



Cast Steel / Stainless steel Gate valves



Gate Valve, BB, CS

Design

The 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.

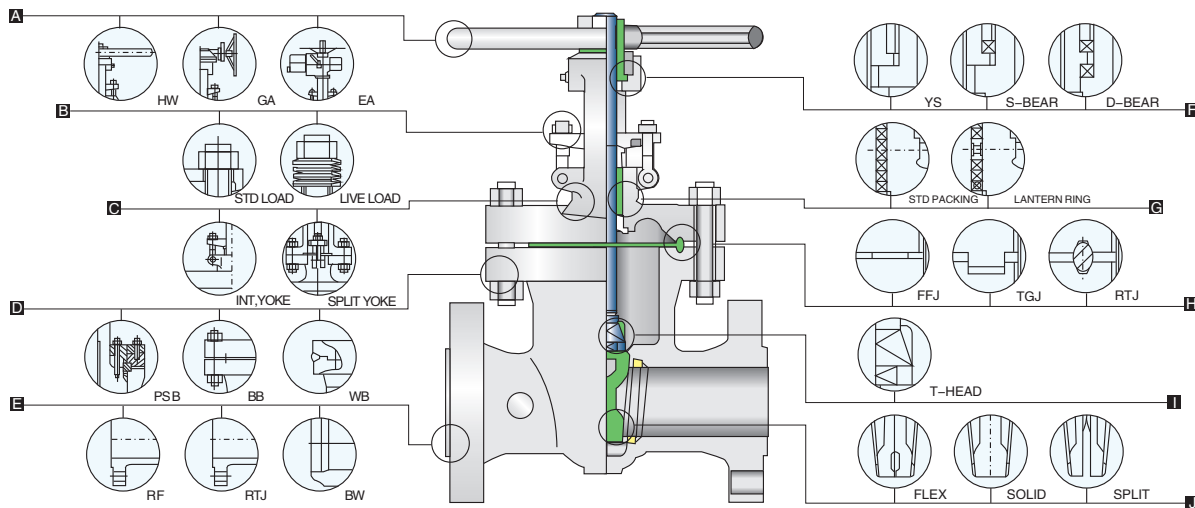
Ranges of materials

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 Cast Steel Valves

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

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



A Operation

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 stments. 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 buttwelding 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.

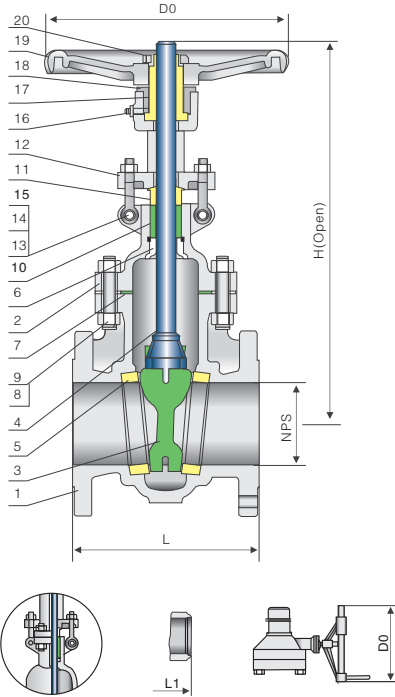
Cast Steel Gate Valve 150Lb/300Lb

Applicable standards:

- STEEL GATE VALVES API 600/API6D
- 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

Design descriptions:

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



Materials of parts

No	Part Name	Carbon steel	ASTM Material 1 1/4cr- 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	SS410	A276-304	SS410
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	Yoke Sleeve	Aluminum-Bronze		
18	Yokesleeve Jam nut	Carbon Steel		
19	Handwheel	Malleable Iron		
20	Handwheel Nut	Carbon Steel		

Note: 1) Special material like Super duplex alloy and other material as customer's requirement.
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.

Dimensional datas of ANSI Class 150Lb

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
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)	340	365	410	485	595	755	895	1040	1145	1333	1420	1635	1862						mm
Do	200	200	250	300	300	350	400	450	500	550	600	700	800						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

Dimensional datas of ANSI Class 300Lb

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
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)	364	385	460	540	649	798	940	1129	1195	1340	1503	1625	1925						mm
Do	200	200	250	300	350	400	450	500	600	600	650	750	900						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

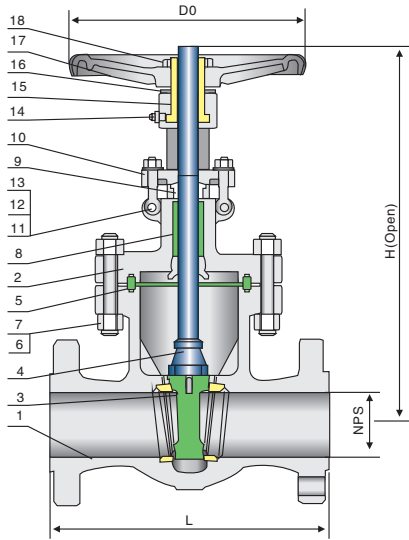
Cast Steel Gate Valve 600Lb/900Lb

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

Design descriptions:

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



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 1 1/4cr-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	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) Special material like Super duplex alloy and other material as customer's requirement.
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.

