Model BLV-2SF Ball valve
Product Manual

Thank you very much for choosing the Yoshitake's product. To ensure the correct and safe use of the product, please read this manual before use. This manual shall be kept with care for future references.

The symbols used in this manual have the following meanings.

⚠ Warning	This symbol indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.
⚠ Caution	This symbol indicates a hazardous situation that, if not avoided, may result in minor or moderate injury or may result in only property damage.

Contents

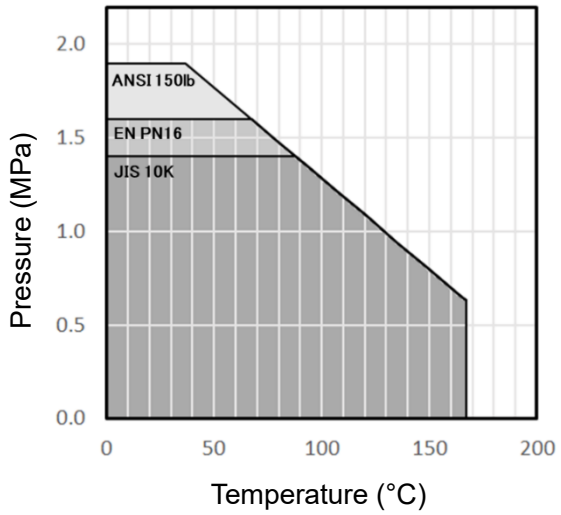
1. Specifications 1
2. Structure and dimensions 2
   2.1 Structure and main parts 2
   2.2 Dimension and weights 3
3. Installation 4
   3.1. Cautions for installation 4
4. Operation 4
   4.1. Warnings and cautions for product usage 4
5. Maintenance and inspection 5
   5.1. Warnings and cautions for maintenance and inspection 5
   5.2. Periodic inspection 5
   5.3. Troubleshooting 5
   5.4. Cautions for disassembly and re-assembly 5
   5.5. Disassembling procedure 6
   5.6. Assembling procedure 6
6. Disposal 6

Warranty Information

YOSHITAKE

1. Specifications

Model		BLV-2SF		
Nominal size		15-100A		
Application		Steam, air, cold and hot water, oil, other non-dangerous fluid		
Max. pressure Max. temperature		According to Pressure-Temperature rating		
Material	Body, cap	Stainless steel		
	Ball	Stainless steel		
	Ball seat	PTFE		
Connection		JIS 10K RF equivalent	ANSI 150lb RF equivalent	EN PN16 equivalent
Features		● Full bore type ● There is no restriction on flow direction. ● Anti-static design prevents static electricity charging on the valve. ● The collar on the lower end of the stem prevents the stem from popping out due to the internal pressure even if the gland is removed.		



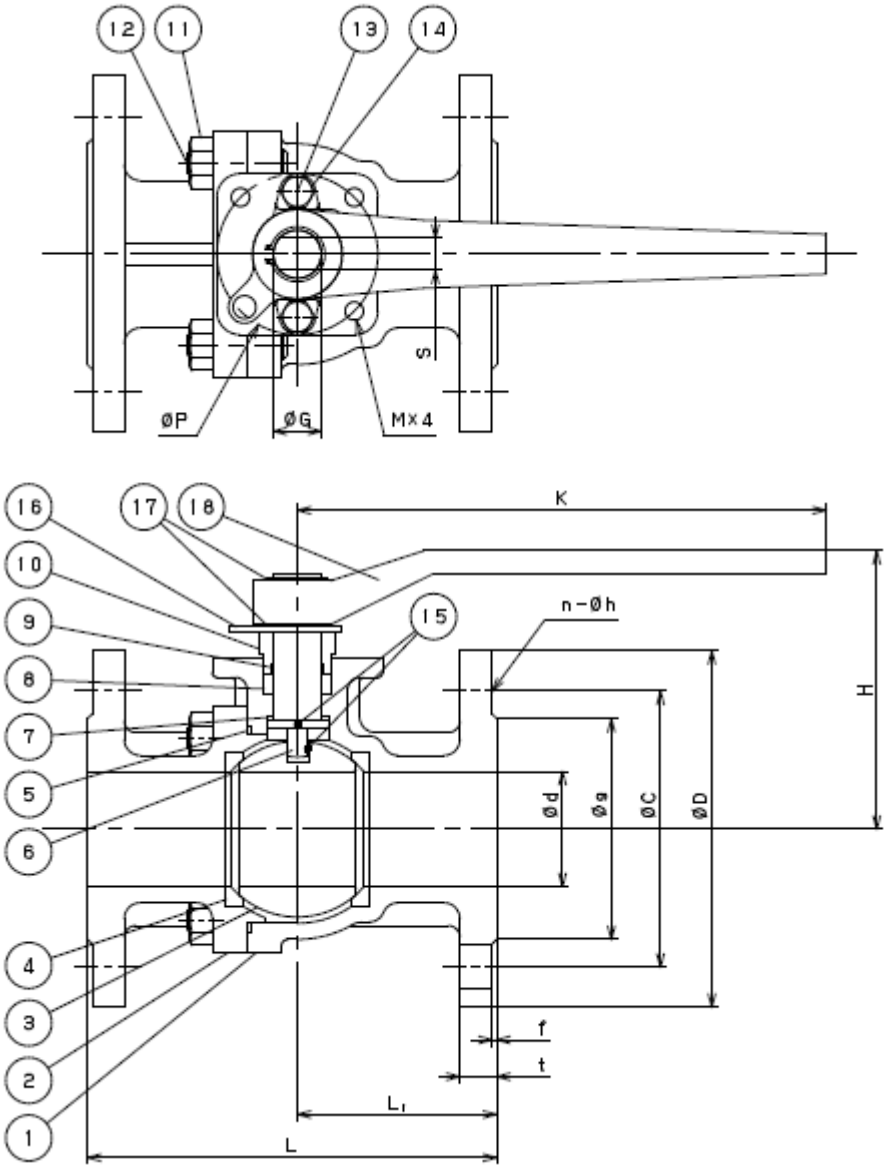
Usable range
The valve can be used in this range.

