EN

USER MANUAL

01 | 01-11-2022

DOMESTIC HOT WATER TANKS

AKU ST 50 S
AKU ST 150 S
AKU ST 300 S

S-THERM | sinclair HEAT PUMPS

„ORIGINAL INSTRUCTIONS“

IMPORTANT NOTE:

Read this manual carefully before installing or operating your new heat pump.
Make sure to save this manual for future reference.

EN For downloading manual for this product, please enter the model name at this link:

CZ Pro stažení manuálu k tomuto produktu zadejte modelové označení do následujícího odkazu:

SK Pre stiahnutie manuálu k tomuto produktu zadajte modelové označenie do nasledujúceho odkazu:

DE Um das Handbuch für dieses Produkt herunterzuladen, geben Sie bitte den Modellnamen für diesen Link ein:

HR Za preuzimanje priručnika za ovaj proizvod unesite naziv modela na ovu vezu:

HU Termék kézikönyvének letöltéséhez írja be a modell megnevezését az alábbi linkre:

SL Za prenos navodil za uporabo tega izdelka, vnesite ime modela na tej povezavi:

RU Чтобы загрузить руководство для этого продукта, введите обозначение модели по следующей ссылке:

IT Per scaricare il manuale di questo prodotto, inserisci il nome del modello a questo link:

ES Para descargar el manual de este producto, ingrese la designación del modelo en el siguiente enlace:

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1 TECHNICAL SPECIFICATION OF THE TANK

1.1 Table of Parameters

Tank type	AKU ST 50 S	AKU ST 150 S	AKU ST 300 S
Usable volume [L]	58	150	284
Maximum permissible pressure PS [bar]	6		
Maximum permissible temperature TS [°C]	90		
Empty tank weight [kg]	23	39	61
Static loss in 24 hours [kWh/24h]	0.75	1.25	2.15

1.2 Description of the AKU ST Tank

Accumulation tanks of the AKU ST series are designed for the accumulation and subsequent distribution of thermal energy from solid fuel boilers, heat pumps, solar collectors, electric boilers, etc. The tanks do not have the option of installing heat exchangers, only direct installation of an electric heating element (e-heater) is possible. Electric heating elements (with power inputs in the range of 1.5–6 kW), which are powered by a voltage of 3×230 V, can be installed directly into the M48×2 welded-on pieces.
The tank vessel is made of sheet metal and the bottom of class 11 steel and is tested with an overpressure of 8.6 bar. Three adjustable legs (standing version) are welded to the vessel. Furthermore, thevessel is equipped with inlet and outlet ports for water, venting, sludge removal, e-heater, regulation and thermometer. Anearthing screw is welded from the front of the vessel. The tank is insulated with polyurethane (PUR) foam with a thickness of min.50 mm, which is protected by a PVC shell and covers.

