OPERATION AND MAINTENANCE INSTRUCTIONS

Pressure resistant electric water heater with control panel of the series

EKR Wall-mounted storage tank with heat exchanger

EKL Wall-mounted storage tank horizontal

Austria Email

Please pass to the user
Id.Nr.: 228843-16

Austria Email AG • Austriastraße 6 • 8720 Knittelfeld
Tel: 03512/700-0 • Fax: 03512/700-239 • www.austria-email.at

DEAR CLIENT!

You have decided to purchase a water heating product with electric storage tank manufactured by us.

Thank you for your trust.

You have purchased an elegantly shaped device that represents the state of the art, that is in conformity with the applicable rules and regulations. The sophisticated enamelling coat is the result of continuous research and development efforts. Due to the constant quality checks during production, our hot water storage tanks boast technical properties that you will appreciate anew every time. Because of the environmentally friendly CFC-free insulation foam, the standby energy consumption is extraordinarily low. The ARA license lets you return of packaging of your device, which will then be disposed of expertly to avoid environmental damage.

Installation and commissioning must be performed exclusively by an authorised installation company in accordance with these instructions.

In this small manual, you will find all the information you will need for the proper installation and operation of the device. Nevertheless, please ask your concessionaire to explain how the device works and to demonstrate how it is operated. Of course, our customer service and our sales department will be more than pleased to assist you with any advice you may need.

We are confident that your electric storage tank will give you many years of trouble-free operation.

TABLE OF CONTENT

SAFETY INSTRUCTIONS

General

- This tank can be used by children eight years old and older as well as by persons with reduced physical, sensory or mental capabilities or who lack experience and knowledge if they are supervised or if they have been trained with regard to the safe use of the tank and understand the resulting risks. Children may not play with the tank or its packaging. Cleaning and user maintenance may not be performed by children without supervision.
- The tank may only be installed and operated as described in this manual or the associated technical information. Any other use is not proper and is therefore impermissible.
- A defective tank may not continue to be operated.
- There is a risk of scalding from hot water or hot components (e.g. fittings, hot water outlet pipe, etc.).
- When using an electric immersion heater, proper corrosion protection is to be ensured.

Installation and commissioning

- Installation and commissioning may only be performed by qualified specialised personnel who therefore assume the responsibility for the proper assembly according to the applicable laws, standards and guidelines.
- The tank is mounted to a sufficient load-bearing wall using a wall mount (note the total weight of the filled tank) or is placed on a flat horizontal surface after mounting the included adjustable feet. Ensure that the subsurface at the installation location has a sufficient load-bearing capacity.
- The tank may only be set up in dry, freeze-protected spaces. The tank is to be completely emptied if there is a risk of freezing.
- The rated pressure specified on the nameplate may not be exceeded.
- When installing the tank, a possible water leak is to be considered and a corresponding collection container (including drain) is to be installed in a drainage object.
- Following the commissioning, the tank and all connections are to be checked for leak tightness.

Electrical Connection

- Only qualified specialised personnel may connect the tank to fixed lines while observing the relevant professional standards and laws.
- A ground fault circuit interrupter with a trip current of $I_{\Delta n} \leq 30mA$ must be installed upstream from the electrical circuit.
- Before working on the tank, this is to be de-energised, checked for the absence of voltage and secured against being switched on again.
- If a connection cable is damaged, immediately disconnect the power supply (circuit breaker) and call a professional!
- Connection cables may not be extended or cut through in any way.

Servicing

- Maintenance, cleaning and any necessary repair or service work may only be performed by specialised personnel who are qualified for this purpose.
- Never try to fix errors and faults yourself.
- Necessary service and maintenance intervals are to be observed in accordance with these operating and assembly instructions.

FUNCTION

The water stored in the enamelled interior tank is heated by an electrical heater insert. A user-adjustable knob is available to preset the desired temperature. At the times determined by the responsible power supply company, the temperature controller automatically switches on the heating. Once the desired temperature in the storage tank is reached, the temperature controller switches the heater off again. If the water temperature drops, for instance because water is used up or as a result of natural cooling (an effect that is minimised by the high-quality CFC-free PU foam insulation), the heating will switch on until the preset storage water temperature is reached again.
If the storage tank is equipped with a heater battery (EKR), the water may be heated with the system's water heater as an alternative to electrical heating.

HOT WATER REQUIREMENT

The hot water requirement of the household depends on the number of persons in the household, the sanitary installations of the flat or house, the insulation, the piping and the individual user's habits.

The following table provides a list of standard consumption values for orientation.

	Hot water demand in litres		Required storage water quantity in litres	
	at 37 °C	at 55 °C	with 80 °C	with 60 °C
Full bath	150 - 180		55 - 66	78 - 94
Shower	30 - 50		11 - 18	16 - 26
Washing hands	3 - 6		1 - 2	1,6 - 3,1
Hair wash (short hair)	6 - 12		3 - 4,4	4,2 - 6,3
Hair wash (long hair)	10 - 18		3,7 - 6,6	5,2 - 9,4
Use of bidet	12 - 15		4,4 - 5,5	6,3 - 7,8
Washing dishes				
for 2 persons per day		16	10	14
for 3 persons per day		20	12,5	18
for 4 persons per day		24	15,2	21,5
House cleaning per bucket of cleaning water		10	6,3	9

In this table, it was assumed that the temperature of the cold water required for mixing to the indicated hot water temperature is approximately 12°C.

ENERGY SAVING

The high-quality CFC-free PU foam insulation and the fitted temperature control means that our electric storage tanks are genuine energy savers.
Low storage water temperatures are especially economic. Therefore, the infinitely variable temperature setting should be set to the lowest value that is actually required to cover the real hot water requirement. This helps save energy and reduces the build-up of limescale deposits in the tank.

STANDBY ENERGY CONSUMPTION

If no water is used for a long time after the end of the water heater's heating interval, the water in the tank will cool down slowly but continuously due to losses at the unit's surface.
The speed of this cooling process depends on the type of device, its size, the thickness and the quality of the tank insulation.
This behaviour is measured during a 24-hour period at a storage water temperature of 65°C, considering the energy input in kWh that is necessary to keep the water temperature constant during this period.

