INSTRUKCJA INSTALOWANIA I OBSŁUGI

INSTALLATION AND OPERATION MANUAL

**INSTALLIERUNG- UND BEDIENUNGANLEITUNG** 

ИНСТРУКЦИЯ ПО УСТАНОВКЕ И ОБСЛУЖИВАНИЮ

Gazowe przepływowe ogrzewacze wody

Instantaneous gas water heater

Gas-Durchlaufwassererhitzer

Водонагреватели проточные газовые



# SZANOWNY KLIENCIE

Gratulujemy wyboru ogrzewacza produkcji **termet** Przekazujemy Państwu wyrób nowoczesny, ekonomiczny, przyjazny dla środowiska, spełniający wszystkie wymagania jakościowe norm europejskich. Prosimy o dokładne zapoznanie się z treścią instrukcji, gdyż znajomość zasad obsługi ogrzewacza oraz zaleceń producenta jest warunkiem niezawodnego, oszczędnego i bezpiecznego jego użytkowania.

Instrukcję należy zachować przez cały okres użytkowania produktu.

Życzymy zadowolenia z naszego wyrobu.

# **DEAR CUSTOMER,**

Congratulations on choosing the termet product. You have purchased a modern, economical and environment-friendly product that complies with high EU quality standards.

Please take time to get yourself familiarised with this manual, as full understanding of the product's functions, as well as knowledge of manufacturer's recommendations is imperative for its smooth, economical and safe operation.

Please keep this manual handy throughout the whole operational lifetime of the water heater.

We hope you will be satisfied with our product.

# WERTE KUNDIN / WERTER KUNDE,

Die von unserer Firma hergestellten Wassererhitzer sind moderne, vollautomatisierte, effiziente Anlagen von bester Qualität.

Für sichere, rationelle sowie sparsame Nutzung der Anlage ist die Befolgung von den in der Bedienungsanleitung beschriebenen Installirungs-, Nutzungs-und Wartungsregeln, notwendig.

Wir wünschen Ihnen Zufriedenheit mit unserem Erzeugnis!

# УВАЖАЕМЫЙ ПОКУПАТЕЛЬ,

Поздравляем с выбором водонагревателя производства фирмы termet

Предлагаем Вам современное, экономное и экологическое устройство, которое соответствует высоким качественным требованиям европейских стандартов. Перед началом эксплуатации просим внимательно ознакомится с настоящей инструкцией, так как знакомство с правилами обслуживания и рекомендациами производителя является условием надежной, зкономной и безопасной его эксплуатаци.

Средний срок службы для нашего нагревателя 15 лет. Сохраняйте инструкцию в течении всего срока использования водонагревателем.

Желаем удовлетворения от длительной и надежной эксплуатации.



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# **1. INTRODUCTION**

This instruction manual describes instantaneous gas water heaters, designed for one or more tap - water uptake points (eg. shower, sink etc.). All drawings, specifications and information included in this instruction manual are based on the up-to-date data of the product, available at the moment of issuing this instruction.

The manufacturer reserves the right to make changes in gas water heater's design, without indicating them in the instruction, as far as the modifications do not have influence on the operational and technical features of the product.

Long-term operation of the product and its reliability most depends on a proper installation and use as well as performing the maintenance in due time and in a proper way.

#### 30.09.2016

# 1.1 Important tips

- Read this before any installation works or use
- Gas appliances, that are permitted to be used and signed with CC symbol are safe if they are used properly and the User and Installer comply with specific rules of installation and use.
- This installation guide and user's manual is an integral part of the water heater unit and as such it should be kept at hand, and be studied carefully throughout, as it contains all the necessary information and precautions that need to be observed to ensure the safety of installation, usage and maintenance of this unit.
- The water heater is a complicated appliance and it has many precise mechanisms. The reliability of the water heater depends mainly on appropriate gas, flue and water systems. Flue system for C-types water heaters must be made of flue pipes separately approved and introduced into the market, that complies with technical requirements presented in section 3.6.
- The flue system must be tight. Any leakages in flue pipes' connections may cause flooding the interior of a water heater with condensate. Any damages caused by above are excluded from the manufacturer liability.
- Any installation and regulation works must be done only by a gas engineer.
- The unit may be assembled and started up only after all the other construction and installation works in its designated room are finished. It is strictly forbidden to assemble and use the unit in rooms where construction or other installation works are still under way.
- Gas and water systems should be equipped with appropriate filters, which are not included with the unit.
- The water heater can be operated only by adults.
- Do not perform any repairs or alterations to the water heater on your own.
- It is strictly forbidden to make any modifications that could reduce the clearance of air-intake holes (covering, blanking off etc.) or uptake and flue ducts in a room and in the appliance.
- Do not keep any containers with inflammable, aggressive or strongly corrosive chemicals close to a water heater.
- It is forbidden to keep or dry clothes or other inflammable objects on or nearby the appliance and flue ducts.
- The service and maintenance operations of the water heater can be only performed by an authorised company.
- Effects of not observance the instructions included in this document by gas engineers or users are excluded from the warranty coverage.

# The manufacturer will not be liable for any damage or malfunction of the boiler caused by disregard to any relevant, official regulations.

# Before you start up the water heater, concerning for your safety, make sure if:

- 1. Permanent air supply necessary for gas combustion is provided,
- 2. The appliance has been connected to an individual and efficient chimney duct,
- 3. The gravitational ventilation duct is not choked.

### <u>If you smell a gas:</u>

Do not use electric switches likely to cause a spark.

Open the door and windows.

Shut down the main gas valve.

Contact the gas emergency service.

- If gas escapes from an untaught valve of a gas cylinder, shut down a valve, disconnect the cylinder and take it outside the building.
- If the gas escaping from a leaky valve on the cylinder catches fire, throw a wet blanket on the cylinder in order to extinguish the fire, and then pour water on it in order to cooling down the cylinder and make possible to turn off the valve.

### In a case of breakdown:

- 1. Turn off the gas supplying valve.
- 2. Turn off the water supply if there is a risk of flooding.
- 3. If there is a risk of water heater freezing, drain out the water from it.