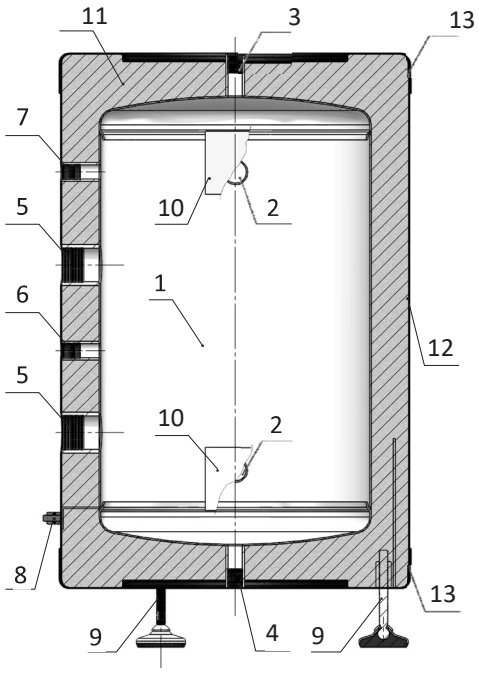


Fig. 1 AKU ST 50 S- Description

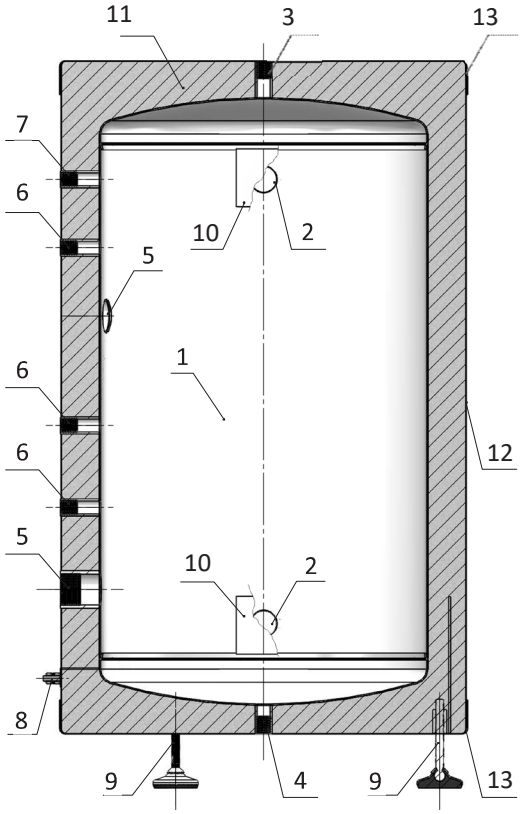


Fig. 2 AKU ST 50 - 500 S - Description

Description:

1. Tank vessel
2. Inlet/outlet port (G5/4")
3. Venting port (G½")
4. Drain port (G½")
5. Port for e-heater (M48×2)
6. Port for regulation (universal) (G½")
7. Port for thermometer (G½")
8. Earthing screw
9. Adjustable leg
10. Deflector
11. Insulation made of hardened PUR foam
12. PVC shell
13. Plastic cover

