

OPERATING AND INSTALLATION MANUAL

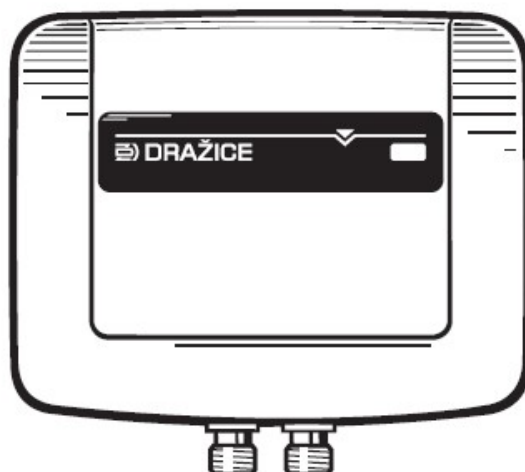
LITTLE FLOW HEATERS

PTO-T 3,5

PTO-T 5

PTO-T 6,5

PTO-T 8



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**

www.dzd.cz

CONTENTS

1	PRODUCT TECHNICAL SPECIFICATION	4
1.1	PRODUCT DESCRIPTION	4
1.2	TECHNICAL DATA	5
1.3	FUNCTION DESCRIPTION	6
2	IMPORTANT NOTICES.....	6
2.1	SAFETY NOTICE	6
2.2	SAFETY ELEMENTS OF THE PRODUCT	8
2.2.1	PRESSURE SWITCH	8
2.2.2	SECURITY ELECTRONICS	8
2.2.3	TEMPERATURE FUSE	8
3	OPERATING AND INSTALLATION INFORMATION	8
3.1	ASSEMBLY ELEMENTS	8
3.2	PLUMBING INSTALLATION.....	9
3.2.1	DIAGRAM OF RECOMMENDED PLUMBING INSTALLATION WHEN CONNECTED DIRECTLY TO THE WATER SUPPLY SYSTEM.....	10
3.2.2	DIAGRAM OF RECOMMENDED PLUMBING INSTALLATION WHEN CONNECTED TO A LOW PRESSURE WATER TANK.....	10
3.3	ELECTRIC INSTALATION	11
3.4	MAINTENANCE INSTRUCTIONS.....	11
3.5	GRAPH OF WATER HEATING	12
3.6	HEATER DIMENSIONS.....	13
4	INSTALLATION REGULATIONS	14

CAREFULLY READ THIS MANUAL BEFORE INSTALLING THE WATER HEATER!

Dear Customer,

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 electrical water heaters.



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.



For proper operation, the water heater must be connected to a constant power source. Installation may only be carried out by the person authorized to do so.

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 PRODUCT DESCRIPTION

Electric non-pressure water flow heater of PTO series is a product the shape design and dimensions of which determine it to be used both above and under the hand basin, sink, shower, etc. It is suitable for heating water in households, workshops, medical attendances and anywhere else with the need of instant hot water withdrawal. It can also be connected to domestic water station (Darling).

ADVANTAGES OF FLOW HEATERS:

- easy operation, easy assembly, and small dimensions
- fast and economic appliance
- heating control light
- instant and continuous hot water withdrawal
- economic and ecologic activator - reduces water and energy consumption
- swivel discharge arm with a pearlator tap or economic shower
- high reliability and safety of operation (increased lifetime of spirals)
- work with operating pressure from **0.08 MPa**
- electronic protection of the appliance in emergency situations
- possibility of installation in bathrooms and lavatories in zone 1 - IP protection 25 (above the bathtub and shower inserts), pursuant to ČSN 33 2000-7-701 (**Chyba! Nenalezen zdroj odkazů.**)

