

## INSTALLATION, OPERATION AND MAINTENANCE MANUAL

### Stop Valve with Bellows Seal Flanged ends



Ref. GENE BRE: 2231

## **Installation, operation and maintenance instructions**

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## 1. Product description.

**Genebre, S.A.** offers a wide range of valves designed and assembled to handwheel and drive fluids in industrial procedures.

The compatibility of materials used to build the valves (see technical specifications) and the application of valves to the different industrial processes is at user's risk. Valves will have an optimal behavior when working conditions do not exceed pressure and temperature limits (pressure curve) for which they have been designed.

## 2. Transport and Storage conditions



**Transport and storage of this kind of products must be done keeping them in their original package!**

### VISUAL INSPECTION

Check whether during transport, unloading and placement the products have suffered damages.

During storage it is recommended to keep them into the included protective wrapping to avoid damages or dirt accumulation in the inside part of the valve. The wrap must not be removed until valve is to be installed.

Valves must be stored in a dry and clean environment.



**If you notice any kind of anomaly during reception of the goods, contact immediately with GENE BRE in order to determine the possible responsibilities on the issue.**

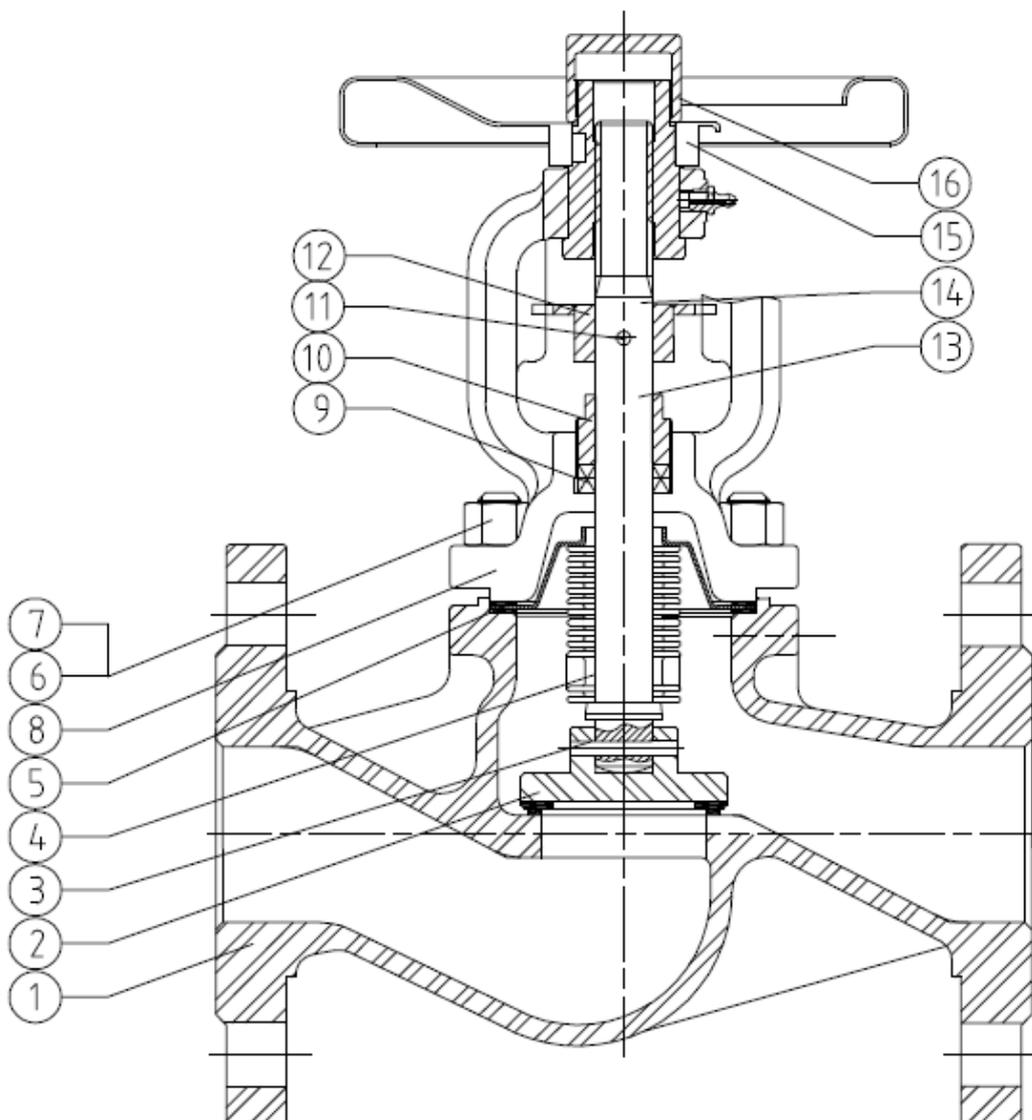
### IMPORTANT NOTE:

**Before installing and/or manipulating these elements, READ CAREFULLY these instructions for use and OBSERVE all contained information. If you fail to understand any of their content, please contact GENE BRE, S.A.**



User is responsible for the safe use of these products, according to present instructions for use and specific technical documentation of the device.