### If you smell fumes:

- 1. Switch off the heater by turning off the hot water tap or shut down the gas valve of water heater.
- 2. Open the door and windows.
- 3. After airing the room, switch on the heater for a while and check if the gas smell disappeared. If not, contact the fitter or a chimney service in order to check the flue system efficiency.

# 2. PRODUCT DESCRIPTION

# 2.1 Technical features

- Electronic ignition with a ionisation flame control.
- Electronic, linear modulation of thermal input keeping a constant water temperature.
- Required water temperature is set by two buttons (MIN, MAX).
- Displaying tap water temperature on the LCD.
- IP44 electric protection degree
- Heat exchanger overheating protection.
- The water heater is adopted for normal pressure and for water supply system from 20 to 1000 kPa (0,2 to 10,0 bar)

Gas instantaneous water heaters type **GT-19-03 AQUA COMFORT** *turbo and* **GT-23-03 AQUA COMFORT** *turbo* are equipped with a closed combustion chamber, what means they are allowed to be used in all rooms that do not have enough chimney draught or it is not possible to install a flue system.

The water heaters are equipped with the most recent technical solutions which provide long-lasting, faultless and economical performance and the comfort of use.

Gas – water valves and control system applied in the water heater provide electronic power modulation, what means the water heater keeps required tap water temperature.

Each water heater is destined to combust only one type of gas (for example 2H-G20) and the water heater must be fed only with this type of gas.

The water heater's type, the group and type of gas, as well as the service line pressure which the heater was designed for, are marked on the packaging, in the instruction manual and on the marking plate.

It is possible to adapt the water heater to combust another type of gas, what is described in section 5. This operation must be only performed by a qualified person.

The water heater actuates (igniting a main burner) automatically and electronically after turning on a water tap. The water heater switches off after turning off a water tap.

One of the main advantages of the water heaters is a little water flow necessary to start up the appliance (about 3 l/min) and electronic linear water temperature regulation.

# 2.2 Construction and technical data

### 2.2.1 Main units of water heaters



1. Main burner

- 2. Gas fittings
- 3. Heat exchanger
- 4. PCB
- 5. Spark generator
- 6. Control board
- 7. Fan
- 8. Water flow switch
- 9. Difference pressure switch
- 10. NTC sensor
- Temperature limiter protection against the heat exchanger overheating

#### 12. Flexible hoses



Fig. 2.2.1.1. Main units of a water heater

Parameter	Unit	Va	lue
Energetic paramet	ers	vu	
Type		GT-19-03	GT-23-03
Nominal thermal output	kW	19.2	23
Efficiency at nominal thermal output	%	93	94
Nominal thermal input	kW	20.6	24.5
Minimal thermal output	kW	57	57
Efficiency at minimal thermal output	%	86	86
Minimal thermal input	kW	66	66
Nominal kinetic pressure for:		0,0	0,0
natural gas: 2H-G20-20mbar	kPa (mbar)	2.0	(20)
liquefied gas: 3P-G31-37mbar		3,7	(37)
liquefied gas: 3B-G30-28÷-30mbar		28÷3,0	(28÷30)
liquefied gas: 3B/P-G30-30mbar		3,0	(30)
Nominal gas consumption <sup>1</sup> ) of a main human for		3,0/3,7	(30/37)
natural gas: 2H-G20-20mbar	m³/h	2.3	2.8
liquefied gas: 3P-G31-37mbar	ka/h	1.7	2.0
liquefied gas: 3B-G30-28+-30mbar	kg/h	1,7	2,0
liquefied gas: 3B/P-G30-30mbar	kg/h	1,7	2,0
liquefied gas: 3+-G30/G31-28÷30/37mbar	kg/h	1,7	2,0
<sup>11)</sup> Calculated for standard gas in standard conditions (dry gas at 15°C, 1013 mbar), a	t given boiler effi	ic iency values.	
Water operating pressure	kPa (bar)	2041000	(0,2410)
Water flow range	dm³/min	2411	2413
Range of tap water temperature setting	°C	35 -	- 60
Flue flow	g/s	17	19
Flue temperature at Maxima output (measured on the height 1m in the		150	155
flue pipe)		~150	~100
Nível de potência sonora L <sub>WA</sub>	dB	50	52
Electric paramete	rs		
Maximal power consumption	W	6	5
Supply voltage	V	23	30
Protection degree		IP	44
Mounting dimension	ons		
Overall dimensions: height / width / depth	mm	585/36	60/220
Weight	kg	16	6,5
Connecting ends' spacing	mm	mm Fig. 3.6.1	
Gas coupling	inch G ½		1/2
Cold water coupling	inch G ½		1/2
Hot water coupling	inch	G	1/2
Connector with a flue system		Ø60/Ø100 c	or Ø80/Ø125
(coo table 2.6, and table 7.1)	mm	Or 2 separa	ate systems
(SEE LANE S.O. AND LADE 1.1)		Ø60xØ60 lu	lb Ø80xØ80
Destination country	<b>'</b>	GR	

### 2.3 Protection equipment

222 Technical data

- **Protection against fumes outflow into a room** bases on a ionisation flame control and if a flame on a burner disappears it causes cutting off the gas supply to the burner.
- Heat exchanger overheating protection provided by a temperature limiter device (item 11) actuates if water temperature in a heat exchanger exceeds 95°C, it happens by shutting down the gas valve which cooperates with a PCB. If a pressure difference between inlet air and outlet flue is not appropriate or there is no pressure difference, the gas valve is shut down.

# The user must not make any modifications on the protection equipment.

# 3. THE WATER HEATER INSTALLATION

The water heater must be installed only by a gas engineer.

All connections with water, gas and flue systems as well as a room, where a water heater will be install in must meet local applicable regulations.

After all installation works are completed, it is necessary to check up if all gas and water connection are tight.

#### NOTE:

Pipes and other water and gas connection elements (filters, valves), neither flue discharge elements are not included in heater's equipment.

# 3.1 Key installation regulations

### 3.1.1 Location

- It is not allowed to install instantaneous gas water heaters above a heat source (i.e. electric or gas cooker, etc.)
- It is not allowed to install instantaneous gas water heaters in rooms exposed to temperatures below 0°C. If there is such a risk, it is necessary to drain the heater out of water.
- It is not allowed to keep any solvents, paints, inflammable gas, glue, detergents or any other chemicals that may cause corrosion.

