oilon®
LÄMPÖÄSSÄ

# STORAGE TANKS

Pre-heat tank
Hot water storage tank with baffle
Rectangular hot water storage tank
Stainless steel domestic hot water tank
Buffer tank
Superheat tank
Square superheat tank

https://oilon.com/en-us – https://www.lampoassa.fi/en/

# OUR STORY FROM THE NORTH

This is Finland – the land of cold, dark and snowy winters.

When the winter comes, we can say goodbye to the light and the warmth of the sun. And yet, life must, and does, go on.

The harsh winter conditions in these parts have taught us to use reliable, energy-efficient solutions for heating our homes.

Furthermore, we have deep respect for the nature surrounding us; we cherish the clean, fresh air we breathe and the majestic stillness of our forests.

To preserve our shared home, we have developed heating solutions that utilize renewable energy sources instead of traditional fossil fuels.

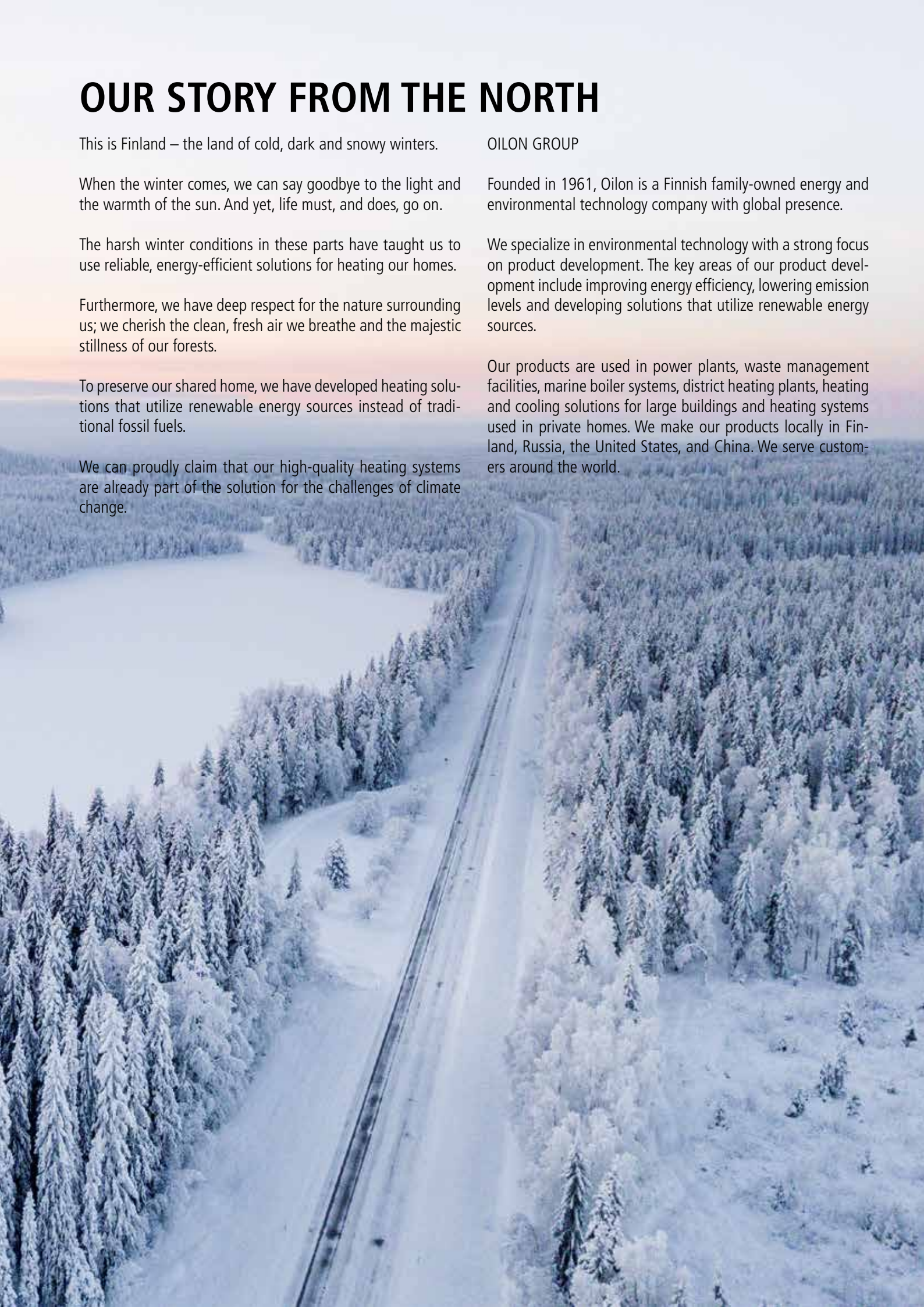
We can proudly claim that our high-quality heating systems are already part of the solution for the challenges of climate change.