Pressure-Temperature rating

⚠ Caution

Confirm that the indications on the body casting correspond with the specifications of ordered product.
*If they are different, do not use the product and contact us.

2. Structure and dimensions
   2.1 Structure and main parts



No.	Part name	Q'ty	No.	Part name	Q'ty
1	Body	1	10	Gland	1
2	Cap	1	11	Nut	1 set
3	Ball	1	12	Stud bolt	1 set
4	Seat	2	13	Bolt	2
5	Gasket	1	14	Spring washer	2
6	Stem	1	15	Anti-static device	2
7	Thrust washer	1	16	Stopper	1
8	Gland packing	3	17	Snap ring	2
9	Stem packing	1	18	Handle	1

2.2 Dimension and weights

(mm)

Size	L	L_1	H	K	M	P	S	G	d	Flange JIS 10K RF equivalent						Weight (kg)
										D	C	g	f	t	n-h	
15A	108	51.7	73	145	M5	42	8	12	15	95	70	51	1	12	4-15	1.9
20A	117	58.5	79	145	M5	42	8	12	20	100	75	56	1	14	4-15	2.3
25A	127	54.7	91	165	M6	50	10	14	25	125	90	67	1	14	4-19	3.8
32A	140	63	94	165	M6	50	10	14	32	135	100	76	2	16	4-19	4.8
40A	165	73.8	113	230	M8	70	14	21	38	140	105	81	2	16	4-19	6.5
50A	178	86.7	122	230	M8	70	14	21	50	155	120	96	2	16	4-19	8.6
65A	190	95	144	230	M8	70	14	21	65	175	140	116	2	18	4-19	12.7
80A	203	101	151	320	M10	102	18	28	80	185	150	126	2	18	8-19	17.8
100A	229	118.6	165	320	M10	102	18	28	100	210	175	151	2	18	8-19	24

(mm)

Size	L	L_1	H	K	M	P	S	G	d	Flange ANSI 150lb RF equivalent						Weight (kg)
										D	C	g	f	t	n-h	
15A	108	51.7	73	145	M5	42	8	12	15	88.9	60.5	35	1.6	11.2	4-16	1.6
20A	117	58.5	79	145	M5	42	8	12	20	98.6	69.9	43	1.6	11.2	4-16	1.9
25A	127	57.2	91	165	M6	50	10	14	25	108	79.2	51	1.6	11.2	4-16	2.8
32A	140	63	94	165	M6	50	10	14	32	117.3	88.9	63.5	1.6	12.7	4-16	3.7
40A	165	82.8	113	230	M8	70	14	21	38	127	98.6	73	1.6	14.3	4-16	5.9
50A	178	86.7	122	230	M8	70	14	21	50	152.4	120.7	92	1.6	16	4-19	8.5
65A	190	95	144	230	M8	70	14	21	65	177.8	139.7	105	1.6	17.6	4-19	12.6
80A	203	101	151	320	M10	102	18	28	80	190.5	152.4	127	1.6	19.1	4-19	18.1
100A	229	118.6	165	320	M10	102	18	28	100	228.6	190.5	157	1.6	23.9	8-19	28.2

(mm)

