



Instruction Manual

Bellows Sealed Valve
BE8H

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Introduction

Thank you for purchasing the **TLV** Bellows Sealed Valve.

This product has been thoroughly inspected before being shipped from the factory. When the product is delivered, before doing anything else, check the specifications and external appearance to make sure nothing is out of the ordinary. Also be sure to read this manual carefully before use and follow the instructions to be sure of using the product properly.

If detailed instructions for special order specifications or options not contained in this manual are required, please contact **TLV** for full details.

This instruction manual is intended for use with the model(s) listed on the front cover. It is necessary not only for installation but for subsequent maintenance, disassembly/reassembly and troubleshooting. Please keep it in a safe place for future reference.

Safety Considerations

- Read this section carefully before use and be sure to follow the instructions.
- Installation, inspection, maintenance, repairs, disassembly, adjustment and valve opening/closing should be carried out only by trained maintenance personnel.
- The precautions listed in this manual are designed to ensure safety and prevent equipment damage and personal injury.
- The cautionary items below are very important for safety: be sure to observe all of them as they relate to installation, use, maintenance, and repair. Furthermore, TLV accepts no responsibility for any accidents or damage occurring as a result of failure to observe these precautions.

Symbol



Indicates that there is a possibility of injury or equipment/product damage



Install properly and DO NOT use this product outside the recommended operating pressure, temperature and other specification ranges.

Improper use may result in such hazards as damage to the product or malfunctions that may lead to serious accidents. Local regulations may restrict the use of this product to below the conditions quoted.

Take measures to prevent people from coming into direct contact with product outlets.

Failure to do so may result in burns or other injury from the discharge of fluids.

When disassembling or removing the product, wait until the internal pressure equals atmospheric pressure and the surface of the product has cooled to room temperature.

Disassembling or removing the product when it is hot or under pressure may lead to discharge of fluids, causing burns, other injuries or damage.

NEVER attempt to modify the product in any way.

Failure to observe these precautions may result in damage to the product and burns or other injury due to malfunction or the discharge of fluids.

Do not use excessive force when tightening nuts and bolts on product flanges or when connecting threaded pipes to the product.

Over-tightening may cause breakage leading to fluid discharge, which may cause burns or other injury.

Use only under conditions in which no freeze-up will occur.

Freezing may damage the product, leading to fluid discharge, which may cause burns or other injury.

Use only under conditions in which no water hammer will occur.

The impact of water hammer may damage the product, leading to fluid discharge, which may cause burns or other injury.

Do not stand on or apply body weight to the handle.

The handle may break, resulting in injury or other accident.


Do not carry the product by the handle.

The handle is not secured and may move causing injury.

Do not place fingers inside the product.

The handle may be turned resulting in injury.

Installation & Operational Considerations

 CAUTION	Before installing the product, blow out the piping to remove any piping scraps, dirt, oil and scale. Failure to do so may result in leakage at the seat due to foreign matter.
	Do not remove the product from its box or protective covering until just prior to installation. The protective cover keeps damage causing foreign materials out of the product.
	Do not attempt to turn the handle past the full open or full closed position. Turning past these points may cause product malfunction or damage.

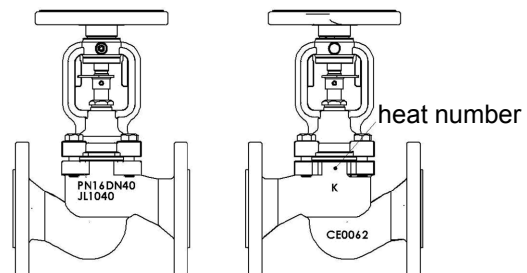
1. Product Description

BE8H series bellows sealed globe valves are used as stop valves. Stop valves are designed only for shutting off and opening the path of flow.

Stem sealing is performed by a flexible bellows and an additional protecting gland.

