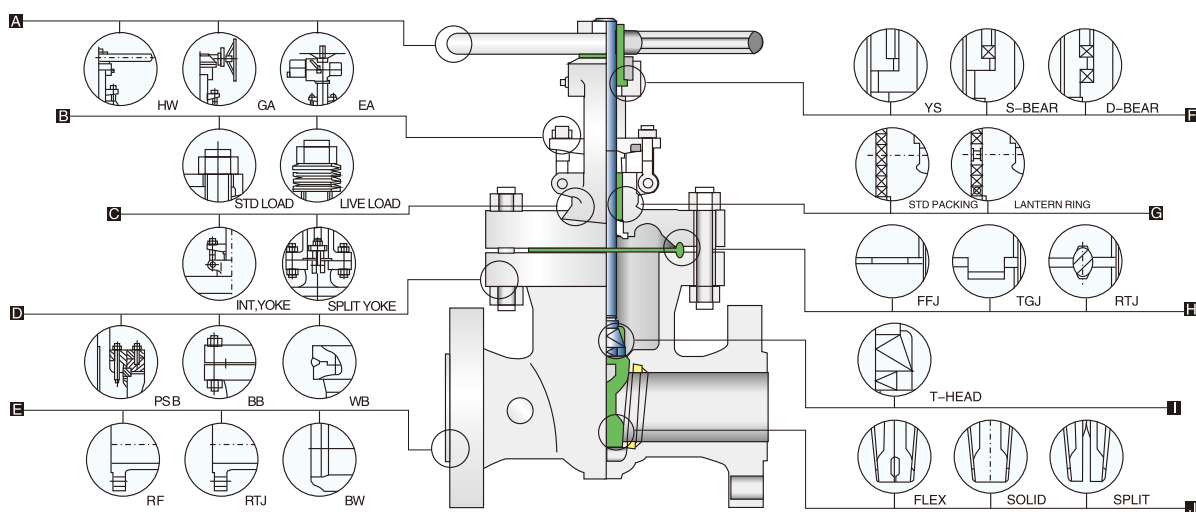
Range of materials

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

Available Modifications For ASPEN Cast Steel Valves

Trim Changes
End Connection Modifications
Packing and Gasket Change
Operator Mounting
Handwheel Extensions

Pressure Equalizing
By-Pass
Customer Specified Coatings
Weld End Bore Changes
Oxygen & Chlorine Clearing & Packaging



A Operating

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

B 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 stunts. Belleville springs are employed to provide constant packing gland stress.

C OS&Y

Outside screw and yoke. Cast steel gate valve yoke integral with bonnet for 150Lb-8" 600Lb-6", 900Lb-4" & small.

D BB

bolted bonnet, welding bonnet and pressure seal bonnet in services requiring frequent cycling or with high pressure/temperature variations.

E End Connections

A choice of flanged, RTJ flanged or butt welding end for piping flexibility.

F Yokesleeve

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.

G Lantern Ring And Double Packing Set

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

H 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 connections in 900lb & higher rated valves.

I 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 possibility of a bent stem jamming the wedge.

J 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.



Cast Steel Gate Valve 150Lb

Applicable standards:

- STEEL GATE VALVES API 600/API 6D
- STEEL GATE VALVES ISO 10434/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

Materials of parts

No	Part Name	Carbon steel	ASTM Material 1 1/4cr-1/2mo	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-F6a	CR-MO-V	A182-F6a
5	Seat ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
6	Stem Backseat	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	Eye Bolt Pin	Carbon steel	A276-420	Carbon steel
14	Eye bolt	Carbon steel	A193-B7	Carbon steel
15	Eye bolt Nut	Carbon steel	A194-2H	Carbon steel
16	Grease Fitting	Brass+Steel		
17	Yoke Sleeve	Aluminum-Bronze		
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.

Design description:

- FULL PORT DESIGN
- OS&Y OUTSIDE SRCREW 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

Dimensions data

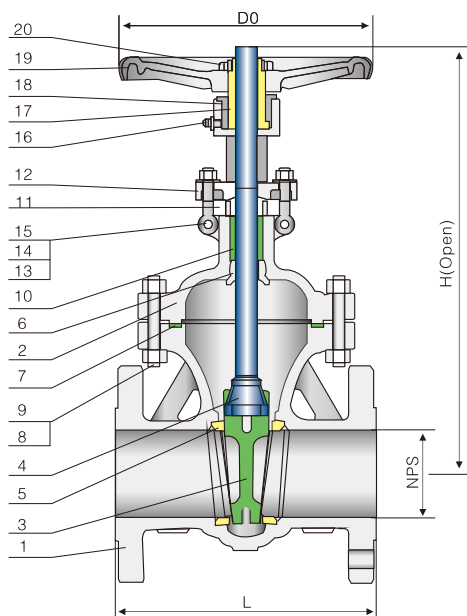
NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	32 800	36 900	in mm
ANSI Class 150Lb																			
L (RF)	7.00 178	7.50 191	8.00 203	9.00 229	10.50 267	11.50 292	13.00 330	14.00 356	15.00 381	16.00 406	17.00 432	18.00 457	20.00 508	22.00 559	24.00 610	24.00 610	28.00 711	28.00 711	in mm
L1 (BW)	85 216	9.50 241	11.12 283	12.00 305	15.88 403	16.50 419	18.00 457	19.75 502	22.50 572	24.00 610	26.00 660	28.00 711	32.00 813	34.00 864	36.00 914	36.00 914	38.00 965	40.00 1016	in mm
H (open)	15.25 386	17.00 434	18.88 480	23.00 584	30.50 765	37.62 956	45.50 1149	53.12 1350	59.38 1508	67.00 1703	74.50 1892	83.50 2119	98.25 2500	110.50 2806	116.50 2960	124.00 3150	129.00 3280	146.50 3720	in mm
Do	8 200	8 200	10 250	12 300	12 300	14 350	16 400	15 450	20 500	22 550	24 600	26 640	29 700	29 720	32 800	32 800	38 950	40 1000	in mm
wt(kg)	18 15	25 18	32 26	50 41	77 69	121 108	178 156	265 248	463 424	463 424	621 587	792 752	1521 1570	1521 1570	1838 1900	2261 3310	2490 2540	3310 3380	RF BW



Cast Steel Gate Valve 300Lb

Applicable Standards:

- STEEL GATE VALVES API 600/API 6D
- STEEL GATE VALVES ISO 10434/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



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 1 ¹ / ₄ Cr-1 ¹ / ₂ Mn	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-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
6	Stem Backseat	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 Fitting	Brass+steel		
17	Yokesleeve	Aluminum-bronze		
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.

Design description:

- FULL PORT DESIGN
- OS&Y OUTSIDE SCREW AND YOKE
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- 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

Dimensions data

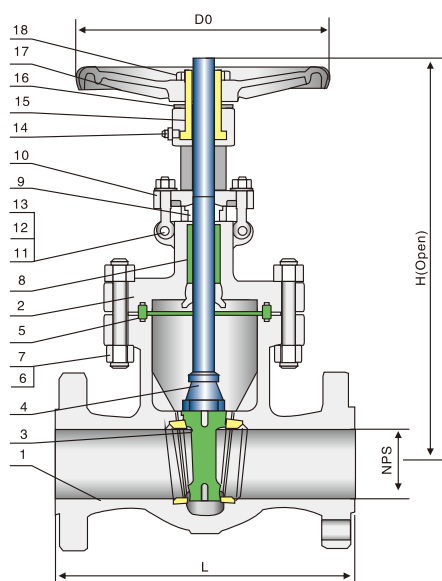
NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	32 800	36 900	in mm
ANSI Class 300Lb																			
L/L1 (RF/BW)	8.50 216	9.50 241	11.12 283	12.00 305	15.88 403	16.50 419	18.00 457	19.75 502	30.00 762	33.00 838	36.00 914	39.00 991	45.00 1143	49.00 1245	53.00 1346	55.00 1397	60.00 1524	68.00 1727	in mm
L2 (RTJ)	9.12 232	10.12 257	11.75 298	12.62 321	16.50 419	17.12 435	18.62 473	20.38 518	30.62 778	33.62 854	36.62 930	39.75 1010	45.88 1165	50.00 1270	54.00 1372	56.00 1422	61.12 1553	69.12 1756	in mm
H (open)	16.12 410	17.88 453	20.00 509	24.00 612	31.75 805	39.38 1000	47.62 1210	55.75 1415	62.25 1580	67.88 1725	77.12 1960	86.38 2195	102.00 2590	117.00 2975	122.00 3100	126.00 3200	130.00 3300	152.00 3860	in mm
Do	8 200	8 200	10 250	12 300	14 350	16 400	18 450	20 500	22 550	22 550	24 600	26 640	29 720	29 720	32 800	32 800	38 950	40 1000	in mm
wt(kg)	23 17	35 26	50 39	71 53	144 113	209 164	322 256	482 390	683 565	950 805	1145 965	1635 1410	2660 2305	3090 2540	3310 2725	3595 3055	3720 3360	3985 3630	RF BW



Cast Steel Gate Valve 600Lb

Applicable Standards:

- STEEL GATE VALVES API 600/API 6D
- STEEL GATE VALVES ISO 10434/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



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 1 ¹ / ₄ Cr-1 ¹ / ₂ Mn	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-F6a	CR-MO-V	A182-F6a
5	Seat ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
6	Stem Backseat	A276-420	A276-304	A276-420
7	Bonnet Gasket	SREITZing	304SS Ring	Steel Ring
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 Fitting		Brass+Steel	
17	Yokesleeve		Aluminum-Bronze	
18	Yokesleeve Jam Nut		Carbon Steel	
19	Handwheel		Malleable Iron	
20	Handwheel Nut		Carbon Steel	

Note: 1) Ductile Ni-resist optional

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- RISING STEM AND NON-RISING HANDWHEEL
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH BG OPERATOR

Dimensions data

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	32 800	36 900	in mm
ANSI Class 600Lb																			
L/L1 (RF/BW)	11.50 292	13.00 330	14.00 356	17.00 432	22.00 559	26.00 660	31.00 787	33.00 838	35.00 889	39.00 991	43.00 1092	47.00 1194	55.00 1397	57.00 1448	61.00 1549	65.00 1651	70.00 1778	82.00 2083	in mm
L2 (RTJ)	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	26.12 664	31.12 791	33.12 841	35.12 892	39.12 994	43.12 1095	47.25 1200	55.38 1407	57.50 1461	61.50 1562	65.50 1664	70.62 1794	82.62 2099	in mm
H (open)	16.50 418	18.75 476	20.38 518	25.50 646	33.00 840	40.38 1025	48.38 1230	57.00 1450	62.00 1575	70.62 1795	76.00 1930	87.00 2210	101.50 2580	105.00 2665	109.50 2780	114.00 2895	124.00 3150	140.00 3560	in mm
Do	8 200	10 250	10 250	12 300	18 450	20 500	24 600	24 600	24 600	24 600	26 640	26 640	29 720	29 720	32 800	32 800	38 950	40 1000	in mm
wt(kg)	36 29	52 42	67 53	112 83	170 125	393 310	610 472	890 730	1245 1055	1530 1240	1965 1625	2450 2030	2995 2590	3475 2855	3725 3065	4045 3440	4185 3780	4480 4085	RF BW



Cast Steel Gate Valve 900Lb

Applicable Standards:

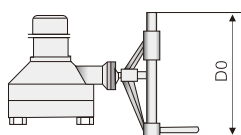
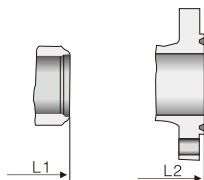
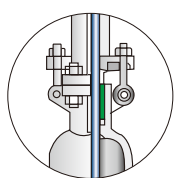
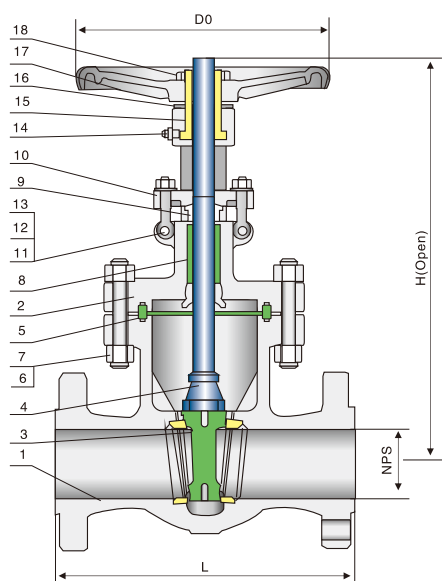
- STEEL GATE VALVES API 600/API 6D
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- STEEL VALVES, ASME B16.34
- FACE TO FACE, ASME B16.10
- END FLANGES, ASME B16.5
- BUTTWELDING ENDS, ASME B16.25
- INSPECTION AND TEST API 598/API 6D

Materials of parts

No	Part Name	Carbon Steel	ASTM Material 1 ¹ / ₄ Cr-1 ¹ / ₂ Mn	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-F6A	CR-MO-V	A182-F6a
5	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
6	Stem Backseat	A276-420	A276-304	A276-420
7	Bonnet Gasket	Steel Ring	304SS Ring	Steel Ring
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 Fitting	Brass+Steel		
17	Yokesleeve	Aluminum-Bronze		
18	Yokesleeve Jam Nut	Carbon Steel		
19	Handwheel	Malleable Iron		
20	Handwheel Nut	Carbon Steel		

Note:1) Ductile Ni-resist optional

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Dimensions data

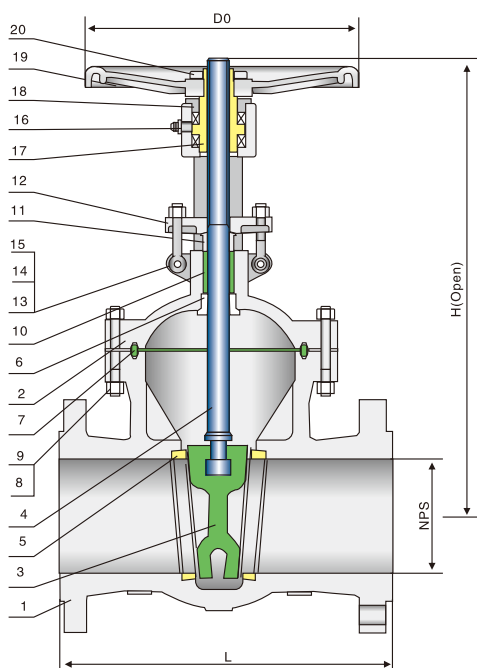
NPS DN	2 50	2 ¹ / ₂ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
ANSI Class 900Lb														
L/L1 (RF/BW)	14.50 368	16.50 419	15.00 381	18.00 457	24.00 610	29.00 737	33.00 838	38.00 965	40.50 1029	44.50 1130	48.00 1219	52.00 1321	61.00 1549	in mm
L2 (RTJ)	14.62 371	16.62 422	15.12 384	18.12 460	24.12 613	29.12 740	33.12 841	38.12 968	40.88 1038	44.88 1140	48.50 1232	52.50 1334	61.75 1568	in mm
H (open)	19.62 498	21.50 547	22.50 573	26.62 678	35.50 900	45.00 1103	53.00 1345	60.00 1525	74.88 1900	81.00 2055	87.00 2215	101.00 2565	104.00 2640	in mm
Do	10 250	10 250	12 300	18 450	20 500	24 600	26 640	29 720	32 800	32 800	38 950	38 950	40 1000	in mm
wt(kg)	74 54	131 105	101 78	172 135	335 260	640 515	1100 920	1600 1380	2250 2010	2850 2565	3060 3485	3935 3250	49.00 4065	RF BW



Cast Steel Gate Valve 1500Lb

Applicable Standards:

- STEEL GATE VALVES API 600/API 6D
- STEEL GATE VALVES ISO 10434/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



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 1 ¹ / ₄ cr- ¹ / ₂ mo	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-F6A	CR-MO-V	A182-F6a
5	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
6	Stem Backseat	A276-420	A276-304	A276-420
7	Bonnet Gasket	Steel Ring	304SS Ring	Steel Ring
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 Fitting	Brass+Steel		
17	Yokesleeve	Aluminum-Bronze		
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.

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

Dimensions data

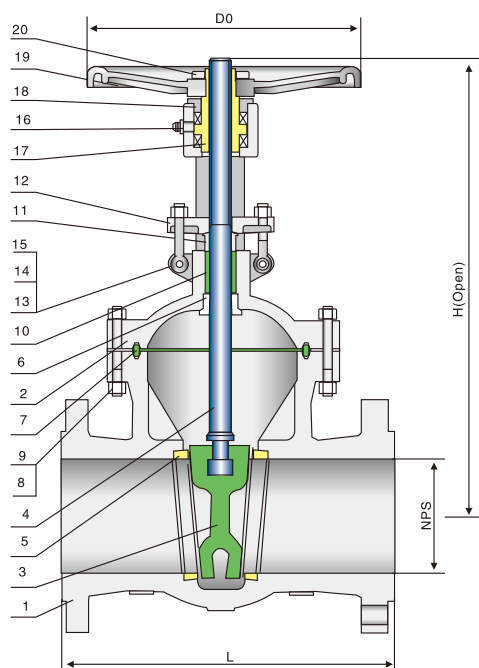
NPS DN	2 50	2 ¹ / ₂ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
ANSI Class 1500Lb														
L/L1 (RF/BW)	14.50 368	16.50 419	18.50 470	21.50 546	27.75 705	32.75 832	39.00 991	44.50 1130	49.50 1257	54.50 1384	60.50 1537	65.50 1664	76.50 1943	in mm
L2 (RTJ)	15.50 371	16.62 422	18.62 473	21.62 549	28.00 711	33.12 841	39.38 1000	45.12 1146	50.25 1276	55.38 1407	61.38 1559	66.38 1686	77.62 1972	in mm
H (open)	24.25 615	26.00 658	30.00 760	34.12 868	39.50 1005	45.00 1145	54.00 1370	61.00 1550	74.88 1900	80.50 2050	93.75 2380	101.50 2580	114.75 2915	in mm
Do	10 250	12 300	18 450	20 500	24 600	18 460	18 460	24 600	24 600	24 600	24 600	24 600	24 600	in mm
wt(kg)	116 105	166 150	209 188	296 265	510 412	920 760	1910 1640	3145 2755	4100 3200	6200 5300	8965 8070	13100 11790	15860 14275	RF BW



Cast Steel Gate Valve 2500Lb

Applicable Standards:

- STEEL GATE VALVES API 600/API 6D
- STEEL GATE VALVES ISO 10434/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



Materials of parts

No	Part Name	Carbon steel	ASTM Material 1 ¹ / ₄ cr-1 ¹ / ₂ mo	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-F6A	CR-MO-V	A182-F6a
5	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
6	Stem Backseat	A276-420	A276-304	A276-420
7	Bonnet Gasket	Steel Ring	304SS Ring	Steel Ring
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 Fitting	Brass+Steel		
17	Yokesleeve	Aluminum-Bronze		
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.

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

Dimensions data

NPS DN	2 50	2 ¹ / ₂ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
ANSI Class 2500Lb														
L/L1 (RF/BW)	17.75 451	20.00 508	22.75 578	26.50 673	36.00 914	40.25 1022	50.00 1270	56.00 1422	-	-	-	-	-	in mm
L2 (RTJ)	17.88 454	20.50 514	23.00 584	26.88 683	36.50 927	40.88 1038	50.88 1292	56.88 1445	-	-	-	-	-	in mm
H (open)	24.88 631	29.00 736	35.00 890	41.50 1055	57.00 1450	63.38 1610	81.75 2075	89.75 2280	-	-	-	-	-	in mm
Do	12 300	18 450	20 500	20 500	24 600	24 600	24 600	24 600	-	-	-	-	-	in mm
wt(kg)	155 124	210 160	310 245	580 460	1600 1310	2450 2010	4570 3800	7150 6000	-	-	-	-	-	RF BW



Ball Valve, CS, FL

Design

ASPEN steel ball valves are designed manufactured to provide maximum service life and dependability. All ball valves are full ported and meet the design requirements of American Petroleum Institute Standard API 608&API 6D British standard BS5351 and generally conform to American Society of Mechanical engineers standard ASME B16.34 valves are available in a complete range of body/bonnet materials and trims.

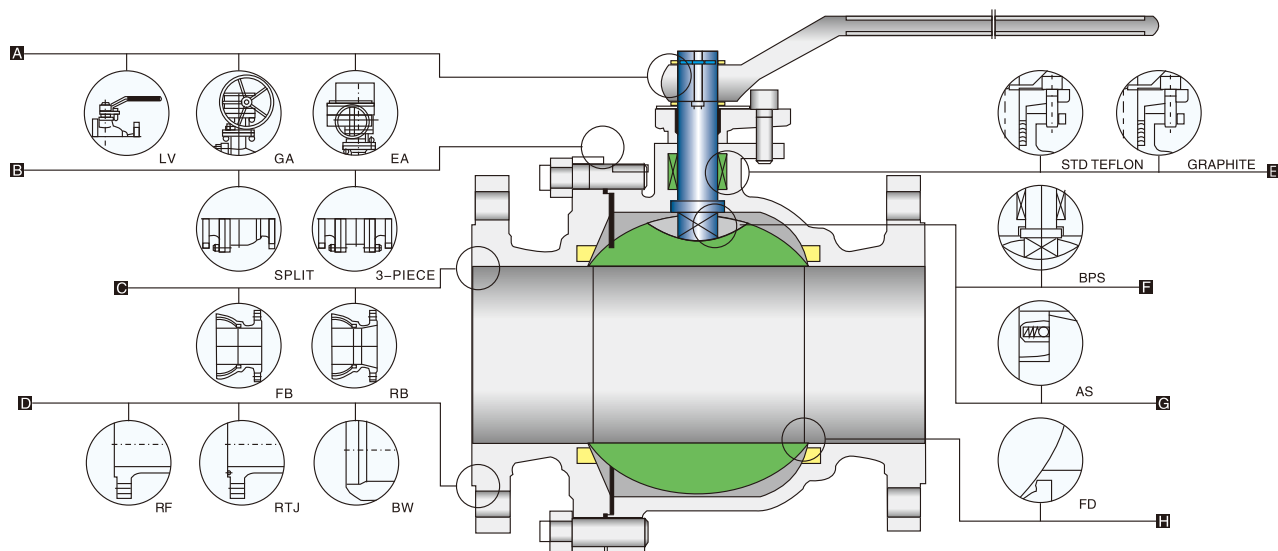
Rang of Materials

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

Available Modifications For ASPEN Cast Steel Valves

Trim changes
End connection modifications
Packing and gasket change
Operator mounting
Handwheel extensions

Pressure equalizing
As or fd
Customer specified coatings
Weld end bore changes
Oxygen&chlorine cleaning&packaging



A Operating

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

B Body&Bonnet

Split or 3-piece, split body& bonnet for 12" & small. disassembles easily for repair components.

C BORE

Full bore or reduced bore . full-bore design provides exceptional flow control.

D End Connections

A choice of flanged RTJ flanged or butt welding end for piping flexibility.

E Packing

Std packing multiple v-teflon packing, combined with live loading, maintains packing compression under high-cycle and severe service applications. Graphite packing is used for high-temperature situation.

F BPS

Blow-out proof stem
A pressure-safe stem shoulder design that protects against failure under excess pressure.

G AS

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

H FS

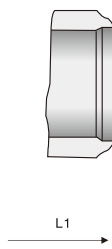
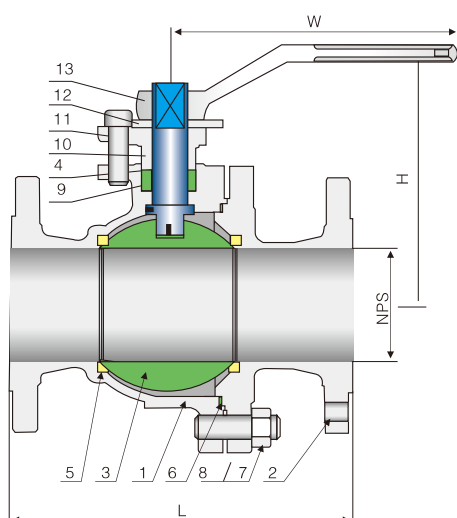
Fire safe designed to API 607 or BS 6755 to grant their operation suitability in case of fire. Secondary metal-to metal seal acts as backup if primary seal is destroyed by fire. Valves ordered for compliance with API 607 will be provided with graphite packing and gaskets.



Floating, Cast Steel Ball Valve 150Lb

Applicable Standards:

- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATIC, API 608
- 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



Materials of Parts

No	Part Name	Carbon steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stern	A276-304	A276-316	A276-304
5	Seat Ring	R, PTFE		
6	Bonnet Gasket	Graphite+304 ²⁾	PTFE	Graphite+304 ²⁾
7	Bonnet stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing	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		

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

Design description

- FULL PORT DESIGN
- BG. BOLTED BONNET. SPLIT BODY
- FLOATING BALL TYPE
- BLOW-OUT PROOF STEM
- FIRE DURABLE CONSTRUCTION
- ANTI STATIC DEVICE
- STOPPER DEVICE
- ISO 5211 MOUNTING PAD
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH WG OPERATOR

Dimensions data

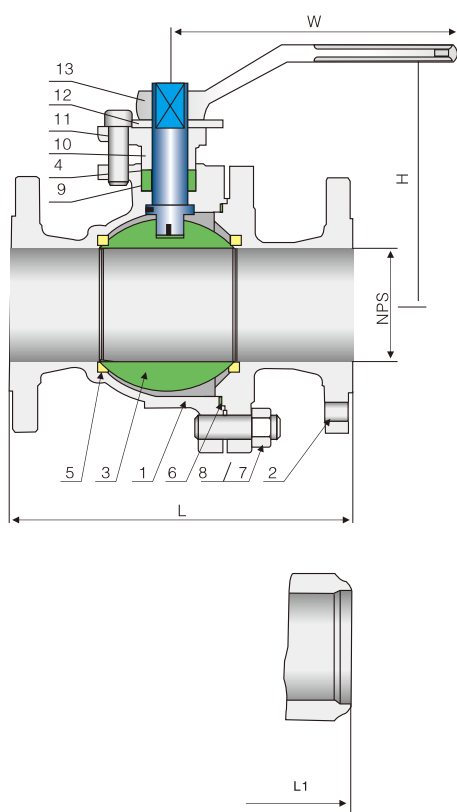
NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
ANSI Class 150Lb													
L (RF)	4.25 108	4.62 117	5.00 127	6.50 165	7.00 178	7.50 190	8.00 203	9.00 229	15.50 394	18.00 457	21.00 533	24.00 610	in mm
L1 (BW)	5.50 140	6.00 152	6.50 165	7.50 190	8.50 216	9.50 241	11.12 283	12.00 305	18.00 457	20.50 521	22.00 559	25.00 635	in mm
H	2.12 55	2.12 55	2.75 70	3.50 90	4.12 105	6.12 155	7.25 185	8.00 205	10.00 255	11.00 280	13.50 345	16.50 420	in mm
W	5 130	5 130	6 160	8 200	14 350	16 400	20 500	20 500	24 600	32 800	32 800	32 800	in mm
wt(kg)	2.3 1.8	3 2.8	4.5 3.7	7 6.2	9.5 8.5	15 14	19 21	33 35	93 98	160 170	200 225	280 295	RF BW



Floating, Cast Steel Ball Valve 300Lb

Applicable Standards:

- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATIC, API 608
- 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



Materials of Parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat Ring	R, PTFE		
6	Bonnet Gasket	Graphite+304 ²⁾	PTFE	Graphite+304 ²⁾
7	Bonnet stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing	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		

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

Design description

- FULL PORT DESIGN
- BG. BOLTED BONNET. SPLIT BODY
- FLOATING BALL TYPE
- BLOW-OUT PROOF STEM
- FIRE DURABLE CONSTRUCTION
- ANTI STATIC DEVICE
- STOPPER DEVICE
- ISO 5211 MOUNTING PAD
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH WG OPERATOR

Dimensions data

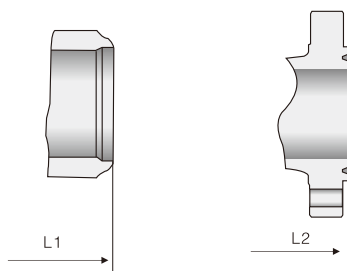
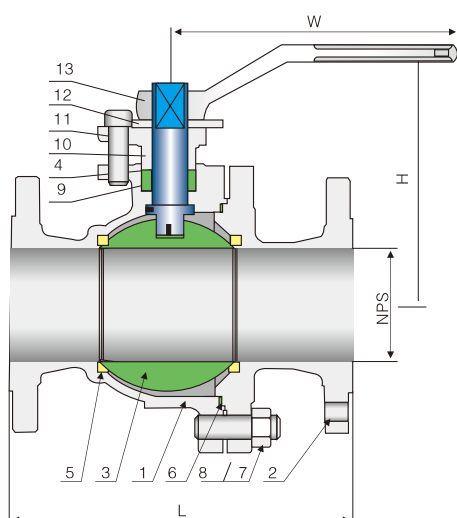
NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
ANSI Class 300Lb													
L (RF)	5.50 140	6.00 152	6.50 165	7.50 190	8.50 216	9.50 241	11.12 283	12.00 305	15.88 403	19.75 502	22.38 568	25.50 648	in mm
L1 (BW)	5.50 140	6.00 152	6.50 165	7.50 190	8.50 216	9.50 241	11.12 283	12.00 305	18.00 457	20.50 521	22.00 559	25.00 635	in mm
H	2.12 55	2.12 55	2.75 70	3.50 90	4.12 105	6.12 153	7.25 187	8.00 206	10.00 255	11.00 280	13.50 345	16.50 420	in mm
W	5 130	5 130	6 160	8 200	14 350	16 400	20 500	20 500	24 600	32 800	32 800	32 800	in mm
wt(kg)	2.5 1.8	3.5 2	5.5 3.2	10.5 5.5	14.5 8.7	23.5 15	30 18	55 36	118 85	200 152	250 182	330 232	RF BW



Floating, Cast Steel Ball Valve 600Lb

Applicable Standards:

- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATIC, API 608
- 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



Materials of Parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stern	A276-304	A276-316	A276-304
5	Seat Ring	R, PTFE		
6	Bonnet Gasket	Graphite+304 ²⁾	PTFE	Graphite+304 ²⁾
7	Bonnet stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing	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		

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

Design description

- FULL PORT DESIGN
- BG. BOLTED BONNET. SPLIT BODY
- FLOATING BALL TYPE
- BLOW-OUT PROOF STEM
- FIRE DURABLE CONSTRUCTION
- ANTI STATIC DEVICE
- STOPPER DEVICE
- ISO 5211 MOUNTING PAD
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH WG OPERATOR

Dimensions data

NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
ANSI Class 600Lb													
L/L1 (RF/BW)	6.50 165	7.50 190	8.50 216	9.50 241	11.50 292	13.00 330	14.00 356	17.00 432	22.00 559	—	—	—	in mm
L2 (RTJ)	—	—	—	—	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	—	—	—	in mm
H	2.38 61.5	2.38 61.5	3.00 78	4.00 101	4.75 120	6.88 174	8.38 212	9.25 234	11.38 289	—	—	—	in mm
W	5 130	6 160	8 200	14 350	16 400	20 500	24 600	24 600	32 800	—	—	—	in mm
wt(kg)	3.3 2.6	4.5 3.1	7.2 4.8	13.5 8	19 3	31 22	39 27	71 53	153 120	—	—	—	RF/RTJ BW



Ball Valve CS, TM

Design

ASPEN steel ball valves are designed manufactured to provide maximum service life and dependability. All ball valves are full ported and meet the design requirements of American Petroleum Institute standard API 608&API 6D British standard BS5351 and generally conform to American society of Mechanical Engineers standard ASME B16.34 valves are available in a complete range of body/bonnet materials and trims.

Rang of Materials

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

Available Modifications For ASPEN Cast Steel Valves

Trim Changes

End Connection Modifications

Packing And Gasket Change

Operator Mounting

Handwheel Extensions

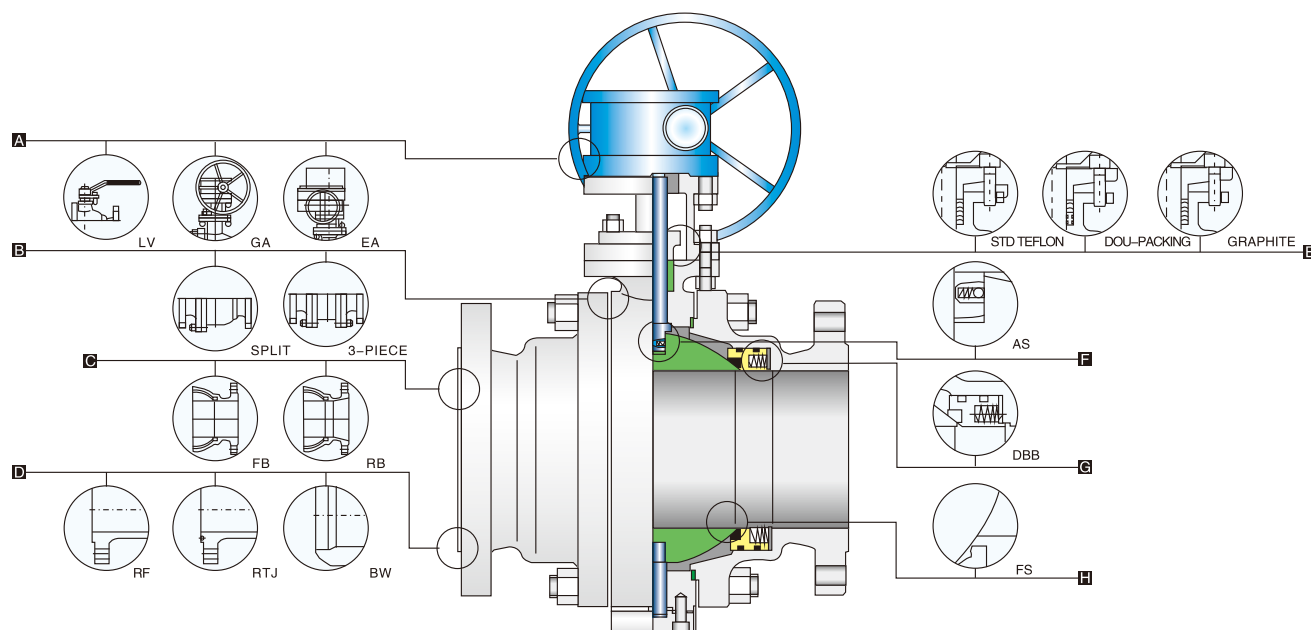
Pressure Equalizing

AS OR FD

Customer Specified Coatings

Weld End Bore Changes

Oxygen & Chlorine Cleaning & Packaging



A Operating

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

B Body&bonnet

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

C BORE

Full bore or reduced bore. Full-bore design provides exceptional flow control.

