

K-val[®] *Korea valve
Engineering solutions*

OSV
Forged Steel Valves
Technical book

Principles Of Company · General Introduction · Company History

About the company

OS Valves (OSV) is a subsidiary of OS Company. OSV has been inspiring our employees to think from outside of the box and to come up with innovative ideas.

When we first started this new business, we promised ourselves that we would create and produce products that all customers can trust. To continue this, we constantly need to be on the edge of ourselves and create high quality products that we can be proud of.

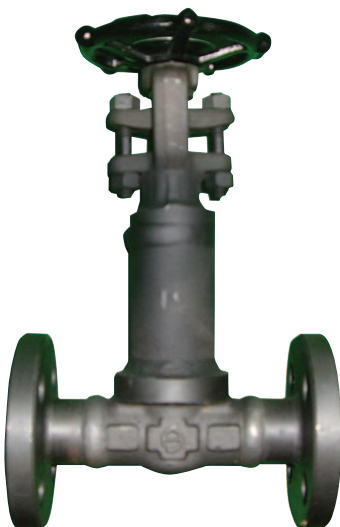
Technology

The goal for OS Valves is to put a quality product in every field. We produce our Valves only with the highest quality materials, so that we can guarantee that all of our products will have a long sustainability.

We can offer a good competitive price to the market using our efficient technology and relationship with other collaborators.

Manufacturing

OS valves are manufactured on modern machine tools and efficient production lines in order to offer high volume capacity. Besides, we also put a genuine effort to assure the highest possible quality of the valves. In every step of the manufacturing processes, all our products are put through strict inspections according to ASME and ANSI so that we can meet the very demanding requirements of our clients.





Product list

API 602, ANSI B16.34

BS 5352

Gate Valves

SIZE	1/4" - 2 "
CLASS	#150 - #2500
MATERIAL	Carbon Steel, Low Alloys, Stainless Steel, High Alloys
BODY TO BONNET	BB, WB
BORE	Standard & Full bore
END CONNECTION	NPT, SW, BW, RF, FF, RTJ

Globe Valves

SIZE	1/4" - 2 "
CLASS	#150 - #2500
MATERIAL	Carbon Steel, Low Alloys, Stainless Steel, High Alloys
BODY TO BONNET	BB, WB
BORE	Standard & Full bore
END CONNECTION	NPT, SW, BW, RF, FF, RTJ

Check Valves

SIZE	1/4" - 2 "
CLASS	#150 - #2500
MATERIAL	Carbon steel, Low Alloys, Stainless Steel, High Alloys
BODY TO BONNET	BB, WB
BORE	Standard & Full bore
END CONNECTION	NPT, SW, BW, RF, FF, RTJ

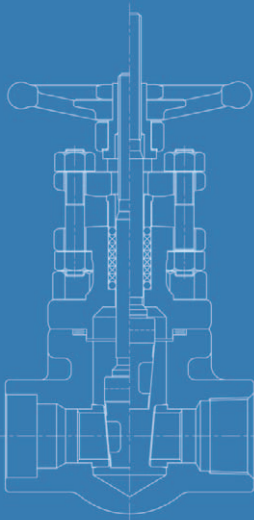
Bellows Seal Valves

SIZE	1/4" - 2 "
CLASS	#150 - #1500
MATERIAL	Carbon Steel, Low Alloys, Stainless Steel, High Alloys
BORE	Standard & Full bore
END CONNECTION	NPT, SW, BW, RF, FF, RTJ

Cryogenic Valves

SIZE	1/4" - 2 "
MATERIAL	Stainless Steel
BODY TO BONNET	BB, WB
BORE	Standard & Full bore
END CONNECTION	NPT, SW, BW, RF, FF, RTJ

Gate Valves



■ Features

- Approved by API and ANSI standards - marked on the nameplate.
- Specially designed hand wheel - the nameplate is kept as small as possible to avoid cutting fingers.
- Use of high quality materials - no copper alloys and asbestos material are used.
- Body bonnets joints with spiral wound gasket for optimum sealing - strong bonnet designed for easy and low cost maintenance.
- Renewable stellite seat rings for long service - different materials available on your request.
- Tested and qualified at various pressures depending on the valve sizes.
- Available in full bore and standard bore depending on your requests - the port size ranges from $\frac{1}{4}$ inch to 2 inch.
- Externally mounted gland bolts - greater strength, fastened with screws for easy replacement and maintenance when damaged.
- Can be customized - we are pleased to make them for you!

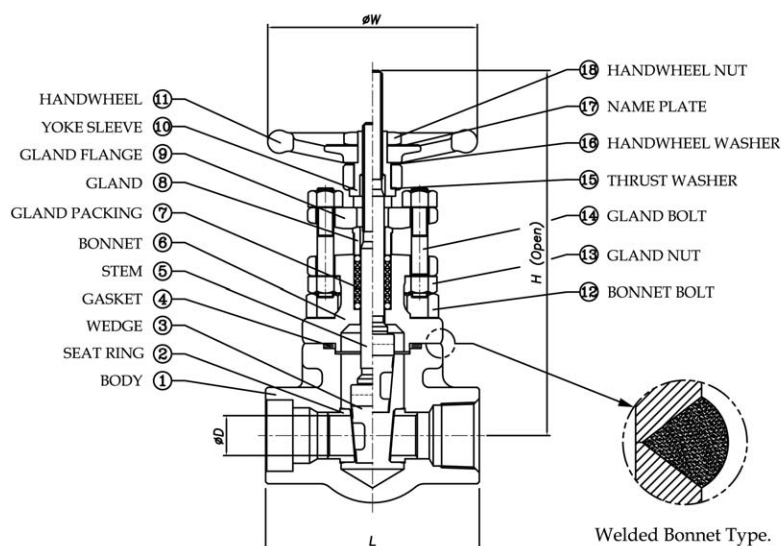
The gate valve is used for opening and closing of a pipeline. The fluid or gas is stopped by a solid wedge; here the wedge (or disc) is opened or closed with a hand wheel nut.

The area where the wedge is connected to the body, the seat area, is hard-faced (HF) to prevent the leakage and to minimize the friction loss: HF means that the area is smoothened with Stellite 6 (we also use other HF materials when preferred).

The body of the valve is covered with a bonnet, which is bolted or welded on the body. The bonnet provides leak-proof closure for the valve body.

Our gate valves are provided with threaded ends, normal ends, socket welded ends, butt-welded ends, raised face, flat face and ring type joints. Both full size and standard size bores are available.

CLASS 800/1500 Standard Bore & Full Bore. SW/NPT/BW Ends.



Basic Material List

Body	A105
Seat Ring	A276-410+STL
Wedge	A743-CA40
Gasket	Graphite+316L
Stem	A274-410
Bonnet	A105
Gland Packing	Graphite
Gland	SS304
Gland Flange	A105
Yoke Sleeve	A582-416
Handwheel	Carbon Steel
Bonnet Bolt	A193-B7
Gland Nut	A194-2H
Gland Bolt	A193-B7
Thrust Washer	A240-301
Name Plate	Aluminium
Handwheel Nut	Carbon Steel

Class 800 ■ Bolted/Welded Bonnet Type.

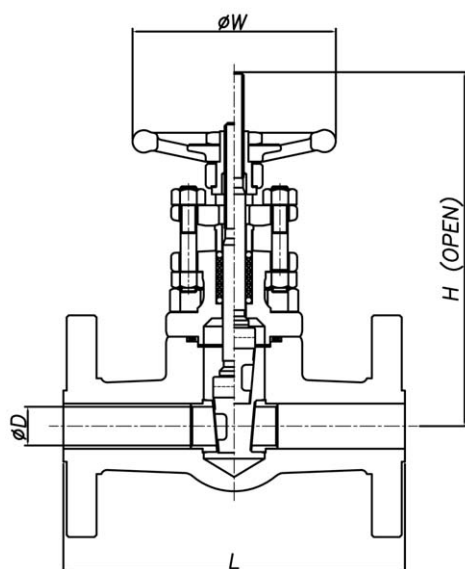
Full Bore.	-		1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2	
Standard Bore.	1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2		-	
L(mm/in)	74	2.91	74	2.91	74	2.91	86	3.39	102	4.0	116	4.57	140	5.51	203	8.0
H(mm/in)	142	5.59	142	5.59	142	5.59	146	5.75	174	6.85	227	8.94	259	10.2	305	12.0
ϕD (mm/in)	6.5	0.26	9.5	0.37	9.5	0.37	12.5	0.49	19.0	0.75	30.0	1.18	38.0	1.5	48.0	1.89
ϕW (mm/in)	82	3.23	82	3.23	82	3.23	100	3.94	100	3.94	140	5.51	160	6.3	200	7.87
Wt.(kg)	1.6		1.5		1.5		1.8		2.6		5.4		8.3		11.4	

Class 1500 ■ Bolted/Welded Bonnet Type.

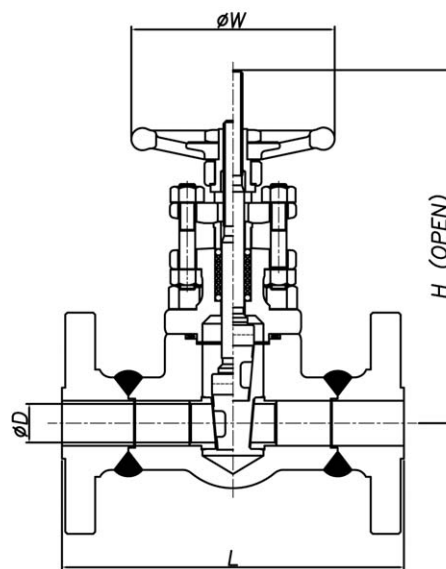
Full Bore.	-		1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2	
Standard Bore.	1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2		-	
L(mm/in)	74	2.91	86	3.39	86	3.39	102	4.0	116	4.57	140	5.51	203	8.0	203	8.0
H(mm/in)	142	5.59	144	5.67	144	5.67	170	6.69	217	8.54	251	9.88	300	11.8	335	13.2
ϕD (mm/in)	6.5	0.26	9.5	0.37	9.5	0.37	12.5	0.49	19.0	0.75	30.0	1.18	38.0	1.5	48.0	1.89
ϕW (mm/in)	82	3.23	100	3.94	100	3.94	100	3.94	140	5.51	160	6.3	200	7.87	200	7.87
Wt.(kg)	1.6		1.8		1.8		2.8		5.5		8.3		11.9		18.9	

Integral & Welded Flanged Ends.

