

KF Forged Steel Gate, Globe & Check Valves



KF Industries



Superior Fluid Control Products

A Brand of **CIRCOR** Energy Products Inc.

PREFACE

Satisfying the world's ever increasing energy demands, KF consistently offers a quality product at a competitive price. Continually improving our state-of-the-art manufacturing and engineering techniques, KF provides the industry with the most extensive valve offering available anywhere in the world.

An ISO manufacturer, KF has produced Ball Valves, Needle Valves, Check Valves and Butterfly Valves since 1962 and is now expanding its product range to include Forged Steel Gate, Globe and Check Valves.

This product line will include a size range of 1/4" - 3", ANSI Class 800 to 2500 lb. In a wide range of forged steel materials including ASTM A105N, ASTM A350-LF2, ASTM A182-F11, ASTM A182-F5, ASTM A182-F304, ASTM A182-F316, ASTM A182-F304L and ASTM-A182-316L, etc.

This catalogue contains the basic dimensions and specifications needed for ordering KF forged steel valves. The illustrations are representations of a certain size of each line of the products, but do not necessarily represent all the sizes in detail. The designs and materials may vary as KF is continually improving on its product.

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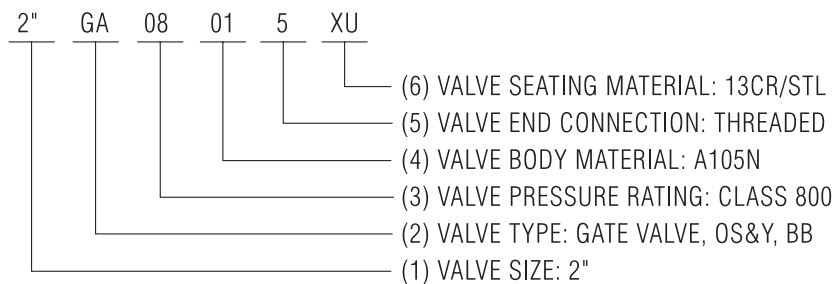
HOW TO ORDER:

Figure numbers are designed to cover essential features. When ordering, please show figure numbers to preclude misunderstanding of your requirements. A detailed description for **specials** must always accompany your order.

The following description may provide a basic guideline in the specification of valves:

SIZE (1)	TYPE (2)	PRESSURE RATING (3)	BODY MATERIALS (3)	END CONNECTION (5)	SEATING CODE (DISC/BODY) (6)
SIZE (1)	GA-Gate Valve OS&Y. BB GL-Globe Valve BB SC-Swing Check Valve BC LC-Piston Type Lift Check Valve BC GAWB-Gate Valve OS&Y. Seal Welded Bonnet GLWB-Globe Valve Seal Welded Bonnet SCWB-Swing Check Valve Seal Welded Cap LCWB-Piston Type Lift Check Seal Welded Cap	01-CLASS 150 03-CLASS 300 06-CLASS 600 08-CLASS 800 15-CLASS 1500 25-CLASS 2500	01-A105N 02-A182-F11 03-A182-F304 04-A182-F316 05-A182-F304L 06-A182-F316L 07-A350-LF2 08-A182-F22 09-A182-F5	1-Raised Face 2-Ring Type Joint 3-Butt Welding 4-Socket Welding 5-Threaded 6-Thrd X SW 7-M&F	X-13CR/13CR XU-13CR/STL U-STL/STL RU 316/316/STL R-316/316 M-MONEL/MONEL N-ALLOY 20/ALLOY 20 H-HASTELLOY B/HASTELLOY B XUN - 13CR/STL/NACE RUN - 316/316/STL/NACE

EXAMPLE: 2"GA08015XU

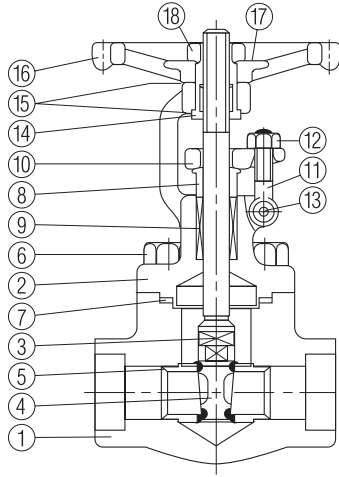


Notes:

1. Material to NACE MR-01-75 on request & indicated on nameplate.
2. Design and construction details are subject to change without notice

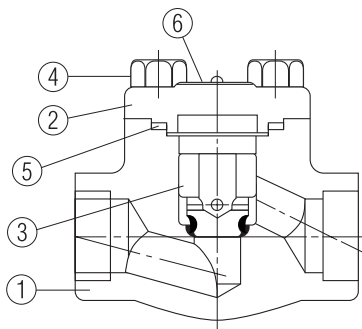


TYPICAL FORGED VALVES



GATE

Part No.	Part Name	Q'ty	ASTM Specifications										NACE
			A105	A350	A182								
				LF2	F5	F11	F22	304	304L	316	316L		
1	Body	1	A105	LF2	F5	F11	F22	304	304L	316	316L	MR-01-75 HRC ≤ 22	
2	Bonnet	1	A105	LF2	F5	F11	F22	304	304L	316	316L		
3	Stem	1	A276-410					A276-304	A276-304L	A276-316	A276-316L		
4	Wedge	1	A276-420					304-STL	304L-STL	316-STL	316L-STL		
5	Seat Ring	2	A276-410+STL					304-STL	304L-STL	316-STL	316L-STL		
6	Bonnet Bolt	4	A193-B7	A320-L7M	A193-B16			A193-B8		A193-B8M			
7	Gasket	1	304+Graphite					316+Graphite					
8	Gland	1	A276-410					A276-304		A276-316			
9	Packing	1 Set	Grafoil					PTFE					
10	Gland Flange	1	WCB					CF8					
11	Gland Bolt	2	A276-410					A276-304					
12	Gland Bolt Nut	2	A194-2H					A194-8					
13	Gland Bolt Pin	2	A276-410					A276-304					
14	Sleeve	1	A276-410										
15	Sleeve Washer	2	A276-410										
16	Handwheel	1	A197										
17	Nameplate	1	Aluminum					304					
18	Handwheel Nut	1	A108-1020										



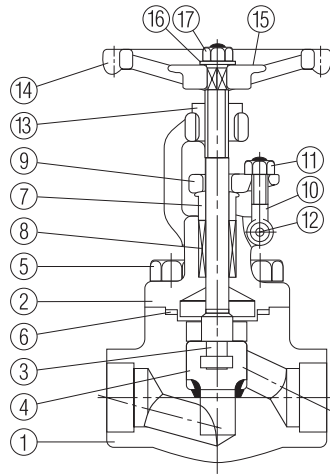
PISTON CHECK

Part No.	Part Name	Q'ty	ASTM Specifications									NACE
			A105	A350	A182							
					LF2	F5	F11	F22	304	304L	316	
1	Body	1	A105	LF2	F5	F11	F22	304	304L	316	316L	MR-01-75 HRC ≤ 22
2	Cover	1	A105	LF2	F5	F11	F22	304	304L	316	316L	
3	Disc	1	A276-420					304-STL	304L-STL	316-STL	316L-STL	
4	Cover Bolt	4	A193-B7	A320-L7M	A193-B16			A193-B8		A193-B8M		
5	Gasket	1	304+Graphite					316+Graphite				
6	Nameplate	1	Aluminum					304				

(1) A105 Also available with 0.25% maximum carbon. Other material also available on application.

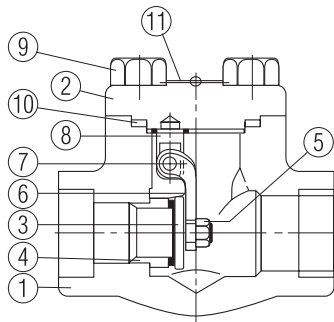


TYPICAL FORGED VALVES



GLOBE

Part No.	Part Name	Q'ty	ASTM Specifications									NACE	
			A105	A350	A182								
				LF2	F5	F11	F22	304	304L	316	316L		
1	Body	1	A105	LF2	F5	F11	F22	304	304L	316	316L	MR-01-75 	



SWING CHECK

Part No.	Part Name	Q'ty	ASTM Specifications									NACE	
			A105	A350	A182								
				LF2	F5	F11	F22	304	304L	316	316L		
1	Body	1	A105	LF2	F5	F11	F22	304	304L	316	316L	MR-01-75	
2	Cover	1	A105	LF2	F5	F11	F22	304	304L	316	316L		
3	Disc	1	A276-420					304-STL	304L-STL	316-STL	316L-STL		
4	Seat Ring	1	A276-410+STL					304-STL	304L-STL	316-STL	316L-STL		
5	Retaining Nut	1	A194-2H					A194-B8					
6	Hinge	1	A743-CA40					A351-CF8M					
7	Hinge Pin	1	A276-410					A276-304					
8	Supporter	1	A276-304					A276-304		A276-316			
9	Cover Bolt	4	A193-B7	A320-L7M	A193-B16			A193-B8		A193-B8M			HRC ≤ 22
10	Gasket	1	304+Graphite					316+Graphite					
11	Nameplate	1	Aluminum					304					

(1) A105 Also available with 0.25% maximum carbon. Other material also available on application.



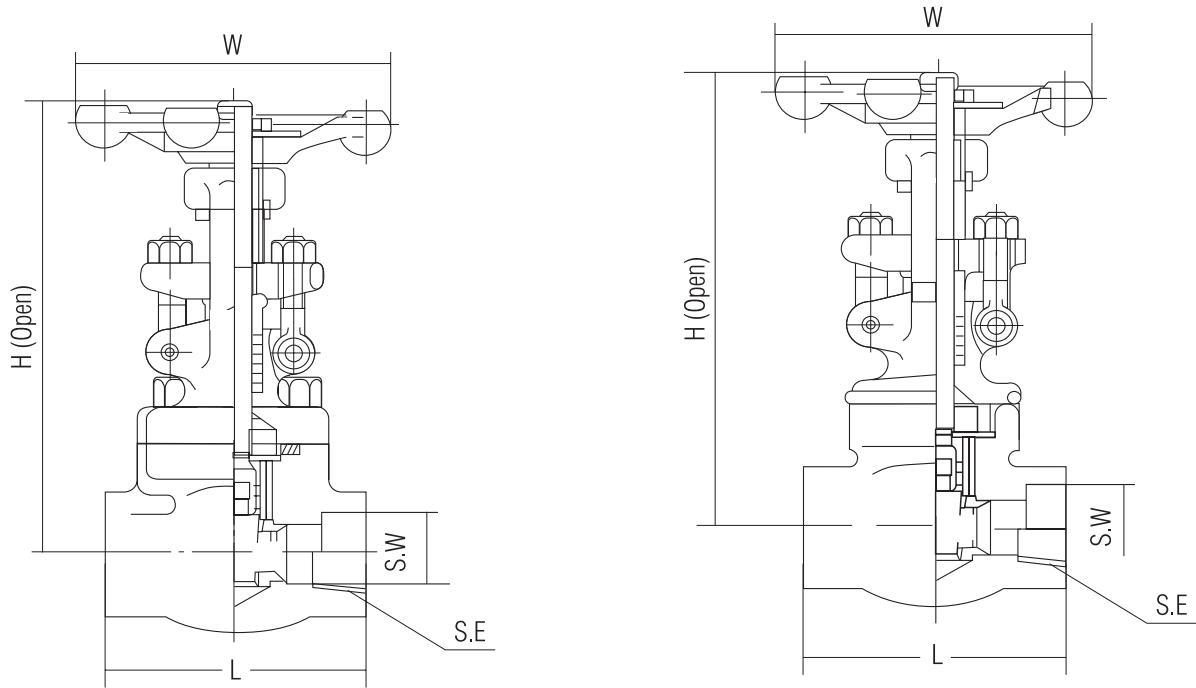
CLASS 800 FORGED STEEL GATE VALVE

FEATURES:

- ◆ REDUCED OR FULL PORT
- ◆ COMPACT OUTSIDE SCREW & YOKE
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ BOLTED BONNET OR WELDED BONNET
- ◆ SOCKET WELD OR THREADED ENDS
- ◆ REPLACEABLE HARDFACED SEATS

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, API 602 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.4
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11
F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal	Reduced Port	mm (in)	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)	65 (2 1/2)	80 (3)
diameter	Full Port	mm (in)	—	—	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)	—
d		mm	7	7	10	13.6	18	24	29	36.8	46.5	51
L		mm	79	79	79	92	111	120	120	140	178	185
H (Open)		mm	166	166	166	169	193	230	246	283	330	359
W		mm	100	100	100	100	125	160	160	180	200	200
Weight	B.B	kg	2.3	2.2	2.1	2.3	4.0	5.9	6.9	11.2	15.8	20
	W.B	kg	1.9	1.8	1.7	2.1	3.7	5.2	6.2	10.4	14.8	—

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



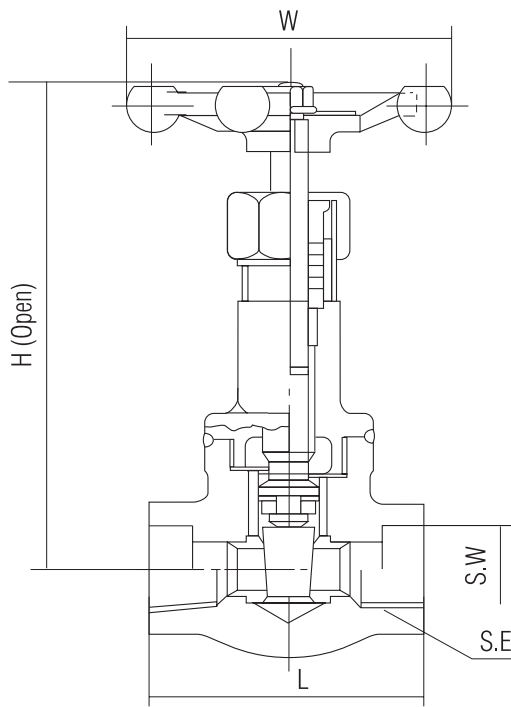
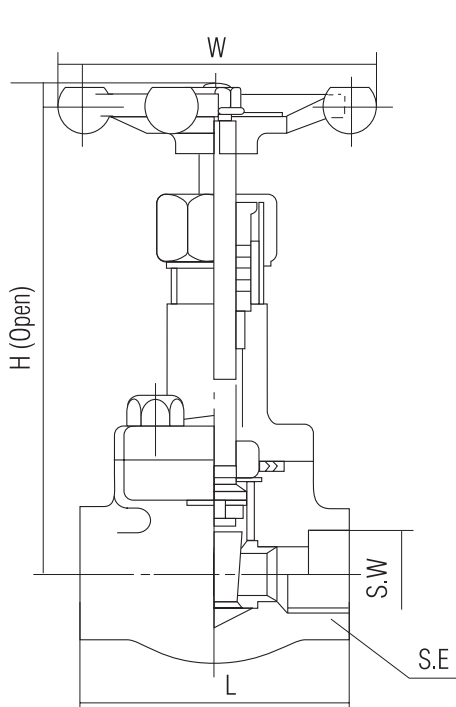
CLASS 800 FORGED STEEL GATE VALVE

FEATURES:

- ◆ BOLTED BONNET OR WELDED BONNET
- ◆ REDUCED OR FULL PORT
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ COMPACT INSIDE SCREW
- ◆ SOCKET WELD OR THREADED ENDS
- ◆ REPLACEABLE HARDFACED SEATS

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, API 602 & ANSI B16.34
- ◆ SOCKET-WELDS (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11
F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal	Reduced Port	mm (in)	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
diameter	Full Port	mm (in)	—	—	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)
d		mm	7	7	10	13.6	18	24	29	36.8
L		mm	79	79	79	92	111	120	120	140
H (Open)		mm	169	169	169	182	208	254	290	330
W		mm	100	100	100	100	125	160	160	180
Weight	B.B	kg	2.3	2.2	2.1	2.3	4.5	5.9	6.7	11.2
	W.B	kg	1.9	1.8	2.7	2.1	4.0	5.2	6.2	10.6

