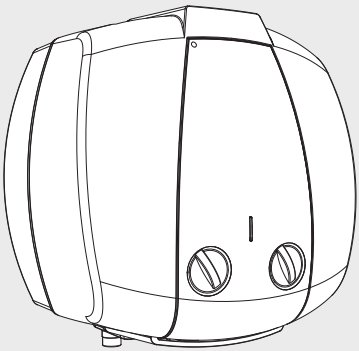
BOSCH

User and Installation manual

Electrical storage water tank
Tronic 2000T

TR2000T 10 | 15



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1 Key to symbols and safety instructions

1.1 Key to symbols

Warnings

Warnings in this document are identified by a warning triangle printed against a grey background.
Keywords at the start of a warning indicate the type and seriousness of the ensuing risk if measures to prevent the risk are not taken.

The following keywords are defined and can be used in this document:

- **NOTICE** indicates a situation that could result in damage to property or equipment.
- **CAUTION** indicates a situation that could result in minor to medium injury.
- **WARNING** indicates a situation that could result in severe injury or death.
- **DANGER** indicates a situation that will result in severe injury or death.

Important information

This symbol indicates important information where there is no risk to people or property.

Additional symbols

Symbol	Explanation
▶	Step in an action sequence
→	Cross-reference to another part of the document
•	List entry
–	List entry (second level)

Table 1

1.2 Security Measures

Installation

- ▶ Installation must only be carried out by an authorised service.
- ▶ IEC 60364-7-701 must be observed when installing the appliance and or electrical accessories.
- ▶ The appliance must be installed in a room free from the risk of frost.
- ▶ First connect the appliance hydraulically and fill with water, then connect the power supply.
- ▶ During the installation isolate the appliance from the power supply.

Installation and conversion

- ▶ Only permit an authorised service to install this appliance.
- ▶ Never obstruct the safety valve outlet.
- ▶ The drain line from the pressure relief valve must be installed downwards in a frost-free location and it must also remain open to the atmosphere.
- ▶ During the heat-up, water may be expelled from the safety valve.

Maintenance

- ▶ Only authorised technicians are permitted to service this appliance.
- ▶ Isolate the appliance from its power supply before commencing any maintenance work on the appliance.
- ▶ Customers are responsible for the safety and environmental compatibility of the appliance as well as its maintenance.
- ▶ Use only original spare parts.
- ▶ To ensure compliance with all safety requirements, a defective power cable may only be replaced by an authorised service.

Instructing the customer (for the installer)

- ▶ Instruct the customer in the function and operation of this appliance.
- ▶ It is the responsibility of customers to carry out regular maintenance and inspections.
- ▶ The appliance must be serviced annually.
- ▶ Inform customers that they must not carry out any modifications or repairs.

Safety of electrical appliances for domestic use and similar purposes

The following requirements apply in accordance with EN 60335-1 in order to prevent hazards from occurring when using electrical appliances:

“This appliance can be used by children of 8 years and older, as well as by people with reduced physical, sensory or mental capabilities or lacking in experience and knowledge, if they are supervised and have been given instruction in the safe use of the appliance and understand the resulting dangers. Children must not play with the appliance. Cleaning and user maintenance must not be performed by children without supervision.”

“If the power cable is damaged, it must be replaced by the manufacturer, its customer service department or a similarly qualified person, so that risks are avoided.”

2 Technical Characteristics and dimensions

2.1 Intended use

The appliance was designed to heat and store DHW. Comply with all regulations and standards related to drinking water applicable in the country.

Use the appliance only in closed systems.

Only use adequate solar liquid in the heat exchanger coil (if present).

Using the appliance for any other purpose will be considered incorrect use. Bosch accepts no liability for any damage resulting from such use.

Water characteristics	Unit	
Water hardness, min.	ppm grain/US gallon °dH	120 7.2 6.7
pH, min. – max.		6.5 – 9.5
Conductivity, min. – max.	µS/cm	130 – 1500

Table 2 Water characteristics

2.2 Appliance Description

- Steel-glassed tank in conformity with the European regulations
- Tank designed and built to withstand high pressures
- Exterior material: steel sheeting and / or plastic
- Easy handling
- Insulating material: polyurethane without CFC
- Anticorrosion protection: magnesium anode.

2.3 Anticorrosion protection

The inside of the tank is lined with homogeneous glass enamel, completely neutral with regards to compatibility and contact with potable water. This lining is neutral with regard to the use with potable water. The existence of a magnesium anode provides additional anticorrosion protection.

