GUVA-USIA

GUVA Bellow seal globe valve

0101 / 0102 / 0103

Bellow seal globe valve

Series:0101/0102/0103

Features:

1.Bellow globe valves are suitable to be used for transmission of flammable, explosive, strong permeable and radioactive fluids.Bellow globe valve is particularly suitable for transmitting high temperature medium fluids due to its feature of multilayer seals with zero leakage and excellent performance. Bellow globe valve is a most environmental friendly valve, which makes "Green Plant" possible. It is the best choice for special application, such as transmission of chlorine, oxygen, gas, hydrogen, natural gas etc.

2. All valve parts are machined and inspected with most advanced proprietary technology. Mechanical seal machining technology is used to machine the valve seating surfaces. All seating surfaces are inspected with interferometers. Therefore, zero leakage could be guaranteed and seal torque could be significantly reduced. In addition to hydraulic and pneumatic pressure seal test, all valves are 100% tested with Helium Spectrometer.

3. The metal bellow, a key part for the valve, is hydraulically formed. The bellow is a fully enclosure type structure to avoid direct contact with the fluid being transmitted. As a result, no corrosion to the bellow and internal flushing is not needed . Together with other feature, such as multilayer seals, Wanlong's bellow globe valve could offer maximum service life, maintenance free and low operating cost.

4. By welding the lower end of the stem to the disc with automatic roll welding equipment, the stem subassembly serves as a barrier to separate the fluid being transmitted with the atmosphere. The surfaces of disc and valve body seating are finely lapped by planetary lapping machine with automatic frequency alternator ensuring perfect sealing of the contacting surfaces. The stem subassembly is 100% Seal tested. In addition, a traditional gland seal staffed with fiber braided corrosion resistant flexible graphite is used at the upper part of the stem. The upper stem gland served as extra protection to prevent any leakage, eliminating the need from servicing, particularly at high temperature applications.

5. The unique computerize simulation of valve chamber design offers a very low flow resistance and low pressure drop enhance higher flow rate within the valve chamber. The flow rate could be increased by 10 to 50% compared with valves of similar size. It is an environmental friendly and energy saving valve.

Second seal — nonmetal gland

There is a gland seal staffed with braided corrosion resistant flexible graphite material at the upper part of the stem. The upper stem gland served as an extra protection to prevent leaking, eliminating the need to service, particularly at high temperature applications.

First seal — bellow subassembly

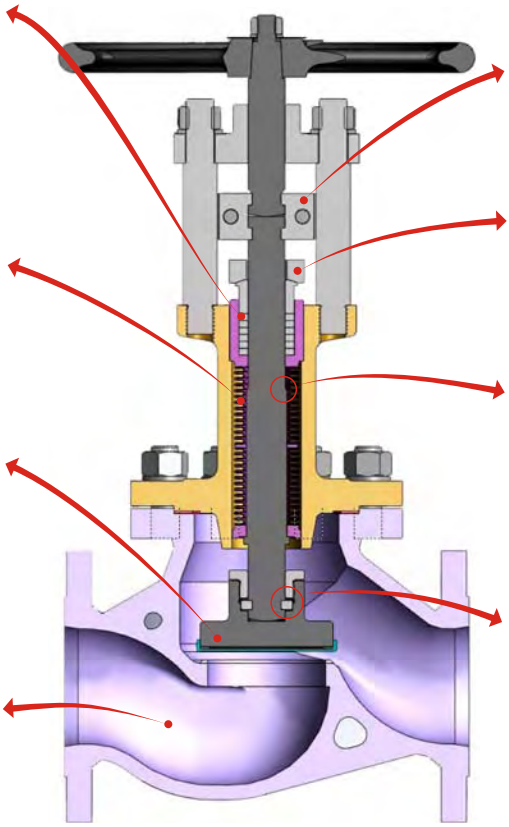
The bellow is a fully enclosure type structure to avoid direct contact with the fluid being transmitted. So it could offer maximum service life, maintenance free, and reduce the operating cost.

