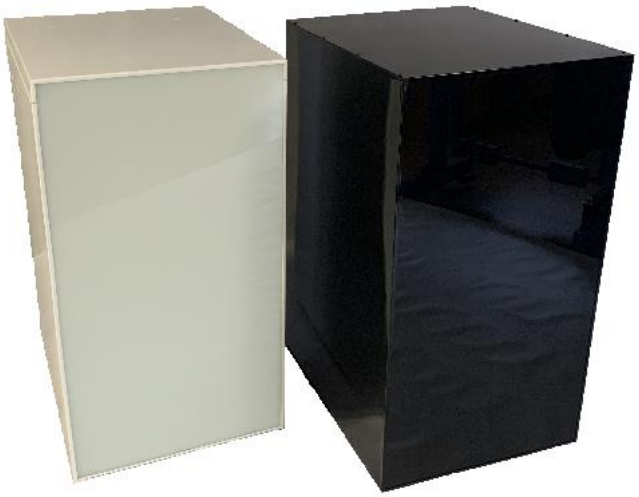


S-TANK

Technical data sheet for the

P Crystal Series Tank

150

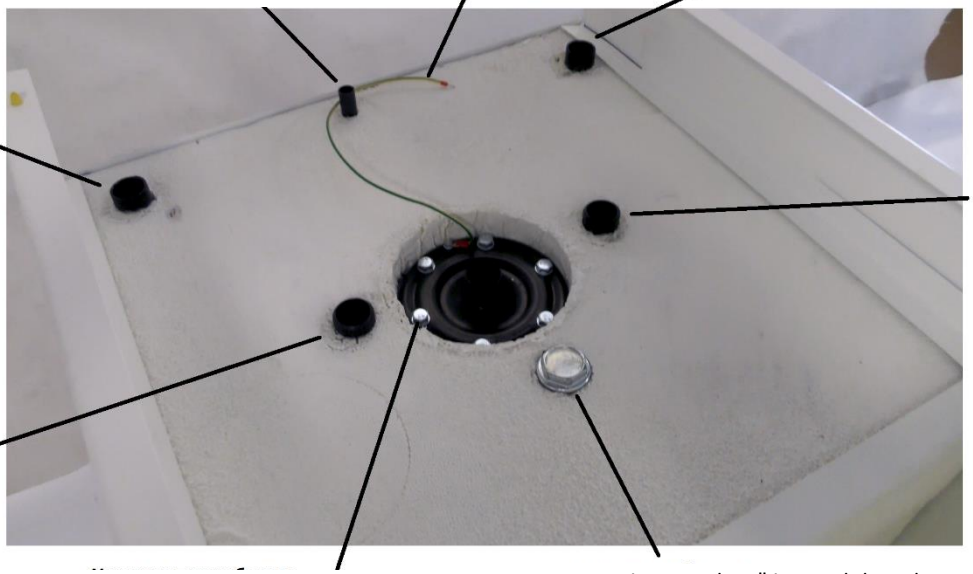
liters

for the HWS systems

The boiler temperature sensor sleeve is of a sliding type throughout the boiler height. This makes it possible to adjust the tank loading efficiency by immersing the sensor to different levels (14 mm internal)

Earthing connection up to 4 Ohm

Return heat transfer fluid from tank to boiler, 1" external thread



Heat transfer fluid supply from boiler to heat exchanger 1" external thread

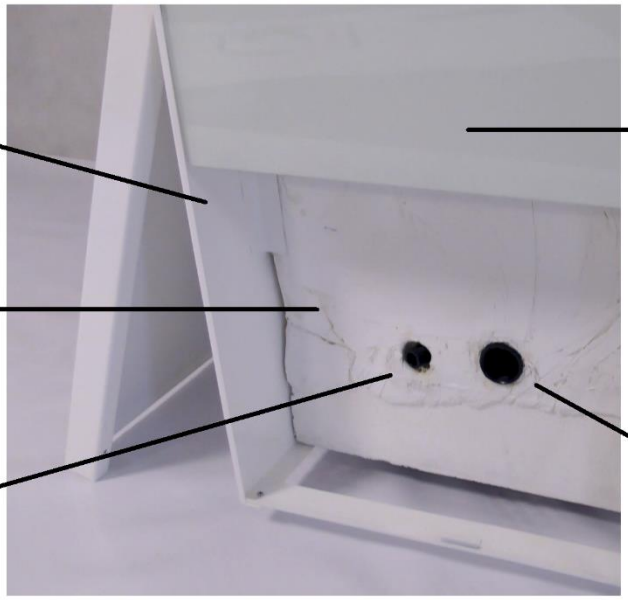
1" external thread Cold water supply pipe to the tank or recirculation pipe. Depending on the need, the pipe can be removed and placed in the opposite branch. Long cold water supply tube. Short recirculation tube.

