OPERATING INSTRUCTIONS AND INSTALLATION

HOT WATER TANKS INDIRECT HEATING

OKH 100 NTR/HV
OKH 125 NTR/HV

Družstevní závody Dražice - strojírna s.r.o.
Dražice 69, 294 71 Benátky nad Jizerou
tel: +420 / 326 370 911
e-mail: info@dzd.cz

DRAŽICE
ČLEN SKUPINY NIBE

CONTENTS

READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLING THE TANK!

Dear customer,

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

The product is not intended for use by

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

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 in an indoor environment with an air temperature of +2°C to+ 45°C and a relative humidity of max. 80%.

The function and safety of the product have been tested by the Engineering Test Institute in Brno.

Publisher Družstevní závody Dražice - strojírna s.r.o., Dražice 69, Benátky nad Jizerou, 294 71, Czech Republic, assures that the packaging complies with the requirements of Sections 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 pictograms used in the instructions

Important information for users of the container.

Manufacturer's recommendations, compliance with which will ensure trouble-free operation and long service life of the product.

CAUTION!
Important warning that must be followed.

1 TECHNICAL SPECIFICATIONS OF THE PRODUCT

1.1 FUNCTION DESCRIPTION

Indirect heating stationary tanks of the NTR/HV series are used to prepare DHW in conjunction with another source of heating water, most often a gas boiler. Their nominal output guarantees a sufficient amount of DHW even for large residential units - businesses, restaurants, and similar facilities. **During periods of increased DHW consumption, the tanks continuously reheat the water and operate similarly to instantaneous water heaters.**

1.2 NOTICE TO CONSUMERS

1.2.1 HOT WATER CONSUMPTION

Hot water consumption in the household depends on the number of people, the amount of sanitary equipment, the length, diameter, and insulation of the pipe distribution system in the apartment or house, and the individual habits of users.

1.2.2 ENERGY SAVINGS

The hot water tank is insulated with high-quality CFC-free polyurethane foam. Set the tank heating source to only the level you need to run your household. This will reduce energy consumption and the amount of deposits on the walls of the tank and on the heat exchanger.

Advantages of using an indirect heating tank:

- easy installation and connection to the heating water source,
- very fast DHW heating,
- enameled steel tank ensures all hygienic requirements for DHW quality,
- built-in magnesium anode increases corrosion resistance,
- high-quality polyurethane insulation ensures minimal heat loss,
- multiple draw-off points,
- Precise DHW temperature control
- option to connect DHW circulation.

1.3 CONSTRUCTION AND BASIC DIMENSIONS OF THE TANK

The tank is made of sheet steel and tested at 1.5 times the operating pressure. The inside of the tank is enamelled. A flange is welded to the bottom of the tank, to which the flange cover is bolted. A sealing ring is inserted between the flange cover and the flange. The flange cover has a recess for the external sensors of the control thermostat and thermometer. An anode rod is mounted on an M8 nut. The water tank is insulated with rigid polyurethane foam. A heat exchanger is welded to the pressure vessel.