Size	L	L_1	H	K	M	P	S	G	d	Flange EN PN16 equivalent						Weight (kg)
										D	C	g	f	t	n-h	
15A	130	61.7	73	145	M5	42	8	12	15	95	65	45	2	16	4-14	2.1
20A	150	73.5	79	145	M5	42	8	12	20	105	75	58	2	18	4-14	2.8
25A	160	72.1	91	165	M6	50	10	14	25	115	85	68	2	18	4-14	4.3
32A	180.3	83	94	165	M6	50	10	14	32	140	100	78	2	18	4-18	5.8
40A	200	97.8	113	230	M8	70	14	21	38	150	110	88	3	18	4-18	7.5
50A	230	111.7	122	230	M8	70	14	21	50	165	125	102	3	18	4-18	10.2
65A	290	144.8	144	230	M8	70	14	21	65	185	145	122	3	18	4-18	15
80A	310	154.5	151	320	M10	102	18	28	80	200	160	138	3	20	8-18	20.7
100A	350	179.3	165	320	M10	102	18	28	100	220	180	158	3	20	8-18	28.5

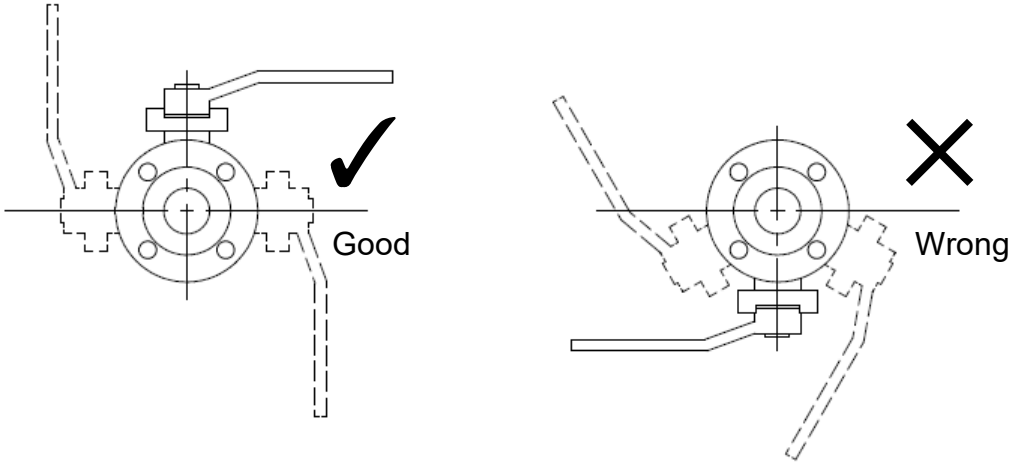
3. Installation

3.1. Cautions for installation

⚠ Caution

(1) Do not disassemble the product unless it is necessary.
*It may prevent the product from functioning properly.
(2) Connect the product firmly so that the fluid will not leak.
*If connection is not firm, fluid might leak by vibration. Hot fluid may cause burn.
*Select sealing gaskets suitable for the fluid characteristics, pressure and temperature.
*Tighten the bolts uniformly in diagonal order.
(3) Connect the product so that it is not subject to excessive load, bending and vibration.
*They may seriously shorten the lifetime of the product.
(4) If freezing is possible, take antifreeze measures such as draining or insulation.
*The frozen fluid may damage the product.

(5) There is no restriction on the flow direction.
(6) The valve can be installed both horizontally and vertically, but do not install upside-down.



4. Operation

4.1. Warnings and cautions for product usage

⚠ Warning

(1) Before letting the fluid into the product, be sure that there will be no possibility of danger if fluid flows into the ends of piping, and that the product is firmly connected.
*If the fluid flows out from the pipe ends or connection part, the surroundings will get dirty. High temperature fluids may cause burn injury.
(2) When using with a high temperature fluid, do not touch the product with your bare hands.
*It could result in burn injury.

⚠ Caution

(3) When applying the fluid into the valve, operate the valve slowly to prevent water hammer and condensate problem.
*Valves, fitting or equipment may be damaged by water hammer or condensate problem.
(4) The product should be used fully open or fully close.
*When used at intermediate opening, the ball and the seat may be damaged.

5. Maintenance and inspection

5.1. Warnings and cautions for maintenance and inspection

⚠ Warning

(1) When disassembling and inspecting the product, ensure that pressure in the valve and pipe is released to atmospheric pressure. If using with high temperature fluids, cool the product down well until it can be touched with bare hands.
*If the fluid flows out, the surroundings will get dirty. High temperature fluids may cause burn injury.
(2) Disassembly and inspection should be conducted by properly trained personnel or manufacturer.

5.2. Periodic inspection

Conduct periodic inspection once a year to maintain functions and performance of the product. If abnormalities were detected, refer to “5.3 Troubleshooting” and take measures.

