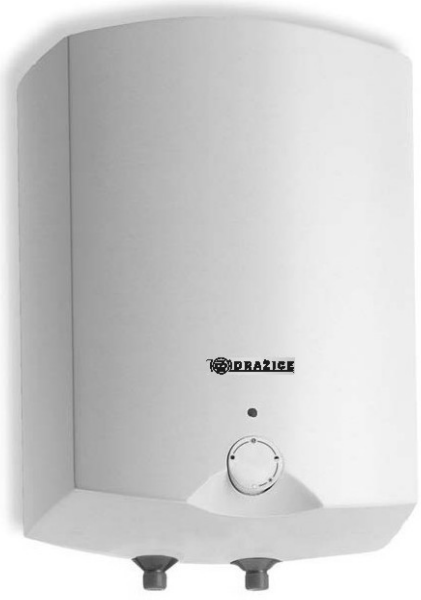
Operation and Installation Manual

DRAŽICE
MEMBER OF THE NIBE GROUP

ELECTRIC WATER HEATER

TO 5 IN/UP
TO 10 IN/UP
TO 15 IN/UP



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Read carefully the below instructions prior to the installation of the water heater.

INFORMATION LEAFLET pursuant to Directive No. 442//2004 Coll., and Annex No.7

Heater types	Energy efficiency class	Heat losses Wh/24hr/l	Nominal capacity (l)	Time of content heating (min)	Electricity consumption for heating of the contents from 10°C to 60°C in kWh	Heat losses kWh/24hr
Tank-type water heaters – suspended, vertical						
TO 5 UP/IN	G	50	5	9	0,3	0,25
TO 10 UP/IN	G	33	10	18	0,6	0,33
TO 15 UP/IN	G	29	15	27	0,9	0,44

TO 5, 10, 15 UP – pressure heater of 5 (10, 15) l capacity located above the supply point
TO 5, 10, 15 IN – pressure heater of 5 (10, 15) l capacity located below the supply point

Dear Customer,
The Works Cooperative of Dražice – Machine Plant, Ltd., would like to thank you for your decision to use a product of our brand.

With this guide, we will introduce you to the use, construction, maintenance and other information.
Product's reliability and safety is proven by tests implemented by the Engineering Test Institute in Brno.

The manufacturer reserves the right for engineering modification of the product.
The product is designed for permanent contact with drinkable water.

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1 PRODUCT ACCESSORIES

The product is packed together with service instructions and list of servicing organisations. The heater is equipped with a safety valve as a protective element. The valve is mounted on the cold water supply (see chapter 7). The package contains anchors and fasteners to fix the heater.

2 MESSAGE FOR CUSTOMERS

The electric heater is designed for preparation of hot water in households, cottages and various welfare facilities. It allows installation of only one hot water consumption point. Its benefit is that it heats up water by power in an unlimited all-day time range. The time of heating service water to the recommended temperature of 60°C is about 9 and 18 minutes, depending on the volume.

Environment Type:

It is recommended to use the product in an indoor environment with air temperatures from +2°C to 45°C and a max. relative humidity of 80%.

3 TECHNICAL DESCRIPTION

The heater tank is steel enamelled for pressure connection, the electric heating element is copper. The heater tank consists of magnesium anode that helps protect the heater tank from corrosion. The heater tank is provided with a valuable polyurethane insulation, all is stored in an upper plastic container. Electric wiring is placed in the bottom (upper) part of the heater, under the removable guard of the heater. Temperature of water can be set by a thermostat within the range between 5°C and 75°C, using the symbols on the thermostat selector button (read more in chapter 13). Cold water inflow is indicated with a blue ring, hot water outflow is indicated with a red ring.