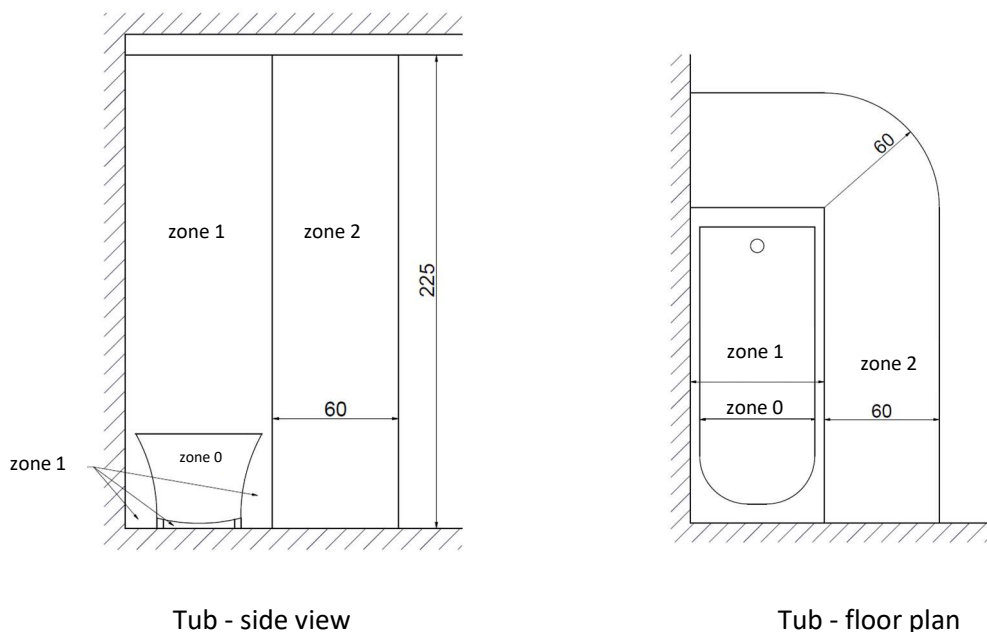


Figure 1

1.2 TECHNICAL DATA

TYPE		3,5	5	6,5	8
LOAD PROFILE		XXS	XXS	XS	XS
ENERGY EFFICIENCY CLASS		A	A	A	A
ENERGY EFFICIENCY	%	38		39	
ANNUAL CONSUMPTION OF ELECTRIC ENERGY	kWh	480	484	467	471
NOISE	dB(A)	46		47	
FUNCTIONS ONLY IN A LOW ELECTRICITY TARIFF		ne	ne	ne	ne
RATED POWER INPUT	kW	3,5	5	6,5	8
RATED VOLTAGE (50 Hz)	V	230	230	3x400	3x400
RATED CURRENT THROUGH THE PHASES	A	15,2	21,7	3 x 9,4	3 x 11,5
FUSE PROTECTION	A	20	25	3x 16	3x 16
RATED SECTION OF CONDUCTORS Cu	mm ²	2,5	2,5	2,5	2,5
RECOMMENDED		ANO			
- FOR HAND BASIN		NE	ANO	ANO	ANO
- FOR SINK		NE			
- FOR SHOWER		NE			
MAX WATER PRESSURE IN PIPING	MPa	0,6			
MIN WATER PRESSURE IN PIPING	MPa	0,08			
IP PROTECTION LEVEL		IP 25			
APPROX. WEIGHT OF THE APPLIANCE	kg	1,6			
DIMENSIONS L X W X H	mm	204 x 80 x 175			

Table 1

1.3 FUNCTION DESCRIPTION

By opening the hot water valve (red marking) on the mixer tap, the heating of the flowing water is automatically switched on. When the heating is turned on, a red light on the front cover of the heater signals. The flow heater does not have the option of power regulation, the water output temperature is regulated directly by the hot water valve on the mixing battery by changing the water flow. As the flow rate increases, its temperature decreases. By closing the hot water valve on the mixer tap, the heating is automatically switched off, the signal light goes out and the electricity consumption is interrupted.