2.4 Accessories (included in the appliance packaging)

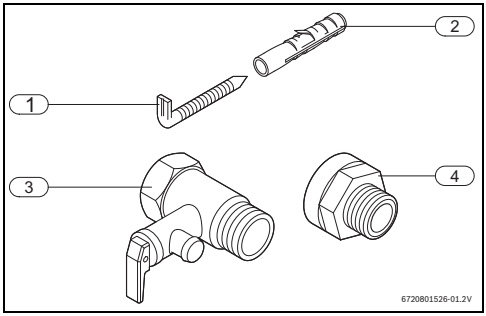


Fig. 1

[1] Hook (2x)[1)]
[2] Sleeve (2x)[1)]
[3] Safety valve (8 bar)
[4] Galvanic insulator (2x)[1)]

1) available in some models (depending on the market)

2.5 Specification

This appliance meets the requirements specified by the European Directives 2014/35/EC and 2014/30/EC.

Technical characteristics	Unit	TR2000T 10	TR2000T 15
General characteristics			
Capacity	l	10	15
Weight (empty)	kg	7,7	9,4
Weight when full	kg	17,7	24,4
Water details			
Maximum permissible pressure	bar	8	
Water connections	Pol.	1/2	
Electrical characteristics			
Nominal power	W	1500	1500
Heating time (ΔT- 50 °C)		0 h 23 min	0 h 35 min
Voltage	VAC	230	
Frequency	Hz	50	
Monophasic electric current	A	6,5	6,5
Power cable (with plug)		HO5VV - F 3 x 1,0 mm^2 or HO5VV - F 3 x 1,5 mm^2	
Protection class		I	
Type of protection		IPX4	
Water temperature			
Temperature ranges	°C	until 70 °C	

Table 3 Technical characteristics

2.6 Dimensions

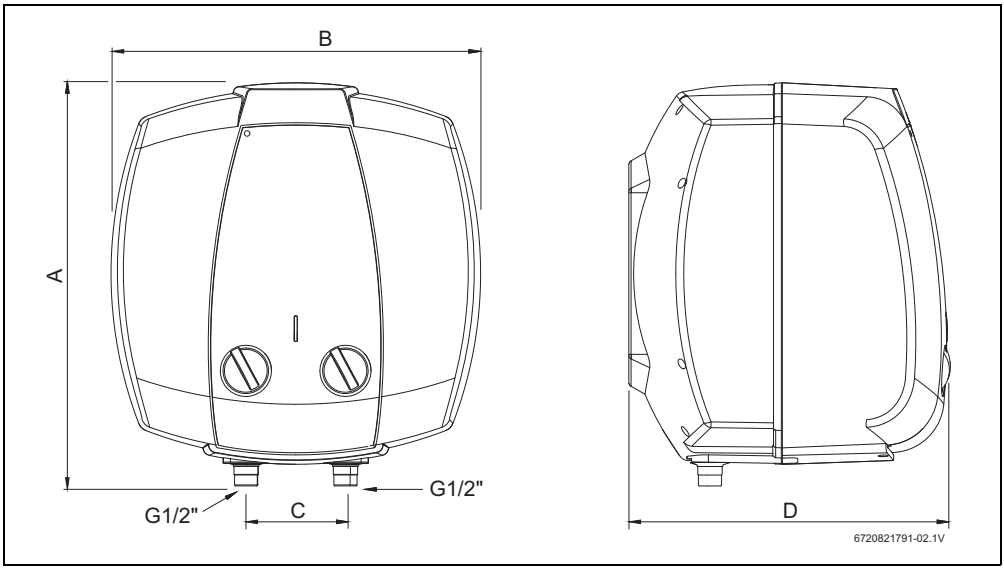


Fig. 2 Dimensions in mm (wall mounting)

