

OPERATING AND INSTALLATION MANUAL

BUILT-IN ELECTRIC FLANGE HEATING UNIT

SE 377

SE 378

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 **DRAŽICE**
NIBE GROUP MEMBER

CONTENTS

1	PRODUCT TECHNICAL SPECIFICATION	4
2	ENERGY SAVING.....	4
3	OPERATION AND TEMPERATURE SETTING.....	4
4	OPERATION PRECONDITIONS.....	5
5	ASSEMBLY AND SAFETY INSTRUCTIONS.....	5
5.1	GENERAL INSTRUCTIONS.....	5
5.2	INSTALLATION SCHEME.....	7
5.3	HEATING UNIT ASSEMBLY	8
5.4	ACCUMULATOR CONNECTION TO THE PRESSURIZED WATER MAIN	9
5.5	ELECTRICAL CONNECTION	10
5.6	FIRST PUTTING INTO OPERATION.....	12
6	INSPECTION, CARE, MAINTENANCE	12
7	FUNCTIONAL DEFECTS.....	12
8	TECHNICAL DATA.....	13
9	DISPOSAL OF PACKAGING MATERIAL AND NON-FUNCTIONING PRODUCT.....	13

CAREFULLY READ THIS MANUAL BEFORE INSTALLING THE WATER HEATER!

Dear Customers!

The "SE" series of heating elements by Winkelmann GmbH, Stahl-Behälter-Technik (Germany) are manufactured and tested accordingly with the valid ÖVE or VDE safety regulations.

Their installation and putting into operation may only be implemented by assembly companies, following this manual.

In this manual, you can find all important instructions necessary for proper installation and operation. Despite that, have the element installation, operation, and functions demonstrated and explained.

Naturally, our department is at your service: Service and Sales Dept.

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 %.

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

The SE series built-in electric flange heating units as main heaters for electric boilers are self-servicing. If calcium rich water is used, scale needs to be removed from the heating element in given time intervals.

The user may set a temperature on the thermostat. The element is turned on automatically; after reaching set water temperature, it is turned off. If the temperature drops (e.g., either by water consumption or natural cooling), the unit is turned on and heated to the pre-set temperature.

2 ENERGY SAVING

Low water temperature in the boiler proves to be especially economic. Therefore, the temperature should be set to be adequate for intended hot water consumption, not higher. This helps to save electricity and prevents lime sediment occurrence.

3 OPERATION AND TEMPERATURE SETTING

The temperature of water in the heater can be adjusted as needed by the thermostat, either continuously or in three steps as indicated. This allows energetically economic operation. To set the temperature, 3 main marked symbols are used:

- Minimum setting - frost protection (approx. 2 °C to 10 °C)
- Approx. **60 °C**, hot water - to prevent scalding, this degree is recommended as it is the economic operation with minimum energy loss and minimum scale occurrence
- Maximum setting (approx. 70 °C to 80 °C)

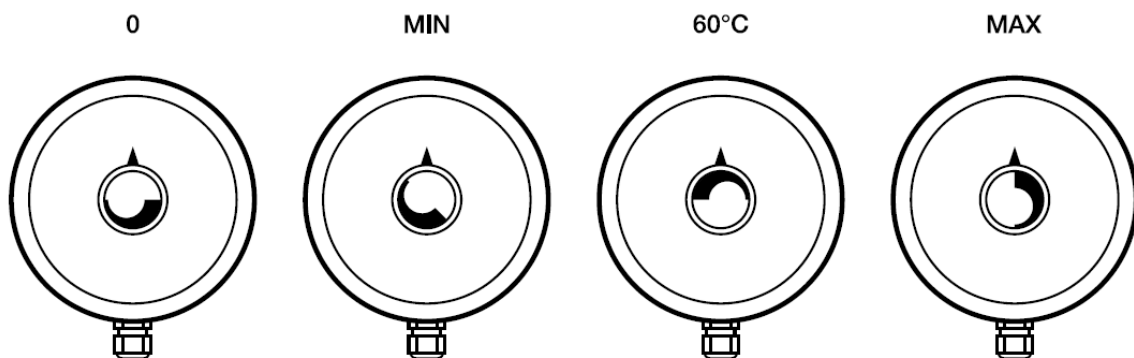


Figure 1

4 OPERATION PRECONDITIONS



The connection of a built-in electric flange unit must follow the data on the plate (operation pressure, heating time, el. voltage). Connecting to the electrics must follow the scheme on the inside of the protective cover.

