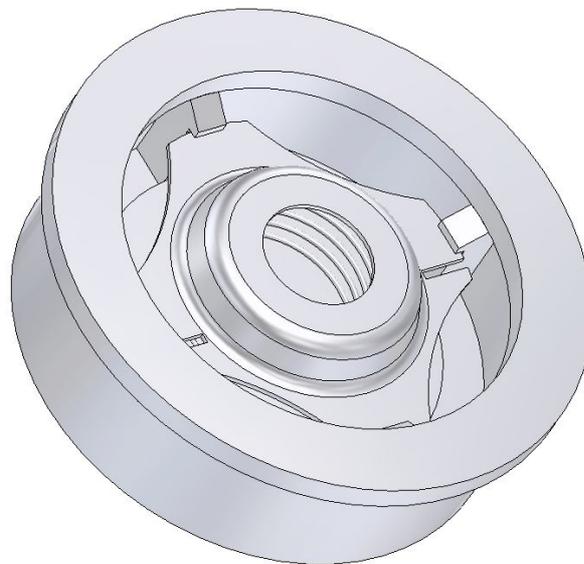


INSTALLATION, OPERATION AND MAINTENANCE MANUAL

Disk check valve

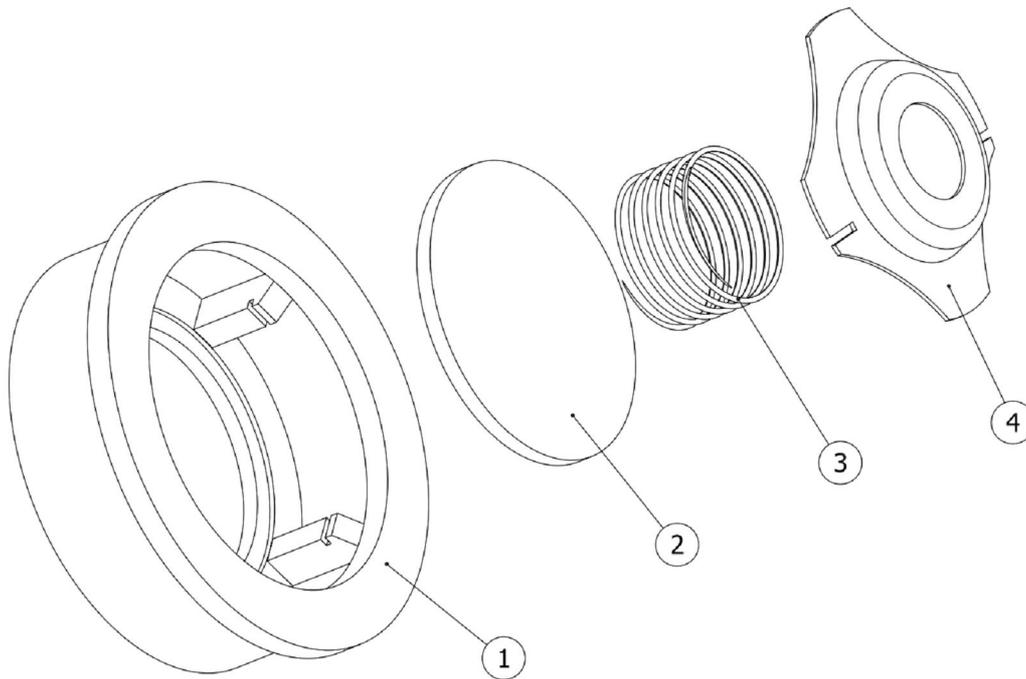


GENEBRE Reference: 2415

Installation, operation and maintenance instructions

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1) Breakdown drawing.



1.1) List of valve components

Part. Nr.	Description	Quant.	Material	Finishing
1	BODY	1	316	Blasting + Pickling
2	DISK	1	316	Blasting + Pickling
3	SPRING	1	316	
4	COVER	1	316	

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. As much as 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.*

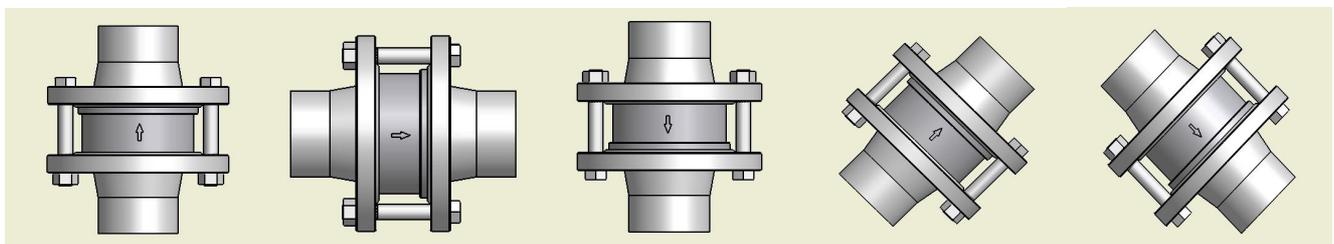
Plan beforehand enough space for future maintenance operations.

Have available some flat gaskets to keep tightness between valve and pipe flanges.

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

Check disk valve can be installed in any position, but you have to take into account the direction of the valve's flow indicated by an arrow in the body.



ASCENDANT

HORIZONTAL

DESCENDANT

BENDE

ATTENTION: in case you need to install the without spring, it can only be placed in vertical position (ascendant fluid).

IMPORTANT:

- Check disk valves by Genebre, S.A. are designed to be assembled between flanges DIN PN16, DIN PN25, DIN PN40 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.
- 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 recommended between these elements is 10 times pipe's diameter -waters up- and 3 times pipe's diameter -waters down- according to CR 13932:2000.

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 metallic 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 on the locking surface or an excessive erosion of the spring material after many operational cycles. In both cases it will be necessary to disassemble the valve for repairing it. GENE BRE, S.A. has replacement *springs* (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 and extract the flanges' screws or bolts. Be careful not to drop the valve. Help yourself with a fastening element if necessary. Place the valve in a correct vise.

b.- Straighten at least one of the *cover* (part. 4) flaps and turn it, so that it can be released from the 4 slots of the *body* (part. 1)

c.- In this same operation, remove the *spring* (part. 3) and the *disk* (part. 2)

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 reassembled, cleaning is essential for a long life for the valve.

- a.- Clean the locking area inside the *body* (part. 1) and replace damaged or worn out pieces.
- b.- Place the *disk* (part. 2) again in its working position and check if it got any damage during disassembling process. Then proceed with the *spring* (part. 3) and finally the *cover* (part. 4), being especially careful to turn it as it slides through the inside of the *body's* (part. 1) 4 slots.
- c.- Fold again the flaps straightened during disassembling to avoid the cover from dropping when the valve starts working.
- d.- Install again the valve between flanges. See *Installation instructions* on page 4.

7.) Pressure for opening

Disk check valve by GENE BRE, S.A. (art.2415) 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. 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.