

# OPERATING AND INSTALLATION INSTRUCTIONS

## INDIRECT HOT WATER TANKS

**OKH 125 NTR/DV**

**OKH 160 NTR/DV**



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 **DRAŽICE**  
ČLEN SKUPINY **NIBE**

# CONTENT

1	TECHNICAL SPECIFICATION OF THE PRODUCT .....	4
1.1	FUNCTION DESCRIPTION.....	4
1.2	NOTICE TO CONSUMERS .....	4
1.2.1	HOT WATER CONSUMPTION .....	4
1.2.2	ENERGY SAVINGS .....	4
1.3	CONSTRUCTION AND BASIC DIMENSIONS OF THE STORAGE TANK .....	5
2	OPERATING AND MOUNTING INFORMATION.....	7
2.1	OPERATING CONDITIONS.....	7
2.2	PLUMBING INSTALLATION .....	7
2.3	CONNECTION OF AN INDIRECT CYLINDER TO THE HOT WATER SYSTEM .....	9
2.4	FIRST COMMISSIONING .....	10
2.5	DECOMMISSIONING, EMPTYING .....	10
2.6	INSPECTION, MAINTENANCE, EQUIPMENT CARE .....	10
2.7	MOST COMMON FUNCTIONAL MALFUNCTIONS AND THEIR CAUSES .....	12
3	IMPORTANT NOTICES .....	12
3.1	INSTALLATION REGULATIONS .....	12
3.2	SHIPPING AND STORAGE INSTRUCTIONS.....	13
3.3	DISPOSAL OF PACKAGING MATERIAL AND NON-FUNCTIONAL PRODUCT .....	13
4	ACCESSORIES .....	13

## READ THIS MANUAL CAREFULLY BEFORE INSTALLING THE TRAY!

Dear Customer,

Družstevní závody Dražice - strojírna s.r.o. would like to thank you for your decision to use our brand's product. These regulations will familiarize you with the use, construction, maintenance and other information about electric water tanks.



Výrobek není určen pro ovládání

- a) persons (including children) with reduced physical, sensory or mental capabilities, or
- b) lack of knowledge and experience, unless they are supervised or properly trained by a responsible person.

The manufacturer reserves the right to make technical changes to the product. The product is intended for permanent contact with drinking water.

We recommend using the product indoors with an air temperature of +2°C to +45°C and a relative humidity of max. 80%.

The function and safety of the product was verified by the Engineering Testing Institute in Brno.

The publisher Družstevní závody Dražice - strojírna s.r.o., Dražice 69, Benátky nad Jizerou, 294 71, Czech Republic assures that the packaging meets the requirements of § 3 and 4 of Act No. 477/2001 Coll. on packaging and on amendments to certain acts, as amended.

Made in the Czech Republic.

### Meaning of the pictograms used in the instructions



**Important information for stack users.**



**Manufacturer's recommendations, the observance of which will guarantee trouble-free operation and long service life of the product.**



**ATTENTION!**  
**Important notice to observe.**

# 1 TECHNICAL SPECIFICATION OF THE PRODUCT

## 1.1 FUNCTION DESCRIPTION

Indirect stationary storage tanks of the NTR/DV series are used for the preparation of hot water in connection with another source of heating water, most often a gas boiler. With their rated output, they guarantee a sufficient amount of hot water even for large residential units - establishments, restaurants and similar facilities. **When the consumption of hot water is increased, the tanks reheat the water continuously and work similarly to flow tanks.**

## 1.2 NOTICE TO CONSUMERS

### 1.2.1 HOT WATER CONSUMPTION



The consumption of hot water in a household depends on the number of people, the amount of sanitary equipment, the length, diameter and insulation of the pipes in the apartment or house and the individual habits of the users.

