Profactor Armaturen GmbH

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PROFACTOR®
DER DEUTSCHE QUALITÄTSSTANDARD

TECHNICAL DATA SHEET AND USER MANUAL

PRODUCT CODE

PF CV 249

HORIZONTAL CHECK VALVE

1. PURPOSE AND SCOPE

A check valve is a type of protective pipeline fitting that prevents the reversal of flow direction of the working medium in a system. 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 the equipment installed 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 installations, and compressed air systems.

2. TECHNICAL SPECIFICATIONS

Product Code	PF CV	249.15	249.20	249.25	249.32	249.40	249.50
Nominal size	DN	15	20	25	32	40	50
	G	1/2"	3/4"	1"	1¼"	1½"	2"
Maximum operating pressure	bar	16		12	10		
Operating medium temperature	°C	0°C to 90°C					
Flow capacity Kv at Δp = 1 bar (m^3/h)	m^3/h	3,6	9,5	23	35	56	86
Installation length A	mm	47	53,5	65,5	74	82	92,5
Weight	g	125	195	330	501	650	1030
Average service life	years	15					

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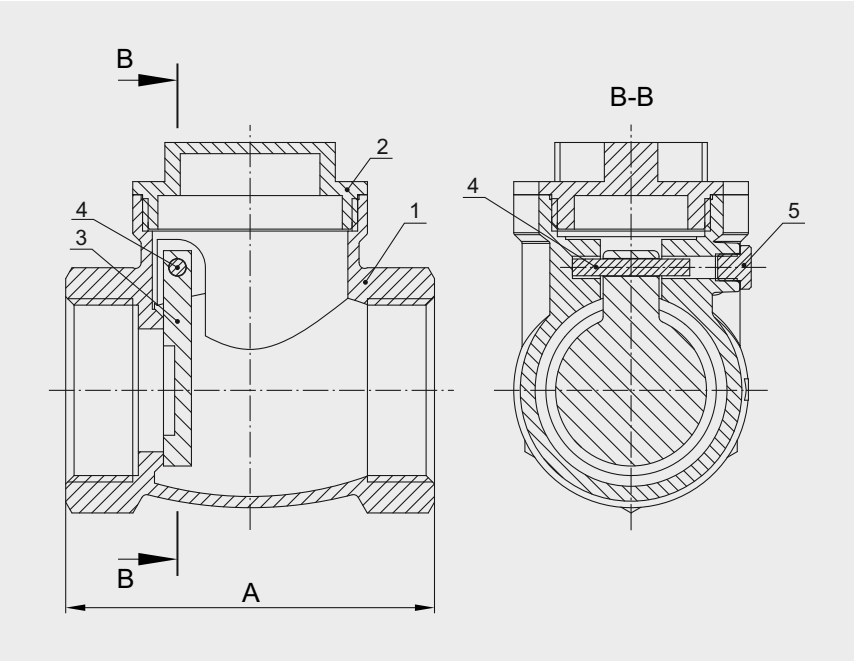
3. DESIGN



1 – Body
2 – Cover
3 – Disc shutter
4 – Pin
5 – Plug

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

Flow shut-off is implemented using a metal-to-metal sealing design (i.e., without rubber gaskets).

The connections between the body (1) and cover (2), as well as between the body and plug (5), are sealed with adhesive.