1" external thread Cold water supply pipe to the tank or recirculation pipe. Depending on the need, the pipe can be removed and placed in the opposite branch. Long cold water supply tube. Short recirculation tube.

короткая.

Tightening torque of flange cover bolts – 8 N*m.
If this value is significantly exceeded, the thread may be stripped and the tank may be damaged

Magnesium anode, 1" internal thread



Powder-coated steel tank external insulation body

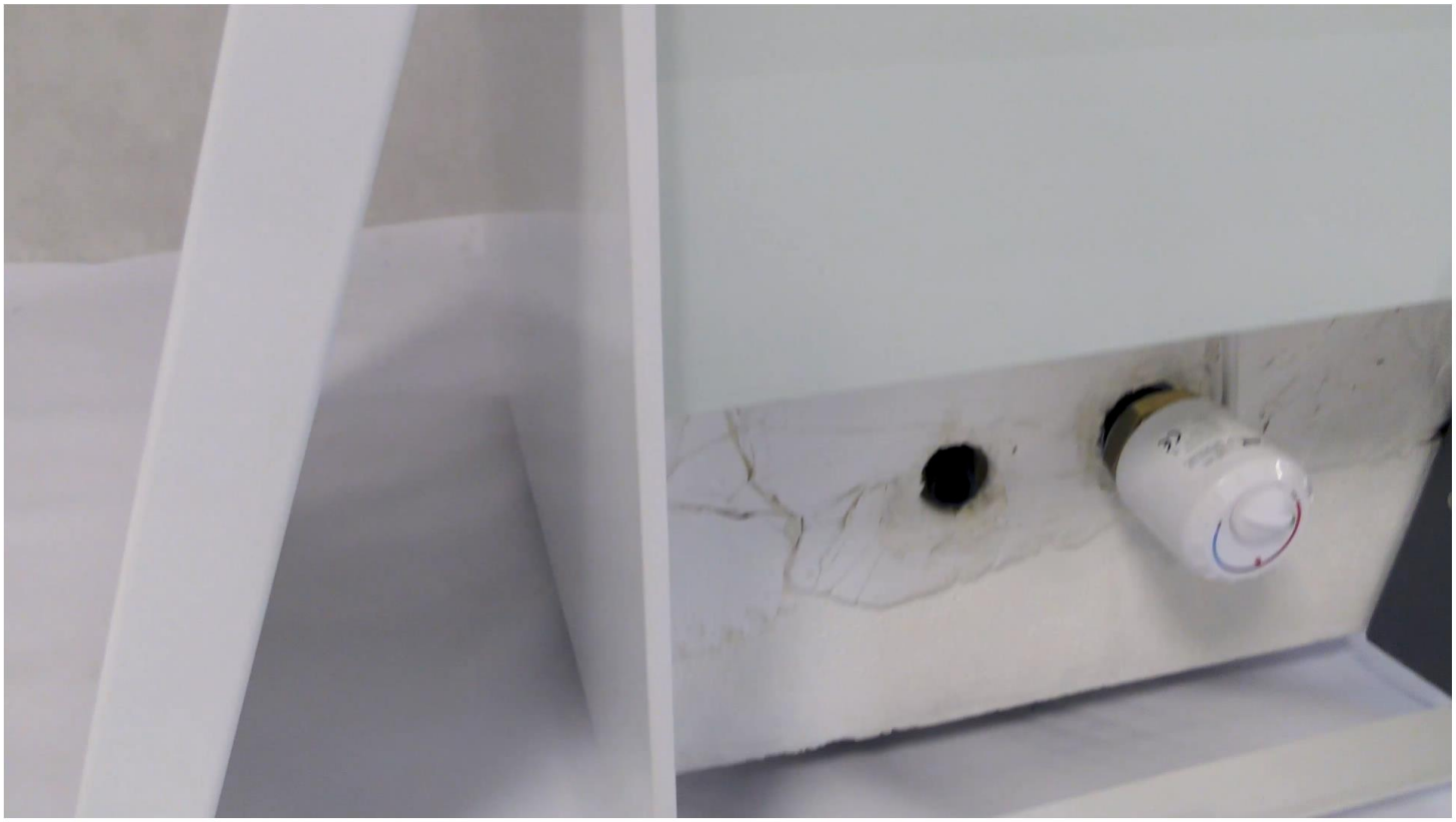
Color-coated tempered glass or organic glass with color-matched lining material.