RF, FF, RTJ.



Integral Flanged

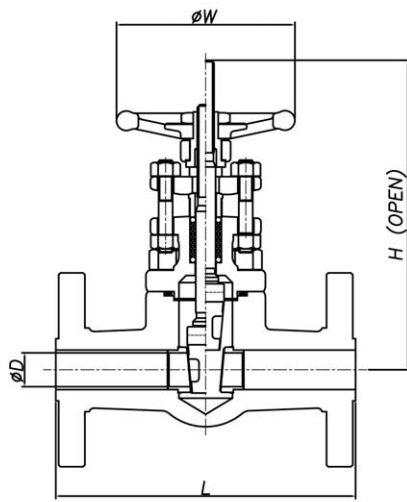


Welded Flanged

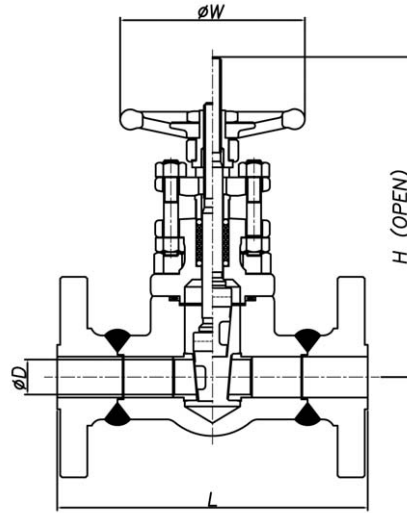
■ ASME/ANSI B 16.10, 16.5

CLASS	Standard Bore.	1/2		3/4		1		1-1/4		1-1/2		2	
150	L(mm/in)	108	4.25	117	4.61	127	5.0	165	6.5	165	6.5	178	7.01
	H(mm/in)	142	5.59	146	5.75	174	6.85	227	8.94	227	8.94	259	10.2
	ϕD (mm/in)	9.5	0.37	12.5	0.49	19.0	0.75	30.0	1.18	30.0	1.18	38.0	1.5
	ϕW (mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	2.7		3.4		5.0		9.2		9.2		12.7	
300	L(mm/in)	140	5.51	152	5.98	165	6.5	190	7.48	190	7.48	216	8.5
	H(mm/in)	142	5.59	146	5.75	174	6.85	227	8.94	227	8.94	259	10.2
	ϕD (mm/in)	9.5	0.37	12.5	0.49	19.0	0.75	30.0	1.18	30.0	1.18	38.0	1.5
	ϕW (mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	3.0		3.7		5.3		9.5		9.5		13.1	
600	L(mm/in)	165	6.5	190	7.48	216	8.5	241	9.49	241	9.49	292	11.5
	H(mm/in)	142	5.59	146	5.75	174	6.85	227	8.94	227	8.94	259	10.2
	ϕD (mm/in)	9.5	0.37	12.5	0.49	19.0	0.75	30.0	1.18	30.0	1.18	38.0	1.5
	ϕW (mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	3.5		4.9		6.7		12.2		12.4		16.5	
900/1500	L(mm/in)	216	8.5	229	9.02	254	10.0	305	12.0	305	12.0	368	14.5
	H(mm/in)	144	5.67	170	6.69	217	8.54	251	9.88	251	9.88	303	11.9
	ϕD (mm/in)	9.5	0.37	12.5	0.49	19.0	0.75	30.0	1.18	30.0	1.18	38.0	1.5
	ϕW (mm/in)	100	3.94	100	3.94	140	5.51	160	6.3	160	6.3	200	7.87
	Wt.(kg)	4.9		6.9		18.5		29.0		28.0		34.0	

Integral & Welded Flanged Ends. RF, FF, RTJ.



Integral Flanged

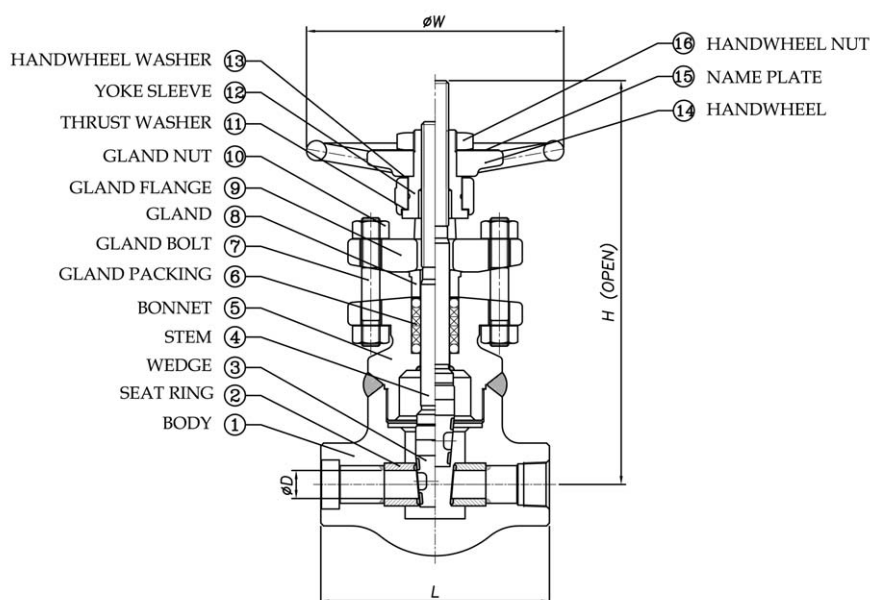


Welded Flanged

■ JIS B 2220, JIS B 2002

CLASS	Standard Bore.	1/2		3/4		1		1-1/4		1-1/2		2	
10K	L(mm/in)	108	4.25	117	4.61	127	5.0	165	6.5	165	6.5	178	7.01
	H(mm/in)	142	5.59	146	5.75	174	6.85	227	8.94	227	8.94	259	10.2
	ϕD (mm/in)	9.5	0.37	12.5	0.49	19.0	0.75	30.0	1.18	30.0	1.18	38.0	1.5
	ϕW (mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	2.7		3.4		5.0		9.2		9.2		12.7	
20K	L(mm/in)	140	5.51	152	5.98	165	6.5	165	6.5	165	6.5	216	8.5
	H(mm/in)	142	5.59	146	5.75	174	6.85	227	8.94	227	8.94	259	10.2
	ϕD (mm/in)	9.5	0.37	12.5	0.49	19.0	0.75	30.0	1.18	30.0	1.18	38.0	1.5
	ϕW (mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	3.0		3.7		5.3		9.5		9.5		13.1	
30K	L(mm/in)	140	5.51	152	5.98	165	6.5	190	7.48	190	7.48	216	8.5
	H(mm/in)	142	5.59	146	5.75	174	6.85	227	8.94	227	8.94	259	10.2
	ϕD (mm/in)	9.5	0.37	12.5	0.49	19.0	0.75	30.0	1.18	30.0	1.18	38.0	1.5
	ϕW (mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	3.2		4.1		6.2		10.7		10.7		14.8	
40K	L(mm/in)	165	6.5	190	7.48	216	8.5	241	9.49	241	9.49	292	11.5
	H(mm/in)	142	5.59	146	5.75	174	6.85	227	8.94	227	8.94	259	10.2
	ϕD (mm/in)	9.5	0.37	12.5	0.49	19.0	0.75	30.0	1.18	30.0	1.18	38.0	1.5
	ϕW (mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	3.5		4.9		6.7		12.2		12.4		16.5	
63K	L(mm/in)	216	8.5	229	9.02	254	10.0	305	12.0	305	12.0	368	14.5
	H(mm/in)	144	5.67	170	6.69	217	8.54	251	9.88	251	9.88	303	11.9
	ϕD (mm/in)	9.5	0.37	12.5	0.49	19.0	0.75	30.0	1.18	30.0	1.18	38.0	1.5
	ϕW (mm/in)	100	3.94	100	3.94	140	5.51	160	6.3	160	6.3	200	7.87
	Wt.(kg)	4.9		6.9		18.5		29.0		28.0		34.0	

CLASS 1500/2500 Standard Bore & Full Bore. SW/NPT/BW Ends.



Basic Material List	
Body	A105N
Seat Ring	A276-410+STL
Wedge	A276-410+STL
Stem	A276-410
Bonnet	A105N
Gland Packing	Graphite
Gland Bolt	A193-B7
Gland	A276-304
Gland Flange	A105N
Gland Nut	A194-2H
Thrust Washer	SS301
Yoke Sleeve	A582-416
Handwheel	Carbon Steel
Name Plate	Aluminium
Handwheel Nut	A194-2H

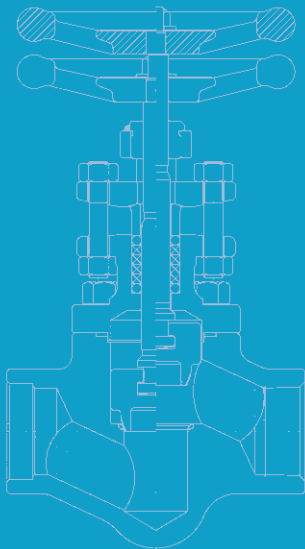
Class 1500 ■ Welded Bonnet Type.

Full Bore.	-		1/2		3/4		1		1-1/4, 1-1/2		2	
Standard Bore.	1/2		3/4		1		1-1/4, 1-1/2		2		-	
L(mm/in)	140	5.5	140	5.5	140	5.5	165	6.5	210	8.3	245	9.6
H(mm/in)	270	10.6	270	10.6	270	10.6	280	11.0	350	13.8	380	15.0
ϕD (mm/in)	13.0	0.5	13.0	0.5	18.0	0.7	23.0	0.9	35.0	1.4	43.0	1.7
ϕW (mm/in)	200	7.9	200	7.9	200	7.9	200	7.9	250	9.8	250	9.8
Wt.(kg)	9.5		9.5		9.2		13.2		22.0		34.0	

Class 2500 ■ Welded Bonnet Type.

