

USER MANUAL

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Introduction

The HERZ water heater DELUXE is a wall mounted unit for providing hot water. In contrast to a hot water boiler which heats and then stores the water before it is being used, the unit operates only when hot water is required.

The HERZ water heater ensures constant temperature and flow of hot water, no matter how much or how often water is drawn from a tap.

Advantages of the HERZ water heater:

- enables supply of domestic hot water
- the continuous-flow heating enables a permanent supply when domestic hot water is required
- the HERZ water heater can be customized to the individual requirements of the consumer
- minimal space required
- needs no domestic hot water boiler
- the constant water temperature in the heat exchanger reduces the danger of legionella- and lime formation
- low return temperature
- minimal heat losses in the system
- easy to install
- optimal heating comfort

1. Function

In the stand-by mode the heating water flows from the primary circuit (district heating main) via a bypass which is kept at operating temperature with a return temperature limiter. If hot water is drawn from a tap by a domestic user connected to the system, the control valve for the cold and heating water is opened by the difference in pressure. Cold water flows through the heat exchanger, is heated up and promptly available as hot water at the domestic hot water tap. The temperature of the domestic hot water is controlled by a thermostat. Using an immersion sensor, this thermostat controls the temperature of the hot water that exits the heat exchanger, which in turn regulates the pressure and temperature controller.

4. Equipment

Important components of the HERZ water heater DELUXE

PT-controller

As the central control valve in the HERZ water heater the patented HERZ PT-controller ensures the provision of hot water and constant temperatures. Reacting to the difference in pressure the valve opens or shuts the heating water and the cold water inlet to the exchanger. Simultaneously, the temperature of the hot water is controlled by a thermostat. The PT-controller closes so that maximum power is used for the domestic hot water processing.

Return Temperature Limiter

Used for controlling the return temperature in the HERZ water heater between 25-60°C. Limitation and locking of the set value range can be achieved by means of stop pins, which need to be ordered separately.

Thermostatic bypass valve

HERZ thermostatic valve, nickel coated brass, with screw cap. In the HERZ water heater DELUXE, this valve is installed in a bypass.

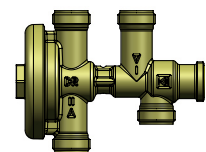
A thermostatic bypass valve fitted with a return temperature limiter is installed into the return of the Water heater to regulate the return temperature. Strainers with a fine-mesh screen of 0.5 mm are fitted in the primary heating flow and secondary heating return to catch impurities.

2. General notes on installation

1. For installation please refer to the drawings and manual included in the packaging.
2. When choosing where to mount the HERZ water heater, the weight of the unit itself as well as the weight of the water must be taken into account.
3. If the HERZ water heater is built in or installed in confined spaces, intermediate ceilings, etc., the front of the unit must be freely accessible for repair and maintenance purposes.
4. Before mounting the HERZ water heater, check that the wall is vertical.
5. Depending on the type of wall where the unit is mounted, the appropriate wall anchors and screws must be used.

3. Safety notes

1. The unit must be installed and connected by professional plumbing and heating engineers only.
2. Only use original HERZ spare parts to replace faulty parts or heating components.
3. Check all connections for leakages prior to starting up the heating system.
4. All screws must be checked and tightened after the unit has been installed.
5. The user must not make any technical changes to the heating system. Otherwise HERZ will not assume liability for any resulting damage.
6. The HERZ water heater must only be installed in rooms and locations that meet the legal requirements.



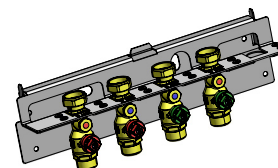
HERZ-Mixing Valve MIX 025 with amended flow direction

25 l/min, 3 bar of water pressure, with water quantity min. 4 l/min, factory setting of mixing temperature 52°C, ±2K mixing precision, temperature max. 90°C, pressure 10 bar.