Aside from the electric regulations, the conditions of local distribution and water supply plants, as well as assembly and operation conditions, must be followed.



If the water is really hard, we recommend installation of water treatment filters preventing the scale occurrence.

These heating elements are suitable for enameled accumulators, double casing tanks, or accumulators coated with either plastic or zinc; they are also suitable for ribbed exchangers. Combination with chromium–nickel vessels is problematic, and therefore not recommended. All elements are suitable for heating drinkable and heating water with operating pressure within 10 bar.

5 ASSEMBLY AND SAFETY INSTRUCTIONS

5.1 GENERAL INSTRUCTIONS

During operation, both the heating element and the anode rod must be under water. Necessary thermal flow of heated water must not be prevented. The heating unit is equipped with a safety fuse preventing further water heating at maximum temperature of 120 °C. It is therefore necessary to select suitable connecting components (pipelines, safety valve combination) that, in case of thermostat defect, resist the max. temperature of 120 °C.

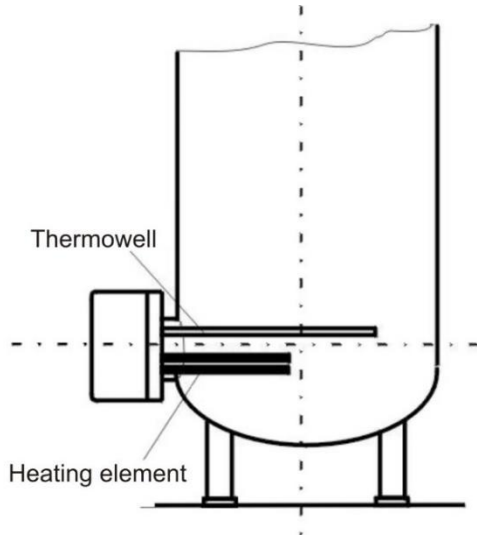


Both the assembly and installation must be implemented by authorized people only.

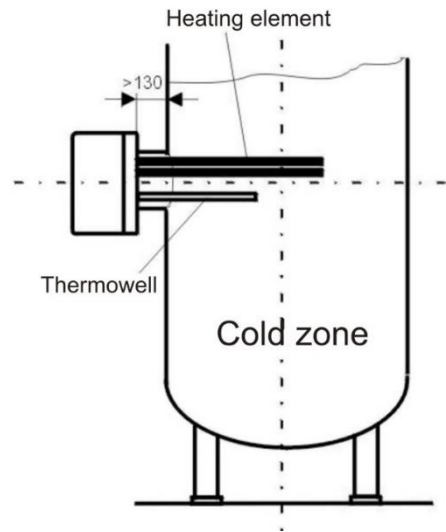
Both electric and water installation must follow and meet requirements and regulations relevant in the country of use.

Position of installation of elements of series: SE

Correct



Faulty

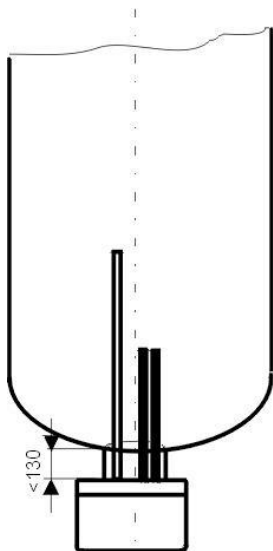


Too long flange welded too high.
Thermowell under the heating element.