D End Connections

A choice of flanged RTJ flanged or buttwelding end for piping flexibility.

E Packing

Std packing multiple v-teflon packing, combined with live loading, maintains packing compression under high-cycle and severe service applications. Graphite packing is used for high-temperature situation.

F AS

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

G 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.

H FS

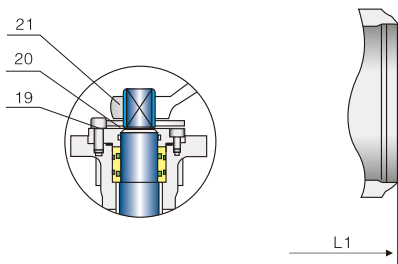
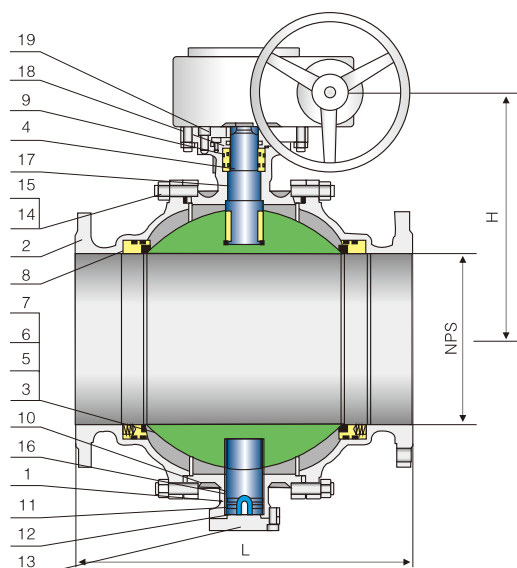
Fire safe designed to API 607 or BS 6755 to grant their operation suitability in case of fire. Secondary metal-to-metal seal acts as backup if primary seal is destroyed by fire. Valves ordered for compliance with API 607 will be provided with graphite packing and gaskets.



Trunnion Mounted, Cast Steel Ball Valve 150Lb

Applicable Standards:

- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATICS, API 608
- 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



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NPR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Lower Cover	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		

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

Design description

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

Dimensions data

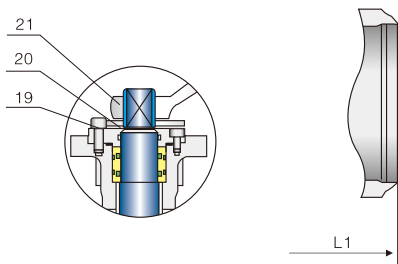
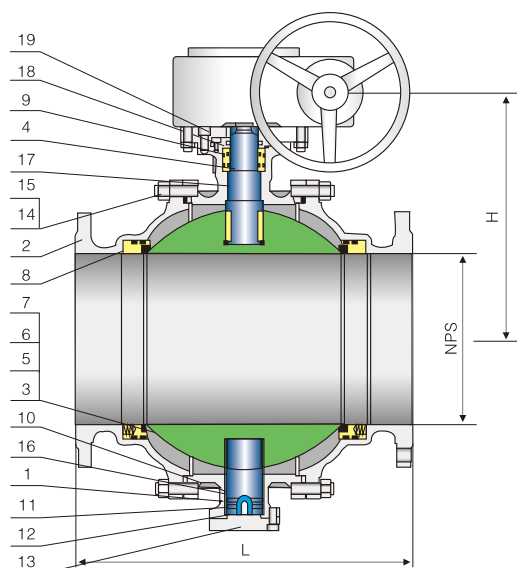
NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	32 800	36 900	in mm
ANSI Class 150Lb																			
L (RF)	7.00 178	7.50 190	8.00 203	9.00 229	15.50 394	18.00 457	21.00 533	24.00 610	27.00 686	30.00 762	34.00 864	36.00 914	42.00 1067	45.00 1143	49.00 1245	51.00 1295	54.00 1372	60.00 1524	in mm
L1 (BW)	8.50 216	9.50 241	11.12 283	12.00 305	18.00 457	20.50 521	22.00 559	25.00 635	30.00 762	33.00 838	36.00 914	39.00 991	45.00 1143	49.00 1245	53.00 1346	55.00 1397	60.00 1524	68.00 1727	in mm
H	7.00 177	7.50 190	8.25 210	9.25 235	20.88 530	24.62 625	25.62 650	30.75 780	31.00 790	36.25 920	38.25 970	43.38 1100	45.25 1150	50.75 1290	55.12 1400	64.12 1630	70.88 1840	80.75 2050	in mm
W	14 350	16 400	20 500	20 500	24 600	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	32 800	32 800	32 800	32 800	32 800	in mm
wt(kg)	15 13.5	19 15.5	27 24.5	38 32.5	81 76	140 132	160 147	205 182	260 241	390 370	510 495	750 726	1200 1125	1400 1250	1860 1640	2100 1930	2530 2390	2970 2760	RF BW



Trunnion Mounted, Cast Steel Ball Valve 300Lb

Applicable Standards:

- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATICS, API 608
- 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



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NPR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Lower Cover	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		

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

Design description

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

Dimensions data

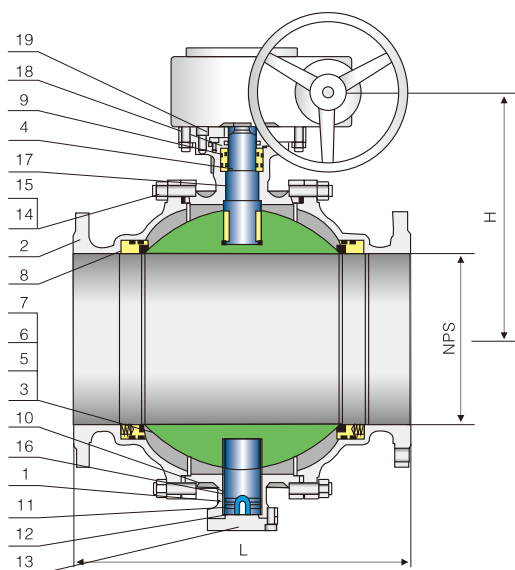
NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	32 800	36 900	in mm
ANSI Class 300Lb																			
L (RF)	8.50 216	9.50 241	11.12 283	12.00 305	15.88 403	19.75 502	22.38 568	25.50 648	30.00 762	33.00 838	36.00 914	39.00 991	45.00 1143	49.00 1245	53.00 1346	55.00 1397	60.00 1524	-	in mm
L1 (BW)	8.50 216	9.50 241	11.12 283	12.00 305	18.00 403	20.50 521	22.00 559	25.00 635	30.00 762	33.00 838	36.00 914	39.00 991	45.00 1143	49.00 1245	53.00 1346	55.00 1397	60.00 1524	-	in mm
H	7.00 177	7.50 190	8.25 210	9.25 235	20.88 530	24.62 625	25.62 650	30.75 780	31.00 790	36.25 920	38.25 970	43.38 1100	45.25 1150	50.75 1290	55.12 1400	64.12 1630	70.88 1800	-	in mm
W	14 350	16 400	20 500	20 500	24 600	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	32 800	32 800	32 800	32 800	-	in mm
wt(kg)	19 14	24 16	34 25	48 34	101 82	175 145	200 155	255 185	325 238	485 375	635 516	935 782	1500 1280	1750 1375	2225 1825	2450 2180	2870 2260	-	RF BW



Trunnion Mounted, Cast Steel Ball Valve 600Lb

Applicable Standards:

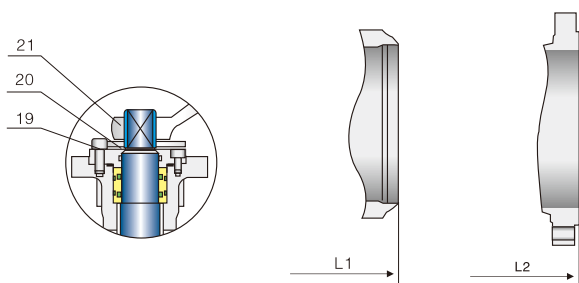
- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATICS, API 608
- STEEL VALVES, ASME B16.34
- FACE TO FACE ASME B16.10
- END FLANGES, ASME B16.5
- BUTTWELDING ENDS ASME B16.25
- INSPECTION AND TEST, API 598/ API 6D



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NPR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Lower Cover	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		

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



Design description

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

Dimensions data

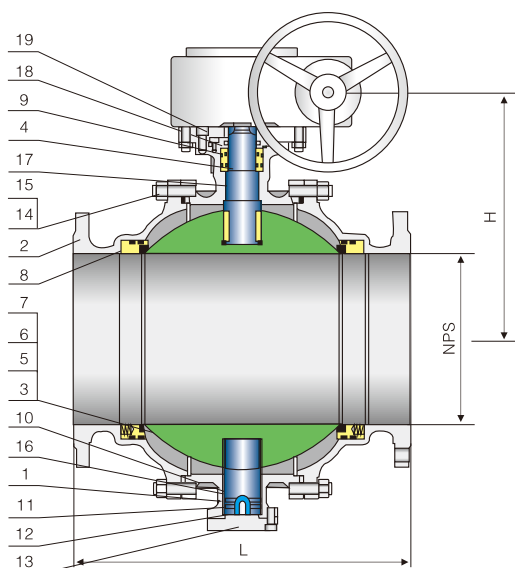
NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	in mm
ANSI Class 600Lb																
L1 (RF/BW)	11.50 292	13.00 330	14.00 356	17.00 432	22.00 559	26.00 660	31.00 787	33.00 838	35.00 889	39.00 991	43.00 1092	47.00 1194	55.00 1397	57.00 1448	61.00 1549	in mm
L2 (RTJ)	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	26.12 664	31.12 791	33.12 841	35.12 892	39.12 994	43.12 1095	47.25 1200	55.38 1407	57.50 1461	61.50 1562	in mm
H	7.12 180	7.62 193	8.50 215	9.50 241	21.25 540	25.00 635	26.12 665	31.12 790	31.88 810	36.38 925	38.75 985	44.50 1130	46.62 1185	52.50 1335	57.00 1450	in mm
W	14 350	16 400	20 500	20 500	24 600	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	32 800	32 800	in mm
wt(kg)	26 19	35 25	58 42	81 51	142 85	287 200	540 395	780 610	1000 805	1300 1010	1700 1350	2100 1656	3400 2775	3800 3125	4500 3790	R F/RTJ BW



Trunnion Mounted, Cast Steel Ball Valve 900Lb

Applicable Standards:

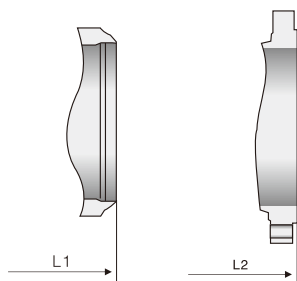
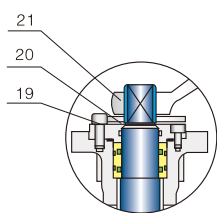
- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATICS, API 608
- STEEL VALVES, ASME B16.34
- FACE TO FACE ASME B16.10
- END FLANGES, ASME B16.5
- BUTTWELDING ENDS ASME B16.25
- INSPECTION AND TEST, API 598/ API 6D



Materials of parts

No	Part Name	Carbon steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NPR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Lower Cover	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		

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



Design description

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

Dimensions data

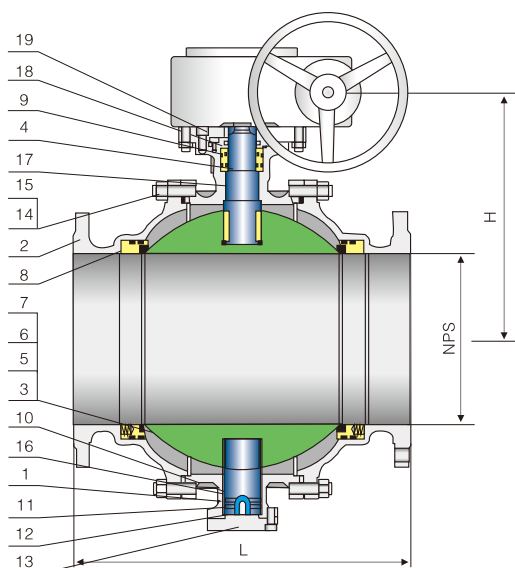
NPS DN	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
ANSI Class 900Lb														
L1 (RF/BW)	14.50 368	16.50 419	15.00 381	18.00 457	24.00 610	29.00 737	33.00 838	38.00 965	40.50 1029	44.50 1130	48.00 1219	52.00 1321	61.00 1549	in mm
L2 (RTJ)	14.62 371	16.62 422	15.12 384	18.12 460	24.12 613	29.12 740	33.12 841	38.12 968	40.88 1038	44.88 1140	48.50 1232	52.50 1334	61.75 1568	in mm
H	8.62 219	9.25 235	10.25 260	15.38 390	25.75 655	30.25 770	31.75 805	38.00 965	38.50 980	45.00 1145	47.00 1195	53.50 1360	56.00 1425	in mm
W	20 500	20 500	20 500	24 600	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	32 800	in mm
wt(kg)	31 23	43 31	68 51	98 61	171 102	345 240	650 480	940 735	1205 965	1565 1215	2050 1625	2535 1995	3950 3335	R F/RTJ BW



Trunnion Mounted, Cast Steel Ball Valve 1500Lb/2500Lb

Applicable Standards:

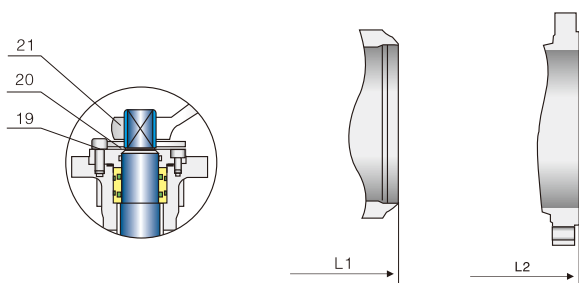
- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATICS, API 608
- STEEL VALVES, ASME B16.34
- FACE TO FACE ASME B16.10
- END FLANGES, ASME B16.5
- BUTTWELDING ENDS ASME B16.25
- INSPECTION AND TEST, API 598/ API 6D



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NPR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Lower Cover	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		

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



Design description

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

Dimensions data

NPS	DN	L/L1 (RF/BW)		L2 (RTJ)		H		W		WT(kg)		L/L1 (RF/BW)		L2 (RTJ)		H		W		WT(kg)			
		ANSI Class1500Lb										ANSI Class2500Lb											
2	50	14.50	368	14.62	371	11.25	285	20	500	49	33	17.75	451	17.88	454	12.00	304	20	500	55	41		
2 1/2	65	16.50	419	16.62	422	12.00	305	20	500	67	44	20.00	508	21.25	540	12.88	327	24	600	76	55		
3	80	18.50	470	18.62	473	13.25	338	24	600	106	73	22.75	578	23.00	584	14.25	362	24	600	120	91		
4	100	21.50	546	21.62	549	20.00	506	24	600	153	87	26.50	673	26.88	683	21.25	540	24	600	173	110		
6	150	27.75	705	28.00	711	33.50	852	24	600	268	145	36.00	914	36.50	927	35.88	911	32	800	302	182		
8	200	32.75	832	33.12	841	39.38	1000	32	800	540	345	40.25	1022	40.88	1038	42.12	1070	32	800	612	430		
10	250	39.00	991	39.38	1000	41.12	1045	32	800	1020	685	50.00	1270	50.88	1292	44.00	1120	32	800	1150	855		
12	300	44.50	1130	45.12	1146	49.38	1255	32	800	1475	1050	56.00	1422	56.88	1445	53.00	1345	32	800	1665	1315		
14	350	49.50	1257	20.25	1276	50.00	1270	32	800	1885	1385	-	-	-	-	-	-	-	-	-	-		
16	400	54.50	1384	44.38	1407	58.50	1485	32	800	2455	1735	-	-	-	-	-	-	-	-	-	-		
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW		



Ball Valve FS, FL

Design

ASPEN steel ball valves are designed and manufactured to provide maximum service life and dependability. All ball valves are full ported and meet the design requirements of American Petroleum Institute standard API 608&API 6D British standard BS5351 and generally conform to American Society of Mechanical Engineers standard ASME B16.34 valves are available in a complete range of body/bonnet materials and trims.

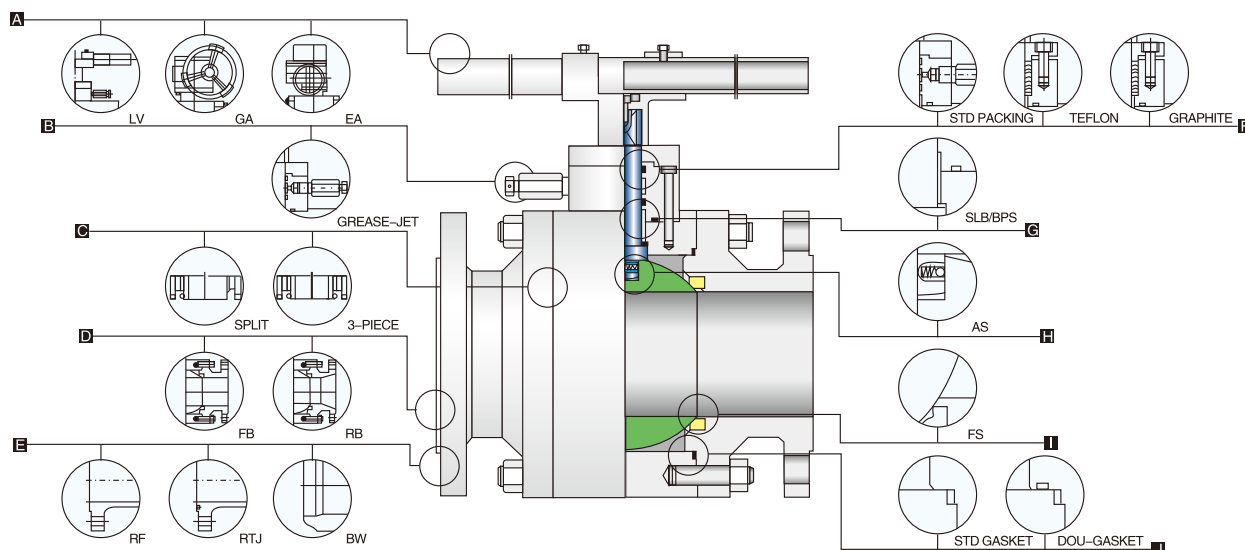
Rang of Materials

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

Available Modifications For ASPEN Cast Steel Valves

Trim changes
End connection modifications
Packing and gasket changes
Operator mounting
Handwheel extensions

Pressure equalizing
AS OR FS
Customer specified coatings
Weld end bore changes
Oxygen & chlorine cleaning & packaging



A Operating

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

B Grease-jet joint

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

C Body&Bonnet

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

D BORE

Full bore or reduced bore . Full-bore design provides exceptional flow control.

E End Connections

A choice of flanged RTJ flanged or butt welding end for piping flexibility.

F Packing

Std packing multiple v-teflon packing, combined with live loading, maintains packing compression under high-cycle and severe service applications. Graphite packing is used for high-temperature situation.

G SLB

Self-lubricating bearing. Easy operation, low torque and longer life

BPS

Blow-out proof stem. A pressure-safe stem. Shoulder design that protects against failure under excess pressure.

H AS

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

I FS

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

J Gasket

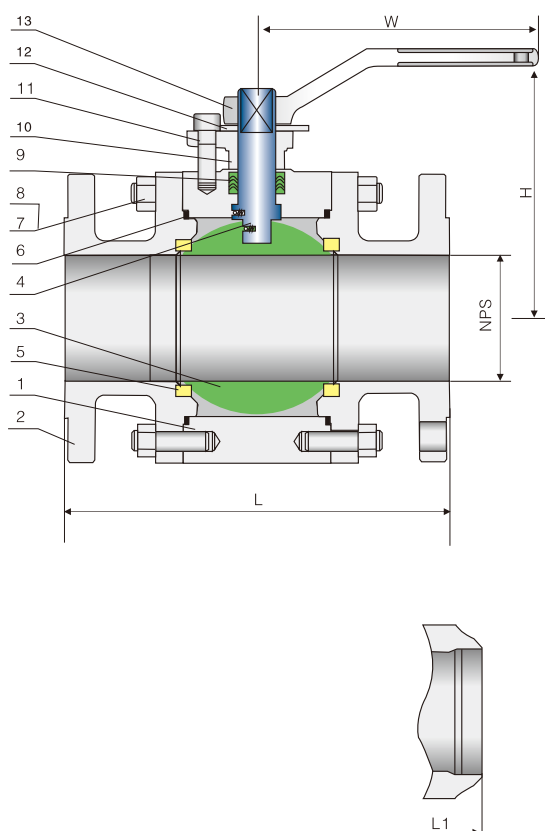
Std gasket or dou-gasket. Std gasket adopt high-performance rubber seal ring. Dou-gasket adopt high-performance rubber seal ring and spiral wound graphite.



Floating, Forged Steel Ball Valve 150Lb

Applicable Standards:

- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATICS, API 608
- 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



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stern	A276-304	A276-316	A276-304
5	Seat Ring	R, PTFE		
6	Bonnet Gasket	Graphite+304 ²⁾	PTFE	Graphite+304 ²⁾
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing	PTFE		
10	Gland Flange	A105	A182-F316	A350-LF2
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle	Carbon Steel		

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

Design description

- FULL PORT DESIGN
- BB. BOLTED BONNET. SPLIT BODY
- FLOATING BALL TYPE
- BLOW-OUT PROOF STEM
- FIRE SAFE CONSTRUCTION
- ANTI STATICS DEVICE
- STOPPER DEVICE
- ISO 5211 MOUNTING PAD
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH WG OPERATOR

Dimensions data

NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
ANSI Class 150Lb													
L (RF)	4.25 108	4.62 117	5.00 127	6.50 165	7.00 178	7.50 190	8.00 203	9.00 229	15.50 394	18.00 457	21.00 533	24.00 610	in mm
L1 (BW)	5.50 140	6.00 152	6.50 165	7.50 190	8.50 216	9.50 241	11.12 283	12.00 305	18.00 457	20.50 521	22.00 559	25.00 635	in mm
H	2.12 55	2.12 55	2.50 65	3.38 85	4.00 100	6.00 150	7.00 180	9.25 235	9.88 250	11.00 280	12.62 320	15.38 390	in mm
W	8 200	8 200	12 300	12 300	166 400	16 400	24 600	24 600	24 600	24 600	32 800	32 800	in mm
wt(kg)	3.1 2.6	4.1 3.9	6 5.2	9.5 8.7	12.8 11.8	20 19	26 28	45 47	126 131	216 226	270 295	378 393	RF BW



Floating, Forged Steel Ball Valve 300Lb

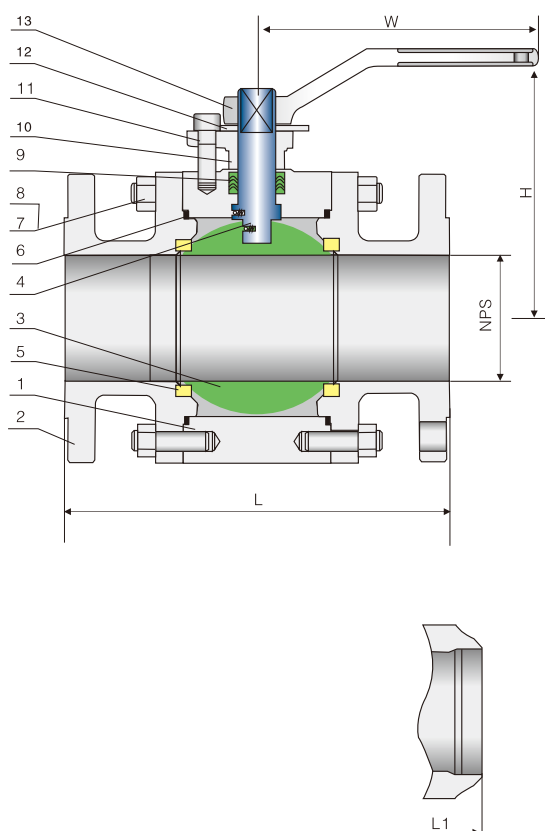
Applicable Standards:

- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATICS, API 608
- 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

Materials of parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stern	A276-304	A276-316	A276-304
5	Seat Ring	R,PTFE		
6	Bonnet Gasket	Graphite+304 ²⁾	PTFE	Graphite+304 ²⁾
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing	PTFE		
10	Gland Flange	A105	A182-F316	A350-LF2
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle	Carbon Steel		

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



Design description

- FULL PORT DESIGN
- BB.BOLTED BONNET.SPLIT BODY
- FLOATING BALL TYPE
- BLOW-OUT PROOF STEM
- FIRE SAFE CONSTRUCTION
- ANTI STATICS DEVICE
- STOPPER DEVICE
- ISO 5211 MOUNTING PAD
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH WG OPERATOR

Dimensions data

NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
ANSI Class 300Lb													
L (RF)	5.50 140	6.00 152	6.50 165	7.50 190	8.50 216	9.50 241	11.12 283	12.00 305	15.88 403	19.75 502	22.38 568	25.50 648	in mm
L1 (BW)	5.50 140	6.00 152	6.50 165	7.50 190	8.50 216	9.50 241	11.12 283	12.00 305	18.00 457	20.50 521	22.00 559	25.00 635	in mm
H	2.12 55	2.12 55	2.50 65	3.38 85	16.00 400	16.00 400	24.00 600	24.00 600	9.88 250	11.00 280	12.62 320	15.38 390	in mm
W	8 200	8 200	12 300	12 300	10 250	12 300	14 350	19 480	24 600	24 600	32 800	32 800	in mm
wt(kg)	3.5 2.8	4.6 3.1	6.7 4.4	10.5 5.5	14.5 8.7	22 13.5	29 17	50 31	141 108	242 194	302 234	423 325	RF BW



Floating, Forged Steel Ball Valve 600Lb

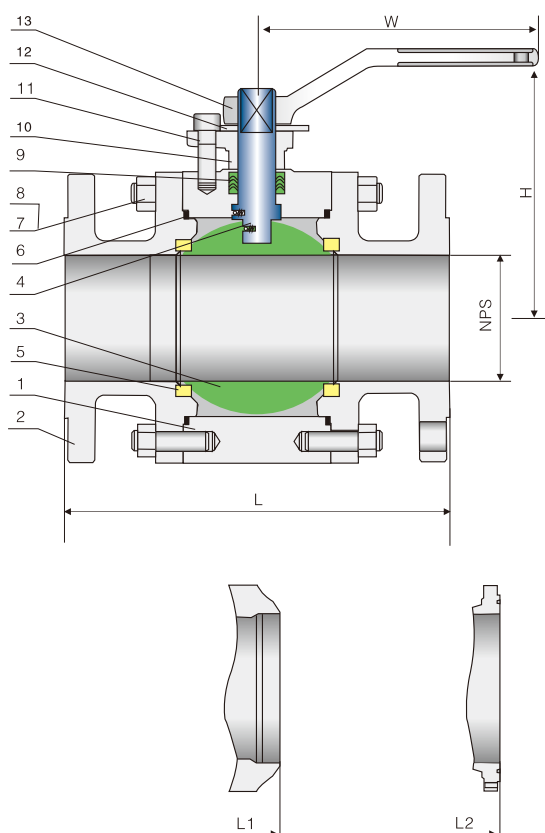
Applicable Standards:

- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATICS, API 608
- 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

Materials of parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stern	A276-304	A276-316	A276-304
5	Seat Ring	R, PTFE		
6	Bonnet Gasket	Graphite+304 ²⁾	PTFE	Graphite+304 ²⁾
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing	PTFE		
10	Gland Flange	A105	A182-F316	A350-LF2
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle	Carbon Steel		

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



Design description

- FULL PORT DESIGN
- BB. BOLTED BONNET. SPLIT BODY
- FLOATING BALL TYPE
- BLOW-OUT PROOF STEM
- FIRE SAFE CONSTRUCTION
- ANTI STATICS DEVICE
- STOPPER DEVICE
- ISO 5211 MOUNTING PAD
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH WG OPERATOR

Dimensions data

NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
ANSI Class 600Lb													
L/L1 (RF/BW)	6.50 165	7.50 190	8.50 216	9.50 241	11.50 292	13.00 330	14.00 356	17.00 432	22.00 559	—	—	—	in mm
L2 (RTJ)	—	—	—	—	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	—	—	—	in mm
H	2.25 58	2.25 58	2.62 68	3.50 89	4.12 105	6.25 158	7.50 190	9.75 247	10.38 262	—	—	—	in mm
W	8 200	12 300	12 300	16 400	16 400	24 600	24 600	24 600	32 800	—	—	—	in mm
wt(kg)	4.5 3.8	5.5 4.1	8 5.6	12.5 7	18 12	27 18	35 23	61 43	172 139	—	—	—	RF BW



Ball Valve FS, TM

Design

ASPEN steel ball valves are designed manufactured to provide maximum service life and dependability. All ball valves are full ported and meet the design requirements of American Petroleum Institute standard API 608&API 6D, British standard BS 5351 and generally conform to American Society of Mechanical Engineers standard ASME B16.34 valves are available in a complete range of body/bonnet materials and trims.

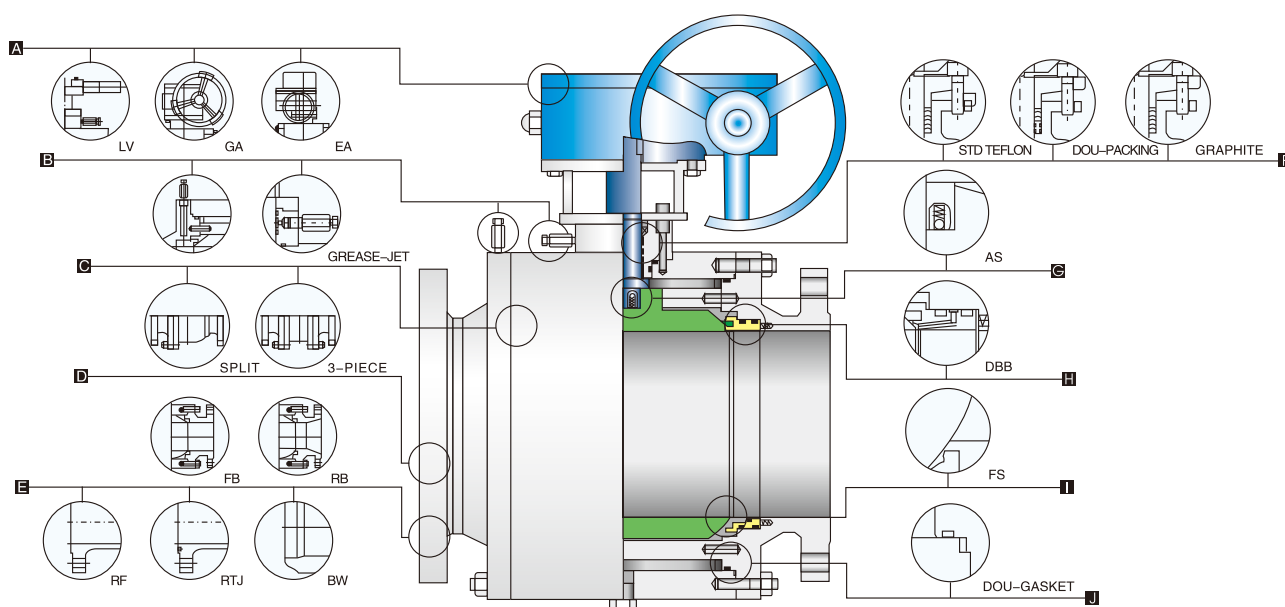
Range of Materials

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

Available Modifications For ASPEN Cast Steel Valves

Trim changes
End connection modifications
Packing and gasket changes
Operator mounting
Handwheel extensions

Pressure equalizing
AS OR FS
Customer specified coatings
Weld end bore changes
Oxygen&chlorine cleaning&packaging



A Operating

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

B Grease-jet joint

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

C Body&Bonnet

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

D BORE

Full bore or reduced bore. Full-bore design provides exceptional flow control.

E End Connections

A choice of flanged RTJ flanged or butt welding end for piping flexibility.

F Packing

Std packing multiple v-teflon packing, combined with live loading, maintains packing compression under high-cycle and severe service applications. Graphite packing is used for high-temperature situation.

G AS

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

H 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 over pressure.

I FS

Fire Safe. Designed to API607 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.

J Gasket

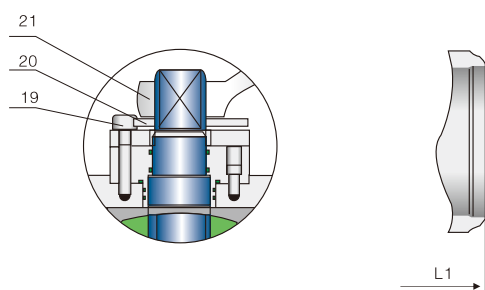
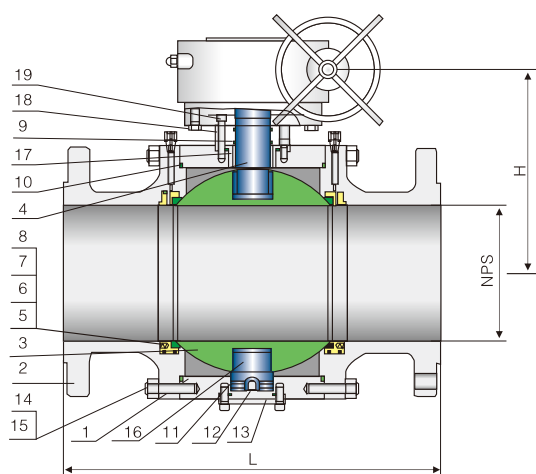
Adopt high-performance rubber seal ring and spiral wound graphite.



