

## OPERATING AND INSTALLATION MANUAL



## STATIONARY ELECTRIC WATER HEATERS



OKCE 800 S/1 MPa  
OKCE 1500 S/1 MPa  
OKCE 2000 S/1 MPa

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## Read carefully the below instructions prior to the installation of the heater!

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, location, construction, maintenance and other information on the tank type pressure water heater. Product's reliability and safety is proven by tests implemented by the Engineering Test Institute in Brno.

**We believe you will be fully satisfied with our product.**

**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. USE

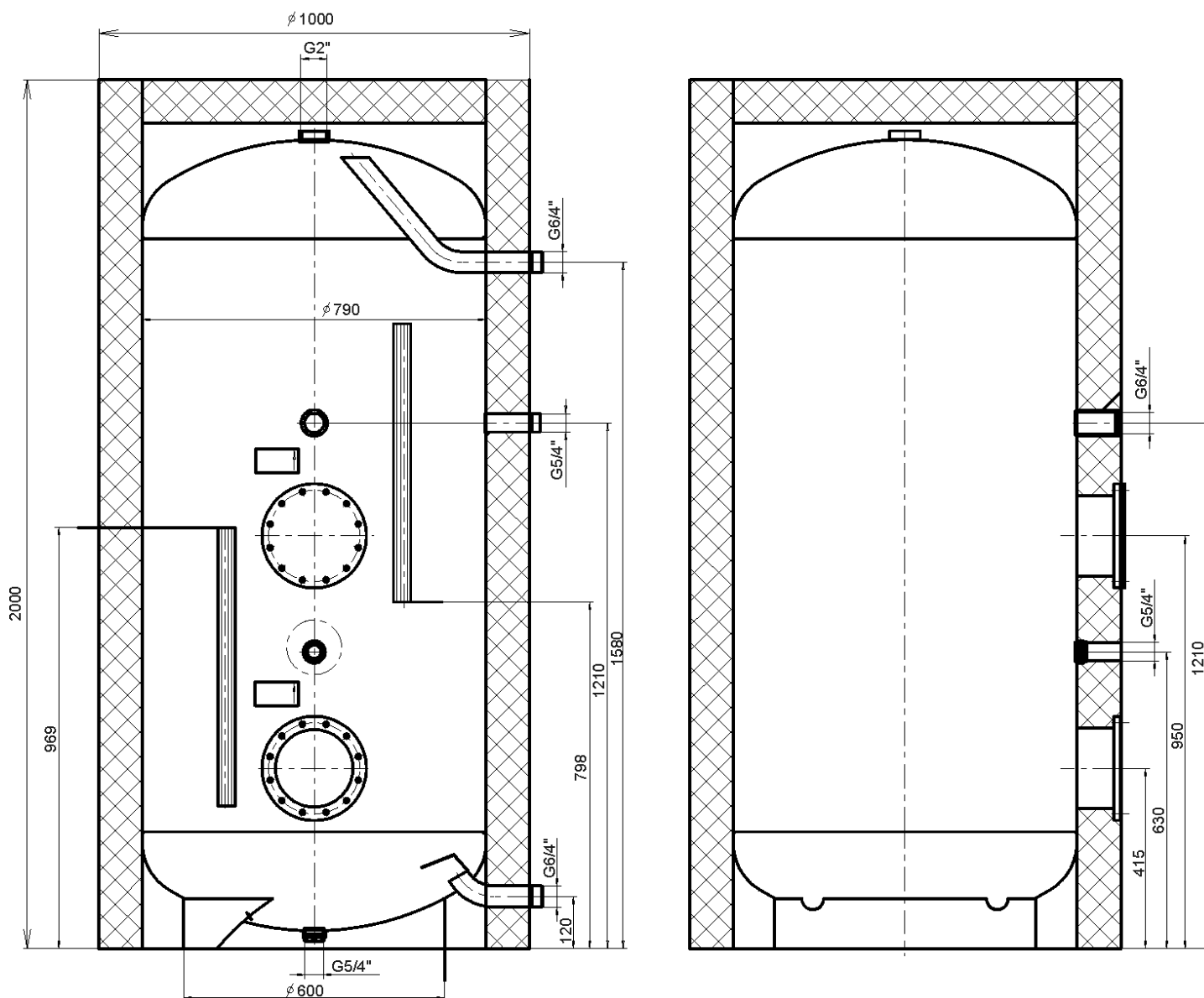
OKCE line water heaters use only electricity for heating. Their nominal performance provides sufficient amount of hot water for flat units, premises, restaurants, and similar establishments.

