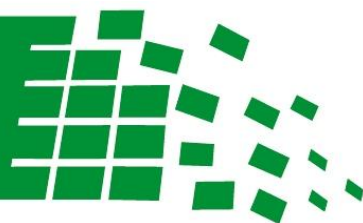


ELEKTROMET[®]



inteligentna technologia

HEAT EXCHANGER WITH DOUBLE COIL

W2

● 200 ● 250 ● 300 ● 350 ● 400 ● 500



INSTALLATION AND OPERATING INSTRUCTIONS WARRANTY CARD

ELEKTROMET[®]

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Before installing and starting the tank, please read this "Installation and Operating Instructions" and the Warranty Terms and Conditions.

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The manufacturer reserves the right to make any design changes as part of the product modernization without having to include them in this manual.

1. Construction and purpose

W2 type heat exchangers, as pressure storage heaters, are designed for heating and storing domestic hot water for the needs of apartments, single- and multi-family houses, public utility buildings, industrial facilities and others.

W2 exchangers with capacities ranging from 200 to 350 are designed for installation in rooms with doors as small as 70 cm wide. They are equipped with two independent spiral coils, allowing for the connection of two power sources with different heating media, such as a low-temperature water boiler and solar collectors with a glycol-based heating medium.

The pressure tanks in these exchangers are made of sheet steel coated internally with a special, high-temperature ceramic enamel, which creates a glassy coating that protects them from corrosion and ensures clean, healthy water. Additional corrosion protection for the tanks is provided by a magnesium anode, which, thanks to the electrochemical potential difference between the steel and magnesium in the water, generates a protective current for the tank.

Thermal insulation is made of PS polystyrene foam permanently connected to the tank walls.

The outer casing of the exchangers is made of plastic or artificial leather.



NOTE!!! In the case of thermal insulation permanently attached to the pressure tank, its removal will result in the loss of the product warranty.

W2 heaters are designed to accommodate an electric heater on a 1.5" plug, including the EJK heater manufactured by ZUG ELEKTROMET with insulated heating elements (Table 3), which do not draw the protective current generated by the magnesium anode used to protect the tank against corrosion. This increases the tank's durability and the life of the magnesium anode.



Fig. 1a. Construction and dimensions of W2 heat exchangers.

