

## INSTALLATION, OPERATION AND MAINTENANCE MANUAL

Diaphragm valve clamp ends Pneumatically  
operated. Spring return actuator N.C.



Ref. GENE BRE: 2946E

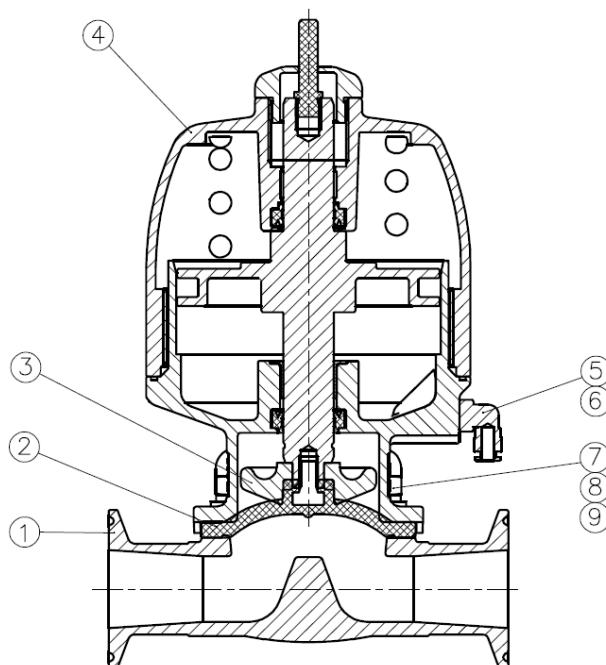
## **Installation, Operation and Maintenance Instructions**

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## 1. Product Description.

**Genebre, S.A.** provides an extensive range of valves that have been designed and built for the management and control of fluids in industrial processes.

The compatibility of the materials from which these valves are manufactured (see the corresponding data sheets) and their application in different industrial processes is the responsibility of the user. The valves will operate at optimum levels provided the working conditions do not exceed the pressure and temperature limits (pressure curve) for which they are designed.



Nº	Denominación / Name	Material	Acabado Superficial / Surface Treatment	Recambios / Spare Parts
1	Cuerpo / Body	Acero Inox. / Stainless Steel 1.4404 (AISI 316L)	Granallado / Shot blasting	-----
2*	Diafragma / Diaphragm	Silicona / Silicone	-----	D2945E xx
3	Disco / Disc	Acero Inox AISI 304 / SS 304	-----	-----
4	Actuador / Actuator	Acero Inox AISI 304 / SS 304	-----	-----
5	Conector de aire / Air Nozzle	-----	-----	-----
6	Silenciador / Muffler	Aleación de Cobre / Cooper alloy	-----	-----
7	Tuerca / Nut	Acero Inox AISI 304 / SS 304	-----	-----
8	Tornillo / Bolt	Acero Inox AISI 304 / SS 304	-----	-----
9	Arandela / Washer	Acero Inox AISI 304 / SS 304	-----	-----

\* Available spare parts

## 2. Transport and Storage Conditions



**The transport and storage of this type of product must be performed in its original packaging!**

### VISUAL INSPECTION

Check that the products have not been damaged during transportation, unloading and placement on site.

During storage, it is recommended that the protective packaging not be removed to prevent any blows or the accumulation of dirt in the interior of the valve. This packaging should not be removed unless the valve is going to be installed.

Where possible, the valves must be stored in a dry clean place.



**If any anomaly is noticed during the observance of these guidelines for receipt, contact GENE BRE urgently in order to resolve the liability for these anomalies!**

### IMPORTANT NOTE:

**Before installing and/or handling these elements, CAREFULLY READ these instructions for use and OBSERVE all information contained herein. In the event of not understanding any of this information, please contact GENE BRE, S.A.**



**The responsibility for the safe use of these products is that of the user in accordance with the contents of these instructions for use as well as the specific technical documentation of the device supplied!**

### 3. Installation Instructions

#### 3.1) Preparation

Remove any remains of packing material from the valve.  
Significant problems may arise with any valve installed onto dirty piping.

Ensure that the pipe is free from dirt, welding particles, etc. prior to installation as the valve may suffer irreparable damage during the start-up of the equipment → *prepare a clean working area.*

Make sure there is sufficient space for future maintenance operations.