Full Bore.	-		1/2		3/4		1		1-1/4, 1-1/2		2	
L(mm/in)	-		140	5.5	140	5.5	165	6.5	210	8.3	245	9.6
H(mm/in)	-		270	10.6	270	10.6	280	11.0	350	13.8	380	15.0
ϕD (mm/in)	-		11.6	0.5	14.6	0.6	19.6	0.8	28.6	1.1	38.1	1.5
ϕW (mm/in)	-		200	7.9	200	7.9	200	7.9	250	9.8	250	9.8
Wt.(kg)	-		9.5		9.2		13.2		22.0		34.0	

Globe Valves



■ Features

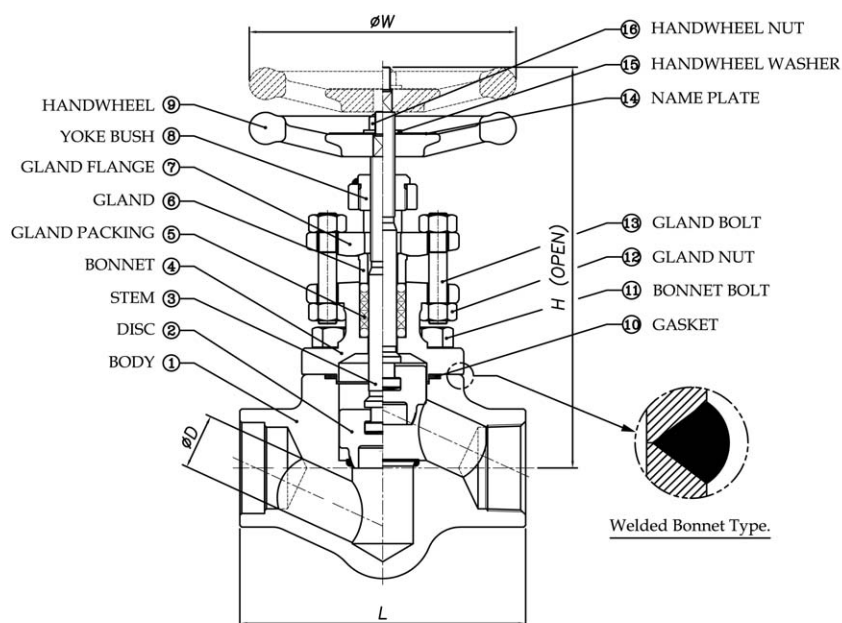
- Approved by API and ANSI standards - marked on the nameplate.
- Specially designed hand wheel - the nameplate is kept as small as possible to avoid cutting fingers.
- Use of high quality materials - no copper alloys and asbestos material are used.
- Body bonnets joints with spiral wound gasket for optimum sealing - strong bonnet designed for easy and low cost maintenance.
- Renewable stellite seat rings for long service - different materials available on your request.
- Tested and qualified at various pressures depending on the valve sizes.
- Available in full bore and standard bore depending on your requests - the port size ranges from $\frac{1}{4}$ inch to 2 inch.
- Externally mounted gland bolts - greater strength, fastened with screws for easy replacement and maintenance when damaged.
- Can be customized - we are pleased to make them for you!

The Globe valve is used for regulating the flow rate in a pipeline. The valve seat in the globe valve is also hard-faced with Stellite 6. The globe valve opens on the same way as the gate valve, with a stem nut, wedge and a hand wheel.

The body of the globe valve is also covered with a bonnet, which is welded or bolted to the body.

Our globe valves are provided with threaded ends, normal ends, socket welded ends, butt welded ends, raised face, flat face, and ring type joints. Both full size and standard size bores are available.

CLASS 800/1500 Standard Bore & Full Bore. SW/NPT/BW Ends.



Basic Material List

Body(STL Seat)	A105
Disc	A743-CA15
Stem	A276-410
Bonnet	A105
Gland Packing	Graphite
Gland	SS304
Gland Flange	A105
Yoke Bush	A582-416
Handwheel	Carbon steel
Gasket	Graphite +316L
Bonnet Bolt	A193-B7
Gland Nut	A194-2H
Gland Bolt	A193-B7
Name Plate	Aluminium
Handwheel Washer	A240-301
Handwheel Nut	Carbon steel

Class 800 ■ Bolted/Welded Bonnet Type.

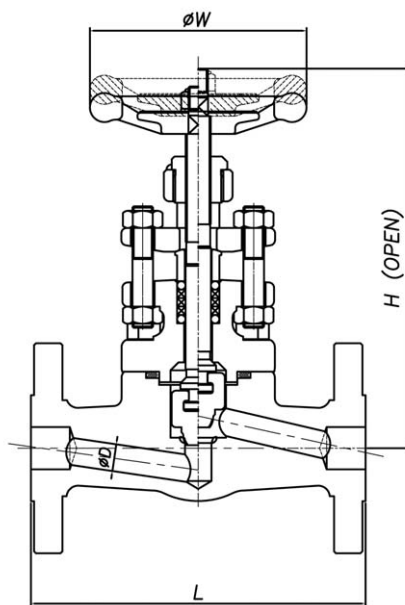
Full Bore.	-		1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2	
Standard Bore.	1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2		-	
L(mm/in)	74	2.91	74	2.91	74	2.91	86	3.39	102	4.0	150	5.91	178	7.0	203	8.0
H(mm/in)	144	5.67	144	5.67	144	5.67	150	5.91	172	6.77	214	8.43	246	9.69	306	12.0
ϕ D(mm/in)	6.5	0.26	9.5	0.37	9.5	0.37	12.5	0.49	17.5	0.69	28.5	1.12	36.5	1.44	46.0	1.81
ϕ W(mm/in)	82	3.23	82	3.23	82	3.23	100	3.94	100	3.94	140	5.51	160	6.3	200	7.87
Wt.(kg)	1.6		1.5		1.5		1.8		2.6		6.0		9.0		13.8	

Class 1500 ■ Bolted/Welded Bonnet Type.

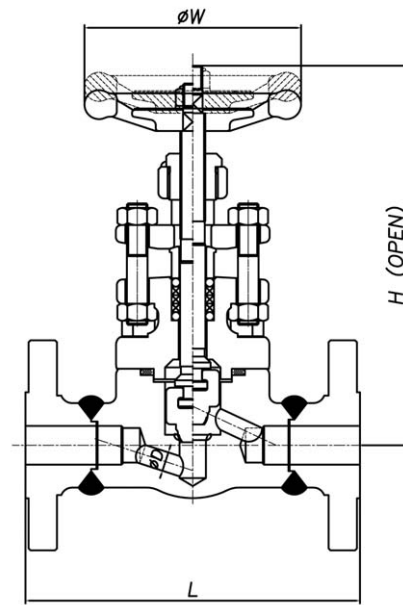
Full Bore.	-		1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2	
Standard Bore.	1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2		-	
L(mm/in)	74	2.91	86	3.39	86	3.39	102	4.0	150	5.91	178	7.0	203	8.0	203	8.0
H(mm/in)	144	5.67	150	5.91	150	5.91	172	6.77	214	8.43	246	9.69	300	11.8	335	12.0
ϕ D(mm/in)	6.5	0.26	8.5	0.33	8.5	0.33	9.5	0.37	14.5	0.57	25.5	1.0	27.5	1.08	38.0	1.5
ϕ W(mm/in)	82	3.23	100	3.94	100	3.94	100	3.94	140	5.51	160	6.3	200	7.87	200	7.87
Wt.(kg)	1.6		2.0		2.0		2.8		6.3		9.3		11.0		18.7	

Integral & Welded Flanged Ends.

RF, FF, RTJ.



Integral Flanged



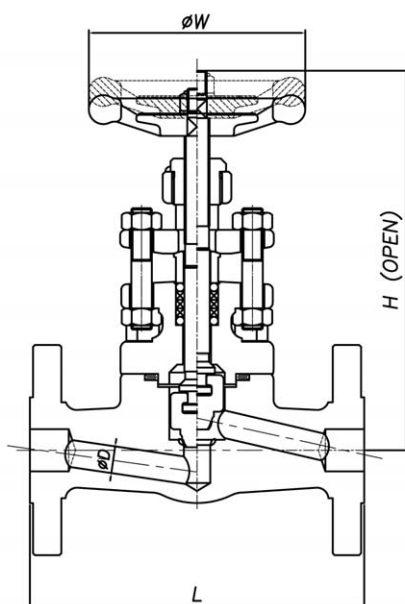
Welded Flanged

■ ASME/ANSI B 16.10, 16.5

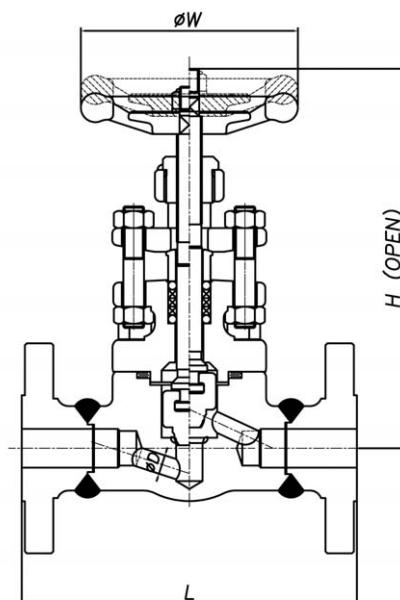
CLASS	Standard Bore.	1/2		3/4		1		1-1/4		1-1/2		2	
150	L(mm/in)	108	4.25	117	4.61	127	5.0	165	6.5	165	6.5	203	7.99
	H(mm/in)	144	5.67	150	5.91	172	6.77	214	8.43	214	8.43	246	9.69
	ϕ D(mm/in)	9.5	0.37	12.5	0.49	17.5	0.69	28.5	1.12	28.5	1.12	36.5	1.44
	ϕ W(mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	2.8		3.5		5.1		9.3		9.3		12.8	
300	L(mm/in)	152	5.98	178	7.01	203	7.99	229	9.02	229	9.02	267	10.5
	H(mm/in)	144	5.67	150	5.91	172	6.77	214	8.43	214	8.43	246	9.69
	ϕ D(mm/in)	9.5	0.37	12.5	0.49	17.5	0.69	28.5	1.12	28.5	1.12	36.5	1.44
	ϕ W(mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	3.1		3.8		5.4		9.6		9.6		13.2	
600	L(mm/in)	165	6.5	190	7.48	216	8.5	241	9.49	241	9.49	292	11.5
	H(mm/in)	144	5.67	150	5.91	172	6.77	214	8.43	214	8.43	246	9.69
	ϕ D(mm/in)	9.5	0.37	12.5	0.49	17.5	0.69	28.5	1.12	28.5	1.12	36.5	1.44
	ϕ W(mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	3.6		5.0		6.8		12.3		12.5		16.6	
900/1500	L(mm/in)	216	8.5	229	9.02	254	10.0	305	12.0	305	12.0	368	14.5
	H(mm/in)	150	5.91	172	6.77	214	8.43	246	9.69	246	9.69	301	11.9
	ϕ D(mm/in)	8.5	0.33	9.5	0.37	14.5	0.57	20.5	0.81	25.5	1.0	27.5	1.08
	ϕ W(mm/in)	100	3.94	100	3.94	140	5.51	160	6.3	160	6.3	200	7.87
	Wt.(kg)	5.0		7.0		18.7		29.2		28.2		34.2	

Integral & Welded Flanged Ends.

