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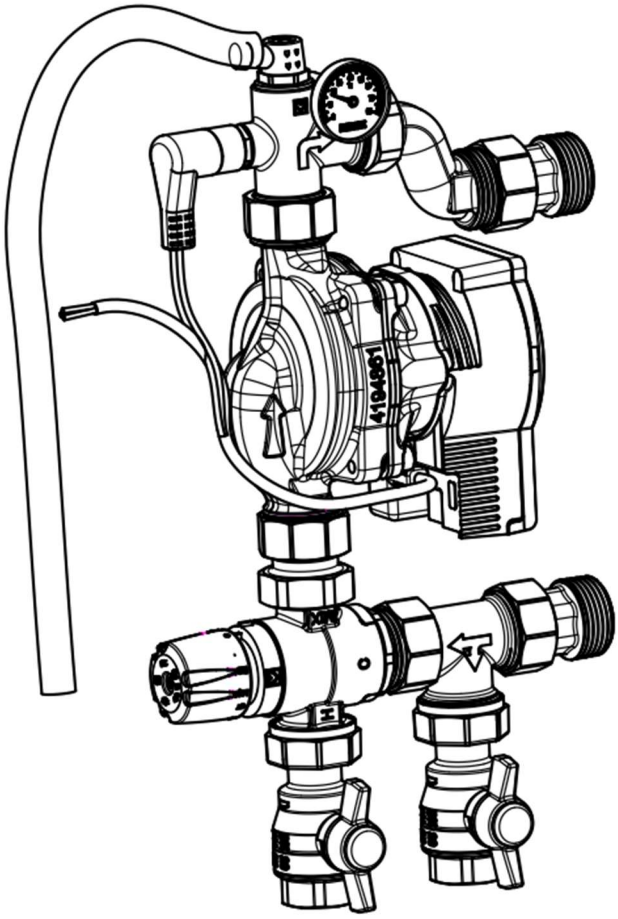


