

**VALFTEK<sup>®</sup>**



**BONETTI<sup>®</sup>**  
**BELLOW SEAL GLOBE VALVES**



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## Rating to DIN 2401

Max. Operating Temperature	Maximum Operating Pressure ( bar )				
	Material Schedule		Material Schedule	Material Schedule	Material Schedule
°C	43	41	41	51-53-63	51-63
-10 +120	16	16	25	40	63
200	13	13	20	35	50
250	11	12	18	32	45
300	10	11	16	28	40
350	-	10	15	24	36
400	-	-	-	21	32

For mat. Sch. 43 also compliance with AD Merkblatt W3/1 and for mat. Sch.41 also compliance with AD Merkblatt W3/2. Above operating range for information only.

## Rating to ASME B16.34 or API 602

Maximum Operating Temperature °C	Maximum Operating Pressure ( bar )											
	Class 150		Class 300		Class 600		Class 800			Class 1500		
	Material Schedule	Material Schedule	Material Schedule	Material Schedule	Material Schedule	Material Schedule	Material Schedule	Material Schedule	Material Schedule	Material Schedule	Material Schedule	
°C	51-53	63	51-53	63	51	63	71	11	31	71	11	31
-29 +38	16,6	19,0	51,1	49,6	102,1	99,3	136,2	137,9	132,4	255,3	258,6	248,1
100	17,7	16,2	46,4	42,2	92,8	84,4	123,7	130,0	112,5	231,9	243,8	211,0
200	14,0	13,7	43,8	35,7	87,6	71,3	116,9	121,3	95,1	219,1	227,4	178,4
300	10,2	10,2	38,7	31,6	77,5	63,3	103,3	113,2	84,4	193,7	212,1	158,1
400	6,5	6,5	34,5	29,1	69,0	58,2	92,0	97,6	77,6	172,5	182,9	145,6
425	5,6	5,6	28,8	28,7	57,5	57,3	76,7	93,6	76,4	143,8	175,5	143,3
500	-	2,8	-	26,8	-	53,7	-	74,1	71,6	-	139,0	134,1
538	-	1,6	-	25,4	-	50,7	-	43,6	67,6	-	81,8	126,8
595	-	-	-	-	-	-	-	17,0	58,6	-	32,0	109,9
600	-	-	-	-	-	-	-	-	57,2	-	-	107,2
700	-	-	-	-	-	-	-	-	26,5	-	-	49,7
800	-	-	-	-	-	-	-	-	9,3	-	-	17,5

For flanged ends of Austenitic stainless steel valves (mat. Sch. 31-63). Max. Operating temperature 538 °C .

## BELLOWS SEAL GLOBE VALVES

### GENERAL INFORMATION

BONETTI® Bellows seal valves are shut-off globe valves with external sealing by means of metallic bellows and an additional safety packing. Internal sealing achieved by means of disc and seat is metal to metal. For low and medium ratings, body-bonnet connection is bolted.

### APPLICATION RANGE

BONETTI® Bellows seal valves are zero emission and maintenance free. An interrupted metallic barrier is positioned between the piping and the environment. These valves are suitable for any fluid and are recommended when zero emission characteristics are required to protect the environment and the health of the workers from pollutive leaks, to prevent expensive wastes due to loss of energy and fluid and to eliminate cost of replacement of packing.

In conclusion, the valves are particularly suitable for dangerous, inflammable, lethal and explosive media.

### DESIGN

The particular characteristics of these valves have been obtained by means of correct sizing and material selection by shrewd and long tests in laboratory and plants under severe working conditions allowed by the rating and a quality system adhering to ISO 9001 requirements. The adopted bellows are fully in compliance with existing international standards (MSS SP 117, BS 5352) and are made of Austenitic Stainless Steel.

The life (corresponding to the number of cycles) is much longer than that required by the relative standards.

Furthermore helium sealing tests are applied to all bellows assemblies after plasma welding.

BONETTI® bellows seal valves are fitted with rising not rotating stem to avoid additional torsional stresses on the bellows.