### 3. Exploded drawing



Nº	Name	Material	Surface Treatment	Spare Part Code
1	Body	Carbon Steel 1.0619	Painting	-----
2	Disc	Carbon Steel 1.0460 + 13Cr	-----	-----
3*	Pin	Stainless Steel AISI 410	-----	K2231 xx
4*	Bellow	Stainless Steel AISI 304	-----	K2231 xx
5*	Body Gasket	AISI 304 + Graphite	-----	K2231 xx
6	Bolt	ASTM A 193-B7	-----	-----
7	Nut	ASTM A 194-2H	-----	-----
8	Bonnet	Carbon Steel 1.0619	Painting	-----
9*	Packing	Graphite	-----	K2231 xx
10	Gland	Stainless Steel AISI 410	-----	-----
11	Pin	Stainless Steel AISI 410	-----	-----
12	Guide	Carbon steel	-----	-----
13*	Stem	Stainless Steel AISI 420	-----	K2231 xx
14	Yoke Nut	Brass	-----	-----
15	Handwheel	Carbon Steel	Epoxy	-----
16	Nut	Carbon Steel	Painting	-----

\* Available spare parts

## 4. Installation instructions

### 4.1) Preparation

Remove any material remains of the valve wrapping.

Serious problems may arise with the installation of a valve in a dirty pipe.

Make sure the pipe is not dirty and doesn't have welding particles, for example, before installing it. This may cause irreparable damages in the valve when the equipment is started → *prepare a clean working area.*

Plan beforehand enough space for future maintenance operations.

Control the correct performance of the valve by turning the handwheel both sides (close and open) and observing if the disc or needle slides correctly. If this is not the case, check if there are foreign particles inside the valve and repeat the whole operation.

In case of vibrations in the pipe it is strongly recommended to mount anti-vibration elements to absorb them. Otherwise, the life of the product could be drastically reduced

## 4.2) Installation of valves with flanged ends

*Design for this kind of regulation valves allows only one position for assembling it to the pipe, specified by means of an arrow in the valve's body that indicates the direction in which the fluid needs to circulate.*



*NOTE: DN150 and DN200 the direction flow is reversed, the fluid input is from top part of the disc.*

*Do not disassemble the valves to install them.*

Make sure the pipe's and edges flanges of the valve are clean.

Use the corresponding screws in all of the flanges drill holes.

Place an adequate joint in each end and align it in the center of the flanges.

Tighten screws evenly and cross-shaped to avoid deformations. To do so, you must not force in any case the pipe to center the valve; it should take its position smoothly. Last, verify that screws are tightened with the recommended torque for each type of screw.

Make sure the flanges joints are well placed.

After assembling, check the tightness and performance of the valve.

***It is recommended to install the valve (from DN15 to DN125) in horizontal position and the handwheel upwards. NEVER install with handwheel down.***

***Valves do not have to support pipe's efforts so it is advisable to anticipate a good alignment and parallelism of such pipe.***

***It is also recommended to use filters in the pipe to extend lifecycle of the valve.***

***When installed on steam systems a suitable steam trap should be fitted immediately upstream of the isolation valve to drain condensate. This will ensure drainage of the pipe when the valve is closed, and will prevent damage of the valve due to waterhammer.***

## **5. Operating instructions**

### **5.1) Usage**

GENEBRE valves provide a leakproof lock when used adjusted to the pressure and temperature values for which they have been designed.

Valve materials have to be fully compatible with the fluid circulating through the valve. Otherwise, valve could be seriously damaged.

***Do not use for slurries or fluids containing solids that can build up in valve cavities.***

### **5.2) Manual operation**

When operating the valve you must avoid excessive lateral efforts with the handwheel. To close, the operation consists in turning the handwheel clockwise and anticlockwise if you want to open the valve.

***Always open isolation valves slowly to avoid system shocks.***

## **6. Maintenance instructions**

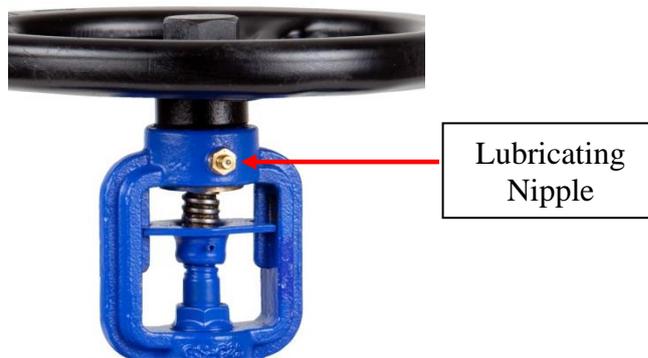
Frequency, place and process of maintenance will be determined by the user by taking into account usage of the product. However, periodical checks explained below will be useful to extend the service life of the valve and reduce installation problems.