Appliance	A	B	C	D
TR2000T 10	406	372	100	257
TR2000T 15	406	372	100	324

Table 4

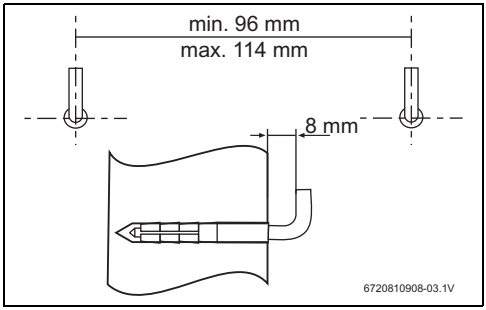


Fig. 3

2.7 Appliance layout

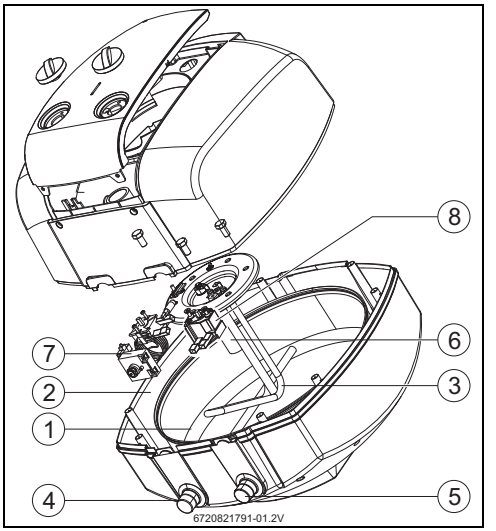


Fig. 4 Appliance composition

[1] Tank
[2] Insulating material: polyurethane without CFC
[3] Heating element
[4] Hot water outlet ½ " male
[5] Cold water inlet½ " male
[6] Magnesium anode
[7] Thermal cut out
[8] Thermostat

2.8 Electrical wiring diagram

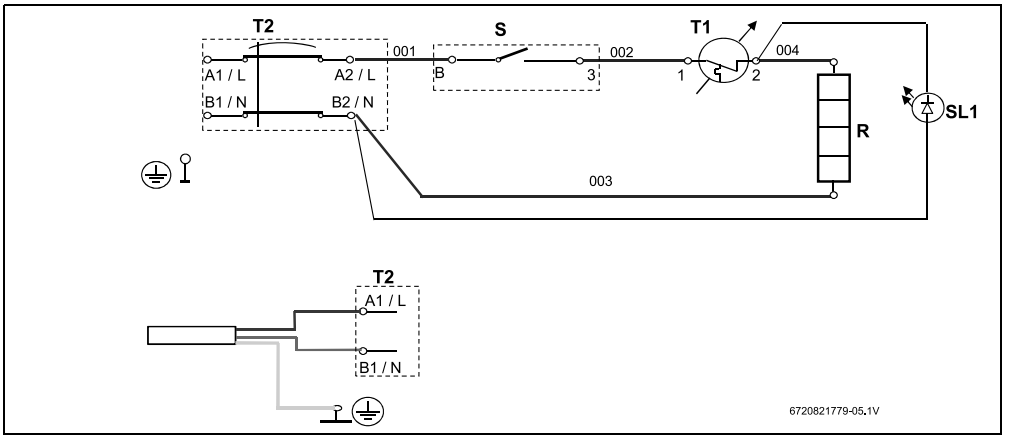


Fig. 5 Electric circuit diagram

3 Regulations

The country's regulations currently in force must be fulfilled for the installation of the electric appliances.

4 Transport

- ▶ Do not drop the appliance.
- ▶ Remove the appliance from the packaging only at the place of installation.

4.1 Transport, storage and recycling regulations

- The equipment should be stored in protected areas against negative temperatures.
- Whenever applicable, the EU 2002/96/EC directive imposed and the differentiated collection / gathering of used electrical and electronic equipment.

5 Installation

Installation, power connection and commissioning must only be carried out by a service approved for such work by the local entities.

5.1 Important notes

CAUTION:
- ▶ Do not drop the appliance.
- ▶ Remove the appliance from the packaging only at the place of installation.
- ▶ Never rest the appliance on the water connections.
- ▶ Wherever applicable, comply with the IEC 60364-7-701 norm on installing the appliance and / or any electric accessories.
- ▶ Chose a sufficiently robust wall to support the appliance with the tank full, see page 6.

CAUTION: Damage to the heating elements!
- ▶ Firstly connect all the water connections and fill the appliance.
- ▶ Connect the appliance to the electric point, assuring connection to earth.

5.2 Siting the appliance

CAUTION:
- ▶ Chose a sufficiently robust wall to support the appliance with the tank full, see page →page 6.

Regulations for the installation location
- ▶ Observe country-specific requirements.
- ▶ The appliance must not be installed on a heat source, exposed to the elements or in corrosive environments.
- ▶ Install the DHW cylinder in rooms where the temperature does not below 0 °C.
- ▶ Only install the appliance in locations with ease of access for the purposes of maintenance.
- ▶ Install the DHW cylinder close to the most frequently used hot water tap in order to reduce heat loss and wait time.
- ▶ Install the DHW cylinder in a room that allows the magnesium anode to be replaced and the necessary maintenance to be performed.

Protection areas 1 and2
- ▶ Do not install in protection areas 1 and 2.
- ▶ Install the appliance outside the protection areas at a distance greater than 60 cm, of the bath.

CAUTION:
- ▶ Make sure that the appliance is connected to the DB board (electrical board) with a connection to the earth cable.

