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BPS mixing sets with low-loss header

NOTE!

The product may only be used if you have fully read and understood these operating instructions. The manual is also available on the AFRISO websites in the Internet

WARNING!

BPS mixing sets must only be installed, commissioned and dismantled by trained and qualified personnel. Work on electrical circuits must only be carried out by a licensed, qualified electrician.

The circulation pumps in the BPS mixing sets operate on a 230 V AC mains supply. This voltage can cause serious injury or death.



Do not allow the pump's electronic components to come into contact with water or other liquids.

When carrying out installation work, the power supply to the pumps must be disconnected.

Do not make any modifications to the device.

Changes and modifications carried out by unauthorised persons may cause danger and are prohibited for safety reasons.

APPLICATION

BPS mixing units with a low-loss header are used to connect a heat source to two circuits of a heating system compliant with PN-EN 12828. They can be used to connect, for example, a radiator system, an underfloor heating system or to charge a domestic hot water tank.

The use of a low-loss header, which is a component of the sets, ensures the separation of the pump circuits - the heat source pump circuit and the heating system pump circuits. This ensures the correct hydraulic operating conditions for the circulation pumps by balancing the flows. This enables smooth and efficient operation of the system and the heat source, and extends the service life of the circulation pumps. Thanks to its design and properties, the low-loss header also aids in venting and the separation of dirt. A manual air vent is used to remove trapped air, whilst dirt should be removed using the KFE drain and fill valve.

PREDICTABLE INCORRECT APPLICATION

BPS mixing sets must not be used in the following cases:

- under conditions exceeding the maximum permissible pressure and temperature parameters of the medium,
- with the following liquids and gases: a mixture of water and glycol with a glycol concentration greater than 50%, steam, oil, petrol, water intended for human consumption, other media that have a destructive effect on valve components or interfere with its operation.

DESCRIPTION AND SCOPE OF DELIVERY

BPS mixing units are ready-to-use hydraulic systems consisting of a hydraulic low-loss header and two sections for connecting the receiving installations. Depending on the version selected, the low-loss header can be connected to components for supplying receivers directly (without a mixing valve), with an ATM thermostatic mixing valve (20-43°C) or an ARV Vario ProClick rotary mixing valve (Fig. 2, 3, 4, 5, 6, 7).

All BPS mixing units are fitted with AFRISO APH 160 circulation pumps and the necessary fittings, such as mesh filters, shut-off valves on the supply side, shut-off valves with built-in non-return valves on the return side, and thermometers. The low-loss header is fitted with a nickel-plated KFE drain and fill valve and a manual air vent.

On the heat source side, the unit has G1" external threads for flat gaskets. On the receiving installation side, shut-off valves with G¾" internal threads are fitted.

MOUNTING

Before installing the BPS set, the system must be thoroughly flushed, taking particular care to remove any residues from soldering, pipe cutting, etc. To provide additional protection against dirt, we recommend installing an AFRISO ADS dirt separator and using AFRISO BCI corrosion inhibitor.

The BPS mixing unit can be installed with a low-loss header in either a vertical or horizontal position. When installing the unit, ensure that the flow directions of the medium comply with the application diagrams (Fig. 2, 3, 4, 5, 6, 7). If the BPS unit is installed in a horizontal position (Fig. 8), it will be difficult to vent the system via the manual air vent on the low-loss header housing. You should therefore provide for the installation of an air vent (e.g. Art. No. 77 735 10) at another point in the system.

On the heat source side, we recommend installing shut-off valves, which will facilitate and speed up the maintenance of the angle filters or, if necessary, the replacement of one of the set's components. If the heat source is not factory-fitted with a circulation pump, one must be installed between it and the BPS set's low-loss header. This is a component required for the system to operate correctly with the low-loss header.

The shut-off valves fitted to the supply and return lines are fitted with a pocket for mounting a temperature probe.

