

VIADRUS

STORAGE TANKS

AkuCOMBI 500/160 L

AkuCOMBI 600/200 L

AkuCOMBI 800/200 L

AkuCOMBI 1000/200 L

OPERATING AND INSTALLATION MANUAL

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1. Description of construction

The combined heat accumulation tanks allow the connection of several heat sources. The main part of the storage tank is the external tank in which the hot heating water is stored and is made of black steel plate, while the inner tank is designed for heating HWS and is made of steel plate coated with a layer of enamel. The flange of cold water from water main inlet, the flange of hot service water outlet and also the connection of circulation are installed in the upper part of the storage tank in the cover of flange. The tanks can be equipped with two spirals (e.g. for solar system and CH system).

In the inner tank in the cover of flange there is installed the magnesium anode (valve 5/4")

The following table lists the wall thickness and type of material which are used for manufacturing the storage tank **Aku COMBI**:

Combined tank External//inner	diameter r [Ø]	Bottom		Material	Shell		Material
		material thickness			material thickness		
		Nominal [mm]	Minimal [mm]	S235JR	Nominal [mm]	Minimal [mm]	S235JR
500/160	700/550	4/3	3/2,5		3/3	3/2,5	
600/200	700/550	4/3	3/2,5		3/3	3/2,5	
800/200	900/550	4/3	3/2,5		4/3	3/2,5	
1000/200	900/550	4/3	3/2,5		4/3	3/2,5	

2. Installation of the storage tank

The connection of storage tanks must be carried out by fitter who holds the appropriate licence. **Installation must be confirmed in the certificate of warranty.** The storage tank with regard to its construction must be installed **VERTICALLY**. The storage tank must connected directly to a water network (with the possibility of disconnection for the purpose of maintenance) with pressure not exceeding **0.6 MPa**, but the minimal pressure must not be lower than **0.1 MPa – approx. 1 atm**. In the event that water pressure in the water main exceeds **0.6 MPa** it must be reduced using a reduction valve. In the cold water inlet pipe there must be installed a safety valve. The drain valve of the safety valve always must be left open and be in contact with the atmosphere. It is permitted the connection of the storage tank so as to achieve several points where the water can be taken from. The spiral in the heat exchanger can be supplied from a low-temperature boiler operated in the open system or from a boiler operated in a closed system (with an expansion reservoir).

First fill the tank with service water (inner tank) and only then fill the tank with heating water (external tank)!

3. Type defects, their causes and remedies

no.	defect	Cause	Remedy
1	Safety valve does not open (neither after blowing through)	The safety valve is sealed.	Clean or replace the valve
2	The safety valve is leaking.	Safety valve contact surfaces are dirty or damaged.	Clean or reface the valve contact surfaces.
		Too high water pressure in the network	Use a pressure reduction
3	Water in HWS tank is dirty	Too much sediment or worn magnesium anode	Remove debris from the tank or replace magnesium anode - is not covered by the warranty

Between the flanged connections of cold and hot water and the piping in the installation it is necessary to use dielectric couplings (plastic - non-conductive) to avoid direct contact between copper and iron and also if the valve or a safety set was connected directly to the equipment. In this way the service life of the tank is prolonged and the effect of electrolysis is prevented especially when the water is acidic (pH<7).

