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NBC 170 HP

Installation and Operation Manual
HOT WATER STORAGE TANK
NBC 170 HP

EN

NBC 170 HP

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1 - Description

NBC Hot Water Storage Tank with one stainless-steel heat exchanger, G 3/4" connections (e.g. to connect a heat pump).

For the correct functioning of the tank it is necessary to optimally design a hot water heating system including a heat source, safety elements and shut-off valves in compliance with the respective standards and rules. The hydraulic variant shall be selected respecting the heating controller used. For a connection example, see Chapter 5 of this document.

1.1 - Models

One model of 162 l total capacity.

1.2 - Tank protection

The entire tank is made of stainless steel which guarantees a long service life. Further qualitative improvement is reached thanks to a magnesium anode rod installed inside the tank. The anode must be checked regularly - see chapter 8 of this manual.

1.3 - Thermal insulation

Tanks are supplied with 50 mm thick non removable EPU insulation, white surface.

1.4 - Connection points on the tank

- 2× top with G 3/4" inner thread, for the heating coil
- 2× top with G 3/4" inner thread, for cold water inlet and hot water outlet
- 1× top for temperature sensors, G 1/2"
- 1× top with G 3/4" inner thread, for recirculation
- 1× top with G 3/4" inner thread, for magnesium anode rod
- 1× lateral G 1/2" with drain valve
- 1× lateral with M8 screw for earthing

1.5 - Packaging

Tanks are delivered standing, each screwed to its pallet, packed in bubble wrap.

2 - General Information


The appliance shall be installed by a qualified person according to valid rules and Manufacturer's Instructions.

This Manual is an integral and important part of the product and must be handed over to the User. Read carefully the instructions in this Manual as they contain important information concerning safety, installation, operation and maintenance. Keep this Manual for later reference.

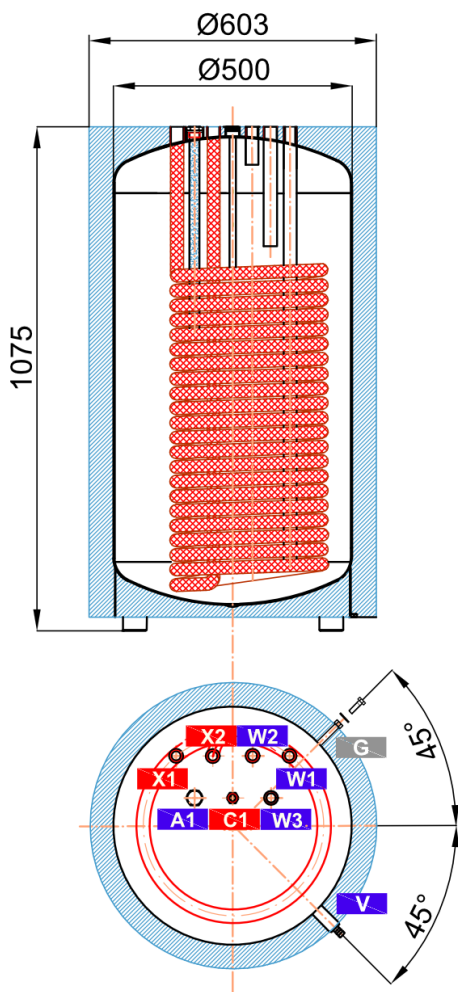
Using the tank for other purposes than stated above is prohibited and the manufacturer accepts no responsibility for damage caused by improper or wrong use.