Trunnion Mounted, Forged Steel Ball Valve 150Lb

Applicable Standards:

- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATICS, API 608
- 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



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NBR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Lower Cover	A182-F304	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	A105	A182-F316	A350-LF2
19	Gland Bolt	A193-B7	A193-B8	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel		

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

Design description

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

Dimensions data

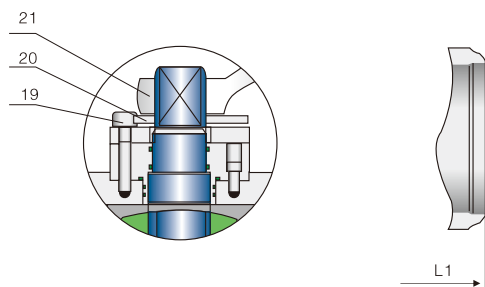
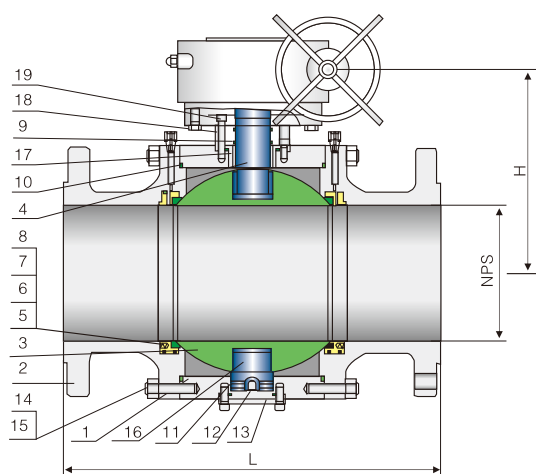
NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	32 800	36 900	in mm
ANSI Class 150Lb																			
L (RF)	7.00 178	7.50 190	8.00 203	9.00 229	15.50 394	18.00 457	21.00 533	24.00 610	27.00 686	30.00 762	34.00 864	36.00 914	42.00 1067	45.00 1143	49.00 1245	51.00 1295	54.00 1372	60.00 1524	in mm
L1 (BW)	8.50 216	9.50 241	11.12 283	12.00 305	18.00 457	20.50 521	22.00 559	25.00 635	30.00 762	33.00 838	36.00 914	39.00 991	45.00 1143	49.00 1245	53.00 1346	55.00 1397	60.00 1524	68.00 1727	in mm
H	4.00 120	6.00 150	7.00 180	9.25 235	9.88 250	11.00 280	12.62 320	15.38 390	16.50 420	21.88 555	23.62 600	25.00 635	28.00 710	29.50 750	31.50 800	34.00 865	36.00 915	38.50 980	in mm
W	16 400	16 400	24 600	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	32 800	32 800	40 1000	40 1000	40 1000	40 1000	40 1000	in mm
wt(kg)	28 25	35 28	55 49	80 71	190 182	290 277	445 553	570 553	780 747	1520 1481	2300 2266	2500 2460	3950 3904	4890 4939	6300 6362	7100 8149	8950 9000	13500 13570	RF BW



Trunnion Mounted, Forged Steel Ball Valve 300Lb

Applicable Standards:

- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATICS, API 608
- 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



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NBR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Lower Cover	A182-F304	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	A105	A182-F316	A350-LF2
19	Gland Bolt	A193-B7	A193-B8	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel		

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

Design description

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

Dimensions data

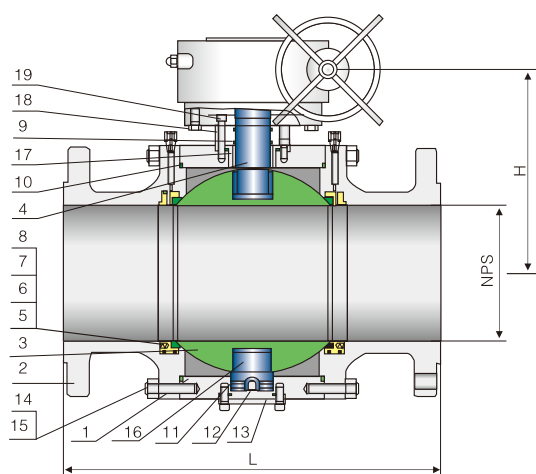
NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	32 800	36 900	in mm
ANSI Class 300Lb																			
L (RF)	8.50 216	9.50 241	11.12 283	12.00 305	15.88 403	19.75 502	22.38 568	25.50 648	30.00 762	33.00 838	36.00 914	39.00 991	45.00 1143	49.00 1245	53.00 1346	55.00 1397	60.00 1524	-	in mm
L1 (BW)	8.50 216	9.50 241	11.12 283	12.00 305	18.00 403	20.50 521	22.00 559	25.00 635	30.00 762	33.00 838	36.00 914	39.00 991	45.00 1143	49.00 1245	53.00 1346	55.00 1397	60.00 1524	-	in mm
H	4.00 120	6.00 150	7.00 180	9.25 235	9.88 250	11.00 280	12.62 320	15.38 390	16.50 420	21.88 555	23.62 600	25.00 635	28.00 710	29.50 750	31.50 800	34.00 865	36.00 915	-	in mm
W	16 400	16 400	24 600	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	32 800	32 800	40 1000	40 1000	40 1000	40 1000	-	in mm
wt(kg)	30 24	40 31	60 49	90 72	200 169	325 280	490 424	690 598	900 872	1810 1665	2620 2440	2860 2635	4430 4075	5430 4880	6810 6225	7655 7115	9590 9230	-	RF BW



Trunnion Mounted, Forged Steel Ball Valve 600Lb

Applicable Standards:

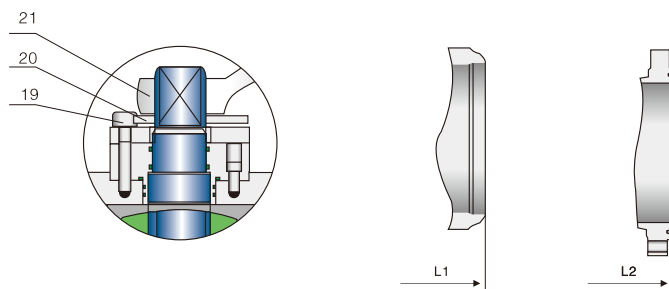
- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATICS, API 608
- STEEL VALVES, ASME B16.34
- FACE TO FACE ASME B16.10
- END FLANGES, ASME B16.5
- BUTTWELDING ENDS ASME B16.25
- INSPECTION AND TEST, API 598/ API 6D



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NBR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Lower Cover	A182-F304	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	A105	A182-F316	A350-LF2
19	Gland Bolt	A193-B7	A193-B8	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel		

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



Design description

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

Dimensions data

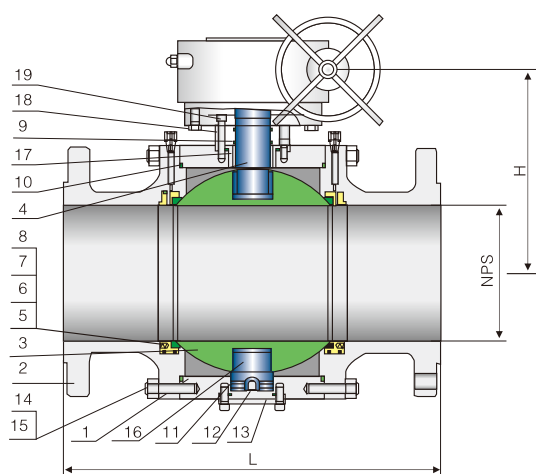
NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	in mm
ANSI Class 600Lb																
L/L1 (RF/BW)	11.50 292	13.00 330	14.00 356	17.00 432	22.00 559	26.00 660	31.00 787	33.00 838	35.00 889	39.00 991	43.00 1092	47.00 1194	55.00 1397	57.00 1448	61.00 1549	in mm
L2 (RTJ)	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	26.12 664	31.12 791	33.12 841	35.12 892	39.12 994	43.12 1095	47.25 1200	55.38 1407	57.50 1461	61.50 1562	in mm
H	6.50 165	7.00 180	7.88 200	11.00 280	12.25 310	14.00 355	16.12 410	18.00 455	19.25 490	21.00 535	24.88 630	25.62 650	30.12 765	31.88 810	34.62 880	in mm
W	16 400	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	32 800	40 1000	40 1000	40 1000	40 1000	40 1000	in mm
wt(kg)	34 27	53 43	65 49	125 95	245 188	505 418	640 495	910 740	1380 1185	2250 1960	3400 3050	3850 3406	4900 4275	6700 6025	8300 7590	RF BW



Trunnion Mounted, Forged Steel Ball Valve 900Lb

Applicable Standards:

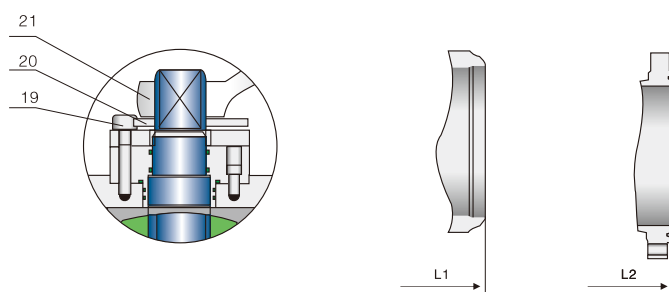
- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATICS, API 608
- STEEL VALVES, ASME B16.34
- FACE TO FACE ASME B16.10
- END FLANGES, ASME B16.5
- BUTTWELDING ENDS ASME B16.25
- INSPECTION AND TEST, API 598/ API 6D



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NBR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Lower Cover	A182-F304	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	A105	A182-F316	A350-LF2
19	Gland Bolt	A193-B7	A193-B8	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel		

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



Design description

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

Dimensions data

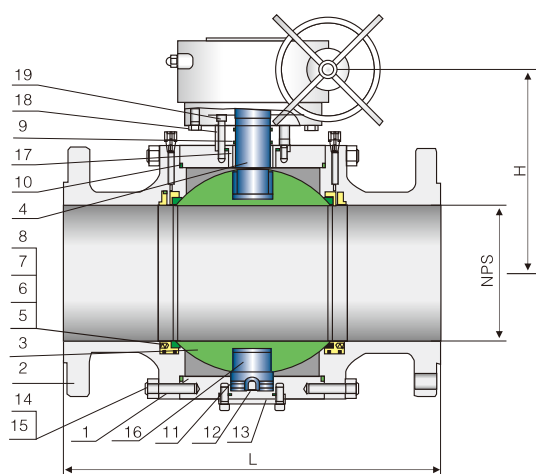
NPS DN	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
ANSI Class 900Lb														
L/L1 (RF/BW)	14.50 368	16.50 419	15.00 381	18.00 457	24.00 610	29.00 737	33.00 965	38.00 965	40.50 1029	44.50 1130	48.00 1219	52.00 1321	61.00 1549	in mm
L2 (RTJ)	14.62 371	16.62 422	15.12 384	18.12 460	24.12 613	29.12 740	38.12 968	38.12 968	40.88 1038	44.88 1140	48.50 1232	52.50 1334	61.75 1568	in mm
H	6.72 170	7.50 190	8.25 210	11.38 290	12.62 320	15.38 390	18.50 470	18.50 470	20.88 530	24.00 610	26.00 660	27.50 700	30.75 780	in mm
W	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 500	32 800	40 1000	40 1000	40 1000	40 1000	in mm
wt(kg)	45 37	65 53	73 56	135 98	360 291	650 545	1350 1145	1350 1145	1890 1650	3100 2750	4300 3875	4950 4410	7100 6485	RF/RTJ BW



Trunnion Mounted, Forged Steel Ball Valve 1500/2500Lb

Applicable Standards:

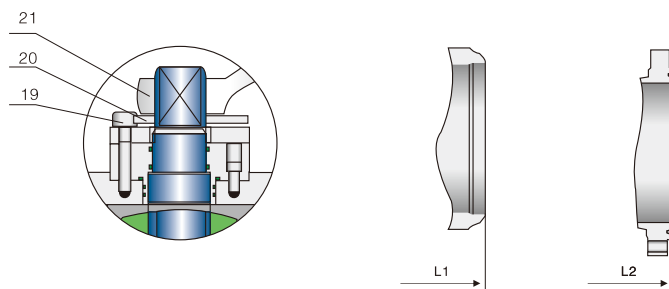
- STEEL BALL VALVES API 608/API 6D
- STEEL BALL VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATICS, API 608
- STEEL VALVES, ASME B16.34
- FACE TO FACE ASME B16.10
- END FLANGES, ASME B16.5
- BUTTWELDING ENDS ASME B16.25
- INSPECTION AND TEST, API 598/ API 6D



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NBR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Lower Cover	A182-F304	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	A105	A182-F316	A350-LF2
19	Gland Bolt	A193-B7	A193-B8	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel		

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



Design description

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

Dimensions data

NPS	DN	L/L1 (RF/BW)		L2 (RTJ)		H		W		WT(kg)		L/L1 (RF/BW)		L2 (RTJ)		H		W		WT(kg)	
		ANSI Class1500Lb										ANSI Class2500Lb									
2	50	14.50	368	14.62	371	6.75	170	24	600	55	40	17.75	451	17.88	454	7.50	190	24	600	68	57
2½	65	16.50	419	16.62	422	7.50	190	24	600	75	55	20.00	508	21.25	540	9.00	230	32	800	95	74
3	80	18.50	470	18.62	473	5.25	210	32	800	95	65	22.75	578	23.00	584	11.00	280	32	800	120	91
4	100	21.50	546	21.62	549	11.38	290	32	800	150	115	26.50	673	26.88	683	14.12	360	32	800	185	122
6	150	27.75	705	28.00	711	13.00	330	32	800	540	420	36.00	914	36.50	927	15.75	400	32	800	675	555
8	200	32.75	832	33.12	841	15.75	400	32	800	880	685	40.25	1022	40.88	1038	18.88	480	40	1000	1100	918
10	250	39.00	991	39.38	1000	17.38	440	32	800	1360	1025	50.00	1270	50.88	1292	20.50	520	40	1000	1650	1355
12	300	44.50	1130	45.12	1146	22.00	560	40	1000	1980	1555	56.00	1422	56.88	1445	26.38	670	40	1000	2300	1950
14	350	49.50	1257	50.25	1276	25.25	640	40	1000	3100	2600	-	-	-	-	-	-	-	-	-	-
16	400	54.50	1384	55.38	1407	27.12	690	40	1000	4650	3930	-	-	-	-	-	-	-	-	-	-
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	bw	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW



Swing Check Valve, BB, CS

Design

ASPEN cast steel check valves are designed and manufactured to provide maximum service life and dependability. All check valves meet the design requirements of American Petroleum Institute standard API600 & 6D, BS EN 13709 and generally conform to American Society of Mechanical Engineers standard ASME B16.34. Valves are available in a complete range of body/cover materials and trims.

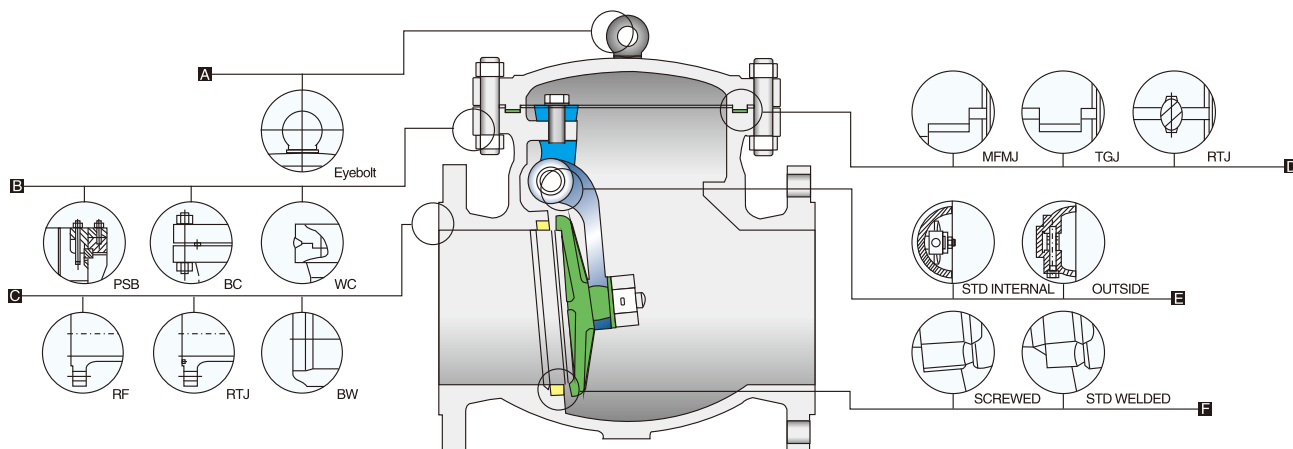
Range of Materials

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

Available Modifications For ASPEN Cast Steel Valves

Trim changes
End connection modifications
Packing and gasket changes
Operator mounting
Handwheel extensions

Pressure equalizing
Customer specified coatings
Weld end bore changes
Oxygen & chlorine cleaning & packaging



A Eyebolt

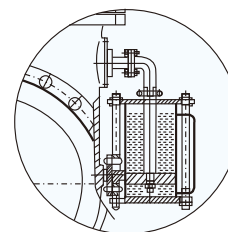
For 150Lb–8", 300Lb–8", 600Lb–6", 900Lb/1500Lb/2500Lb–4" & over.

B BC

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

C End Connections

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



D Body-to-Cover 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 cover connection in 900Lb & higher rated valves.

E 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.

F Seat Rings

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

HCU weighted mechanical accumulator

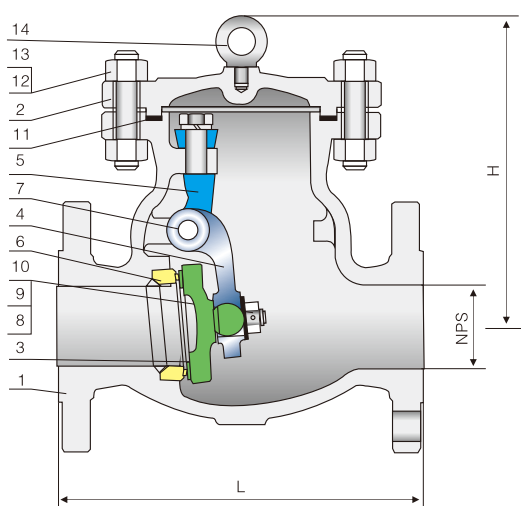
This design can be used to either dampen or assist closing of the check valve disc depending on orientation. by using the hydraulic control unit to buffer action the disc, the valve opens at lower flow rates.



Swing, Cast Steel Check Valve 150Lb

Applicable Standards:

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



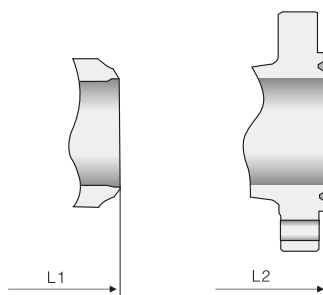
Materials of parts

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

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

2) NPS 6" & larger.

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



Design description

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

Dimensions data

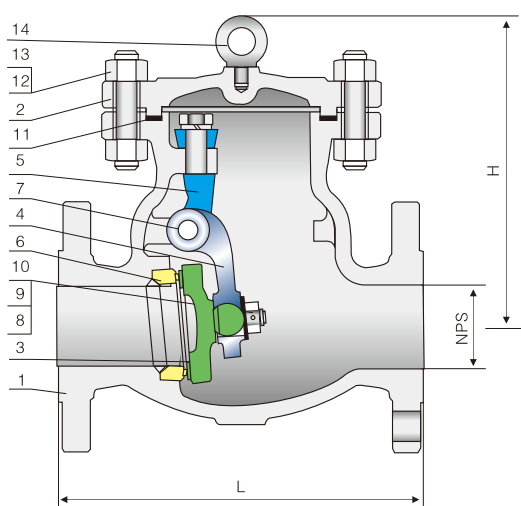
NPS DN	2 50	2 ¹ / ₂ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	36 900	in mm
ANSI Class 150Lb																		
L/L1 (RF/BW)	8.00	8.50	9.50	11.50	14.00	19.50	24.50	27.50	31.00	34.00	38.50	38.50	51.00	51.00	57.00	60.00	77.00	in
	203	216	241	292	356	495	622	699	787	864	978	978	1295	1295	1448	1524	1956	mm
L2 (RTJ)	8.50	9.00	10.00	12.00	14.50	20.00	25.00	28.00	31.50	34.50	39.00	39.00	51.50	-	-	-	-	in
	216	229	254	305	368	508	635	711	800	876	991	991	1308	-	-	-	-	mm
H	6.00	6.50	6.88	8.00	11.50	13.88	15.38	17.00	18.75	20.62	22.88	24.62	34.75	37.00	37.00	38.62	48.00	in
	152	165	175	204	293	353	390	432	475	525	582	627	883	940	940	980	1220	mm
wt(kg)	14	20	25	40	71	118	177	263	353	542	632	855	970	1600	1600	1990	2760	RF/RTJ
	10	12	17	29	57	96	143	227	295	468	552	755	831	1420	1420	1760	2230	BW



Swing, Cast Steel Check Valve 300Lb

Applicable Standards:

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



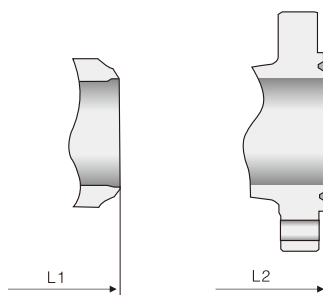
Materials of parts

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

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

2) NPS 6" & larger.

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



Design description

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

Dimensions data

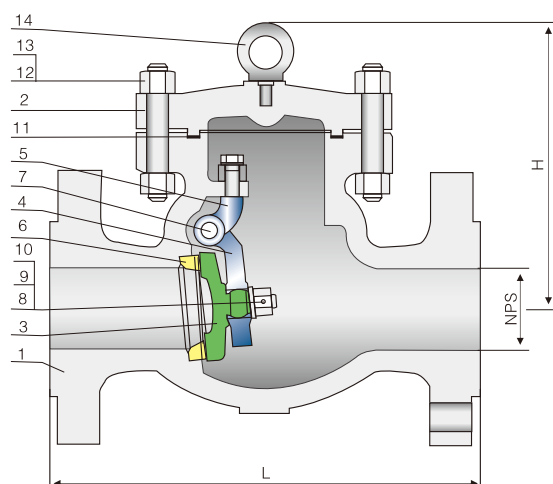
NPS DN	2 50	2 ¹ / ₂ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	36 900	in mm
ANSI Class 300Lb																		
L _{L1} (RF/BW)	10.50 267	11.50 292	12.50 318	14.00 356	17.50 445	21.00 533	24.50 622	28.00 711	33.00 838	34.00 864	38.50 978	40.00 1016	53.00 1346	53.00 1346	59.00 1499	62.75 1594	82.00 2083	in mm
L ₂ (RTJ)	11.12 283	12.12 308	13.12 333	14.62 371	18.12 460	21.62 549	25.12 638	28.62 727	33.62 854	34.62 879	39.12 994	40.75 1035	53.88 1368	54.00 1372	60.00 1524	63.75 1619	— —	in mm
H	6.00 152	6.50 165	6.88 175	8.00 204	11.50 292	13.88 353	15.38 390	17.00 432	18.75 475	20.62 525	22.88 582	24.62 627	34.75 883	35.88 910	37.00 940	38.62 980	48.00 1220	in mm
wt(kg)	16 11	23 13	29 18	46 31	82 61	136 103	204 155	302 245	405 315	625 503	730 593	985 812	1115 895	1465 1205	1840 1525	2290 1895	3180 2395	RF/RTJ BW



Swing, Cast Steel Check Valve 600Lb

Applicable Standards:

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

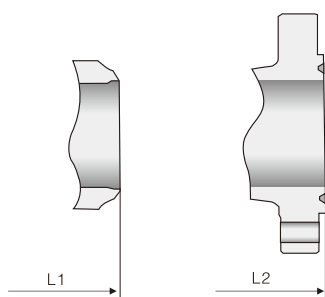


Materials of parts

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

Note: 1) NPS 6" & larger.

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



Design description

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

Dimensions data

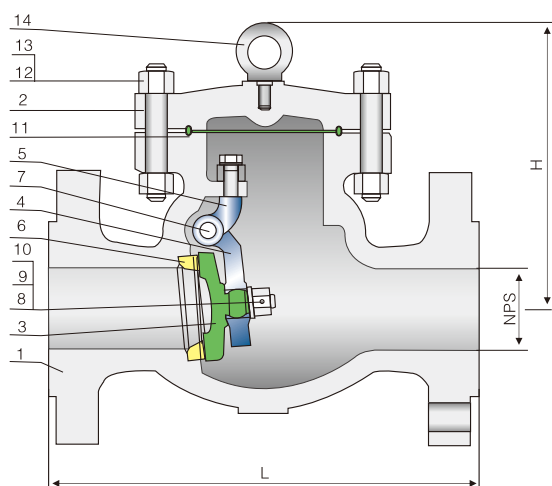
NPS DN	2 50	2 ¹ / ₂ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
ANSI Class 600Lb														
L/L1 (RF/BW)	11.50	13.00	14.00	17.00	22.00	26.00	31.00	33.00	35.00	39.00	43.00	47.00	55.00	in
	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	mm
L2 (RTJ)	11.62	13.12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



Swing, Cast Steel Check Valve 900Lb

Applicable Standards:

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

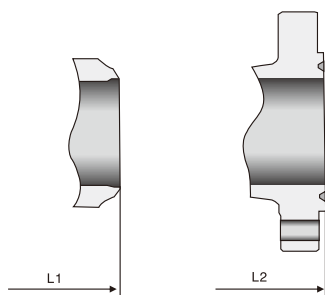


Materials of parts

No	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr-1/2Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Cover	A216-WCB	A217-WC6	A352-LCB
3	Disc ¹⁾	A216-WCB+CR13	A182-F11+HF	A350-LCB+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Fork Part	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	Gasket	Steel Ring	304SS Ring	Steel Ring
12	Stud	A193-B7	A193-B16	A320-L7
13	Stud Nut	A194-2H	A194-7	A194-4
14	Eyebolt ²⁾	Carbon Steel		

Note: 1) NPS 6" & larger.

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



Design description

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

Dimensions data

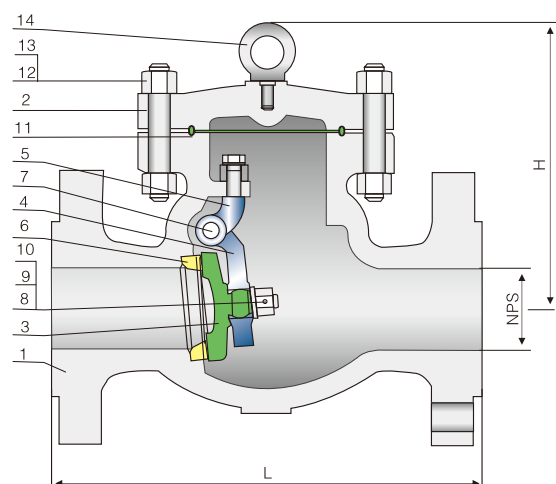
NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
ANSI Class 900Lb														
L/L1 (RF/BW)	14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00	40.50	44.50	48.00	52.00	—	in
	368	419	381	457	610	737	838	965	1029	1130	1219	1321	—	mm
L2 (RTJ)	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12	40.88	44.88	48.50	52.50	—	in
	371	422	384	460	613	740	841	968	1038	1140	1232	1334	—	mm
H	9.50	10.00	11.00	12.50	18.12	22.00	24.00	26.50	29.38	32.00	33.50	38.75	—	in
	240	256	278	320	460	560	610	675	745	815	850	985	—	mm
wt(kg)	37	54	68	109	195	321	481	711	956	1468	1870	2316	—	RF/RTJ
	21	25	34	58	115	194	290	461	597	950	1210	1533	—	BW



Swing, Cast Steel Check Valve 1500/2500Lb

Applicable Standards:

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

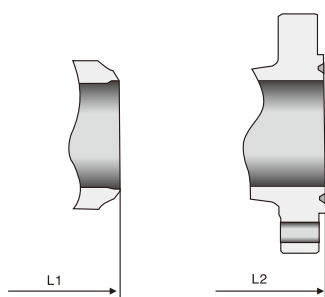


Materials of parts

No	Part Name	ASTM Material		
		Carbon steel	1 ¹ / ₄ Cr-1 ¹ / ₂ Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Cover	A216-WCB	A217-WC6	A352-LCB
3	Disc ¹⁾	A216-WCB+CR13	A182-F11+HF	A350-LCB+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Fork Part	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	Gasket	Steel Ring	304SS Ring	Steel Ring
12	Stud	A193-B7	A193-B16	A320-L7
13	Stud Nut	A194-2H	A194-7	A194-4
14	Eyebolt ²⁾	Carbon Steel		

Note: 1) NPS 6" & larger.

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



Design description

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

Dimensions data

NPS	DN	L/L1 (RF/BW)		L2 (RTJ)		H		WT(kg)		L/L1 (RF/BW)		L2 (RTJ)		H		WT(kg)	
		ANSI Class1500Lb								ANSI Class2500Lb							
2	50	14.50	368	14.62	371	9.50	240	40	29	17.75	451	17.88	454	10.75	275	50	35
2½	65	16.50	419	16.62	422	10.00	256	63	47	20.00	508	20.25	514	13.25	335	76	55
3	80	18.50	470	18.62	473	13.00	330	70	49	22.75	578	23.00	584	13.75	350	85	68
4	100	21.50	546	21.62	549	14.75	375	115	84	26.50	673	26.88	683	15.12	385	165	115
6	150	27.75	705	28.00	711	18.88	480	250	152	36.00	914	36.50	927	19.50	495	460	225
8	200	32.75	832	33.12	841	23.50	595	470	310	40.25	1022	40.88	1038	24.62	625	900	580
10	250	39.00	991	39.38	1000	26.00	660	740	470	50.00	1270	50.88	1292	28.00	712	1300	860
12	300	44.50	1130	45.12	1146	29.12	740	1100	710	56.00	1422	56.88	1445	35.62	905	1800	1150
14	350	49.50	1257	50.25	1276	30.88	785	1410	910	—	—	—	—	—	—	—	—
16	400	54.50	1384	55.38	1407	32.88	835	1600	1100	—	—	—	—	—	—	—	—
in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW	in	mm	in	mm	in	mm	mm	mm



Butterfly Dual-plate,Cast Steel Check Valve 150Lb/300Lb

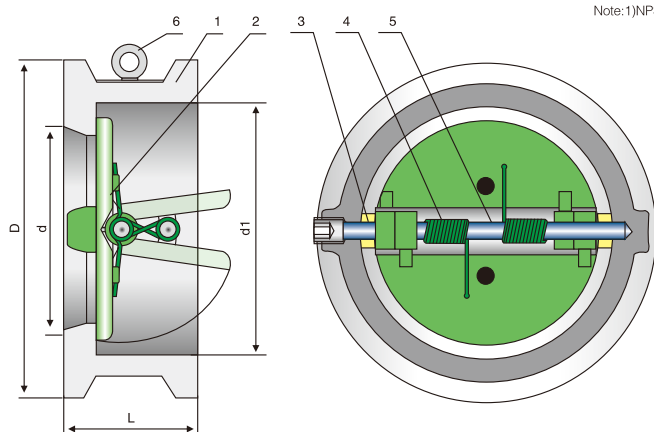
Applicable Standards:

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

Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9NiMo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Plate	A216-WCB+CR13	A351-CF8M+HF	A350-LCB+CR13
3	Stop Pin	A276-420	A276-304	A276-420
4	Back Spring	A313-304	A313-316	A313-304
5	Hinge Pin	A276-420	A276-304	A276-420
6	Eyebolt ⁽²⁾	Carbon Steel		

Note: 1) NPS 8" & larger.



Design description

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

Dimensions data

NPS DN	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
ANSI Class 150Lb														
L	2.38 60	2.62 67	2.88 73	2.88 73	3.88 98	5.00 127	5.75 146	7.12 181	7.25 184	7.50 191	8.00 203	8.62 219	8.75 222	in mm
D	4.00 103	4.88 122	5.38 135	6.75 173	8.62 220	10.88 277	13.25 337	16.00 407	17.62 448	20.12 512	21.50 547	23.75 604	28.12 715	in mm
d	2.00 51	2.50 65	3.25 80	4.00 102	6.00 152	8.00 203	10.00 254	12.00 305	13.75 350	15.75 400	17.75 450	19.75 500	23.62 600	in mm
D1	2.25 56	2.88 73	3.50 88	4.25 108	6.25 160	8.25 210	10.50 266	12.12 310	14.00 355	16.00 405	18.00 455	19.88 505	23.75 605	in mm
WT	2	3	4	6	13	25	39	54	80	117	138	163	331	kg
ANSI Class 300Lb														
L	2.38 60	2.62 67	2.88 73	2.88 73	3.88 98	5.00 127	5.75 146	7.12 181	8.75 222	9.12 232	10.38 264	11.50 292	12.50 318	in mm
D	4.25 110	5.00 128	5.75 147	7.00 179	9.88 249	12.00 305	14.12 359	16.50 420	19.00 483	21.12 537	23.38 594	25.62 652	30.38 772	in mm
d	2.00 51	2.50 65	3.00 80	4.00 102	6.00 152	8.00 203	10.00 254	12.00 305	14.00 350	16.00 400	18.00 450	20.00 500	24.00 600	in mm
D1	2.25 58	2.88 73	3.50 88	4.25 108	6.38 160	8.25 210	10.50 266	12.25 310	14.00 355	16.00 405	18.00 455	20.00 505	24.00 608	in mm
WT	3	4	6	8	18	31	51	77	117	190	200	265	410	kg



Butterfly Dual-Plate,Cast Steel Check Valve 600Lb/900Lb

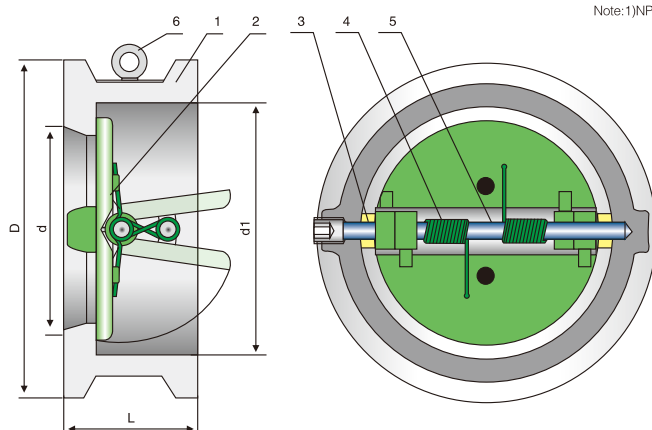
Applicable Standards:

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

Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9NiMo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Plate	A216-WCB+CR13	A351-CF8M+HF	A350-LCB+CR13
3	Stop Pin	A276-420	A276-304	A276-420
4	Back Spring	A313-304	A313-316	A313-304
5	Hinge Pin	A276-420	A276-304	A276-420
6	Eyebolt ²⁾	Carbon Steel		

Note: 1) NPS 8" & larger.



