

**gorenje**



***OTG 50-120 SM***

Dear buyer, thank you for purchasing our product.

Prior to the installation and first use of the electric water heater, please read these instructions carefully.

**THIS APPLIANCE IS NOT INTENDED FOR USE BY PERSONS (INCLUDING CHILDREN) WITH REDUCED PHYSICAL, SENSORY OR MENTAL CAPABILITIES, OR LACK OF EXPERIENCE AND KNOWLEDGE, UNLESS THEY HAVE BEEN GIVEN SUPERVISION OR INSTRUCTIONS CONCERNING THE USE OF THE APPLIANCE BY A PERSON RESPONSIBLE FOR THEIR SAFETY.**

**CHILDREN SHOULD BE SUPERVISED TO ENSURE THAT THEY DO NOT PLAY WITH THE APPLIANCE.**

In accordance with the latest guidelines, we have developed for our more demanding customers the electric water heater OTG equipped with an intelligent electronic regulator allowing the setting of the temperature of water in the heater as well as smart "ECO<sup>S</sup>" mode of operation. The heater records your habits and after a while, it calculates the optimal operating mode that enables minimal use of electric energy necessary to meet your warm water needs.

This water heater has been manufactured in compliance with the relevant standards and tested by the relevant authorities as indicated by the Safety Certificate and the Electromagnetic Compatibility Certificate. The technical characteristics of the product are listed on the label affixed between the inlet and outlet pipes. The installation must be carried out by qualified staff. All repairs and maintenance work within the water heater, e.g. lime removal or inspection/replacement of the protective anticorrosion anode, must be carried out by an authorised maintenance service provider.

## INSTALLATION

The water heater shall be installed as close as possible to the outlets. When installing the water heater in a room with a bathtub or shower, take into account the requirements defined in IEC Standard 60364-7-701 (VDE 0100, Part 701). It has to be fitted to the wall using appropriate wall screws with a minimum diameter of 8 mm. A wall with a poor load-bearing capacity must be properly reinforced where the heater will be installed. The water heater may only be fixed upon the wall vertically. We recommend the distance between the water heater and the ceiling is large enough to allow simple replacement of the MG anode (see dimension G in the Installation Drawing), in order to avoid unnecessary dismantling of the heater during the servicing intervention.

## TECHNICAL PROPERTIES OF THE APPLIANCE

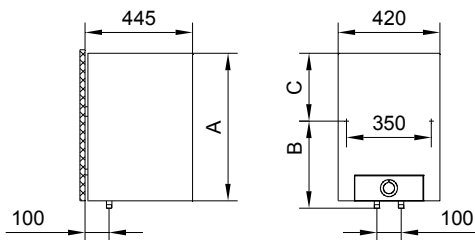
Type	OTG 50 SM	OTG 80 SM	OTG 100 SM	OTG 120 SM
Volume [l]	50	80	100	120
Rated pressure [MPa (bar)]	0,6 (6) / 0,9 (9)			
Weight / Filled with water [kg]	24/74	31/111	36/136	41/161
Anti-corrosion of tank	enamelled & Mg Anode			
Power of electrical heater [W]	2000			
Connection voltage [V~]	230			
Protection class	I			
Degree of protection	IP24			
Duration of heating to 75 °C <sup>1)</sup> [h]	1 <sup>55</sup>	3 <sup>05</sup>	3 <sup>55</sup>	4 <sup>35</sup>
Quantity of mixed water at 40 °C [l]	94	148	194	226
Energy consumption <sup>2)</sup> [kWh/24h]	0,99	1,26	1,71	1,81

1) Time for heating the whole content of heater if the initial temperature of cold water from water supply is 15 °C.

2) Energy consumption to maintain the temperature of water in the water heater at 65 °C if the surrounding temperature is 20 °C, measured according to EN 60379.

	A	B	C	G
OTG 50 SM	690	470	250	210
OTG 80 SM	950	735	245	360
OTG 100 SM	1125	900	255	360
OTG 120 SM	1300	900	430	510

Connection and installation dimensions of the water heater [mm]



## CONNECTION TO THE WATER SUPPLY

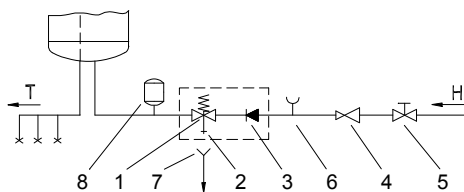
The water heater connections for the inlet and outlet of water are colour-coded. The inlet of cold water is marked with blue colour, while the hot water outlet is marked with red colour. The water heater can be connected to the water supply in two ways. The closed-circuit pressure system enables several points of use, while the open-circuit gravity system enables a single point of use only. The mixer taps must also be installed in accordance with the selected installation mode.

