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Circulation pump APW 710 for domestic hot water system

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!

Life-threatening hazard due to the presence of a magnetic field!

Persons with a pacemaker are advised to maintain a safe distance from the device due to the magnet built into the pump. Attention should also be paid to electronic equipment installed near the device, as the presence of the magnet may cause interference.

The APW pump may only be installed, commissioned, and dismantled by trained and qualified personnel.

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

Risk of scalding by hot medium! Perform all installation and maintenance work after the system has cooled down.

Life-threatening electrical voltage!

Direct contact with live electrical parts poses an immediate life-threatening hazard.

Before starting any work, the pump must be disconnected from the power supply and secured against being switched on again.

Do not allow the pump motor housing to come into contact with water or other liquids.

The connection of the device to the mains should be carried out by a person with the appropriate qualifications and authorisations.

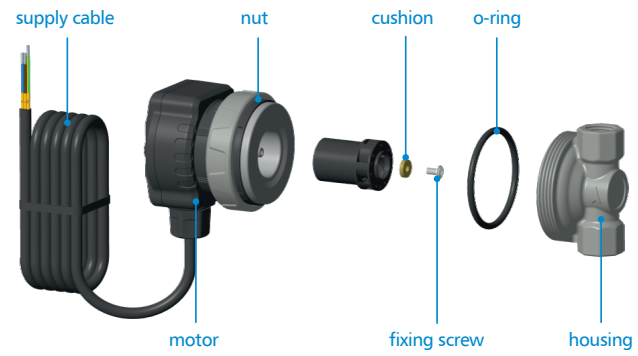
APPLICATION

Used in domestic water systems. Installed between the domestic hot water tank and the water outlets. Circulates the water in a closed circuit.

DESCRIPTION

The APW circulation pump consists of a single-phase magnet motor and a stainless steel housing with connection nozzles. The motor's rotating parts and bearings are immersed in the pumped liquid. The motor is equipped with an electronic control system. The control system allows for 3-speed adjustment. The APW pump does not require additional external motor protection against overload.

CONSTRUCTION



MOUNTING

The APW circulation pump is designed for indoor installation. The pump should be installed in a dry and well-ventilated room, protected from frost, on a straight section of pipeline. It is recommended to install shut-off valves before and after the pump to facilitate maintenance work. During mounting, make sure that the direction of flow of the medium in the system matches the arrow on the pump housing. We recommend installing a non-return valve after the pump.

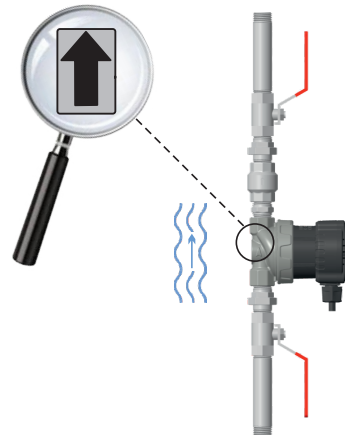


Fig. 1. Illustrative diagram of APW pump mounting

A mesh filter should be installed upstream of the pump to protect it from contamination that could damage the impeller or cause blockages. The permissible mounting positions for the pump are shown in the figure below.



Fig. 2. Permissible mounting positions for the APW pump

Motor positions

The pump motor must be positioned so that the power cable socket faces downwards or to the side. Otherwise, condensation from the air on the surface of the cable may drip into the pump's electronics, potentially causing a short circuit and damaging the pump. The pump motor must be positioned as shown in the figure below.