### 1.2.2 ENERGY SAVINGS

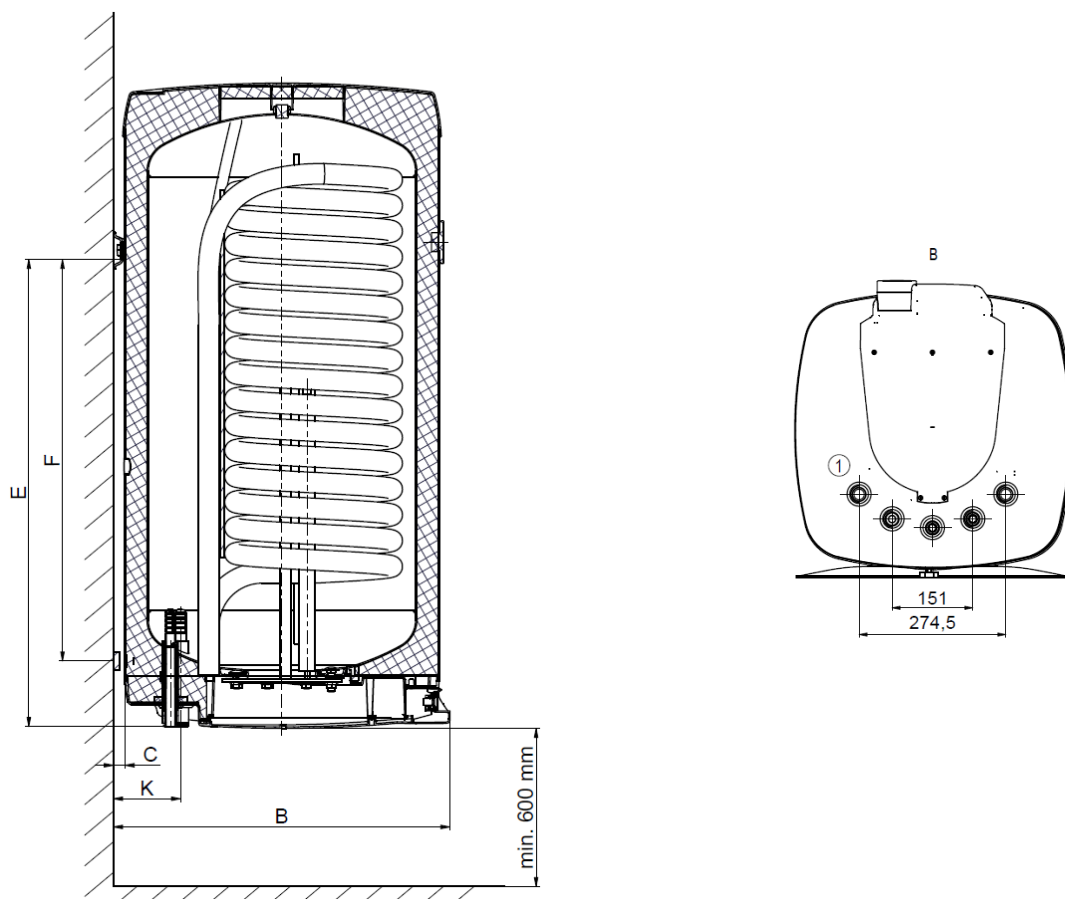
The hot water tank is insulated with high-quality polyurethane foam without CFCs. Set the temperature on the tank thermostat only to the level you absolutely need to operate the household. This will reduce energy consumption and the amount of deposits on the vessel walls and on the exchanger.

#### **Advantages of using an indirect heating tank:**

- easy installation and connection to the heating water source,
- very fast DHW(Domestic Hot Water) heating,
- enamelled steel tank ensures all hygienic requirements for DHW quality,
- in magnesium anode increases corrosion resistance,
- high-quality polyurethane insulation ensures minimal heat loss,
- continuously adjustable DHW temperature up to 75 °C,
- multiple draw-off points,
- light signaling of the tank operation,
- precise DHW temperature control,
- possibility of connecting DHW circulation.