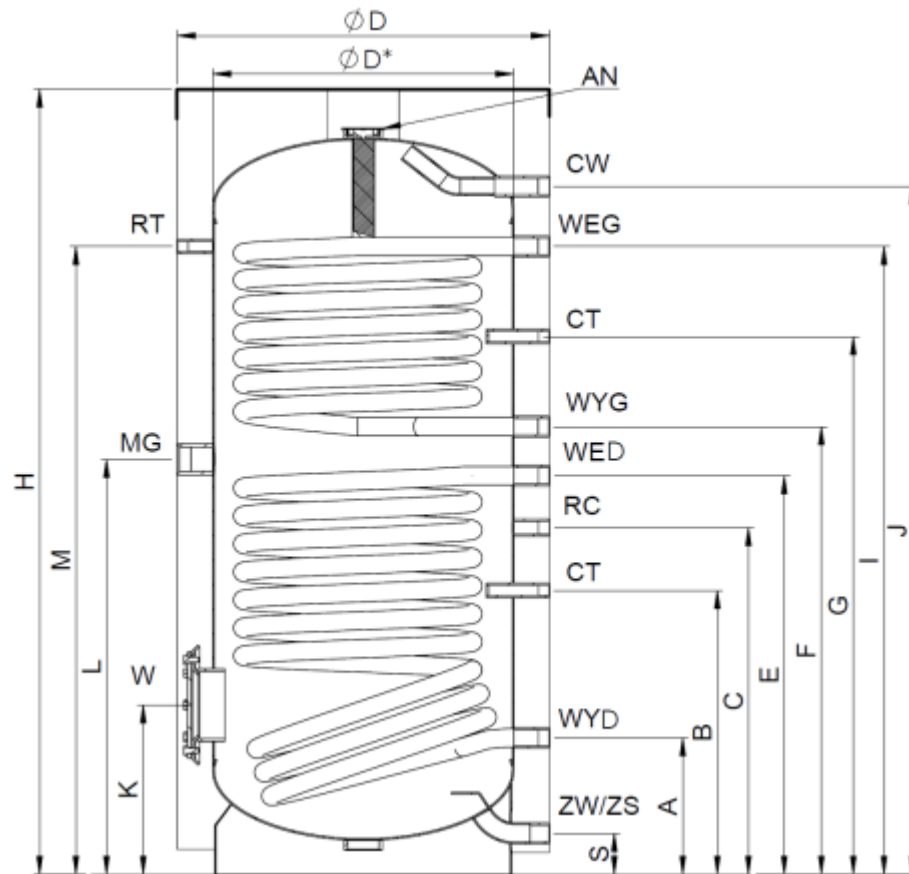


Fig. 1b. Construction and dimensions of W2 exchangers with capacities of 200, 250, 300, 400

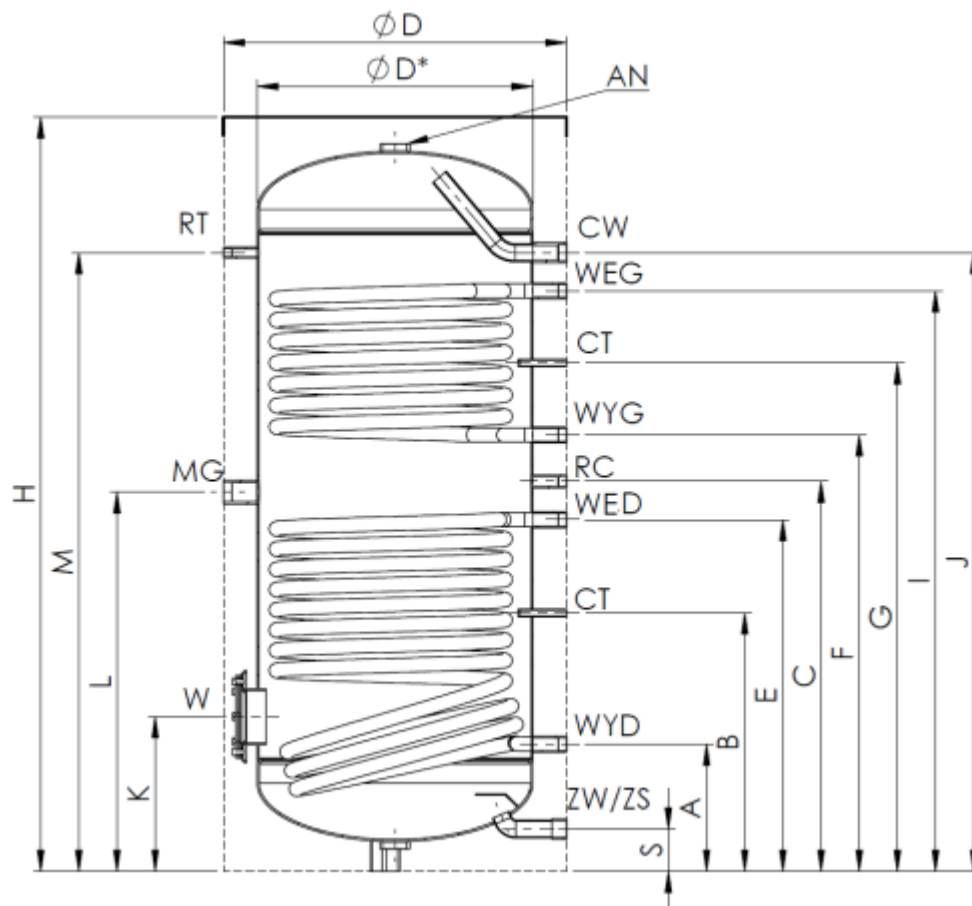


Fig. 1b. Construction and dimensions of W2 exchangers with capacities of 350, 500

Table 1 Dimensions of W2 exchangers.