OILON GROUP

Founded in 1961, Oilon is a Finnish family-owned energy and environmental technology company with global presence.

We specialize in environmental technology with a strong focus on product development. The key areas of our product development include improving energy efficiency, lowering emission levels and developing solutions that utilize renewable energy sources.

Our products are used in power plants, waste management facilities, marine boiler systems, district heating plants, heating and cooling solutions for large buildings and heating systems used in private homes. We make our products locally in Finland, Russia, the United States, and China. We serve customers around the world.

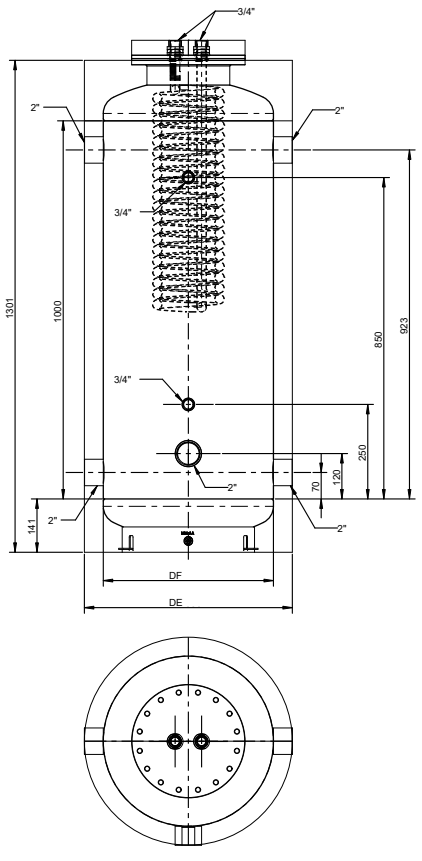


# Pre-heat tank

These tanks are intended for use with ground source heat pumps.
We offer various coil options, or the tank can be delivered without a coil preinstalled.
Maximum design temperature: 99 °C
Maximum design pressure: 6 bar

**TECHNICAL DATA**

| Model | Volume, l | Outer diam-eter, DE mm | Height, mm | Coil options available |
|---|---|---|---|---|
| Pre-heat tank 200 | 200 | 550 | 1,340 | 1 x LK45 coil for pre-heating |
| Pre-heat tank 300 | 300 | 650 | 1,340 | 1 x LK45 coil for pre-heating |



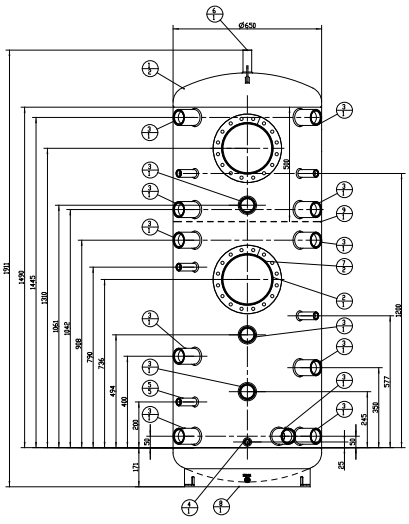

**PRE-HEAT TANK**

# Hot water storage tank with baffle

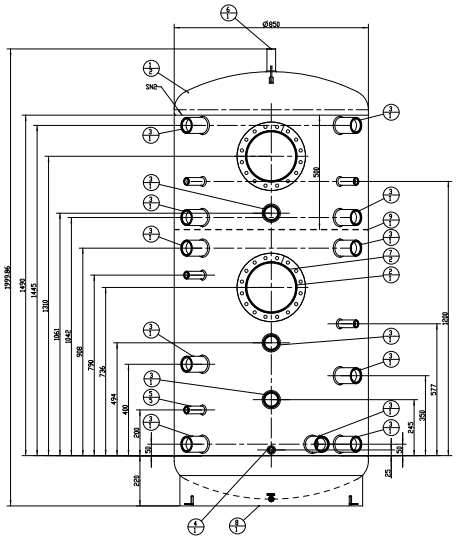
These tanks are intended for use with ground source heat pumps.
We offer various coil options, or the tank can be delivered without a coil preinstalled.
The outer insulation layer can be removed to facilitate transportation or installation in cramped spaces.
Maximum design temperature: 99 °C
Maximum design pressure: 6 bar