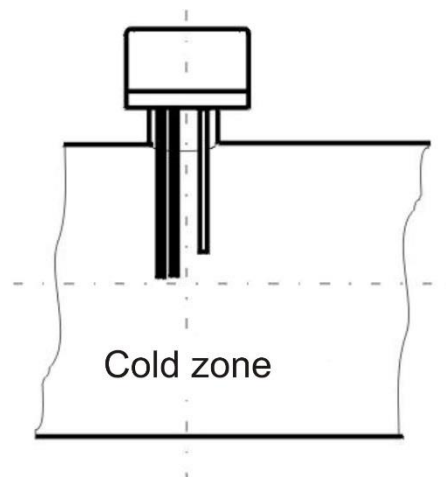
Vertical installation from the bottom

Only SE types

Correct



Faulty



The unit built in too high and in reversed position (the protective guard is up).



The flange rim must not exceed 130 mm, so that the temperature sensor and the element reach into the tank deep enough. Correct position of a built-in element assures even heating of the tank contents. In front of the flange, a +100 mm free space must be left for the assembly.

Scale occurrence lowers functionality; it is therefore necessary, especially with hard water, to take the following measures: Select proper temperature setting; install device lowering water hardness; regular removal of boiler scale.

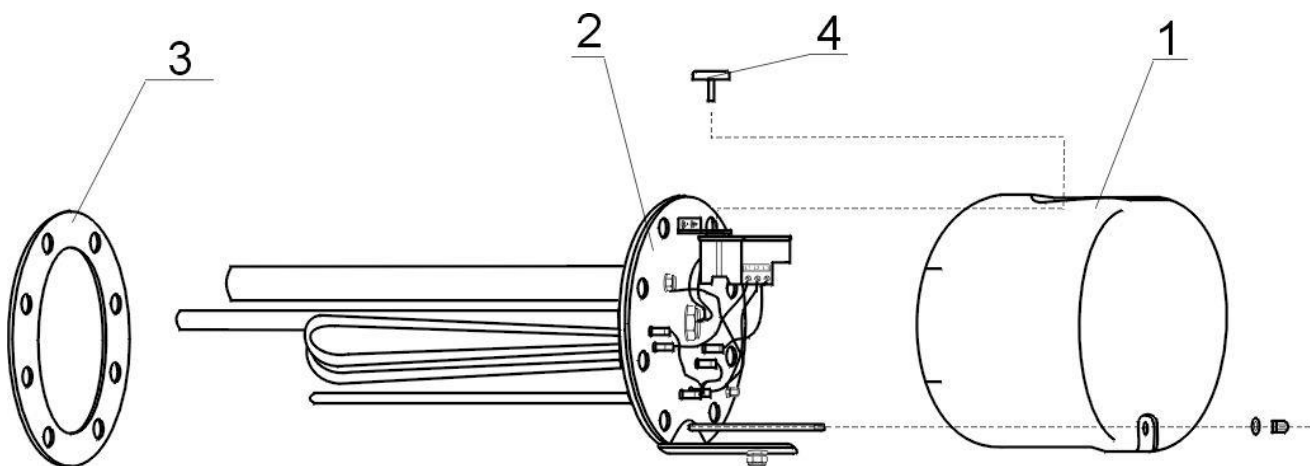


Damage to the heating element due to calcareous sediments is not accepted by the manufacturer as a reason for complaint.

5.2 INSTALATION SCHEME

The number of elements differs according to type line.

