

INSTALLATION, OPERATION AND MAINTENANCE MANUAL

Disk check valve

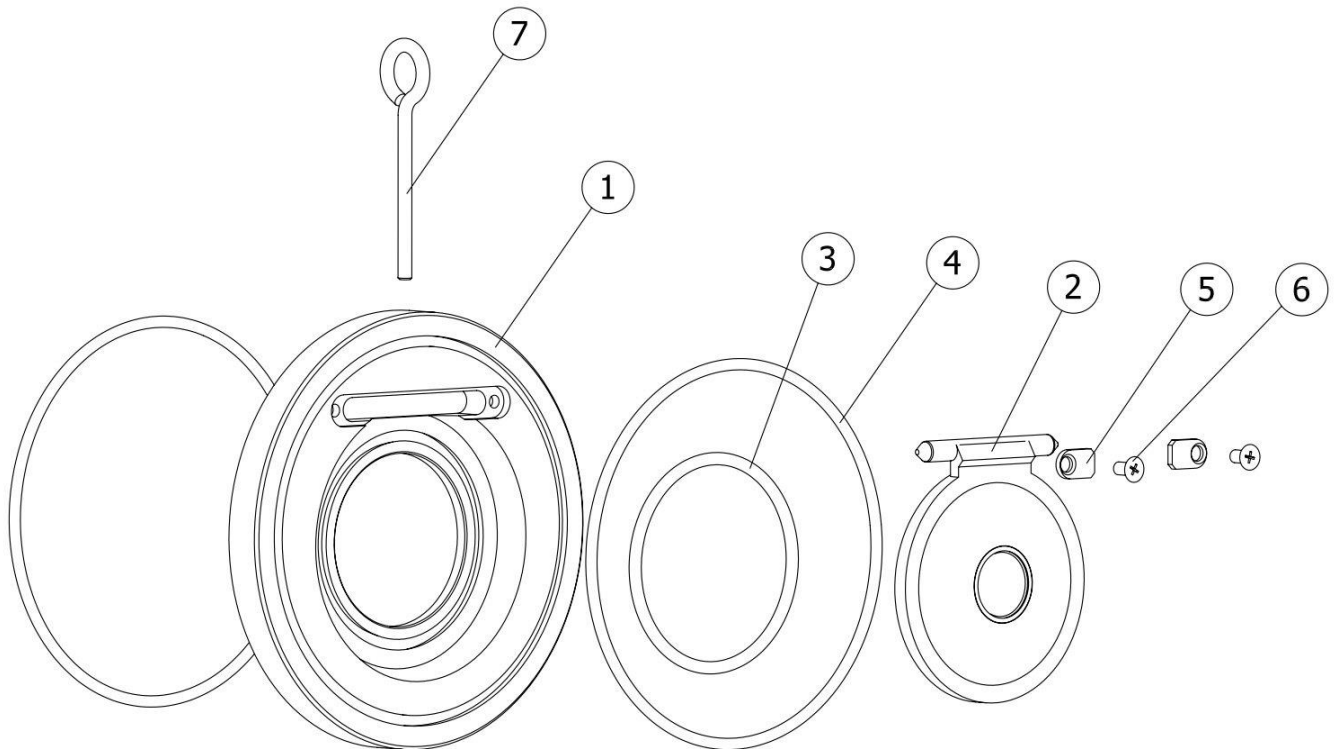


GENEBRE Reference: 2406

Installation, operation and maintenance instructions

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1) Breakdown drawing



1.1) List of valve components

Nº	Name	Material	Surface Treatment	Spare Part Code
1	Body	Stainless Steel 1.4408 (CF8M)	Shot blasting	-----
2	Disk	Stainless Steel 1.4408 (CF8M)	Shot blasting	-----
3	External O'ring	FKM	-----	K2406
4	Disk O'ring	FKM	-----	K2406
5	Axis screw	Stainless Steel AISI 316	-----	-----
6	Stem Stopper	Stainless Steel AISI 316	-----	-----
7	Hook	Steel	Zinc Plated	-----

* Available spare parts

2) Storage

In case valve is not immediately installed, it is recommended to keep it inside the included protective wrapping to avoid damages or dirt accumulation. The wrap must not be removed until valve is to be installed. When possible, valves must be stored in a dry and clean environment.

3) Installation instructions

3.1) 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.

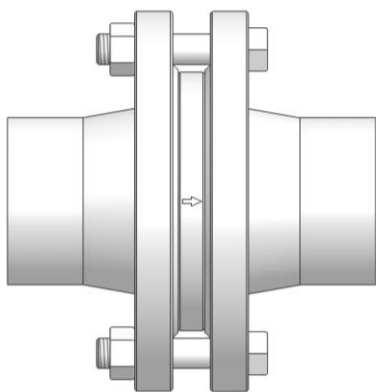
Gaskets between valve and pipe flanges are not necessary as the *o-ring* (part. 4) will keep tightness between them.

