GC SUPPLIES UK LTD

Installation, Operating and Maintenance Instructions:

ETG-WPCV40

Wafer Pattern Spring Check Valve

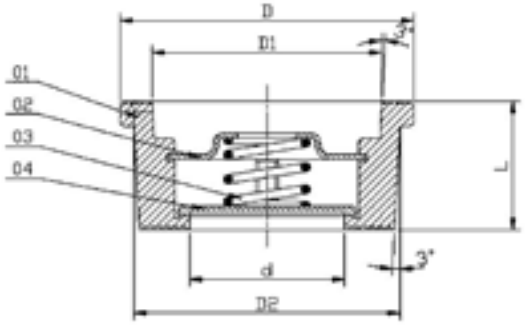
Contents

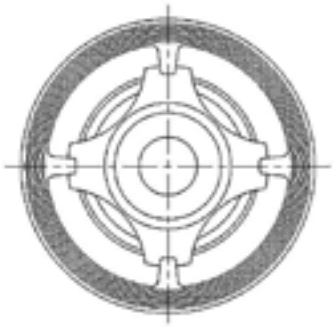
Valve Information

ETG-WPCV40

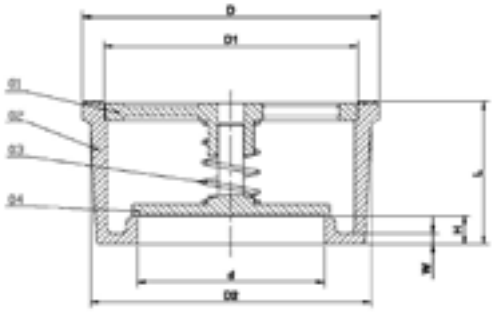
Wafer Pattern Spring Check Valve

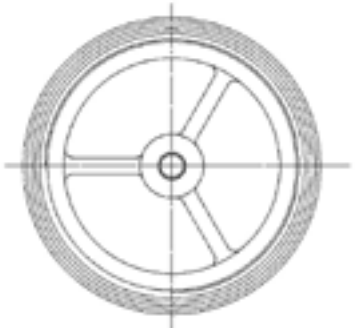
1/2” - 4”





5” - 8”





Item	Part	Material	Qty.
1	Body	CF8M	1
2	Spring Cover	SS316	1
3	Spring	SS316	1
4	Disc	CF8M	1

SIZE	d	D	D1	D2	L	H	W
1/2”	15	39	28.3	34	16		
3/4”	20	46	35.7	41	19		
1”	25	54	40	49	22		
1-1/4”	32	70	52.4	62	28		
1-1/2”	40	81	61	71	32		
2”	48	94	75.4	85	40		
2-1/2”	62	113	90	102	46		
3”	75	132	109	123	50		
4”	95	150	125.3	140	60		
5”	118	187	160	177	90	18	6.8
6”	140	217	187	205	106	23	7.2
8”	185	274	240	261	140	32	8

• ASTM A351 CF8M 316 Stainless Steel construction, 316 Trim, Spring, Screws and Insert.

• Metal – Metal Seat.

• 1/2”- 4” 40 bar pressure rated. 5”- 8” 25 bar pressure rated.

• -20 / + 200 deg C Temp rated.

• To fit between DIN PN10/16/25/40 and ANSI 150 (May fit other flange tables, please ask).

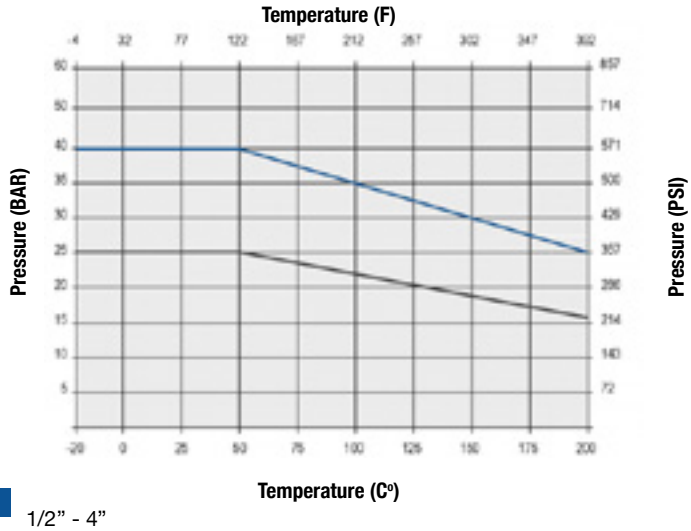
• Face to Face dimensions conform to DIN 3202 K4.