4. IMPORTANT NOTICES!

1. It is prohibited to connect the storage tanks unfulfilled with water.
2. It is forbidden to operate the inner HWS heater and the external heating water tank without a functioning safety valve (the function of valve must be checked every 14 days –by turning the valve to the left and to the right so that water is flowing out from the side outlet draining the water. Then turn the valve in the opposite direction until it snaps in the initial position and push it into the valve body. If no water leaks during the valve turning it means that the valve is not functional. If after turning the valve and after its return to the original position the water permanently leaks this means that the cone of valve is dirty therefore it should be flushed several times by opening the drain(outlet) by turning the valve.
ATTENTION – possible escape of hot water. The company does not assume the responsibility for the safety valve malfunction which is caused by faulty assembly of valve and errors in installation e.g. reduction valve missing in the installation of cold water inlet. Maximal pressure when the safety valve is the fully open must not exceed 0.67 MPa for the HWS tank, but in case of heating water the pressure must not exceed 0,35 MPa when the safety valve is the fully open and **the system is closed**.
3. Between the safety valve and storage tank there must not be installed any other element (device) - for example, shut-off valve, water seal, etc.
4. The repair method is specified by the manufacturer.
5. By the proper security cooperating with the storage tank of boiler it is also ensured the proper security of spiral in the storage tank.
6. At least once a year the company must be charged with rinsing the tank to remove sediments.
7. Plastic pipes must not be used for connection of storage tanks because they are not adapted to temperatures of 95 ° C and pressure of 0.7 MPa.
8. Storage tanks must be installed so that the free access (e.g. for the purpose of maintenance, repair or replacement) is ensured.
9. Replace the magnesium anode in HWS tank at least once every **18 months** (it is necessary to keep proof of purchase anode). Regular replacement is a condition of the tank warranty validity (this regards the enamelled tank).
10. To prolong the service life of the tank and ensure proper functioning of the safety valve is necessary to use filters for catching impurities.
11. If the tanks are operated in a very aggressive environment (e.g. cowshed), it is necessary to purchase a product which is specially adapted to operate in such environment (the parts that might be damaged by rapid corrosion are adjusted by the manufacturer and an appropriate chemical finish is applied to them)
12. It is prohibited to prevent water from dripping from the safety valve – don't obstruct the drainage hole of the safety valve! If the water during operation leaks from the valve continuously it signals that the pressure in installation is too high or the valve is not functioning properly. Outfall of water drained from the valve must be directed downward. Under the valve place a funnel for water drain off. Also a hose can be put on the outfall and it will drain off water when the valve is open. This hose must be resistant to temperatures of +80 ° C, its inside diameter is 9 mm and maximum length 1.2 m. The hose must be led to the drainage with gradient min. 3% and in an environment in which the temperature does not drop below 0 ° C. The hose must be ensured against reduction of inside diameter and its end must be visible (for the check of valve function).
13. In the event of failure of a product it is necessary to inform **the company from which the storage tank was purchased**. It is necessary to retain the proof of storage tank purchase for the purpose of inspection carried out by the customer service. The exchange of seal, exchange of magnesium anodes, etc. are not included in the number of repairs..
14. The certificate of warranty is the basis of a warranty repair. The certificate of warranty must complete, filled out properly and without any corrections (retain it for the entire duration of the warranty).
15. The matters not regulated by the above conditions will be dealt with according to Civil Code.
16. The manufacturer is not responsible for any irregularity or expense caused by the removal (dismounting)
17. **The manufacturer** reserves the right to make any modifications without notice.

5. Instructions for product disposal after its service life expiration

VIADRUS a.s. is a contractual partner of the firm EKO-KOM a.s., its client number being F00120649. Packages are in compliance to ČSN EN 13427.

Because the product is constructed of common materials its individual parts are recommended to be disposed through a firm dealing with waste collection and disposal.

The heater wrapping should be disposed of in following way:

- plastic foil, cardboard cover and the wooden pallet into the common waste
- metal strap for strapping – through a firm dealing with waste collection and disposal
- wooden base, is designated for a single usage and no longer can be used as a product. Its disposal is subject to Act. 477/ 2001 Sb. a 185/2001 Coll.as amended.

In case that the product has lost its serviceability you can take advantage of product “take back service” (if this is established); in case that the originator has declared that it is a scrap it must be handled according to the valid legislation of relevant country.

6. Guarantee

Guarantee of an enamel storage tank is 36 months *. The other parts - 24 months.

The guarantee includes the above period, but the maximum the period of warranty plus 12 months from the date of manufacture.