## 2. PRODUCT DESCRIPTION

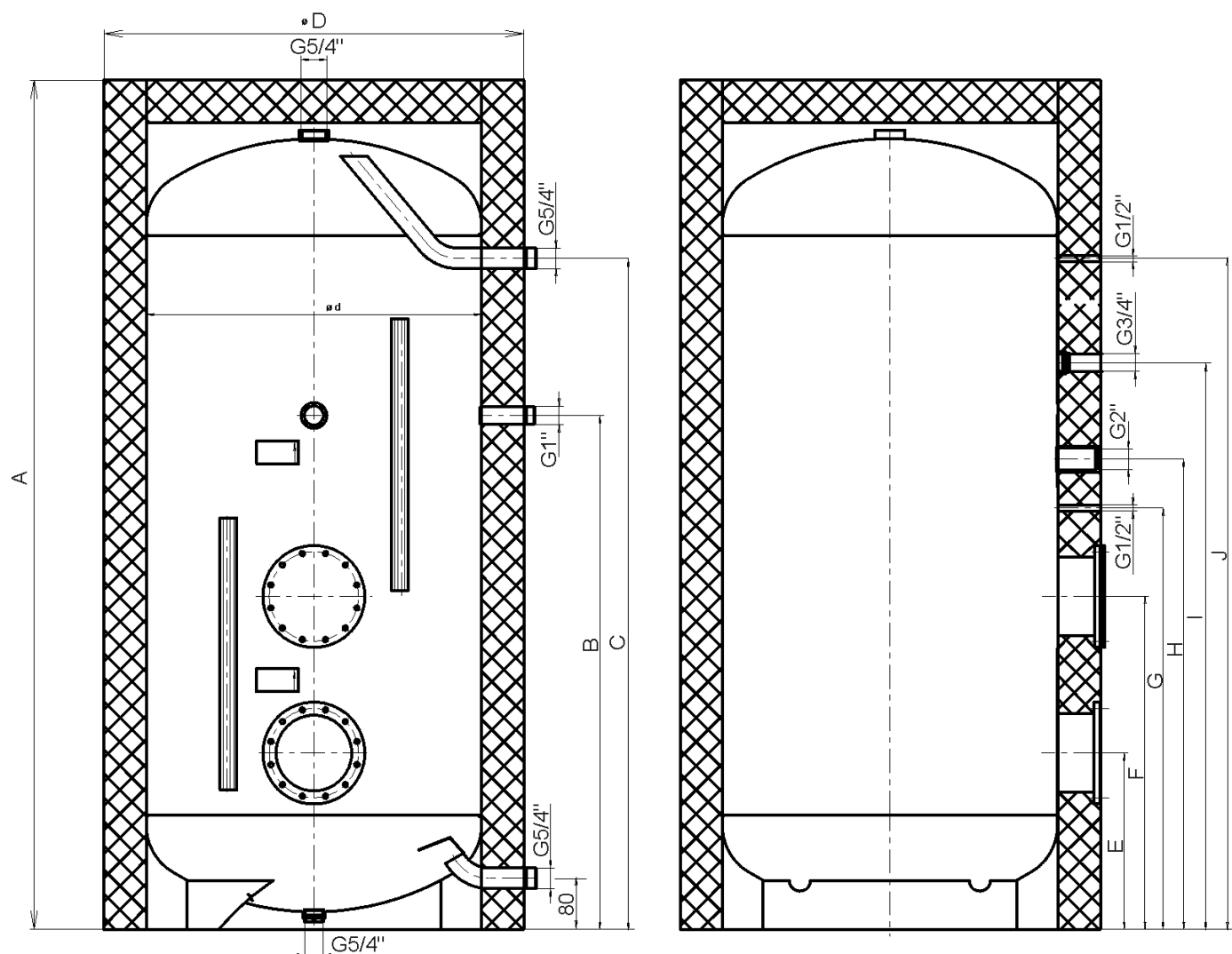
The heater tank is welded from a steel sheet; it is entirely coated with hot water resistant enamel. For additional corrosion protection a magnesium anode is mounted in the upper part of the heater to adjust the electric potential inside the tank, reducing the risk of corrosion. All types have the outlets of hot and cold water and a circulation opening welded to them. The heater shell consists of a foam insulation with a plastic surface. Under a plastic cover on the side of the heater, there is a cleaning and revision opening ended with a flange; various performance heating units may be mounted into the opening. The heater is to be placed on the ground.

