

## INSTALLATION, OPERATION & MAINTENANCE MANUAL

### Double Disk Check Valve



Ref. GENE BRE: 2401

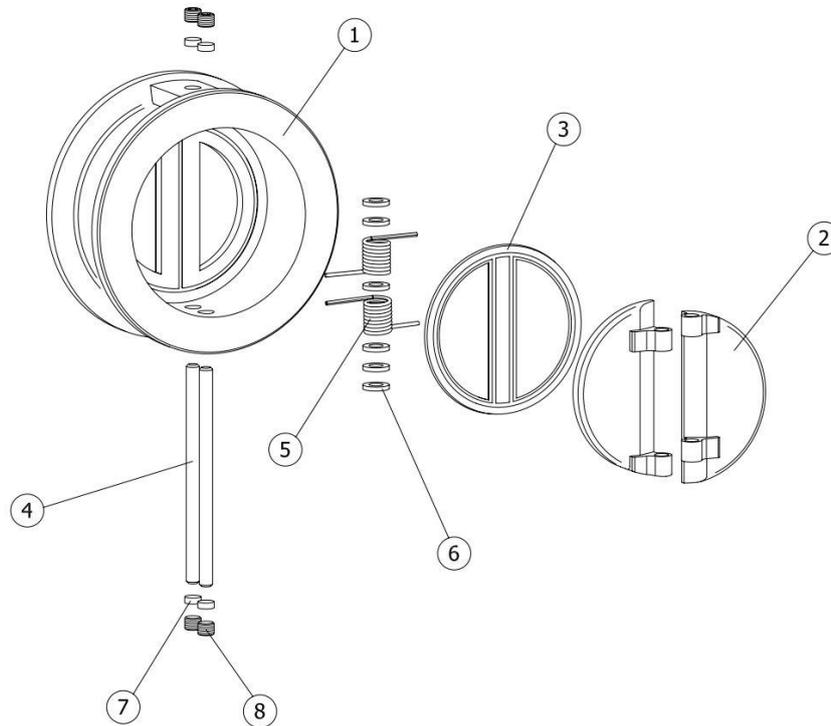


Ref. GENE BRE: 2402

## INSTRUCTIONS FOR INSTALLATION, OPERATION & MAINTENANCE MANUAL

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## 1) Exploded view.



### 1.1) Parts List

Nº	Name	Material		Surface Treatment		Spare Part Code
		2401	2402	2401	2402	
1	Body	Cast iron EN-GJL-250	Stainless Steel 1.4408	Epoxy Painted	Shot blasting	-----
2	Disk	Stainless Steel 1.4408		Shot blasting		-----
3	Seat	NBR	FKM	-----	-----	-----
4	Axle	Stainless Steel AISI 316		-----	-----	-----
5*	Spring	Stainless Steel AISI 316		-----	-----	K2401
6*	Washer	PTFE		-----	-----	K2401
7*	Plug	NBR	FKM	-----	-----	K2401
8*	Grub Screw	Stainless Steel AISI 304		-----	-----	K2401

\* Available spare parts

## 2) Storage

In case that the valve is not installed immediately, keep it with protective packaging to prevent strokes or accumulation of dirt (it should not be removed until the valve is going to be installed). As far as possible, the valves should be stored in a dry and clean area.

## 3) Installation Instructions

### 3.1) Preparation

Remove any remaining packing materials from the valve.

There may be serious problems with any valve installed in a dirty pipe.

Make sure the pipe is free of dirt, welding particles, etc. before installation because the valve could get irreparable damage when starting-up → *prepare a clean working area.*

Provide enough space for future maintenance.

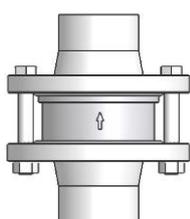
Use flat gaskets between valve and pipe flanges to ensure sealing.

Check the correct operation of the valve by pushing both discs (part.2) in the flow direction and noting that they return on their own once released. Otherwise, check that there are not foreign objects inside the valve and then repeat the operation. If both discs can't turn freely, do not install the valve.

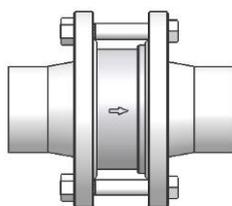
In case of vibrations in the pipe it is strongly recommended to mount anti-vibration elements to absorb them. Otherwise, the life of the product could be drastically reduced.

### 3.2) Installation

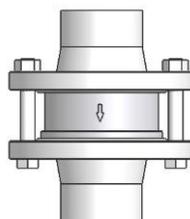
The double disk check valve can be installed in any position, but must take into account the flow direction of the valve marked by an arrow in the body.