4 GENERAL TECHNICAL DATA

Typ		TO 5 UP/IN	TO 10 UP/IN	TO 15 UP/IN
Capacity	l	5	10	15
Rated pressure	MPa	0,6	0,6	0,6
Weight	kg	7	8	11
Power input	W	2000	2000	2000
Time of heating from 10°C to 60°C	min	9	18	27
Electric connection	V	1 PE-N 230V/50Hz	1 PE-N 230V/50Hz	1 PE-N 230V/50Hz
IP Protection		IP 24	IP 24	IP 24
Heat losses/energy efficiency class	kWh/24h	0,25 / G	0,33 / G	0,4 / G

5 OPERATING ACTIVITY

After the heater is connected to electric network, the heating element starts heating water. The element is turned on and off by a thermostat.

Thermostat can be set as per your need within the range from 5°C to 75°C. We recommend setting service water to max temperature of 55°C. This temperature ensures the optimal operation of the heater. After reaching the temperature set, the thermostat switches off the electric circuit and discontinues water heating. The control light signals if the element is in operation (light is on) or if it is off (the light goes out). In case of longer operation without using the heated volume the thermostat has to be set to position 9°C (set the “snowflake” symbol on the thermostat button) to avoid its freezing.

6 WALL MOUNTING

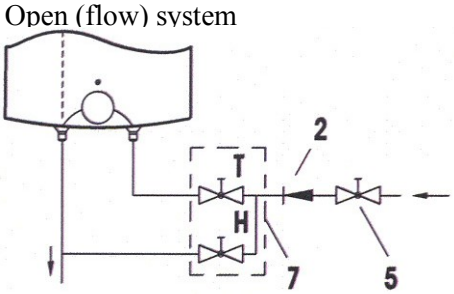
Prior to mounting check the loading capacity of the wall. If needed, reinforce it. Mount the water heater in vertical position only. The fastening screws must have guaranteed spacing of 140 mm. Mounting dimensions are specified on Fig.1.

7 PLUMBING FIXTURE

Water inflow and outflow is indicated with different colour terminals on the heater tubes. Cold water supply is indicated with blue and hot water outflow is indicated with red. There are two ways of connecting the water heater to water network. Closed, pressure connection system allows water withdrawal at multiple supply (withdrawal) points whilst open flow system allows one supply (withdrawal) point only. With regard to the selected way of connection, you need to purchase suitable combination faucets. For the open flow system you need to mount a return valve in front of the heating element in order to avoid water outflow from the boiler if water supply gets discontinued. For this type of connection, you have to use the flow combination faucet. Due to heating, the volume of water increases, which causes water dripping from the combination faucet pipe. You will not prevent water from dripping by strong tightening of the combination faucet valve but you may damage the combination faucet.

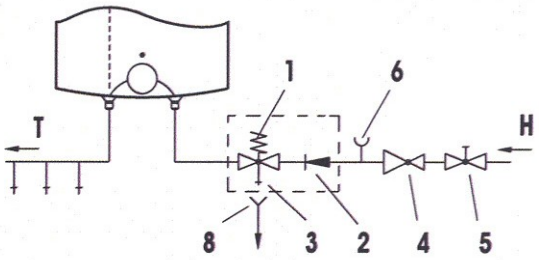
For the closed pressure connection system you need to use pressurised combination faucets at the withdrawal points. You have to attach a safety valve to the filling pipe to avoid increase of pressure in the tank above the rated pressure. During water heating in the heater, the water pressure in the tank increases until it reaches the limit set on the safety valve.

Open (flow) system



The “above-supply-point” version

Closed (pressure) system



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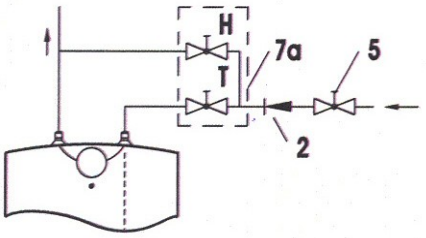

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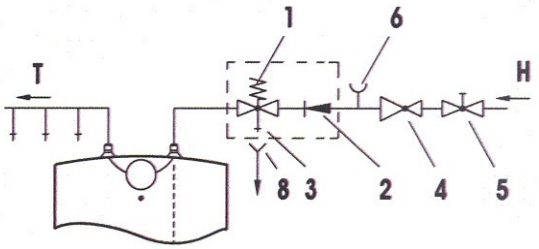