Disc with welding and grinding processing

The disc is made in corrosion-resistant stainless steel or alloy steel. Welding materials are imported from Germany and USA, to increase corrosion resistance, erosion, increased life expectancy, while protecting the use of seals.

Unique channel design

Offers low flow resistance, so the flow rate could increase 10% to 50% comparing with other valves in similar size.



Anti-rotation block

Prevent lateral torsion of bellows, to ensure maximum service life of bellows

Packing sleeve

For compression packing, so that better sealing performance and increase packing life, maintenance-free

The upper stem travel limit

The upper stem travel limit offering protection to the valve by effectively prevent bellow over extension, greatly prolong bellow service life

Hinged connection

Disc and valve stem are hinge connected offering perfect and reliable sealing performance between the disc and valve seating surface. Leaking free could be guaranteed at shut off.

0101 Butt welding connection bellow globe valve Class 150~300

Performance specification

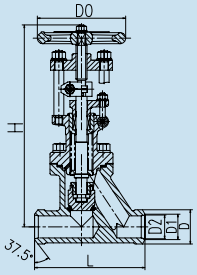
Nominal pressure		Class150	Class300
Test pressure Mpa (psi)	Shell test	435	1100
	Top sealing test	/	/
	High pressure sealing test	320	800
	Low pressure pneumatic test	90	
Maximal working temperature(°F)		1292	

Design standards

Design and manufacture	Face-to-Face dimension	Butt welded end dimension
BS1873 MSS-SP-117 ASME 16.34	ASME B16.10	ASME B16. 25
Pressure-temperature	**Test-inspection**	**Helium Spectrometry**
ASME B16.34	API 598	API 602

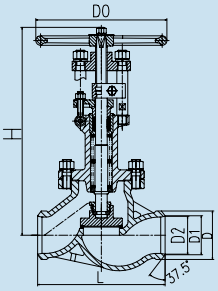
Main external dimensions

	NPS	L	D	D1	D2	H	D0
150LB	½″	108	32	22	17	306	148
	¾″	117	32	28	22	306	148
	1″	127	38	34	28	310	148
	1¼″	140	60	43	37	420	196
	1½″	165	60	49	43	420	196
	2″	203	70	61	54	432	196



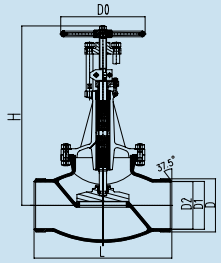
	NPS	L	D	D1	D2	H	D0
300LB	½″	152	32	22	17	306	148
	¾″	178	32	28	22	306	148
	1″	203	38	34	28	310	148
	1¼″	216	60	43	37	420	196
	1½″	229	60	49	43	420	196
	2″	267	70	61	54	432	196

	NPS	L	D	D1	D2	H	D0
150LB	2½″	216	92	72	67	495	220
	3″	241	106	84	80	548	250
	4″	292	122	107	104	626	320
	5″	356	157	135	130	710	320
	6″	406	184	163	157	855	400
	8″	495	238	211	206	1016	500
	10″	622	296	262	360	1240	600
	12″	698	345	310	306	1287	600



	NPS	L	D	D1	D2	H	D0
300LB	2½″	292	92	72	67	495	220
	3″	318	106	84	80	548	250
	4″	356	122	107	104	626	320
	5″	400	157	135	130	710	320
	6″	444	184	163	157	855	400
	8″	559	238	211	206	1016	500
	10″	620	296	262	360	1240	600
	12″	711	345	310	306	1287	600

	NPS	L	D	D1	D2	H	D0
150LB	14″	787	378	344	340	1416	600
	16″	914	434	391	384	1548	850
	18″	978	491	436	432	1748	850
	20″	978	542	488	484	1790	850



	NPS	L	D	D1	D2	H	D0
300LB	14″	838	378	344	340	1416	600
	16″	864	434	391	384	1548	850
	18″	978	491	436	432	1748	850
	20″	1016	542	488	484	1820	850

