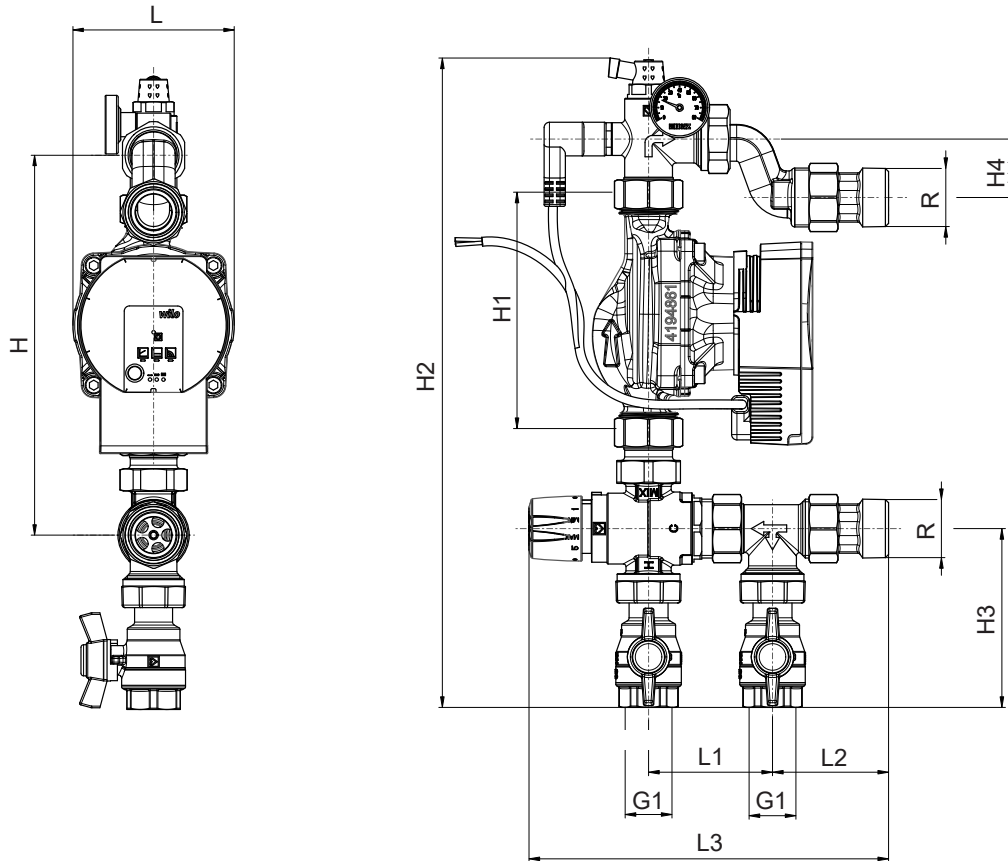


HERZ Pump group THERMO

Datasheet 3 F532 4X, Issue 0324

☑ Dimensions



Order Nr.	Pump	R [mm]	G1 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [in]	L [mm]	L1 [mm]	L2 [in]	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

☑ Material and construction

Mixing valve body:
 Spacer body:
 Holland connector:
 Eccentric piece:
 Gaskets:
 External threads:

forged brass acc. to EN 12165
 forged brass acc. to EN 12165
 forged brass acc. to EN 12165
 casted brass acc. to EN 1982
 EPDM
 acc. to ISO 228-1

☑ 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:

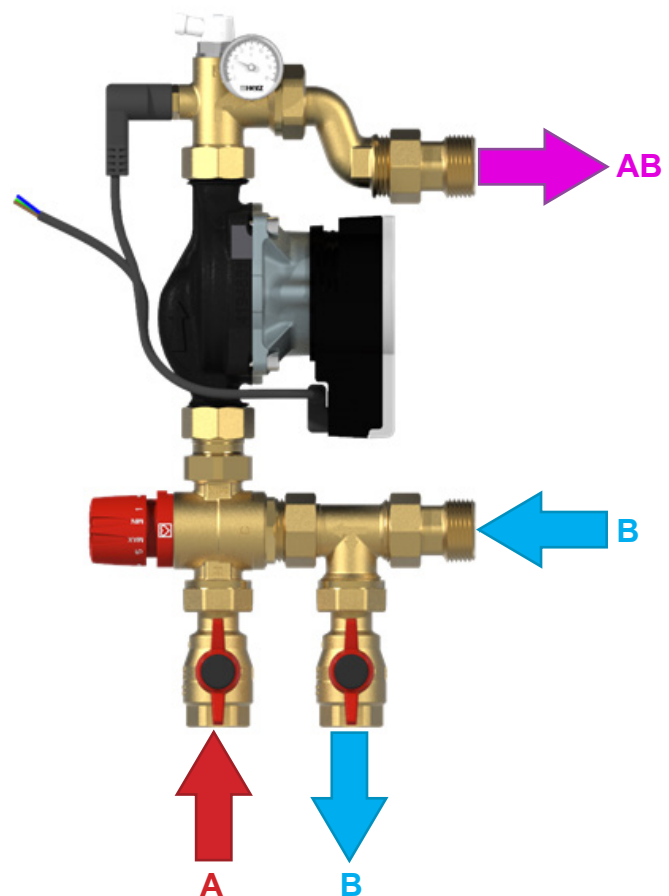
Heating water according to ÖNORM H5195 or VDI- Standard 2035. The use of ethylene, or propylene glycol in a mixing ratio of 25- 50% is allowed. EPDM gaskets can be affected by Mineral oils lubricants and thus lead to failure of the EPDM seals. Please refer to the manufacturers documentation when using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

