Type BV1001
Floating Mounted Ball Valve

Application

Tight-closing ball valve for process engineering and industrial applications
Nominal size NPS $^{1}/_{2}$ to 8
Nominal Pressure Class 150 to 300
Temperatures 0-200℃

Features

Type BV1001 ball valve equipped with pneumatic rotary actuator or hand lever.
·Valve body material: Cast stainless steel (or Cast steel).
·Valve ball material: Stainless steel.
·Seat ring installed at the side of the valve ball, can dynamically self-adjusting and be changed.
·Leakage rate according to ANSI/FCI70-2, up to class VI of on-off operation.
·The ball valves designed according to the modular assembly principle, can be equipped with various accessories.
·Ball shaft used blow-out proof, dust proof design, with PTFE packing.
·Face-to-face dimensions according to ASME B16.10-2000 CL150/CL300.
·Flange for attachment of actuators in accordance with DIN ISO 5211.

Fig. 1: Type BV1001 Ball Valve with Pneumatic Rotary Actuator

Structural Characteristic

– Fire safe device
– Antistatic device
– Blow-out proof stem
– Easy to adjust gland packing
– Belleville washer to tight glandbolting
– By-pass,drain and bleed(option)

Standard Specification

– Desigan standard: ASME B16.34 API 6D API 608
– Structure length: ASME B16.10
– Flanged end: ASME B16.5
– Fire safe test:API 607 ISO 10597
– Inspection and test:API 598 API 6D

Principle of operation

The process medium can flow through the ball valve in both directions. The ball with its cylindrical bore (ball channel) rotates around the center axis. The rotary angle of the ball determines the flow rate across the free area between the body and the ball channel. The ball shaft, can be optionally connected to a pneumatic actuator or equipped with a manually operated lever actuator. The ball is sealed by means of exchangeable seat rings.
The ball shaft is sealed with PTFE/Flexible graphite ring packing.

Additional equipment and accessories:

The ball valve, following accessories can be used individually or in combination
– Pneumatic actuator
– Limit switch
– Various solenoid valves
– Supply pressure regulator
– According to user specifications can provide other attachments

Fail-safe position

Depending on the different initial install position of in the pneumatic actuators, the ball valve has two fail-safe positions, which become automatically close or open when the supply air fails:

Control valve CLOSED without supply air

The ball valve closes when the air supply fails.
The ball valve opens when the air supply increases to against the force of the springs.

Control valve OPEN without supply air

The ball valve opens when the air supply fails.
The ball valve closes when the air supply increases to against the force of the springs.

Table 1: *Main technical data*

Nominal size	NPS	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"
Nominal pressure	Class	150/300											
Type of end connection	Flange	ASME B16.5-2009											
Seat/plug seal	PTFE Soft seal	PTFE Soft seal											
Temperature range	℃	-10℃ to 200℃											
Leakage rate		according to ANSI/FCI 70-2											
Valve plug	Soft seal	VI											
	Metal seal	IV											

Table 2: *Material*

No.	Designation	Material			
1	Body	A216-WCB	A352-LCB	A351-CF8	A351-CF8M
2	Cap	A216-WCB	A352-LCB	A351-CF8	A351-CF8M
3	Ball	A105+ENP	A350-LF2-ENP	A182-F304	A182-F316
4	Gasket	204 Sprial wound+graphite+PTFE			316 Sprial wound +graphite+PTFE
5	Nut	A 194-2H	A194 - 7	A 194-8	
6	Bolt	A193-B7	A320-L7	A192-B8	
7	Seat	PTFE/25%Carbon-TFM1600			
8	Stem	A183-F6a		A182-F304	A182-F316
9	Bearing	304+PTFE+MoS_2			316+PTFE+MoS_2
10	Packing	PTFE/Flexible graphite			
11	Gland	A276-410		A276-304	A276-316
12	Bearing	304+PTFE+MoS_2			316+PTFE+MoS2
13	Gland fange	A216-WCB	A351-CF8		
14	Belleville washer	A240-301			

