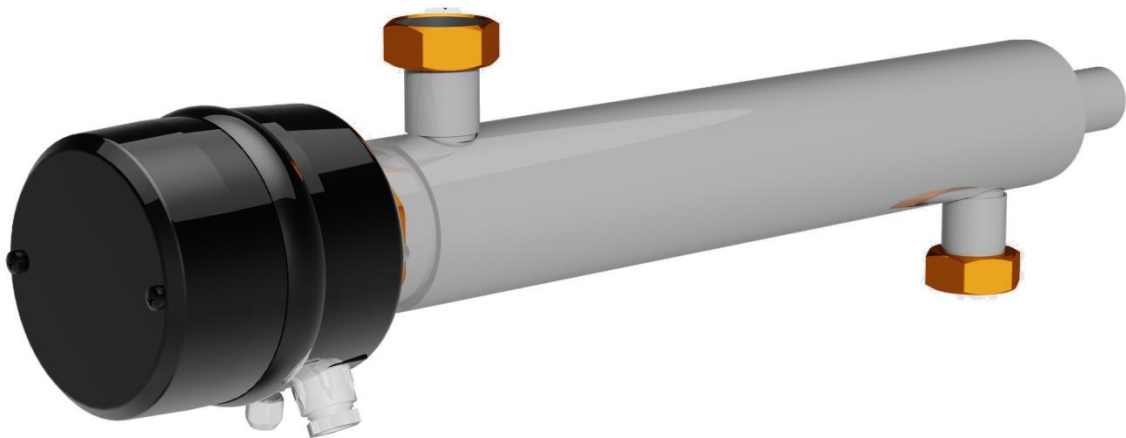


OPERATING AND INSTALLATION MANUAL

BIVALENT SOURCE TO HEAT PUMP WITH CASCADE REGULATION

TJ 2" HP 9 kW



Družstevní závody Dražice - strojírna s.r.o.
Dražice 69, 294 71 Benátky nad Jizerou
Phone.: +420 /326 370 990
Fax: +420 / 326 370 980
E-mail: export@dzd.cz

 **DRAŽICE**
NIBE GROUP MEMBER

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CAREFULLY READ THIS MANUAL BEFORE INSTALLING THE PRODUCT ACCESSORIES!

Dear customer,

Družstevní závody Dražice - strojírna s.r.o., would like to thank you for your decision to use a product of our brand.

The product is not intended to be controlled by

- a) people (including children) with reduced physical, sensual, or mental capacities, or
- b) people with insufficient knowledge and experiences unless supervised by responsible person, or unless properly instructed by such responsible person.

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

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

Product's reliability and safety is proven by tests implemented by the Engineering Test Institute in Brno.

Made in the Czech Republic.

Meaning of pictograms used in the Manual



Important information for heater users.



Abiding by the recommendations of the manufacturer serves to ensure trouble-free operation and the long service life of the product.



Caution!
Important notice to be observed.

1 PRODUCT TECHNICAL SPECIFICATION

1.1 FUNCTION DESCRIPTION

Bivalent source for the heat pump with cascade regulation is designed as an additional heating to the thermal pump, i.e. as a bivalent source for the provision of thermal comfort and potential replacement of thermal pump for cases of malfunction.

Water is heated by tubular heating element. The well includes the sensor of safety thermostat. Water temperature should be controlled by thermal pump regulation. In case of a failure, the safety thermostat switches off electricity supply in all poles at a temperature of 90–95 °C.

1.2 ADVICE FOR CUSTOMERS



Prior to putting the heating element into operation, re-measuring of insulation resistance is recommended. The insulation resistance in cold must not be below 50 MΩ. If the insulation resistance is lower, we recommend drying the heating element.

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

1.3 DESIGN AND GENERAL HEATER DIMENSIONS

The bivalent source consists of an electrical heating element with a connecting thread G 2" (Figure 1). A safety thermostat and a connection terminal block are placed under the wiring plastic cover.