Bellows valves are on-off type and the standard disc can be easily replaced with a regulating disc (Fig. 3) to obtain a Regulating valve.

### RATINGS

The max. operating pressures related to the max. operating temperatures for each rating are shown on page 2 for information only.

In case of heavy service with pipes exposed to shocks, vibrations, repeated stresses, condensate hammering etc. and with harmful fluids, valves with body of steel, even for limited operating conditions, shall be selected.

When ordering or enquiring, the valve heaviest operating conditions (kind of fluid, pressure, temperature) shall be advised.

For all globe valves, operating torques are related to differential pressures and nominal sizes. The below table shows max. allowable differential pressures depending on pressure ratings and nominal sizes for easily opening and closing valves .

### Max. allowable differential pressures acc. to DIN 3356 for globe valves

Anma Çapı DN	PN16 (bar)	PN25 (bar)	PN40 (bar)
125	16	25	33
150	16	17	21
200	10	10	14
250	6	-	9

### MATERIAL SCHEDULES

The Bellows seal valves are manufactured in different materials schedules. For "Material Schedule" we mean the material quality of each valve components.

For all the different figures of valves, the applicable part list is shown on each descriptive page.

Herebelow we list the main components of the different material schedules :

Material Schedule	Body Material	Disc-Seat Material
11	Forged Alloy Steel	Stellite Gr.6
31	Forged Stainless Steel -316	Stellite Gr.6
41	Nodular Cast Iron	%13 Cr Steel
43	Cast Iron	%13 Cr Steel
51	Forged Carbon Steel	%13 Cr Steel
53	Cast Steel	%13 Cr Steel
63	Forged or Cast Stainless Steel - 316	S.S. - 316
71	Forged Carbon Steel	Stellite Gr.6

### SIZES (DN)

Standard sizes are DN15 (1/2") through DN250 (10")

### CONNECTIONS

Bellows valves illustrated in this catalogue have the following end connections :

– Flanged acc. to ISO7005-1/2, DIN, UNI, AFNOR, etc.

### SHIPPING PREPARATION

Our valves are supplied after passing the prescribed dimensional and functional tests. All valves are protected by plastic closures on connections and external painting for storage and shipping purposes.

Wooden containers are used for export shipments.

### OPTIONAL

1- For temperature below 200 °C , disc seat can be supplied of soft material (normally PTFE+Graphite) instead of metal (Fig: 1, 2)

2- Regulating disc can be supplied on flow control valves (Fig : 3)

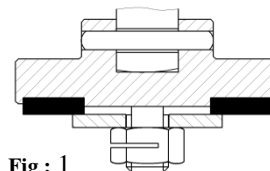


Fig : 1

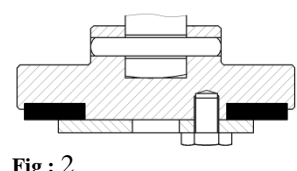


Fig : 2

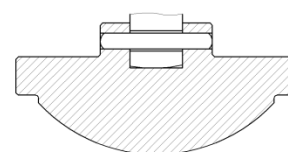


Fig : 3

## BELLOWS SEAL GLOBE VALVES

Type : BBT-L

PN16 Cast Iron (JL1040)

Flanged

Sizes : DN 15 – DN 250

Pressure rating : PN 16 DIN 2401 (page : 2)

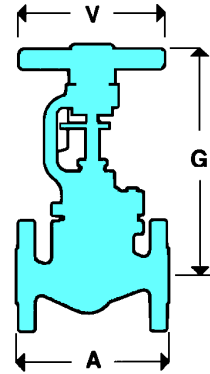
Dimensions : acc. to DIN 3202-F1 and EN 558-1

Connections : Flanged acc. to TS ISO 7005-2 and DIN EN 1092-2

Temp. Range : -10 +300 °C

Material sch. : 43

Applications : Steam , hot water, water , comp. air and other process fluids



(Note: The use of cast iron valves is to be excluded with harmful fluids -inflammables, toxic, corrosive, etc. - and for heavy service with pipes exposed to shocks, vibrations, repeated stresses, condensate hammering, etc.)