Monitor the correct functioning of the valve by turning the handwheel in both open and close directions, whilst observing the correct movement of the valve plug element. If this is not the case, check that there are no foreign bodies in the interior of the valve and repeat the operation.

It is recommended that qualified staff perform this task.

#### 3.2) Installation of Valve with clamp ends

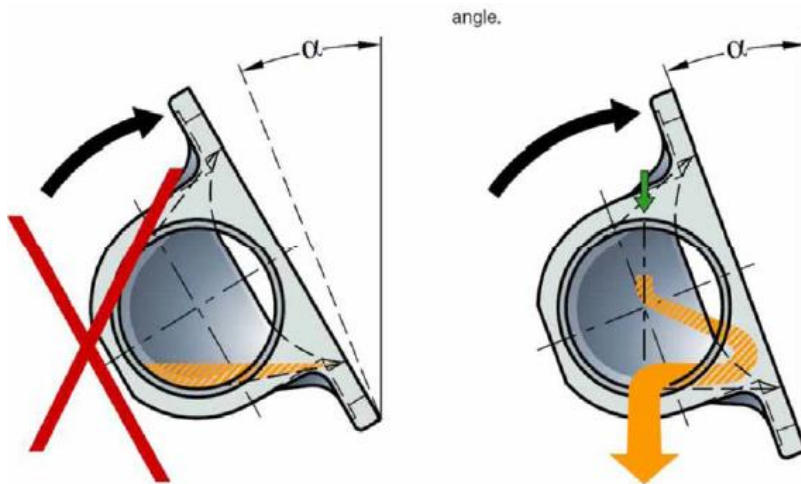
*Do not disassemble the valve during installation.*

Make sure that the pipe clamp end (Item 2981 - Genebre) and the valve clamp end are clean. Install silicone gaskets (Item 2987 - Genebre) between the clamp ends to maintain the tightness of both parts and join them using the quick locking binding clamp (Item 2986 - Genebre). There is a different gasket and clamp for each valve size.

After assembly, check the tightness and operation of the valve.

***These are bi-directional valves; therefore, it doesn't matter the flow direction.***

***It is recommended that the valve is installed on a horizontal position and with the actuator at the top. However, in cases where total drainability is required, the valve must be installed with an inclination as indicated in the following table:***



Med. / Size	$\alpha$
1"	35°
1 1/2"	27.5°
2"	27.5°

***The valves must not support any potential stresses from the piping; therefore, it is advisable to ensure they are properly aligned and parallel to the piping.***

***Once the product has been installed, we recommend performing a couple of opening and closing movements to verify the correct functioning of the valve and that there is nothing impeding its closing.***

## 4. Operating Instructions

### 4.1) Use

Before operating the equipment, we should always have the Technical Specifications on hand and never exceed the limit values.

Never touch the valve and/or piping that are in contact with the surrounding fluid when the process is running, as injuries or burns could occur.

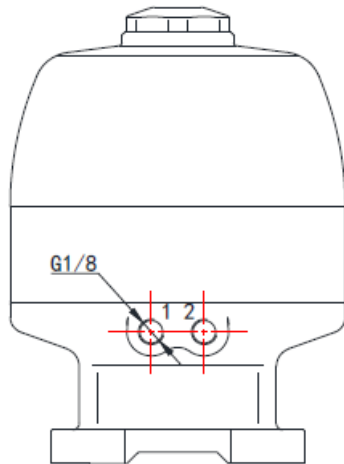
The valves provide a tight seal when used in accordance with the pressure / temperature values for which they have been designed.

The materials from which the valves are made must be compatible with the fluid circulating through the valve; otherwise, the valve may become seriously damaged.

***CAUTION: Do not use this type of valve with fluids that could contain solids as this may damage the seal of the valve rendering it useless.***

## 4.2) Pneumatic connection

All connectors for pneumatic installation are the "quick connector" kind, for a pipe  $\varnothing$  6 mm.