1.3 AKU ST Tank Drawing

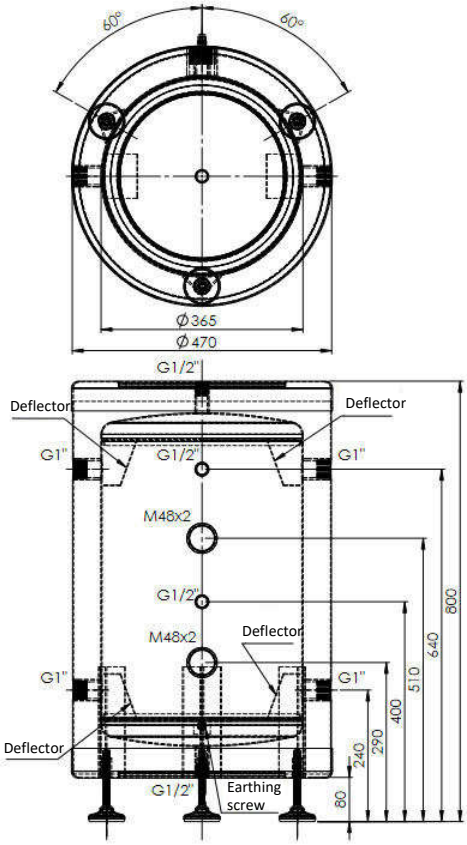


Fig. 3 AKU ST 50 S

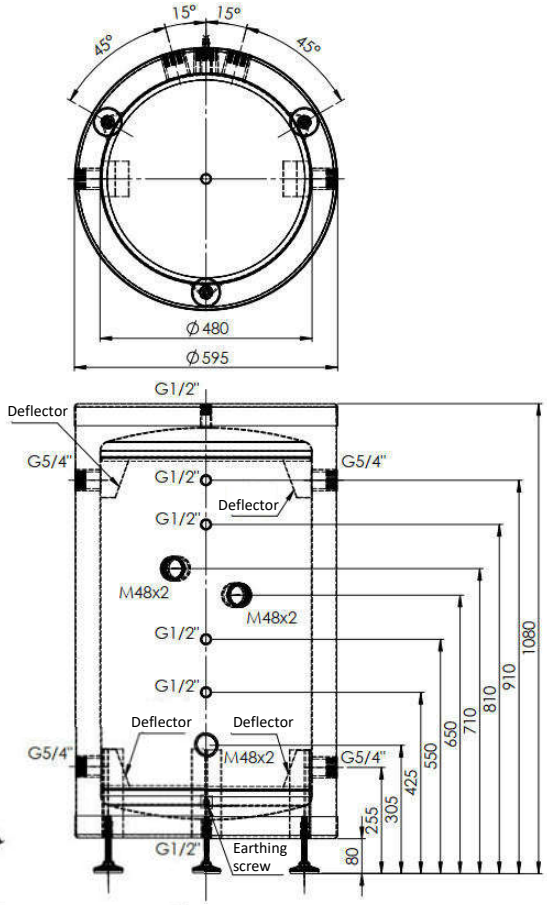


Fig. 4 AKU ST 150 S

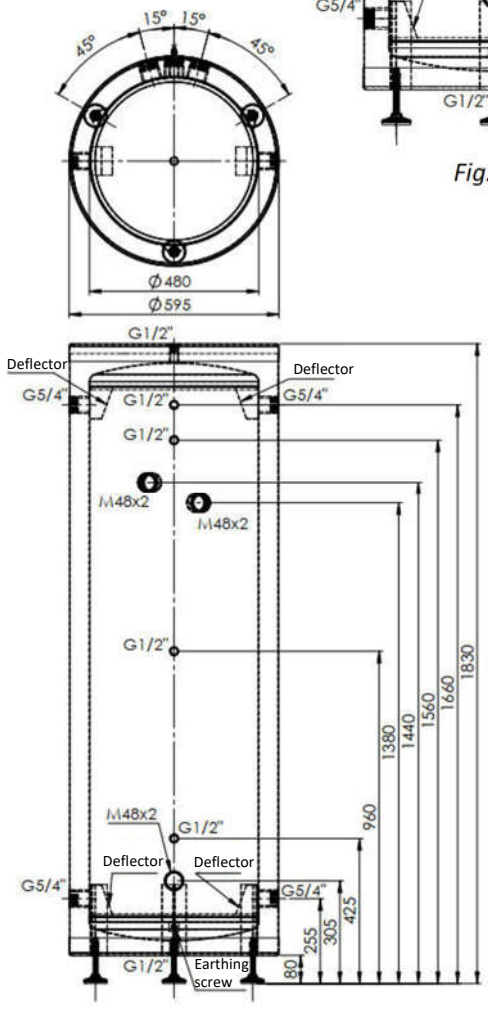


Fig. 5 AKU ST 300 S

In case this tank is made to order according to the customer's requirements (i.e. different size and volume of the tank, inlet and outlet ports layout, etc.) but with the same material properties and functions, this tank must abide by the general instructions resulting from this manual for installation, operation, and maintenance.

2 ECOLABELLING

In September 2015, the measure of ecodesign of heaters and hot water storage tanks defined in EU Commission Regulation No. 814/2013, based on Directive 2009/125/EC, came into effect. The aim of this directive is to reduce energy consumption while increasing the share of renewable sources within the European Union. The concept of ecodesign, which is introduced by the above-mentioned Directive, determines the minimum parameters that a given product must meet in order to be sold on the EU market. The ecodesign of the products themselves is then set so that the product is always optimized in terms of its impacts on the environment while maintaining all its important functions.
At the same time, in connection with ecodesign, the obligation to label products with energy labels (ecolabelling), which is defined in EU Commission Regulation No. 812/2013, based on Directive 2010/30/EU, has come into force. This Regulation establishes requirements for energy labelling and the provision of additional product information for water heaters with a nominal thermal output of ≤ 70 kW and hot water storage tanks with a useful volume of ≤ 500 litres. Among the main reasons for the implementation of energy labels are not only to reduce energy consumption and improve the negative impacts on the environment but also to provide a quick overview of individual products.

