

FluoroSeal



## CAST STEEL VALVES

**ANSI/BS/NACE  
GATE, GLOBE & CHECK  
VALVES**

Class 150, 300, 600, 900, 1500 & 2500



### GATE VALVE

FluoroSeal Gate Valves allow a steady efficient straight-through fluid flow to minimize pressure drop. This is made possible by a simple wedge disc moving across the flow inside the valve with the simple operation of the stem nut. These valves are for simple ON-OFF applications, as throttling operation would eventually cause seat and wedge damage.

Furthermore, thanks to its high capacity, metal-to-metal seal design, simple operation, low flow resistance, and moderate cost, gate valves are widely used in the petrochemical industry. Our standard gate valve is hand wheel operated, but it can also be configured with actuator or gear operator.

### GLOBE VALVE

FluoroSeal Globe Valves are designed and manufactured for throttling service and frequent cycling applications where pressure drop is a secondary consideration. Its round-shaped body is divided internally in order to optimize flow control and direction; this valve type can achieve bubble-tight shut-off when needed. Each globe valve has a stem guided disc that it is also available in different shapes to suit the application.

Our globe valves can be operated through a hand wheel, gear operators, or actuators. They can be used in a large range of liquids, semi-liquids, gasses, and corrosive applications. FluoroSeal globe valves are also perfectly suited for difficult services demanding regular valve maintenance, as the design has been optimized to reduce the time required for seat and disk replacement.



### SWING CHECK VALVE

FluoroSeal swing check valves are specifically designed and built for moderate flow velocity applications to prevent flow reversals, and can be installed vertically or horizontally in piping systems. This type of valve offers a wide area for fluid pressure to push the disc open in the desired flow direction. The disc returns automatically by gravity to its closed position when the fluid pressure drops on flow reversal. The disc weight is an important variable to consider during the ordering process.

Swing check valves can be mounted in systems with corrosive fluids, extreme temperatures, and high vibration, but they must avoid unstable flow and frequent flow reversals to prevent eventual damage and diminish valve life. FluoroSeal Swing Check valves are suitable for chemical, mining, power, and water treatment applications.



**GATE VALVE**

- Available in large sizes
- Easy to maintain and disassemble
- Low price
- Ideal for viscous liquids
- Used as a shut off valve
- **OTHER FEATURES:**
- Gate types: Rectangular or Round
- Stem types: Rotating or non-rotating
- Bonnet types: bolted bonnet
- Available sizes: 2" to 48"
- Body types: Bolt Flange, Butt weld, Metal face seal
- Seat types: Integral to valve body or seat ring type
- Actuator types: Handwheel, Enclosed Gear, Chain Wheel, Electric or Pneumatic Actuator

**DESIGN AND TESTING STANDARDS  
GATE VALVES**

API 600, BS 1414  
Valves design

ANSI B16.10  
Face-to-Face and End-to-End Dimensions of Valves

ANSI B16.34  
Valves, Flanged and Butt Weld End

API 6FA  
Specification for Fire Test for Valves

NACE MR0175  
Sulphide Stress Cracking Resistant Metallic Material for Oilfield Equipment

ANSI B16.5  
½" – 24" Pipe Flanged and Flanged Fittings

ANSI B16.47  
26" – 60" Large Diameter Steel Flanges

ANSI B16.25  
Butt Weld Ends

API 598, ANSI B16.34  
Testing

ASTM / AISI  
Materials

**GLOBE VALVE**

- Good shut off capability
- Moderate to good throttling capability
- Shorter stroke (compared to a gate valve)
- Available in straight and angle patterns
- Easy to machine or resurface the seats
- **OTHER FEATURES:**
- Disk types: Plug or ball
- Stem types: T-slot or disk nut
- Available sizes: 2" to 24"
- Body types: Straight pattern and Angle pattern
- Seat types: Screwed to valve body or integral
- Actuator types: Handwheel, Enclosed Gear, Chain Wheel, Pneumatic Actuator

**DESIGN AND TESTING STANDARDS  
GLOBE VALVES**

API 600, BS 1873  
Valves design

ANSI B16.10  
Face-to-Face and End-to-End Dimensions of Valves

ANSI B16.34  
Valves, Flanged and Butt Weld End

API 6FA  
Specification for Fire Test for Valves

NACE MR0175  
Sulphide Stress Cracking Resistant Metallic Material for Oilfield Equipment

ANSI B16.5  
½" – 24" Pipe Flanged and Flanged Fittings

ANSI B16.47  
26" – 60" Large Diameter Steel Flanges

ANSI B16.25  
Butt Weld Ends

API 598, ANSI B16.34  
Testing

ASTM / AISI  
Materials

**SWING CHECK VALVE**

- Low friction losses
- Drip tight seating
- Low maintenance
- No spring to wear
- Prevents backflow
- Works as backup system
- Can be installed vertically or horizontally
- **OTHER FEATURES:**
- Disk types: Swing type
- Available sizes: 2" to 48"
- Body types: Flanged or butt weld end
- Seat types: Integral to valve body or seat ring type

**DESIGN AND TESTING STANDARDS  
SWING CHECK VALVES**

API 600, BS 1868  
Valves design

ANSI B16.10  
Face-to-Face and End-to-End Dimensions of Valves

ANSI B16.34  
Valves, Flanged and Butt Weld End

API 6FA  
Specification for Fire Test for Valves

NACE MR0175  
Sulphide Stress Cracking Resistant Metallic Material for Oilfield Equipment

ANSI B16.5  
½" – 24" Pipe Flanged and Flanged Fittings

ANSI B16.47  
26" – 60" Large Diameter Steel Flanges

ANSI B16.25  
Butt Weld Ends

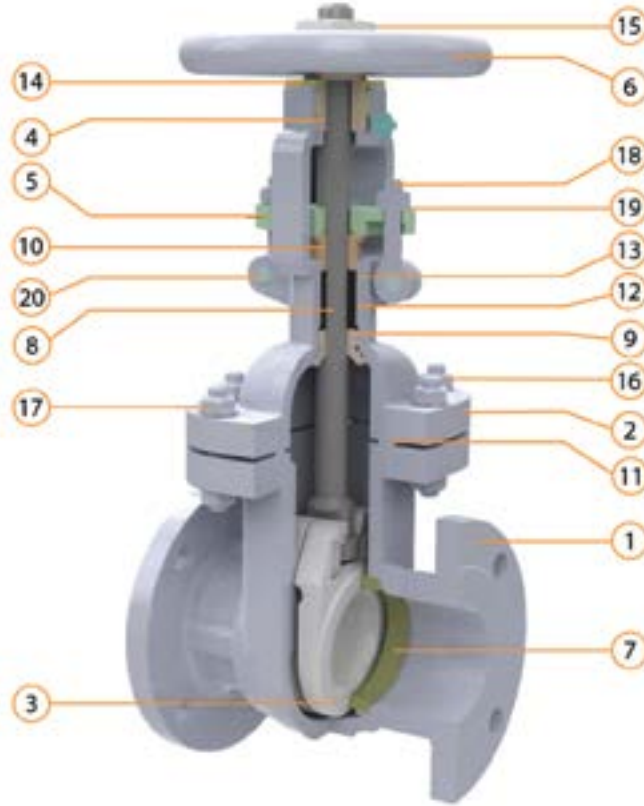
API 598, ANSI B16.34  
Testing

ASTM / AISI  
Materials

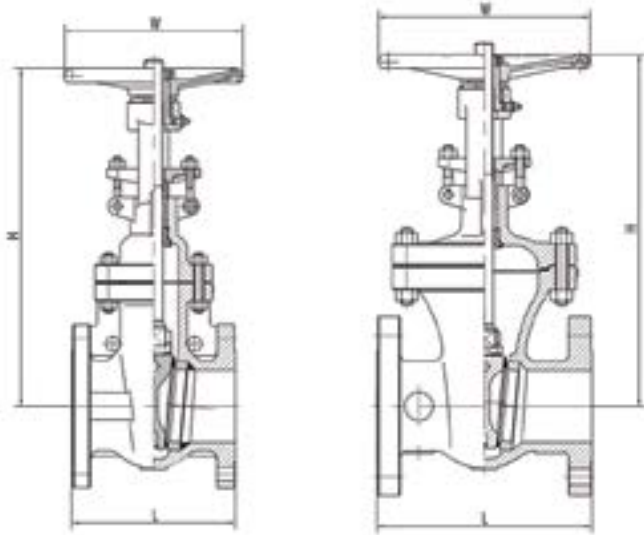
**GATE VALVE**

Class 150, 300: 2" up to 48" / Class 600: 2" up to 36" / Class 900, 1500: 2" up to 24" / Class 2500: 2" up to 12"

