

Weheat Buffer and Boiler tanks

Installation manual ENG



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Installation Manual – March 2024

English – Original Instructions

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**WEHEAT**

# Preface

## About this Document

This manual contains instructions and important information about the installation of the Weheat buffer and boiler tanks. Ensure that you have fully read and understood the instructions in this manual, before proceeding with installation. Keep this manual for future reference.

## Used Symbols

Symbol	Meaning
	This symbol indicates a hazardous situation that <b>could result</b> into severe injury or death if the associated instructions are not followed.
	This symbol indicates a hazardous situation which <b>could result</b> into significant injury or death if the corresponding instructions are not followed.
	This symbol indicates a hazardous situation that <b>could result</b> in injury or damage to the tank, heating system and surroundings if the associated instructions are not followed.
	This symbol provides useful information that is not related to a hazardous situation.
	This symbol indicates a reference to an external source.

## Contact Information

For questions about the heat pump or this manual, you can contact:



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# Use of the Manual

This manual serves as a comprehensive guide for both end-users and installers, ensuring the safe installation, operation, and maintenance of the boiler.

## Safety

### Safety Warnings and potential risks

#### Installation

 **WARNING**

The buffer and boilers must be installed by a professional installer who will be responsible for ensuring compliance with all relevant regulations, rules, and guidelines. Weheat does not accept responsibility for any misuse of the tanks, and warranty coverage will be invalid in such cases.

Any leaks from buffer or boiler tanks can cause water damage to the surrounding area, leading to structural damage, mold growth, and other costly repairs. Using high-quality materials and working with experienced professionals can help minimize potential issues with buffer and boiler tank installations.

#### Safety Warnings

 **CAREFUL**

Buffer and boilers tanks operate at high temperatures, presenting a potential safety hazard.

#### Hot water expansion

 **CAREFUL**

When installing tanks, it's essential to include a pressure regulation device in the system such as overpressure relief valves and expansion tanks. This is necessary to manage the increase in water volume that occurs when water is heated in the boiler.

#### Risk of freezing

 **WARNING**

If the boiler is to remain out of use in an unheated room for an extended period, such as during winter holidays, there is a risk of freezing. To prevent damage, it is essential to completely empty the boiler under these circumstances. To accomplish this, the user can utilize the drain connection.

## Legionella prevention



To prevent legionella contamination in boilers, it's recommended to, once a week, have the entire tank heated up to a temperature of 60°C or above for at least 20 minutes. Please ensure that the heat pump is configured to run the legionella prevention cycle.

## Declaration of Conformity

The tanks referenced in this regulation meet the stipulations outlined in the Pressure Equipment Directive (PED) and Standing Losses determined according 12897.

## Components

Delivery includes:

### Buffer

- Buffer tank
- Buffer wall mount bracket
- Warranty card
- Energy Label
- PS Protection
- Box

### Not delivered

- G ½" Air release valve
- G ½" Drain valve

### Boiler

- Boiler tank
- Sensor's cable glands
- Warranty card
- Energy Label
- PS Protection
- Box

### Not delivered

- Inlet Combination 6 bar
- G ¾" Drain valve
- Temperature sensors

## Product Description

### Application

The WBL and WBF tanks are specially designed for heat pump systems, serving as integral components for thermal storage and management. The WBF is designed for all-electric and hybrid systems, while the WBL is designed to support Domestic Hot Water (DHW) in all-electric heat pump setups. Weheat tanks are optimized to enhance system efficiency, performance, and reliability.

## Structure and Function

The WBF-50/100 buffer tanks are an optional part for all-electric and hybrid heat pump installations. It helps to balance out fluctuations in heating demand and ensures consistent and efficient operation of the heat pump system by acting as a thermal reservoir.

The WBL-200/300 boiler tanks are specifically designed for integration into all-electric heat pump solutions within heating systems. Featuring a spiral tube design with increased surface area of 2.6m<sup>2</sup>, these tanks facilitate efficient heat transfer, making them well-suited for heat pump systems. Additionally, they offer the flexibility to accommodate an electric heating element for supplementary heating support.