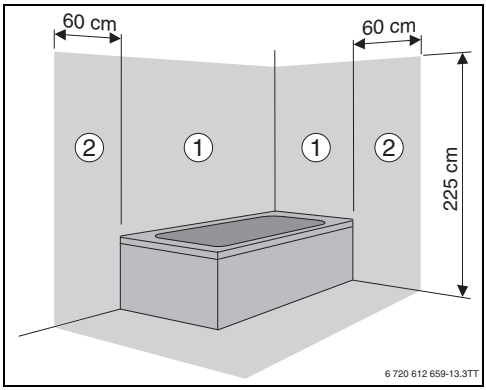


Fig. 6 Protection areas

5.3 Water connection

CAUTION: Damage to appliance connections through contact corrosion!

- Use galvanized insulators in your water connections. These will avoid galvanic electric currents between the hydraulic link metals and, consequently corrosion of these.

NOTICE: Material damage!

- Install a filter at the water inlet in areas where the water contains particles or sediments.

NOTICE: Material damage!

- So as to avoid corrosion, colour and odour in the water, take into account the information in table 2 with the drinking water requirements in addition to the possible need to adjust the installation to the type of water (for example, adding filtering systems or changing the supply source).

It is recommended:

- to purge the system before appliance installation, the existence of sand can cause a reduction in flow or even cause a total obstruction.

- Identify the piping for hot and cold water, in order to avoid a possible swop (→ Fig. 7 and 8).

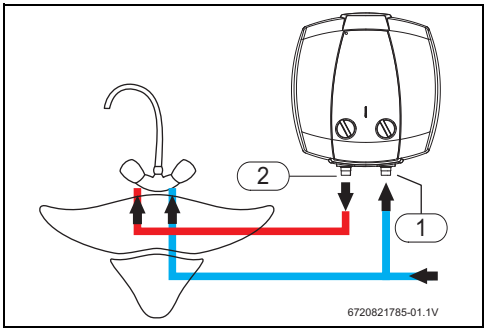


Fig. 7 Installation above the sink

[1] Cold water inlet (right hand side)
[2] Hot water outlet (left hand side)

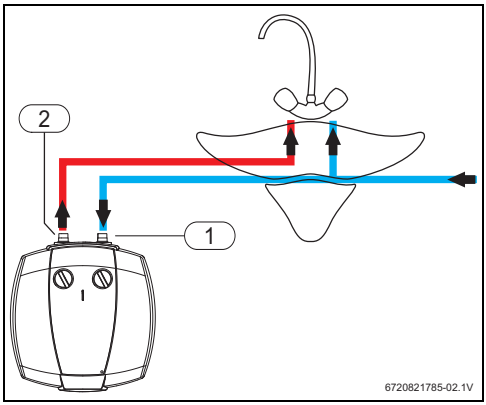


Fig. 8 Installation under the sink

[1] Cold water inlet (right hand side)
[2] Hot water outlet (left hand side)

- Use the appropriate connection accessories to do the hydraulic connection to the appliance.

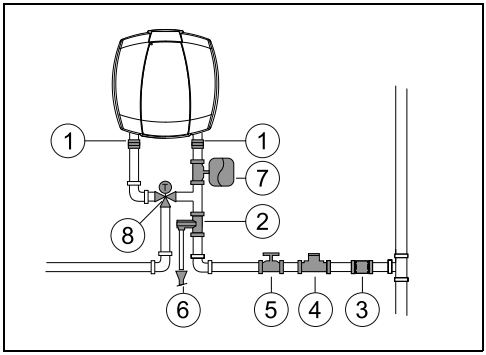


Fig. 9 Water connection

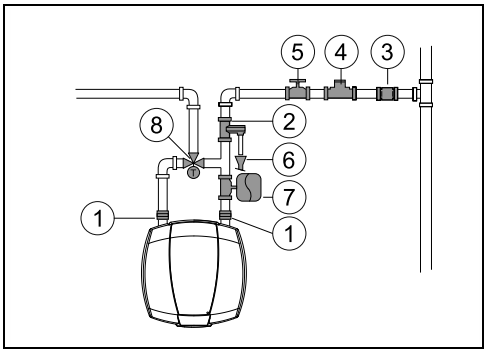


Fig. 10 Water connection

[1] Galvanic insulation
[2] Discharge valve
[3] Non-return valve
[4] Reducer valve
[5] Shut-off valve
[6] Drainage connection
[7] Expansion vessel
[8] Mixing valve

In order to avoid problems caused by sudden pressure changes, we recommend the installation of a non return valve at the appliance

In the case of freezing:
- Switch off the appliance.
- Purge the appliance (→chapter 6.3).

-or-
- Do not disconnect the appliance from the electric current.
- Select the lowest water temperature.

Safety valve

DANGER:
- Install a safety valve at the water inlet of the appliance (→ Fig. 9 and 10).

NOTICE:
NEVER OBSTRUCT THE PURGE OUTLET OF THE SAFETY VALVE.