Heater mentioned in this manual has a degree of electrical protection assured by the housing: IP 44 Equipped with a cord and plug can be installed in Zone 2 or further - it should not be installed in Zone 1. Device can be installed in zone 1 only if it is permanently connected to the power source.



Fig .3.1.1.1 Zones in a room equipped with a bath tube | Fig.3.1.1.2 Zones in a room equipped with a bath tube

### 3.1.2 Electric system

The heater was designed as a first-class device. It was designed for single-phase power supply with alternating current rated voltage of 230 V / 50 Hz. The heater equipped with a cord and plug must be plugged to a wall socket with a safety pin. If you connect the heater to a permanent power supply, electrical installation should be equipped with the heater disconnected from the power source.

### Note:

The control of the water heater must be connect to a power source. If L and N cables are improperly connected, the control system is not able to detect a flame and it make an ignition trial until the water heater switches off in a safety mode. You will see E1 error code on the LCD.

In such a case it s necessary to change L and N cobles in the socket. The water heater will switch on after it detects it is properly connected.

### 3.1.3 Gas system

It is recommended to install a gas cut – off valve as close to a water heater as possible.

The water heater must be connected to gas mains with steel or copper pipes, accordingly to applicable regulations.

If you use liquefied gas, the water heater must be connected with a liquefied gas system, with a gas pressure reduction device situated on a gas cylinder, by means a flexible tube no longer than 3m and pressure strength 300 kPa, which is resistant to components of liquefied gas, mechanical damages and temperature 60°C.

Gas appliances with thermal output exceeding 10kW (i.e. heaters covered by this instruction as well), should be connected with the mentioned above flexible tube by the means of steel pipe at least 0.5 m long.

The gas system must be equipped with a pressure reduction device that enable to reduce pressure to p = 3.7 kPa.

# 3.2. Preliminary check-up operations

- Take the water heater out of a box •
- Undo the control panel from clips in a front cover and pull it to you. •
- Disconnect the cable from the control panel. •
- Unscrew 2 screws. .
- Take off the front cover of the water heater.
- Remove plugs from gas and water connections.
- During installation works, it is necessary to check if:
- the purchased water heater is adapted to combust the type of gas . supplied from the gas mains which the appliance will be connected to. The type of gas the heater has been adapted for is given on a box and a marking plate placed on a back cover.
- the water system has been rinsed thoroughly with water, in order to • remove rust, scale, sand or other foreign matter, which could disturb the proper operation of the heater (e.g. increase the resistance of water flow in the system).

# 3.3 Mounting the heater on the wall

Maximal temperature of the appliance's surface does not exceed 85°C, so it is not necessary to take a special care of inflammable build materials

In case of building the heater over in a furniture system, air supply necessary for proper gas combustion should be provided. (Fig. 3.3.1).

Mount the heater on the wall, on hooks permanently fixed in it, using two rectangular notches on the heater back cover.







Fig. 3.3.1. Required mounting distances





200 120 53

D

- A connection to gas system
- **B** cold water supply
- C hot water outlet
- D connection to flue or flue-air system
- E connection to air system



# 3.4 Connection to gas supply

The connection is presented in the Fig. 3.3.2. Dimension of a connector pipe is G 1/2.

On the system pipe should be installed a cut off valve and a gas filter. Installing a gas filter is essential for correct and long-lasting operation of the gas unit and the burner.

A filter is not included in the installation kit.

# 3.5 Connecting to the water supply

The connection is presented in the Fig. 3.3.2. Water connector pipe size: G1/2".

On the system pipe there should be installed a cut-off valve.

Connect the water heater with water supply system by means of flexible hose with is a part of installation kit attached to the product.

In order to stop mechanical pollution, and thus, provide the heater reliability and its long-term operation, it is recommended to install a water filter on a water feed pipe. The filter must not cause any resistance for a water flow and should be easy to be cleaned.

# The filter is not included in the basic heater's equipment.

### 3.6 Connecting to a flue system

Gas instantaneous water heaters type GT-19-03 AQUA COMFORT turbo and GT-23-03 AQUA COMFORT turbo are manufactured as C62 installation type version, what means that:

- it has closed combustion chamber it relation to a room, where the water heater is installed in. (C)
- it is intended to be connected to flue ducts, that have been separately approved and introduced into the market (6),
- it is equipped with a fan supporting the flue offtake (2)

The ways of connecting C-type water heaters to flue systems are presented on Fig. 3.6....

The ways of connecting C-type water heaters with heat output 19,2 kW to flue systems in multistoreyed buildings are presented in separate section. In such buildings it is possible to connect a water heater to common flue system that consists of:

separate common pipes with a diameter 120 mm - such a system will be appropriate for 4 level - buildings,

- concentric common pipe with a diameter 140/200 mm - such a system will be appropriate for 5 level – buildings To ensure proper operation of the device, use the appropriate dimensions of wires (diameter, maximum length, resistance on the elbows), depending on used flue system. The maximum length of the cables should be consistent with the data given in the table below.

G-19-03	Concentric pipes system		Separate pipes system		
AQUA COMFORT turbo	Ø60/Ø100 Ø80/Ø125		Ø80xØ80		
with power	The maximum length a chimney duct ( m )				
GT-19-03	20 30		30		
GT-23-03	20	30	30		

Flow resistance of the exhaust gas at each elbow, depending on the bending angle and also reduction of the maximum cable length are given in the table below.

Reducing maximum length of flue system depending upon the elbow				
Elbow 15° Elbow 45° Elbow 90°				
0.25m 0.5m 1m				

To ensure correct operation of the heater is necessary to ensure proper amount of air supplied to the combustion chamber by the air system. Control of air supply takes place through the air limiters located at the top of the cover of the combustion chamber (Figure 3.6.1.).



Bending of air limiters is not required in the case of flue systems with maximum length specified in the table below.

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G-19-03	Concentric pipes system		Separate pipes system
AQUA COMFORT turbo	Ø60/Ø100 Ø80/Ø125		Ø80xØ80
with power	The maximum length a chimney duct ( m )		
GT-19-03	2 15		15
GT-23-03	3	16	16

In case of longer flue systems - in the top of the combustion chamber (rys.3.6.1.) it is necessary to bend next limiters of air flow to ensure proper operation of the heater and that the device does not turn off displaying the error codes E1 - in the case of too much air or E3 - in the case of too low level of air. Approximate the oxygen content measured in the flue gas should be  $8 \pm 2\%$ .