0102 Socket welded connection bellows globe valves Class 150~300

Performance specification

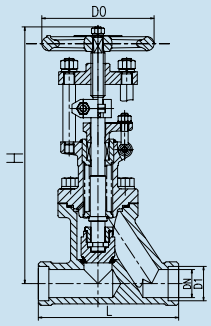
Nominal pressure		Class150	Class300
Test pressure Mpa (psi)	Shell test	435	1100
	Top sealing test	/	/
	High pressure sealing test	320	800
	Low pressure pneumatic test	90	
Maximal working temperature(°F)		1292	

Design standards

Design and manufacture	Face-to-Face dimension	Socket welded end dimension
ASME B16.34	ASME B16.10	ASME B16. 11
Pressure-temperature	**Test-inspection**	**Helium Spectrometry**
ASME B16.34	API 598	API 602

Main external dimensions

	NPS	L	D0	H	D1	DN
150LB	½″	108	148	⩽306	21.8	15
	¾″	117	148	⩽306	27.1	20
	1″	127	148	⩽310	33.8	25
	1¼″	140	196	⩽420	42.6	32
	1½″	165	196	⩽420	48.7	40
	2″	203	196	⩽432	61.1	50



	NPS	L	D0	H	D1	DN
300LB	½″	152	148	⩽306	21.8	15
	¾″	178	148	⩽306	27.1	20
	1″	203	148	⩽310	33.8	25
	1¼″	216	196	⩽420	42.6	32
	1½″	229	196	⩽420	48.7	40
	2″	267	196	⩽432	61.1	50

0103 Flanged (RF) connection bellow globe valve Class 150~300

Performance specification

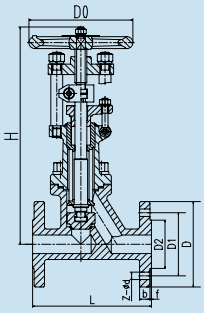
Nominal pressure		Class150	Class300
Test pressure Mpa (psi)	Shell test	435	1100
	Top sealing test	/	/
	High pressure sealing test	320	800
	Low pressure pneumatic test	90	
Maximal working temperature(°F)		1292	

Design standards

Design and manufacture	Face-to-Face dimension	Butt welded end dimension
BS1873 MSS-SP-117 ASME 16.34	ASME B16.10	ASME B16. 25
Pressure-temperature	**Test-inspection**	**Helium Spectrometry**
ASME B16.34	API 598	API 602

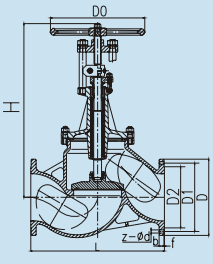
Main external dimensions

	NPS	L	D	D1	D2	b	f	Z-Φd	H	D0
150LB	½″	108	89	60.5	35	12	2	4-15	306	148
	¾″	117	98	70	43	12	2	4-15	306	148
	1″	127	108	79.5	51	12	2	4-15	310	148
	1¼″	140	117	89	64	13	2	4-15	420	196
	1½″	165	127	98.5	73	15	2	4-15	420	196
	2″	203	152	120.5	92	16	2	4-19	432	196



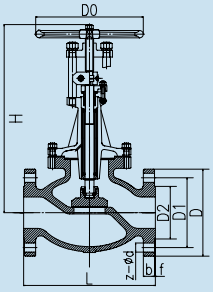
	NPS	L	D	D1	D2	b	f	Z-Φd	H	D0
300LB	½″	152	95	66.7	35	15	2	4-16	306	148
	¾″	178	120	82.5	43	16	2	4-19	306	148
	1″	203	125	88.9	51	18	2	4-19	310	148
	1¼″	216	135	98.4	64	19	2	4-19	420	196
	1½″	229	155	114.3	73	21	2	4-22	420	196
	2″	267	165	127	92	23	2	8-19	432	196

	NPS	L	D	D1	D2	b	f	Z-Φd	H	D0
150LB	2½″	216	178	139.5	105	18	2	4-19	387	200
	3″	241	190	152.5	127	19	2	4-19	411	250
	4″	292	229	190.5	157	24	2	8-19	454	250
	5″	356	254	216	186	24	2	8-22	455	355
	6″	406	279	241.5	216	26	2	8-22	541	355
	8″	495	343	398.5	270	29	2	8-22	651	450
	10″	622	406	362	324	31	2	12-25	800	450
	12″	698	483	432	381	32	2	12-25	1230	500