Nominal content in litres	80	100	120	150	200
Standby energy consumption kWh/24h EKL	1,20	1,25	1,30	1,50	1,70
Standby energy consumption kWh/24h EKR		0,80	0,85	0,97	

OPERATION

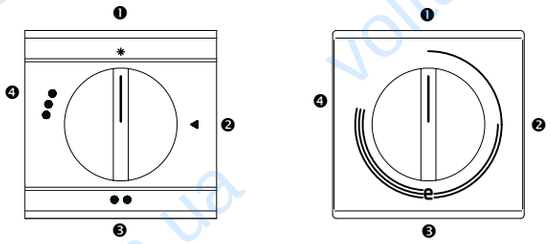
All operating elements required for the operation of the electric storage tank EKR (button to adjust the temperature controller) and monitoring elements (operation indicator lamp and thermometer) are included in a control panel on the front wall of the device.
Wall-mounted storage tank EKL do not have an operation indicator lamp and the button to adjust the temperature controller of the horizontal storage tank is located on the front (connection side).

This tank can be used by children eight years old and older as well as by persons with reduced physical, sensory or mental capabilities or who lack experience and knowledge if they are supervised or if they have been trained with regard to the safe use of the tank and understand the resulting risks. Children may not play with the tank or its packaging. Cleaning and user maintenance may not be performed by children without supervision.

TEMPERATURE SETTING

As a setting aid, the adjusting knob of the electric heater's temperature controller has 4 main stages, namely:

❶	up to 30 °C	Frost protection for the tank
❷	approx. 40 °C	Hand warm tank water
❸	approx. 65 °C	Moderately hot tank water
❹	approx. 85 °C	hot tank water



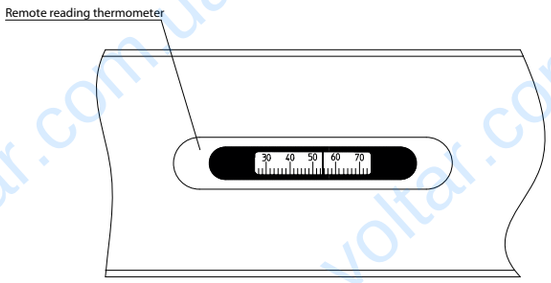
Caution:
The adjusting knob at the left limit stop does not result in an off position or shutdown of the device heating. The water may still have a temperature of 30 °C when operated in the ❶ frost protection position.

The temperature controller should not be set to a higher position than ❸ (approx. 65 °C) when operated using day current. This position is recommended to rule out unintentiona scalding by excessively hot water. The device operates particularly economically at this setting. The heat losses are minor and the formation of boiler scale is largely avoided. Low standby energy consumption.

Due to the hysteresis of the temperature controller (± 7 K) and possible radiation losses (cooling of the pipeline), the temperature specifications are subject to an accuracy of ± 10 K.

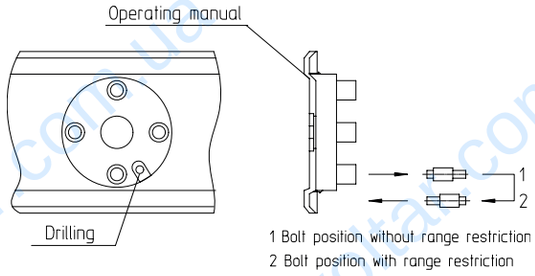
THERMOMETER

There is a remote thermometer built into the front panel of the device typ EKR for monitoring the stored water temperature.
The display value depends upon the temperature regulator setting. Only with the adjustment knob at „Pos.❹“ and after completion of the warm up process is the maximum display value reached. For other regulator positions the pointer deflection is reduced accordingly.



ADJUSTMENT RANGE LIMITATION (EKR)

In order to avoid unintentional scalding caused by water which is too hot, the adjustment range of the temperature regulator can be limited to a maximum of 65°C. The device must be electrically isolated from the grid at all poles. Set to „Pos ❶“. After opening the connection space, remove the stop pin in that is located in a drilling in the back of the control panel and reinsert it into the hole with the long shaft in front.



PREREQUISITES FOR OPERATION

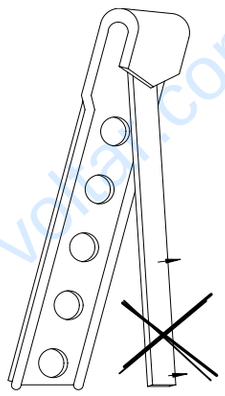
The storage tanks must be used exclusively in accordance with the conditions specified on the rating plate. In addition to national regulations and standards recognised in the laws, compliance with the connection conditions of the local electricity company and water supply works as well as the installation and operation instructions is required.

The room where the device is operated must be free of frost. The device must be installed in a reasonably expected location, i.e. if the device needs to be maintained, repaired or replaced, it must be readily accessible. If the water is very hard, either of the following options is recommended: to connect a commercially available standard descaling device upstream of the tank observe a maximum operating temperature of approximately 65°C (setting “Pos. ❸”). The bare-tube heat exchanger of the EKR series must be flushed properly before the initial installation is performed. If the bare-tube heat exchanger is not used, the outer tube ends must be sealed to prevent back-cooling. The drinking water quality must be appropriate to ensure proper operation.
It is recommended to fit a water filter upstream of the device to keep the tank free of dirt and other particles.

Should a device, at the point of delivery, clearly display a malfunction, damage or other defect, this must not be fitted, installed or used in the system. Subsequent complaints regarding devices with an obvious defect which have been connected and installed are expressly excluded under the warranty and guarantee.