2.1 Description of the Tank Energy Label

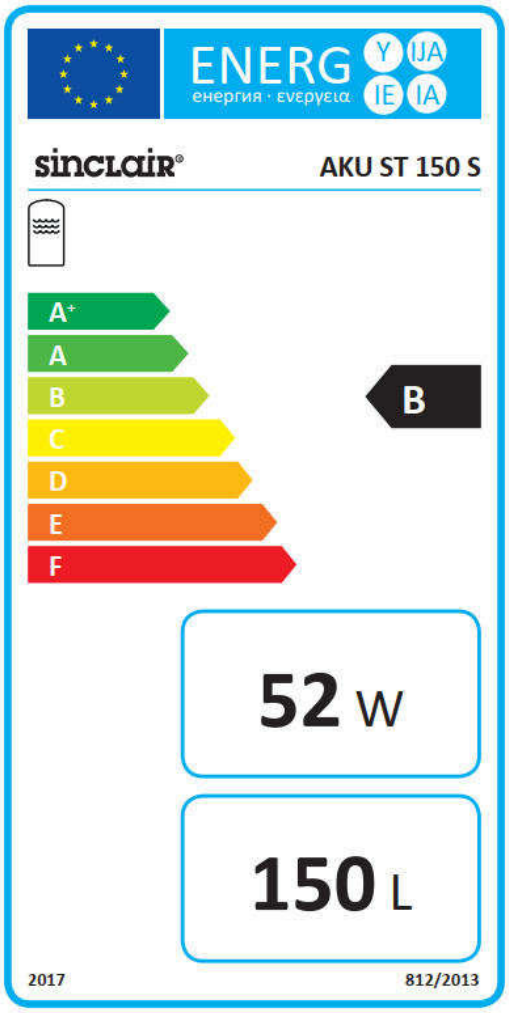


Fig. 6 Energy label

The energy label contains the following information:

SINCLAIR
- supplier's trademark

AKU ST 150 S
- model identification mark used by the supplier

B
- energy efficiency class of the hot water tank

52 W
- constant loss in watts

150 L
- hot water tank volume in litres

2.2 Results of Measurements and Calculations of Technical Parameters

Tank type	AKU ST 50 S	AKU ST 150 S	AKU ST 300 S
Energy efficiency class	B	B	C
Static loss (W)	32.3	51.9	90.3
Usable volume (L)	58	150	284