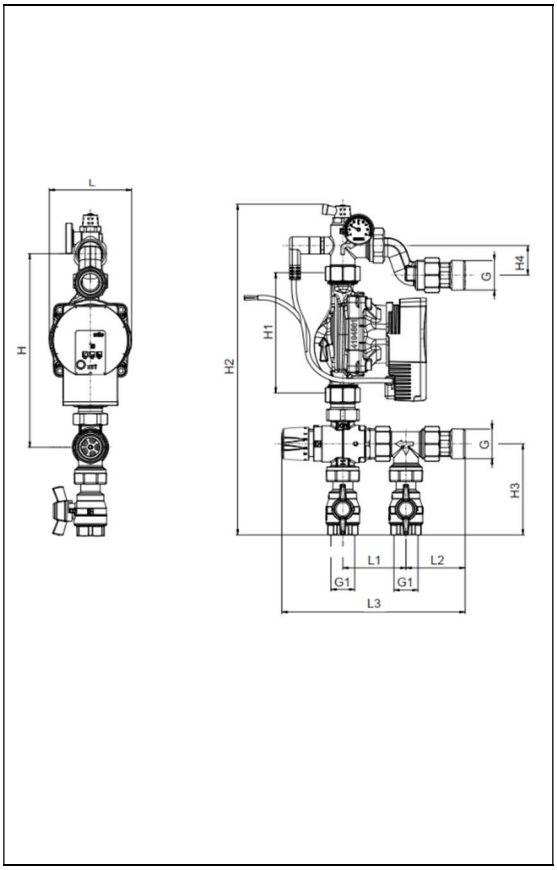
HERZ – MIXING SET THERMO

Installation instructions ENG

EAC

Herz®

A



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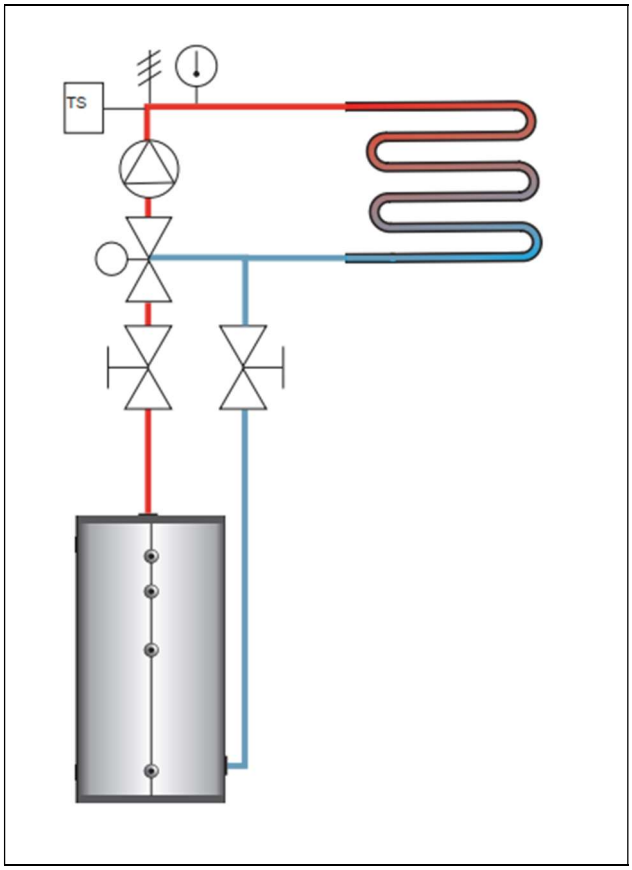

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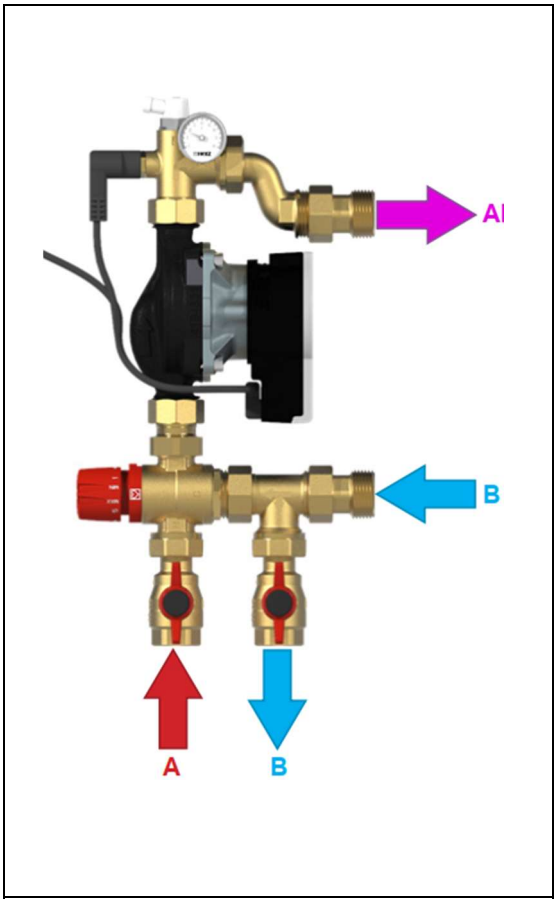