Warning: The manufacturer is not responsible for the stability of the electrical network. In case of voltage fluctuations, call the relevant branch of the power plant. Voltage fluctuations between 180 and 240 V will not damage the heater. It will only affect the power, e.g. a 5% drop in voltage means a 10% reduction in heater power and thus a reduction in the temperature of the heated water.

2 IMPORTANT NOTICES

2.1 SAFETY NOTICE

The safety instructions given in this chapter are based not only on the requirements of harmonized standards and EC directives, but have general product safety in mind and are based on practical experience of user behavior. Analogous or partially deviant information that may occur for various reasons in the other chapters of the manual, please regard them as secondary and always follow the warnings given in this chapter!



Entrust the installation and commissioning of the product to a professional company! Installation by a layman is not permitted! The manufacturer is not responsible for defects caused by improper installation and for mechanical damage (natural disasters, violent damage, etc.) that occurred after the product was sold We recommend installing a filter against mechanical impurities in the water! We recommend regular cleaning of the inlet filter screen on the heater flange!

Before commissioning, read the operating instructions carefully, look at the illustrations and keep the instructions.



Before starting for the first time and always after possible reassembly to the water pipe, or when the water supply is interrupted, vent the appliance so that when the power supply is switched off current, open the hot water valve on the mixer tap and leave it open until the water from the instantaneous water heater starts to flow smoothly. That will happen to vent the heater and thus prevent the appliance from overheating. Burnout of the heating coil due to insufficient ventilation is not covered by warranty repairs.

Check that the data on the type plate corresponds to the voltage in your electrical outlet. Never use the appliance if it has a damaged power cord or plug, if it is not working properly, if it has been dropped on the ground and damaged, or if it has been dropped into water. In such cases, store the appliance to a professional service center to check its safety and correct function.



The appliance is intended for household use and similar purposes only! It is an appliance accessible to the general public, intended for placement in residential or commercial buildings.

To ensure additional protection, we recommend installing in el. of the bathroom supply circuit, a residual current device (RCD) with a rated tripping current not exceeding 30 mA. Ask for the advice of an inspection technician or an electrician.



Electrical and plumbing installations must comply with applicable regulations and standards. The heater must only be installed in a non-freezing environment, otherwise there is a risk of damage to the product. Do not operate the heater in the event of freezing.

The heater must be permanently connected to a fixed line with an installed device allowing the disconnection of all line poles (with the exception of the protective conductor) with a contact distance in the open state of min. 3mm! The heater must be connected to a protective earth, according to the relevant EN standards. The specific resistance of water at 15 °C must not be less than 1300 Ohm.cm (requirement of the ČSN EN 60335-2-35 standard). Drinking water generally meets this requirement. Information on water conductivity can be obtained from the water supply manager or at the hygiene station. The heater is designed to be connected directly to the water supply system or with a special low-pressure water tap. When connected directly to the water supply system, the water pressure in the supply pipe must not be higher than 6 bar (0.6 MPa). When connecting directly to the water supply system, we recommend using a safety valve up to 0.6 MPa. The product has IP 25 protection and may be placed in bathrooms, showers and washrooms according to ČSN 33 2000-7-701 in zones 1, 2 and 3 (Fig. 1). The flow heater is protected against splashing water (IP X5).



Do not cover the ventilation holes on the back of the flow heater! These holes serve as ventilation and for possible drainage of water condensed on the inside of the heater. When using for the first time, unscrew the aerator on the spout arm or shower attachment and open the blue valve of the mixer tap. The flow of cold water removes residual dirt from the water pipe after assembly and after sealing the fittings. Close the blue valve. Open the red valve and leave it open until the water from the instantaneous water heater starts flowing smoothly (air removal). After installing the aerator or connecting the shower, it is possible to connect the heater to the electricity. sewing.

If there is air in the heater (e.g. when the water supply is interrupted), vent the air in a similar way as when assembling the appliance (don't forget to disconnect the heater from the mains). The flow heater is intended only for heating cold flowing water. It must not be used for additional heating, e.g. by connecting to an electric storage tank, etc. Regularly check the flow and remove limescale from the aerator and shower (see IV. Maintenance instructions).