3 - Technical Data and Dimensions of TV NBC 170 HP

Regulus NBC 170 HP Hot Water Storage Tank

	Main Features	
	Application	The stainless steel tank with integrated heat exchanger is used for hot water preparation. It is supplied with a drain valve, non-removable insulation and a magnesium anode to protect the internal surfaces of the tank against corrosion.
	Working fluid	water (tank) - water, water-glycol mixture (max. 1:1), water-glycerine mixture (max. 2:1) (heat exchanger)
	Code	17615
Energy Efficiency Data (as per EC Regulation No. 812/2013)		
Energy efficiency class		B
Static loss		42 W
Storage volume		162 l
Technical data		
Total DHW tank volume		170 l
Fluid volume in DHW tank		162 l
Heat exchanger volume		8.0 l
Heat exchanger surface area		2.0 m²
Max. working temperature in DHW tank		95 °C
Max. working temperature in heat exchanger		95 °C
Max. working pressure in DHW tank		7 bar
Max. working pressure in heat exchanger		15 bar
DHW tank diameter		500 mm
DHW tank diameter with insulation		603 mm
DHW tank overall height		1075 mm
Tipping height		1233 mm
DHW tank empty weight		42 kg
Power for hot water heating from 10 °C to 45 °C at heating water temperature 60 °C		
Heat exchanger performance		32 kW, (780 l/h)
Materials		
DHW tank material		stainless steel AISI 316L
Heat exchanger material		stainless steel AISI 304
DHW tank insulation		EPU (expanded polyurethane)
DHW tank outer surface insulation		polyurethane
Accessories		
Electronic anode rod		code 13793
Spare parts (magnesium anode rods)		
Mg anode rod (A1)		code 6750

Dimensions



CONNECTIONS

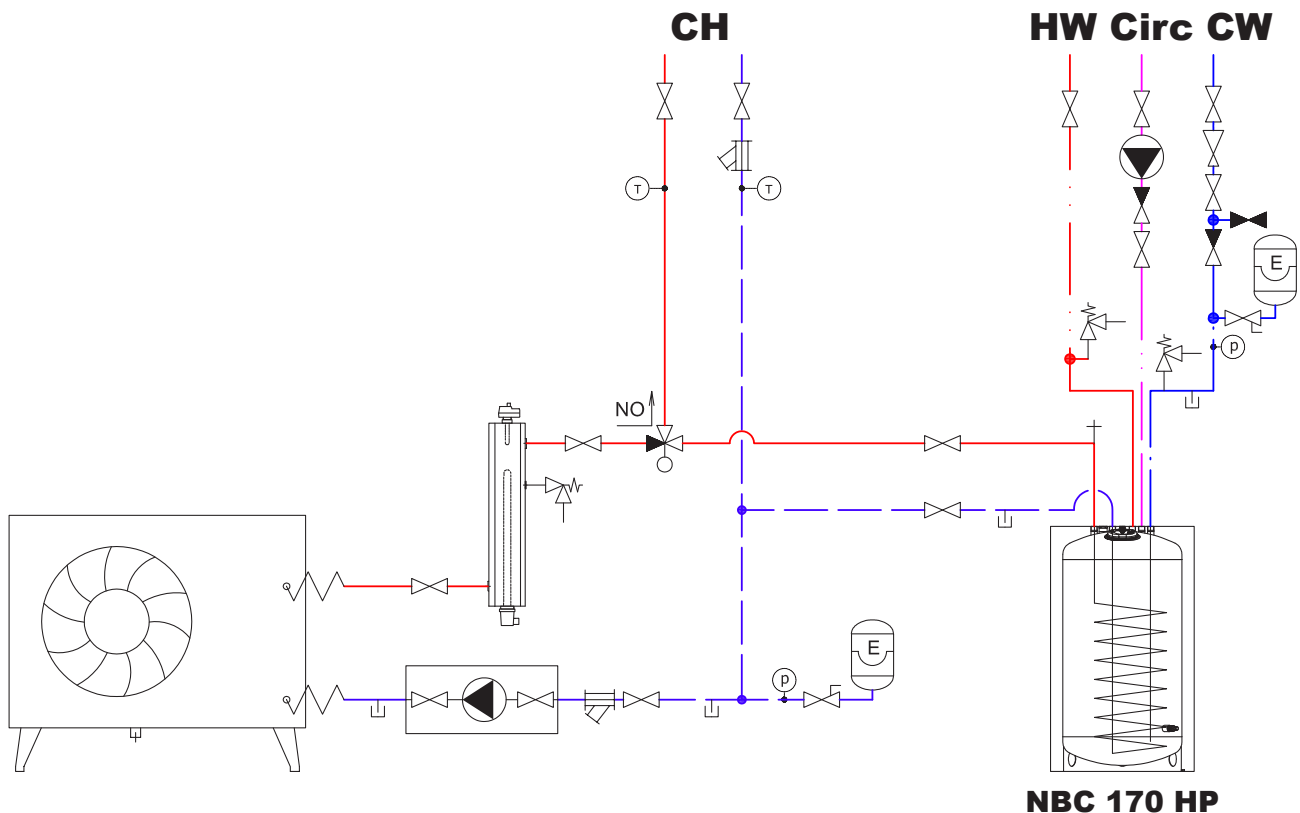
pos.	description	connection	height [mm]
DHW heating			
W1	Cold water	G 3/4" F	1060
W2	Domestic hot water	G 3/4" F	1060
W3	Recirculation	G 3/4" F	1060
Control and safety			
C1	Temperature sensor	G 1/2" F	1060
Heat sources			
X1	Supply from heat source	G 3/4" F	1060
X2	Return to heat source	G 3/4" F	1060
Others			
A1	Magnesium anode rod	G 3/4" F	1060
V	Drain valve	G 1/2" F	180
G	Grounding	M8	180

