Cat. No./ Serial No. .....

Date of manufacture .....

QC

Galmet

Installation and Operating Manual / Warranty Card

Layered tank **SG(S) Fusion 100**

for dual function gas boilers

Please read the instructions carefully before beginning the installation and use of the product.

Made in Poland

www.galmet.eu

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1. Operation and maintenance

1.1. Device description

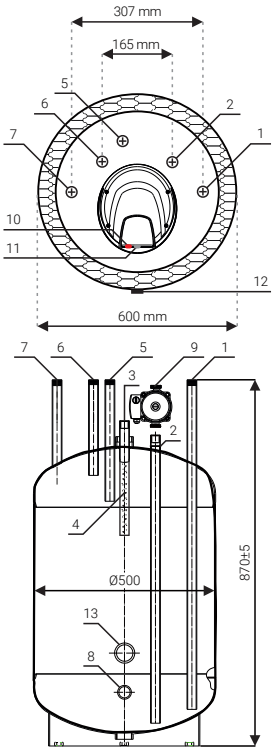
The tank is protected against corrosion by a ceramic enamel burned at 850°C. A large magnesium anode is an additional protective element. The tank is insulated with ecological polyurethane foam, which reduces heat loss to minimum. The outer housing is made from steel and is coated with powder paint.

This layer tank is designed for operation with a dual function gas boiler and storage of domestic hot water. The tank acts as a buffer loaded from the top with warm water, which does not mix with the cold water occupying the bottom section of the tank. This solution greatly enhances the comfort of using a dual function boiler, resulting in a large amount of heated water in a short time. Thanks to its layered water distribution, small water consumption does not start the boiler too often. This prolongs its life and allows the user to save gas.

1.2. Technical characteristics

The main part of the device is the tank, in which the water is heated. The tank is made from a sheet of steel which is then enamelled with a ceramic enamel on the inside part of the tank. The connections of the tank are closed with corks and all are located at the top cover.

1.3. Scheme



1. cold water inlet
2. cold water outlet (to boiler)
3. sensor to control the pump
4. magnesium anode on a 5/4" cap (under the top cover)
5. circulation connector
6. connector for hot water from boiler
7. domestic hot water outlet
8. drain
9. 3-stage circulation pump
10. switch
11. thermostat
12. thermometer
13. 5/4" plug for electrical set