For the SE type series

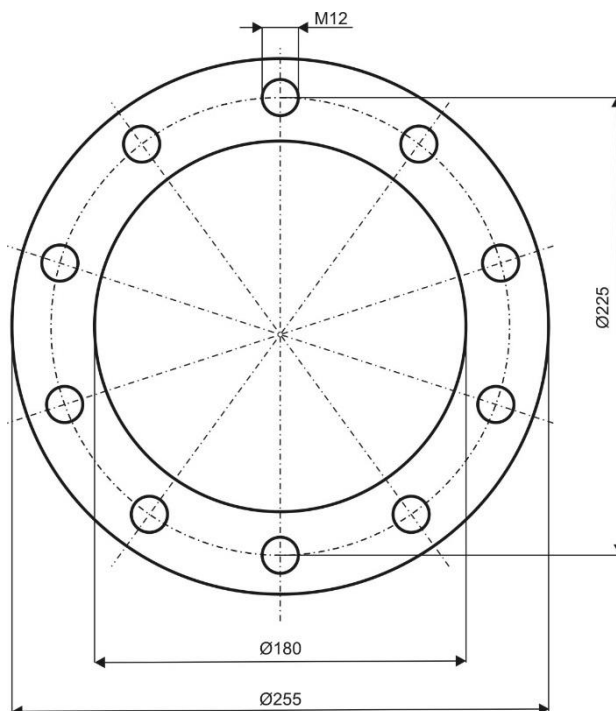


Adequate flanges:

For all types

SE 377, SE 378 ($\varnothing 255$)

10 holes



5.3 HEATING UNIT ASSEMBLY

Aside from the installation regulations, the conditions of connection resulting from local distribution and water supply plants must be followed:

1. Remove protective cover, position 1
2. Install heating flange with the seal (position 2.3) into the tank. The thermowell must always be above the heating element well
3. Fit the heating flange (position 2) using M8 screws (max. tightening torque 22 Nm), tightened crosswise; Screwing the heating element must be tested and tightened with a 2 - 3 Nm tightening torque
4. Implement electric connection following the scheme. Warning - do not forget to connect the guard wire
5. Fit the protective cover and tighten with a nut, fit the control wheel of the thermostat
6. **Put into operation only if water is in the accumulator.**



Heating element assembly and its initial operation can only be implemented by an expert, who takes responsibility for proper implementation and equipment.



The space in front of the connection armature equal to the installation length + 50 mm must be left free for installation, etc.