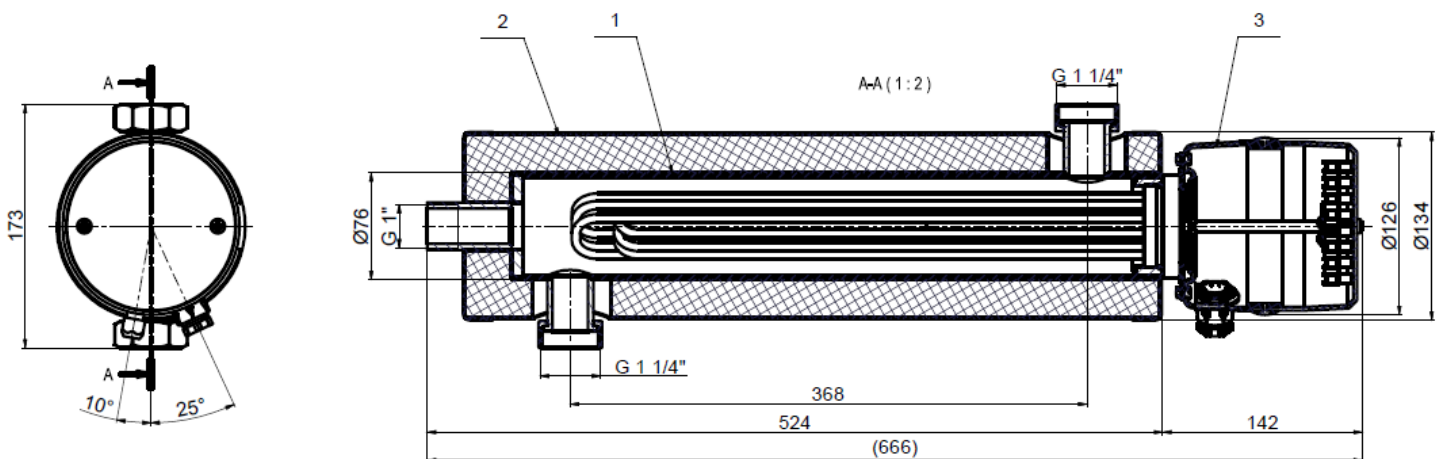


Figure 1

Legend:

- 1 - bivalent source steel casing
- 2 - thermal insulation
- 3 - cover with wiring

TYPE	OUTPUT	CONNECTION	RECOMMENDED CIRCUIT BREAKER VALUE	ELECTR. PROTECTION
	kW		A	
TJ 2" HP 9 kW	3 - 9	3 PE-N AC 400 V/50 Hz	3x 16	IP 44

Table 1

2 OPERATION AND FITTING INSTRUCTIONS

2.1 INSTALLATION



The bivalent source is connected to the heating circuit of the heat pump, e.g. according to the diagram in (Figure 2). It has 3 inlets or outlets for connection, while the side outlets (Figure 1, G 1 1/4 ") are with a cap nut and the upper outlet (Figure 1, 1") suitable, for example, for bleeding in the case of vertical mounting.

