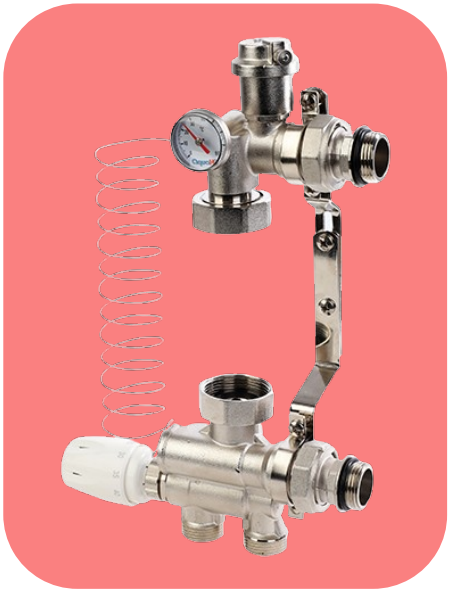
Mixing unit for underfloor heating

ZQMIX101D25

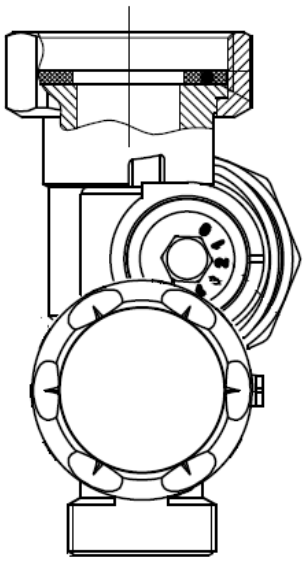
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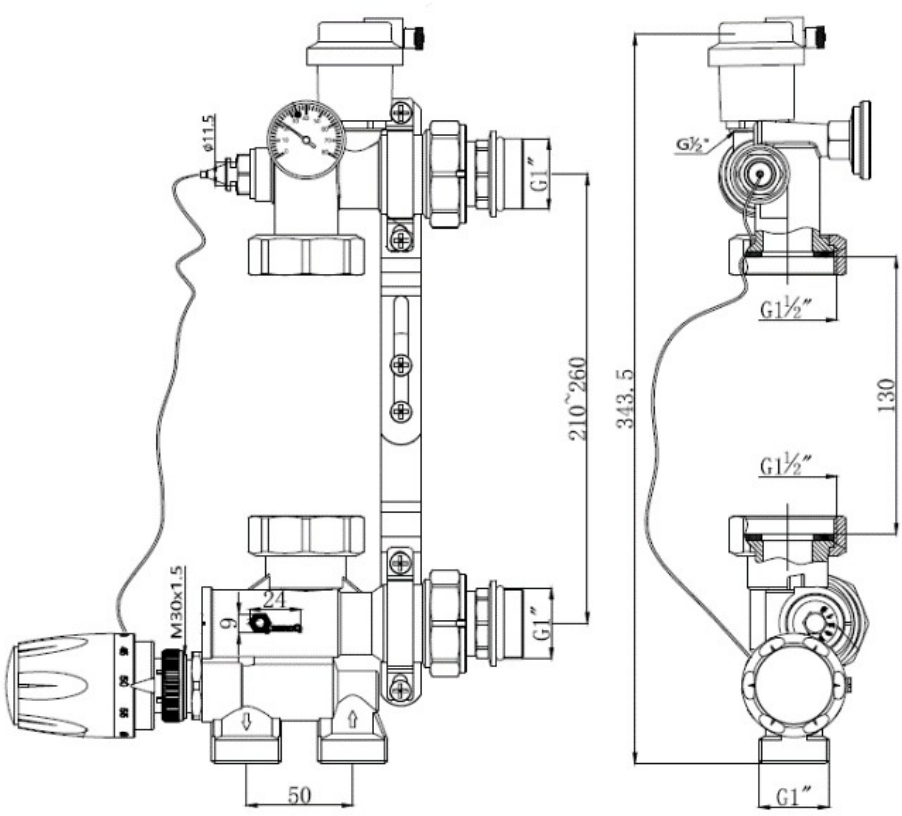
PRODUCT DESCRIPTION

