



Forged Steel Valves

Globe Gate & Check

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Type

- 1 = Gate
- 2 = Globe
- 3 = Y Pattern Globe
- 4 = Piston Check
- 5 = Lift Check With Spring
- 6 = Swing Check
- 7 = Y Pattern Check
- 8 = Needle Globe
- 9 = Cryogenic Gate
- 0 = Cryogenic Globe
- X = Special

Code

- C = Cast Steel Valves
- F = Forged Steel Valves
- I = Cast Iron Valves
- B = Ball Valves
- W = Wellhead Valves
- WB = Wafer Butterfly Valves

Pressure Class

- 15 = Class 150
- 30 = Class 300
- 40 = Class 400
- 60 = Class 600
- 80 = Class 800
- 90 = Class 900
- 150 = Class 1500
- 250 = Class 2500

Body Material

- 0 = ASTM A105
- 1 = ASTM A350 LF2
- 2 = ASTM A182 F5
- 3 = ASTM A350 LF3
- 4 = ASTM A182 F11
- 5 = ASTM A182 F22
- 6 = ASTM A182 F304
- 7 = ASTM A182 F316
- 8 = ASTM A182 F304L
- 9 = ASTM A182 F316L
- A = ASTM A182 F51
- X = Special

2" Forged Steel Gate Valve, Class 800, A105 Body & Bonnet, Socket Weld End, With HF / HF Trim, Bolted Bonnet, Full Bore.

Example: 2"-F1800 S21

End Connection

- F = Raised Face Flanged End
- P = Plain Flate Face Flanged End
- R = Ring Type Joint End
- B = Buttweld End
- T = Threaded End
- S = Socket Weld End

Trim Material

	Seat	Disc	Stem
1 =	13CR	13CR	F6
2 =	HF	HF	F6
3 =	HF	13CR	F6
4 =	MONEL	MONEL	MONEL
5 =	316SS	316SS	F316
6 =	HF	MONEL	MONEL
7 =	HF	316SS	F316
8 =	304SS	304SS	F304
9 =	304L	304L	304L
0 =	316L	316L	316L
A =	F51	F51	F51
B =	Inconel 625		
X =	Special		

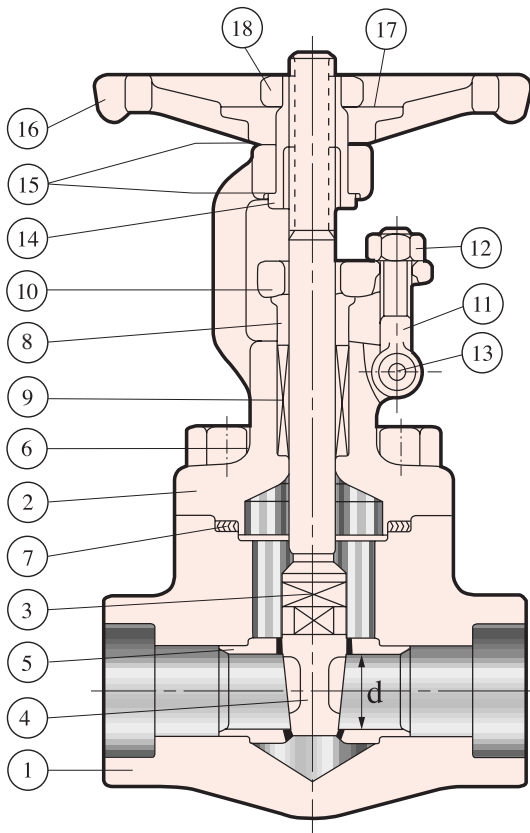
Bonnet Connection

- 1 = Bolted Bonnet - Full Bore
- 2 = Welded Bonnet - Full Bore
- 3 = Bolted Bonnet - Reduced Bore
- 4 = Welded Bonnet - Reduced Bore

Forged Steel Gate Valves

Standard Material Specifications

Part No.	Part Name	ASTM Specifications										
		Carbon Steel		Alloy Steel			Stainless Steel					
		A 105	A350	A182								
		(b, c)	LF2	F5	F11(d)	F22	F304 (e)	F304L	F316(e)	F316L	F51	
1	Body	A 105	LF2	F5	F11	F22	F304	F304L	F316	F316L	F51	
2	Bonnet	A 105	LF2	F5	F11	F22	F304	F304L	F316	F316L	F51	
3	Stem	A276 - 410					A276 - 304	A276 - 304L	A276 - 316	A276 - 316L	F51	
4	Disc	A276 - 420					304 + STL	304L + STL	316 + STL	316L + STL	F51	
5	Seat Ring	A276 - 410 + STL					304 + STL	304L + STL	316 + STL	316L + STL	F51	
6	Bonnet Bolt (a)	A193 - B7	A320 - L7	A193 - B16			A193 - B8		A193 - B8M			
7	Gasket	304 + Graphite					316 + Graphite					
8	Gland	A276 - 410					A276 - 304		A276 - 316		F51	
9	Packing	Flexible Graphite					PTFE					
10	Gland Flange	A105	LF2	F11			CF8			F51		
11	Gland Bolt	A193-B7	A320-L7	A193 - B16			A193 - B8 / B8M					
12	Gland Bolt Nut	A194-2H	A194-7	A194 - 4			A194 - 8					
13	Gland Bolt Pin	A276 - 410					A276 - 304			F51		
14	Sleeve						A276 - 410					
15	Sleeve Washer						A276 - 410					
16	Handwheel						A197					
17	Nameplate	Aluminum					304					
18	Handwheel Nut						A108 - 1020					



Gate Valve

Notes:

- Temperature limitations on bolting are as following:
Gr B7, 1000°F(538°C); Gr L7, 1000°F(538°C);
Gr B16, 1100°F(595°C); Gr B8-CL1, 1500°F(816°C);
Gr B8M-CL1, 1500°F(816°C); Gr B8-CL2, 1000°F(538°
and Gr B8M-CL2, 1000°F(538°C).
- Upon prolonged exposure to temperatures above 800°F(425°C), the carbide phase of carbon steel may be converted to graphite.
- Only killed steel shall be used above 850°F(455°C).
- Use normalized and tempered material only.
- At temperatures over 1000°F(538°C), use only when the carbon is 0.04 percent or higher.

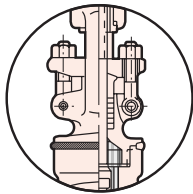
Class150 / 300 / 600 Forged Steel Gate Valves

Features:

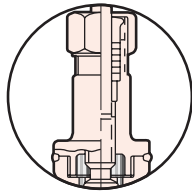
- Bolted Bonnet (B.B) or Welded Bonnet (W.B).
- Spiral Wound Gasket of Stainless Steel and Flexible Graphite with Controlled Compression.
- Flanged End.
- Compact Outside Screw & Yoke or Compact Inside Screw.
- Renewable Hardfaced Seats.

Specifications:

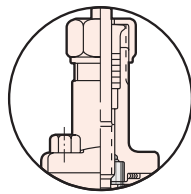
- Basic Design: **API-602 & ANSI B16.34**
- Face to Face: **ANSI B16.10**
- Flanged End: **ANSI B16.5**
- Test and Inspect: **API-598**
- Standard Material: **See Page 3**



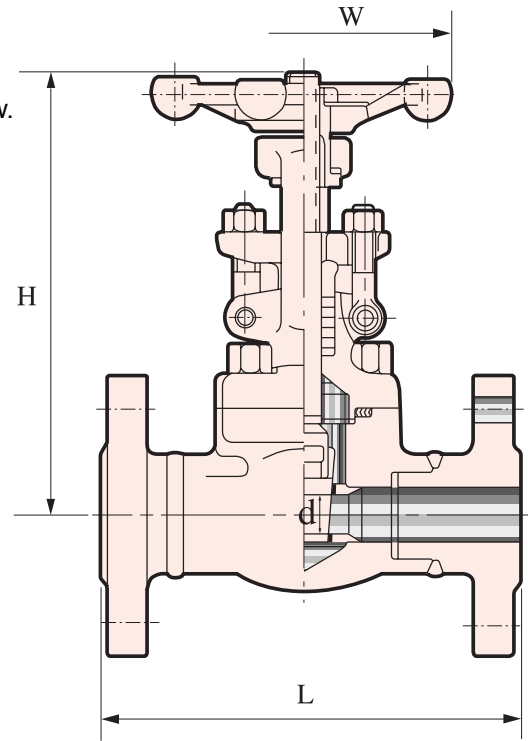
OS & Y W.B



Inside Screw W.B



Inside Screw B.B



OS & Y B.B

Dimensions and Weights

NPS		inch	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
d	inch	0.39	0.51	0.71	0.94	1.14	1.46	
	mm	10	13	18	24	29	37	
L	CLASS 150	inch	4.25	4.62	5.00	5.50	6.50	8.00
		mm	108	117	127	140	165	203
	CLASS 300	inch	5.5	6.0	6.5	7.0	7.5	8.5
		mm	140	152	165	178	190	216
	CLASS 600	inch	6.5	7.5	8.5	9.0	9.5	11.5
		mm	165	190	216	229	241	292
H (OPEN)	CLASS 150	inch	6.20	6.70	7.80	9.30	9.70	11.10
		mm	158	169	197	236	246	283
	CLASS 300	inch	6.70	7.80	9.30	9.70	11.10	12.60
		mm	169	197	236	246	283	320
	CLASS 600	inch	6.70	7.80	9.30	9.70	11.10	12.60
		mm	169	197	236	246	283	320
W	inch	3.94	3.94	4.92	6.30	6.30	7.10	
	mm	100	100	125	160	160	180	
WEIGHT	CLASS 150	lb	9.9	11.4	19.8	25.3	27.5	44.7
		kg	4.5	5.2	8.2	11.5	12.5	20.3
	CLASS 300	lb	10.6	13.7	20.5	30.8	34.1	51.5
		kg	4.8	6.2	9.3	14.0	15.5	23.4
	CLASS 600	lb	13.0	16.3	22.9	35.6	38.5	62.3
		kg	5.9	7.4	10.4	16.2	17.5	28.3