Design description

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

Dimensions data

NPS	DN																				
		L	D	d	d1	WT	L	D	d	d1	WT	L	D	d	d1	WT	L	D	d	d1	WT
		ANSI Class600Lb									ANSI Class900Lb										
2	50	2.38	60	4.38	110	2.00	51	2.25	58	4	2.75	70	5.50	140	2.00	51	2.25	58	8		
2 1/2	65	2.62	67	5.00	128	2.50	65	2.88	73	5	3.25	83	6.38	162	2.50	65	2.88	73	11		
3	80	2.88	73	5.75	147	3.00	80	3.50	88	8	3.25	83	6.50	165	3.00	80	3.50	88	14		
4	100	3.12	79	7.50	191	4.00	102	4.25	108	11	4.00	102	8.00	204	4.00	102	4.25	108	20		
6	150	5.38	137	10.38	264	6.00	152	6.38	162	26	6.25	159	11.25	286	6.00	152	6.38	162	42		
8	200	6.50	165	12.50	318	7.88	200	8.38	212	55	8.12	206	14.00	356	7.88	200	8.38	212	84		
10	250	8.38	213	15.62	398	9.88	250	10.50	266	95	9.50	241	17.00	432	9.88	250	10.50	266	145		
12	300	9.00	229	17.88	455	12.00	305	12.25	312	140	11.50	292	19.50	495	12.00	305	12.25	312	220		
14	350	10.75	273	19.25	490	13.25	337	14.00	355	223	-	-	-	-	-	-	-	-	-		
16	400	12.00	305	22.12	562	15.25	387	15.75	400	360	-	-	-	-	-	-	-	-	-		
in	mm	in	mm	in	mm	in	mm	in	mm	kg	in	mm	in	mm	in	mm	in	mm	kg		



Globe Valve, BB, CS

Design

ASPEN cast steel globe valves are designed and manufactured to provide maximum service life and dependability. All globe valve are full ported and meet the design requirements of American Petroleum Institute standard API600& 6D.BS EN 13709 and generally conform to American Society of Mechanical Engineers standard ASME B16.34 .Valves are available in a complete range of body/bonnet materials and trims.

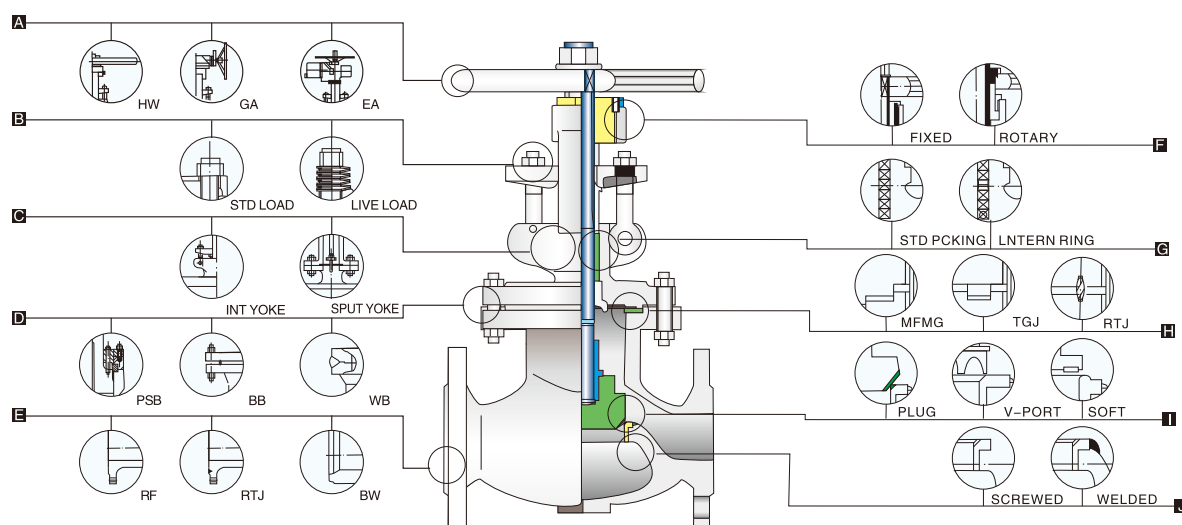
Rang of Materials

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

Available Modifications For ASPEN 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



A Operating

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

B Live Load Packing

In services requiring frequent cycling or with high pressure/temperature variations, live loading extends the service life between maintenance periods packing gland adjustments. Belleville spring are employed to provide constant packing gland stress.

C OS & Y

O outside screw and yoke. Cast steel globe valve yoke integral with bonnet for 10 & smaller.

D BB

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

E End Connections

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

F Yoke sleeve

Furnished in aluminum bronze to reduce operating torque. Most size furnished with ball bearing yoke sleeves.

G Lantern Ring And Double Packing Set

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

H 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.

I Disc

Plug disc is stem guided on all size. Disc has a differential angle front the seat to provide a line contact for maximum sealing. The bottom of v-port disc is guided by the body seat ring for maximum disc stability in throttling applications, the soft teflon ring is excellent for lower temperature service where tight shut off required.

J Seat Rings

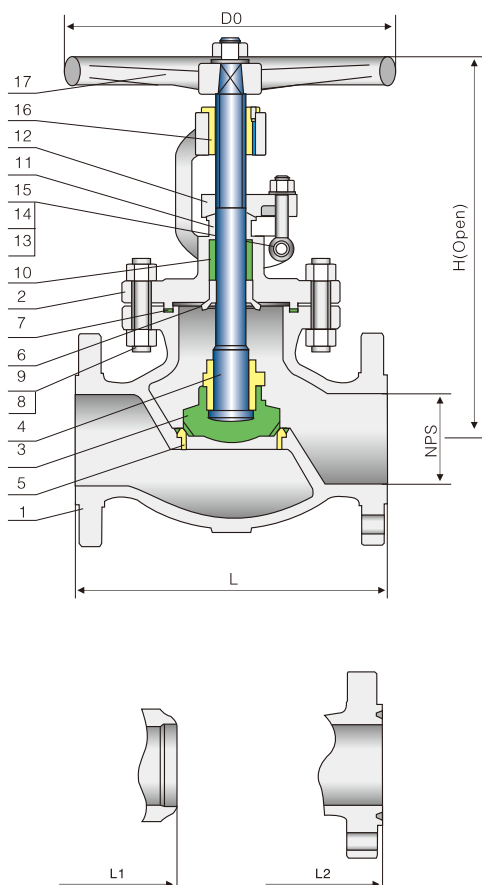
Separate heavy duty, full ported rings for easy maintenance. Screwed or welded connection into body.



Cast Steel Globe Valve 150Lb/300Lb

Applicable Standards:

- STEEL GLOBE VALVES BS EN 13709/API 600
- 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



Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Disc	A105+CR13	A182-F11+HF	A350-LF2+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
6	Stem Backseat	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	Yokesleeve	Aluminum-Bronze ¹⁾		
17	Handwheel	Malleable Iron		

Note: 1)Ductile Ni-resist 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.

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

Dimensions data

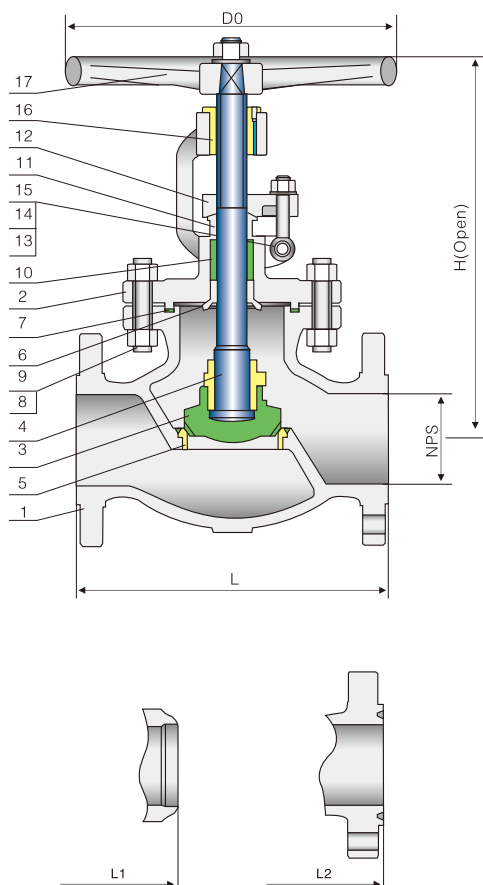
NPS	DN	L/L1 (RF/BW)		L2 (RTJ)		H (open)		D0		WT(kg)		L/L1 (RF/BW)		L2 (RTJ)		H (open)		D0		WT(kg)	
		ANSI Class150Lb										ANSI Class300Lb									
2	50	8.00	203	8.00	203	15.00	380	7	180	18	14	10.50	267	11.12	282	16.75	425	8	200	25	20
2 1/2	65	8.50	216	8.50	216	21.00	535	10	240	30	22	11.50	292	12.12	308	19.00	485	10	240	32	22
3	80	9.50	241	9.50	241	17.50	445	11	280	41	33	12.50	318	13.12	333	19.88	505	11	280	38	27
4	100	11.50	292	11.50	292	20.25	515	11	280	64	43	14.00	356	14.62	371	22.50	570	13	320	56	41
6	150	16.00	406	16.00	406	22.00	560	13	320	86	72	17.50	444	18.12	460	25.25	640	16	400	96	75
8	200	19.50	495	19.50	495	24.25	615	13	320	110	88	22.00	559	22.62	575	33.25	845	18	450	150	117
10	250	24.50	622	24.50	622	32.00	815	16	400	280	245	24.50	622	25.12	638	35.50	900	20	500	360	310
12	300	27.50	698	27.50	698	35.88	910	18	450	380	345	28.00	711	28.62	727	38.62	980	24	600	550	492
14	350	31.00	787	31.00	787	48.38	1230	20	500	510	450	-	-	-	-	-	-	-	-	-	-
16	400	36.00	914	36.00	914	57.00	1450	24	600	740	665	-	-	-	-	-	-	-	-	-	-
in	mm	in	mm	in	mm	in	mm	in	mm	RF	BW	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW



Cast Steel Globe Valve 600Lb/900Lb

Applicable Standards:

- STEEL GLOBE VALVES BS EN 13709/API 600
- 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



Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	1 ¹ / ₄ Cr- ¹ / ₂ Mo	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	A350-LF2+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
6	Stem Backseat	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	Yokesleeve	Aluminum-Bronze ¹⁾		
17	Handwheel	Malleable Iron		

Note: 1)Ductile Ni-resist 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.

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

Dimensions data

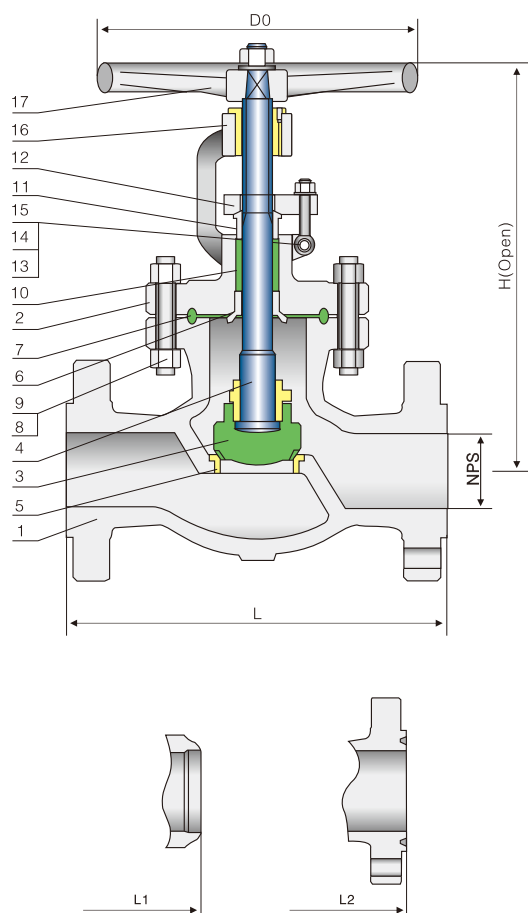
NPS	DN	L/L1 (RF/BW)		L2 (RTJ)		H (open)		D0		WT(kg)		L/L1 (RF/BW)		L2 (RTJ)		H (open)		D0		WT(kg)	
		ANSI Class600Lb										ANSI Class900Lb									
2	50	11.50	292	11.62	295	17.50	445	10	240	35	27	14.50	368	14.62	371	22.00	560	11	280	57	41
2½	65	13.00	330	13.12	333	19.75	502	11	280	50	34	16.50	419	16.62	422	23.25	590	13	320	82	53
3	80	14.00	356	14.12	359	21.00	533	13	320	60	42	15.00	381	15.12	384	25.25	640	16	400	91	58
4	100	17.00	432	17.12	435	24.50	622	16	400	110	84	18.00	457	18.12	460	31.88	810	18	450	168	117
6	150	22.00	559	22.12	562	29.50	750	18	450	230	192	24.00	610	24.12	613	41.38	1050	20	500	365	238
8	200	26.00	660	26.12	663	36.50	927	20	500	410	350	29.00	737	29.12	740	53.50	1360	24	600	665	538
10	250	31.00	787	31.12	790	44.88	1140	24	600	770	680	33.00	838	33.12	841	61.88	1570	24	600	1250	1060
12	300	33.00	838	33.12	841	53.12	1350	24	600	1140	1030	—	—	—	—	—	—	—	—	—	—
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW



Cast Steel Globe Valve 1500Lb/2500Lb

Applicable Standards:

- STEEL GLOBE VALVES BS EN 13709/API 600
- 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



Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	1 ¹ / ₄ Cr-1 ¹ / ₂ Mo	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	A350-LF2+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
6	Stem Backseat	A276-420	A276-304	A276-420
7	Bonnet Gasket	SteelRing	304SS Ring	Steel Ring
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	Yokesleeve		Aluminum-Bronze ¹⁾	
17	Handwheel		Malleable Iron	

Note: 1)Ductile Ni-resist 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.

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

Dimensions data

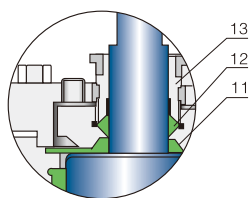
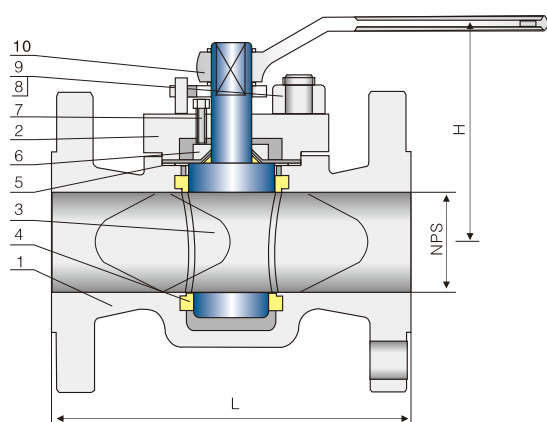
NPS	DN	L/L1 (RF/BW)		L2 (RTJ)		H (open)		D0		WT(kg)		L/L1 (RF/BW)		L2 (RTJ)		H (open)		D0		WT(kg)	
		ANSI Class1500Lb										ANSI Class2500Lb									
2	50	14.50	368	14.62	371	22.00	560	13	320	68	57	17.75	451	17.88	454	25.50	650	16	400	97	72
2 1/2	65	16.50	419	16.62	422	23.25	590	16	400	97	81	20.00	508	20.50	414	28.12	715	18	450	138	95
3	80	18.50	470	18.62	473	29.50	750	18	450	116	95	22.75	578	23.00	584	32.50	825	20	500	167	108
4	100	21.50	546	21.62	549	36.00	915	20	500	215	184	26.50	673	26.88	683	47.00	1195	24	600	305	196
6	150	27.75	705	28.00	711	48.62	1235	24	600	445	347	36.00	914	36.50	927	70.50	1790	28	700	633	351
8	200	32.75	832	33.12	841	65.00	1650	28	700	795	635	-	-	-	-	-	-	-	-	-	-
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW



Cast Steel Plug Valve 150Lb/300Lb

Applicable Standards:

- STEEL PLUG VALVES API 599/API 6D
- STEEL PLUG VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATICS, API 599
- 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



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Plug	A182-F304(1)	A182-F316	A182-F304(1)
4	Sleeve	Glass Filled PTFE		
5	Bonnet Gasket	Graphite+304(2)	Graphite+316(2)	Graphite+304(2)
6	Adjusting Gasket	A182-F6a	A182-F316	A182-F6a
7	Adjusting Bolt	A193-B7	A193-B8	A320-L7
8	Bonnet Stud	A193-B7	A193-B8	A320-L7
9	Bonnet Bolt	A194-2H	A194-8	A194-4
10	Handle	Carbon Steel		
11	Diaphragm	A167-304+PTFE	A167-316+PTFE	A167-304+PTFE
12	Packing	Graphite		
13	Gland Flange	A216-WCB	A217-WC6	A352-LCB

Note: 1) A105+ENP optional
2) Jacketed construction

Design description

- RUGGED, HEAVY-DUTY BODY
- BOLTED BONNET CAP
- PTFE SLEEVED, TAPERED PLUG
- LARGE PORT OPENINGS
- NON-LUBRICATED
- STEM INTEGRAL WITH PLUG
- IN-LINE ADJUSTMENT
- FIRE SAFE CONSTRUCTION
- ANTI STATIC DEVICE
- STOPPER DEVICE
- RENEWABLE SEAT RING
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH WG OPERATOR

Dimensions data

NPS	DN	L (RF)		L1 (BW)		H		W		WT(kg)		L (RF)		L1 (BW)		H		W		WT(kg)	
		ANSI Class150Lb										ANSI Class300Lb									
2	50	7.00	178	10.50	267	6.00	150	13	320	17	13	8.5	216	10.50	267	6.00	150	13	320	17	13
2½	65	7.50	191	12.00	305	6.50	165	14	350	20	14	9.5	241	12.00	305	6.50	165	14	350	20	14
3	80	8.00	203	13.00	330	7.12	180	16	410	25	17.5	11.0	283	13.00	330	7.12	180	16	410	25	17.5
4	100	9.00	229	14.00	356	15.00	380	13	320	40	29	12.0	305	14.00	356	15.00	380	13	320	40	29
6	150	10.50	267	18.00	457	20.50	520	13	320	70	55	16.0	403	18.00	457	20.50	520	13	320	70	55
8	200	11.50	292	20.50	521	22.88	580	13	320	135	110	16.5	419	20.50	521	22.88	580	13	320	135	110
10	250	13.00	330	22.00	559	24.50	620	14	350	220	182	18.0	457	22.00	559	24.50	620	14	350	220	182
12	300	14.00	356	25.00	635	26.75	680	15	380	300	247	20.0	502	25.00	635	26.75	680	15	380	300	247
in	mm	in	mm	in	mm	in	mm	in	mm	RF	BW	in	mm	in	mm	in	mm	in	mm	RF	BW



Cast Steel Plug Valve 600Lb/900Lb

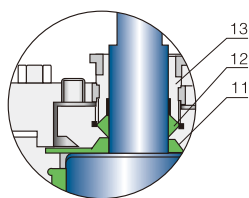
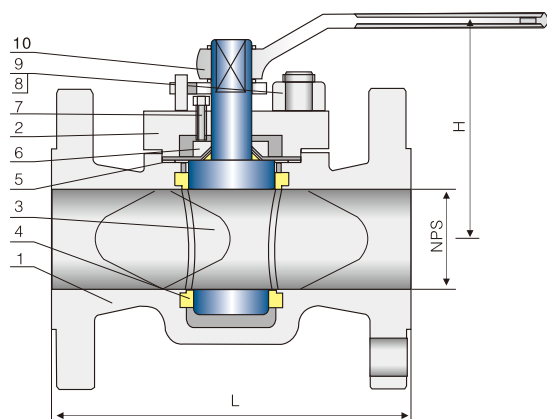
Applicable Standards:

- STEEL PLUG VALVES API 599/API 6D
- STEEL PLUG VALVES ISO 14313
- FIRE SAFE, API 607
- ANTI STATICS, API 599
- 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

Materials of parts

No	Part Name	Carbon Steel	ASTM Material 18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet Cap	A216-WCB	A351-CF8M	A352-LCB
3	Plug	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Sleeve	Glass Filled PTFE		
5	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
6	Adjusting Gasket	A182-F6a	A182-F316	A182-F6a
7	Adjusting Bolt	A193-B7	A193-B8	A320-L7
8	Bonnet Stud	A193-B7	A193-B8	A320-L7
9	Bonnet Bolt	A194-2H	A194-8	A194-4
10	Handle	Carbon Steel		
11	Diaphragm	A216-WCB	A217-WC6	A352-LCB
12	Packing	Graphite		
13	Gland Flange	A216-WCB	A217-WC6	A352-LCB

Note: 1) A105+ENP optional
2) Jacketed construction



Design description

- RUGGED, HEAVY-DUTY BODY
- BOLTED BONNET CAP
- PTFE SLEEVED, TAPERED PLUG
- LARGE PORT OPENINGS
- NON-LUBRICATED
- STEM INTEGRAL WITH PLUG
- IN-LINE ADJUSTMENT
- FIRE SAFE CONSTRUCTION
- ANTI STATICS DEVICE
- STOPPER DEVICE
- RENEWABLE SEAT RING
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH WG OPERATOR

Dimensions data

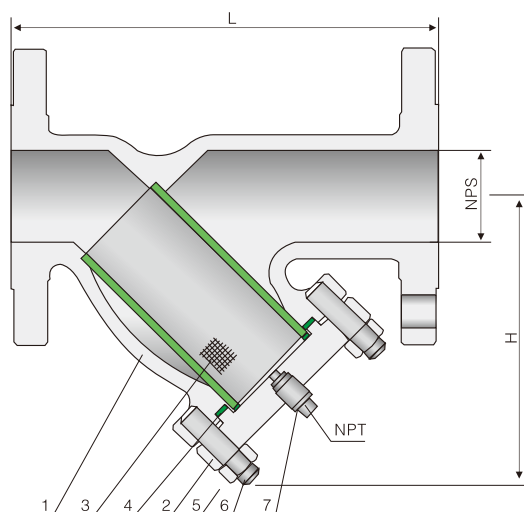
NPS	DN	L (RF)		L1 (BW)		H		W		WT(kg)		L (RF)		L1 (BW)		H		W		WT(kg)	
		ANSI Class600Lb										ANSI Class900Lb									
2	50	11.50	292	11.62	295	6.12	155	14	350	28	21	14.50	368	14.62	371	6.12	155	14	350	52	32
2½	65	13.00	330	13.12	333	6.75	170	16	410	33	23.5	16.50	419	16.62	422	6.75	170	16	410	60	34
3	80	14.00	356	14.12	359	7.25	185	13	320	387	23	15.00	381	15.12	384	7.25	185	13	320	70	47
4	100	16.00	432	16.12	435	15.38	390	13	320	75	46	18.00	457	18.12	460	15.38	390	13	320	92	55
6	150	19.50	559	19.62	562	20.88	530	13	320	142	97	24.00	610	24.12	613	20.88	530	13	320	195	120
8	200	23.50	660	23.62	664	23.25	590	14	350	250	167	29.00	737	29.12	740	23.25	590	14	350	320	197
10	250	26.50	787	26.62	791	24.88	630	15	350	365	227	33.00	838	33.12	841	24.88	630	15	380	455	277
12	300	30.00	838	30.12	841	27.12	690	15	380	515	354	38.00	965	38.12	968	27.12	690	15	380	625	405
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW



Cast Steel Y-Strainer 150Lb/300Lb

Applicable Standards:

- STEEL STRAINER, 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:

- Y-PATTERN TYPE
- BOLTED BONNET CAP WITH DRAIN PLUG
- PERFORATED STAINLESS STEEL SCREEN
- STRAINER DENSITY 100 MESH DESIGN
- FULL RANGE OF STRAINER DENSITY
- RENEWABLE STRAINER DENSITY
- FLANGED OR BUTTWELDING ENDS



Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet Cap	A216-WCB	A351-CF8M	A350-LCB
3	Screen	A240-304	A240-316	A240-304
4	Bonnet Gasket	Graphite+304 ¹⁾	PTFE	Graphite+304 ¹⁾
5	Bonnet Stud	A193-B7	A193-B8	A320-L7
6	Bonnet Stud Nut	A194-2H	A194-8	A194-7
7	Drain Plug	A276-410	A276-316	A276-410

Note: 1) spiral wound construction

Percentage open area

MESH	A SWG	B m/m	C m/m	D %
5	20	0.914	4.166	67.3
10	22	0.711	1.829	51.8
20	28	0.356	0.914	51.8
30	32	0.274	0.572	45.7
40	36	0.193	0.442	48.4
50	37	0.172	0.336	43.6
60	38	0.152	0.271	41.0
80	40	0.122	0.195	37.8
100	42	0.102	0.152	35.8
120	43	0.092	0.119	31.8
150	45 1/2	0.066	0.103	37.1
180	46 1/2	0.053	0.088	38.9
200	47	0.051	0.076	35.8
250	48	0.040	0.062	37.7
300	48	0.039	0.044	27.6

Even the mesh* is same:
open area is not always same
due to the diameter of wire.
The details of wire as follows:

A: Number of Wire
B: Diameter of Wire
C: Width of Opening
D: Percentage of OPEN AREA

Dimensions data

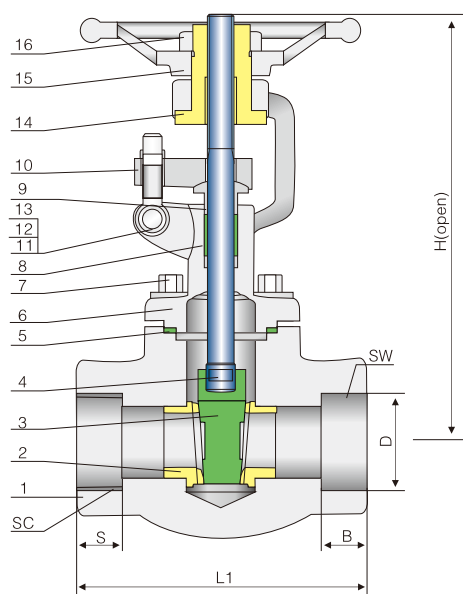
NPS	DN	L/L1 (RF/BW)		H		PLUG (NPT)		WT (KG)	L/L1 (RF/BW)		H		PLUG (NPT)		WT (KG)
		ANSI Class 150Lb							ANSI Class 300Lb						
1/2	15	5.50	140	3.38	87	1/8	2.1	0.8	5.50	140	3.38	87	1/8	2.5	1.2
3/4	20	6.00	152	4.12	105	1/2	2.3	1.2	6.00	152	4.12	105	1/2	3.4	1.8
1	25	6.50	165	4.50	114	1/2	3.1	1.4	6.50	165	4.50	114	1/2	4.2	2.6
1½	40	8.00	203	6.12	156	1/2	6.2	3.7	8.00	203	6.12	156	1/2	8.6	4.8
2	50	9.00	229	7.12	181	1/2	9.7	6.7	9.00	229	7.12	181	1/2	11.12	8.2
2½	65	11.00	279	10.25	259	3/4	23.5	16.5	11.00	279	10.25	259	3/4	29	20
3	80	12.50	318	11.50	293	3/4	28	22	12.50	318	11.50	293	3/4	38	27
4	100	14.50	368	12.75	324	3/4	37	28	14.50	368	12.75	324	3/4	57	39
6	150	18.50	470	17.62	448	3/4	67	59	18.50	470	17.62	448	3/4	105	74
8	200	23.50	597	21.00	535	3/4	91	78	23.50	597	21.00	535	3/4	176	131
10	250	26.50	673	27.12	690	1	135	113	26.50	673	27.12	690	1	230	164
12	300	30.50	775	30.75	780	1	168	151	30.50	775	30.75	780	1	360	268
in	mm	in	mm	in	mm	in	RF	BW	in	mm	in	mm	in	RF	BW



Compact Steel Gate Valve 800Lb

Applicable Standards:

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



Materials of parts

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

Note: 1) spiral wound construction

Design description

- OUTSIDE SCREW AND YOKE (OS&Y)
- BOLTED BONNET
- CHOICE OF WB, WELDED 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, BUTTWELDING ENDS
- FLANGED ENDS

Dimensions data

NPS DN	Unit	L1 ¹⁾	L(Flanged Ends)				d	SW		SC	H(open)		D0	WT ²⁾ (kg)
			150Lb	300Lb	600Lb			D	B		NPT	S		
3/8	in	3.12	4.00	5.50	6.50	0.394	0.693	0.378		3/8	0.540	6.00	4.00	4.5/4
10	mm	79	102	140	165	10	17.6	9.6			13.6	151	100	
1/2	in	3.12	4.25	5.50	6.50	0.394	0.858	0.378		1/2	0.535	6.00	4.00	5.1/4
15	mm	79	108	140	165	10	21.8	9.6			13.6	151	100	
3/4	in	3.62	4.62	6.00	7.50	0.531	1.067	0.500		3/4	0.547	6.25	4.00	8.2/4.3
20	mm	92	117	152	190	13.5	27.1	12.7			13.9	158	100	
1	in	4.38	5.00	6.50	8.50	0.709	1.331	0.500		1	0.681	7.25	5.00	10.5/6.6
25	mm	111	127	165	216	18	33.8	12.7			17.3	185	125	
1 1/4	in	4.75	5.50	7.00	9.00	0.945	1.677	0.500		1 1/4	0.709	9.38	6.25	12.4/9.5
32	mm	120	140	178	229	24	42.6	12.7			18	239	160	
1 1/2	in	4.75	6.50	7.50	9.50	1.181	1.917	0.500		1 1/2	0.724	9.50	6.25	20.1/11
40	mm	120	165	190	241	30	48.7	12.7			18.4	243	160	
2	in	5.50	7.00	8.50	11.50	1.437	2.406	0.626		2	0.756	11.00	7.00	28/14.5
50	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)

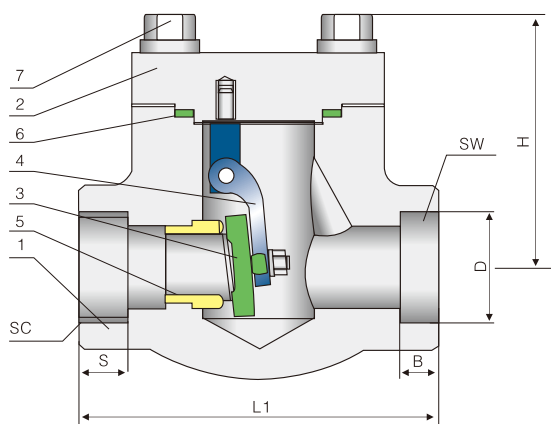


Compact Steel Check Valve 800Lb

Applicable Standards:

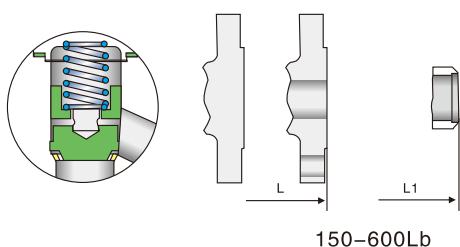
- STEEL CHECK VALVES, API 602
- STEEL VALVES, ASME B16.34
- FACE TO FACE, MANUFACTURER STANDARD
- FACE TO FACE, FLANGED, ASME B16.10
- END FLANGES, ASME B16.5
- BUTTWELDING ENDS, ASME B16.25
- SOCKET-WELDING ENDS, ASME B16.11
- SCREWED ENDS, ASME B1.20.1
- INSPECTION AND TEST, API 598

Materials of parts



No	Part Name	ASTM Material		
		C-Si	16Cr-12Ni-2Mo	1 1/4Cr-1/2Mo-Si
1	Body	A105	A182-F316	A182-F11
2	Cover	A105	A182-F316	A182-F11
3	Disc	A182-F6a	A182-F316	A182-F6A+HF
4	Hinge	A276-410	A276-316	A276-410
5	Seat	A276-410	A182-F316	A276-410+HF
6	Gasket ⁽²⁾	Graphite+304	Graphite+316	Graphite+304
7	Stud	A193-B7	A193-B8M	A193-B16

Note: 1) lift type check valve seat ring integral with body.
2) spiral wound construction.