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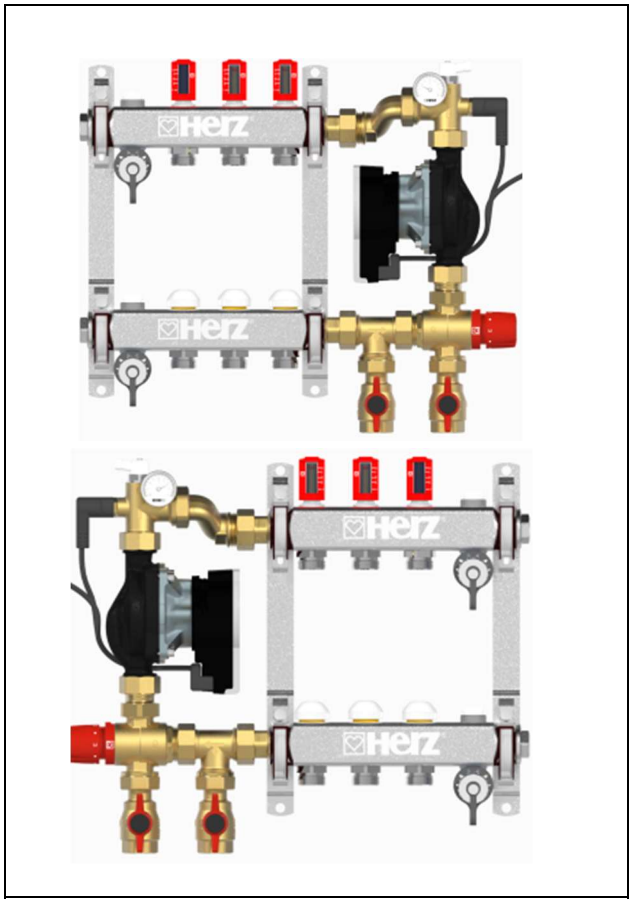
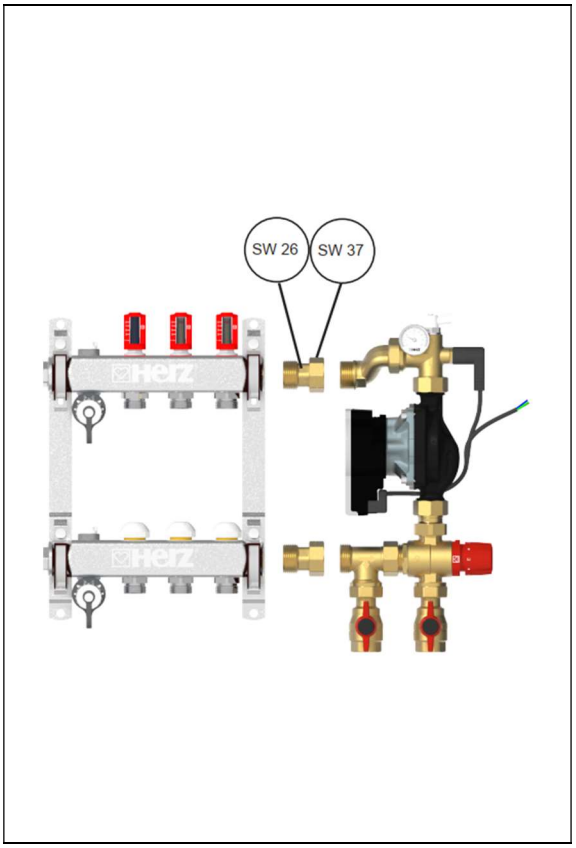
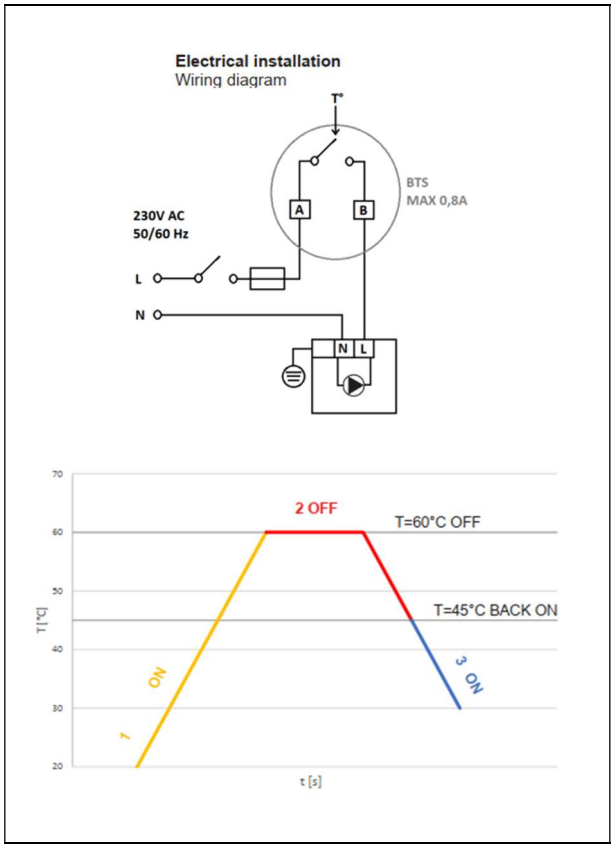