RF, FF, RTJ.



Integral Flanged

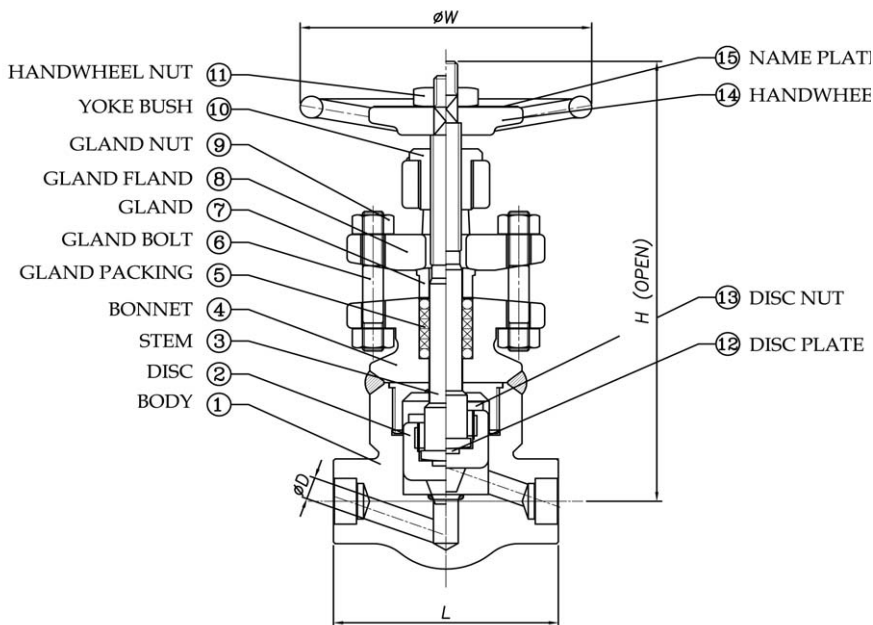


Welded Flanged

■ JIS B 2220, JIS B 2002

CLASS	Standard Bore.	1/2		3/4		1		1-1/4		1-1/2		2	
10K	L(mm/in)	108	4.25	117	4.61	127	5.0	165	6.5	165	6.5	203	7.99
	H(mm/in)	144	5.67	150	5.91	172	6.77	214	8.43	214	8.43	246	9.69
	ϕD (mm/in)	9.5	0.37	12.5	0.49	17.5	0.69	28.5	1.12	28.5	1.12	36.5	1.44
	ϕW (mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	2.8		3.5		5.1		9.3		9.3		12.8	
20K	L(mm/in)	152	5.98	178	7.01	203	7.99	229	9.02	229	9.02	267	10.5
	H(mm/in)	144	5.67	150	5.91	172	6.77	214	8.43	214	8.43	246	9.69
	ϕD (mm/in)	9.5	0.37	12.5	0.49	17.5	0.69	28.5	1.12	28.5	1.12	36.5	1.44
	ϕW (mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	3.1		3.8		5.4		9.6		9.6		13.2	
30K	L(mm/in)	152	5.98	178	7.01	203	7.99	229	9.02	229	9.02	267	10.5
	H(mm/in)	144	5.67	150	5.91	172	6.77	214	8.43	214	8.43	246	9.69
	ϕD (mm/in)	9.5	0.37	12.5	0.49	17.5	0.69	28.5	1.12	28.5	1.12	36.5	1.44
	ϕW (mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	3.3		4.2		5.9		10.1		10.1		14.8	
40K	L(mm/in)	165	6.5	190	7.48	216	8.5	241	9.49	241	9.49	292	11.5
	H(mm/in)	144	5.67	150	5.91	172	6.77	214	8.43	214	8.43	246	9.69
	ϕD (mm/in)	9.5	0.37	12.5	0.49	17.5	0.69	28.5	1.12	28.5	1.12	36.5	1.44
	ϕW (mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	3.6		5.0		6.8		12.3		12.5		16.6	
63K	L(mm/in)	216	8.5	229	9.02	254	10.0	305	12.0	305	12.0	368	14.5
	H(mm/in)	150	5.91	172	6.77	214	8.43	214	8.43	246	9.69	301	11.9
	ϕD (mm/in)	8.5	0.33	9.5	0.37	14.5	0.57	20.5	0.81	25.5	1.0	27.5	1.08
	ϕW (mm/in)	100	3.94	100	3.94	140	5.51	160	6.3	160	6.3	200	7.87
	Wt.(kg)	5.0		7.0		18.7		29.2		28.2		34.2	

CLASS 1500/2500 Standard Bore & Full Bore. SW/NPT/BW Ends.



Basic Material List

Body(STL Seat)	A105
Disc	A743-CA15+STL
Stem	A276-410
Bonnet	A105
Gland Packing	Graphite
Gland Bolt	A193 - B7
Gland	SS304
Gland Flange	A105
Gland Nut	A194-2H
Yoke Bush	A582-416
Handwheel Nut	Carbon steel
Disc Nut	A276-410
Hand wheel	Carbon steel
Name Plate	Aluminium

Class 1500 ■ Welded Bonnet Type.

Full Bore.	-		1/2		3/4		1		1-1/4, 1-1/2		2	
Standard Bore.	1/2		3/4		1		1-1/4, 1-1/2		2		-	
L(mm/in)	140	5.5	140	5.5	140	5.5	165	6.5	210	8.3	245	9.6
H(mm/in)	270	10.6	270	10.6	270	10.6	280	11.0	350	13.8	375	14.8
ϕ D(mm/in)	13.0	0.5	13.0	0.5	18.0	0.7	23.0	0.9	35.0	1.4	43.0	1.7
ϕ W(mm/in)	200	7.9	200	7.9	200	7.9	200	7.9	250	9.8	250	9.8
Wt.(kg)	9.5		9.5		9.2		13.2		21.0		33.0	

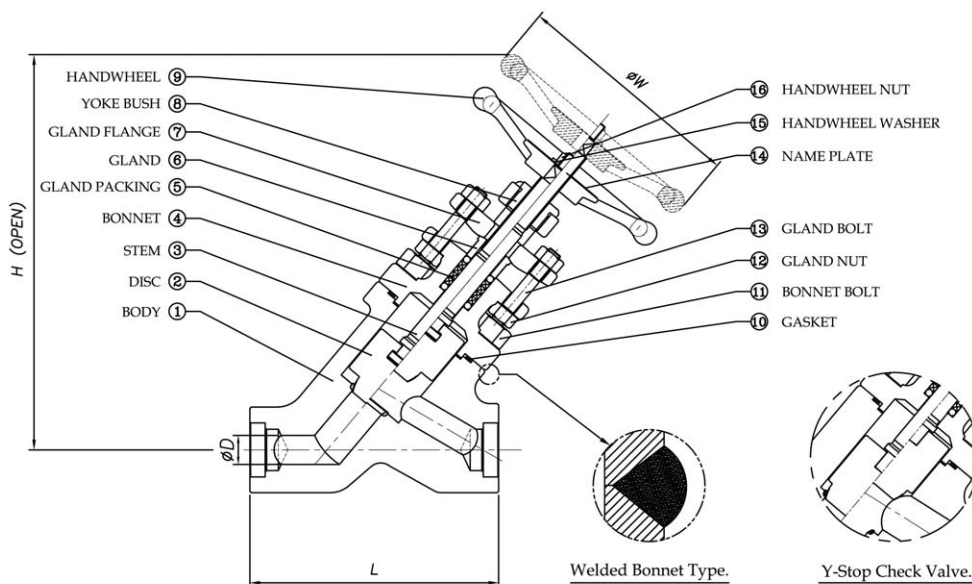
Class 2500 ■ Welded Bonnet Type.

Full Bore.	-		1/2		3/4		1		1-1/4, 1-1/2		2	
L(mm/in)	-		140	5.5	140	5.5	165	6.5	210	8.3	245	9.6
H(mm/in)	-		270	10.6	270	10.6	280	11.0	350	13.8	375	14.8
ϕ D(mm/in)	-		11.5	0.5	15.0	0.6	20.0	0.8	29.0	1.1	38.0	1.5
ϕ W(mm/in)	-		200	7.9	200	7.9	200	7.9	250	9.8	250	9.8
Wt.(kg)	-		9.5		9.2		13.2		21.0		33.0	

Y-Type Globe Valves

CLASS 800/1500 Standard Bore & Full Bore.

SW/NPT/BW Ends.



Basic Material List

Body(STL Seat)	A105
Disc	A743-CA15
Stem	A276-410
Bonnet	A105
Gland Packing	Graphite
Gland	SS304
Gland Flange	A105
Yoke Bush	A582-416
Handwheel	Carbon steel
Gasket	Graphite +316L
Bonnet Bolt	A193-B7
Gland Nut	A194-2H
Gland Bolt	A193-B7
Name Plate	Aluminium
Handwheel Washer	A240-301
Handwheel Nut	Carbon steel

Class 800

■ Bolted/Welded Bonnet Type.