MOUNTING AND SAFETY INFORMATION

a) **Important mounting information! Do not bend hang-up hook safety element due to possible fracture. Risk of injury by falling device in the case of non-observance!**



b) A wall rail for hanging up the upper fastening hook is enclosed with every device, which is mounted to the wall using two screws and takes over the supporting function.
Two additional screwed connections must be provided on the wall (in accordance with the dimensioned drawing with the device dimensions) for the lower wall plate of the device; this has only a supporting function against the wall as well as against lateral shifting. The lower wall bracket has no supporting function and may therefore not be subject to any excessive stress. Lifting and/or supporting the electrical storage heater on the lower wall bracket is prohibited, as this strain can lead to the wall bracket tearing off! Hot water heaters of a suspended type must not be mounted horizontally.

c) The fastening hooks and with that the hang-up dimension A can be adjusted at intervals of 50 mm by repositioning the rear tank wall screws into other holes of the hook (only for 50 – 150 litres). The attachment hook is always to be secured to the rear wall of the tank with at least two screws.
Caution: Only fixing hooks provided by the manufacturer may be used!
If the assembly height is changed, this is to be tightened to the mounting screws with a torque of 40 - 50 Nm.

d) The dimensioned device drawings and any information labels that may be enclosed must be observed during mounting.

e) **Caution:** the weight of the water heater including the weight of the water filling (the rated capacity) must be taken into account for load-related and strength-related design of the device mounting surface or selection of the mounting location.
Special suspensions: see thin-wall and/or ceiling suspension.

f) If a water heater is provided with enclosures (covering), installed in narrow, small rooms or in suspended ceilings and the like, it is absolutely important to check that the connecting side of the device (water connections, electric connecting area or heating unit) remains freely accessible and no accumulation of heat results. A free space of 500 mm must be available for de-installation of the heating flange. A space of at least 50 mm must be kept free above the device for hanging it up on the wall rail.

g) Any electrochemical processes that may be possible (contact corrosion, e.g. copper – steel) must be taken into account according to the rules of technology when selecting or arranging the order of insulation material used on the part of the system (caution with mixed installations). We recommend the installation of insulated screw fittings.

h) The device is equipped with a safety temperature limiter, which stops any further heating of the device from a water temperature of max. 110 °C (EN 60335 -2-21; ÖVE-EW41, Part 2 (500) /1971). Therefore, the connecting components (connecting pipes, safety valve combinations, etc.) must be selected in such a way that they resist temperatures of 110 °C and any consequential damages are avoided in the case of a possible malfunction of the temperature control.

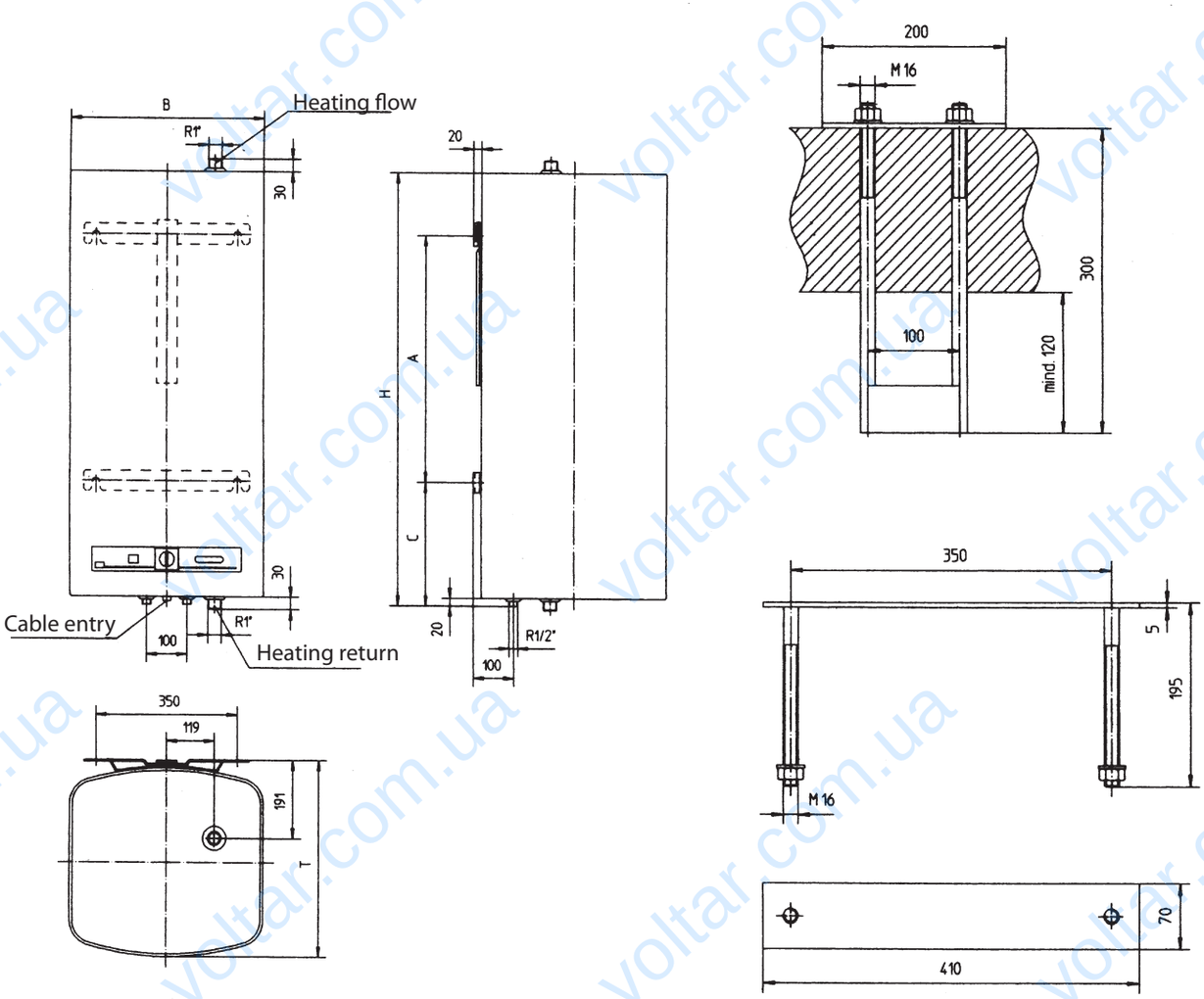
i) Mounting and installation must be performed exclusively by licensed craftsmen.

j) **Horizontal storage tanks:** The fitting situation for horizontal tanks is determined by the function and must therefore be observed strictly. The cold water inlet (blue) and the hot water outlet (red) should be located next to each other on the same level and protrude in the lower part of the housing cover.

