

**BELVEN BUTTERFLY VALVES**  
**INSTALLATION- OPERATION- AND MAINTENANCE INSTRUCTIONS**

Prior to installation, these instructions must be fully read and understood.

These instructions apply to standard Belven butterfly valves type:

BV10 - BV11 - BV12 - BV13 - BV14

and above mentioned types with appendix (e.g. BV10S, BV12NPA, BV13HP, BV10TR)

These products are designed, manufactured and tested under the supervision of a certified quality assurance system in accordance with the Pressure Equipment Directive (PED) 2014/68/EU, Annex H.

These valves are designed to guarantee your safety during installation, operation and maintenance, provided that the limitations of use, defined in the technical data sheets, are respected and that the recommendations given in these instructions are applied. The valves must be installed and operated in accordance with local requirements and regulations for industrial valves. Any violation of these regulations may be dangerous to health, the environment or the installation. Belven is not responsible for improper installation or operation of its valves.

These instructions relate to the standard manual valves.

More specific instructions per valve type are available on request.

For automated valves, additional instructions are available for the actuators, if required.

It is imperative that these instructions are available at the valve site. The control of the distribution of these instructions, translated into the language of the end user (for European countries), is your responsibility.

## **1. Storage & Protection**

The Belven valves should be stored in a closed building at a temperature between -4°C and 30°C in a dry place that is fireproof, weatherproof and well ventilated. No corrosive chemicals should be present. The pipe connections must be covered to protect the interior from dust, dirt, oil or other impurities.

If an electric actuator is mounted on the valve, we recommend running it approximately every 30 days.

If stored for more than 4 months, inspect the storage container every four months to ensure it is in good condition and that any additional protective covers or materials are in place. Ensure that all parts are covered and that bare metal is treated with an appropriate rust inhibitor.

Avoid storage under direct sun exposure.

Do not stack unpackaged valves on top of each other.

## 2. Cautions

*Before installing, dismantling or disassembling the valve respect below cautions.:*

1. *The butterfly valve installation, operation and maintenance must be performed by trained personnel.*
2. *Verify that the process conditions are within the application limits of the valve.*
3. *Before any installation or intervention, the piping must be depressurized, empty and flushed (and decontaminated if a hazardous medium is involved).*
4. *Use protective clothing and equipment to prevent injury.*
5. *Clean the piping connections of the valve and the piping before installation.*
6. *Never perform piping work near a valve that may affect the temperature (e.g. welding may melt seals) or damage the valve (e.g. grinding).*
7. *If the valve is to be used in a location with a fire or explosion hazard, the user must ensure that the valve is designed for such use (check the "Fire Safe" certificate or ATEX declaration). With ATEX, all metal parts must be grounded.*
8. *The valve disc of a butterfly valve has a cutting effect. Always make sure that the valve disc does not move during installation or maintenance.*

## 3. Installation

A visual inspection and testing of the open and closed butterfly valve are required to assess for damage or opening/closing problems before installing the valve.

The butterfly valve should be installed in the open position with the valve disc in the body. We recommend that the disc be approximately 10° in the open position.

Ensure that the pipe connections are cleaned, undamaged and correctly aligned [axial and radial]. The upstream section and the downstream section must be connected to the valve without causing stresses during or after installation.

Remove the protective caps from the valve ends.

The butterfly valves are suitable for mounting between flanges EN 1092-2 and EN 1759-1, unless otherwise specified.

The Wafer-type butterfly valve (BV10 or BV11) has center holes and is clamped between flanges by threaded rods and nuts.

The Lug-type butterfly valve (BV12) has threaded holes and is clamped between the flanges by bolts and nuts.

The flange-type butterfly valve (BV13 or BV14) is flanged and is secured in the pipe by bolts and nuts.

Never install a butterfly valve in a pipe bend or too close to pumps or other piping elements to avoid turbulence.

Belven recommends a length of straight pipe at least 5x the pipe diameter before and after the butterfly valve.

The centric Belven butterfly valves are bi-directional, on the eccentric butterfly valves there is an arrow on the body, this indicates the direction of flow. Be sure to install these valves in the correct position.

**Respect the following recommendations when installing the valves :**

**Rubberlined butterfly valves with centric disc :**

For Wafer-type and Lug-type butterfly valves, BV10-BV11-BV12, ensure that the inside diameter of the adjacent flange is large enough to allow the disc to rotate in the fully open position without touching the flange or pipe.

Metal connecting flanges are recommended. The seat of the butterfly valve serves as a seal between the valve body and the connecting flanges. No additional flange gaskets should be installed, they may cause overcompression and distortion of the seat. The distance between the flanges should be 7 to 10 mm wider than the valve body so that the flange faces of the seat remain undamaged during installation.

If the butterfly valve is used as an end-of-line valve, then a blind flange must be installed downstream of the butterfly valve

**Butterfly valves with eccentric disc :**

Ensure that the inside diameter of the adjacent flange is large enough to allow the disc to rotate in the fully open position without touching the flange or pipe. Metal connecting flanges are recommended. Flange gaskets are required to prevent leakage between the metal connecting surfaces. Depending on the thickness of the flange gaskets, we recommend that the distance between the flanges be approximately 10 mm wider than the valve body for smooth butterfly valve installation.