**TECHNICAL DATA**

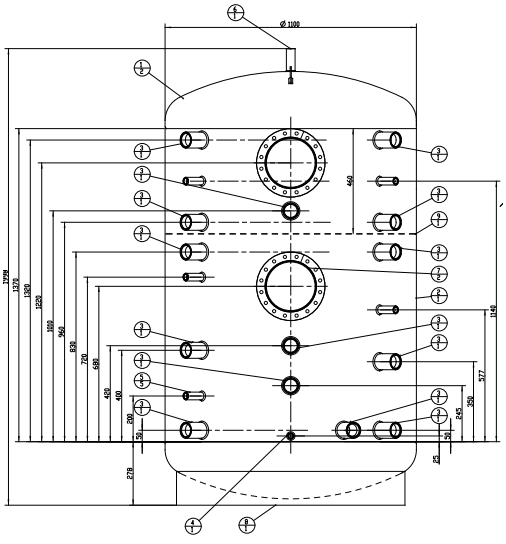
| Model | Volume, l | Outer diameter, mm | Outer diameter – no insulation, mm | Height, mm | Coil options available |
|---|---|---|---|---|---|
| Hot water storage tank with baffle 600 | 600 | 850 | 650 | 1,911 | 2 x LK45 coils, 2 x LK60 coils |
| Hot water storage tank with baffle 1000 | 1,000 | 1,050 | 850 | 2,000 | 2 x LK45 coils, 2 x LK60 coils |
| Hot water storage tank with baffle 1500 | 1,500 | 1,300 | 1,100 | 2,000 | 2 x LK45 coils, 2 x LK60 coils, 2 x LK60 coils, 2 x LK80 coils |



**HOT WATER STORAGE TANK WITH BAFFLE 600**



**HOT WATER STORAGE TANK WITH BAFFLE 1000**



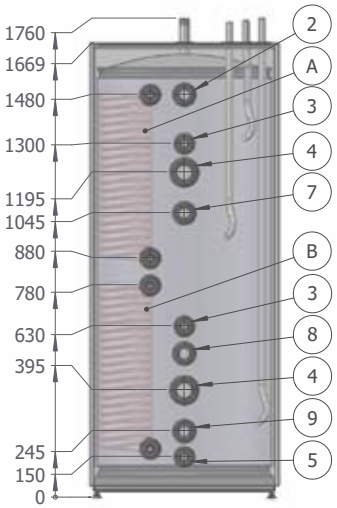
**HOT WATER STORAGE TANK WITH BAFFLE 1500**

# Rectangular hot water storage tank

Two domestic hot water coils as standard.
The hybrid storage tank version has an additional coil for solar collectors.
Maximum design temperature: 100 °C
Maximum design pressure: 3 bar

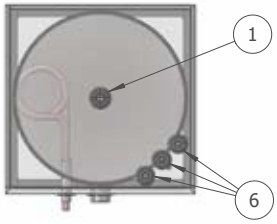
**TECHNICAL DATA**

| Model | Volume, l | Depth x width, mm | Height, mm | Clearance required for lifting the unit upright, mm | Coil |
|---|---|---|---|---|---|
| Rectangular hot water storage tank 500 | 500 | 700 x 700 | 1,730 | 1,840 | 2 x 12 VAC |
| Rectangular hot water storage tank 500 HYBRID | 500 | 700 x 700 | 1,730 | 1,840 | 3 x 12 m |

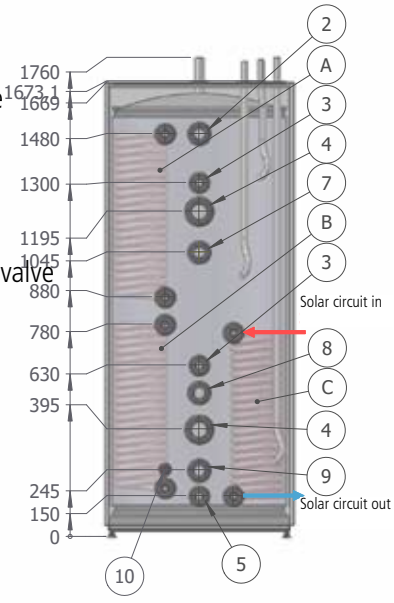



1. Expansion tank/bleed valve
2. Heating/flow
3. Temperature sensor
4. Electric immersion heater
5. Drain
6. Thermostatic water mixing valve
7. Auxiliary flow fitting
8. Return fitting
9. Return fitting