Full Bore.	-		1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2	
Standard Bore.	1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2		-	
L(mm/in)	74	2.91	74	2.91	74	2.91	86	3.39	102	4.0	150	5.91	178	7.0	203	8.0
H(mm/in)	150	5.91	150	5.91	150	5.91	163	6.42	180	7.09	240	10.0	274	12.0	320	14.0
ø D(mm/in)	6.5	0.26	9.5	0.37	9.5	0.37	12.5	0.49	17.5	0.69	28.5	1.12	36.5	1.44	46.0	1.81
ø W(mm/in)	82	3.23	82	3.23	82	3.23	100	3.94	100	3.94	140	5.51	160	6.3	200	7.87
Wt.(kg)	1.9		1.8		1.8		2.1		3.5		6.7		9.7		13.7	

Class 1500

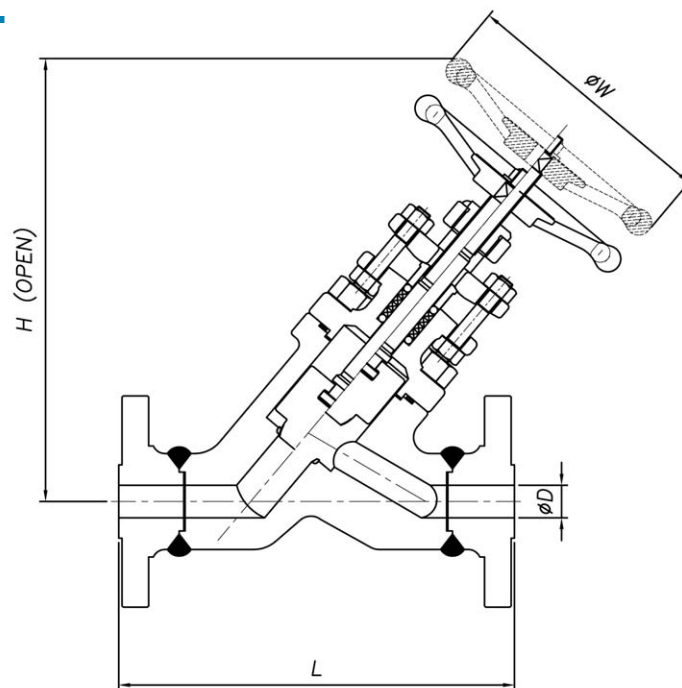
■ Bolted/Welded Bonnet Type.

Full Bore.	-		1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2	
Standard Bore.	1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2		-	
L(mm/in)	74	2.91	86	3.39	86	3.39	102	4.0	150	5.91	178	7.0	203	8.0	-	-
H(mm/in)	150	5.91	150	5.91	160	6.3	175	6.89	230	10.0	270	12.0	310	14.0	-	-
ø D(mm/in)	6.5	0.26	8.5	0.33	8.5	0.33	9.5	0.37	14.5	0.57	25.5	1.0	27.5	1.08	-	-
ø W(mm/in)	82	3.23	100	3.94	100	3.94	100	3.94	140	5.51	160	6.3	200	7.87	-	-
Wt.(kg)	1.6		2.2		2.1		3.6		6.8		9.8		14.3		-	

Y-Type Globe Valves

Welded Flanged Ends.

RF, FF, RTJ.

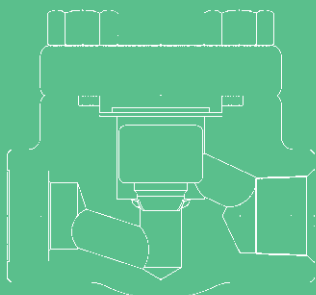


Welded Flanged

■ ASME/ANSI B 16.10, 16.5

CLASS	Standard Bore.	1/2		3/4		1		1-1/4		1-1/2		2	
150	L(mm/in)	140	5.51	152	5.98	165	6.5	203	7.99	203	7.99	229	9.02
	H(mm/in)	150	5.91	163	6.42	180	7.09	240	9.4	240	9.4	274	10.8
	Ø D(mm/in)	9.5	0.37	12.5	0.49	17.5	0.69	28.5	1.12	28.5	1.12	36.5	1.44
	Ø W(mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	2.8		3.5		5.1		9.3		9.3		12.8	
300	L(mm/in)	152	5.98	178	7.01	203	7.99	229	9.02	229	9.02	267	10.5
	H(mm/in)	150	5.91	163	6.42	180	7.09	240	9.4	240	9.4	274	10.8
	Ø D(mm/in)	9.5	0.37	12.5	0.49	17.5	0.69	28.5	1.12	28.5	1.12	36.5	1.44
	Ø W(mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	3.1		3.8		5.4		9.6		9.6		13.2	
600	L(mm/in)	165	6.5	190	7.48	216	8.5	241	9.49	241	9.49	292	11.5
	H(mm/in)	150	5.91	163	6.42	180	7.09	240	9.4	240	9.4	274	10.8
	Ø D(mm/in)	9.5	0.37	12.5	0.49	17.5	0.69	28.5	1.12	28.5	1.12	36.5	1.44
	Ø W(mm/in)	82	3.23	100	3.94	100	3.94	140	5.51	140	5.51	160	6.3
	Wt.(kg)	3.6		5.0		6.8		12.3		12.5		16.6	
900/1500	L(mm/in)	216	8.5	229	9.02	254	10.0	305	12.0	305	12.0	368	14.5
	H(mm/in)	160	6.3	175	6.89	230	9.1	270	10.6	270	10.6	312	12.2
	Ø D(mm/in)	8.5	0.33	9.5	0.37	14.5	0.57	20.5	0.81	25.5	1.0	27.5	1.08
	Ø W(mm/in)	100	3.94	100	3.94	140	5.51	160	6.3	160	6.3	200	7.87
	Wt.(kg)	5.0		7.0		18.7		29.2		28.2		34.2	

Piston Check Valves



■ Features

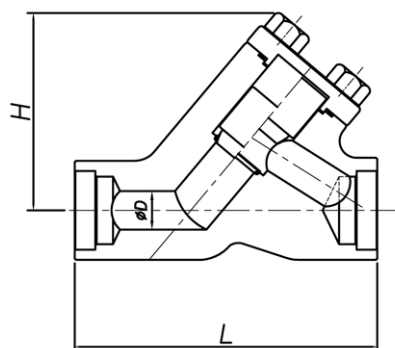
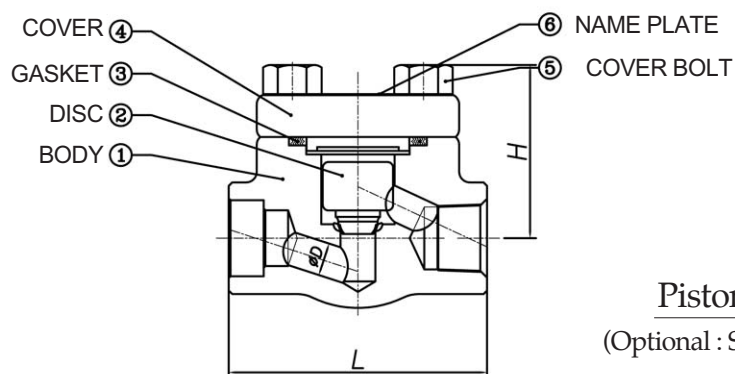
- Specially designed and patented hinge - better flow rate and less pressure loss.
- Approved by API and ANSI standards - marked on the nameplate.
- Hard faced seat ring - better closure.
- Externally mounted gland bolts - greater strength, fastened with screws for easy replacement and maintenance when damaged.
- Use of high quality materials - no copper alloys and asbestos material are used.
- Tested and qualified at various pressures depending on the valve sizes.
- Tapered disc and seats - minimize slamming of the disc, longer wear and less maintenance
- Can be customized - we are pleased to make them for you!
- Available in full bore and standard bore depending on your requests - the port size ranges from $\frac{1}{4}$ inch to 2 inch.

■ Y-lift and lift check valve

Check valves are used in apparatus plumbing to prevent liquids from flowing backwards through the system. This valve works with pressure difference; the disc (or the lift) can be lifted up off its seat by higher pressure of inlet or upstream fluid to allow flow to the outlet or downstream side.

All the check valves can have a Hard Faced seat-ring / area: Hard Facing of the disc or lift is optional. to prevent the leakage and minimize the friction loss. But welded. socket welded ends with full-or standard bore are available.

CLASS 800/1500 Standard Bore & Full Bore. SW/NPT/BW Ends.



Basic Material List

Body(STL Seat)	A105
Disc	A276-410
Gasket	Graphite+316L
Cover	A105
Cover Bolt	A193-B7
Name Plate	Aluminium

■ Lift Check / Y-Lift Check

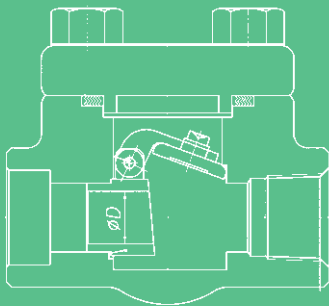
Class	Full Bore.	-		1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2	
	Standard Bore.	1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2		-	
800	L(mm/in)	74	2.9	74	2.9	74	2.9	86	3.4	102	4.0	150	5.9	178	7.0	203	8.0
	H(mm/in)	48	1.9	48	1.9	48	1.9	51	2.0	65	2.5	79	3.1	100	3.9	125	4.9
	ø D(mm/in)	9.9	0.4	9.9	0.4	9.9	0.4	12.7	0.5	19.0	0.7	30.0	1.2	38.0	1.5	46.0	1.8
	Wt.(kg)	1.0		1.0		1.0		1.5		2.0		4.1		6.4		6.4	

■ Lift Check / Y-Lift Check

Class	Full Bore.	-		1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2	
	Standard Bore.	1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2		-	
1500	L(mm/in)	86	3.4	86	3.4	86	3.4	102	4.0	150	5.9	178	7.0	203	8.0	-	
	H(mm/in)	51	2.0	51	2.0	51	2.0	65	2.5	79	3.1	100	3.9	125	4.9	-	
	ø D(mm/in)	8.5	0.3	8.5	0.3	8.5	0.3	9.5	0.4	14.5	0.6	25.5	1.0	27.5	1.1	-	
	Wt.(kg)	1.5		1.5		1.5		2.0		4.1		6.4		9.8		-	

Swing Check Valves

(실용신안 제432125호)



Swing Check 밸브

■ 에너지 효율의 극대화!