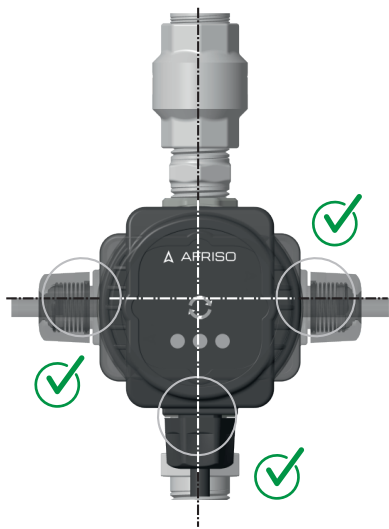
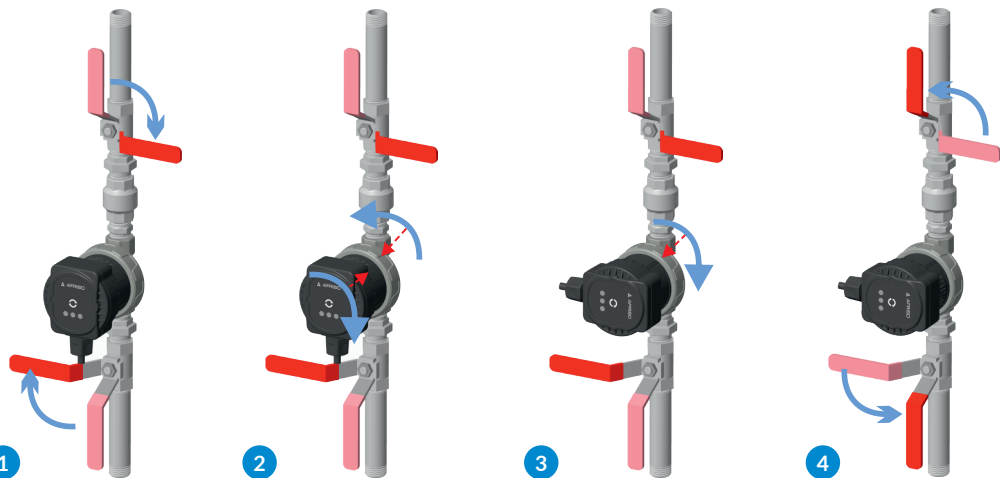


Fig. 3. Permissible motor positions of the APW pump

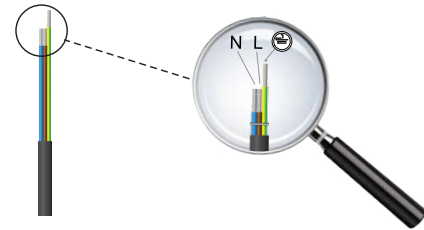
The position of the pump motor must be adjusted before mounting the pump or filling the system. If the system is already filled, turn off the pump, disconnect the power supply, and ensure the system has cooled down before changing the position of the motor. Then:

- close the shut-off valves before and after the pump (1),
- loosen the nut that connects the motor to the pump housing and rotate the motor to the desired position (2),
- tighten the nut (3),
- open the shut-off valves before and after the pump, then vent the pump (4). Procedure described in the subsection "Operation" ► „Venting the pump”.



Electrical connection

The electrical connections must be made according to the markings on the wires, using the factory cable. The blue wire is the neutral wire (N), the brown wire is the phase wire (L), and the yellow-green wire is the protective/grounding wire (PE). **Do not open the pump housing!**



The electrical cable should be laid with a slight slope. The cable must not be under tension.



USAGE

First pump activation

The pump must not be started up in an unfilled system. Before starting up the pump for the first time, fill the system with water and remove any air.

Venting the pump

Before starting the system for the first time, after filling and venting the system, make sure that the circulation pump is not aerated. To do this, switch on the pump and set it to maximum capacity for about 10 minutes. The pump will vent itself during operation. The air that has accumulated in the pump can lead to loud operation. The pump will be vented when the noise level decreases.

Rotational speed setting

The pump has a 3-speed rotation control. The required speed can be selected using the button in the centre of the panel.

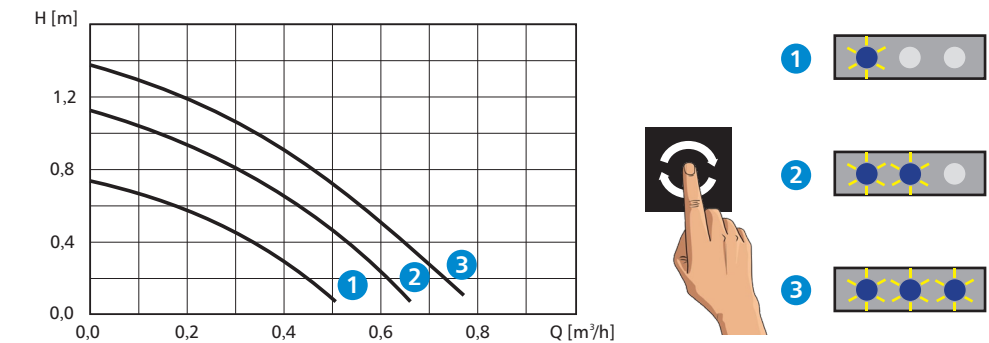


The currently selected characteristic is indicated by blue-lit LEDs:

- minimal efficiency – the first LED is on,
- intermediate efficiency – two LEDs are on,
- maximum efficiency – three LEDs are on.