☑ Advantages of HERZ pump group THERMO:

- adjustable flow temperature between 20°C and 42°C,
- shut off ball valves included,
- easy to use and maintain,
- reliable design and long service life,
- permanent quality control of production in HERZ factories,
- easy installation.

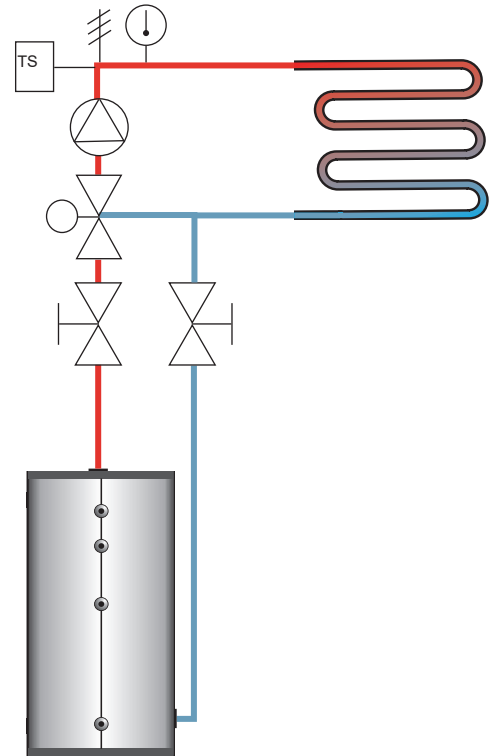
☑ Function principle

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).



☑ Field of application

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 ($\pm 2^{\circ}\text{C}$). See last page in this data sheet for an image display of the hydraulic system.



☑ Brass

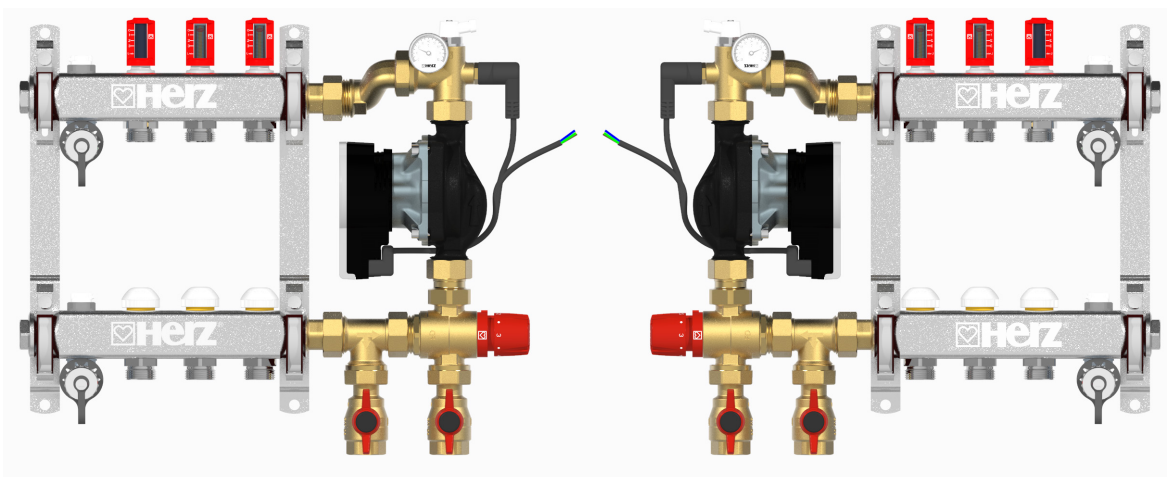
Pump group THERMO is made from brass due to its good strength and excellent corrosion resistance. Under Article 33 of the REACH Regulation (EC No. 1907/2006), we are obliged to point out that the material lead is listed on the SVHC list and that all brass components manufactured in our products exceed 0.1 % (w / w) lead (CAS: 7439-92-1 / EINECS: 231-100-4). Since lead is a component part of an alloy, actual exposure is not possible and therefore no additional information on safe use is necessary.