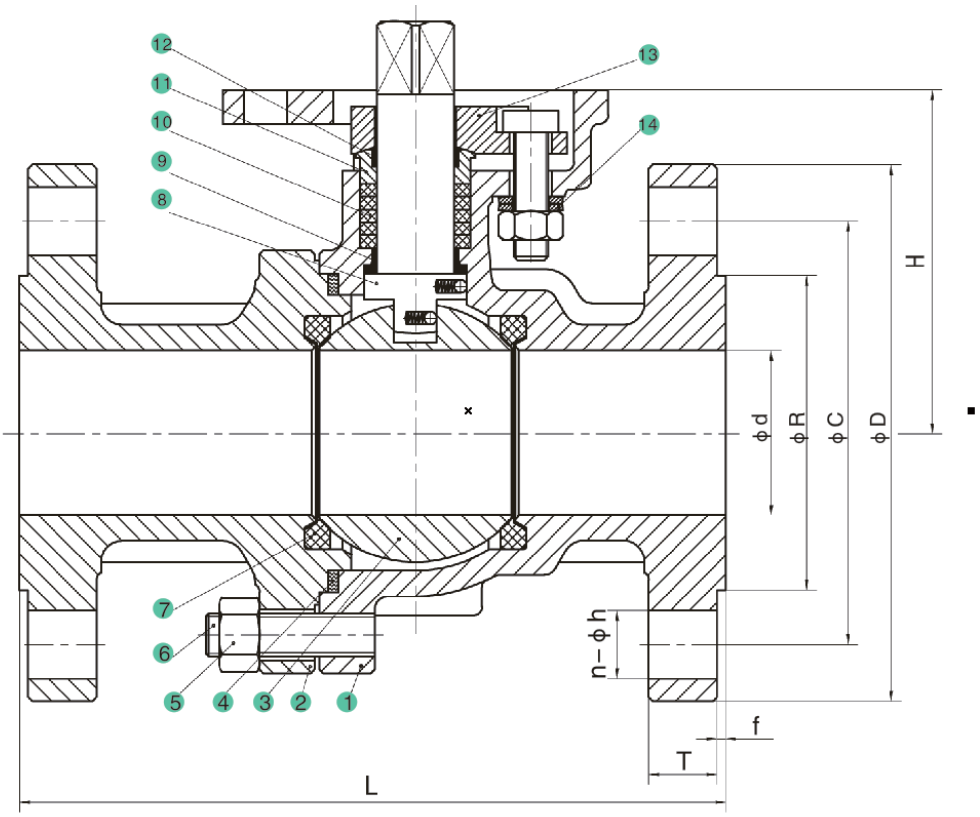

Fig.2 Sectional diagram of Type BV1001

Table 3: *Dimensions in mm for standard version of Type BV1001-150*

DN		Dimension		Flange dimension						ISO5211	
DN	NPS	L	H	D	T	F	R	C	N-Φh	Flange	Stem
15	1/2	108	48	90	9.6	2	34.9	60.3	4-Φ16	F05	9
20	3/4	117	55	100	11.2	2	42.9	69.9	4-Φ16	F05	9
25	1	127	64	110	12.7	2	50.8	79.4	4-Φ16	F05	11
32	1 1/4	140	72	115	14.3	2	63.5	88.9	4-Φ16	F05	11
40	1 1/2	165	80	125	15.9	2	73.0	98.4	4-Φ16	F07	14
50	2	178	95	150	17.5	2	92.1	120.7	4-Φ19	F07	14
65	2 1/2	190	106	180	20.7	2	104.8	139.7	4-Φ19	F10	17
80	3	203	116	190	22.3	2	127.0	152.4	4-Φ19	F10	17
100	4	229	140	230	22.3	2	157.2	190.5	4-Φ19	F10	22
125	5	356	170	255	22.3	2	185.7	215.9	4-Φ22	F12	27
150	6	394	190	280	23.9	2	215.9	241.3	4-Φ22	F12	27
200	8	457	246	345	27.0	2	269.9	298.5	4-Φ22	F14	27

Table 4: *Dimensions in mm for standard version of Type BV1001-300*

DN		Dimension		Flange dimension						ISO5211	
DN	NPS	L	H	D	T	F	R	C	N-Φh	Flange	Stem
15	1/2	140	48	95	12.7	2	34.9	66.7	4-Φ16	F05	9
20	3/4	152	55	115	14.3	2	42.9	82.6	4-Φ19	F05	9
25	1	165	64	125	15.9	2	50.8	88.9	4-Φ19	F05	11
32	1 1/4	178	72	135	17.5	2	63.5	98.4	4-Φ19	F05	11
40	1 1/2	190	80	155	19.1	2	73.0	114.3	4-Φ22	F07	14
50	2	216	95	165	20.7	2	92.1	127.0	4-Φ19	F07	14
65	2 1/2	241	106	190	23.9	2	104.8	149.2	4-Φ22	F10	17
80	3	282	116	210	27.0	2	127.0	168.3	4-Φ22	F10	17
100	4	305	140	255	30.2	2	157.2	200.0	4-Φ22	F10	22
125	5	381	170	280	33.4	2	185.7	235.0	4-Φ22	F12	27
150	6	403	190	320	35.0	2	215.9	269.9	4-Φ22	F14	27
200	8	502	246	380	39.7	2	269.9	330.2	4-Φ26	F16	36

Selecting and sizing the ball valve:

Accordance with ball valve operation and design conditions:

– Calculate the required nominal size, on-off valve generally based on user pipe size to calculate diameter of the valve.

– Select the suitable materials from Table 2.

– Select accessories.

Ordering text:

Ball valve	Type BV1001 DN... Class...
Valve body material	Acc. to table 2
Type of end connection	Flanges
Seat and plug	Metal sealing or soft sealing
Actuator	Pneumatic rotary actuator or hand lever
Fail-safe position	Fail-close or fail-open
Process medium	Density and temperature
Max. Flow rate	n kg/h or m³/h
Max Shut off DP	Δp
Pressure p1 and p2	(MPa, KPa bar)
Accessories	Limit switch, Solenoid valve, Supply pressure regulator
Others	

Specifications subject to change without notice