Dimensional datas of ANSI Class 600Lb

NPS DN	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	in mm
	50	65	80	100	150	200	250	300	350	400	450	500	600	
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 (open)	16.50	18.75	20.38	25.50	33.00	40.38	48.38	57.00	62.00	70.62	76.00	87.00	101.50	in
	418	476	518	646	840	1025	1230	1450	1575	1795	1930	2210	2580	mm
Do	8	10	10	12	18	20	24	24	24	24	26	26	29	in
	200	250	250	300	450	500	600	600	600	600	640	640	720	mm
wt(kg)	36	52	67	112	170	393	610	890	1245	1530	1965	2450	2995	RF
	29	42	53	83	125	310	472	730	1055	1240	1625	2030	2590	BW

Dimensional datas of ANSI Class 900Lb

NPS DN	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	in mm
	50	65	80	100	150	200	250	300	350	400	450	500	600	
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	61.00	in
	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549	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	61.75	in
	371	422	384	460	613	740	841	968	1038	1140	1232	1334	1568	mm
H (open)	19.62	21.50	22.50	26.62	35.50	45.00	53.00	60.00	74.88	81.00	87.00	101.00	104.00	in
	498	547	573	678	900	1103	1345	1525	1900	2055	2215	2565	264.00	mm
Do	10	10	12	18	20	24	26	29	32	32	38	38	40	in
	250	250	300	450	500	600	640	720	800	800	950	950	1000	mm
wt(kg)	74	131	101	172	335	640	1100	1600	2250	2850	3060	3935	49.00	RF
	54	105	78	135	260	515	920	1380	2010	2565	3485	3250	4065	BW

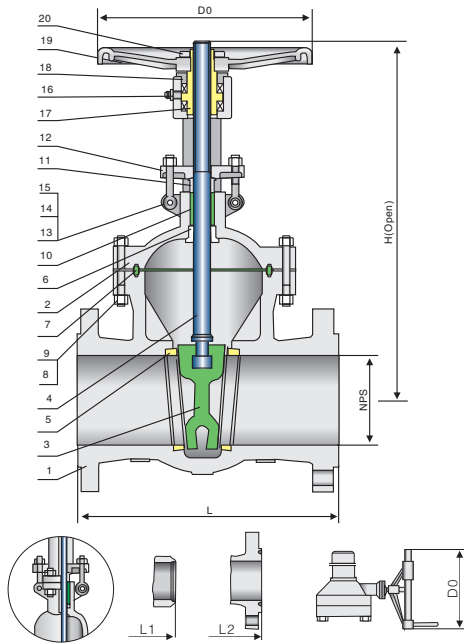
Cast Steel Gate Valve 1500Lb/2500Lb

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

Design descriptions:

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



Materials of parts

No	Part Name	Carbon Steel	ASTM Material 1 ¹ / 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+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) Special material like Super duplex, alloy and other material as customer's requirement.
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.

Dimensional datas of ANSI Class 1500Lb

NPS DN	2	2½	3	4	6	8	10	12	14	16	18	20	24	in mm
L/L1 (RF/BW)	14.50	16.50	18.50	21.50	27.75	32.75	39.00	44.50	49.50	54.50	60.50	65.50	76.50	in
	368	419	470	546	705	832	991	1130	1257	1384	1537	1664	1943	mm
L2 (RTJ)	15.50	16.62	18.62	21.62	28.00	33.12	39.38	45.12	50.25	55.38	61.38	66.38	77.62	in
	371	422	473	549	711	841	1000	1146	1276	1407	1559	1686	1972	mm
H (open)	24.25	26.00	30.00	34.12	39.50	45.00	54.00	61.00	74.88	80.50	93.75	101.50	114.75	in
	615	658	760	868	1005	1145	1370	1550	1900	2050	2380	2580	2915	mm
Do	10	12	18	20	24	18	18	24	24	24	24	24	24	in
	250	300	450	500	600	460	460	600	600	600	600	600	600	mm
wt(kg)	116	166	209	296	510	920	1910	3145	4100	6200	8965	13100	15860	RF
	105	150	188	265	412	760	1640	2755	3200	5300	8070	11790	14275	BW