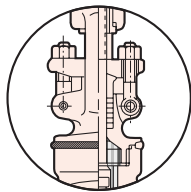
Class 800 Forged Steel Gate Valves

Features:

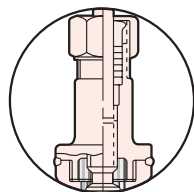
- Bolted Bonnet (B.B) or Welded Bonnet (W.B).
- Spiral Wound Gasket of Stainless Steel and Flexible Graphite with Controlled Compression.
- Reduced or Full Port.
- Compact Outside Screw & Yoke or Compact Inside Screw.
- Renewable Hardfaced Seats.
- Socket Weld (S.W) or Threaded End (T.E).

Specifications:

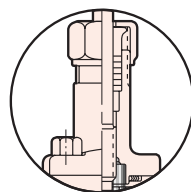
- Basic Design: **API-602 & ANSI B16.34**
- Socket Weld End(S.W): **ANSI B16.11**
- Threaded End (T.E): **ANSI B1.20.1**
- Test and Inspect: **API-598**
- Standard Material: **See Page 3**



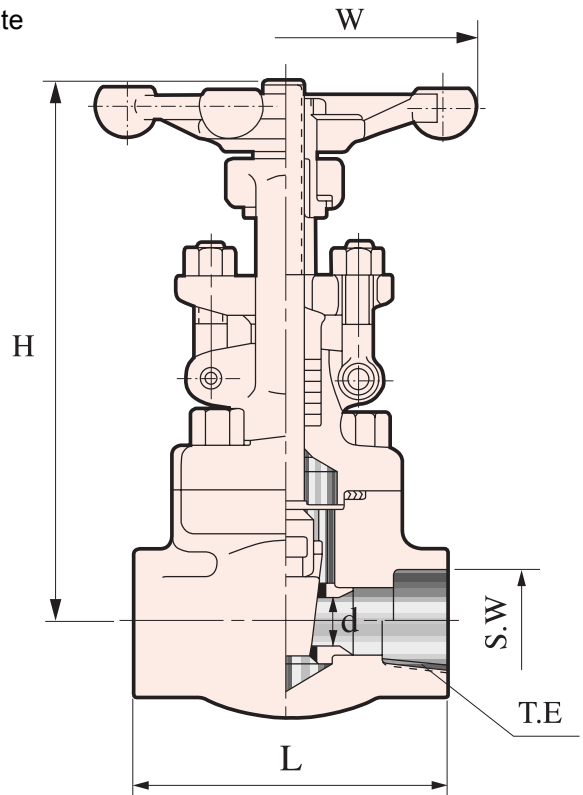
OS & Y W.B



Inside Screw W.B



Inside Screw B.B



OS & Y B.B

Dimensions and Weights

Normal Diameter	Reduced Port	inch	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
	Full Port	inch	-	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	-
d	inch	0.28	0.39	0.51	0.71	0.94	1.14	1.46	1.81	2.00	
	mm	7	10	13	18	24	29	37	46	51	
L	inch	3.12	3.12	3.62	4.37	4.75	4.75	5.50	7.00	7.28	
	mm	79	79	92	111	120	120	140	178	185	
H (OPEN)	Outside Screw & Yoke	inch	6.22	6.22	6.70	7.76	9.30	9.68	11.14	12.99	14.13
		mm	158	158	169	197	236	246	283	330	359
	Inside Screw	inch	6.65	6.65	7.20	8.19	10.60	11.42	12.99	-	-
		mm	169	169	182	208	254	290	330	-	-
W	inch	3.93	3.93	3.90	4.92	6.29	6.29	7.08	7.87	7.87	
	mm	100	100	100	125	160	160	180	200	200	
Weight	B.B	lb	4.84	4.62	5.06	8.80	13.00	15.20	24.60	34.76	44.00
		kg	2.2	2.1	2.3	4.0	5.9	6.9	11.2	15.8	20.0
	W.B	lb	3.96	3.74	4.62	8.14	11.44	13.64	22.88	32.56	-
		kg	1.8	1.7	2.1	3.7	5.2	6.2	10.4	14.8	-

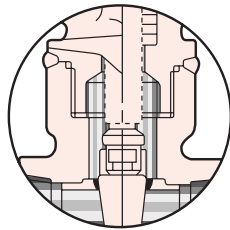
Class 1500 Forged Steel Gate Valves

Features:

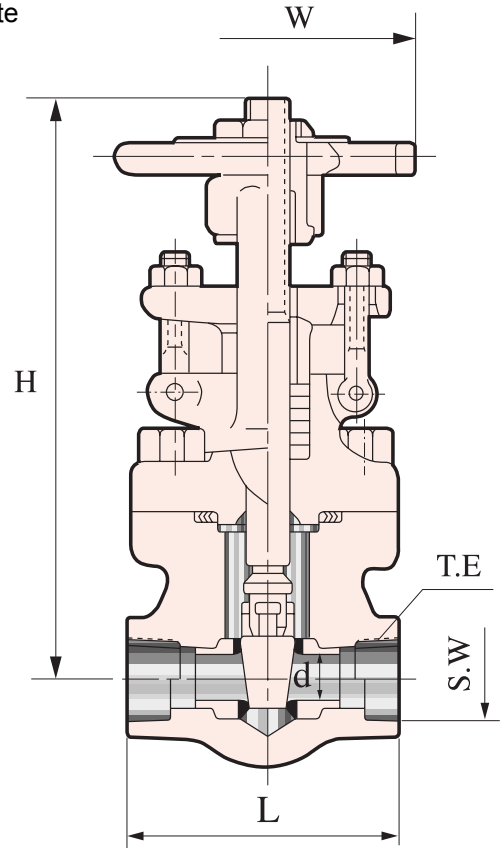
- Bolted Bonnet (B.B) or Welded Bonnet (W.B).
- Spiral Wound Gasket of Stainless Steel and Flexible Graphite with Controlled Compression.
- Reduced or Full Port.
- Compact Outside Screw & Yoke or Compact Inside Screw.
- Renewable Hardfaced Seats.
- Socket Weld (S.W) or Threaded End (T.E).

Specifications:

- Basic Design: **API-602 & ANSI B16.34**
- Socket Weld End (S.W): **ANSI B16.11**
- Threaded End (T.E): **ANSI B1.20.1**
- Test and Inspect: **API-598**
- Standard Material: **See Page 3**



OS & Y W.B



OS & Y B.B

Dimensions and Weights									
Normal Diameter	Reduced Port	inch	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	Full Port	inch	-	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"
d		inch	0.28	0.39	0.51	0.71	0.94	1.14	1.46
		mm	7	10	13	18	24	29	37
L		inch	3.62	4.37	4.37	4.72	4.75	5.5	7.0
		mm	92	111	111	120	120	140	178
H (OPEN)		inch	6.65	7.75	7.75	9.30	9.69	11.14	13.00
		mm	169	197	197	236	246	283	330
W		inch	3.94	4.92	4.92	6.30	6.30	7.09	7.87
		mm	100	125	125	160	160	180	200
Weight	B.B	lb	10.34	10.12	10.12	13.86	19.14	26.60	37.80
		kg	4.7	4.6	4.6	6.3	8.7	12.2	17.2
	W.B	lb	8.80	8.56	8.56	12.76	17.66	24.64	35.20
		kg	4.0	3.9	3.9	5.8	7.8	11.2	16.0

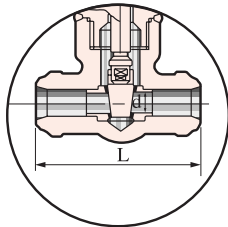
Class 2500 Forged Steel Gate Valves

Features:

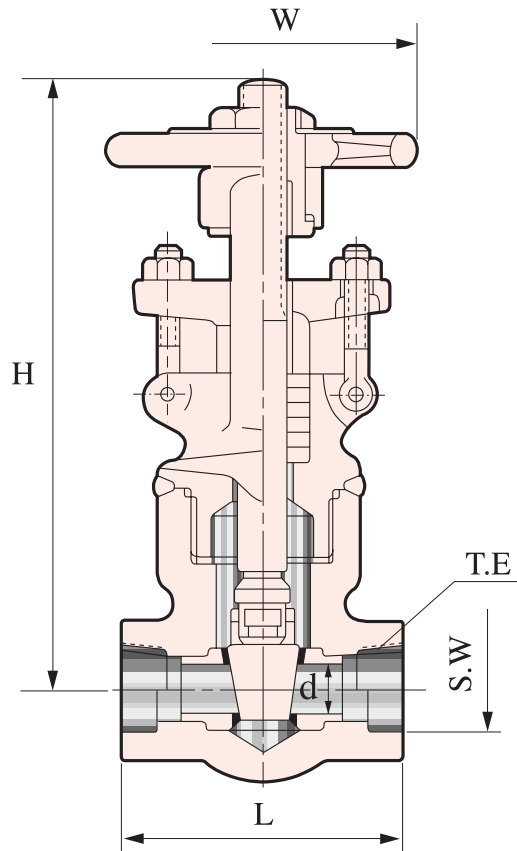
- Welded Bonnet (W.B).
- Compact Outside Screw & Yoke.
- Socket Weld (S.W), Threaded End (T.E), or Butt-Weld End (B.W).
- Renewable Hardfaced Seats.