Design description

- BOLTED COVER
- CHOICE OF WB, WELDED COVER
- SEAT RINGS TYPE
- SEAT RINGS INTEGRAL WITH BODY OF LIFT
- HORIZONTAL OR VERTICAL SERVICE
- SW, SOCKET-WELDING ENDS
- SC, SCREWED ENDS
- BW, BUTTWELDING ENDS
- FLANGED ENDS

Dimensions data

NPS DN	Unit	L1 ¹⁾	L(Flanged Ends)			d	SW		SC		H	WT ²⁾ (kg)
			150Lb	300Lb	600Lb		D	B	NPT	S		
3/8	in	3.12	4.00	6.00	6.50	0.354	0.693	0.378	3/8	0.540	2.40	3.8/2.8
10	mm	79	102	152	165	9	17.6	9.6		13.6	61	
1/2	in	3.12	4.25	6.00	6.50	0.354	0.858	0.378	1/2	0.535	2.40	5.6/3.4
15	mm	79	108	152	165	10	21.8	9.6		13.6	61	
3/4	in	3.62	4.62	7.00	7.50	0.512	1.067	0.500	3/4	0.547	2.40	7.8/4.7
20	mm	92	117	178	190	13	27.1	12.7		13.9	61	
1	in	4.38	5.00	8.00	8.50	0.689	1.331	0.500	1	0.681	3.07	12.5/9.2
25	mm	111	127	203	216	17.5	33.8	12.7		17.3	78	
1 1/4	in	4.75	5.50	8.50	9.00	0.906	1.677	0.500	1 1/4	0.709	3.31	17/10.5
32	mm	120	140	216	229	23	42.6	12.7		18	84	
1 1/2	in	4.75	6.50	9.00	9.50	1.142	1.917	0.500	1 1/2	0.724	10.25	23.5/13.3
40	mm	120	165	229	241	30	48.7	12.7		18.4	3.98	
2	in	5.50	8.00	10.50	11.50	1.378	2.406	0.626	2	0.756	4.72	38.8/18.9
50	mm	140	203	267	292	35	61.1	15.9		19.2	120	



Compact Steel Globe Valve 800Lb

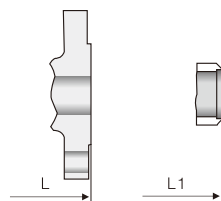
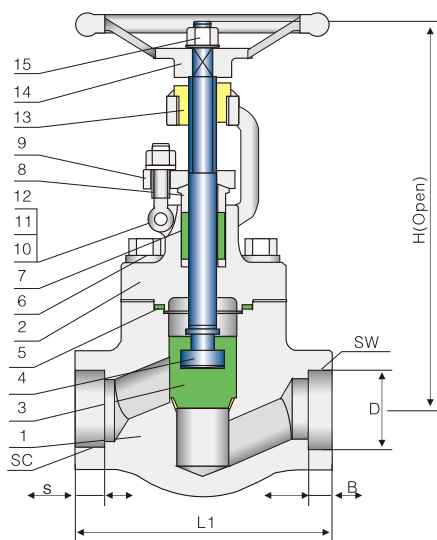
Applicable Standards:

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

Materials of parts

No	Part Name	ASTM Material		
		C-Si	16Cr-12Ni-2Mo	1 1/4Cr-1/2Mo-Si
1	Body	A105	A182-F316	A182-F11
2	Bonnet	A105	A182-F316	A182-F11
3	Disc	A182-F6a	A182-F316	A182-F6A+HF
4	Stem	A276-410	A276-316	A276-410
5	Bonnet Gasket ²⁾	Graphite+304	Graphite+316	Graphite+304
6	Bonnet Stud	A193-B7	A193-B8M	A193-B16
7	Packing	Graphite		
8	Gland	A276-410	A276-316	A276-410
9	Gland Flange	A105	A182-F316	A182-F11
10	Eyebolt Pin	A276-410	A276-316	A276-410
11	Eyebolt	A193-B7	A193-B8M	A193-B16
12	Eyebolt Nut	A194-2H	A194-8M	A194-2H
13	Yokesleeve	A276-410		
14	Handwheel	Malleable Iron		
15	Handwheel Nut	Carbon Steel		

Note: 1) seat integral with body
2) spiral wound construction



150-600Lb

Design description

- OUTSIDE SCREW AND YOKE (OS&Y)
- BOLTED BONNET
- CHOICE OF WB, WELDED 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

Dimensions data

NPS DN	Unit	L1 ¹⁾	L(Flanged Ends)			d	SW		SC	H(open)	D0	WT ²⁾ (kg)	
		150Lb	300Lb	600Lb			D	B	NPT	S			
3/8	in	3.12	4.00	6.00	6.50	0.354	0.693	0.378	3/8	0.540	6.50	4.00	3.8/2.8
10	mm	79	102	152	165	9	17.6	9.6		13.6	164	100	
1/2	in	3.12	4.25	6.00	6.50	0.354	0.858	0.378	1/2	0.535	6.50	4.00	5.6/3.4
15	mm	79	108	152	165	9	21.8	9.6		13.6	164	100	
3/4	in	3.62	4.62	7.00	7.50	0.512	1.067	0.500	3/4	0.547	6.50	4.00	7.8/4.7
20	mm	92	117	178	190	13	27.1	12.7		13.9	164	100	
1	in	4.38	5.00	8.00	8.50	0.689	1.331	0.500	1	0.681	8.00	5.00	12.5/9.2
25	mm	111	127	203	216	17.5	33.8	12.7		17.3	203	125	
1¼	in	4.75	5.50	8.50	9.00	0.906	1.677	0.500	1¼	0.709	8.88	6.25	17/10.5
32	mm	120	140	216	229	23	42.6	12.7		18	224	160	
1½	in	6.00	6.50	9.00	9.50	1.142	1.917	0.500	1½	0.724	10.25	6.25	23.5/13.3
40	mm	152	165	229	241	29	48.7	12.7		18.4	260	160	
2	in	6.75	8.00	10.50	11.50	1.378	2.406	0.626	2	0.756	11.88	7.00	38.8/18.9
50	mm	172	203	267	292	35	61.1	15.9		19.2	300	180	

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



API 603 Corrosion-Resistant Valves Cast Stainless Steel Gate Valves 150Lb

Applicable Standards:

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

Materials of parts

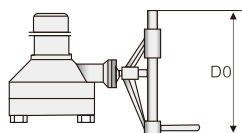
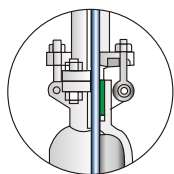
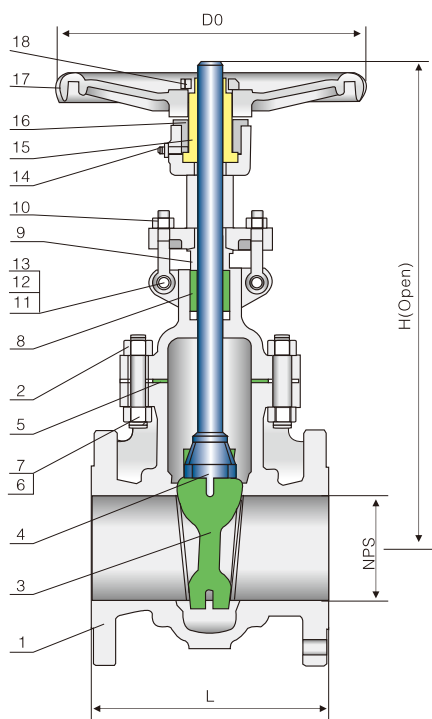
No	Part Name	ASTM Material		
		18Cr-18Ni	18Cr-9Ni-2Mo	17Cr-9Ni-2Mo
1	Body	A351-CF8	A351-CF8M	A351-CF3M
2	Bonnet	A351-CF8	A351-CF8M	A351-CF3M
3	Wedge	A351-CF8	A351-CF8M	A351-CF3M
4	Stem	A182-F304	A182-F316	A182-F316L
5	Bonnet Gasket ¹⁾	Graphite+304	Graphite+316	Graphite+316L
6	Bonnet Stud	A193-B8	A193-B8M	A193-B8M
7	Bonnet Stud Nut	A194-8	A194-8M	A194-8M
8	Packing ²⁾	Graphite		
9	Gland	A276-304	A276-316	A276-316L
10	Gland Flange	A351-CF8	A351-CF8M	A351-CF8M
11	Eyebolt Pin	A276-304	A276-316	A276-316
12	Eyebolt	A193-B8	A193-B8	A193-B8
13	Eyebolt Nut	A194-8	A194-8	A194-8
14	Grease Fitting	Carbon steel Ni Plated		
15	Yokesleeve	Aluminum-Bronze ³⁾		
16	Yokesleeve Jam Nut	A276-304		
17	Handwheel	Malleable Iron		
18	Handwheel Nut	Carbon Steel		

Note: 1) Spiral wound construction, teflon optional

2) Teflon optional.

3) Ductile Ni-resist optional.

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



Design description

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

Dimensions data

NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	in mm
ANSI Class 150Lb															
L (RF)	4.25 108	4.62 117	5.00 127	6.50 165	7.00 178	7.50 190	8.00 203	9.00 229	10.50 267	11.50 292	13.00 330	14.00 356	15.00 381	16.00 406	in mm
L1 (BW)	4.25 108	4.62 117	5.50 140	7.00 178	7.50 191	8.00 203	8.50 216	9.50 242	11.00 280	12.00 305	13.50 343	14.50 369	15.50 394	16.50 419	in mm
H (open)	8.25 210	8.50 215	9.25 235	11.75 300	15.25 386	17.00 434	18.88 480	23.00 584	30.50 765	37.62 956	45.50 1149	53.12 1350	59.38 1508	67.00 1703	in mm
D0	4 100	4 100	6 140	6 140	8 200	8 200	10 250	12 300	12 300	14 350	16 400	18 450	20 500	22 550	in mm
WT(kg)	3 2.5	3.5 3	5.5 4	9.2 8	15 12.5	21 15	27 21.5	42 34	64.5 58	101 90	149 130.5	221 207	303 275	387 355	BW RF/RTJ



API 603 Corrosion-Resistant Valves Cast Stainless Steel Gate Valves 300Lb

Applicable Standards:

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

Materials of parts

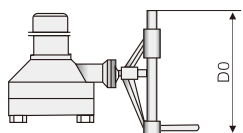
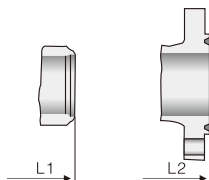
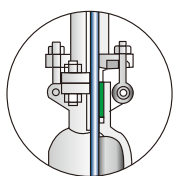
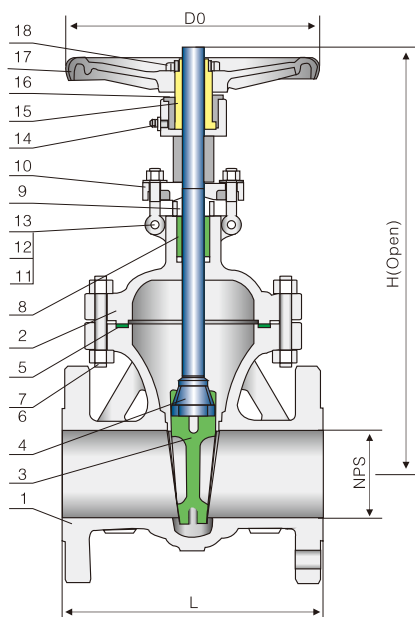
No	Part Name	ASTM Material		
		18Cr-18Ni	18Cr-9Ni-2Mo	17Cr-9Ni-2Mo
1	Body	A351-CF8	A351-CF8M	A351-CF3M
2	Bonnet	A351-CF8	A351-CF8M	A351-CF3M
3	Wedge	A351-CF8	A351-CF8M	A351-CF3M
4	Stem	A182-F304	A182-F316	A182-F316L
5	Bonnet Gasket ¹⁾	Graphite+304	Graphite+316	Graphite+316L
6	Bonnet Stud	A193-B8	A193-B8M	A193-B8M
7	Bonnet Stud Nut	A194-8	A194-8M	A194-8M
8	Packing ²⁾	Graphite		
9	Gland	A276-304	A276-316	A276-316L
10	Gland Flange	A351-CF8	A351-CF8M	A351-CF8M
11	Eyebolt Pin	A276-304	A276-316	A276-316
12	Eyebolt	A193-B8	A193-B8	A193-B8
13	Eyebolt Nut	A194-8	A194-8	A194-8
14	Grease Fitting	Carbon steel Ni Plated		
15	Yokesleeve	Aluminum-Bronze ³⁾		
16	Yokesleeve Jam Nut	A276-304		
17	Handwheel	Malleable Iron		
18	Handwheel Nut	Carbon Steel		

Note: 1) Spiral wound construction, teflon optional

2) Teflon optional.

3) Ductile Ni-resist optional.

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



Design description

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

Dimensions data

NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	in mm
ANSI Class 300Lb															
L/L1 (RF/BW)	5.50 140	6.00 152	6.50 165	7.50 190	8.50 216	9.50 241	11.12 283	12.00 305	15.88 403	16.50 419	18.00 457	19.75 502	30.00 762	33.00 838	in mm
L2 (RTJ)	— —	— —	— —	— —	9.12 232	10.12 257	11.75 298	12.62 321	16.50 419	17.12 435	18.62 473	20.38 518	30.62 778	33.62 854	in mm
H (open)	6.34 161	6.42 163	7.72 196	9.88 251	16.12 410	17.88 453	20.00 509	24.00 612	31.75 805	39.38 1000	47.62 1210	55.75 1415	62.25 1580	67.88 1725	in mm
D0	4 100	4 100	6 140	6 140	8 200	8 200	10 250	10 250	14 350	16 400	18 450	20 500	22 550	22 550	in mm
WT(kg)	3.3 2.7	4 3.5	6.5 4.7	10.5 8.5	20 14.5	30 22.5	43 33	61 45.5	123 97	179 140	276 219	413 334	585 484	813 689	BW RF/RTJ



API 603 Corrosion-Resistant Valves Cast Stainless Steel Gate Valves 600Lb

Applicable Standards:

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

Materials of parts

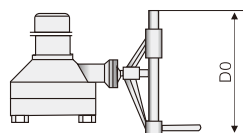
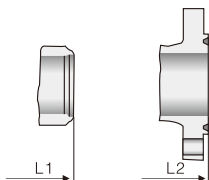
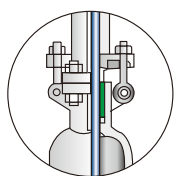
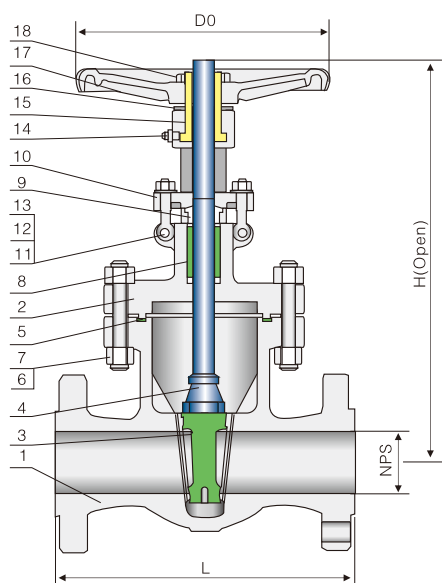
No	Part Name	ASTM Material		
		18Cr-18Ni	18Cr-9Ni-2Mo	17Cr-9Ni-2Mo
1	Body	A351-CF8	A351-CF8M	A351-CF3M
2	Bonnet	A351-CF8	A351-CF8M	A351-CF3M
3	Wedge	A351-CF8	A351-CF8M	A351-CF3M
4	Stern	A182-F304	A182-F316	A182-F316L
5	Bonnet Gasket ¹⁾	Graphite+304	Graphite+316	Graphite+316L
6	Bonnet Stud	A193-B8	A193-B8M	A193-B8M
7	Bonnet Stud Nut	A194-8	A194-8M	A194-8M
8	Packing ²⁾	Graphite		
9	Gland	A276-304	A276-316	A276-316L
10	Gland Flange	A351-CF8	A351-CF8M	A351-CF8M
11	Eyebolt Pin	A276-304	A276-316	A276-316
12	Eyebolt	A193-B8	A193-B8	A193-B8
13	Eyebolt Nut	A194-8	A194-8	A194-8
14	Grease Fitting	Carbon steel Ni Plated		
15	Yokesleeve	Aluminum-Bronze ³⁾		
16	Yokesleeve Jam Nut	A276-304		
17	Handwheel	Malleable Iron		
18	Handwheel Nut	Carbon Steel		

Note: 1) Spiral wound construction, teflon optional

2) Teflon optional.

3) Ductile Ni-resist optional.

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



Design description

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

Dimensions data

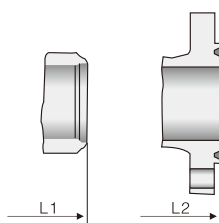
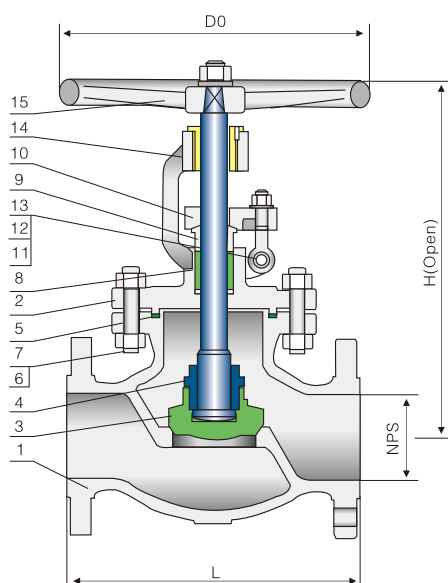
NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	in mm
ANSI Class 600Lb															
L (RF)	6.50 165	7.50 190	8.50 216	9.50 241	11.50 292	13.00 330	14.00 356	17.00 432	22.00 559	26.00 660	31.00 787	33.00 838	35.00 889	39.00 991	in mm
L1 (BW)	— —	— —	— —	— —	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	26.12 664	31.12 791	33.12 841	35.12 892	39.12 994	in mm
H (open)	6.34 161	6.42 163	7.72 196	9.88 251	16.50 418	18.76 476	20.38 518	25.50 646	33.00 840	40.38 1025	48.38 1230	57.00 1450	62.00 1575	70.62 1795	in mm
D0	4 100	6 140	6 140	8 200	8 200	10 250	10 250	12 300	18 450	20 500	24 600	24 600	24 600	24 600	in mm
WT(kg)	4.5 3.7	5.5 4.2	8.5 6.5	16.5 9.5	32 26	46 37	59 47	99 74	151 111	348 275	540 418	789 647	1103 935	1359 1098	BW RF/RTJ



API 603 Corrosion-Resistant Valves Cast Stainless Steel Globe Valves 150Lb

Applicable Standards:

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



Materials of parts

No	Part Name	ASTM Material		
		18Cr-18Ni	18Cr-9Ni-2Mo	17Cr-9Ni-2Mo
1	Body	A351-CF8	A351-CF8M	A351-CF3M
2	Bonnet	A351-CF8	A351-CF8M	A351-CF3M
3	Disc	A351-CF8	A351-CF8M	A351-CF3M
4	Stem	A182-F304	A182-F316	A182-F316L
5	Bonnet Gasket ¹⁾	Graphite+304	Graphite+316	Graphite+316L
6	Bonnet Stud	A193-B8	A193-B8M	A193-B8M
7	Bonnet Stud Nut	A194-8	A194-8M	A194-8M
8	Packing ²⁾	Graphite		
9	Gland	A276-304	A276-316	A276-316L
10	Gland Flange	A351-CF8	A351-CF8M	A351-CF3M
11	Eyebolt Pin	A276-304	A276-316	A276-316
12	Eyebolt	A193-B8	A193-B8	A193-B8
13	Eyebolt Nut	A194-8	A194-8	A194-8
14	Yokesleeve	Aluminum-Bronze ³⁾		
15	Handwheel	Malleable Iron		

Note: 1) Spiral wound construction, teflon optional

2) Teflon optional.

3) Ductile Ni-resist optional.

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

Design description

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

Dimensions data

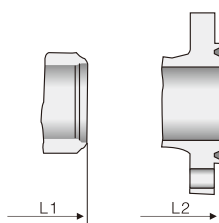
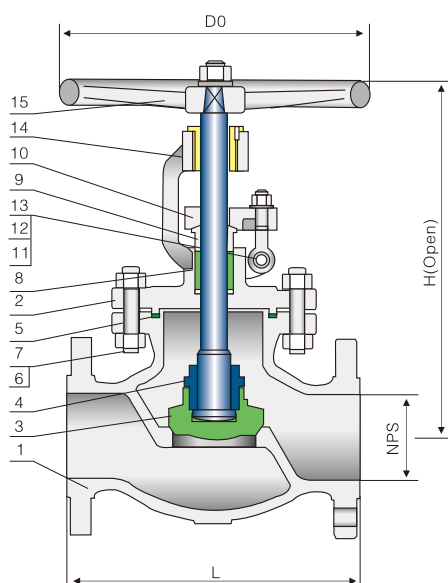
NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	in mm
ANSI Class 150Lb															
L/L1 (RF/BW)	4.25 108	4.62 117	5.00 127	6.50 165	8.00 203	8.50 216	9.50 241	11.50 292	16.00 406	19.50 495	24.50 622	27.50 698	31.00 787	36.00 914	in mm
L2 (RTJ)	— —	— —	— —	— —	8.50 216	9.00 229	10.00 254	12.00 305	16.50 419	20.00 508	25.00 635	28.00 711	31.50 800	36.50 927	in mm
H (open)	7.00 180	7.5 190	8.25 210	9.25 235	15.00 380	21.00 535	17.50 445	20.25 515	22.00 560	24.25 615	32.00 815	35.88 910	48.38 1230	57.00 1450	in mm
D0	4 100	4 100	4 100	6 140	7 180	10 240	11 280	11 280	13 320	13 320	16 400	18 450	20 500	24 600	in mm
WT(kg)	3 2.5	3.5 3	4.5 4	11 8	18 14	30 22	41 33	64 43	86 72	110 88	280 245	380 345	510 450	740 665	BW RF/RTJ



API 603 Corrosion-Resistant Valves Cast Stainless Steel Globe Valves 300Lb

Applicable Standards:

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



Materials of parts

No	Part Name	ASTM Material		
		18Cr-18Ni	18Cr-9Ni-2Mo	17Cr-9Ni-2Mo
1	Body	A351-CF8	A351-CF8M	A351-CF3M
2	Bonnet	A351-CF8	A351-CF8M	A351-CF3M
3	Disc	A351-CF8	A351-CF8M	A351-CF3M
4	Stem	A182-F304	A182-F316	A182-F316L
5	Bonnet Gasket ¹⁾	Graphite+304	Graphite+316	Graphite+316L
6	Bonnet Stud	A193-B8	A193-B8M	A193-B8M
7	Bonnet Stud Nut	A194-8	A194-8M	A194-8M
8	Packing ²⁾	Graphite		
9	Gland	A276-304	A276-316	A276-316L
10	Gland Flange	A351-CF8	A351-CF8M	A351-CF3M
11	Eyebolt Pin	A276-304	A276-316	A276-316
12	Eyebolt	A193-B8	A193-B8	A193-B8
13	Eyebolt Nut	A194-8	A194-8	A194-8
14	Yokesleeve	Aluminum-Bronze ³⁾		
15	Handwheel	Malleable Iron		

Note: 1) Spiral wound construction, teflon optional

2) Teflon optional.

3) Ductile Ni-resist optional.

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

Design description

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

Dimensions data

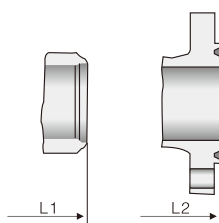
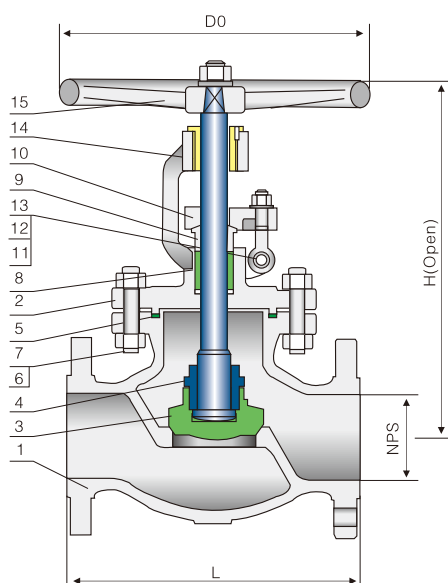
NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	in mm
ANSI Class 300Lb															
L/L1 (RF/BW)	6.00 152	7.00 178	8.00 203	9.00 229	10.50 267	11.50 292	12.50 318	14.00 356	17.50 444	22.00 559	24.50 622	28.00 711	-	-	in mm
L2 (RTJ)	-	-	-	-	11.12 282	12.12 308	13.12 333	14.62 371	18.12 460	22.62 575	25.12 638	28.62 727	-	-	in mm
H (open)	7.00 180	7.50 190	8.25 210	9.25 235	16.75 425	19.00 485	19.88 505	22.50 570	25.25 640	33.25 845	35.50 900	38.62 980	-	-	in mm
D0	4 100	4 100	4 100	6 140	8 200	10 240	11 280	13 320	16 400	18 450	20 500	24 600	-	-	in mm
WT(kg)	4 3	4.5 3.5	6 5	15 12	25 20	32 22	38 27	56 41	96 75	150 117	360 310	550 492	-	-	BW RF/RTJ



API 603 Corrosion-Resistant Valves Cast Stainless Steel Globe Valves 600Lb

Applicable Standards:

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



Materials of parts

No	Part Name	ASTM Material		
		18Cr-18Ni	18Cr-9Ni-2Mo	17Cr-9Ni-2Mo
1	Body	A351-CF8	A351-CF8M	A351-CF3M
2	Bonnet	A351-CF8	A351-CF8M	A351-CF3M
3	Disc	A351-CF8	A351-CF8M	A351-CF3M
4	Stem	A182-F304	A182-F316	A182-F316L
5	Bonnet Gasket ¹⁾	Graphite+304	Graphite+316	Graphite+316L
6	Bonnet Stud	A193-B8	A193-B8M	A193-B8M
7	Bonnet Stud Nut	A194-8	A194-8M	A194-8M
8	Packing ²⁾	Graphite		
9	Gland	A276-304	A276-316	A276-316L
10	Gland Flange	A351-CF8	A351-CF8M	A351-CF3M
11	Eyebolt Pin	A276-304	A276-316	A276-316
12	Eyebolt	A193-B8	A193-B8	A193-B8
13	Eyebolt Nut	A194-8	A194-8	A194-8
14	Yokesleeve	Aluminum-Bronze ³⁾		
15	Handwheel	Malleable Iron		

Note: 1) Spiral wound construction, teflon optional

2) Teflon optional.

3) Ductile Ni-resist optional.

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

Design description

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

Dimensions data

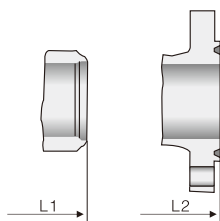
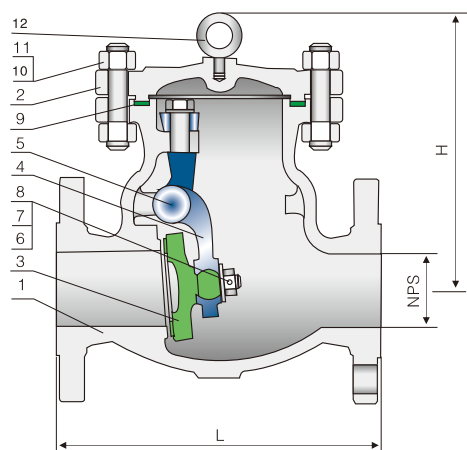
NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	in mm
ANSI Class 600Lb															
L/L1 (RF/BW)	6.50 165	7.50 190	8.50 216	9.50 241	11.50 292	13.00 330	14.00 356	17.00 432	22.00 559	26.00 660	31.00 787	33.00 838	-	-	in mm
L2 (RTJ)	-	-	-	-	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	26.12 663	31.12 790	33.12 841	-	-	in mm
H (open)	7.25 185	7.62 195	9.00 230	11.00 280	17.50 445	19.75 502	21.00 533	24.50 622	29.50 750	36.50 927	44.88 1140	53.12 1350	-	-	in mm
D0	4 100	4 100	6 140	5 200	10 240	11 280	13 320	16 400	18 450	20 500	24 600	24 600	-	-	in mm
WT(kg)	6 4.8	8 6.2	14 9.5	23 16.5	35 27	50 34	60 42	110 84	230 192	410 350	770 680	1140 1030	-	-	BW RF/RTJ



API 603 Corrosion-Resistant Valves Cast Stainless Steel Swing Check Valves 150Lb

Applicable Standards:

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



Materials of parts

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

Note: 1) Spiral wound construction, teflon optional

2) Nps 6" & larger

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

Design description

- BC, BOLTED COVER
- SWING TYPE, ANTI-ROTATION DISC
- SEAT RINGS INTEGRAL WITH BODY
- NON-PENETRATE DISC SHAFT
- HORIZONTAL OR VERTICAL SERVICE
- FLANGED OR BUTTWELDING ENDS

Dimensions data

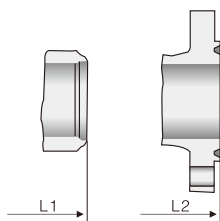
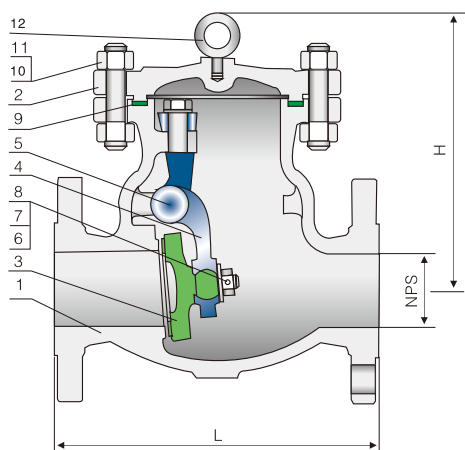
NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	in mm
ANSI Class 150Lb																			
L/L1 (RF/BW)	4.25	4.62	5.00	6.50	8.00	8.50	9.50	11.50	14.00	19.50	24.50	27.50	31.00	34.00	38.50	38.50	51.00	-	in
	108	117	127	165	203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



API 603 Corrosion-Resistant Valves Cast Stainless Steel Swing Check Valves 300Lb

Applicable Standards:

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



Materials of parts

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

Note: 1) Spiral wound construction, teflon optional

2) Nps 6" & larger

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

Design description

- BC, BOLTED COVER
- SWING TYPE, ANTI-ROTATION DISC
- SEAT RINGS INTEGRAL WITH BODY
- NON-PENETRATE DISC SHAFT
- HORIZONTAL OR VERTICAL SERVICE
- FLANGED OR BUTTWELDING ENDS

Dimensions data

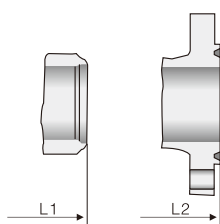
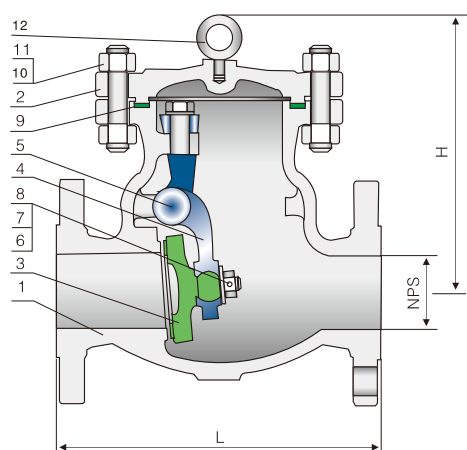
NPS DN	2/1 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	in mm
ANSI Class 300Lb																			
L/L1 (RF/BW)	6.00	7.00	8.00	9.00	10.50	11.50	12.50	14.00	17.50	21.00	24.50	28.00	33.00	34.00	38.50	40.00	53.00	-	in
	152	178	203	229	267	292	318	356	445	533	622	711	838	864	978	1016	1346	-	mm
L2 (RTJ)	-	-	-	-	11.12	12.12	13.12	14.62	18.12	21.62	25.12	28.62	33.62	34.62	39.12	40.75	53.88	-	in
	-	-	-	-	283	308	333	371	460	549	638	727	854	879	994	1035	1368	-	mm
H	3.12	3.38	3.88	4.38	6.00	6.50	6.88	8.00	11.50	13.88	15.38	17.00	18.75	20.62	22.88	24.62	34.75	-	in
	80	85	100	110	152	165	175	204	293	353	390	432	457	525	582	627	883	-	mm
wt(kg)	3	4	6	10	16	23	29	46	82	136	204	302	405	625	730	985	1115	-	RF/RTJ
	2.5	3.5	5	7	11	13	18	31	61	103	155	245	315	503	593	812	895	-	BW



API 603 Corrosion-Resistant Valves Cast Stainless Steel Swing Check Valves 600Lb

Applicable Standards:

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



Materials of parts

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

Note: 1) Spiral wound construction, teflon optional

2) Nps 6" & larger

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

Design description

- BC, BOLTED COVER
- SWING TYPE, ANTI-ROTATION DISC
- SEAT RINGS INTEGRAL WITH BODY
- NON-PENETRATE DISC SHAFT
- HORIZONTAL OR VERTICAL SERVICE
- FLANGED OR BUTTWELDING ENDS

Dimensions data

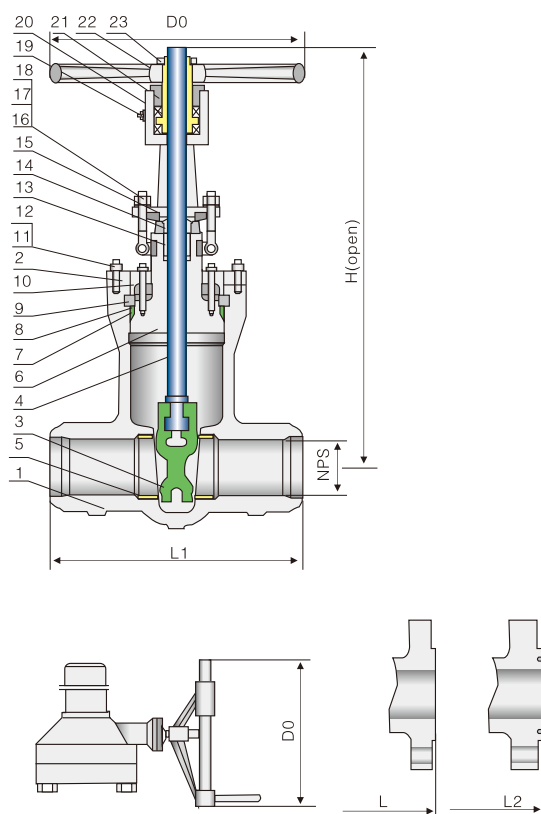
NPS DN	2/1 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	in mm
ANSI Class 600Lb																			
L/L1 (RF/BW)	6.50	7.50	8.50	9.50	11.50	13.00	14.00	17.00	22.00	26.00	31.00	33.00	35.00	39.00	43.00	47.00	55.00	-	in
	165	190	216	241	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	-	mm
L2 (RTJ)	-	-	-	-	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12	43.12	47.25	55.38	-	in
	-	-	-	-	295	333	359	435	562	664	791	841	892	994	1095	1200	1407	-	mm
H	3.38	3.50	4.50	5.50	7.50	8.00	8.75	10.00	14.50	17.50	19.25	21.38	23.38	25.75	28.75	31.00	43.50	-	in
	85	90	115	140	190	205	222	255	368	445	490	540	595	655	730	785	11305	-	mm
wt(kg)	5.5	7.5	12	15	24	35	44	70	125	207	310	460	615	945	1105	1495	1695	-	RF/RTJ
	4	6	8	12.5	16	19	26	44	87	147	220	350	452	720	845	1160	1280	-	BW



Pressure Seal, Cast Steel Gate Valve 900Lb

Applicable Standards:

- STEEL GATE VALVES, API 600/API 6D
- STEEL GATE VALVES, ISO 10434/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



Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	1 ¹ / ₄ Cr-1 ¹ / ₂ Mo	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	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 Fitting	Brass+Steel		
20	Yokesleeve	Aluminum-Bronze ²⁾		
21	Yokesleeve Jam Nut	Carbon Steel		Stainless 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.