Type		W2					
		200	250	300	350	400	500
Capacity	[dm ³]	207	232	264	322	489	470
Height	H [mm]	1160	1280	1430	1680	1530	1780
Max height when tilted	H* [mm]	1345	1450	1585	1815	1735	1960
Diameter	D [mm]	680	680	680	680	810	810
Diameter without thermal insulation	D* [mm]	550	550	550	550	650	650
Cold water	S [mm]	90	90	90	90	100	100
	ZW	1"	1"	1"	1"	1 ¼"	1 ¼"
Hot water	J [mm]	990	1110	1260	1400	1320	1460
	CW	1"	1"	1"	1"	1 ¼"	1 ¼"
Heating water supply upper coil	I [mm]	900	1010	1150	1250	1215	1370
	WEG	1"	1"	1"	1"	1"	1"
Heating water return upper coil	F [mm]	660	770	820	920	875	1030
	WYG	1"	1"	1"	1"	1"	1"
Heating water supply lower coil	E [mm]	570	680	730	730	770	830
	WED	1"	1"	1"	1"	1"	1"
Heating water return lower coil	A [mm]	240	250	250	250	300	300
	WYD	1"	1"	1"	1"	1"	1"
Circulation	F [mm]	610	590	635	825	680	920
	RC	¾"	¾"	¾"	¾"	¾"	¾"
Temperature sensor sleeve	B [mm]	370	470	520	520	490	610
	G [mm]	790	890	985	1075	1045	1200
	CT	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
Heater sleeve	L [mm]	610	710	760	795	825	895
	MG	1½"	1½"	1½"	1½"	1½"	1½"
Thermometer sleeve	M [mm]	880	1000	1150	1400	1210	1460
	RT	½"	½"	½"	½"	½"	½"
Magnesium anode	nr:	703-40-330	703-40-330	703-40-390	703-40-390	703-40-430	703-40-500
	AN	2"	2"	2"	2"	2"	2"
Cleaning hole	W	ø130	ø130	ø130	ø130	ø130	ø130
	K [mm]	310	310	310	310	365	365
Drain	S [mm]	90	90	90	90	100	100
	ZS	1"	1"	1"	1"	1 ¼"	1 ¼"

Table 2 Technical parameters of W2 exchangers.

Type		W2							
		200		250		300		350	
Tank capacity	dm³	207		232		264		322	
Coil surface	m²	lower coil	upper coil	lower coil	upper coil	lower coil	upper coil	lower coil	upper coil
		1,0	0,7	1,26	0,7	1,4	1,0	1,4	1,0
Coil capacity	dm³	5,7	4,2	7,3	4,2	8,1	5,7	8,1	5,7
DHW efficiency 80/10/45°C 70/10/45°C 60/10/45°C	dm³/h	545	386	720	386	756	545	756	545
		462	322	602	322	629	462	629	462
		336	236	432	236	462	336	462	336
Heating power 80/10/45°C 70/10/45°C 60/10/45°C	kW	22,2	15,7	29,3	15,7	30,8	22,2	30,8	22,2
		18,8	13,1	24,5	13,1	25,6	18,8	25,6	18,8
		13,7	9,6	17,6	9,6	18,8	13,7	18,8	13,7
DHW efficiency 80/10/60°C 70/10/60°C	dm³/h	327	230	375	230	451	327	451	327
		241	198	275	198	330	241	330	241
Heating power 80/10/60°C 70/10/60°C	kW	19	13,4	21,8	13,4	26,2	19	26,2	19
		14	11,5	16	10	19,2	14	19,2	14
Heating water flow in the coil	m³/h	1,7	1,2	2,0	1,2	2,2	1,7	2,2	1,7
Pressure loss	mbar	35	25	50	25	70	35	70	35
Initial capacity heater temperature 60°C 80/10/45°C 70/10/45°C	dm³/10min	169		169		223		261	
		158		158		210		248	
Standby losses**	W	54		60		66		79	
Tank operating parameters	Maximum operating pressure and temperature pr = 1,0 MPa tr = 90°C								
Heating medium parameters	Maximum operating pressure and temperature pr = 1,6 MPa tr = 100°C								
Type of tank	steel covered with ceramic enamel inside								
Type of external casing	plastic or imitation leather cover								
Thermal insulation	65 mm polystyrene foam								
Heater weight in housing	kg	105		112		126		138	

