



NEWCO FIGURE NUMBERS

Type	Pressure Class	End Connections	Trim Material
1 = Gate, OS&Y	1 = 150	F = Flanged	1 = CR13
2 = Globe, OS&Y	2 = 125	W = Butt Weld	2 = CR13/HF**
3 = Swing Check	3 = 300	J = RTJ	3 = HF/HF**
4 = Lift Check	4 = 400	S = Socket Weld	4 = 316
5 = Ball	5 = 250	T = Threaded	5 = NI CU (Monel***)
6 = Gate, NRS	6 = 600	B = Wafer	6 = Alloy 20
7 = Angle, OS&Y	8 = 800	X = Special	7 = Bronze
8 = Plug	9 = 900	(Customer to specify)	8 = Iron
9 = Butterfly	15 = 1500		9 = Special (Customer to specify)
	25 = 2500		
	45 = 4500		

- *SUFFIX LETTERS**
- PS = Pressure Seal Bonnet
 - SO = Safe-O-Seal Bonnet
 - WB = Welded Bonnet
 - UB = Union Bonnet
 - HP = Horizontal Piston Check
 - HB = Horizontal Ball Check
 - VB = Vertical Ball Check
 - TD = Tilting Disc Check
 - FP = Full Port
 - RP = Regular Port
 - TF = Teflon* Insert
 - VT = Viton* Insert
 - SC = Stop-Check
 - NR = Non-Return
 - SG = Solid Wedge, Gate
 - N1 = Material to NACE MR-01-75
 - HL = High Lift
 - FS = Firesafe
 - PT = PTFE Seats
 - GO = Gear Operator
 - MO = Motor Operator
 - PO = Pneumatic Operator
 - HO = Hydraulic Operator
 - CR = Cryogenic Service
 - OL = Outside Weight & Lever
 - VP = V-Port Disc
 - BP = By-Pass
 - OX = Oxygen Service
 - CL = Chlorine Service
 - GI = Grease Injection
 - BS = Bellows Seal
 - VG = Venturi Gate
 - ST = Socket Weld x Threaded
 - SL = Special Lining

FIG. 11F-CB2*

BODY/BONNET MATERIAL

- CB = ASTM A216, WCB = Cast Carbon Steel
- C5 = ASTM A217, C5 = Cast Alloy Steel (5% Chrome, 1/2% Moly)
- C6 = ASTM A217, WC6 = Cast Alloy Steel (1 1/4% Chrome, 1/2% Moly)
- C9 = ASTM A217, WC9 = Cast Alloy Steel (2 1/4% Chrome, 1% Moly)
- C12 = ASTM A217, C12 = Cast Alloy Steel (9% Chrome, 1% Moly)
- LCB = ASTM A352, LCB = Cast Low Temperature Carbon Steel
- LC3 = ASTM A352, LC3 = Cast Low Temperature 3 1/2% Nickel Steel
- CF8 = ASTM A351, CF8 = Cast 304 Stainless Steel
- C8M = ASTM A351, CF8M = Cast 316 Stainless Steel
- A20 = ASTM A351, CN7M = Cast Alloy 20
- MO = ASTM A296, M35 = Cast NI CU (Monel***)
- FS = ASTM A105 = Forged Carbon Steel
- F5 = ASTM A182, F5 = Forged Alloy Steel (5% Chrome, 1/2% Moly)
- LF-2 = ASTM A350, LF2 = Forged Low Temperature Carbon Steel
- F11 = ASTM A182, F11 = Forged Alloy Steel (1 1/4% Chrome, 1/2% Moly)
- F22 = ASTM A182, F22 = Forged Alloy Steel (2 1/4% Chrome, 1% Moly)
- F8M = ASTM A182, F316 = Forged 316 Stainless Steel
- F8 = ASTM A182, F304 = Forged 304 Stainless Steel
- F8C = ASTM A182, F321 = Forged 321 Stainless Steel
- DI = ASTM A395 = Cast Ductile Iron
- IB = ASTM A126, CLB = Cast Iron
- BR = ASTM B61 = Bronze
- SPL = Special (Customer to specify)

* = Viton and Teflon are registered trademarks of DuPont Company.
 ** HF = Hardfaced - AWS 5.13 Class C₀C_RA
 *** Monel is a registered trademark of International Nickel Company.