The open-circuit gravity system requires the installation of a non-return valve in order to prevent the water from draining out of the tank in the event of the water supply running dry or being shut down. This installation mode requires the use of a cross-flow mixer tap. As the heating of water expands its volume, this causes the tap to drip. The dripping cannot be stopped by tightening it further; on the contrary, the tightening can only damage the tap. The closed-circuit pressure system requires the use of pressure mixer taps. For safety reasons the supply pipe must be fitted with a safety valve or alternatively, a valve of the safety class that prevents the pressure in the tank from exceeding the nominal pressure by more than 0.1 MPa (1 bar). The outlet opening on the relief valve must be equipped with an outlet for atmospheric pressure.

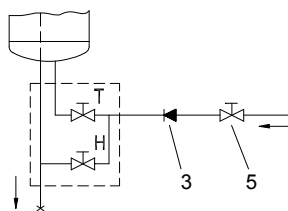
The heating of water in the heater causes the pressure in the tank to increase to the level set by the safety valve. As the water cannot return to the water supply system, this can result in dripping from the outlet of the safety valve. The drip can be piped to the drain by installing a catching unit just below the safety valve. The drain installed below the safety valve outlet must be piped down vertically and placed in an environment that is free from the onset of freezing conditions.

In case the existing plumbing does not enable you to pipe the dripping water from the safety valve into the drain, you can avoid the dripping by installing a 3-litre expansion tank on the inlet water pipe of the boiler.

In order to provide correct operation of the safety valve, periodical inspections of the relief valve must be carried out by the user to eliminate any limescale and check if the safety valve is blocked. To check the valve, open the outlet of the safety valve by turning the handle or unscrewing the nut of the valve (depending on the type of the valve). The valve is operating properly if the water comes out of the nozzle when the outlet is open.



Closed (pressure) system



Open (non-pressure) system

Legend:

1 - Safety valve

2 - Test valve

3 - Non-return valve

4 - Pressure reduction valve

5 - Closing valve

6 - Checking fitting

7 - Funnel with outlet connection

8 - Expansion tank

H - Cold water

T - Hot water

**Between the water heater and safety valve, no closing valve may be built in because it could impede the function of the safety valve.**

The heater can be connected to the domestic water supply network without a pressure-reducing valve if the pressure in the network is lower than the nominal pressure. If the pressure in the network exceeds the nominal pressure, a pressure-reducing valve must be installed.

**Before connecting it to the power supply, the water heater must be filled with water.**

When filling the heater for the first time, the tap for the hot water on the mixing tap must be opened. When the heater is filled with water, the water starts to run through the outlet pipe of the mixing tap.

## CONNECTING THE WATER HEATER TO THE POWER SUPPLY NETWORK

Before connecting to the power supply network, install a power supply cord in the water heater, with a min. diameter of  $1.5 \text{ mm}^2$  (H05VV-F 3G  $1.5 \text{ mm}^2$ ). To do this, the protective plate must be removed from the water heater.



Connecting the heater to the power supply network must take place in accordance with the standards for electric appliances. To comply with the national installation regulations, an all poles disconnect switch must be installed between the water heater and the power supply network. When the heater is connected to the power supply, both lights on the front panel will light up for 2 seconds.

230 V~

Legend:

1 - Connection terminal

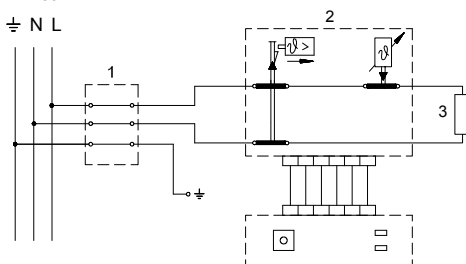
2 - Electronic regulator and bipolar thermal cut-out

3 - Electric heating element

L - Live conductor

N - Neutral conductor

$\perp$  - Earthing conductor



Electric installation

**CAUTION: Before any intervention into the interior of the water heater, disconnect it from the power supply network!**

## OPERATION AND MAINTENANCE

After connecting to the water and power supply, the heater is ready for use.

The heater is equipped with an electronic regulator that enables the setting of the temperature of water, adjustment of the heater's operation to your habits ("ECO<sup>S</sup>" programme) and troubleshooting application.

### OPERATION

The water heater is operated by turning the regulation knob to the desired level.



#### Switching on/off the heater

- To switch on the heater, turn the knob in the clockwise direction to reach the desired temperature level.
- To switch off the heater, turn the knob to the "0" position (if the heater is disconnected from the power supply, water must be drained from it in case of danger of freezing).