## Construction

All Weheat tanks are constructed from 1.0 mm thick stainless-steel Duplex 2205, with the spiral in WBL tanks composed of stainless steel 316L. These alloys boost corrosion resistance, eliminating the need for anodes or regular maintenance. Both tank lines feature 50 mm polyurethane foam insulation (PUR), ensuring optimal thermal efficiency, while the casing is made from galvanized steel for added durability.

Another important construction feature of the Weheat boilers is the placement of the coil spiral. The spiral is positioned very close to the bottom of the tank to ensure that the tank does not have any cold zones. This design ensures that the entire contents of the tank are heated effectively, which facilitates an efficient legionella prevention cycle.

## Pressure



### WBF Buffer Tanks Specifications:

- Designed for use in closed heating systems (Central Heating System).
- Maximum pressure: 6 bars.
- Prescribed working pressure: 1-3 bars.
- An expansion vessel is required to cope with overpressure and thermal expansion.

**WBL Boilers Specifications** - The WBL boilers integrate two systems:

#### 1. Spiral (Central Heating System):

- Maximum working pressure: 6 bars.
- Prescribed working pressure: 1-3 bars.
- Requires an expansion vessel to cope with overpressure and thermal expansion.

#### 2. Pressurized Storage of Domestic Hot Water (DHW) System:

- DHW system takes place in the tank.
- Maximum water pressure of 6 bars. In instances of higher water pressure, a pressure reducing valve must be employed.
- System shall be equipped with a certified pressure relief valve (e.g., inlet combination).

## Product Identification

The description label located on the right side of the tank contains the following information:

### WBF

- Product name
- Volume [L]
- Tank Dimensions [mm]
- Max. Working Pressure [bar]
- Max. Test Pressure [bar]
- Connections
- Net Weight [kg]
- Max. Water Temperature[°C]
- Serial Number
- CE marking
- RoHS marking

### WBL

- Product name
- Volume [L]
- Tank Dimensions [mm]
- Max. Working Pressure [bar]
- Max. Test Pressure [bar]
- Heat exchanger [m<sup>2</sup>]
- Connections
- Potable water connections
- Net Weight [kg]
- Max. Water temperature [°C]
- Serial Number
- CE Marking
- RoHS marking

## Type Overview

Table 1.1 Type overview

Type	Model	Volume
WBF	WBF-50	50 liters
	WBF-100	100 liters
WBL	WBL-200	200 liters
	WBL-300	300 liters

# Product Specifications

## WBF-50/100



**WBF-50**  
**50L Duplex RVS 2205 Buffer Tank**

**WBF-100**  
**100L Duplex RVS 2205 Buffer Tank**

Energy efficiency class*		A	A
Standing Loss	W	21	31
Volume	L	50	100
Inner tank material		Duplex Stainless steel 2205 1.0mm	Duplex Stainless steel 2205 1.0mm
Isolation material		50 mm Polyurethane Foam	50 mm Polyurethane Foam
Outer shell material		Galvanized Steel	Galvanized Steel
Diameter	mm	470	470
Diameter with brackets	mm	495	495
Height	mm	615**	1045**
Height of the bracket from the bottom	mm	425	855
Maximum loaded capacity***	kg	150	150
Weight	kg	18	24
Loaded Weight	kg	68	124
Water in connection		G6/4"M & G1"F	2x G6/4"M & G1"F
Water out connection		G6/4"M & G1"F	2x G6/4"M & G1"F
Air vent valve connection		G1/2"F	G1/2"F
Drain valve connection		G1/2"F	G1/2"F
Mounting options		Wall mount or standing	Wall mount or standing
Temp. max	°C	90	90
Max. working pressure	bar	6	6
Colours		Mate black + black	Mate black + black
Other features		Connections optionally with flat sealing ring	Connections optionally with flat sealing ring
		Lightweight buffer	Lightweight buffer
		Period of 3 years warranty	Period of 3 years warranty

\* According to EN 12897 \*\*when placed standing, 30mm will be added \*\*\*using 4x M10 bolts