Please order by size, figure number (which specifies type), pressure class, end connections, materials and special features, as shown above.

For End Connections, Body Materials and Trims not listed, please specify.



GATE VALVE FEATURES

CAST STEEL BOLTED BONNET

Gate valves are straight-through flow valves which provide positive shutoff with minimal pressure drop and flow turbulence. The barrier to flow is a wedge sliding at right angles to the direction of flow.

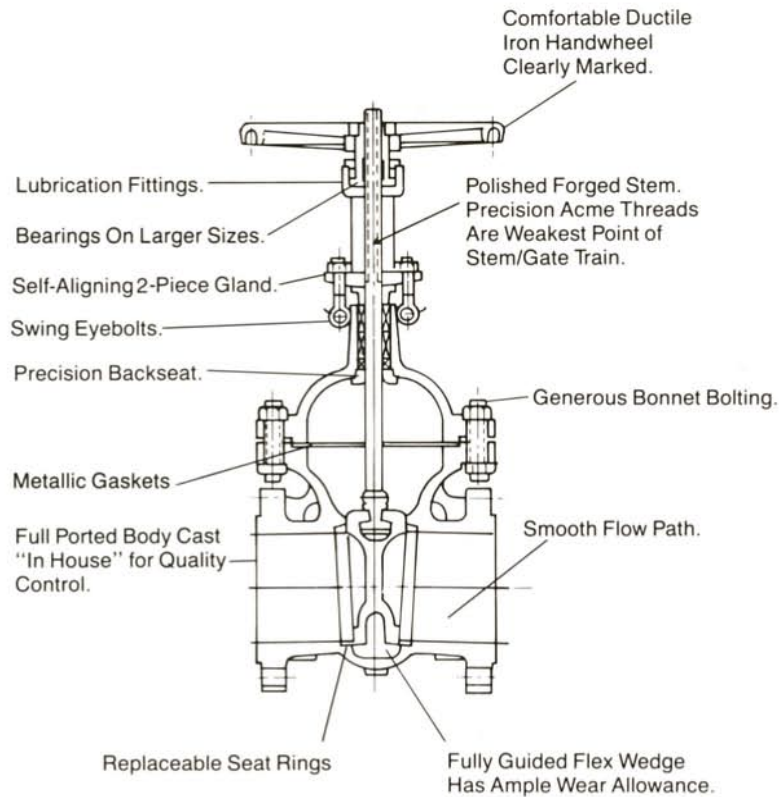
Gate valves may be installed without consideration for the direction of flow. They are not recommended for use in a partially open, throttling position as erosion, noise and excessive wear can occur. Gate valve installations should always be made with consideration for the potential of bonnet over-pressurization caused by fluids which may become entrapped in the bonnet of a closed valve. Where this possibility exists, it is the user's responsibility to insure that proper venting is installed.

Newco cast steel bolted bonnet gate valves are of the out-

side screw, rising stem design commonly called OS&Y. This type of design places the stem threads external to the valve so they are not contaminated by the flowing media and are accessible for lubrication. Also, the open/closed position of the valve is easily distinguished by the stem position.

Newco cast steel bolted bonnet gate valves comply with the design and testing requirements of ANSI B16.34, API 600 and API 598. Installation dimensions comply with ANSI B16.10.

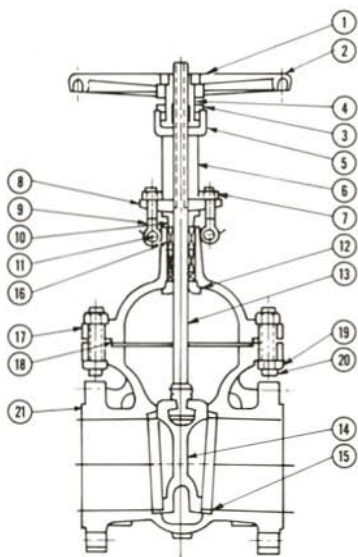
All Newco cast steel bolted bonnet gate valves have the following features engineered to provide convenience, durability and maintainability.





