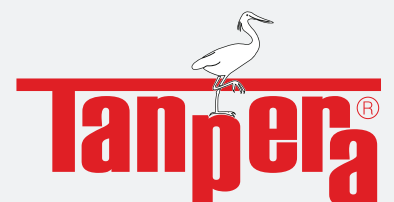




Accumulation Tank User Manual



Project :

Customer :

Heat Exchanger Type :

Serial No :

Year :

The information in this document is based on the most up-to-date information and production materials available at the time of preparation for publication. Therefore, due to the rapid developments in this field, we accept no responsibility for changes in technical specifications that may affect the content of this document.

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1. What Is an Accumulation Tank?

A hot water accumulation tank is a pressurized tank that heats the cold service water coming from the mains using the energy it takes from an external heat source, and stores this hot water - ready for use and at the desired temperature - inside an insulated body.

Its basic function is to manage the difference in time and capacity between the heat production capacity and the instantaneous hot water consumption demand.



2. Operating Principle

Hot water accumulation tanks operate by the indirect heating method. Their basic operating principles are based on heat transfer and thermal storage.

- Heating: The external heat source (boiler, etc.) and mains water enter the plate heat exchanger. Without the two waters mixing, heat transfer takes place instantly.
- Hygienic Storage: The clean hot water heated in the heat exchanger is sent to the accumulation tank for storage.
- Heat Protection: The excellent insulation of the tank maintains the temperature of the water for a long time.
- Smart Support: If the temperature drops below the set degree, the integrated electric heating element automatically activates and heats the water to the desired temperature.
- Use: In this way, the desired hot and clean water is continuously ready for use.

3. Liability and Warranty Terms

This section defines the warranty scope, user responsibilities, and situations outside the warranty for the Accumulation Tank products manufactured by TANPERA A.Ş.

- The responsibility of the operator/user begins with the delivery of the product.
- Read the installation and operating manual before delivery.
- The installation and operating manual must be kept near the product and in a visible place.
- It is the customer's responsibility to keep the invoice and warranty certificate during the warranty period.

3.1. Situations Outside the Scope of Warranty

- Problems and faults resulting from the product not being used for its intended purpose are outside the scope of the warranty.
- Problems and faults resulting from commissioning, maintenance, repair, and installation by persons or organizations not authorized by Tanpera are outside the scope of the warranty.
- Problems and faults that may occur if the instructions in this manual are not observed are outside the scope of the warranty.
- Faults and problems resulting from operating the product with damaged or improperly fitted safety devices are outside the scope of the warranty.
- Faults resulting from maintenance work not being carried out on time are outside the scope of the warranty.
- Faults that may occur from using non-original spare parts/accessories not supplied by Tanpera are outside the scope of the warranty.
- Problems and faults resulting from the product being installed in a manner that does not comply with the rules, standards, and regulations stated in the installation diagram are outside the scope of the warranty.
- Deformations and explosions resulting from the operating pressure exceeding the maximum operating pressure stated on the tank label are outside the scope of the warranty.
- Cracks resulting from the freezing of water in the environment where the tank is located, and (if there is an electric heater) heating-element and tank damage resulting from the unit being run dry, are outside the scope of the warranty.
- Corrosion and tank perforation resulting from the Magnesium Anode Rod not being checked during annual periodic maintenance and not being replaced when depleted are outside the scope of the warranty.

3.2. Warranty Period

- This product is under our company's warranty against material, workmanship, and manufacturing defects for a period of 2 (two) years from the invoice date.
- For commissioning and annual maintenance operations, please contact the Tanpera Service Center.

NOTE:

The properties of the water used in boilers must comply with the Regulation of the T.R. Ministry of Health on water intended for human consumption (Regulation No. 28580 of 07/03/2013). In summary, to minimize corrosion damage, the chemical properties of the service water must remain within the limit values given in the table alongside.

Limit Values	
pH	6,5 – 9,5
Conductivity at 20°C	50-500 μ S/cm
Total Hardness	10 - 20 °Fr (5,5 - 11 °dH , 100-200ppm)
Chloride (Cl)	\leq 250 mg/l
Sulfate (SO ₄ ²⁻)	\leq 250 mg/l
Hydrogen Carbonate (HCO ₃)	70-300 mg/l
Free Chlorine Gas (Cl ₂)	<1 mg/l (within 5 hours)

4. Warnings and Safety

All potential personnel injury risks are indicated with the safety caution symbol. The following causes may result in physical harm to personnel;

- The "Electricity" symbol word indicates that failure to observe the safety information will result in electric shock, death or serious (irreversible) injuries.
- The "Danger" symbol, together with the word, indicates an imminent danger; failure to observe the safety information will result in death or serious (irreversible) injuries.
- The "Hot Surface" symbol, together with the word, indicates that the surface to be touched is above 60°C and that failure to observe the safety information will result in serious (irreversible) injuries.