Connection of the heater to the air – flue system and installation of the system should provide tightness. Each used system should be installed with outlet with wind protection and the protection against external factors. NOTE:

Before connection the flue system to the heater remove the cap from the fan.

3.6.1. Horizontal outlet of air - flue system - over a wall or over a roof.



Note: Horizontal air-flue pipe should be installed with the slope ~3° (Fig. 3.7.1) so that the raining water coming into pipes will not flood the boiler and flow out the building.

It is not necessary to install draining board, if the slope has been made.

The hose for condensate drain must be properly siphoned.

 $\begin{array}{l} \mbox{Calculation formula for the flue system Fig. 3.6.1.1} \\ H_{max} = L_{max} - 1m \ \mbox{(loss on elbow Or tee)} \\ L_{max} - max \ \mbox{flue pipe lenght} \end{array}$ 



Calculation formula for the flue system Fig. 3.6.2.1

 $H_{max} = H_1 + H_2 = L_{max} - (1m \text{ (loss on elbow)} + 1m \text{ (loss on tee})$ 

Lmax - max flue pipe length

#### 3.6.3 Connecting to a common chimney system consisting of a air supply pipe and a flue pipe



 $\label{eq:calculation formula for a flue system Fig. 3.6.3.1 \\ H_{max} = H_1 + H_2 = L_{max} - (1m \ \mbox{(loss on elbow)} + 1m \ \mbox{(loss on tee)} \\ L_{max} - max \ \mbox{flue pipe lenght}$ 

# 3.6.4. Flue offtake and gas supply by means of two separate pipes

In order to use a system of two separate pipes:

- Unscrew a cover in an upper part of the combustion chamber in the point where an air supply system is connected to the water heater (Fig. 3.6.1),
- Keep a gasket which is placed under the cover to use it later,
- Screw down an adapter Ø80/Ø80 (acc. to table 7.1), at place where the removed cover had been screwed down before, seal a connection by means of kept gasket,
- Screw down an adapter Ø60/Ø80 (acc. to table 7.1) in the point of flue offtake, in an upper part of combustion chamber, by sliding over its lower part onto the connection of a fan and sealing up the connection by means of a gasket No 690.00.06



**Note:** Horizontal air-flue pipe should be installed with a slope ~3° (Fig. 3.6.4.1 and Fig. 3.6.4.2.) so that the raining water coming into pipes will not flood the boiler and flow out the building.

It is not necessary to install draining board, if the slope has been made.

The hose for condensate drain must be properly siphoned.

Calculation formula for a flue system Fig. 3.6.4.1

 $H_{max} = H_1 + H_2 = L_{max} - 1m$  (loss on elbow)

L<sub>max</sub> – max flue pipe lenght

# 4. HEATER OPERATION

# 4.1 Preparing the heater for the first start-up

Before proceeding with the first start-up of the water heater, it is necessary to:

- fill a water system with water so as after turning on water taps water may flow.
- Connect the water heater to the electric supply (a red diode will light on the control panel)
- turn on a gas knob (if you use LPG, turn on a valve placed on a gas cylinder).

# 4.2 Starting-up the heater

Use buttons "MIN" and "MAX" (Fig. 4.3.1) and set the required tap water temperature. After turning on a water tap, the water heater will automatically actuate.

# During the first start-up, release air from the system and the gas fittings.

During the first start – up gas is not ignited in a burner and in a consequence the anti – outflow protection closes a gas valve for 30 s (E1 error code will be displayed on LCD). After 30 s the control system actuate the water heater. After 3 ignition trials (2 trials for LPG) the water heater will be blocked. It is signalled with a E1 error code permanently displayed on LCD, In order to cancel the error, turn off a water tap and then turn it on again. Repeat this action until air from a gas a protect will be

In order to cancel the error, turn off a water tap and then turn it on again. Repeat this action until air from a gas system will be released.

After this the water heater is ready to be used.

Calculation formula for a flue system Fig. 3.6.4.2  $H_{max} = H_1 + H_2 + H_3 = L_{max} - (1m+1m+1m)$  (loss on elbows)  $L_{max} - max$  flue pipe lenght

After turning on a water tap, gas is ignited on a main burner – then you get hot water from a tap. After turning off a hot water tap, the gas supply to the main burner will be cut off and after 15 the fan will stop.

# 4.3 Water temperature regulation



The water heater is equipped with a system to control gas – water valves that is responsible for keeping a set water temperature. To set water temperature use buttons "**MIN**" and "**MAX**" (Fig. 4.3.1). During you set the temperature you can see current temperature value on LCD. It is possible to set tap water temperature within the range  $35^{\circ}\div60^{\circ}$ C.

If the water heater works, the current tap water temperature is presented on LCD. The water heater is equipped with a water flow limiter that limit the flow to:

- 11 l/min for the water heater with output: GT-19-03,

- 13 l/min for the water heater with output: GT-23-03.

If hot water tap is set for maximum water flow and the set water temperature is high, and the supplying water temperature is low (in winter) it is possible that the water heater (because its parameters of output 19,2 kW (275 kcal) or 23kW (330 kcal) will not reach the set tap water temperature. Because the minimum output of the water heater is 5,7 kW (82kcal/min), if water flow is low, the tap water temperature may exceed the set temperature.

The water temperature increase depending on water flow is shown in the Fig. 4.3.3.



Fig.4.3.2





# 4.4 Diagnostics

If there appears a failure in water heater's performance, it will be signaled by displaying the proper error code on the control panel. Error codes are being displayed with the priority of their importance for the safety of use.

If the symbols E1, E2, E3 or E6 flash, it is a signal that the water heater has been switched in safety mode. This lock status may be cancelled by turning on a water tap. If despite of this the water heater is still blocked it is necessary to contact service team.