Polyurethane foam insulation with average thickness of 80-85 mm

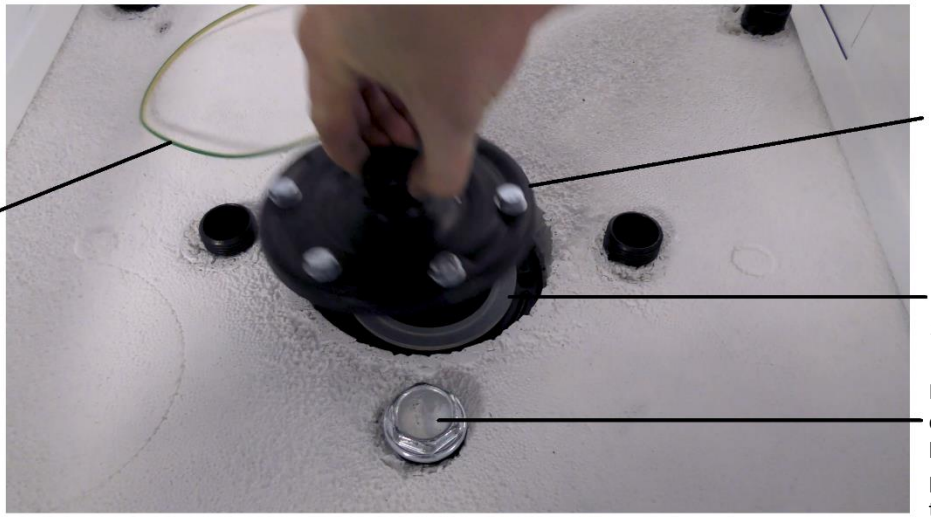
Heating element mounting hole. 11/2" internal threaded hole diameter.
A flange for mounting a dry heating element and thermostat can also be provided upon prior request.
If necessary, a dry heating element can be replaced with a wet heating element using flange union.

Drain port, 1/2" internal thread

Example of heating element installation with automatic thermostat



Heating element power cable is routed to the tank top and then to the rear wall. There you can easily plug it into a socket or into a tray and bring it to the power panel



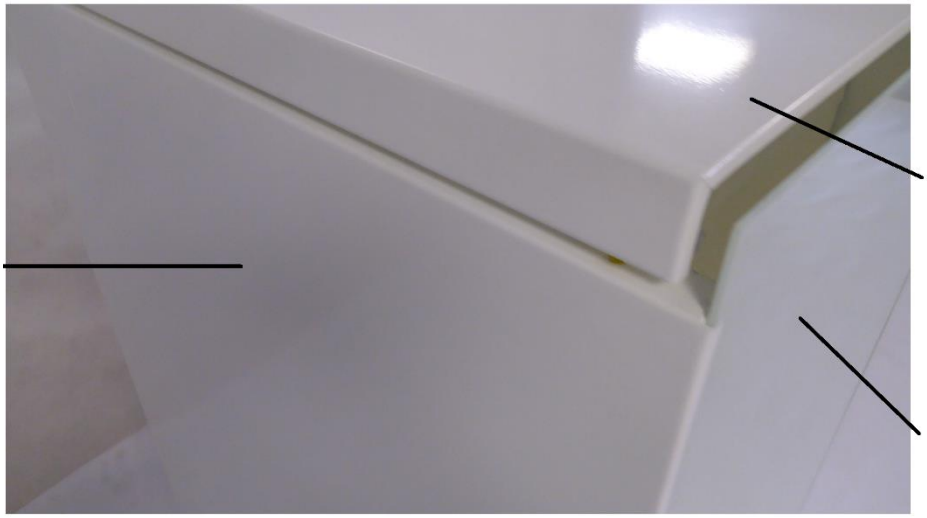
Ground wire connection is required, even if there is no heating element in the tank

Inspection flange with 1" internal thread and six locking bolts.