In order to choose the proper pump capacity for a system, the required flow and head must be known. These parameters are specified in the project.

CHARACTERISTICS OF THE PUMP OPERATING



MAINTENANCE

APW circulation pumps are maintenance-free.

The mesh filter, which is located before the pump, should be cleaned at least once a year. Before cleaning the filter, make sure that the installation is not running and has cooled down. To clean the filter, close the shut-off valves before and after the filter, and then unscrew the filter cartridge. After cleaning and rinsing the filter element, put it back into the filter, screw the filter element back on, open the shut-off valves and vent the system.

If the impeller is blocked (indicated by the third LED flashing), turn off the pump and carefully unblock the impeller manually. To do this, turn off the pump, disconnect the power supply and wait for the system to cool down. Then close the shut-off valves before and after the pump and remove the pump motor.

Remove the impeller from the motor by unscrewing the retaining screw and rinse it under running water. Do not use any detergents.



After rinsing the impeller, clean the motor of any remaining dirt and visually inspect the condition of the O-ring. To improve the sealing properties, the O-ring can be lubricated with technical petroleum jelly approved for use with domestic water. Reassemble the pump.

Open the shut-off valves, activate the pump and remove the air.



PUMP OPERATING ERRORS

Operating errors of the APW pump are indicated by different characteristic LED displays. The table below shows all errors that can occur and how they are indicated by the LEDs.		
Failure	Cause	Recommendation
The pump is not running	No power supply	Check the supply cables.
	Pump blocked	Remove the cause of the blockage.
The system is noisy	Excessive efficiency	Change the operating characteristics.
	Aerated system	Vent the system.
The pump runs noisily	Aerated pump	Vent the pump.
	Inflow height too low	Modify the system to increase the inflow height.
	Contamination in the pump	Remove contamination from the inside of the pump.
	Worn bearing	Replace the pump.
The first LED flashes	Pump switched off, supply voltage too high	Switch off the power supply. Check power consumption and restore voltage to normal range to eliminate alarm.
The second diode flashes	Pump switched off, supply voltage too low	
The third LED flashes	Pump impeller blocked	Switch off power supply. Check for impeller or pump blockage. Switch on the power supply once the cause of the fault has been rectified.

TECHNICAL DATA

Parameter	Value
Efficiency	max. 0,8 m³/h
Pump head	max. 1,5 m
Supply voltage	230 V, 50 Hz
Power consumption	4÷8 W
Electricity consumption	0,02÷0,03 A
Degree of protection	IP44
Insulation class	H
Operating pressure	max. 10 bar
Operating temperature	2÷95°C
Ambient temperature	0÷40°C
Medium	water
Temperature class	TF95
Connection	G½" F
Sound intensity	< 43 dB (A)

APPROVALS AND CERTIFICATES

AFRISO Sp. z o.o. hereby declares that the product complies with:

- machinery directive (2006/42/EC),
- low-voltage directive (2014/35/EU),
- electromagnetic compatibility directive (2014/30/EU),
- the restriction of hazardous substances directive (2011/65/EU and 2015/863).

The full text of the EU Declaration of Conformity is available at the following web address: www.afriso.pl. The product is hygienically certified by the National Institute of Public Health NIH in Poland.

DECOMISSIONING, DISPOSAL

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1. Disconnect the power supply.
 2. Dismount the device.
 3. Dispose of the product according to local directives and guidelines.
- Electronic parts and batteries should not be disposed of with household waste. Return the product to the appropriate collecting point or to the manufacturer's or distributor's collecting point.
- Pompa obiegowa jest wykonana z materiałów nadających się do recyklingu.

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.