A) Hot water coil
B) Preheating coil

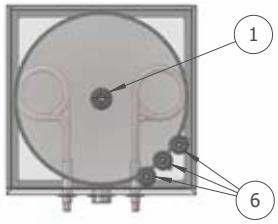



**RECTANGULAR**
**HOT WATER STORAGE TANK 500**



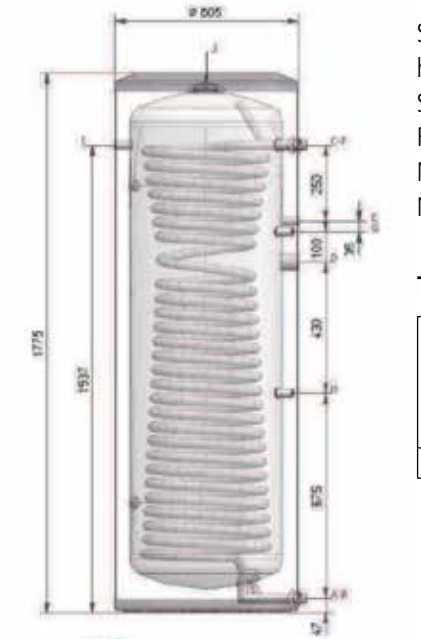

1. Expansion tank/bleed valve
2. Heating/flow
3. Temperature sensor
4. Electric immersion heater
5. Drain
6. Thermostatic water mixing valve
7. Auxiliary flow fitting
8. Return fitting
9. Return fitting
10. Solar sensor location

A) Hot water coil
B) Preheating coil
C) Solar coil




**RECTANGULAR**
**HOT WATER STORAGE TANK 500 HYBRID**

# Stainless steel domestic hot water tank




Supplied with an integrated supplementary immersion heater (3 kW, 1-stage).
Stainless steel coil and tank.
For use with heat pumps up to 10 kW.
Maximum design temperature: 100 °C
Maximum design pressure: 10 bar

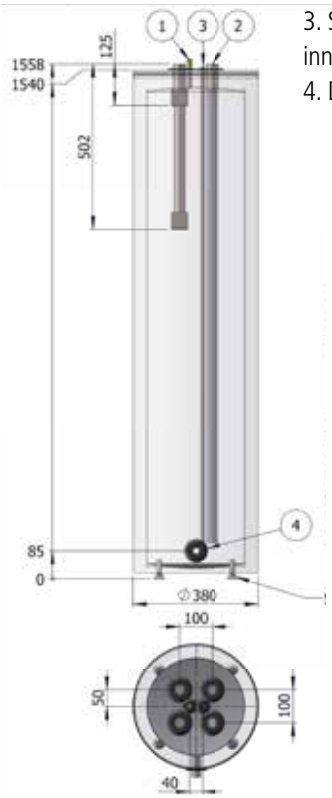
**TECHNICAL DATA**

| Model | Volume, l | Diameter Ø, mm | Height, mm |
|---|---|---|---|
| KVV300 | 287 | 595 | 1,730 |

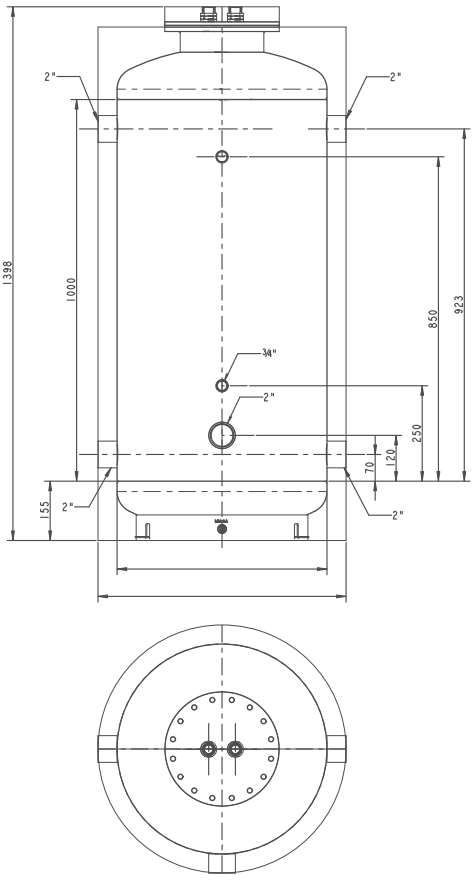
# Buffer tank

1. Bleed valve 1/8" inner thread
2. Connections 4 pcs DN 25
3. Sensor tube, lenght 1450, inner diameter 9 mm
4. Drain DN 15