If the butterfly valve is used as an end-of-line valve, then a blind flange must be installed downstream or the butterfly valve must be secured with a safety latch in the closed position, in order to prevent injuries from movements of the disc or from escaping medium.

Make sure that both flanges are properly assembled against each other and then tighten the bolts and nuts in two steps (first assemble all bolts with the nut loosely screwed on and then tighten them with a torque wrench), whereby the bolts must be crosswise tightened.

Before operating the butterfly valve, ensure that it is fully installed on both sides. The actuators at automated valves should not be connected until the butterfly valves are properly installed.

We recommend that after installation, the entire system be thoroughly flushed with the valve in the open position to remove all residue.

Always turn the butterfly valve to the fully open position when performing a hydrostatic test of the installation.

Never use the butterfly valve in the closed position as an end line fixture for holding test pressure.

Open/close the valve 3 to 5 times to be sure it is functioning properly before operating the system.

## 4. Operation

The fluid through the valve must be compatible with the valve's construction materials. Pressure and temperature conditions must be within the operating conditions recommended in the technical documentation.

When commissioning, ensure that no dirt or foreign objects remain in the valve or pipe. In case of doubt, flush the pipe carefully with water.

If the valve has not been used for a long time, it should be opened and closed manually several times before actual use. All manually operated valves are closed in the standard clockwise direction. The closed position is indicated by the position of the lever.

Water hammer creates a power surge at the closed valve and can damage the disc/shaft or disc/seat connection. Avoid water hammer when starting a pump.

Any inappropriate operation can cause leakages or other problems.

## 5. Maintenance

The Belven butterfly valve should be periodically checked for proper operation.

For proper valve operation, it is recommended that the butterfly valve is fully opened and closed several times each month. A higher checking frequency is recommended when the valve is operating under severe conditions.

Any leakage should be repaired immediately.

**Before removing the valve from the system or before any disassembly, ensure that the system is depressurized and cooled.** Wear protective clothing and equipment to avoid injury. Always isolate the affected section of the pipeline, depressurize it completely and drain the medium completely before dismounting the butterfly valve. Ensure that no medium can enter the pipeline during maintenance. If the valve is automated, the power source must always be disconnected from the control before dismounting the butterfly valve.

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

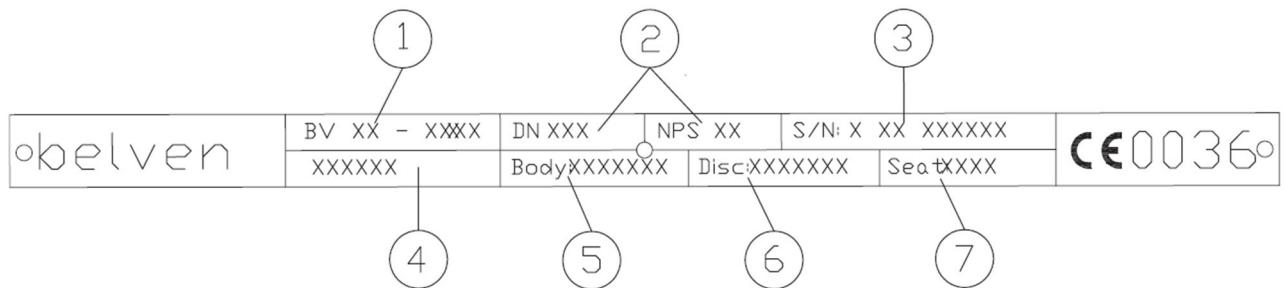
## 6. Identification

The information of the butterfly valve is specified on a type plate.

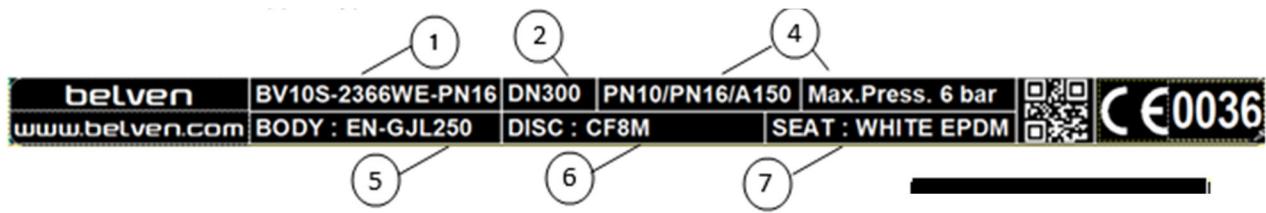
Depending on the type, the plate is mounted on the top flange or on the neck of the butterfly valve.

The most common type plates are listed below:

### a. Rubberlined butterfly valve type : BV10-BV12-BV10U-BV11U-BV12U-BV12-BV14



### b. Rubberlined butterfly valve type : BV10S – BV12S



- 1 Belven product type
- 2 Size of the butterfly valve (DN: in mm - NPS: in inch)
- 3 Serial number
- 4 Flange connection and maximum operation pressure
- 5 Material of the body
- 6 Material of the disc
- 7 Material of the seat

Serial N°: AW 0100

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### c. Eccentric butterfly valves



ISO9001

MODEL NO	BV10-HP	0036	II2GD
FLANGE	PN40	BODY	WCB
RATING	PN40	DISC	CF8M
TEMP	-29to160°C	STEM	17-4
SERIAL NO	P02 000 004	SEAT	PTFE

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