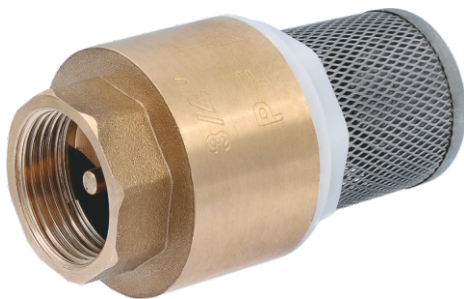




PROFACTOR[®]
DER DEUTSCHE QUALITÄTSSTANDARD

EN

TECHNICAL DATA SHEET AND USER MANUAL



PRODUCT
CODE

PF CVS 248

**SPRING CHECK VALVE
WITH A FILTER**

1. PURPOSE AND SCOPE

A check valve is a type of protective pipeline fitting that prevents the reversal of flow direction in a system. Such valves allow the medium to pass in one direction and prevent movement in the opposite direction, operating automatically. Check valves must be installed in locations where the pipeline or equipment connected to it needs to be protected from back pressure and reverse flow.

A spring check valve with a filter, or an end filter with a check valve, is used for drawing the working medium with self-priming pumps, as well as at the inlet of submersible pumps. This design prevents the need for refilling the system, avoids water hammer, and protects sensitive system components from mechanical impurities.

Typical applications include hydraulic or pneumatic industrial systems, and it is ideal for use with cold / hot water, oils, and compressed air.

2. TECHNICAL SPECIFICATIONS

Nominal size: DN 25

Connection: 1"F, cylindrical pipe thread (G)

Maximum operating pressure: 10 bar

Maximum differential pressure: 1 bar

Operating medium temperature: -20°C to $+110^{\circ}\text{C}$

Mesh size (filtration degree): 1200 μm

Flow capacity Kv at $\Delta p = 1$ bar: 11.5 m^3/h

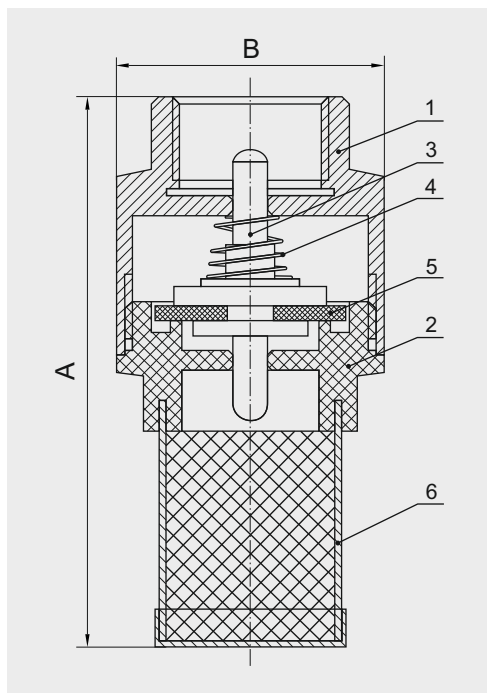
Installation length A: 89 mm

Diameter B: 48 mm

Weight: 202 g

Average service life: 15 years

3. DESIGN



- 1 – Body
- 2 – Coupling with seat
- 3 – Closing stem with disc
- 4 – Spring
- 5 – Sealing ring
- 6 – End filter

The check valve consists of a body (1), coupling with seat (2), closing stem with disc (3), compression spring (4), sealing ring (5), and end filter screen (6).

The body is made of brass grade CW617N (according to European standard DIN EN 12165:2011). The coupling is made of impact-resistant engineering thermoplastic resin (acrylonitrile butadiene styrene — ABS) and has, in its lower part, a bonded end filter, which is a cylindrical welded mesh with a closed bottom made of stainless steel AISI 304 in accordance with DIN EN 10088:2005.

The body and coupling have guides ensuring the movement of the closing stem along the direction of the flow, as well as female threaded connection ports in accordance with ISO 228-1:2000, DIN EN 10226:2005.

The closing stem is also made of brass grade CW617N. The compression spring is made of stainless steel AISI 304, and the sealing ring is made of wear-resistant nitrile butadiene rubber (NBR).