## 1.3 CONSTRUCTION AND BASIC DIMENSIONS OF THE STORAGE TANK

The tank is made of sheet steel and tested at 1.5 times the operating pressure. The inside of the container is enameled. A flange is welded to the bottom of the container, to which the flange lid is screwed. A sealing ring is inserted between the flange cover and the flange. In the flange cover there are wells for placing the sensors of the regulating thermostat and thermometer. An anode rod is mounted on the M8 nut. The water tank is insulated with hard polyurethane foam. A heat exchanger is welded in the pressure vessel.



Tank dimensions: OKH 125 NTR/DV, OKH 160 NTR/DV

Figure 1

	OKH 125 NTR/DV	OKH 160 NTR/DV
A	1050	1235
B	550	550
C	19	19
D	520	520
E	757	1000
F	638	880
H	283	225
K	117	117
R	450	450

①	3/4" outer
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Table 1

TYPE		OKH 125 NTR/DV	OKH 160 NTR/DV
VOLUME	l	115	143
MAX. TANK WEIGHT WITHOUT WATER	kg	67	76
HEAT EXCHANGE SURFACE OF THE EXCHANGER	m <sup>2</sup>	1,45	1,45
MAXIMUM VESSEL PRESSURE	bar		6
MAXIMUM HEAT EXCHANGER PRESSURE	bar		10
MAXIMUM OPERATING TEMPERATURE IN THE VESSEL	°C		80
RECOMMENDED DHW TEMPERATURE	°C		60
DHW CONNECTION			G 3/4"
HEATING WATER CONNECTION			G 3/4"
ELECTRIC. COVER			IP44
RATED HEAT OUTPUT AT HEATING WATER TEMPERATURE OF 80°C AND FLOW RATE 720 l/h	W	32000	32000
HEAT EXCHANGER HEATING TIME FROM 10°C TO 60°C	min	13	16
STATIC LOSS	W	49	55
HEAT EXCHANGER VOLUME	l		9,5
PRESSURE DROP IN THE EXCHANGER AT FLOW RATE 720 l/h	mbar		46
ENERGY EFFICIENCY CLASS	-	B	C
MAXIMUM OPERATING TEMPERATURE / OVERPRESSURE IN THE EXCHANGERS	°C/bar		110/10

Table 2

## 2 OPERATING AND MOUNTING INFORMATION

### 2.1 OPERATING CONDITIONS



The tank may only be used in accordance with the conditions stated on the rating plate and the instructions in this manual. In addition to the legally recognized national regulations and standards, the connection conditions set by the local electricity and water utilities as well as the installation and operating instructions must also be observed..

The temperature at the installation location of the heater must be higher than +2 °C, the room must not freeze. The heater must be installed in a location that can be considered suitable, i.e. the device must be easily accessible for any necessary maintenance, repair or replacement..



In case of very hard water, we recommend that you install a conventional descaling device upstream of the tank. For proper operation, it is essential to use drinking water of appropriate quality. To prevent possible deposits, we recommend that you install a water filter upstream of the tank.

### 2.2 PLUMBING INSTALLATION



The connection of the tanks to the water supply is shown in - Figure 2. To disconnect the tank, it is necessary to install a Js 3/4" screw fitting on the inlets and outlets of the domestic water. If the DHW distribution is equipped with a circulation circuit, the "return" is connected to the inlet marked as CIRCULATION. Types 100, 125 NTR/ DV are equipped with a drain outlet. The tank must be equipped with a safety valve for operation. The safety valve is mounted on the cold water inlet marked with a blue circle. We recommend that the hot water distribution from the tank be as short as possible, which will reduce heat losses..