Never install any accessory between the safety valve and the cold-water inlet (right hands side) of the appliance.

If the water inlet pressure is between 1.5 and 3 bar, it is not necessary to install a pressure reducing valve.
If the water inlet pressure is above these values, it is necessary
- to install a pressure reducing valve (Fig. 9, 10, [4]). The pressure relief valve will activate whenever the water pressure in the appliance is above 8 bar (± 1 bar), for which reason it is necessary to plan a way of draining off this water.
- install an expansion vessel (Fig. 9, 10, [7]) to stop the pressure relief valve opening so frequently. The volume of the expansion vessel should be equivalent to 5% of the volume of the appliance.

5.4 Electrical connections

DANGER:
By electrical discharge!
- Before working on the electrical components, firstly cut the power, (fuse, circuit breaker or other).

All adjusting devices, verification and safety mechanisms were submitted to a rigorous test in factory and are ready to work.

CAUTION:
Electrical protection!

- The appliance should dispose of an independent connection to the DB board (electric board), protected by a 30 mA differential circuit breaker and earthing.

The electrical connection must be realized in accordance with the current country laws regarding electrical installations.

- Connect the appliance via a socket with earth connection.

5.5 Start-up

- Verify that the appliance has been correctly installed and assembled.
- Open the water inlet valves.
- Open all the hot water taps in order to ensure all the air is out of the connections.
- Control the tightness of all the connections and ensure that the appliance fills to its full capacity.
- Connect the appliance to the electric current.
- Inform the customer of any user information of the appliance and handling.

6 Use

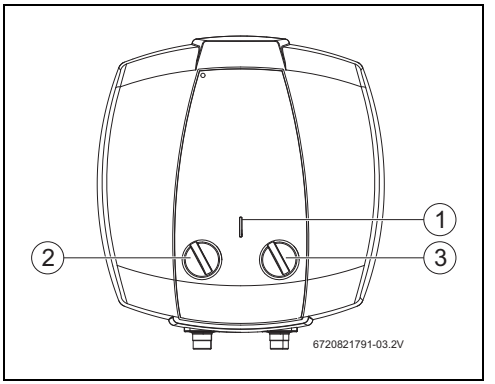


Fig. 11 User interface

[1] Operating light
[2] On / Off switch
[3] Temperature selector

CAUTION: The first start-up of the appliance must be carried out by an authorized technician, which will provide the user with all the necessary information to the best working and handling of the device.

6.1 Turning the appliance on/off

Turn on

- Switch to „I".

Turn off

- Switch to „0".

6.2 Setting the DHW temperature

Once the water has reached the selected temperature level, the appliance stops heating up (the indicator switches off). When the water temperature is below the desired value, the appliance re-starts the heating cycle (the indicator switches back on) until it reaches the desired temperature selected.

The water outlet temperature can be regulated until 70 °C.

Increasing the temperature

- Turn the temperature selector to the right.

Decreasing the temperature

- Turn the temperature selector to the left.

6.2.1 „Anti-Frost"-mode -

In this mode, the hot water tank always starts, when the temperature inside the hot water tank reaches 5 °C.

- Switch to „-".

6.3 Emptying the appliance

- Turn off the appliance from the electric supply.

DANGER: Burn risk!
Open a hot water tap to and verify the temperature of the water in the appliance before opening the safety valve.

- Wait until the water temperature decreases in order to avoid burns or any other damage.

- Switch off the water cutting valve and open a hot water tap.
- Open the safety valve (Fig. 12).

- Wait until the appliance is completely empty.

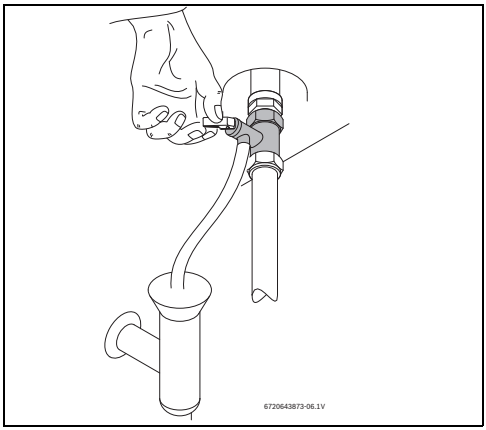


Fig. 12 Manual activation of the safety valve

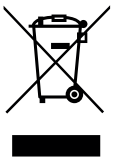
7 Environment / disposal

Environmental protection is a fundamental corporate strategy of the Bosch Group.
The quality of our products, their efficiency and environmental safety are all of equal importance to us and all environmental protection legislation and regulations are strictly observed.
We use the best possible technology and materials for protecting the environment taking into account of economic considerations.