Typ		W2				
		400		500		
Usable capacity of the tank	dm³	389		470		
Heater surface	m²	lower coil	upper coil	lower coil	upper coil	
		1,8	1,3	2,0	1,3	
Coil capacity	dm³	10,5	6,8	11,5	6,8	
Efficiency DHW 80/10/45°C 70/10/45°C 60/10/45°C	dm³/h	1253 1081 762	934 786 540	1351 1155 811	934 786 540	
Heating power 80/10/45°C 70/10/45°C 60/10/45°C		kW	51 44 31	38 32 22	55 47 33	38 32 22
Efficiency DHW 80/10/60°C 70/10/60°C			dm³/h	739 550	550 413	791 602
Heating power 80/10/60°C 70/10/60°C	kW			43 32	32 24	46 35
Heating water flow in the coil		m³/h	2,9	2,2	3,1	2,2
Pressure loss	mbar	120	105	135	105	
Initial capacity of the heater temperature 60°C 80/10/45°C 70/10/45°C	dm³/10min					
Standby losses**	W	70		81		
Tank operating parameters	Maximum operating pressure and temperature pr = 1,0 MPa tr = 90°C					
Heating medium parameters	Maximum operating pressure and temperature pr = 1,6 MPa tr = 100°C					
Type of tank	steel covered with ceramic enamel inside					
Type of external casing	plastic or imitation leather cover					
Thermal insulation	80 mm polystyrene foam					
Heater weight in housing	kg	ok. 182		ok. 194		

* 80°C, 70°C, 60°C - heating water temperature at the coil supply
10°C - cold domestic water supply temperature
45°C - domestic hot water temperature

** in accordance with the applicable EU Commission Regulation No. 812/2013 and 814/2013

Equipment:

- opening pressure safety valve: 0,6 MPa

2. Security and conditions for safe use.

The heat exchangers may only be operated with a functional safety valve with an opening pressure of 0.6 MPa (water pressure in the water supply network up to 0.6 MPa) or 1.0 MPa (water pressure in the water supply network up to 1.0 MPa) installed on the cold water supply line. This valve protects the device against excessive pressure in the water supply network or excessive pressure increase resulting from the water in the tank heating up.

Even during normal operation of the heat exchanger, water may temporarily escape from the safety valve while the water is heating, indicating that the valve is operating correctly. In such cases, do not obstruct the discharge opening in any way.

All types of exchangers should be operated with an installed thermometer with a measuring range of $0 \div 120^{\circ}\text{C}$, and on heaters with a capacity of more than 250 liters, pressure gauges with a measuring range of $0 \div 1 \text{ MPa}$ should also be installed.



1. A safety valve, supplied with the exchanger, must be installed on the cold water inlet to the exchanger. It should be installed so that the arrowhead on the valve body aligns with the water flow direction.
 2. No shut-off valves may be installed between the safety valve and the heater.
 3. Operating the heater without a safety valve or with a faulty safety valve is prohibited as it may cause a failure and poses a threat to human life and health.
-



In order to extend the life of the tank and ensure trouble-free operation of the safety valve, the manufacturer recommends the use of mechanical filtration systems (e.g. string filters) that capture solid impurities (such as sand, rust or mud) installed on the cold water inlet directly before the safety valve.

The installation and subsequent operation of filters should be carried out based on the documentation included with the filter systems..

3. Installation



Installation and any repairs to the exchanger, both on the electrical and water side, should only be carried out by specialists with appropriate qualifications.

3.1 Connection to the water supply network and central heating installation.

The heat exchanger should be connected vertically to a water supply system where the pressure does not exceed 0.6 MPa or 1.0 MPa and is not lower than 0.1 MPa. If the pressure in the system frequently exceeds 0.4 MPa, it is recommended to install a pressure reducing

valve or expansion tank upstream of the heat exchanger to limit troublesome water outflow from the safety valve. When the pressure in the water supply system exceeds 0.6 MPa or 1.0 MPa, installing a pressure reducing valve is necessary to prevent continuous water outflow through the safety valve.

3.2 Installing an EJK type heater

During the tank warranty period, only heaters designed for enameled tanks, i.e., with insulated heating elements (insulated heating elements do not "steal" the protective current generated by the magnesium anode), may be used. This is one of the warranty conditions for the W2 heater. EJK type heaters manufactured by ZUG ELEKTROMET meet this requirement..

Table 3. Selection of electric heaters and water heating time for $\Delta t = 50^{\circ}\text{C}$

Heater type	Amount of heating water	EJK-1500	EJK-2000	EJK-3000	EJK-4500	EJK-6000
	dm ³	h	h	h	h	h
W2 200	97	4,8	3,6	2,4	1,6	1,2
W2 250	100	4,8	3,6	2,4	1,6	1,2
W2 300	120	5,8	4,4	2,9	1,9	1,5
W2 350	160	7,8	5,8	4,0	2,6	2,0
W2 400	180	8,8	6,5	4,5	3,0	2,5
W2 500	250	12,5	9,2	6,0	4,0	3,0

Among the EJK heaters manufactured by ZUG ELEKTROMET, single-phase 230 V heaters with a power of 1.5 and 2.0 kW and three-phase 400 V heaters with a power of 3.0, 4.5 and 6.0 kW can be installed in W2 exchangers, see the list in Table 3.

