



BELLOWS VALVE BSV Series

PRODUCT MANUAL

Thank you very much for choosing the Yoshitake 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.

1. Specification

Model	BSV-10F	BSV-20F	BSV-2EN		BSV-10S	BSV-10ST	
Connection	JIS 10KFF flanged	JIS 20KRF flanged	BSEN PN16 flanged	BSEN PN25 flanged	JIS 10KRF flanged		
Nominal size	15A to 250A	15A to 150A	15A to 250A	15A to 150A	15A to 100A		
Application	Steam, Air, Cold and hot water, Oil, Other non-dangerous fluids						
Max. operating pressure	1.4MPa*1	15A -100A: 2.8MPa*1 125A,150A: 2MPa*1	1.6MPa*2	2.5MPa*2	1.4MPa*1		
Max. operating temperature	300°C*1	350°C*1	350°C*2	350°C*2	300°C*1	183°C*1	
Material	Body	Ductile cast iron				Stainless steel	
	Valve	Stainless steel				PTFE	
	Seat	Stainless steel					

*1 The relationship between the operating pressure and operating temperature is based on JIS B2051; for PTFE, the PTFE rating in JIS B2051 applies.

*2 The relationship between the operating pressure and operating temperature is based on the pressure-temperature rating specified in BS EN 1092-2.

Caution

Please confirm that the indications on the product correspond with the specifications of the ordered product model before use.

* If they are different, please contact us without using the product.

2. Storage and Installation

Caution

- Store the product indoors in a dust free, low humidity, dry and ventilated environment.
- Installation should be conducted by suitably trained personnel, wearing protective head, eye, hand and foot protection.
- To install the product, make sure that the direction of fluid flow matches the arrow marked on the product.
- In order to avoid excessive piping stress in the valve, carefully align the center of the valve and the connected pipe so that they will be in line.
- In case that the product is expected to be frozen, be sure to conduct freezing prevention measures or water draining treatment (after use).
- The valve can be installed in both horizontal and vertical pipes, but the position must be from upright to sideways. Do not install the valve upside down.
- To use the valve for high-temperature fluids (approximately 200-degree C or higher), raise the valve temperature to the operating temperature, and then tighten the bolts shown in Figure 1 additionally. For additional tightening, ensure that the valve is open, and tighten the bolts in a diagonal sequence using a torque wrench. Tightening should be done gradually and evenly, with increasing bolt torque from a low torque to the tightening torque as listed in the table below.

Nominal size	15-20A	25-32A	40-50A	65A	80-125A	150-250A
Bolt width across flats (mm)	17	17	19	19	24	24
Tightening torque (N·m)	20	30	40	50	70	100

3. Operation

⚠ Warning

Before applying fluid, make sure that there is no danger if the fluid flows into the end of the piping.
*Failure to follow this notice may result in property damage due to fluid leakage.

⚠ Caution

(1) When using the product with its valve fully open, turn the handle counterclockwise by 45 degrees from the fully open position to prevent the valve from being stuck.

(2) Operate the valve according to the torque limits shown below, and do not apply excessive force.

Nominal size	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A
Torque limits (Nm)	20	20	25	30	50	50	80	110	160	245	300	300	300

(3) Do not try to turn the handle beyond its fully open/closed positions. Otherwise, the valve may be damaged.

(4) Sizes 200A and larger are equipped with Valve (S) to reduce the opening torque. When opening the valve, first rotate the Handle by approximately one full turn to open the Valve (S) and allow the differential pressure between the inlet and outlet pressures to reduce before continuing to operate the Handle (See Figure 2).

(5) Tighten the lock bolt if it is necessary to fix the handle (See Figure 3).

(6) When applying grease to the sleeve, remove the lock bolt and put grease into screw hole (See Figure 3).

(recommendation: Henkel LOCTITE LB 8150).

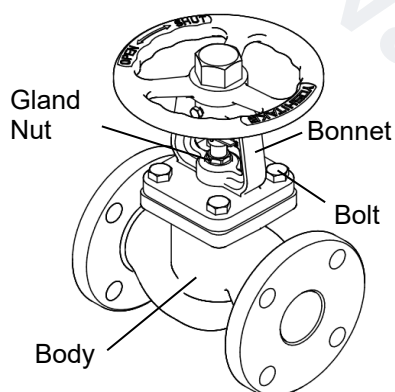


Figure 1

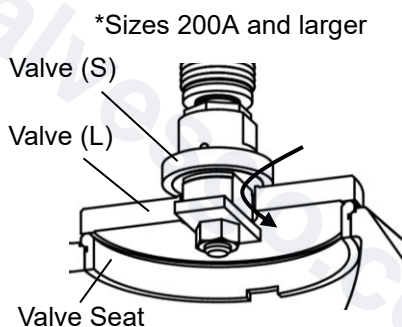


Figure 2

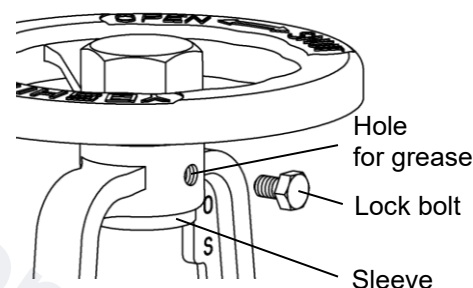


Figure 3

4. Troubleshooting

Trouble	Cause	Remedy
Leakage from between the body and the bonnet.	1. Stress relief of gasket.	1. Tighten the bolt additionally. If leakage does not stop after the retightening, replace the product.
Leakage from the gland packing part.	1. Damage of the bellows.	1. Tighten the gland nut. Then, replace the product immediately.
Leakage from the valve and/or valve seat on complete closing	1. The valve and/or valve seat are damaged.	1. Replace the product with new one.
	2. Foreign matter caught.	2. Remove the foreign substance.
Operation torque of the handle is abnormally large	1. Poor lubrication of the sleeve.	1. Apply grease to the sleeve in reference to "3. Operation".
	2. Foreign substance is stuck on spindle and screw part.	2. Remove the foreign substance.
Abnormal sound	1. Each screw is loose.	1. Retighten the loosened parts.

5. Maintenance

⚠ Warning

Completely discharge the pressure inside of the product, line and equipment before inspection and maintenance. For high temperature fluid, cool down the product till it can be touched with bare hands.

* Failure to follow this notice may result in injury or burns due to residual pressure.

Periodic inspection

Please perform annual inspections to maintain the product's optimal performance.

Inspection item

- Opening and closing operation
- Abnormal sound
- Outside leakage

If any abnormality is found, refer to "4. Troubleshooting" and take appropriate measures.

6. After service

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-rings, gaskets, diaphragms, etc.

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