**BUFFER TANK 100**




**BUFFER TANK 200 AND 300**




For use with a ground source heat pump in buildings with radiator heating (installed only if required)
Maximum design temperature: 100 °C
Maximum design pressure: 3 bar

**TECHNICAL DATA**

| Volume: | Dimensions ø x height, mm | Height mm |
|---|---|---|
| 100 | 370 x 1,570 | 1,558 |

**TECHNICAL DATA**

| Volume: | Dimensions ø x height, mm | Height mm |
|---|---|---|
| 200 | 550 x 1,340 | 1,340 |
| 300 | 650 x 1,340 | 1,340 |

# Superheat tank

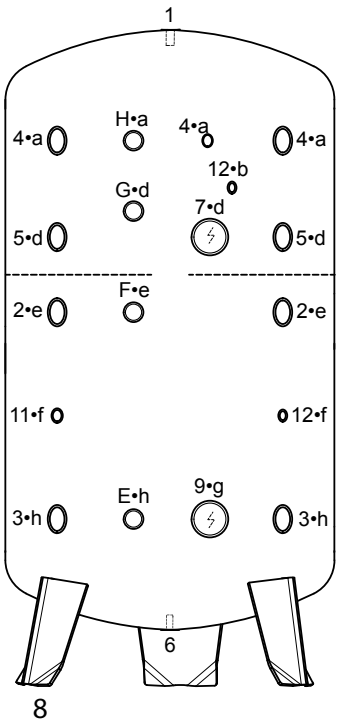
Material: S355
Max. operating temperature: 110 °C
Max. operating pressure: 3 bar
Insulation: polyurethane, thickness: 100 mm
Surfaces: plastic end caps (ABS), galvanized steel sheet (color-coated)
Domestic hot water coils: ø22 mm finned copper tube, design pressure: 10 bar. Standard coil supplied with 500–2,000-liter tanks: 2 x LK MAX (soldered), 2,500–5,000-liter tanks: 2 x LK45.
Superheat tanks come equipped with a stratifier baffle.

**STANDARD IMMERSION HEATERS FOR ROUND TANKS**

| Tank volume, l | Std. heater, kW | Standard heater position | Auxiliary heater positions in standard tanks |
|---|---|---|---|
| 500 | 6 | upper section | lower section |
| 750 | 6 | upper section | lower section |
| 1,000 | 9 | upper section | lower section |
| 1,500 | 9 | upper section | lower section |
| 2,000 | 10 | upper section | lower section |
| 2,500 | 10 | upper section | lower 2, upper 1 |
| 3,000 | 10 | upper section | lower 2, upper 1 |
| 4,000 | 10 | upper section | lower 2, upper 1 |
| 5,000 | 10 | upper section | lower 2, upper 1 |

**DHW COIL OPTIONS FOR ROUND TANKS**

| | Length, mm | Fitting, R OT | Coil surface area, m² | Flange cover, ø mm |
|---|---|---|---|---|
| LK 45 | 950 | DN 20 | 2.8 | 200 |
| LK 60 | 1,250 | DN 25 | 4.3 | 200 |
| LK 80 | 900 | DN 32 | 6.5 | 250 |
| LK 100 | 1,000 | DN 40 | 8.6 | 300 |
| LK 120 | 1,100 | DN 50 | 10.8 | 300 |
| LK 140 | 1,200 | DN 50 | 13 | 300 |
| LK MAX | 1,360 | 22 mm | 4.3 | Soldered |