GATE VALVES



No.	Description	Carbon Steel	Low Temp. Service	Stainless Steel	High Temp. Service	Sour Service
1	Body	ASTM A216-WCB	ASTM A352-LCC	ASTM A351-CF8M	ASTM A217-WC9	ASTM A216-WCB
2	Bonnet	ASTM A216-WCB	ASTM A352-LCC	ASTM A351-CF8M	ASTM A217-WC9	ASTM A216-WCB
3	Wedge	ASTM A216-WCB/ Cr13 Overlay	ASTM A352-LCC/ SS316 Overlay	ASTM A351-CF8M	ASTM A217-WC9/ Stellite Overlay	ASTM A216-WCB/ Cr13 Overlay-NC
4	Stem Nut	ASTM A439 D-2	ASTM A439 D-2	ASTM A439 D-2	ASTM A439 D-2	ASTM A439 D-2
5	Gland Flange	ASTM A216-WCB	ASTM A352-LCC	ASTM A351-CF8M	ASTM A216-WCB	ASTM A216-WCB
6	Handwheel	Ductile Iron	Ductile Iron	Ductile Iron	Ductile Iron	Ductile iron
7	Seat Ring	ASTM A105/ Stellite Overlay	ASTM A350-LF2/ Stellite Overlay	ASTM A182-F316/ Stellite Overlay	ASTM A182-F22/ Stellite Overlay	ASTM A 105/ Stellite Overlay
8	Stem	ASTM A182-F6a	ASTM A182-F316	ASTM A182-F316	ASTM A182-F6a	ASTM A182-F6a-NC
9	Back Seat	ASTM A276-410	ASTM A276-316	ASTM A276-316	ASTM A276-410	ASTM A276-410-NC
10	Gland	ASTM A276-410	ASTM A276-316	ASTM A276-316	ASTM A276-410	ASTM A276-410-NC
11	Gasket	Spiral Wound Graphite+S.S.	Spiral Wound Graphite+S.S.	Spiral Wound Graphite+S.S.	Spiral Wound Graphite+S.S.	Spiral Wound Graphite+S.S.
12	Middle Packing	Graphite	Graphite	Graphite	Graphite	Graphite
13	Top/Bottom Packing	SS316+Graphite	SS316+Graphite	SS316+Graphite	SS316+Graphite	SS316+Graphite
14	Retaining Nut	Carbon Steel	Carbon Steel	Stainless Steel	Carbon Steel	Carbon Steel
15	Handwheel Nut	Carbon Steel	Carbon Steel	Stainless Steel	Carbon Steel	Carbon Steel
16	Bonnet Stud	ASTM A193-B7	ASTM A320-L7	ASTM A193-B8	ASTM A193-B16	ASTM A193-B7M
17	Bonnet Nut	ASTM A194-2H	ASTM A194-7	ASTM A194-8	ASTM A194-4	ASTM A194-2HM
18	Eye Bolt	ASTM A193-B7	ASTM A320-L7	ASTM A193-B8	ASTM A193-B16	ASTM A193-B7M
19	Eye Bolt Nut	ASTM A194-2H	ASTM A194-7	ASTM A194-8	ASTM A194-4	ASTM A194-2HM
20	Eye Bolt Pin	Carbon Steel	Stainless Steel	Stainless Steel	Stainless Steel	Carbon Steel



**BOLTED BONNET GATE VALVE  
ANSI/ASME CLASS 150 & CLASS 300**

SIZE 2" to 48"

Handwheel or Enclosed Gear Operated and  
Actuators Optional on All Sizes

Face-to-Face Dimensions to ANSI B16.10

Flanged End Dimensions to ANSI B16.5

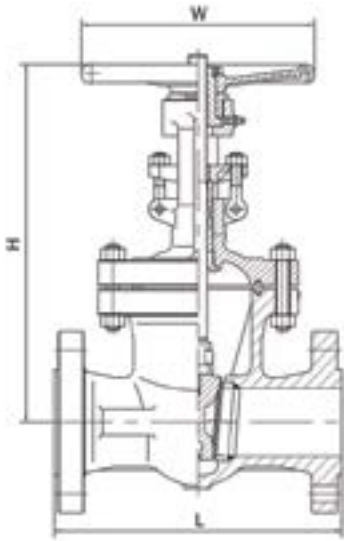
and ANSI B16.47

Butt Weld End to ANSI B16.25

ANSI CLASS 150											
Size		L(RF)		L1(BW)		W		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	7.0	178	8.5	216	8	200	12.8	325	40	18
2 1/2"	65	7.5	191	9.5	241	8	200	17.7	449	55	25
3"	80	8.0	203	11.1	282	10	250	20.2	514	73	33
4"	100	9.0	229	12.0	305	10	250	23.7	603	110	50
5"	125	10.0	254	15.0	381	14	350	28.1	713	143	65
6"	150	10.5	267	15.9	403	14	350	30.9	785	185	84
8"	200	11.5	292	16.5	419	14	350	38.4	975	284	129
10"	250	13.0	330	18.0	457	16	400	45.9	1,166	425	193
12"	300	14.0	356	19.7	502	18	450	55.0	1,396	604	274
14"	350	15.0	381	22.5	572	22	560	60.1	1,526	908	412
16"	400	16.0	406	24.0	610	24	600	68.0	1,728	1,118	507
18"	450	17.0	432	26.0	660	25	640	74.9	1,902	1,451	658
20"	500	18.0	457	28.0	711	27	680	83.8	2,128	1,781	808
24"	600	20.0	508	32.0	813	30	760	98.1	2,492	2,877	1,305
26"	650	22.0	559	34.0	864	24*	610*	110.4	2,805	3,746	1,699
28"	700	24.0	610	36.0	914	24*	610*	120.5	3,060	4,257	1,931
30"	750	24.0	610	36.0	914	24*	610*	125.3	3,182	5,247	2,380
32"	800	26.0	660	38.0	965	24*	610*	140.7	3,574	5,684	2,578
36"	900	28.0	711	40.0	1,016	32*	810*	147.2	3,739	7,716	3,500
40"	1,000	30.0	762	42.0	1,067	32*	810*	169.7	4,311	10,251	4,650
42"	1,050	31.0	787	43.0	1,092	32*	810*	178.2	4,527	11,184	5,073
48"	1,200	34.0	864	46.0	1,168	32*	810*	197.2	5,010	15,770	7,153

ANSI CLASS 300									
Size		L-L1 (RF-BW)		W		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	8.5	216	8	200	17.1	435	60	27
2 1/2"	65	9.5	241	10	250	20.3	515	77	35
3"	80	11.1	282	10	250	21.3	540	115	52
4"	100	12.0	305	10	250	24.9	633	163	74
5"	125	15.0	381	14	350	30.4	771	262	119
6"	150	15.9	403	14	350	32.1	815	322	146
8"	200	16.5	419	16	400	40.2	1,020	485	220
10"	250	18.0	457	18	450	47.7	1,212	763	346
12"	300	19.7	502	20	500	56.7	1,440	1,047	475
14"	350	30.0	762	22	560	61.0	1,550	1,530	694
16"	400	33.0	838	25	640	69.7	1,770	2,013	913
18"	450	36.0	914	27	680	80.4	2,042	2,524	1,145
20"	500	39.0	991	24*	610*	87.9	2,233	3,649	1,655
24"	600	45.0	1,143	24*	610*	102.4	2,600	5,115	2,320
26"	650	49.0	1,245	24*	610*	109.1	2,772	6,834	3,100
28"	700	53.0	1,346	32*	810*	122.8	3,120	7,826	3,550
30"	750	55.0	1,397	32*	810*	132.3	3,361	10,326	4,684
32"	800	60.0	1,524	32*	810*	145.4	3,692	11,530	5,230
36"	900	68.0	1,727	32*	810*	152.7	3,879	15,179	6,885
40"	1,000	76.0	1,930	40*	1,000*	179.0	4,547	18,629	8,450
42"	1,050	78.0	1,981	40*	1,000*	186.6	4,739	21,495	9,750
48"	1,200	88.0	2,235	40*	1,000*	211.5	5,373	28,770	13,050