GATE VALVE MATERIALS

CAST STEEL BOLTED BONNET



	Part Name	Material
1	Handwheel Nut	Carbon Steel
2	Handwheel	Ductile Iron A536
3	Yoke Nut	Carbon Steel
4	Stem Nut	Aust. Ductile Iron - A439-D2
5	Grease Fitting	Carbon Steel
6	Yoke	ASTM A216 Gr WCB
7	Eyebolt Nut	Carbon Steel
8	Gland Flange	Carbon Steel
9	Eyebolt	Carbon Steel
10	Gland	13 CR Stainless
11	Eyebolt Pin	Carbon Steel
Trim Parts		
12	Backseat-Bushing	(See Page 37 for
13	Stem	Trim Materials)
14	Wedge	
15	Seat Ring	
16 to 21 — See below		

	Part Name	Carbon Steel	LCB	LC3	WC6	WC9
16	Packing	Commercial	Commercial	Commercial	Commercial	Commercial
17	Bonnet	A216 GR WCB	A352 GR LCB	A352 GR LC3	A217 GR WC6	A217 GR WC9
18	Bonnet Gasket					
	Class 150 + 300	Corr. Mild Steel	RPTFE/316	RPTFE	Corr. 304 SS	Cor. 304 SS
	Class 600 & up	Steel ring joint	RPTFE/316	304 SS ring joint	5% Cr ring joint	5% Cr ring joint
19	Bonnet stud nuts	A194 Gr 2H	A194 Gr 7M	A194 Gr 7M	A194 Gr 2H	A194 Gr 2H
20	Bonnet Studs	A193 Gr B7	A320 Gr L7M	A320 Gr L7M	A193 Gr B7	A193 Gr B7
21	Body	A216 Gr WCB	A352 Gr LCB	A352 Gr LC3	A217 Gr WC6	A217 Gr WC9

	Part Name	C5	C12
16	Packing	Commercial	Commercial
17	Bonnet	A217 Gr C5	A217 Gr C12
18	Bonnet Gasket		
	Class 150 + 300	Corr. 304 SS	Corr. 304 SS
	Class 600 & up	5% Cr ring joint	410 SS ring joint
19	Bonnet stud nuts	A194 Gr 2H	A194 Gr 2H
20	Bonnet Studs	A193 Gr B7	A193 Gr B7
21	Body	A217 Gr C5	A217 Gr C12

Construction and materials may vary between sizes and pressure classes and are subject to change without notice.

This is not a complete list of all available materials. See Page 36 for additional body materials.

See Page 37 for details of trim materials.

Specifications are ASTM unless otherwise noted.



GATE VALVES

CAST STEEL BOLTED BONNET - Class 150 & 300

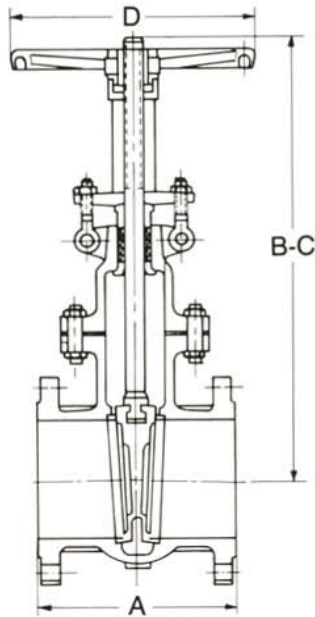


Fig. 11F-CB

Class 150 - Fig. 11F-CB

- Corrugated soft iron gasket
- Integral yoke - NPS 12 & smaller
- Thrust bearings - NPS 14 & larger
- Lantern ring optional

Class 300 - Fig. 13F-CB

- Corrugated soft iron gasket
- Integral yoke - NPS 10 & smaller
- Thrust bearings - NPS 12 & larger
- Lantern ring optional