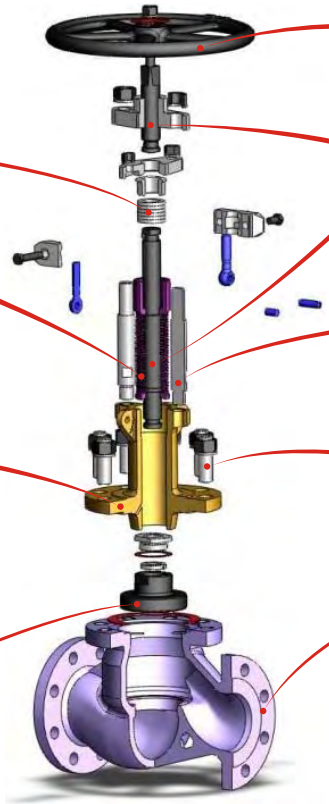
	NPS	L	D	D1	D2	b	f	Z-Φd	H	D0
300LB	2½″	292	190	149	105	26	2	8-22	387	200
	3″	318	210	168.5	127	29	2	8-22	411	250
	4″	356	255	200	157	32	2	8-22	454	250
	5″	400	280	235	186	35	2	8-22	455	355
	6″	444	320	270	216	37	2	12-22	541	355
	8″	559	380	330	270	42	2	12-25	651	450
	10″	620	445	387.5	324	48	2	16-29	800	450
	12″	711	520	451	381	51	2	16-32	1230	500

	NPS	L	D	D1	D2	b	f	Z-Φd	H	D0
150LB	14″	787	533	476.5	413	35	2	12-29	1450	600
	16″	914	597	534.5	470	37	2	16-29	1645	600
	18″	978	635	578	533	40	2	16-32	1748	850
	20″	978	700	635	584.2	41.3	2	20-32	1790	850



	NPS	L	D	D1	D2	b	f	Z-Φd	H	D0
300LB	14″	838	585	514.5	413	54	2	20-32	1450	600
	16″	864	650	571.5	470	58	2	20-35	1645	600
	18″	978	710	628.5	533	61	2	24-35	1748	850
	20″	1016	775	686	584.2	62	2	24-35	1790	850

Main parts



Handwheel
ASTM A536 65-45-12
ASTM A216 WCB
ASTM A351 CF8M

Stuffing
Flexible graphite

Stem
ASTM A276 304
ASTM A276 316
ASTM A276 316L
ASTM A276 410
ASTM A276 420

Metal-bellow
ASTM A276 304
ASTM A276 304L
ASTM A276 316
ASTM A276 316L
ASTM A182 F91
ASTM A494 Hastelloy C-22
ASTM A494 Hastelloy C-276