### Actuator Spring Return Normally Closed:

1: air input for the OPENING

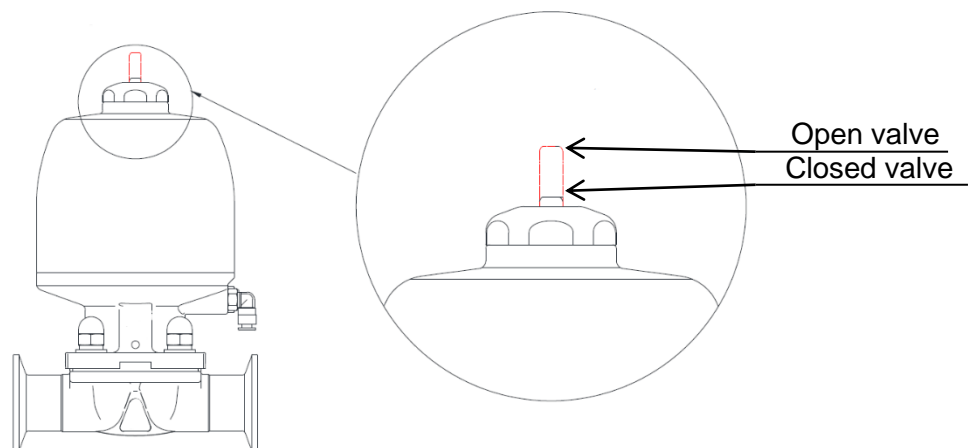
2: air output during CLOSING (spring return)

**IMPORTANT:** Power air must be **CLEAN and DRY**.  
Respect minimum and maximum air pressure (5 – 7 bar)

## 4.3) Visual Indicator

When the valve is open, the red indicator rises outward.

When the valve is closed, the red indicator descends inwards.



## 4.4) Special Conditions

- The operation of the actuator in extreme temperature conditions exceeding the design limits may damage internal and external parts, and it might be potentially hazardous for the operating or maintenance personnel.
- The operation of the actuator in extreme pressure conditions exceeding the design limits may cause a malfunction of the actuator and the spontaneous breakage of parts and, therefore, might be potentially hazardous for the operating or maintenance personnel.

## 5. Maintenance Instructions

The maintenance frequency, place and method will be defined by the user, bearing in mind the use of this product. However, where necessary, some checks will aid in prolonging the useful life of the valve and reducing problems in the installation.

The valves must not be left in the open or closed position for extended periods of time. It is recommended, whenever the process allows, carrying out a manoeuvring procedure at least once every six months.

The Actuator does not require maintenance.

If an internal component has been damaged, please contact Genebre S.A. to evaluate the possibility of repairing it.

## 6. Repair Instructions

Genebre S.A. shall not be responsible for an improper handling of the element or any of its components.



**Only use original or recommended parts/spare parts by GENE BRE S.A.!**



## 6.1.) Disassembly

Prepare a clean work area and the appropriate tools for the mechanical tasks.



**Prior to removing the valve from the piping in order to clean or replace it, ensure that the line has been closed and depressurised, as poor handling could result in a serious accident to people as well as severe damage to the installation.**

Proceed carefully. Never remove the valve bolts without reading the instructions carefully. The assembly and disassembly of valves/actuator should only be performed by qualified staff.

It is very important to follow the sequence of steps; if we do not, we could damage the diaphragm.

1. Keep the valve open applying air (5-7 bar) through the air input from the actuator.
2. Remove the 4 *bolts, nuts and washers (part. 7-8-9)*.
3. Separate the *actuator (part. 4)* and bonnet from the *body (part. 1)*
4. Unscrew the *diaphragm (part. 2)* from the *disc (part. 3)*, turning it anti-clockwise

## 6.2) Assembly

When the valve is reset, cleaning is essential for a long useful life of the valve.

1. Keep the valve open applying air (5-7 bar) through the air input from the actuator.
2. Fasten the *diaphragm (part. 2)* to the female thread of the *disc (part. 3)*
3. Join *body (part. 1)* and *bonnet / actuator assembly (part. 4)* by fastening the bolts, nuts and washers.
4. Fasten the bolts (using the criss-cross method). See the tightening torque of the bolts in the following table (paragraph 6.3)

**Once the valve has been assembled, we recommend performing a couple of opening and closing movements to verify its correct functioning and that there is nothing impeding its closing.**

## 6.3) Tightening torque of bolts / nuts

VALVE MEASUREMENTS	TIGHTENING TORQUE (N m)
1/2"	2 – 3
3/4"-1"	5 – 6
1 1/2"-2"	9 – 11

## 7. Hygiene and Safety Instructions:

7.1) Fluids that go through a valve 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.



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

7.2) Always operate the valve in open position to make sure there is no pressure in the internal cavity.

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

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