Bellows sealed valves are provided with cast markings according to the requirements of the PN-EN19 standard. The markings facilitate technical identification and contain:

- nominal diameter DN (mm),
- nominal pressure PN (bar),
- body and bonnet material,
- arrow indicating medium flow direction,
- manufacturer,
- heat number,
- CE marking, for products subject to the 97/23/EC directive. CE marking starts from DN32

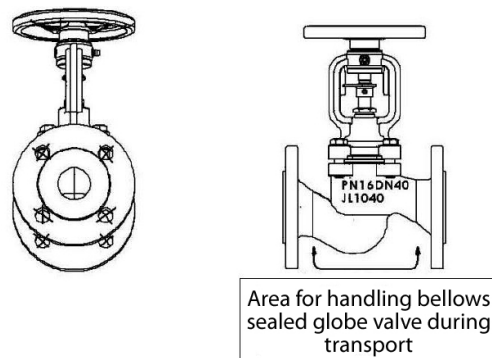


2. Requirements for Maintenance Staff

The staff assigned to assembly, operation and maintenance tasks should be qualified to carry out such jobs. If the valve is provided with mechanical actuators, the operating manual of the actuator should be obeyed. During operation parts of the valve, for example the handwheel, cover, or body, may become hot and the user should take appropriate measures to prevent burns.

3. Transport and Storage

Transport and storage should be carried out at temperatures between -20 and 65 °C. Valves should be protected against the influence of external forces and destruction of the paint layer as well. The aim of the paint layer is to protect the valves against rust during transport and storage. Valves should be kept in clean, dry rooms and protected against the influence of atmospheric conditions. A drying agent or heating should be applied in damp rooms to prevent condensate formation. The valves should be transported in such a way as to avoid handwheel and valve stem damage.



Do not fit lifting devices to connecting holes or handwheel.

4. Function

BE8H series valves are designed to shut off the medium flow. The type of working medium may make some materials unsuitable for use. Valves are designed for normal working conditions. Working pressure is related to the maximum temperature of the medium as shown in the table below.

Model	Material	PN	-20	-10	50	100	120	150	200	250	300	350	400	Temp. (°C)
BE8H-16	EN-GJL-250	16	—	16	16	16	16	14.4	12.8	11.2	9.6	—	—	Maximum Operating Pressure (barg)
BE8H-25	EN-GJS-400-18-LT	25	—	25	25	25	25	24.3	23	21.8	20	17.5	—	
BE8H-40	GP240GH	40	30	40	40	37.1	36.3	35.2	33.3	30.4	26.7	25.7	23.8	

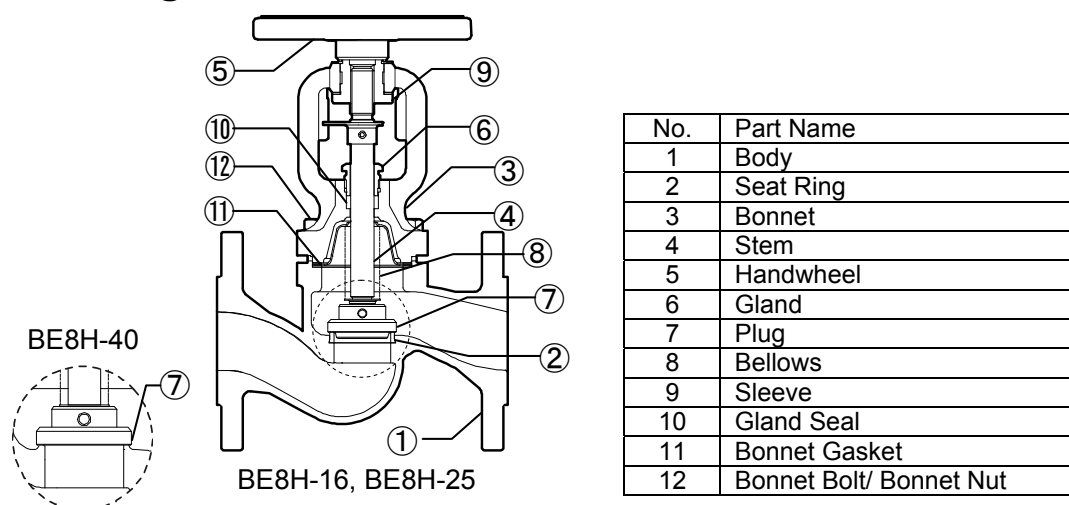


The plant designer is responsible for selection of a valve that is suitable for working conditions.