High temperature silicone

Magnesium anode 26 mm in diameter and 650 or 840 mm long according to customer preferences 1" internal thread.

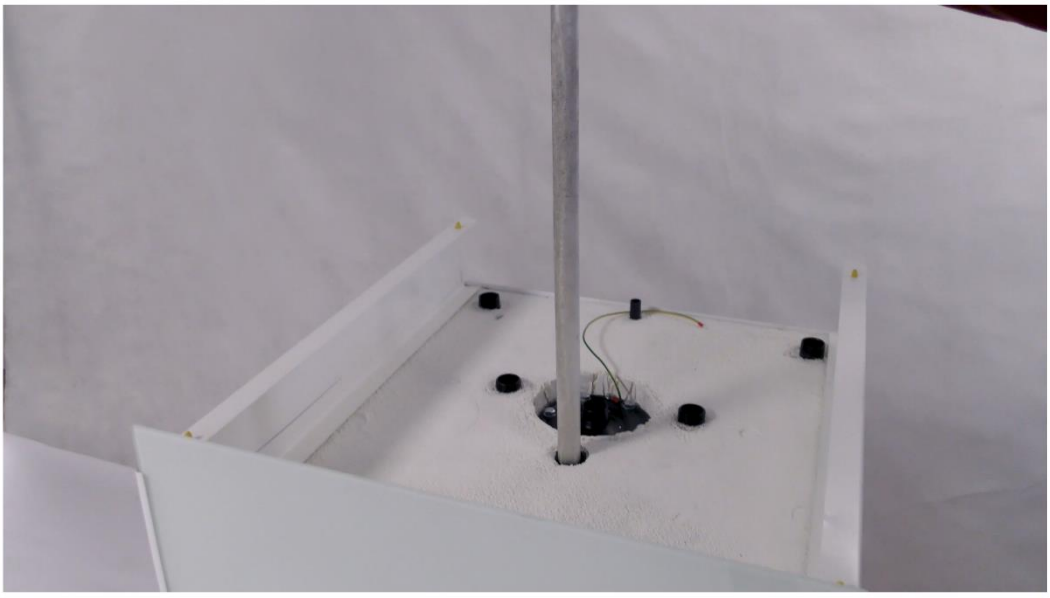
Side panels of the tank are powder-coated. You can remove them if necessary. These parts are also equipped with breaking off elements for tank piping and diverging outlet pipes from the body



The upper tank cover closing the installation section. The installation section can accommodate a recirculating pump, antiflash valve, active titanium anode and other water heater piping elements.

The upper cover is also equipped with a breaking off element for tank piping and mounting against the wall.

Color-coated tempered glass or organic glass with color-matched lining material.



Magnesium anode replacement procedure. Before replacing the magnesium anode, block the cold water makeup, depressurize the tank and only then, after making sure everything's right, unscrew the anode. The requirements for magnesium anode replacement are described in the Tank Installation and Operating Manual.

150*400 mm breaking off body element in the upper tank cover

95*100 mm breaking off body element in the tank side panel

Accessories

Tank width – 600 mm

Tank depth – 725 mm

Tank height with adjustable supports – 1137 to 1172 mm

Tank gross weight – 88 kg

Heat exchanger area – 1 m2 Heat exchanger capacity – 24 to 35 kW Tank internal coating – glass-ceramic enamel

Tank operating pressure up to • 6 bar Heat exchanger operating pressure up to – 6 bar Maximum tank temperature – 80 °C Maximum heat exchanger temperature – 95 °C

HWS tank output is up to 1050 liters per hour. Provided that HWS is heated from 8 to 42 degrees and a boiler capacity is 35 kW. The output is 765 liters per hour with a boiler capacity of 24 kW.

Transit flange cover with 11/2" threaded internal connection diameter For installation of wet heating element with a capacity of 2 to 6 kW

A 2.4 kW dry heating element assembly with flange cover and decorative cap. The tube is enameled.