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

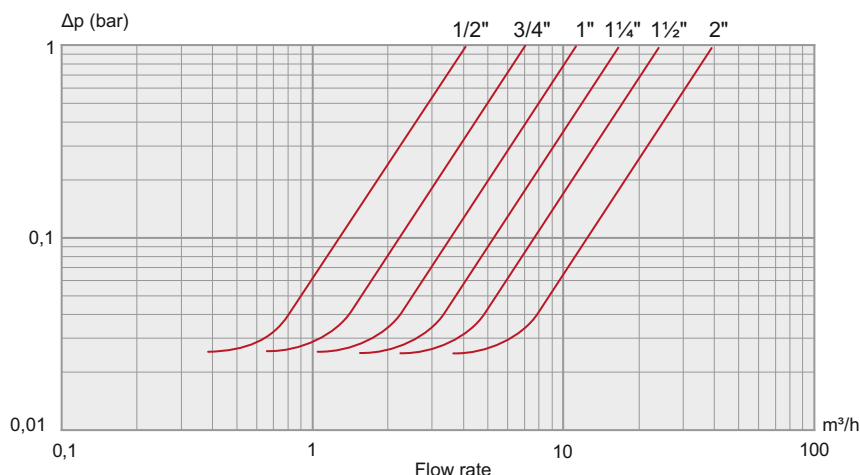
4. OPERATING PRINCIPLE

The valve is connected to the inlet pipe of the pump and immersed in a reservoir containing the working fluid. When the pump creates suction, the pressure at the valve outlet decreases. Atmospheric pressure acts on the working medium, which in turn exerts force on the disc of the closing stem, overcoming the spring force and opening the valve.

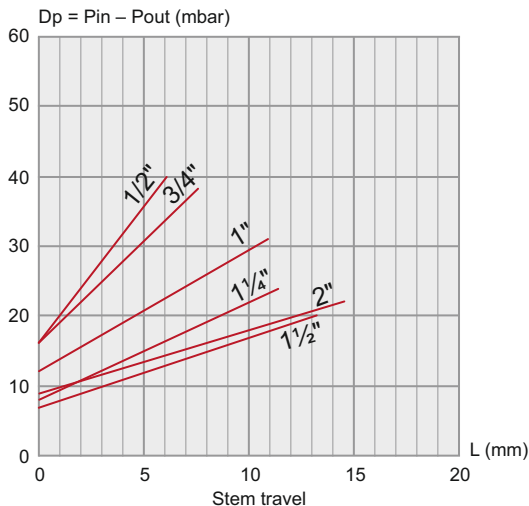
The stem moves out of the coupling seat to a greater or lesser extent depending on the pressure difference (between atmospheric pressure and the pressure in the pump inlet pipe). Before passing through the valve, the working fluid flows through the mesh end filter, which traps mechanical particles and thus protects the valve.

5. HYDRAULIC CHARACTERISTICS

Pressure drop diagram:



Valve minimum opening pressure diagram:



6. INSTALLATION INSTRUCTIONS

The valve is supplied to the customer fully ready for operation and does not require any 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 valve can be installed in any position, but the arrow on the body must correspond to the direction of the water flow.

The spring check valve with filter serves as a terminal element and does not require the installation of any supports or compensators. The valve must be securely fastened to the pipeline, leakage of the working fluid through the threaded section is not permitted.

Threaded connections must be made using PTFE-tape (polytetrafluoroethylene sealing material), polyamide thread with silicone, or flax fiber as the sealing material. Care must be taken to ensure that excess sealing material does not enter the valve seat, as this may cause the valve to malfunction. Check the correctness of installation.

This check valve also functions as a mechanical filter, and therefore can be used in systems where the medium contains a high concentration of mechanical impurities.

7. OPERATION AND MAINTENANCE

The check valve must be operated without exceeding the pressure and temperature values specified in paragraph 2 of the technical specifications.

Installation and dismantling of the product, as well as any repair or adjustment operations, must be carried out only when the system is depressurized. Allow the equipment to cool down to ambient temperature before performing any work.

Check valves should not be used in systems with sudden or frequent pulsations of the medium flow, such as behind piston compressors.

The end filter screen must be periodically rinsed and cleaned. A reduced flow of working fluid into the pump inlet pipe may indicate the need to clean the filter element.

8. 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 observes the rules of storage, transportation, installation, operation, and maintenance. The warranty covers all defects arising due to the manufacturer's fault.

The warranty does not cover defects caused by:

- Violation of storage, transportation, installation, operation, or maintenance conditions;
- Traces of exposure to substances aggressive to the materials of the product;
- Evidence 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 modifications to the device that do not affect its technical characteristics or functional features.



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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