Error code	Description
E. L	Lack of flame If the Lack of flame is detected then gas Valle will be closed and water heater is Stopped for 30s (E1 is being displayed permanently). After 30 s the control system actuate the water heater. After 3 ignition trials (2 trials for LPG) the water heater will be blocked. (It is signalled with a flashing E1 error code displayed on LCD, what means that the water heater has been switched off in safety mode) Electric supply cables improperly connected The control of the water heater must be connect to a power source. If L and N cables are improperly connected, the control system is not able to detect a flame and it make an ignition trial until the water heater switches off in a safety mode. You will see
	E1 error code on the LCD. In such a case it s necessary to change L and N cobles in the socket. The water heater will switch on after it detects it is properly connected.
E.2.	Water temperature In a heat exchanger exceeded 95°C. Gas valve is made closed – the heat process is stopped (You will see flashing E2 error code on LCD, what means that the water heater has been switched off in safety mode)
E.J.	<ul> <li>Lack of pressure difference in a chimney system or there is a brake in differentia pressure switch's circuit</li> <li>If a pressure difference between inlet air and outlet flue is not appropriate or there is no pressure difference, then:</li> <li>the gas valve is shut down,</li> <li>E3 error code is being displayed on LCD</li> <li>15 s - time needed to short contacts of a differential pressure switch</li> <li>If after 15 s the contacts are still open, the water heater will be switched off in safety mode.</li> <li>You will see flashing E3 error code on LCD</li> </ul>
E,4,	<ul> <li>Damage In NTC temperature sensor's circuit:</li> <li>the gas valve is shut down and a heat process is stopped</li> <li>E4 error code is being displayed permanently on LCD</li> <li>After removing the error reason the water heater will automatically return to its normal operation</li> </ul>
E,5,	<b>Damage in an electric system of control unit:</b> (You will see flashing E6 error code on LCD, what means that the water heater has been switched off in safety mode)
El	<ul> <li>Fault in gas unit's modulator system</li> <li>The water heater operates at its minimal output</li> <li>E7 error code is being displayed permanently on LCD</li> <li>After removing the error reason the water heater will automatically return to its normal operation</li> </ul>

# 4.5 Switching off the heater

In case of an anticipated long break in the heater operation disconnect the water heater from electric supply and close gas valve on the heater or on a gas cylinder (if applicable)

If a room where the water heater is installed is exposed to temperatures below 0°C, it is necessary to drain the heater out of water.

In order to do this, cut off cold water supply, then undone a nut on the pipe supplying the water into the water unit and turn on the hot water tap.

# 5. ADAPTING THE WATER HEATER TO COMBUSTING DIFFERENT TYPE OF GAS

	Adaptation of heater to another type of gas can be performed only by AUTHORIZED SERVICE COMPANY.
NOTE!	Heater supplied by the manufacturer, is suitable for gas shown on the nameplate. If you need to connect the device to a different type of gas than the type for which the device has been pre-equipped, check what type of gas can be adapted.

Gases to which you can adjust the heater, are given on the nameplate-in the category of the device:

Category:		
Category.	II 2E 3P	
	II 2E 3B/P	
	II 2H 3P	
	II <sub>2H 3B/P</sub>	
	II 2H 3B	
	II 2H 3+	
water heater is designed to		<ul> <li>Family 3 – liquefied gases:</li> </ul>
combustion of gas from two	Family 2 – natural gases:	3P-G31-37mbar
families	2E-G20-13mbar	3P-G31-50mbar
	2E-G20-20mba	3B/P-G30-30mbar
	2H-G20-20mbar	3B/P-G30-37mbar
	2H-G20-25mbar	3B/P-G30-50mbar
	211 020 2011001	3B-G30-28-30mbar
		3B-G30-50mbar
		3+-G30/G31-28-30/37mbar
		12

List 5.1

Gas name	Gas family	Gas group	Kind of gas	Nominal inlet gas pressure
2E-G20-13mbar		E	G20	13 mbar
2E-G20-20mbar	2	E	G20	20 mbar
2H-G20-20mbar	Natural gas	Н	G20	20 mbar
2H-G20-25mbar		Н	G20	25 mbar
3P-G31-37mbar		propan P	G31	37 mbar
3P-G31-50mbar		propan P	G31	50 mbar
3B/P-G30-30mbar		propan-butan B/P	G30	30 mbar
3B/P-G30-37mbar	3	propan-butan B/P	G30	37 mbar
3B/P-G30-50mbar	Liquefied gas	propan-butan B/P	G30	50 mbar
3B-G30-28-30mbar		butan B	G30	28-30mbar
3B-G30-50mbar		butan B	G30	50mbar
3+-G30/G31-28-30/37mbar		propan-butan B/P	G30/ G31	28-30/37mbar

Switching of water heater to another type of gas:

replacement of the nozzles in main burner,

adapting the controller to operation with a specific type of gas,

- regulation of the minimum and maximum gas pressure in the burner,
- starting power regulation on control panel
- check the tightness.

5.1. Replacement of the nozzles in main burner

• disconnect mixer from the burner by unscrewing the 4 screws;

- unscrew the nozzles and insert new ones (tightly fasten nozzles of the burner, pay attention not to damage the threads);
- reassemble the mixer and the body of the burner.

#### List 5.2

LIOT 0.2					
Cas some	Drawing No. of	Marking the	Quantity		
Gashame	nozzle	nozzle	GT-19-03	GT-23-03	
2E-G20-13mbar	Z0382.01.00.01	130			
2E-G20-20mbar					
2H-G20-20mbar	Z0082.01.00.01	120			
2H-G20-25mbar					
3P-G31-37mbar	72524 01 00 01	95	3524 01 00 01 85		
3P-G31-50mbar	23324.01.00.01	00	10	12	
3B/P-G30-30mbar					
3B/P-G30-37mbar					
3B/P-G30-50mbar	72525 01 00 01	80			
3B-G30-28-30mbar	23323.01.00.01	00			
3B-G30-50mbar					
3+-G30/G31-28-30/37mbar					



5.2. Changing the parameters of the controller

Parameters :

**r1** – starting power (range of changes 0 -99)

r2 - maximum power (range of changes 0-99 - factory setting 99)

**r3** – type of gas (00 natural gas, 01 liquified gas)

Changing parameters is performed only in the case of changeover on a different gas family.