Packaging

We participate in the recycling programmes of the countries in which our products are sold to ensure optimum recycling.
All of our packaging materials are environmentally friendly and can be recycled.

Old electrical and electronic appliances



Electrical or electronic devices that are no longer serviceable must be collected separately and sent for environmentally compatible recycling (in accordance with the European Waste Electrical and Electronic Equipment Directive).

To dispose of old electrical or electronic devices, you should use the return and collection systems put in place in the country concerned.

8 Inspection/Maintenance

Maintenance must only be carried out by an authorized technician.

8.1 User information

8.1.1 Cleaning

- Never use abrasive, corrosive or solvent cleaning detergents.
- Use a soft cloth to clean the exterior of the appliance.

8.1.2 Safety valve verification

- Verify that the water is expelled during the heating process through the safety purge valve.
- Never obstruct the safety purge valve outlet.

8.1.3 Safety valve

- Manually open the safety valve at least once a month (Fig. 12).

WARNING:
Ensure the purging of the water does not cause any damage to persons or goods.

8.1.4 Maintenance and repair

- It is the responsibility of the client to regularly call out technical assistance or an authorized technician to perform periodic maintenance.

8.2 Periodic maintenance work

WARNING:
Before carrying out any maintenance work:

- Turn off all electric current.
- Turn off the water cut off valve (→Fig. 9).

- Only make use of genuine replacement parts.
- Order the replacement parts in accordance with the parts catalogue for the appliance.
- When carrying out maintenance work change the disassembled joints and replace these with new ones.

8.2.1 Functionality verification

- Verify the good working order of all the elements.

CAUTION: Damages to the glass enamel!
Never clean the enamel interior of the appliance with decalcifying agents. The magnesium anode ensures anti corrosion protection. There is no need for alternative products for the protection of the enamel.

8.2.2 Magnesium Anode

This appliance disposes of an anti-corrosion magnesium anode in the inside.

WARNING:
It is forbidden to operate the appliance without an installed magnesium anode.

WARNING:
The magnesium anode needs to be annually tested and replaced if necessary, failing to do so will result in the termination of the warranty. The appliance without this type of protection will not be covered by the manufactures warranty.

- Before starting, verify that the appliance is disconnected from the electric current.
- Completely drain the appliance (→ Chapter 6.3).
- Remove the lid of the appliance.

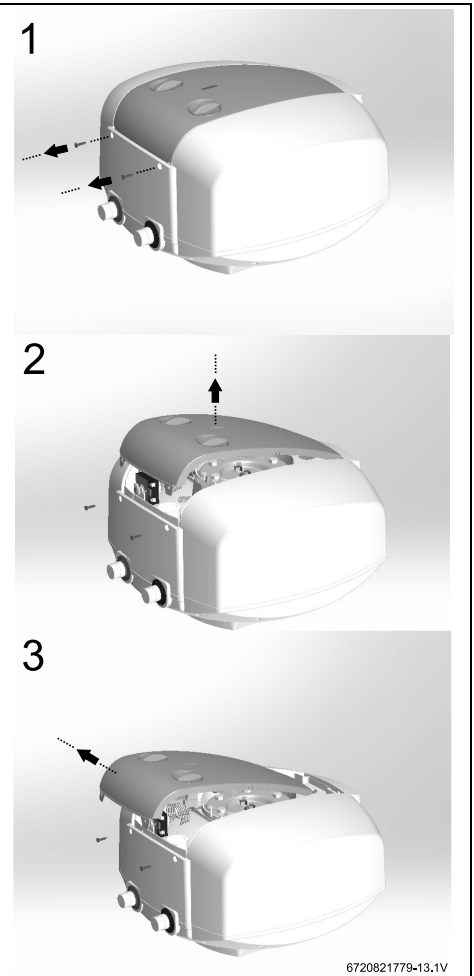


Fig. 13

- Switch off the circuit breaker feeding the appliance.
- Disconnect the connecting cables to the thermostat
- Loosen the fastening screws of the flange [1].
- Remove the flange [2].
- Verify the magnesium anode [3] and replace it if necessary.