1. Operation and maintenance

1.4. Remember

1. Before installation of the heater it is recommended to read the installation and user manual that comes with the device.
2. It is not allowed to turn on the heater which is not filled with water.
3. It is not allowed to operate the heater without the proper working safety valve (its functioning must be checked every 14 days – simply turn the protective hood right or left in the way that causes an outflow from a lateral outlet carrying outside. Next turn the hood in the opposite direction till it reaches the previous position and press it to the valve's body. If you turn the hood and water does flow out , the valve is inefficient. If you turn the hood and bring it back to the starting position but water dribbles constantly, the valve's head is polluted and you should rinse the valve opening the outflow by turning the hood a few times. The outlet carrying water from the valve allows water flow freely outside. To avoid uncontrolled outflow you should use a funnel or a pipe carrying water to the sewage system. Attention – there is a possibility of hot water flowing . Safety valve dripping excessively due to: a) constant functioning of water supply with pressure higher than allowed, b) short, sudden leaps of water supply's pressure – are not subject to a warranty repair or exchange. The company is not responsible for wrong functioning of the safety valve caused by the faulty assembling of the valve or installation errors e.g. lack of a pressure reducing valve in the installation carrying cold water. Max pressure of the full opening of the safety valve cannot exceed 1,0 MPa (10 bar).
4. The non-pressure water heaters can only work with non-pressure taps. The water heater must be connected to the tap with a flexible hose and gaskets in the caps. Next, open the hot water valve (marked in red) and wait till the tank fills with water (as the spout water starts running). In the non-pressure type water heaters the safety valve function is carried out by the three-way tap.
5. You cannot remove the cover of the heater if it is connected to the power network.
6. In case of cold water existence in the installation supplying it to the heater , non-return valve or another appliance functioning as a non-return valve e.g pressure reductor you should assemble in the water installation a cumulative membrane vessel with its capacity not lower than 5% of the boiler's capacity.
7. Within the installation, in which the heater is assembled any appliances causing the so called "water hammer" cannot exist, e.g . ball valve used as a rinsing valve.
8. It is not allowed to prevent dripping of water from the safety valve – do not block the escape hole of the safety valve. If water leaks continuously from the safety valve it means that the pressure in the water pipe installation is too high or the safety valve is inefficient. The outlet carrying out of the valve should be directed down. Below the valve it is advisable to put a funnel carrying the water out. You can also put on the outlet a pipe carrying the water leakage , appearing when opening the safety valve. The pipe should be resistant to temperature of + 80°C, its inner diameter 9 mm and max length 1,2 m led to the water outlet with a decline (min 3%) in the surroundings where the temperature does not fall below 0°C. The pipe must be protected against the decrease of the passage space (kneading, clogging), and its outlet should be visible (for checking the valve's functioning).
9. The heater must be turned off immediately if the steam comes out of the battery (it should be reported to the manufacturer).
10. The conductivity of the water should not be lower than 100 µS/cm, this ensures correct operation of the magnesium anode.
11. Constant functioning of the heater at the max temperature causes a faster consumption of the electric parts and the tank.
12. Connecting the heater to the power network without a grounding bolt may result in electrocution in case of a failure of electric equipment.
13. It is not allowed to use within the power circuit any fuse-element above 16 A.
14. At least once a year you should test the heater's protection by measuring the efficiency neutralization.
15. At least every 12 months you should have the service centre rinse any sediment from the heater.
16. To prolong the life of the tank and to ensure the efficient work of the safety valve you should use filters eliminating pollution.
17. If the tanks work in a very aggressive surroundings (e.g. in a barn) you should purchase a product especially designed for working in such surroundings (producer prepares parts which may get corroded faster, protecting them suitably for chemical reasons.
18. "Galmet Sp. z o.o." Sp. K. reserves the right to introducing any modifications without prior warning of consumers.
19. The heating coil should be flushed by the installer before the first use (besides, installing a filter is recommended to remove any impurities).
20. Please be advised that water odors and the change in colour of the water from the heater to dark indicate the formation of hydrogen sulfide by reducing sulfate content of the bacteria that live in oxygen-poor water. If cleaning the tank, replacement of the magnesium anode and start with the temperature above >60°C will not get rid of the problem, we recommend the use of titanium anode connected separately to the mains.
21. All maintenance and installation works must be performed in accordance with applicable health and safety regulations.

2. Installation

Installation should be done by a specialist with suitable qualifications (connecting the heater should be noted down in the warranty card). Due to the design of the water heater, it can be installed only VERTICALLY.

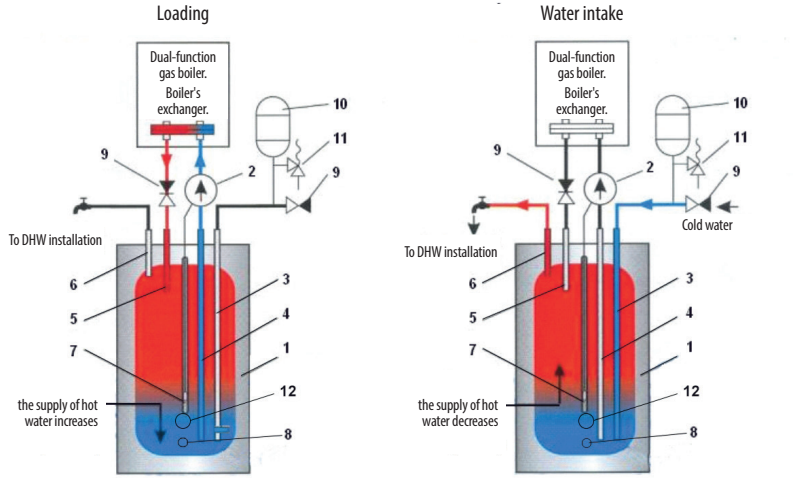
The water heater must be connected directly to the water supply network (with the possibility of disconnection in case of maintenance) with a pressure not exceeding 1 MPa - approx. 10 bar, and the minimum pressure can not be lower than 0,1 MPa - approx. 1 bar. If water pressure in the water supply network exceeds 1 MPa - approx. 10 bar, it is necessary to reduce the pressure by using a reduction valve.

