

# Operation and Installation Manual



## Screw-mounted electrical heating unit



TJ 6/4“ -2  
TJ 6/4“ - 2,5  
TJ 6/4“ - 3,3  
TJ 6/4“ - 3,75  
TJ 6/4“ - 4,5  
TJ 6/4“ - 6  
TJ 6/4“ - 7,5  
TJ 6/4“ - 9

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## Screw-mounted electrical heating unit

The Works Cooperative of Dražice – Machine Plant, Ltd., would like to thank you for your decision to use a product of our brand. With this guide, we will introduce you to the use, construction, maintenance and other information on the heating units.

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

**The manufacturer reserves the right for engineering modification of the product.**

**The product is designed for permanent contact with drinkable water.**



### 1. Use:

The screw-mounted electrical heating unit (heating unit) is designed exclusively for water heating. It is designed as an additional heating source in water heaters connected in a system with solar collectors. It can also be used as an additional source of heating in accumulation tanks. If the installation requirements are obeyed, it can be used as the main source of heating by a heater, or for other purposes. It is not intended for use in stainless tanks.

Types with extended cooling compartment can be used in accumulation tanks marked with v6 and v7.

**Notice:** It is recommended to store the product in an indoor environment with air temperatures from +2°C to +45°C and maximum relative humidity of 70%.

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.

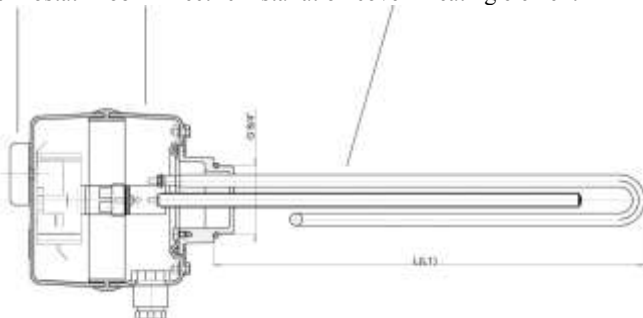
### 2. Heating unit description:

The heating unit consists of an electrical heating element with a connecting thread G 6/4". A thermostat and a safety fuse; the element's operation control light; and a connecting terminal board are placed under the plastic cover.

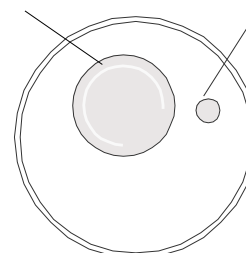
To use the OKC ... NTR, NTRR, OKCE ... NTR, NTRR heaters in solar systems with reheat by means of electricity, the heaters have a G 6/4" neck placed for mounting a secondary electrical heating unit.

The heating unit is placed above the lower exchanger.

Thermostat knob Electric installation cover Heating element



Thermostat control Control light



Type	Output	Connection	Time of heating from 10°C to 60°C (approx. 150 l)	Time of heating from 35°C to 60°C (approx. 150 l)	IP Protection	Temperature setting range	Element length (l)	Element length (l1)	Weight
	kW		hod	hod		°C	mm	mm	kg
TJ 6/4" - 2	2	1 PE-N AC 230 V / 50 Hz	4,5	2,2	IP 45	0 - 75	350	380	1,6
TJ 6/4" - 2,5	2,5	1 PE-N AC 230 V / 50 Hz	4	2			350	405	1,8
TJ 6/4" - 3,3	3,3	3 PE-N AC 400 V / 50 Hz	2,7	1,5			325	425	2,0
TJ 6/4" - 3,75	3,75	3 PE-N AC 400 V / 50 Hz	2,3	1,2			350	450	2,2
TJ 6/4" - 4,5	4,5	3 PE-N AC 400 V / 50 Hz	2	1			400	500	2,3
TJ 6/4" - 6	6	3 PE-N AC 400 V / 50 Hz	1,5	0,7			520	520	2,4
TJ 6/4" - 7,5	7,5	3 PE-N AC 400 V / 50 Hz	1,3	0,6			575	685	2,4
TJ 6/4" - 9	9	3 PE-N AC 400 V / 50 Hz	1	0,5			605	720	2,6

L Screw-mounted electrical heating unit of TJ series

L1 Screw-mounted electrical heating unit of TJ series with an extended cooling compartment

### 3. Installation instructions:

- When active, the element and the termowells have to be surrounded with a sufficient amount of water from all sides.
- Thermic water flow must not be prevented.
- Mounting positions – horizontal or vertical from under.
- The length of the 6/4 “ neck shall not exceed 70 mm. If longer, the variant with an extended cooling compartment has to be used.
- If the length of the neck is within 100 mm, it has to be extended on the water side, or undercut in a minimum length of 40 mm to the minimal diameter of 50 mm. The maximum pressure in the tank is 10 bar.