VALVE		DIMENSIONS			Stroke mm	FLANGE DIMENSIONS					WEIGHT kg	FLOW COEFFICIENT	
Type	DN mm	A mm	G mm	V mm		D mm	b mm	z	d mm	k mm		C <sub>v</sub>	K <sub>v</sub>
BBT-L	15	130	200	125	8	95	14	4	14	65	4,1	7	6
BBT-L	20	150	200	125	8	105	16	4	14	75	4,8	12	10
BBT-L	25	160	210	125	11	115	16	4	14	85	6,0	16	14
BBT-L	32	180	210	125	11	140	18	4	19	100	7,0	22	19
BBT-L	40	200	225	150	15	150	18	4	19	110	9,6	37	32
BBT-L	50	230	230	150	17	165	20	4	19	125	12	58	50
BBT-L	65	290	250	175	18	185	20	4	19	145	17	85	75
BBT-L	80	310	260	175	21	200	22	8	19	160	20	140	120
BBT-L	100	350	340	225	26	220	24	8	19	180	33	215	185
BBT-L	125	400	360	225	33	250	26	8	19	210	50	335	285
BBT-L	150	480	405	300	42	285	26	8	23	240	70	470	400
BBT-L	200	600	500	400	53	340	30	12	23	295	105	840	720
BBT-L	250	730	650	600	70	405	32	12	28	355	300	1300	1150

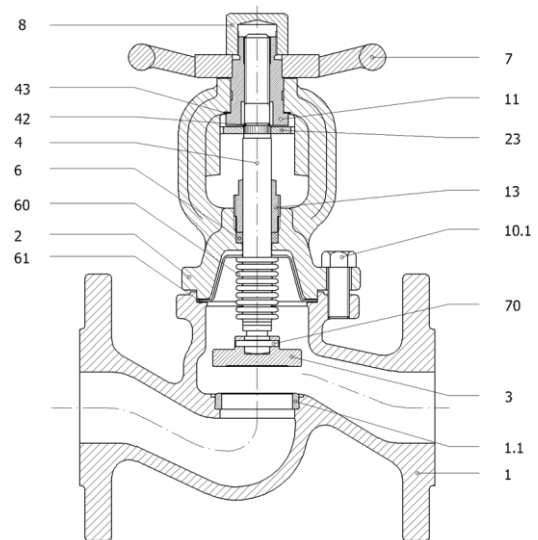
D: Outside dia. b: Thickness z: No. of holes d: Hole dia. k: Dia. of bolt circle

Part no.	Part name	Material
1	Body	JL 1040 ( GG 25 )
1.1	Seat	AISI 420
2	Bonnet	JL 1040 ( GG 25 )
3	Disc •	AISI 420
4	Stem	AISI 420
6	Security packing	Graphite
7	Handwheel	JL 1030 ( GG 20 )
8	Handwheel nut	Carbon steel (Plated)
10.1	Bolt	5.6
11	Yoke bushing	Carbon steel (Plated)
13	Packing gland	Carbon steel (Plated)
23	Indicator, Antirotation	Carbon steel (Plated)
42	Retaining ring	Alloy steel
43	Antifriction washer	Carbon steel C70
60	Bellows	AISI 321 / AISI 316 Ti
61	Gasket	Graphite
70	Pin	Stainless steel
70.1	Split nut *	Fe 37 + HT
76	Bearing *	Alloy steel
78	Bearing nut *	Carbon steel
80	Lubricator *	Steel (1/8" BSP)

• DN 250 valve is equipped with balanced disc for easy operation.

\* These parts are used only in DN 250 valve.

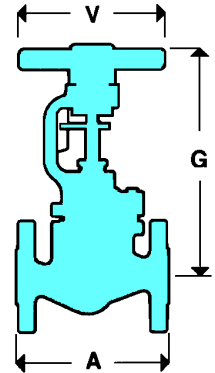
Note: DN 250 valves including balanced disc is installed in pipeline in reverse direction shown with an arrow on the body.