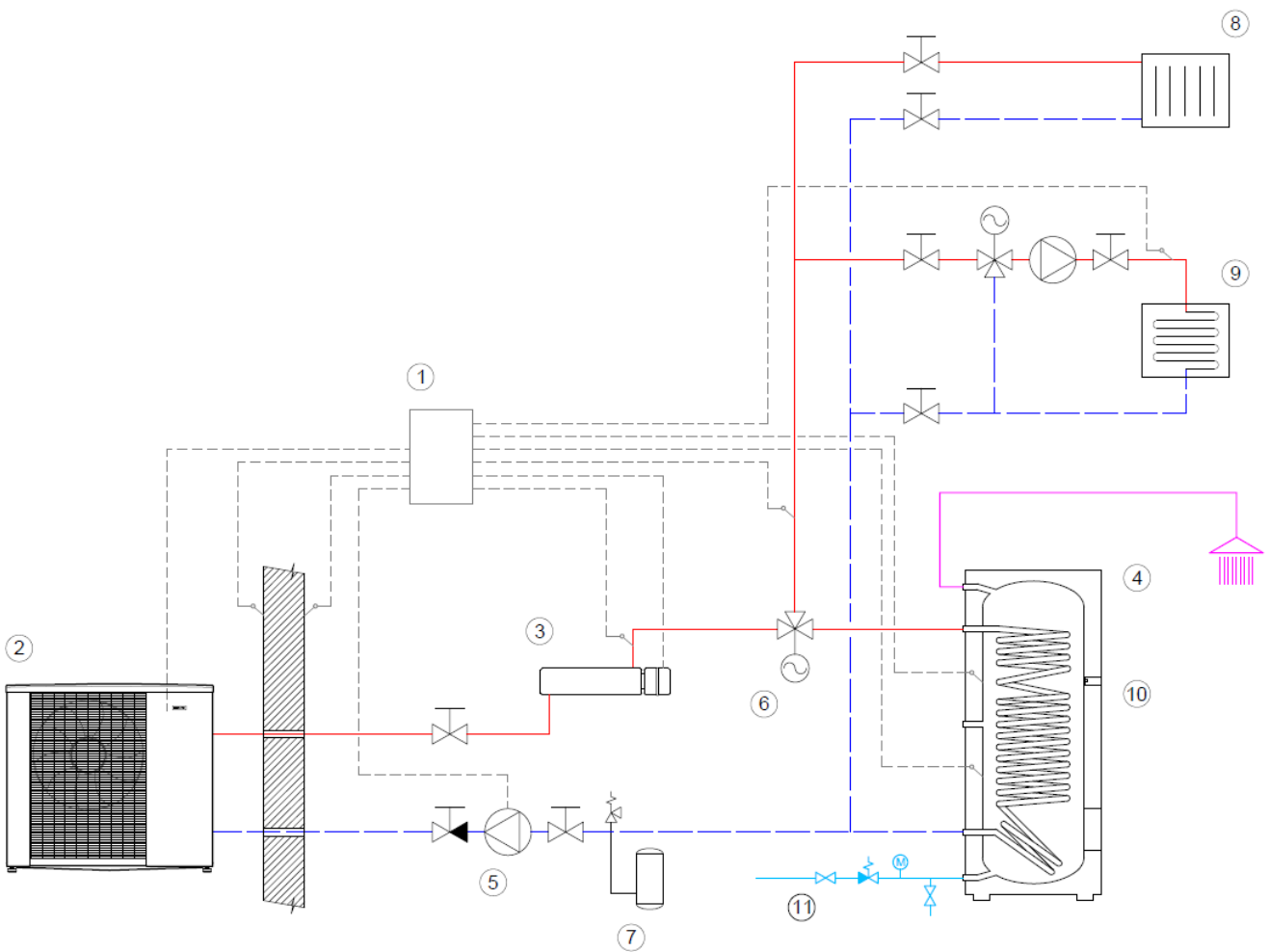


Figure 2

Legend:

- 1 - heat pump regulation,
- 2 - outdoor compact unit,
- 3 - bivalent source,
- 4 - water heater,
- 5 - circulation pump,
- 6 - changeover valve,
- 7 - heating circuit safety assembly
- 8 - radiator circuit,
- 9 - floor heating circuit,
- 10 - socket for additional heating unit TJ 6/4",
- 11 - safety assembly on the cold water supply

Here are the recommended hydraulic connection options with an indication of the flow direction of the heating medium (Figure 3). With vertical installation, only a position with the wiring cover facing down is possible in order to bleed the entire volume of the bivalent source.

Considering the insulation type, the bivalent source is not suitable in the joint heating and cooling circuit with temperature below dew point (15 °C).

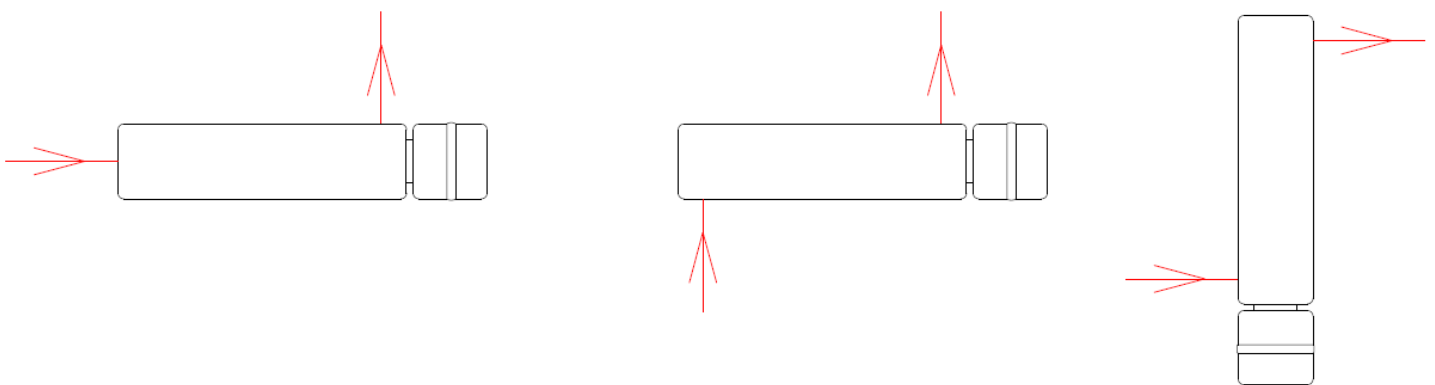


Figure 3

To attach the bivalent source to a wall or structure, 2 sleeves with anchor bolts are provided (Figure 4). Dowels must be selected according to the type of the building structure; Therefore they are not included in the package.



