



PROFACTOR®
DER DEUTSCHE QUALITÄTSSTANDARD

EN

TECHNICAL DATA SHEET AND USER MANUAL



PRODUCT CODE

PF CV 240
PF CV 240P
PF CV 241
PF CV 241P
PF CV 242
PF CV 242FM
PF CV 243
PF CV 244
PF CV 245

SPRING CHECK VALVE

1. PURPOSE AND SCOPE

A check valve is a type of protective pipeline fitting that prevents the flow direction of the medium in the system from reversing. Such valves allow the medium to flow in one direction and prevent movement in the opposite direction, operating automatically.

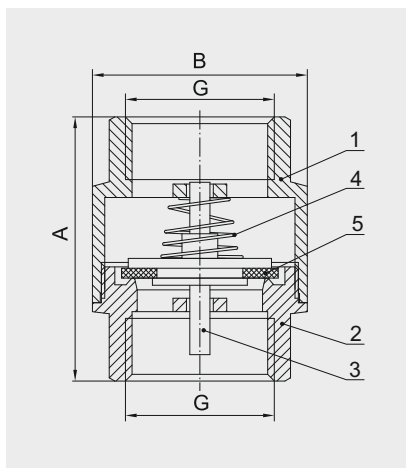
Check valves must be installed in locations where the pipeline or equipment mounted on it needs to be protected from back pressure and reverse flow. This particular check valve is designed for domestic water supply, heating, air-conditioning systems, and compressed air installations.

2. TECHNICAL SPECIFICATIONS

Product Code	PV CV	240	240P	241	241P	242	242FM	243	244	245
Nominal size	DN	15		20		25		32	40	50
	G	1/2"		3/4"		1"		1¼"	1½"	2"
Maximum operating pressure	bar	25	12	25	12	25		18		
Minimum operating medium temperature	°C	– 20								
Maximum operating medium temperature	°C	100	80	100	80	100				
Flow capacity Kv at Δp = 1 bar	m³h	4,1	4,2	7,0	7,7	11,3	7,9	16,3	23,8	39,0
Installation length A	mm	45		51		54	65	57,5	68,5	72,5
Diameter B	mm	33,5		42,5		48,5		58,5	69,5	82
Weight	g	138	122	210	190	280	301	430	680	970
Average service life	years	15								

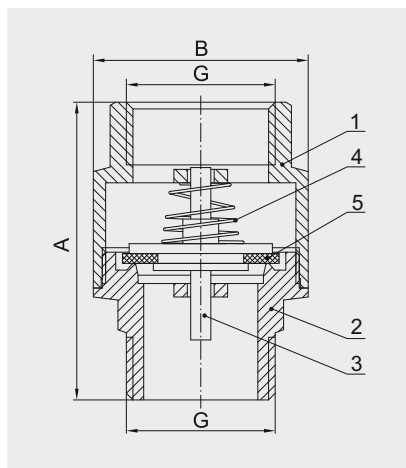
3. DESIGN

PF CV 240 – 245; 240P – 241P



- 1 – Body
- 2 – Coupling with seat
- 3 – Closing stem with disc

PF CV 242FM



- 4 – Spring
- 5 – Sealing ring

The valve design ensures low pressure loss, silent operation, and excellent tightness in all operating conditions. The valve guarantees no leakage in the closed position. The shut-off tightness of the valve is in accordance with DIN 3230-4-1977.

Connection thread: cylindrical pipe thread is in accordance with ISO 228-1 and DIN 259.

4. MATERIALS

PF CV 240, PF CV 241, PF CV 242, PF CV 242FM, PF CV 243, PF CV 244, PF CV 245:

Body (1), coupling (2), stem (3) — Brass CW617N (DIN EN 12165)

Spring (4) — Stainless steel AISI 304 (DIN EN 10088)

Sealing ring (5) — Wear-resistant NBR rubber

PF CV 240P – PF CV 241P:

Body (1), coupling (2) — Brass CW617N (DIN EN 12165)

Stem (3) — ABS plastic

Spring (4) — Stainless steel AISI 304 (DIN EN 10088)