The manufacturer for the validity of his guarantee requires:

- To inspect storage tanks regularly once a year. Only an authorized service organization is qualified to exercise the inspections.
- To document all records on carried out guarantee and after-guarantee repairs and annual inspections in an annex to this manual guarantee certificate.

Every fault must be notified immediately after having been discovered and always in writing.

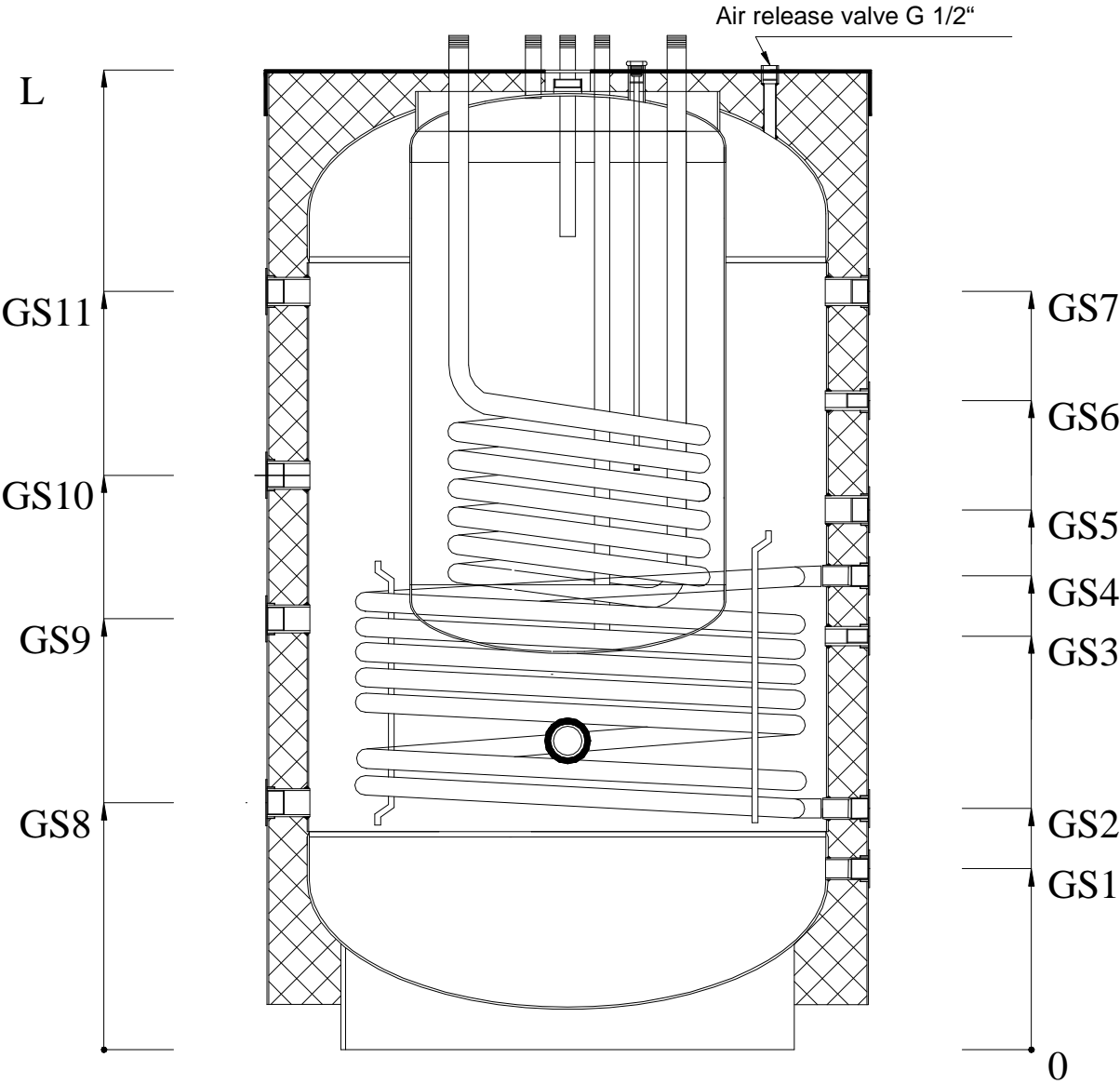
In case of an infringement of above instructions the guarantees provided by the manufacturer will not be recognized.