Figure 4

2.2 ELECTRICAL INSTALLATION

2.2.1 GENERAL INFORMATION FOR ELECTRICAL INSTALLATION



Run the supply cable and, if necessary, the cable for checking the thermal fuse (Figure 5, TL) through the grommets and connect according to the wiring diagram of the electric boiler (Figure 5). The heating unit is connected to a 400 V and 50 Hz electrical grid via a fixed wire connection with a corresponding section and protection adequate to the heating element output.

Notice: The power supply must contain a main breaker disconnecting all poles of the grid. Perform the installation in compliance with applicable standards.

2.2.2 WIRING DIAGRAM

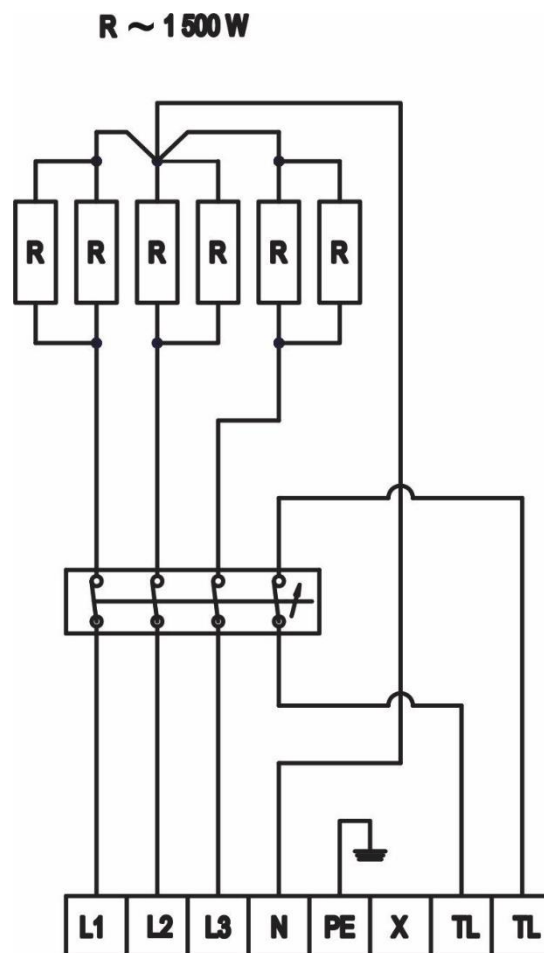


Figure 5

2.3 INSPECTION, MAINTENANCE

Maintenance involves decalcification of the heating element at certain time intervals selected by water hardness at the place of use, particularly if the system includes untreated heating water. **Damage to the heating element due to calcareous sediments is not accepted by the manufacturer as a reason for complaint.**

2.4 MOST FREQUENT FUNCTION FAILURES AND THEIR CAUSES

FAILURE SYMPTOM	TROUBLESHOOTING
Bivalent source does not heat	Safety thermostat is automatically non-returnable, it is activated by pressing a button on the thermostat body.
Heating element failure	Safety thermostat is connected but the bivalent source does not heat Have the heating unit repaired by an authorized company.

Table 2



Do not attempt 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 bivalent source.

3 IMPORTANT NOTICES

3.1 INSTALLATION REGULATIONS

- Each heat source shall be equipped with a non-lockable locking device, see ČSN 06 0830.
- When active, the element and the thermowells must be surrounded with a sufficient amount of water from all sides.
- Thermo water flow must not be prevented.
- Mounting positions – horizontal or vertical from under (Chapter 2.1, Figure 3).
- The maximum pressure in the tank is 10 bar.
- Minimum flow for safe function of bivalent source is 1000 l/h.
- Considering the insulation type, the bivalent source is not suitable in the joint heating and cooling circuit with temperature below dew point (15 °C).



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

3.2 SPARE PARTS

Always state the type of the heating unit and the name of the spare part when placing an order.

- Safety fuse
- Wires
- Sealing ring

3.3 DISPOSAL OF PACKAGING MATERIAL AND NON-FUNCTIONING PRODUCT

A service fee for providing return and recovery of packaging material has been paid for the packaging in which the product 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 heater 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 center (collecting yard), or contact the manufacturer.



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