• CE marked in accordance with PED 2014/68/EU (from 1.1/4”).

The valves are designed to fit between flanges within the PCD of the flange bolts. This valve requires flange gaskets to be used. Because of the Metal – Metal seating, this valve can be used for elevated temperatures. Can be used in any orientation within the pipework. Low spring cracking pressures.

Available size range: 1/2” - 8”

Pressure-Temp. Rating

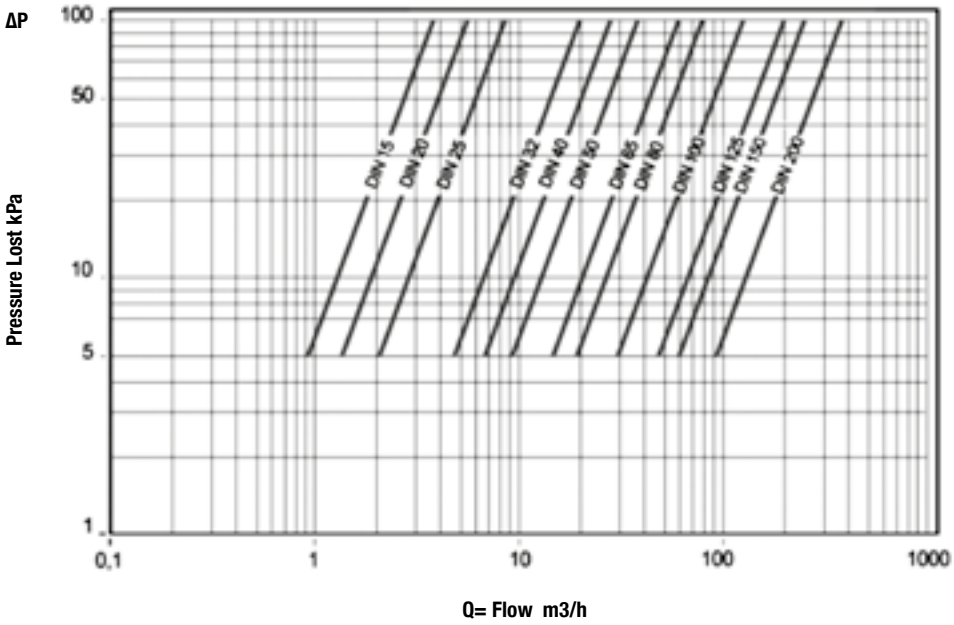


1/2” - 4”

SIZE	Vertical Upward Flow (mbar)	Vertical Downward Flow (mbar)	Horizontal Flow (mbar)
1/2”	25	21	23
3/4”	25	21	23
1”	25	21	23
1-1/4”	27	21	24
1-1/2”	29	21	25
2”	29	21	25
2-1/2”	31	21	26
3”	32	21	26
4”	33	21	27
5”	34	17	22
6”	36	18	23
8”	36	18	27

Please note that no alternative spring ranges are

Coefficcent KV	KV Factor
1/2”	3,7
3/4”	5,5
1”	8,5
1-1/4”	20
1-1/2”	27
2”	38
2-1/2”	60
3”	82
4”	120
5”	200
6”	240
8”	380



Introduction

G.C. Supplies offers a wide range of valves, designed and assembled to handle 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 the user's risk. Valves will have an optimal behaviour when working conditions do not exceed the recommended pressure and temperature limits for which they have been designed.

Transport and Storage Conditions

Visual Inspection

It is important to conduct a visual inspection to check for any damage on the product that could have occurred during transport, unloading or placement. If you notice any kind of anomaly upon receiving the goods, please contact GC Supplies in order to resolve the issue.

Storage

During storage it is recommended to keep valves in a dry and clean environment within the included protective wrapping to avoid damage or dirt accumulation. The protective wrap should not be removed until the valve is ready to be installed.