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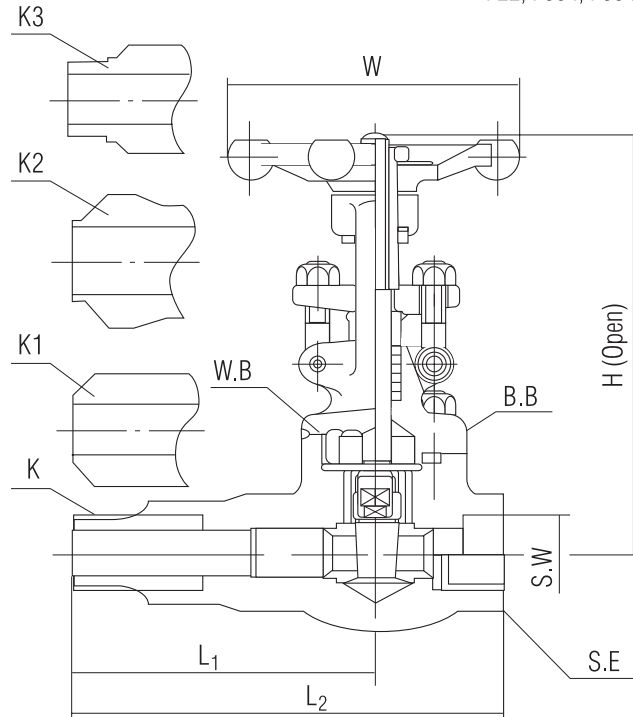
CLASS 800 FORGED STEEL GATE VALVE

FEATURES:

- ◆ WELDED BONNET OR BOLTED BONNET
- ◆ COMPACT OUTSIDE SCREW & YOKE
- ◆ EXTENDED BODY
- ◆ REPLACEABLE HARDFACED SEATS
- ◆ ONE END IS SOCKET WELD
OR THREADED END THE OTHER END IS
K, K1, K2 or K3

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, API 606
- ◆ SOCKET-WELD (S.W), ANSI B16, 11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598 &
ANSI B16.34
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11
F22, F304, F304L, F316, F316L



Designation	K	K1	K2	K3
Connection End	Threaded End	Beveled End	Integrally Reinforced End	Socket Weld End

DIMENSIONS:

Nominal diameter	mm (in)	15 (1/2)	20 (3/4)	25 (1)	40 (1 1/2)	50 (2)
d	mm (in)	10	13	18	29	36.5
L1	mm	103	103	111	127	152
L2	mm	140.5	145.5	162	187	222
H (Open)	mm	166	169	193	246	283
W	mm	100	100	125	160	180
Weight	W.B	kg	2.9	3.4	5.5	8.3
	B.B	kg	4.9	4.5	7.4	13.5

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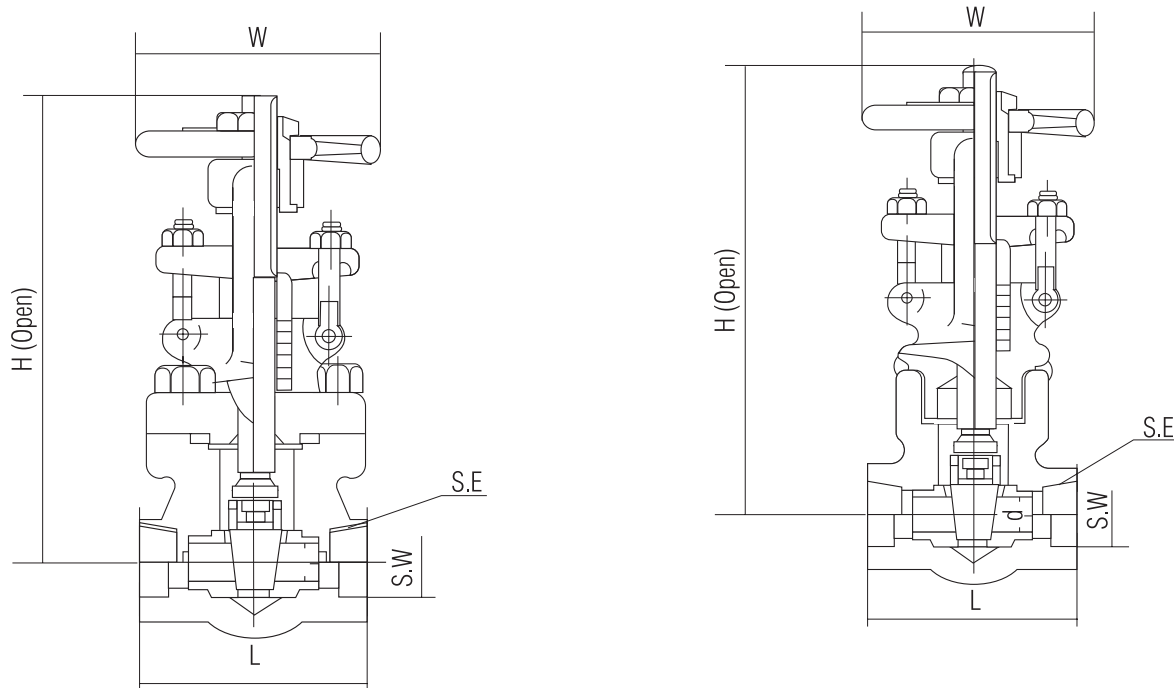
CLASS 1500 FORGED STEEL GATE VALVE

FEATURES:

- ◆ BOLTED BONNET OR WELDED BONNET
- ◆ COMPACT OUTSIDE SCREW & YOKE
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ SOCKET WELD OR THREADED ENDS
- ◆ REDUCED OR FULL PORT
- ◆ REPLACEABLE HARDFACED SEATS

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, API 602 & ANSI B16.34
 - ◆ SOCKET-WELD (S.W), ANSI B16.11
 - ◆ THREADED END (S.E), ANSI B1.20.1
 - ◆ VALVE TEST AND INSPECT: API 598 & ANSI B16.34
- STANDARD MATERIAL: A105, LF2, F5, F11
F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal	Reduced Port	mm (in)	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
diameter	Full Port	mm (in)	—	—	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)
d		mm	7	7	13.6	13.6	18	24	29	36.8
L		mm	111	111	111	111	114	120	140	162
H (Open)		mm	197	197	197	197	224	237	276	320
W		mm	125	125	125	125	160	160	180	200
Weight	B.B	kg	4.8	4.7	4.6	4.6	6.3	8.7	12.1	17.2
	W.B	kg	4.1	4.0	3.9	3.9	5.8	7.8	11.2	16

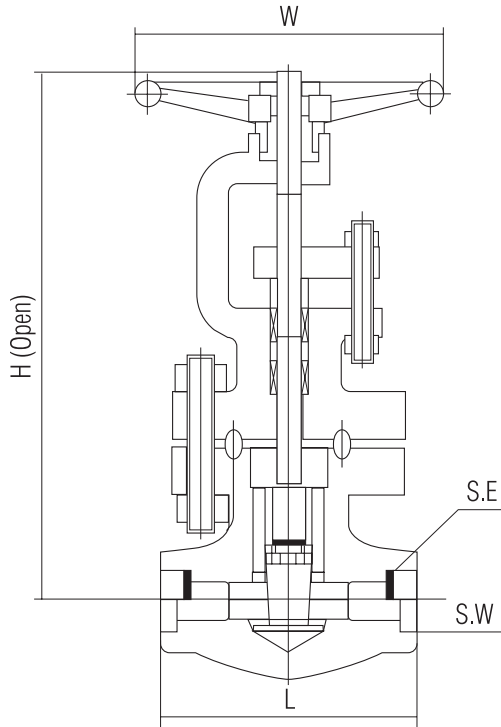
Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



CLASS 2500 FORGED STEEL GATE VALVE

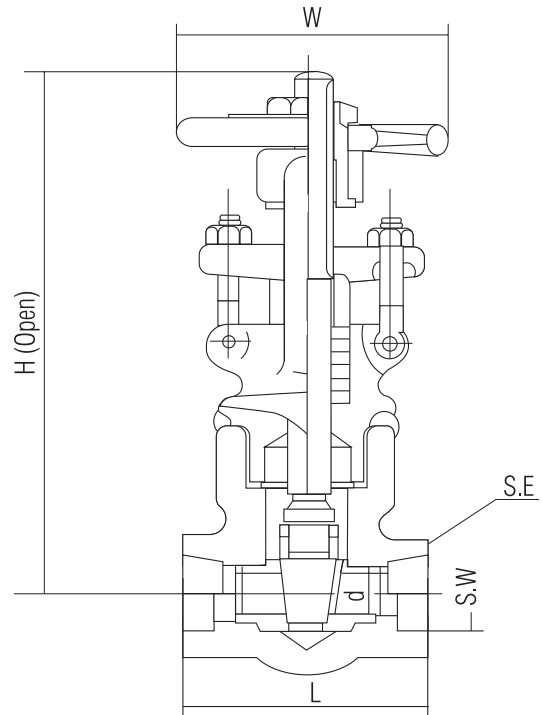
FEATURES:

- ◆ WELDED BONNET OR BOLTED BONNET
- ◆ COMPACT OUTSIDE SCREW & YOKE
- ◆ SOCKET WELD, THREADED OR BUTT-WELD ENDS
- ◆ REPLACEABLE HARDFACED SEATS



APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, API 602 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ BUTT-WELD (B.W) ANSI B16.25
- ◆ VALVE TEST AND INSPECT: API 598 & ANSI B16.34
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal diameter		mm (in)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d		mm (in)	13.6	13.6	18	25	29	36.8
L	S.W ; S.E	mm	114	114	140	162	162	200
	W.B	mm	218	218	259	320	320	350
	B.B	mm	385	388	434	492	492	561
W		mm	125	125	160	180	180	200
Weight	S.W ; S.E	kg	7	7	14	23	22.5	28
	B.W	kg	11.3	12.5	15.6	17.8	20.9	35.5

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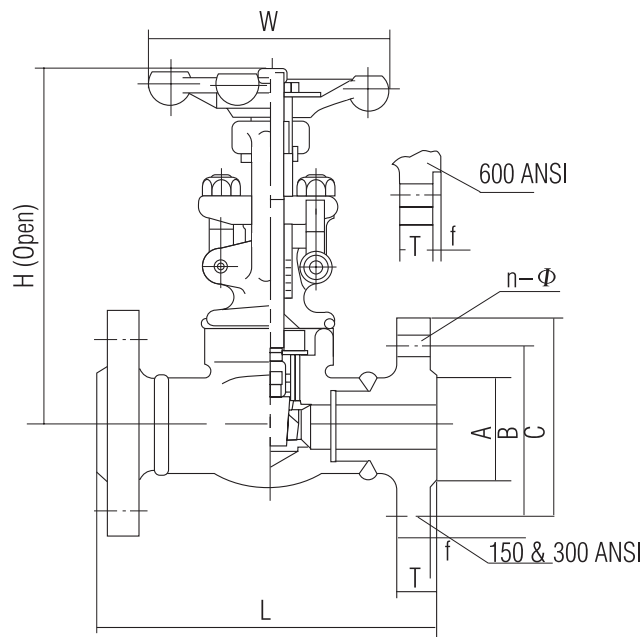
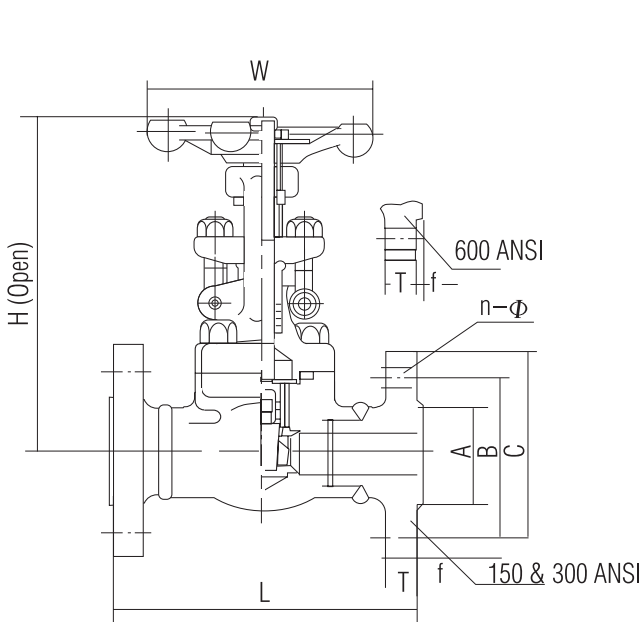
CLASS 150, 300, 600 FLANGED END FORGED STEEL GATE VALVE

FEATURES:

- ◆ BOLTED BONNET OR WELDED BONNET
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ COMPACT OUTSIDE SCREW & YOKE
- ◆ REPLACEABLE HARDFACED SEATS

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, API 602 & ANSI B16.34
- ◆ FLANGED END, ANSI B16.5
- ◆ FACE TO FACE ANSI B16.10
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal diameter	mm (in)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d	mm	10	13.6	18	24	29	36.8
CLASS 150 L	mm	108	117	127	140	165	178
CLASS 300 L	mm	140	152	165	178	190	216
CLASS 600 L	mm	165	190	216	229	241	292
H (Open)	mm	166	169	193	230	246	290
W	mm	100	100	125	160	160	180
CLASS 150 Weight	kg	3.2	4.8	7.7	9.8	10.8	18.5
CLASS 300 Weight	kg	4.8	6.2	9.3	14	15.5	23.4
CLASS 600 Weight	kg	5.9	7.4	10.4	16.2	17.5	28.3

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



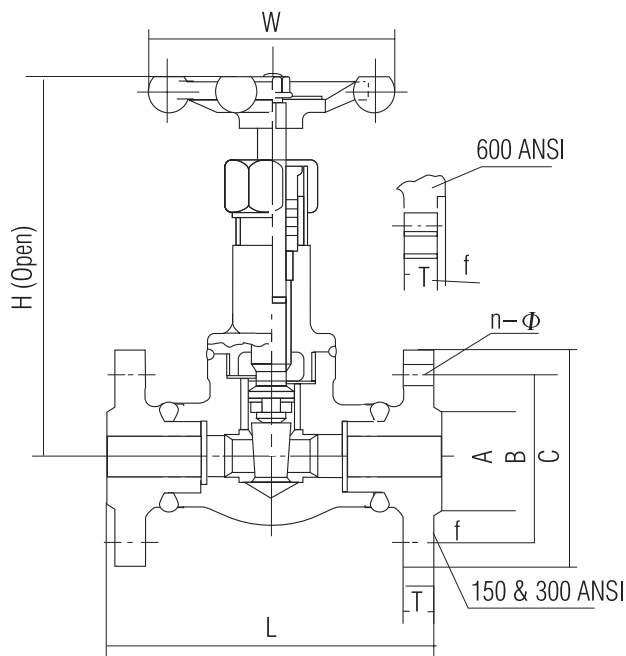
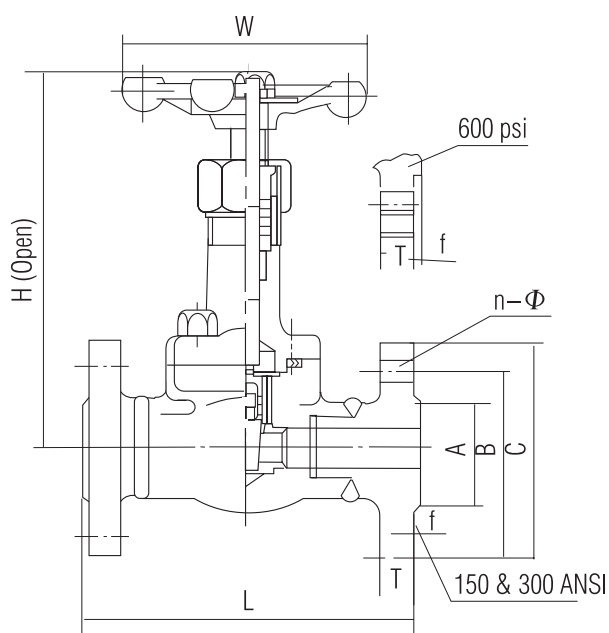
CLASS 150, 300, 600 FLANGED END FORGED STEEL GATE VALVE

FEATURES:

- ◆ BOLTED BONNET OR WELDED BONNET
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ COMPACT INSIDE SCREW
- ◆ REPLACEABLE HARDFACED SEATS

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, API 602 & ANSI B16.34
- ◆ FLANGED END, ANSI B16.5
- ◆ FACE TO FACE ANSI B16.10
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