## WBL-200/300



**WBL-200**  
**200L Duplex RVS 2205 Buffer Tank**

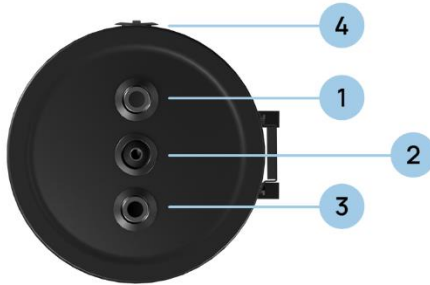
**WBL-300**  
**300L Duplex RVS 2205 Buffer Tank**

		<b>WBL-200</b>	<b>WBL-300</b>
		<b>200L Duplex RVS 2205 Buffer Tank</b>	<b>300L Duplex RVS 2205 Buffer Tank</b>
Energy efficiency class*		A	A
Standing Loss	W	41	48
Volume	L	200	300
Inner tank material		Duplex Stainless steel 2205 1.0mm	Duplex Stainless steel 2205 1.0mm
Isolation material		50 mm Polyurethane Foam	50 mm Polyurethane Foam
Outer shell material		Galvanized Steel	Galvanized Steel
Diameter	mm	600	600
Height	mm	1242	1602
Weight	kg	44	52
Spiral surface	m <sup>2</sup>	2,6	2,6
Spiral diameter	mm	28	28
Spiral Material		Stainless steel 316L	Stainless steel 316L
Spiral flow rate	m <sup>3</sup> /h	1,3	1,3
Spiral pressure loss	bar	0,36	0,36
Spiral connection		2x G6/4"M & G1"F	2x G6/4"M & G1"F
Connection tap water in/out		G3/4"F	G3/4"F
Drain valve connection		G3/4"F	G3/4"F
Electric element connection		G6/4"F	G6/4"F
Temperature sensor connection		2x G½"F with dip tube and cable glands included	2x G½"F with dip tube and cable glands included
Mounting options		Standing	Standing
Temp. max	°C	90	90
Max. working pressure	bar	6	6
Thermometer range	°C	0 - 100	0 - 100
Colours		Mate black + black	Mate black + black
Other features		4 handholds: 2 on the sides, 2 on the top	4 handholds: 2 on the sides, 2 on the top
		Connections optionally with flat sealing ring	Connections optionally with flat sealing ring
		Lightweight boiler	Lightweight boiler
		Period of 3 years warranty	Period of 3 years warranty

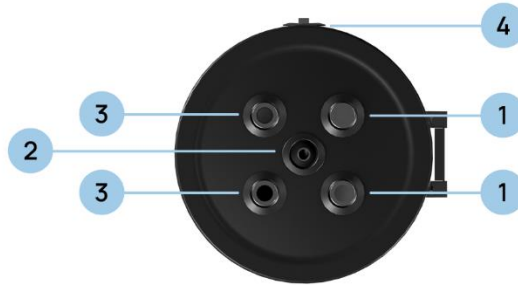
\* According to EN 12897

# Installation

## Dimensions WBF-50/100



WBF-50



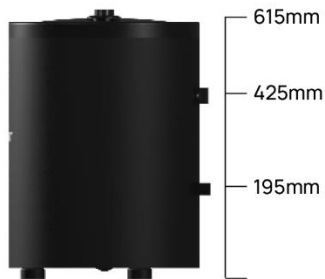
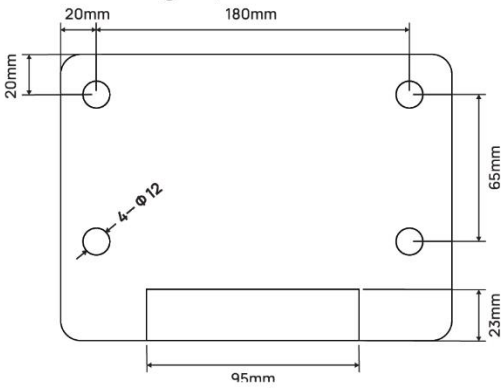
WBF-100

	Description	Connector type
1	Hot water out	6/4" M and G1" F
2	Air bleeder	G1/2"
3	Cold water in	6/4" M and G1" F
4	Drain	G3/4"