Tank dimensions: OKH 100 NTR/HV, OKH 125 NTR/HV

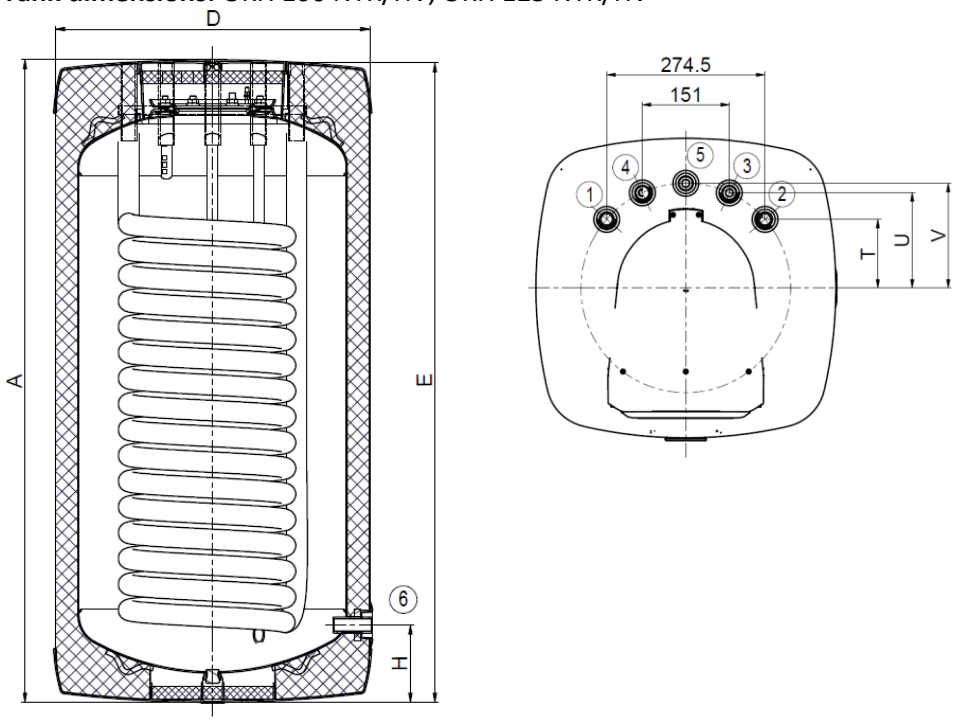

Figure 1

	OKH 100 NTR/HV	OKH 125 NTR/HV
A	897	1058
D	520	520
E	888	1049
H	127	127
T	119	119
U	165	165
V	182	182

①	3/4" external
②	3/4" external
③	3/4" external
④	3/4" external
⑤	3/4" external
⑥	1/2" internal

Table 1

TYPE		OKH 100 NTR/HV	OKH 125 NTR/HV
VOLUME	l	87	113
MAX. TANK WEIGHT WITHOUT WATER	kg	55	67
HEAT EXCHANGER SURFACE AREA	m^2	1.08	1.45
MAXIMUM PRESSURE OF THE CONTAINER	bar	6	
MAXIMUM EXCHANGER PRESSURE	bar	10	
MAXIMUM OPERATING TEMPERATURE IN THE CONTAINER	°C	80	
RECOMMENDED DHW TEMPERATURE	°C	60	
DHW CONNECTION		G 3/4"	
HEATING WATER CONNECTION		G 3/4"	
ELECTRICAL PROTECTION		IP42	
PRESSURE LOSS IN THE EXCHANGER AT A FLOW RATE OF 720 L/H	mbar	33	46
EXCHANGER VOLUME	l	7.1	9.5
NOMINAL HEAT OUTPUT AT A HEATING WATER TEMPERATURE OF 80°C AND A FLOW RATE OF 720 l/h	W	24000	32000
HEATING TIME THROUGH THE EXCHANGER FROM 10°C TO 60°C	min	13	13
STATIC LOSS	W	44	49
ENERGY EFFICIENCY CLASS		B	B

Table 2

2 OPERATING AND INSTALLATION INFORMATION

2.1 OPERATING CONDITIONS

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

The temperature at the installation site of the heater must be above +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.

If the water is very hard, we recommend installing a standard water softener upstream of the tank. For proper operation, it is necessary to use drinking water of appropriate quality. To prevent possible deposits, we recommend installing a water filter upstream of the tank.

2.2 WATER INSTALLATION

The connection of tanks to the water installation is shown at -Figure 2 . In case of possible disconnection of the tank, it is necessary to install Js 3/4" fittings on the service water inlets and outlets. If the DHW distribution system is equipped with a circulation circuit, connect the "return" to the inlet marked CIRCULATION. Types 100, 125 NTR / HV are equipped with a drain outlet. The tank must be equipped with a safety valve for operation. The safety valve is installed on the cold water inlet marked with a blue ring. We recommend the shortest possible hot water distribution from the tank to reduce heat loss.

Each pressurized hot water tank must be equipped with a diaphragm spring-loaded safety valve. The safety valve must be easily accessible, as close to the tank as possible. The supply pipe must have at least the same clearance as the safety valve. The safety valve should be placed high enough to ensure that overflow water is drained by gravity. We recommend installing the safety valve on a branch pipe. This makes replacement easier without having to drain the water from the tank. Safety valves with a fixed pressure set by the manufacturer are used for installation. The trigger pressure of the safety valve must be the same as the maximum permissible pressure of the tank 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 reducing valve must be installed in the system. No shut-off valve may be installed between the storage tank and the safety valve. Follow the safety device manufacturer's instructions during installation.