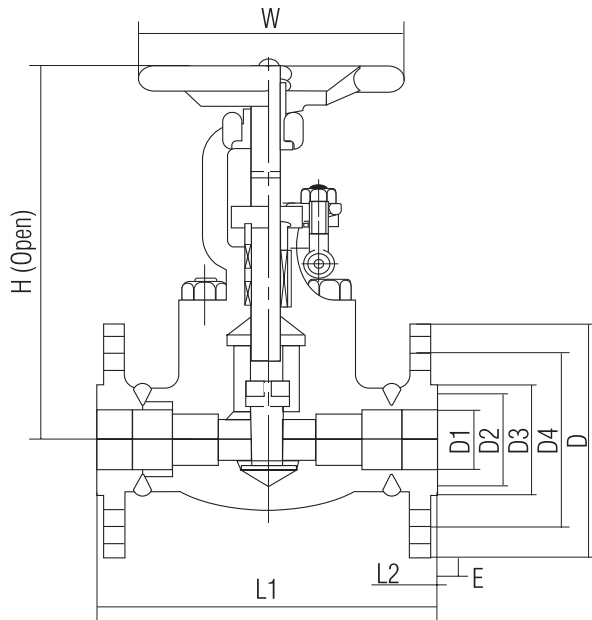
DIMENSIONS:

Nominal diameter	mm (in)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d	mm	10	13.6	18	24	29	36.8
CLASS 150 L	mm	108	117	127	140	165	178
CLASS 300 L	mm	140	152	165	178	190	216
CLASS 600 L	mm	165	190	216	229	241	292
H (Open)	mm	166	169	193	230	246	290
W	mm	100	100	125	160	160	180
CLASS 150 Weight	kg	4.5	5.2	8.2	11.5	12.5	20.3
CLASS 300 Weight	kg	4.8	6.2	9.3	14	15.5	23.4
CLASS 600 Weight	kg	5.9	7.4	10.4	16.2	17.5	28.3

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



CLASS 1500 FLANGED END FORGED STEEL GATE VALVE



APPLICABLE STANDARDS:

BASIC DESIGN: API 602 & ANSI B16.34

DIMENSIONS OF VALVES: ANSI B16.10

FLANGED END: ANSI B16.5

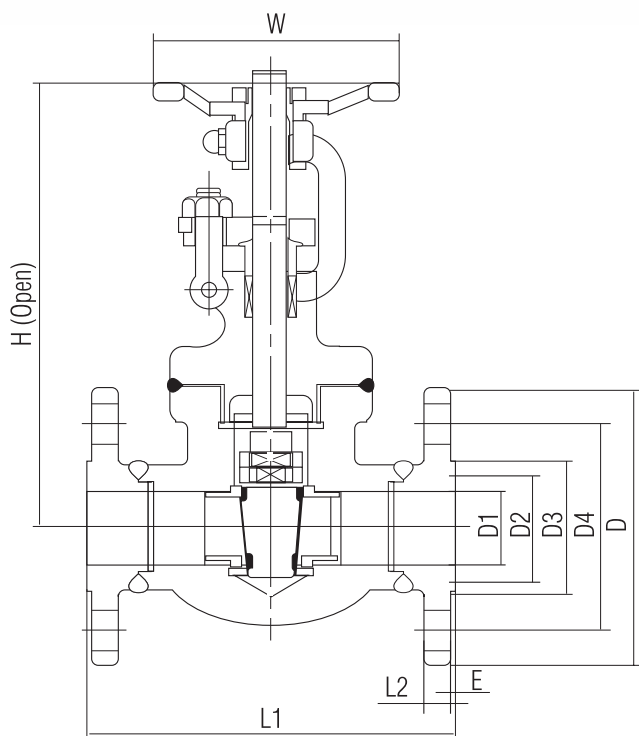
VALVE TEST AND INSPECTION: API598

Part No.	Part Name	Q'ty	Material	
1	Body	1	A105	LF2
2	Disc	1	A276-410+1F	A276-316+1F
3	Seat Ring	2	A276-410+HF	A276-316+HF
4	Stem	1	A276-410	A276-316
5	Gasket	1	304+Graphite	
6	Bonnet Bolt	4	A193-B7	A320-L7
7	Bonnet	1	A105	LF2
8	Packing	1 Set	Graphite	
9	Gland Bolt	2	A276-410	
10	Gland Bolt Pin	2	A276-410	
11	Packing Flange	1	A276-410	
12	Gland Flange	1	WCB	
13	Nut	2	A194-2H	
14	Stem Nut	1	A276-410	
15	Washer	1	A276-410	
16	Nameplate	1	Aluminum	
17	Hand Wheel Nut	1	A10B-1025	
18	Hand Wheel	1	A197	
19	Plug	2	Plastic	

	L1	H	W	D1	D2	D3	D4	D	L2	E
1/2"	216	197	125	Φ17	Φ39.67	Φ60.5	Φ82.5	Φ120	22.5	6.4
3/4"	229	197	125	Φ22	Φ44.45	Φ66.5	Φ89	Φ130	25.5	6.4
1"	254	218	160	Φ27	Φ50.8	Φ71.5	Φ101.5	Φ150	29	6.4
1 1/4"	279	237	160	Φ34	Φ60.32	Φ81	Φ111.1	Φ160	29	6.4
1 1/2"	305	274	180	Φ42	Φ68.28	Φ92	Φ124	Φ180	32	6.4
2	366	320	200	Φ54	Φ95.25	Φ124	Φ165.1	Φ216	38.5	7.9



CLASS 2500 FLANGED END FORGED STEEL GATE VALVE



APPLICABLE STANDARDS:

BASIC DESIGN: ANSI B16.34 & API 602

DIMENSIONS OF VALVES: ANSI B16.10

FLANGED ENDS: ANSI B16.5

VALVE TEST AND INSPECTION: API598

Part No.	Part Name	Q'ty	Material	
1	Body	1	A105	LF2
2	Disc	1	A276-410+1F	A276-316+1F
3	Seat Ring	2	A276-410+HF	A276-316+HF
4	Stem	1	A276-410	A276-316
5	Gasket	1	304+Graphite	
6	Bonnet Bolt	4	A193-B7	A320-L7
7	Bonnet	1	A105	LF2
8	Packing	1 Set	Graphite	
9	Gland Bolt	2	A276-410	
10	Gland Bolt Pin	2	A276-410	
11	Packing Flange	1	A276-410	
12	Gland Flange	1	WCB	
13	Nut	2	A194-2H	
14	Stem Nut	1	A276-410	
15	Washer	1	A276-410	
16	Nameplate	1	Aluminum	
17	Hand Wheel Nut	1	A10B-1025	
18	Hand Wheel	1	A197	
19	Plug	2	Plastic	

	L1	H	W	D1	D2	D3	D4	D	L2	E
1/2"	264	218	180	Φ17	Φ42.9	Φ65	Φ88.9	Φ133	30.5	8.7
3/4"	273	218	180	Φ22	Φ50.8	Φ73	Φ95.2	Φ140	32	8.7
1"	300	259	180	Φ27	Φ60.3	Φ82.5	Φ107.9	Φ159	35	8.7
1 1/4"	352.2	308	200	Φ34	Φ72.2	Φ102	Φ130.2	Φ184	38.5	11.9
1 1/2"	387.2	308	200	Φ42	Φ82.5	Φ114	Φ146	Φ203	44.5	11.9
2	454.2	445	300	Φ54	Φ101.6	Φ133	Φ171.4	Φ235	51	11.9



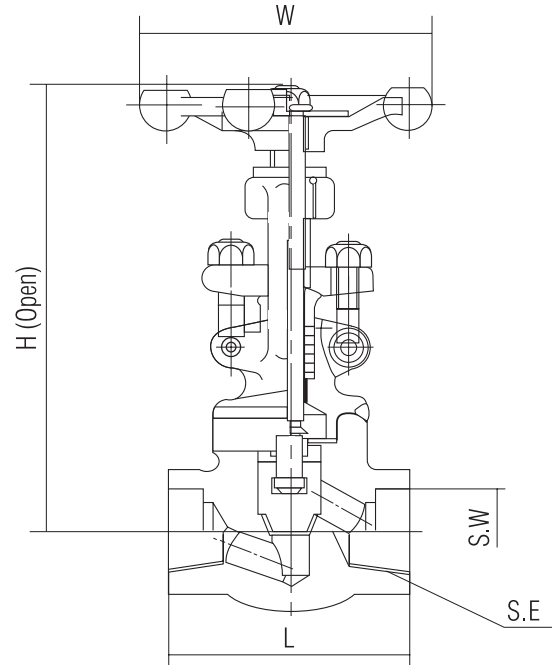
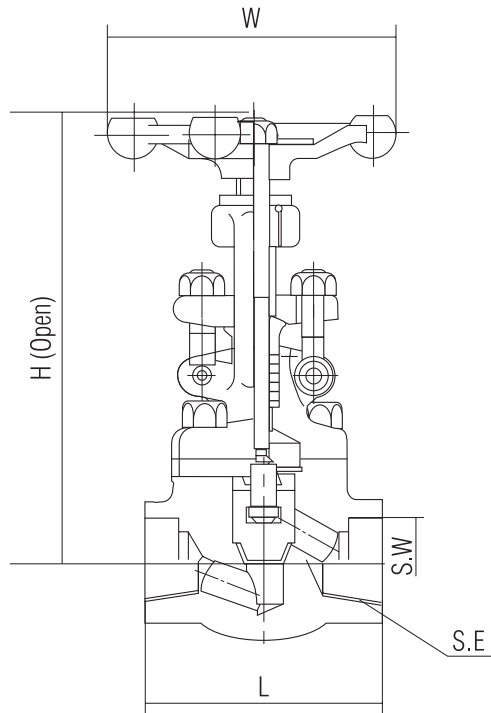
CLASS 800 FORGED STEEL GLOBE VALVE

FEATURES:

- ◆ REDUCED OR FULL PORT
- ◆ COMPACT OUTSIDE SCREW & YOKE
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ BOLTED BONNET OR WELDED BONNET
- ◆ SOCKET WELD OR THREADED ENDS
- ◆ INTEGRAL HARDFACED SEAT

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, BS 5352 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E) ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT :API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal	Reduced Port	mm (in)	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)	—
diameter	Full Port	mm (in)	—	—	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d		mm	8	10	10	13	17	23	30	37	46
L		mm	79	79	79	92	111	130	152	172	200
H (Open)		mm	176	176	176	176	212	230	254	294	327
W		mm	100	100	100	100	125	160	160	180	200
Weight	B.B	kg	2.2	2.1	1.9	2.1	3.9	5.8	7.2	10.8	16
	W.B	kg	1.9	1.8	1.7	2.1	3.7	5.2	6.2	10.4	14.8

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



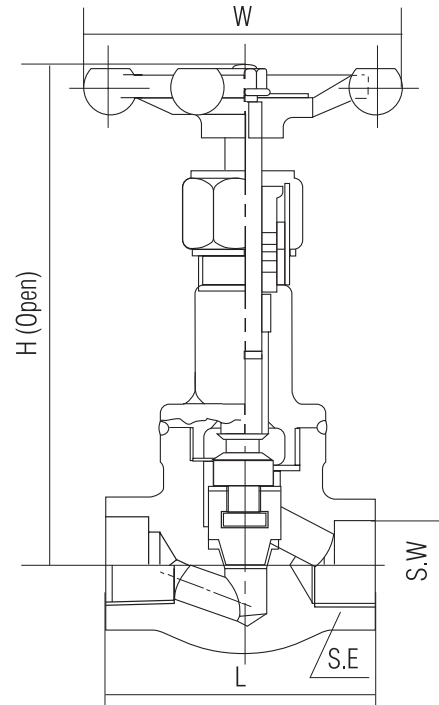
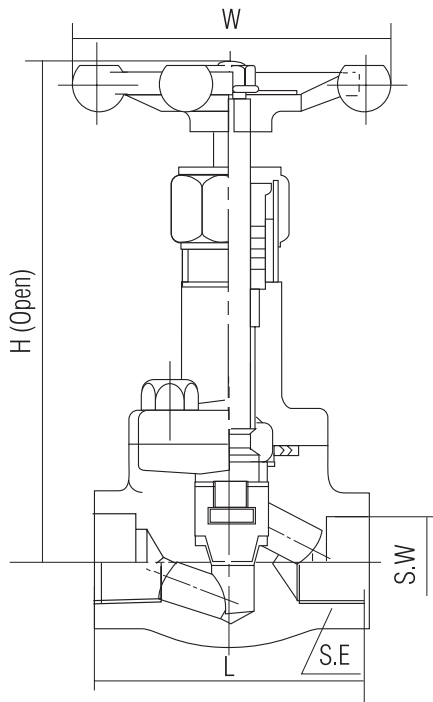
CLASS 800 FORGED STEEL GLOBE VALVE

FEATURES:

- ◆ BOLTED BONNET OR WELDED BONNET
- ◆ REDUCED OR FULL PORT
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ COMPACT INSIDE SCREW
- ◆ SOCKET WELD OR THREADED ENDS
- ◆ INTEGRAL HARDFACED SEAT

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, BS 5352 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal	Reduced Port	mm (in)	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
diameter	Full Port	mm (in)	—	—	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)
d		mm	8	10	10	13	17	23	30	37
L		mm	79	79	79	92	111	120	152	172
H (Open)		mm	157	157	157	162	195	267	267	301
W		mm	100	100	100	100	125	160	160	180
Weight	B.B	kg	2.1	2.0	1.9	2.1	3.3	7.5	7.5	11.4
	W.B	kg	1.9	1.8	1.7	1.9	3.0	6.2	6.2	10.6

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



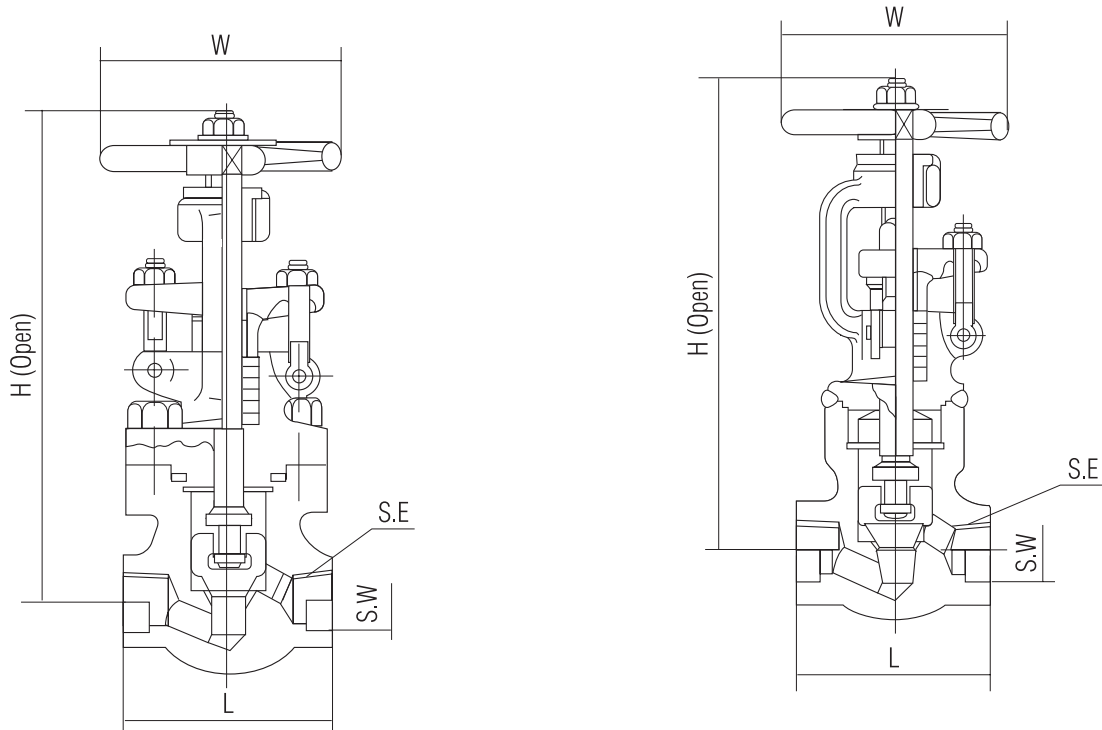
CLASS 1500 FORGED STEEL GLOBE VALVE

FEATURES:

- ◆ BOLTED BONNET OR WELDED BONNET
- ◆ COMPACT OUTSIDE SCREW & YOKE
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ SOCKET WELD OR THREADED ENDS
- ◆ REDUCED OR FULL PORT
- ◆ INTEGRAL HARDFACED SEAT

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, BS 5352 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL, A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal	Reduced Port	mm (in)	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
diameter	Full Port	mm (in)	—	—	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)
d		mm	7	7	10	13	17	23	30	37
L		mm	111	111	111	111	130	152	172	220
H (Open)		mm	207	207	207	207	240	258	290	337
W		mm	125	125	125	125	160	160	180	200
Weight	B.B	kg	4.9	4.9	4.7	4.6	6.8	9.2	13.6	20.9
	W. B	kg	4.3	4.3	4.1	4	6.2	8.6	12.7	19.1