현재의 스윙체크 밸브는 디스크가 밸브의 커버와 결합이 되어있는 모양으로, 유체가 흐를 때 디스크가 완전히 열리지 않기 때문에 많은 에너지 손실이 발생합니다. 또한 디스크를 교체할 때나 밸브의 보수 후 디스크가 시트링에 완전히 밀착이 되지 않으므로 누설이 발생할 수 있습니다.

OS Swing Check 밸브는 시트링과 디스크가 힌지로 결합되어있는 형태로서 이는 더 나은 유량을 확보할 수 있습니다. 핀에 의해서 힌지가 결합된 상태에서 디스크를 교체하더라도 디스크의 밀착 위치가 변화되지 않으므로 시트링과 디스크 사이에 유체 누설이 발생하는 것을 방지할 수 있습니다. 이러한 설계는 유체가 밸브를 통과할 때 작은 회전반경으로도 디스크가 완전히 열릴 수 있도록 도와줍니다. 그리고 이 완전 개방 가능한 디스크는 유체가 밸브를 통과할 때 생기는 에너지 손실을 감소시켜 주어서 밸브가 더 나은 유량과 에너지 효율성을 갖출 수 있도록 도와줍니다. 결과적으로 적은 압력 손실 및 에너지 사용이라는 장점을 가지고 있습니다. 또한, 밀접하게 연결되어 있는 디스크와 힌지는 누출을 최소화 하여 안전한 플랜트의 유지 및 보수 비용을 절감시켜 주며, 디스크와 힌지에 영향을 주지않도록 설계되어 있는 안정된 커버 또한 결과적으로 오에스의 스윙 체크 밸브를 더욱 가치있게 만듭니다.

■ 오에스 스윙체크 밸브의 특징:

- 시트링에 고정되어있는 힌지 설계로 디스크가 완전히 열리고 닫힙니다. 그러므로 완전한 디스크의 오픈으로 유량의 흐름에 방해가 없습니다.
- 커버에 손상이 생겼을지라도 힌지와 디스크에 영향이 없으므로 누설이 발생하지 않습니다.
- 다양한 선택 가능한 high-quality 재질로 고객의 만족을 극대화 시켜 드립니다.
- 적은 유량 손실과 에너지 효율로 인한 유지 비용 및 플랜트 운전의 비용을 절감시켜 드립니다.
- 디스크와 시트링의 보다 높은 수명을 위하여 stellite6로 hard facing 하였습니다. 아래의 도면에서 보여지듯이 OS 스윙 체크 밸브는 힌지가 시트링에 연결되어있는 형태를 띄고 있습니다.

오에스 체크밸브의 효율은 실제 계측한 유량(flow rate, CV값)과 port size가 나온 자료에서 확인 하실 수 있듯이, 일반 swing check 밸브와 비교했을 때, OS Swing Check 밸브는 약 16% 더 높은 유량을 확보할 수 있습니다.

오에스 스윙체크 밸브는 완벽한 품질과 만족스런 가격으로 고객의 요구를 실행하는데 앞장서겠습니다.

Swing Check Valve

■ The maximization of energy efficiency!

In general, most swing-check valves are designed whereby the disc is connected to the valve cover, but this design brings a big energy loss. Also, there could be a leakage because the connection between the disc and the seat-ring can loosen after the replacement or repair of the disc.

However, here 'OS Swing Check valve' is built in a way that the hinge connects the disc and seat-ring, and this design allows a better flow rate. The possible fluid leakage between the seat-ring and disc will also be prevented, because the contact position of the disc and seat-ring connection will not be moving even after the disc replacement job. In this special design, the disc can be fully opened with a small turning radius of the disc when the fluids pass through the valve. Furthermore, this fully openable disc can lead to the reduction of the energy loss when the fluids pass through the valve, so eventually the valve can provide a better flow rate and energy efficiency. Finally, the close connection of the disc and hinge minimizes the leakage and ultimately brings cost reduction in safe plant maintenance and repair, and stable cover, which is designed to not affect the hinge and disc, also makes OS Swing Check valve more valuable.

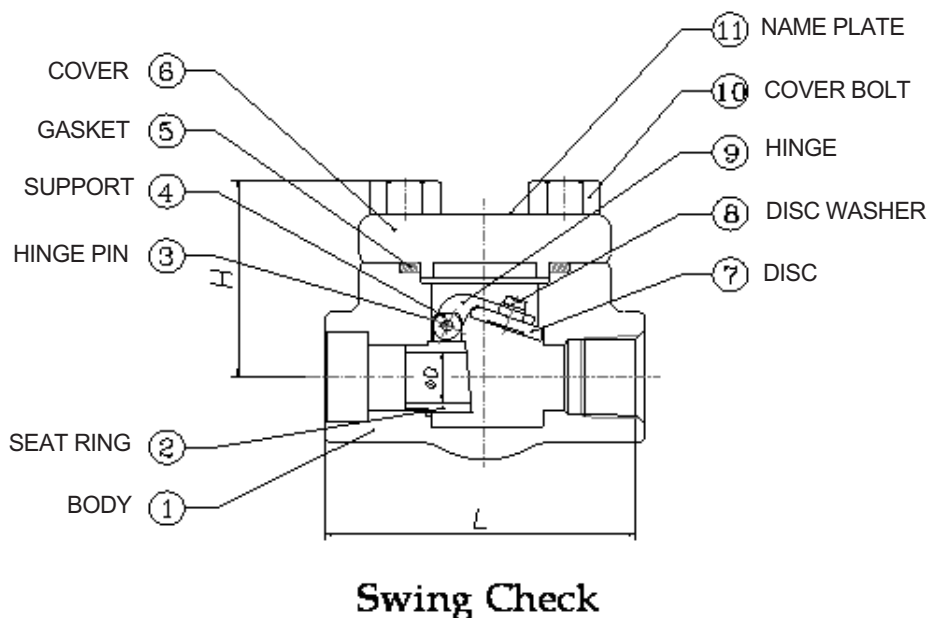
■ Special Features:

- The disc can be fully opened and tightly closed because the specially designed hinge, which is fixed to the seat-ring.
- No leakage from any damage on the cover occurs because the cover does not affect the hinge and disc.
- A variety of high-quality materials can be chosen.
- Costs for the plant operation and maintenance can be reduced owing to a low fluid loss and high-energy efficiency.
- The disc and seat-ring are hardfaced with Stellite-6 for a longer lifetime.

As can be seen at the bottom drawing, OS Swing Check Valve has the hinge connected to the seat-ring. The actual efficiency of our valve can be checked in the following data, which shows the real values of flow rates (CVs) and port sizes measured. It is clear that OS Swing Check valve can secure about 16% higher flow-rate compared to the general swing valves.

Here we promise that we, OS, will try our best to fulfill customer satisfaction with a high-quality and competitive price swing check valve.

CLASS 800/1500 Standard Bore & Full Bore. SW/NPT/BW Ends.



Basic Material List

Body	A105
Seat Ring	A351-CF8M+STL
Hinge Pin	A276-316
Gasket	Graphite+316L
Cover	A105
Disc	A276-410
Disc Washer	SS304
Hinge	A351-CF8M
Cover Bolt	A193-B7
Name Plate	Aluminium

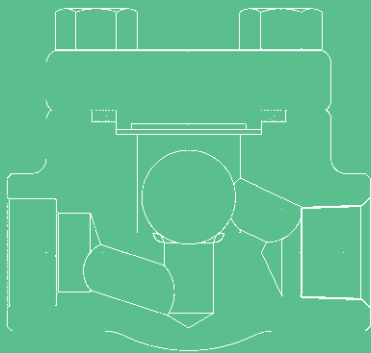
■ Swing Check

Class	Full Bore.	-		1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2	
	Standard Bore.	1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2		-	
800	L(mm/in)	74	2.9	74	2.9	74	2.9	86	3.4	102	4.0	116	4.6	140	5.5	203	8.0
	H(mm/in)	48	1.9	48	1.9	48	1.9	51	2.0	65	2.5	75	3.0	95	3.7	125	4.9
	ø D(mm/in)	9.9	0.4	9.9	0.4	9.9	0.4	12.7	0.5	19.0	0.7	30.0	1.2	38.0	1.5	47.0	1.9
	Wt.(kg)	1.0		1.0		1.0		1.5		2.0		4.1		6.4		6.4	
	Cv(gal/min)					11		17.6		31.4		57.6		80.1			

■ Swing Check

Class	Full Bore.	-		1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2	
	Standard Bore.	1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2		-	
1500	L(mm/in)	86	3.4	86	3.4	86	3.4	102	4.0	116	4.6	140	5.5	203	8.0	-	
	H(mm/in)	51	2.0	51	2.0	51	2.0	65	2.5	75	3.0	95	3.7	125	4.9	-	
	ø D(mm/in)	9.9	0.4	9.9	0.4	9.9	0.4	12.7	0.5	19.0	0.7	30.0	1.2	38.0	1.5	-	
	Wt.(kg)	1.5		1.5		1.5		2.0		4.1		6.4		9.8		-	
	Cv(gal/min)					11		17.6		31.4		57.6		80.1		-	

Ball Check Valves

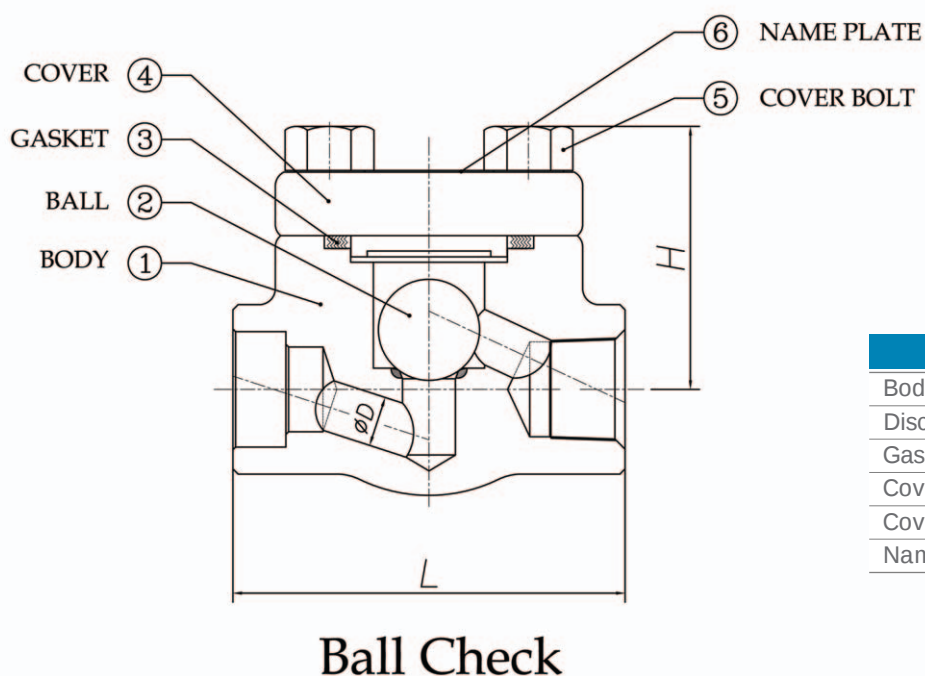


Ball check Valves

A ball check valve is an automatically actuated valve, which is opened by fluid flow in one direction and closed by flow in the opposite direction. The valve uses a ball instead of disc to seal against a seat to stop flow in one direction to make it a non-return valve.