Each pressurized domestic hot water tank must be equipped with a diaphragm spring-loaded safety valve. The safety valve must be easily accessible, as close as possible to the tank. The inlet pipe must have at least the same clearance as the safety valve. The safety valve is placed high enough to ensure that dripping water can be drained by gravity. We recommend installing the safety valve on the branch. Easier replacement without having to drain the water from the tank. Safety valves with a fixed pressure set by the manufacturer are used for installation. The safety valve's trigger pressure must be the same as the maximum permitted tank pressure and at least 20% higher than the maximum pressure in the water supply system (Table 3). If the pressure in the water supply system exceeds this value, a pressure reducer must be included in the system. No shut-off valve must be installed between the tank and the safety valve. During installation, follow the instructions of the safety device manufacturer..



Before each use of the safety valve, it is necessary to check it. The check is carried out by manually moving the membrane away from the seat, turning the knob of the tear-off device always in the direction of the arrow. After turning, the knob must snap back into the notch. The correct function of the tear-off device is indicated by the water draining through the waste pipe of the safety valve. In normal operation, this check must be carried out at least once a month and after each time the tank is out of operation 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 continuously downwards and must be in an environment without temperatures below freezing. When draining the tank, use the recommended drain valve. First, it is necessary to close the water access to the tank. The necessary pressures can be found in the following table. For the safety valve to function properly, a non-return valve must be installed on the supply pipe to prevent the tank from emptying spontaneously and hot water from flowing back into the water supply system..

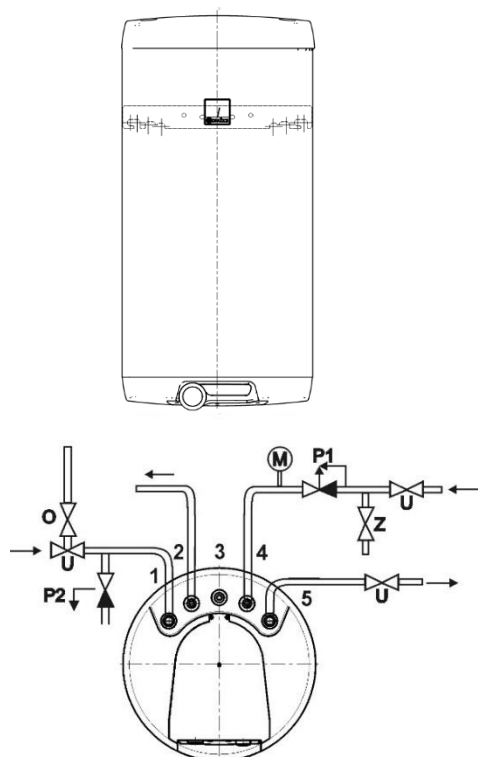
You can find the necessary pressures in the following table - Table 3.

**When installing the security equipment, proceed in accordance with the standard.**

SAFETY VALVE TRIGGER PRESSURE [MPa]	PERMISSIBLE OPERATING OVERPRESSURE OF THE WATER TANK [MPa]	MAX. PRESSURE IN COLD WATER PIPES [MPa]
0,6	0,6	do 0,48

**Table 3**

Connection of the tank exchanger and the cold water inlet fitting



- O - Air vent valve
- U - Shut-off valve
- P1 - Safety valve with check valve
- P2 - Safety valve for heating circuit
- M - Pressure gauge
- Z - Test valve

- 1 - Heating water inlet
- 2 - DHW output
- 3 - Circulation
- 4 - Cold water inlet
- 5 - Heating water outlet

The connection to the cold water supply must comply with the standard in the country of installation

**Figure 2**



## 2.3 CONNECTION OF AN INDIRECT CYLINDER TO THE HOT WATER SYSTEM



It is advisable to install shut-off valves at the inlet and outlet of the heating water (in case the tank is dismantled). The valves should be as close as possible to the reservoir to avoid greater heat loss.

The heating circuit is connected to the marked inlets and outlets of the cylinder exchanger and a vent valve is installed at the highest point. To protect the pumps, three-way valve, check valves and against clogging of the exchanger, it is necessary to build a filter into the circuit. We recommend rinsing the heating circuit before installation. Properly thermally insulate all connecting wiring. If the system will work with priority DHW heating using a three-way valve, always follow the instructions of the manufacturer of the three-way valve during installation.