The “below-supply-point” version

Explanation:

1 – Safety valve
2 – Back pressure valve
3 – Test valve
4 – Reduction valve
5 – Shut-off valve
6 – Test adaptor
7.7a – Flow combination faucet
8 – Funnel with connector to drain from the safety valve
H – Cold water
T - Hot water

Safety valve is mounted on the cold water inlet identified with a blue ring. Each hot service water pressure heater must have a safety valve with a membrane spring. Nominal clearance of safety valves is defined in the ČSN 0 60830 standard. The safety valve must be well accessible, as near to the heater as possible. The input pipes must have at least the same clearance as the safety valve. The safety valve is placed high enough to secure dripping water drain by gravity. We recommend mounting the safety valve onto a branch pipe. This allows easier exchange without having to drain the water from the heater. Safety valves with fixed pressure settings from the manufacturer are used for the assembly. Starting pressure of a safety valve must be identical to the maximum allowed heater pressure, and at least 20% higher than the maximum pressure in the water main. If the water main pressure exceeds such value, a reduction valve must be added to the system. No stop valves can be put between the heater and the safety valve. During the assembly, follow the guide provided by the safety equipment manufacturer. It is necessary to check the safety valve each time before putting it into operation. It is checked by manual moving of the membrane from the seat, turning the make-and-break device button always in the direction of the arrow. After being turned, the button must click back into a notch. Proper function of the make-and-break device results in water draining through the safety valve outlet pipe. In common operation, such a check needs to be implemented at least once a month, and after each heater shutdown for more than 5 days. Water may be dripping off the drain pipe of the safety valve; the pipe must be open into the air, pointed down; environment temperatures must not drop below zero. When draining the heater, use a recommended draining valve. First, close water input into the heater.

Find necessary pressure values in the following table.

For proper safety valve operation, a backflow valve must be mounted on the inlet pipes, preventing spontaneous heater draining and hot water penetrating back into the water main.
We recommend that the hot water distribution from the heater was as short as possible to minimise heat losses.

Safety valve starting pressure (MPa)	Admissible operating water heater pressure (MPa)	Max pressure in the cold water pipe (MPa)
0.6	0.6	up to 0.48
0.7	0.7	up to 0.56
1	1	up to 0.8

Heaters must be provided with a discharge valve mounted on the cold service water inlet to the heater for potential disassembly or repair.

When assembling the security equipment, follow ČSN 06 0830.

8 ELECTRICAL INSTALLATION

The electric wiring scheme is attached in the manual to the water heater (Fig. 2). The heater has to be connected via a separate supply with a front-end main switch. The heater is connected to the 230V/50Hz electric network using a conductor with a contact plug fitted with a switch that turns off all network poles and the circuit breaker (protector). Electric installation must comply with valid electrotechnical standards. Connection of the heater to electric network shall be executed following the plumbing fixture. Access to the electric part of the heater is enabled only upon disconnecting the heater from power supply and unscrewing the guard of the heater. Respect rules of protection against electrical injuries in accordance with ČSN 33 2000-4-41.
The degree of protection of electric parts of the heater is IP 24.

9 PUTTING THE HEATER INTO OPERATION

Once connected to the water supply, the heater can be put in service.
Procedure:

a) check the power and water main installation
b) open the hot water valve on the combination faucet
c) open the cold water inlet valve to the heater.
d) As soon as the water starts running through the hot water valve, the heater is filled and the valve closes.
e) Using the front-end main switch open electricity and thus the heater activates.

10 IMPORTANT NOTICES

- The hot water outlet must be equipped with a combination faucet.
- It is not allowed to handle the thermostat in any manner whatsoever, aside from temperature resetting with a control button.
- All electric installation handling, adjustment and replacement of the regulation elements shall only be performed by an authorised service company.

The thermal fuse must not be turned off. The non-reversible thermal fuse discontinues electric power input to the heating element should the thermostat fail, if the water temperature in the heater exceeds 99°C.