We offer two kinds of ball check valves: spring-loaded valves and valves that operate without the spring inside.

CLASS 800/1500 Standard Bore & Full Bore. SW/NPT/BW Ends.



Basic Material List

Body	A105
Disc	A182-F304
Gasket	Graphite+316L
Cover	A105
Cover Bolt	A193-B7
Name Plate	Aluminium

■ Ball Check

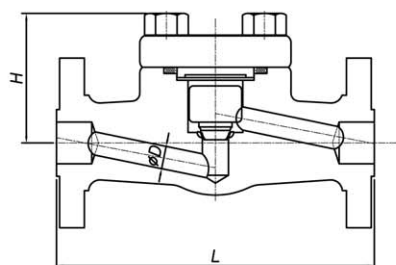
Class	Full Bore.	-		1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2	
	Standard Bore.	1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2		-	
800	L(mm/in)	74	2.9	74	2.9	74	2.9	86	3.4	102	4.0	150	5.9	178	7.0	203	8.0
	H(mm/in)	48	1.9	48	1.9	48	1.9	51	2.0	65	2.5	79	3.1	100	3.9	125	4.9
	Ø D(mm/in)	9.9	0.4	9.9	0.4	9.9	0.4	12.7	0.5	19.0	0.7	30.0	1.2	38.0	1.5	46.0	1.8
	Wt.(kg)	1.0		1.0		1.0		1.5		2.0		4.1		6.4		6.4	

■ Ball Check

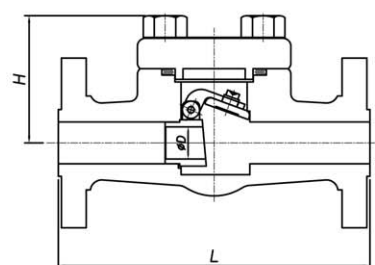
Class	Full Bore.	-		1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2	
	Standard Bore.	1/4		3/8		1/2		3/4		1		1-1/4, 1-1/2		2		-	
1500	L(mm/in)	86	3.4	86	3.4	86	3.4	102	4.0	150	5.9	178	7.0	203	8.0	-	
	H(mm/in)	51	2.0	51	2.0	51	2.0	65	2.5	79	3.1	100	3.9	125	4.9	-	
	Ø D(mm/in)	8.5	0.3	8.5	0.3	8.5	0.3	9.5	0.4	14.5	0.6	25.5	1.0	27.5	1.1	-	
	Wt.(kg)	1.5		1.5		1.5		2.0		4.1		6.4		9.8		-	

Integral & Welded Flanged Ends.

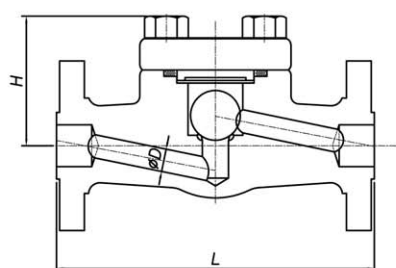
RF, FF, RTJ.



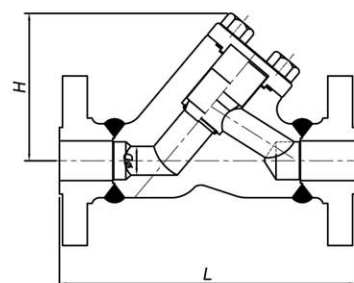
Lift Check



Swing Check



Ball Check

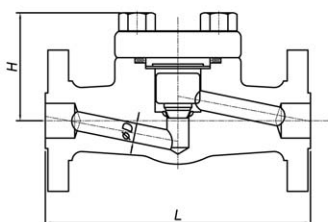


Y-Lift Check

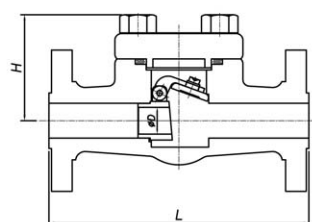
■ ASME/ANSI B 16.10, 16.5

CLASS	Standard Bore.		1/2		3/4		1		1-1/4		1-1/2		2	
150	L(mm/in)	Lift, Ball	108	4.25	117	4.61	127	5.0	165	6.5	165	6.5	178	7.01
		Swing	Same as Lift, Ball Check Valve.											
	ø D(mm/in)		9.5	0.37	12.5	0.49	19.5	0.77	30.0	1.18	30.0	1.18	38.0	1.5
	H(mm/in)		48	1.89	51	2.01	65	2.56	79	3.11	79	3.11	100	3.94
	Wt.(kg)		1.7		2.4		3.8		7.7		7.7		11.4	
300	L(mm/in)	Lift, Ball	152	5.98	178	7.01	203	7.99	229	9.02	229	9.02	267	10.5
		Swing	178	7.01	203	7.99	216	8.5	229	9.02	241	9.49	267	10.5
	ø D(mm/in)		9.5	0.37	12.5	0.49	19.5	0.77	30.0	1.18	30.0	1.18	38.0	1.5
	H(mm/in)		48	1.89	51	2.01	65	2.56	79	3.11	79	3.11	100	3.94
	Wt.(kg)		2.2		3.3		5.1		9.9		9.9		12.2	
600	L(mm/in)	Lift, Ball	165	6.5	190	7.48	216	8.5	241	9.49	241	9.49	292	11.5
		Swing	Same as Lift, Ball Check Valve.											
	ø D(mm/in)		9.9	0.39	12.7	0.5	19.0	0.75	30.0	1.18	30.0	1.18	38.0	1.5
	H(mm/in)		48	1.89	51	2.01	65	2.56	79	3.11	79	3.11	100	3.94
	Wt.(kg)		2.5		3.9		5.7		11.2		11.2		13.8	
900/1500	L(mm/in)	Lift, Ball	216	8.5	229	9.02	254	10.0	305	12.0	305	12.0	368	14.5
		Swing	97	3.82	97	3.82	137	5.39	157	6.18	157	6.18	157	6.18
	ø D(mm/in)		8.5	0.33	9.5	0.37	14.5	0.57	20.5	0.81	25.5	1.0	27.5	1.08
	H(mm/in)		56	2.2	65	2.56	79	3.11	100	3.94	100	3.94	125	4.92
	Wt.(kg)		5.0		7.0		18.7		29.2		28.2		34.2	

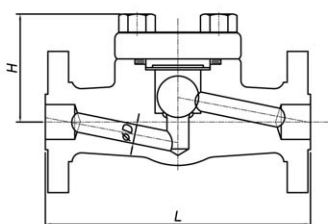
Integral & Welded Flanged Ends. RF, FF, RTJ.



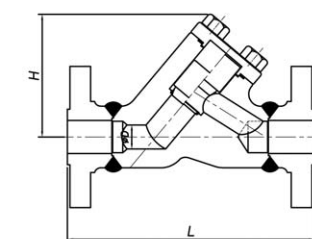
Lift Check



Swing Check



Ball Check



Y-Lift Check

■ JIS B 2220, JIS B 2002

CLASS	Standard Bore.		1/2		3/4		1		1-1/4		1-1/2		2	
10K	L(mm/in)	Lift, Ball	108	4.25	117	4.61	127	5	165	6.5	165	6.5	203	7.99
		Swing	Same as Lift, Ball Check Valve.											
	ø D(mm/in)		9.5	0.37	12.5	0.49	19.5	0.77	30.0	1.18	30.0	1.18	38.0	1.5
	H(mm/in)		48	1.89	51	2.01	65	2.56	79	3.11	79	3.11	100	3.94
	Wt.(kg)		1.7		2.4		3.8		7.7		7.7		11.4	
20K	L(mm/in)	Lift, Ball	152	5.98	178	7.01	203	7.99	229	9.02	229	9.02	267	10.5
		Swing	178	7.01	203	7.99	216	8.5	229	9.02	241	9.49	267	10.5
	ø D(mm/in)		9.5	0.37	12.5	0.49	19.5	0.77	30.0	1.18	30.0	1.18	38.0	1.5
	H(mm/in)		48	1.89	51	2.01	65	2.56	79	3.11	79	3.11	100	3.94
	Wt.(kg)		2.2		3.3		5.1		9.9		9.9		12.9	
30K	L(mm/in)	Lift, Ball	20K Same as Lift, Ball Check Valve.											
		Swing												
	ø D(mm/in)		9.5	0.37	12.5	0.49	19.5	0.77	30.0	1.18	30.0	1.18	38.0	1.5
	H(mm/in)		48	1.89	51	2.01	65	2.56	79	3.11	79	3.11	100	3.94
	Wt.(kg)		2.3		3.5		5.4		10.3		10.3		13.4	
40K	L(mm/in)	Lift, Ball	165	6.5	190	7.48	216	8.5	241	9.49	241	9.49	292	11.5
		Swing	Same as Lift, Ball Check Valve.											
	ø D(mm/in)		9.9	0.39	12.7	0.5	19.0	0.75	30.0	1.18	30.0	1.18	38.0	1.5
	H(mm/in)		48	1.89	51	2.01	65	2.56	79	3.11	79	3.11	100	3.94
	Wt.(kg)		2.5		3.9		5.7		11.2		11.2		13.8	
63K	L(mm/in)	Lift, Ball	216	8.5	229	9.02	254	10.0	305	12.0	305	12.0	368	14.5
		Swing	97	3.82	97	3.82	137	5.39	157	6.18	157	6.18	157	6.18
	ø D(mm/in)		8.5	0.33	9.5	0.37	14.5	0.57	20.5	0.81	25.5	1.0	27.5	1.08
	H(mm/in)		56	2.2	65	2.56	79	3.11	100	3.94	100	3.94	125	4.92
	Wt.(kg)		5.0		7.0		18.7		29.2		28.2		34.2	