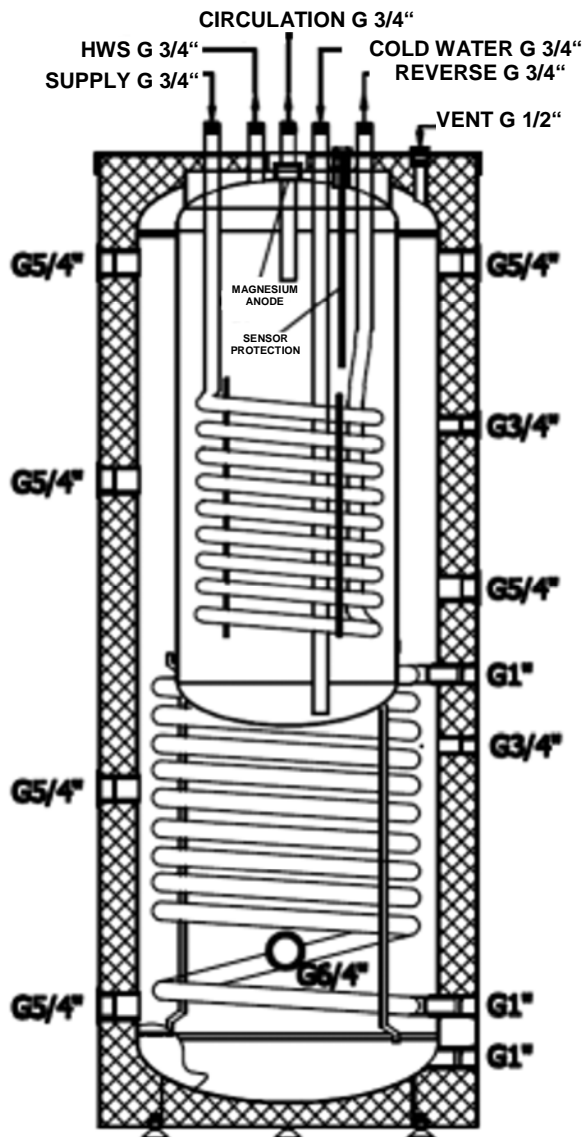
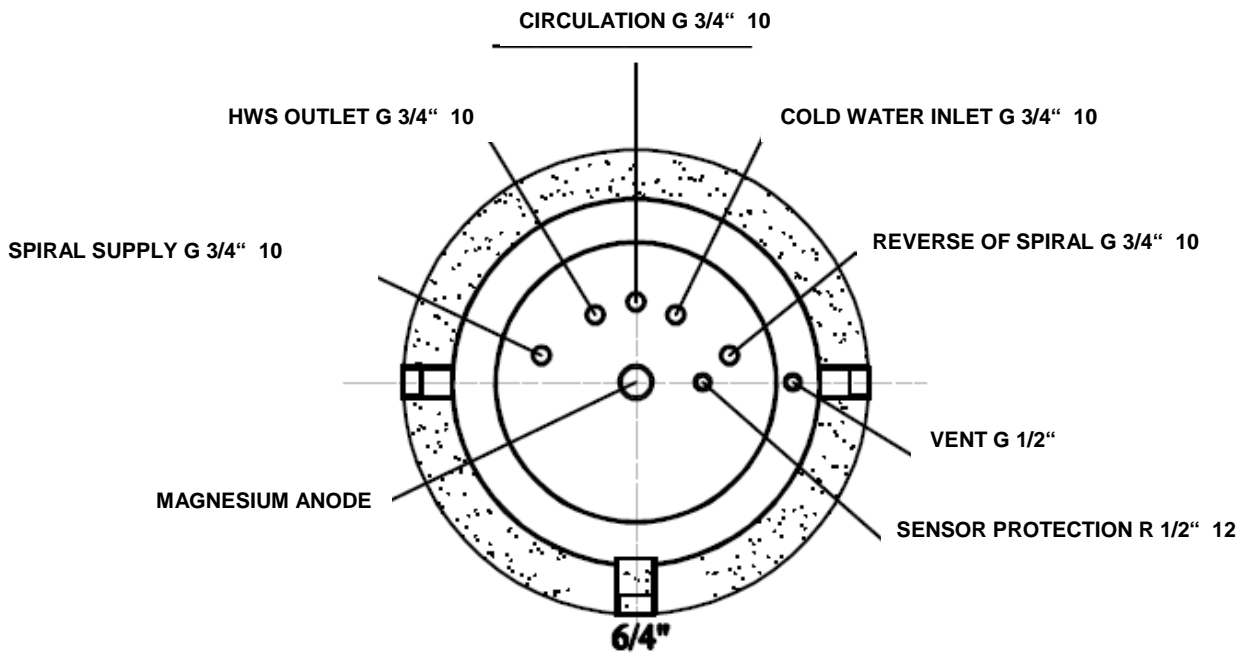
The guarantee does not apply to:

- faults caused by improper assembly and improper attendance of the product and faults caused by improper maintenance;
- product damage arisen from transport or other mechanical damage;
- the faults caused by an unsuitable way of storing;
- faults caused by failure to observe instructions stated in this manual.

The manufacturer reserves the right of alterations made within the product innovation that needn't be included in this manual

AkuCOMBI 500/160 L
AkuCOMBI 600/200 L
AkuCOMBI 800/200 L
AkuCOMBI 1000/200 L





Technical parameters		Designation	AkuCOMBI 500/160 L	
Spirals			solar	CH
The volume of external tank		l	340	
The volume of HWS tank		l	160	
Maximal allowable temperature		°C	100	
Maximal allowable pressure in the tank with heating water		bar	3	
Maximal allowable pressure in the HWS tank		bar	6	
Surface of heat exchanger		m ²	2.1	1
Volume of heat exchanger		l	12.8	5,8
Dimensions				
Height of heating water connection	GS1	mm	250	
Height of solar connection (return)	GS2	mm	350	
Height sensor connection (solar)	GS3	mm	565	
Height solar connection (supply)	GS4	mm	780	
Height of CH connection (return)	GS5	mm	960	
Height of sensor connection (CH)	GS6	mm	1160	
Height of CH connection (inlet)	GS7	mm	1360	
Height of other source connection (return)	GS8	mm	360	
Height of other source connection (inlet)	GS9	mm	710	
Height of other source connection (return)	GS10	mm	1010	
Height of other source connection (inlet)	GS11	mm	1360	
Height of equipment	L	mm	1730	
Tank diameter (without insulation)	Ø	mm	700	
Diameter with insulation	Ø	mm	900	
Insulation made of hardened polyurethane foam		mm	100	
External shell	skay			
Hydraulic connections				
Heating water connection		internal thread	1"	
Solar circuit (supply / return branch)		internal thread	1"	
CH circuit (supply / return)		internal thread	5/4"	
Solar circuit (supply / return)		internal thread	1"	
E-coupling (heating element)		internal thread	6/4"	
Sensor Connection		internal thread	3/4"	
Cover of sensor		internal thread	1/2"	
Cold water / hot water		external thread	3/4"	
Circulation		external thread	3/4"	
Magnesium Anode		plug	5/4"	
Weight (empty)		kg	220	

