



# **Installation, Operating and Maintenance Instructions:**

ETG-WPCV16

Wafer Pattern Swing Check Valve

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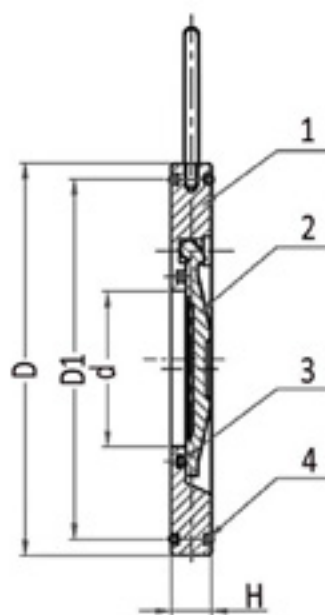
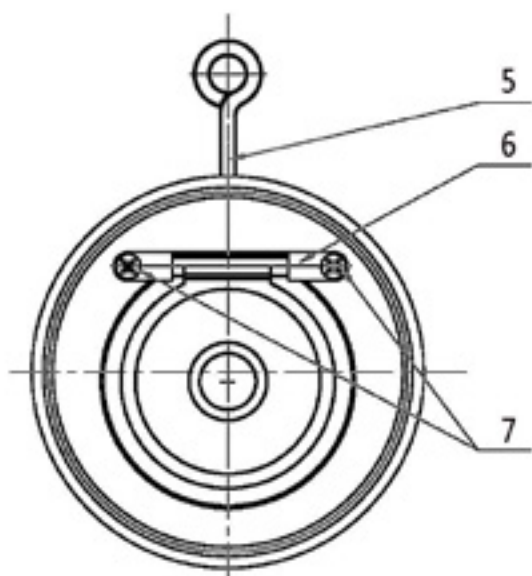
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Hygiene and Safety

# Valve Information

## ETG-WPCV16

### Wafer Pattern Spring Check Valve



- 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.

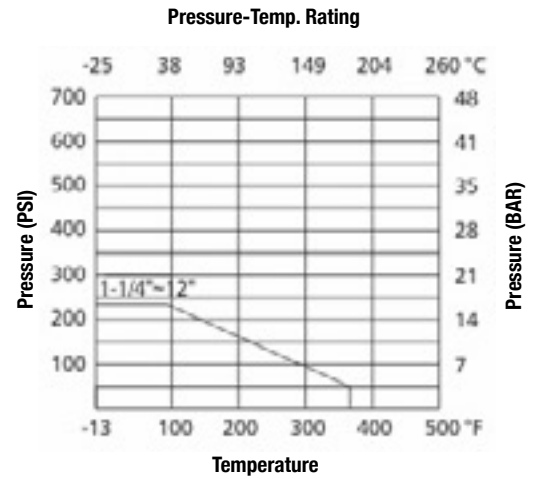
**Available size range: 1/2" - 8"**

Item	Part	Material	Qty.
1	Body	CF8M	1
2	Disk	CF8M	1
3	Disk O'Ring	VITON	1
4	External O'Ring	VITON	2
5	Hook	AISI 304	1
6	Stem Stopper	AISI 316	2
7	Screw	AISI 316	2