Installation should be carried out in accordance with the heater installation and operating instructions.

The single-phase heat exchanger with a heater should be connected to the mains via a 230V/16A plug-in socket with a grounding pin. The connection of the heater to the mains is indicated by a green light, and the heater activation is indicated by a red light.

The electrical diagrams of the heaters are shown in Figures 3 and 4.

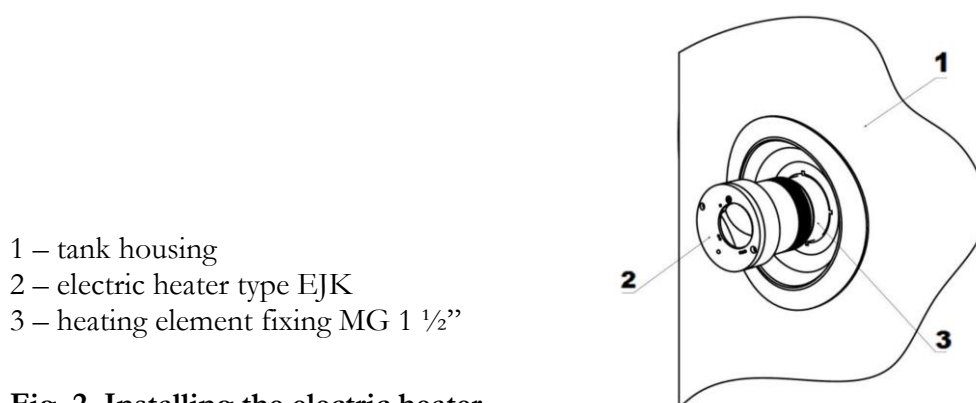


Fig. 2. Installing the electric heater.

- 1 - heating element
- 2 - temperature controller
+ temperature limiter
- 3 - resistor
- 4 - rectifier diode
- 5 - red light emitting diode
- 6 - metal head

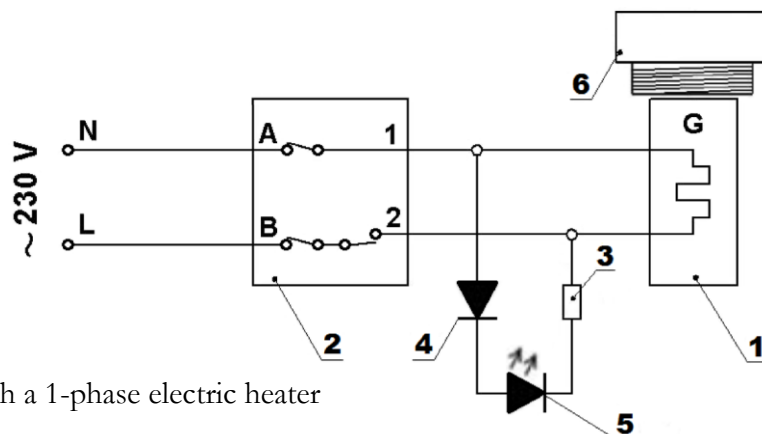


Fig. 3. Electrical diagram of a heater with a 1-phase electric heater



The connection of the heater with a 3-phase electric heater to the installation in accordance with the wiring diagram (Fig. 4) should be performed by a specialist with appropriate qualifications.

- 1 - heating element
- 2 - temperature controller
+ temperature limiter
- 3 - resistor
- 4 - metal head
- LS1 - green indicator light
- LS2 - red indicator light