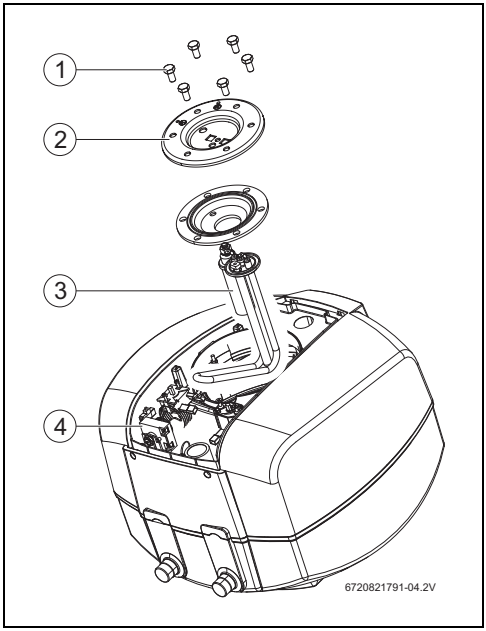


Fig. 14 Access and identifying internal components

[1] Fastening screw
[2] Flange
[3] Magnesium anode
[4] Safety thermostat

8.2.3 Periodic cleaning

DANGER: Burn risk!
During the periodic cleaning process the hot water may cause serious burns.

- ▶ Carry out this operation outside working hours.

- ▶ Turn off all hot water taps.
- ▶ Inform all residents of the danger of burns.
- ▶ Position the thermostat on the maximum position, by turning temperature knob clockwise until it stops (→ Fig. 11, [4]).
- ▶ Wait until the indicator turns off.
- ▶ Open all the hot water taps, starting with the nearest one to the furthest one from the appliance, and purge all the hot water from inside the appliance, at least 3 minutes.
- ▶ Turn off all the hot water taps, and position the thermostat on the normal working position.

8.2.4 Long standing - non working (more than 3 months)

After a long period of inactivity you should change the water inside the appliance (more than 3 months).

- ▶ Switch off the electric current to the appliance.
- ▶ Drain the appliance completely.
- ▶ Fill the appliance until the water comes out from all the hot water taps.
- ▶ Turn on the appliance to the electric current.

8.3 Safety thermostat

The appliance is equipped with an automatic safety thermostat. If for any reason the water temperature inside the appliance exceeds the safety limit, the switch will trigger and cut all electric current supplying the appliance, thus avoiding any accidents.

DANGER: The reactivation of the appliance should only be done by an authorized technician!
The action to manually re-start or reactivate should only be done once the cause of which initiated this action has been identified and rectified.To reactivate the device:

- ▶ Press the button firmly (Fig. 14, [4]).

If the safety thermostat is activated on a frequent basis:

- ▶ ensure more regular cleaning of the electric heater.

8.4 Inside of the tank

The storage of water at high temperatures and the characteristics of the water itself can cause a layer of scale to build up on the surface of the electric heater and/or the accumulation of detritus in the interior of the tank, affecting mainly:

- water quality
- power consumption
- appliance functionality
- appliance service life

Amongst other things, the abovementioned consequences lead to a lower thermal transfer between the heater and the water, causing the thermostat to start/stop more frequently, higher power consumption and potential safety activation if temperature limits are breached (manual resetting of thermostat necessary).

For optimal functioning, the following recommendations are made:

- Clean the interior of the tank.
- Clean the electric heater (descale or replace).
- Inspect the magnesium anode.
- Replace the sealing collar of the flange.

The abovementioned interventions are not covered by the appliance warranty.

8.5 Required actions after any maintenance work has been carried out

- Refasten and check the fastness of all the water connections.
- Turn on the appliance.

9 Problems

9.1 Problem/Cause/Solution

DANGER:
Assembly, maintenance and repairs should only be carried out by authorized technicians.

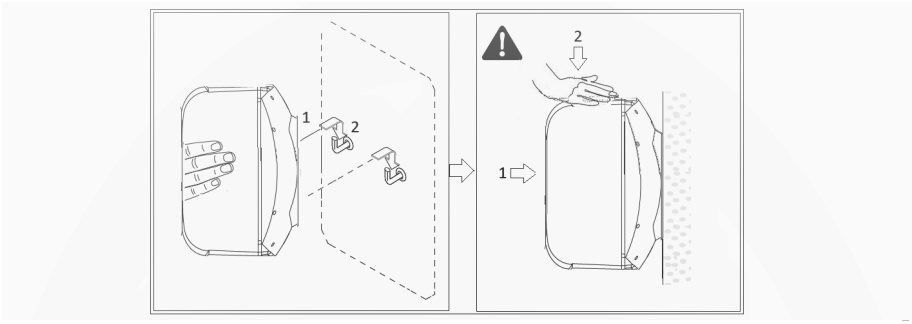
In the following diagram there are some solutions described for possible problems / troubleshooting (these should only be performed by authorized technicians).