NOTE: Take general safety precautions against excessive heat during the commissioning or maintenance of the unit.

- Take general occupational safety precautions during the commissioning or
- maintenance of the product.
- During operation, the product contains high-pressure hot water.
During maintenance or disassembly, make sure the product is out of service and
- the system is depressurized.
- The product components are heavy.
Please take the necessary safety precautions during the transport and handling
- of the product. The product must be used in one system only.
- The product is not suitable for outdoor use.
- The product is not suitable for use in flammable environments and with minerals.
It must be operated with clean, particle-free service water.



5. Scope of Delivery

The scope of delivery is described in the shipping document. Immediately after receiving the product, carry out the necessary checks for material, accuracy and damage. Please report any transport damage to us immediately.

When you receive the product, check that the contents of the packaging are complete. The standard scope of delivery includes the following;

- 1 x Accumulation Tank (Body and Insulation)
- 1 x User Manual and Warranty Certificate
- 1 x Magnesium Anode Rod (mounted on the tank)
- 1 x Thermometer (fitted or in the box, depending on the model)

CAUTION: When receiving the product, check whether there is any tear, dent, or impact on the packaging under the supervision of the cargo/transport official. In the event of any damage or missing part, do not accept the product and have a Damage Assessment Report drawn up. Otherwise, the product will be deemed to have been delivered undamaged.

5.1. Transport

The scope of delivery is described in the shipping document. Immediately after receiving the product, carry out the necessary checks for material, accuracy and damage. Please report any transport damage to us immediately.

When you receive the product, check that the contents of the packaging are complete. The standard scope of delivery includes the following;

5.2. Storage

- The products must be stored in a dry and well-ventilated environment.
- Precautions must be taken against the products tipping over due to a possible earthquake or other causes.
- The products must be stored so that no load is placed on them and no object can fall onto them.

6. Product Components

- 1** Body
- 2** Insulation
- 3** Magnesium Anode Rod
- 4** Connection Sockets
- 5** Cleaning and Access Cover
- 6** Outer Casing
- 7** Sensor Sleeve



7. Technical Specifications


Accumulation tanks, providing high-efficiency storage for every need and every heating system;



- Fully compatible with condensing units, boilers, heat pumps and solar energy.
- High service-water comfort between 100-5000 L
- Maximum operating pressure (Tank): 10 Bar
- Maximum operating temperature (Tank): 95°C
- Construction: S235JR Steel
- Minimum limescale formation thanks to its smooth surface. Thanks to its high-quality enamel coating compliant with DIN 4753-3, hygienic hot water protection and optimum corrosion protection
- Magnesium anode protection
- Installation-friendly and largely maintenance-free construction;
- Recirculation connection option
- High thermal insulation
- 100 - 500 L: 50mm, 42 kg/m³ Rigid Polyurethane Insulation
- 800 - 5000 L: 80mm, 18 kg/m³ Open-Cell Soft Polyurethane Insulation
- Outer Casing Cover
- 100 - 500 L: Thermowen Coating
- 800 - 5000 L: Vinyl Casing (Vinleks)
- Designed in accordance with TS EN 13445-3 standards.

8. Product Label

Every TANPERA-branded accumulation tank has a name label on it. The following details are stated on this label;



TANPERA TEKNOLOJİ VE END. ÜRÜN.SAN. VE TİC. A.Ş.

HOT WATER ACCUMULATION TANK

Model	PRO 1000/10-EV
Hacim Volume	1000 Liter
Maks. İşletme Sıcaklığı Max. Operating Temperature	90°C
Maks. İşletme Basıncı Max. Operating Pressure	10 bar
Çap Diameter	1015 mm
Yükseklik Height	2180 mm
Ağırlık Weight	305 Kg


WARNINGS

A safety valve at least 1" in diameter and set to an opening pressure of at most 9 bar must be used at the cold water inlet.

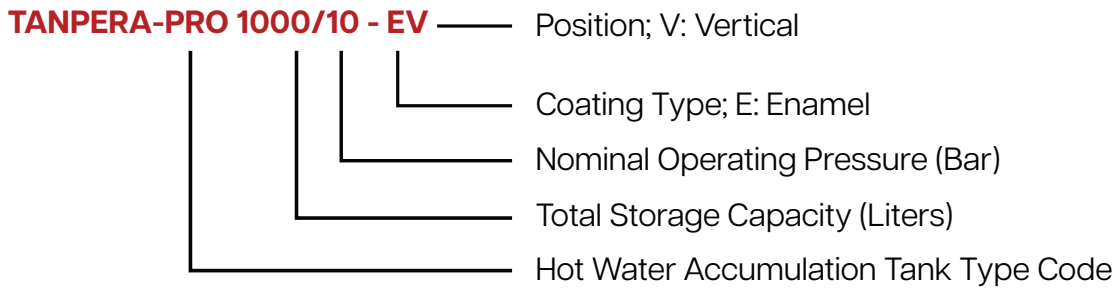
To check and, if necessary, replace the protective anode rod, call Tanpera service.