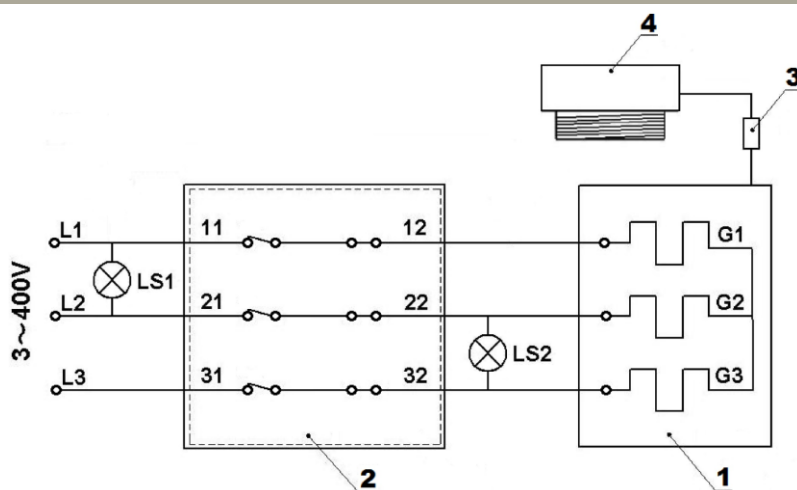


Fig. 4. Electrical diagram of a heater with a 3-phase electric heater.



Do not insert the plug of the connecting cable into the electrical socket without making sure that the tank is filled with water.



During the warranty period for the tank, only heaters with an insulated heating element, e.g. EJK type manufactured by ZUG ELEKTROMET, should be used.

4. Operation and maintenance.

1. Periodically, at least once a month and before each start-up after shutdown, the correct operation of the safety valve should be checked (in accordance with the valve manufacturer's instructions).
2. A momentary small flow of water from the safety valve while the water in the heater is heating up is a normal phenomenon and indicates that the safety valve is working properly.



A constant leak from the safety valve outlet indicates a valve malfunction or excessive pressure in the water supply system. Do not obstruct the outlet in any way.

3. If the heater is not used during the winter and there is a risk that the water in the heater may freeze, it should be drained by opening the safety valve.
4. The magnesium anode wears out over time, so its condition should be checked periodically, at least once a year. If the anode has lost two-thirds of its volume, and no later than after 18 months, it should be replaced with a new one. A suitable magnesium anode can be purchased at a retail outlet or from the heater manufacturer.
The anode is located in the upper bottom of the heater tank and to check its condition or replace it with a new one:
 - cut off the supply of cold water, open the hot water tap for a moment, and then close the hot water outlet from the heater,
 - remove the top cover of the heater housing,
 - remove the insulation element covering the plug with the anode attached,
 - unscrew the plug along with the anode,
 - install the new anode in reverse order, paying attention to the tightness of the connections..
5. Periodically, depending on the hardness of the water, accumulated sediment and loose scale should be removed.

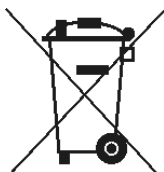


The magnesium anode plays an important role in protecting the enameled tank against corrosion and its regular inspection and replacement with a new one is a condition for maintaining the tank warranty.

The replaced used anodes and the certificates of their replacement (anode purchase) should be kept for inspection by the manufacturer's service in the event of a tank failure.

5. Warranty conditions.

1. The warranty is granted for a period of 60 months for the enameled tank..
2. The warranty for the remaining parts of the heater is 24 months.
3. The warranty period is counted from the date of sale of the product to the user, as entered in the warranty card and confirmed by the purchase document (invoice) issued by the seller.
4. The guarantor guarantees the efficient operation of the heater provided that it is installed and used in accordance with this instruction manual.
5. During the warranty period, the user is entitled to free repairs to the heater caused by the manufacturer. Such damage will be repaired within 14 days of the notification date.
6. The user loses the right to warranty repairs in the event of:
 - improper use of the device,
 - repairs and modifications to the device performed by unauthorized persons,
 - improper installation and operation of the device contrary to these instructions,
 - operating the heater without a safety valve or with a faulty safety valve,
 - lack of a magnesium or titanium anode,
 - lack of documentation of the replacement of the magnesium anode every 18 months (no proof of purchase: receipt, invoice, etc.),
 - using an electric heater with uninsulated heating elements,
 - dismantling the thermal insulation permanently attached to the pressure tank.
7. The guarantor may refuse to carry out the repair if:
 - no assembly access to the device is provided,
 - to replace the tank, it is necessary to dismantle other devices, partition walls, etc.
 - the tank is permanently connected to the water supply system using non-detachable connections,
 - the thermal insulation permanently attached to the pressure tank will be dismantled.
8. Each service request is preceded by an initial assessment to determine whether the fault described by the customer exists and whether it was not caused by the user's fault through improper use of the device.
9. In the event of a service call for an event not covered by the warranty, i.e. AFTER THE WARRANTY PERIOD EXPIRES, the costs of the service visit and the ordered repair are covered by the customer.
10. In the event of any irregularities in the operation of the heater, please notify the manufacturer's service by phone at 77/ 471 08 17 from 7:00 a.m. to 3:00 p.m., or by email at serwis@elektromet.com.pl or at the point of purchase. DO NOT DISASSEMBLE THE DEVICE.
11. The method of repairing the device is determined by the manufacturer.
12. The basis for the performance of repairs under the warranty is a correctly completed, complete and free from any corrections Warranty Card.
13. In matters not regulated by the above conditions, the provisions of the Civil Code shall apply.
15. It is recommended to keep the warranty card throughout the entire service life of the exchanger.