Specifications:

- Basic Design: **ANSI B16.34**
- Socket Weld End (S.W): **ANSI B16.11**
- Threaded End (T.E): **ANSI B1.20.1**
- Butt Weld (B.W): **ANSI B16.25**
- Test and Inspect: **API-598**
- Standard Material: **See Page 3**



OS & Y B.W



OS & Y S.W or T.E

Dimensions and Weights

Normal Diameter		inch	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
d	inch	0.51	0.51	0.71	0.94	1.14	1.46	
	mm	13	13	18	24	29	37	
L	S.W, T.E	inch	7.32	7.32	7.32	9.13	9.13	10.98
		mm	186	186	186	232	232	279
	B.W	inch	8.5	9.0	10.0	11.0	12.0	14.5
		mm	216	229	254	279	305	368
H(OPEN)		inch	8.58	8.58	10.20	12.60	12.60	13.78
		mm	218	218	259	320	320	350
W		inch	4.92	4.92	6.30	7.09	7.09	7.87
		mm	125	125	160	180	180	200
Weight	S.W, T.E	lb	15.4	15.4	30.8	49.5	50.6	61.6
		kg	7	7	14	22.5	23	28
	B.W	lb	24.86	27.50	34.32	39.16	45.98	78.10
		kg	11.3	12.5	15.6	17.8	20.9	35.5

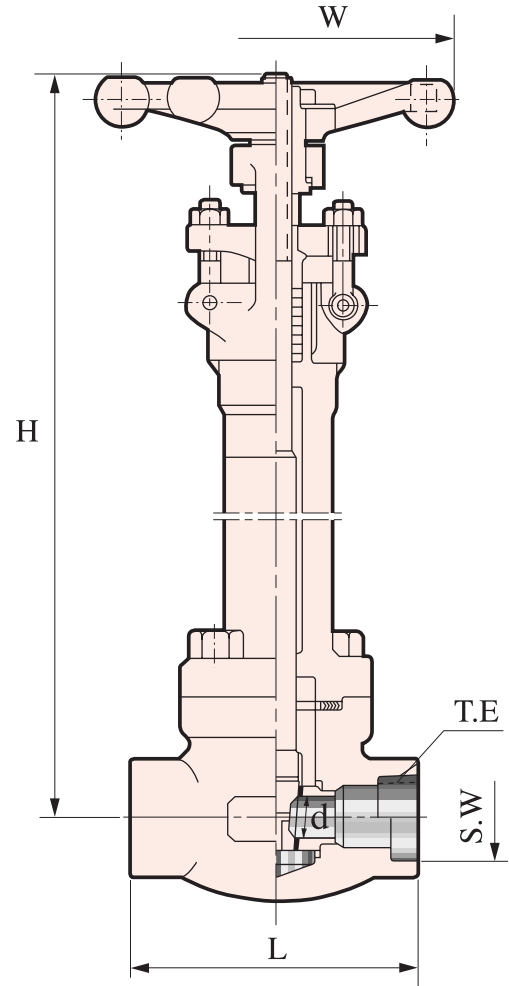
Class 800 Forged Steel Cryogenic Gate Valves

Features:

- Reduced or Full Port.
- Outside Screw & Yoke Long Bonnet.
- Spiral Wound Gasket of Stainless Steel.
- Socket Weld (S.W) or Threaded End (T.E).
- Renewable Hardfaced Seats.
- Balancing Hole in Wedge.

Specifications:

- Basic Design: **API-602 & ANSI B16.34**
- Socket Weld End (S.W): **ANSI B16.11**
- Threaded End (T.E): **ANSI B1.20.1**
- Test and Inspect: **API-598**
- Standard Material: **LF2, F304(L), F316(L)**



OS & Y S.W or T.E

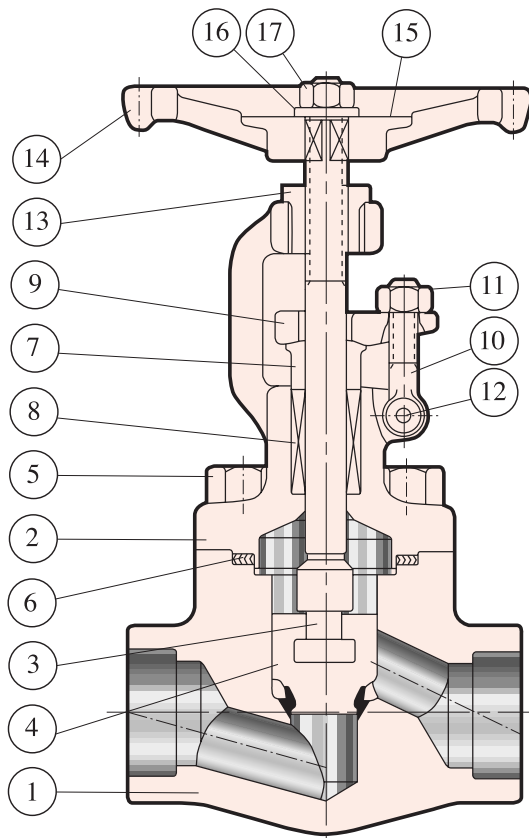
Dimensions and Weights

Normal Diameter	Reduced Port	inch	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	Full Port	inch	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"
d	inch	0.28	0.39	0.51	0.71	0.94	1.14	1.46	
	mm	7	10	13	18	24	29	37	
L	inch	3.12	3.62	4.37	4.72	4.72	5.51	7.00	
	mm	79	92	111	120	120	140	178	
H (OPEN)	inch	13.00	13.11	14.17	16.02	18.70	18.70	21.69	
	mm	330	333	360	407	475	475	551	
W	inch	3.94	3.94	4.92	6.30	6.30	7.09	7.87	
	mm	100	100	125	160	160	180	200	
Weight	lb	11.44	15.64	20.70	29.74	33.04	39.21	61.60	
	kg	5.2	7.1	9.4	13.5	15.0	17.8	28.0	

Forged Steel Globe Valves

Standard Material Specifications

Part No.	Part Name	ASTM Specifications									
		Carbon Steel		Alloy Steel			Stainless Steel				
		A 105	A350	A182							
		(b, c)	LF2	F5	F11(d)	F22	F304 (e)	F304L	F316(e)	F316L	F51
1	Body	A 105	LF2	F5	F11	F22	F304	F304L	F316	F316L	F51
2	Bonnet	A 105	LF2	F5	F11	F22	F304	F304L	F316	F316L	F51
3	Stem	A276 - 410					A276 - 304	A276 - 304L	A276 - 316	A276 - 316L	F51
4	Disc	A276 - 420					304 + STL	304L + STL	316 + STL	316L + STL	F51
5	Bonnet Bolt (a)	A193 - B7	A320 - L7	A193 - B16			A193 - B8		A193 - B8M		
6	Gasket	304 + Graphite					316 + Graphite				
7	Gland	A276 - 410					A276 - 304		A276 - 316		F51
8	Packing	Flexible Graphite					PTFE				
9	Gland Flange	A105	LF2	F11			CF8				F51
10	Gland Bolt	A193-B7	A320-L7	A193 - B16			A193 - B8 / B8M				
11	Gland Bolt Nut	A194-2H	A194-7	A194 - 4			A194 - 8				
12	Gland Bolt Pin	A276 - 410					A276 - 304				F51
13	Sleeve	A276 - 410									
14	Handwheel	A197									
15	Nameplate	Aluminum					304				
16	Handwheel Washer	A108 - 1020									
17	Handwheel Nut	A194 - 2H									



Globe Valve

Notes:

- Temperature limitations on bolting are as following:
 Gr B7, 1000°F(538°C); Gr L7, 1000°F(538°C);
 Gr B16, 1100°F(595°C); Gr B8-CL1, 1500°F(816°C);
 Gr B8M-CL1, 1500°F(816°C); Gr B8-CL2, 1000°F(538°C);
 and Gr B8M-CL2, 1000°F(538°C).
- Upon prolonged exposure to temperatures above 800°F(425°C), the carbide phase of carbon steel may be converted to graphite.
- Only killed steel shall be used above 850°F(455°C).
- Use normalized and tempered material only.
- At temperatures over 1000°F(538°C), use only when the carbon is 0.04 percent or higher.