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



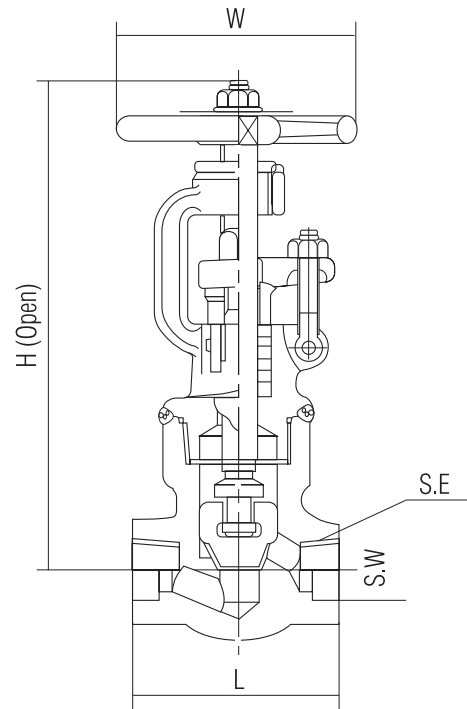
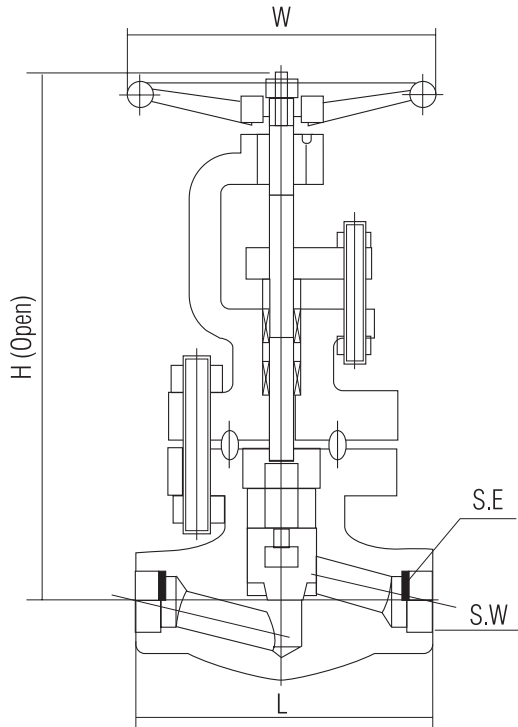
CLASS 2500 FORGED STEEL GLOBE VALVE

FEATURES:

- ◆ BOLTED BONNET OR WELDED BONNET
- ◆ COMPACT OUTSIDE SCREW & YOKE
- ◆ SOCKET WELD, THREADED OR BUTT WELD ENDS
- ◆ INTEGRAL HARDFACED SEAT

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, BS 5352 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ BUTT-WELD (B.W) ANSI B16.25
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal diameter		mm (in)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d		mm (in)	11	14	19	29	29	36
L	S.W ; S.E	mm	130	130	172	220	220	240
	W.B	mm	227	227	288	330	330	360
	B.B	mm	380	380	423	480	480	540
W		mm	160	160	160	200	200	220
Weight	S.W ; S.E	kg	8	8	17	26	25	34
	B.W	kg	12	13	20	35	32	40

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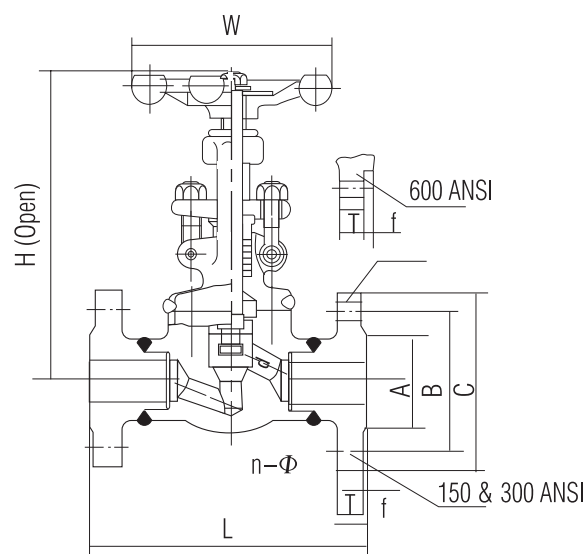
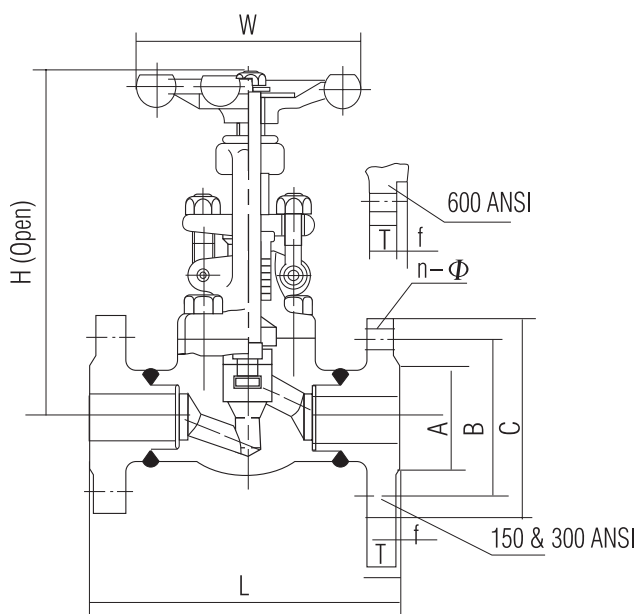
CLASS 150, 300, 600 FLANGED END FORGED STEEL GLOBE VALVE

FEATURES:

- ◆ BOLTED BONNET OR WELDED BONNET
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ INTEGRAL HARDFACED SEAT
- ◆ COMPACT OUTSIDE SCREW & YOKE

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, BS 5352 & ANSI B16.34
- ◆ FACE TO FACE ANSI B16.10
- ◆ FLANGED END (F.E), ANSI B16.5
- ◆ VALVE TEST AND INSPECT :API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22.F304, F304L, F316, F316L



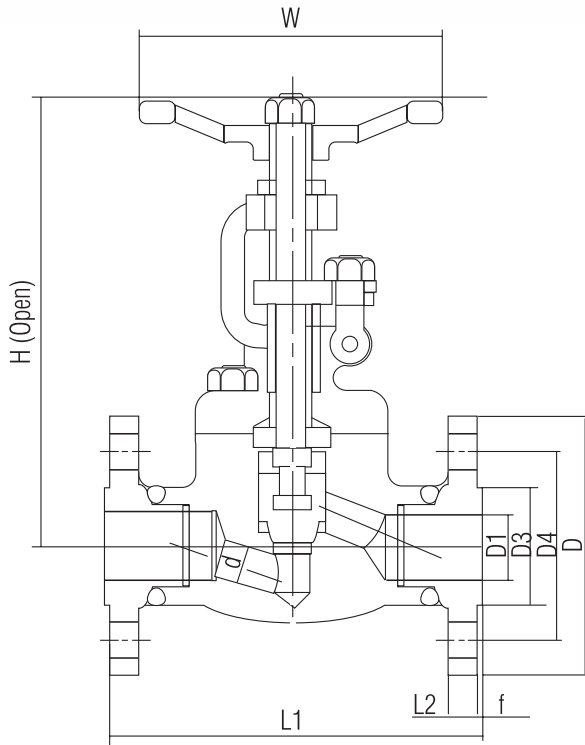
DIMENSIONS:

Nominal diameter	mm (in)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d	mm	10	13	17	23	30	37
CLASS 150 L	mm	108	117	127	140	165	203
CLASS 300 L	mm	152	178	203	216	229	267
CLASS 600 L	mm	165	190	216	229	241	292
H (Open)	mm	176	176	212	230	254	294
W	mm	100	100	125	160	160	180
CLASS 150 Weight	kg	2.7	4.0	6.3	8.9	10.3	14.7
CLASS 300 Weight	kg	4.0	5.2	7.5	11.3	16.5	18.2
CLASS 600 Weight	kg	5.6	6.9	9.8	12.5	18.4	20.0

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



CLASS 1500 FLANGED END FORGED STEEL GLOBE VALVE



APPLICABLE STANDARDS:

BASIC DESIGN: BS5352 & ANSI B16.34

DIMENSIONS OF VALVES: ANSI B16.10

FLANGED END: ANSI B16.5

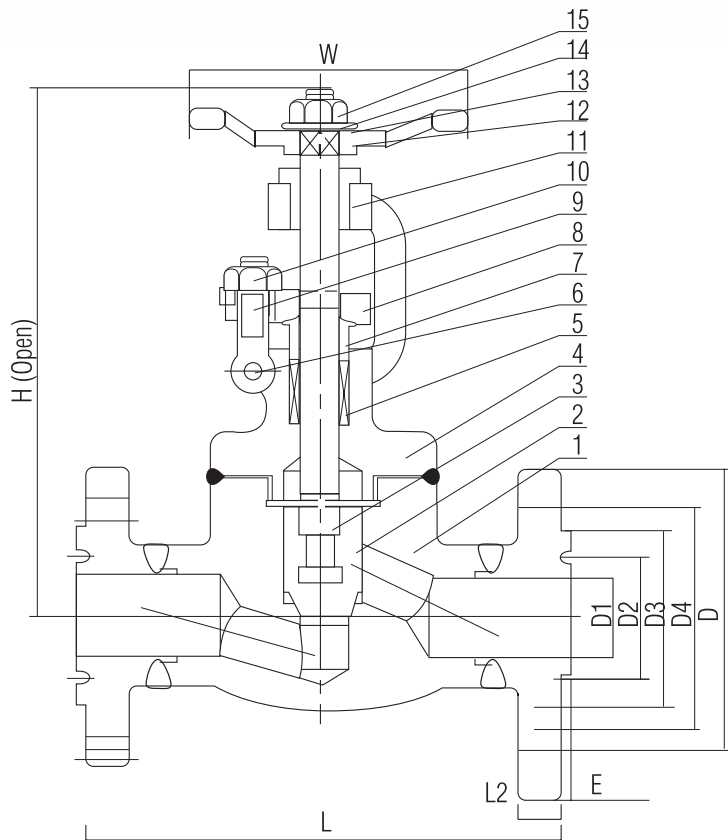
VALVE TEST AND INSPECTION: BS5352 & API598

Part No.	Part Name	Q'ty	Material	
1	Body	1	A105-HF	LF2+HF
2	Plug	1	A276-420	A276-420
3	Stem	1	A276-410	A276-316
4	Gasket	1	304+Graphite	
5	Bonnet Bolt	4	A193-B7	A193-L7M
6	Bonnet	1	A105	LF2
7	Packing	1 Set	Graphite	
8	Gland Bolt	2	A276-410	
9	Gland Bolt Pin	2	A276-410	
10	Packing Flange	1	A276-410	
11	Gland Flange	1	WCB	
12	Nut	2	A194-2H	
13	Stem Nut	1	A276-410	
14	Washer	1	A276-410	
15	Name Plate	1	Aluminum	
16	Hand Wheel Nut	1	A108-1025	
17	Hand Wheel	1	A197	
18	Plug	2	Plastic	

	L1	H1	W	D1	D2	D3	D4	D	L2	f
1/2"	216	207	125	Φ17	Φ39.67	Φ60.5	Φ82.5	Φ120	22.5	6.4
3/4"	229	207	125	Φ22	Φ44.45	Φ66.5	Φ89	Φ130	25.5	6.4
1"	254	240	160	Φ27	Φ50.8	Φ71.5	Φ101.5	Φ150	29	6.4
1 1/4"	279	258	160	Φ34	Φ60.32	Φ81	Φ111.1	Φ160	29	6.4
1 1/2"	305	290	160	Φ42	Φ88.26	Φ92	Φ124	Φ180	32	6.4
2	366	337	200	Φ54	Φ95.25	Φ124	Φ165.1	Φ216	38.5	7.9



CLASS 2500 FLANGED END FORGED STEEL GLOBE VALVE



APPLICABLE STANDARDS:

BASIC DESIGN: ANSI B16.34 & API 602

DIMENSIONS OF VALVES: ANSI B16.10

FLANGED ENDS: ANSI B16.5

VALVE TEST AND INSPECTION: API598

Part No.	Part Name	Q'ty	Material
1	Body	1	A105/HF
2	Plug	1	A276-410/HF
3	Stem	1	A276-410
4	Bonnet	1	A105
5	Gland Packing	1 Set	Graphite
6	Gland Bolt Pin	2	A276-410
7	Gland	1	A276-410
8	Gland Flange	1	A216-WCB
9	Gland Bolt	2	A193-B7
10	Gland Bolt Nut	2	A194-2H
11	Stem Nut	1	A276-410
12	Hand Wheel	1	A197
13	Name Plate	1	Aluminum
14	Washer	1	A108-1020
15	Hand Wheel Nut	1	A108-1020

	L	H	W	D1	D2	D3	D4	D	L2	E (RF)	E (RTJ)
1/2"	264	227	180	Φ17	Φ42.9	Φ65	Φ88.9	Φ133	30.5	6.4	8.7
3/4"	273	227	180	Φ22	Φ50.8	Φ73	Φ95.2	Φ140	32	6.4	8.7
1"	308	266	180	Φ27	Φ60.3	Φ82.5	Φ107.9	Φ159	35	6.4	8.7
1 1/4"	352.2	320	180	Φ34	Φ72.2	Φ102	Φ130.2	Φ184	38.5	7.9	11.9
1 1/2"	387.2	320	180	Φ42	Φ82.5	Φ114	Φ146	Φ203	44.5	7.9	11.9
2	454.2	302	350	Φ54	Φ101.6	Φ133	Φ171.4	Φ235	51	7.9	11.9



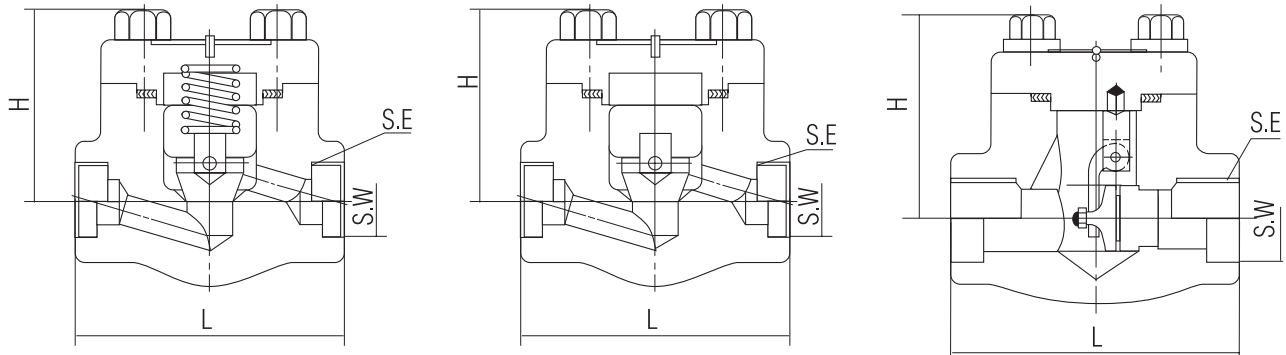
CLASS 800 FORGED STEEL CHECK VALVE

FEATURES:

- ◆ REDUCED OR FULL PORT
- ◆ LIFT OR SWING CHECK VALVE
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ BOLTED CAP
- ◆ SOCKET WELD OR THREADED ENDS
- ◆ REPLACEABLE OR INTEGRAL HARDFACED SEAT

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, MS-SP-118 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



DIMENSIONS:

LIFT CHECK VALVE											
Nominal diameter	Reduced Port	mm (in)	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)	—
	Full Port	mm (in)	—	—	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d	mm	mm	7	7	10	13	17	23	30	37	46.5
L	mm	mm	79	79	79	92	111	120	152	172	200
H	mm	mm	61	61	61	61	78	84	103	118	132
Weight	kg	kg	1.5	1.4	1.2	1.4	2.3	3.9	5.6	8.9	12.5
SWING CHECK VALVE											
Nominal diameter	Reduced Port	mm (in)	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)	—
	Full Port	mm (in)	—	—	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d	mm	mm	7	7	10	13.6	18	24	29	36.8	46.5
L	mm	mm	79	79	79	92	111	120	120	140	170
H	mm	mm	61	61	61	61	78	84	101	120	133
Weight	kg	kg	1.3	1.2	1.0	1.1	1.9	3.4	4.5	7.3	9.8