## BELLOWS SEAL GLOBE VALVES

**Type : BBT-L**  
**PN25 Nodular Cast Iron (JS1049)**  
**Flanged**

**Sizes** : DN 15 – DN 250  
**Pressure rating** : PN 25 DIN 2401 (page :2)  
**Dimensions** : acc. to DIN 3202-F1 and EN 558-1  
**Connections** : Flanged acc. to TS ISO 7005-2 and DIN EN 1092-2  
**Temp. Range** : -10 +300 °C  
**Material sch.** : 43  
**Uygulamalar** : Steam, heat transfer oil, hot water, water and other process fluids



VALVE		DIMENSIONS			Strok mm	FLANGE DIMENSIONS					WEIGHT kg	FLOW COEFFICIENT	
Tip	DN mm	A mm	G mm	V mm		D mm	b mm	z	d mm	k mm		C <sub>v</sub>	K <sub>v</sub>
BBT-L	15	130	200	125	8	95	16	4	14	65	4,1	7	6
BBT-L	20	150	200	125	8	105	18	4	14	75	4,8	12	10
BBT-L	25	160	210	125	11	115	18	4	14	85	6,0	16	14
BBT-L	32	180	210	125	11	140	18	4	19	100	7,0	22	19
BBT-L	40	200	225	150	15	150	18	4	19	110	9,6	37	32
BBT-L	50	230	230	150	17	165	20	4	19	125	12	58	50
BBT-L	65	290	250	175	18	185	22	8	19	145	17	85	75
BBT-L	80	310	260	175	21	200	24	8	19	160	20	140	120
BBT-L	100	350	340	225	26	235	24	8	23	190	33	215	185
BBT-L	125	400	360	225	33	270	26	8	28	220	51	335	285
BBT-L	150	480	405	300	42	300	28	8	28	250	71	470	400
BBT-L	200	600	500	400	53	360	34	12	28	310	106	840	720
BBT-L	250	730	650	600	70	425	32	12	31	370	310	1300	1150

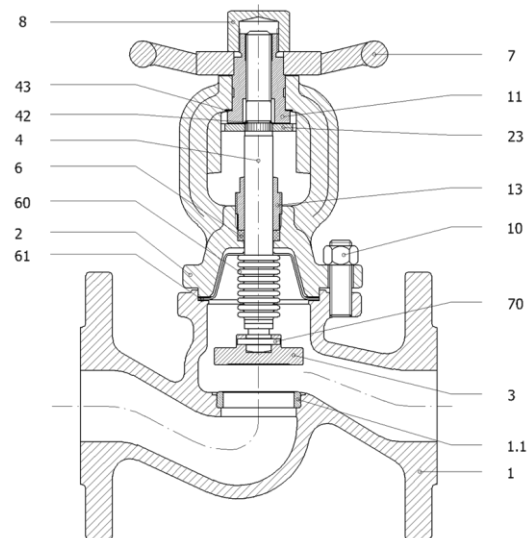
D: Outside dia. b: Thickness z: No. of holes d: Hole dia. k: Dia. of bolt circle

Part no.	Part name	Material
1	Body	JS 1049 ( GGG 40.3 )
1.1	Seat	AISI 420
2	Bonnet	JS 1049 ( GGG 40.3 )
3	Disc •	AISI 420
4	Stem	AISI 420
6	Security packing	Graphite
7	Handwheel	JL 1030 ( GG 20 )
8	Handwheel nut	Carbon steel (Plated)
10	Stud bolt & nut	5.6 - 5.2
11	Yoke bushing	Carbon steel (Plated)
13	Packing gland	Carbon steel (Plated)
23	Indicator,Antirotation	Carbon steel (Plated)
42	Retaining ring	Alloy steel
43	Antifriction washer	Carbon steel C70
60	Bellows	AISI 321 / AISI 316 Ti
61	Gasket	Graphite
70	Pin	Stainless steel
70.1	Split nut *	Fe 37 + HT
76	Bearing *	Alloy steel
78	Bearing nut *	Carbon steel
80	Lubricator *	Steel (1/8" BSP)

• DN 250 valve is equipped with balanced disc for easy operation.