The heater must not be immersed in water (even partially) and installed in an explosive environment. Prevent manipulation by children and unauthorized persons without the supervision of a responsible person! Do not carry out any interventions or repairs on the flow heater if it is connected to the mains. Entrust all repairs to a professional service worker. Avoid mechanical damage to the appliance and frost damage.

The power supply must not be damaged by sharp or hot objects, an open flame and must not be immersed in water. Use only undamaged and correct extension cords. If the power supply of this appliance is damaged, the supply must be replaced by the manufacturer, its service technician or a similarly qualified person in order to avoid a dangerous situation. There is a risk of electric shock after removing the cover! Do not touch live electrical parts! Never use the appliance for any purpose other than that for which it is intended and described in this manual! Failure to follow the manufacturer's instructions voids the right to a warranty repair. The manufacturer is not responsible for damage caused by improper handling of the appliance, unprofessional assembly and mechanical damage (e.g. fire, burns, scalds, natural disasters, violent damage, etc.) and is not responsible for the warranty for the appliance in case of non-observance of the above safety warnings.

2.2 SAFETY ELEMENTS OF THE PRODUCT

This flow heater guarantees high operational safety. This security is ensured by three levels of protection.

2.2.1 PRESSURE SWITCH

A pressure switch that does not close the electrical circuit when there is insufficient water flow.

2.2.2 SECURITY ELECTRONICS

Safety electronics that automatically interrupts water heating for the necessary time when the appliance overheats. Intermittent operation of the heater indicates non-compliance with the operating conditions set by the manufacturer, or heater failure. The cause of the malfunction must be removed immediately, as there is a risk of damage to the appliance.

2.2.3 TEMPERATURE FUSE

Protects against overheating in case of electronic failure. If the thermal fuse breaks, the fuse must be replaced with a fuse prescribed by the manufacturer and we recommend sending the heater for inspection to a service center or directly to the manufacturer to check the electronics and the overall function of the product.



Be sure to regularly clean the strainer in the cold water supply to the heater, aerator, or shower insert. Clogging of these components can result in a reduction in water flow and the appliance being shut down until the causes are eliminated. All safety elements must be repaired by a specialist service worker!