☑ Assembly

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:



A system where the HERZ Pump group is installed must be flushed to remove any dirt or debris that may have accumulated during installation. Failure to remove dirt or debris may affect performance and the manufacturer's guarantee. The installation of filters of appropriate capacity at the inlet of the water from the main supply is always advisable. In areas that are subject to highly aggressive water, arrangements must be made to treat the water before it enters the valve.

Access to the HERZ pump group must be unobstructed for any maintenance that may be required to the Pump group or valve connections. The pipework from/to the HERZ pump group must not be used to support the weight of the Pump group itself.

When connecting the HERZ pump group to the system components use suitable sealing material (spinning material, Teflon ribbon, sealing paste) to coat the pipes. There should not be an excess of sealing material on the pipe because it can damage the thread. All the connecting pipes have to be correctly aligned, so the pump group is not loaded with a bending moment. When using copper or plastic pipes take into account the pressure and temperature limits of used material.

When assembling, use a suitable assembly tool that adapts to pump group end connections. Following assembly, the connections of the ball valve must be checked for water-tightness by the installer. All engineering standards and recognized regulations must be adhered to by these specialist staff.



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.

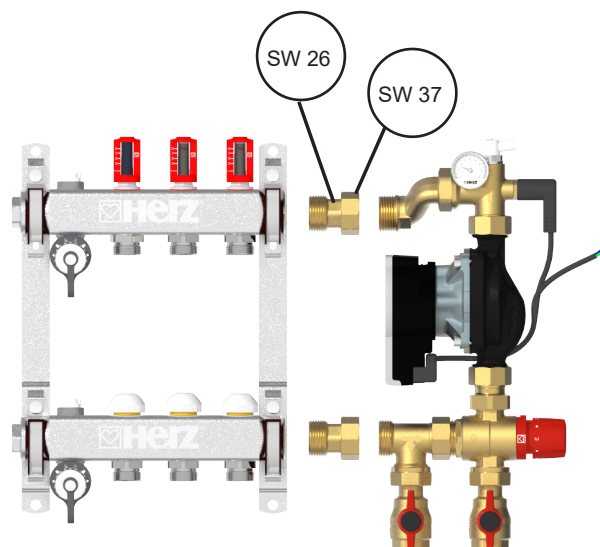
Approximate system characteristics:

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 $\Delta T = 8K$, the system heat output power is 7.000 W. In this case, the Pump group THERMO is suitable for areas with surfaces up to 80m².

- **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.





DANGER

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.

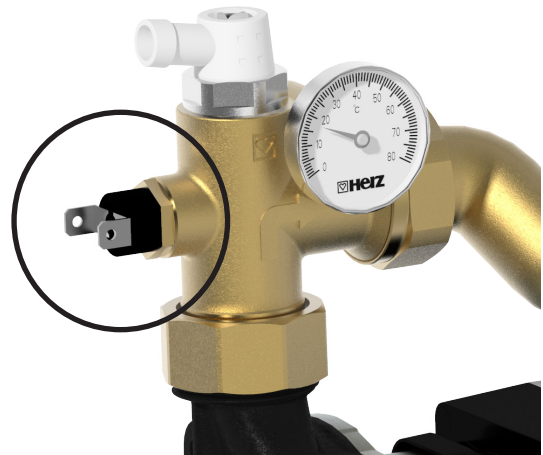
• Circulation pump

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:

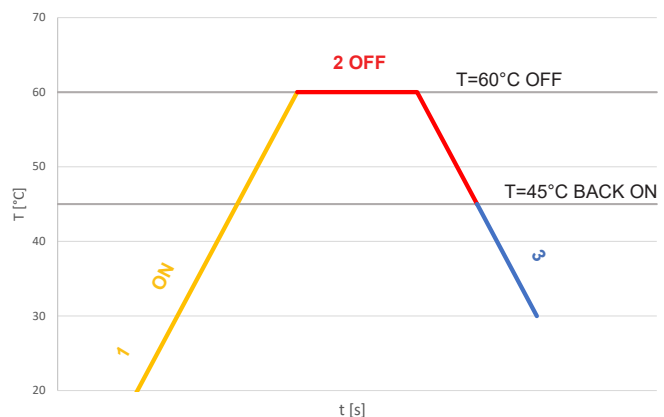
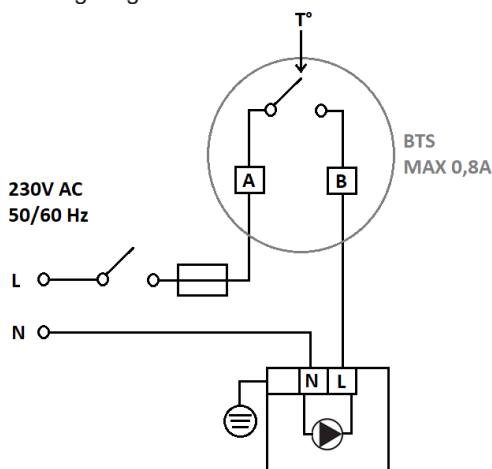
- Constant pressure setting
- Constant volume flow setting
- Venting of the housing setting

• 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.