Inspection items
○Whether opening and closing operation is normal
○Whether there is abnormal noise
○Whether there is external leak

5.3. Troubleshooting

Trouble	Cause	Remedy
External leak	Nut [11] is loose.	Tighten nut [11].
	Bolt [13] is loose.	Tighten bolt [13].
	Gasket [5] is damaged.	Replace seat [4] and gasket [5].
	Gland packing [8] is damaged.	Replace all the packings.*
Seat leak	Seat [4] is damaged.	Replace seat [4] and gasket [5].
	Ball [3] is damaged.	Replace the product.
	Foreign substances are stuck.	Remove the foreign substances.
Abnormally high operation torque	Bolt [13] is overtightened.	Loosen bolt [13] and re-tighten so that there is no leak (but not too tightly).
	Foreign substances are stuck.	Remove the foreign substances.
Abnormal noise	Bolt [13] is loose.	Tighten bolt [13].

*Packings: seat [4], gasket [5], thrust washer [7], gland packing [8], stem packing [9]

5.4. Cautions for disassembly and re-assembly

⚠ Caution

(1) When disassembling and re-assembling, replace the packings with new ones.
(2) When disassembling and re-assembling, be careful not to drop parts. Keep the dismantled parts on soft cloth so that they will not be damaged.
*Damage on the parts may impair the product’s function.
(3) When reassembling, assemble the parts securely. Tighten the bolts and nuts uniformly in diagonal order.
*Loose assembly or uneven tightening may cause fluid leakage.

5.5. Disassembling procedure

(1) Close the valve fully.
(2) Detach the snap rings [17] from the stem [6], and remove the handle [18] and stopper [16].
(3) Remove the nuts [11] fixing the body [1] and cap [2], and take the cap [2] off the body [1].
(4) Remove the gasket [5] from the body [1] or cap [2].
(5) Remove the ball [3] from the body [1].
(6) Push the stem [6] to inside body [1] and remove it.
(7) Remove the thrust washer [7] from the stem [6].
(8) Remove the seats [4] from the body [1] and cap [2].
(9) Remove the bolts [13], and disassemble the gland [10], stem packing [9] and gland packing [8].

5.6. Assembling procedure

(1) Mount 3 pieces of gland packing [8] on the body [1]. Be sure that the V-shaped grooves are on downside.
(2) Insert the stem packing [9] into the gland [10], and fix them temporarily on the body [1] with bolts [13].
(3) Assemble the seats [4] on the body and cover [2].
(4) Attach the thrust washer [7] on the stem [6].
(5) Insert the stem [6] from inside the body [1] and push in until the collar of the stem [6] contacts the body [1]. Then rotate it until the full-close position.
(6) Mount the ball [3] on the body [1] so that its groove fits the stem [6].
(7) Fit the gasket [5] on the body [1].
(8) Attach the cap [2] on the body [1] without moving seat [4], and fix them with nuts [11].
(9) Mount the stopper [16] on the stem [6] and fix them with snap ring [17].
(10) Tighten the bolts [13] which had been temporarily fastened.
(11) Mount the handle [18] on the stem [6] and fix with the snap ring [17].
(12) Check and confirm that all fastening parts are securely fastened.

Size and torque of fastening parts

Nominal size	Nut [11]			Bolt [13]		
	Nominal diameter of screw	Size of Wrench	Torque (N･m)	Nominal diameter of screw	Size of Wrench	Torque (N･m)
15, 20A	M8	13	10	M5	8	6
25, 32A	M10	17	19.6	M8	13	9
40, 50A	M12	19	34.5	M10	17	15
65, 80A	M12	19	34.5	M10	17	24
100A	M12	19	34.5	M10	17	42

6. Disposal

When disposing the product, refer to the drawing to check material of each part and dispose them separately according to local rules and regulations.

Warranty Information

1. Limited warranty

   This product has been manufactured using highly-advanced techniques and subjected to strict quality control. Please be sure to use the product in accordance with instructions on the manual and the label attached to it.

   Yoshitake warrants the product to be free from any defects in material and workmanship under normal usage for a period of one year from the date of receipt by the original user, but no longer than 24 months from the date of shipment from Yoshitake's factory.

2. Parts supply after product discontinuation

   This product may be subject to discontinuation or change for improvement without any prior notice. After the discontinuation of the product, Yoshitake supplies the repair parts for 5 years otherwise individually agreed.

3. This warranty does not cover the damage due to any of below:
   (1) Valve seat leakage or malfunction caused by foreign substances inside piping.
   (2) Improper handling or misuse.
   (3) Improper supply conditions such as abnormal water pressure/quality.
   (4) Water scale or freezing.
   (5) Trouble with power/air supply.
   (6) Any alteration made by other than Yoshitake.
   (7) Use under severe conditions deviating from the design specifications
   (e.g. in case of corrosion due to outdoor use).
   (8) Fire, flood, earthquake, thunder and other natural disasters.
   (9) Consumable parts such as O-ring, gasket, diaphragm and etc.

   Yoshitake is not liable for any damage or loss caused by malfunction or defect of the product.

YOSHITAKE