You can have the cleaning and periodic maintenance of your product carried out by Tanpera service.

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9. Product Notation and Descriptions



10. Table of Product Model Names and Technical Data

Accumulation Tank	Symbol	PRO 100	PRO 200	PRO 300	PRO 400	PRO 500	PRO 800	PRO 1000	PRO 1500	PRO 2000	PRO 2500	PRO 3000	PRO 4000	PRO 5000
Volume	V (L)	100	200	300	400	500	800	1000	1500	2000	2500	3000	4000	5000
Diameter	D (mm)	490	590	590	750	750	950	950	1120	1260	1460	1460	1760	1760
Height	H (mm)	1030	1300	1810	1380	1620	1670	2010	2250	2250	2200	2600	2300	2700
Water Inlet/Outlet	N1 (inch)	3/4"	3/4"	1"	1"	1"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	2"	2"
Circulation Connection	N2 (inch)	3/4"	3/4"	1"	1"	1"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	2"	2"
Additional Electric Heater	N3 (inch)	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"	2"	2"	2"	2"	2"	2"
Thermometer	N4 (inch)	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Magnesium Anode	N5 (inch)	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Cleaning Flange	N6 (inch)	4"	4"	4"	4"	4"	5"	5"	5"	5"	5"	5"	5"	5"
Drain	N7 (inch)	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Empty Weight	W (kg)	35	55	70	78	90	130	155	258	325	455	590	645	745

11. Installation and Connections

11.1. Preliminary Preparations

- ➔ Installation must only be carried out by authorized service personnel or staff with the relevant technical qualifications.
- ➔ The unit must be visually inspected for any damage that may have occurred during transport.
- ➔ The installation area must be a location that has no risk of freezing, has suitable humidity, and is well ventilated.
- ➔ The surface on which the unit is placed must be capable of safely bearing the fully filled weight of the accumulation tank.



11.2 Hydraulic Installation and Connections

- Before water is supplied to the system, it must be ensured that all connection points are clean and free of burrs.
- The hot water flow and hot water return connections must be made in accordance with the markings on the unit.
- The hot water outlet line must be installed with materials resistant to excessive expansion.
- The safety valve must be of the values specified by the manufacturer (usually 6 bar) and must always be installed in a vertical position. The safety valve outlet must never be closed; it must be connected to a discharge line open to the atmosphere.
- If the installation pressure exceeds the maximum operating pressure stated on the unit label, an additional expansion tank must be installed in the system.
- Where necessary, equipment such as a check (non-return) valve, filter, and ball valve must be installed.
- Teflon tape suitable for hot water, or hemp + paste, must be used on all threaded connections.
- To check the connections after installation, suitable preparation for a pressure test must be made before water is supplied to the installation.
-

11.3 Post-Installation Checks

- The torque values of all mechanical connections must be reviewed one last time.
- The vibration and noise level of the unit during operation must be checked.
- The user must be informed about the operating principle of the safety valve and the periodic maintenance requirements.

12. Commissioning

12.1. Checks for Commissioning

After the installation of the accumulation tank is completed, carry out the following steps in order to activate the system. These operations must be carried out by authorized technical personnel.

12.2. Preliminary Checks

Before starting the water-filling process, carry out the following physical checks.

- All pipe connections must be checked for leak-tightness and correct execution.
- Safety Valve: A safety valve of a suitable bar value to maintain the system pressure (usually 8-10 bar, see the label) must be fitted on the cold water inlet line.
- Expansion Tank: It must be checked that an expansion tank of suitable capacity to absorb the pressure fluctuations occurring in the system is present and active.
- It must be confirmed that the blind plugs (unused inlets/outlets) are tightly closed.

12.3. Filling the Tank with Water and Bleeding the Air

Air remaining inside the tank causes corrosion and loss of efficiency. For this reason, the air must be bled during the filling process.

- Fully open the nearest hot water tap in the installation (or on the tank). This allows the air inside to be expelled while the tank fills with water.
- Slowly open the cold water inlet valve going to the accumulation tank.
- Wait until an uninterrupted (bubble-free) flow of water comes from the hot water tap you left open.
- When the water begins to flow steadily, the tank is completely full and the air has been bled. Close the hot water tap.
- If there is an automatic air vent on the tank or at the highest point of the installation, check that its cap is loose.

12.4. Commissioning the Heat Source

After the tank is completely full of water, commission the primary heat source (Boiler, Heat Pump, Solar Energy, etc.).