A safety valve, for example ZB8 FACH Cieszyn, must be installed on the cold water supply pipe, while the safety valve, equipped with a function that reduces water pressure in the water heater through redirecting its flow back to the water supply installation, with a water supply installation that, for a distance of 5 m from the safety valve, should withstand a water temperature of 90°C (due to the possibility of hot water flow from the tank to the installation).

The outlet of the safety valve must be open all the time – connected with a normal atmosphere.

The tank acts as a buffer loaded from the top with warm water, which does not mix with the cold water occupying the bottom section of the tank. This solution greatly enhances the comfort of using a dual function boiler, resulting in a large amount of heated water in a short time. A 3-stage circulation pump (standard) of adjustable output allows the tank to work with dual function boilers of various outputs, without the risk that they will switch off due to overheating of the water flowing into the tank. Its compact size makes it possible to locate the tank right beneath your boiler, and this means easy and quick installation even in small spaces.

The outer body of the circulation pump is made of composite. The maximum force that can be used to screw the pump can not exceed 30 Nm.



1. Layer tank
2. Loading pump
3. Cold water inlet
4. Cold water outlet (to gas boiler)
5. Connector for hot water from gas boiler
6. Domestic hot water outlet
7. Loading pump's control sensor
8. Water drain
9. Check valve
10. DHW expansion vessel
11. Safety valve
12. 5/4" plug for electrical set

3. Troubleshooting

PROBLEM	CAUSE	METHOD OF ELIMINATION
The safety valve does not open {even doing a blow through).	Safety valve seized.	Clean or replace the valve.
Safety valve leaks.	Touching surfaces of safety valve dirty or defective.	Clean or scrub the touching surfaces of the safety valve.
	Excessive water pressure in the network.	Instal a flow control device.
Water from the water heater is dirty.	A large amount of sediment in the tank.	Clean the tank of sediment.
	Worn out magnesium anode	Replace the magnesium anode - not covered by the warranty.

Warning!

1. At least once every 18 months replace the magnesium anode (keep the receipt for the magnesium anode). Regular replacement of the magnesium anode is a requirement for maintaining a warranty on the tank (for an enamelled tank).
2. It is not allowed to install the water heater without a properly functioning safety valve.
3. The safety valve must be installed directly in front of the cold water pipe leading to the water heater. Only valves approved by the Technical Supervision Office, designed for capacitive water heaters, can be used – ones with a return valve. The safety valve allows water to flow out of the heater, if an excessive increase in pressure in the heater occurs – opening pressure of 0,67 MPa.
4. No additional device can be installed between the safety valve and the water heater (e.g. shut off valve, water valve, etc.).
5. The repair method is specified by the manufacturer.
6. In the event of product defects importer. Free repairs of damage, for which the manufacturer is liable, will be remedied within 14 days from the date of notification. THE WATER HEATER MUST NOT BE DISASSEMBLED. The receipt for the purchase of the water heater must be kept for after sales service purposes. The number of repairs does not include gasket replacements, magnesium anode replacements etc.
7. A properly filled out, complete and in no way corrected warranty card is the basis for having repairs done under warranty (it must be kept throughout the warranty period).
8. Cases not covered by the above conditions are subject to the provisions of the Polish Civil Code.
9. Connections with the heaters must not be made of plastic pipes not designed to work at a temperature of 95°C and at a pressure of 1,0 MPa.
10. Water heaters must be installed in such a way as to ensure easy access (e.g. for maintenance, repair or replacement).
11. The manufacturer is not liable for any inconvenience or expense caused by the dismantling of additional housing elements.
1. In case water becomes odorous or darkly coloured, this is caused by the formation of hydrogen sulfide by sulfate reducing bacteria that live in oxygen poor water. If cleaning the water heater, replacing the magnesium anode and setting the temperature above 60°C do not improve the situation, we recommend the use of a titanium anode connected separately to the power supply.

4. Technical specification

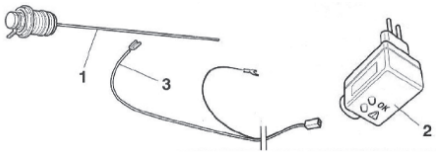
Specification	unit	SG(S) Fusion 100
storage capacity *	l	104
Tank's maximum working temperature	°C	95
Tank's maximum working pressure	MPa	1
Magnesium anode - top cover 5/4" plug	mm	25x390
Height	mm	900
Internal diameter	mm	500
External diameter	mm	600
Net weight	kg	54

* According to the (EU) 812/2013, 814/2013.