Electrical installation Wiring diagram



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.

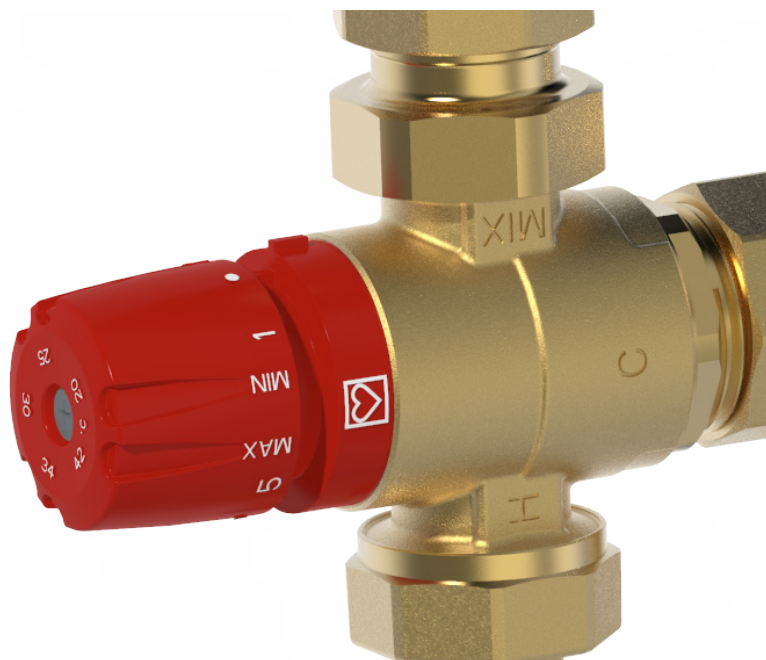
1. Ensure that the system is clean and free from any dirt and debris before commissioning the thermostatic mixer
2. It is recommended that the temperature be set using a suitable calibrated digital thermometer. The valve must be commissioned by measuring the temperature of the mixed water emerging at 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 ($\pm 2^\circ\text{C}$). 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:

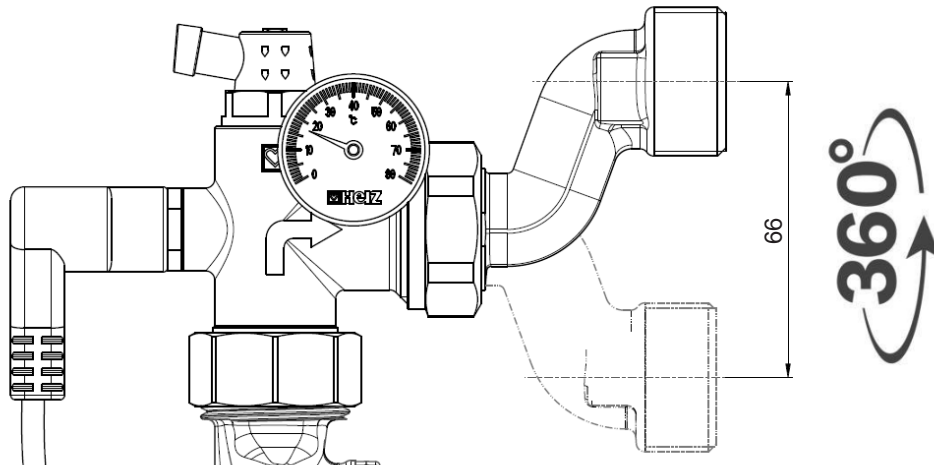
- Hot water inlet: H
- Cold water inlet: C
- Mixed water outlet: MIX



- **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 $\pm 33\text{mm}$ and therefore fitted to almost any manifold on the market.



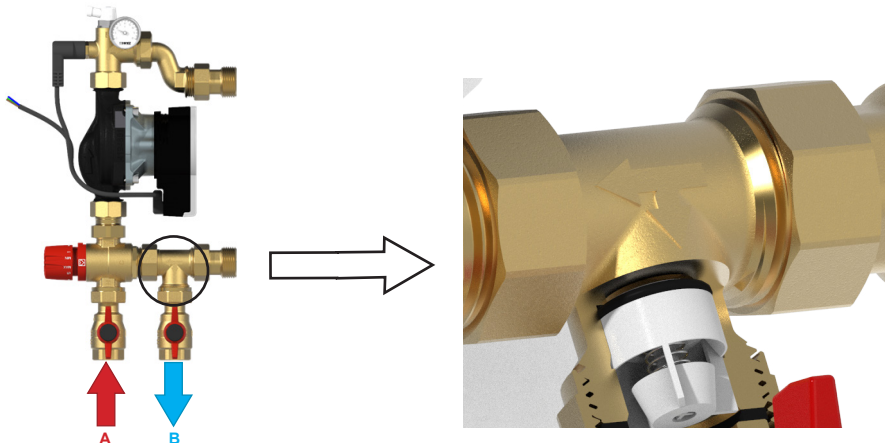
- **Air vent**

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).