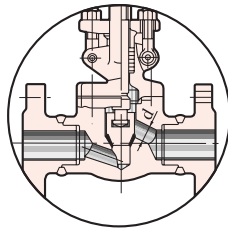
Class 150 / 300 / 600 Forged Steel Globe Valves

Features:

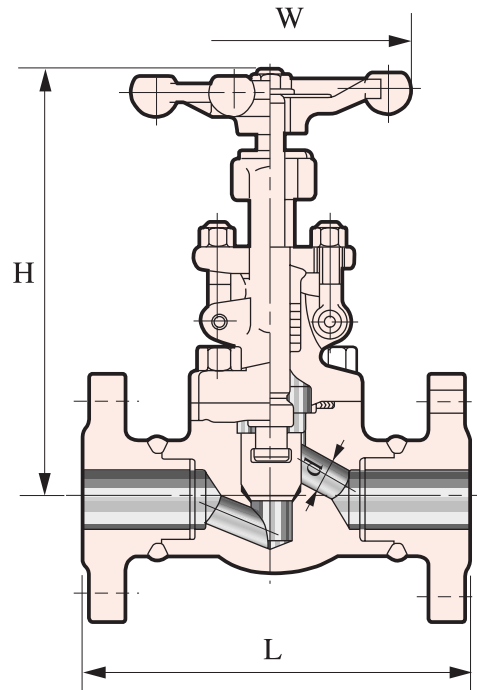
- Bolted Bonnet (B.B) or Welded Bonnet (W.B).
- Spiral Wound Gasket of Stainless Steel.
- Integral Stellite Seat.
- Flanged End.
- Compact Outside Screw & Yoke.

Specifications:

- Basic Design: **API-602 & ANSI B16.34**
- Face to Face: **ANSI B16.10**
- Flanged End: **ANSI B16.5**
- Test and Inspect: **API-598**
- Standard Material: **See Page 9**



OS & Y W. B



OS & Y B. B

Dimensions and Weights

Normal Diameter		inch	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
d		inch	0.39	0.51	0.71	0.94	1.14	1.46
		mm	10	13	18	24	29	37
L	CLASS 150	inch	4.25	4.62	5.00	5.50	6.50	8.00
		mm	108	117	127	140	165	203
	CLASS 300	inch	6.0	7.0	8.0	8.5	9.0	10.5
		mm	152	178	203	216	229	267
	CLASS 600	inch	6.5	7.5	8.5	9.0	9.5	11.5
		mm	165	190	216	229	241	292
H (OPEN)	CLASS 150	inch	6.54	6.73	8.15	9.45	10.12	13.00
		mm	166	171	207	240	256	330
	CLASS 300	inch	6.73	8.15	9.45	10.12	13.00	14.96
		mm	171	207	240	256	330	380
	CLASS 600	inch	6.73	8.15	9.45	10.12	13.00	14.96
		mm	171	207	240	256	330	380
W		inch	3.94	3.94	4.92	6.30	6.30	7.09
		mm	100	100	125	160	160	180
WEIGHT	CLASS 150	lb	7.94	11.02	14.55	21.60	26.45	33.07
		kg	3.6	5.0	6.6	9.8	12.0	15.0
	CLASS 300	lb	8.82	11.46	16.53	24.91	36.37	40.12
		kg	4.0	5.2	7.5	11.3	16.5	18.2
	CLASS 600	lb	12.34	15.21	21.6	27.55	40.56	44.09
		kg	5.6	6.9	9.8	12.5	18.4	20.0

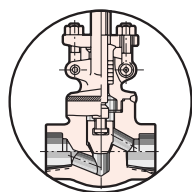
Class 800 Forged Steel Globe Valves

Features:

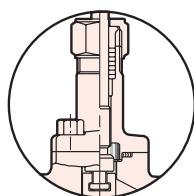
- Bolted Bonnet (B.B) or Welded Bonnet (W,B).
- Spiral Wound Gasket of Stainless Steel.
- Socket Weld (S.W) or Threaded End (T.E).
- Compact Outside Screw & Yoke or Compact Inside Screw.
- Integral Stellite Seat.

Specifications:

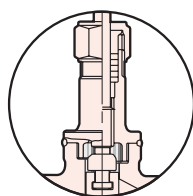
- Basic Design: **API-602 & ANSI B16.34**
- Socket Weld End (S.W): **ANSI B16.11**
- Threaded End (T.E): **ANSI B1.20.1**
- Test and Inspect: **API-598**
- Standard Material: **See Page 9**



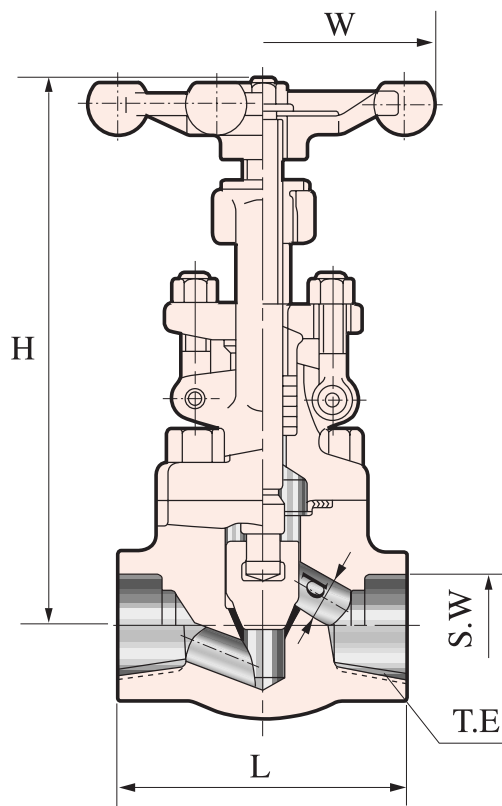
OS & Y W.B



Inside Screw B.B



Inside Screw W.B



OS & Y B.B

Dimensions and Weights										
Normal Diameter	Reduced Port	inch	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	-
	Full Port	inch	-	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
d		inch	0.39	0.39	0.51	0.71	0.94	1.14	1.46	1.81
		mm	10	10	13	18	24	29	37	46
L		inch	3.12	3.12	3.62	4.37	4.72	5.98	6.77	7.87
		mm	79	79	92	111	120	152	172	200
H (OPEN)	Outside Screw & Yoke	inch	6.54	6.54	6.73	8.15	9.45	10.12	13.00	13.98
		mm	166	166	171	207	240	258	330	355
	Inside Screw	inch	6.18	6.18	6.40	7.68	10.51	10.51	11.85	-
		mm	157	157	162	195	267	267	301	-
W		inch	3.94	3.94	3.94	4.92	6.30	6.30	7.09	7.87
		mm	100	100	100	125	160	160	180	200
Weight	B.B	lb	4.62	4.18	4.62	8.58	12.76	15.80	23.80	35.20
		kg	2.1	1.9	2.1	3.9	5.8	7.2	10.8	16.0
	W.B	lb	3.96	3.74	4.62	8.14	11.44	13.64	22.88	32.56
		kg	1.8	1.7	2.1	3.7	5.2	6.2	10.4	14.8

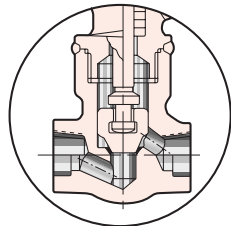
Class 1500 Forged Steel Globe Valves

Features:

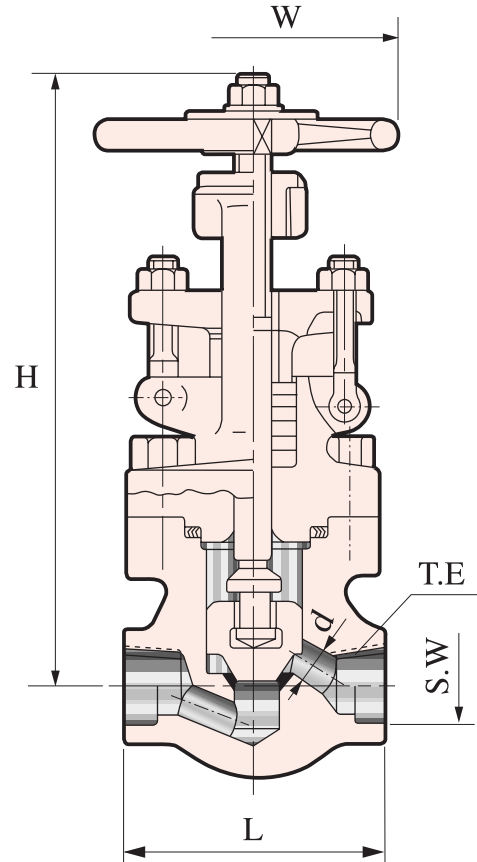
- Bolted Bonnet (B.B) or Welded Bonnet (W.B).
- Spiral Wound Gasket of Stainless Steel.
- Socket Weld (S.W) or Threaded End (T.E).
- Reduced or Full Port.
- Compact Outside Screw & Yoke or Compact Inside Screw.
- Integral Stellite Seat.