- turn off the power;
- turn on the power again
- in the 20s from the heater connection to the power supply, press and hold for 5 seconds two buttons "MIN" and "MAX"(at the same time)
- the display shows the code "R1";
- release the buttons "MIN" and "MAX";
- by single pressing the button "MAX" select the parameter "R2";
- if you selected "R2", accept the selection with the button "MIN". The display should show a value of "99". If it is different, correct it by pressing the button "MAX", after reaching the desired value, press button "MIN" to accept the choice;
- by pressing the button "MAX" select parameter "R3";
- \_\_\_\_if you selected "R3", use the "MIN" to accept the selection. The display shows the current value;
- Image: for natural gas
- Image: for liquified gas
- to modify the value of the selected parameter, press the "MAX".;
- after reaching the desired value, press "MIN" to accept the choice;
- to complete the programming function, press the" MAX" button to select a parameter "En" and confirm by pressing "MIN".

List 5.3

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modulator All adjustments must be performed based on the data characteristics shown in Table 3. Check the inlet and outlet pressure of the gas by

5.3. Regulation of the minimum and maximum gas pressure on

- using an unit of gas pressure inspection.
  after exiting the programming functions, use "MAX" on the control panel to set the water temperature on the highest value=60°C;
- remove the protective cap "k" from the modulator coil of gas valve:
- loosen by half turn the threaded cap located on the measurement tip of the outlet gas pressure "OUT P";
- connect the pressure gauge to the measurement tip of the outlet gas pressure;

#### REGULATION OF MAXIMUM PRESSURE IN BURNER

- make sure all wires are connected;
- run the heater and keep the maximum flow of water;
- Using a flat key, turn the screw "B" to set the maximum value of pressure in the burner according to Table 3. Turning the screw according to the direction clockwise direction causes in increase of the maximum pressure of the gas outlet.

#### REGULATION OF MINIMUM PRESSURE IN BURNER

- disconnect the wires supplying the coil of modulator "z";
- run the heater;
- not to cause changes in the preset maximum pressure in burner, hold the screw "B" using the a flat key. Use a screwdriver to turn the screw "A" and set the minimum pressure of the gas in accordance with the value given in the table 3 Turning the screw according to the direction clockwise direction causes in increase of the minimum pressure of the gas outlet.
- After you complete the regulation connect the wires supplying the coil of modulator "z";

After completing the adjustment:

- check the minimum and maximum pressures. If necessary readjust the pressure;
- fit the protective cap "k";
- Check the electrical connections to the modulator coil;
- Check and carefully seal the pressure control points by tightening the threaded cap on the gas set;
- Set the temperature on the control panel according to user needs

#### **5.4.** Starting power regulation

In the case of explosive gas ignition or no ignition, change the value of the starting power. Follow the instructions in point 2 change the value of "R1" in the range 0 to 99, so as to achieve a stable ignition of the gas.

**5.5.** After adjusting the heater to another type of gas:

• on the nameplate

- delete type of gas that has been pre-determined
- enter the type of gas to the heater has been adjusted
- in the manual put the information that the heater has been designed for a different type of gas.

	Gas pressure in burner			
Cas	19 kW		2	3 kW
Gas	Min [Pa]	Max [Pa]	Min [Pa]	Max [Pa]
2E-G20- 13mbar	-20 <sup>±20</sup>	1020 <sup>±30</sup>	-10 <sup>±20</sup>	1030 <sup>±30</sup>
2E-G20- 20mbar	10 <sup>±20</sup>	1280 <sup>±30</sup>	0 <sup>±20</sup>	1390 <sup>±30</sup>
2H-G20- 20mbar	10 <sup>±20</sup>	1280 <sup>±30</sup>	0 <sup>±20</sup>	1390 <sup>±30</sup>
2E-G20- 25mbar	10 <sup>±20</sup>	1280 <sup>±30</sup>	0 <sup>±20</sup>	1390 <sup>±30</sup>
3P-G31- 37mbar	80 <sup>±20</sup>	2060 <sup>±30</sup>	130 <sup>±20</sup>	2120 <sup>±30</sup>
3P-G31- 50mbar	80 <sup>±20</sup>	2060 <sup>±30</sup>	130 <sup>±20</sup>	2120 <sup>±30</sup>
3B/P-G30- 30mbar	20 <sup>±20</sup>	1450 <sup>±30</sup>	30 <sup>±20</sup>	1600 <sup>±30</sup>
3B/P-G30- 37mbar	20 <sup>±20</sup>	1450 <sup>±30</sup>	30 <sup>±20</sup>	1600 <sup>±30</sup>
3B/P-G30- 50mbar	20 <sup>±20</sup>	1450 <sup>±30</sup>	30 <sup>±20</sup>	1600 <sup>±30</sup>
3B-G30- 28-30mbar	20 <sup>±20</sup>	1450 <sup>±30</sup>	30 <sup>±20</sup>	1600 <sup>±30</sup>
3B-G30- 50mbar	20 <sup>±20</sup>	1450 <sup>±30</sup>	30 <sup>±20</sup>	1600 <sup>±30</sup>
3+-G30/G31- 28-30/37mbar	20 <sup>±20</sup>	1450 <sup>±30</sup>	30 <sup>±20</sup>	1600 <sup>±30</sup>
	— <b>A</b>			



# 6. MAINTENANCE

In order to ensure the appropriate and long-lasting operation of the heater, it is recommended to perform maintenance operations. Inspections and maintenance works must be only performed by an authorized service team, at least once a year.

The range of recommended maintenance operations is presented below.

Before starting any maintenance operations, the gas and water supply must be cut off, and then the water should be drain out from the appliance. Before cleaning the heater, first disassembly the burner and then follow the same way with the heat exchanger.

# 6.1 Cleaning a heat exchanger (removing deposits and scale)

To ensure full gas combustion and keeping maximum heat exchange efficiency, it is recommended to keep the segments of the heat exchanger cleaned.

Cleaning a heat exchanger out of sediments requires it to be disassembled from the water heater and rinsed with a strong water stream.

If it is necessary to remove scale from ducts of the heat exchanger, do it using agents available on the market, according to the recommendations of agent's manufacturer.

The scale can be also removed by means of 10-20% acetic acid, by keeping it in the heat exchanger for about 3 hours. After it the heat exchanger should be thoroughly rinsed with clean water.

Do not use wire brushes, or other brushes with hard bristle.