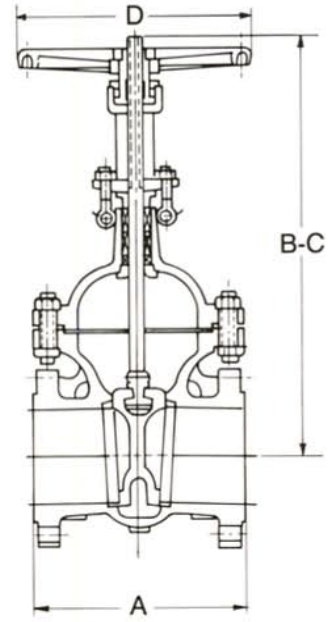


Fig. 13F-CB

CLASS 150 DIMENSIONS

		2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
A Face to Face RF	IN	7.0	7.5	8.0	9.0	10.0	10.5	11.5	13.0	14.0	15.0	16.0	17.0	18.0	20.0
	MM	178	191	203	229	254	267	292	330	356	381	406	432	457	508
A End to End BW	IN	8.5	9.5	11.12	12.0	15.0	15.87	16.5	18.0	19.75	22.5	24.0	26.0	28.0	32.0
	MM	216	241	283	305	381	403	419	457	502	572	610	660	711	813
B Valve Open	IN	15.5	16.9	18.6	23.3	28.0	31.5	39.3	47.0	54.9	61.2	68.9	76.9	83.5	101.4
	MM	394	429	472	592	711	800	998	1194	1394	1554	1750	1953	2121	2576
C Valve Closed	IN	13.0	13.9	15.2	18.9	22.5	24.9	30.5	36.3	41.9	47.0	52.8	58.6	65.1	76.9
	MM	330	353	386	480	572	632	775	922	1064	1194	1341	1488	1654	1953
D Handwheel Dia.	IN	8	8	8	10	13	14	16	18	18	22	24	27	30	30
	MM	203	203	203	254	330	356	406	457	457	559	610	686	762	762

CLASS 300 DIMENSIONS

		2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
A Face to Face RF/BW	IN	8.5	9.5	11.12	12.0	15.0	15.87	16.5	18.0	19.75	30.0	33.0	36.0	39.0	45.0
	MM	216	241	283	305	381	403	419	457	502	762	838	914	990	1143
B Valve Open	IN	17.5	18.9	20.5	24.6	29.4	33.3	41.6	49.6	57.4	63.9	71.6	77.9	87.3	102.5
	MM	445	480	521	625	747	846	1057	1260	1458	1623	1819	1974	2217	2604
C Valve Closed	IN	15.0	15.9	17.0	20.2	23.8	26.6	32.8	38.8	44.6	49.7	55.4	60.4	65.8	77.6
	MM	381	404	432	513	605	676	833	986	1133	1262	1407	1534	1671	1971
D Handwheel Dia.	IN	8	10	10	12	15	16	18	20	20	27	29	33	35	43
	MM	203	254	254	305	381	406	457	508	508	686	737	838	889	1092



BODY/BONNET MATERIALS

BODY/BONNET MATERIALS

Newco cast steel valves are available in a wide range of body/bonnet materials and optional trim materials. Listed below are some of the more popular materials. Additional

materials are available. Please contact Newmans or your local distributor for details.

Newco Material Designation	Common Description	ASTM Specification	Body/Bonnet Material Service Recommendation	Trim			
				Standard			Optional
				Gates	Globes	Checks	
CB	Carbon Steel	A216 WCB	Non-corrosive water oil & gases at temperatures between -20°F & +800°F.	2	2	2	1,3,4,5,6,7
LCB	Low Temp Carbon	A352 LCB	Low temperature service between -50°F & +650°F.	4	4	4	1,2,3,7
LC3	3½% Nickel	A352 LC3	Low temperature service between -150°F & +650°F.	4	4	4	1,2,3,7
WC6	1¼% Chrome ½% Moly	A217 WC6	Non-corrosive service, water, oil & gases at temperatures between -20°F & +1100°F.	3	3	3	1,2,4,5,6,7
WC9	2¼% Chrome 1% Moly	A217 WC9	Non-corrosive service, water, oil & gases at temperatures between -20°F & +1100°F.	3	3	3	1,2,4,5,6,7
C5	5% Chrome ½% Moly	A217 C5	Corrosive, non-corrosive or erosive service at temperatures between -20°F & +1200°F.	3	3	3	1,2,4,5,6,7
A20	Alloy 20	A351 CN7M	Corrosive service at temperatures between -20°F & +300°F.	6	6	6	2,3
C12	9% Chrome 1% Moly	A217 C12	Corrosive, non-corrosive or erosive service at temperatures between -20°F & +1200°F.	3	3	3	1,2,4,5,6,7
C8M	Cast 316	A351 CF8M	Corrosive, cryogenic or high temperature service between -425°F & +1200°F.	4	4	4	2,3,5,7