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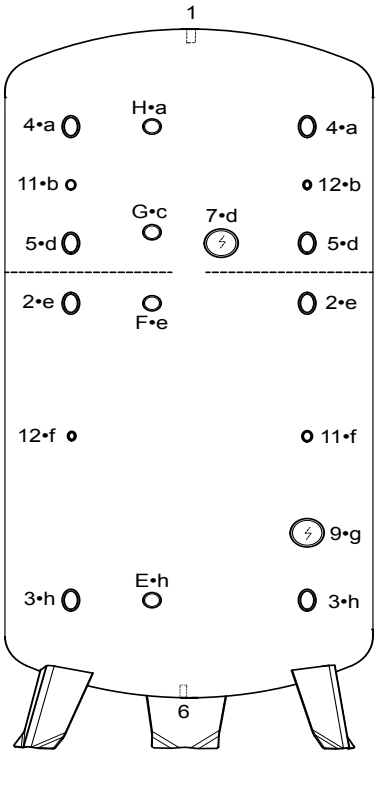
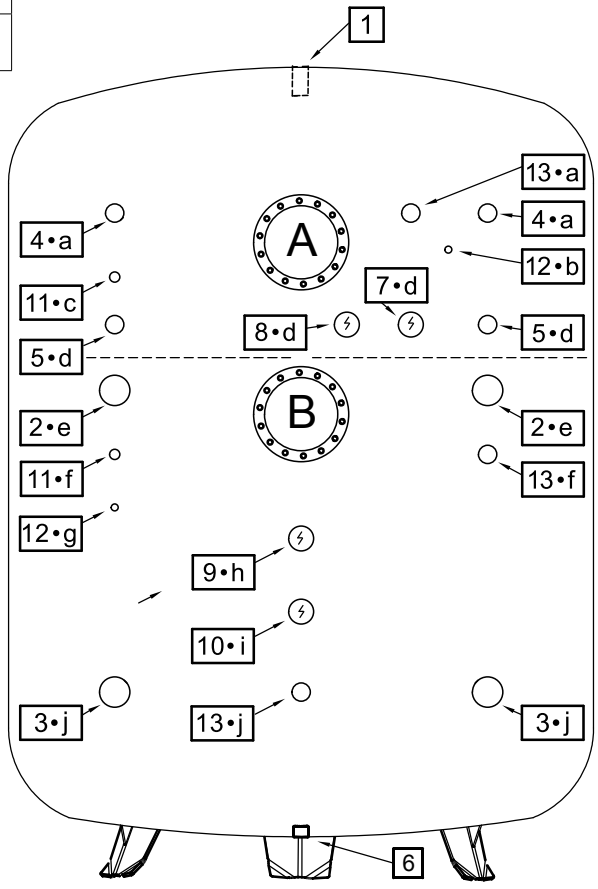
**SUPERHEAT TANK • 500 LITERS**




**SUPERHEAT TANK • 750–2,000 LITERS**




**SUPERHEAT TANK • 2,500–5,000 LITERS**

| STANDARD FITTINGS AND FITTING SIZES FOR ROUND TANKS | | 500 | 750 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 4,000 | 5,000 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Thermal relief/bleed valve fitting | 1" | 1" | 1" | 1" | 1" | 1" | 1" | 1" | 1" |
| 2 | Heating circuit LJ, flow from tank/Condenser, return to tank/Auxiliary heating | 1" | 1" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 2 1/2" | 2 1/2" | 2 1/2" |
| 3 | Heating circuit LJ, return to tank/Condenser, supply from tank/Auxiliary heating | 1" | 1" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 2 1/2" | 2 1/2" | 2 1/2" |
| 4 | Heating circuit LJ, supply from upper tank layer/Superheater, return to tank/Auxiliary heating | 1" | 1" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
| 5 | Heating circuit LJ, return to upper tank layer/Superheater, supply from tank/Auxiliary heating | 1" | 1" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
| 6 | Drain fitting | 1" | 1" | 1" | 1" | 1" | 1" | 1" | 1" | 1" |
| 7 | Port for electric immersion heater A1 | 2" | 2" | 2" | 2" | 2" | 2" | 2" | 2" | 2" |
| 8. | Port for electric immersion heater A2* | | | | | | 2" | 2" | 2" | 2" |
| 9. | Port for electric immersion heater B1 | 2" | 2" | 2" | 2" | 2" | 2" | 2" | 2" | 2" |
| 10. | Port for electric immersion heater B2* | | | | | | 2" | 2" | 2" | 2" |
| 11. | Temperature sensor/thermostat port | 1/2" | 1/2" | 1/2" | 1/2" | 1/2" | 1/2" | 1/2" | 1/2" | 1/2" |
| 12. | Sensor pocket, ID | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm |
| 13. | Auxiliary connections* | | | | | | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
| A | Domestic hot water coil, K45* | | | | | | 2 x 3/4" | | | |
| B | Domestic hot water coil, LK45* | | | | | | | | | |
| C | Domestic hot water coil, LK MAX, DHW in | 2 x 22 mm | | | | | | | | |
| D | Domestic hot water coil, LK MAX, DHW out | | | | | | | | | |
| E | Domestic hot water coil, LK MAX, DHW lower coil in | | | | | | | | | |
| F | Domestic hot water coil, LK MAX, DHW lower coil out | | | | | | | | | |
| G | Domestic hot water coil, LK MAX, DHW upper coil in | | | | | | | | | |
| H | Domestic hot water coil, LK MAX, DHW upper coil out | | | | | | | | | |