Heating element in the flange cover with a capacity of 2 to 6 kW. The type of heating element in the tank can be changed at any time if required. Or conveniently remove the heating element for cleaning and inspection.

Field of application:- Accumulation and storage of heated sanitary water.

Product material: - Carbon steel with enamel coating.

Description: - The tank is designed to accumulate hot water from various heat sources. The 'P' series tank improves the hot water supply system flexibility, allowing you to accumulate a constant volume of hot water and use hot water supply recirculation to increase comfort of use. And the possibility of connecting an electric heater via a 1 1/2" hole with internal thread at the tank bottom makes the tank more versatile. The tank can operate in combination with the following heat sources:

Solid fuel-fire boiler Biomass boiler Pellet boiler Fireplace with a water jacket
Gas-fired boiler Electric boiler Solar collector

Tank insulation
Unremovable rigid polyurethane foam insulation with average thickness of 80-85 mm

Optionally available:

– Installation of dry ceramic heating element with a capacity of 2.4 kW or wet heating element with a capacity of 2 to 6 kW

— Installation of active titanium corrosion protection

1. Description

1.1 The P series tank is designed for use in HOT WATER SUPPLY systems!

1.2 The P series tank is designed for operating water temperatures ranging from +2 to +80 degrees Celsius.

1. Arrangement, installation and operation.

2.1 Prior to the tank installation, please, read the Tank Certificate and Installation and Operating Manual (read on www.s-tank.ru)

2.2 Installation location needs to be chosen so that:

- in case of leakage from the tank the water is drained to a sewer trap and then freely discharged from the premises;

- it can be protected from shocks, industrial vibration, exposure to atmospheric precipitation (to be installed only in the premises). Any shock or mechanical impact may destroy the thermal insulation material and also produce failures in the integrity of the tank internal coating, cause tank leakage resulting in the tank failure!

When proceeding with the installation, it needs to be accounted that a free access should be provided to the tank for connecting, maintaining and disassembling it.

2.3 The tank should be installed by skilled specialists and persons having a certificate or a license for performing works related to the heating system installation! The installation needs to be confirmed in the Warranty Certificate.

2.4. Wash the tank with water before putting it into operation!

2.4.1 The tank should be earthed; for this purpose, there is a suitable place on the flange cover at the tank top. The earthing bus resistance should be not more than 4 Ohm. An access to the earthing bus is to be provided by the Customer.

2.5. Acceptance of goods in terms of quality, completeness and quantity of units of goods in a package is to be made by the Buyer within two calendar days from receipt of the goods, but not later than 14 (fourteen) calendar days from the date of the goods handover.

2.6. The magnesium anode replacement period is not later than 6 months from the start of operation. The magnesium anode should be visually inspected at least once every 3 months (if the anode diameter reduced by more than 10 mm at least in one place, it should be immediately replaced). The titanium anode functionality should be tested at least once a year by a maintenance engineer, with the test results being entered into the Technical Data Sheet (no replacement is required in case of normal operation). The anode test results and replacement should be recorded in the Technical Data Sheet (test date, test results).

2.7. It is not permitted to put the tank in operation without filling it with water.

2.8. It is not permitted to operate the tank without a properly functioning safety valve. The safety valve condition needs to be inspected every 90 days by turning a head (handle) to the left or to the right so that the water could flow from a side outlet to the outside. Then, set the handle in the initial position. If no fluid flows when turning the handle, then the valve is out of order. When turning the handle and returning it to the initial position a continuous water leakage is observed, then a valve plunger is soiled. Wash the valve several times by opening the outlet by turning the handle. To avoid the uncontrolled water outflow, a hose need to be mounted to drain water to the sewer. Important—hot water may flow out. Excessive amount of water leaks from the safety valve as a result of the following:

1) inlet water pressure is higher than allowable;

2) short-term pressure surges of inlet water are not considered to be a warranty case, and the valve is not subject to replacement. The company is not liable for the abnormal operation of the safety valve caused by incorrect mounting of the valve and errors in the system, for example, absence of a pressure-relief valve in the cold water supply system.