\* Gear Operator



**BOLTED BONNET GATE VALVE  
ANSI/ASME CLASS 600 & CLASS 900**

SIZE 2" to 36"

Handwheel or Enclosed Gear Operated and  
Actuators Optional on All Sizes

Face-to-Face Dimensions to ANSI B16.10

Flanged End Dimensions to ANSI B16.5  
and ANSI B16.47

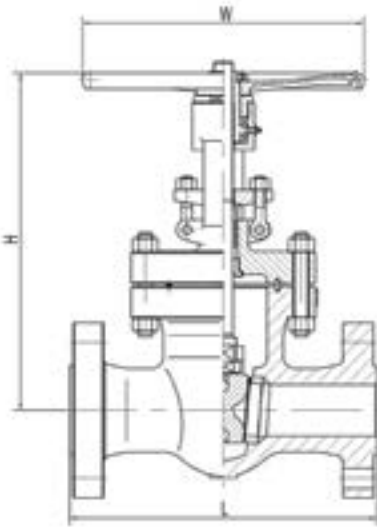
Butt Weld End to ANSI B16.25

ANSI CLASS 600											
Size		L-L1 (RF-BW)		L2(RTJ)		W		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	11.5	292	11.6	295	10	250	16.8	427	79	36
2 1/2"	65	13.0	330	13.1	333	10	250	20.6	522	121	55
3"	80	14.0	356	14.1	359	12	300	22.7	576	159	72
4"	100	17.0	432	17.1	435	14	350	26.1	663	282	128
5"	125	20.0	508	20.1	511	16	400	29.1	738	386	175
6"	150	22.0	559	22.1	562	18	450	35.9	911	613	278
8"	200	26.0	660	26.1	663	20	500	44.1	1,121	992	450
10"	250	31.0	787	31.1	790	25	640	50.7	1,287	1,228	557
12"	300	33.0	838	33.1	841	27	680	57.8	1,468	2,072	940
14"	350	35.0	889	35.1	892	24*	610*	69.4	1,763	2,901	1,316
16"	400	39.0	991	39.1	994	24*	610*	71.9	1,825	3,686	1,672
18"	450	43.0	1,092	43.1	1,095	24*	610*	81.6	2,072	4,564	2,070
20"	500	47.0	1,194	47.2	1,200	24*	610*	90.2	2,292	6,559	2,975
24"	600	55.0	1,397	55.4	1,407	32*	810*	107.2	2,722	9,374	4,252
26"	650	57.0	1,448	57.5	1,461	32*	810*	124.0	3,150	11,596	5,260
28"	700	61.0	1,549	61.5	1,562	40*	1,000*	132.4	3,362	13,404	6,080
30"	750	65.0	1,651	65.5	1,664	40*	1,000*	139.7	3,549	15,322	6,950
32"	800	70.0	1,778	70.6	1,794	40*	1,000*	150.0	3,811	18,409	8,350
36"	900	82.0	2,082	82.6	2,098	40*	1,000*	167.7	4,260	22,156	10,050

ANSI CLASS 900											
Size		L-L1 (RF-BW)		L2(RTJ)		W		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	14.5	368	14.6	371	12	300	19.9	505	209	95
2 1/2"	65	16.5	419	16.6	422	14	300	21.9	557	238	108
3"	80	15.0	381	15.1	384	14	300	23.0	583	276	125
4"	100	18.0	457	18.1	460	16	400	26.0	661	430	195
6"	150	24.0	610	24.1	613	20	500	37.0	940	833	378
8"	200	29.0	737	29.1	740	18*	460*	48.2	1,225	1,404	637
10"	250	33.0	838	33.1	841	18*	460*	57.1	1,450	2,557	1,160
12"	300	38.0	965	38.7	968	18*	460*	63.9	1,623	3,417	1,550
14"	350	40.5	1,029	40.9	1,038	24*	610*	70.3	1,785	4,784	2,170
16"	400	44.5	1,130	44.9	1,140	24*	610*	76.0	1,930	6,768	3,070
18"	450	48.0	1,219	48.5	1,232	32*	810*	90.2	2,290	8,664	3,930
20"	500	52.0	1,321	52.5	1,333	32*	810*	95.2	2,417	11,288	5,120
24"	600	61.0	1,549	61.7	1,568	32*	810*	108.3	2,750	13,558	6,150

\* Gear Operator





**BOLTED BONNET GATE VALVE  
ANSI/ASME CLASS 1500 & CLASS 2500**

SIZE 2" to 24"

Handwheel or Enclosed Gear Operated and  
Actuators Optional on All Sizes

Face-to-Face Dimensions to ANSI B16.10

Flanged End Dimensions to ANSI B16.5

Butt Weld End to ANSI B16.25

ANSI CLASS 1500											
Size		L-L1 (RF-BW)		L2(RTJ)		W		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	14.5	368	14.6	371	14	350	19.9	505	209	95
2 1/2"	65	16.5	419	16.6	422	16	400	22.9	582	282	128
3"	80	18.5	470	18.6	473	16	400	24.7	628	399	181
4"	100	21.5	546	21.6	549	20	500	28.9	735	606	275
6"	150	27.7	705	28.0	711	24	600	38.3	973	1,382	627
8"	200	32.7	832	33.1	842	18*	460*	53.9	1,370	2,601	1,180
10"	250	39.0	991	39.4	1,000	18*	460*	59.8	1,520	5,027	2,280
12"	300	44.5	1,130	45.1	1,146	24*	610*	72.4	1,840	7,187	3,260
14"	350	49.5	1,257	50.2	1,278	24*	610*	89.3	2,267	9,039	4,100
16"	400	54.5	1,384	55.4	1,407	24*	610*	95.3	2,420	13,140	5,960
18"	450	60.5	1,537	61.4	1,559	40*	1,000*	110.7	2,812	17,747	8,050
20"	500	65.5	1,664	66.4	1,686	40*	1,000*	121.2	3,078	24,692	11,200
24"	600	76.5	1,943	77.6	1,972	40*	1,000*	140.6	3,570	29,762	13,500

ANSI CLASS 2500											
Size		L-L1 (RF-BW)		L2(RTJ)		W		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	17.7	451	17.9	454	14	350	28.0	700	291	132
2 1/2"	65	20.0	508	20.2	514	18	450	30.0	750	454	206
3"	80	22.7	578	23.0	584	18	450	35.5	887	564	256
4"	100	26.5	673	26.9	683	20	500	43.2	1,079	1,098	498
6"	150	36.0	914	36.5	927	24*	610*	58.0	1,450	3,417	1,550
8"	200	40.2	1,022	40.9	1,038	24*	610*	64.4	1,610	5,280	2,395
10"	250	50.0	1,270	51.7	1,292	24*	610*	83.0	2,076	9,833	4,460
12"	300	56.0	1,422	56.9	1,455	24*	610*	91.2	2,281	13,338	6,050

\* Gear Operator

**NOTES:**

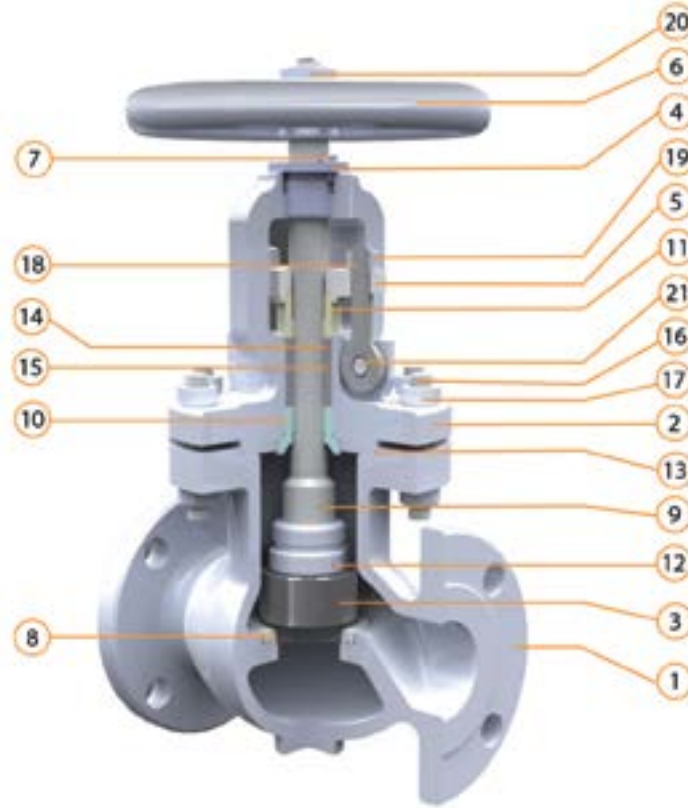
1. The information on this catalog is provided for general informational purposes only.
2. For all technical parameters of the product please contact your local FluoroSeal sales office or authorized representative.