Technical parameters		Designation	AkuCOMBI 600/200 L	
Spirals			solar	CH
The volume of external tank		l	400	
The volume of HWS tank		l	200	
Maximal allowable temperature		°C	100	
Maximal allowable pressure in the tank with heating water		bar	3	
Test pressure in the tank with heating water		bar	5	
Maximal allowable pressure in the HWS tank		bar	6	
Test pressure in the HWS tank		bar	10	
Surface of heat exchanger		m ²	2.1	1
Volume of heat exchanger		l	12.8	5,8
Dimensions				
Height of heating water connection	GS1	mm	250	
Height of solar connection (return)	GS2	mm	350	
Height sensor connection (solar)	GS3	mm	565	
Height solar connection (supply)	GS4	mm	780	
Height of CH connection (return)	GS5	mm	1060	
Height of sensor connection (CH)	GS6	mm	1335	
Height of CH connection (inlet)	GS7	mm	1560	
Height of other source connection (return)	GS8	mm	360	
Height of other source connection (inlet)	GS9	mm	760	
Height of other source connection (return)	GS10	mm	1160	
Height of other source connection (inlet)	GS11	mm	1560	
Height of equipment	L	mm	1920	
Tank diameter (without insulation)	Ø	mm	700	
Diameter with insulation	Ø	mm	900	
Insulation made of hardened polyurethane foam		mm	100	
External shell	skay			
Hydraulic connections				
Heating water connection		internal thread	1"	
Solar circuit (supply / return branch)		internal thread	1"	
CH circuit (supply / return)		internal thread	5/4"	
Solar circuit (supply / return)		internal thread	1"	
E-coupling (heating element)		internal thread	1 1/2"	
Sensor Connection		internal thread	3/4"	
Cover of sensor		internal thread	1/2"	
Cold water / hot water		external thread	3/4"	
Circulation		external thread	3/4"	
Magnesium Anode		plug	5/4"	
Weight (empty)		kg	295	

Technical parameters		Designation	AkuCOMBI 800/200 L	
Spirals			solar	CH
The volume of external tank		l	600	
The volume of HWS tank		l	200	
Maximal allowable temperature		°C	100	
Maximal allowable pressure in the tank with heating water		bar	3	
Maximal allowable pressure in the HWS tank		bar	6	
Surface of heat exchanger		m ²	2.4	1
Volume of heat exchanger		l	15.8	5,8
Dimensions				
Height of heating water connection	GS1	mm	350	
Height of solar connection (return)	GS2	mm	420	
Height sensor connection (solar)	GS3	mm	720	
Height solar connection (supply)	GS4	mm	825	
Height of CH connection (return)	GS5	mm	970	
Height of sensor connection (CH)	GS6	mm	1095	
Height of CH connection (inlet)	GS7	mm	1220	
Height of other source connection (return)	GS8	mm	430	
Height of other source connection (inlet)	GS9	mm	750	
Height of other source connection (return)	GS10	mm	1000	
Height of other source connection (inlet)	GS11	mm	1320	
Height of equipment	L	mm	2000	
Tank diameter (without insulation)	Ø	mm	900	
Diameter with insulation	Ø	mm	1100	
Insulation made of hardened polyurethane foam		mm	100	
External shell	skay			
Hydraulic connections				
Heating water connection		internal thread	1"	
Solar circuit (supply / return branch)		internal thread	1"	
CH circuit (supply / return)		internal thread	5/4"	
Solar circuit (supply / return)		internal thread	1"	
E-coupling (heating element)		internal thread	6/4"	
Sensor Connection		internal thread	3/4"	
Cover of sensor		internal thread	1/2"	
Cold water / hot water		external thread	3/4"	
Circulation		external thread	3/4"	
Magnesium Anode		plug	5/4"	
Weight (empty)		kg	485	