DIMENSIONED DRAWING

Series EKR

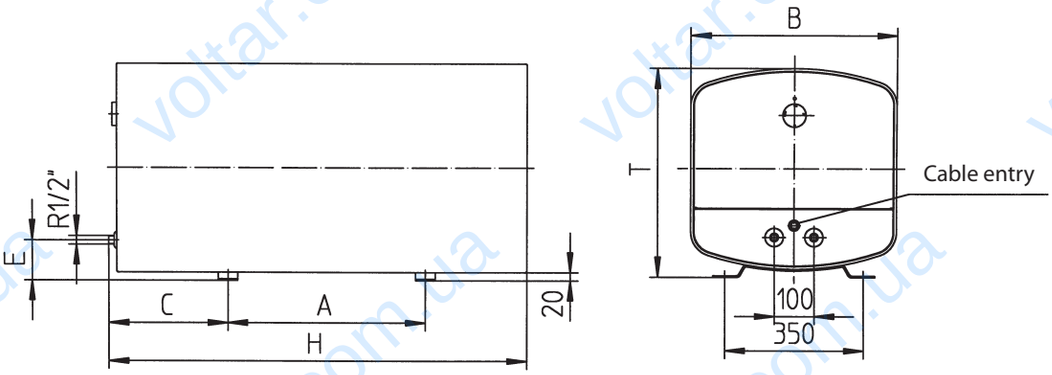
Type	Con-tent litres	Variety	Dimensions in mm A	A adbustable von - bis	C	H	B	T	Weight in kg
EKR 100	100	Hängespeicher m. Heizregister	600	400 - 700	300	921	520	520	66
EKR 120	120	Hängespeicher m. Heizregister	800	550 - 800	300	1056	520	520	74
EKR 150	150	Hängespeicher m. Heizregister	800	750 - 1000	300	1256	520	520	82

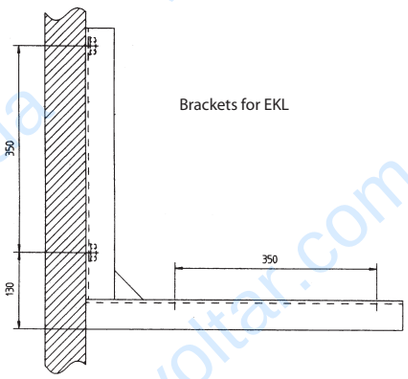


Series EKL

Type	Con-tent litres	Variety	Dimensions in mm						Weight in kg
			A	C	H	B	T	E	
EKL 80	80	Horizontal storage tank	500	150	780	480	480	80	42
EKL 100	100	Horizontal storage tank	500	300	904	480	480	80	52
EKL 120	120	Horizontal storage tank	500	300	1056	520	520	100	61
EKL 150	150	Horizontal storage tank	700	300	1256	520	520	100	66
EKL 200	200	Horizontal storage tank	1000	300	1590	520	520	100	77

EKL 80 - 200 l





PRODUCT FICHE ERP

EKR

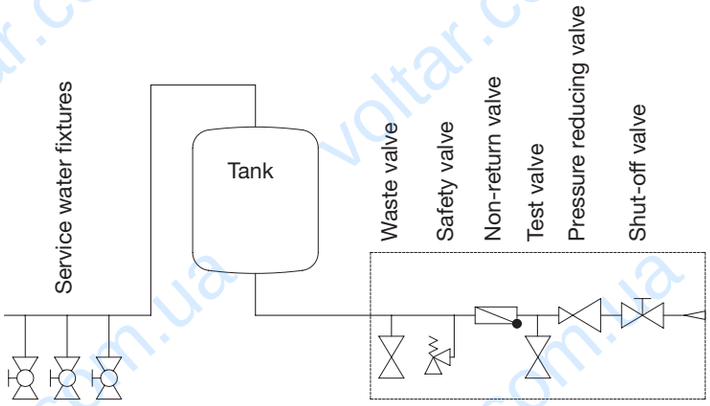
Modell		EKR 100	EKR 120	EKR 150
Tank volume	l	100	120	150
Mixed water volume	V_{40}	152	183	228
Load profile		M	M	L
Energy efficiency class		B	B	C
Energy efficiency	%	39,9	39,7	38,5
Daily electricity consumption	Q_{elec}	6,020	6,062	12,565
Annual electricity consumption	kWh	1313	1320	2713
Thermostat temperature settings	°C	65	65	65
Sound power level indoors	dB	15	15	15
Specific precautions		Refer to the manual	Refer to the manual	Refer to the manual
Comments				

EKL

Modell		EKL 80	EKL 100	EKL 120	EKL 150	EKL 200
Tank volume	l	80	100	120	150	200
Mixed water volume	V_{40}	122	152	183	228	304
Load profile		M	M	M	M	M
Energy efficiency class		C	C	B	C	C
Energy efficiency	%	36,6	36,4	39,2	38,0	37,7
Daily electricity consumption	Q_{elec}	6,724	6,772	6,157	6,412	6,477
Annual electricity consumption	kWh	1432	1440	1336	1379	1390
Thermostat temperature settings	°C	65	65	65	65	65
Sound power level indoors	dB	15	15	15	15	15
Specific precautions		Refer to the manual	Refer to the manual	Refer to the manual	Refer to the manual	Refer to the manual
Comments						

SERVICE WATER CONNECTION (PRESSURE-PROOF)

Any warranty for our water heaters shall be rejected in case of use of unsuitable or inoperative storage connector fittings as well as an exceedance of the specified operating pressure.
All storage tanks and boilers with “Max. operating pressure 6 bar” or “Max. operating pressure 10 bar” on their power rating plate are pressure-resistant storage tanks. The connection/connecting components (e.g. safety valve, pressure reducer) are to be designed/dimensioned in accordance with national standards and regulations (e.g. DIN 1988-20; ÖNORM EN 806-2).
Attention: The mains water pressure must match the safety valve, if required, a pressure reducer should be used!
A pressure reducing valve must be installed in the cold water supply line should the line pressure be higher.
The water plumbing must only be implemented using a tested diaphragm safety valve or a diaphragm safety valve combination (connector fitting for pressure-type storage tanks)!
A safety valve combination consists of a shutoff, test, non-return, drain and safety valve with an expansion water drain and is installed between the cold water supply line and the cold water supply (blue) of the storage tank in the order as drawn.