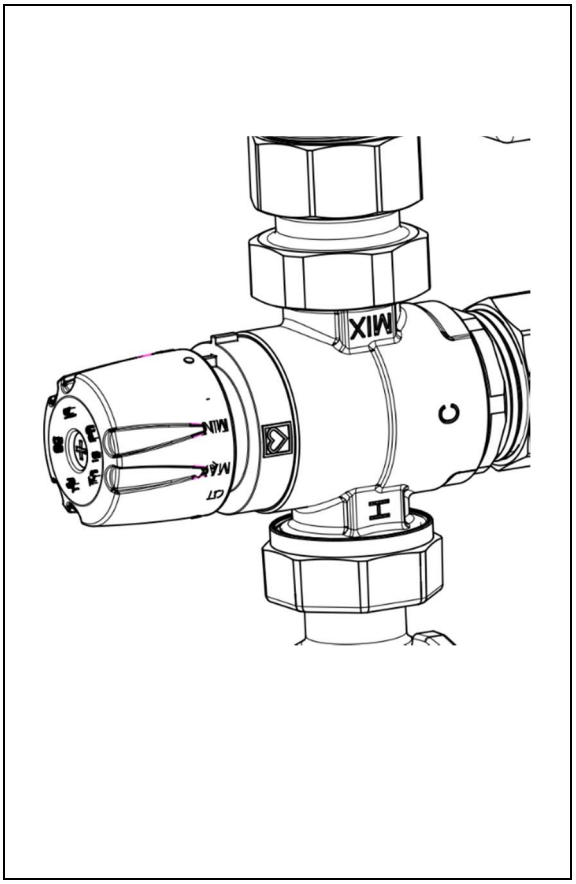
E


SW 26
SW 37

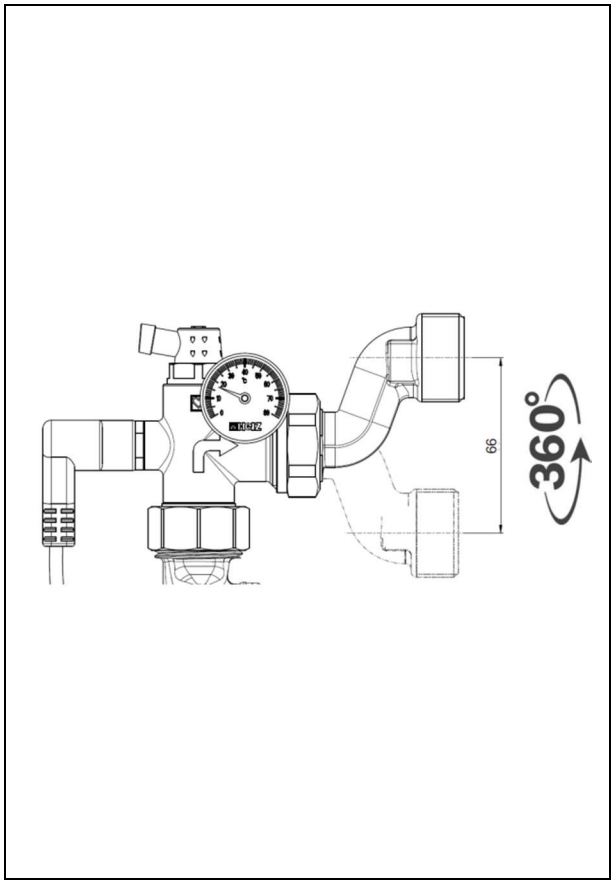
F


Electrical installation
Wiring diagram
T°
BTS
MAX 0,8A
230V AC
50/60 Hz
A
B
L
N
N
L
2 OFF
T=60°C OFF
T=45°C BACK ON
1 ON
3 ON
T [°C]
t [s]

G


MIX

H


66
360°

I

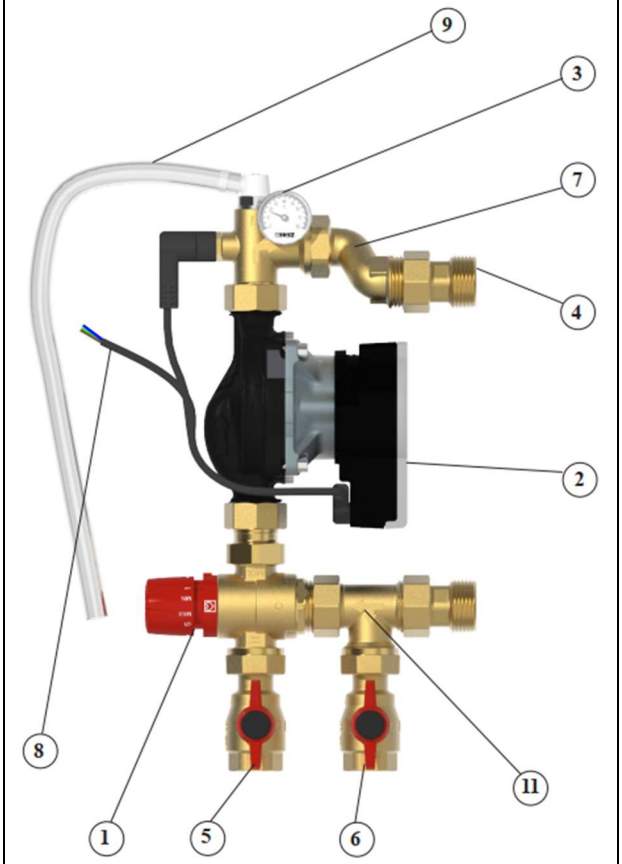
1.

2.

3.

4.

J



Material and construction

Mixing valve body:	forged brass acc. to EN 12165
Spacer body:	forged brass acc. to EN 12165
Holland connector:	forged brass acc. to EN 12165
Eccentric piece:	casted brass acc. to EN 1982
Gaskets:	EPDM
External threads:	acc. to ISO 228-1
Internal thread:	acc. to ISO 7-1
Pump:	3 F532 41 – WILO PARA 15-130/6-43/SC 3 F532 42 – without pump

Order Nr.	Pump	G [in]	G1 [in]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]
3 F532 41	With pump	1	¾	220	130	367	101	33	93	70	66	203
3 F532 42	-	1	¾	220	-	367	101	33	-	70	66	203

For the dimensions of the Pump group THERMO, see page 2, point A

Operating data

Nominal pressure:	6 bar (static) 5 bar (dynamic)
Mixing valve setting:	20°C – 42°C
Temperature stability:	±2°C
Maximum inlet pressure ratio (C/C or C/H):	2:1
Min. temperature differential to ensure fail-safe between supply and mixed water:	10°C
Max. operating temperature:	90°C
Min. operating temperature:	2 °C
Bimetal thermostatic switch:	Fixed cut-off setting 60°C
Measuring range of thermometer:	0 - 80 °C
KVS:	2.5

Medium:
Heating water according to ÖNORM H5195 or VDI- Standard 2035. The use of ethylene, or propylene glycol in a mixing ratio of 25- 50% is allowed. EPDM gaskets can be affected by Mineral oils lubricants and thus lead to failure of the EPDM seals. Please refer to the manufacturers documentation when using ethylene glycol products for frost and corrosion protection.

