

BELVEN BALL VALVES

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

Before installation, these instructions must be fully read and understood

These instructions apply to Belven standard ball valves type:

BV1 – BV2 – BV3 – BV4 – BV5 – BV6 – BV7 – BV8 – BV59 – BV63

and these type with appendix (e.g. BV1-LD, BV3M3, BV4S, BV6W)

These products have been designed, manufactured, and tested under the supervision of a certified Quality Assurance System in accordance with Pressure Equipment Directive (PED) 2014/68/EU Annex module H. These valves are designed to guarantee your safety during the installation, operation, and maintenance under the condition of respecting the limitations of use defined in the technical data sheets and applying the recommendations mentioned in these instructions. The valves must be installed and operated in accordance with the local requirements and regulations of industrial valves. Any violation of these regulations may become dangerous for health, environment, or the installation. Belven shall not bear responsibility for wrong installation or operation of its valves.

These instructions cover the standard manual valves.

More specific instructions per valve type are available upon request.

For actuated valves complementary instructions are available for the actuators if required.

It is imperative that these instructions are available at the destination of the valves. The control of the distribution of these instructions translated into the language where the end-user is located (for European countries) is under your responsibility.

1. Storage & Protection

The Belven valves must be stored indoors at a cool temperature between -4°C and 30°C in a dry place that is fire resistant, weatherproof, and well ventilated. No corrosive chemicals should be present. The pipe connections must be covered to protect the internals for dust, dirt, oil, or other impurities. When an actuator is mounted on the valve, we recommend that it should be cycled approximately every 30 days.

For storage longer than 4 months, the storage container should be inspected every four (4) months to ensure it is in good condition, and any additional protective coverings or materials are in working order. Ensure all parts are plugged, and bare metal is covered with a suitable rust inhibitor.

Avoid storage under direct sun exposure.

Do not stack unpacked valves.

2. Cautions

for safety, follow these cautions before installing, removing, or disassembling the valve.

- 1. The operation of ball valves and their controls must be done by staff trained in all aspects of their operation.**
- 2. The installer must check that the working conditions (materials/pressure/temperature) are within the limitations of the valve (consult technical datasheet and check the corrosion/fluid/concentration/temperature combination).**
- 3. Before any installation or intervention, the line must be depressurized, drained, and rinsed (and decontaminated in case of dangerous fluid).**
- 4. Use protective clothing and equipment to avoid injury. Keep hands and other body parts out of the valve.**
- 5. Clean the pipe connections of valve and pipe before installation.**
- 6. Never carry out piping work near a valve that can affect the temperature (e.g. welding can melt seals) or damage the valve (e.g. grinding).**
- 7. If the valve is to be used in a potential fire- or explosive atmosphere, the user must ensure that the valve has been designed for such a use (check fire safe certificate and ATEX declaration). In an ATEX zone all metal parts must be grounded.**

3. Installation

Before installation of the valve into the piping system, visually inspect the valve to determine if any damage has occurred during shipping or storage. Tests and inspections of the open and closed valve are necessary to see whether there is any trouble to open/close the valve. Move the valve in its open position before mounting in the pipeline.

Ensure that the connecting ends in the line are clean, undamaged and correctly lined up (axially and radially). The down- and up-stream pipeline has to be connected with the valve without generating tensions during or after the assembly.

Remove the protective covers from the valve ends.

Most of the Belven ball valves are bi-directional but if there is an arrow on the body, it indicates the direction of flow. For valves that are designed to be used only one-way, assure the correct position of the valve.

Respect following recommendations while installing the valves:

Valves with threaded ends:

The Belven valve has two threaded ends machined in the body that are manufactured according to the international standards. The fittings and the pipeline must comply to the same standard in order to fit properly with the valve. To guarantee the tightness of the junctions, seal materials may be used by putting them on the threads of the pipeline (hemp, teflon tape, etc.). During the assembly, it is recommended to screw the pipeline and keep the valve clamped with a wrench on the hexagonal or octagonal area outside the threaded end into which the pipe is screwed; please make sure not to exceed with the torque which may cause tensions inside the valve.

Valves with flanged ends:

The Belven valve has two flanged ends machined in the body that are manufactured according to the international standards. The pipeline flanges must comply to the same standard in order to fit properly with the valve. The tightness between the flanges must be guaranteed by means of a gasket, whose choice and assembly must be made by the installer. Ensure that the flanges and pipe flanges are properly mounted, tighten the screws in two steps (smooth screwing to join and lock with a torque wrench), opposing bolts sequentially.