Premounting unit

Supplied as first fix mounting rail, complete with ball valves for isolating heating, cold- and hot water circuits, connection to the ball valves is possible from the wall, or underneath. The Water heater can be connected at a later date by using the connections and fittings included. The HERZ premounting unit needs to be ordered separately.



5. Operating data

For providing hot water:

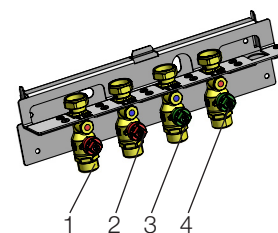
With fitted flow rate limiter: 15 [l/min]

Inlet pressure: 2,8 [bar]

Amount of water drawn in l/min	15
Temperature of cold water in °C	10
Max. operating temperature °C	90
Max. operating pressure	10 bar
Hot water temperature in °C	50
Heat exchanger output	45 kW

Distribution of the connections:

1. Flow district heating plant
2. Return district heating plant
3. Cold water supply
4. Hot water outlet



7. Construction

Due to its compact design the HERZ water heater can be surface or flush mounted, so the HERZ water heater can be installed in any convenient position (e.g.: instead of a classic hot water tank).

The HERZ water heater can be delivered in two versions, as a surface mounted or flush mounted version. In both cases the substation is mounted on a metal steel plate and either fitted in the inwall unit or surface mounted and fitted with the cover. The pre mounting unit needs to be ordered separately and can be fitted at first fix stage, the water heater can be installed at a later stage.

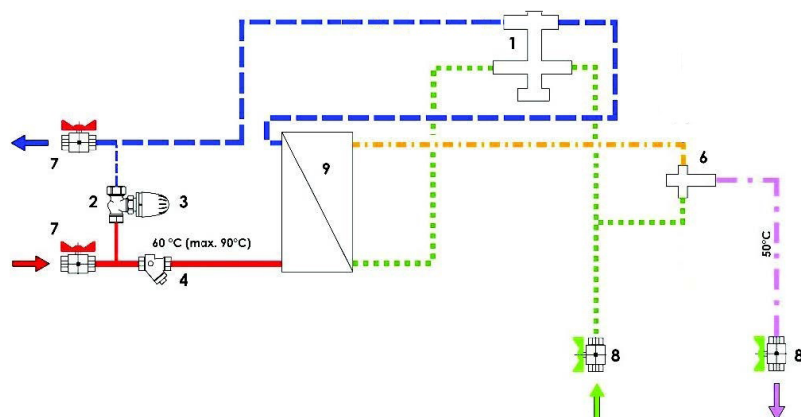
Domestic hot water circuit can be isolated by closing the ball valves, so in a case of malfunction the problems can be solved independently from each other.

All elements of the HERZ- Water heaters are mounted with detachable connections so they can be changed or maintained.

6. Dimensions of the Water heater

Dimensions of the HERZ water heater	
<i>Dimension of the connections, inlet/outlet</i>	
Supply flow district heating plant	G 3/4 male thread
Return flow district heating plant	G 3/4 male thread
Cold water inlet/-outlet	G 3/4 male thread
Hot water outlet	G 3/4 male thread

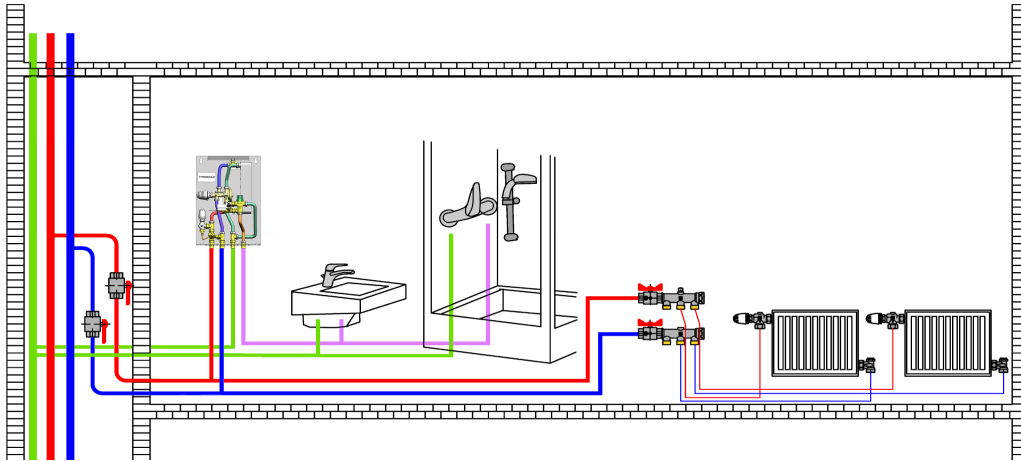
8. Functional scheme of the water heater