3 OPERATING AND INSTALLATION INFORMATION

3.1 ASSEMBLY ELEMENTS

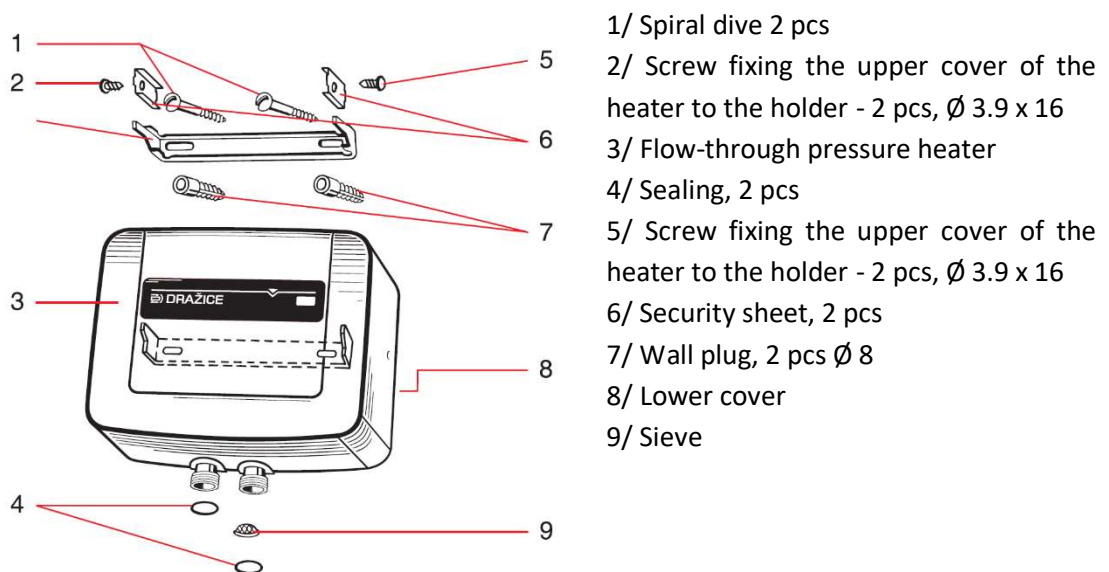


Figure 2

3.2 PLUMBING INSTALLATION



Considering the 100% water pressure test check, a small amount of water may remain in the heater, which is not a problem.

The cold water inlet is marked with a blue mark, the hot water outlet with a red mark. Turn off the main water supply. Attach the instantaneous heater bracket to the wall by marking the dowel holes on the wall. Drill the marked holes on the wall with a drill with a diameter of 8 mm to a depth of 40 mm. Place the dowels in the hole and fasten the holder with two screws. On the sides of the flow heater, loosen the 2 screws securing the cover so that the pressure feet in the holes on the back make room for the bracket to slide. Slide the heater onto the fixed bracket and tighten the 2 screws on the sides of the flow heater. Connect the heater to the water system using flexi hoses. Observe the correct connection, the G3/8" cold water inlet port marked with the blue mark on the heater cover, the G3/8" hot water outlet port marked with the red mark on the heater cover. Open the main water shut-off and vent the heater by first opening the cold water valve on the faucet to drain the dirty water. Open the hot water valve and vent the instantaneous water heater. Deaeration is finished as soon as clean, deaerated water flows smoothly from the faucet. The appliance can then be connected to the electricity network.

3.2.1 DIAGRAM OF RECOMMENDED PLUMBING INSTALLATION WHEN CONNECTED DIRECTLY TO THE WATER SUPPLY SYSTEM

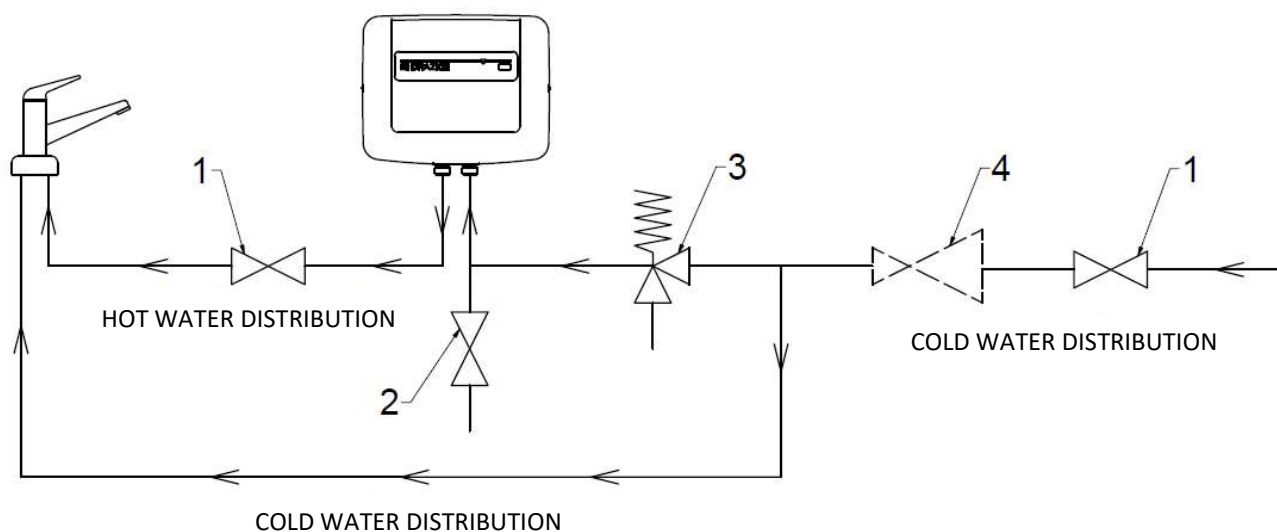
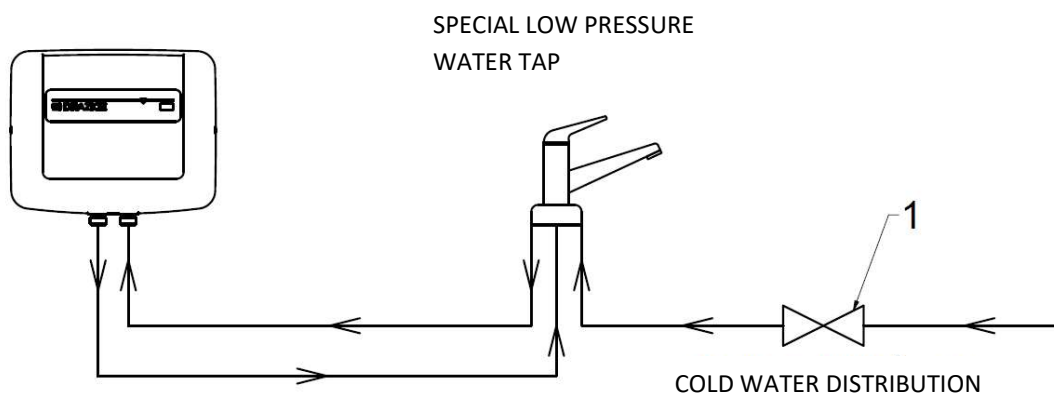