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



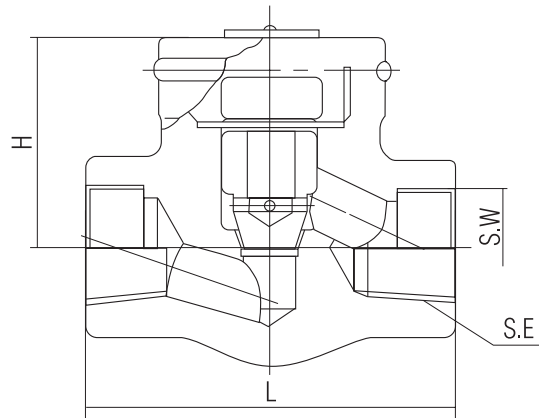
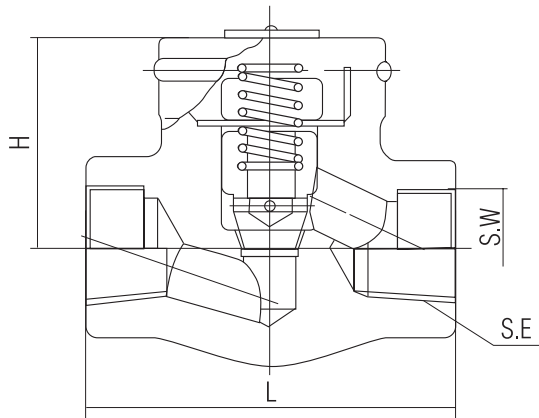
CLASS 800 FORGED STEEL CHECK VALVE

FEATURES:

- ◆ REDUCED OR FULL PORT
- ◆ WELDED CAP
- ◆ LIFT CHECK VALVE
- ◆ SOCKET WELD OR THREADED ENDS
- ◆ INTEGRAL HARDFACED SEAT

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, MS-SP-118 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal diameter	Reduced Port	mm (in)	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)	—
d		mm	7	7	10	13	17	23	30	37	46.5
L		mm	79	79	79	92	111	120	152	172	200
H		mm	61	61	61	61	78	84	103	118	132
Weight		kg	1.58	1.54	1.52	1.72	2.83	6.5	7.8	9.65	10.8

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



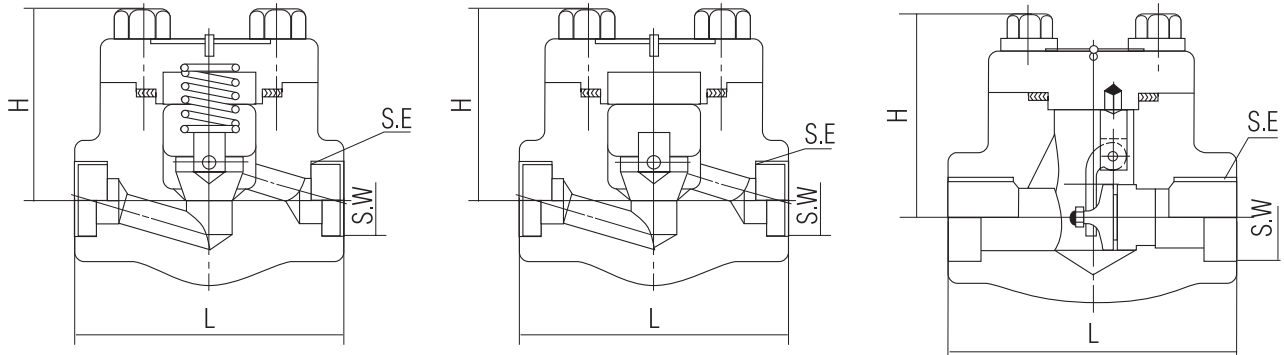
CLASS 1500 FORGED STEEL CHECK VALVE

FEATURES:

- ◆ REDUCED OR FULL PORT
- ◆ LIFT OR SWING CHECK VALVE
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ BOLTED CAP
- ◆ SOCKET WELD OR THREADED ENDS
- ◆ REPLACEABLE OR INTEGRAL HARDFACED SEAT

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, MS-SP-118 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



DIMENSIONS:

LIFT CHECK VALVE										
Nominal diameter	Reduced Port	mm (in)	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
	Full Port	mm (in)	—	—	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)
d		mm	7	7	10	13	17	23	30	37
L		mm	111	111	111	111	130	152	172	220
H		mm	79	79	79	79	97	104	120	139
Weight		kg	3.0	3.0	3.0	3.4	4.8	6.9	10.7	14.6
SWING CHECK VALVE										
Nominal diameter	Reduced Port	mm (in)	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
	Full Port	mm (in)	—	—	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)
d		mm	7	7	10	13.6	18	24	29	36.8
L		mm	111	111	111	111	120	140	140	162
H		mm	79	79	79	19	97	105	120	140
Weight		kg	3.2	3.1	3.0	3.6	4.3	6.1	8.8	12.6

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



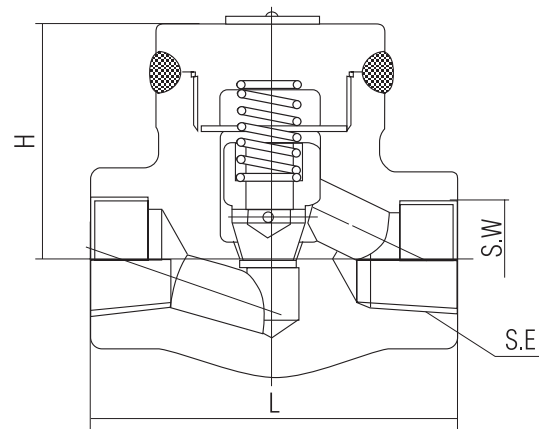
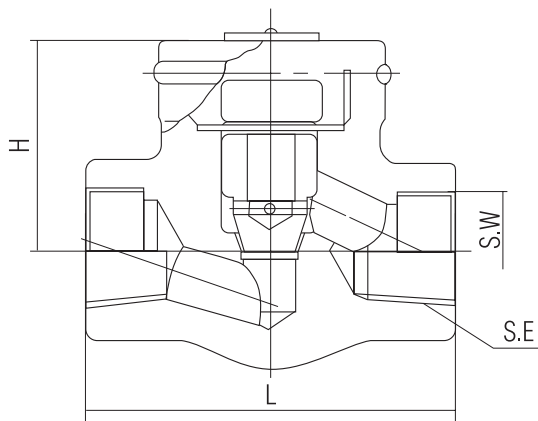
CLASS 1500 FORGED STEEL CHECK VALVE

FEATURES:

- ◆ WELDED CAP
- ◆ LIFT CHECK VALVE
- ◆ REDUCED OR FULL PORT
- ◆ INTEGRAL HARDFACED SEAT
- ◆ SOCKET WELD OR THREADED ENDS

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, MS-SP-118 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal	Reduced Port	mm (in)	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
diameter	Full Port	mm (in)	—	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)
d		mm	7	7	10	13	17	23	30	37
L		mm	111	111	111	111	130	152	172	220
H		mm	79	79	79	79	97	104	120	139
Weight		kg	2.3	2.2	3.5	3.8	5.3	8.4	13.2	16.8

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



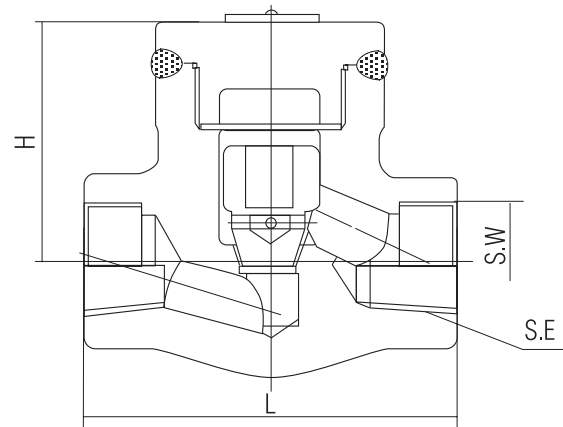
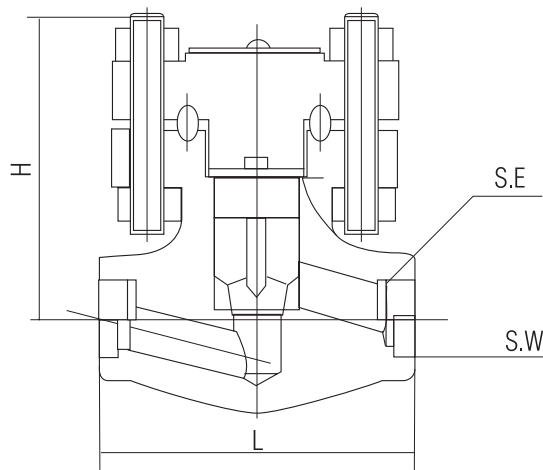
CLASS 2500 FORGED STEEL CHECK VALVE

FEATURES:

- ◆ BOLTED CAP OR WELDED CAP
- ◆ LIFT CHECK VALVE
- ◆ SOCKET WELD OR THREADED ENDS
- ◆ INTEGRAL HARDFACED SEAT

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, MS-SP-118 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598 & ANSI B16.34
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal diameter		mm (in)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d		mm	10	13	17	23	30	35
L	W.B	mm	127	152	172	172	235	235
	B.B	mm	130	130	150	200	200	240
H		mm	79	98	110	110	170	170
Weight		kg	6.6	11.8	17.6	16.9	21.5	21.3

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



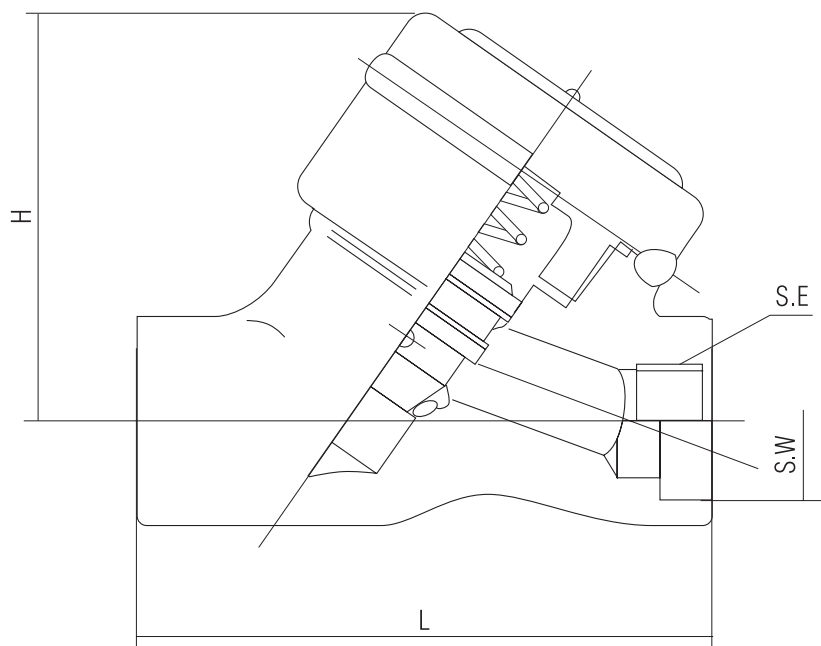
CLASS 800 AND 1500 FORGED STEEL Y-PATTERN LIFT CHECK VALVE

FEATURES:

- ◆ WELDED CAP
- ◆ SOCKET WELD OR THREADED ENDS
- ◆ LIFT CHECK VALVE
- ◆ INTEGRAL HARDFACED SEAT

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, MS-SP-118 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal diameter		mm (in)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d	CLASS 800	mm	10	13	17	23	30	37	46.5
	CLASS 1500	mm	10	13	17	23	30	37	46.5
L	CLASS 800	mm	98	98	98	120	140	140	170
	CLASS 1500	mm	102	102	102	130	150	190	190
H	CLASS 800	mm	84	84	84	102	114	114	145
	CLASS 1500	mm	90	90	101	125	132	143	203
Weight	CLASS 800	kg	3.0	2.9	3.7	6.5	8.5	9.6	10.8
	CLASS 1500	kg	3.2	3.2	4.1	7.2	10.5	11.6	12

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



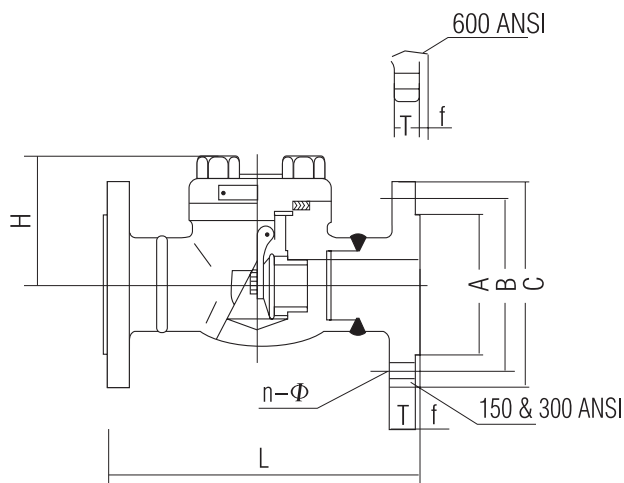
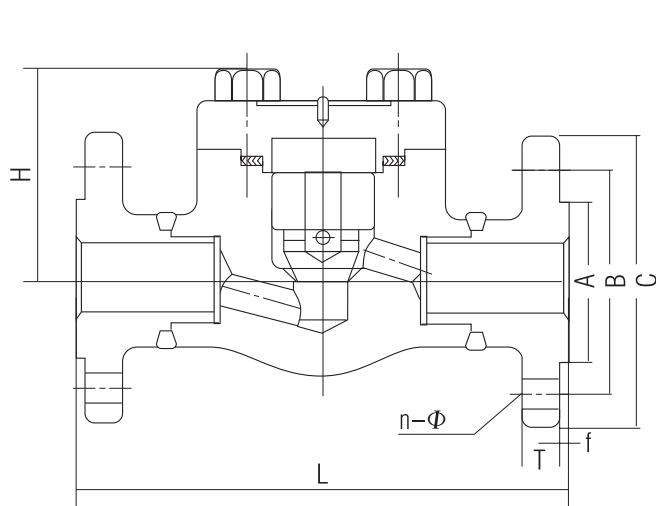
CLASS 150, 300, 600 FLANGED END FORGED STEEL CHECK VALVE

FEATURES:

- ◆ BOLTED CAP
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ LIFT OR SWING CHECK VALVE
- ◆ INTEGRAL OR REPLACEABLE HARDFACED SEATS

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, MS-SP-118 & ANSI B16.34
- ◆ FACE TO FACE ANSI B16.10
- ◆ FLANGED END (F.E), ANSI B16.5
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



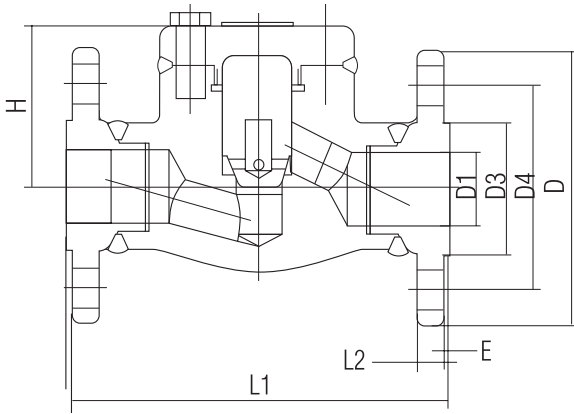
DIMENSIONS:

Nominal diameter		mm (in)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d	LIFT	mm	13	17	23	30	37	46.5
	SWING	mm	13.6	18	24	29	36.8	46.5
CLASS 150 L		mm	108	117	127	140	165	203
CLASS 300 L		mm	152	178	203	216	229	267
CLASS 600 L		mm	165	190	216	229	241	292
H		mm	61	61	78	84	103	118
CLASS 150 Weight		kg	2.6	3.4	4.4	8.2	9.0	12.6
CLASS 300 Weight		kg	2.7	3.7	4.7	8.8	9.6	13.7
CLASS 600 Weight		kg	3.0	4.0	5.8	9.5	10.0	15.6

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



CLASS 1500 FLANGED END FORGED STEEL LIFT CHECK VALVE



APPLICABLE STANDARDS:

BASIC DESIGN: MS-SP-118 & API 602

DIMENSIONS OF VALVES: ANSI B16.10

FLANGED END: ANSI B16.5

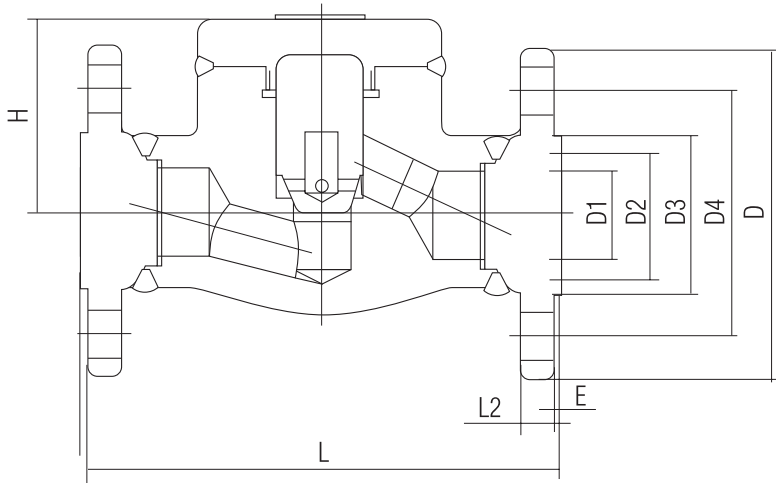
VALVE TEST AND INSPECTION: API 598

Part No.	Part Name	Q'ty	Material			
1	Body	1	A105+HF	LF2+HF	A182-F304L/HF	A182-F316/HF
2	Disc	1	A276-420	A276-316	A276-304L/HF	A182-F316/HF
3	Cap Bolt	4	A193-B7	A193-L7M	A193-B8	A193-B8M
4	Cap	1	A105	LF2	A182-F304L	A182-F316L
5	Washer	1	SS304+Graphite			SS316+Graphite
6	Name Plate	1	Aluminum			
7	Spring	1	Stainless Steel			
8	Plug	2	Plastic			

	L1	H	D1	D2	D3	D4	D	L2	E
1/2"	216	79	Φ 17	Φ 39.67	Φ 60.5	Φ 82.5	Φ 120	22.5	6.4
3/4"	229	79	Φ 22	Φ 44.45	Φ 66.5	Φ 89	Φ 130	25.6	6.4
1"	254	97	Φ 27	Φ 50.6	Φ 71.5	Φ 101.5	Φ 150	29	6.4
1 1/4"	279	104	Φ 34	Φ 60.32	Φ 81	Φ 111.1	Φ 160	29	6.4
1 1/2"	308	120	Φ 42	Φ 68.28	Φ 92	Φ 124	Φ 180	32	6.4
2	368	139	Φ 54	Φ 95.25	Φ 124	Φ 165.1	Φ 216	38.5	7.9



CLASS 2500 FLANGED END FORGED STEEL LIFT CHECK VALVE



APPLICABLE STANDARDS:

BASIC DESIGN: ANSI B16.34 & MS-SP-118

DIMENSIONS OF VALVE: ANSI B16.10

FLANGED ENDS: ANSI B16.5

VALVE TEST AND INSPECTION: API598

Part No.	Part Name	Q'ty	Material
1	Body	1	A105
2	Disc	1	A105-410
3	Bonnet	1	A105
4	Name Plate	1	Aluminum

	L	H	D1	D2	D3	D4	D	L2	E
1/2"	264	77	Φ 17	Φ 42.9	Φ 65	Φ 88.9	Φ 133	30.5	8.7
3/4"	273	77	Φ 22	Φ 50.8	Φ 73	Φ 95.2	Φ 140	32	8.7
1"	308	100	Φ 27	Φ 60.3	Φ 82.5	Φ 107.9	Φ 159	35	8.7
1 1/4"	352.2	135	Φ 34	Φ 72.2	Φ 102	Φ 130.2	Φ 184	38.5	11.9
1 1/2"	387.2	135	Φ 42	Φ 82.5	Φ 114	Φ 146	Φ 203	44.5	11.9
2	454.2	182	Φ 54	Φ 101.6	Φ 133	Φ 171.4	Φ 235	51	11.9



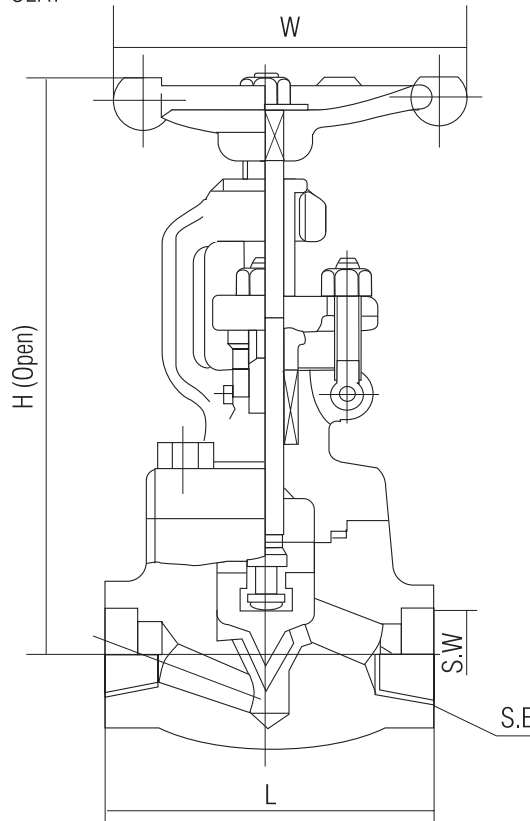
CLASS 800 AND 1500 FORGED STEEL NEEDLE GLOBE VALVE

FEATURES:

- ◆ BOLTED BONNET
- ◆ REDUCED PORT
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ COMPACT OUTSIDE SCREW & YOKE
- ◆ NEEDLE POINT FLOW CONTROL
- ◆ INTEGRAL HARDFACED SEAT

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, MS-SP-118 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal diameter	mm (in)	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d	mm	8	10	10	13	17	23	30	37
L	mm	79	79	79	92	111	130	152	172
H (Open)	mm	176	176	176	176	212	230	254	294
W	mm	100	100	100	100	125	160	160	180
Weight	kg	2.3	2.2	2.1	2.1	4.2	6.1	7.5	11.2

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



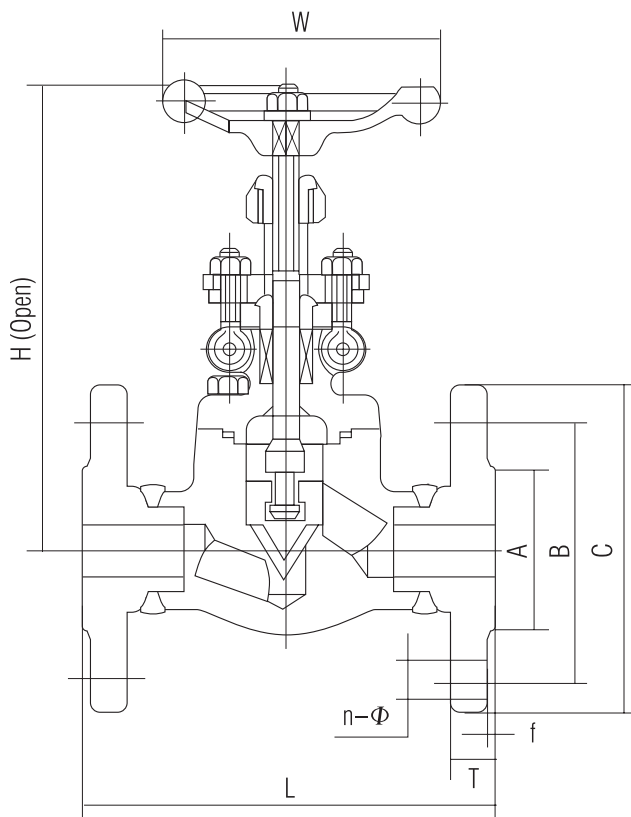
CLASS 150, 300, 600 FLANGED END FORGED STEEL NEEDLE GLOBE VALVE

FEATURES:

- ◆ BOLTED BONNET
- ◆ REDUCED PORT
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ COMPACT OUTSIDE SCREW & YOKE
- ◆ INTEGRAL HARDFACED SEAT
- ◆ NEEDLE POINT FLOW CONTROL

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, MS-SP-118 & ANSI B16.34
- ◆ FLANGED END (F.E), ANSI B16.5
- ◆ FACE TO FACE ANSI B16.10
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal diameter	mm (in)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d	mm	10	13.6	17	23	30	37
CLASS 150 L	mm	108	117	127	140	165	203
CLASS 300 L	mm	152	178	203	216	229	267
CLASS 600 L	mm	165	190	216	229	241	292
H (Open)	mm	176	176	212	230	254	294
W	mm	100	100	125	160	160	180
CLASS 150 Weight	kg	3.6	5.0	6.6	9.8	12.0	15.0
CLASS 300 Weight	kg	4.0	5.2	7.5	11.3	16.5	18.2
CLASS 600 Weight	kg	5.6	6.9	9.8	12.5	18.4	20.0

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



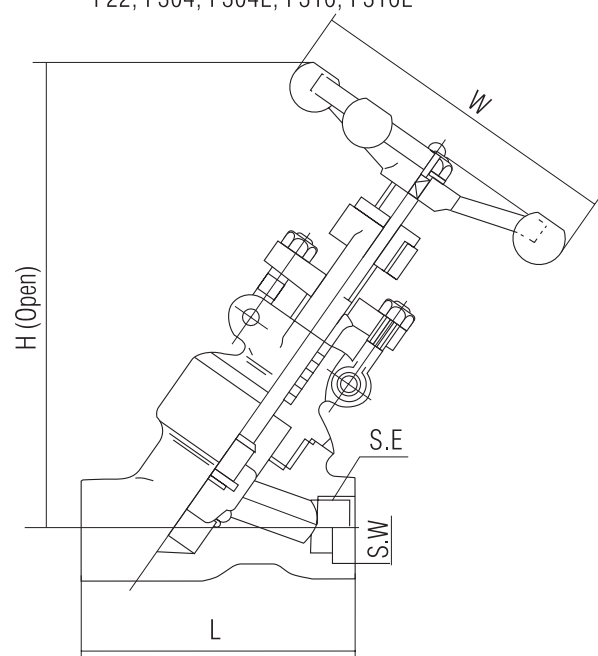
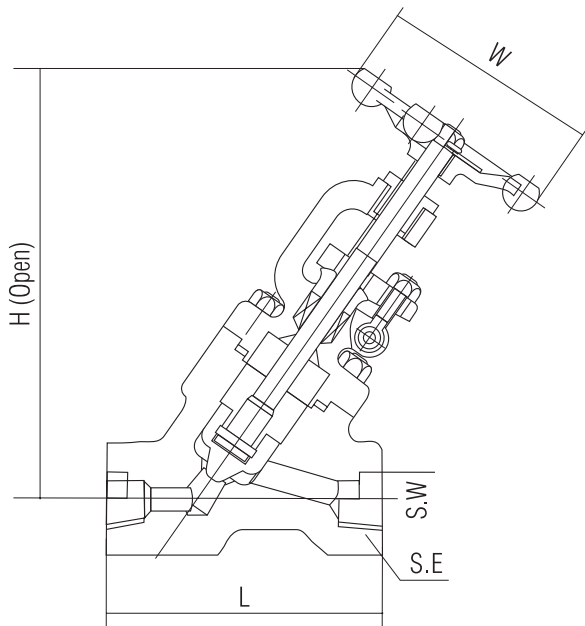
CLASS 800 AND 1500 FORGED STEEL Y-PATTERN GLOBE VALVE

FEATURES:

- ◆ WELDED OR BOLTED BONNET
- ◆ SOCKET WELD OR THREADED ENDS
- ◆ COMPACT OUTSIDE SCREW & YOKE
- ◆ INTEGRAL HARDFACED SEAT
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, BS 5352 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ SCREWED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, LF2, F5, F11, F22, F304, F304L, F316, F316L



DIMENSIONS:

Nominal diameter		mm (in)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d	CLASS 800	mm	10	13	17	23	30	37	46
	CLASS 1500	mm	10	13	13	19	28	28	38
L	CLASS 800	mm	98	98	98	120	140	140	170
	CLASS 1500	mm	98	98	120	140	170	170	200
H	CLASS 800	mm	240	240	240	290	302	368	368
	CLASS 1500	mm	170	170	195	235	278	278	310
W	CLASS 800	mm	100	100	100	125	160	160	180
	CLASS 1500	mm	100	100	125	160	180	180	200
Weight	B.B CLASS 800	mm	4.6	4.6	4.6	7.6	9.8	13.7	14.0
	W.B CLASS 800	kg	3.5	3.5	3.8	6.6	8.5	11.3	12.5
Weight	W.B CLASS 1500	kg	4.5	4.5	6.1	7.6	9.8	14.5	20.8

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



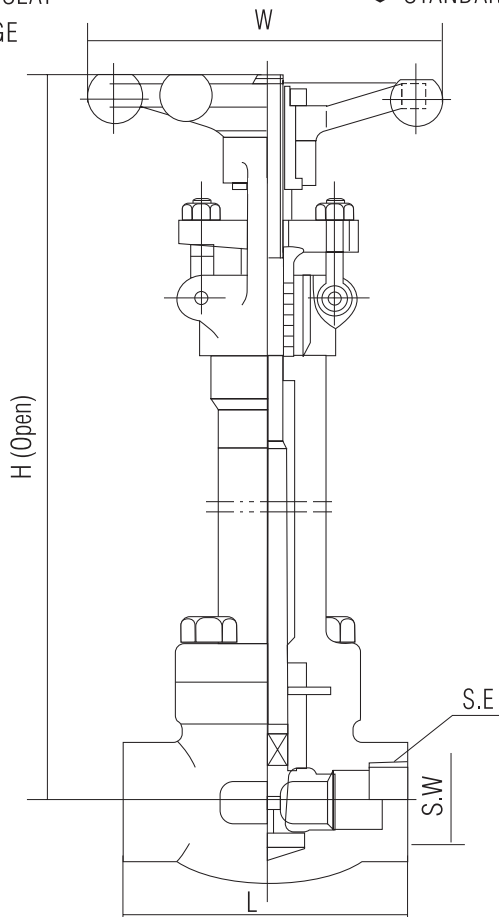
CLASS 800 FORGED STEEL CRYOGENIC GATE VALVE

FEATURES:

- ◆ REDUCED OR FULL PORT
- ◆ OUTSIDE SCREW & YOKE AND EXTENDED BONNET
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ SOCKET WELD OR THREADED ENDS
- ◆ REPLACEABLE HARDFACED SEAT
- ◆ BALANCING HOLE ON WEDGE

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, API 602 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: F304, F304L, F316, F316L, LF3



DIMENSIONS:

Nominal	Reduced Port	mm (in)	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)	—
diameter	Full Port	mm (in)	—	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d		mm	8	8	10	13.6	18	24	29	36.8	46.5
L		mm	79	79	79	92	111	120	120	140	178
H (Open)		mm	333	33	333	343	360	407	475	475	551
W		mm	100	100	100	125	125	160	160	180	200
Weight		kg	5.2	5.2	5.0	7.1	9.4	13.5	15.0	17.8	28.0

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



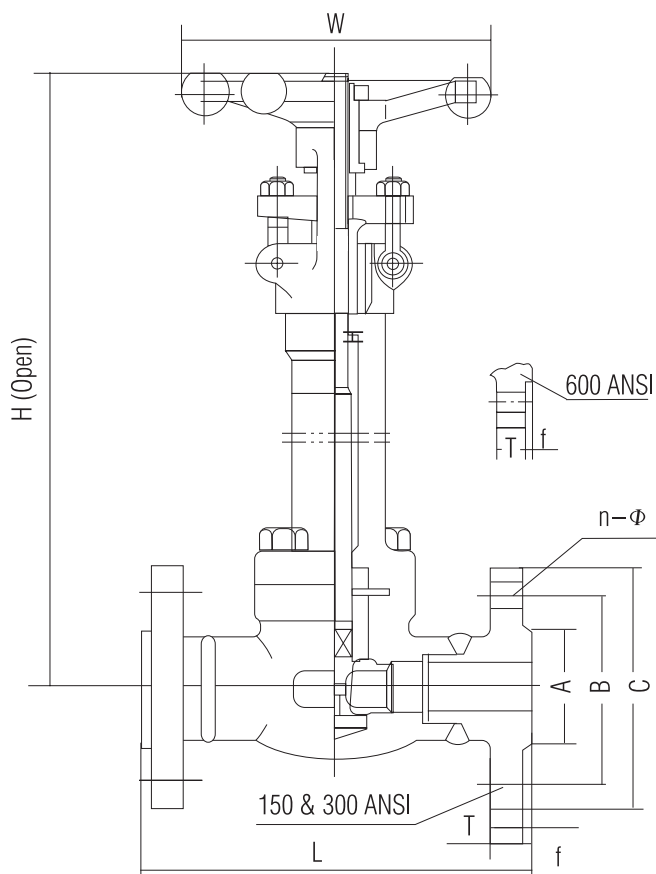
CLASS 150, 300, 600 FLANGED END FORGED STEEL CRYOGENIC GATE VALVE