5. Titanium, maintenance-free, active anode

5.1. Pros of the titanium anode

- reliable, durable protection
- low consumption of anodes
- no sludge on the anode
- not required regeneration
- guaranteed long-term operation of the tank



1. Titanium anode
2. Potentiometer (AC)
3. Grounded cord

NOTE ! Before installing the anode CORREX, remove existing protective magnesium anode.

1. Cable supplied bipolar, connecting the anode CORREX and potentiometer plug must not be lengthened.
2. A random change in polarity causes the acceleration of corrosion.
3. It is recommended to use the socket 230 V in a short distance from the tank.

5.2. Troubleshooting

LED CONTROL	CAUSE	METHOD OF REMOVAL
ON - green colour	- Anode CORREX working properly. Full protection against corrosion.	-
OFF	- Lack of electricity.	- Check the voltage 230 V.
ON - red colour	- Lack of water in the tank. - Cables between the electronic part and the anode is connected incorrectly. - Lack of contact between the ground (tank) and the electrical part of the anode. - The anode is contacted with the mass of the tank.	- Fill the tank with water. - Put the cables at the anode. - Check and clean the rust all connections. - Properly isolate the anode from the tank.

It is NECESSARY to use a dielectric connectors (made out of a plastic material - electrically nonconductive) between the hot and cold water connections and the installation's connections in order to avoid iron-copper contact, also in case where the relief group is connected directly to the tank. This extends the life of the water tank and prevents electrolysis phenomena, especially when the water is acidic (pH <7).

The symbol presented beside signifies that it is prohibited to dispose of worn electrical and electronic devices together with other waste. These products should be delivered to assigned waste collection points for waste processing. A proper recycling of electrical and electronic devices helps to protect the natural environment and prevents negative impact on human health.

6. Product fiche (according to EU Regulation No 812/2013)

6.1. SG(S) Fusion

1	EN - Supplier's name or trade mark	Galmet
2	EN - Supplier's model identifier	SG(S) Fusion 100
3	EN - Energy efficiency class	C
4	EN - Standing loss [W]	61
5	EN - Storage volume [L]	104

DECLARATION OF CONFORMITY

„GALMET Sp. z o.o." Sp. K.
48-100 Głubczyce, Raciborska 36

declares that the following products:

SG(S) 100

To which this declaration applies to is compliant with the following directives:

Pressure Equipment Directive (PED): 2014/68/UE;

The water heaters are intended for heating and storage of the DHW.
The wall thickness of the jackets and the bottoms,
as well as the material the exchangers were made of are listed below:

Type	Diameter [Ø]	Bottoms		Jackets	
		Material thickness	Material	Material thickness	Material
SG(S) 100	500	3,0	S235JR	2,5	S235JR

Głubczyce 19.07.2016
(Place and date)

PREZES ZARZĄDU
Stanisław Galara
(Authorized person signature)

Notes

Notes

WARRANTY CARD

No.	Date of receiving	Description of the repair	Date of worksmanship	Serviceman's signature

Date of repair	Date of repair	Date of repair	Date of repair
Range of repair	Range of repair	Range of repair	Range of repair
Seal of the service	Seal of the service	Seal of the service	Seal of the service
Name, address of the owner	Name, address of the owner	Name, address of the owner	Name, address of the owner
Owner's signature	Owner's signature	Owner's signature	Owner's signature

WARRANTY CARD

„Galmet Sp. z o.o." Sp. K.
48-100 Głubczyce, ul. Raciborska 36

Magnesium anode replacement confirmation (paid service)	
Date and signature of an authorized person	Date and signature of an authorized person
Date and signature of an authorized person	Date and signature of an authorized person

Warranty coupon 1	Warranty coupon 2	Warranty coupon 3	Warranty coupon 4
Galmet tworzymy rzeczy mądre	Galmet tworzymy rzeczy mądre	Galmet tworzymy rzeczy mądre	Galmet tworzymy rzeczy mądre
Type:	Type:	Type:	Type:
Factory No.:	Factory No.:	Factory No.:	Factory No.:
Date of sale:	Date of sale:	Date of sale:	Date of sale:
Seller's seal and signature	Seller's seal and signature	Seller's seal and signature	Seller's seal and signature

Installation confirmation
Galmet tworzymy rzeczy mądre
Type:
Factory No.:
Date of sale:
Seller's seal and signature