3. Customization for specific applications is available upon request.
4. We reserve the right to changes without prior notice.

**GLOBE VALVE**

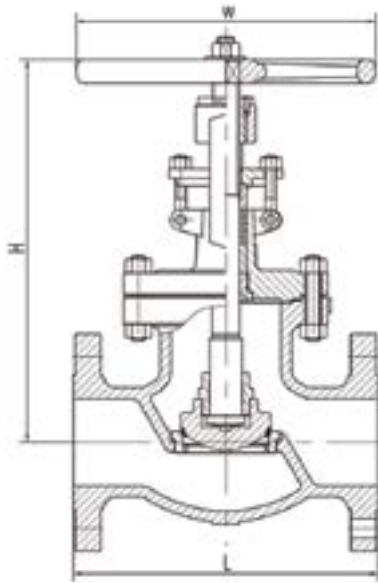
Class 150: 2" up to 24" / Class 300: 2" up to 20" / Class 600: 2" up to 18" / Class 900: 2" up to 16" / Class 1500: 2" up to 12" / Class 2500: 2" up to 8"

GLOBE VALVES



No.	Description	Carbon Steel	Low Temp. Service	Stainless Steel	High Temp. Service	Sour Service
1	Body	ASTM A216-WCB	ASTM A352-LCC	ASTM A351-CF8M	ASTM A217-WC9	ASTM A216-WCB
2	Bonnet	ASTM A216-WCB	ASTM A352-LCC	ASTM A351-CF8M	ASTM A217-WC9	ASTM A216-WCB
3	Disc	ASTM A105/ Cr13 Overlay	ASTM A350-LF2/ SS316 Overlay	ASTM A182-F316	ASTM A182-F22/ Stellite Overlay	ASTM A105/ Cr13 Overlay-NC
4	Stem Nut	ASTM A439 D-2	ASTM A439 D-2	ASTM A439 D-2	ASTM A439 D-2	ASTM A439 D-2
5	Gland Flange	ASTM A216-WCB	ASTM A352-LCC	ASTM A351-CF8M	ASTM A216-WCB	ASTM A216-WCB
6	Handwheel	Ductile Iron	Ductile Iron	Ductile Iron	Ductile Iron	Ductile Iron
7	Screw	ASTM A193-B7	ASTM A320-L7	ASTM A193-B8	ASTM A193-B16	ASTM A193-B7M
8	Seat Ring	ASTM A105/ Stellite Overlay	ASTM A350-LF2/ Stellite Overlay	ASTM A182-F316/ Stellite Overlay	ASTM A182-F22/ Stellite Overlay	ASTM A105/ Stellite Overlay
9	Stem	ASTM A182-F6a	ASTM A182-F316	ASTM A182-F316	ASTM A182-F6a	ASTM A182-F6a-NC
10	Back Seat	ASTM A276-410	ASTM A276-316	ASTM A276-316	ASTM A276-420	ASTM A276-410-NC
11	Gland	ASTM A276-410	ASTM A276-316	ASTM A276-316	ASTM A276-420	ASTM A276-410-NC
12	Disc Nut	ASTM A276-410	ASTM A276-316	ASTM A276-316	ASTM A276-420	ASTM A276-410-NC
13	Bonnet Gasket	Spiral Wound Graphite+S.S.	Spiral Wound Graphite+S.S.	Spiral Wound Graphite+S.S.	Spiral Wound Graphite+S.S.	Spiral Wound Graphite+S.S.
14	Top/Bottom Packing	SS316+Graphite	SS316+Graphite	SS316+Graphite	SS316+Graphite	SS316+Graphite
15	Middle Packing	Graphite	Graphite	Graphite	Graphite	Graphite
16	Bonnet Stud	ASTM A193-B7	ASTM A320-L7	ASTM A193-B8	ASTM A193-B16	ASTM A193-B7M
17	Bonnet Nut	ASTM A194-2H	ASTM A194-7	ASTM A194-8	ASTM A194-4	ASTM A194-2HM
18	Eye Bolt	ASTM A193-B7	ASTM A320-L7	ASTM A193-B8	ASTM A193-B16	ASTM A193-B7M
19	Eye Bolt Nut	ASTM A194-2H	ASTM A194-7	ASTM A194-8	ASTM A194-4	ASTM A194-2HM
20	Handwheel Nut	ASTM A194-2H	ASTM A194-7	ASTM A194-8	ASTM A194-4	ASTM A194-2HM
21	Eye Bolt Nut	Carbon Steel	Stainless Steel	Stainless Steel	Stainless Steel	Carbon Steel



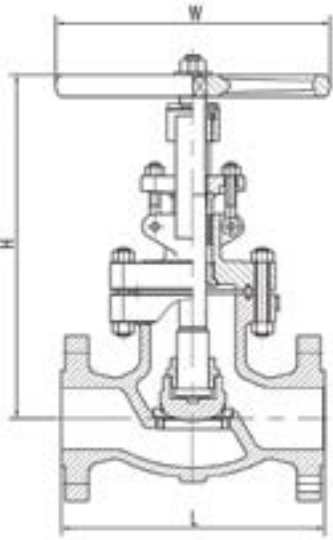


**BOLTED BONNET GLOBE VALVE**  
**ANSI/ASME CLASS 150 & CLASS 300**  
 SIZE 2" to 24"  
 Handwheel or Enclosed Gear Operated and  
 Actuators Optional on All Sizes  
**Face-to-Face Dimensions to ANSI B16.10**  
**Flanged End Dimensions to ANSI B16.5**  
**Butt Weld End to ANSI B16.25**

ANSI CLASS 150									
Size		L-L1 (RF-BW)		W		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	8.0	203	8	200	13.7	349	49	22
2 1/2"	65	8.5	216	8	200	15.0	382	66	30
3"	80	9.5	241	10	250	16.1	409	77	35
4"	100	11.5	292	12	300	18.3	466	110	50
5"	125	14.0	356	14	350	20.2	514	172	78
6"	150	16.0	406	14	350	21.4	544	198	90
8"	200	19.5	495	18	450	24.4	621	364	165
10"	250	24.5	622	20	500	28.0	711	602	273
12"	300	27.5	699	25	640	35.9	913	928	421
14"	350	31.0	787	25	640	38.1	968	1,360	617
16"	400	36.0	914	28	720	39.0	991	1,940	880
18"	450	38.5	978	24*	610*	44.9	1,140	2,535	1,150
20"	500	38.5	978	24*	610*	49.7	1,262	4,850	2,200
24"	600	51.0	1,295	32*	810*	60.0	1,524	6,945	3,150

ANSI CLASS 300									
Size		L-L1 (RF-BW)		W		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	10.5	267	8	200	14.9	378	62	28
2 1/2"	65	11.5	292	10	250	16.3	413	90	41
3"	80	12.5	318	10	250	17.2	436	119	54
4"	100	14.0	356	14	350	20.6	523	190	86
5"	125	15.7	400	18	450	22.6	575	276	125
6"	150	17.5	445	18	450	24.4	620	340	154
8"	200	22.0	559	18	450	33.8	859	529	240
10"	250	24.5	622	22	560	35.6	905	703	319
12"	300	28.0	711	25	640	39.9	1,014	1,362	618
14"	350	33.0	838	28	720	44.5	1,130	2,072	940
16"	400	34.0	864	24*	610*	51.6	1,310	2,976	1,350
18"	450	38.5	978	24*	610*	57.5	1,460	5,071	2,300
20"	500	40.0	1,016	32*	810*	64.3	1,632	6,834	3,100

\* Gear Operator



**BOLTED BONNET GLOBE VALVE  
ANSI/ASME CLASS 600 & CLASS 900**

SIZE 2" to 18"

