Profactor Armaturen GmbH

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PROFACTOR®
DER DEUTSCHE QUALITÄTSSTANDARD

TECHNICAL DATA SHEET AND USER MANUAL

PRODUCT CODE

PF RVS 612
PF RVA 613

RADIATOR CONNECTION UNIT WITH BALL VALVE

1. PURPOSE AND SCOPE

The radiator connection unit is used in two-pipe heating systems for connecting radiators with bottom connections spaced 50 mm apart (center-to-center).

The unit allows the user, if necessary, to completely shut off the radiator from the heating system. Such a unit is especially convenient for systems with concealed bottom piping, as it helps to avoid hidden pipe connections and increase system reliability.

The unit is connected to the radiator via a threaded connection with a self-sealing seat or by using a self-sealing adapter. This design provides a detachable and leak-tight connection between the unit and the radiator without additional sealing materials.

The unit can be used with steel, copper, polymer, and multilayer composite pipes transporting liquid media non-aggressive to the product materials, such as water or glycol-based solutions. The maximum glycol concentration must not exceed 50%.

2. TECHNICAL SPECIFICATIONS

Product Code	PF	RVS 612	RVA 613
Type	—	straight	angled
Nominal size	DN	20	
	G	3/4"	
Maximum operating pressure	bar	10	
Maximum temperature of the heat transfer medium	°C	110°C	
Maximum ambient temperature	°C	50°C	
Permissible relative air humidity	%	85	
Flow capacity Kvs, at Δp=1 bar	m³/h	3,7	2,1
Weight	g	304	333
Average service life	years	30	

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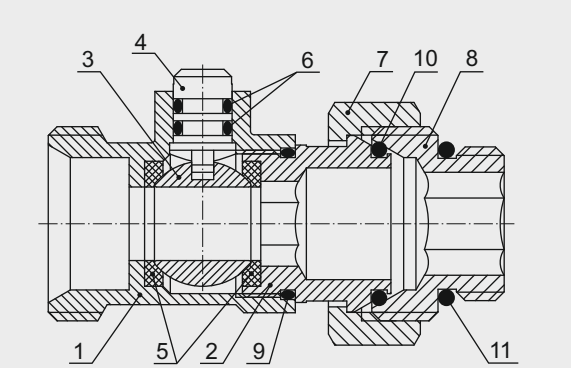
3. DESIGN

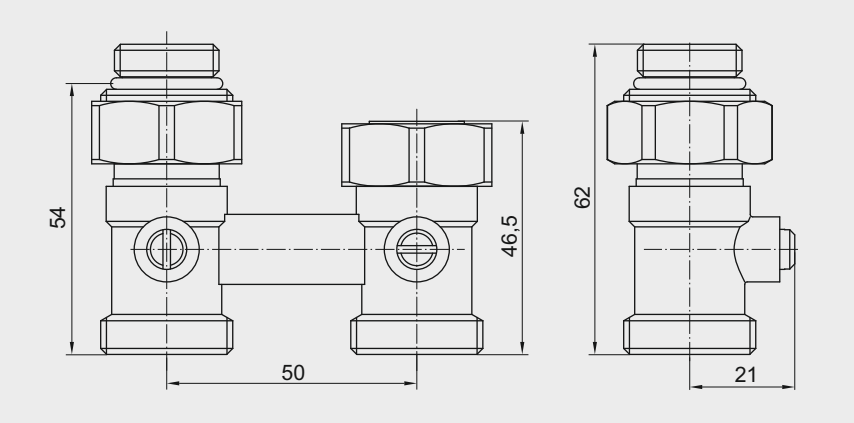
Straight radiator connection unit with ball valve:



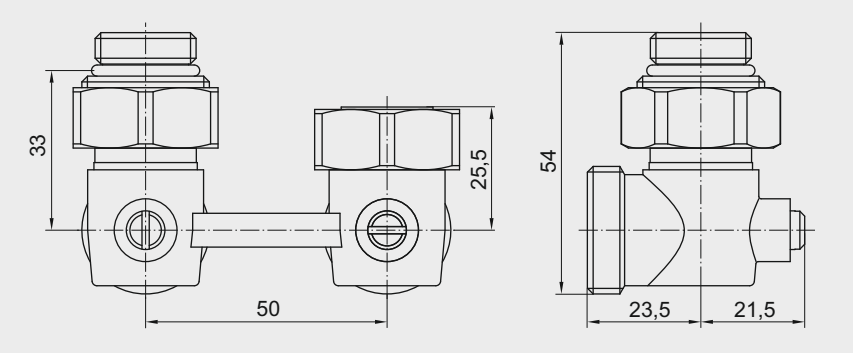
1 – Body
2 – Threaded flange
3 – Ball
4 – Stem
5 – Ball seat rings
6 – Stem O-rings
7 – Union nut
8 – Adapter nipple
9, 10, 11 – Sealing rings

Overall and installation dimensions.

Straight radiator connection unit with ball valve:



Angled radiator connection unit with ball valve:



The radiator connection unit has an H-shaped design and consists of two shut-off valves with ball mechanisms connected together with a center-to-center spacing of 50 mm.

The unit is available in two versions:

Straight (PF RVS 612) — the valve outlets for connection to the pipeline and the radiator are aligned on the same axis;

Angled (PF RVA 613) — the valve outlets for connection to the pipeline and the radiator are arranged at a 90° angle.

Both shut-off valves are identical and share a common H-shaped body (1). Each valve consists of a body (1), a threaded flange (2), a ball (3), a stem (4), a union nut (7), and an adapter nipple (8).

The valve body has two outlets for Eurocone fittings with 3/4" external cylindrical threads for connection to the pipeline, and two corresponding outlets with internal metric threads for screwing in the threaded flanges (2). It also includes two stem holes and two seats for valve seat rings (5).

The union nut (7) has a 3/4" cylindrical thread and is used for connection to radiators with 3/4" male threaded outlets, or for screwing in adapter nipples (8) used to connect to radiators with 1/2" female threaded outlets.

The threaded flange (2) has a seat for the valve seat ring (5) on one side and a seat for the adapter nipple (8) on the other. The body, threaded flanges, union nuts, and adapter nipples are made of brass grade CW617N (DIN EN 12165-2011). The surfaces of the body, flanges, and union nuts are nickel-plated.

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Connections between the body and flange are sealed with O-rings (9). To ensure tightness at the connections between the unit and the radiator, the threaded flange is equipped with a sealing ring (10), and the adapter nipple has a sealing ring (11). The shut-off element is a chrome-plated brass ball (3) sealed with seat rings (5) made of high-temperature-resistant elastic Teflon (polytetrafluoroethylene, PTFE).

The ball is operated by a stem (4). The valve stem is inserted from inside the body (1) and has a limiting shoulder. Both the ball and stem are made of brass grade CW614N (DIN EN 12165-2011). The stem is nickel-plated, and the ball is chrome-plated.

Stem tightness is ensured by two O-rings (6). All sealing rings (6, 9, 10, 11) are made of synthetic elastomer (ethylene-propylene rubber, EPDM).

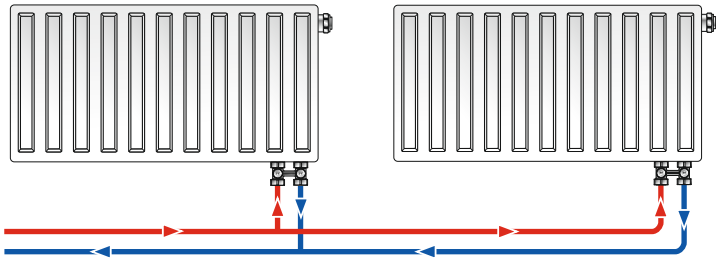
All pipe threads are in an accordance with ISO 228-1:2000, DIN 259, and all metric threads are in an accordance with ISO 261:1998.

4. PRINCIPLE OF OPERATION

The radiator connection unit for two-pipe heating systems consists of two shut-off valves connected together — one attached to the supply pipe, the other to the return pipe.

Flow direction can be in either direction, as the operating characteristics are the same both ways. The supply or return line of the radiator can be shut off by turning the valve stem 90° using a flat-head screwdriver.