Disposal of packaging material and functionless product
A service fee for providing return and recovery of packaging material has been paid for the packaging in which the water heater was delivered.
The service fee was paid pursuant to Act No. 477/2001 Coll., as amended, at EKO-KOM a.s. The client number of the company is F06020274. Take the product packages to a waste disposal place designated to that purpose by the municipality. When the operation terminates, disassemble and transport the discarded and unserviceable heater to a waste recycling centre (collecting yard), or contact the manufacturer.

11. FUNCTIONAL DEFECTS

Defect			Failure
1.	Water in the tank is cold	LED is on	- Heating element failure
2.	Water in the tank is not warm enough	LED is on	- Heating element failure
3.	Water in the tank is cold	LED is not on	- operating thermostat failure Safety thermostat shut off Power supply - power supply outside the heater discontinued
4.	Water in the tank does not correspond with temperature set	LED is on	- Thermostat failure

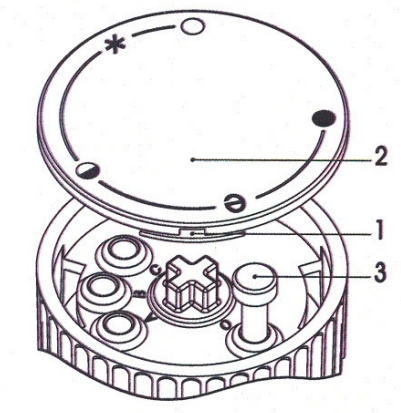
Do not try to repair the failure yourselves. Seek either expert or service help. It does not take much for an expert to remove the defect. When making a repair appointment, report the type and serial number you find on the performance plate of your water heater.

12. FIRE-FIGHTING REGULATIONS FOR INSTALLATION AND USE OF HEATER

We would like to emphasise that the heater must not be connected to power supply if work involving flammable liquids (petrol, spot remover) or gases, etc., is performed nearby.

13. USE AND MAINTENANCE OF HEATER

Once connected to water and power network, the heater is ready for use. By turning the thermostat knob located on the front side of the protective guard set the desired water temperature between 25°C, position "◑ " and 75°C, position "●. We recommend that the knob was set to position **"e"**. Such connection is most economic; temperature of water is about 55°C, thermal losses and scale formation will be lower than if set to higher temperature.
For safety reasons setting of optional highest temperature in the water heater is possible according to the below instructions:



a) Insert a screwdriver in opening 1 and remove the cap of knob 2,

b) Set the range in the selector knob 3
to the desired temperature,
C - 35 °C
B - 45 °C
A - 55 °C
O - 75 °C

c) Refit the cap of knob 2 onto the knob casing.

The electric heater operation is indicated by a control light that is on until the water in the heater heats up to the selected temperature, or until switched off as scheduled. Due to heating, the volume of water increases, which causes water dripping from the combination faucet pipes. You will not prevent water from dripping by strong tightening of the handle on the combination faucet but you may damage the faucet.
If you do not intend to use the heater constantly, you need to protect the water in the heater from frost by not discontinuing the power totally and setting the thermostat selector to position "*". At such setting the heater is maintained at the approximate temperature of 9°C. If you take the heater off the power supply, you have to drain the water from it if there is a risk that the water inside freezes. Clean the outer parts of the appliance with a mild detergent solution. Do not use thinners or other aggressive cleaning agents. Through regular service inspections you will ensure trouble-free operation and long service life of the heater. We recommend that the first inspection of the heater was performed by a specialist, approximately after two yours following its putting in operation. During the inspection the scale, that will

accumulate inside the heater depending on the quality, amount and temperature of the water consumed, will be removed as needed. During the inspection of the heating element, the service technician will advise of the date of the next inspection, taking into consideration the found condition of the appliance.

WARNING: Prior to any intervention in the inside of the heating element, the appliance has to be disconnected from power supply!
Do not attempt to repair the heater by yourselves, call the nearest authorised service centre to do so.