4 - Operation

The tank is designed for operation in pressure circuits. Hot water is heated in the tank via the integrated heat exchanger (heating coil) from e.g. a heat pump.

Hot water temperature should be set to 55-60 °C. This temperature guarantees the best operation and at the same time, it prevents formation of Legionella bacteria.

5 - Examples of Assigning Connection Points



6 - Installation and Commissioning

Installation shall meet valid rules and may be done only by qualified staff. The tank shall be placed on the floor, as close to the heat source as possible.

Warning: Defects caused by improper installation, use or handling are not covered by warranty.

6.1 - Connection to heat sources

Connect heating circuits to the inlet and outlet of the heating coil. The heat source connects to the tank using G 3/4" fittings.

6.2 - Connection to water mains

DHW piping shall be made according to valid rules. G 3/4" fittings are used to connect the tank to a cold water inlet and hot water outlet. A safety kit (code 17387) shall be installed at the cold water inlet. Installation of a reducing valve to the tank inlet is recommended. If the pressure from water mains exceeds 6 bar, a reducing valve is necessary. An 8-liter expansion tank shall be installed at the cold water inlet.

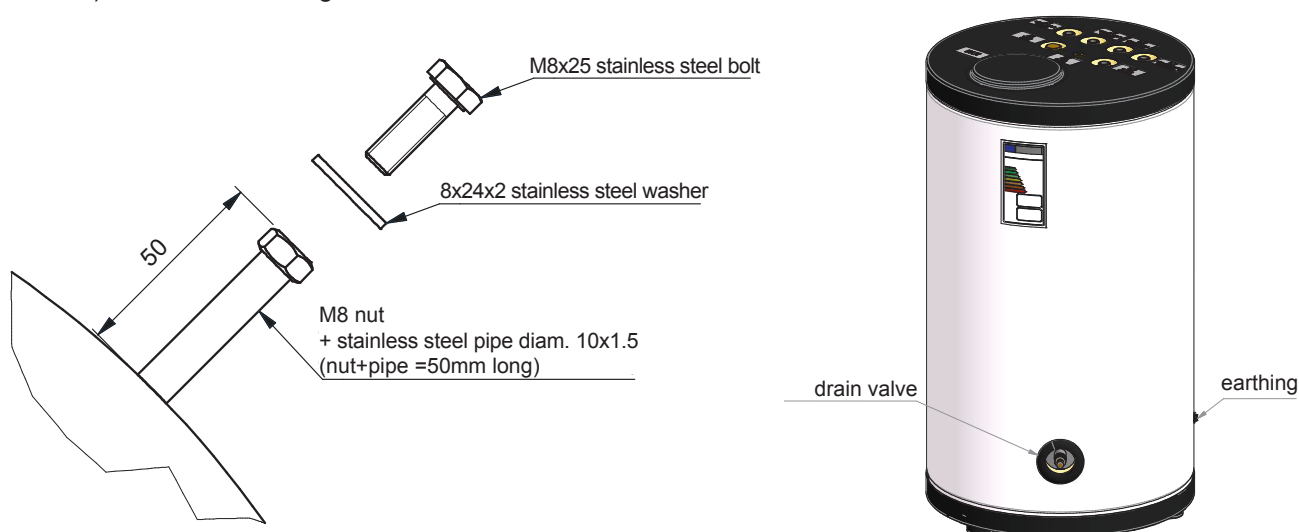
Should the water be too hard, install a water softener before the tank. In case the water contains mechanical impurities, install a strainer.