FEATURES:

- ◆ BOLTED BONNET
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ REPLACEABLE HARDFACED SEATS
- ◆ OUTSIDE SCREW & YOKE AND EXTENDED BONNET
- ◆ BALANCING HOLE ON WEDGE

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, API 602 & ANSI B16.34
- ◆ FLANGED END (F.E.), ANSI B16.5
- ◆ FACE TO FACE ANSI B16.10
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: F304, F304L, F316, F316L, LF3



DIMENSIONS:

Nominal diameter	mm (in)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d	mm	10	13.6	18	24	29	37
CLASS 150 L	mm	108	117	127	140	165	178
CLASS 300 L	mm	140	152	165	178	190	216
CLASS 600 L	mm	165	190	216	229	241	292
H (Open)	mm	333	360	407	475	475	551
W	mm	100	125	125	160	160	180
CLASS 150 Weight	kg	6.0	8.7	11.0	16.1	18.5	21.6
CLASS 300 Weight	kg	7.0	9.4	12.5	18.3	20.1	24.0
CLASS 600 Weight	kg	8.0	11.1	13.4	18.5	22.6	26.8

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



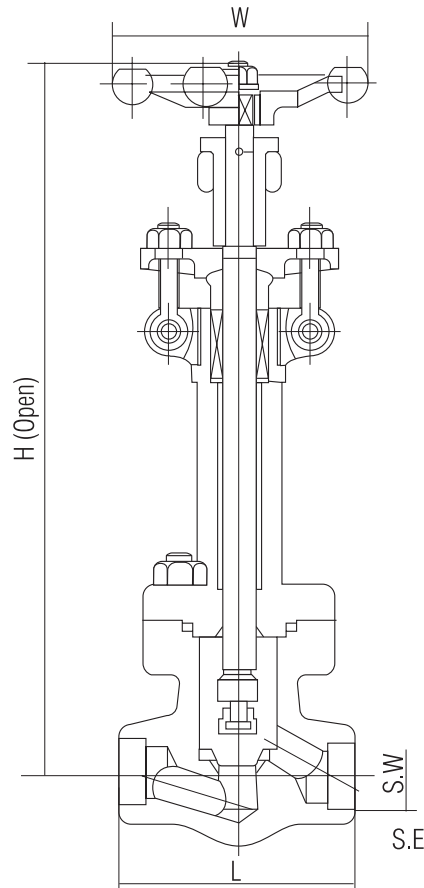
CLASS 800 FORGED STEEL CRYOGENIC GLOBE VALVE

FEATURES:

- ◆ REDUCED OR FULL PORT
- ◆ OUTSIDE SCREW & YOKE AND EXTENDED BONNET
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ SOCKET WELD OR THREADED ENDS
- ◆ INTEGRAL HARDFACED SEAT

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, BS 5352 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: F304, F304L, F316, F316L, LF3



DIMENSIONS:

Nominal	Reduced Port	mm (in)	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)	—
diameter	Full Port	mm (in)	—	8 (1/4)	10 (3/8)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d		mm	8	8	10	13	17	23	30	37	46
L		mm	79	79	79	92	111	130	152	172	200
H (Open)		mm	359	359	359	370	370	410	474	474	546
W		mm	100	100	100	125	125	160	160	180	200
Weight		kg	6.8	6.6	6.4	7.2	9.5	13.5	17.0	19.8	29.6

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



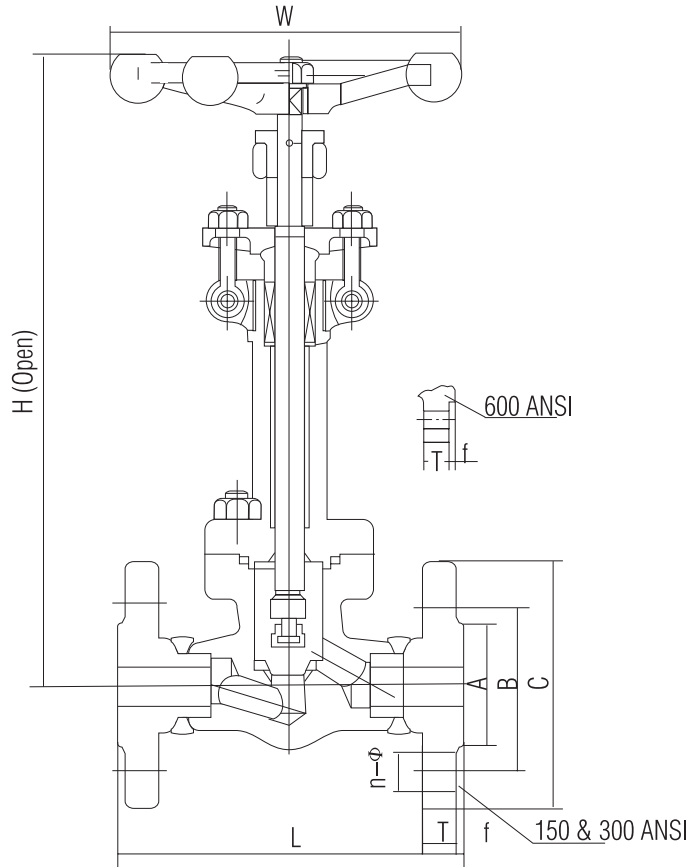
CLASS 150, 300, 600 FLANGED END FORGED STEEL CRYOGENIC GLOBE VALVE

FEATURES:

- ◆ BOLTED BONNET
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ INTEGRAL HARDFACED SEAT
- ◆ OUTSIDE SCREW & YOKE AND EXTENDED BONNET

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, BS 5352 & ANSI B16.34
- ◆ FACE TO FACE ANSI B16.11
- ◆ FLANGED END (F.E), ANSI B16.5
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: F304, F304L, F316, F316L, LF3



DIMENSIONS:

Nominal diameter	mm (in)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d	mm	10	13	17	23	30	37
CLASS 150 L	mm	108	117	127	140	165	203
CLASS 300 L	mm	152	178	203	216	229	267
CLASS 600 L	mm	165	190	216	229	241	292
H (Open)	mm	359	370	370	410	474	474
W	mm	100	125	125	160	160	180
CLASS 150 Weight	kg	7.4	8.8	11.1	16.1	20.5	23.6
CLASS 300 Weight	kg	8.4	9.5	11.8	17.3	22.1	26.0
CLASS 600 Weight	kg	9.4	10.2	13.5	18.5	24.6	28.8

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



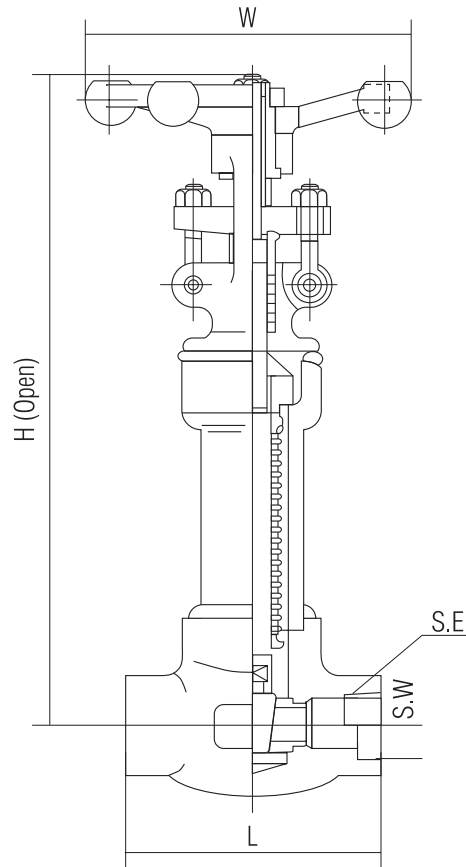
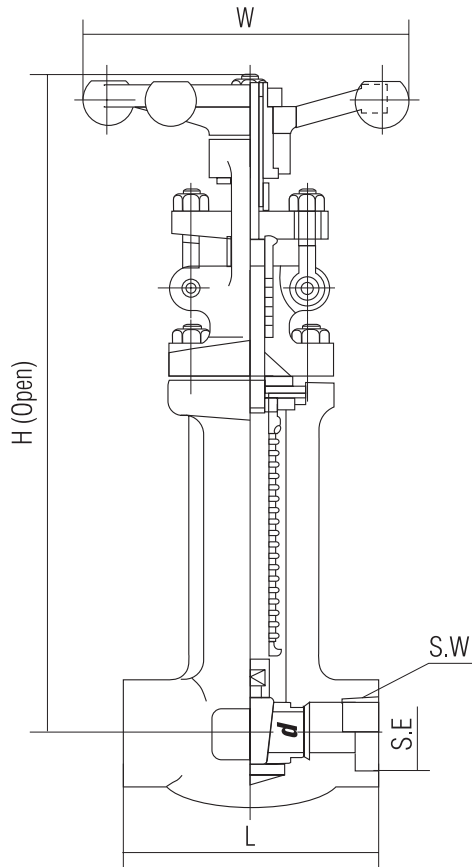
CLASS 800 FORGED STEEL BELLOWS SEAL GATE VALVE

FEATURES:

- ◆ BOLTED BONNET OR WELDED BONNET
- ◆ REPLACEABLE HARDFACED SEATS
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ OUTSIDE SCREW & YOKE
- ◆ SOCKET WELD OR THREADED ENDS

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, API 602 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, F304, F304L, F316, F316L, LF2



DIMENSIONS:

Nominal diameter		mm (in)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d		mm	10	13.6	18	24	29	36.8
L		mm	79	92	111	120	120	140
H (Open)		mm	249	277	332	370	433	514
W		mm	100	125	125	160	160	180
Weight	W.B	kg	2.9	3.4	5.9	8.7	10.2	16.0
	B.B	kg	3.0	3.3	5.2	7.2	8.9	13.5

Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



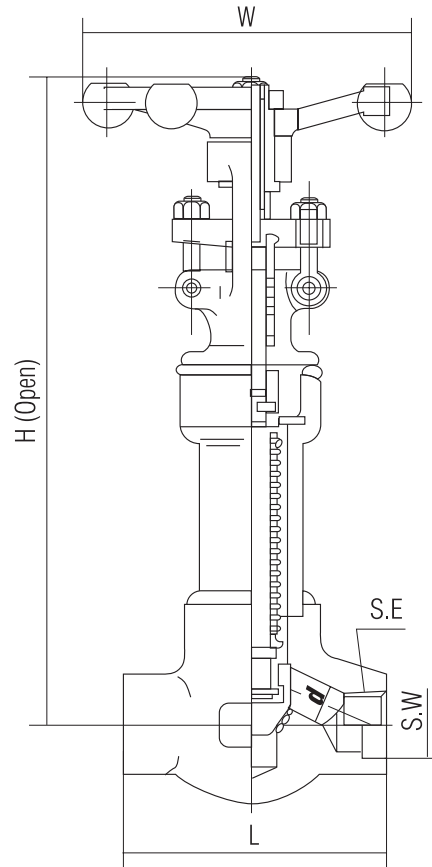
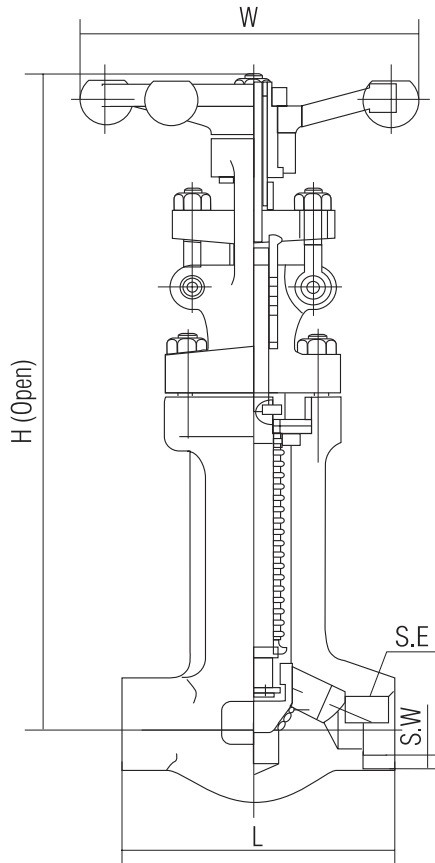
CLASS 800 FORGED STEEL BELLOWS SEAL GLOBE VALVE

FEATURES:

- ◆ BOLTED BONNET OR WELDED BONNET
- ◆ INTEGRAL HARDFACED SEAT
- ◆ SPIRAL WOUND GASKET OF STAINLESS STEEL
- ◆ OUTSIDE SCREW & YOKE
- ◆ SOCKET WELD OR THREADED ENDS

APPLICABLE STANDARDS:

- ◆ BASIC DESIGN, BS 5352 & ANSI B16.34
- ◆ SOCKET-WELD (S.W), ANSI B16.11
- ◆ THREADED END (S.E), ANSI B1.20.1
- ◆ VALVE TEST AND INSPECT: API 598
- ◆ STANDARD MATERIAL: A105, F304, F304L, F316, F316L, LF2



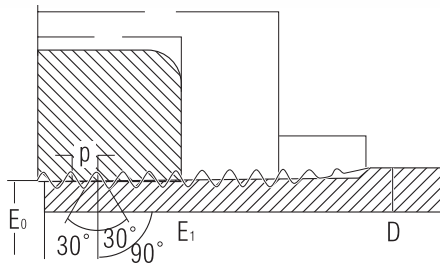
DIMENSIONS:

Nominal diameter		mm (in)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
d		mm	10	13	17	23	30	37
L		mm	79	92	111	130	152	172
H (Open)		mm	220	220	244	321	321	347
W		mm	100	100	125	160	160	180
Weight	W.B	kg	3.0	4.8	7.9	11.0	16.8	25.2
	B.B	kg	2.8	4	7.0	9.6	13.5	20.2

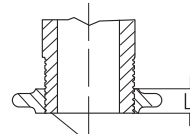
Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.



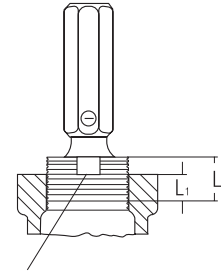
AMERICAN NATIONAL STANDARD TAPER PIPE THREADS (NPT) AND SOCKET WELD (S.W)



TAPER PIPE THREADS—ANSI B1.20.1



Flush by hand



Notch flush face of fitting.

If chambered, notch flush with bottom of chamber

$$E_0 + D - (0.050D + 1.1)P$$

$$\star E_1 + E_0 + 0.0625L_1$$

$$E_2 = (0.80 + 6.8)P$$

$p = \text{Pitch}$
 Depth of thread = $0.80p$
 Total Taper $3/4$ -inch per foot

Tolerance on Product

One turn large or small from notch on plug gauge or face of ring gauge.

DIMENSIONS IN INCHES

Nominal pipe size	D Outside diameter of pipe	Number of threads per inch	P Pitch of thread hand between	E_0 Pitch diameter at beginning of external thread	E_1 ■ Pitch diameter at end of external thread	L_1 ● Normal engagement by and between external and internal threads	L_2 ◆ Length of effective external thread	Hight of thread
1/16	0.3125	27	0.03704	0.27118	0.28118	1.160	1.160	0.02963
1/8	0.405	27	0.03704	0.36351	0.37360	0.1615	0.1615	0.02963
1/4	0.540	18	0.05556	0.47739	0.49163	0.2278	0.2278	0.04444
3/8	0.675	18	0.0556	0.61201	0.62701	0.240	0.240	0.04444
1/2	0.840	14	0.07143	0.75843	0.77843	0.320	0.320	0.05714
3/4	1.050	14	0.07143	0.96768	0.98887	0.339	0.339	0.05714
1	1.315	11.5	0.08696	1.21363	1.23863	0.400	0.400	0.06957
1 1/4	1.660	11.5	0.08696	1.55713	1.58338	0.420	0.420	0.06957
1 1/2	1.900	11.5	0.08696	1.79609	1.82234	0.420	0.420	0.06957
2	2.375	11.5	0.08696	2.26902	2.29627	0.436	0.436	0.06957

■ Also pitch diameter at gauging notch.

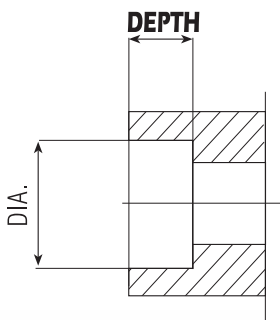
◆ Also length of plug gauge.

● Also length of ring gauge, and length from gauging notch to small end of plug gauge.