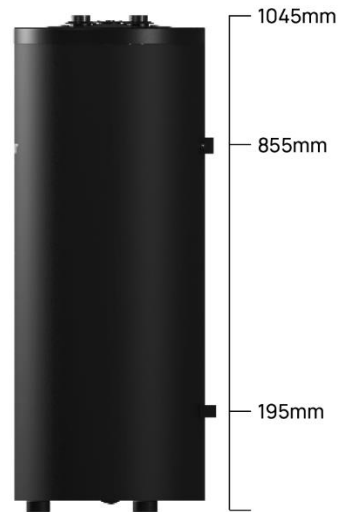


6/4" M and G1" F connection

## Mounting system

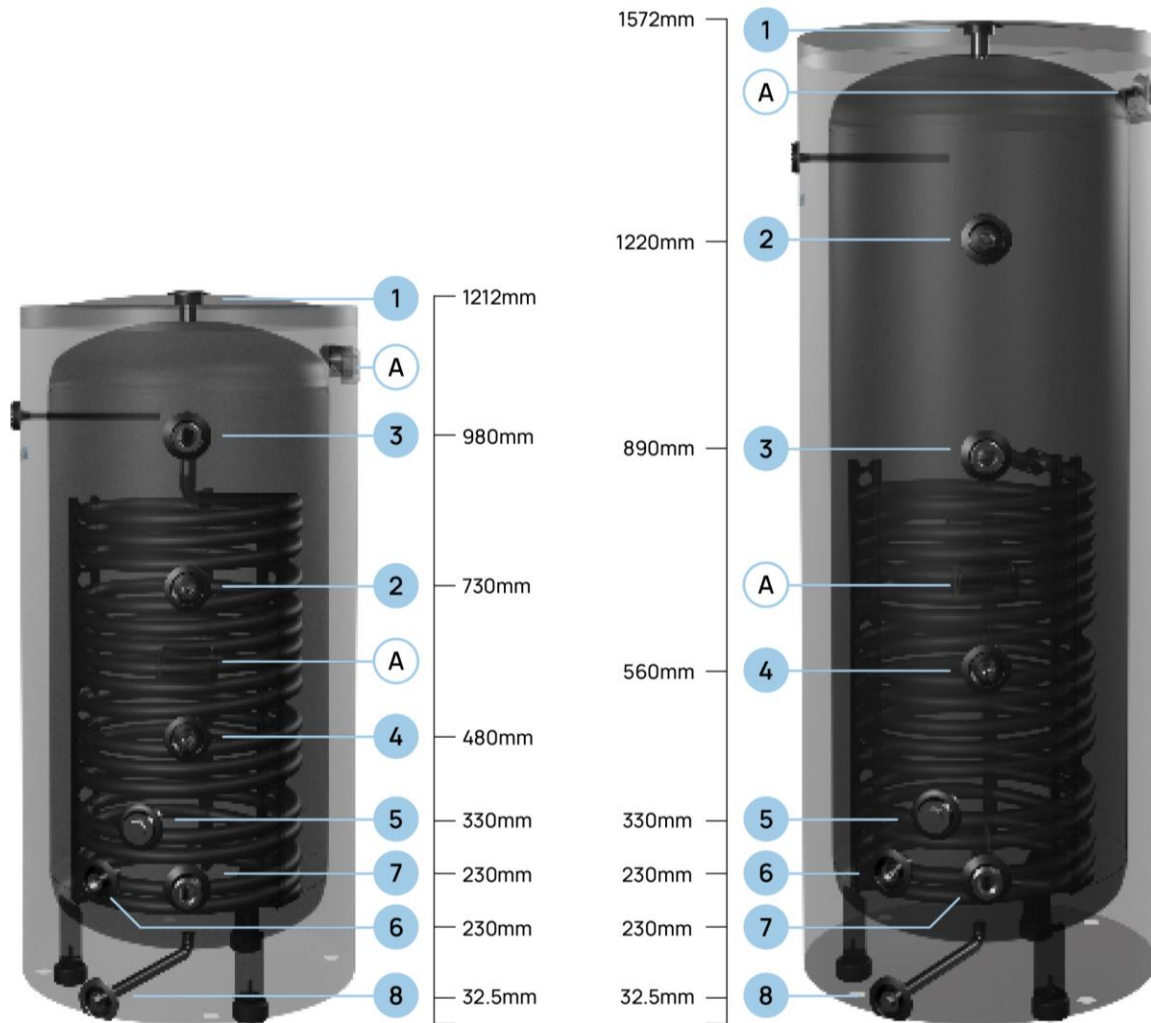


WBF-50



WBF-100

## Dimensions WBL 200/300



WBL-200

WBL-300

	Description	Connector type
1	DHW out	G1/2" F
2	Temp sensor top	G1/2" F
3	Spiral in	6/4" M and G1" F
4	Temp sensor bottom	G1/2" F
5	Electric heating element 3 kW	G6/4" F
6	DHW in	G3/4" F
7	Spiral out	6/4" M and G1" F
8	Drain	G3/4" F
A	Handle	-



G1.5" M and G1" F connection

## Location

### WARNING

To optimize efficiency, it's important to minimize the length of piping between the tank and the heat pump, reducing heat loss.

When selecting the location, consider the filled weight of the boiler and ensure that the supporting surface can adequately handle its weight.

The boiler, inlet combination, water and drainpipes should be situated in a frost-free environment. To minimize energy loss, all hydraulic pipes must be properly insulated in accordance with central heating system regulations.

Please ensure that there is sufficient space for connections, pipework and for service and maintenance purposes.

## Transport to location

The buffer tanks and boilers are delivered completely assembled. Transportation can be done in two ways.

### With the Package

Utilizing a hand truck, you can transport the tank along with its packaging, including top and bottom PS foam and the box.

### Using Handholds

In the WBL tanks, four handholds are strategically positioned—two on the sides and two on the top.

During transportation using the handholds, the tank should be tilted downwards. One installer grasps the handholds located on the top of the tank, while the second installer supports the tank by holding onto the two feet. This method ensures ease of transportation for Weheat boilers. Please be careful when placing the boiler back onto the floor.