After connecting the tank to the water supply system, hot water heating system, and after testing the safety valve (according to the instructions enclosed with the valve), the tank can be put into operation. The reservoir must be filled with water before it can be put into operation. The first heating process must be carried out by a licensed professional and must be supervised. The hot water drain pipe as well as the parts of the safety fitting can be hot.

### CONNECTING THE HEATER TO THE WATER AND HEATING SYSTEM

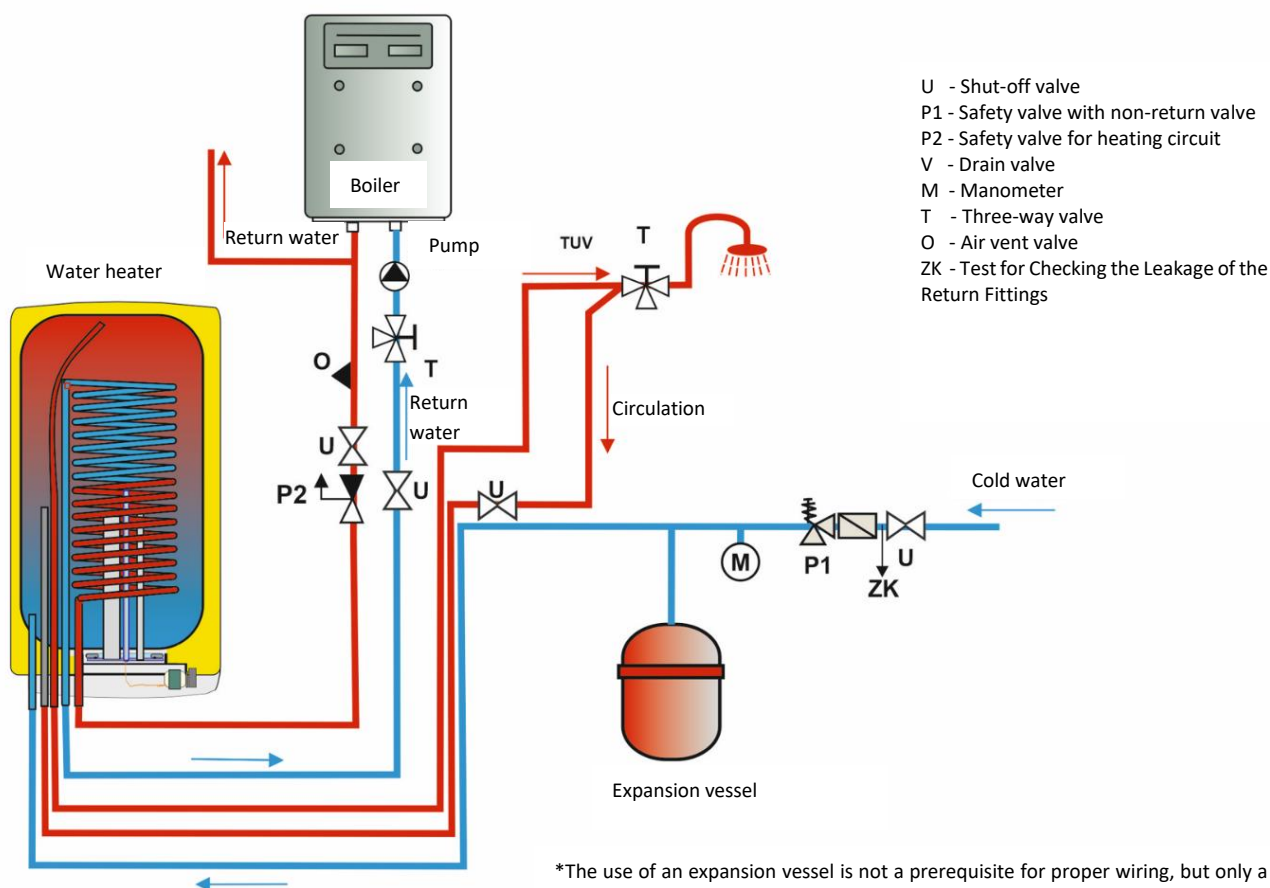


Figure 3

## 2.4 FIRST COMMISSIONING



During the heating process, the water, which increases in volume due to heating, must drip from the safety valve in the case of a pressure connection. In the case of a non-pressure connection, the water drips from the overflow mixing tap. After the heating is complete, the set temperature and the actual temperature of the water drawn should be approximately the same. After connecting the tank to the water supply, the electrical network and after testing the safety valve (according to the instructions enclosed with the valve), the tank can be put into operation.

### Procedure for commissioning the storage tank:

1. Check the water supply system, and for combined tanks also the installation to the hot water heating system. Check the correct location of the sensors
2. Open the hot water valve of the mixing tap.
3. Open the valve of the cold water supply pipe to the tank.
4. As soon as water starts to flow out through the hot water valve, the tank is filled and the valve can be closed.
5. If there is a leak (flange cover), we recommend tightening the flange cover screws. Tighten the screws crosswise. Tightening torque 15Nm.
6. Screw on the electrical installation cover.
7. When heating domestic water with thermal energy from the hot water heating system, open the valves at the heating water inlet and outlet, or vent the exchanger.
8. When starting operation, rinse the tank until the turbidity disappears.
9. Fill out the warranty card properly.

## 2.5 DECOMMISSIONING, EMPTYING



The hot water tank must be emptied before the start of the cold season. Applies if the tank is not reheated by any energy source and there is a risk of freezing of water in the tank.