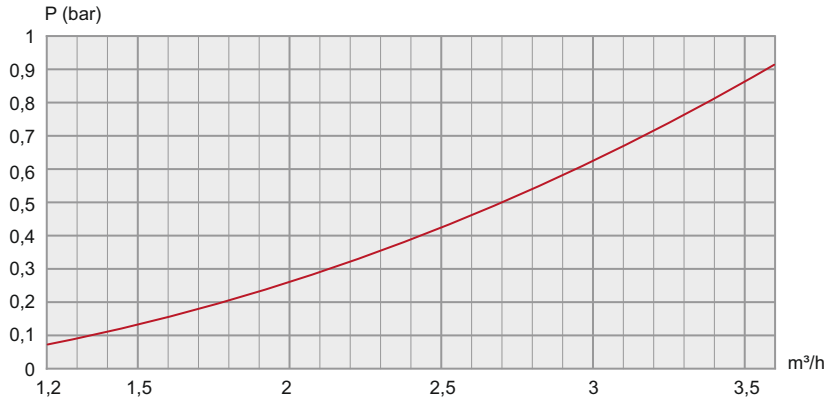
Radiator connection diagram for a two-pipe heating system:



5. HYDRAULIC CHARACTERISTICS

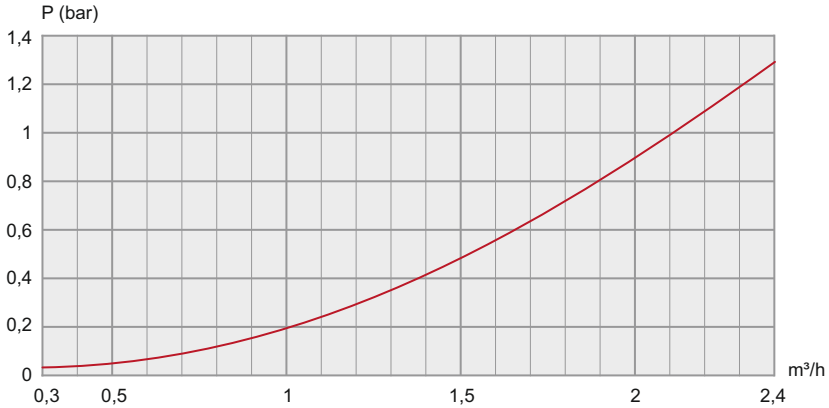
Straight radiator connection unit (PF RVS 612)

Pressure loss chart as a function of flow rate:



Angled radiator connection unit (PF RVA 613)

Pressure loss chart as a function of flow rate:



6. INSTALLATION INSTRUCTIONS

The radiator connection unit is used in two-pipe heating systems to connect radiators with bottom connections spaced 50 mm apart (center-to-center).

Before installation, the pipeline must be cleaned of rust, dirt, scale, sand, and other debris that could affect product performance. Upon completion of installation, heating and heat supply systems must be flushed with water until it runs clear of mechanical impurities.

The straight unit (PF RVS 612) is used when connecting radiators to pipes coming from the floor, while the angled unit (PF RVA 613) is used for connection to pipes coming from the wall. Connection of the H-shaped unit to radiators with 3/4" male threaded connections is carried out using union nuts (7).

If the radiator has 1/2" female threaded connections, the unit is connected using adapter nipples (8). First, screw the adapter nipples into the radiator outlets, then attach the unit and tighten the nuts.

The unit must not be subjected to mechanical stress from the pipeline (bending, compression, tension, torsion, misalignment, vibration, uneven tightening of fasteners). If necessary, supports or compensators should be installed to reduce the load on the unit from the pipeline.

The misalignment of the connected pipelines must not exceed 3 mm per 1 meter of length, plus 1 mm for each additional meter. The unit must be installed in such a way as to ensure free access to the shut-off mechanisms of the valves.

Check the installation for correctness.

7. OPERATING AND MAINTENANCE

The radiator connection unit must be operated without exceeding the pressure and temperature values specified in the technical specifications table.

Installation, disassembly, and any repair operations must be performed only when the system is depressurized.

Allow the equipment to cool to ambient temperature before servicing.

8. WARRANTY OBLIGATIONS

The warranty period is 24 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.

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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