1	HERZ- DT - controller
2	HERZ- Bypass- Thermostatic Valve
3	HERZ- Return Temperature Limiter
4	HERZ- Strainer
5	HERZ- Thermostatic Head
6	HERZ- Mixing Valve
7	HERZ- Ball valve
8	HERZ- Ball valve
9	Heat exchanger

9. Connecting to the district heating main

The water heater is connected parallel to the district heating main. If possible, the unit should be installed before the first end user.



10. Operating conditions

Besides the national rules and regulations, the industrial standards as well as the connection conditions of the local water supplier need to be met and, furthermore, installation and operating instructions need to be followed.

The room where the Water heater will be installed should be frost-free and the place of installation has to be chosen in such a way that the unit is easily accessible for maintenance and repair work. The incoming water temperature should range between a minimum of 60 °C and a maximum of 80 °C. A primary static pressure of 10 bar and a primary differential pressure of 0.5 bar are fine. Furthermore, in case of system failure, all connecting pipes must be able to withstand a maximum temperature of 95 °C.

11. Starting-up

The HERZ water heater is easy to operate and user-friendly. All you have to do is open up the ball valves in the following order so as to avoid water hammer:

1. Open flow district heating plant slowly (red ball valve).
2. Open return district heating plant slowly (red ball valve).
3. Open cold water supply slowly slowly (green ball valve).
4. Open hot water outlet slowly (green ball valve).

12. Temperature setting

The HERZ water heater DELUXE is set to a default temperature of max. 55 °C. The settings of the thermostat cannot be changed to ensure the optimal tap water temperature at all times.

13. Initial start-up

In accordance with the Austrian ÖNORM H5195-1 standard, before initially starting up the HERZ water heater, make sure to use only clean pipe materials that comply with standards (i.e., all pipe work must be free from forging scale, rust, burrs and impurities). The same holds true for fittings and units (boilers, radiators, convectors, expansion vessels, etc.). The Austrian ÖNORM H5195 standard further provides for clean and professional workmanship (without welding beads, sealing or solder residues, burrs, bore chips and others) and cleaning of all components prior to their installation.

Strainers should be fitted because deposits in the pipes can

damage the controller and impurities can enter the drinking water system.

To prevent corrosion in the heating system, the Austrian ÖNORM H5195-1 standard requires the following measures:

14. Shutting down, emptying

Shutting down the HERZ water heater for a prolonged period of time or dismantling it for whatever reason is done by shutting all ball valves.

In rooms exposed to temperatures below freezing the HERZ water heater must be drained down prior to the start of the cold season if the unit is to be shut down for several days. To drain the Water heater, place a vessel with a capacity of 4 to 8 litres underneath the unit and drain the hot water from the ball valves till the HERZ-Water heater is completely empty.

If temperatures are liable to drop below freezing point, be aware that not only the water in the HERZ water heater and the hot water pipes may freeze but also the water in the cold water inlet pipes leading to the fittings and to the unit itself. Therefore it is best to drain all water pipes and pipe fittings up to the frost-proof part of the domestic heating system.