The following must principally be observed:
In order to ensure a flawless function of the connector fitting, it must only be mounted in frost-protected rooms. The drain of the safety valve must be open and observable or the outlet pipe from the drop collector (expansion water funnel) must lead into the sewer, so that neither frost nor clogging by dirt or anything similar may cause any malfunction. Make sure that the drip cup is not blocked.
Furthermore, it must be observed that the drain pipe of the safety valve must be installed with a steady downward inclination.
No shutoff valve or other throttling must be installed between the safety valve and the cold water supply of the storage tank. The safety valve must be set to a response pressure that is lower than the nominal pressure (6 bar) of the storage tank. The cold water supply line must be rinsed out before the storage tank is connected finally. The discharge openings of the safety valves (domestic water and heating circuits) must open out into an appropriate drainage object in order to avoid any damage caused by the escape of operating fluid.

After completed plumbing and bubble-free filling of the storage tank, the connector fitting must be checked for functionality.

a) In order to avoid a blockage of the venting facility of the safety valve due to furring, the venting facility of the safety valve must be operated from time to time during operation of the system. It must be observed whether the valve closes again after releasing the venting facility and whether the water in place runs off completely through the funnel or the blow-off pipe.
b) For safety valves installed ahead of water heaters, it must be observed whether the safety valve responds during heating of the water heater. This can be identified by the exit of water from the blow-off pipe.

Implementation: operator, plumber
Time interval: every 6 months

Maintenance and repairs:
If no water exits during heating of the water heater or in the event of a permanent leak of the safety valve, an attempt must be made to loosen the valve by repeated operation of the venting facility or to rinse out any possible foreign object (e.g. fur particle) on the sealing unit.
If this cannot be achieved, appropriate repairs by a plumber must be initiated. The complete safety valve must be replaced in the case of any damage to the valve seat or sealing ring.
Implementation: plumber
Time interval: yearly

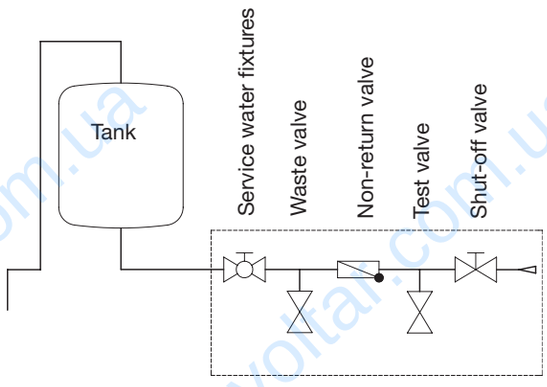
To test the non-return valve, the shutoff valve is closed and no water must run out of the opened test valve. The storage tank is operated using the hot water valve of the service fitting (mixer tap). As a result, the storage tank is constantly under line pressure. To protect the internal boiler from overpressure during heating, the appearing expansion water is discharged through the safety valve.
In order to avoid damages to the hot water tank from overpressure, it is absolutely necessary to replace any furred safety valves. The non-return valve prevents the hot water from flowing back into the cold water supply net in the case of a loss of line pressure, thus protecting the boiler from heating up without water. Using the shutoff valve, the storage tank can be separated in relation to water and thus also from the cold water supply network, and emptied through the drain valve, if required.

In order to allow for a trouble-free repair, a removal or exchange of the device, it is necessary to establish the connection of the tank by means of a detachable connection (Dutch). Tank leaks as a result of an improper connection and resulting damage and consequential damage are excluded from the warranty and product liability.

NON-PRESSURE CONNECTION

In cases in which fittings are used for non-pressure connection (mixer units), a non-pressure connection can also be made for pressure-resistant storage tanks.
No safety valve is required in the cold water inflow pipe, although a back-flow valve, shut-off valve and drainage valve are! This type of connection is beneficial when just one hot water extraction point is required.
With the control device (mixing unit), the operation of the storage tank takes place via the hot water valve - this acts as a shutoff device in the storage tank‘s cold water inlet pipe. This means that hot water abstraction from the storage tank will be caused by the hot water valve opening and cold water being forced from below into the heat storage boiler and in this way the hot water will flow out freely through the hot water outlet via the mixing unit.

The operating mechanisms for non-pressure connection are constructed in such a way that the hot water outlet remains open even if the hot water and cold water valves are closed and thus the storage boiler is connected with the external air. The excess water which occurs during the heating process can flow unhindered through the hot water outlet. If necessary, the storage tank can be separated from the cold water pipe system using the shut-off valve and can be drained via the drainage valve.
Remark: If a pressure-resistant storage tank is connected without pressure, there may be an overrun of several litres of water after the tapping process has ended which is due to construction reasons (the quantity depends on the volume of the tank). This does not constitute a defect.



CENTRAL HEATING CONNECTION (ONLY EKR)

The heat exchanger is suitable for connection to a water heater at a pressure of up to 6 bar. A forced circulation with pump is required. If the storage tank is connected to alternating current, the pump can be controlled via the free charge pump contact. The temperature setting of this contact is identical to the temperature level of the two contacts for the fitted electric heater.
The bare-tube heat exchanger of the EKR series must be flushed properly before the initial installation is performed. If the bare-tube heat exchanger is not used, the outer tube ends must be sealed to prevent back-cooling.

In the event of a combination with boilers or gas fired water heaters, an additional sensor protection tube (clear width 9.5mm) is fitted in the heating flange for insertion of the sensor (to be provided on site – capillary tube or electronic sensor). The sensor tube protrudes above the topmost coil of the heat exchanger.

If a hot water storage tank with bare-tube heat exchanger is installed, a shut-off element or circulation brake should be fitted in the inflow line to prevent backheating into the heating circuit when the central heating is switched off and electric operation is active.

However, under no circumstances is it permissible to shut off the inflow line and the return line because this would make it impossible for the water inside the heat exchanger to expand, which could damage the heat exchanger.

If the water heater is heated by its heat exchanger, then it must be ensured that in no case the hot water temperature exceeds 85 °C, as otherwise the safety temperature limiter of the electric heater can trigger and render it inoperable.

In order to allow for a trouble-free repair, a removal or exchange of the device, it is necessary to establish the connection of the tank by means of a detachable connection (Dutch). Tank leaks as a result of an improper connection and resulting damage and consequential damage are excluded from the warranty and product liability.