Before installing and/or manipulating these elements, read these instructions carefully. If you fail to understand any of their content, please contact G.C. Supplies.

Installation Instructions

Preparation

Firstly, separate the valve from the valve wrapping. Serious problems may arise with the installation of a valve into an unclean pipe, make sure the pipe is not dirty before installing it.

Plan beforehand enough space for future maintenance operations. Use flat gaskets to keep tightness between the valve and pipe flanges. Check the valve is operating correctly by pushing the disc (refer to the diagram) in the direction of the flow and ensuring it goes back to the original position once it's released. If this is not the case, check if there are any foreign particles inside the valve and repeat until desired outcome is achieved. If the disc does not move smoothly, the valve must not be installed.

It is strongly recommended to mount anti-vibration elements to absorb any potential vibrations that may damage and reduce the life cycle of the valve.

Assembling

Disc check valves can be installed in any position, but the flow direction of the valve marked by an arrow on the body must be taken into account.

Upward Horizontal Downward Angular

In case you need to install the valve without the spring, the valve should only be placed in vertical position (upward flow).

The Wafer Pattern Spring Check Valve is designed to be assembled between flanges PN10, PN16, PN25, PN40, ANSI 150 and ANSI 300.

Take extreme care in centering the valve with respect to the axis of the pipe in order to guarantee the tightness between body and flange. The valve has a centering ring which is responsible for this operation, once the valve is installed this ring can be removed.

Maintain good parallelism between the flanges. Leave enough space between them so that valve can be easily inserted or removed.

Tighten the flange bolts 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 (upstream) and 3 times pipe's diameter (downstream) according to CR 13932:2000 standard.

Operating Instructions

Usage

Check Valves are usually used to prevent fluid from flowing back into the system. Wafer Check Valves are installed between flanges, which provide a leakproof lock when used adjusted to the pressure and temperature values for which they have been designed. Valve components must be fully compatible with the fluid circulating through the pipe, otherwise, the valve could be seriously damaged.

Operation

By default, this kind of valve does not need to be operated. Opening and closing are automatic, depending on pressure and direction of the flow. For more information about the minimum opening pressure of the valve, please refer to the valve information stated previously in the document.

Maintenance Instructions

Check valves with a metal sealing are designed so that they do not need any lubrication and/or periodical maintenance during their life cycle. However, periodical checks 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 threads, locks, fasteners 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 leakage.

Reparation Instructions

If fluid continues to circulate through the line once the valve is completely closed, the leakage may be caused by damage on the sealing surface or by an excessive erosion on the spring after many operational cycles. In both cases it will be necessary to disassemble the valve for repairing it.

However, for example it may be the case that, in an area difficult to access, it is more economically viable to directly replace the valve instead of repairing it.

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.

- Loosen and extract the flange screws or bolts. Be careful not to drop the valve. Use a fastening element if necessary and place the valve in a correct vice.
- Straighten at least one of the flaps from the support and turn it, so that it can be released from the four slots of the body.
- In this same operation, remove the spring and the disc.

Reassembling

Before proceeding to reassemble the valve, make sure that reparation kit and/or pieces to be used are appropriate. When it is reassembled, maintaining cleanliness is essential for a long life cycle.

a) Clean the sealing area inside the body and replace damaged or worn out pieces.

b) Place the disc back in its working position, making sure to check if it has sustained any damage during disassembling process. Then proceed with the spring and finally, the spring cover, being especially careful to turn it as it slides through the inside of the body's four slots.

c) Re-fold the flaps straightened during disassembling to avoid the support from dropping when the valve starts working.

d) Reinstall the valve between flanges. Refer back to the installation instructions if necessary.

Opening Pressure

The Disc Check Valve has been designed to work with minimal operational pressures (for more details, please consult the technical specifications in the valve information).

Hygiene and Safety

The fluids that go through the valve can be corrosive, toxic, flammable or pollutant. They can also be found at very high or low temperatures. When operating valves, you must follow the operation instructions.

It is recommended that you:

- Protect your eyes.
- Wear gloves and appropriate working clothes.
- Wear safety footwear.
- Wear a helmet.
- Have running water to hand.
- Have an extinguisher to hand when work with flammable fluids.

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

Any type of repair or maintenance should be performed in a well ventilated area.