**Waste from electrical and electronic equipment (WEEE)**

This product should not be treated as household waste. By ensuring correct disposal, you will help protect the environment. For more detailed information about recycling this product, contact your waste disposal service provider or the store where you purchased the product.

Zakład Urządzeń Grzewczych
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DEKLARACJA ZGODNOŚCI (DECLARATION OF CONFORMITY)

Pan **Wojciech Jurkiewicz**
 (Mr)
 (Imię, Nazwisko / Surname, Name)

reprezentujący firmę **ZUG “ELEKTROMET” Gołuszowice 53 48-100 Głubczyce**
 (legal representative of)
 (Nazwa i adres producenta / Manufacturer's Name and Address)

DEKLARUJE / DECLARES

z pełną odpowiedzialnością, że wyrób:
 (with all responsibility, that the product):

**Wymiennik ciepłej wody użytkowej z podwójną węzownicą typu
 W2 200, W2 250, W2 300, W2 350, W2 400, W2 500**

.....
 (nazwa, typ lub model / name, type or model)

został zaprojektowany, wyprodukowany i wprowadzony na rynek zgodnie z następującymi dyrektywami:
 (has been designed, manufactured and placed on the market in conformity with directives):

-Dyrektywa Urządzeń Ciśnieniowych (PED): 2014/68/UE
 -Pressure Equipment Directive (PED): 2014/68/EU

-Dyrektywa Ekoprojektu: 2009/125/WE
 -Ecodesign Directive 2009/125/EC

-Rozporządzenie Komisji (UE) nr 814/2013
 -Commission Regulation (EU) No. 814/2013

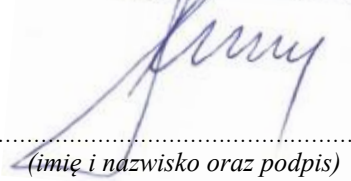
-Rozporządzenie Parlamentu Europejskiego I rady (UE) 2017/1369
 -Regulation of the European Parliament and of the council (EU) 2017/1369

-Rozporządzenie Komisji (UE) nr 812/2013
 -Commission Regulation (EU) No. 812/2013

Gołuszowice, 28. czerwiec. 2024r.

.....
 (miejsce i data wystawienia)
 (place and date)

WŁAŚCICIEL
 ZUG **ELEKTROMET**
 Wojciech Jurkiewicz



.....
 (imię i nazwisko oraz podpis)
 (Name, Surname and Signature)

GUARANTEE CARD

No.	Application's date	Repair description	Repair date	Service signature	Comments

Repair's date	Repair's date	Repair's date	Repair's date	Repair's date	Repair's date
Repair scale	Repair scale	Repair scale	Repair scale	Repair scale	Repair scale
Service's stamp	Service's stamp	Service's stamp	Service's stamp	Service's stamp	Service's stamp
User's address and name	User's address and name	User's address and name	User's address and name	User's address and name	User's address and name
User's signature	User's signature	User's signature	User's signature	User's signature	User's signature

GUARANTEE CARD

Comments:

GUARANTEE TICKET 1	GUARANTEE TICKET 2	GUARANTEE TICKET 3	GUARANTEE TICKET 4	GUARANTEE TICKET 5
Water heater type:	Water heater type:	Water heater type:	Water heater type:	Water heater type:
Factory number	Factory number	Factory number	Factory number	Factory number
Date of sale:	Date of sale:	Date of sale:	Date of sale:	Date of sale:
Stamp and signature of seller	Stamp and signature of seller	Stamp and signature of seller	Stamp and signature of seller	Stamp and signature of seller