Profactor Armaturen GmbH

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PROFACTOR®
DER DEUTSCHE QUALITÄTSSTANDARD

TECHNICAL DATA SHEET AND USER MANUAL

PRODUCT CODE

PF PRV 251.15
PF PRV 251.15G
PF PRV 251.20
PF PRV 251.20G

PISTON-TYPE PRESSURE REDUCING VALVE

1. PURPOSE AND SCOPE

The pressure reducing valve can be used in installations for potable water and plumbing system. It can also be used in heating systems to protect boiler against increased pressure. The outlet pressure is adjustable and does not vary with changes of the inlet pressure. It has compact dimensions and low level of noise.

2. TECHNICAL SPECIFICATIONS

Product Code	PF PRV	251.15	251.15G	251.20	251.20G
Threaded connection	DN	G1/2"		G3/4"	
Maximum inlet pressure PN	bar	16			
Maximum temperature	°C	90			
Outlet pressure range	bar	1 – 6			
Factory settings	bar	3			
Pressure gauge code	—	not	PF SG 861-10	not	PF SG 861-10
Manometer scale	bar	not	0 ÷ 10	not	0 ÷ 10
Pressure gauge connector	—	G1/4" (ISO 228)			
Nominal water flow (at the rate of 2 m/s)	m^3/hour	1,26		2,22	
	L/min	21		37	
Nominal water flow (at the rate of 1 m/s)	m^3/hour	0,6		1,08	
	l/min	10		18	
Average service life	years	15			

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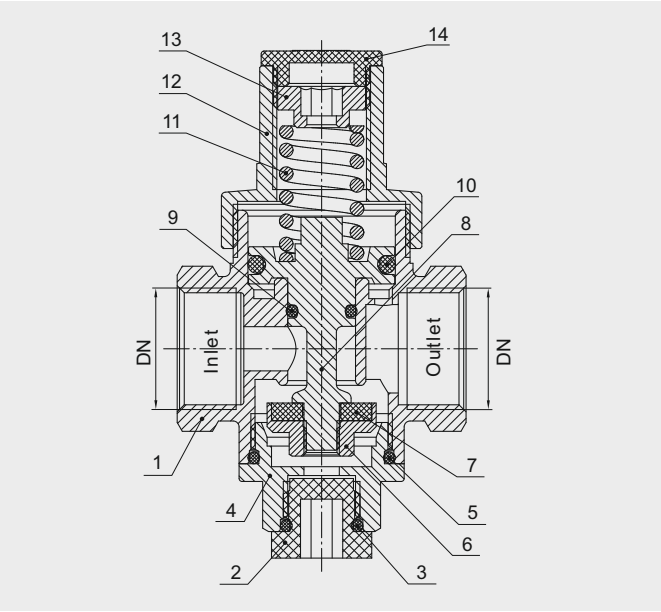
3. DESIGN

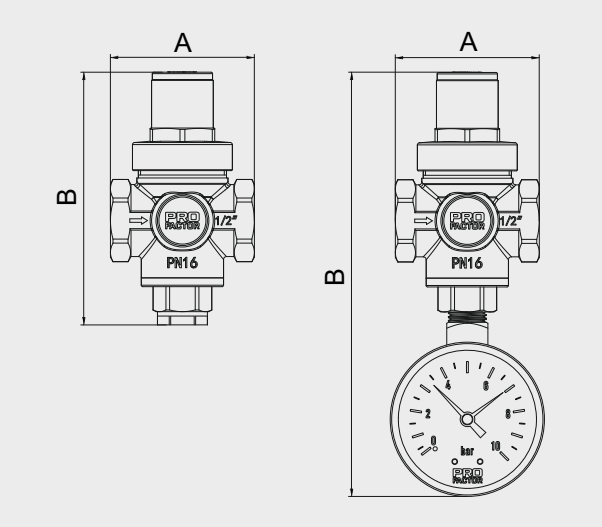


1 – Body
2 – Pressure gauge port plug
3 – Sealing
4 – Bottom cap
5 – Sealing
6 – Valve
7 – Valve sealing
8 – Rod
9 – Sealing of small piston
10 – Sealing of large piston
11 – Spring
12 – Upper cap
13 – Adjusting screw
14 – Cover

4. MATERIAL

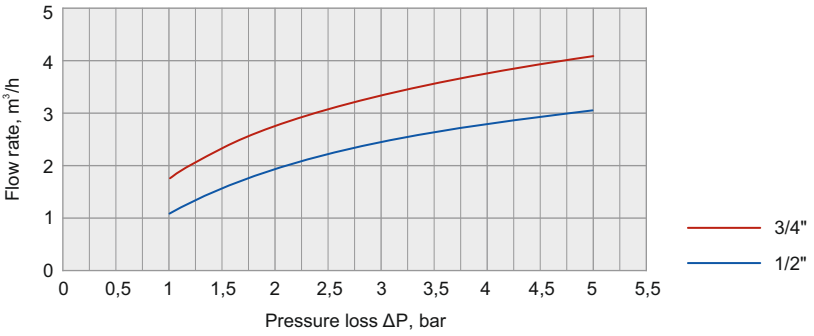
Body — Brass CW617N
Plug — Nylon PA6
Sealing — EPDM
Bottom cap — Brass CW617N
Valve — Brass CW617N
Valve sealing — EPDM
Rod — Brass CW617N
Sealing of small piston — EPDM
Sealing of large piston — EPDM
Spring — Stainless steel
Upper cap — Brass CW617N
Adjusting screw — Brass CW617N
Plug — Nylon PA6

5. DIMENSIONS



Product Code	PF PRV 251.15	PF PRV 251.20	PF PRV 251.15G	PF PRV 251.20G
Modification	without gauge		with gauge	
DN	G1/2"F – G1/2"F	G3/4"F – G3/4"F	G1/2"F – G1/2"F	G3/4"F – G3/4"F
A, mm	49	52,5	49	52,5
B, mm	85	90	150	155
Weight, g	280	340	350	410

6. PRESSURE DROP DIAGRAM



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7. ADJUSTMENT

PROFACTOR® pressure reducing valves are preset at a 3 bar outlet pressure.