### 4. Heating unit assembly:

The heating unit shall be mounted in the heater's neck. The end of the thread is provided with a rubber seal. To ensure better tightness we recommend the screw joint being additionally sealed with cannabis, a Teflon sealing tape or with a mastic sealant (be careful – choose a mastic sealant suitable for demountable joints). Tighten the element properly. If the cable bushing is not directed upright down, loosen the 4 screws on the plastic cover bottom. Turn the cover (not more than by 180°) to the desired position and retighten the screws. Check whether the live parts of the wiring do not touch.

### 5. Connection to electrical network:

Run the supply cord through the bushing and connect accordingly with the scheme for the particular type of heating unit.

The heating unit is connected to a 230/400 V 50 Hz electrical network conductor with a corresponding section and a protection adequate to the heating element output.

**Notice:** The power supply must contain a breaker disconnecting all poles of the network.

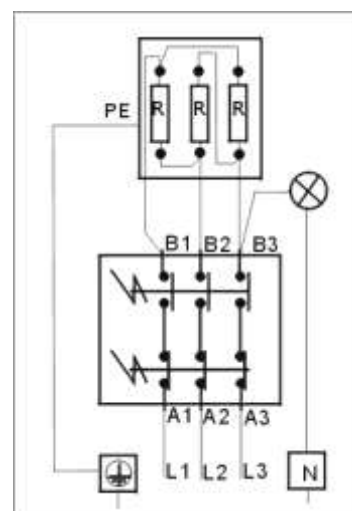
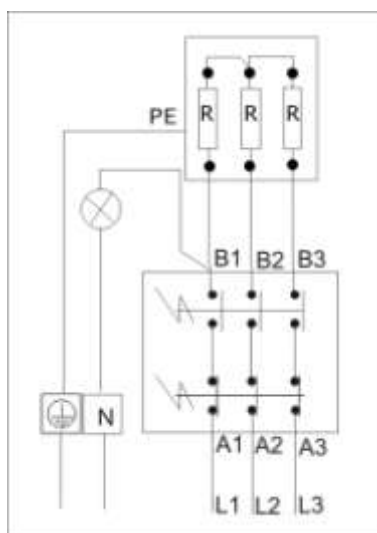
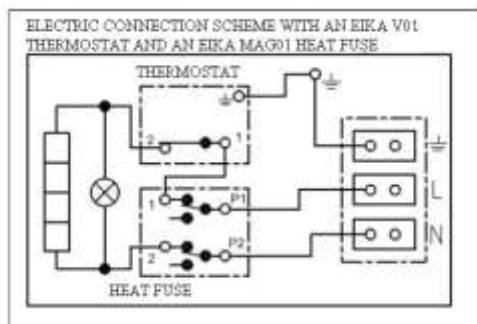
Perform the installation in compliance with applicable ČSN standards.

### 6. Wiring scheme:

TJ 6/4“ - 2 R= 2 kW  
TJ 6/4“ - 2,5 R= 2,5 kW

TJ 6/4“ - 3,3 R = 1,1 kW  
TJ 6/4“ - 3,75 R = 1,25 kW  
TJ 6/4“ - 4,5 R = 1,5 kW  
TJ 6/4“ - 6 R = 2 kW

TJ 6/4“ - 7,5 R = 2,5 kW  
TJ 6/4“ - 9 R = 3 kW



## 7. Heating unit servicing and maintenance:

Simple control consists only of setting the desired temperature on the control thermostat knob. The setting range is 5 -74°C.

The recommended set temperature is 60°C approximately.

The \* symbol – fuse against freezing 5-8°C. When the control light is on, the element is running. Maintenance involves decalcification of the heating element in certain time intervals selected by water hardness at the place of use.

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

**Notice:** If the heating unit is used in an accumulation heater, the wear of the anode rod of the heater may deteriorate. We recommend checking it more frequently. Consider the instructions of the manufacturer regarding the exchange of the anode rod.

## 8. Principle of operation and failures:

Water is heated by tubular heating element. Thermowell contains sensors of a safety fuse and a thermostat (both devices are in a single block). The thermostat controls the set temperature of water. In case of a failure, the safety fuse switches off electricity supply in all poles within the temperature range of 0 – 90°C. The element operation control light is not on. The safety fuse is non-self-returning. It is activated by pressing a button on the thermostat body.

If the heating element fails, there is no indication and the control light is on even when the thermostat is active. Have the heating unit repaired by an authorised company.

## 9. Spare Parts:

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

Thermostat and safety fuse

Wires

Packing ring

## Disposal of packaging material and functionless product

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