15. Servicing and maintenance

Owing to its outstanding design, the HERZ water heater requires comparably little maintenance work. However, in hard water areas lime-scale can build up in the system. Depending on the hardness of the water, your system should be de-scaled by a professional every one to two years. In case scale in the system has damaged the valves, these should be replaced immediately to ensure smooth operation of your heating system.

Do not clean the unit with scouring or harsh cleaning products. Wipe it down with a damp cloth which has been rinsed in water with a few drops of mild detergent.

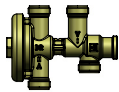




Heat exchanger

Parameters	Recommended limits for the tap water quality on the secondary side
Temperature	Depends on the composition of the water, but under 60°C, to reduce the risk of stress corrosion of the stainless steel and pitting corrosion in the copper through the hot water.
PH-value	7-9
Alkalinity	60 mg/L < [HCO ₃ ⁻] < 300 mg/L
Conductivity	< 500 µS/cm
Hardness	[Ca ²⁺ ,Mg ²⁺]/[HCO ₃ ⁻] > 0,5
Chloride	1000 mg/L at 25 °C 300 mg/L at 50 °C 100 mg/L at 80 °C 0 mg/L at T > 100 °C
Sulphate	[SO ₄ ²⁻] < 100 mg/L and [HOC ₃ ⁻]/[SO ₄ ²⁻] > 1
Nitrate	[NO ₃ ⁻] < 100 mg/L
Free chlorine < 0,5 mg/L	

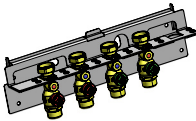
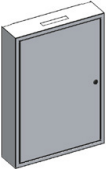
Note:

The given reference values of the heat exchanger producer are considered with regard to the required water quality.

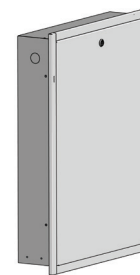
16. Spare parts

Article	
PT- controller	
Return temperature limiter	
Thermostatic bypass valve	
Heat exchanger DHW	
Drinking water mixing valve	

17. Accessory

Premounting unit	
HERZ-Cover for HERZ Water Heaters Made of steel white powder coated, for HERZ water heater	

HERZ-Inwall Unit for HERZ Substations
Made of zinc coated steel, with mounting frame. Front frame and door white, powder coated (RAL 9003), door with catch.



18. Troubleshooting, malfunctioning

Problem: The hot water temperature is too high

Solution: The HERZ PT controller must be checked and, if necessary, replaced by a qualified and approved plumbing and heating engineer.

Problem: The hot water temperature is too low

Solution: The heat exchanger must be checked and, if necessary, replaced by a qualified and approved plumbing and heating engineer. Check with your district heating provider whether there is a failure in their system. Check that the red ball valves are turned on. The thermostat controller must be checked and, if necessary, replaced by a qualified and approved plumbing and heating engineer. The whole system must be checked by a qualified and approved plumbing and heating engineer for scale buildup.