There is a drain valve at the lowest point of the tank.

Complete DHW piping shall be properly insulated.

6.3 - Tank earthing

Earth the tank before commissioning. The earthing bolt is at the same height as the drain valve (180mm from the floor) and rotated 90 degrees counter-clockwise behind the drain valve.



6.4 - Electronic anode rod installation

Magnesium anode rod is factory installed in the tank. An electronic anode rod (code 13793) can be installed in the tank instead of the magnesium one.

6.5 - Commissioning

Earth the tank before commissioning. The earthing screw is located at the marked place. Fill the entire system with liquids and air-vent. Check all connections for leaks and a system pressure.

The quality of top-up and heating water is set by ČSN 07 7401:1992. **Hot water quality must meet the conditions shown in the Table of limit values for total dissolved solids in hot water.**

Table of limit values for total dissolved solids in hot water

Description	pH	Total dissolved solids (TDS)	Ca	Chlorides	Mg	Na	Fe
Max. value	6.5 - 9.5	600 mg/l	40 mg/l	100 mg/l	20 mg/l	200 mg/l	0.2 mg/l

It is recommended to maintain the temperature of the hot water in the tank, e.g. by means of a heat pump, in the temperature range of 48-52 °C. It is recommended to temporarily raise the temperature of the entire hot water system to 65-70 °C as a protection against the formation of bacteria, especially Legionella. It is recommended to carry out a temporary temperature increase whenever the hot water supply is shut down for a longer time. Requirements for the quality and temperature of hot water can be set by a special regulation according to the methods of hot water use (staff hygiene, hot water for hospitals, educational institutes, technological water, etc.). Set the parameters of the respective controller according to the manufacturer's documentation and recommendations. Check regularly that all control and adjustment elements are functioning properly.

7 - Tank Insulation

Product description

Thermal insulation is a component of tank that prevents heat losses. Thermal insulation of EPU with polyurethane foil is used.

Warning

Do not use open fire near the product.

8. Maintenance, Replacement of Magnesium Anode Rod

If the tank is fitted with a heating element, disconnect it from the mains before starting the maintenance.

Clean the exterior of the tank with a wet cloth and a suitable detergent.

Never use abrasives, solvents, petroleum-based products, etc.

Check for water leaks at the tank connection points.

The tanks come equipped with an anti-corrosion sacrifice magnesium anode rod as standard; it protects its inner parts against corrosion. For this reason it is necessary that the anode rod is checked regularly, i.e. within 12 months after commissioning and subsequently always not later than 12 months after the last check. In locations where water contains more ferrites or calcites, it is recommended to check the magnesium anode rod every 6 months. If more than one third of its total volume is consumed, the anode rod shall be replaced with a new one. Disregarded of its state, the anode rod shall be replaced with a new one within 24 months from commissioning. In case an electronic anode is used, the above described procedures are not necessary. Then only a visual check of its function (indication lamp) is necessary every 3 months. Indication of the proper working of the electronic anode rod is described in its Installation and Operation Manual. If damage to a tank occurs due to neglected substitution of a magnesium anode rod or a non-working electronic anode rod, warranty cannot be claimed.

9 - Disposal

Packaging shall be disposed of in compliance with the valid rules. When the product reaches the end of its life, it shall not be disposed of as household waste. It shall be dropped off at a Local Waste Recycling Centre. Insulation shall be recycled as plastic and the steel vessel as scrap iron.

10 - Warranty

This product is covered by warranty according to the conditions described in this Manual and according to the Warranty Certificate. A Warranty Certificate is an integral part of the supply.