*Only in tanks with a volume of 2,500 l or more

DIMENSIONS FOR ROUND TANKS

ROUND TANKS – VERTICAL POSITIONS OF TANK FITTINGS, mm

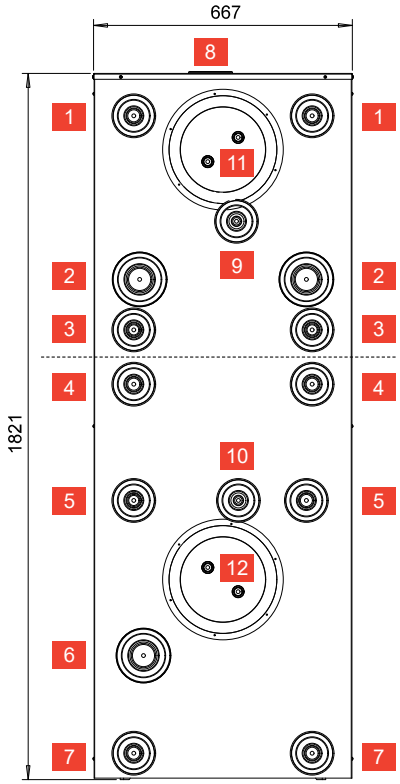
| Tank volume, l | S = S. heat B = Basic | Weight, kg | Height, mm | Width, no insulation, mm (det. segments) | Total width, mm | Height tolerance, mm* | a | b | c | d | e | f | g | h | i | j |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | B | 185 | 1,550 | 720 | 900 | ± 10 | 1,190 | 1,055 | 996 | 850 | | 570 | 470 | 344 | | |
| 500 | S | 185 | 1,550 | 720 | 900 | ± 10 | 1,160 | 1,060 | 1,010 | 955 | 795 | 575 | 355 | 355 | | |
| 750 | B | 235 | 2,100 | 770 | 950 | ± 40 | 1,681 | 1,495 | 1,309 | 1,180 | | 787 | 687 | 380 | | |
| 750 | S | 235 | 2,100 | 770 | 950 | ± 40 | 1,665 | 1,505 | 1,375 | 1,345 | 1,180 | 815 | 550 | 365 | | |
| 1,000 | B | 265 | 2,150 | 870 | 1,050 | ± 40 | 1,731 | 1,545 | 1,359 | 1,230 | | 837 | 737 | 430 | | |
| 1,000 | S | 265 | 2,150 | 870 | 1,050 | ± 40 | 1,715 | 1,555 | 1,425 | 1,395 | 1,230 | 865 | 600 | 415 | | |
| 1,500 | B | 325 | 2,200 | 1,070 | 1,250 | ± 40 | 1,731 | 1,545 | 1,359 | 1,230 | | 837 | 737 | 430 | | |
| 1,500 | S | 325 | 2,200 | 1,070 | 1,250 | ± 40 | 1,745 | 1,585 | 1,455 | 1,425 | 1,260 | 895 | 630 | 445 | | |
| 2,000 | B | 375 | 2,250 | 1,220 | 1,400 | ± 40 | 1,761 | 1,575 | 1,389 | 1,260 | | 867 | 767 | 460 | | |
| 2,000 | S | 375 | 2,250 | 1,220 | 1,400 | ± 40 | 1,760 | 1,600 | 1,470 | 1,440 | 1,275 | 910 | 645 | 460 | | |
| 2,500 | S and B | 380 | 2,250 | 1,300 | 1,500 | ± 40 | 1,750 | 1,650 | 1,575 | 1,445 | 1,265 | 1,090 | 945 | 860 | 660 | 440 |
| 3,000 | S and B | 420 | 2,300 | 1,400 | 1,600 | ± 40 | 1,795 | 1,695 | 1,620 | 1,490 | 1,310 | 1,135 | 990 | 905 | 705 | 485 |
| 4,000 | S and B | 500 | 2,450 | 1,600 | 1,800 | ± 40 | 1,785 | 1,685 | 1,610 | 1,480 | 1,300 | 1,125 | 980 | 895 | 695 | 475 |
| 5,000 | S and B | 620 | 2,500 | 1,800 | 2,000 | ± 40 | 1,855 | 1,755 | 1,680 | 1,550 | 1,370 | 1,195 | 1,050 | 965 | 765 | 545 |

* Differences in tank height have an impact on the vertical position of sleeves, but not the distance between them.