## Inlet Combination



In all-electric systems, the water in the hot water boiler tank expands during operation, which makes necessary the installation of an inlet combination or other expansion capability in the hot water circuit. This inlet combination valve should be installed in the sanitary cold water pipe, just before it enters the boiler tank. Additionally, a drainpipe must be installed to collect any water that exits from the inlet combination valve due to overpressure in the system. Install a siphon on the drain pipe if it is connected directly to the sewer. For detailed connection diagrams please check the installation manual from your heat pump

## Circulation Pump

When choosing a circulation pump for the WBL, it's crucial to consider the optimal flow rate of 1.3m<sup>3</sup>/h in the spiral. This ensures efficient heat exchange between the heat pump and the tap water. To maintain optimal flow and maximize efficiency, Weheat recommends using circulation pumps with a nominal delivery head range of 8 meters (e.g. Wilo Para 25-130/8-75/SCU).

## Air release valve

Within the WBF, there is a G1/2"F connection for an air vent valve. Please install an air release valve to facilitate the removal of air from the system.

## Tools and accessories

The presence of G6/4"M & G1"F connectors allows the installer to choose the type of connections which suit best for the installation:

- For G6/4"M - 2-piece connection and sealing ring are used.
- For the G1"F - G1"male steel connection, **Loctite cord** or **sealant** are necessary.

## Electric Heating Element

An electric heating element can be installed in the boiler as a backup source of heat in case the primary heating system fails or is insufficient.

The electric heating element must also have CE certification and its own safety functions.

When using an electric heating element, the electrical installation must have a dedicated circuit capable of supplying 16A current.

The electric heating element supplied by Weheat has a 3kW power output, 6/4" connection and its own safety function.

The electric heating element must be connected to the control bridge/indoor unit of the heat pump (please follow heat pump's instructions manual).