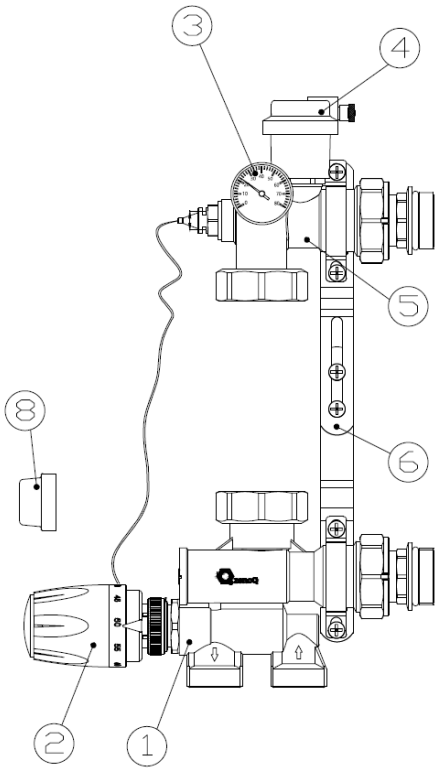
Mixing unit is designed to create an open circulation circuit with a low coolant temperature in the heating system of the building. It is mounted on the manifold group of the low-temperature circuit. It is connected to the high-temperature circuit of the heating system.
Mixing units can be used in built-in heating systems (warm floors, warm walls, outdoor area heating, soil heating of greenhouses and hotbeds, etc.).
The mixing group has adjustable fasteners. Due to this, it can be connected to manifold with a variable center distance in the range of 210-260 mm.
The heat output of the mixing group is controlled by a thermostatic head with a remote sensor and a bypass valve. Thermal head setting range 20-60℃. The number of bypass valve settings is 0-5.
The pumping group is completed with:
- check valve (bottom beam);
- thermometer (shows the temperature of the mixed heat carrier);
- automatic air vent;
- detachable connections (for convenient connection of the manifold).



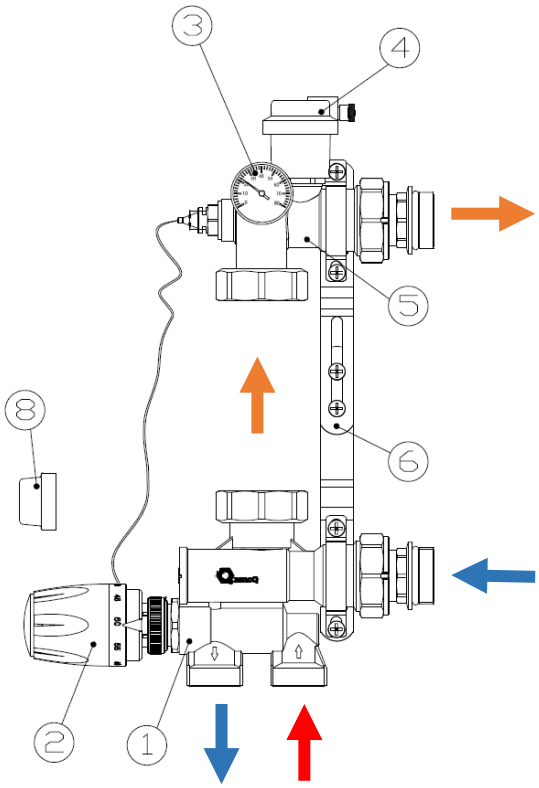
TECHNICAL SPECIFICATIONS	
Maximum primary circuit temperature	90 ℃
Max pressure	10 bar
Maximum differential pressure of the primary circuit, ΔP max.	1 bar
Minimum differential pressure of the primary circuit, ΔP min.	0,1 bar
Temperature control range in the secondary circuit (on the thermal head)	20÷60 ℃
Heating output, (bypass setting 0)	10 kW
Heating output, (bypass setting 5)	12,5 kW
Max flow rate Kv	4,8 m3/h
Thermometer scale range	0 - 80℃
Connection diameter	1"
Pump connection diameter	1*1/2"
Installation length of the installed pump	130 (180) mm
Thermal head capillary length	2 m
Connection thread for thermostatic head	M30*1,5

DIMENSIONS





CONSTRUCTION AND MATERIALS		
1	Body (bottom beam)	Brass CW617N
2	Thermostatic head	-
3	Thermometer	-
4	Automatic air vent	Brass CW617N
5	Body (top beam)	Brass CW617N
6	Adjustable mounts	Steel A3
7	O-ring	EPDM
8	Cap	PE



OPERATING PRINCIPLE

The high-temperature coolant enters from the bottom right (arrow up). In the lower housing (1), the high-temperature heat carrier of the heating system is mixed with the heat carrier from the return line of the low-temperature circuit (bottom side inlet).