5.4 ACCUMULATOR CONNECTION TO THE PRESSURIZED WATER MAIN

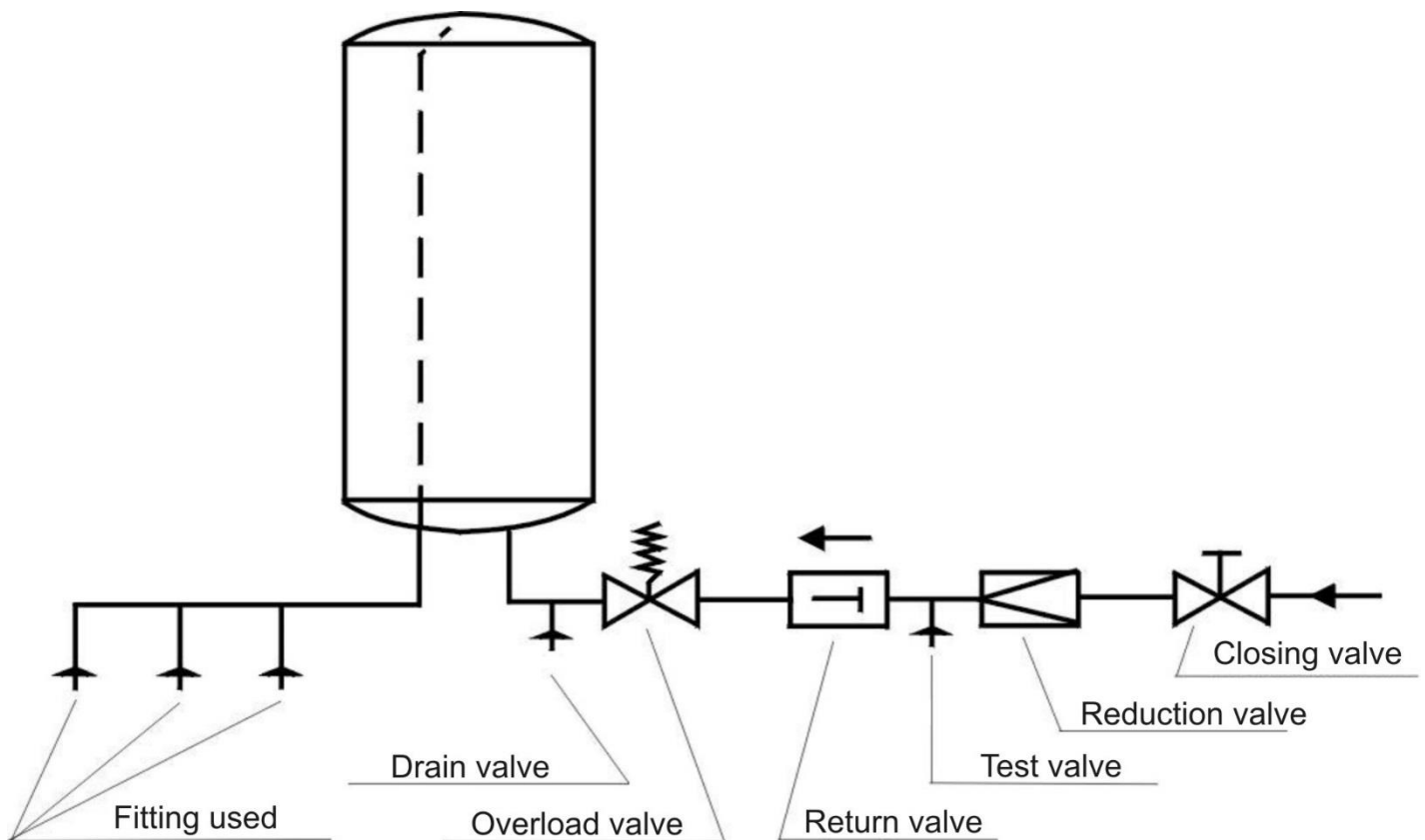


Accumulator assembly, connection, and use instructions must be followed.

Connection to the Pressure System

If inadequate and non-functional fittings are used and the operational pressure exceeded, the warranty is cancelled.

Water main connection may only be implemented via a diaphragm safety valve or a diaphragm safety combination. Safety valve combination consists of a closing valve, pressure reducing valve, test valve, backflow valve, overload valve with compensation circulation, and a drain valve. This combination is built in between the cold water inlet and cold water inlet to the reservoir.



5.5 ELECTRICAL CONNECTION



Heating element assembly and its initial operation can only be implemented by an expert, who takes responsibility for proper implementation and equipment.

The electrical connection must be implemented based on the attached scheme. The scheme related to a specific type is inside the plastic cover of the heating unit!

The network voltage must be respected! All metal parts of the accumulator must meet relevant protective regulations.

The main must have a multipole switch with a 3 mm contact clearing. All switches must be connected to circuit breakers. The lead in cable must be led into the area of connection via a sealing connector and secured from shifting, wringing, and tearing out by a clamp.



Warning! Factory connection must not be changed.

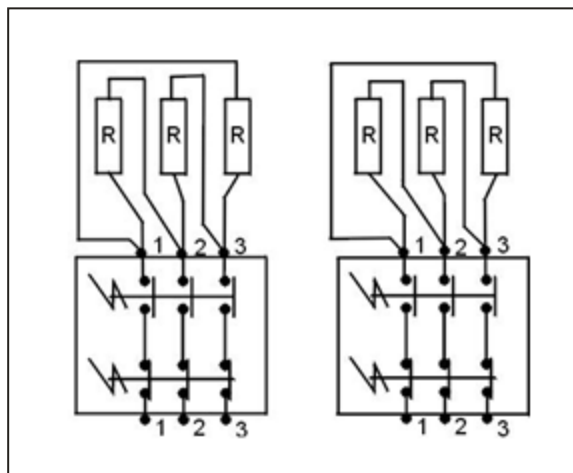
Connection scheme for SE 377, SE 378

The heating unit allows 3 types of connection.