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

Dimensions data

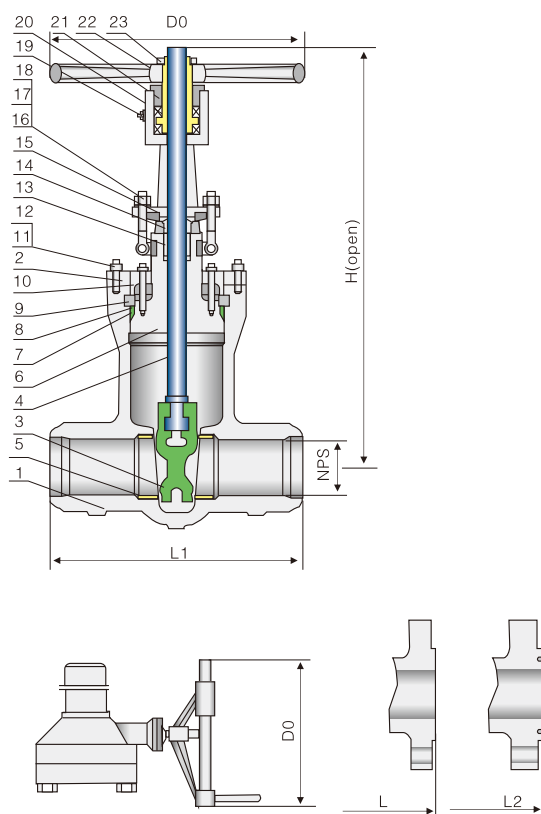
NPS DN	2 50	2 ¹ / ₂ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	in mm
ANSI Class 900Lb											
L1 (BW)	8.50 216	10.00 254	12.00 305	14.00 356	20.00 508	26.00 660	31.00 787	36.00 914	39.00 991	43.00 1092	in mm
L (RF)	14.50 368	165.50 419	15.00 381	18.00 457	24.00 610	29.00 737	33.00 838	38.00 965	40.50 1029	44.50 1130	in mm
L2 (RTJ)	14.62 371	16.62 422	15.12 384	18.12 460	24.12 613	29.12 740	33.12 841	38.12 968	40.88 1038	44.88 1140	in mm
H (open)	17.62 448	17.62 448	19.5 495	22.88 580	32.62 830	67.362 955	45.5 1165	53.12 1350	59 1500	70.5 1790	in mm
D0	14 350	14 350	14 350	14 350	18 450	24 600	28 700	34 850	34 850	34 850	in mm
WT(kg)	39 69	39 69	48 72	69 110	158 253	289 430	482 710	710 1025	998 1452	1390 1960	BW RF/RTJ



Pressure Seal, Cast Steel Gate Valve 1500Lb/2500Lb

Applicable Standards:

- STEEL GATE VALVES, API 600/API 6D
- STEEL GATE VALVES, ISO 10434/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



Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	1 ¹ / ₄ Cr- ¹ / ₂ Mo	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	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 Fitting	Brass+Steel		
20	Yokesleeve	Aluminum-Bronze ²⁾		
21	Yokesleeve Jam Nut	Carbon Steel		Stainless 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.

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

Dimensions data

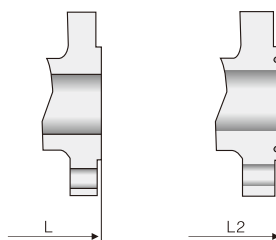
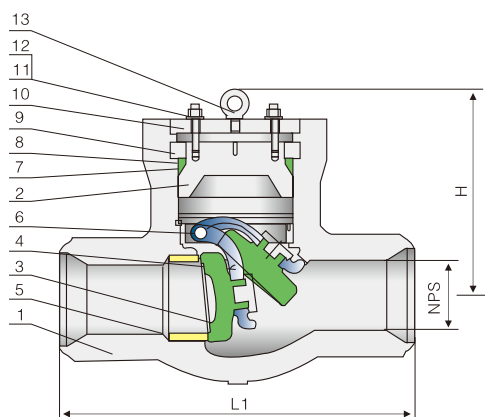
NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	in mm
ANSI Class 1500Lb											ANSI Class 2500Lb										
L1 (BW)	8.50 216	10.00 254	12.00 305	16.00 406	22.00 559	28.00 711	34.00 864	39.00 991	42.00 1067	47.00 1194	11.00 279	13.00 330	14.50 368	18.00 457	24.00 610	30.00 762	36.00 914	41.00 1041	-	-	in mm
L (RF)	14.50 368	16.50 419	18.50 470	21.50 546	27.75 705	32.75 832	39.00 991	44.50 1130	49.50 1257	54.00 1384	17.75 451	20.00 508	22.75 578	26.50 673	36.00 914	40.25 1022	50.00 1270	56.00 1422	-	-	in mm
L2 (RTJ)	15.50 371	16.62 422	18.62 473	21.62 549	28.00 711	33.12 841	39.38 1000	45.12 1146	50.25 1276	55.38 1407	17.88 454	20.50 514	23.00 584	26.88 683	36.50 927	40.88 1038	50.88 1292	56.88 1445	-	-	in mm
H (open)	17.62 448	17.62 448	21.62 550	25.25 640	33.5 850	38.62 980	46.5 1180	62.25 1580	70.5 1790	78 1980	22.5 570	22.5 570	25.62 650	30 760	36.62 930	41.38 1050	44.88 1140	60.25 1530	-	-	in mm
D0	14 350	14 350	14 350	18 450	24 600	28 700	34 850	34 850	34 850	34 850	14 350	14 350	18 450	24 600	28 700	34 850	34 850	34 850	-	-	in mm
WT(kg)	45 80	45 80	55 95	77 123	175 283	323 481	540 795	795 1148	1115 1626	1556 2195	110 165	110 195	150 235	175 316	380 635	575 910	980 1780	1570 2680	-	-	BW RF/RTJ



Pressure Seal Cast Steel Swing Check Valve 900Lb

Applicable Standards:

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



Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	1 ¹ / ₄ Cr-1 ¹ / ₂ Mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC6	A351-CF8M
2	Pres. Seal Bonnet	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	Cover	Carbon Steel	Alloy Steel	Stainless Steel
11	Stud	A193-B7	A193-B7	A193-B8M
12	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.

Design description

- PSB, PRESSURE SEAL BONNET
- FLEXIBLE DISC, FULLY GUIDED
- RENEWABLE SEAT RINGS
- FLANGED OR BUTTWELDING ENDS

Dimensions data

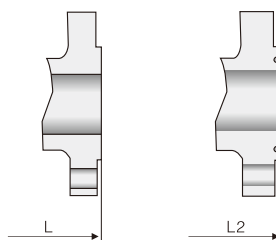
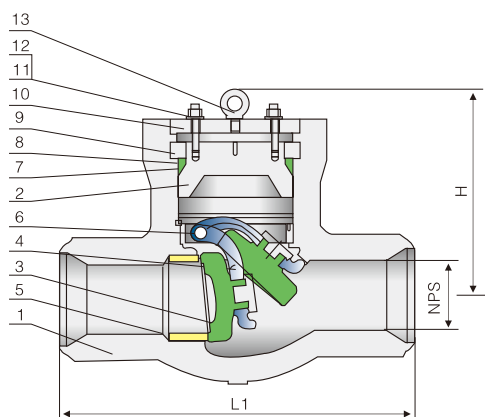
NPS DN	2 50	2 ¹ / ₂ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	in mm
ANSI Class 900Lb											
L1 (BW)	8.50	10.00	12.00	14.00	20.00	26.00	31.00	36.00	39.00	43.00	in
	216	254	305	356	508	660	787	914	991	1092	mm
L (RF)	14.50	16.60	15.00	18.00	24.00	29.00	33.00	38.00	40.5	44.5	in
	368	419	381	457	610	737	838	965	1029	1130	mm
L2 (RTJ)	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12	40.88	44.88	in
	371	422	384	460	613	740	841	968	1038	1140	mm
H	9.50	9.50	10.00	13.38	15.75	18.12	21.62	24.00	27.00	29.50	in
	240	240	255	340	400	460	550	610	685	750	mm
wt(kg)	22	34	38	71	176	485	761	1125	1345	1490	BW
	44	55	61	116	255	630	940	1433	1710	1820	RF/RTJ



Pressure Seal Cast Steel Swing Check Valve 1500Lb/2500Lb

Applicable Standards:

- STEEL CHECK VALVES, BS EN 13709/API 600
- 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



Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	1 ¹ / ₄ Cr-1 ¹ / ₂ Mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC6	A351-CF8M
2	Pres. Seal Bonnet	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	Cover	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.

Design description

- PSB, PRESSURE SEAL BONNET
- FLEXIBLE DISC, FULLY GUIDED
- RENEWABLE SEAT RINGS
- FLANGED OR BUTTWELDING ENDS

Dimensions data

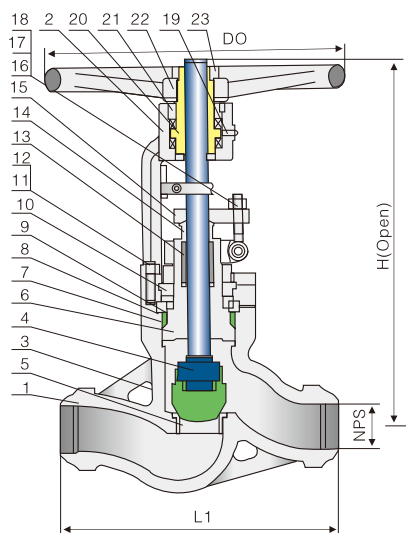
NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
ANSI Class1500Lb										ANSI Class2500Lb								
L1 (BW)	8.50 216	10.00 254	12.00 305	16.00 406	22.00 559	28.00 711	34.00 864	39.00 991	42.00 1067	11.00 279	13.00 330	14.50 368	18.00 457	24.00 610	30.00 762	36.00 914	41.00 1041	in mm
L (RF)	14.50 368	16.50 419	18.50 470	21.50 546	27.75 705	32.75 832	39 991	44.5 1130	49.5 1257	17.75 451	20.00 508	22.75 578	26.50 673	36.00 914	40.25 1022	50 1270	56 1422	in mm
L2 (RTJ)	14.62 371	16.62 422	18.62 473	21.62 549	28.00 711	33.12 842	39.38 1000	45.12 1146	50.25 1276	17.88 454	20.50 514	23.00 584	26.88 683	36.50 927	40.88 1038	50.88 1292	56.88 1445	in mm
H	9.50 240	9.50 240	11.88 300	15.38 390	18.00 455	20.62 525	24.00 610	27.00 685	30.00 760	10.25 260	10.25 260	13.75 350	16.12 410	18.88 480	22.38 570	25.25 640	32.00 815	in mm
wt(kg)	22 44	37 61	45 110	78 155	245 378	530 675	815 1160	1213 1710	1555 2315	55 93	78 130	95 170	182 315	300 618	630 1125	825 1760	1580 2910	BW RF/RTJ



Pressure Seal, Cast Steel Globe Valve 900Lb

Applicable Standards:

- STEEL GLOBE VALVES, BS EN 13709/API 600
- 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



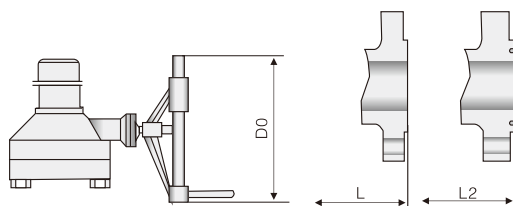
Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	1 ¹ / ₄ Cr-1 ¹ / ₂ Mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC6	A351-CF8M
2	Yoke	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	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 Fitting	Brass+Steel		
20	Yokesleeve	Aluminum-Bronze ²⁾		
21	Yokesleeve Jam Nut	Carbon Steel		Stainless 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.



Design description

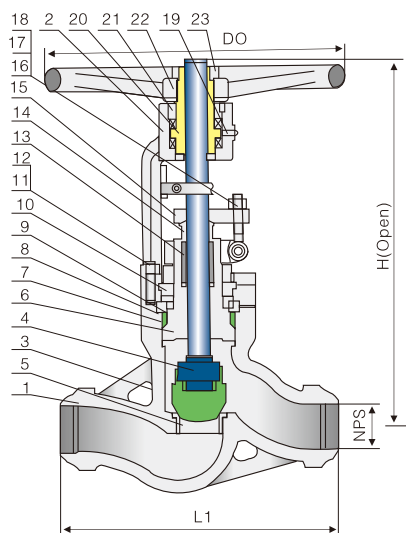
- PSB, PRESSURE SEAL BONNET
- OS&Y, OUTSIDE SCREW AND YOKE
- BB, BOLTED BONNET
- RENEWABLE SEAT RINGS
- RISING STEM AND HANDWHEEL
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH BG OPERATOR

Dimensions data

NPS DN	2 50	2 ¹ / ₂ 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
ANSI Class 900Lb									
L1 (BW)	8.50 216	10.00 254	12.00 305	14.00 356	20.00 508	26.00 660	31.00 787	36.00 914	in mm
L (RF)	14.50 368	16.50 419	15.00 381	18.00 457	24.00 610	29.00 737	33.00 838	38.00 965	in mm
L2 (RTJ)	14.62 371	16.62 422	15.12 384	18.12 460	24.12 613	29.12 740	33.12 841	38.12 968	in mm
H (open)	22 557	22 557	22 557	27 685	36.38 925	43.38 1100	50.62 1285	57 1450	in mm
DO	16 400	16 400	16 400	16 400	28 700	28 700	36 900	36 900	in mm
WT(kg)	46 75	53 82	68 95	100 135	270 355	450 680	740 1050	1150 1480	BW RF/RTJ

Applicable Standards:

- STEEL GLOBE VALVES, BS EN 13709/API 600
- 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



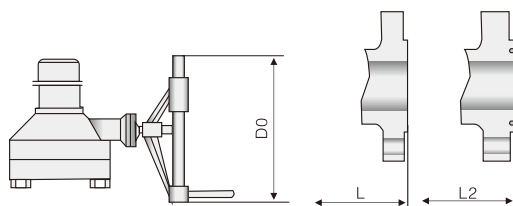
Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	1 ¹ / ₄ Cr-1 ¹ / ₂ Mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC6	A351-CF8M
2	Yoke	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	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 Fitting	Brass+Steel		
20	Yokesleeve	Aluminum-Bronze ²⁾		
21	Yokesleeve Jam Nut	Carbon Steel		Stainless 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.



Design description

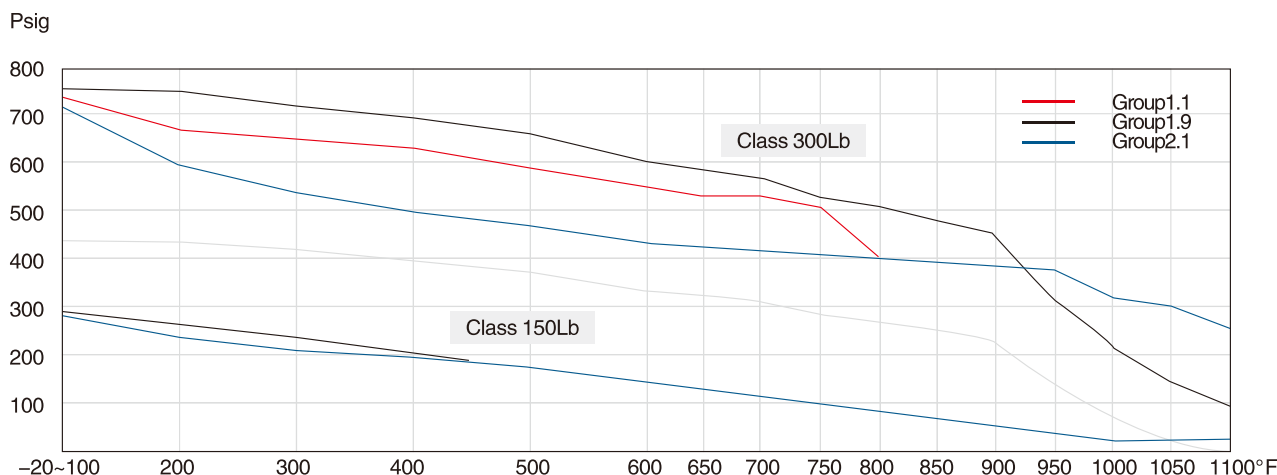
- PSB, PRESSURE SEAL BONNET
- OS&Y, OUTSIDE SCREW AND YOKE
- BB, BOLTED BONNET
- RENEWABLE SEAT RINGS
- RISING STEM AND HANDWHEEL
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH BG OPERATOR

Dimensions data

NPS DN	2 50	2 ¹ / ₂ 65	3 80	4 100	6 150	8 200	2 50	2 ¹ / ₂ 65	3 80	4 100	6 150	in mm
ANSI Class 1500Lb						ANSI Class 2500Lb						
L1 (BW)	8.50 216	10.00 254	12.00 305	16.00 406	22.00 559	28.00 711	11.00 279	13.00 330	14.50 368	18.00 457	24.00 610	in mm
L (RF)	14.50 368	16.50 419	18.50 470	21.50 546	27.75 705	32.75 832	17.75 451	20.00 508	22.75 578	26.50 673	36.00 914	in mm
L2 (RTJ)	14.62 371	16.62 422	18.62 473	21.62 549	28.00 711	33.12 842	17.88 454	20.50 514	23.00 584	26.88 683	36.50 927	in mm
H (open)	22 557	22 557	24.38 620	30 760	44.62 1135	54.75 1390	23.38 595	23.38 595	28 710	32.25 820	49.62 1260	in mm
D0	16 400	18 450	20 500	24 600	28 700	36 900	16 400	20 500	24 600	28 700	36 900	in mm
WT(kg)	57 86	65 112	90 162	190 240	450 580	730 950	65 115	78 136	125 205	155 275	480 860	BW RF/RTJ



Pressure-temperature Ratings Class150Lb/300Lb



ASME B16.34 Maximum Allowable Non-Shock Pressure

Psig

TEMPERATURE		ASTM MATERIALS															
		ANSI Class 150Lb								ANSI Class 300Lb							
°F	°C	Group 1.1	Group 1.2	Group 1.3	Group 1.9	Group 1.10	Group 1.13	Group 2.1	Group 2.2	Group 1.1	Group 1.2	Group 1.3	Group 1.9	Group 1.10	Group 1.13	Group 2.1	Group 2.2
-20~100	-20~38	285	290	265	290	290	290	275	275	740	750	695	750	750	750	720	720
200	93	260	260	250	230	260	260	230	235	670	750	655	750	750	745	600	620
300	149	230	230	230	230	230	230	205	215	655	730	640	720	720	715	540	560
400	204	200	200	200	200	200	200	190	195	635	705	620	695	695	705	495	515
500	260	170	170	170	170	170	170	170	170	600	665	585	665	665	665	465	480
600	316	140	140	140	140	140	140	140	140	550	605	535	605	605	605	435	450
650	343	125	125	125	125	125	125	125	125	535	590	525	590	590	590	430	445
700	371	110	110		110	110	110	110	110	535	570		570	570	570	425	430
750	399	95	95		95	95	95	95	95	505	505		530	530	530	415	425
800	427	80	80		80	80	80	80	80	410	410		510	510	510	405	420
850	454				65	65	65	65	65				485	485	485	395	420
900	482				50	50	50	50	50				450	450	370	390	415
950	510				35	35	35	35	35				320	375	275	380	385
1000	538				20	20	20	20	20				215	260	200	320	350
1050	566				20 ^{a)}	20 ^{a)}	20 ^{a)}	20 ^{a)}	20 ^{a)}				145	175	145	310	345
1100	593				20 ^{a)}	20 ^{a)}	20 ^{a)}	20 ^{a)}	20 ^{a)}				95	110	100	255	305

TEST PRESSURE BY API 598

Hydrostatic shell test	450	450	400	450	450	450	425	425	1125	1125	1050	1125	1125	1125	1100	1100
Hydrostatic seal test	315	320	295	320	320	320	305	305	815	825	765	825	825	825	795	795
Air seat test	80 ± 20								80 ± 20							

Metric conversions by API STD 2564 pressure: 1 pound per square inch (psig) = 0.06894757 bar = 0.006894757 MPa temperature: °C = (5/9)°F - 32

ASME B16.34 Materials Group			
Group 1.1	A105 ^{a)}	A216-WCB ^{a)}	
Group 1.2	A216-WCC ^{a)}	A352-LCC ^{a)}	
Group 1.3	A352-LCB ^{a)}		
Group 1.9	A217-WC6 ^{d)}		
Group 1.10	A217-WC9 ^{d)}		
Group 1.13	A217-C5		
Group 2.1	A182-F304	A351-CF8	A351-CF3 ^{b)}
Group 2.2	A182-F316	A352-CF8M	A351-CF3M ^{c)}

a). Not to be used over 650°F (343°C).

b). Not to be used over 650°F (427°C).

c). Not to be used over 650°F (538°C).

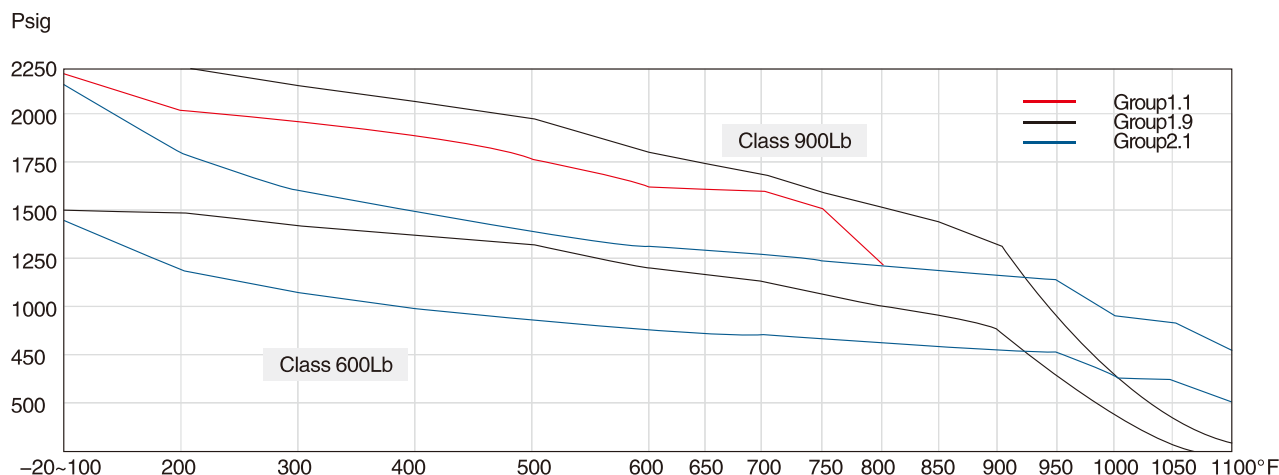
b). Not to be used over 650°F (593°C).

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).



Pressure-temperature Ratings Class 600Lb/900Lb



ASME B16.34 Maximum Allowable Non-Shock Pressure

Psig

TEMPERATURE		ASTM MATERIALS															
		ANSI Class 600Lb								ANSI Class 900Lb							
°F	°C	Group 1.1	Group 1.2	Group 1.3	Group 1.9	Group 1.10	Group 1.13	Group 2.1	Group 2.2	Group 1.1	Group 1.2	Group 1.3	Group 1.9	Group 1.10	Group 1.13	Group 2.1	Group 2.2
-20~100	-20~38	1480	1500	1390	1500	1500	1500	1440	1440	2220	2250	2085	2250	2250	2250	2160	2160
200	93	1350	1500	1315	1500	1500	1490	1200	1240	2025	2250	1970	2250	2250	2235	1800	1860
300	149	1315	1455	1275	1445	1455	1430	1080	1120	1970	2185	1915	2165	2185	2150	1620	1680
400	204	1270	1410	1235	1385	1410	1410	995	1025	1900	2115	1850	2080	2115	2115	1490	1540
500	260	1200	1330	1165	1330	1330	1330	930	955	1795	1995	1745	1995	1995	1995	1395	1435
600	316	1095	1210	1065	1210	1210	1210	875	1640	1640	1815	1600	1815	1815	1815	1310	1355
650	343	1075	1175	1045	1175	1175	1175	860	1610	1610	1765	1570	1765	1765	1765	1290	1330
700	371	1065	1135		1135	1135	1135	850	1600	1600	1705		1705	1705	1705	1275	1305
750	399	1010	1010		1065	1065	1055	830	1510	1510	1510		1595	1595	1585	1245	1280
800	427	825	825		1015	1015	1015	805	1235	1235	1235		1525	1525	1525	1210	1265
850	454				975	975	965	790					1460	1460	1450	1190	1255
900	482				900	900	740	780					1350	1350	1110	1165	1245
950	510				640	755	550	765					955	1130	825	1145	1160
1000	538				430	520	400	640					650	780	595	965	1050
1050	566				290	350	290	615					430	525	430	925	1030
1100	593				190	220	200	515					290	330	300	770	915

TEST PRESSURE BY API 598

Hydrostatic shell test	2225	2250	2100	2250	2250	2250	2175	3350	3350	3375	3150	3375	3375	3250	3250	3250
Hydrostatic seal test	1630	1650	1530	1650	1650	1650	1585	2445	2445	2475	2295	2475	2475	2380	2380	2380
Air seat test	80 ± 20															

Metric conversions by API STD 2564 pressure: 1 pound per square inch (psig) = 0.06894757 bar = 0.006894757 MPa temperature: °C = (5/9)°F - 32

ASME B16.34 Materials Group			
Group 1.1	A105 ^{a)}	A216-WCB ^{a)}	
Group 1.2	A216-WCC ^{a)}	A352-LCC ^{a)}	
Group 1.3	A352-LCB ^{a)}		
Group 1.9	A217-WC6 ^{d)}		
Group 1.10	A217-WC9 ^{d)}		
Group 1.13	A217-C5		
Group 2.1	A182-F304	A351-CF8	A351-CF3 ^{b)}
Group 2.2	A182-F316	A352-CF8M	A351-CF3M ^{c)}

a). Not to be used over 650°F (343°C).

b). Not to be used over 650°F (427°C).

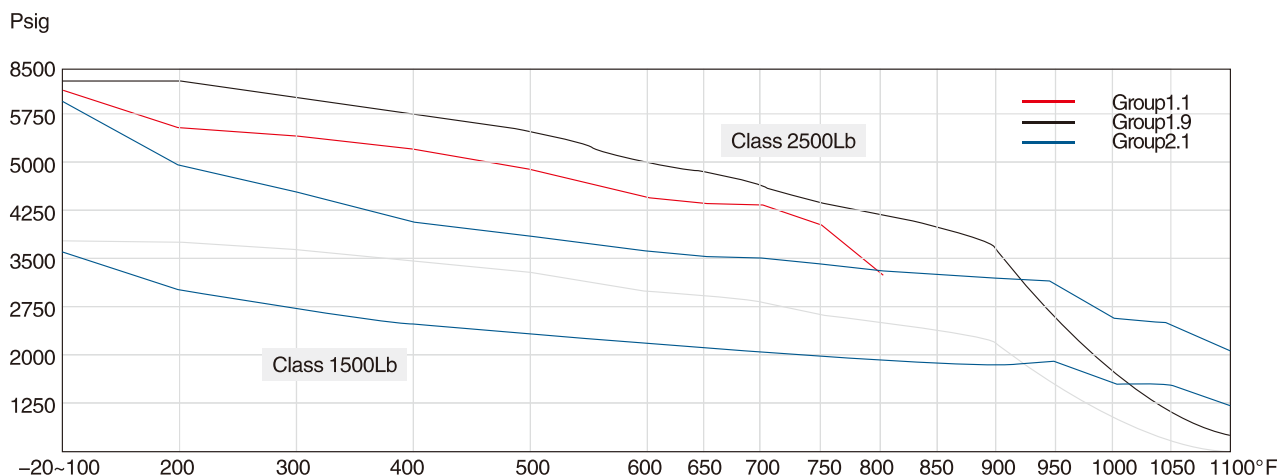
c). Not to be used over 650°F (538°C).

b). Not to be used over 650°F (593°C).

e). Permissible, but not recommended for prolonged use above 800°F (427°C).



Pressure-temperature Ratings Class1500Lb/2500Lb



ASME B16.34 Maximum Allowable Non-Shock Pressure

Psig

TEMPERATURE		ASTM MATERIALS															
		ANSI Class 1500Lb								ANSI Class 2500Lb							
°F	°C	Group 1.1	Group 1.2	Group 1.3	Group 1.9	Group 1.10	Group 1.13	Group 2.1	Group 2.2	Group 1.1	Group 1.2	Group 1.3	Group 1.9	Group 1.10	Group 1.13	Group 2.1	Group 2.2
-20~100	-20~38	3705	3750	3470	3750	3750	3750	3600	3600	6170	6250	5785	6250	6250	6250	6000	6000
200	93	3375	3750	3280	3750	3750	3725	3000	3095	5625	6250	5470	6250	6250	6205	5000	5160
300	149	3280	3640	3190	3610	3640	3580	2700	2795	5470	6070	5315	6015	6070	5965	4500	4660
400	204	3170	3530	3085	3465	3530	3530	2485	2570	5280	5880	5145	5775	5880	5880	4140	4280
500	260	2995	3325	2910	3325	3325	3325	2330	2390	4990	5540	4850	5540	5540	5540	3880	3980
600	316	2735	3025	2665	3025	3025	3025	2185	2255	4560	5040	4440	5040	5040	5040	3640	3760
650	343	2685	2940	2615	2940	2940	2940	2150	2220	4475	4905	4355	4905	4905	4905	3580	3700
700	371	2665	2840		2840	2840	2840	2125	2170	4440	4730		4730	4730	4730	3540	3620
750	399	2520	2520		2660	2660	2640	2075	2135	4200	4200		4430	4430	4400	3460	3560
800	427	2060	2060		2540	2540	2540	2015	2110	3430	3430		4230	4230	4230	3360	3520
850	454				2435	2435	2415	1980	2090				4060	4060	4030	3300	3480
900	482				2245	2245	1850	1945	2075				3745	3745	3085	3240	3460
950	510				1595	1885	1370	1910	1930				2655	3145	2285	3180	3220
1000	538				1080	1305	995	1605	1750				1800	2170	1655	2675	2915
1050	566				720	875	720	1545	1720				1200	1455	1200	2570	2865
1100	593				480	550	495	1285	1525				800	915	830	2145	2545

TEST PRESSURE BY API 598

Hydrostatic shell test	5575	5625	5225	5625	5625	5625	5400	5400	9275	9375	8700	9375	9375	9375	9000	9000
Hydrostatic seal test	4080	4125	3820	4125	4125	4125	2960	3960	6790	6875	6365	6875	6875	6875	6600	6600
Air seat test	80 ± 20															

Metric conversions by API STD 2564 pressure: 1 pound per square inch (psig) = 0.06894757 bar = 0.006894757 MPa temperature: °C = (5/9)°F - 32

ASME B16.34 Materials Group			
Group 1.1	A105 ^{a)}	A216-WCB ^{a)}	
Group 1.2	A216-WCC ^{a)}	A352-LCC ^{a)}	
Group 1.3	A352-LCB ^{a)}		
Group 1.9	A217-WC6 ^{d)}		
Group 1.10	A217-WC9 ^{d)}		
Group 1.13	A217-C5		
Group 2.1	A182-F304	A351-CF8	A351-CF3 ^{b)}
Group 2.2	A182-F316	A352-CF8M	A351-CF3M ^{c)}

a). Not to be used over 650°F (343°C).

b). Not to be used over 650°F (427°C).

c). Not to be used over 650°F (538°C).

b). Not to be used over 650°F (593°C).

e). Permissible, but not recommended for prolonged use above 800°F (427°C).