ELECTRICAL CONNECTION

General information

a) As a general rule, the electrical connection must be made in accordance with the wiring diagram glued inside the connection chamber of the storage tank!
b) Ensure that the supply voltage is correct!
c) Fit an all-pole disconnector with 3mm contact opening width in the electric feeder. Automatic circuit breakers can also be used as disconnectors.
d) The connection cable must be fed through the cable screw connection into the connection chamber of the storage tank and protected with a strain relief mechanism against pulling out and twisting. Tanks with heater battery have a second cable entry point for the charge pump control cable.
e) For installation and intrusive interventions into the device, the hot water storage tank must first be isolated completely (all poles) and on every side from the power supply in compliance with EN 50110 (ÖVE, TAEV). Before carrying out any additional work, the system must be secured against being switched on again (remove the fuses, trigger the mains circuit breaker).

Reconnection possibilities

For storage tanks with choice of heating time, the heating elements must be reconnected according to the wiring diagram glued inside the unit. The factory connection corresponds to a heating time of 6 hours in ~ 230 V supply voltage. The three-phase current circuits 3 ~ 400 V, respectively 3 N ~ 400 V, available as an option for 100 litres and above, must also be reconnected according to the following table.

EKR

Reconnectable heating times, ratings and fusing current.
Bold figures represent the factory connection (6 hrs 230V)

Heater clamping* Heating time hrs		Heating times at mains voltage							
		~230V					3~400V		3N~400V
							S+M+S wye conn.		
		M 16	S 8	**S+M 6**	S+S 4	S+M+S 3 1/3	4	3 1/3	3 1/3
Storage tank content 100l	kW A		1,10 6	**1,75 10**	2,20 10	2,85 16		2,80 6	
Storage tank content 120l	kW A		1,35 10	**2,00 10**	2,70 16	3,35 16		3,20 6	
Storage tank content 150l	kW A		1,65 10	**2,30 16**	3,30 16		3,70 10		3,95 10

* S = side heater in flange
M = middle heater in flange

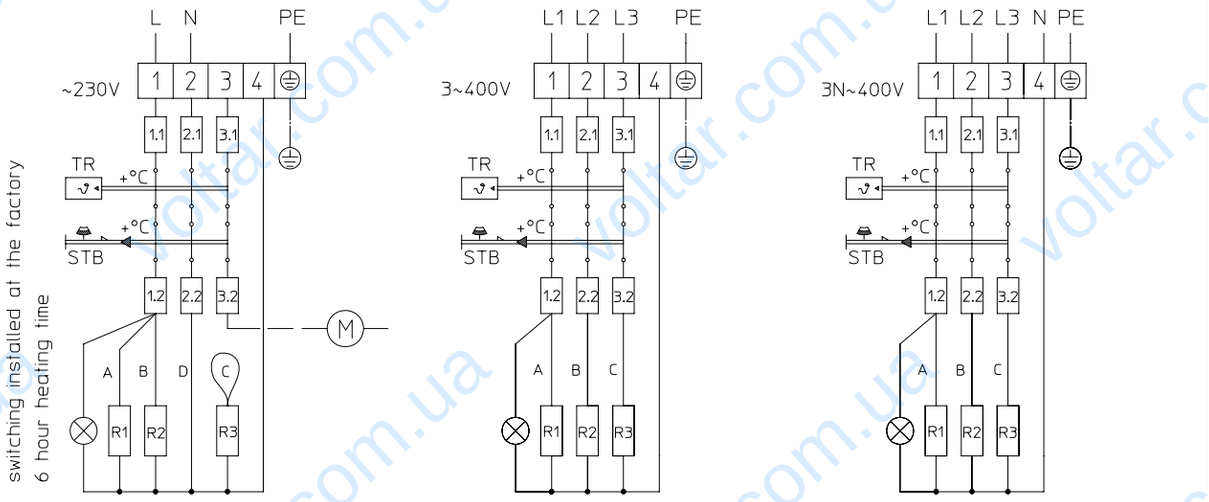
EKL

Bold figures represent the factory connection (6 hrs 230V)

Heater clamping* Heating time hrs		Heating times at mains voltage						
		~230V				3~400V		3N~400V
						S+M+S wye conn.		
		S 8	**S+M 6**	S+S 4	S+M+S 3 1/3	4	3 1/3	3 1/3
Horizontal storage tank content 80l	kW A	1,00 6	**1,65 10**	2,00 10	2,65 10		2,60 6	
Horizontal storage tank content 100l	kW A	1,10 6	**1,75 10**	2,20 10	2,85 16		2,80 6	
Horizontal storage tank content 120l	kW A	1,30 6	**1,95 10**	2,60 16	3,25 16		3,10 6	
Horizontal storage tank content 150l	kW A	1,65 10	**2,30 16**	3,30 16		3,70 10		3,95 10
Horizontal storage tank content 200l	kW A	2,10 10	**2,75 16**			4,40 10		4,85 10

* S = side heater in flange
M = middle heater in flange

Connection diagram EKR, EKL



Heating time	Cable	
3 1/3 hr.	A,B,C	at therm. terminal 1.2
	D	at therm. terminal 2.2
4 hr.	A,C	at therm. terminal 1.2
	B	remove
	D	at therm. terminal 2.2
8 hr.	A	at therm. terminal 1.2
	B,C	remove
	D	at therm. terminal 2.2
16 hr.	A,C	remove
	B	at therm. terminal 1.2

Heating time	Cable	
3 1/3-4 hr.	A	at therm. terminal 1.2
	B	at therm. terminal 2.2
	C	at therm. terminal 3.2
	D	remove

Heating time	Cable	
3 1/3 hr.	A	at therm. terminal 1.2
	B	at therm. terminal 2.2
	C	at therm. terminal 3.2
	D	remove

Volume	Tubular heating element (KW)			Reconnectable heating outputs in kW Switching installed at the factory 6 hour heating time							
				~230V					3~400V		3N~400V
	r1	r2	r3	16 hr.	8 hr.	6 hr.	4 hr.	3 1/3 hr.	4 hr.	3 1/3 hr.	3 1/3 hr.
50 litre	0,65	0,30	0,65	0,30	0,65	0,95	1,30	1,60			
80 litre	0,85	0,30	0,85		0,85	1,15	1,70	2,00			
100 litre	1,10	0,65	1,10		1,10	1,75	2,20	2,85		2,80	
120 litre	1,35	0,65	1,35		1,35	2,00	2,70	3,35		3,20	
150 litre	1,65	0,65	1,65		1,65	2,30	3,30		3,70		3,95
200 litre	2,30	0,65	2,30		2,30	2,95			4,70		5,25