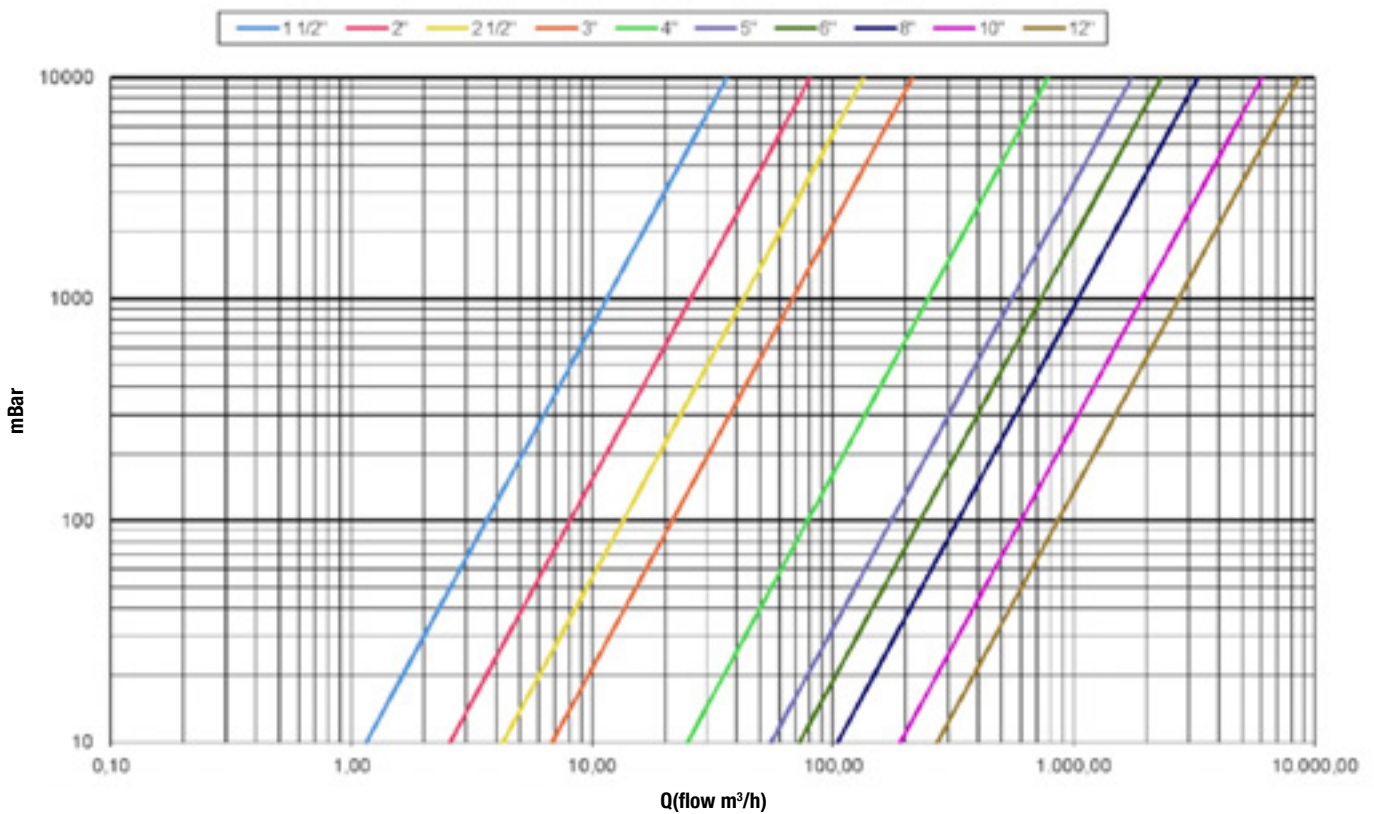
SIZE	d	D	D1	H	KGs
DN32	20	82	68	12	0.42
DN40	25	92	75	12	0.52
DN50	32	105	84	14	0.79
DN65	40	124	96	14	1.10
DN80	54	136	117.5	14	1.30
DN100	70	164	148	18	2.26
DN125	92	194	166	18	3.15
DN150	114	220	197	20	4.54
DN200	154	275	249	22	7.65
DN250	200	330	310	26	12.63
DN300	230	384	358	30	19.95

## Kv values & Minimum Opening Pressure Differential

SIZE	Kv (Cubic M/Hr)	Vertical Upward Flow Opening	Horizontal Upward Flow Opening
DN32	10.6	6 Mbar	0 Mbar
DN40	16	6 Mbar	0 Mbar
DN50	27.5	6 Mbar	0 Mbar
DN65	45.5	6 Mbar	0 Mbar
DN80	68.8	6 Mbar	0 Mbar
DN100	112.7	6 Mbar	0 Mbar
DN125	168	6 Mbar	0 Mbar
DN150	231	6 Mbar	0 Mbar
DN200	314	9 Mbar	0 Mbar
DN250	425	9 Mbar	0 Mbar
DN300	550	9 Mbar	0 Mbar



Pressure Drop Chart



# 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.

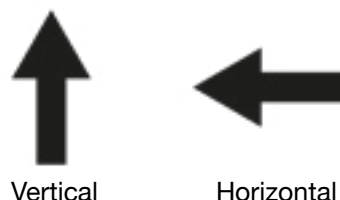
**Before installing and/or manipulating these elements, read these instructions carefully. If you fail to understand any of their content, please contact G.C. Supplies.**

## 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. Gaskets between valve and pipe flanges are not necessary as the Body O'Ring will keep tightness between them. 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.

**Assembling** Wafer Swing Check Valves can only be installed in two different positions:



The Wafer Pattern Swing Check Valve is designed to be assembled between flanges DIN PN10, DIN PN16 and ANSI 150.

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.

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 on the body.

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 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 (upstream) and 3 times pipe's diameter (downstream) according to CR 13932:2000.

# 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 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 depressurised.

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

- Loosen flange bolts. Be careful not to drop the valve. Use a fastening element if necessary and place the valve in a vice in horizontal position.
- Remove both Screws and their respective Stem Stoppers and remove the Disc.
- Remove the Seat and the O'Rings from their respective slots.

## 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 area inside the Body and replace damaged or worn out pieces.
- b) Insert the Seat and the Disc O'Rings into their respective slots.
- c) Place the Disc in its working position and check if it got any damage during disassembling process. Then proceed with the Stem Stoppers and Screws.
- d) Reinstall the valve using the installation instructions.

# Opening Pressure

The Wafer Swing 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.**