14. INSTALLATION REGULATIONS

Regulations and instructions that must be obeyed connect the heater

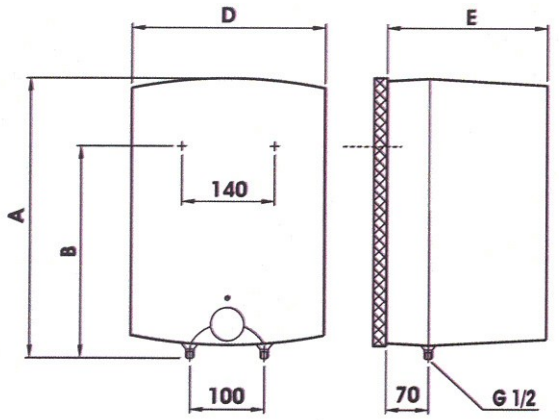
a) to the electrical network
ČSN 33 2180 - Connecting of electric devices and appliances
ČSN 33 2000-4-41 - Low voltage electric installations Protective measures to ensure safety – Protection against electric shock
ČSN 33 2000-5-51 - Electric installations of buildings
ČSN 33 2000-7-701 - Low voltage electric installations Single-purpose devices and devices in special premises - Premises with tub or shower

b) to the hot water heating system
ČSN 06 0320 - Thermal systems in buildings - Hot water preparation – Design and Project Engineering
ČSN 06 0830 – Thermal systems in buildings – Protecting devices
ČSN 73 6660 – Internal water conduits
ČSN 07 7401 - Water and steam for thermal energy equipments with working steam pressure up to 8 MPa
ČSN 06 1010 - Tank water heaters with water and steam heating; and combined with electric heating Technical requirements. Testing.
Both electric and water installation must follow and meet requirements and regulations relevant in the country of use.

Fig. 1

Heater dimensions

The “above-supply-point” version



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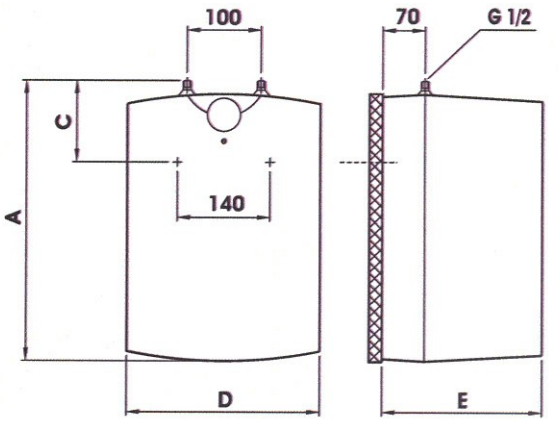
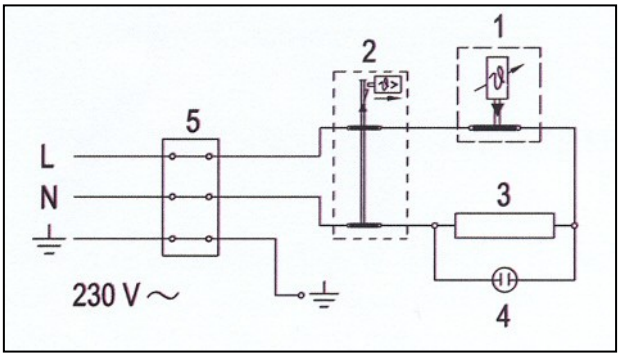


	A	B	C	D	E
TO 5 UP	400	280	-	260	265
TO 5 IN	400	-	155	260	265
TO 10 UP	500	398	-	350	265
TO 10 IN	500	-	122	350	265
TO 15 UP	500	398	-	350	310
TO 15 IN	500	-	122	350	310

Fig. 2



Wiring scheme

Explanation:

1 - Thermostat
2 - Thermal fuse, non-reversible
3 - Heating element
4 - Operation indicator
5 – Terminal board
L – Phase conductor N – Null conductor ⏚ – Earth conductor

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