# 6.2 Burner maintenance

During maintenance works clean plates situated on segments of the burner. Pay attention whether the plates or segments were not damaged.

# 6.3 Cleaning a water filter

Clean a water filter during every maintenance work. The filter must be also cleaned if you notice that water flow is lower than usual. If a water filter is damaged, it is necessary to replace it with a new one.

### 6.4 Cleaning a gas filter

Clean a gas filter during every maintenance work. If a gas filter is damaged, it is necessary to replace it with a new one.

# 6.5. Cleaning a water flow limiter

The water heater is equipped with a water flow limiter, which is shown in the Fig. 4.3.2. The water flow limiter provides the maximal flow

- 11 l/min for water heater with output: 19.2kW,
- 13 l/min for water heater with output: 23kW,

Pollutions in a water flow limiter can cause a lower water flow. In order to clean a water flow limiter, unscrew a nut situated on an inlet pipe of a heat exchanger, move a pipe and remove a water flow limiter. Then rinse it and mount it again.

# 6.6 Checking up the protections against leakage in a flue system and heat exchanger overheating.

Temperature limiter - (Fig. 2.2.1.1 item. 11) - protection against leakage in a flue system, is set for the temperature  $75\pm 3^{\circ}$ . In order to verify the correctness of a limiter's setting, follow the below mentioned actions:

- prepare a metal vessel with a thermometer,
- fill the vessel with a liquid,
- take the limiter out of the holder (unscrew the screws), put it into a vessel submerging in the liquid only the metal cap
- heat the liquid up to the temperature 72°C in su ch temperature the limiter should not actuate,
- heat the liquid up to 78°C in such temperature the limiter should actuate.
- A limiter that operates properly disconnects electric contacts in the temperature range 72 ÷78°C.

# 6.7 Checking – up the fan operation control protection device



Use new gaskets if any elements of water or gas systems has been disassembled. The works mentioned in section 6 are not covered by warranty repairs.

# 7. Air – flue systems

Table 7.1 lists all parts required to mount the boiler properly and to ensure its proper operation. Parts specified below are available in regular sale or are not delivered with boiler as its equipment.

#### Tabel 7.1

	Name	Code	Quantity
	Flue– air concentric system Ø80 / Ø125 (Fig. 3.6	6.1.1)	
	Concentric adapter	ADK 505/80	1
1	Concentric tee 90° with access eye	TKR 220/80	1
	System elements (acc. with system design)	acc. to TERMET catalogue	1set
	Flue-air concentric system Ø60 / Ø100 (Fig. 3.6	5.1.1)	
2	Air- flue-gas system (connecting elbow +1 m of pipe + outlet connection) or	wg Fig. 690.00.00.00	1kpl
3	Air- flue-gas system (connecting elbow +2 m of pipe + outlet connection) or	wg Fig. 691.00.00.00	1kpl
4	Air- flue-gas system (connecting elbow +0.92 m of pipe + outlet connection) or	ZS 455/60	1 kpl
	Concentric adapter	ADK 505/60	1
5	Concentric tee 90° with access eve	TKR 220/60	1
	System elements (acc. with system design)	acc. to TERMET catalogue	1set
	Flue-air concentric system Ø80 / Ø125 ( Fig. 3.6	5.2.1)	
	Concentric adapter	ADK 505/80	1
	Concentric tee 90° with access eve	TKR 220/80	1
6	Horizontal draining board	OKO 242/80	1
	Concentric elbow 90° with a bracket	KKW 121/80	1
	System elements (acc. with system design)	acc. to TERMET catalogue	1set
	Flue-air concentric system Ø60 / Ø100 ( Fig. 3.6	5.2.1)	
	Concentric adapter	ADK 505/60	1
	Concentric tee 90° with access eve	TKR 220/60	1
7	Horizontal draining board	OKO 242/60	1
	Concentric elbow 90° with a bracket	KKW 121/60	1
	System elements (acc. with system design)	acc. to TERMET catalogue	1set
	Flue-air concentric system Ø80 / Ø125 ( Fig. 3)	622	
	Concentric adapter	ADK 505/80	1
	Concentric washout hole	W/K 241/80	1
8	Vertical draining board	OKP 241/80	1
	System elements (acc with system design)		1set
	Elue-air concentric system Ø60 / Ø100 / Fig. 3 f	(2 2)	1001
			1
		WK 241/60	1
9	Vertical draining board	OKP 241/60	1
	System elements (acc with system design)		1sot
	Zestaw spalinowo – powietrzny. Concentric system Ø60/Ø	100 ( Fig. 3631)	1301
	Concentric adapter	ADK 505/60	1
	Concentric tee 90° with access eve	TKR 222/60	1
11	Flue elbow 90° with a bracket	KSW 122/60	1
	Vertical draining board	OSP 151/60	1
	System elements (acc. with system design)	acc to TERMET catalogue	1set
	Flue-air concentric system Ø80 / Ø125 / Fig. 3 f	3 1)	1961
	Concentric adapter	ADK 505/80	1
	Concentric tee 90° with access eve	TKR 222/80	1
12	Flue elbow 90° with a bracket	KSW 122/80	1
.2	Vertical draining board	OSP 151/80	1
	System elements (acc. with system design)	acc. to TERMET catalogue	1set
	Flue air system with separate pipes $\emptyset$ 80 x $\emptyset$ 80 (F	ig 3641)	
		ADS 507/80	1
	Flue – das washout hole	WS 141/80	1
	Vertical draining board	OSP 151/80	1
13	Air adapter (//80///80	ADP 503/80	1
		KS 121/80	1
	System (280 elements (200 with system design)	acc to TERMET catalogue	1 set
	Flue air system with senarate nines (260 x (260 / Flue air system with senarate nines (260 / Flue air system with sen	ig 3 6 / 1)	1.000
			1
	Flue – as washout hole	M/S 1/1/60	1
	Vertical draining board	000 151/60	1
14	Air adapter Ø60	ΔDD 503/60	1
		KS 121/60	1
	System (60 alamante / acc with system design)		1 e ot
	j System 200 elements (aut. With System design)		1961
	Flue adapter (200/290	ND9 507/00	4
		KC 101/00	۱ ۲
			۲
15	Horizontal draining board	USO 152/80	1
10	Flue elbow 90° with a bracket	KSW 122/80	1
	Air adapter Ø80	ADP 503/80	1
	System (280 elements (acc with system design)	acc to TERMET catalogue	1 cot
├	$1 \text{ Grow elements} = \{au, with system utergin\}$		1 351
	Flue adapter (260		1
			1
	ENUW 30	NO 121/80	<u> </u>
16		USU 152/80	
	Air adoptor (260		1
	All adapted 200		1 001
1	J System woo elements (acc. with system design)		1 381