The service water is drained after closing the shut-off valve in the cold water supply line (via the drain valve in the case of a combination of safety valves) and opening all hot water valves at the connected valves at the same time. **Hot water may come out when draining!** If there is a risk of frost, it must also be taken into account that not only the water in the hot water tank and hot water pipes, but also in the entire cold water supply line can freeze. It is therefore advisable to empty all fittings and pipes that carry water up to the part of the house water meter (connection of the house to the water mains) that is no longer threatened by frost. When the cylinder is put back into operation, it is essential to ensure that it is filled with water and that **the water at the hot water valves flows out without bubbles.**

## 2.6 INSPECTION, MAINTENANCE, EQUIPMENT CARE



During heating, the water, which increases in volume during heating, must visibly drip from the safety valve outlet (in the case of a pressureless connection, this water drips from the mixing valve valve). When fully heated (approx. 75 °C), the increase in water volume is approx. 3% of the tank content. The function of the safety valve must be checked regularly (according to the information in the enclosed safety valve instructions). In normal operation, it must be checked at least once a month and after each time the tank is out of operation for more than 5 days.



Caution! The cold water inlet pipe and the cylinder connection fitting may become hot! If the hot water cylinder is not operating or hot water is not being drawn, no water must drip from the safety valve. If water drips, either the water pressure in the supply pipe is too high or the safety valve is defective. Please call a qualified plumber immediately!



Repeated heating of water causes scale to form on the walls of the container, and especially on the flange cover. The formation of scale depends on the hardness of the heated water, its temperature and the amount of hot water used. If the water contains a lot of minerals, a specialist must be called in to remove the scale forming inside the heater, as well as loose deposits, after one to two years of operation. Cleaning is carried out through the flange opening - remove the flange cover, clean the heater. A new seal must be used when reassembling. The inside of the heater has a special enamel coating, it must not come into contact with the scale removing agent - do not use a descaling pump. Remove the scale with a wooden or plastic tool and vacuum it or wipe it with a cloth. Then the device must be thoroughly rinsed and the heating process checked as during the first commissioning. Do not use any aggressive cleaning agents (liquid sand, chemicals - acidic, alkaline) or any paint thinners (such as nitro thinner, trichlor, etc.) to clean the outer casing of the heater. Clean the outer casing of the heater with a damp cloth and add a few drops of detergent commonly used in the household.