5. Application

- Steam, water, air and other fluids*
(*Do not use for toxic, flammable or otherwise hazardous fluids.)
- Industrial technologies, power industry, etc.

6. Configuration



7. Installation

During the installation of the Bellows Sealed Valve the following steps should be observed:

- Visually inspect the valve initially to ensure it is undamaged and also ensure that it is suited to the medium and working conditions used in the plant.
- Remove dust caps if supplied.
- Protect the valve during installation from debris and excessive temperature conditions.
- Steam pipelines should be fitted in such a way as to avoid condensate collection; in order to avoid water hammer, a steam trap should be installed.



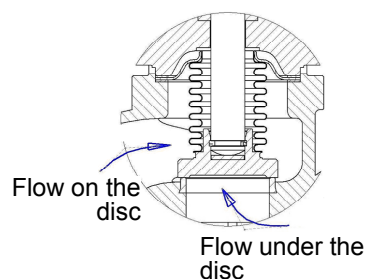
The pipeline where the valve is fitted should be arranged in such a way that the valve body is not subjected to any bending or stretching forces. Bolted joints on the pipeline must not cause additional stress resulting from excessive tightening, and fastener materials must comply with the working conditions of the plant,

- The valve stem should be protected during pipeline painting.
- The valve can be installed in any position, however it is recommended to install it with the handwheel upwards.



Take note of the medium flow direction, marked with an arrow on the body. Flow direction is established by the followings rules:

	BE8H-16 / BE8H-25	BE8H-40
	Stop valve	Stop valve
	PN16 – PN25	PN40
Under the disc	DN15 – DN150	DN15 – DN100
On the disc	DN200	DN125 – DN150

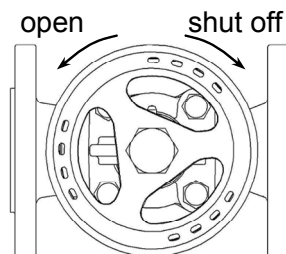


- Before plant startup, especially after repairs are carried out, flush out the pipeline through the fully open valve, in order to discharge solid particles or welding splinters which may be harmful for sealing surfaces.
- A strainer (wire mesh filter) installed before the valve increases the certainty of correct operation.

8. Maintenance

During maintenance the following rules should be observed:

- Startup process – Sudden changes of pressure and temperature should be avoided when starting the plant.
- The valve is closed by turning the handwheel clockwise when looking down from above the handwheel (according to the arrow direction marked on the handwheel).
- The valve is opened by turning the handwheel counter-clockwise.

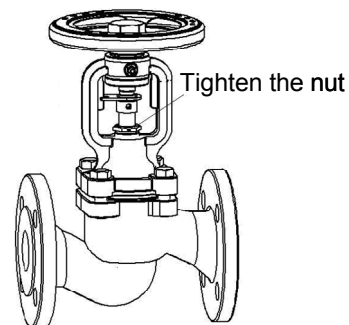


Do not use any additional lever when turning the handwheel

- The performance of fitted valves can be checked by repeated closing and opening.
- If leakage occurs from the valve stem, it is necessary to tighten gland nut compressing the gland seal with moderate force until the leakage stops.