P = 3,2 kW

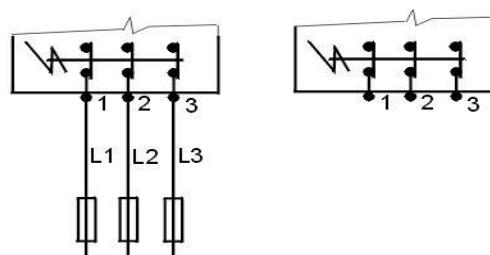


Factory connection must not be changed!



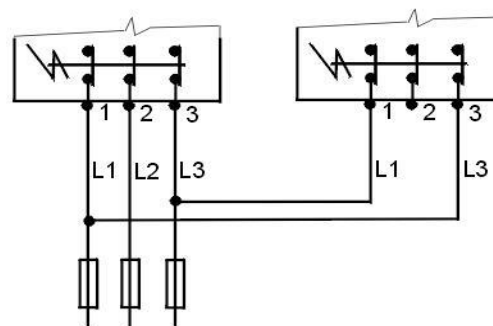
3 PE - N - AC 400V

SE 377 - 8 kW
SE 378 - 9,5 kW



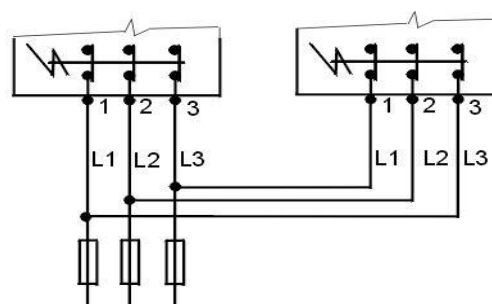
3 PE - N - AC 400V

SE 377 - 11 kW
SE 378 - 12,7kW



3 PE - N - AC 400V

SE 377 - 16 kW
SE 378 - 19 kW



5.6 FIRST PUTTING INTO OPERATION

Before electric part connection, the accumulator must be filled with water. During the rating, water must drip off the safety valve.



Warning: Both the hot water outlet pipe and safety armature parts may be hot.

After heating, the set temperature of consumed water should roughly correspond with temperature shown on the thermometer.

6 INSPECTION, CARE, MAINTENANCE

High calcium content water requires the removal of both scale and calcium sediments after one or two years, implemented by an expert worker. Cleaning may be implemented through the flange opening; a new seal must be used during assembly.

Specially enamelled accumulator containers must not get in contact with scale solvents or a lime pump. Eventually, the container must be thoroughly rinsed; its re-heating must follow the method of the first putting into operation.

After two years of operation, it is recommended that an expert checks the functionality of the –in-built magnesium anode.

During the maintenance, protective connection of all metal (conductive) parts of the heater must not be damaged or removed. Neither mechanical means causing abrasion nor paint thinners (nitro, tricholor, etc.) can be used for cleaning. It is best to use a wet cloth with couple drops of a neutral cleaning preparation.

7 FUNCTIONAL DEFECTS

If the water in the accumulator is not heated, check either the circuit breaker or the fuse and the thermostat settings.

In all other cases, do not try to remove the defect yourself. 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 heating element.

8 TECHNICAL DATA

Flange diameter 260 mm - SE 377, SE 378

Type	Power [kW]	Heating time approx. 300 l from 10°C to 60°C	Engagement	Body length [mm]	Weight [kg]	Recommended circuit breaker value [mm]
SE 377*	8,0-11-16	2 - 2 - 1,3	3 PE-N AC 400 V / 50 Hz, Δ	610	8	3x25
SE 378*	9,5-12,7-19	2 - 1,5 - 1	3 PE-N AC 400 V / 50 Hz, Δ	740	11,5	3x32

* Only for 750 and 1000 liter tanks

Note: Flange diameter 225 mm = bolt spacing

Electrical protection IP20

9 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 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 center (collecting yard), or contact the manufacturer.



13-2-2025