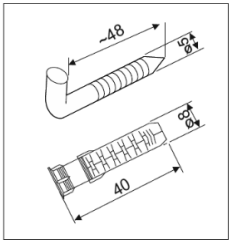
Problem							Reason	Remedy
Domestic Cold Water	Very hot water	Insufficient capacity	Continuous drain from the pressure relief valve	Rust-colored water	Water with a bad odour	Noises in the DHW cylinder		
X							Overvoltage or the safety switch was triggered (performance too high).	▶ Check whether the cable of the device is designed to supply the required power.
X	X						Incorrect temperature set by the temperature regulator.	▶ Adjust the temperature regulator.
X							High limit safety cut-out triggered.	▶ Confirm that the thermostat is correctly inserted into the phial pocket. ▶ Reset the thermostat (→section 8.3). ▶ Assess maintenance needs (for example, descaling the electrical heater, removal of dirt).
X							Defective heating element.	▶ Exchange the heating element.
X							Incorrect operation of the temperature limiter.	▶ Replace the temperature limiter or install a new one.
X		X	X			X	Scale on the DHW cylinder and/or the safety group.	▶ Remove scale. ▶ Assess the need for more frequent maintenance or water treatment if caused by elevated water hardness. ▶ If necessary replace the safety group.
		X	X			X	Water pressure in the system.	▶ Check the system water pressure. ▶ If necessary, install a pressure reducer (→Fig. 9). ▶ Confirm the need for an expansion vessel (pre-load 0.5 bar below Pmax).
		X				X	Capacity of the water supply network.	▶ Check piping.

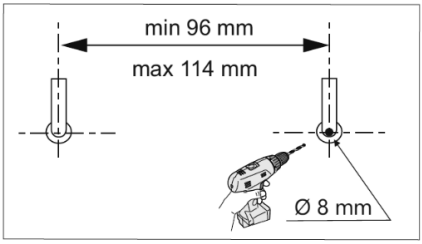
Table 5

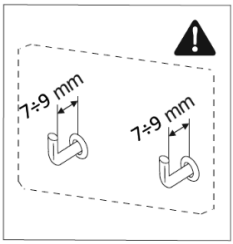
Problem							Reason	Remedy
				X			Inside of storage tank with accumulated dirt.	▶ Drain the appliance and clean the inside. ▶ Assess the water supply (for example, apply a filter). ▶ Carry out maintenance and re-fill the tank.
					X		Bacterial contamination.	▶ Drain the DHW cylinder and clean it. ▶ Disinfect the DHW cylinder.
X		X					Possible re-circulation system for drinking water, excessive consumption from water taps or leak in the hot water system.	▶ Assess time necessary for reheating (→Tab. 3). ▶ Replace the product with one that has sufficient capacity.

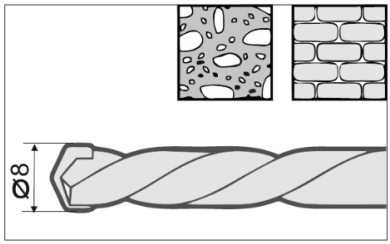
Table 5

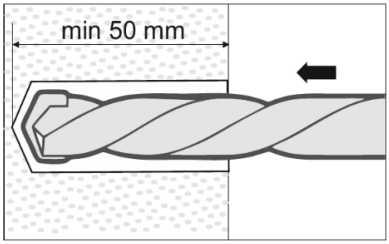

1
2
2
1

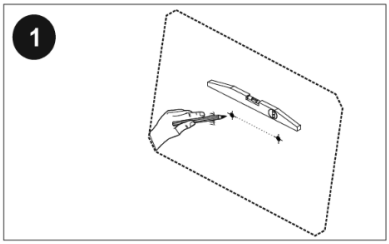

~48
Ø5
Ø8
40

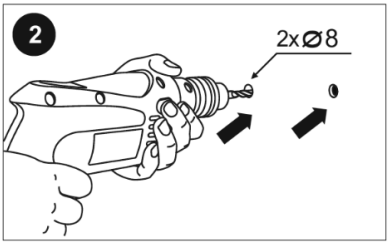

min 96 mm
max 114 mm
Ø 8 mm

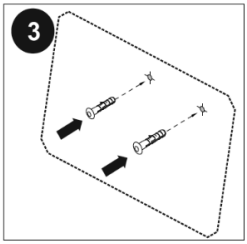

7÷9 mm
7÷9 mm


Ø8


min 50 mm


1


2
2xØ8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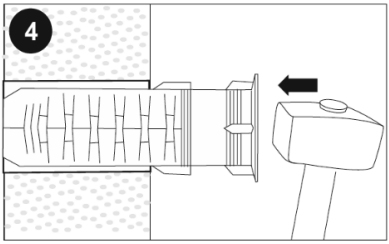
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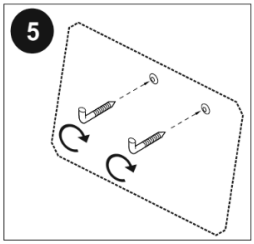
5

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