UPWARD



HORIZONTAL



DESCENDING



INCLINED



**ATTENTION:** If you need to install the valve without spring, it may only be placed vertically (upward flow).

## **IMPORTANT:**

- Genebre double disk check valves are designed for mounting between flanges DIN PN16 (art. 2401), DIN PN25 (art. 2402) and ANSI 150 (art. 2401 / art. 2402).
- Take the precaution of centring the valve with the axis of the pipe in order to ensure sealing between body and flange.
- Do not weld with the valve mounted as it could get damage by overheating and produce deformation of the seating area.
- Pay particular attention to the flow direction of the valve marked by an arrow in the body.
- Check the parallelism of the flanges. Keep enough space between them so that the valve can be inserted or removed easily.
- Tighten the screws of the flanges to hold the valve body firmly. Apply the alternate clamping method to ensure proper installation.
- The valve should never be mounted adjacent to an elbow, reducer, valve or pump, to avoid turbulence. The recommended minimum distance between these elements is 10 times the diameter of the pipe - upstream - and 3 times the diameter of the pipe - downstream – according to CR 13932:2000.
- Please, refer to the product datasheet.

## **4) Operating Instructions**

### **4.1) Usage**

Check valves are used mainly to prevent backward flow in the system. Wafer valves are made for being installed between flanges, and provide a tight seal when are used respecting the values of pressure / temperature for which they are designed.

The material of the valve body, seat and other components must be compatible with the fluid going through the valve; otherwise the valve can be seriously damaged.

### **4.2) Operation**

This type of valve, by definition, does not require any operation. Opening and closing is done automatically depending on the pressure and flow direction. For more information about the opening pressure of the valve consult the technical data sheet of the product.

## 5) Maintenance Instructions

Check valves do not require regular maintenance and lubrication during their life. However, the following regular checks will help to extend the life of the valve and reduce problems in the installation:

- keep the valve in the fully closed position.
- check that all screws and threaded unions are not loose or rusted. Tighten if necessary.
- Inspect the valve and surrounding areas to check that there is not any leakage.

## 6) Repair Instructions

If the valve is completely closed and the fluid is circulating through the line, the leakage is due to the sealing surface and / or seat is damaged or due to an excessive wear of the springs by fatigue after many cycles of continuous operation. In both cases it will be necessary to take off the valve for repair. In this case Genebre, S.A. have springs available (part. 5) for replacement. However, it could be the case (for ex. In remote areas) where, for economical reasons, it is not advisable a valve repair, it is better to change the valve.

### 6.1) Disassembly

To make the repair it is necessary to remove the valve from the installation.

*Make sure that the line is cold, drained and depressurized.*

*Prepare a clean working area and appropriate tooling for mechanical tasks.*

- Loosen the bolts of the flanges, use a fixture if necessary.
- Remove the 4 screws (part. 8), the 4 rubber plugs (part. 7) and the 2 axles (part. 3).
- Separate the 2 springs (part. 5) and their washers (part. 6).
- Remove both disks (part. 2).

NOTE: The seat (part. 3) has been vulcanized into the groove during the manufacturing process to improve their grip, so you can not remove it. Therefore, if damage has occurred to the seat must replace the full valve.

## 6.2) Assembly

Before installing the valve again, make sure that the repair kit and / or parts are original ones.

- a. - Clean the seat area inside the *body* (part. 1) and replace damaged or worn parts.
- b. - Replace *disks* (part. 2) in its working position and take care that they have not been damaged during the disassembling process. Continue with the *springs* (part. 5) and also with the *washers* (part. 6).
- c. - Insert both *axles* (part. 3) through their respective holes in the body taking care to guide the disks, springs and washers. Then seal with the 4 *plugs* (part. 7) and insert back the 4 *pin* (part. 8).
- d. - Reinstall the valve between flanges. See Installation Instructions on page 4.

## 7) Opening Pressure

The double disk check valve (art. 2401 / art. 2402) has been designed to work with minimum opening pressure (for details see technical data sheet of the product).

## 8) Safety Instructions

**8.1)** The fluids pass through a valve can be corrosive, toxic, flammable or pollutant. They can also be found at very high or low temperature. When handling valves shall be taken necessary security measures and it is advisable to use personal protective equipment:

- 1) Wear eye protection.
- 2) Wear gloves and appropriate work clothes.
- 3) Wear safety shoes.
- 4) Wear a helmet.
- 5) Note the availability of running water.
- 6) For flammable fluids, make sure you have a fire extinguisher.

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

**8.3)** Any valve that was used in toxic services must have a cleaning certificate before handling.

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