Check correct performance of the valve by pushing the *disk* (part.2) in the direction of the flow and making sure it goes back to the original position once it is released. If this is not the case, check if there are foreign particles inside the valve and repeat the whole operation. If the disk does not slide smoothly, valve must not be installed.

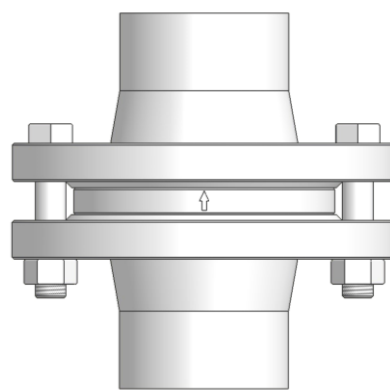
3.2) Assembling

Disk check valves can only be installed in two different positions:

A.- Horizontal or **B.- Vertical** (ascendant fluid), as shown in the following sketch:



A.- HORIZONTAL



B.- VERTICAL
(ASCENDANT FLUID)

IMPORTANT:

- Check disk valves by Genebre, S.A. (art.2406) are designed to be assembled between flanges DIN PN10, DIN PN16 and ANSI 150.
- Be extremely cautious when placing the valve in the center of the pipe axis to assure tightness between the body and the flange.
- Do not weld once the valve is already assembled, as it could be damaged due to overheating and deformation of the seat area.
- Pay attention to the direction of the valve's flow, indicated with an arrow in the body.
- Verify good parallelism of the flanges. Leave enough space between them so that valve can be easily inserted or removed.
- Tighten the flanges screws until they make firm contact with the valve's body. Apply the alternate tightening method to assure a correct installation.
- Valve must never be assembled adjacent to an elbow, reducer, valve or pump in order to avoid turbulences. Minimum distance between these elements is 10 times pipe's diameter -waters up- and 3 times pipe's diameter -waters down- according to CR 13932:2000.
- Never try to install the valve with a different setup than the one indicated in section 3.2.

4) Operational instructions

4.1) Usage

Check valves are usually used to prevent fluid from coming back into the system. These are Wafer valves, to be installed between flanges, and they provide a leakproof lock when used adjusted to the pressure and temperature values for which they have been designed.

Body material for the valve, seat and rest of components has to be fully compatible with the fluid circulating through the pipe. Otherwise, valve could be seriously damaged.

4.2) Operation

By default, this kind of valve does not need to be operated. Opening and closing are automated, depending on pressure and direction of the flow. For more information on opening pressure for the valve, please consult the technical specifications for the product.

5) Maintenance operations

Check valves with soft lock are designed so that they do not need any lubrication and/or periodical maintenance during their life cycle.

However, periodical checks explained below will be useful to extend the service life of the valve and reduce installation problems:

- Keep the valve in a completely closed position.
- Verify all locks and threaded ends to check if they are loose or rusted. Tighten them if necessary.
- Inspect the valve and surrounding areas to verify if there is any leak.

6) Reparation instructions

In case the fluid continues to circulate through the line once the valve is completely closed, the leak may be caused by damages in the seat and/or the locking surface, so it will be necessary to disassemble the valve so that it can be repaired. If this is the case, GENE BRE, S.A. has spare *joints* (part. 4) and *seats* (part. 3). However, it may be the case that (for example, in an area difficult to access) due to financial reasons it is not recommended to repair the valve but directly replace it.

6.1) Disassembling

You must remove the valve from the installation to repair it.

Make sure the line is cold, drained and depressurized.

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

a - Loosen flanges' setscrews. Be careful not to drop the valve. Help yourself with a fastening element if necessary. Place the valve in a valid vise in ascendant fluid position.

b.- Remove both *screws* (part. 6) and their respective *stoppers* (part. 5) and remove the *disk* (part. 2).

c.- Remove the *seat* (part. 3) and the *o-rings* (part. 4) from their respective slots.

6.2) Reassembling

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 armored again, cleaning is essential for a long life for the valve.

- a.- Clean the lock area inside the *body* (part. 1) and replace damaged or worn out pieces.
- b.- Insert the *seat* (part. 3) and the *o-rings* (part. 4) into their respective slots.
- c.- Place again the *disk* (part. 2) in its working position and check if it got any damage during disassembling process. Then proceed with the *stoppers* (part. 5) and *screws* (part. 6).
- d.- Reinstall again the valve between flanges. See *Installation instructions* on page 4.

7) Pressure for opening

Disk check valve by GENE BRE, S.A. (art.2406) has been designed to work with minimal operational pressures (to obtain more information, please consult the technical specifications).

8) Hygiene and Safety Instructions

8.1) Fluids that go through the 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.

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

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

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