Adjustment of the reducing valves is carried out without dismantling it. Before adjusting the valve installed in the system, it is recommended to bleed the air from the pipeline.

It is necessary to set the flow rate (0,1 L/min). Then proceed to adjust the pressure reducing valve.

A. Remove the cover “14” and use the regulator “13” to set the pressure: rotating CLOCKWISE the pressure value will increase, while rotating COUNTERCLOCKWISE it will decrease.

B. Once the required pressure has been reached, re-fit the plastic plug “14”.

8. INSTALLATION

The reducing valve can be installed at any mounting position (but it must not be installed upside down).

IMPORTANT! The water flow direction must coincide with the direction of the arrow on the valve body.

The reducing valve must be installed at the safe distance from the boiler; the generated hot water increases the volume, and, consequently, increases pressure in the system, which makes operation of the valve unstable. To avoid this, it is recommended to install expansion tank in the system between the reducing valve and the boiler.

When using PTFE-tape, polyamide thread or flax, care should be taken not to get material into the body of reduction valve. This could damage the valve.

It is recommended to install a strainer before the pressure reducing valve, in order to eliminate any impurities in the water which could compromise the functioning.

Valves must be provided with adequate support. Adjoining pipework must be supported to avoid the imposition of pipeline strains on the valve body.

The reducing valve should be installed so that it should be possible to read the gauge indicators.

The body of the device must ensure sufficient space for adjustments and maintenance.

Max. torque for:
PF PRV 251.15 and PF PRV 251.15G — 35 Nm;
PF PRV 251.20 and PF PRV 251.20G — 45 Nm.

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9. OPERATION MAINTENANCE

The reducing valve must be used at the temperature and pressure set forth in this technical manual.

The reducing valve maintenance consists in replacing the sealing from time to time. The necessity to replace the sealing is manifested in gradual outlet pressure increase over the adjusted, while the water taps are completely closed, as well as leak of water from the cover "14".

In this case, you should close upstream shut-off valve, pour off the water from the system (or a part of it), and replace O-rings. After this you should repeat the adjustment according to section 6 hereof.

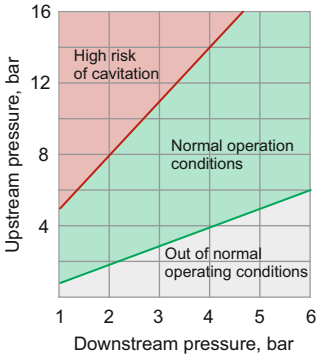
Freezing the operating environment inside the reducing valve is not allowed.

10. TROUBLE-SHOOTING

Problem	Description	Solution
Increased downstream pressure	Sealing of small piston damaged	Replace the sealing 9
	Sealing of large piston damaged	Replace the sealing 10
	The valve sealing damaged	Replace the sealing 7
Leakage from the cover (14)	Sealing of large piston damaged	Replace the sealing 10
Leakage from the pressure gauge port plug (2)	Sealing of the pressure gauge port plug damaged	Replace the sealing 3
Leakage on the valve body	Sealing between the body and the bottom cap damaged	Replace the sealing 5

11. INSTALLATION RECOMMENDATIONS

Cavitation diagram:



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In order to minimise the risk of cavitation in the reducing valve, which could cause malfunctions with the risk of erosion in the seal area, vibration and noise, you are strongly advised to refer to the operating conditions specified in the diagram.

If the pressure ratio exceeds the specified limit, you should consider the design pressure of the system or the use of a first stage pressure reducing valve (e.g. first stage pressure reducing valve from 16 to 8 bar and second stage from 8 to 4 bar).

It is recommended that flow velocity is kept within 1 to 2 metres per second when calculating the correct reducing valve size. This will prevent noise in the pipes and rapid wear of appliances.

It is especially important for systems of residential houses.

12. DISPOSAL

The disposal of PROFACTOR® — Drinking water manifolds systems must not endanger the health or the enviroment. National legal regulations for proper disposal of the PROFACTOR® — Drinking water manifolds systems have to be followed.

13. WARRANTY OBLIGATIONS

The warranty period is 12 months from the date of sale to the end consumer. Throughout the entire warranty period, the manufacturer guarantees the proper functioning of the product and its compliance with safety requirements, provided that the consumer follows the rules for storage, transportation, installation, operation, and maintenance of the product. The warranty covers all defects arising through the manufacturer's fault.

The warranty does not cover defects resulting from:

— Violation of storage, transportation, installation, operation, or maintenance conditions;
— Exposure to substances aggressive to the materials of the product;
— Signs of mechanical damage;
— Damage caused by fire, natural disasters, or other force majeure circumstances;
— Damage caused by improper actions of the user;
— Evidence of unauthorized interference with the product design.

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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 changes to the product design that do not affect its technical characteristics or functional features.

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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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