Before putting the safety valve into operation, it must be checked. The check is performed by manually moving the diaphragm away from the seat, turning the release device knob in the direction of the arrow. After turning, the knob must snap back into the notch. The proper functioning of the breakaway device is indicated by water draining through the safety valve's drain pipe. During normal operation, this check must be performed at least once a month and after each shutdown of the tank for more than 5 days. Water may drip from the safety valve through the drain pipe. The pipe must be freely open to the atmosphere, positioned continuously downwards, and located in an environment where temperatures do not fall below freezing. Use the recommended drain valve when draining the tank. First, shut off the water supply to the tank. The required pressures are listed in the following table. For the safety valve to function properly, a check 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.

The required pressures are listed in the following table -Table 3 .

In case of possible disassembly or repair, **the heaters must be equipped with a drain valve located on** the cold water supply to the heater**. When installing the safety device, proceed in accordance with the standard.**

SAFETY VALVE TRIGGER PRESSURE [MPa]	PERMISSIBLE OPERATING OVERPRESSURE OF THE WATER TANK [MPa]	MAX. PRESSURE IN THE COLD WATER PIPE [MPa]
0.6	0.6	**up to** 0.48

Table 3

Connection of the storage tank exchanger and fittings at the cold water inlet

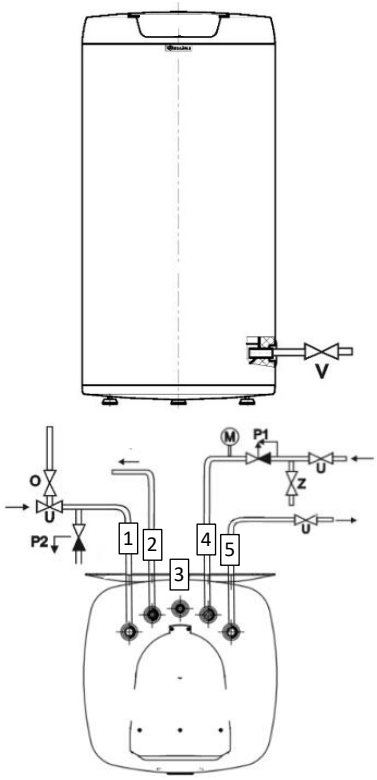

Figure 2

O - Vent valve
U - Shut-off valve
P1 - Safety valve with non-return valve
P2 - Safety valve for heating circuit
M - Pressure gauge
Z - Test valve
V - Drain valve

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

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

2.3 CONNECTION OF AN INDIRECT HEATING TANK TO A HOT WATER SYSTEM

It is advisable to install shut-off valves on the heating water inlet and outlet (in case the tank needs to be removed). The valves should be as close to the tank as possible to prevent significant heat loss.

The heating circuit is connected to the marked inlets and outlets of the tank exchanger and a vent valve is installed at the highest point. To protect the pumps, three-way valve, check valves, and to prevent clogging of the exchanger, a filter must be installed in the circuit. We recommend flushing the heating circuit before installation. Properly insulate all connecting pipes. If the system will operate with priority DHW heating using a three-way valve, always follow the three-way valve manufacturer's instructions during installation.

After connecting the tank to the water supply, hot water heating system, and after testing the safety valve (according to the instructions included with the valve), the tank can be put into operation. The tank must be filled with water before commissioning. The first heating process must be performed and checked by a licensed professional. The hot water drain pipe and parts of the safety fittings may be hot.