- Make sure the circulation pump is running in the correct direction.
- Do a final visual check of the installation connections for any leaks (especially those that may occur due to expansion when heating begins).
- Observe the temperature rise on the thermometer on the tank (if any).

12.5. Use of the Electric Heater (Heating Element) (Optional)

If your tank has an electric heater (heating element) for supplementary purposes;

Caution: Never apply electricity to the heating element before the tank is completely full of water. Dry operation causes the element to fail instantly.

- Set the thermostat to the desired temperature (e.g., 60°C).
- Make sure the electrical connections are made via a grounded line.

Caution: In locations where the mains water pressure is higher than the operating pressure of the tank (the label value), a Pressure Reducer must always be installed on the cold water inlet line. Explosions and leaks caused by high pressure are outside the scope of the warranty.

Caution: DO NOT RUN DRY! NEVER switch on the electric heater/heating element without being sure that the tank is completely full of water (without seeing water flow from the tap). Running the heating element in a tank that has not been bled or is empty causes the element to burn out within seconds, and this is outside the scope of the warranty.

13. After-Sales Services

13.1. Service Scope and General Information

Our company bases all processes, from the design to the production of our products, on high quality standards. The Accumulation Tank you have purchased is under our company's warranty against manufacturing defects. For the efficient and long-lasting use of your product, the installation, commissioning, and maintenance instructions in this manual must be strictly followed.

13.2. Authorized Service and Maintenance Services

The periodic maintenance, repairs, and spare-part replacements of accumulation tanks must be carried out only by service points authorized by our company. Interventions carried out by unauthorized persons may void the product's warranty and create safety risks.

Service Request: For any fault condition or maintenance request, please contact our technical support unit by phone or e-mail.

Periodic Maintenance: To maintain the performance of the product, it is recommended that operations such as checking the magnesium anode rod and cleaning the inside of the tank be carried out annually by authorized service.

13.3. Spare Parts Supply

In accordance with the Regulation on After-Sales Services of Industrial Goods, our company undertakes to keep in stock the spare parts necessary for this product to perform its functions throughout its service life (the period determined by the Ministry, generally 10 years) and to supply them for a fee when requested.

14. Cleaning and Maintenance

Maintenance

- Disconnect the electric heater's electrical connection from the unit.
- Frequently check that the components on the unit's installation are intact and clean.
Have the unit serviced at least once a year. In cases where the water quality is unsuitable
- (hard water and very hard water) and at high temperatures, carry out maintenance at shorter intervals.
- Check whether the unit's recirculation pump is working.
- During maintenance, open the drain valve and drain the water inside the unit. During draining, the unit drain must be connected to a sink, and flooding of the boiler room must be prevented.
- Always replace the magnesium anode rod. Tanpera services are authorized for maintenance and repairs. The selling company is not responsible for applications carried out by unauthorized persons. Original spare parts must be used in maintenance and repairs.

Maintenance Warnings

- Cut off the power before starting maintenance operations.
- It must be checked that there is no looseness in the electrical connections of the control panel.
- The control panel grounding line must be checked. It must be checked that there is no wear, perforation, or heat-related change in the electrical cables.

15. Possible Problems and Solutions

PROBLEM	POSSIBLE CAUSE	SOLUTION
No water comes from the taps	<ul style="list-style-type: none"> • The mains water may be cut off. • The tank inlet valve may be closed. • The installation filter may be clogged. 	<ul style="list-style-type: none"> • Check the mains water. • Set the cold water inlet valve to the open position. • Clean the filter in the installation.
Water does not heat up	<ul style="list-style-type: none"> • The heat source may not be working. • The electric heater (if any) fuse may be off or may be faulty. • The circulation pump may not be working. 	<ul style="list-style-type: none"> • Check the heat source feeding the tank. • Turn on the fuse. If the problem continues, the element may be faulty. Contact Tanpera Service. • Check the pump's power supply and whether it is working.
Water does not heat up enough	<ul style="list-style-type: none"> • The thermostat setting may be low. • The tank capacity may be insufficient for consumption. • The coil or tank interior may be limescaled. 	<ul style="list-style-type: none"> • Check the thermostat setting and raise it. • If there is too much simultaneous use, reduce consumption and wait for the water to heat. • For limescale, maintenance must be done by authorized service.
Water dripping from the safety valve	<ul style="list-style-type: none"> • The mains pressure may be too high. 	<ul style="list-style-type: none"> • A pressure reducer (regulator) must be fitted at the installation inlet.
Hot water smells bad or is cloudy in color	<ul style="list-style-type: none"> • The water inside may have been left unused for a long time. • The magnesium anode rod may be depleted. • Bacterial growth. 	<ul style="list-style-type: none"> • Completely drain the water in the tank and fill it with fresh water. • Contact the TANPERA Service Center to check and replace the anode rod. • Perform thermal shock by briefly raising the tank temperature to 65°C-70°C.



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