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

- **T – piece with check valve**

Included check valve, which is mounted in the T-piece, protects the system from backflow of the water from the return line.



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**

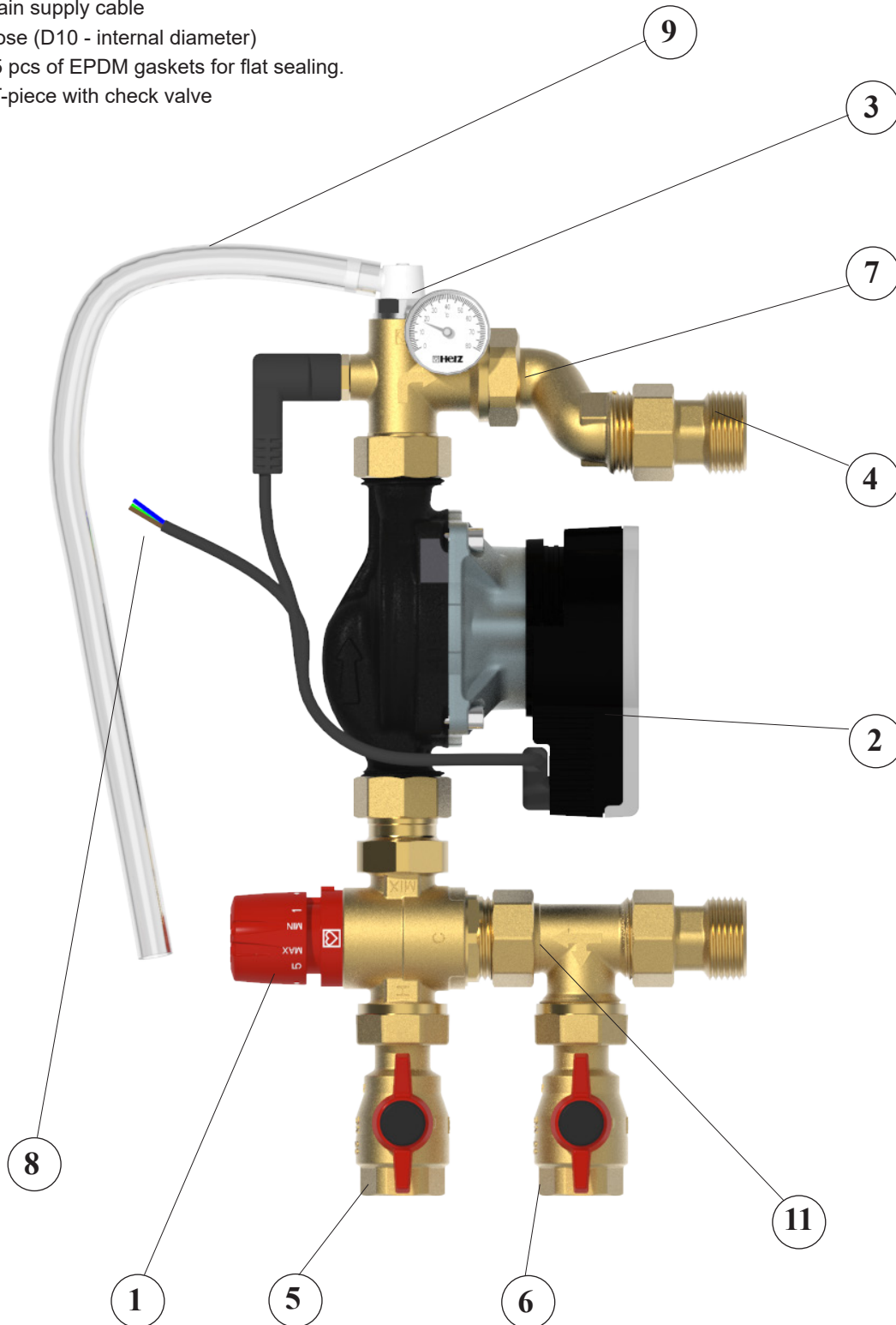
Vent the system regularly using an air vent using the HERZ universal key (1 6625 00).

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.