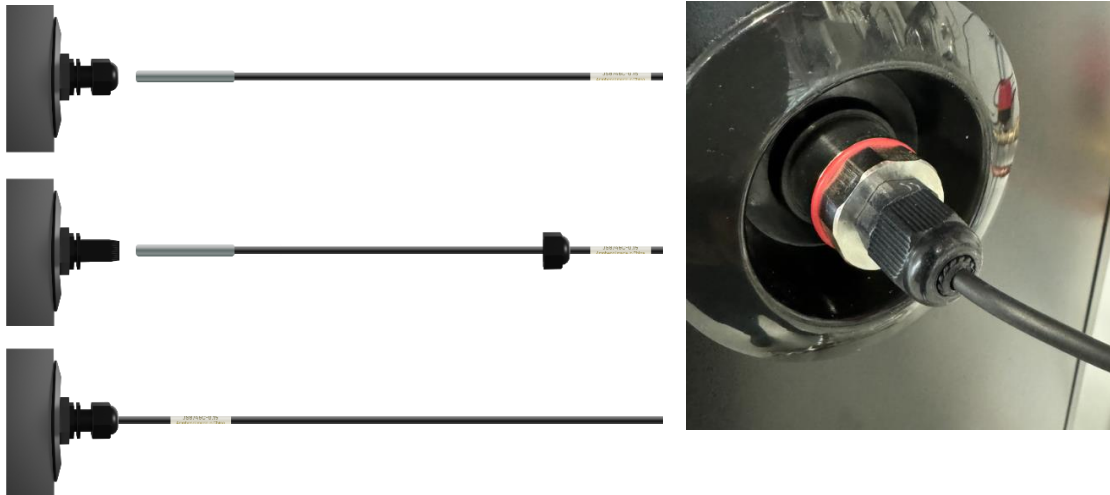
### WATCH OUT

Ensure that the electric heating element is **turned on only after** the boiler is filled with water.

## Temperature sensors

The placement of both the top and bottom temperature sensors is crucial for the proper functionality of the heat pump. Always ensure that they are positioned correctly and connected in accordance with the instructions outlined in the heat pump's installation manual.

Ensure that the sensors are fully inserted into the dip tube and that the cable glands are securely tightened to prevent any movement of the sensors.



## Filling the boiler

- Close the inlet valve on the inlet combination.
- Open any hot water tap.
- Open the valve on the inlet combination.
- Close the hot water taps when water flows out.

## Draining the boiler

- Close the inlet valve on the inlet combination.
- Open any hot water tap to release pressure and allow air to enter the system.
- Connect a hose to the drain valve present on the side bottom of the boiler.
- Make sure the hose goes into a drain pipe or any entry to the sewage system.
- Open the drain valve.
- After the water stops flowing, close the drain valve.

### CAREFUL

Before beginning the draining process, please be aware that the system is filled with hot water which can cause burns or scalding. Take necessary precautions and wear appropriate protective gear. Allow the water to cool down sufficiently before proceeding.

# Installation verification

## WATCH OUT

Verify that the boiler installation has been completed according to the specifications and relevant guidelines presented in this manual and its attachments. This includes checking the pipework and sensor placement.

Ensure that the electric heating element, if present, is turned on **only after** the boiler has been filled with water.

After filling the tank, check for any leakages in the system for at least 30 minutes.

The spiral heat transfer capacity is designed to work optimally with a water flow of 1,3m<sup>3</sup>/h. Verify the water flow accordingly.

Check that all safety features of the boiler are operational, including pressure relief valves (inlet combination) and temperature sensors.

## Maintenance

One of the primary objectives in the design of Weheat tanks was to minimize the need for maintenance work. However, periodic inspections remain necessary to ensure the safe and long-term operation of the boiler. These inspections include:

- Emptying and inspecting the boiler: empty the boiler annually to inspect and clean the electric heat element, ensuring it is free of any kind of deposits.
- Checking the operation of the inlet combination: To ensure the functionality of the pressure relief valve, please turn the relief valve knob in both directions.

# Warranty

Weheat products come with a three-year warranty against material and construction defects from the date of purchase as indicated on the invoice, which must be retained. This warranty is subject to the following conditions:

- Installation must be carried out by a recognized qualified professional, who assumes full responsibility for ensuring compliance with installation standards and instructions.
- The water quality in the boiler must meet the specifications of the European Drinking Water Directive 98/83/EC.
- Damage resulting from frost, over-pressure, water softening, over-voltage, or improper installation, repair, or use is not covered under this warranty.
- Corrosion caused by wrong sealant usage. Certain sealants can potentially attack or corrode certain types of steel. Ensure proper application and compatibility with the materials involved.

Weheat encourages all customers to thoroughly review the installation guidelines and to consult with a qualified professional for installation and maintenance to ensure the longevity and proper functioning of your Weheat products.