Sealing ring (5) — Wear-resistant NBR rubber

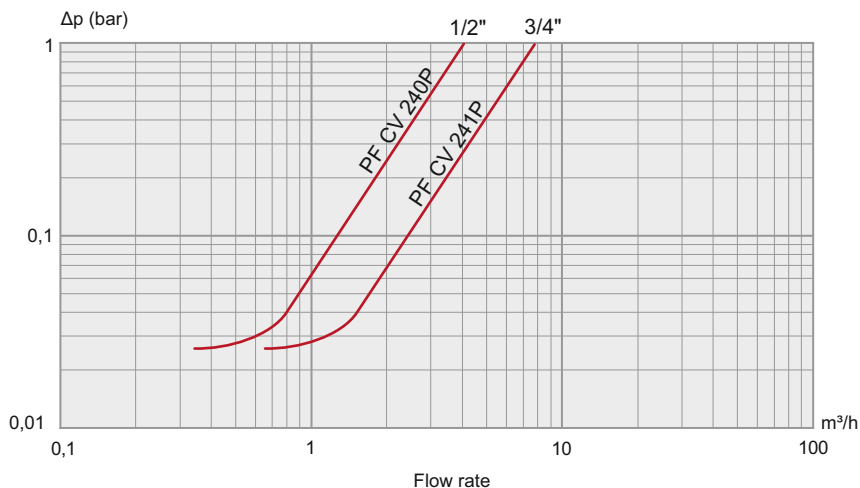
5. OPERATING PRINCIPLE

When the medium flows through the pipeline, it exerts pressure on the disc of the closing stem, overcoming the spring force and thus opening the valve. The stem moves out of the coupling seat to a greater or lesser extent depending on the flow rate through the valve. If the flow decreases to zero, the spring pushes the disc of the closing stem back into the seat, closing the valve.

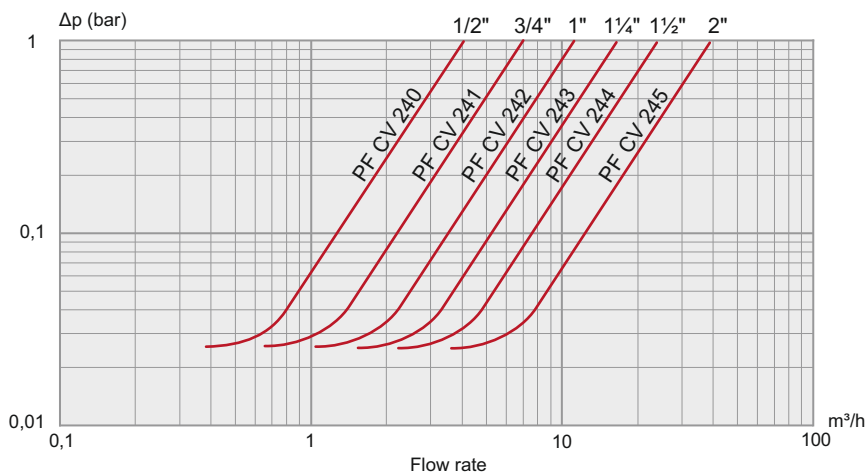
6. HYDRAULIC CHARACTERISTICS

Pressure drop diagram:

Check valve with plastic stem:

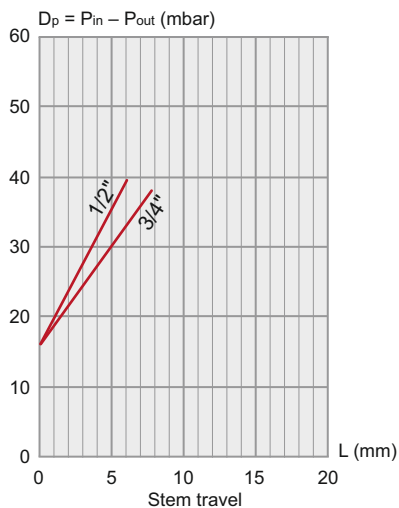


Check valve with brass stem:

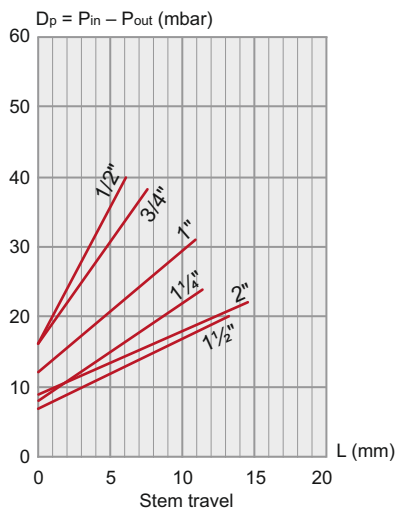


Valve minimum opening pressure diagram:

Check valve with plastic stem:



Check valve with brass stem:



7. INSTALLATION INSTRUCTIONS

The valve is supplied to the customer fully ready for operation and requires no additional adjustment.