**We recommend that after two years of operation, the tank be inspected and, if necessary, cleaned of limescale, and the anode rod be inspected and, if necessary, replaced.** The anode's service life is theoretically calculated to be two years of operation, but it varies with the hardness and chemical composition of the water at the place of use. Based on this inspection, it is possible to determine the date for the next anode rod replacement. If the anode is only clogged with deposits, clean its surface; if it is worn out, install a new one. Entrust the cleaning and replacement of the anode to a company that provides service. When draining water from the heater, the hot water mixing valve must be open so that there is no vacuum in the heater tank, which would prevent water from leaking out.

## 2.7 MOST COMMON FUNCTIONAL MALFUNCTIONS AND THEIR CAUSES

MANIFESTATION OF THE FAULT	INDICATOR LIGHT	SOLUTION
The water temperature does not correspond to the set value		<ul style="list-style-type: none"><li>Faulty thermostat</li></ul>
Water is constantly dripping from the safety valve		<ul style="list-style-type: none"><li>High inlet pressure</li><li>defective safety valve</li></ul>

Table 4



Do not attempt to correct the defect yourself. Contact either a professional or service center. An expert often needs little to fix the defect. When arranging a repair, please state the type designation and serial number, which can be found on the rating plate of your water tank.

## 3 IMPORTANT NOTICES

### 3.1 INSTALLATION REGULATIONS

- Regularly check the magnesium anode and replace it.
- **No shut-off valve may be installed between the tank and the safety valve.**
- If the overpressure in the water supply system is higher than 0.6 MPa, a pressure reducing valve must be placed in front of the safety valve.
- All hot water outlets must be equipped with a mixer tap.
- Before filling the tank with water for the first time, we recommend checking that the nuts of the flange joint of the container are tightened. Tighten the screws crosswise against each other. Tightening torque 15Nm.
- If the heater (hot water tank) is not used for more than 24 hours, or if the object with the heater is unattended by persons, shut off the cold water supply to the heater.
- The heater (hot water cylinder) may only be used in accordance with the conditions specified on the rating plate
- Due to transport and thermal expansion, excess enamel may fall off to the bottom of the vessel in heaters with heat exchangers. This phenomenon is absolutely normal and does not affect the quality and service life of the heater. The layer of enamel that remains on the container is decisive. DZD has many years of experience with this phenomenon and is not a reason for a complaint.



**Water installations must respect and comply with the requirements and regulations of the country of use!**

## 3.2 SHIPPING AND STORAGE INSTRUCTIONS

The device must be transported and stored in a dry environment, protected from the weather, in the temperature range of -15 to +50°C. When loading and unloading, the instructions on the packaging should be followed.



Due to transport and thermal expansion, excess enamel may fall off to the bottom of the vessel in heaters with heat exchangers. This phenomenon is absolutely normal and does not affect the quality and service life of the heater. The layer of enamel that remains on the container is decisive. DZD has many years of experience with this phenomenon and is not a reason for a complaint.

## 3.3 DISPOSAL OF PACKAGING MATERIAL AND NON-FUNCTIONAL PRODUCT

A service fee was paid for the packaging in which the product was delivered to ensure the take-back and recovery of packaging material. The service fee was paid in accordance with Act No. 477/2001 Coll., as amended, to EKO-KOM a.s. The company's client number is F06020274. Dispose of the packaging from the water tank in a place designated by the municipality for waste disposal. Dismantle the discarded and unusable product after the end of operation and transport it to a waste recycling centre (collection yard) or contact the manufacturer.

## 4 ACCESSORIES

The product comes with a G 3/4" safety valve and a drain valve.

**In your own interest, check the completeness of the accessories.**

3-2-2025