Type	Tubular heater kW			Reconnectable heating ratings in kW							
				~230V					3~400V		3N~400V
	r1	r2	r3	16 hrs.	8 hrs.	**6 hrs.**	4 hrs.	3 1/3 hrs.	4 hrs.	3 1/3 hrs.	3 1/3 hrs.
EKL 080 U	1,00	0,65	1,00		1,00	**1,65**	2,00	2,65		2,60	
EKR 100 U, EKL 100 U	1,10	0,65	1,10		1,10	**1,75**	2,20	2,85		2,80	
EKL 120 U	1,30	0,65	1,30		1,30	**1,95**	2,60	3,25		3,10	
EKR 120 U	1,35	0,65	1,35		1,35	**2,00**	2,70	3,35		3,20	
EKR 150 U, EKL 150 U	1,65	0,65	1,65		1,65	**2,30**	3,30		3,70		3,95
EKL 200 U	2,10	0,65	2,10		2,10	**2,75**			4,40		4,85
EKR 200 U	2,30	0,65	2,30		2,30	**2,95**			4,70		5,25

COMMISSIONING

Before the device is switched on electrically, the storage tank must be filled with water.

The expansion water produced in the interior tank during heating must drip from the safety valve (pressure resistant connection), respectively from the overflow mixer tap (pressureless connection).

Caution: First-time heating must be performed and supervised by a licensed professional. The hot water drainpipe and parts of the safety fitting may get hot.

After heating, the set temperature and the actual temperature of the retrieved water should be approximately the same.

DECOMMISSIONING, DRAINING

If a water heater is shut down or not used for an extended period of time, it must be emptied and completely disconnected from the electrical power supply. Switch off supply line switch or circuit breakers.

In rooms where there is a permanent risk of frost, the water heater has to be emptied before the start of the cold season if the device is not used for several days and if it is not operated in frost protection mode.

Once the stop valve in the cold water supply line has been closed, the water is drained through the drain valve of the safety valve combination. Simultaneously, all hot water valves of the connected fittings are opened. Draining is also possible through the safety valve into the expansion water funnel (drip catcher). To do this, the safety valve wheel must be brought to “test” position.

Caution: Hot water may flow out during the draining procedure.

If there is a risk of frost, do not forget that not only the water in the water heater and in the hot water lines may freeze, but also in all cold water supply lines to the fittings and to the device itself. Therefore, it makes sense to drain all water-carrying fittings and pipelines (including the heating circuit = bare-tube heat exchanger) all the way back to the frost-proofed part of the domestic water system (domestic water connection).

If the storage tank is re-commissioned, it is absolutely necessary to ensure that it is filled with water and that bubble-free water comes from the hot water valves.

CHECKING, MAINTENANCE, CARE

a) During heating, the expansion water must drip visibly from the drain of the safety valve (in case of a pressureless connection, the expansion water drips from the valve of the mixer tap). If the device is fully heated (approximately 85°C), the volume of the expansion water is approximately 3.5% of the content of the storage tank.
The function of the safety valve must be checked regularly. When the safety valve check button is lifted or turned to the “test” position, the water must flow freely from the body of the safety valve into the drain funnel.
Caution: The cold water inlet and parts of the storage tank connection fitting may get hot in the process. If the water heater is not heated, no water should drip from the safety valve. If water does drip from the safety valve, either the pressure in the water line is too high (above 5.5 bar: fit a pressure reducing valve), or the safety valve is defective. Please call the installation expert immediately!

b) If the water is very hard, a professional must remove the limescale forming inside the interior tank as well as the freely deposited limescale after one to two years of operation.
For cleaning, it is necessary to open the flange – remove heating flange, clean storage tank, always use a new sealing when refitting the heating flange. Any contact between the specially enamelled interior tank of the water heater and boiler scale dissolver must be avoided – do not work with the deliming pump. Scrape off deposited scale with wood and remove with a hoover or wipe with a cloth.
Finally, flush the device thoroughly (according to ÖNORM H5195) and observe the heating procedure as if the device was first-time commissioned.

c) To make a justified claim under the warranty granted, the fitted protective anode must be checked by a professional at max. 2-year intervals. Do not damage or remove the protective current discharge resistor underneath the heater fastening screw during maintenance work.

d) Do not use abrasive cleaning agent and no paint thinners (such as nitro, trichlor compounds etc.) to clean the device. It is best to clean the device with a moist cloth, adding a few drops of a household cleaning liquid. In hospitals and other public buildings, the prevailing regulations for cleaning and disinfection must be observed.

MALFUNCTIONS

If the water in the storage tank is not heated, please check whether the circuit breaker in the distributor (MCB) has tripped or whether the fuse has blown. Also check the setting of the temperature controller.

In all other cases, do not attempt to repair the malfunction yourself. Please contact either a licensed installation professional or our customer service. Often, a professional will be able to fix the storage tank in the blink of an eye. When making your call, please always state the type designation and the serial number. You will find it on the rating plate of your electric storage tank.

WARRANTY, GUARANTEE AND PRODUCT LIABILITY

Warranty is made according to the legal provisions of the Republic of Austria and the EU.

1. The prerequisite for honoring of warranty terms on the part of the manufacturer (hereinafter referred to as Manufacturer) is presentation of a paid invoice for the purchase of the appliance in question, whereby the identity of the appliance including model and fabrication number must be indicated on the invoice and presented by the claim applicant. The General Terms and Conditions, Terms and Conditions of Sale and Delivery of the manufacturer shall apply exclusively.

2. The assembly, installation, wiring and startup of the appliance in question must, to the extent that this is prescribed legally or in the installation and operation guide, have been performed by an authorized electrical technician or installer who has followed all the required regulations. The hot water tank (excluding outer jacket or plastic cover) must be protected from exposure to direct sunlight to prevent discoloration of the polyurethane foam and possible cracking of plastic parts.