Components of HERZ Pump group THERMO

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 (D10 - internal diameter)
10. 5 pcs of EPDM gaskets for flat sealing.
11. T-piece with check valve

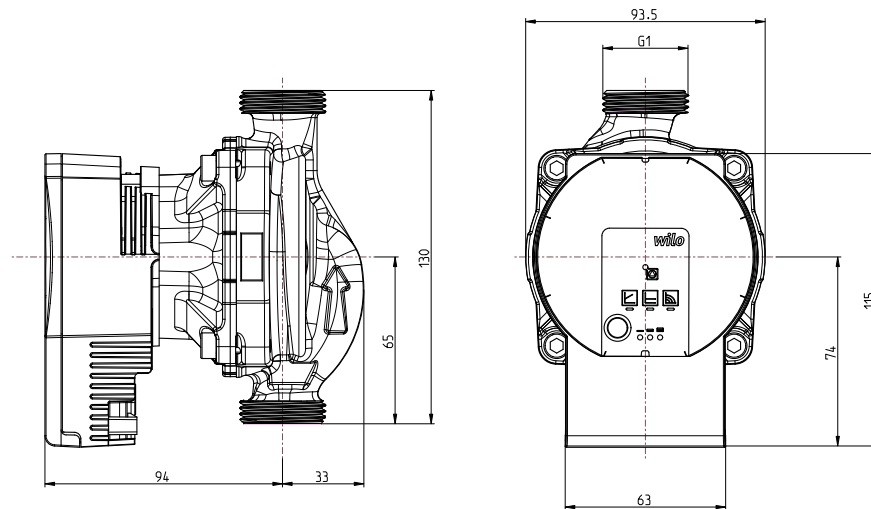


HERZ - Pump group

Circulation pump used in HERZ - Pump group

General information

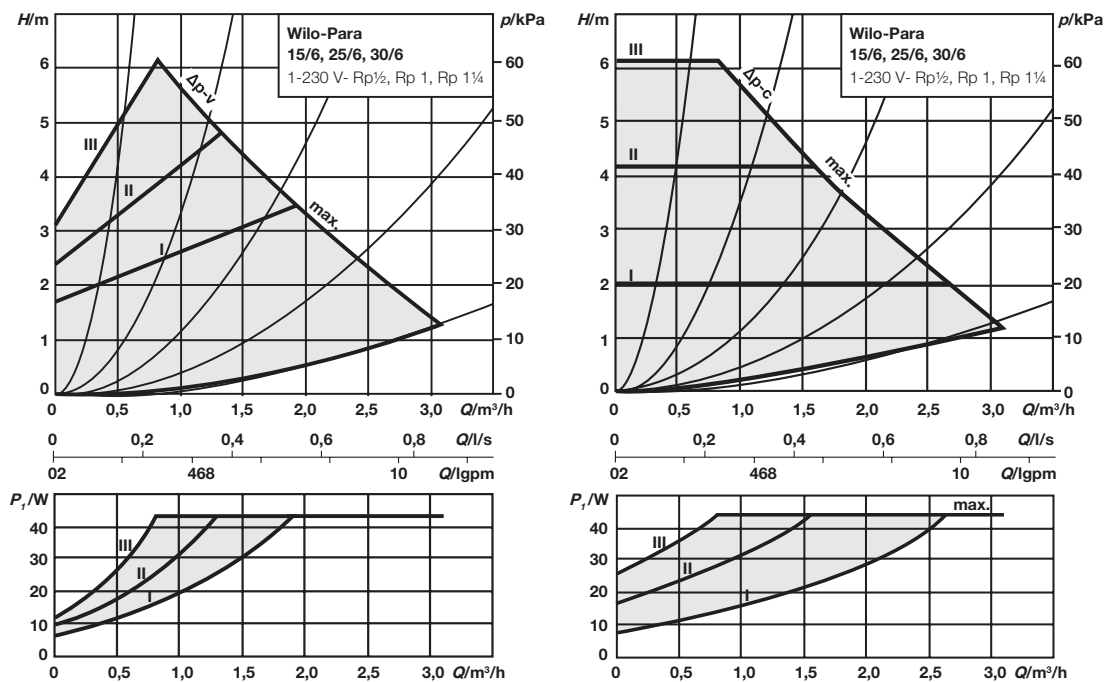
Pump dimensions



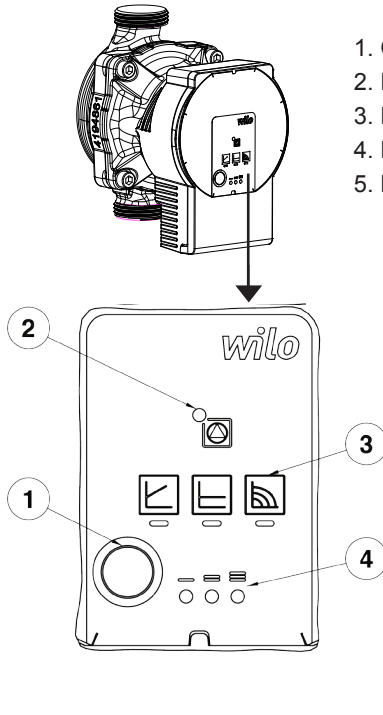
Pump data

Type:	WILO PARA 15-130/6-43/SC
Thread:	G 1"
Overall length:	130 mm
Energy Efficiency Index (EEI):	≤ 0,20
Max. delivery head:	6.7 m
Max. volume flow:	3.2 m ³ /h
Max. operating temperature:	100 °C
Max. operating pressure:	10 bar
Mains connection:	1~230 V +10%/-15%, 50/60 Hz (IEC 8 standard voltage)
Protection class:	IPx4D
Insulation class:	F
Minimum suction head at suction port to avoid cavitation at water pumping temperature	
Minimum suction head at 50/95 °C:	0.5 / 4.5 m

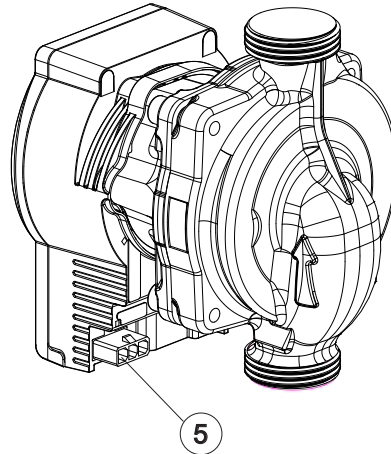
Pump hydraulic operation area



Product description



1. Operating button for pump adjustment
2. Run signal/fault signal LED
3. Display of selected control mode
4. Display of selected characteristic curve (I, II, III)
5. Mains connection: 3-pin plug connection



Indicator lights - LEDs



- Signal display
- LED is lit up in green in normal operation
- LED lights up/flashes in case of a fault
- Display of selected control mode $\Delta p-v$, $\Delta p-c$ and constant speed
- Display of selected pump curve (I, II, III) within the control mode
- LED indicator combinations during the pump venting function, manual restart and key lock

Commissioning

Commissioning only by qualified technicians.



The pump attempts an automatic restart upon detecting a blockage. If the pump does not restart automatically:

- Activate manual restart via the operating button: press and hold for 5 seconds, then release.
- The restart function is initiated, and lasts max. 10 minutes.