Handwheel or Enclosed Gear Operated and  
Actuators Optional on All Sizes

Face-to-Face Dimensions to ANSI B16.10

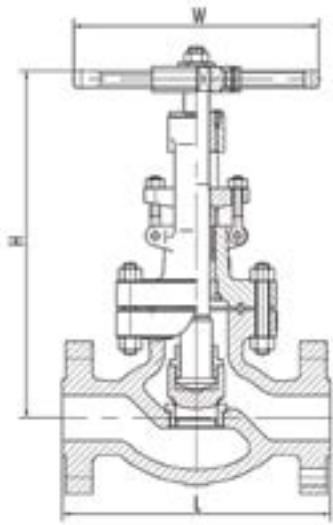
Flanged End Dimensions to ANSI B16.5

Butt Weld End to ANSI B16.25

ANSI CLASS 600											
Size		L-L1 (RF-BW)		L2(RTJ)		W		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	11.5	292	11.6	295	10	250	18.5	469	106	48
2 1/2"	65	13.0	330	13.1	333	10	250	21.3	540	152	69
3"	80	14.0	356	14.1	359	14	350	22.8	579	196	89
4"	100	17.0	432	17.1	435	18	450	26.7	677	295	134
5"	125	20.0	508	20.1	511	20	500	30.5	775	379	172
6"	150	22.0	559	22.1	562	22	560	32.0	812	891	404
8"	200	26.0	660	26.1	663	25	640	36.9	938	1,237	561
10"	250	31.0	787	31.1	790	28	720	39.1	994	1,777	806
12"	300	33.0	838	33.1	841	24*	610*	50.4	1,280	2,822	1,280
14"	350	35.0	889	35.1	892	24*	610*	57.1	1,450	3,417	1,550
16"	400	39.0	991	39.1	994	30*	760*	63.4	1,610	4,630	2,100
18"	450	43.0	1,092	43.1	1,095	32*	810*	70.9	1,801	7,055	3,200

ANSI CLASS 900											
Size		L-L1 (RF-BW)		L2(RTJ)		W		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	14.5	368	14.6	371	14	350	19.0	482	209	95
2 1/2"	65	16.5	419	16.6	422	14	350	22.0	560	304	138
3"	80	15.0	381	15.1	384	18	450	23.6	600	276	125
4"	100	18.0	457	18.1	460	20	500	28.5	725	463	210
6"	150	24.0	610	24.1	613	25	600	38.1	967	959	435
8"	200	29.0	737	29.1	740	24*	610*	40.9	1,040	1,609	730
10"	250	33.0	838	33.1	841	24*	610*	45.9	1,165	2,714	1,231
12"	300	38.0	965	38.1	968	32*	810*	54.1	1,374	4,299	1,950
14"	350	40.5	1,029	40.9	1,038	32*	810*	76.1	1,934	5,952	2,700
16"	400	44.5	1,130	44.9	1,140	32*	810*	87.0	2,210	7,826	3,550

\* Gear Operator



**BOLTED BONNET GLOBE VALVE  
ANSI/ASME CLASS 1500 & CLASS 2500**

SIZE 2" to 12"

Handwheel or Enclosed Gear Operated and  
Actuators Optional on All Sizes

Face-to-Face Dimensions to ANSI B16.10

Flanged End Dimensions to ANSI B16.5

Butt Weld End to ANSI B16.25

ANSI CLASS 1500											
Size		L-L1 (RF-BW)		L2(RTJ)		W		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	14.5	368	14.6	371	14	350	19.0	482	209	95
2 ½"	65	16.5	419	16.6	422	14	350	24.4	620	304	138
3"	80	18.5	470	18.6	473	20	500	28.3	720	399	181
4"	100	21.5	546	21.6	549	22	560	34.1	866	959	435
6"	150	27.7	705	28.0	711	24*	610*	41.4	1,052	1,190	540
8"	200	32.7	832	33.1	842	24*	610*	49.6	1,261	2,138	970
10"	250	39.0	991	39.4	1,000	32*	810*	65.0	1,651	3,351	1,520
12"	300	44.5	1,130	45.1	1,146	32*	810*	77.2	1,960	5,622	2,550

ANSI CLASS 2500											
Size		L-L1 (RF-BW)		L2(RTJ)		W		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	17.7	451	17.9	454	16	400	24.2	615	401	182
2 ½"	65	20.0	508	20.2	514	20	500	28.0	710	639	290
3"	80	22.7	578	23.0	584	22	560	29.5	750	750	340
4"	100	26.5	673	26.9	683	24*	610*	36.7	932	1,808	820
6"	150	36.0	914	36.5	927	24*	610*	50.3	1,277	4,453	2,020
8"	200	40.2	1,022	40.9	1,038	24*	610*	62.3	1,583	9,811	4,450

\* Gear Operator

**NOTES:**

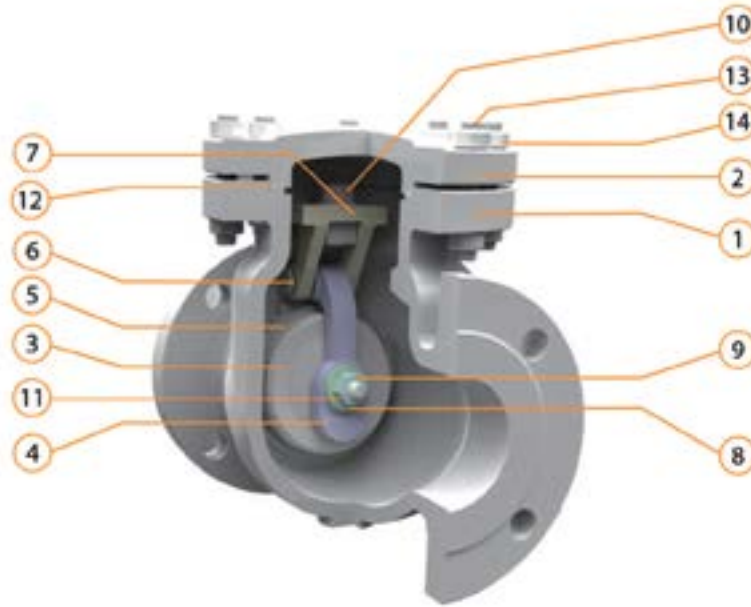
1. The information on this catalog is provided for general informational purposes only.
2. For all technical parameters of the product please contact your local FluoroSeal sales office or authorized representative.

3. Customization for specific applications is available upon request.
4. We reserve the right to changes without prior notice.

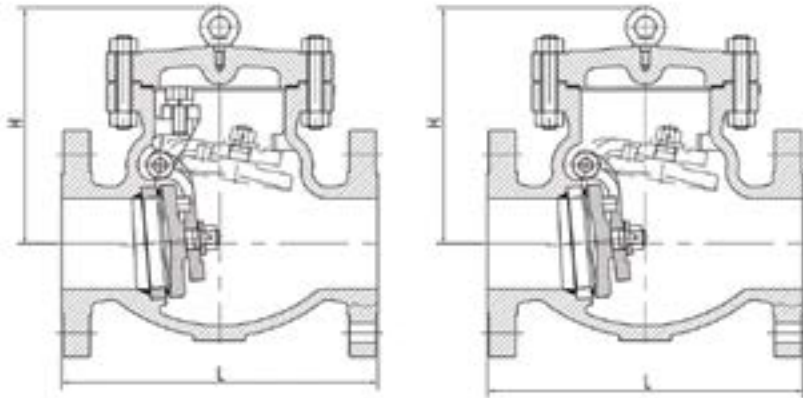
## SWING CHECK VALVE

Class 150, 300: 2" up to 48" / Class 600: 2" up to 36" / Class 900: 2" up to 24" / Class 1500: 2" up to 24" / Class 2500: 2" up to 12"