3. The area in which the appliance is operated must be kept from freezing. The unit must be installed in a location where it can be easily accessed for maintenance, repair and possible replacement. The costs for any necessary changes to the structural conditions (e.g. doors and passages too narrow) are not governed by the guarantee and warranty declaration and therefore shall be rejected on the side of manufacturer. When erecting, installing and operating the water heater in unusual locations (e.g. attics, interior rooms with water-sensitive floors, closets, etc.), provision must be made for possible water leakage and means provided for catching the water with a corresponding drain to avoid secondary damage in the context of product liability.

4. Warranty claims will not be honored for:
inappropriate transport, normal wear and tear, intentional or negligent damage, use of force of any kind or description, mechanical damage or damage caused by frost or also by exceeding the operating pressure stated on the rating plate, even if only once, use of connection fittings that do not comply with the standard, use of defective tank connection fittings and unsuitable and defective service fittings. Breaking of glass and plastic components, possible colour differences, damage due to improper use, in particular non-observance of the mounting and operating instructions (Operating and Mounting Instructions), damage by external influence, connecting to incorrect voltage, corrosion damage as a consequence of aggressive waters (water not suitable for drinking) in accordance with the national regulations (e.g. Austrian ordinance on drinking water, TWV – Fed. Law Gazette II No. 304/2001), deviations between the actual drinking water temperature at the tank fitting and the specified hot water temperature of up to 10K (hysteresis of the controller and possible cooling due to pipelines), Continued use, despite the occurrence of a defect, unauthorised modifications to the device, installation of additional components that were not tested together with the device, improperly carried out repairs, Insufficient water conductivity (min. 150 µs/cm) operational wear of the magnesium anode (wearing part), natural formation of boiler scale, lack of water, fire, flood, lightning, overvoltage, power failure or other types of force majeure. Use of non-original and company-external components such as e.g. heating elements, reactive anode, thermostat, thermometer, ribbed tube heat exchanger, etc., Parts installed in an uninsulated condition with respect to the storage tank, ingress of foreign particles or electrochemical influences (e.g. mixed installations), failure to observe the design documents, unpunctual and undocumented renewal of the installed protective anode, no or improper cleaning and operation, as well as any deviations from the standard that reduce the value or functionality of the device only slightly. Fundamental compliance with all regulations in ÖNORM B 2531, DIN 1988 (EN 806), DIN 1717, VDI 2035 or the corresponding national regulations and laws must be ensured.

5. A justified claim must be reported to the closest customer service location of the manufacturer. The latter reserves the right to replace or repair a defective part or to decide whether a defective appliance shall be replaced with a working one of equal value. The manufacturer furthermore expressly reserves the right to require that the purchaser return the appliance in question. The time of a repair or a replacement is determined by the production.

6. Repairs made under warranty are to be performed only by persons authorized by the manufacturer. Replaced parts become the property of the manufacturer. If any repairs to the water heater become necessary as part of necessary service work, these are charged at the cost of repair and prorated material cost.

7. Any work performed without our express order, even this is done by an authorized installer, will void the warranty. Assumption of the costs for repairs performed by third parties presumes that the manufacturer was requested to eliminate the defect and did not or did not in timely fashion meet his obligation for replacement or repair.

8. The warranty period will not be renewed or extended as a result of a guarantee and warranty claim, service or maintenance work.

9. Transport damage will only be inspected and if appropriate recognized if it has been reported in writing to the manufacturer no later than the weekday following delivery.

10. Claims exceeding the terms of the warranty, in particular those for damage and consequential damages, are precluded insofar as these are legally permissible. Pro rata work times for repairs as well as the costs for restoring the equipment to its original condition must be paid in full by the purchaser. The guarantee provided extends according to this guarantee declaration only to the repair or replacement of the appliance. The provisions of the Terms of Sales and Delivery of the manufacturer remain, insofar as they are not altered by these guarantee conditions, fully in effect.

11. There is a charge for services provided outside of the context of these guarantee conditions.

12 In order for a warranty claim to be honored by the manufacturer, the appliance must be paid for in full to the manufacturer and the claimant must have met all his obligations to his vendor in full.

13. The enamelled internal boiler for water heaters is warranted for the specified period from the delivery date provided all warranty terms described under Points 1 to 12 are observed with in full. If the warranty terms have not been met, the legal warranty requirements of the respective country from which the appliance was shipped shall prevail.

14. Claim satisfaction according to prevailing Austrian Product Liability Law:
Claims for compensation under the title of product liability are only justified if all prescribed measures and necessities for fault-free and approved operation of the appliance have been met. This includes among other things the prescribed and documented anode replacement, connection to proper operating voltage, prevention of damage due to improper use, etc. From these conditions it can be concluded that if all requirements are met (norms, installation and operation guide, general guidelines, etc.), the device or product fault resulting in the secondary damages would not have occurred. Furthermore it is mandatory that for processing of the claim the necessary documentation such as the part number and manufacturing number of the water heater, the seller's invoice and that of the executing license holder as well as a description of the malfunction for a laboratory study of the appliance in question (absolutely required, since a specialist will study the appliance and analyze the cause of failure) be provided. Furthermore, the original installation at the place of assembly may not be changed, converted or dismantled before being inspected by the manufacturer or an appointed expert.
Any change to the original assembly situation on-site will lead to the immediate exclusion of any claims arising from the warranty, guarantee or product liability.
To prevent misidentification of the water heater during transport, it must be marked with a highly visible and legible marking (preferably including address and signature of the end customer). Corresponding pictorial documentation indicating the extent of the damage, the installation (cold water line, hot water outlet, heating outgoing and return, safety fixtures, expansion tank if present) as well as the defect location on the water heater is also required. Furthermore the manufacturer reserves the express right to require that the purchaser provide all the documents and equipment and equipment parts necessary for clarification. The prerequisite for performing services under the title of product liability is that it is the claimant's obligation to prove that the damage was caused by the manufacturer's product. Damage compensation according to the Austrian Product Liability Law is subject to a 500 Euro deductible. Until the entire matter is clarified and the circumstances as well as determination of the causal factors are established, the manufacturer is held faultless. Non-observance of the operating and installation guide and/or the relevant norms is considered negligent and will result in a liability disclaimer within the scope of compensation for damages.

The illustrations and data are not binding and may be modified without notice when technical improvements are made. Subject to printing errors and technical changes.