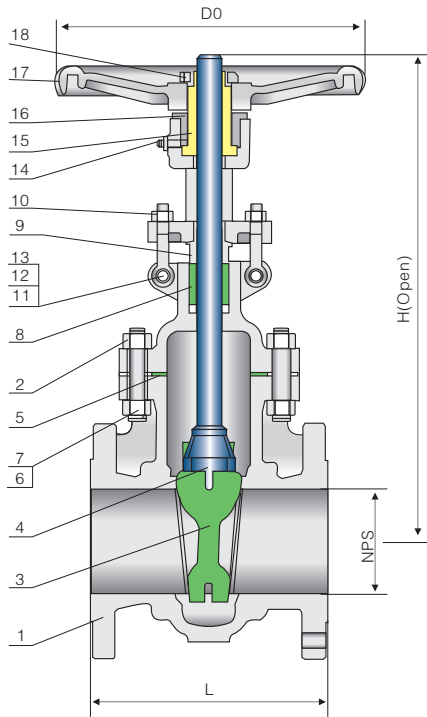
API 603 Corrosion-Resistant Valves Cast Stainless Steel Gate Valves 150Lb

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

Design descriptions:

- 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



Materials of parts

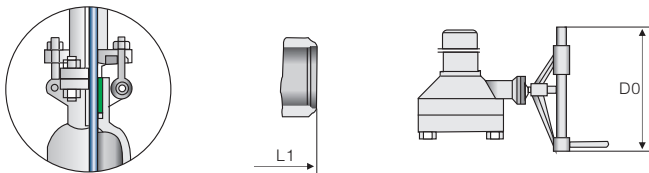
No	Part Name	ASTM Materials		
		18Cr-18Ni	18Cr-9Ni-2Mo	17Cr-9Ni-2Mo
1	Body	A351-CF8	A351-CF8M	A351-CF3M
2	Bonnet	A351-CF8	A351-CF8M	A351-CF3M
3	Wedge	A351-CF8	A351-CF8M	A351-CF3M
4	Stem	A182-F304	A182-F316	A182-F316L
5	Bonnet Gasket ¹⁾	Graphite+304	Graphite+316	Graphite+316L
6	Bonnet Stud	A193-B8	A193-B8M	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.



Dimensional datas

NPS DN	2	2½	3	4	6	8	10	12	14	16	
	50	65	80	100	150	200	250	300	350	400	in mm
ANSI Class 150Lb											
L (RF)	7.00	7.50	8.00	9.00	10.50	11.50	13.00	14.00	15.00	16.00	in mm
L1 (BW)	7.50	8.00	8.50	9.50	11.00	12.00	13.50	14.50	15.50	16.50	in mm
H (open)	15.25	17.00	18.88	23.00	30.50	37.62	45.50	53.12	59.38	67.00	in mm
D0	8	8	10	12	12	14	16	18	20	22	in mm

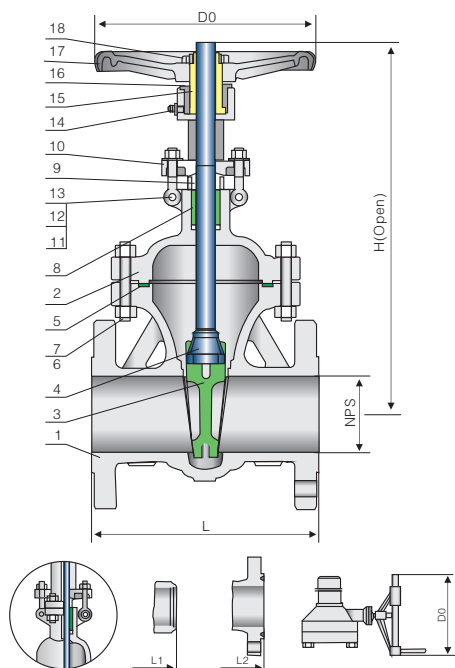
API 603 Corrosion-Resistant Valves Cast Stainless Steel Gate Valves 300Lb/600Lb

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

Design descriptions:

- 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



Materials of parts

No	Part Name	ASTM Materials		
		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.

Dimensional datas of ANSI Class 300Lb

NPS DN	2	2½	3	4	6	8	10	12	14	16		in mm
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		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)	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	8 200	8 200	10 250	10 250	14 350	16 400	18 450	20 500	22 550	22 550		in mm

Dimensional datas of ANSI Class 600Lb

NPS DN	2	2½	3	4	6	8	10	12	14	16		in mm
L (RF)	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)	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	8 200	10 250	10 250	12 300	18 450	20 500	24 600	24 600	24 600	24 600		in mm



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