CHECK VALVES



No.	Description	Carbon Steel	Low Temp. Service	Stainless Steel	High Temp. Service	Sour Service
1	Body	ASTM A216-WCB	ASTM A352-LCC	ASTM A351-CF8M	ASTM A217-WC9	ASTM A216-WCB
2	Cover	ASTM A216-WCB	ASTM A352-LCC	ASTM A351-CF8M	ASTM A217-WC9	ASTM A216-WCB
3	Disc	ASTM A216-WCB/ Cr13 Overlay	ASTM A352-LCC/ SS316 Overlay	ASTM A351-CF8M	ASTM A217-WC9/ Stellite Overlay	ASTM A216-WCB/ Cr13 Overlay-NC
4	Hinge	ASTM A216-WCB	ASTM A352-LCC	ASTM A351-CF8M	ASTM A217-WC9	ASTM A216-WCB
5	Seat Ring	ASTM A105/ Stellite Overlay	ASTM A182-F316/ Stellite Overlay	ASTM A182-F316/ Stellite Overlay	ASTM A182-F22/ Stellite Overlay	ASTM A105/ Stellite Overlay
6	Hinge Pin	ASTM A276-410	ASTM A276-316	ASTM A276-316	ASTM A276-410	ASTM A276-410-NC
7	Yoke	ASTM A216-WCB	ASTM A352-LCC	ASTM A351-CF8M	ASTM A217-WC9	ASTM A216-WCB
8	Washer	ASTM A276-410	ASTM A276-316	ASTM A276-316	ASTM A276-410	ASTM A276-410-NC
9	Disc Nut	ASTM A276-410	ASTM A276-316	ASTM A276-316	ASTM A276-410	ASTM A276-410-NC
10	Nut	ASTM A276-410	ASTM A276-316	ASTM A276-316	ASTM A276-410	ASTM A276-410-NC
11	Disc Split Pin	ASTM A276-420	ASTM A276-316	ASTM A276-316	ASTM A276-420	Stainless Steel
12	Bonnet Gasket	Spiral Wound Graphite+S.S.	Spiral Wound Graphite+S.S.	Spiral Wound Graphite+S.S.	Spiral Wound Graphite+S.S.	Spiral Wound Graphite+S.S.
13	Bonnet Stud	ASTM A193-B7	ASTM A320-L7	ASTM A193-B8	ASTM A193-B16	ASTM A193-B7M
14	Bonnet Nut	ASTM A194-2H	ASTM A194-7	ASTM A194-8	ASTM A193-4	ASTM A194-2HM



## BOLTED COVER SWING CHECK VALVE ANSI/ASME CLASS 150 & CLASS 300

SIZE 2" to 48"

Face-to-Face Dimensions to ANSI B16.10

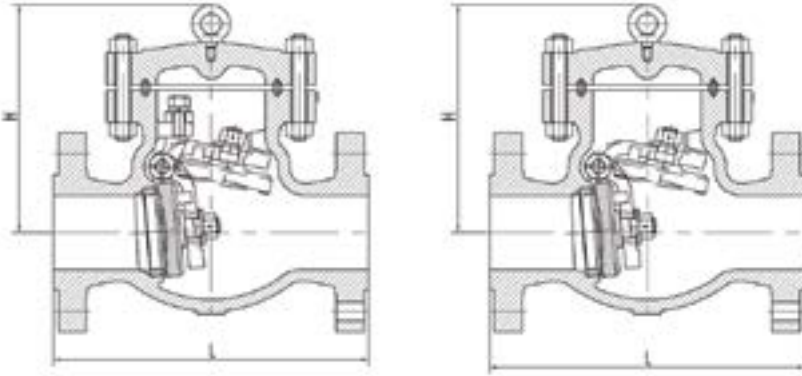
Flanged End Dimensions to ANSI B16.5

and ANSI B16.47

Butt Weld End to ANSI B16.25

ANSI CLASS 150							
Size		L-L1 (RF-BW)		H		Weight (RF)	
in	mm	in	mm	in	mm	lb	kg
2"	50	8.0	203	6.1	155	42	19
2 1/2"	65	8.5	216	6.7	170	57	26
3"	80	9.5	241	7.1	180	64	29
4"	100	11.5	292	8.7	220	106	48
5"	125	13.0	330	9.4	240	132	60
6"	150	14.0	356	10.6	268	170	77
8"	200	19.5	495	12.2	310	306	139
10"	250	24.5	622	14.6	370	450	204
12"	300	27.5	699	16.7	425	807	366
14"	350	31.0	787	18.7	475	944	428
16"	400	34.0	864	20.7	525	1,217	552
18"	450	38.5	978	22.8	580	1,704	773
20"	500	38.5	978	24.7	628	2,304	1,045
24"	600	51.0	1,295	34.7	882	3,439	1,560
26"	650	51.0	1,295	35.8	910	3,792	1,720
28"	700	57.0	1,448	36.8	935	4,365	1,980
30"	750	60.0	1,524	38.6	980	4,894	2,220
32"	800	68.0	1,727	41.7	1,058	6,219	2,821
36"	900	77.0	1,956	53.2	1,352	7,372	3,344
40"	1,000	85.0	2,159	55.9	1,420	9,039	4,100
42"	1,050	89.0	2,261	58.5	1,485	9,700	4,400
48"	1,200	101.0	2,566	65.0	1,650	11,574	5,250

ANSI CLASS 300							
Size		L-L1 (RF-BW)		H		Weight (RF)	
in	mm	in	mm	in	mm	lb	kg
2"	50	10.5	267	6.9	175	46	21
2 1/2"	65	11.5	292	7.3	185	66	30
3"	80	12.5	318	7.8	198	86	39
4"	100	14.0	356	9.3	235	152	69
5"	125	15.7	400	10.4	264	196	89
6"	150	17.5	445	11.1	282	276	125
8"	200	21.0	533	13.2	335	463	210
10"	250	24.5	622	15.2	385	677	307
12"	300	28.0	711	18.1	460	1,098	498
14"	350	33.0	838	20.5	520	1,477	670
16"	400	34.0	864	21.8	554	1,764	800
18"	450	38.5	978	23.6	600	2,260	1,025
20"	500	40.0	1,016	26.4	670	2,976	1,350
24"	600	53.0	1,346	33.5	850	4,303	1,952
26"	650	53.0	1,346	37.0	940	5,602	2,541
28"	700	59.0	1,499	45.7	1,162	6,338	2,875
30"	750	62.7	1,594	50.3	1,278	7,209	3,270
32"	800	68.0	1,727	52.0	1,320	8,157	3,700
36"	900	82.0	2,083	59.3	1,505	9,656	4,380
40"	1,000	96.0	2,438	69.4	1,762	12,831	5,820
42"	1,050	103.0	2,617	74.4	1,890	15,322	6,950
48"	1,200	124.0	3,151	88.6	2,250	17,857	8,100



**BOLTED COVER SWING CHECK VALVE  
ANSI/ASME CLASS 600 & CLASS 900**

SIZE 2" to 36"

Face-to-Face Dimensions to ANSI B16.10

Flanged End Dimensions to ANSI B16.5

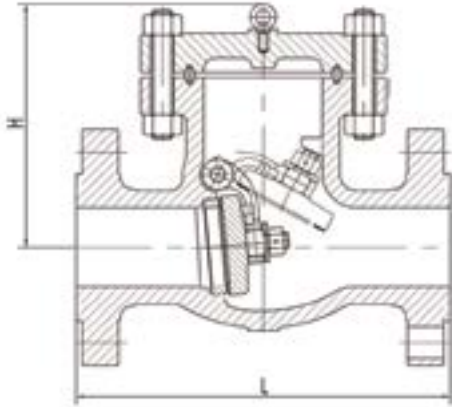
and ANSI B16.47

Butt Weld End to ANSI B16.25

ANSI CLASS 600									
Size		L-L1 (RF-BW)		L2(RTJ)		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	11.5	292	11.6	295	7.2	182	79	36
2 1/2"	65	13.0	330	13.1	333	7.9	200	108	49
3"	80	14.0	356	14.1	359	8.9	227	134	61
4"	100	17.0	432	17.1	435	10.2	260	284	129
5"	125	20.0	508	20.1	511	11.6	295	401	182
6"	150	22.0	559	22.1	562	12.8	325	500	227
8"	200	26.0	660	26.1	663	15.4	390	842	382
10"	250	31.0	787	31.1	790	19.3	490	1,310	594
12"	300	33.0	838	33.1	841	20.8	528	1,797	815
14"	350	35.0	889	35.1	892	22.5	572	2,072	940
16"	400	39.0	991	39.1	994	26.0	660	2,555	1,159
18"	450	43.0	1,092	43.1	1,095	28.3	719	3,391	1,538
20"	500	47.0	1,194	47.2	1,200	31.9	811	4,674	2,120
24"	600	55.0	1,397	55.4	1,407	38.2	971	6,878	3,120
26"	650	57.0	1,448	57.5	1,461	43.6	1,108	8,400	3,810
28"	700	63.0	1,600	63.5	1,613	46.9	1,190	10,185	4,620
30"	750	65.0	1,651	65.5	1,664	52.0	1,320	12,236	5,550
32"	800	70.0	1,778	70.6	1,794	55.0	1,397	15,036	6,820
36"	900	82.0	2,083	82.6	2,099	60.8	1,545	18,078	8,200