## 3. HEATER DIMENSIONS

### OKCE 800 S/1MPa



# OKCE 1500, 2000 S/1MPa



	OKCE 1500 S/1MPa	OKCE 2000 S/1MPa
<b>A</b>	2240	2500
<b>B</b>	1217	1252
<b>C</b>	1825	1997
<b>D</b>	1100	1200
<b>d</b>	1000	1100
<b>E</b>	437	447
<b>F</b>	837	847
<b>G</b>	1167	1202
<b>H</b>	1354	1472
<b>I</b>	1494	1612
<b>J</b>	1825	1997

## 4. TECHNICAL PARAMETERS

Type	OKCE 800 S/1Mpa	OKCE 1500 S/1Mpa	OKCE 2000 S/1MPa
Capacity (l)	800	1500	2000
Weight (kg)	244	360	420
Operating accumulator pressure (MPa)	1	1	1
Max. hot water temperature (°C)	95	95	95
Time of el.heating from 10°C to 60°C*	Based on selected power input of the in-built heating unit*		
Heat losses	4,3	6,9	7,4

## 5. ELECTRIC WIRING

Connection, repairs, and wiring inspections may only be implemented by company (person) authorised to such activity. Expert connection must be confirmed on the warranty certificate.

The heater is connected to the electric network using a solid moving conductor with a switch that turns off all network poles and the circuit breaker (protector).

Installations in bathrooms, laundromats, rest rooms, and showers, 33 2000-7-701 must be obeyed.

The degree of protection of electric parts of the heater is IP 44.

Respect rules of protection against electrical injuries in accordance with ČSN 33 2000-4-41.

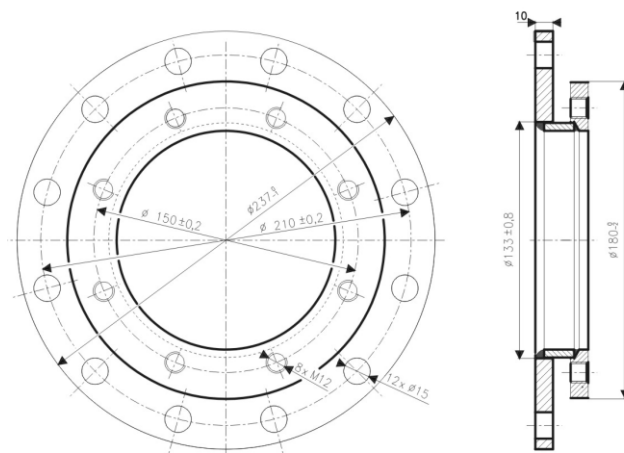
### Wiring for:

**OKCE 800 S/1MPa, OKCE 1500 S/1MPa and OKCE 2000 S/1MPa**

### Heating units use

Reduction flange 210 / 150

	TPK 168/2,2 kW TPK 210-12/2,2 kW TPK 210-12/3-6 kW TPK 210-12/5-9 kW TPK 210-12/8-12 kW	TJ 6/4" - 2 TJ 6/4" - 2,5 TJ 6/4" - 3,3 TJ 6/4" - 3,75 TJ 6/4" - 4,5 TJ 6/4" - 6 TJ 6/4" - 7,5 TJ 6/4" - 9
OKCE 800 S/1 Mpa	ANO	ANO
OKCE 1500 S/1 Mpa	ANO	ANO <sup>1)</sup>
OKCE 2000 S/1 Mpa	ANO	ANO <sup>1)</sup>



1) The G 2" - G 1½" reduction has to be used.

	REU 18-2,5	RDU 18-2,5	RDU 18-3	RDU 18-3,8	RDU 18-5	RDU 18-6	RDW 18-7,5	RDW 18-10	R5W 18-12	R5W 18-15
OKCE 800 S/1 Mpa	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
OKCE 1500 S/1 Mpa	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
OKCE 2000 S/1 Mpa	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Can be mounted with a reduction flange only										

## 6. SECURITY EQUIPMENT

Each hot service water pressure heater must have a membrane spring loaded with a safety valve. Nominal clearance of safety valves is defined in the ČSN 06 0830 standard. Heaters are supplied without a safety valve. The safety valve must be easily accessible, as close 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 the branch led above the heater. 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 with 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.

Before putting the safety valve into operation it always needs to be checked by manual removal of the membrane from the valve seat and 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 can drip from the safety valve through the drain pipe; the pipe must be freely open to the atmosphere, placed vertically and shall be in an environment free of temperatures below freezing.

When draining the heater, use a recommended drain 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 input pipes, preventing spontaneous heater draining and hot water penetrating back into the water main.