GATE VALVE - API 602 / ASME B16.34

No.	ASTM Designation	A105N	A350		A182					A182					
	Parts		LF2	LF3	F304/L	F316/L	F321	F347	F51	F5	F9	F11	F22	F91	
1	Body	A105	LF2	LF3	F304/L	F316/L	F321	F347	F51	F5	F9	F11	F22	F91	
2	Seat Ring	A276-410+STL		A276-316+STL or A276-304+STL		A276-321+STL	A276-347+STL	UNS S31803+STL	A276-410+STL						
										F5+STL	F9+STL	F11+STL	F22+STL	F91+STL	
3	Wedge	A743-CA40+*STL or A276-410+*STL		A351-CF8M+*STL or A351-CF8+*STL		A276-321+*STL	A276-347+*STL	UNS S31803+STL	A743-CA40+*STL or A276-410+*STL						
				A276-316+*STL or A276-304+*STL											
4	Stem	A276-410		A276-304 or 316		A276-316	A276-321	A276-347	UNS S31803	A276-410					
5	Gasket	316L + Spiral Wound Graphite					321 SWG	347 SWG	Duplex SWG	316L +Spiral Wound Graphite					
6	Bonnet	A105	LF2	LF3	F304/L	F316/L	F321	F347	F51	F5	F9	F11	F22	F91	
7	Bonnet Bolt	A193-B7	A320-L7		A193-B8 or B8M					A193- B7 or B16					
8	Gland Packing	Graphite													
9	Gland	304 Stainless Steel													
10	Gland Flange	A105		A182-F304						A105					
11	Gland Nut	A194-2H		A194-8 or 8M						A194-2H or 4					
12	Gland Bolt	A193-B7		A193-B8 or B8M						A193-B7 or B16					
13	Yoke Sleeve	A582-416													
14	Handwheel	Carbon Steel													
15	Name Plate	Aluminium			304 Stainless Steel						Aluminium				
16	Handwheel Nut	Carbon Steel													

GLOBE VALVE - ASME B16.34 / BS 5352

No.	ASTM Designation	A105N	A350		A182					A182				
	Parts		LF2	LF3	F304/L	F316/L	F321	F347	F51	F5	F9	F11	F22	F91
1	Body	A105	LF2	LF3	F304/L	F316/L	F321	F347	F51	F5	F9	F11	F22	F91
2	Seat	Integral Hardfaced Stellite 6												
3	Disc	A743-CA40+*STL or A276-410+*STL	A351-CF8M+*STL or A351-CF8+*STL				A276-321+*STL	A276-347+*STL	UNS S31803+*STL	A743-CA40+*STL or A276-410+*STL				
4	Stem		A276-316+*STL or A276-304+*STL				A276-321	A276-347	UNS S31803	A276-410				
5	Gasket	A276-410					A276-316 or A276-304		A276-321	A276-347	UNS S31803	A276-410		
6	Gasket	316L Spiral Wound Graphite					321 SWG		347 SWG	Duplex SWG	316L Spiral Wound Graphite			
7	Bonnet	A105	LF2	LF3	F304/L	F316/L	F321	F347	F51	F5	F9	F11	F22	F91
8	Bonnet Bolt	A193-B7	A320-L7		A193-B8 or B8M					A193-B7 or B16				
9	Gland Packing	Graphite												
10	Gland	304 Stainless Steel												
11	Gland Flange	A105		A182-F304						A105				
12	Gland Nut	A194-2H		A194-8 or 8M						A194-2H or 4				
13	Gland Bolt	A193-B7		A193-B8 or B8M						A193-B7 or B16				
14	Yoke Bush	A582-416												
15	Handwheel	Carbon Steel												
16	Name Plate	Aluminium			304 Stainless Steel						Aluminium			
17	Handwheel Nut	Carbon Steel												

PISTON CHECK VALVE - ASME B16.34 / BS 5352

No.	ASTM Designation	A105N	A350		A182					A182				
	Parts		LF2	LF3	F304/L	F316/L	F321	F347	F51	F5	F9	F11	F22	F91
1	Body	A105	LF2	LF3	F304/L	F316/L	F321	F347	F51	F5	F9	F11	F22	F91
2	Seat	Integral Hardfaced Stellite 6												
3	Disc	A276-410+*STL	A276-316+*STL or A276-304+*STL			A276-321+*STL	A276-347+*STL	UNS S31803+*STL	A276-410+*STL					
4	*Spring	A276-304					Inconel X-750 or 316			A276-304				
5	Gasket	316L Spiral Wound Graphite					321 SWG	347 SWG	Duplex SWG	316L Spiral Wound Graphite				
6	Cover	A105	LF2	LF3	F304/L	F316/L	F321	F347	F51	F5	F9	F11	F22	F91
7	Cover Bolt	A193-B7	A320-L7		A193-B8 or B8M					A193-B16 or B7				
8	Name Plate	Aluminium			304 Stainless Steel					Aluminium				

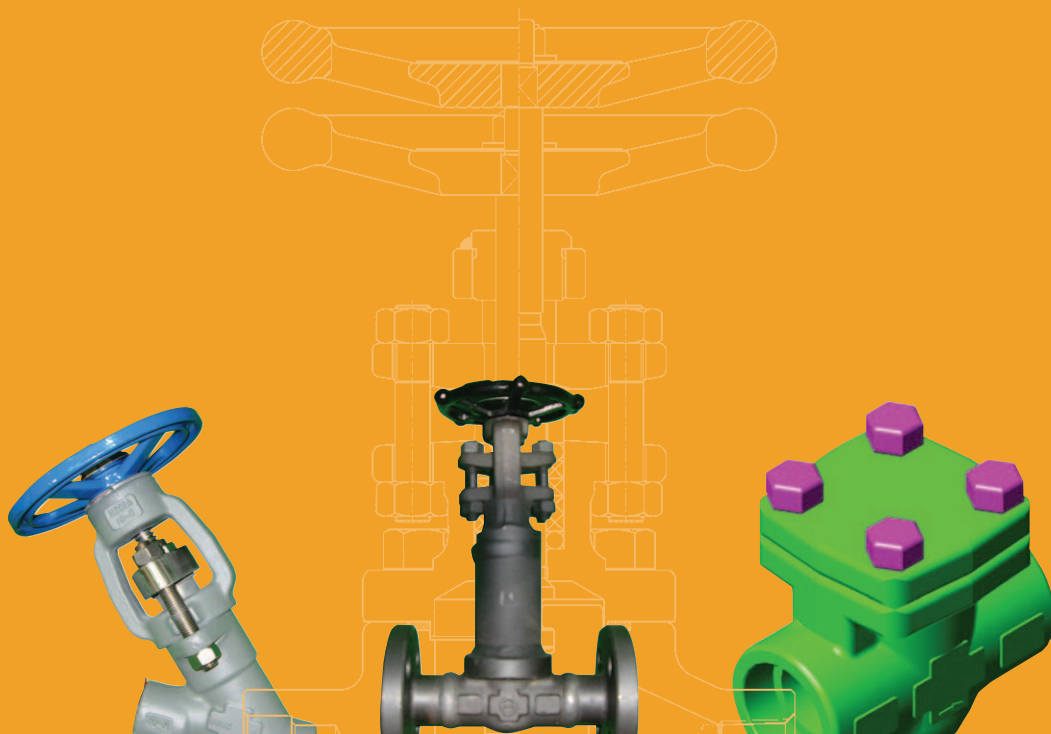
SWING CHECK VALVE - ASME B16.34 / BS 5352

No.	ASTM Designation	A105N	A350		A182					A182				
	Parts		LF2	LF3	F304/L	F316/L	F321	F347	F51	F5	F9	F11	F22	F91
1	Body	A105	LF2	LF3	F304/L	F316/L	F321	F347	F51	F5	F9	F11	F22	F91
2	Seat Ring	A351-CF8M+STL or A351-CF3M+STL					A276-321+STL	A276-347+STL	UNS S31803+STL	A351-CF8M+STL or A 351 CF3M +STL				
3	Disc	A276-410+*STL	A276-316+*STL			A276-321+*STL	A276-347+*STL	UNS S31803+*STL	A276-410+*STL					
4	Hinge			A351-CF8M or A351-CF3M										
5	Gasket	316L Spiral Wound Graphite					321 SWG	347 SWG	Duplex SWG	316L Spiral Wound Graphite				
6	Cover	A105	LF2	LF3	F304/L	F316/L	F321	F347	F51	F5	F9	F11	F22	F91
7	Cover Bolt	A193-B7	A320-L7		A193-B8 or B8M					A193-B16 or B7				
8	Retaining Washer	304 Stainless Steel												
9	Hinge Pin	A276-316												
10	Name Plate	Aluminium			304 Stainless Steel					Aluminium				

[illegible]

* need to designate Grade

* need to designate Grade



PRODUCT SYSTEM

- Chemical Plants
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- Power Plants-Fossil Fuel
- Breweries & Distilleries
- Electrical Component Plants
- Foundries
- Power Plant-Nuclear
- Coke By-Products Plants
- Food Processing Plants
- Paint & Paint Product Plants
- Textile Industry
- Steel & Other Metal Processing Plants
- Rubber & Synthetic Rubber Products Plants
- Petroleum Products & Handling Systems
- Pulp & Paper Plants
- Pharmaceutical Plants
- Water Treatment-Purification

K-val[®]