With the help of a circulation pump, the mixed temperature coolant enters the upper housing (5), and then to the supply manifold of the low-temperature heating system.

The mixed temperature value is controlled by the thermostatic head (2). The temperature is measured using a remote sensor, which is installed in the upper part of the housing (5). Two housings are assembled on a mounting base (6). The temperature value of the heat carrier entering the low-temperature circuit can be seen using a contact thermometer (3).

The air removal function is carried out using an automatic vertical air vent (4). For the correct operation of the group, it is necessary to ensure a minimum pressure drop of at least 0.1 bar between the supply and return pipelines to the primary circuit of the heating system.

In the lower housing (1) there is a bypass with a setting range from 0 to 5. It is located on the side near the thermal head (2).

INSTALLATION REQUIREMENTS

1. For the correct operation of the mixing group, it is necessary to ensure a minimum pressure drop of at least 0.1 bar.
2. It is optimal to install the mixing group to the left of the manifold block. Can be installed on the right. The nipples of the detachable connections of the group are equipped with an O-Ring gasket. This allows not to use additional sealing materials for them - speeding up and simplifying installation.
3. The group air vent works automatically. There is a cap on the side of the valve. When filling the system, it is recommended to close it. After filling - you need to open.
4. The fittings should not experience loads from the pipeline (during bending, compression, tension, torsion, distortion, vibration, uneven tightening of fasteners, etc.). If necessary, supports or compensators should be provided to eliminate the load on the fittings from the pipeline.
5. The misalignment of the connected pipelines should not exceed 3 mm with a length of up to 1 m plus 1 mm for each subsequent meter.
6. Lever wrenches are not allowed for mounting.
7. It is recommended to install the mixing unit with the air vent up in a vertical position.
8. Installation and dismantling of the circulation pump is recommended to be carried out with closed ball valves, which must be installed at the inlet / outlet to the pumping group.
9. Before carrying out a hydraulic test of the mounted mixing unit with attached underfloor heating manifolds, make sure that all union nuts are tightly tightened.
10. Installation of thermostatic head with immersion temperature sensor:
- Set the head setting to the maximum value.
- Place the sensor in the temperature sensor socket.
- Set the head setting to the target temperature.

BYPASS SETUP

The principle of bypass operation is that the less the bypass is opened, the faster the required flow temperature is reached, and vice versa, with the maximum open bypass, the flow increases and at the same time the fluctuation of the flow temperature associated with the opening-closing of various zones into which the heating system is divided is reduced.

If necessary, set the bypass as follows:
– If the temperature difference is too high, gradually open the bypass until the calculated temperature difference is reached.
– If the flow temperature is below the set value, gradually close the bypass to ensure that the heating medium is supplied from the high temperature circuit. The table below shows the bypass flow depending on the setting.

BYPASS POSITION SETTING		
№	Bypass setting	Throughput Kv, m3/hour
1	0	3,0
2	1	3,4
3	2	3,8
4	3	4,2
5	4	4,5
6	5	4,8

INSTRUCTIONS FOR REPLACING THE CIRCULATION PUMP

To replace the circulation pump, you must:
1. Turn off the power.
2. Close the ball valves. And all check valves (or flow meters) of the manifold block.
3. Drain the coolant through the lower manifold using the drain valve. It is impossible to remove water from the pump-mixing group, since a check valve is installed on the lower section of the assembly.
4. Loosen the fittings.
5. Disconnect the power cable from the pump.
6. Remove the circulation pump and replace with a new one.
7. Reconnect the power supply cable of the circulation pump according to the instructions given on the pump itself.
8. Tighten the fittings.
9. Open the ball valves and shut-off valves (flow meters) of the manifold group, connect the power supply.

Note: in case of failure of the electrical part of the pump (stator), it is recommended to replace only it, and leave the hydraulic housing.

OPERATION AND MAINTENANCE REQUIREMENTS

1. The units must be operated at the pressure and temperature specified in the specification table.
2. It is not allowed to operate the unit with loose union nuts and detachable connections.
3. It is strictly forbidden to allow freezing of the working environment inside the unit.
4. Disassembly of the unit is allowed only when the coolant is drained.

MANUFACTURER

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Country of origin: China