Specifications:

- Basic Design: **API-602 & ANSI B16.34**
- Socket Weld End (S.W): **ANSI B16.11**
- Threaded End (T.E): **ANSI B1.20.1**
- Test and Inspect: **API-598**
- Standard Material: **See Page 9**



OS & Y W.B



OS & Y B.B

Dimensions and Weights

Normal Diameter	Reduced Port	inch	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	Full Port	inch	-	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"
d	inch	0.28	0.39	0.51	0.71	0.94	1.14	1.46	
	mm	7	10	13	18	24	29	37	
L	inch	3.62	4.37	4.37	4.72	5.98	6.80	7.87	
	mm	92	111	111	120	152	172	200	
H (OPEN)	inch	6.73	8.15	8.15	9.45	10.16	13.00	13.98	
	mm	171	207	207	240	258	330	355	
W	inch	3.94	4.92	4.92	6.30	6.30	7.09	7.87	
	mm	100	125	125	160	160	180	200	
Weight	B.B	lb	10.78	10.34	10.12	14.96	20.24	29.90	45.98
		kg	4.9	4.7	4.6	6.8	9.2	13.6	20.9
	W.B	lb	9.46	9.02	8.80	13.64	18.92	27.94	42.02
		kg	4.3	4.1	4.0	6.2	8.6	12.7	19.1

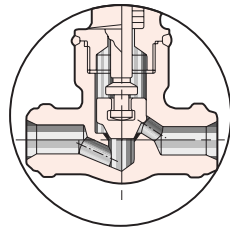
Class 2500 Forged Steel Globe Valves

Features:

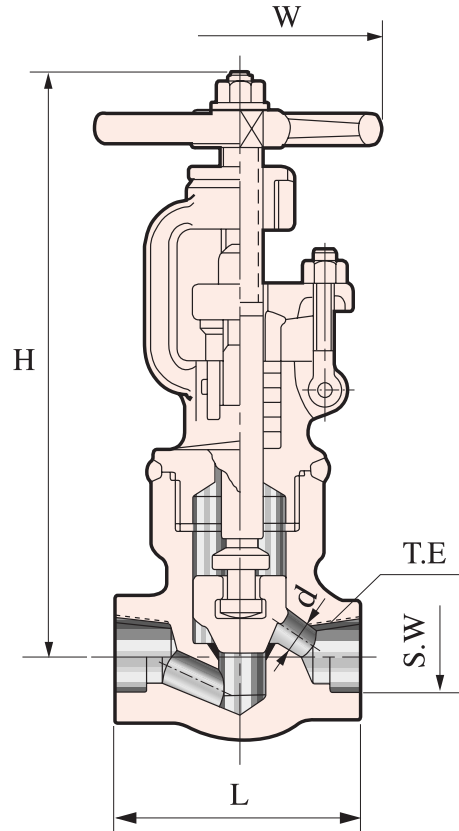
- Welded Bonnet (W.B).
- Compact Outside Screw & Yoke.
- Socket Weld (S.W), Threaded End (T.E), or Butt Weld End (B.W).
- Integral Stellite Seat.

Specifications:

- Basic Design: **ANSI B16.34**
- Socket Weld (S.W): **ANSI B16.11**
- Threaded End (T.E): **ANSI B1.20.1**
- Butt Weld (B.W): **ANSI B16.25**
- Test and Inspect: **API-598**
- Standard Material: **See Page 9**



OS & Y B.W



OS & Y T.E or S.W

Dimensions and Weights

Normal Diameter		inch	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
d	inch	0.39	0.51	0.71	0.94	1.14	1.46	
	mm	10	13	18	24	29	37	
L	S.W, T.E	inch	7.32	7.32	7.32	9.13	9.13	10.98
		mm	186	186	186	232	232	279
	B.W	inch	8.50	9.02	10.00	10.98	12.00	14.20
		mm	216	229	254	279	305	368
H (OPEN)		inch	8.94	8.94	11.34	13.00	13.00	14.17
		mm	227	227	288	330	330	360
W		inch	6.30	6.30	6.30	7.87	7.87	8.66
		mm	160	160	160	200	200	220
Weight	B.B	lb	17.6	17.6	37.4	55.0	57.2	74.8
		kg	8	8	17	25	26	34
	W.B	lb	29.4	28.6	44.0	70.4	77.0	88.0
		kg	12	13	20	32	35	40

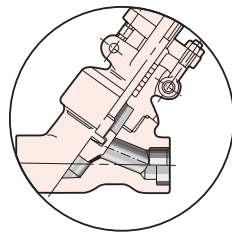
Class 800 1500 Forged Steel Y-Pattern Globe Valves

Features:

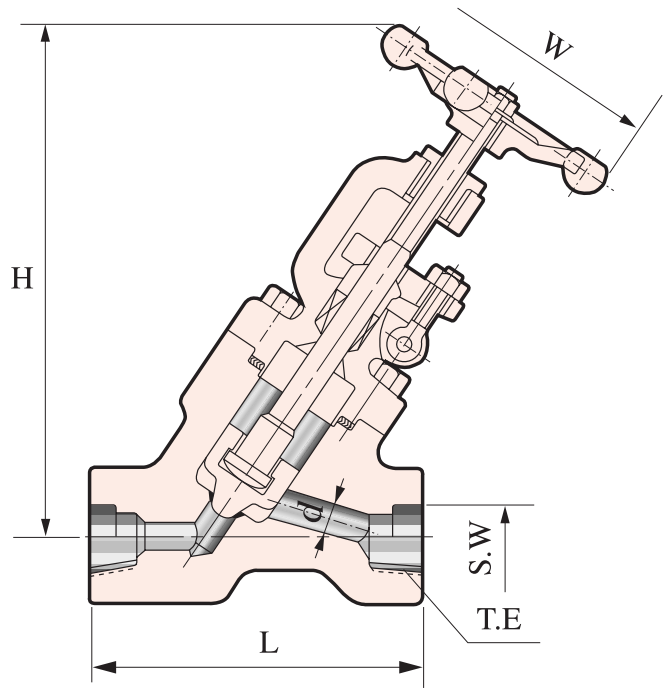
- Welded Bonnet (W.B) or Bolted Bonnet (B.B).
- Compact Outside Screw & Yoke.
- Socket Weld (S.W) or Threaded End (T.E).
- Integral Stellite Seat.

Specifications:

- Basic Design: **ANSI B16.34**
- Socket Weld End (S.W): **ANSI B16.11**
- Threaded End (T.E): **ANSI B1.20.1**
- Test and Inspect: **API-598**
- Standard Material: **See Page 9**



OS & Y W.B



OS & Y B.B

Dimensions and Weights									
Normal Diameter		inch	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	
d	Class 800	inch	0.51	0.71	0.94	1.14	1.46	1.81	
		mm	13	18	24	29	37	46	
	Class 1500	inch	0.51	0.51	0.75	11.02	11.02	1.49	
		mm	13	13	19	28	28	38	
L	Class 800	inch	3.86	4.37	4.72	5.51	5.51	6.69	
		mm	98	111	120	140	140	170	
	Class 1500	inch	5.51	5.51	5.51	7.00	7.00	8.50	
		mm	140	140	140	178	178	216	
H (OPEN)	Class 800	inch	6.89	8.46	10.00	12.00	12.00	14.37	
		mm	175	215	254	305	305	365	
	Class 1500	inch	6.69	7.68	9.25	10.94	10.94	12.20	
		mm	170	195	235	278	278	310	
W	Class 800	inch	3.94	4.92	6.30	6.30	7.09	7.87	
		mm	100	125	160	160	180	200	
	Class 1500	inch	3.94	4.92	6.30	7.09	7.09	7.87	
		mm	100	125	160	180	180	200	
Weight	B.B	Class 800	lb	10.12	10.12	16.72	21.56	30.14	30.80
			kg	4.6	4.6	7.6	9.8	13.7	14.0
	W.B	Class 800	lb	7.70	8.36	14.52	18.70	24.86	27.50
			kg	3.5	3.8	6.5	8.5	11.30	12.5
		Class 1500	lb	9.90	13.42	16.72	21.56	31.90	45.76
			kg	4.5	6.1	7.6	9.8	14.5	20.8

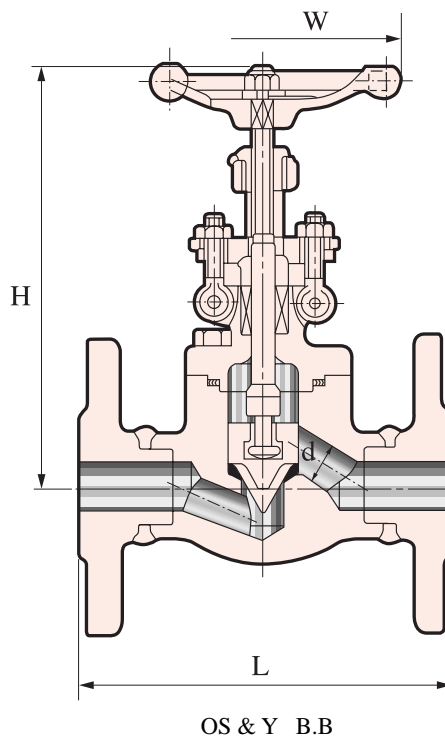
Class 150 / 300 / 600 Forged Steel Needle Globe Valves

Features:

- Bolted Bonnet (B.B).
- Reduced Port.
- Spiral Wound Gasket of Stainless Steel.
- Flanged End.
- Compact Outside Screw & Yoke.
- Needle Point Flow Control.
- Integral Stellite Seat.