19. Recycling and disposal

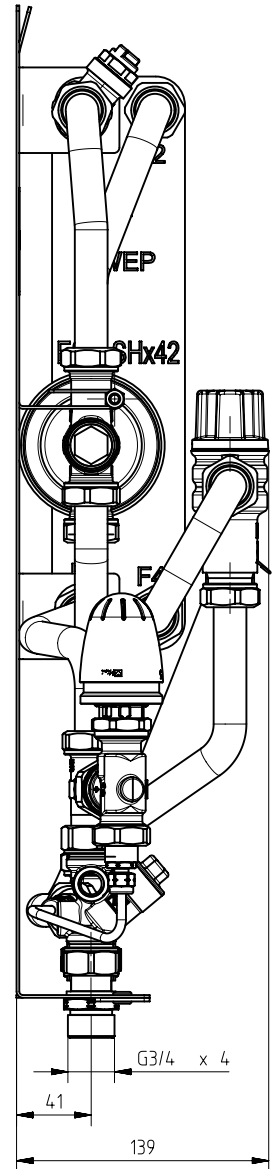
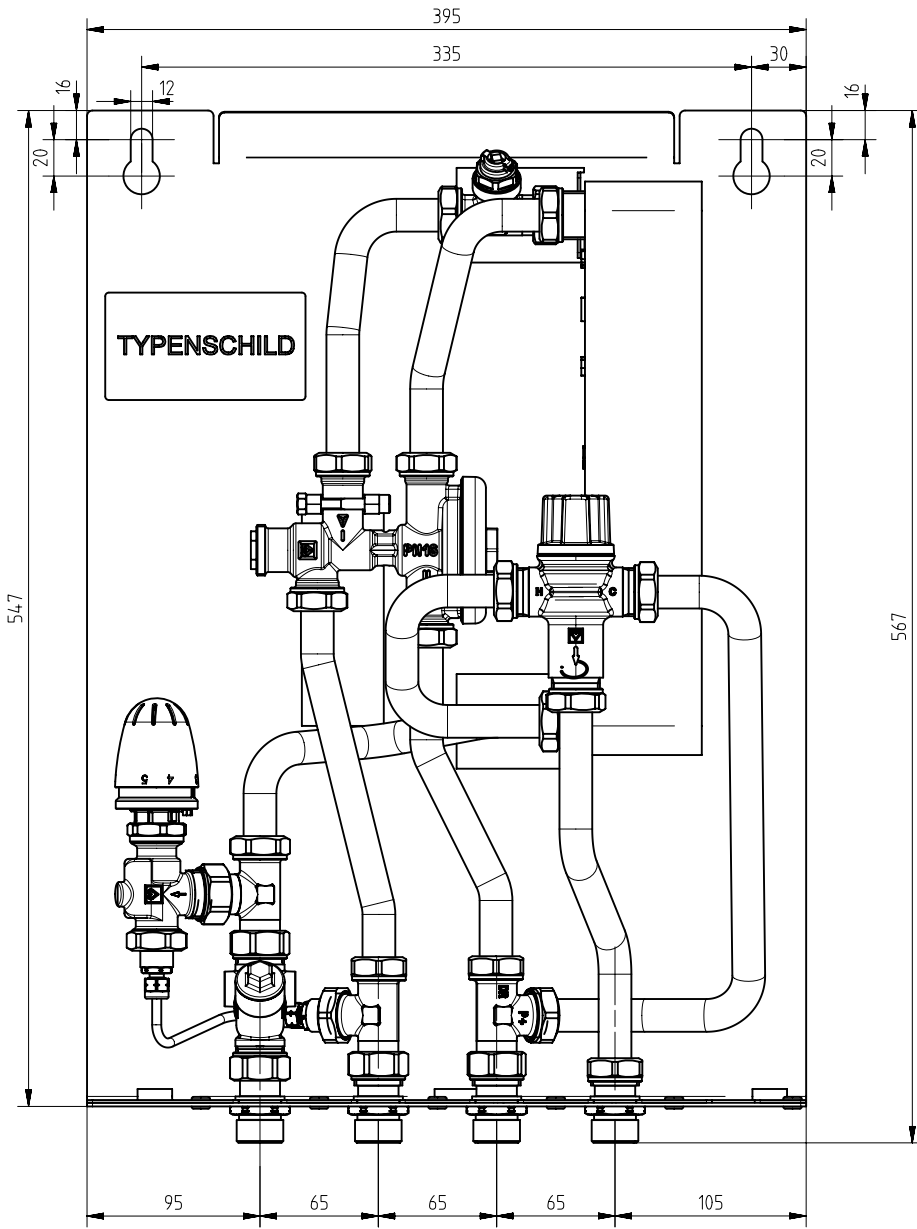
The Water heater as well as the packaging are mainly made of recyclable raw material.

Substation

The Water heater and accessories should be disposed of sensibly and properly and not in household waste.

Packaging

- The disposal of the packaging is the responsibility of the installer.



Please note: all diagrams are indicative in nature and do not claim to be complete.

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