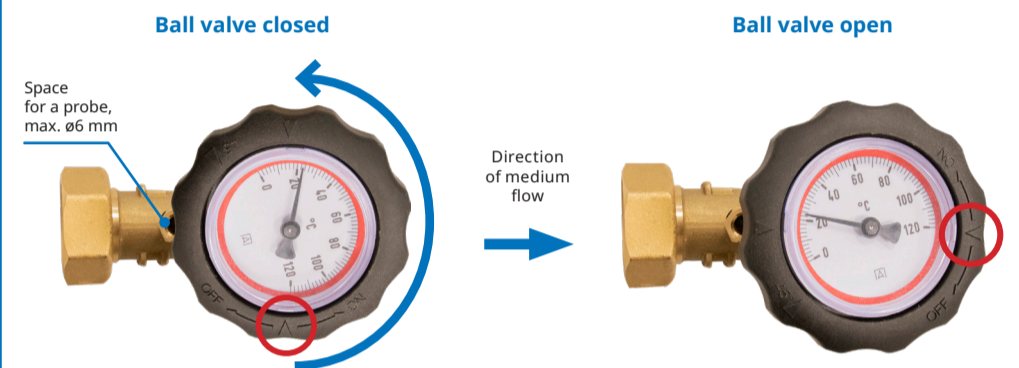


Fig. 1. Shut-off valve fitted to the supply line

You should also provide suitable brackets to secure the BPS unit depending on the installation position. Brackets are not included in the set.

EXAMPLE APPLICATION DIAGRAMS

Fig. 2.
Art. No. 90 900 20

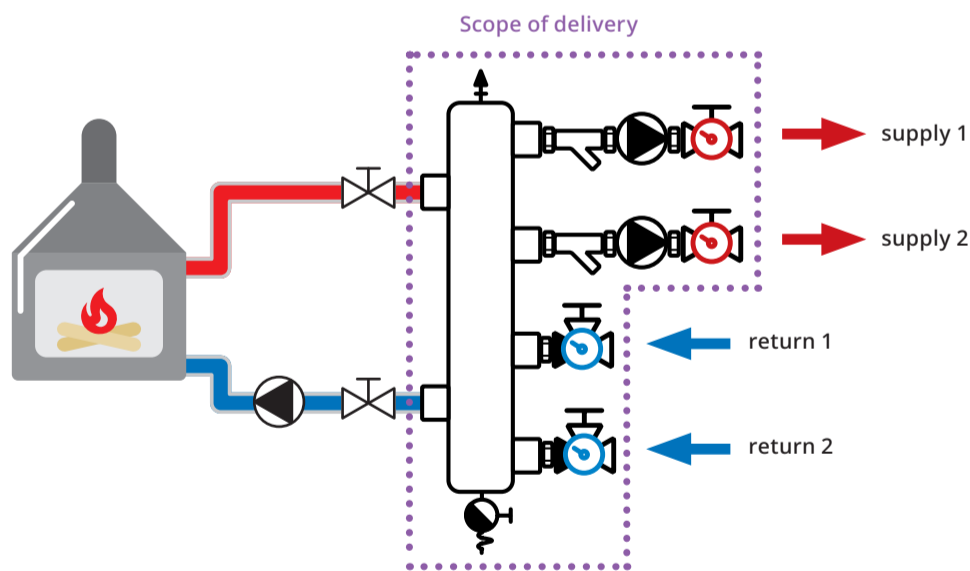
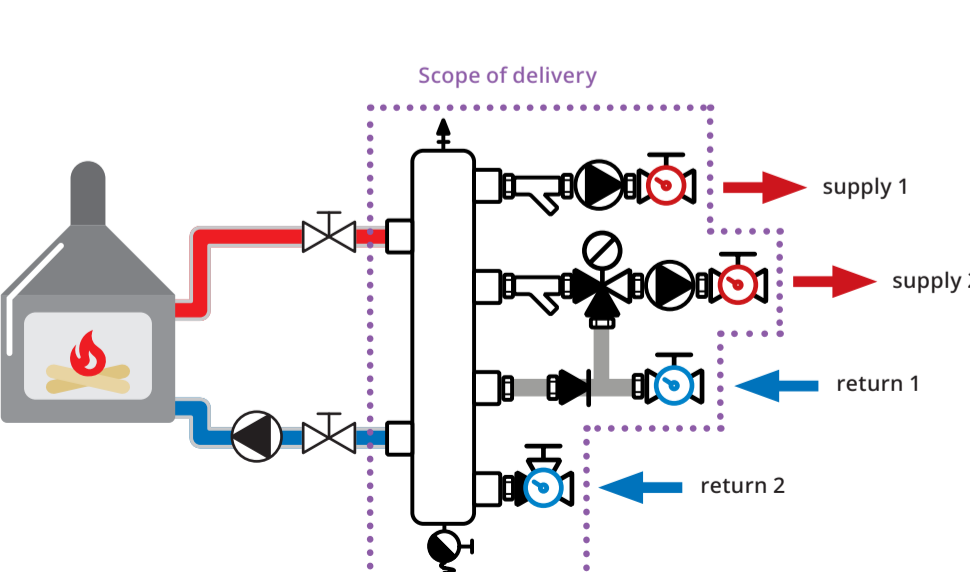