Scope

HERZ Pump group THERMO is used in high temperature heating systems when there is a need to warm up a low-temperature heating system - radiant heating (floor/wall heating). The set consists of a mixing valve, spacer, thermostatic switch, two free-turning nut connectors, and two ball valves. The mixing set controls the secondary heating circuit which controls the temperature in the room (depending on the needs). Supply flow temperature can be regulated to a constant value (±2°C).
See page 2, point B

Installation

HERZ Pump group THERMO is connected to the hot main supply (A). The mixing valve is mixing the hot supply (A) with return from the system (B) and it adjusts the temperature that flows into the system according to the set value (AB).
See page 2, point C

The pump group for underfloor heating can be mounted directly on the high-temperature heating system. The mounting position is arbitrary (vertical or horizontal). Please check that all the components are in the box before the installation of this product. Before installing the pump group, the system must be inspected to ensure that its operating conditions are within the range of the operating data/conditions, for example, the supply temperature, supply pressure, etc.
Axis of the rotor of the pump always has to be in horizontal position. So if the Pump group is mounted horizontally, it is not allowed, that the head of the circulation pump is directed upwards or downwards.
HERZ Pump group THERMO is suitable for both let-hand and right hand mounting directly to the HERZ Underfloor heating manifold.
See page 2, point D

HOT WATER / LIQUID
Pay attention while installing / commissioning / servicing the Pump group because the temperature of medium can exceed 100°C. Exposure to this high temperature medium can cause death, serious injury or damage of the other components in the system.
Make sure that when works are being carried out on the HERZ Pump group the system is cooled down and it is unpressurised. Before any disassembly make sure that the system is drained.

ELECTRIC SHOCK
Usage all of electrical standards and recognized regulations must be adhered to by specialist electricians who are installing the circulation pump in the HERZ pump group. Usage of correct safety equipment against electric shock is obligatory.
Live parts can cause electric shock that will result in serious injury or death.
When working on the circulation pump, disconnect the mains voltage supply and ensure that it cannot be switched on.
See detailed instructions for the circulation pump for the correct connection to the main electrical supply.

- Approximate system characteristics:

When planning the correct usage of Pump group THERMO, system limits need to be respected (circulation pump and the kvs of thermostatic valve).
If the flow speed in the system reaches 12,5 l/min and ΔT = 8K, the system heat output power is 7.000 W. In this case, the Pump group THERMO is suitable for areas with surfaces up to 80m^2.

☒ Free-turning nut connectors

Connectors which are included in the set are used to connect the pump group directly to the distributors for floor heating systems. Install the free-turning nut connectors to connect the HERZ pump group directly to the manifold. The usage of these connectors simplifies the service due to free-turning nut.
See page 3, point E

☒ Circulation pump

When the product leaves the factory, the connections on the pump are not completely screwed in, as the installer can adjust the position of the pump to its needs.

The functions of the WILO PARA circulation pump are:

- Constant pressure setting
- Constant volume flow setting
- Venting of the housing setting

☑ Safety temperature cut out

The included bimetal thermostatic switch (BTS) protects the system from overheating. The switch setting is fixed in such a way, that it cuts off the supply power to the circulation pump if the temperature in the flow exceeds 60°C, which may happen if the mixing valve is not working correctly due to damaged sealings in or any other reason.
For wiring diagram see page 3, point F

For safety temperature cut out operation diagram see page 3, point F.