ANSI CLASS 900									
Size		L-L1 (RF-BW)		L2(RTJ)		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	14.5	368	14.6	371	11.2	284	154	70
2 1/2"	65	16.5	419	16.6	422	11.8	300	218	99
3"	80	15.0	381	15.1	384	12.0	305	238	108
4"	100	18.0	457	18.1	460	13.0	331	328	149
6"	150	24.0	610	24.1	613	16.7	423	675	306
8"	200	29.0	737	29.1	740	20.0	507	1,127	511
10"	250	33.0	838	33.1	841	22.9	582	1,790	812
12"	300	38.0	965	38.7	968	25.6	650	2,480	1,125
14"	350	40.5	1,029	40.9	1,038	27.0	686	3,064	1,390
16"	400	44.5	1,130	44.9	1,140	32.2	818	4,200	1,905
18"	450	48.0	1,219	48.5	1,232	33.1	842	6,636	3,010
20"	500	52.0	1,321	52.5	1,333	36.7	932	8,929	4,050
24"	600	61.0	1,549	61.7	1,568	40.4	1,025	11,508	5,220





## BOLTED COVER SWING CHECK VALVE ANSI/ASME CLASS 1500 & CLASS 2500

SIZE 2" to 24"

Face-to-Face Dimensions to ANSI B16.10

Flanged End Dimensions to ANSI B16.5

Butt Weld End to ANSI B16.25

ANSI CLASS 1500									
Size		L-L1 (RF-BW)		L2(RTJ)		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	14.5	368	14.6	371	11.2	284	154	70
2 1/2"	65	16.5	419	16.6	422	11.8	300	218	99
3"	80	18.5	470	18.6	473	13.1	332	328	149
4"	100	21.5	546	21.6	549	14.7	373	542	246
6"	150	27.7	705	28.0	711	19.8	502	1,217	552
8"	200	32.7	832	33.1	842	23.9	608	2,249	1,020
10"	250	39.0	991	39.4	1,000	25.6	649	3,417	1,500
12"	300	44.5	1,130	45.1	1,146	30.7	779	4,960	2,250
14"	350	49.5	1,257	50.2	1,276	37.0	940	6,570	2,980
16"	400	54.5	1,384	55.4	1,407	40.2	1,020	9,877	4,480
18"	450	60.5	1,537	61.4	1,559	45.3	1,150	13,338	6,050
20"	500	65.5	1,664	66.4	1,686	47.5	1,206	17,593	7,980
24"	600	76.5	1,943	77.6	1,972	60.4	1,535	21,958	9,960

ANSI CLASS 2500									
Size		L-L1 (RF-BW)		L2(RTJ)		H		Weight (RF)	
in	mm	in	mm	in	mm	in	mm	lb	kg
2"	50	17.7	451	17.9	454	15.7	400	315	143
2 1/2"	65	20.0	508	20.2	514	16.5	420	520	236
3"	80	22.7	578	23.0	584	17.3	440	761	345
4"	100	26.5	673	26.9	683	18.9	480	1,455	660
6"	150	36.0	914	36.5	927	20.1	510	3,164	1,435
8"	200	40.2	1,022	40.9	1,038	27.2	692	5,478	2,485
10"	250	50.0	1,270	50.9	1,292	33.5	850	8,333	3,780
12"	300	56.0	1,422	56.9	1,445	39.1	992	12,258	5,560

### NOTES:

- The information on this catalog is provided for general informational purposes only.
- For all technical parameters of the product please contact your local FluoroSeal sales office or authorized representative.

- Customization for specific applications is available upon request.
- We reserve the right to changes without prior notice.



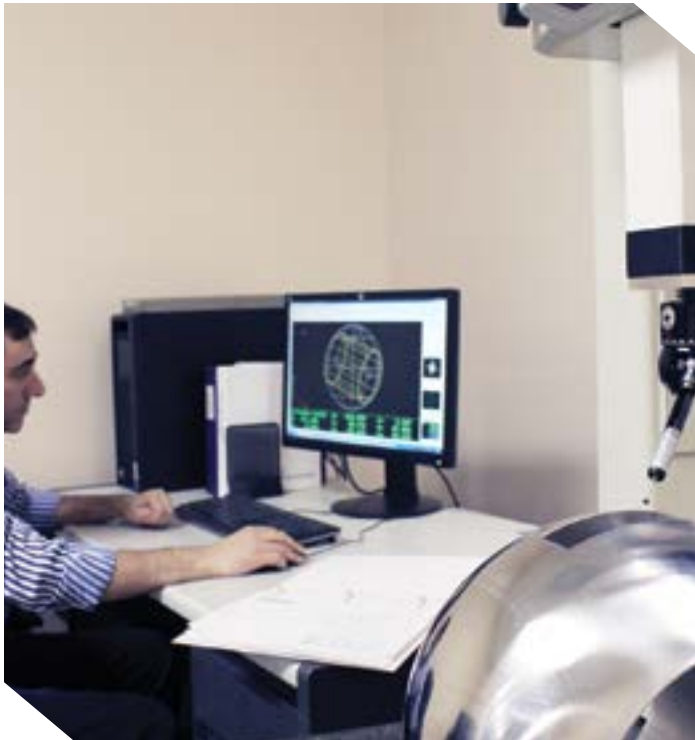
At FluoroSeal, we are inspired and committed to developing innovative flow control solutions for every industry we serve.



FluoroSeal operations span across the world - from headquarters in Canada, to an international sales force and manufacturing. Comprised of over 500 employees worldwide, FluoroSeal is a leading provider of innovative solutions to the flow control industry.

For over 40 years, FluoroSeal has been manufacturing and customizing a wide range of valves, parts, and accessories for various industries such as Oil & Gas, Chemical, Pharmaceutical, Petrochemical, Marine, and Mining. Our client-oriented culture allows us to understand complex industry needs and meet the highest quality standards - that is why our manufacturing processes are ISO 9001:2015 and PED 2014/68/EU certified with TUV Rheinland of North America.

Our wholly owned foundries and manufacturing plants enhance our capability to offer an extensive range of high quality valves at competitive prices in a wide range of exotic alloys on demand. With our large global network of warehouses, stocking distributors, and factory authorized service centers FluoroSeal is capable of delivering valves, repair service, and technical support where and when the end user needs it.



### OUR ENGINEERING COMMITMENT

FluoroSeal is committed to providing customers with products tailored to their needs. Whatever your application and industry sector, we can assist you in making the most appropriate selection of product type, materials, and options. From providing engineering data such as flow calculations and CV factors to helpful after-sale service including in-line trouble-shooting — you can rely on our team to assist you.

### ENGINEERED SOLUTIONS DIVISION (ESD)

Our Engineered Solutions Division (ESD) is staffed with highly skilled engineers, technicians and draftsmen specialized in customizing existing designs to meet your specific needs.

### QUALITY ASSURANCE

FluoroSeal Valves are designed with the best features presently available on the market. They are inspected throughout the manufacturing process to assure high quality and consistency in every unit.