SOUR GAS SERVICE MATERIALS

Newco cast steel valves may be furnished with body and trim materials in compliance with NACE MR-01-75 specifications. The standard valve is WCB with double tempered trim 2 and Class II bolting. Other materials, trim and bolting

are available. To order the configuration you require, please specify the appropriate figure number and suffix designation as shown on Page 3.



BODY/BONNET MATERIALS

TRIM MATERIALS

Newco cast steel valves are available with a wide range of trim materials. Those which are most commonly used are shown in the table below. For availability of trims not shown, please contact Newmans or your local distributor.

Newco Trim No.	Seat Ring Facing*	Wedge or Disc Facing*	Stem	Other Trim Parts	Service Recommendation
1	CR 13	CR 13	F6a	F6a	Non-corrosive applications. Steam, gas & general service to 700°F. Oil & oil vapor to 900°F.
2	Hardfaced	CR 13	F6a	F6a	Steam, gas, oil & general service to 1000°F. Standard trim for gate valves.
3	Hardfaced	Hardfaced	F6a	F6a	Premium trim for service to 1200°F. Excellent for high pressure water and steam service.
4	316 SS	316 SS	316 SS	316 SS	Corrosive service to 850°F. Low temperature service standard for 316 SS valves.
5	NI CU	NI CU	NI CU	NI CU	Corrosive services to 750°F.
6	Alloy 20	Alloy 20	Alloy 20	Alloy 20	Corrosive services to 500°F.
7	Bronze	Bronze	Brass	Bronze	Water, gas or low pressure steam to 450°F.
X	Special	Special	Special	Special	Customer to specify.

* Standard trim designates face material only. If trim parts are to be solid (316 for example), specify as special trim.

Trim parts are defined as follows:

Gate Valves: Gate and seat ring seating surfaces, stem, backseat surface

Globe/Angle Valves: Disc and seat ring seating surfaces, stem, backseat bushing

Swing Check Valves: Disc and seat ring seating surfaces, hinge pin

Lift Check Valves: Disc and seat ring seating surfaces

Tilting Disc Check Valves: Disc and seat ring seating surfaces, pivot pins, spacer

Soft Seat Trim:

Gate valves are available with PTFE seat inserts or soft inserts in the body seat rings.

Globe and angle valves have the soft insert in the disc.

In all cases, the valves are designed to have a secondary metal-to-metal back-up seat in addition to the soft insert.

Soft seats may be ordered by specifying the appropriate figure number suffix as noted on Page 3.



PRESSURE TEMPERATURE RATINGS

ANSI B16.34

CLASS 150

TEMPERATURE °F	WCB*	WC6	WC9	C5	C12
-20 to 100	285	290	290	290	290
200	260	260	260	260	260
300	230	230	230	230	230
400	200	200	200	200	200
500	170	170	170	170	170
600	140	140	140	140	140
650	125	125	125	125	125
700	110	110	110	110	110
750	95	95	95	95	95
800	80	80	80	80	80
850	65	65	65	65	65
900	50	50	50	50	50
950	35	35	35	35	35
1000	20	20	20	20	20
1050	—	20**	20**	20**	20**
1100	—	20**	20**	20**	20**
1150	—	—	—	20**	20**
1200	—	—	—	20**	20**