- The LEDs flash in succession clockwise.
- To cancel, press and hold the operating button for 5 seconds.

NOTICE
After the restart, the LED displays shows the previously set values of the pump.

☑ Venting



Fill and vent the system correctly. If the pump does not vent automatically:

- Activate the pump venting function via the operating button: press and hold for 3 seconds, then release.
 - The pump venting function is initiated and lasts 10 minutes.
 - The top and bottom LED rows flash in turn at 1 second intervals.
- To cancel, press and hold the operating button for 3 seconds.



NOTICE

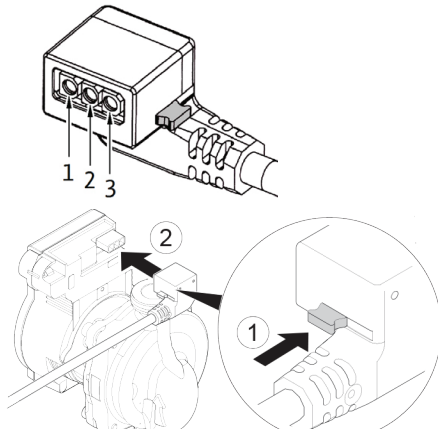
After the restart, the LED displays shows the previously set values of the pump.

☑ Electrical connection

May only be installed by qualified technicians.

- The current type and voltage must correspond to the specifications on the rating plate.
- Maximum back-up fuse: 10 A, slow-blow.
- Only operate the pump with sinusoidal AC voltage.
- Note the switching frequency:
 - On/off switching operations via mains voltage $\leq 100/24$ h.
 - $\leq 20/h$ for a switching frequency of 1 min. between switching on/off via mains voltage.
- The electrical connection must be made via a fixed connecting cable equipped with a connector device or an all-pole switch with a contact opening width of at least 3 mm.
- Use a connecting cable with sufficient outer diameter (e.g. H05VV-F3G1.5) to protect against leaking water and to ensure strain relief on the threaded cable connection.
- Use a heat-resistant connecting cable where fluid temperatures exceed 90 °C.
- Ensure that the connecting cable does not make contact with either the pipes or the pump.

☑ Connecting the mains cable



- Cable assignment:
 - 1 yellow/green: PE
 - 2 blue: N
 - 3 brown: L

- Press down the locking button of the 3-pin pump plug and connect the plug to the plug connection of the control module until it snaps into place.