CE	DEKLARACJA ZGODNOŚCI DECLARATION OF CONFORMITY ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ KONFORMITÄTSERKLÄRUNG
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Wyrób / Product / Изделие / Erzeugniss:	Gazowy przepływowy ogrzewacz wody / Instantaneous gas water heater/ Водонагреватели проточные газовые / Gaswassererhitzer
Тур / Туре / Тип / Тур:	Tabela / Table / таблица / Tabelle
Nazwa handlowa / Name / Торговое название / Handelsname:	Tabela / Table / таблица / Tabelle

 Oświadcza się z pełną odpowiedzialnością, że opisane powyżej wyroby są zgodne z wymaganiami zasadniczymi następujących dyrektyw (rozporządzeń) wraz z odnośnymi zmianami oraz odpowiednimi normami zharmonizowanymi:

This is to certify that products mentioned above comply with substantial requirements of the following directives and corresponding harmonized standards:

• Заявляется с полной ответственностью что описаны выше изделия согласны принципиальным требованиям следующих директив и соответствующим гармонизированным нормам:

 Hiermit, mit voller Verantwortung erklären wir, dass die oben genannten Erzeugnisse mit den Ansprüchen folgender Richtlinien und konsolidierter EN – Normen übereinstimmen:

Тур / Туре Тип / Тур	Nazwa handlowa / Name	Dyrektywy (rozporządzenie) /	Normy / Standards
GP-19-01 GP-23-01	TermaQ	<ul> <li>2009/142/WE (Rozporz. MG z dnia 21-12-2005r - Dz. U. Nr 263 poz. 2201) w sprawie zasadniczych wymagań dla urządzeń spalających paliwa gazowe;</li> </ul>	стандарты / Normen
		<ul> <li>2009/142/WE Gas appliances (GAD);</li> </ul>	PN-EN 26:2007
		<ul> <li>2009/142/WE Газовые аппараты;</li> </ul>	
		<ul> <li>2009/142/WE Gasverbrauchseinrichtungen;</li> </ul>	
GE-19-02 GE-23-02 GH-19-02 GH-23-02 Terma	TermaQ Electronic	<ul> <li>2009/142/WE (Rozporz. MG z dnia 21-12-2005r - Dz. U. Nr 263 poz. 2201) w sprawie zasadniczych wymagań dla urządzeń spalających paliwa gazowe;</li> <li>2004/108/WE (Ustawa z dnia 13.04.2007r Dz.U. Nr 82 z dn.11-05-2007, poz.556) o kompatybilności elektromagnetycznej;</li> </ul>	PN-EN 26:2007
		<ul> <li>2009/142/WE Gas appliances (GAD);</li> <li>2004/108/WE Electromagnetic compatibility (EMC);</li> </ul>	PN-EN 55014-2:1999
		<ul> <li>2009/142/WE Газовые аппараты;</li> <li>2004/108/WE Электромагнитное совпадение;</li> </ul>	PN-EN 55014-2:1999 +A1:2004
		<ul> <li>2009/142/WE Gasverbrauchseinrichtungen;</li> <li>2004/108/WE Elektromagnetische Verträglichkeit</li> </ul>	
GT-19-03 GT-23-03	Aqua Comfort turbo	<ul> <li>2009/142/WE (Rozporz. MG z dnia 21-12-2005r - Dz. U. Nr 263 poz. 2201) w sprawie zasadniczych wymagań dla urządzeń spalających paliwa gazowe;</li> <li>2004/108/WE (Ustawa z dnia 13.04.2007r Dz.U. Nr 82 z dn.11-05-2007, poz.556) o kompatybilności elektromagnetycznej;</li> <li>2006/95/WE (Rozporz. MG z dnia 21-08-2007r - Dz. U. Nr 155 poz. 1089) w sprawie zasadniczych wymagań dla sprzętu elektrycznego</li> </ul>	PN-EN 26:2007 PN-EN 55014-2:1999
		<ul> <li>2009/142/WE Gas appliances (GAD);</li> <li>2004/108/WE Electromagnetic compatibility (EMC);</li> <li>2006/95/WE Low voltage electrical equipment (LVD)</li> </ul>	PN-EN 55014-2:1999 +A1:2004
		<ul> <li>2009/142/WE Газовые аппараты;</li> <li>2004/108/WE Электромагнитное совпадение;</li> <li>2006/95/WE Электрические аппараты низкого напряжения</li> </ul>	PN-EN 50165:2005
		<ul> <li>2009/142/WE Gasverbrauchseinrichtungen;</li> <li>2004/108/WE Elektromagnetische Verträglichkeit</li> </ul>	11-210 00355-1:2004

Ogrzewacze są zgodne z przebadanym typem WE wraz z zapewnieniem jakości produkcji.

Heaters comply to examined type and assure production.

Водонагреватели согласны из обследованным типом WE вместе с гарантией качества производства.

Die Gaswassererhitzer stimmen mit dem geprüften WE Typ und mit dem Produktions-Qualitätssystem überein.

Informacje dodatkowe/ Additional inrofmation/Дополнительные информации/Nachträgliche Auskünfte:

• Jednostka certyfikująca / Notified Body / Орган по сертификаци / Zertifizierungsstelle: INiG - Kraków

• Jednostka kontrolująca / Inspection Notified Body / Контрольный орган / Kontrolleinheit: INiG - Kraków

• Laboratorium badawcze / Test laboratory / Испытательная лаборатория / Prüflabor: PCBC Laboratorium Elektrotechniczne - Warszawa,

Laboratorium Badań Elektrycznych – Die Krakówoli Jakości

Siniebodziee 15.11.20164.

Miejsce i data wydania Place and date of issue Место и дата выдачи Ort / Ausstellungsdatum 16

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