\* These parts are used only in DN 250 valve .

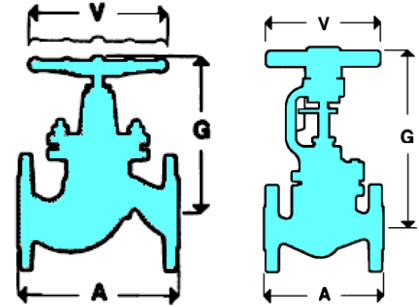
**Note: DN 250 valves including balanced disc is installed in pipeline in reverse direction shown with an arrow on the body .**



## BELLOWS SEAL GLOBE VALVES

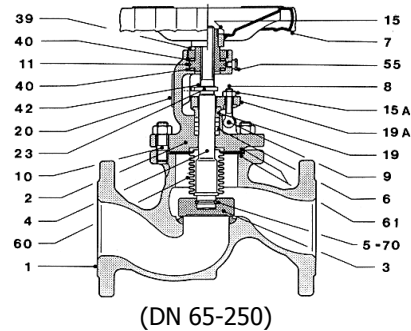
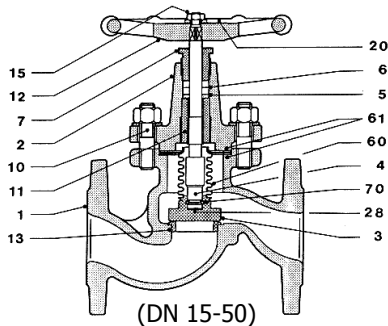
**Type : BBT-L**  
**PN40 Carbon steel, Stainless steel**  
**Flanged**

**Sizes : DN 15 – DN 250**  
**Pressure rating : PN40 DIN 2401 (page : 2)**  
**Boyutlar : acc. to DIN 3202-F1 ve EN 558-1**  
**Connections : Flanged acc. to ISO 7005-2 and DIN EN 1092-**  
**Temp. Range : -10 +400 C<sup>0</sup>**  
**Material sch. : 51 - 53 - 63**



VALVE		MAT. SCH.	DIMENSIONS			Stroke mm	FLANGE DIMENSIONS					WEIGHT Kg	FLOW COEFFICIENT	
Type	DN mm		A mm	G mm	V mm		D mm	b mm	z	d mm	K mm		C <sub>v</sub>	K <sub>v</sub>
BBT-L	15	51-63	130	160	125	5	95	16	4	14	65	2,5	4	3,5
BBT-L	20	51-63	150	162	125	6	105	18	4	14	75	6	8	7
BBT-L	25	53-63	160	180	125	7	115	18	4	14	85	6,5	14	12
BBT-L	32	53-63	180	188	125	9	140	18	4	18	100	8,5	22	19
BBT-L	40	53-63	200	205	125	12	150	18	4	18	110	11,5	35	30
BBT-L	50	53-63	230	250	200	13	165	20	4	18	125	16,5	56	48
BBT-L	65	53-63	290	290	250	17	185	22	8	18	145	21	85	75
BBT-L	80	53-63	310	305	250	20	200	24	8	18	160	28	140	120
BBT-L	100	53-63	350	360	300	25	235	24	8	22	190	45	215	185
BBT-L	125	53-63	400	420	400	28	270	26	8	25	220	65	335	285
BBT-L	150	53-63	480	470	400	37	300	28	8	25	250	98	470	400
BBT-L	200	53-63	600	520	600	45	375	34	12	30	320	170	805	690
BBT-L	250	53-63	730	650	600	70	450	38	12	33	345	405	1250	1070