Figure 3

3.2.2 DIAGRAM OF RECOMMENDED PLUMBING INSTALLATION WHEN CONNECTED TO A LOW PRESSURE WATER TANK



1. Shut-off valve
2. Drain valve (drain plug)
3. Safety valve with check valve (max. 0.6 MPa)
4. Reducing valve (in case of high pressure in the cold water distribution)

Figure 4



The appliance can be connected without the mandatory safety valve. The obligation to use a safety valve is only for heaters with a volume greater than 3 liters. We recommend the use of a check valve (max. 0.6 MPa).

The appliance is connected to a source of drinking water and is intended for the preparation of domestic hot water.

3.3 ELECTRIC INSTALATION

The heater must be permanently connected to a fixed line. Install according to ČSN 33 2000-7-701.

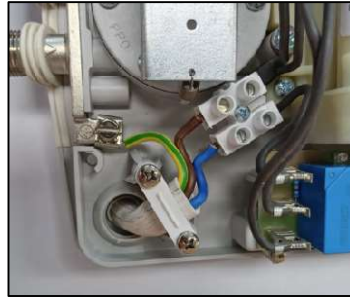


The appliance must be connected to a protective conductor! El. the installation of heaters with a fixed connection must be carried out by a company authorized to work on el.device. The correctness of the installation must be confirmed in the warranty certificate. Without confirmation, the product is not covered by the warranty!



Connection example 3 x 400 V

Figure 5



Connection example 230 V

Figure 6

3.4 MAINTENANCE INSTRUCTIONS

Maintenance of flow heater is very simple. It is only limited to maintaining its surface cleanliness, checking the cleanliness of the sieve in the cold water inlet, and cleaning of the pearlator or the shower element.

Pearlator

During cleaning, unscrew the pearlator from the swivel arm. Take the element out and clean the holes of it. Proceed in the opposite manner to assemble it.

Shower element

When cleaning the shower element, loosen the screw on the front drain surface. Take out individual elements and clean the flow channels on the periphery of the elements, e.g. using a soft brush. Proceed in the opposite manner to assemble it.

If, despite the cleaning, the water flow of the heater is lower, you need to clean the screen in the water inlet to the heater.

Cleaning the screen in the water inlet

First disconnect the appliance using the protection element from the power supply and familiarise other heater users with its disconnection. Then close the water supply. Dismantle the heater from the wall and from the water inlet. Clean the screen (sieve) and proceed in the opposite manner to mount the heater back on.