2.3 Energy Labels of the Tank

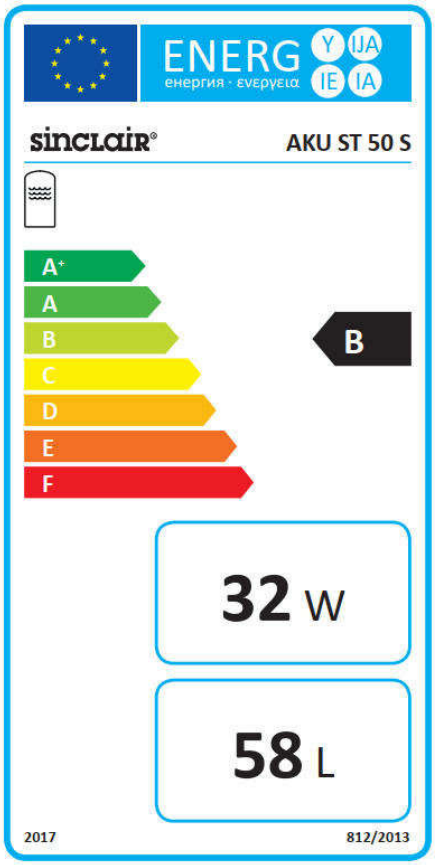


Fig. 7 AKU ST 50 S Energy label

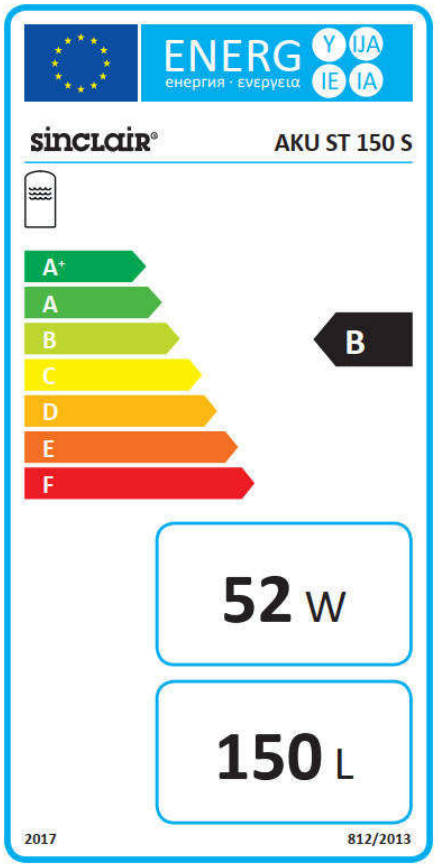


Fig. 8 AKU ST 300 S Energy label

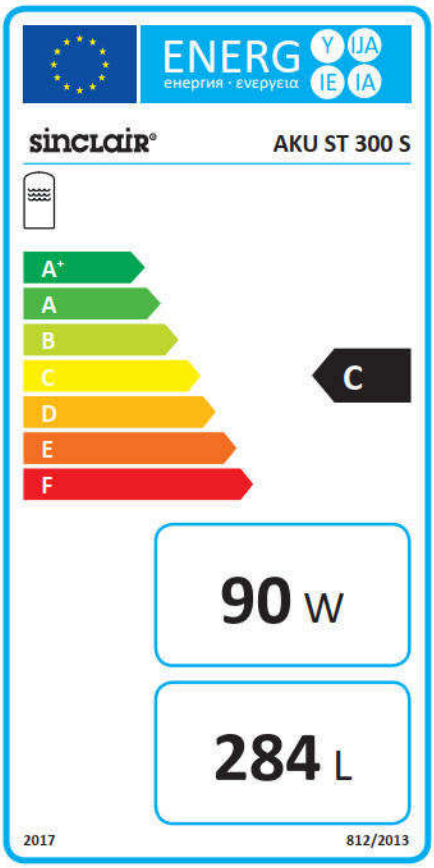


Fig. 9 AKU ST 300 S Energy label

3 INSTALLATION OF THE AKU ST TANK

Steel storage tanks are designed to store process water, heating water, condensate or coolant in pressure circuits. These steel tanks may be used in the heating, water supply or other industries.

Attention, these tanks are not intended for heating or accumulation of domestic hot water (DHW)!

All electrical and piping works, adjustment and commissioning must be carried out by a competent professional company!

3.1 Instructions for Carrying Out the Plumbing Work on the Water and Heating Systems

Installation must be carried out by a professionally qualified person or company in accordance with the applicable technical regulations and valid standards.

The tank can be placed in operating room or open space. When placing the tank, safety regulations, standards and fire protection rules must be observed. The tank must be placed so that it allows access to all its parts, both from the inside and outside, as well as to the fittings when carrying out inspections, tests, repairs, cleaning and maintenance. The nameplate must be accessible to maintain its permanent legibility.
The tank must be placed on supports, load-bearing foundations or floors that are dimensioned for the load during the pressure test. The position of the tank must be solved in such a way that allows moving the tank during repairs.

If the tank is equipped with an earthing screw, it is necessary to earth it using an earthing CY wire with a cross-section of min. 6 mm. If the size or construction of the tank does not allow the installation of an earthing screw, it must be earthed using suitable earthing clamps.
All transitions and fittings connected to the tank must also be earthed and electrically interconnected using suitable clamps. This electrical interconnection and earthing have to be done also using the above-mentioned earthing wire and these wires from the individual clamps/terminals must be connected to the designated earthing point. All connections and earthing must be done in accordance with applicable national standards and the measured value of earth resistance must conform to the technical specifications for the application.
In case of failure of the supplied tank, the user is required to provide the manufacturer with a valid document (building audit report) about checking the earthing and its results. The manufacturer reserves the right to carry out its own inspection and measurements. If the tank earthing is connected to the electrical wiring, where the obligatory inspection was not performed or has failed, it is a serious violation of the installation and operating conditions. In such case, the manufacturer assumes no liability for injuries resulting from the operation of such installed tank, nor for any damage that may occur to the tank.