2.9. It is prohibited to block fluid dripping from the safety valve—do not plug a safety valve port. If the valve continuously leaks, this means that either the pressure in the water supply system is too high or the safety valve is out of order. The drain valve outlet should be oriented downward. It is recommended to mount a funnel under the valve for water drainage. A drainage hose may be mounted and put into the sewer to remove water which flows out when opening the safety valve. The hose should withstand a temperature of +95 degrees Celsius, has an inner diameter of not less than 9 mm, maximum length of 1.2 m and a plane for water flow with an inclination downward (min 3%) and needs to be mounted in the premises in which the temperature does not drop below 0 degrees Celsius. The hose should be protected from mechanical damage and its outlet should be seen (to monitor the valve operation). The valve cannot be installed so that it can be cut off from the tank by a tap.

2.10. The tank should not be installed in close proximity of open fire or contact with the boiler insulation; when mounting a heating system with the tank, an installing organization should ensure compliance with fire safety regulations during the tank operation!

2.11. The tank should be immediately disconnected if steam escapes from a mixer (this case should be reported to the Service Center)

2.12. Continuous tank operation at a maximum temperature causes accelerated tank failure.

2.13. A proper protection of a boiler operating in combination with the tank guarantees protection of the tank heat exchanger.

2.14. Preventive washing should be conducted every 12 months to wash out sediment from the tank.

2.15. To prolong the tank service life and ensure trouble-free operation of the safety valve, filters need to be used to prevent clogging.

2.16. A water heater should be connected directly to the water supply system having a pressure not more than 0.6 MPa (about 6 bar), while the minimum pressure should not be less than 0.1 MPa (1 bar). The cold water supply pipe should be fitted with a safety valve. The safety valve outflow port should be permanently opened and connected to the atmosphere.

It is not permitted to mount any device (for example, a return valve, a shut-off valve) between a relief valve and the water heater, however, a T-shaped pipe with a drain valve may be mounted. When the pressure in the water supply system exceeds 0.6 MPa, it needs to be reduced using a pressure-relief valve.

2.17. All works related to maintenance and installation should be performed in compliance with effective occupational safety rules.

2.18. CAUSES OF MALFUNCTIONS

Malfunctions	Cause	Troubleshooting
Relief valve does not open (also when purged)	- Relief valve is clogged	- Clean the valve or replace it
- Relief valve leaks	- Relief safety valve is clogged or damaged - Water pressure is too high	- Clean safety valve - Use pressure reducing valve
- Water in water heater became dirty	- Too much sediment in the tank - Magnesium anode is worn out	- Clean the tank from sediment - Replace magnesium anode (not warranty case)

Depending on the capacity of your HWS circuit, an expansion tank (10% of the circuit capacity) and a safety assembly (for 6 bar level) should be mounted on this circuit since the system is closed!

3. Tank selection

3.1 The tank is to be selected individually depending on the heating system or HWS parameters or according to the project documentation. Prior to selecting a water heater, you should test the network cold water quality in your house to detect if it contains chemical substances specified in the Table provided below in the Technical Data Sheet. If the chemical composition is not in compliance with the required quality, a water conditioning and purification equipment needs to be installed prior to the tank installation. Before installation make sure that earthing bus resistance in your house is not higher than 4 Ohm - this will make the life of your relatives and people much more safe and will protect your tank from the adverse effect of earth currents.

3.2 The manufacturer reserves the right to make technical changes according to design documentation.

4. Warranty

4.1 The manufacturer guarantees conformity of the S-TANK tanks, "P" series, to safety requirements, provided that the user observes transportation, storage, installation and operation rules. The warranty period—5 years from the date of sale by the manufacturer of the tank with the magnesium anode and 10 years with the active titanium anode (one-time purchase and installation of the titanium anode and tank). These warranty obligations will enter into effect upon registration of the product with the manufacturer within two months from the date of purchase.

The product is to be registered by mailing the required information to the manufacturer's address

s-tank.garan@mail.ru, the list of required documents is provided in the Installation and Operating Manual http://s-tank.by/wp-content/uploads/Instrukcziya-po-montazhu-i-ekspluataczii-bakov-S-TANK-2.pdfin case the product is not registered, the warranty period is 1 (one) year from the date of sale.