4. MATERIALS

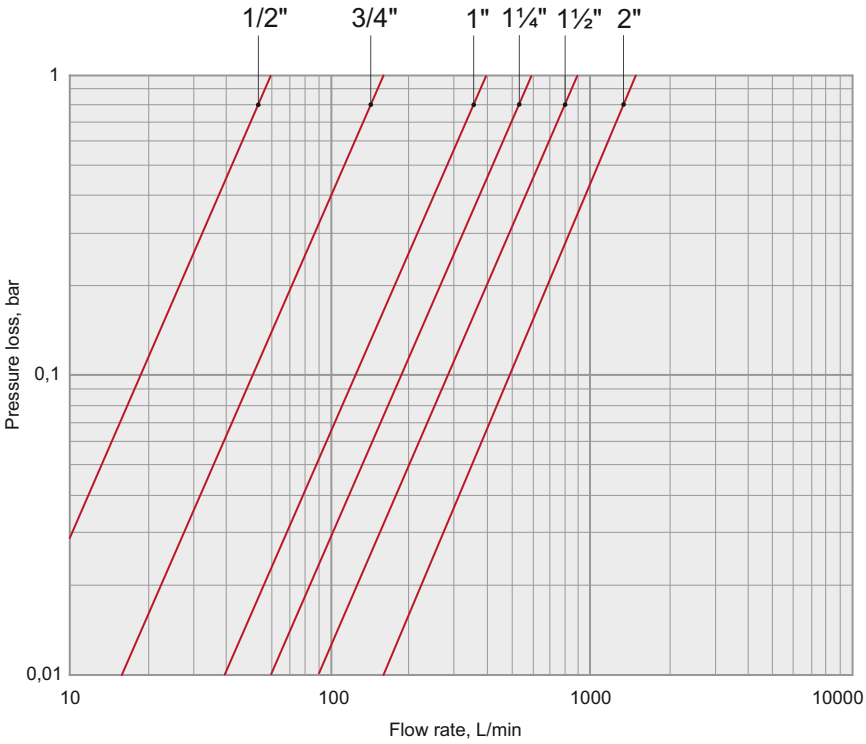
Body (1), Cover (2), Disc (3), Plug (5) — Brass CW617N (DIN EN 12165)
Pin (4) — Stainless steel AISI 304 (DIN EN 10088)

5. OPERATING PRINCIPLE

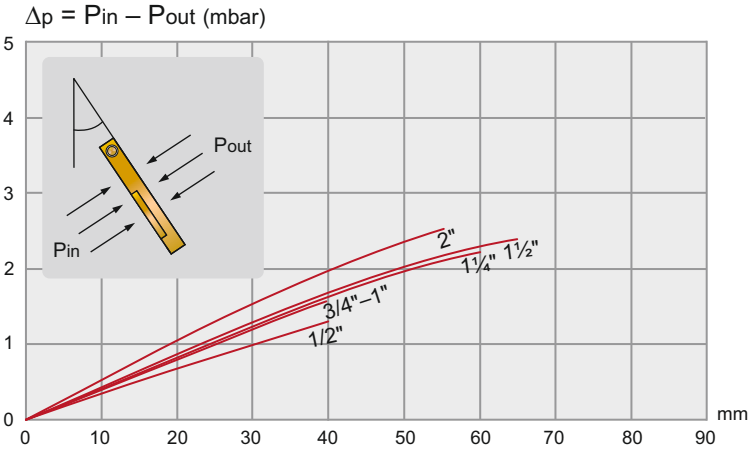
When the medium flows through the pipeline, it exerts pressure on the disc shutter (3), and by overcoming its own weight, lifts it, there by opening the valve. The disc shutter (3) rises to a greater or lesser extent depending on the flow rate through the valve. If the flow decreases to zero, the weight of the disc returns it to its original position, closing the valve.

6. HYDRAULIC CHARACTERISTICS

Flow rate and pressure loss diagram:



Valve minimum opening pressure diagram:



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 systems, and boiler pipelines must be flushed with water after installation until the water runs clear and free of mechanical impurities.

The horizontal disc check valve can be installed either horizontally with the cover facing upward (with no deviation from the horizontal plane toward the valve opening direction) or vertically, provided that the disc remains in the closed position under the force of gravity. 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 (such as bending, compression, tension, twisting, misalignment, vibration, or uneven tightening of fasteners). If necessary, supports or compensators should be provided to reduce the load from the pipeline on the valve. The misalignment of the 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 section of the pipeline where the check valve is installed. The 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 section is not permitted. Threaded connections should be made using PTFE-tape (polytetrafluoroethylene sealing material), polyamide thread with silicone, or flax fiber as sealing material. 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 installation. After installation, a pressure (manometric) test of the system's tightness should be carried out . This test ensures that the system is protected from leaks and related damage.

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, since solid particles may reduce the valve's sealing capability and damage the seat or disc shutter. The valve may require cleaning if contamination occurs.

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 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.

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 due to the manufacturer's fault.

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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 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 in handling 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 performance.

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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 detailes:
- 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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