3.2 Wiring Instructions (for Tanks Additionally Equipped With an E-Heater)

The electrical installation must only be carried out by qualified personnel in accordance with applicable national standards and laws. The wiring diagram for a 1-phase e-heater with a 1-phase thermostat is shown in Figure 10. The wiring diagram for a 3-phase e-heater with a 1-phase thermostat is shown in Figure 11, and the wiring diagram for a 3-phase e-heater with a 3-phase thermostat can be found in Figure 12. The most suitable cable for connecting the e-heater to the LV network is the CYKY type with the number of wires and their cross-section chosen according to the type of connection, power input of the e-heater, and size and characteristics of the protection element. The issue of protection is comprehensively addressed in BS EN 60898-1.
Place the cable for older TN-C networks according to the original ČSN 341050 (or equivalent), for new installations of TN-S network according to ČSN 332000-5-52 (or equivalent).

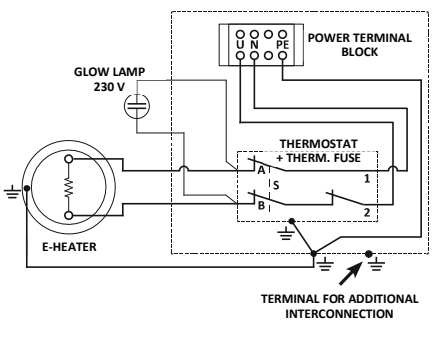


Fig. 10 Wiring of the 1-phase e-heater and the 1-phase thermostat

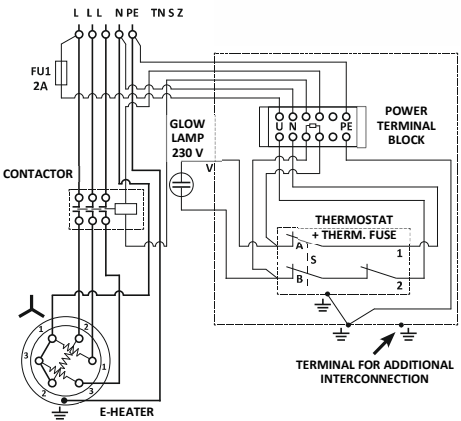


Fig. 11 Wiring of the 3-phase e-heater and the 1-phase thermostat

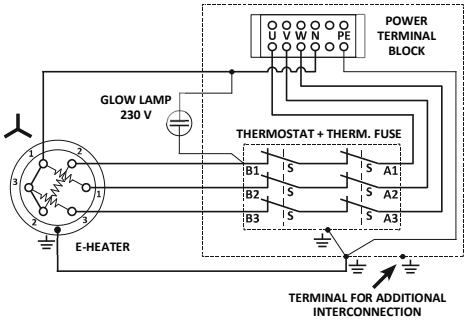


Fig. 12 Wiring of the 3-phase e-heater and the 3-phase thermostat

4 COMMISSIONING THE TANK

4.1 Procedure for Commissioning the Tank

This tank is not intended for domestic drinking water.
The tank is to be filled together with the heating system in compliance with the applicable standards and regulations. To reduce corrosion, it is recommended to use appropriate products for the heating system. The quality of the heating water depends on the quality of water that is used to fill up the system at the time of commissioning, the quality of the make-up water, and the frequency of its refilling. This has a great impact on the life of heating systems. Poor quality of heating water may cause problems such as corrosion of the equipment and incrustation, especially on heat-transfer surfaces.
The quality of heating and make-up water is specified by ČSN 07 7401 or an equivalent standard.
Fill the heating circuits with appropriate fluids and bleed the system. Make sure that all connections are tight and check the pressure in the system. Set the parameters of the heating controller according to the documentation and manufacturer's recommendations. Periodically check that all control and adjustment elements are working properly.

The tank can never be put into operation without a built-in safety valve and this valve must not be dismounted during the use of the tank!
The functionality of the safety valve must be checked once a month.

4.2 Safety Valve Test

The safety valve must be checked by releasing the water for a short time. This can be done by a valve installed on the safety fitting. Manually turn or press the valve to release the water into the drain. The water must stop flowing after the valve is released. After this test, when the pressure in the tank is increased due to heating, some water may drip out. After the water has been released and the pressure in the tank has been reduced, this dripping must stop. If this does not happen, the valve is defective and must be repaired immediately by a professionally qualified company.