CONNECTING THE HEATER TO THE WATER SUPPLY AND HEATING SYSTEM

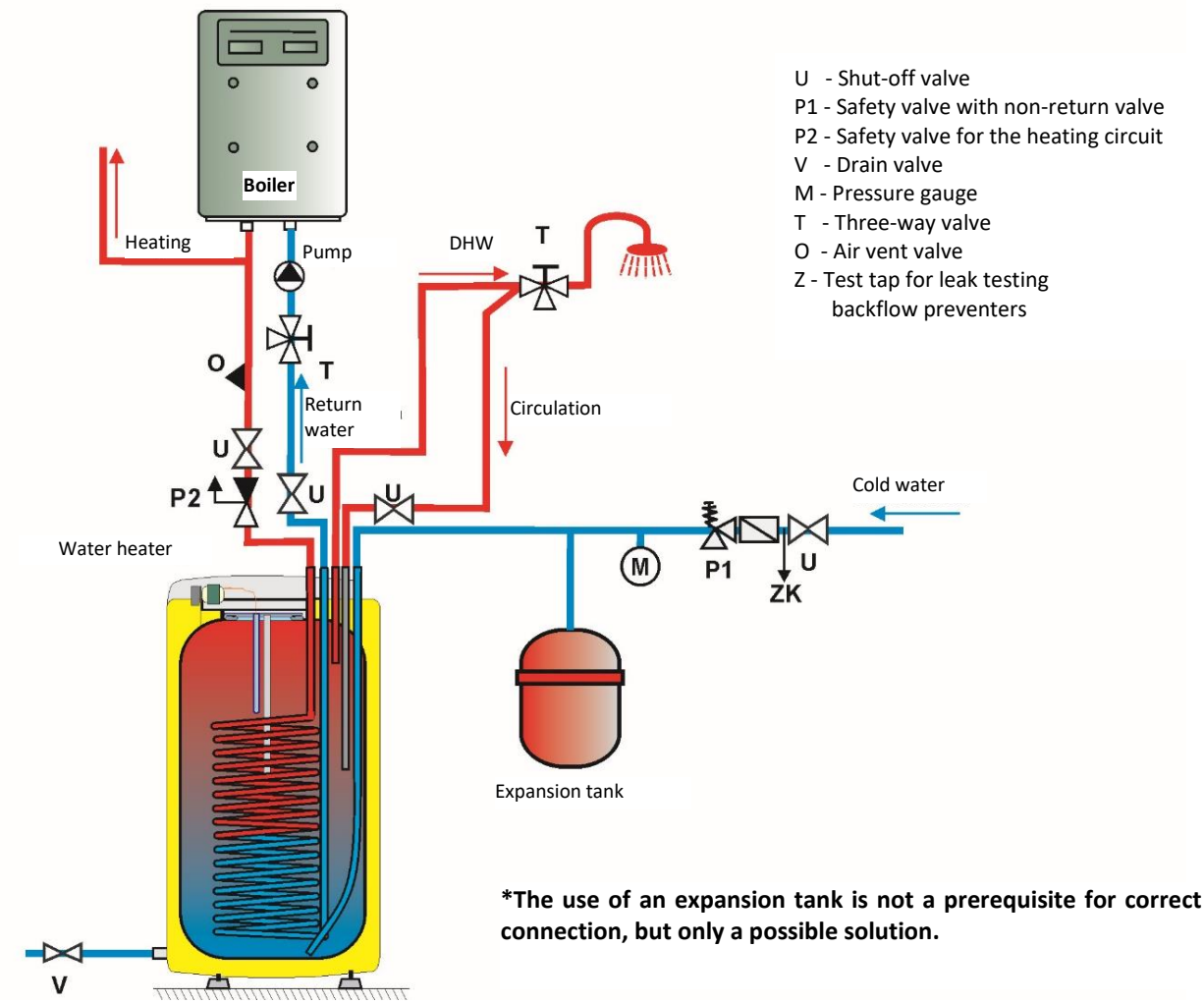

Figure 3

2.4 FIRST COMMISSIONING

During the heating process, water that expands due to heating must drip from the safety valve in the case of a pressurized connection. In the case of a non-pressurized connection, water drips from the overflow mixing valve. After 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 testing the safety valve (according to the instructions included with the valve), the tank can be put into operation.

Procedure for putting the tank into operation:

1. Check the water supply installation and, in the case of combination tanks, also the installation to the hot water heating system. Check the correct positioning 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. Once water begins to flow through the hot water valve, the tank is full and the valve can be closed.
5. If a leak occurs (flange cover), we recommend tightening the flange cover screws. Tighten the screws crosswise against each other. Tightening torque 15 Nm.
6. Screw on the electrical installation cover.
7. When heating domestic water with thermal energy from a hot water heating system, open the valves at the heating water inlet and outlet, and vent the exchanger if necessary.
8. When starting operation, flush the tank until the cloudiness disappears.
9. Fill in the warranty card correctly.