4.2 Warranty implementation procedure. If warranty claims are grounded, the S-TANK WATER HEATERS service division takes a decision regarding the methods of eliminating identified faults - either by repairing or replacing a failed device. The warranty period specified in the Warranty Certificate remains unchanged in this case. In case of replacement of the failed device with a new one, the warranty period is not extended, and the replacement is recorded in the Warranty Certificate.

4.3 The warranty does not cover the defects occurred due to the fault of the user as a result of violation of the Installation and Operating Manual, requirements of the Technical Data Sheet and also in case of mechanical damage.

4.4. As regards malfunctions detected during the warranty period, please, contact the manufacturer/importer. A free-of-charge repair of malfunctions occurred to the fault of the manufacturer should be performed within the period specified in the effective legislation from the date of certifying the failure as a warrantable failure by the manufacturer/importer.

IMPORTANT – It is not permitted to dismantle the tank upon occurrence of the warranty case until you get the manufacturer's or importer's permission

4.5. To submit the notification of defects to the service division of the Importer/Seller, the following needs to be specified: order number and factory number of the product (see the information label), date of procurement (sales receipt, invoice) malfunction description, correct installation site address and telephone contact number of a person operating the tank.

4.6. The condition for performing the tank warranty repair implies submission of the sales receipt, invoice and correctly and fully completed Warranty Certificate by the user, with the name of the seller and installing organization and without any corrections. The Warranty Certificate needs to be retained within the entire period of the equipment operation.

4.7. It is not permitted to operate the tank without a properly functioning safety valve. To comply with the warranty, the purchase of a respective safety valve and safety valve Warranty Certificate need to be confirmed.

4.8. Installation and commissioning of the tank, being the warranty item, should be performed by skilled specialists subject to the rules established by the legislation and also according to Installation and Operating Manual (read on www.s-tank.ru)

4.9. Protect to tank from direct solar radiation exposure.

4.10. The tank should be installed in zones not subjected to weather effects (rain, snow, etc.)

4.11. Plastic pipes not designed to operate at a temperature of 100 degrees Celsius and at a pressure 1.0 MPa should not be used for the tank connection.

4.12. The tank should be installed so that free access is provided to it for maintenance.

4.13. The manufacturer is not liable for possible inconveniences or expenses related to the structural changes of a building/premises necessary for moving in or moving out, installing or dismantling the tank (for example, narrow doors or corridors)—the request for compensation of the expenses will be declined by the manufacturer. If there is a need to install a water heater in a specific place (for example, in the attic or in a room with a floor sensitive to water impact, warehouses, etc.), the room should be protected against possible water ingress and the issue of mounting devices for collecting and draining this water to avoid damage should be considered.

4.14. All mechanical defects of the tank lead to the loss of warranty.

4.15. The relief valve should be mounted directly upstream the tank on a tube supplying cold water to it. Use only the valves complying with specifications and designed for storage water heaters. The safety valve should be used in accordance with the Valve Operating Instruction.

4.16. It is strictly prohibited to mount additional devices (for example, a shut-off valve, return valve, etc.) between the safety valve and the water heater. It is only recommended to mount a T-shaped pipe for draining water from the tank.

4.17. It is prohibited to install the tank in the premises in which the ambient temperature may drop below 0 degrees Celsius.

4.18. The following will not be considered by the warranty if:

- the heating system with the tank was filled not with the specially conditioned water or specially prepared solution for filling the heating system, with the respective quality certificate being provided (for tanks configured for heating systems); Either purified or treated water should flow through the HWS tank heat exchanger

- if, when removing and fitting the flange cover, the bolts were tightened without a torque wrench to a torque greater than 8 H*m and as a result, the flange thread was stripped.