Specifications:

- Basic Design: **API-602 & ANSI B16.34**
- Face to Face: **ANSI B16.10**
- Flanged End: **ANSI B16.5**
- Test and Inspect: **API-598**
- Standard Material: **See Page 9**



Dimensions and Weights

Normal Diameter		inch	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
d	inch	0.39	0.51	0.71	0.94	1.14	1.46	
	mm	10	13	18	24	29	37	
L	CLASS 150	inch	4.25	4.62	5.00	5.51	6.50	8.00
		mm	108	117	127	140	165	203
	CLASS 300	inch	6.0	7.0	8.0	8.5	9.0	10.5
		mm	152	178	203	216	229	267
	CLASS 600	inch	6.5	7.5	8.5	9.0	9.5	11.5
		mm	165	190	216	229	241	292
H (OPEN)		inch	6.93	6.93	8.35	9.06	10.00	11.57
		mm	176	176	212	230	254	294
W		inch	3.94	3.94	4.92	6.30	6.30	7.09
		mm	100	100	125	160	160	180
WEIGHT	CLASS 150	lb	7.92	11.00	14.52	21.56	26.40	33.00
		kg	3.6	5.0	6.6	9.8	12.0	15.0
	CLASS 300	lb	8.80	11.44	16.50	24.86	36.30	40.04
		kg	4.0	5.2	7.5	11.3	16.5	18.2
	CLASS 600	lb	12.32	15.18	21.56	27.50	40.48	44.00
		kg	5.6	6.9	9.8	12.5	18.4	20.0

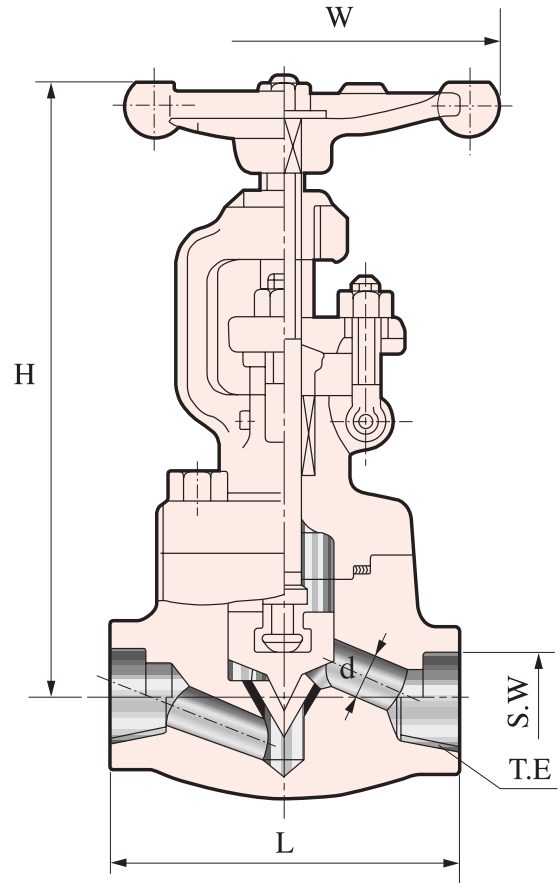
Class 800 / 1500 Forged Steel Needle Globe Valves

Features:

- Bolted Bonnet (B.B).
- Reduced Port.
- Spiral Wound Gasket of Stainless Steel.
- Compact Outside Screw & Yoke.
- Needle Point Flow Control.
- Integral Stellite Seat.
- Socket Weld (S.W) or Threaded End (T.E).

Specifications:

- Basic Design: **API-602 & ANSI B16.34**
- Socket Weld End (S.W): **ANSI B16.11**
- Threaded End (T.E): **ANSI B1.20.1**
- Test and Inspect: **API-598**
- Standard Material: **See Page 9**



OS & Y T.E or S.W

Dimensions and Weights									
Normal Diameter	inch	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
d	inch	0.28	0.39	0.39	0.51	0.71	0.94	1.14	1.46
	mm	7	10	10	13	18	24	29	37
L	inch	3.11	3.11	3.11	3.62	4.37	4.72	5.98	6.77
	mm	79	79	79	92	111	120	152	172
H (OPEN)	inch	6.93	6.93	6.93	6.93	8.35	9.06	10.00	11.57
	mm	176	176	176	176	212	230	254	294
W	inch	3.94	3.94	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	100	100	125	160	160	180
Weight	lb	5.06	4.84	4.40	4.62	9.24	13.42	16.5	24.64
	kg	2.3	2.2	2.0	2.1	4.2	6.1	7.5	11.2

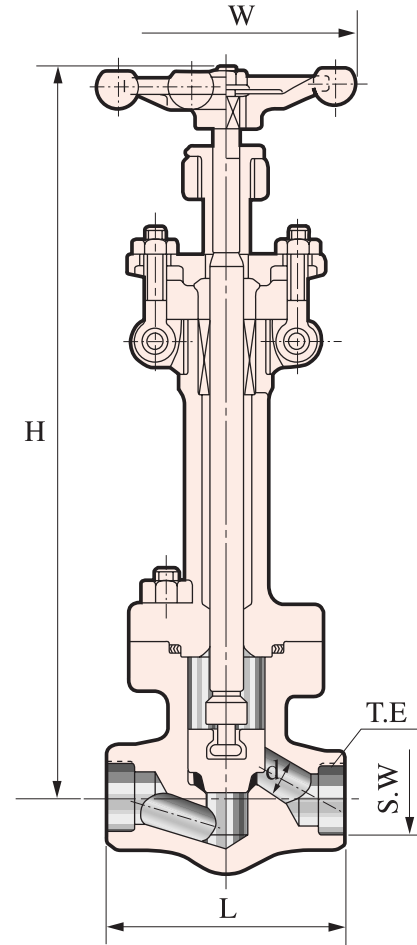
Class 800 Forged Steel Cryogenic Globe Valves

Features:

- Reduced or Full Port.
- Outside Screw & Yoke, Long Bonnet.
- Spiral Wound Gasket of Stainless Steel.
- Socket Weld (S.W) or Threaded End (T.E).
- Integral Stellite Seat.

Specifications:

- Basic Design: **API-602 & ANSI B16.34**
- Socket Weld End (S.W): **ANSI B16.11**
- Threaded End (T.E): **ANSI B1.20.1**
- Test and Inspect: **API-598**
- Standard Material: **LF2, F304(L), F316(L)**

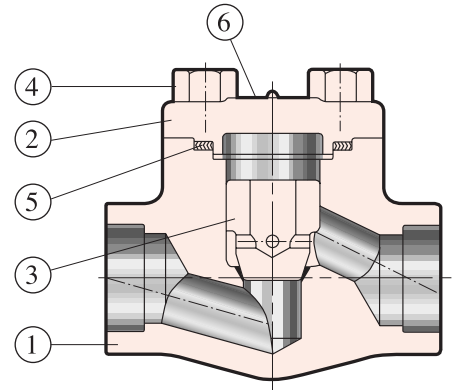


OS & Y B.B

Dimensions and Weights									
Normal Diameter	Reduced Port	inch	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	Full Port	inch	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"
d		inch	0.28	0.39	0.51	0.71	0.94	1.14	1.46
		mm	7	10	13	18	24	29	37
L		inch	3.12	3.62	4.37	4.72	4.72	6.77	7.87
		mm	79	92	111	120	120	172	200
H (OPEN)		inch	13.11	13.26	14.57	14.96	16.41	18.66	21.50
		mm	333	337	370	380	410	474	546
W		inch	3.94	3.94	4.92	6.30	6.30	7.09	7.87
		mm	100	100	125	160	160	180	200
Weight		lb	14.52	14.08	15.84	20.90	29.70	37.40	43.56
		kg	6.6	6.4	7.2	9.5	13.5	17.0	19.8

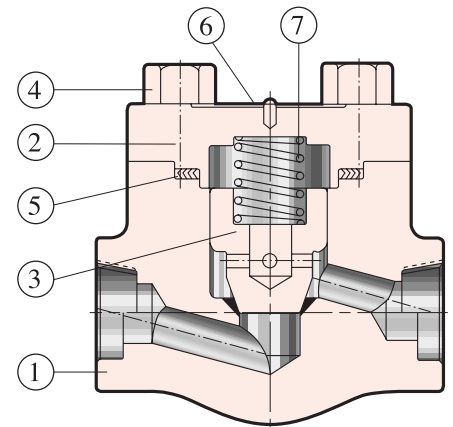
Forged Steel Check Valves

Standard Material Specifications		Piston Check & Lift Check with Spring Valve									
Part No.	Part Name	ASTM Specifications									
		Carbon Steel		Alloy Steel				Stainless Steel			
		A 105	A350	A182							
	(b, c)	LF2	F5	F11(d)	F22	F304(e)	F304L	F316(e)	F316L	F51	
1	Body	A 105	LF2	F5	F11	F22	F304	F304L	F316	F316L	F51
2	Cover	A 105	LF2	F5	F11	F22	F304	F304L	F316	F316L	F51
3	Disc	A276 - 420					304+ STL	304L+ STL	316+ STL	316L+ STL	F51
4	Cover Bolt (a)	A193-B7	A320-L7	A193 - B16			A193 - B8		A193 - B8M		
5	Gasket	304 + Graphite					316 + Graphite				
6	Nameplate	Aluminum					304				
7	Spring	Stainless Steel									