CLASS 300

TEMPERATURE °F	WCB*	WC6	WC9	C5	C12
-20 to 100	740	750	750	750	750
200	675	710	715	750	750
300	655	675	675	730	730
400	635	660	650	705	705
500	600	640	640	665	665
600	550	605	605	605	605
650	535	590	590	590	590
700	535	570	570	570	570
750	505	530	530	530	530
800	410	510	510	500	510
850	270	485	485	440	485
900	170	450	450	355	450
950	105	380	380	260	370
1000	50	225	270	190	290
1050	—	140	200	140	190
1100	—	95	115	105	115
1150	—	—	—	70	75
1200	—	—	—	45	50

CLASS 600

TEMPERATURE °F	WCB*	WC6	WC9	C5	C12
-20 to 100	1480	1500	1500	1500	1500
200	1350	1425	1430	1500	1500
300	1315	1345	1355	1455	1455
400	1270	1315	1295	1410	1410
500	1200	1285	1280	1330	1330
600	1095	1210	1210	1210	1210
650	1075	1175	1175	1175	1175
700	1065	1135	1135	1135	1135
750	1010	1065	1065	1065	1065
800	825	1015	1015	995	1015
850	535	975	975	880	975
900	345	900	900	705	900
950	205	755	755	520	740
1000	105	445	535	385	585
1050	—	275	400	280	380
1100	—	190	225	205	225
1150	—	—	—	140	150
1200	—	—	—	90	105

CLASS 900

TEMPERATURE °F	WCB*	WC6	WC9	C5	C12
-20 to 100	2220	2250	2250	2250	2250
200	2025	2135	2150	2250	2250
300	1970	2020	2030	2185	2185
400	1900	1975	1945	2115	2115
500	1795	1925	1920	1995	1995
600	1640	1815	1815	1815	1815
650	1610	1765	1765	1765	1765
700	1600	1705	1705	1705	1705
750	1510	1595	1595	1595	1595
800	1235	1525	1525	1490	1525
850	805	1460	1460	1315	1460
900	515	1350	1350	1060	1350
950	310	1130	1130	780	1110
1000	155	670	805	575	875
1050	—	410	595	420	565
1100	—	290	340	310	340
1150	—	—	—	205	225
1200	—	—	—	135	155

CLASS 1500

TEMPERATURE °F	WCB*	WC6	WC9	C5	C12
-20 to 100	3705	3750	3750	3750	3750
200	3375	3560	3580	3750	3750
300	3280	3365	3385	3640	3640
400	3170	3290	3240	3530	3530
500	2995	3210	3200	3225	3225
600	2735	3025	3025	3025	3025
650	2685	2940	2940	2940	2940
700	2665	2840	2840	2840	2840
750	2520	2660	2660	2660	2660
800	2060	2540	2540	2485	2540
850	1340	2435	2435	2195	2435
900	860	2245	2245	1765	2245
950	515	1885	1885	1305	1850
1000	260	1115	1340	960	1460
1050	—	685	995	705	945
1100	—	480	565	515	565
1150	—	—	—	345	380
1200	—	—	—	225	260

CLASS 2500

TEMPERATURE °F	WCB*	WC6	WC9	C5	C12
-20 to 100	6170	6250	6250	6250	6250
200	5625	5930	5965	6250	6250
300	5470	5605	5640	6070	6070
400	5280	5485	5400	5880	5880
500	4990	5350	5330	5540	5540
600	4560	5040	5040	5040	5040
650	4475	4905	4905	4905	4905
700	4440	4730	4730	4730	4730
750	4200	4430	4430	4430	4430
800	3430	4230	4230	4145	4230
850	2230	4060	4060	3660	4060
900	1430	3745	3745	2945	3745
950	860	3145	3145	2170	3085
1000	430	1860	2230	1600	2430
1050	—	1145	1660	1170	1570
1100	—	800	945	860	945
1150	—	—	—	570	630
1200	—	—	—	370	430

*Not recommended for prolonged use above 800°F.

**For weld end valves only. Flanged end ratings terminate at 1000°F.

NOTE: Packing, gasket or bolting may limit temperature. Please advise service temperature if above 1000°F.

Ratings from ANSI B16.34 standard class valves.

Special class weld end valves to ANSI B16.34 are available on special order.