Double head pole
ASTM A29 1035

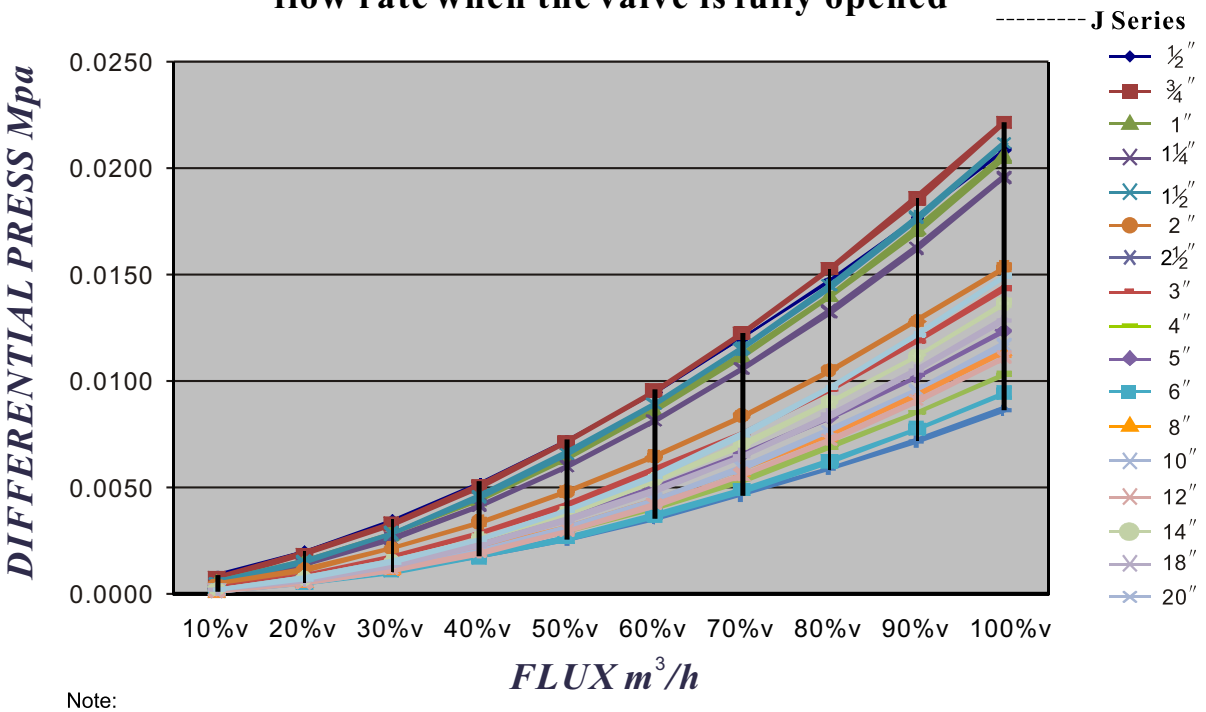
Bonnet
ASTM A105 A105
ASTM A276 304
ASTM A216 WCB
ASTM A352 LCB
ASTM A351 CF8M
ASTM A351 CF8
ASTM A351 CF3
ASTM A494 Hastelloy C-22
ASTM A494 Hastelloy C-276
ASTM A995 CD4MCu

Bolt/Nut
ASTM A193
ASTM A194

Disc-Sealing face
ASTM A276 304/316+STL

Body
ASTM A105 A105
ASTM A276 304
ASTM A216 WCB
ASTM A352 LCB
ASTM A351 CF8M
ASTM A351 CF8
ASTM A351 CF3
ASTM A494 Hastelloy C-22
ASTM A494 Hastelloy C-276
ASTM A995 CD4MCu

Various globe valve pressure drop curve at various flow rate when the valve is fully opened



Note:
1.Rated flow rate inside the valve: v= 2.5m/s
2.X Axis: Flow volume calculated proportionally with the flow rate changes.(m^3/h)
3.Y Axis: Pressure loss of fluid after leaving the valve as the flow volume changes. (Mpa)

Flow Coefficient comparison chart at 1bar pressure drop and maximum valve opening

---------J Seires

NPS	100%opening (mm)	Flux coefficients data kv				
		Our valve		《Design Manual Valves》		Optimize percentage (%)
		Casting	Forging	Casting	Forging	
1/2″	10	/	3.9	/		
3/4″	10	/	5.8	/		
1″	10	/	6.9	/		
1 1/4″	12	/	12.6	/		
1 1/2″	13	/	24.0	/		
2″	13	/	46.1	/		
2 1/2″	19	96.7	/	64.5	/	49.92
3″	23	111.2	/	97.7	/	13.82
4″	28	200.6	/	152.6	/	31.45
5″	35	295.8	/	238.4	/	24.08
6″	38	462.5	/	343.4	/	34.68
8″	52	761.9	/	610.4	/	24.82
10″	65	1170.8	/	953.8	/	22.75
12″	78	1697.7	/	1373.4	/	23.61

1.Cv is used mainly by US(ISA Standard) to express flow rate coefficient.
2.Kv is used by Germany to express flow rate coefficient in metric unit.
The exchange rate between Cv & Kv is: Cv≈1.167Kv
The detail please see TB-1020

GUVA

GUVA-USIA Manufacturer

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