Technical parameters		Designation	AkuCOMBI 1000/200 L	
Spirals			solar	CH
The volume of external tank		l	800	
The volume of HWS tank		l	200	
Maximal allowable temperature		°C	100	
Maximal allowable pressure in the tank with heating water		bar	3	
Maximal allowable pressure in the HWS tank		bar	6	
Surface of heat exchanger		m ²	2.4	1
Volume of heat exchanger		l	15.8	5,8
Dimensions				
Height of heating water connection	GS1	mm	350	
Height of solar connection (return)	GS2	mm	420	
Height sensor connection (solar)	GS3	mm	720	
Height solar connection (supply)	GS4	mm	825	
Height of CH connection (return)	GS5	mm	925	
Height of sensor connection (CH)	GS6	mm	1075	
Height of CH connection (inlet)	GS7	mm	1225	
Height of other source connection (return)	GS8	mm	430	
Height of other source connection (inlet)	GS9	mm	830	
Height of other source connection (return)	GS10	mm	1120	
Height of other source connection (inlet)	GS11	mm	1520	
Height of equipment	L	mm	2000	
Tank diameter (without insulation)	Ø	mm	900	
Diameter with insulation	Ø	mm	1100	
Insulation made of hardened polyurethane foam		mm	100	
External shell	skay			
Hydraulic connections				
Heating water connection		internal thread	1"	
Solar circuit (supply / return branch)		internal thread	1"	
CH circuit (supply / return)		internal thread	5/4"	
Solar circuit (supply / return)		internal thread	1"	
E-coupling (heating element)		internal thread	1 1/2"	
Sensor Connection		internal thread	3/4"	
Cover of sensor		internal thread	1/2"	
Cold water / hot water		external thread	3/4"	
Circulation		external thread	3/4"	
Magnesium Anode		plug	5/4"	
Weight (empty)		kg	485	

Certificate of warranty and Certificate of quality and completeness of the storage tank:

AkuCOMBI 500/160 L
AkuCOMBI 600/200 L
AkuCOMBI 800/200 L
AkuCOMBI 1000/200 L

Serial number of the storage tank

User (surname, first name)

Address (street, city, zip code)

Phone / Fax

Overpressure in the inlet water pipe kPa

Conditions of the validity of the warranty:

- Installation of the storage tank must be carried out according to " Operating and installation manual for storage tanks" by a professional firm
- Putting Into operation must be carried out according to "Operating and installation manual for storage tanks" by a contractual service organization accredited by the manufacturer
- The faults must be removed by a contractual service organization accredited by the manufacturer

The completeness of the supplied storage tank is guaranteed by the seller

The certificate of warranty is void if not filled out.

The user confirms that:

- he has received the "Operating and Installation manual"
- he has been acquainted with the operation and maintenance of the storage tank

..... Production date Stamp of the manufacturer Checked by: (signature)
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..... Date of installation Installation company (stamp, signature) Signature of user
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..... Date of putting into operation Contractual service organization (stamp, signature) Signature of user
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Enclosure to the certificate of warranty for the customer- user

Record of the carried out warranty and post warranty repairs and regular annual checks of the product			
Date of record	Carried out activity	Contractual service organization (signature, stamp)	Signature of customer

Certificate of warranty and Certificate of quality and completeness of the storage tank:

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Serial number of the storage tank

User (surname, first name)

Address (street, city, zip code)

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Certificate of warranty and Certificate of quality and completeness of the storage tank:

AkuCOMBI 500/160 L
AkuCOMBI 600/200 L
AkuCOMBI 800/200 L
AkuCOMBI 1000/200 L

Serial number of the storage tank

User (surname, first name)

Address (street, city, zip code)

Phone / Fax

Overpressure in the inlet water pipe kPa

Conditions of the validity of the warranty:

- Installation of the storage tank must be carried out according to " Operating and installation manual for storage tanks" by a professional firm
- Putting Into operation must be carried out according to "Operating and installation manual for storage tanks" by a contractual service organization accredited by the manufacturer
- The faults must be removed by a contractual service organization accredited by the manufacturer

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