1. Temperature in the system is rising until it reaches 60°C (±5°C). Switch is connected and the power on the circulation pump is ON.
2. Temperature reached 60°C (±5°C). Switch disconnects, therefore cuts the power from the pump (OFF).
3. The temperature in the system drops to 45°C (±5°C). Switch connects and the power to the pump is ON.

☑ Mixing valve

After installation of the pump group, the mixing valve needs to be commissioned and tested by the instructions given below, taking into account applicable standards and codes of practice.

1. Ensure that the system is clean and free from any dirt and debris before commissioning the thermostatic mixer
2. It is recommended that the temperature be set using a suitable calibrated digital thermometer. The valve must be commissioned by measuring the temperature of the mixed water emerging at the point of use. Note that the included thermometer on the pump group is a temperature indicator and that the actual temperature may slightly vary from the actual set temperature of the medium
3. The minimum discharge temperature from the valve must be set taking account of the fluctuations due to simultaneous use. These conditions need to be stabilized before commissioning
4. Adjust the temperature using the adjusting handle on the valve.

The setting/temperature of mixed water going out of the mixing valve can be adjusted with the rotation of the red handle. Setting temperature: 20°C – 42°C (±2°C). Inspect the setting number on the handle and adjust the temperature:

Handle	1	2	3	4	5
T setting	20°C	25°C	30°C	34°C	42°C

The following markings are shown on the mixer body (see page 3, point G)

- Hot water inlet: H
- Cold water inlet: C
- Mixed water outlet: MIX

☑ Eccentric screw connector

The product is not only fully compatible with HERZ standard underfloor heating system manifolds but also with the majority of manifolds produced by other producers due to eccentric screw connector.
The position of the eccentric screw connector can be adjusted for ±33mm and therefore fitted to almost any manifold on the market.
See page 3, point H

Air vent

Following the installation process and while commissioning it is needed to vent the system. The air can get stuck on the top of the elbow piece because it is the highest part of the heating system.
Vent the system using an air vent using the HERZ universal key (1 6625 00).

For procedure, see page 4, point I

1. Connect the air vent with use the supplied tube
2. Unscrew the air vent using 1 6625 00
3. Vent the system, until it is not fully vented
4. Close the air vent using 1 6625 00

Components

1. Mixing valve
2. Circulation pump Wilo PARA 15-130/6-43/SC
3. Elbow piece with a thermostatic switch, temperature indicator, and air vent
4. Connectors with free moving nut
5. Ball valve – hot inlet
6. Ball valve – cold return
7. Eccentric connector
8. Main supply cable
9. Hose
10. 5 pcs of EPDM gaskets for flat sealing.
11. T-piece with check valve insert

See page 4, point J

Maintenance

Regular maintenance of heating systems keeps them running smoothly, optimizing their energy consumption and reducing utility bills. Well-maintained components ensure the heating system doesn't have to work harder than necessary to achieve the desired temperature.
Make sure, that regular maintenance is done periodically at least twice a year, according to the procedures written below:

1. Check and clean the system filters.
2. Check that the non-return valves are operating normally, without problems caused by impurities.
3. Limescale can be removed from internal components by immersion in a suitable de-scaling liquid.
4. When the components which can be maintained have been checked, commissioning should be carried out again.

- **Ball valves:**

According to EN 806-5 (point 6. Operation), valves must always be in their fully opened or closed position and actuated at regular intervals to ensure they remain operational. Therefore HERZ Ball valves should be closed and opened periodically at least twice a year. This prevents the ball valve from blocking, reduces sediment deposition, and reduces the possibility of corrosion inside the valve.

- **Mixing valve:**

In-service tests should be carried out regularly to monitor the mixer performance, as deterioration of performance could indicate that the valve and/or the system require maintenance. If, during these tests, the temperature of the mixed water has changed significantly in comparison to the previous tests, the details given in the installation and commissioning sections should be checked and maintenance carried out.
The following aspects should be checked regularly to ensure that the optimum performance levels of the valve are maintained, periodically at least twice a year.