#### Temperature setting

- The desired temperature level is set by turning the knob in the clockwise direction.

ECO<sup>S</sup> - Temperature depends on the recorded needs of the user.

❄️ - Protection against freezing, temperature around 10 °C.

👤 - Water temperature around 35 °C.

ECO - Water temperature around 55 °C.

🔥 - Water temperature around 75 °C.

#### The operation of the heater in the "ECO<sup>S</sup>" mode

This mode of operation is suitable if your hot water consumption habits are relatively consistent (example: taking a shower at approximately the same time of the day). Your habits are recorded and then taken into account when heating the water. The operation of the heater in the "ECO<sup>S</sup>" mode reduces the consumption of electric energy.

- The "ECO<sup>S</sup>" mode of operation can be switched on by twisting the control knob counter clockwise. The green and red light start simultaneously. The red light symbolises the functioning of the heater and the green light symbolises the "ECO<sup>S</sup>" mode.
- The "ECO<sup>S</sup>" function is based on a 7-day cycle. During the first week of operation, the water temperature in the heater is maintained at 75 °C and the programme records the

consumption pattern for seven consecutive days. After that, the recorded pattern starts to be used automatically and the heater prepares the hot water based on the measurements from the previous week. At the same time, the heater continues to record the consumption. If the pattern differs from the previous week in terms of time or volume, the newly recorded pattern is used the following week.

- The water temperature in the "ECO<sup>S</sup>" mode is kept between 40 °C and 75 °C. When no consumption is anticipated (standby temperature), the water is maintained at 40 °C.
- If, during recording, there was a power failure or the heater was switched off, the recording is not valid.
- The "ECO<sup>S</sup>" mode can be turned off by twisting the control knob to any other position.

### Anti-legionella function

The function is factory set. After connecting to the power supply or after eliminating an error, the anti-legionella function is switched on after 3 days.

When the heater is switched on and the temperature of the water in the heater is above 62 °C continuously for 15 minutes, the countdown is finished. As soon as the temperature falls below 62 °C, a 30-day countdown begins again. If within 30 days the heater does not reach 62 °C, the anti-legionella function is switched on and the heater heats the water to the temperature of 62 °C for 15 minutes.

If the heater is not switched on or connected to the power supply and the 30-day period expires, the anti-legionella function does not switch on until the heater is turned on.

If the anti-legionella function is in operation and the user switches off the heater, the function is interrupted and a new 30-day countdown begins.

If the user lowers the set temperature during the operation of the anti-legionella functions, the function is interrupted and a new 30-day countdown begins.

### Error indication

In case of an error or warning on the heater, red and green light start blinking to indicate an error according to the table below.

STATUS	RED light	GREEN light
<i>Normal operation</i>		
Heater switched off	/	/
Heater switched on, no error, heater not operating	/	/
Heater switched on, no error, heater operating	<b>GLOWING</b>	/
<i>Operation in ECO<sup>S</sup> mode</i>		
Heater switched on, no error, heater not operating	/	<b>GLOWING</b>
Heater switched on, no error, heater operating	<b>GLOWING</b>	<b>GLOWING</b>
<i>ERRORS (Call the service)</i>		
Heater switched on, temp. sensor error (sensor 1 or sensor 2 in short circuit or open circuit, temp. difference error)	<b>BLINKING</b>	<b>BLINKING</b>
Heater switched on, heater warning	<b>BLINKING</b>	<b>BLINKING</b>

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When the water heater is not in use for a longer period of time and is switched off or disconnected from the power supply, it must be emptied in case of danger of freezing. Water from the heater is drained through the inlet pipe of the heater. For this purpose, a special fitting (T-fitting) must be mounted between the relief valve and the heater inlet pipe, or a discharge tap. The heater can be discharged directly through the relief valve, by rotating the handle or the rotating valve cap to the same position as for checking the operation. Before discharge, make sure the heater is disconnected from the power supply, and open the hot water on the connected mixer tap. After discharging through the inlet pipe, there is still some water left in the water heater. The remaining water will be discharged after removing the heating flange, through the heating flange opening. The external parts of the water heater can be cleaned with a mild detergent solution. Do not use solvents and abrasives.

Regular preventive maintenance inspections ensure faultless performance and long life of your heater. The first of these inspections should be carried out by the authorised maintenance service provider about two years from installation in order to inspect the wear of the protective anticorrosion anode and remove the lime coating and sediment as required. The lime coating and sediment on the walls of the tank and on the heating element is a result of quality, quantity and temperature of water flowing through the water heater. The maintenance service provider shall also issue a condition report and recommend the approximate date of the next inspection.

**Never try to repair any possible faults of the water heater by yourself, but inform about it the nearest authorised service workshop.**