# Square superheat tank

Dimensions: height / width / depth: 1,821 x 667 x 675
Volume 450 l
Weight: 212 kg
Min. operating temperature: 0 °C
Max. operating temperature: 100 °C
Max. operating pressure: 3 bar
Insulation: polyurethane
Surfaces: plastic, color-coated galvanized steel sheet
Domestic hot water coils: ø22 mm finned copper tube, 2 x 10 m, 2 x LK45. The total coil fluid volume is 6.2 liters, and the total external heat transfer surface area is 5.1 m².
Superheat tanks come equipped with a stratifier baffle.

To ensure sufficient heating and domestic hot water production, the tank should always be equipped with a backup heater. We offer optional 6-kW electric immersion heater kits for the TV450 Compact tank.




**TV450 COMPACT STORAGE TANK FITTINGS**

| | | |
|---|---|---|
| 1 | Heating circuit LJ, supply from upper tank layer/ Superheater, return to tank/Auxiliary heating | 1" |
| 2 | Electrical immersion heater ports for the upper tank section | 2" |
| 3 | Heating circuit LJ, return to upper tank layer/ Superheater, supply from tank/Auxiliary heating | 1" |
| 4 | Heating circuit LJ, flow from tank/Condenser, return to tank/Auxiliary heating | 1" |
| 5 | Heating circuit LJ, flow from tank/Auxiliary heating | 1" |
| 6 | Electrical immersion heater port for the lower tank section | 2" |
| 7 | Heating circuit LJ 2, flow from tank/Auxiliary fitting | 1" |
| 8 | Bleed valve fitting | 1" |
| 9 | Sensor fitting for the upper tank section | ½" |
| 10 | Sensor fitting for the lower tank section | ½" |
| 11 | Domestic hot water coil, upper tank section | Cu22 |
| 12 | Domestic hot water coil, lower tank section | Cu22 |

**ACCESSORIES FOR THE TV450 COMPACT TANK**

| | | **CONTENTS** |
|---|---|---|
| Electric immersion heater with thermostat | 6 kW | Supplementary heater + housing with overheat protection and standoff collar (no installation) |
| Electric immersion heater with overheat protection | 6 kW | Supplementary heater and control box with overheat protection, thermostat and standoff collar (no installation) |

## SEPARATE STORAGE TANKS

Separate storage tanks are hot water tanks designed for use with ground source heat pumps. The required tank volume depends on the building and its water system configuration. To supplement the heat pump, various other heat sources can be connected to the tank. Our versatile round storage tanks can be configured or modified to meet almost any need.

The tanks can be equipped with a range of immersion heaters with different power ratings. If connected to a system controlled by the automatic Ässäcontrol control system, the tank should be equipped with an immersion heater kit that includes an overheat protection device. If the Ässäcontrol system is not used, a kit with both a thermostat and an overheat protection device should be selected instead. Both the standard and the optional immersion heaters are delivered with the necessary control and safety devices.

In configurations using a separate storage tank, domestic hot water is heated inside a copper coil immersed in the tank. This results in excellent water turnover, keeping the water in the domestic hot water circuit fresh. In round tank versions, the size of the coil can be adjusted to meet local needs. This may change the position of the tank's standard connections.

## SUPERHEAT TANKS

Superheat tanks are used for storing the energy required for heating domestic hot water and the heating energy required by your home's water-circulating floor and/or radiator heating system. These tanks are able supply a high and steady flow of domestic hot water while providing even heating for your home.

For the TV450 Compact model, the primary design goals were versatility, minimal space requirement and advanced energy efficiency performance. The tank has a square, installation-friendly shape that fits in a small space with very little headroom. Thanks to the closed-cell foam molding technique used for insulation, TV450 Compact has extremely low heat loss values.

Our superheat tanks can be used in both new buildings and refurbishment projects. The tank's interior is divided into two sections, separated by a stratifier baffle that has a flow channel in the middle. This baffle ensures that the heat in the tank is divided effectively into layers. The section above the baffle is charged with the hottest energy produced by the ground source heat pump: the superheat. Thanks to the baffle, the hottest energy stays in the upper section of the tank and doesn't mix with the other storage layers in the tank. This allows the system to produce hot domestic water with extremely high energy efficiency.

## ACCUMULATOR TANKS

Accumulator tanks are intended for supplementing ground source heat pumps that do not have a desuperheater. The tanks are available with different coil sizes and heater ratings. Accumulator tanks have no baffle inside.