- the heating system and tank were not earthed (this is necessary to prevent the influence of parasite (earth) currents on metal and, as a result, corrosion occurrence and acceleration);

- if the tank was used in heating systems with air available in the network (for tanks configured for heating systems);

- if the tank was used in the heating and HWS system not equipped with a respective safety assembly for excessive pressure release;

- the tank was used in aggressive media;

- low-quality installation;

- the expansion tank of a required capacity (10% of the system capacity) is not available for the closed heating and HWS system;

- The quality of sanitary hot water in the tank should comply with the following standards:

Conductivity mc/cm *)	**>450**	**-**
pH	**<6**	**0**
	6-8+	**+**
	>8	**-**
Chlorides (mg/l)	**>50**	**-**
Sulfur compounds (mg/l)	**<50+**	**+**
	50-200 0	**0**
	>200	**-**
Nitrogen compounds (mg/l)	**<100**	**+**
Carbon dioxide (mg/l)	**<5 +**	**+**
	5-20 0	**0**
	>20	**-**
Oxygen (mg/l)	**<1 +**	**+**
	1-8 0	**0**
	>8	**-**
Amone (mg/l)	**<2 +**	**+**
	2-20 0	**0**
	>20	**-**
Ferrum and manganese (mg/l)	**>0.2**	**0**
Sulfur compounds (mg/l)	**<5**	**-**
Chlorine (mg/l)	**<0.5**	**+**

*) at 20 degrees Celsius

+ = resistant material

0 - destruction may occur, if several substances reach the value of ‘’ 0 ‘’

- - not recommended to use

- damage caused by improper transportation;

- damage caused intentionally or damage occurred due to negligence;

- mechanical damage or damage caused by weather effects (for example, frost) or actions arising from exceeding the allowable operational pressure specified in the Technical Data Sheet

- malfunctions caused by the use of fittings being not in compliance with effective standards;

- accidents caused by installation or operation of malfunctioning or damaged safety valves;

- damage resulted from improper use;

- damage occurred due to non-observance of the rules contained in the Tank Installation and Operating Manual and Certificate;

- damage occurred as a result of fire, flood, lightning strike, voltage surge in the electrical network or other cases;

- accidents occurred as a result of using non-original spare parts such as heating element assembly, magnesium anode, titanium anode, thermostat, thermometer, gaskets, etc.;

- electrochemical corrosion occurred;

- damage caused by non-replacement of the magnesium anode or non-observance of regular inspection of the serviceability of the titanium anode within the terms specified in the Technical Data Sheet;

- the cases in which the temperature of cold water running from the tap differs from the thermometer reading by about 12 degrees Celsius (this difference is likely to be caused, in particular, by the thermostat hysteresis, distance between the tank and a consumption point, low temperature in a room in which the water heater is installed);

- cases related to the natural formation of scaling;

- damage resulting from irregular cleaning of the tank from scale and sediment;

4.19. The tank repair techniques are to be defined by the manufacturer.

4.20. A free-of-charge repair does not include as follows: tank adjustment, magnesium anode replacement, seal replacement or other parts naturally wearable in the process of operation.

4.21. These are the only warranty conditions of the manufacturer. No other warranties are accepted, unless manufacturer's instructions in writing are provided.

4.22. Civil Code regulations are applied to the issues not addressed by these conditions.

5. Storage conditions:

Store the product prior to commissioning in a heated room at a temperature not below 20°C and relative humidity not more than 65%.

Standard product configuration:

1. Tank—1 pc
2. Thermal insulation—1 pc
3. Upper decorative cover—1 pc
4. Product Certificate—1 pc
5. Magnesium anode—1 pc

6. Titanium anode with a power supply unit (option upon request) - 1 pc, if pre-ordered

The manufacturer informs you that damage of the primer and enamel coating may occur on the inner tank surface due to the fact that the product was thermally treated at a temperature over 850 °C during the manufacturing process. This causes formation of oxides (ferrum oxide and others) on the tank outer and inner surface which later may peel off or husk from the surface. This will not affect the tank serviceability and reduce the warranty period and service life of the product.

Sale date _____

Signature of Seller _____

Name and address of the trading organization

_____

_____

Seal

Name and address of the mounting organization

_____

_____Seal

Table for Magnesium anode replacement

Replacement date	No. and date of sale receipt, invoice	Anode model	Company replacing the anode	Full name	Signature

Table for titanium anode inspection

Inspection date	No. and date of sale receipt, invoice	Anode model	Company performing the inspection	Full name	Signature

Manufacturer:

S-TANK WATER HEATERS LTD, Republic of Belarus, Minsk Region

Build. 72B, 17-ogo Sentyabrya Str., township Ivenets, Volozhinsky District

Tel./fax 8(01772) 6 77 11; Tel. +375296325040,

Technical support: alfa-vim@mail.ru