Materials Characteristic

Materials Characteristic

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ASTM Specification		Chemical Analysis										Mechanical Properties				
		C	Mn	Si	P	S	Cr	Ni	Mo	Cu	V	Tensile	Yield	Elongation	Reduction	Hardness
		Carbon	Manganese	Silicon	Phosphorus	Sulfur	Chromium	Nickel	Molybdenum	Copper	Vanadium	Mpa	Mpa	%	of area,%	HB
		Nominal or maximum,%										Min				Max
Cast steel																
Carbon steel	A216-WCA	0.25	0.70	0.60	0.040	0.045	0.50	0.50	0.20	0.30	0.03	415-585	205	24	35	-
	A216-WCB	0.30	1.00	0.60	0.040	0.045	0.50	0.50	0.20	0.30	0.03	485-655	250	22	35	-
	A216-WCC	0.25	1.20	0.60	0.040	0.045	0.50	0.50	0.20	0.30	0.03	485-655	275	22	35	-
Cast steel																
Chrome-molybdenum steel	A217-WC1	0.25	0.50-0.80	0.60	0.040	0.045	0.35	0.45-0.65	0.45-0.65	0.50	-	450-620	240	24	35	-
	A217-WC6	0.05-0.20	0.50-0.80	0.60	0.040	0.045	1.00-1.50	0.50	0.45-0.65	0.50	-	485-655	275	20	35	-
	A217-WC9	0.02-0.18	0.40-0.70	0.60	0.040	0.045	2.00-2.75	0.50	0.90-1.20	0.50	-	485-655	275	20	35	-
	A217-C5	0.20	0.40-0.70	0.75	0.040	0.045	4.00-6.50	0.50	0.45-0.65	0.50	-	620-795	415	18	35	-
	A217-C12	0.20	0.35-0.65	1.00	0.040	0.045	8.00-10.0	0.50	0.90-1.20	0.50	-	620-795	415	18	35	-
Cast steel																
Ni alloy steel	A494 M-35-1	0.35	1.50	1.25	0.030	0.030	-	Allowance	-	26.0-33.0	Fe ≤ 3.50	450	170	25	-	-
	A494 CW-6M	0.07	1.00	1.00	0.040	0.030	17.0-20.0	Allowance	17.0-20.0	-	Fe ≤ 3.00	495	275	25	-	-
	A494 CY-40	0.40	1.50	3.00	0.030	0.030	14.0-17.0	Allowance	-	-	Fe ≤ 11.0	185	195	30	-	-
Cast steel																
Stainless steel	A351-CF8	0.08	1.50	2.00	0.040	0.040	18.0-21.0	8.0-11.0	0.50	-	-	485	205	35	35	-
	A351-CF8M	0.08	1.50	1.50	0.040	0.040	18.0-21.0	9.0-12.0	2.0-3.0	-	-	485	205	30	30	-
	A351-CF3	0.03	1.50	2.00	0.040	0.040	17.0-21.0	8.0-12.0	0.50	-	-	485	205	35	35	-
	A351-CF3M	0.03	1.50	1.50	0.040	0.040	17.0-21.0	9.0-13.0	2.0-3.0	-	-	485	205	30	30	-
	A351-CN7M	0.07	1.50	1.50	0.040	0.040	19.0-22.0	27.5-30.5	2.0-3.0	3.0-4.0	-	450	170	35	35	-
Cast steel																
Carbon steel	A352-LCB	0.30	1.00	0.60	0.040	0.045	0.50	0.50	0.20	0.30	0.03	450-650	240	24	35	-
	A352-LCC	0.25	1.20	0.60	0.040	0.045	0.50	0.50	0.20	0.30	0.03	485-655	275	22	35	-
	A352-LC1	0.25	0.50-0.80	0.60	0.040	0.045	-	-	0.45-0.65	-	-	450-620	240	24	35	-
	A352-LC2	0.25	0.50-0.80	0.60	0.040	0.045	-	2.00-3.00	-	-	-	485-655	275	24	35	-
	A352-LC3	0.15	0.50-0.80	0.60	0.040	0.045	-	3.00-4.00	-	-	-	485-655	275	24	35	-
Forged steel																
Carbon steel	A105(N)	0.35	0.60-1.05	0.35	0.040	0.050	0.30	0.40	0.12	0.40	0.03	485	250	30	30	187
	A350-LF1	0.30	1.35	0.15-0.3	0.035	0.040	0.30	0.40	0.12	0.40	0.03	415-585	205	25	38	-
	A350-LF2	0.30	1.35	0.15-0.30	0.035	0.040	0.30	0.40	0.12	0.40	0.03	485-655	252	22	30	-
	A350-LF3	0.20	0.90	0.20-0.35	0.035	0.040	0.30	3.25-3.7	0.12	0.40	0.03	485-655	260	22	35	-
	A350-LF9	0.20	0.40-1.06	-	0.035	0.040	0.30	1.60-2.24	0.12	0.75-1.25	0.03	435-605	315	25	38	-
Forged steel																
Stainless steel	A182-F304	0.08	2.00	1.00	0.040	0.030	18.0-20.0	8.0-11.0	-	-	-	515	205	30	50	-
	A182-F316	0.08	2.00	1.00	0.040	0.030	16.0-18.0	10.0-14.0	2.0-3.0	-	-	515	205	30	50	-
	A182-F304L	0.03	2.00	1.00	0.045	0.030	18.0-20.0	8.0-13.0	-	-	-	485	170	30	50	-
	A182-F316L	0.03	2.00	1.00	0.045	0.030	16.0-18.0	10.0-15.0	2.0-3.0	-	-	485	170	30	50	-
Component part																
Trim	A276-304	0.08	2.00	1.00	0.045	0.030	18.0-20.0	8.0-10.5	-	-	-	515	205	40	50	-
	A276-316	0.05	2.00	1.00	0.045	0.030	16.0-18.0	10.0-14.0	2.0-3.0	-	-	485	170	40	50	-
	A276-410	0.15	1.00	1.00	0.040	0.030	11.5-13.5	-	-	-	-	480	275	20	45	-
	A276-420	0.15	1.00	1.00	0.040	0.030	12.0-14.0	-	-	-	-	-	-	-	-	241
	A182-F6A	0.15	1.00	1.00	0.040	0.030	11.5-13.5	0.50	-	-	-	585	380	18	35	167-229
Fastening piece																
Stud	A193-B7	0.37-0.49	0.65-1.10	0.15-0.35	0.035	0.040	0.75-1.20	-	0.15-0.25	-	-	860	720	16	50	-
	A193-B7M	0.37-0.49	0.65-1.10	0.15-0.35	0.035	0.040	0.75-1.20	-	0.15-0.25	-	-	690	550	18	50	235
	A193-B8	0.08	2.00	1.00	0.045	0.030	18.0-20.0	8.0-10.50	-	-	-	515	205	30	50	223
	A193-B8A	0.08	2.00	1.00	0.045	0.030	18.0-20.0	8.0-10.50	-	-	-	515	205	30	50	192
	A193-B8M	0.08	2.00	1.00	0.045	0.030	16.0-18.0	10.0-14.0	2.0-3.0	-	-	515	205	30	50	192
Nut	A320-L7	0.38-0.48	0.75-1.00	0.15-0.35	0.035	0.040	0.80-1.10	-	0.15-0.25	-	-	860	725	16	50	-
	A194-2H	≥ 0.40	1.00	0.40	0.040	0.050	-	-	-	-	-	-	-	-	-	248-352
	A194-2HM	≥ 0.40	1.00	0.40	0.040	0.050	-	-	-	-	-	-	-	-	-	159-237
	A194-7	0.37-0.49	0.65-1.00	0.15-0.35	0.040	0.040	0.75-1.20	-	0.15-0.25	-	-	-	-	-	-	248-352
	A197-8	0.08	2.00	1.00	0.045	0.030	18.0-1.20	8.0-10.5	-	-	-	-	-	-	-	126-300
	A194-8M	0.08	2.00	1.00	0.045	0.030	16.0-18.0	10.0-14.0	2.0-3.0	-	-	-	-	-	-	126-300



Nace Resist SSC Valves, Nace MRO175

Nace Valves:

For service four gases of other hydrogen sulfide bearing hydrocarbon fluids, ASPEN 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 ASPEN cast steel valve, a note should be taken as the fact that NACE hardness requirement conflicts with the one of valve seating surface specified by API600, Table 13. ASPEN 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	API600 Hardness
1	Body	A216-WCB	≤HRC 22 (237 HB)	—
2	Bonnet/yoke	A216-WCB		—
3	Seat ring	A105 With 13cr overlay		≥ 250 HB*
4	Wedge/disc	A216-WCB/ A105 with 13cr overlay		≥ 250HB*
5	Stem	ANSI type410/A182-F6a	≤HRC 22 (237 HB)	≥ 200HB
6	Backseat bushing			≥ 250HB
7	Lantern ring			—
8	Gland			—
9	Bonnet gasket	316SS+Graphite	—	—
		316SS(RTJ)	≤HRC 22	—
10	Bonnet bolt	A193-B7	—	—
		A194-B7M	≤HRC 22	—
11	Bonnet nut	A194-2H	—	—
		A194-2HM	≤HRC 22	—

Minimum hardness differential of 50 HB between the seats.

All the cast steel valves in this catalogue can be manufactured to NACE MR 0175 specification for sour oil and gas service.

- 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 II nut and bolt.
- G). All NACE valves are further identified by additional works"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.

Spectrum test, Portable And Mobile On-Site Metal Analysers



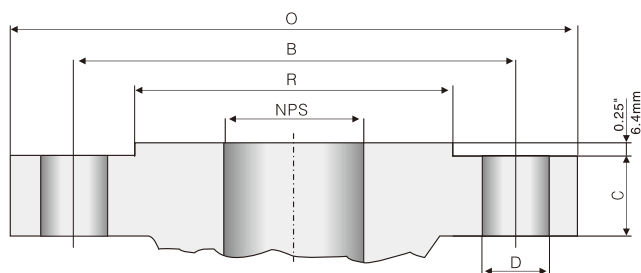
International Materials Standards

International Materials Standards

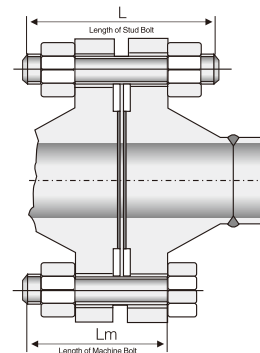
Materials		America	Germany			United kingdom		China
		ASTM/AISI/SAE/ASME	DIN NO	DIN TYPE	MATERIAL NUMBER	BS NUMBER	BS GRADE	GB
Cast steel								
Carbon steel	A216-WCA	ASTM A216-WCA	1681	GS-38	1.042	1504-161	430	WCA
	A216-WCB	ASTM A216-WCB	17245	GS-C25	1.0619	1504-161	480	WCB
	A216-WCC							WCC
Cast steel								
Chromium-molybdenum steel	A217-WC1	ASTM A217-WC1	17245	GS-22Mo4	1.5419			ZG20Mo
	A217-WC6	ASTM A217-WC6	17245	GS-17CrMo55	1.7357			15CrMo
	A217-WC9	ASTM A217-WC9	17245	GS-18CrMo810	1.7379			12Cr1Mo1V
	A217-C5	ASTM A217-C5	VDeh SPW 595	GS-12CrMo195	17363	1504	625E	1Cr5Mo
	A217-C12	ASTM A217-C12	VDeh SPW 595	G-X120CrMo101	17389	1504	629E	9Cr1Mo
Ni alloy steel	A494 M-35-1							
	A494 CW-6M							
	A494 CY-40							
Cast steel								
Stainless steel	A351-CF8	ASTM A351-CF8	17445	G-X6CrNi189	1.4308	1504-304	C15	0Cr18Ni9
	A351-CF8M	ASTM A351-CF8M	17445	G-X6CrNiMo1810	1.4408	1504-316	C16	1Cr18Ni12Mo2Ti
	A351-CF3	ASTM A351-CF3	17440	G-X2CrNi189	1.4306	970/1	304S 11	00Cr18Ni10
	A351-CF3M	ASTM A351-CS3M	17440	G-X2CrNiMoN1810	1.4404	2056	316S11	00Cr17Ni14Mo2
	A351-CN7M	ASTM A351-CN7M				1504	332C11E	
Cast steel								
Carbon steel	A352-LCB	ASTM A352-LCB	SFW 685	GS+21Mo5	1.1138			LCB
	A352-LCC	ASTM A352-LCC	17173	GS-26CrMo4	1.7219			LCC
	A352-LC1	ASTM A352-LC1				1504	245LT50	
	A352-LC2	ASTM A352-LC2						ZG0CRMNVA1
	A352-LC3	ASTM A352-LC3	SEW 685	GS10Ni14	1.5638	1504-503	Lt60	
Forged steel								
Carbon steel	A105(N)	ASTM A105	17100	St50-2	1.005	1503	221-490	25
	A350-LF1	ASTM A350-LF1	SEW 680	TTSt41	1.0437			
	A350-LF2	ASTM A350-LF2	17155	19Mn5	1.0482			
	A350-LF3	ASTM A350-LF3	17173	10Ni14	1.5367	1503	50Gr.490	
	A350-LF9	ASTM A350-LF9						
Forged steel								
Stainless steel	A182-F304	ASTM A182-F304	17440	X5CrNi189	1.4301	1503	304S31	0Cr18Ni9
	A182-F316	ASTM A182-F316	17440	X5CrNiMo1810	1.4401	1503	316S31	0Cr17Ni12Mo2
	A182-F304L	ASTM A182-F304L	17440	X2CrNi810	1.4311			00Cr18Ni10
	A182-F316L	ASTM A182-F316L	17440	X2CrNiMo1810	1.4404	1503	316S11	00Cr17Ni14Mo2
Component part								
Trim	A276-304	ASTM A276-304						0Cr18Ni9
	A276-316	ASTM A276-316						0Cr17Ni12Mo2
	A276-410	ASTM A276-410						1Cr13
	A276-420	ASTM A276-420						2Cr13
	A182-F6A	ASTM A182-F6A						2Cr13
Fastening piece								
Stud	A193-B7	ASTM A193-GRAD B7	17240	40CrMoV47	1.7711	1506-630	790	35CrMoA
	A193-B7M	ASTM A193 GRAD B7M						
	A193-B8	ASTM A193 GRAD B8	17440	X5CrNi189	1.4301			0Cr18Ni9
	A193-B8A							
	A193-B8M	ASTM A193 GRAD B8M	17245	X6CrNiMoTi17 12 2	1.4571	1506-316	S31	0Cr17Ni12Mo2
	A320-L7	ASTM A320 GR L7	17200	42CrMo4	1.7225	4882		42CrMo
	A194-2H	ASTM A194 GRAD 2H	17400	CK35	1.1181	1506-162		45
Nut	A194-2HM	ASTM A194 GRAD 2HM						
	A194-7	ASTM A194 GRAD7	17200	24CrMo5	1.7258	1506-162		20CrMo
	A197-8	ASTM A194 GRAD8	17245	X6CrNiMo17 12 2	1.4571	1506-316	S31	0Cr18Ni9
	A194-8M	ASTM A194-GR8M	17440	X5CrNiMo1810	1.4401			0Cr17Ni12Mo



Flanged Ends 150Lb/300Lb



ANSI Class150Lb/300Lb
0.25"(6.4mm) Raised face joint



Class150Lb

NPS		O		C		R		B		D		Bolt		L		Lm	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	QTY	Diam	in	mm	in	mm
2	50	6.00	152.4	0.75	19.1	3.62	91.9	4.75	120.7	0.75	19.1	4	5/8	3.25	82.6	2.75	69.9
2 1/2	65	7.00	177.8	0.88	22.4	4.12	104.6	5.50	139.7	0.75	19.1	4	5/8	3.50	88.9	3.00	76.2
3	80	7.50	190.5	0.94	23.9	5.00	127.0	6.00	152.4	0.75	19.1	4	5/8	3.50	88.9	3.00	76.2
4	100	9.00	228.6	0.94	23.9	6.19	157.2	7.50	190.5	0.75	19.1	8	5/8	3.50	88.9	3.00	76.2
5	125	10.00	254.0	0.94	23.9	7.31	185.7	8.50	215.9	0.88	22.4	8	3/4	3.75	95.3	3.25	82.6
6	150	11.00	279.4	1.00	25.4	8.50	215.9	9.50	241.3	0.88	22.4	8	3/4	4.00	101.6	3.25	82.6
8	200	13.50	342.9	1.12	28.4	10.62	269.7	11.75	298.5	0.88	22.4	8	3/4	4.25	108.0	3.50	88.9
10	250	16.00	406.4	1.19	30.2	12.75	323.9	14.25	362.0	1.00	25.4	12	7/8	4.50	114.3	4.00	101.6
12	300	19.00	482.6	1.25	31.8	15.00	381.0	17.00	431.8	1.00	25.4	12	7/8	4.75	120.7	4.00	101.6
14	350	21.00	533.4	1.38	35.1	16.25	412.8	18.75	476.3	1.12	28.4	12	1	5.25	133.4	4.50	114.3
16	400	23.50	596.9	1.44	36.6	18.50	469.9	21.25	539.8	1.12	28.4	16	1	5.25	133.4	4.50	114.3
18	450	25.00	635.0	1.56	39.6	21.00	533.4	22.75	577.9	1.25	31.8	16	1 1/8	5.75	146.1	5.00	127.0
20	500	27.50	698.5	1.69	42.9	23.00	584.2	25.00	635.0	1.25	31.8	20	1 1/8	6.25	158.8	5.50	139.7
24	600	32.00	812.8	1.88	47.8	27.25	692.2	39.50	749.3	1.38	35.1	20	1 1/4	6.75	171.5	6.00	152.4
26	650	34.25	870.1	2.00	50.8	29.50	749.3	41.75	806.5	1.38	35.1	24	1 1/4	8.25	209.6	7.50	190.5
28	700	36.50	927.1	2.25	57.2	31.50	800.1	44.00	863.6	1.38	35.1	28	1 1/4	8.50	215.9	7.75	196.9
30	750	38.75	984.3	2.40	60.9	33.75	857.3	46.00	914.4	1.38	35.1	28	1 1/4	9.00	228.6	8.00	203.2
32	800	41.75	1060.5	2.62	66.5	36.00	914.4	48.00	977.9	1.62	41.1	28	1 1/2	9.75	247.7	8.75	222.3
34	850	43.75	1111.3	2.81	71.4	38.00	965.2	50.00	1028.7	1.62	41.1	32	1 1/2	10.00	254.0	9.00	228.6
36	900	46.00	1168.4	3.06	77.7	40.25	1022.4	52.00	1085.9	1.62	41.1	32	1 1/2	10.50	266.7	9.50	241.3

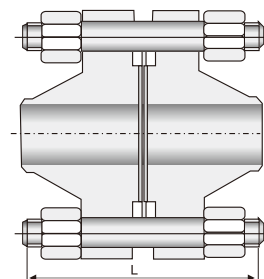
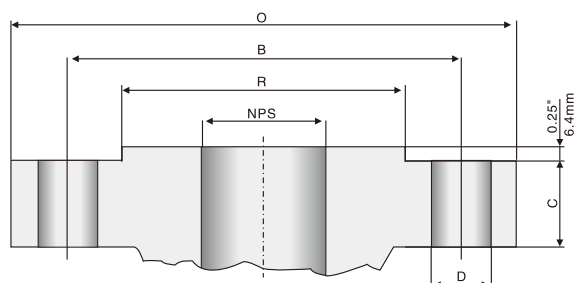
Class300Lb

NPS		O		C		R		B		D		Bolt		L		Lm	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	QTY	Diam	in	mm	in	mm
2	50	6.50	165.1	0.88	22.4	3.62	91.9	5.00	127.0	0.75	19.1	8	5/8	3.50	88.9	3.00	76.2
2 1/2	65	7.50	190.5	1.00	25.4	4.12	104.6	5.88	149.4	0.88	22.4	8	3/4	4.00	101.6	3.25	82.6
3	80	8.25	209.6	1.12	28.4	5.00	127.0	6.62	168.1	0.88	22.4	8	3/4	4.25	108.0	3.50	88.9
4	100	10.00	254.0	1.25	31.8	6.19	157.2	7.88	200.2	0.88	22.4	8	3/4	4.50	114.3	3.75	95.3
5	125	11.00	279.4	1.38	35.1	7.31	185.7	9.25	235.0	0.88	22.4	8	3/4	4.75	120.7	4.00	101.6
6	150	12.50	317.5	1.44	36.6	8.50	215.9	10.62	269.7	0.88	22.4	12	3/4	4.75	120.7	4.25	108.0
8	200	15.00	381.0	1.62	41.1	10.62	269.7	13.00	330.2	1.00	25.4	12	7/8	5.50	139.7	4.75	120.7
10	250	17.50	444.5	1.88	47.8	12.75	323.9	15.25	387.4	1.12	28.4	16	1	6.25	158.8	5.50	139.7
12	300	20.50	520.7	2.00	50.8	15.00	381.0	17.75	450.9	1.25	31.8	16	1 1/8	6.75	171.5	6.00	152.4
14	350	23.00	584.2	2.12	53.8	16.25	412.8	20.25	514.4	1.25	31.8	20	1 1/8	7.00	177.8	6.25	158.8
16	400	25.50	647.7	2.25	57.2	18.50	469.9	22.50	571.5	1.38	35.1	20	1 1/4	7.50	190.5	6.50	165.1
18	450	28.00	711.2	2.38	60.5	21.00	533.4	24.75	628.7	1.38	35.1	24	1 1/4	7.75	196.9	6.75	171.5
20	500	30.50	774.7	2.50	63.5	23.00	584.2	27.00	685.8	1.38	35.1	24	1 1/4	8.00	203.2	7.25	184.2
24	600	36.00	914.4	2.75	69.9	27.25	692.2	32.00	812.8	1.62	41.1	24	1 1/2	9.00	228.6	8.00	203.2
26	650	38.25	971.6	3.12	79.2	29.50	749.3	34.50	876.3	1.75	44.5	28	1 5/8	10.25	260.3	9.25	235.0
28	700	40.75	1035.1	3.38	85.9	31.50	800.1	37.00	939.8	1.75	44.5	28	1 5/8	10.75	273.0	9.75	247.7
30	750	43.00	1092.2	3.62	91.9	33.75	857.3	39.25	997.0	1.88	47.8	28	1 3/4	11.50	291.6	10.50	266.7
32	800	45.25	1149.4	3.88	98.6	36.00	914.4	41.50	1054.1	2.00	50.8	28	1 7/8	12.25	311.3	11.25	285.8
34	850	47.50	1206.5	4.00	101.6	38.00	965.2	43.50	1104.9	2.00	50.8	28	1 7/8	12.75	323.9	11.75	298.5
36	900	50.00	1270.0	4.12	104.6	40.25	1022.4	46.00	1168.4	2.12	53.8	32	2	13.25	336.7	12.25	311.2

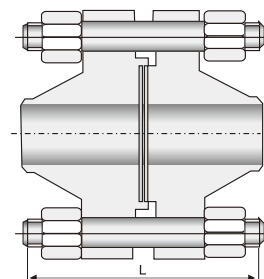
- a) NPS24" and smaller flanged ends by ANSI B16.5, NPS26" and larger by MSS SP-44.
b) Flange of 150Lb and 300Lb with the raised face of 0.06(1.6mm) is included in the smallest flange of thickness C.
c) The length L of the double -end bolt doesn't include the terminal length.
d) Flange gasket of the matching flange ASME B16.20.



Flanged Ends 600Lb/900Lb



ANSI Class600Lb/900Lb
0.25\"/>



ANSI Class600Lb/900Lb
Male & female

Class600Lb

NPS		O		C		R		B		D		Bolt		L		LRTJ		Lm	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	QTY	Diam	in	mm	in	mm	in	mm
2	50	6.50	165.1	1.00	25.4	3.62	91.9	5.00	127.0	0.75	19.1	8	5/8	4.25	108.0	4.25	108.0	4.00	101.6
2 1/2	65	7.50	190.5	1.12	28.4	4.12	104.6	5.88	149.4	0.88	22.4	8	3/4	4.75	120.7	4.75	120.7	4.50	114.3
3	80	8.25	209.6	1.25	31.8	5.00	127.0	6.62	168.1	0.88	22.4	8	3/4	5.00	127.0	5.00	127.0	4.75	120.7
4	100	10.75	273.1	1.50	38.1	6.19	157.2	8.50	215.9	1.00	25.4	8	7/8	5.75	146.1	5.75	146.1	5.50	139.7
5	25	13.00	330.2	1.75	44.5	7.31	185.7	10.50	266.7	1.12	28.4	8	1	6.50	165.1	6.50	165.1	6.25	158.8
6	150	14.00	355.6	1.88	47.8	8.50	215.9	11.50	292.1	1.12	28.4	12	1	6.75	171.5	6.75	171.5	6.50	165.1
8	200	16.50	419.1	2.19	55.6	10.62	269.7	13.75	349.3	1.25	31.8	12	1 1/8	7.50	190.5	7.50	190.5	7.25	184.2
10	250	20.00	508.8	2.50	63.5	12.75	323.9	17.00	431.8	1.38	35.1	16	1 1/4	8.50	215.9	8.50	215.9	8.25	209.6
12	300	22.00	558.8	2.62	66.5	15.00	381.0	19.25	489.0	1.38	35.1	20	1 1/4	8.75	222.3	8.75	222.3	8.50	215.9
14	350	23.75	603.3	2.75	69.9	16.25	412.8	20.75	527.1	1.50	38.1	230	1 3/8	9.25	235.0	9.25	235.0	9.00	228.6
16	400	27.00	685.8	3.00	76.2	18.50	469.9	23.75	603.3	1.62	41.1	20	1 1/2	10.00	254.0	10.00	254.0	9.75	247.7
18	450	29.25	743.0	3.25	82.6	21.00	533.4	25.75	685.4	1.75	44.5	20	1 5/8	10.75	273.1	10.75	273.1	10.50	266.7
20	500	32.00	812.8	3.50	88.9	23.00	584.2	28.50	723.9	1.75	44.5	24	1 5/8	11.25	285.8	11.25	285.8	11.00	279.4
24	600	37.00	939.8	4.00	101.6	27.25	692.2	33.00	838.2	2.00	50.8	24	1 7/8	13.00	330.2	13.25	336.6	12.75	323.9
26	650	40.00	1016.0	4.25	108.0	29.50	749.3	36.00	914.4	2.00	50.8	28	1 7/8	14.00	355.6	14.00	355.6	13.75	349.3
28	700	42.25	1073.2	4.38	111.3	31.50	800.1	38.00	965.2	2.12	53.8	28	2	14.50	368.3	14.50	368.3	14.25	362.0
30	750	44.50	1130.3	4.50	114.3	33.75	857.3	40.25	1022.4	2.12	53.8	28	2	15.00	381.0	14.75	375.4	14.75	374.7
32	800	47.00	1193.8	4.62	117.3	36.00	914.4	42.50	1079.5	2.38	60.5	28	2 1/4	15.50	393.7	15.75	400.1	15.25	387.4
34	850	49.00	1244.6	4.75	120.7	38.00	965.2	44.50	1130.3	2.38	60.5	28	2 1/4	16.25	412.8	16.25	412.8	16.00	406.4
36	900	51.75	1314.5	4.88	124.0	40.25	1022.4	47.00	1193.8	2.62	66.5	28	2 1/2	15.75	400.1	16.75	425.5	15.50	393.7

Class900Lb

NPS		O		C		R		B		D		Bolt		L		LRTJ		Lm	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	QTY	Diam	in	mm	in	mm	in	mm
2	50	8.50	215.9	1.50	38.1	3.62	91.9	6.50	165.1	1.00	25.4	8	7/8	5.75	146.1	5.75	146.1	5.50	139.7
2 1/2	65	9.62	244.3	1.62	41.1	4.12	104.6	7.50	190.5	1.12	28.4	8	1	6.25	158.8	6.25	158.8	6.00	152.4
3	80	9.50	241.3	1.50	38.1	5.00	127.0	7.50	190.5	1.00	25.4	8	7/8	5.75	146.1	5.75	146.1	5.50	139.7
4	100	11.50	292.1	1.75	44.5	6.19	157.2	9.25	235.0	1.25	31.8	8	1 1/8	6.75	171.5	6.75	171.5	6.50	165.1
5	25	13.75	349.3	2.00	50.8	7.31	185.7	11.00	279.4	1.38	35.1	8	1 1/4	7.50	190.5	7.50	190.5	7.25	184.2
6	150	15.00	381.0	2.19	55.6	8.50	215.9	12.50	317.5	1.25	31.8	12	1 1/8	7.50	190.5	7.75	196.9	7.25	184.2
8	200	18.50	469.9	2.50	63.5	10.62	269.7	15.50	393.7	1.50	38.1	12	1 3/8	8.75	222.3	8.75	222.3	8.50	215.9
10	250	21.50	546.1	2.75	69.9	12.75	323.9	18.50	469.9	1.50	38.1	16	1 3/8	9.25	235.0	9.25	235.0	9.00	228.6
12	300	24.00	609.6	3.12	79.2	15.00	381.0	21.00	533.4	1.50	38.1	20	1 3/8	10.00	254.0	10.00	254.0	9.75	247.7
14	350	25.25	641.4	3.38	85.9	16.25	412.8	22.00	558.8	1.62	41.1	20	1 1/2	10.75	273.1	11.00	279.4	10.50	266.7
16	400	27.75	704.9	3.50	88.9	18.50	469.9	24.25	616.0	1.75	44.5	20	1 5/8	11.25	285.8	11.50	292.1	11.00	279.4
18	450	31.00	787.4	4.00	101.6	21.00	533.4	27.00	685.8	2.00	50.8	20	1 7/8	12.75	323.9	13.25	336.6	12.50	317.5
20	500	33.75	857.3	4.25	108.0	23.00	584.2	29.50	749.3	2.12	53.8	20	2	13.75	349.3	14.25	362.0	13.50	342.9
24	600	41.00	1041.4	5.50	139.7	27.25	692.2	35.50	901.7	2.62	66.5	20	2 1/2	17.25	438.2	18.00	457.2	17.00	431.8

a) NPS24\"/>

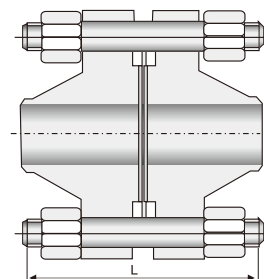
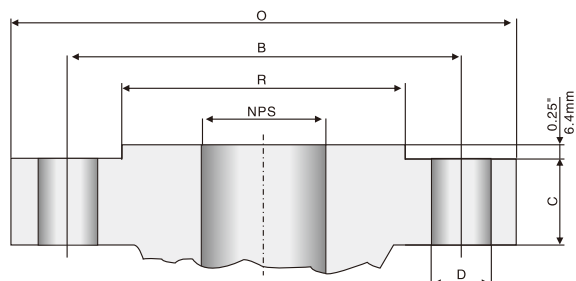
b) Flange of 600Lb and 900Lb with the raised face of 0.06(1.6mm) is included in the smallest flange of thickness C.

c) The length L of the double -end bolt doesn't include the terminal length.

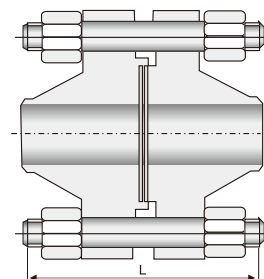
d) Flange gasket of the matching flange ASME B16.20.



Flanged Ends 1500Lb/2500Lb



ANSI Class600Lb/900Lb
0.25\"/>



ANSI Class600Lb/900Lb
male & female

Class1500Lb

NPS		O		C		R		B		D		Bolt		L		LRTJ		Lm	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	QTY	Diam	in	mm	in	mm	in	mm
2	50	8.50	215.9	1.50	38.1	3.62	91.9	6.50	165.1	1.00	25.4	8	7/8	5.75	146.1	5.75	146.1	5.50	139.7
2 1/2	65	9.62	244.3	1.62	41.1	4.12	104.6	7.50	190.5	1.012	28.4	8	1	6.25	158.8	6.25	158.8	6.00	152.4
3	80	10.50	266.7	1.88	47.8	5.00	127.0	8.00	203.2	1.25	31.8	8	1 1/8	7.00	177.8	7.00	177.8	6.75	171.5
4	100	12.25	311.2	2.12	53.8	6.19	157.2	9.50	241.3	1.38	35.1	8	1 1/4	7.75	196.9	7.75	196.9	7.50	190.5
5	125	14.75	374.7	2.88	73.2	7.31	185.7	11.50	292.1	1.62	41.1	8	1 1/2	9.75	247.7	9.75	247.7	9.50	241.3
6	150	15.50	393.7	3.25	82.6	8.50	215.9	12.50	317.5	1.50	38.1	12	1 3/8	10.25	260.4	10.50	266.7	10.00	254.0
8	200	19.00	482.6	3.62	91.9	10.62	269.7	15.50	393.7	1.75	44.5	12	1 5/8	11.50	292.1	12.75	323.9	11.25	285.8
10	250	23.00	584.2	4.25	108.0	12.75	323.9	19.00	482.6	2.00	50.8	12	1 7/8	13.25	336.6	13.50	342.9	13.00	330.2
12	300	26.50	673.1	4.88	124.0	15.00	381.0	22.50	571.5	2.12	53.8	16	2	14.75	374.7	15.25	387.4	14.50	368.3
14	350	29.50	749.3	5.25	133.4	16.25	412.8	25.00	635.0	2.38	60.5	16	2 1/4	16.00	406.4	16.75	425.5	15.75	400.1
16	400	32.50	825.5	5.75	146.1	18.50	469.9	27.50	704.9	2.62	66.5	16	2 1/2	17.50	444.5	18.50	469.9	17.25	438.2
18	450	36.00	914.4	6.38	162.1	21.00	533.4	30.50	774.7	2.88	73.2	16	2 3/4	19.50	495.3	20.75	527.1	19.25	489.0
20	500	38.75	984.3	7.00	177.8	23.00	584.2	32.75	831.9	3.12	79.2	16	2	21.25	539.8	22.25	565.2	21.00	533.4
24	600	46.00	1168.4	8.00	203.2	27.25	692.2	39.00	990.6	3.62	91.9	16	3 1/2	24.25	616.0	25.50	647.7	24.00	609.6

Class2500Lb

NPS		O		C		R		B		D		Bolt		L		LRTJ		Lm	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	QTY	Diam	in	mm	in	mm	in	mm
2	50	9.25	235.0	2.00	50.8	3.62	91.9	6.75	171.5	1.12	28.4	8	1	7.00	177.8	7.00	177.8	6.75	171.5
2 1/2	65	10.50	266.7	2.25	57.2	4.12	104.6	7.75	196.9	1.25	31.8	8	1 1/8	7.75	196.9	8.00	203.2	7.50	190.5
3	80	12.00	304.8	2.62	66.5	5.00	127.0	9.00	228.6	1.38	35.1	8	1 1/4	8.75	222.3	9.00	228.6	8.50	215.9
4	100	14.00	355.6	3.00	76.2	6.19	157.2	10.75	273.1	1.62	41.1	8	1 1/2	10.00	254.0	10.25	260.4	9.75	247.7
5	125	16.50	419.1	3.62	91.9	7.31	185.7	12.75	323.9	1.88	47.8	8	1 3/4	11.75	298.5	12.25	311.2	11.50	292.1
6	150	19.00	482.6	4.25	108.0	8.50	215.9	14.50	368.3	2.12	53.8	8	2	13.50	342.9	14.00	355.6	13.25	336.6
8	200	21.75	552.5	5.00	127.0	10.62	269.7	17.25	438.2	2.12	53.8	12	2	15.00	381.0	15.50	393.7	14.75	374.7
10	250	26.50	673.1	6.50	165.1	12.75	323.9	21.25	539.8	2.12	53.8	12	2 1/2	19.25	489.0	20.00	508.0	19.00	482.6
12	300	30.00	762.0	7.25	184.2	15.00	381.0	24.38	619.3	2.88	73.2	12	2 3/4	21.25	539.8	22.00	558.8	21.00	533.4

A). NPS24\"/>

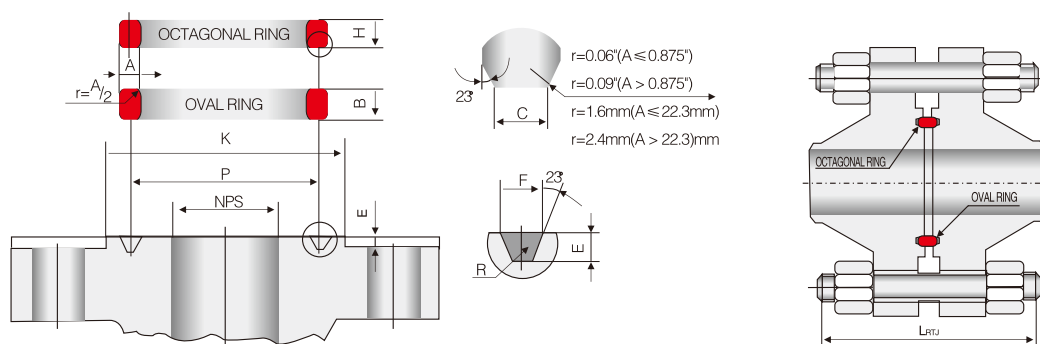
b). Flange of 1500Lb and 2500Lb with the raised face of 0.06\"/>

c). The length L of the double –end bolt doesn't include the terminal length.

d). Flange gasket of the matching flange ASME B16.20.