- **Circulation pump:**

If the pump has not been working for some time (in ˝off˝ season) its shaft or propeller may get stuck. See options of your control unit to run the circulation pump for a few seconds so it does not get stuck.

In case the circulation pump is broken, then only the specialist electricians can exchange or service it. These specialist electricians need to respect all of electrical standards and recognized regulations. Usage of correct safety equipment against electric shock is obligatory.
Live parts can cause electric shock that will result in serious injury or death.
When working on the circulation pump, disconnect the mains voltage supply and ensure that it cannot be switched on.
See detailed instructions for the circulation pump for the correct connection to the main electrical supply.

- **Air vent**

Vent the system regularly using an air vent using the HERZ universal key (1 6625 00).

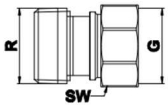
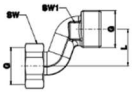
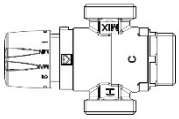
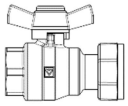
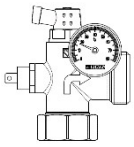
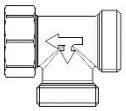
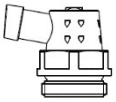
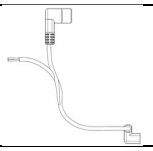
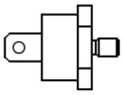
☑ Disposal instructions

The disposal of HERZ - Pump group must not endanger the health or the environment. National legal regulations for the proper disposal of the HERZ-pump group have to be followed.

Troubleshooting

Problem	Description	Solution
Circulation pump is causing noise	Air in the circulation pump	Set the circulation pump in the venting of the housing setting
	Cavitation due to insufficient suction pressure	Increase the system pressure within the permissible range
		Check the delivery head and set it to a lower head if necessary
The surface heating system is too cold	The circulation pump is not working	The fixed sensor has cut off the main supply to the pump because the temperature has exceeded 60°C. Check if the mixing valve is working correctly.
	The pump setting is set too low – not enough flow capacity	Increase setpoint
		Change the control mode from Δp-c to Δp-v
	The ball valve is closed	Open the ball valve
	Mixing valve setting is too low	Check the setting of the mixing valve and adjust it
	The primary inlet temperature is too low	Adjust the main supply temperature (via controller or boiler)
	Air is present in the system	Vent the system
The surface heating system is too hot	Mixing valve setting is too high	Check the setting of the mixing valve and adjust it
	The mixing valve is not working correctly	Replace the defective mixing valve
Noisy system	Air is present in the system	Vent the system
	The circulation pump setting is not correct	Check and change the circulation pump setting
The circulation pump is not working	The circulation pump is not working	The fixed sensor has cut off the main supply to the pump because the temperature has exceeded 60°C. Check if the mixing valve is working correctly.
	Electrical fuse defective	Check fuses
	No voltage supply at the pump	Rectify the power interruption
	The circulation pump is defective	Replace the pump

Spare parts

Sketch	Description	Article Nr.	Pc.
	Thermometer 0-80°C	1 6383 01	1
	Connector G1″- R1″	1 6383 06	2
	Adapter G1″	1 6383 04	1
	Eccentric screw connector G1″	1 6383 09	1
	Mixing valve 20°C – 42°C	1 6383 20	1
	Ball valve G1-G3/4″	1 2211 42	1
	Elbow piece with a thermostatic switch, temperature indicator and air vent	1 6383 21	1
	T-piece for bottom connection	1 6383 22	1
	Air vent G1/2″	1 6383 23	1
	Main supply cable	1 6383 24	1
	Bimetal thermostatic switch fixed setting 60°C	1 6383 25	1
	Multipurpose key	1 6625 00	1
	Cable for safety temperature cut out	1 6383 26	1

☑ **Example of system with HERZ products**