Leakage on the gland means that the bellows has been damaged. The upper part of the valve should be replaced immediately



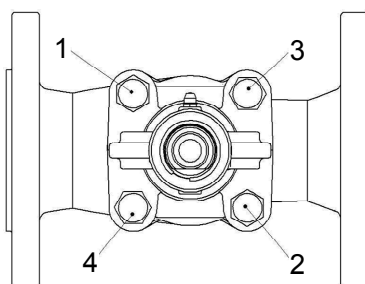
9. Service and Repair

! *For safety assurance, each valve should be surveyed and maintenance carried out regularly especially for those which are used rarely. The frequency of these activities should be determined by the user on the basis of working (operating) conditions, nevertheless they should be done at least once a month. The stem thread must also be lubricated periodically.*

All service and repair jobs should be carried out by authorized staff using suitable tools and original spare parts. Before removing the valve from the pipeline, or before service, the pipeline should be out of operation. During service and repair jobs it is necessary to decrease pressure to 0 bars, valve temperature to ambient temperature and to use appropriate personal protective gear at all times. After valve removal it is necessary to replace the flange connection gaskets between the valve and pipeline.

! *Precautions should be taken when touching the gasket between the body and the valve bonnet. The gasket contains a metal core which may cause injury,*

Every time the valve bonnet is disassembled the sealing surfaces should be cleaned. During assembly a new gasket of the same type as previously used should be applied. Body-bonnet bolt connections should be tightened when the valve is in the open position. The bolts should be tightened evenly and crosswise using a torque wrench.



- Tightening torques

Screw	M8	M10	M12	M16
Torque (N·m)	15 – 20	35 – 40	65 – 70	140 – 150

- Before re-installing the valves in the pipeline it is necessary to check valve operation, and tightness of all connections. A tightness test should be carried out with a water pressure of 1.5 times the nominal pressure of the valve.

10. Troubleshooting

! *When troubleshooting the valve, all safety rules should be strictly obeyed*

Fault	Possible reason	Remedy
No flow	Valve closed	Open the valve
	Flange dust caps were not removed	Remove dust caps on the flanges
Poor flow	Valve is not open enough	Open the valve
	Dirty filter	Clean or replace the screen
	Clogged pipeline	Check the pipeline
Difficulty operating the handwheel	Dry stem	Grease the stem
	Gland overtightened	Slightly slacken gland nut. Pay attention to maintaining gland tightness
Stem leakage	Bellows damage	Tighten the gland until leakage stops and replace the upper part of the valve as soon as possible.
Seat leakage	Incorrect shut off	Tighten the handwheel without using any auxiliary tools

The table continues on next page

Fault	Possible reason	Remedy
Seat leakage	Seat or disc damage	Replace the valve and contact the supplier or TLV
	Pressure difference too great	Apply valve with balancing disc. Check if the valve was installed according to direction of arrow marked on the valve.
	Medium polluted with solid particles	Clean the valve. Fit strainer before the valve.
Broken connecting flange	Bolts tightened unevenly	Replace the valve with new one

11. Disposal

Obsolete and dismantled valves must not be disposed of with household waste. This product is made of materials which can be re-used and should be delivered to designated recycling centers.

12. Product Warranty

1. Warranty Period
One year following product delivery.
2. Warranty Coverage
TLV Euro Engineering GmbH warrants this product to the original purchaser to be free from defective materials and workmanship. Under this warranty, the product will be repaired or replaced at our option, without charge for parts or labor.
3. This product warranty will not apply to cosmetic defects, nor to any product whose exterior has been damaged or defaced; nor does it apply in the following cases:
 - 1) Malfunctions due to improper installation, use, handling, etc., by other than TLV Euro Engineering GmbH authorized service representatives.
 - 2) Malfunctions due to dirt, scale, rust, etc.
 - 3) Malfunctions due to improper disassembly and reassembly, or inadequate inspection and maintenance by other than TLV Euro Engineering GmbH authorized service representatives.
 - 4) Malfunctions due to disasters or forces of nature.
 - 5) Accidents or malfunctions due to any other cause beyond the control of TLV Euro Engineering GmbH.
4. Under no circumstances will TLV Euro Engineering GmbH be liable for consequential economic loss damage or consequential damage to property.

* * * * *

For Service or Technical Assistance:

Contact your **TLV** representative or your regional **TLV** office.

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