2.5 DECOMMISSIONING, EMPTYING

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

The service water is drained after closing the shut-off valve in the cold water supply pipe (via the drain valve on the combination safety valves) and simultaneously opening all hot water valves on the connected fittings. **Hot water may flow out during drainage!** 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 may freeze, but also the entire cold water supply pipe. 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 supply) that is no longer at risk of freezing. When the tank is put back into operation, it is essential to ensure that it is filled with water and that **the water flows out of the hot water valves without bubbles.**

2.6 INSPECTION, MAINTENANCE, CARE OF THE EQUIPMENT

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

Caution! The cold water inlet pipe and the tank connection fitting may become hot during this process! If the hot water tank is not in operation or no hot water is being drawn, no water should drip from the safety valve. If water is dripping, either the water pressure in the supply pipe is too high or the safety valve is defective. Please call a professional plumber immediately!

Repeated heating of the water causes limescale to build up on the walls of the tank and especially on the flange cover. The amount of limescale 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 limescale 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 and clean the heater. A new gasket must be used when reassembling. The inside of the heater has a special enamel coating and must not come into contact with limescale remover – do not use a descaling pump. Remove limescale deposits with a wooden or plastic tool and vacuum them up or wipe them off with a cloth. Then rinse the device thoroughly and check the heating process as you did when you first put it into operation. Do not use any aggressive cleaning agents (liquid sand, chemicals – acidic, alkaline) or 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 commonly used household detergent. household detergent.

After two years of operation, we recommend checking and, if necessary, cleaning the tank of limescale, checking and, if necessary, replacing the anode rod. The service life of the anode is theoretically calculated at two years of operation, but this varies depending on the hardness and chemical composition of the water at the place of use. Based on this inspection, it is possible to determine the date of 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 maintenance services. When draining water from the heater, the hot water mixing valve must be open to prevent negative pressure from forming in the heater tank, which would prevent water from flowing out.

2.7 MOST COMMON MALFUNCTIONS AND THEIR CAUSES

SYMPTOMS OF MALFUNCTION	INDICATOR LIGHT	SOLUTION
The water temperature does not correspond to the value set on the external source		• Faulty sensor or external source
Water is constantly dripping from the safety valve		• High inlet pressure • Defective safety valve

Table 4

Do not attempt to repair the fault yourself. Contact either a specialist or a service center. A specialist will often need very little to repair the fault. When arranging for repairs, provide 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

- Check the magnesium anode regularly and replace it.
- **No shut-off valve may be installed between the tank and the safety valve.**
- If the water supply pressure exceeds 0.6 MPa, a pressure reducing valve must be installed upstream of the safety valve.
- All hot water outlets must be equipped with a mixing valve.
- Before filling the tank with water for the first time, we recommend checking that the nuts on the flange connection of the tank are tightened. Tighten the screws crosswise against each other. Tightening torque 15 Nm.
- If you do not use the heater (hot water tank) for more than 24 hours, or if the building with the heater is unattended, shut off the cold water supply to the heater.
- The heater (hot water tank) may only be used in accordance with the conditions specified on the rating plate.
- Due to transport and thermal expansion, excess enamel may fall to the bottom of the tank in heaters with an exchanger. This phenomenon is completely normal and does not affect the quality and service life of the heater. The layer of enamel that remains on the tank is decisive. DZD has many years of experience with this phenomenon and it is not a reason for complaint.

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

3.2 TRANSPORT AND STORAGE INSTRUCTIONS

The device must be transported and stored in a dry environment, protected from the weather, at temperatures between -15 and +50°C. When loading and unloading, follow the instructions on the packaging.

Due to transport and thermal expansion, excess enamel may fall to the bottom of the container in heaters with an exchanger. This phenomenon is completely 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 it is not a reason for complaint.

3.3 DISPOSAL OF PACKAGING MATERIAL AND NON-FUNCTIONAL PRODUCTS

A service fee was paid for the packaging in which the product was delivered to ensure the return and recycling of the 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 at a location designated by the municipality for waste disposal. After the end of operation, dismantle the discarded and unusable product and transport it to a waste recycling center (collection yard) or contact the manufacturer.

4 ACCESSORIES

A G ¾" safety valve and a drain valve are included with the product.

In your own interest, please check that all accessories are included.

27-8-2025