Fig. 3.
Art. No. 90 901 20



EXAMPLE APPLICATION DIAGRAMS

Fig. 4.
Art. No. 90 906 20

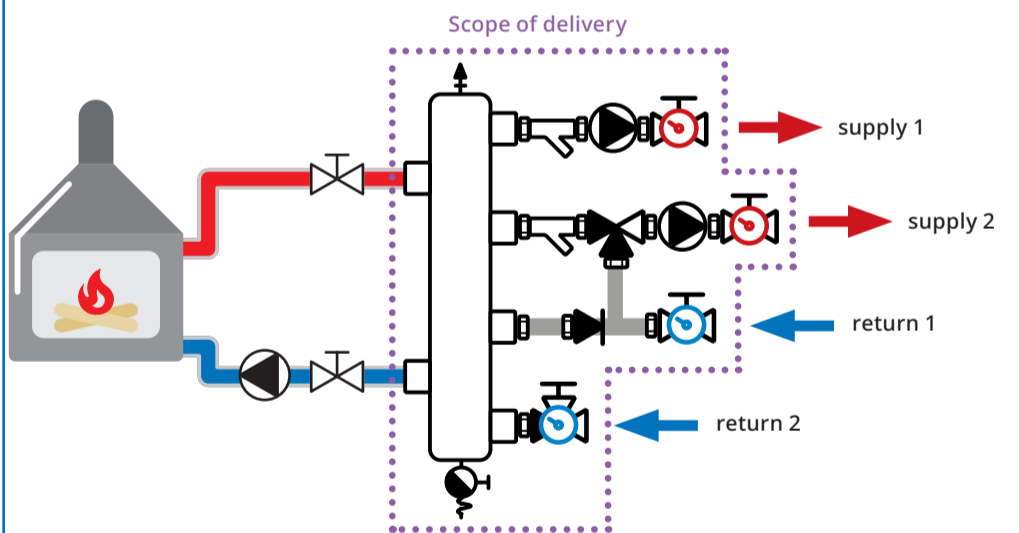
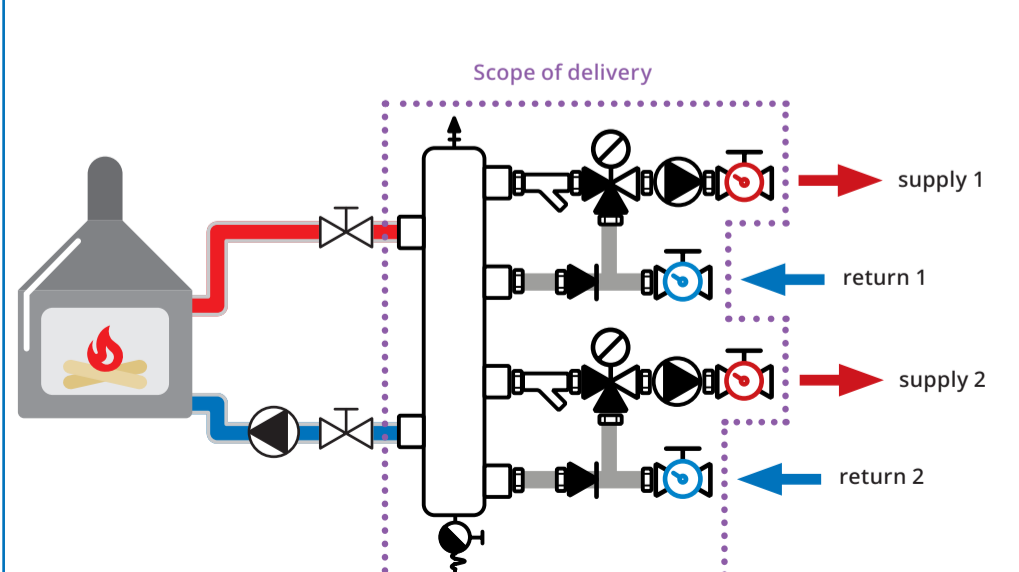