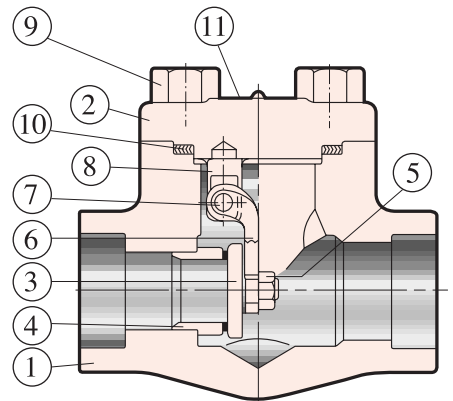


Piston Check Valve

Standard Material Specifications		Swing Check Valve									
Part No.	Part Name	ASTM Specifications									
		Carbon Steel		Alloy Steel				Stainless Steel			
		A 105	A350	A182							
	(b, c)	LF2	F5	F11(d)	F22	F304(e)	F304L	F316(e)	F316L	F51	
1	Body	A 105	LF2	F5	F11	F22	F304	F304L	F316	F316L	F51
2	Cover	A 105	LF2	F5	F11	F22	F304	F304L	F316	F316L	F51
3	Disc	A276 - 420					304+ STL	304L+ STL	316+ STL	316L+ STL	F51
4	Seat Ring	A276-410 + STL					304+ STL	304L+ STL	316+ STL	316L+ STL	F51
5	Retaining Nut	A194 - 2H					A194 - B8				
6	Hing	A276 - CA40					A351 - CF8M				
7	Hing Pin	A276 - 410					A276 - 304				
8	Supporter	A276 - 304					A276 - 304		A276 - 316		
9	Cover Bolt (a)	A193-B7	A320-L7	A193 - B16			A193 - B8		A193 - B8M		
10	Gasket	304 + Graphite					316 + Graphite				
11	Nameplate	Aluminum					304				



Lift Check with Spring Valve



Swing Check Valve

Notes:

- a. Temperature limitations on bolting are as following: Gr B7, 1000°F(538°C); Gr L7, 1000°F(538°C); Gr B16, 1100°F(595°C); Gr B8-CL1, 1500°F(816°C); Gr B8M-CL1, 1500°F(816°C); Gr B8-CL2, 1000°F(538°C); and Gr B8M-CL2, 1000°F(538°C).
- b. Upon prolonged exposure to temperatures above 800°F(425°C), the carbide phase of carbon steel may be converted to graphite.
- c. Only killed steel shall be used above 850°F(455°C).
- d. Use normalized and tempered material only.
- e. At temperatures over 1000°F(538°C), use only when the carbon is 0.04 percent or higher.

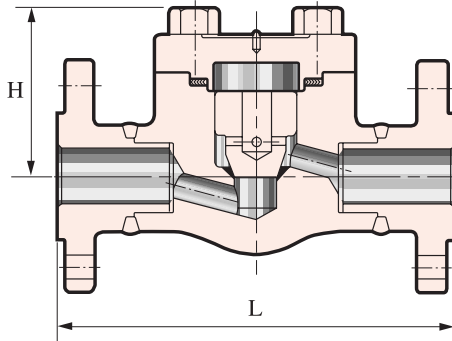
Class 150 / 300 / 600 Forged Steel Check Valves

Features:

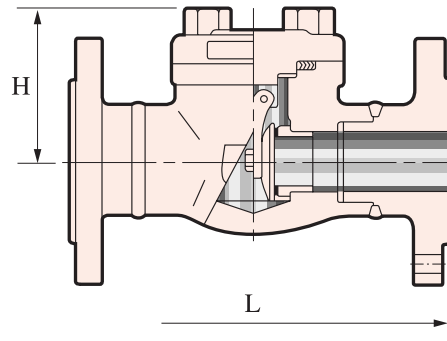
- Bolted Bonnet (B.B).
- Spiral Wound Gasket of Stainless Steel.
- Integral or Renewable Hardfaced Seat.
- Flanged End.
- Piston or Swing Check Valve.

Specifications:

- Basic Design: **API-602 & ANSI B16.34**
- Face to Face: **ANSI B16.10**
- Flanged End: **ANSI B16.5**
- Test and Inspect: **API-598**
- Standard Material: **See Page 18**



Piston Check Valve



Swing Check Valve

Dimensions and Weights

Normal Diameter		inch	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
d	inch	0.51	0.71	0.94	1.14	1.46	1.81	
	mm	13	18	24	29	37	46	
L	CLASS 150	inch	4.25	4.62	5.00	5.50	6.50	8.00
		mm	108	117	127	140	165	203
	CLASS 300	inch	6.0	7.0	8.0	8.5	9.0	10.5
		mm	152	178	203	216	229	267
	CLASS 600	inch	6.5	7.5	8.5	9.0	9.5	11.5
		mm	165	190	216	229	241	292
H	CLASS 150	inch	2.40	2.40	3.11	3.74	4.06	4.65
		mm	61	61	78	95	103	118
	CLASS 300	inch	2.40	3.11	3.74	4.06	4.65	5.31
		mm	61	79	95	103	118	135
	CLASS 600	inch	2.40	3.11	3.74	4.06	4.65	5.31
		mm	61	79	95	103	118	135
WEIGHT	CLASS 150	lb	5.72	7.48	9.68	18.04	19.80	27.72
		kg	2.6	3.4	4.4	8.2	9.0	12.6
	CLASS 300	lb	5.94	8.14	10.34	19.36	21.12	30.14
		kg	2.7	3.7	4.7	8.8	9.6	13.7
	CLASS 600	lb	6.60	8.80	12.76	20.90	22.00	34.32
		kg	3.0	4.0	5.8	9.5	10.0	15.6

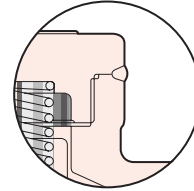
Class 800 Forged Steel Check Valves

Features:

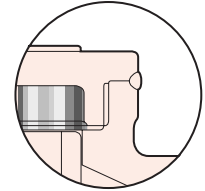
- Reduced or Full Port.
- Piston or Swing Check Valve.
- Bolted Bonnet (B.B) or Welded Bonnet (W.B).
- Spiral Wound Gasket of Stainless Steel.
- Socket Weld (S.W) or Threaded End (T.E).
- Renewable or Integral Hardfaced Seat.

Specifications:

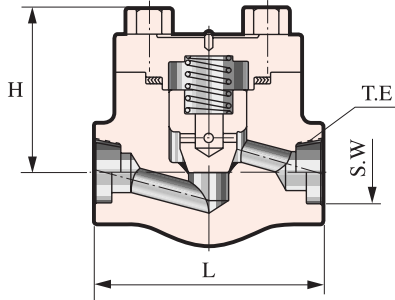
- Basic Design: **API-602 & ANSI B16.34**
- Socket Weld End (S.W): **ANSI B16.11**
- Threaded End (T.E): **ANSI B1.20.1**
- Test and Inspect: **API-598**
- Standard Material: **See Page 18**



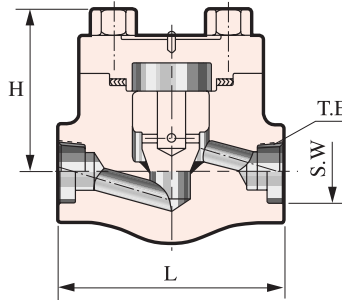
Lift Check with Spring Valve W.B



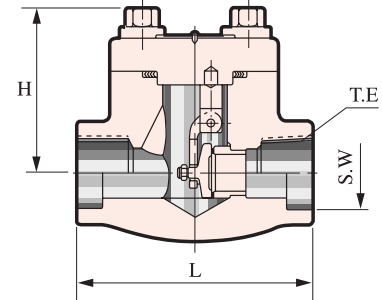
Piston Check Valve W.B



Lift Check with Spring Valve B.B



Piston Check Valve B.B



Swing Check Valve B.B

Dimensions and Weights

Piston Check Valve

Normal Diameter	Reduced Port	inch	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	Full Port	inch	-	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"
d	inch	0.28	0.39	0.51	0.71	0.94	1.14	1.46	
	mm	7	10	13	18	24	29	37	
L	inch	3.12	3.12	3.62	4.37	4.72	5.98	6.8	
	mm	79	79	92	111	120	152	172	
H	inch	2.40	2.40	2.56	3.11	3.74	4.06	4.56	
	mm	61	61	65	79	95	103	118	
Weight	lb	3.08	2.64	3.08	5.06	8.58	12.3	19.6	
	kg	1.4	1.2	1.4	2.3	3.9	5.6	8.9	

Swing Check Valve

Normal Diameter	Reduced Port	inch	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	Full Port	inch	-	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"
d	inch	0.28	0.39	0.51	0.71	0.94	1.14	1.46	
	mm	7	10	13	18	24	29	37	
L	inch	3.12	3.12	3.62	4.37	4.72	4.72	5.51	
	mm	79	79	92	111	120	120	140	
H	inch	2.40	2.40	3.07	3.31	3.98	4.72	5.24	
	mm	61	61	78	84	101	120	133	
Weight	lb	2.64	2.20	2.42	4.18	7.48	9.90	16.06	
	kg	1.2	1.0	1.1	1.9	3.4	4.5	7.3	

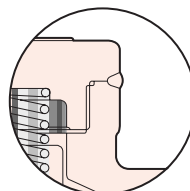
Class 1500 Forged Steel Check Valves

Features:

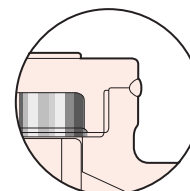
- Reduced or Full Port.
- Lift, Piston or Swing Check Valve.
- Bolted Bonnet (B.B) or Welded Bonnet (W.B).
- Spiral Wound Gasket of Stainless Steel.
- Socket Weld (S.W) or Threaded End (T.E).
- Renewable or Integral Hardfaced Seat.