Before installing the valve, the pipeline must be cleaned of scale and rust. Heating, heat supply, internal cold and hot water supply systems, and boiler pipelines must be flushed with water after installation until the water runs clear without mechanical impurities.

The check valve can be installed in any position; however, the arrow on the body must correspond to the direction of the working medium flow. The valve must not be subjected to mechanical loads from the pipeline (bending, compression, tension, twisting, misalignment, vibration, or uneven tightening of fasteners). If necessary, supports or compensators should be provided to reduce the load on the valve from the pipeline. The misalignment of connected pipelines must not exceed 3 mm per meter of length, plus 1 mm for each additional meter.

It is recommended to install manual shut-off valves for scheduled maintenance on the pipeline section where the check valve is installed. Valves should be opened slowly to avoid possible water hammer and sudden pressure surges in the system.

The valve must be securely fastened to the pipeline; leakage of the working fluid through the threaded part is not permitted. Threaded connections should be sealed using PTFE-tape (fluoroplastic sealing material), polyamide thread with silicone, or flax fiber. Care must be taken to ensure that excess sealing material does not enter the valve seat, as this may lead to valve malfunction.

Check the correctness of the installation. After installation, a pressure (manometric) test of the system's tightness should be carried out. This test ensures the system is leak-free and prevents potential damage associated with leaks.

When using the check valve in systems where the medium contains a high concentration of mechanical impurities, a mechanical filter should be installed before the valve, as solid particles may impair the valve's sealing performance and tightness. It may be necessary to remove and blow through the valve to eliminate mechanical contaminants. After installation, it is recommended to open all water taps to release air from the valve and flush it with water.

8. OPERATION AND MAINTENANCE

The check valve must be operated without exceeding the pressure and temperature limits specified in the technical specifications table. If the system pressure can rise above the valve's rated pressure, ensure that a safety device is installed. Installation, removal, repair, or adjustment of the valve must be performed only when the system is depressurized. Allow the equipment to cool down to ambient temperature before any work. Check valves should not be used in systems with sudden or frequent pulsations of the medium flow, such as those occurring behind piston compressors.

9. WARRANTY OBLIGATIONS

The warranty period is 24 months from the date of sale to the end user. During the entire warranty period, the manufacturer guarantees the proper operation of the product and its compliance with safety requirements, provided that the user complies with the rules of storage, transportation, installation, operation, and maintenance. The warranty covers all defects arising from the manufacturer's fault.

The warranty does not cover defects resulting from:

- Violation of storage, transportation, installation, operation, or maintenance conditions;
- Traces of exposure to substances aggressive to the valve materials;
- Traces of mechanical damage.
- Damage caused by fire, natural disasters, or other force majeure circumstances;
- Damage resulting from improper actions by the user;
- Evidence of unauthorized interference with the product's design.

The product described in this technical manual is a technically complex device that must be installed by a qualified specialist with appropriate experience working with this type of equipment.

Installation and commissioning must be carried out by an authorized and certified company.

Profactor Armaturen GmbH reserves the right to make design changes to the device that do not affect its technical characteristics or functional performance.



INTERNATIONAL WARRANTY CARD

NAME OF THE PRODUCT

PRODUCT CODE, SIZE

QUANTITY

SELLER NAME AND ADDRESS

DATE OF PURCHASE

SELLER STAMP

SELLER SIGNATURE

For the warranty term refer to the Warranty obligation clause in the technical manual

FOLD LINE

FOLD LINE

In case of any claims to the product quality the following documents should be submitted:

1. Application with customer and product details:

- Name of the customer, actual address and phone number
- Article of the product
- Reason for the claim and photo
- Plumbing system where installed (name, address, phone number)

2. Invoice copy and receipt

3. Warranty card

RETURN/EXCHANGE COMMENTS

DATE

SIGNATURE



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