4.3 **Thermostat Setting** (for Tanks Additionally Equipped with an E-Heater)

The tank thermostat must be set so that the operating temperature indicated on the nameplate is never exceeded on the installed thermometer. When this temperature is reached, the e-heater must be disconnected by the thermostat. Electric heating is indicated by the light of the indicator on the e-heater cover. An inspection by a professionally qualified person or company must be carried out once a year.
If the e-heater continues to operate even after reaching the target temperature set on the thermostat, it is necessary to immediately disconnect the e-heater from the mains and contact a specialist company or manufacturer.

It is inadmissible to disable or tamper with the thermal fuse that interrupts the power supply of the e-heater if the temperature of the water in the tank rises above 90 °C in the event of a thermostat failure.

5 TANK MAINTENANCE

5.1 Tank Maintenance

During maintenance of the tank that is equipped with the e-heater, please disconnect the e-heater from the power supply. To clean the external parts of the tank, use a damp cloth and an appropriate cleaner. Never use abrasive cleaners, solvents, petroleum-based products, etc.
Check all joints for water leaks.

5.2 Disposal of Packaging Material and Non-Functional Product

To ensure the return and recovery of the packaging material, a service fee has been paid for the packaging in which the product was delivered. The service fee was paid to EKO-KOM a.s. pursuant to Act no. 477/2001 Coll. as amended. The client number of our company is EK-P04070004. Dispose of tank packaging materials at a public waste disposal site. Uninstall the discarded and unserviceable product after the end of its operation and transport it to the waste recycling centre (collecting yard), or contact the manufacturer.

5.3 Warranty

The standard warranty period is 24 months from the date of commissioning, but no longer than 25 months from the date of sale of the product.

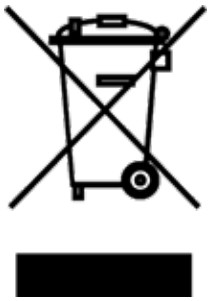
5.4 Warranty Conditions

- The installation of the product and its commissioning were carried out by a professionally qualified company or person.
- When making a warranty claim, the customer submits the documents required to apply for the claim (properly completed and confirmed warranty card, proof of purchase, or other documents)
- Installation and commissioning were carried out in accordance with the technical conditions specified in the installation and operation manual, on the product itself and the conditions specified in general obligatory regulations or technical standards.
- During the operation of the product, the specified technical conditions, which are stated in the installation and operation manual, on the product itself and in general obligatory regulations or technical standards, were observed.
- All servicing carried out on the product during the warranty or post-warranty period must be recorded and confirmed by a qualified company or service technician in the warranty card or in the operating and service record form, which is part of this accompanying documentation.
- A legible and undamaged nameplate with the corresponding serial number must be attached to the product.

5.5 Cases not Covered by the Warranty

- The product was installed in contradiction to the installation and operation manual or technical standards.
- The defect was caused by improper or insufficient service or maintenance.
- The product was used for a purpose other than that for which it is intended.
- The defect was caused by unprofessional intervention in the product or its unprofessional modification.
- The defect was caused by improper transport or other mechanical damage.
- The defect was caused by defective, missing or incorrectly adjusted system components that are absolutely necessary for the proper function of the product.
- The malfunction was caused by a natural disaster or other unforeseeable factors (flood, storm, fire)
- Tampering with or falsifying the warranty card or other documents associated with the sale and warranty of this product was detected.

NOTE CONCERNING PROTECTION OF ENVIRONMENT



This product must not be disposed of via normal household waste after its service life, but must be taken to a collection station for the recycling of electrical and electronic devices. The symbol on the product, the operating instructions or the packaging indicate such disposal procedures. The materials are recyclable in accordance with their respective symbols. By means of re-use, material recycling or any other form of recycling old appliances you are making an important contribution to the protection of our environment. Please ask your local council where your nearest disposal station is located.

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HEAT PUMPS