Specifications:

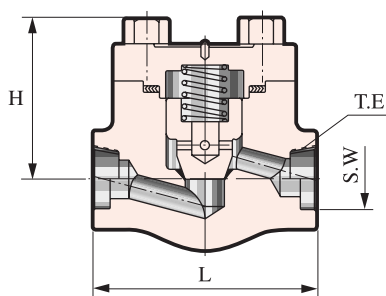
- Basic Design: **API-602 & ANSI B16.34**
- Socket Weld End (S.W): **ANSI B16.11**
- Threaded End (T.E): **ANSI B1.20.1**
- Test and Inspect: **API-598**
- Standard Material: **See Page 18**



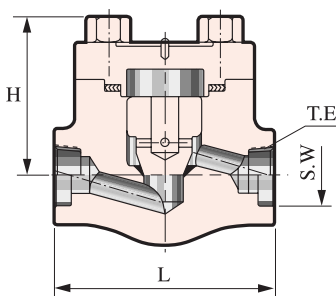
Lift Check with Spring Valve W.B



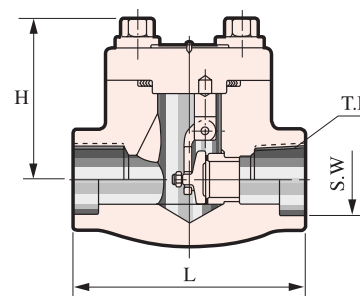
Piston Check Valve W.B



Lift Check with Spring Valve B.B



Piston Check Valve B.B



Swing Check Valve B.B

Dimensions and Weights

Piston Check / Lift Check Valve

Normal Diameter	Reduced Port	inch	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	Full Port	inch	-	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"
d	inch	0.28	0.39	0.51	0.71	0.94	1.14	1.46	
	mm	7	10	13	18	24	29	37	
L	inch	3.62	4.37	4.37	4.72	5.98	6.77	7.87	
	mm	92	111	111	120	152	172	200	
H	inch	2.56	3.12	3.12	3.82	4.09	4.72	5.47	
	mm	65	79	79	97	104	120	139	
Weight	lb	6.60	6.60	7.48	10.56	15.18	23.54	32.12	
	kg	3.0	3.0	3.4	4.8	6.9	10.7	14.6	

Swing Check Valve

Normal Diameter	Reduced Port	inch	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	Full Port	inch	-	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"
d	inch	0.28	0.39	0.51	0.71	0.94	1.14	1.46	
	mm	7	10	13	18	24	29	37	
L	inch	3.62	4.37	4.37	4.72	4.72	5.51	7.00	
	mm	92	111	111	120	120	140	178	
H	inch	3.12	3.12	3.12	3.82	4.13	4.72	5.51	
	mm	79	79	79	97	105	120	140	
Weight	lb	6.82	6.60	7.92	9.46	13.42	19.4	27.72	
	kg	3.1	3.0	3.6	4.3	6.1	8.8	12.6	

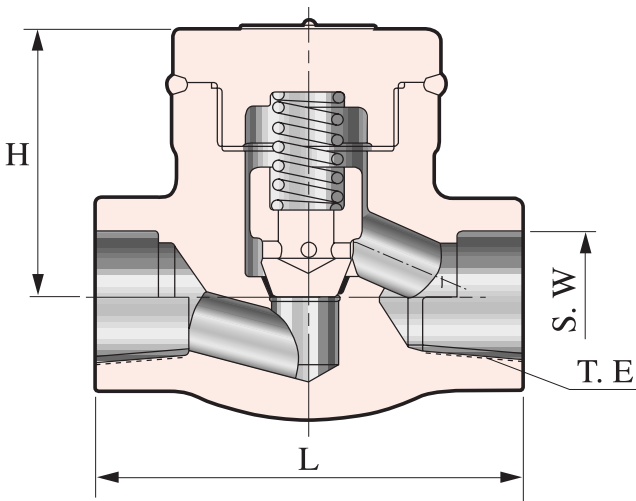
Class 2500 Forged Steel Check Valves

Features:

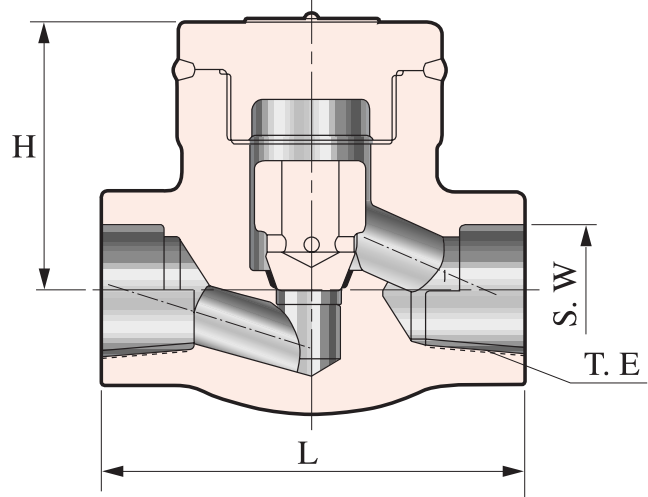
- Lift or Piston Check Valve.
- Welded Bonnet (W.B).
- Socket Weld (S.W) or Threaded End (T.E).
- Integral Hardface Seat.

Specifications:

- Basic Design: **API-602 & ANSI B16.34**
- Socket Weld End (S.W): **ANSI B16.11**
- Threaded End (T.E): **ANSI B1.20.1**
- Test and Inspect: **API-598 or ANSI B16.34**
- Standard Material: **See Page 18**



Lift Check With Spring Valve W.B



Piston Check Valve W.B

Dimensions and Weights

Normal Diameter	inch	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
d	inch	0.39	0.51	0.71	0.94	1.14	1.46
	mm	10	13	18	24	29	37
L	inch	7.32	7.32	7.32	9.13	9.13	10.98
	mm	186	186	186	232	232	279
H	inch	3.12	3.90	4.33	4.33	6.69	6.69
	mm	79	98	110	110	170	170
Weight	lb	14.52	25.96	38.72	37.18	47.3	46.86
	kg	6.6	11.8	17.6	16.9	21.5	21.3

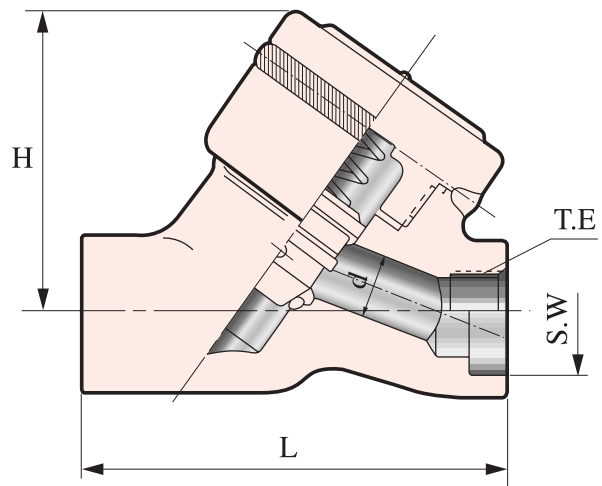
Class 800 / 1500 Forged Steel Y-Pattern Check Valves

Features:

- Lift Check Valve.
- Welded Bonnet (W.B).
- Socket Weld (S.W) or Threaded End (T.E).
- Integral Hardfaced Seat.

Specifications:

- Basic Design: **API-602 & ANSI B16.34**
- Socket Weld End (S.W): **ANSI B16.11**
- Threaded End (T.E): **ANSI B1.20.1**
- Test and Inspect: **API-598**
- Standard Material: **See Page 18**



Lift Check With Spring Valve W.B

Dimensions and Weights									
Normal Diameter		inch	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
d	Class 800	inch	0.39	0.51	0.71	0.94	1.14	1.46	1.81
		mm	10	13	18	24	29	37	46
	Class 1500	inch	0.39	0.51	0.67	0.91	1.18	1.46	1.83
		mm	10.0	13.0	17.0	23.0	30.0	37.0	46.5
L	Class 800	inch	3.86	3.86	4.33	4.72	5.51	1.51	6.69
		mm	98	98	110	120	140	140	170
	Class 1500	inch	4.01	4.01	4.01	5.12	5.90	7.48	7.48
		mm	102	102	102	130	150	190	190
H	Class 800	inch	3.30	3.30	3.30	4.01	4.40	4.49	5.71
		mm	84	84	84	102	114	114	145
	Class 1500	inch	3.54	3.54	3.98	4.92	5.19	5.63	7.99
		mm	90	90	101	125	132	143	203
Weight	Class 800	lb	6.60	6.38	8.14	14.30	18.70	21.10	23.76
		kg	3.0	2.9	3.7	6.5	8.5	9.6	10.8
	Class 1500	lb	7.04	7.04	9.02	15.84	23.10	25.5	26.3
		kg	3.2	3.2	4.1	7.2	10.5	11.6	12.0