Ring-Joint Flanged Ends



Ring-Joint Flanged Ends

1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17									
ANSI Class-Lb						Annular Groove								150Lb		300Lb 600Lb		900Lb		1500Lb		2500Lb		
150	300	600	900	1500	2500	No	P		E		F		R		K									
NPS							in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		
2						R22	3.250	82.55	0.250	6.35	0.344	8.74	0.03	0.76	4.00	101.60								
	2	2				R23	3.250	82.55	0.312	7.92	0.469	11.91	0.03	0.76			4.25	107.95					4.50	114.30
				2		R24	3.750	95.25	0.312	7.92	0.469	11.91	0.03	0.76							4.88	123.95		
					2	R26	4.000	101.60	0.312	7.92	0.469	11.91	0.03	0.76			5.00	127.00					5.25	133.35
2½						R25	4.000	101.60	0.250	6.35	0.344	8.74	0.03	0.76	4.75	120.65								
	2½	2½				R26	4.000	101.60	0.312	7.92	0.469	11.91	0.03	0.76			5.00	127.00					5.25	133.35
				2½		R27	4.250	107.95	0.312	7.92	0.469	11.91	0.03	0.76							5.38	136.65		
					2½	R28	4.375	111.13	0.375	9.53	0.531	13.49	0.03	0.76									5.88	149.35
3						R29	4.500	114.30	0.250	6.35	0.344	8.74	0.03	0.76	5.25	133.35								
	3	3	3			R31	4.875	123.83	0.312	7.92	0.469	11.91	0.03	0.76			5.75	146.05	6.12	155.45				
					3	R32	5.000	127.00	0.375	9.53	0.531	13.49	0.06	1.52									6.62	168.15
4						R36	5.875	149.23	0.250	6.35	0.344	8.74	0.03	0.76	6.75	171.45								
	4	4	4			R37	5.875	149.23	0.312	7.92	0.469	11.91	0.03	0.76			6.88	174.75	7.12	180.85				
					4	R38	6.188	157.18	0.438	11.13	0.656	16.66	0.06	1.52									8.00	203.20
				4		R39	6.375	161.93	0.312	7.92	0.469	11.91	0.03	0.76							7.62	193.55		
5						R40	6.750	171.45	0.250	6.35	0.344	8.74	0.03	0.76	7.62	193.55								
	5	5	5			R41	7.125	180.98	0.312	7.92	0.469	11.91	0.03	0.76			8.25	209.55	8.50	215.90				
					5	R42	7.500	190.50	0.500	12.70	0.781	19.84	0.06	1.52									9.50	241.30
				5		R44	7.625	193.68	0.312	7.92	0.469	11.91	0.03	0.76							9.00	228.60		
6						R43	7.625	193.68	0.250	6.35	0.344	8.74	0.03	0.76	8.62	218.95								
	6	6	6			R45	8.312	211.12	0.312	7.92	0.469	11.91	0.03	0.76			9.50	241.30	9.50	241.30				
				6		R46	8.312	211.12	0.375	9.53	0.531	13.49	0.06	1.52							9.75	247.65		
					6	R47	9.000	228.60	0.500	12.70	0.781	19.84	0.06	1.52									11.00	279.40
8						R48	9.750	247.65	0.250	6.35	0.344	8.74	0.03	0.76	10.75	273.05								
	8	8	8			R49	10.625	269.88	0.312	7.92	0.469	11.91	0.03	0.76			11.88	301.75	12.12	307.85				
				8		R50	10.625	269.88	0.438	11.13	0.656	16.66	0.06	1.52							12.50			
					8	R51	11.000	279.40	0.562	14.27	0.906	23.01	0.06	1.52									13.38	339.85

A) please to see FLANGED ENDS for other connection dimension.

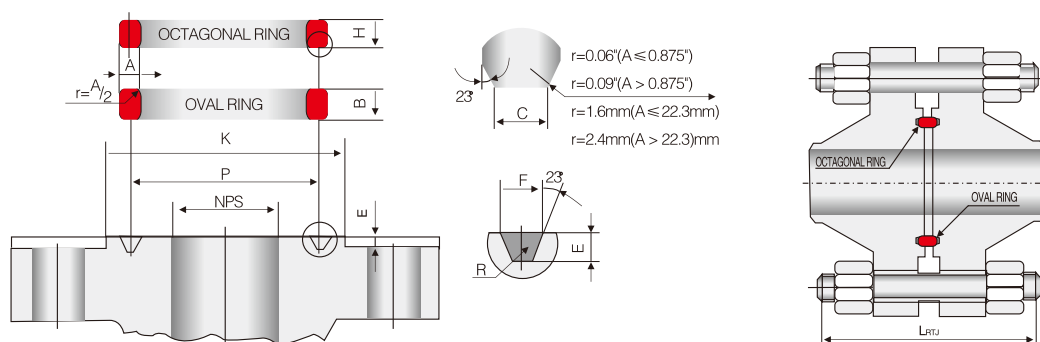
B) flange metal ring gasket of the matching flange ASME B16.20

C) For the specification of NPS 2–21/2" of 900Lb will adopt the dimensions of 1500Lb.

D) the length LRTJ of the double-end bolt don't include the terminal length.



Ring-Joint Flanged Ends



Ring-Joint Flanged Ends

1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17									
ANSI Class-Lb						Annular Groove								150Lb		300Lb 600Lb		900Lb		1500Lb		2500Lb		
150	300	600	900	1500	2500	No	P		E		F		R		K									
NPS							in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		
10						R52	12.00	304.80	0.250	6.35	0.344	8.74	0.03	0.76	13.00	330.20								
	10	10	10			R53	12.750	323.85	0.312	7.92	0.469	11.91	0.03	0.76			14.00	355.60	14.25	361.95				
				10		R54	12.750	323.85	0.438	11.13	0.656	16.66	0.06	1.52							4.62	371.35		
					10	R55	13.500	342.90	0.688	17.48	1.188	30.18	0.09	2.29									16.75	425.45
12						R56	15.000	381.00	0.250	6.35	0.344	8.74	0.03	0.76	16.00	406.40								
	12	12	12			R57	15.000	381.00	.312	7.92	0.469	11.91	0.03	0.76			16.25	412.75	16.50	49.10				
				12		R58	15.000	381.00	0.562	14.27	0.906	23.01	0.06	1.52							17.25	438.15		
					12	R60	16.000	406.00	0.688	17.48	1.312	33.32	0.09	2.29									19.50	495.30
14						R59	15.625	396.88	0.250	6.35	0.344	8.74	0.03	0.76	16.75	425.45								
	14	14				R61	16.500	419.10	0.312	7.92	0.469	11.91	0.03	0.76			18.00	457.20						
			14			R62	16.500	419.10	0.438	11.13	0.656	16.66	0.06	1.52					18.38	466.85				
				14		R63	16.500	419.10	0.625	15.88	1.062	26.97	0.09	2.29							19.25	488.95		
16						R64	17.785	454.03	0.250	6.35	0.344	8.74	0.03	0.76	19.00	482.60								
	16	16				R65	18.500	469.90	0.312	7.92	0.469	11.91	0.03	0.76			20.00	508.00						
			16			R66	18.500	469.90	0.438	11.13	0.656	16.66	0.06	1.52					20.62	523.75				
				16		R67	18.500	469.90	0.688	17.48	1.188	30.18	0.09	2.29							21.50	546.10		
18						R68	20.375	517.53	0.250	6.35	0.344	8.74	0.03	0.76	21.50	546.10								
	18	18				R69	21.000	533.40	0.312	7.92	0.469	11.91	0.03	0.76			22.62	574.55						
			18			R70	21.000	533.40	0.500	12.70	0.781	19.84	0.06	1.52					23.38	593.85				
				18		R71	21.000	533.40	0.688	17.48	1.188	30.18	0.09	2.29							24.12	612.65		
20						R72	22.000	558.80	0.250	6.35	0.344	8.74	0.03	0.76	23.50	596.90								
	20	20				R73	23.000	584.20	0.375	9.53	0.531	13.49	0.06	1.52			25.00	635.00						
			20			R74	23.000	584.20	0.500	12.70	0.781	19.84	0.06	1.52					25.50	647.70				
				20		R75	23.000	584.20	0.688	17.48	1.312	33.32	0.09	2.29							26.50	673.10		
24						R76	26.500	673.10	0.250	6.35	0.344	8.74	0.03	0.76	28.00	711.20								
	24	24				R77	27.250	692.15	0.438	11.13	0.656	16.66	0.06	1.52			29.50	749.30						
			24			R78	27.250	692.15	0.625	15.88	1.062	26.97	0.09	2.29					30.38	771.65				
				24		R79	27.250	692.15	0.812	20.62	1.438	36.53	0.09	2.29							31.25	793.75		

A).Please to see FLANGED ENDS for other connection dimension.

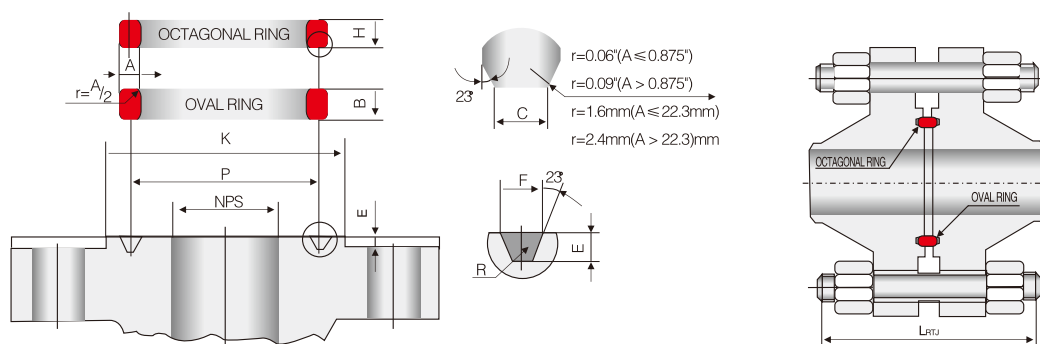
b).Flange metal ring gasket of the matching flange ASME B16.20

c).For the specification of NPS 2~21/2" of 900Lb will adopt the dimensions of 1500Lb.

D).The length LRTJ of the double-end bolt don't include the terminal length.



Ring-Joint Flanged Ends



Ring-Joint Flanged Ends

1	2	4	5	6	7	8	25		26		27		28		29		30		31		32		33		34		
ANSI Class-Lb						Metal joint ring										150Lb		300Lb		600Lb		900Lb		1500Lb		2500Lb	
150	300	600	900	1500	2500	No	A		B		H		C		LRTJ												
NPS							in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
2						R22	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	3.75	95.25											
	2	2				R23	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			4.00	101.60	4.25	107.95							
				2		R24	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75									5.75	146.05			
					2	R26	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75											7.00	177.80	
2½						R25	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	4.00	101.60											
	2½	2½				R26	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			4.50	114.30	4.75	120.65					7.00	177.80	
				2½		R27	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75									6.25	158.75			
					2½	R28	0.500	12.70	0.56	14.22	0.69	17.53	0.341	8.66											8.00	203.20	
3						R29	0.313	7.95	0.69	17.53	0.50	12.70	0.206	5.23	4.00	101.60											
	3	3	3			R31	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			4.75	120.65	5.00	127.00	5.75	146.05					
					3	R32	0.500	12.70	0.75	19.05	0.69	17.53	0.341	8.66											9.00	228.60	
					3	R35	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75									7.00	177.80			
4						R36	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	4.00	101.60											
	4	4	4			R37	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			5.00	127.50	5.75	146.05	6.75	171.45					
					4	R38	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49											10.25	260.35	
					4	R39	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75									7.75	196.85			
5						R40	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	4.25	107.95											
	5	5	5			R41	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			5.25	133.35	6.50	165.10	7.50	190.50					
					5	R42	0.750	19.05	1.00	25.40	0.94	23.88	0.485	12.32											12.25	311.15	
					5	R44	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75									9.75	247.65			
6						R43	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	4.50	114.30											
	6	6	6			R45	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			5.50	139.70	6.75	171.45	7.75	196.85					
					6	R46	0.500	12.70	0.75	19.05	0.69	17.53	0.341	8.66											14.00	355.60	
					6	R47	0.750	19.05	1.00	25.40	0.94	23.88	0.485	12.32									10.50	266.70			
8						R48	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	4.75	120.65											
	8	8	8			R49	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			6.00	152.40	7.75	196.85	8.75	222.25					
					8	R50	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49									12.75	323.85			
					8	R51	0.875	22.23	1.13	28.70	1.06	26.92	0.583	14.81											15.50	393.70	

A).Please to see FLANGED ENDS for other connection dimension.

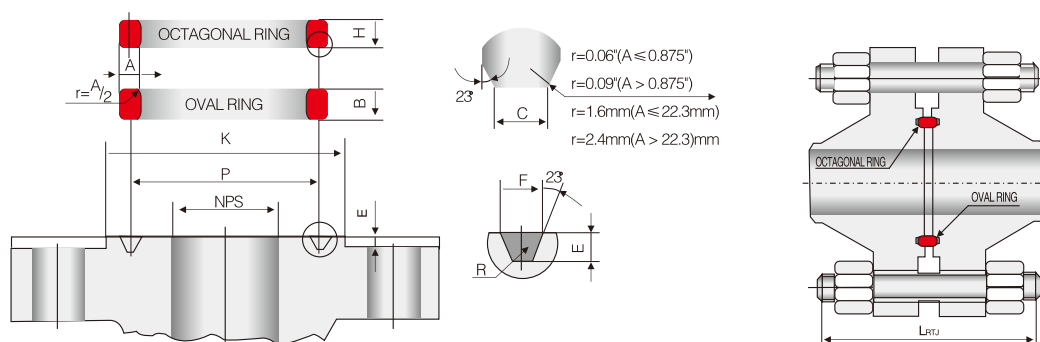
b).Flange metal ring gasket of the matching flange ASME B16.20

c).For the specification of NPS 2~21/2" of 900Lb will adopt the dimensions of 1500Lb.

D).The length LRTJ of the double-end bolt don't include the terminal length.



Ring-Joint Flanged Ends



Ring-Joint Flanged Ends

1	2	4	5	6	7	8	25	26	27	28	29	30	31	32	33	34											
ANSI Class-Lb						Metal joint ring								150Lb		300Lb		600Lb		900Lb		1500Lb		2500Lb			
150	300	600	900	1500	2500	No	A		B		H		C		LRTJ												
NPS							in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm			
10						R52	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	5.00	127.00											
	10	10	10			R53	0.438	11.13	0.69	17.53	0.63	16.00	.305	7.75			6.75	171.45	8.50	215.90	9.25	234.95					
				10		R54	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49									13.50				
					10	R55	1.125	28.58	1.44	36.58	1.38	35.05	0.780	19.81											20.00	508.00	
12						R56	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	5.25	133.35											
	12	12	12			R57	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			7.25	184.15	8.75	222.25	10.00	254.00					
				12		R57	0.875	22.23	1.13	28.70	1.06	26.39	0.583	14.81									15.25	387.35			
					12	R60	1.250	31.75	1.56	39.62	1.50	38.10	0.879	22.33											22.00	558.80	
14						R59	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	5.75	146.05											
	14	14				R61	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			7.50	190.50	9.25	234.95							
			14			R62	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49							11.00	279.40					
				14		R63	1.000	25.40	1.44	33.27	1.25	31.75	0.681	17.30									16.75	425.45			
16						R64	0.313	7.95	0.56	14.22	0.50	12.70	0.205	5.21	5.75	146.05											
	16	16				R65	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			8.00	203.20	10.00	254.00							
			16			R66	0.625	15.88	1.00	22.35	0.81	20.57	0.413	10.49							11.50	292.10					
				16		R67	1.125	28.58	1.44	36.58	1.38	36.05	0.780	19.81									18.50	469.90			
18						R68	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	6.25	158.75											
	18	18				R69	0.438	11.13	0.75	17.53	0.63	16.00	0.305	7.75			8.25	209.55	10.75	273.05							
			18			R70	0.750	19.05	1.00	25.40	0.94	23.88	0.485	12.32							13.25	336.55					
				18		R71	1.125	28.58	1.44	36.58	1.38	35.05	0.780	19.81									20.75	527.05			
20						R72	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	6.75	171.45											
	20	20				R73	0.500	12.70	0.75	19.05	0.63	17.53	0.341	8.66			8.75	222.25	11.50	292.10							
			20			R74	0.750	19.05	1.00	25.40	0.94	23.88	0.485	12.32							14.25	361.95					
				20		R75	1.250	31.75	1.56	39.62	1.38	38.10	0.879	22.33									22.25	565.15			
24						R76	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	7.25	184.15											
	24	24				R77	0.625	15.88	0.88	22.35	0.69	20.57	0.413	10.49			10.0	254.00	13.25	336.55							
			24			R78	1.000	25.40	1.31	33.27	0.94	31.75	0.681	17.30							18.00	457.20					
				24		R79	1.375	34.93	1.75	44.45	1.50	41.40	0.977	24.82									25.50	647.70			

A).Please to see FLANGED ENDS for other connection dimension.

b).Flange metal ring gasket of the matching flange ASME B16.20

c).For the specification of NPS 2~21/2" of 900Lb will adopt the dimensions of 1500Lb.

D).The length LRTJ of the double-end bolt don't include the terminal length.



Buttwelding Ends

Nominal wall thickness	Use without backing ring	Use with continuous rectangular backing ring
$\leq 0.88"$ (22.5mm)		
$> 0.88"$ (22.5mm)		

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 there is other requirement.

Order 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 be specified the diameter of the pipe that contract with valves. If need backing ring, indicate specification.

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

ASME B16.25–Butt–Welding Ends

1		2	3		4		5		6		7	
Nominal Pipe Diameter		Wall Thickness of pipe Number	Outside Diameter of Welding End				Nominal Inside Diameter of Pipe		Machined Inside Diameter of Pipe		Nominal Wall Thickness	
			Steel Valves		Forged ¹⁾							
NPS	DN		A	A ₁		B		C		t		
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
2½	65	40	2.96	75	2.88	73.0	2.469	62.5	2.479	62.93	0.203	5.16
		80	2.96	75	2.88	73.0	2.323	59	2.351	59.69	0.276	7.01
		160	2.96	75	2.88	73.0	2.125	54	2.178	55.28	0.375	9.53
3	80	xxs	2.96	75	2.88	73.0	1.771	45	1.868	47.43	0.552	14.02
		40	3.59	91	3.50	88.9	3.068	78	3.081	78.25	0.216	5.49
		80	3.59	91	3.50	88.9	2.900	73.5	2.934	74.53	0.300	7.62
		160	3.59	91	3.50	88.9	2.624	66.5	2.692	68.38	0.438	11.13
3½	90	xxs	3.59	91	3.50	88.9	2.300	58.5	2.409	61.19	0.600	15.24
		40	4.12	105	4.00	101.6	3.548	90	3.564	90.52	0.226	5.74
		80	4.12	105	4.00	101.6	3.364	85.5	3.402	86.42	0.318	8.08
4	100	40	4.62	117	4.50	114.3	4.026	102	4.044	102.73	0.237	6.02
		80	4.62	117	4.50	114.3	3.826	97	3.869	98.28	0.337	8.56
		120	4.62	117	4.50	114.3	3.624	92	3.692	93.78	0.438	11.13
		160	4.62	117	4.50	114.3	3.438	87.5	3.530	89.65	0.531	13.49
5	125	xxs	4.62	117	4.50	114.3	3.152	80	3.279	83.30	0.674	17.12
		40	5.69	144	5.56	141.3	5.047	128	5.070	128.80	0.258	6.55
		80	5.69	144	5.56	141.3	4.813	122	4.866	123.58	0.375	9.53
		120	5.69	144	5.56	141.3	4.563	116	4.647	118.04	0.500	12.70
6	150	160	5.69	144	5.56	141.3	4.313	109.5	4.428	112.47	0.625	15.88
		xxs	5.69	144	5.56	141.3	4.063	103	4.209	106.92	0.750	19.05
		40	6.78	172	6.62	168.3	6.065	154	6.094	154.82	0.280	7.11
		80	6.78	172	6.62	168.3	5.761	146.5	5.828	148.06	0.432	10.97
8	200	120	6.78	172	6.62	168.3	5.501	140	5.600	142.29	0.562	14.27
		160	6.78	172	6.62	168.3	5.187	132	5.326	135.31	0.719	18.26
		xxs	8.78	172	6.62	168.3	4.897	124.5	5.072	128.85	0.864	21.95
		40	8.78	223	8.62	219.1	7.981	203	8.020	203.75	0.322	8.18
10	250	60	8.78	223	8.62	219.1	7.813	198.5	7.873	200.02	0.406	10.31
		80	8.78	223	8.62	219.1	7.625	193.5	7.709	195.84	0.500	12.70
		100	8.78	223	8.62	219.1	7.437	189	7.544	191.65	0.594	15.09
		120	8.78	223	8.62	219.1	7.187	182.5	7.326	186.11	0.719	18.26
10	250	140	8.78	223	8.62	219.1	7.001	178	7.163	181.98	0.812	20.62
		xxs	8.78	223	8.62	219.1	6.875	174.5	7.053	179.16	0.875	22.23
		160	8.78	223	8.62	219.1	6.813	173	6.998	177.79	0.906	23.01
		40	10.94	278	10.75	273.0	10.020	254.5	10.070	255.74	0.365	9.27
10	250	60	10.94	278	10.75	273.0	9.750	247.5	9.384	249.74	0.500	12.70
		80	10.94	278	10.75	273.0	9.562	243	9.670	245.55	0.594	15.09
		100	10.94	278	10.75	273.0	9.312	236.5	9.451	240.01	0.719	18.26
		120	10.94	278	10.75	273.0	9.062	230	9.232	234.44	0.844	21.44
10	250	140	10.94	278	10.75	273.0	8.750	222	8.959	227.51	1.000	25.40
		160	10.94	278	10.75	273.0	8.500	216	8.740	221.95	1.125	28.58



Buttwelding Ends

ASME B16.25–Butt–Welding Ends

1		2	3		4		5		6		7	
Nominal Pipe Diameter		Wall Thickness of pipe Number	Outside Diameter of Welding End				Nominal Inside Diameter of Pipe	Machined Inside Diameter of Pipe	Nominal Wall Thickness			
			Steel Valves		Forged ¹⁾							
NPS	DN		A	A ₁	B		C		t			
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
12	300	STD	12.97	329	12.75	323.8	12.000	305	12.053	306.08	0.375	9.53
		40	12.97	329	12.75	323.8	11.938	303	11.999	304.72	0.406	10.31
		XS	12.97	329	12.75	323.8	11.750	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	1.00	25.40
		140	12.97	329	12.75	323.8	10.500	266.5	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		
14	350	STD	14.25	362	14.00	355.6	13.250	336.5	13.303	337.88	0.375	9.53
		40	14.25	362	14.00	355.6	13.124	333.5	13.192	335.08	0.438	11.13
		XS	14.25	362	14.00	355.6	13.000	330	13.084	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	11.771	299.00	1.250	31.75
160	14.25	362	14.00	355.6	11.188	284	11.498	292.07	1.406	35.71		
16	400	STD	16.25	413	16.00	406.4	15.250	387.5	15.303	388.68	0.375	9.53
		40	16.25	413	16.00	406.4	15.000	381	15.084	383.14	0.500	12.70
		60	16.25	413	16.00	406.4	14.688	373	14.811	376.21	0.656	16.66
		80	16.25	413	16.00	406.4	14.312	363.5	14.482	367.84	0.844	21.44
		100	16.25	413	16.00	406.4	13.938	354	14.155	359.53	1.031	26.19
		120	16.25	413	16.00	406.4	13.562	344.5	13.826	351.18	1.219	30.96
		140	16.25	413	16.00	406.4	13.124	333.5	13.442	341.43	1.438	36.53
		160	16.25	413	16.00	406.4	12.812	325.5	13.170	334.50	1.594	40.49
18	450	STD	18.28	464	18.00	457.2	17.250	438	17.303	439.48	0.375	9.53
		XS	18.28	464	18.00	457.2	17.000	432	17.084	433.94	0.500	12.70
		40	18.28	464	18.00	457.2	16.876	428.5	16.975	431.19	0.562	14.27
		60	18.28	464	18.00	457.2	16.500	419	16.646	422.82	0.750	19.05
		80	18.28	464	18.00	457.2	16.124	409.5	16.318	414.46	0.938	23.83
		100	18.28	464	18.00	457.2	15.688	398.5	15.936	404.78	1.156	29.36
		120	18.28	464	18.00	457.2	15.250	387.5	15.553	395.03	1.375	34.93
		140	18.28	464	18.00	457.2	14.876	378	15.225	386.77	1.562	39.67
160	18.28	464	18.00	457.2	14.438	366.5	14.842	376.99	1.781	45.24		
20	500	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	482.5	19.084	484.74	0.500	12.70
		40	20.31	516	20.00	508.0	18.812	478	18.920	480.55	0.594	15.09
		60	20.31	516	20.00	508.0	18.376	467	18.538	470.88	0.812	20.62
		80	20.31	516	20.00	508.0	17.938	455.5	18.155	461.13	1.031	26.19
		100	20.31	516	20.00	508.0	17.438	443	17.717	450.02	1.281	32.54
		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	44.45
160	20.31	516	20.00	508.0	16.062	408	16.513	419.44	1.969	50.01		
22	550	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	533	21.084	535.54	0.500	12.70
		60	22.34	567	22.00	558.8	20.250	514	20.428	518.86	0.875	22.23
		80	22.34	567	22.00	558.8	19.750	502	19.990	507.75	1.125	28.58
		100	22.34	567	22.00	558.8	19.250	488.5	19.553	496.63	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	18.678	474.41	1.875	47.63
		160	22.34	567	22.00	558.8	17.750	450.5	18.240	463.30	2.215	53.98

Note: 1) Forged or machined component part
a. STD=standard wall thickness.
b. XS=intensifying wall thickness.
c. XXS=double intensifying wall thickness.



Buttwelding Ends

Nominal wall thickness	Use without backing ring	Use with continuous rectangular backing ring
$\leq 0.88"$ (22.5mm)		
$> 0.88"$ (22.5mm)		

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 there is other requirement.

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

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

ASME B16.25–Butt–Welding Ends

1		2	3		4		5		6		7	
Nominal Pipe Diameter		Wall Thickness of pipe Number	Outside Diameter of Welding End				Nominal Inside Diameter of Pipe		Machined Inside Diameter of Pipe		Nominal Wall Thickness	
			Steel Valves		Forged ¹⁾							
NPS	DN		A	A ₁		B		C		t		
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
24	600	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	03.084	586.34	0.500	12.70
		30	24.38	619	24.00	609.6	22.876	581	22.975	583.59	0.562	14.27
		40	24.38	619	24.00	609.6	22.624	574.5	22.755	577.97	0.688	17.48
		60	24.38	619	24.00	609.6	22.062	560.5	22.263	565.49	0.969	24.61
		80	24.38	619	24.00	609.6	21.562	547.5	21.826	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	2.062	52.37
		160	24.38	619	24.00	609.6	19.312	490.5	19.857	504.37	2.344	59.54
26	650	10	26.38	670	26.00	660.4	25.376	645.5	25.413	645.50	0.312	7.92
		20	26.38	670	26.00	660.4	25.000	635	25.084	637.14	0.500	12.70
28	700	10	28.38	721	28.00	711.2	27.376	695.5	27.413	696.30	0.312	7.92
		20	28.38	721	28.00	711.2	27.000	686	27.084	687.94	0.500	12.70
		30	28.38	721	28.00	711.2	26.750	679.5	26.865	682.37	0.625	15.88
30	750	10	30.38	772	30.00	762.0	29.376	746	29.413	747.10	0.312	7.92
		20	30.38	772	30.00	762.0	29.000	736.5	29.084	738.74	0.500	12.70
		30	30.38	772	30.00	762.0	28.750	730	28.865	733.17	0.625	15.88
32	800	10	32.50	825	32.00	812.8	31.376	797	31.413	797.90	0.312	7.92
		20	32.50	825	32.00	812.8	31.000	787.5	31.084	789.54	0.500	12.70
		30	32.50	825	32.00	812.8	30.750	781	30.865	783.97	0.625	15.88
		40	32.50	825	32.00	812.8	30.624	778	30.755	781.17	0.688	17.48
34	850	10	34.50	876	34.00	863.6	33.376	848	33.413	848.70	0.312	7.92
		20	34.50	876	34.00	863.6	33.000	838	33.084	840.34	0.500	12.70
		30	34.50	876	34.00	863.6	32.750	832	32.865	834.77	0.625	15.88
		40	34.50	876	34.00	863.6	32.624	828.5	32.755	831.97	0.688	17.48
36	900	10	36.50	927	36.00	914.4	35.376	898.5	35.413	899.50	0.312	7.92
		20	36.50	927	36.00	914.4	35.000	889	35.084	891.14	0.500	12.70
		30	36.50	927	36.00	914.4	34.750	882.5	34.865	885.57	0.625	15.88
		40	36.50	927	36.00	914.4	34.500	876.5	34.646	880.02	0.750	19.05

Note: 1) Forged or machined component part
a. STD=standard wall thickness.
b. XS=intensifying wall thickness.
c. XXS=double intensifying wall thickness.



Cast Steel Valves Gate Globe & Check Valves

Size of Connection	Valve Type	Pressure Rating	Body/Bonnet Type	Type of Connection	Body Material	Operator	Trim Material
A	B	C	D	E	F	G	H
e.g.: 6"	G G — 0 3		A	R — 0 5		H	0 2

Example: Flanged 6" class 300 cast stainless steel full bore gate valve with trim 02.

The figure numbers shown on this key are designed to cover essential features of ASPEN valves.

Please use figure numbers to ensure prompt and accurate processing of your order.

A detailed description must accompany any special orders.

A Size of Connection				
2"(50mm)	8"(200mm)	20"(500mm)	32"(800mm)	
2 1/2"(65mm)	10"(250mm)	22"(550mm)	34"(850mm)	
3"(80mm)	12"(300mm)	24"(600mm)	36"(900mm)	
4"(100mm)	14"(350mm)	26"(650mm)	40"(950mm)	
5"(125mm)	16"(400mm)	28"(700mm)	42"(1050mm)	
6"(150mm)	18"(450mm)	30"(750mm)	48"(1200mm)	
B	Valve Type			
GG—Gate Valve		GL—Globe Valve	YG—Y—Globe Valve	
BG—Bellows Globe Valve		SC—Swing Check Valve		
LC—Lift Check Valve		WC—Water Check Valve		
C	Pressure Rating			
01—ANSI 150		03—ANSI 300	06—ANSI 600	
09—ANSI 900		15—ANSI 1500	25—ANSI 2500	
D	Body/Bonnet Style			
A—Bolted bonnet(cast)			B—Extended bonnet	
C—Cast bolted bonnet bellows seal				
D—Pressure seal bonnet				
E	Type of Connection			
B—butt welding end		F—flat face flange end		
J—ring joint flange end		N—screwed end		
R—raised face flange end		S—socket welding end		
w—wafer				
F	Body Material			
01—WCB	02—WC6	03—WC9	04—C5	05—CF8
06—CF8M	07—CF3	08—CF3M	09—CG8M	10—CG3M
11—LCB	12—LCC	13—Monel	14—Hastelloy C	
15—Alloy 20	16—Tiannium		17—Special	

G	Operator		
H—Handwheel		G—Gear operator	P—Pneumatic actuator
E—Electric actuator		S—Special	
H	Trim material		
Trim No.	Seat Ring or Surface	Wedge/Disc or Surface	Stem
01	13Cr	13Cr	ASTM A 182 F6a
02	18Cr–8Ni	18Cr–8Ni	ASTM A 182 F304
03	Stellite	18Cr–8Ni	ASTM A 182 F304
04	Stellite	13Cr	ASTM A 182 F6a
05	Stellite	Stellite	ASTM A 182 F6a
06	18Cr–8Ni–Mo	18Cr–8Ni–Mo	ASTM A 182 F316
07	Stellite	18Cr–8Ni–Mo	ASTM A 182 F316
08	Stellite	Stellite	ASTM A 182 F316
09	Monel	Monel	Ni Cu Alloy Monel
10	Alloy 20	Alloy 20	ASTM B473
11	Special	Special	Special