Fig. 5.
Art. No. 90 911 20



1 2
3 4

EXAMPLE APPLICATION DIAGRAMS

Fig. 6.
Art. No. 90 961 20

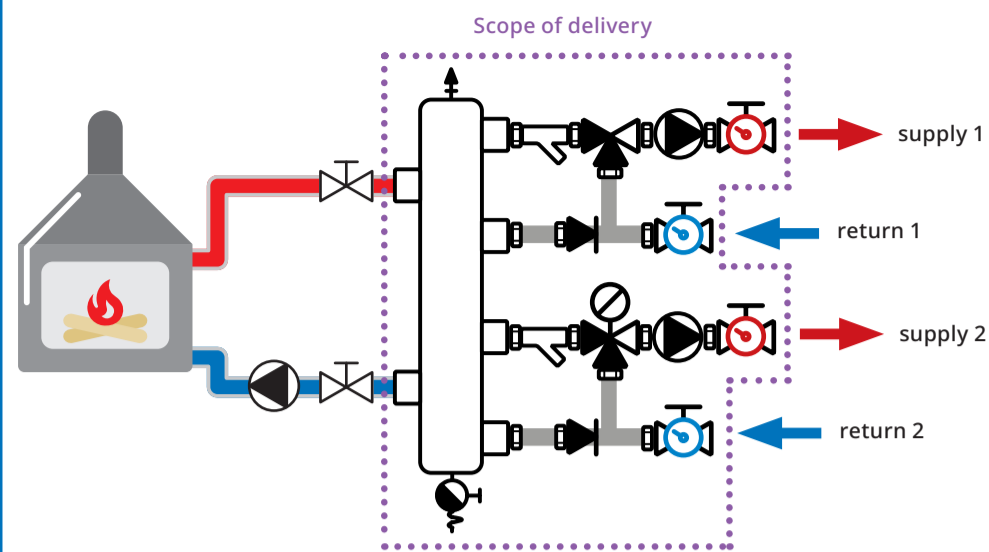
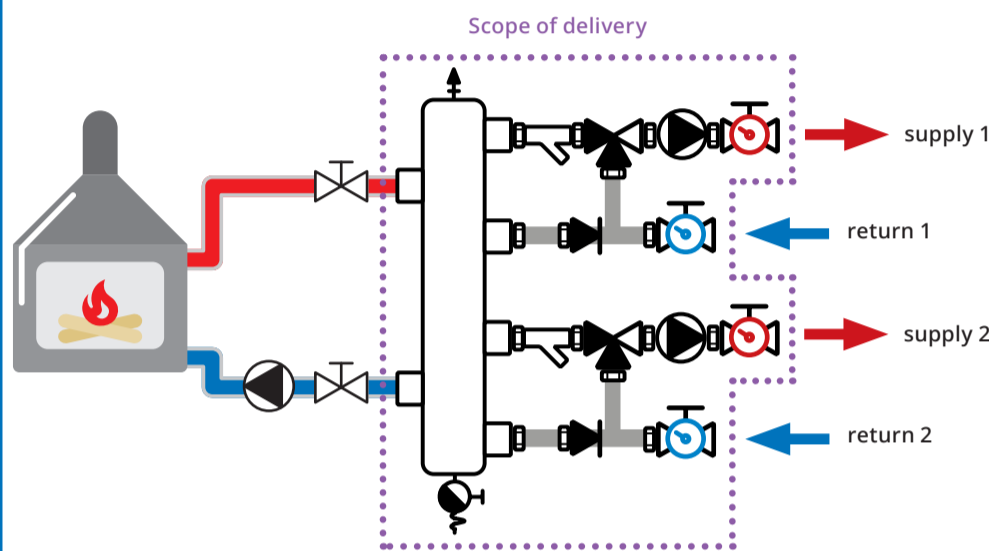
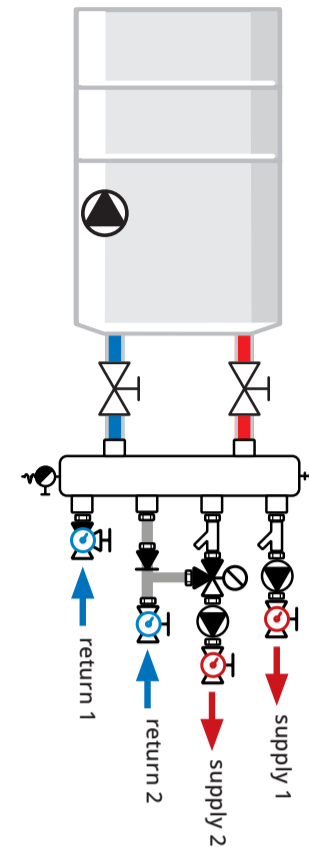





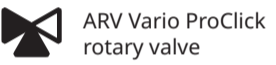


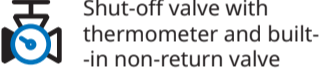
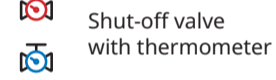
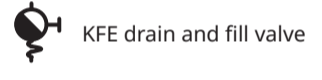
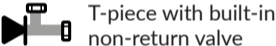
Fig. 7.
Art. No. 90 966 20