D: Outside dia. b: Thickness z: No. of holes d: Hole dia. k: Dia. of bolt circle



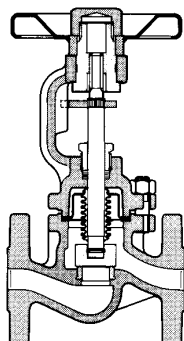
Part no.	Part name	Mat. Sch. 51-53	Mat. Sch. 63
1	Body	ASTM A105 ● ASTM A216 WCB ●	ASTM A182 F316 ● ASTM A351 CF8M ●
2	Bonnet	ASTM A105	ASTM A182 F316
3	Disc	ASTM A182 F6	ASTM A182 F316
4	Stem	ASTM A479 410	ASTM A479 316 Nitr.
5	Bottom ring	Carbon steel	Reinforced Graphite
6	Packing	Graphite	Graphite
7	Threaded gland	Carbon steel	Carbon steel
10	Stud bolt and nut	ASTM A193 B7	ASTM A193 B7
11	Bonnet bush ■	OT58 UNI 5707	ASTM A439 D2C
12	Handwheel	Cast iron	Cast iron
13	Seat	ASTM A182 F6	ASTM A182 316
15	Nut	ASTM A194 2H	ASTM A194 2H
20	Name plate	Stainless steel	Stainless steel
28	Antifriction plate	OT58 UNI 5707	-
60	Bellows	AISI 321/AISI316Ti	AISI 321/AISI316Ti
61	Gasket	Graphite	Graphite
70	Connecting ring	Spring steel	Stainless steel

● Depending on size ■ for DN32, DN40, DN50 only

Part no.	Part name	Mat. Sch. 53	Mat. Sch. 63
1	Body	ASTM A216 WCB+13%Cr	ASTM A351 CF8M
2	Bonnet	ASTM A216 WCB	ASTM A351 CF8M
3	Disc	ASTM A182 F6 ● ASTM A105+13%Cr ●	ASTM A182 F316
4	Stem	ASTM A182 F6	ASTM A479 316 Nitr.
5	Split nut ◇	ASTM A105 (hardened)	ASTM A564 630
6	Packing	Graphite	Grafit
7	Handwheel	Carbon steel	Carbon steel
8	Swing bolt	ASTM A193 B7	ASTM A193 B7
9	Pin	Alloy steel	Alloy steel
10	Stud bolt and nut	ASTM A193 B7/A1942H	ASTM A193 B7/A1942H
11	Yoke bushing	ASTM B150 C62300	ASTM B150 C62300
15	Handwheel nut	Cast iron	Cast iron
15.A	Nut	ASTM A194 2H	ASTM A194 2H
19	Gland	ASTM A105	ASTM A479 304
20	Name plate	Stainless steel	Stainless steel
23	Indicator	Carbon steel (plated)	St. steel
39	Retaining nut	Carbon steel	Carbon steel
40	Thrust bearing	Alloy steel	Alloy steel
42	Retaining ring	Alloy steel	Alloy steel
55	Lubricator	Steel	Steel
60	Bellows	AISI 321	AISI 321
61	Gasket	Graphite	Graphite
70	Connecting ring	Stainless steel	Stainless steel

◇ for DN125, 150, 200, 250 only

**BELLOWS SEAL VALVES**  
Other models

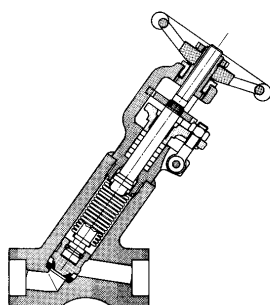


**BONETTI®**

**BELLOWS SEAL GLOBE VALVES**

Carbon steel, Stainless steel  
Type : BBTL

Flanged  
ASME B 16.5 Class 150-300  
1/2" – 6"

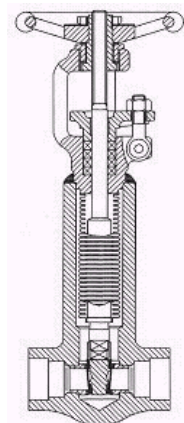


**BONT®**

**BELLOWS SEAL GLOBE VALVES**

Forged steel  
Type : WBY-L

Screwed, Socket weld, Butt weld  
ASME B 16.34 Class 800, 1500, 2500  
1/2" – 2"



**BONT®**

**BELLOWS SEAL GATE VALVES**

Forged steel  
Type : GWBT-L

Screwed, Socket weld, Butt weld  
API 602 Class 800, 1500  
1/2" – 2"



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