★ For the 1/8-27 and 1/4-18 sizes ●●● E_1 approx. $= D - (0.05D + 0.827)P$.

Above information extracted from American National Standard for Pipe Threads, ANSI B1.20.1

SOCKET WELD ANSI B16.11

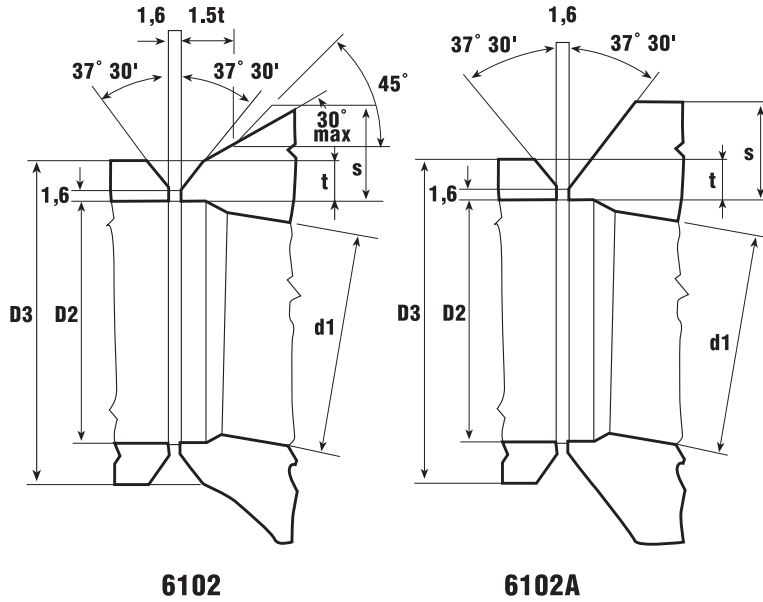


Nominal pipe size		SOCKET BORE DIAMETER				SOCKET BORE DEPTH Min.	
		Inches		Millimeters			
NPS	DN	Max.	Min.	Max.	Min.	Inch	mm
1/4	8	0.565	0.555	14.35	14.10	0.38	9.6
3/8	10	0.700	0.690	17.78	17.53	0.38	9.6
1/2	15	0.865	0.855	21.97	21.72	0.38	9.6
3/4	20	1.075	1.065	27.30	27.05	0.50	12.7
1	25	1.340	1.330	34.04	33.78	0.50	12.7
1 1/4	32	1.685	1.685	42.80	42.54	0.50	12.7
1 1/2	40	1.925	1.915	48.90	48.64	0.50	12.7
2	50	2.416	2.406	61.37	61.11	0.62	15.8



AMERICAN NATIONAL STANDARD BUTT-WELD (B.W) AND STEEL PIPE

Butt-Weld (B.W) Connections
from ANSI B16.25



Size (in)	Dimension of Pipes (mm)								
	Schedule 80			Schedule 160			Schedule xx-stg		
	D3	D2	t	D3	D2	t	D3	D2	t
1/4	13.7	7.7	3.0						
3/8	17.1	10.7	3.2	—	—	—	—	—	—
1/2	21.3	13.9	3.7	21.3	11.8	4.8	21.3	6.4	7.5
3/4	26.7	18.8	3.9	26.7	15.6	5.6	26.7	11.9	7.8
1	33.4	24.4	4.5	33.4	20.7	6.4	33.4	15.2	9.1
1 1/2	48.3	38.1	5.1	48.3	34.0	7.1	48.3	27.9	10.2
2	60.3	49.3	5.5	60.3	42.9	8.7	60.3	38.2	11.1
2 1/2	73.0	59.0	7.0	73.0	54.0	9.5	73.0	45.0	14.0
3	88.9	73.7	7.6	88.9	66.6	11.1	88.9	58.4	15.2
4	114.3	97.2	8.6	114.3	87.3	13.5	114.3	80.1	17.1

Fig. 6102: Applicable for thickness of valve wall $s \geq 22.2\text{mm}$
 Fig. 6102A: Applicable for thickness of valve wall $s < 22.2\text{mm}$
 —Dimension d1 depends on requested schedule.

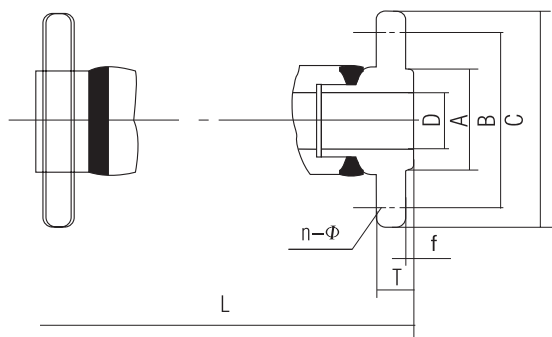
DIMENSIONAL DATA FOR STANDARD & SCHEDULE PIPE STEEL PIPE

PIPE	SIZE	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Standard	Outside Dia.	.405	.540	.675	.840	1.050	1.315	1.660	1.900	2.375
	Inside Dia.	.269	.364	.493	.622	.824	1.049	1.380	1.610	2.067
	Wall Thick.	.068	.088	.061	.109	.113	.133	.140	.145	.154
	Wt. Per Ft.	.24	.42	.57	.85	1.13	1.68	2.27	2.72	3.65
Extra Heavy	Inside Dia.	.215	.302	.423	.546	.742	.957	1.278	1.500	2.939
	Wall Thick.	.095	.119	.126	.147	.154	.179	.191	.200	.218
	Wt. Per Ft.	.31	.54	.74	1.09	1.47	2.17	3.00	3.63	5.02
	Double Extra Heavy				.252	.434	5.99	.896	1.100	1.503
Schedule 40	Inside Dia.	.269	.364	.493	.622	.824	1.049	1.380	1.610	2.067
	Wall Thick.	.068	.088	.091	.109	.113	.133	.140	.145	.154
	Wt. Per Ft.	.24	.42	.57	.85	1.13	1.68	2.27	2.72	3.65
	Schedule 80	.215	.302	.423	.546	.742	.957	1.278	1.500	1.939
Schedule 80	Inside Dia.	.215	.302	.423	.546	.742	.957	1.278	1.500	1.939
	Wall Thick.	.095	.119	.126	.147	.154	.179	.191	.200	.218
	Wt. Per Ft.	.31	.54	.74	1.09	1.47	2.17	3.00	3.63	5.02
	Schedule 160				.466	.614	.815	1.160	1.338	1.689
Schedule 160	Inside Dia.				.187	.218	.250	.250	.281	.343
	Wall Thick.				1.30	1.94	2.84	3.76	4.86	7.44
	Wt. Per Ft.									

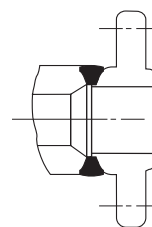
ALL DIMENSIONS ARE IN INCHES.
 CARBON STEEL PIPE-Conforms to ANSI B36.10 Standards.
 STAINLESS STEEL PIPE-Conforms to ANSI B36.19 Standards.



END CONNECTIONS AND DIMENSION FLANGED END



1/2" ~ 2" (Forging)



BUTT WELDING

DIMENSIONS (ANSI B16.5) (ANSI B16.10)																							
Class	Valve Size		L						D		A		C		g		T		f		Φ		Number of Bolts
			Gate		Globe/Check*		Swing Check																
	DN	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	n
150	15	1/2	108	4.25	108	4.25	108	4.25	17	0.67	89	3.50	60.5	2.38	35.0	1.38	11.5	0.44			16	0.62	
	20	3/4	117	4.62	117	4.62	117	4.62	23	0.91	99	3.88	70.0	2.75	43.0	1.69	13.0	0.50			16	0.62	
	25	1	127	5.00	127	5.00	127	5.00	29	1.14	108	4.25	79.5	3.12	51.0	2.00	14.5	0.56			16	0.62	4
	32	1 1/4	140	5.50	140	5.50	140	5.50	35	1.38	118	4.62	89.0	3.50	63.5	2.50	15.0	0.82			16	0.62	
	40	1 1/2	165	6.50	165	6.50	165	6.50	40	1.57	127	5.00	98.5	3.88	73.0	2.88	17.5	0.69			16	0.69	
	50	2	178	7.00	203	8.00	203	8.00	52	2.05	152	6.00	120.5	4.75	92.0	3.62	19.5	0.75			20	0.75	
300	15	1/2	140	5.50	152	6.00	152	6.00	17	0.67	96	3.75	66.5	2.62	Same as Class 150		14.5	0.56			16	0.62	
	20	3/4	152	6.00	178	7.00	178	7.00	23	0.91	118	4.62	82.5	0.91			16.0	0.56			20	0.75	
	25	1	165	6.50	203	8.00	203	8.50	29	1.14	124	4.88	89.0	3.25			17.5	0.69			20	0.75	4
	32	1 1/4	178	7.00	216	8.50	216	9.00	35	1.38	134	5.25	98.5	3.50			19.5	0.75			20	0.75	
	40	1 1/2	190	7.50	229	9.00	229	9.50	40	1.57	156	6.12	114.0	4.50			21.0	0.81			22	0.88	
	50	2	216	8.50	267	10.50	267	10.50	52	2.05	166	6.50	127.0	5.00			22.5	0.88			20	0.75	8
600	15	1/2	165	6.50	Same as Gate										Same as Class 150		21.5	0.81			Same as Class 300		
	20	3/4	190	7.50													23.0	0.87					
	25	1	216	8.50													24.5	0.94					
	32	1 1/4	229	9.00													28.0	1.06					
	40	1 1/2	241	9.50													29.5	1.13					
	50	2	292	11.50													32.5	1.25					
900&1500	15	1/2	216	8.50	Same as Gate										Same as Class 150		29.5	1.13			22	0.88	
	20	3/4	229	9.00													32.5	1.25			22	0.88	
	25	1	254	10.00													36.0	1.37			26	1.00	4
	32	1 1/4	279	11.00													36.0	1.37			26	1.00	
	40	1 1/2	305	12.00													39.0	1.50			29	1.12	
	50	2	368	14.50													45.5	1.75			26	1.00	8

*Lift and ball type. Other Flange Facings also Available on Application. Integrally Flanged Ends also Available on Application.



MATERIAL SPECIFICATIONS

BODY, BONNET AND CAP MATERIAL

Description		Carbon Steel ASTM A105	Low Temp. Steel per ASTM A350 LF2	Alloy Steel ASTM A182			Austenitic S.S ASTM A182			
				F5	F11	F22	304	316	304L	316L
CHEMICAL COMPOSITION	Carbon %	0.35 max.	0.30 max.	0.15 max.	0.10-0.20	0.05-0.15	0.08 max.	0.08 max.	0.035 max.	0.035 max.
	Manganese %	0.60-1.5	1035 max.	0.30-0.80	0.30-0.80	0.30-0.60	20. max.	2.0 max.	2.0 max.	2.0 max.
	Phosphor. max. %	0.040	0.035	0.030	0.040	0.040	0.040	0.040	0.040	0.040
	Sulphur max. %	0.050	0.040	0.030	0.040	0.040	0.030	0.030	0.030	0.030
	Silicon %	0.35 max.	0.15-0.30	0.50 max.	0.50-1.0	0.50 max.	1.0 max.	1.0 max.	1.0 max.	1.0 max.
	Nickel %	0.040 max.	0.040 max.	0.50 max.	—	—	8.00-11.00	10.00-14.00	8.00-13.00	8.00-15.00
	Chromium %	0.30 max.	0.30 max.	4.0-6.0	1.00-1.50	2.00-2.50	18.00-20.00	16.00-18.00	18.0-20.0	16.00-18.00
	Molybdenum %	0.12 max.	0.12 max.	0.44-0.65	0.44-0.65	0.87-1.13	—	2.0-3.0	—	2.00-3.00
	Copper %	0.40 max.	0.40 max.	—	—	—	—	—	—	—
	Vanadium %	0.03 max.	0.03 max.	—	—	—	—	—	—	—
	Columbium %	0.02 max.	0.02 max.	—	—	—	—	—	—	—
Mechanical Properties	Tensile min [MPa]	485	485-655	485	515	515	515	515	485	485
	Yield min [MPa]	250	250	275	310	310	205	205	170	170
	Elongation min %	22	22	20.0	20	20.0	30	30	30	30
	Reduction %	30	30	35.0	30	30.0	50	50	50	50
	HB max.	187	187	143-217	156-207	156-207	—	—	—	—
	Impact "V" min [J]	—	16/-45.6°C	—	—	—	—	—	—	—

NOMINAL SEATING SURFACE MATERIALS

Trim Number	Nominal Trim	Seat Surface Hardness (HB, ^a minimum)	Material Type ^b	Typical Specification (Grade)		
				Cast	Forged	Welded
1	F6	c	13Cr	ASTM A 217 (CA15)	ASTM A 182 (F6a)	AWS A5.9 ER410
2	304	d	350 ^e	ASTM A 351 (CF8)	ASTM A 182 (F304)	AWS A5.9 ER308
3	F310	d	25Cr-20Ni		ASTM A 182 (F310)	AWS A5.9 ER310
4	Hard F6	750 ^e	Hard 13Cr		f	
5	Hardfaced	350 ^e	Co-Cr A ^g			AWS A5.13 ERCrCo-A
5A	Hardfaced	350 ^e	Ni-Cr			h
6	F6 and Cu-Ni	250 ⁱ	13Cr	ASTM A 217 (CA15)	ASTM A 182 (F6a)	AWS A5.9 ER410
7	F6 and Hard F6	175 ^j 300 ⁱ 750 ⁱ	Cu-Ni 13Cr Hard 13Cr	ASTM A 217 (CA15)	ASTM A 182 (F6a) f	AWS A5.9 ER410
8	F6 and Hardfaced	300 ⁱ	13Cr	ASTM A 217 (CA15)	ASTM A 182 (F6a)	AWS A5.9 ER410
8A	F5 and Hardfaced	350 ⁱ 300 ⁱ	Co-Cr A ^g 13Cr	ASTM A 217 (CA15)	ASTM A 182 (F6a)	AWS A5.13 ERCrCo-A h
9	Monel	350 ⁱ	Ni-Cr		Manufacturer's Standard	
10	316	d	Ni-Cu alloy 16Cr-8Ni	ASTM A 351 (CF8)	ASTM A 182 (F316)	AWS A5.9 ER316
11	Monel and Hardfaced	d 350 ⁱ	Ni-Cu alloy Trim 5 or 5A		Manufacturer's Standard	See Trim 5 or 5A
12	316 and Hardfaced	d 350 ⁱ	18Cr-8Ni Trim 5 or 5A	ASTM A 351 (CE8M)	ASTM A 182 (F316)	AWS A5.9 ER316 See Trim 5 or 5A
13	Alloy 20	d	19Cr-29Ni	ASTM A 351 (CN7M)	ASTM B 473	AWS A5.9 ER320
14	Alloy 20 and Hardfaced	d 350 ⁱ	19Cr-29Ni Trim 5 or 5A	ASTM A 351 (CN7M)	ASTM B 473	AWS A5.9 ER320 See Trim 5 or 5A

Note: Cr=chromium; Ni=nickel; Co=cobalt; Cu=copper.

^aHB (formerly BHN) is the symbol for the Brinell hardness number per ASTM E 10.

^bFree-machining grades of 13Cr are prohibited.

^cBody and gate seat surfaces should be 250 HB minimum with a 50 HB minimum differential between the body and gate seat surfaces.

^dManufacturer's standard hardness.

^eDifferential hardness between the body and gate seat surfaces is not required.

^fCase hardened by nitriding to a thickness of 0.13 millimeters (0.005 inch) minimum.

^gThis classification includes such trademarked materials as Stellite 6™, Stoddy 6™, and Wallex 6™.

^hManufacturer's standard hardfacing with a maximum iron content of 25 percent.

ⁱHardness differential between the body and gate seat surfaces shall be the manufacturer's standard.

^jManufacturer's standard with 30Ni minimum.



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World Headquarters

KF Industries
1500 S.E. 89th Street
P.O. Box 95249
Oklahoma City, OK 73143-5249 USA
Phone: (405) 631-1533
Fax: (405) 631-5034
E-mail: kfinfo@kfvalves.com
www.kfvalves.com

US Industrial

KF Contromatics Industrial Products
1500 S.E. 89th Street
P.O. Box 95249
Oklahoma City, OK 73143-5249 USA
Phone: (405) 631-1533
Fax: (405) 631-5034
E-mail: controinfo@kfvalves.com
www.kfvalves.com

Canada

KF Industries Canada
9430-39th Avenue Edmonton
Alberta, Canada T6E 5T9
Phone: (780) 463-8633
Fax: (780) 461-1588
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