EXAMPLE APPLICATION DIAGRAMS

Fig. 8.
Example of the installation of a BPS unit with a low-loss header in a horizontal position, connected to a gas boiler



-  Manual air vent
-  Mesh filter
-  Pump
-  ARV Vario ProClick rotary valve
-  ATM thermostatic valve
-  Shut-off valve
-  Shut-off valve with thermometer and built-in non-return valve
-  Shut-off valve with thermometer
-  KFE drain and fill valve
-  T-piece with built-in non-return valve

5 6
7 8

TECHNICAL DATA

Parameter / part	Value / material
Source-side connections	G1"
Installation-side connections	G¾" F
Flow through the low-loss header	max. 4.0 m³/h
Low-loss header power	max. 70 kW at ΔT = 15K
Nominal pressure of the set	PN6
Operating temperature of the set	max. 90°C
Nominal pressure of the low-loss header	PN16
Material	steel, brass, copper
Glycol concentration	max. 50%
Air vent	manual, G½"
Drain and fill valve	KFE nickel-plated, G½"
Thermometers	Ø50 mm, 0-120°C
Mesh filters	DN20, PN10
Shut-off valve on the supply and return lines (if applicable)	DN20, PN16
Shut-off valve with built-in non-return valve (if fitted)	DN20, PN10
T-piece with built-in non-return valve (if applicable)	DN20, PN10
Circulation pumps	AFRISO APH 160 15-7/130 mm, 230 V AC, 45 W (with a 1.6 m cable)
Rotary mixing valve (if applicable)	ARV 362 Vario ProClick, Kvs 3.5-9 m³/h, PN10
Thermostatic mixing valve (if applicable)	ATM 561, Kvs 2.5 m³/h, 20-43°C, PN10

MAINTENANCE

Periodically check the tightness of connections.
The angle filter cartridges must be cleaned at least once a year. To do this, switch off the pumps and close the shut-off valves before the unit, as well as those on the supply and return lines. Then drain the system of the fluid by first opening the KFE drain and fill valve, followed by the manual air vent. Unscrew the filter cartridges, clean them or replace them if necessary. Take care to ensure that any fluid leaking from the filters does not come into contact with the circulation pumps. Screw the filter cartridge back into the housing, close the KFE drain valve, open the shut-off valves, vent the system and switch on the pumps. Top up the system with medium if necessary.
We recommend using the KFE drain and fill valve on the low-loss header at regular intervals (at least once a year) to remove any dirt that has settled out of the medium from the system.

NOTE!

Maintenance work may only be carried out on the units once the system has cooled down. Failure to do so may result in scalding from the hot medium.

USE OF MIXING VALVES, CIRCULATION PUMPS AND OTHER COMPONENTS

Please refer to the enclosed user manuals for (depending on the version selected): ARV Vario ProClick and ATM mixing valves, and APH circulation pumps. The manuals are also available on the website: www.afriso.pl.

If any of the components need replacing, follow the same procedure as for cleaning the angle filters (see MAINTENANCE).

NOTE!

Components of BPS sets may only be replaced once the heating system has cooled down completely and the power supply to the pumps has been disconnected!

ARV Vario ProClick rotary mixing valves feature the Kvs Vario function, which allows the Kvs value to be adjusted within a range of 3.5-9 m³/h. The full procedure for selecting the appropriate Kvs value is described in the valve operating instructions.

ARV Vario ProClick rotary mixing valves can operate automatically when equipped with electric actuators (e.g. AFRISO ARM ProClick) or controllers (e.g. AFRISO ACT ProClick), which are not components of the BPS sets.

APPROVALS AND CERTIFICATES

This product is subject to the Pressure Equipment Directive 2014/68/EU and, in accordance with Article 4.3 (recognised engineering practice), does not bear the CE marking. The product has been marked with the Construction Product Mark B, in accordance with national regulations.

The circulation pumps supplied with the product are provided with a declaration of conformity, which is available on the website: www.afriso.pl.

DECOMMISSIONING, DISPOSAL

1. Disconnect the power supply.
 2. Dismount the device.
 3. Dispose of the product in accordance with applicable regulations, standards and safety guidelines.
- Electronic components and batteries must not be disposed of with household waste. This product contains a non-removable battery. Please return the product to a proper collection point or to the manufacturer's or distributor's collection point.

WARRANTY

Product guarantee in accordance with the general conditions of sale and delivery.

CUSTOMER SATISFACTION

For AFRISO customer satisfaction is paramount. If you have any questions, suggestions or product problems, please contact us.