☑ Intended use

High-efficiency circulators in the Wilo-Para series are exclusively intended for circulating fluids in hot-water heating systems and similar systems with constantly changing volume flows.

Permitted fluids:

- Heating water according to VDI 2035 (CH: SWKI BT 102-01) or ÖNORM H 5195.
- Water-glycol mixtures* with a maximum of 50% glycol.

*Glycol has a higher viscosity than water. If admixtures of glycol are used, the pumping data of the pump must be corrected to match the mixing ratio. Intended use includes observing these instructions and the specifications and markings on the pump.

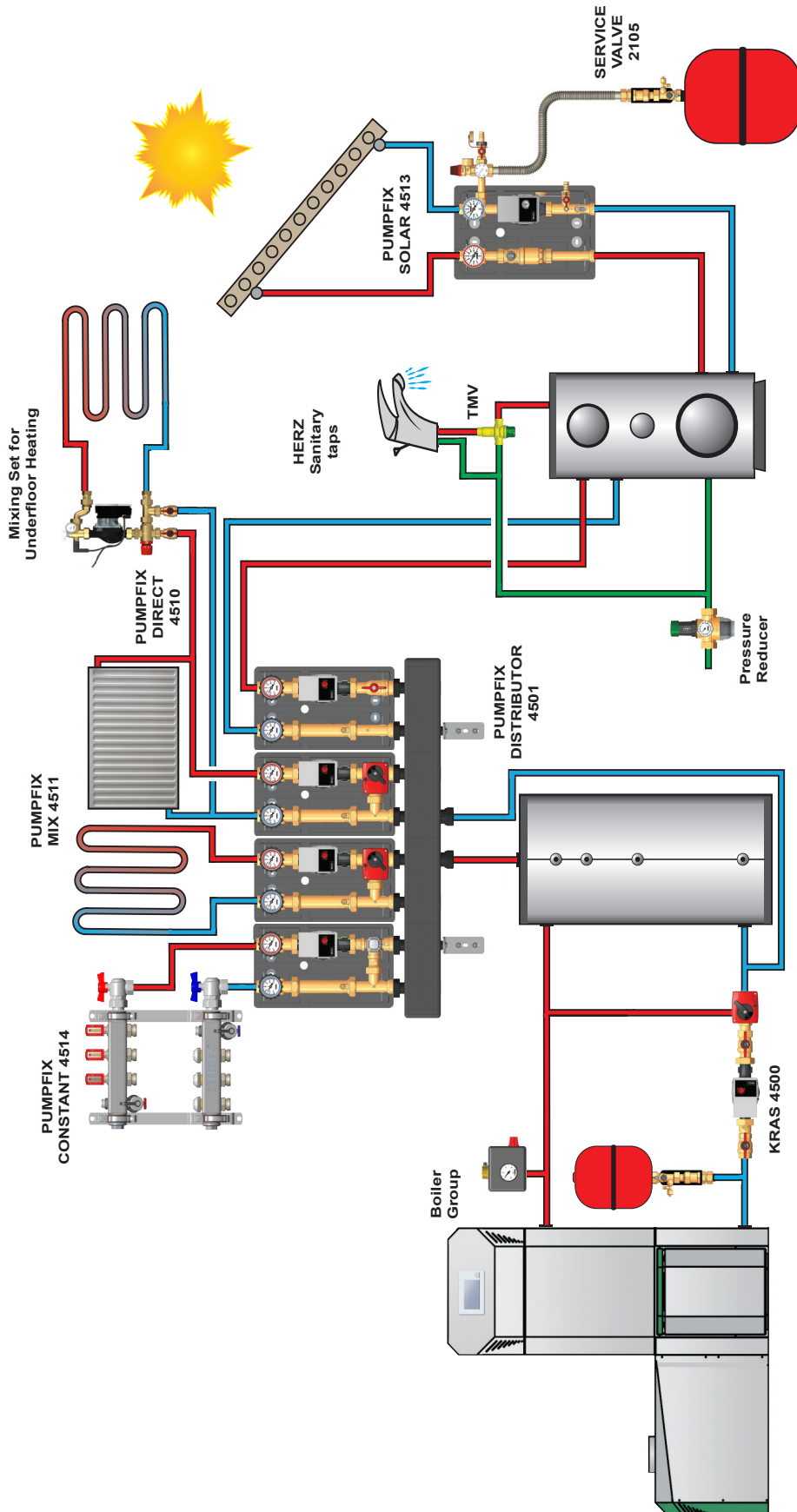
☑ Spare parts

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 for WILO PARA 15/130-6	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

☑ 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 $\Delta p-c$ to $\Delta p-v$
	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

☑ Example of system with HERZ products



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