Valves with welded ends:

The Belven valve has welded ends that are manufactured according to the international standards. The fittings and the pipeline must comply to the same standard in order to fit properly with the valve. Remove the central part of the valve before welding, to prevent overheating and melting of the seals.

Weld the ends onto the pipe respecting the international welding standards for piping.

Ensure to keep the ends well aligned and parallel, without subjecting the valve to torsion, bending, compression or traction.

It is recommended that after the installation, an accurate washing of the entire installation is done, keeping the valve open, in order to remove all residues which may damage the ball or the seats.

Always turn the valve in fully open position when doing a hydrostatic testing of the system.

Never use the ball valve in closed position as "end-of-line" for holding the test pressure.

Open/close the valve 3 to 5 times to assure proper functioning before using the pipeline.

4. Operation

The fluid through the valve has to be compatible with the materials of construction of the valve. Pressure and temperature conditions must be less than the maximum conditions recommended in the technical documentation of the product.

At commissioning ensure that no dirt or foreign objects are left inside the valve or pipeline. In case of doubt flush the pipeline carefully with water.

If the valve was not in use for a long duration, open and close it several times manually before actual operation. All the manually operated valves are standard closed by clockwise rotation. The closed position is indicated by the position of the lever. It is recommended to use the valve in fully open or closed position, always avoid half open position.

Waterhammer creates a torque peak at the closed valve and can damage the ball/stem or ball/seat connection. Prevent waterhammer when starting up a pump.

Any unsuitable operation action can cause leaking or other problems.

5. Maintenance

The Belven valve should be periodically checked to ensure of its proper operation. For a correct function of the valve it is recommended that the valve is cycled several times from fully open to fully closed every month. A higher checking frequency is recommended when the valve is working under severe conditions. Any leaking of the packing must be immediately repaired: depressurize the valve and gradually tighten the packing. If an inspection reveals that the valve is leaking at the seat or at the body seal, or if the packing can't be tightened the valve should be replaced or repaired.

Before dismantling the valve, make sure the system is depressurized and cooled down.

The valve body may be very cold or very hot during use. Always protect yourself against cold injuries and burns. Always isolate the relevant part of the pipeline, release the pressure from the valve and remove the medium before dismantling the valve. Be aware of the type of medium involved. Protect people and environment from any harmful or poisonous substances. Make sure no medium can enter the pipeline during valve maintenance.

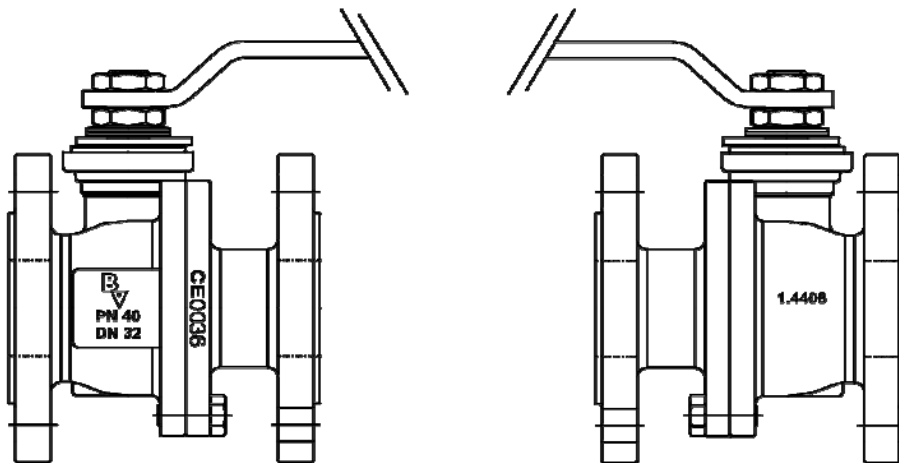
If the valve is actuated, always ensure that the power source is disconnected before dismantling.

Always use original Belven spare parts to repair the valves.

In case of questions or doubts contact your Belven representative for assistance.

6. Identification of the ball valve

Depending on the type and size of the valve, information is casted or lasered in or mentioned on a type shield on the valve body.



BV = Belven logo
 PN40 = pressure class
 DN32 = dimension in mm
 CE0036 = CE-label (when applicable)

1.4408 = body material