**When assembling the security equipment, follow the ČSN 06 0830 standard.**

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

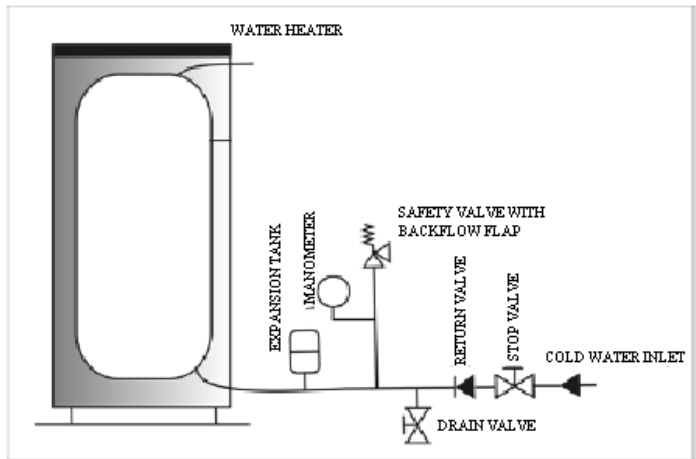
## 7. PUTTING THE HEATER INTO OPERATION

After connecting the heater to the water main, electrical power system, and after checking the safety valve (following the instructions attached to the valve), the heater can be put into operation.

### Procedure:

- Check the water main and wiring; Check proper placement of thermostat sensors;
- Open the hot water valve on the mixing tap;
- Open the cold water inlet valve to the heater;
- When the water starts flowing through the hot water valve, the filling of the heater is finished and the valve needs to be closed;
- If a flange lid leak is discovered, the flange lid bolts need to be tightened;
- Fasten the electric installation cover;
- When commencing operation, flush the heater until the cloudiness in the water is gone.
- Make sure to fill in properly the warranty certificate.

Cold Water Inlet Scheme



## 8. HEATER CLEANING AND ANODE ROD EXCHANGE

Repetitive water heating causes limestone sediment on both the tank walls and chiefly the flange lid. The sedimentation depends on the hardness of water heated, its temperature, and amount of hot water consumed. We recommend checking and cleaning the tank from scale, and possibly replacement anode rod, after two years of operation. The anode life is theoretically calculated for two years of operation; however, it changes with water hardness and chemical composition in the place of use. Based on such an inspection, the next term of anode rod exchange may be determined. Have the company in charge of service affairs clean and exchange the anode. When discharging water from the heater, the mixing valve of the hot water tap must be open in order to avoid creating underpressure that would prevent water discharge.

## 9. IMPORTANT NOTICES

- Check and exchange the Mg anode regularly.
- No stop valves can be put between the heater and the safety valve.
- All outlets of hot water must be equipped with a combination faucet.
- Before filling the heater with water for the first time, it is recommended to fasten the flange connection nuts of the tank.
- It is not allowed to handle the thermostat, aside from temperature resetting with a control button.
- All electric installation handling, setting, and regulation feature exchange, may only be implemented by a service company.

**Notice:** To prevent formation of bacteria (e.g. *Legionella pneumophila*) within stack heating it is recommended, if absolutely necessary, to increase the temperature of HSW periodically for a transitional period of time to at least 70°C. It is also possible to make use of another way of HSW disinfecting.

## 10. INSTALLATION REGULATIONS

### Regulations and instructions that must be obeyed if the heater is connected

- a) to the heating system
  - ČSN 06 0310 – Thermal systems in buildings – Designing and Installation
  - ČSN 06 0830 – Thermal systems in buildings – Protecting devices
- b) 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 2000-7-701 - Low voltage electric installations: Single-purpose devices and devices in special premises - Premises with tub or shower
- c) 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.
  - ČSN 75 5455 – Calculation of water installations inside buildings
  - ČSN EN 12897 – Water supply – Indirectly heated closed tank-type water heaters

Both electric and water installation must follow and meet requirements and regulations relevant in the country of use.

## 11. FURTHER INFORMATION

### 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 water boiler packages to a waste disposal place determined by the town. When the operation terminates, disassemble and transport the discarded and unserviceable heater to a waste recycling centre (collecting yard), or contact the manufacturer.



## 12. FUNCTIONAL DEFECTS

	Defect	Control light	Porucha
1	Water in the tank is cold	Light on	- Heating element failure - Some elements are not heating
2	Water in the tank is not warm enough	Light on	- Failure of any of elements - failure of coil in an element*
3	Water in the tank is cold	Light off	- thermostat failure - safety fuse turned off electricity supply outside the heater interrupted - thermostat failure
4	Water in the tank does not correspond with temperature set	Light on	- thermostat failure

\*Each heating element is made of two or more parallel connected coils. Element works, but with lower performance.

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.