ISO 9001: 2015



Design and Manufacture of Industrial Valves

PED 2014/68/EU



Design and Manufacture of Industrial Valves

# ORDERING INSTRUCTIONS



Size	Valve Type	Pressure Class	End Connection	Operator	Body Material	Trim Material	Special
2" to 48"							
<b>Valve Type</b>							
GC0	Gate Valve API600 Cast						
LC0	Globe Valve API600 Cast						
CC0	Check Valve API600 Cast						
<b>Pressure Class</b>							
01	ASME Class 150 lbs	09	ASME Class 900 lbs				
03	ASME Class 300 lbs	15	ASME Class 1500 lbs				
06	ASME Class 600 lbs	25	ASME Class 2500 lbs				
<b>End Connection</b>							
FR	Flanged Raised Face						
FJ	Flanged Ring Joint						
FF	Flanged Flat Face						
BW	Butt Weld						
XX	Special						
<b>Operator</b>							
B	Bare Stem	EGL	Enclosed Gear + Locking Device				
H	Handwheel	C	Chain Wheel				
HL	Handwheel + Locking Device	M	Motor Actuator				
EG	Enclosed Gear	P	Pneumatic Actuator				
<b>Body Material</b>							
Refer to Body Material Table (Table 1)							
<b>Trim Material</b>							
Refer to Trim Material Table (Table 2)							
<b>Special</b>							
NRS	Non-Rising Stem	XB	Extended Bonnet				
NACE	NACE MR01-75	BP	By-pass				
XT	Extended Stem						

Code	WCB	LCB	LCC	WC6	WC9	C5
Material	ASTM A216 Gr.WCB	ASTM A352 Gr. LCB	ASTM A352 Gr. LCC	ASTM A217 Gr. WC6	ASTM A217 Gr. WC9	ASTM A217 Gr. C5
Code	CF8	CF8M	CF3	CF3M	CD4	A20
Material	ASTM A351 Gr. CF8	ASTM A351 Gr. CF8M	ASTM A351 Gr. CF3	ASTM A351 Gr. CF3M	ASTM A995 Gr. 1B	A20 - A351 Gr. CN7M

Code	Disc Surface	Seat Surface	Stem
R01	13Cr	13Cr	ASTM A182 Gr. F6a
S02	304 S.S.	304 S.S.	ASTM A182 Gr. F304
R05	Stellite 6	Stellite 6	ASTM A182 Gr. F6a
R08	13Cr	Stellite 6	ASTM A182 Gr. F6a
S10	316 S.S.	316 S.S.	ASTM A182 Gr. F316
S12	316 S.S.	Stellite 6	ASTM A182 Gr. F316
A13	Alloy 20	Alloy 20	ASTM B473
S15	Stellite 6	Stellite 6	ASTM A182 Gr. F304
S16	Stellite 6	Stellite 6	ASTM A182 Gr. F316

## MODEL SELECTION EXAMPLE

Example: 2"-GC001FR/H-WBC/R08-NACE  
 Description: 2", Gate Valve API600 Cast, ASME Class 150 lbs, Flanged Raised Face, Handwheel, Carbon Steel WBC body, 13CR/Stellite 6 Trim, and NACE MR0175 requirement.

## NOTES:

- For all technical parameters of the product please refer to this catalog, additional information can be obtained from your local FluoroSeal sales office or authorized representative.
- Customization for specific applications is available upon request.



**CONTROLLING PROVISIONS**

These terms and conditions shall control with respect to any purchase order or sale of FluoroSeal Inc.'s products. No waiver, alteration or modification of these terms and conditions whether on Buyer's purchase order or otherwise, shall be valid unless the waiver, alteration or modification is specifically accepted in writing and signed by an authorized representative of FluoroSeal Inc.

**DELIVERY**

FluoroSeal Inc. will make every effort to complete delivery of products as indicated on its acceptance of an order, but FluoroSeal Inc. assumes no responsibility or liability, and will accept no back charge, for loss or damage due to delay or inability to deliver caused by acts of God, war, labor difficulties, accident, delays of carriers, by contractors or suppliers, inability to obtain materials, shortages of fuel and energy, or any other causes of any kind whatever beyond the control of FluoroSeal Inc. FluoroSeal Inc. may terminate any contract of sale of its products without liability of any nature, by written notice to Buyer, in the event that the delay in delivery or performance resulting from any of the aforesaid causes shall continue for a period of sixty (60) days. Under no circumstances shall FluoroSeal Inc. be liable for any special or consequential damages or for loss, damage, or expense (whether or not based on negligence) directly or indirectly arising from delays or failure to give notice of delay.

**WARRANTY**

FluoroSeal Inc. warrants for one year from the date of shipment its manufactured products to the extent that FluoroSeal Inc. will replace those having defects in material or workmanship when used for the purpose and in the manner which FluoroSeal Inc. recommends. If FluoroSeal Inc.'s examination discloses to its satisfaction that the products are defective and an adjustment is required, the amount of such adjustment shall not exceed the net sale price of the defective product(s) - no allowance will be made for labor or expense for 3rd party repair or replacement of defective products or damage resulting from same. FluoroSeal Inc. warrants other manufacturers products which it sells to the extent of the warranties and terms & conditions of their respective makers. Where engineering design or fabrication work is supplied, Buyer's acceptance of FluoroSeal Inc.'s design or of delivery of work shall relieve FluoroSeal Inc. of all further obligation, other than expressed in FluoroSeal Inc.'s product warranty.

THIS IS FLUOROSEAL INC.'S SOLE WARRANTY. FLUOROSEAL INC. MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED THE AFORE STATED OBLIGATION ARE HEREBY DISCLAIMED BY FLUOROSEAL INC. AND EXCLUDED FROM THIS WARRANTY.

FluoroSeal Inc. neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of its engineering designs or products. This warranty shall not apply to any products or parts of products which (a) have been repaired or altered outside of FluoroSeal Inc.'s factory, in any manner; (b) have been subjected to misuse, negligence or accidents; (c) have been used in a manner contrary to FluoroSeal Inc.'s instructions or recommendations. FluoroSeal Inc. shall not be responsible for design errors due to inaccurate or incomplete information supplied by Buyer or its representatives.

**LIABILITY**

FluoroSeal Inc. will not be liable for any loss, damage, cost of repairs, incidental or consequential damages of any kind, whether based upon warranty (except for the obligation accepted by FluoroSeal Inc. under "Warranty" above), contract or negligence, arising in connection with the design, manufacture, sale, use or repair of the products or of the engineering designs supplied to Buyer. Any litigation will be interpreted in accordance with the laws of the Province of Québec, Canada and any suit, action or

proceeding relating to these terms and conditions may be instituted in any competent court sitting in the district of Montréal, Québec, Canada.

**RETURNS**

FluoroSeal Inc. cannot accept return of any product(s) unless its written permission has been first obtained, in which case same will be credited subject to the following: (a) all material returned must, on its arrival at FluoroSeal Inc.'s plant, be found to be in first-class condition; if not, cost of putting in saleable condition will be deducted from credit memoranda; (b) a handling charge deduction will be made from all credit memoranda issued for material returned; (c) transportation charges, if not prepaid, will be deducted from credit memoranda.

**SHIPMENTS**

All products sent out will be carefully examined, counted and packed. The cost of any special packing or special handling caused by Buyer's requirements or requests shall be added to the amount of the order. No claim for shortages will be allowed unless made in writing within ten (10) days of receipt of a shipment. Claims for products damaged or lost in transit should be made to the carrier, as FluoroSeal Inc.'s responsibility ceases, and title passes, on delivery to the carrier.

**SPECIAL PRODUCTS**

Orders covering special or non-standard products are not subject to cancellation except on such terms as FluoroSeal Inc. may specify on application.

**PRICES AND DESIGNS**

Prices and designs are subject to change without notice. All prices are F.O.B. Point of Shipment, unless otherwise stated.

**TAXES**

The amount of any sales, excise or other taxes, if any, applicable to the products, shall be added to the purchase price and shall be paid by Buyer unless Buyer provides FluoroSeal Inc. with an exemption certificate acceptable to the taxing authorities.

**NUCLEAR PLANTS**

Where the products, engineering design or fabrication is for nuclear plant applications, Buyer agrees (a) to take all necessary steps to add FluoroSeal Inc. as an insured supplier under the American Nuclear Insurers (ANI) pool and under the Mutual Atomic Energy Reinsurance Pool (MAERP) for property damage and liability insurance and if necessary steps could have been taken, but are not taken, Buyer shall hold FluoroSeal Inc. harmless against all such losses which could have been thus covered; (b) Buyer agrees to hold FluoroSeal Inc. harmless with respect to any personal injury or death, property damage or any other loss in a nuclear incident which is caused directly or indirectly by defective design, material, or workmanship, furnished by FluoroSeal Inc. and which is covered by insurance maintained by Buyer (or which could be so covered but with respect to which Buyer has elected to self-insure), and further agrees to waive subrogation by its carriers of such insurance against FluoroSeal Inc.; (c) as to nuclear hazards for which Buyer cannot obtain insurance coverage, the liability of FluoroSeal Inc. for any personal injury or death, property damage or any other loss directly caused by defective design, material, or workmanship furnished by FluoroSeal Inc. shall not exceed the value of the material furnished by FluoroSeal Inc. at the time of the loss occurrence.

# FluoroSeal

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