**6.1)** Valves must not remain in open or closed position for a long period of time. It is recommended, if the process allows for it, to operate it for control purposes every six months.

**6.2)** Verify possible leaks in the stem area; in case they exist, it is likely that the bellows is damaged; stem and bellow should be replaced (see section 7).

**6.3)** Verify possible leaks through the line (due to closure); this defect is probably caused by deposition of impurities between the disc or needle and the seat, transported by the fluid. Disassemble the valve from the pipe, clean it thoroughly and reinstall it. If the problem persists you should change the valve, since it is possible that some metallic parts used for closure are damaged (erosion, corrosion).

**6.4)** Keep the stem well greased, for it use the lubricating nipple.  
"Pay attention, that the lubricant is suitable for the media".



## 7. Reparation instructions



**Before disassembling the pipe's valve to clean or replace it, make sure that line has been closed and depressurized because a bad operational procedure could cause a serious accident to staff and installation system**

### 7.1) Disassembling

You must remove the valve from its installation to repair it, **making sure the pipe has been previously depressurized.**

*Prepare a clean working area and adequate tools to perform mechanical tasks.*

- a. Loosen and remove the nut (part.16), remove the handwheel (part.15).
- b. Loosen and remove the nuts (part.7)
- c. Remove the Bonnet (part.8), Stem (part.13) and Disc (part.2) of the valve Body (part.1).
- d. Loosen totally the gland (part.10).
- e. Take out the pin (part.11).

- f. Remove the Stem (part.13), bellow (part.4) and Disc (part.2) assembly of the Bonnet (part.8).
- g. Take out the pin (part.3) and remove the Disc (part.2) of the stem (part.13).
- h. Remove the gasket (part.5) of the body (part.1) and remove the packing (part.9) of the Bonnet (part.8).

Once the valve is completely disassembled, you must verify the state of each one of the pieces that compose it and the ones to be reused will have to be completely cleaned and stored in a safe and clean environment.

All locking surfaces, seats, joints and sides have to be checked for corrosion, erosion, metallic inlays and marks. If they were damaged or in case of doubt, they will need to be replaced.

Cleaning of the valve's pieces must be done using an adequate degreasing agent. You must be careful with the locking surfaces, locking sides of the ends and joints, because if they were damaged this could cause a bad impact in the valve's performance.

## 7.2) Rebuilding (assembling of the valve)

Before proceeding to reassemble the valve, make sure that reparation kit and/or pieces to be used are appropriate and original from the factory.

When it is assembled again, cleaning is essential for a long life for the valve.

- a. Place the disc (part.2) in the new stem / bellow assembly and after place the pin (part.3).
- b. Place the new packing (part.9) in the bonnet (part.8).
- c. Introduce the stem (part.13), bellow (part.4) and disc (part.2) assembly in the bonnet (part.8).
- d. Fix with pin (part.11) the guide (part.12) and the stem (part.13).
- e. Place the new gasket (part.5) in the body (part.1).
- f. Place the bonnet assembly over the body (part. 1), place the nuts (part.7) on the bolts (part.6) to bring together the two different parts of the valve.
- g. Then, tighten the nuts (part.7) adjusting slowly and alternating diagonally and evenly until obtaining the recommended tightening torque (*see Torque table 7.3*).
- h. Tight the gland (part.10).
- i. Place the handwheel (part.15).
- j. Place and tight the nut (part.16)

## 7.3) Tightening torque Screws/ Nuts for joining the valve's different parts:

*It is required for all body screws to make contact of body metal against cover metal.*

Bolts / Nuts	Torque N.m
M8	25
M10	50
M12	87
M14	138
M16	210
M20	412

*(These values are the recommended values by screws manufacturers, in our case we have considered using them in cal. 8.8)*

## 8. Hygiene and Safety Instructions

**8.1)** Fluid passing through a valve or accessory can be corrosive, toxic, flammable or pollutant. They can also be found at very high or low temperature. When operating valves, you must follow the security instructions and it is recommended to use personal protection gadgets:

- 1) Protect your eyes.
- 2) Wear gloves and appropriate working clothes.
- 3) Wear safety footwear.
- 4) Wear a helmet.
- 5) Have running water at hand.
- 6) To operate flammable fluids, make sure you have an extinguisher at hand.

**8.2) Before removing a valve from a pipe, check always if the line is completely drained and depressurized.**

**8.3)** Operate the valve in open position to make sure there is no pressure in the internal cavity.

**8.4)** Any valve being used by toxic services department needs to obtain a cleanliness certificate before being operated.

**8.5)** Any type of repair or maintenance should be performed in ventilated places.