Protection from freezing and damage due to frost

If the flow heater is mounted at a place with a risk of freezing in winter (e.g. cottages or cabins not occupied in winter), the appliance has to be dismantled and store it in such manner to avoid its exposure to frost. Pure removal of residual water in the heating element and labyrinth by blowing through the drain arm is not enough, and does not protect against damage caused by frost.



If the stated instructions are not followed and the appliance gets damaged by frost, the title to warranty repair ceases due to improper use of the product.

Wipe the outer surfaces of the flow heater and the combination faucet with a soft cloth damped in a detergent solution. **Do not use aggressive solutions or rough cleaning agents!** Let an expert deal with larger maintenance and repairs!

3.5 GRAPH OF WATER HEATING

Temperature of heated water

The graph shows the dependence of the maximum water flow [l/min.] on the flowing water temperature [°C] for inputs of 3.5 kW, 5 kW, 6.5 kW and 8 kW. The data applies if the inlet water temperature is 10 °C.

Example: From the PTO-T - 6.5 (6.5 kW) heater, at an inlet water temperature of 10 °C and a flow rate of 2.3 l/min, water at a temperature of 50 °C will flow out.

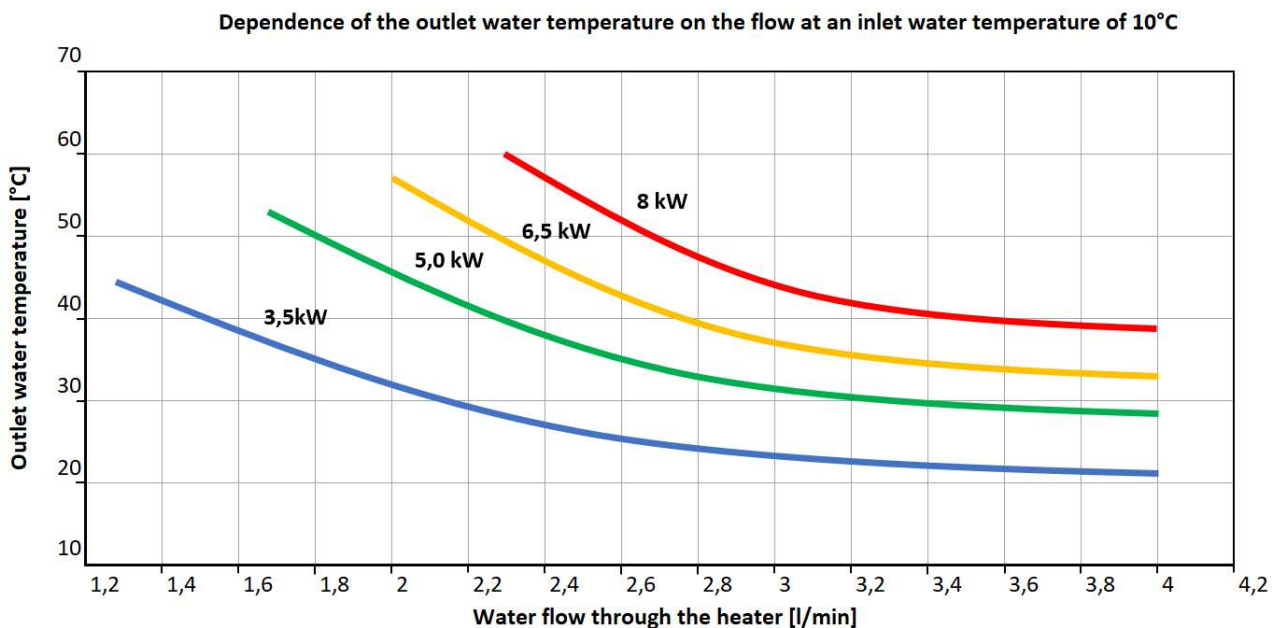


Figure 7

3.6 HEATER DIMENSIONS

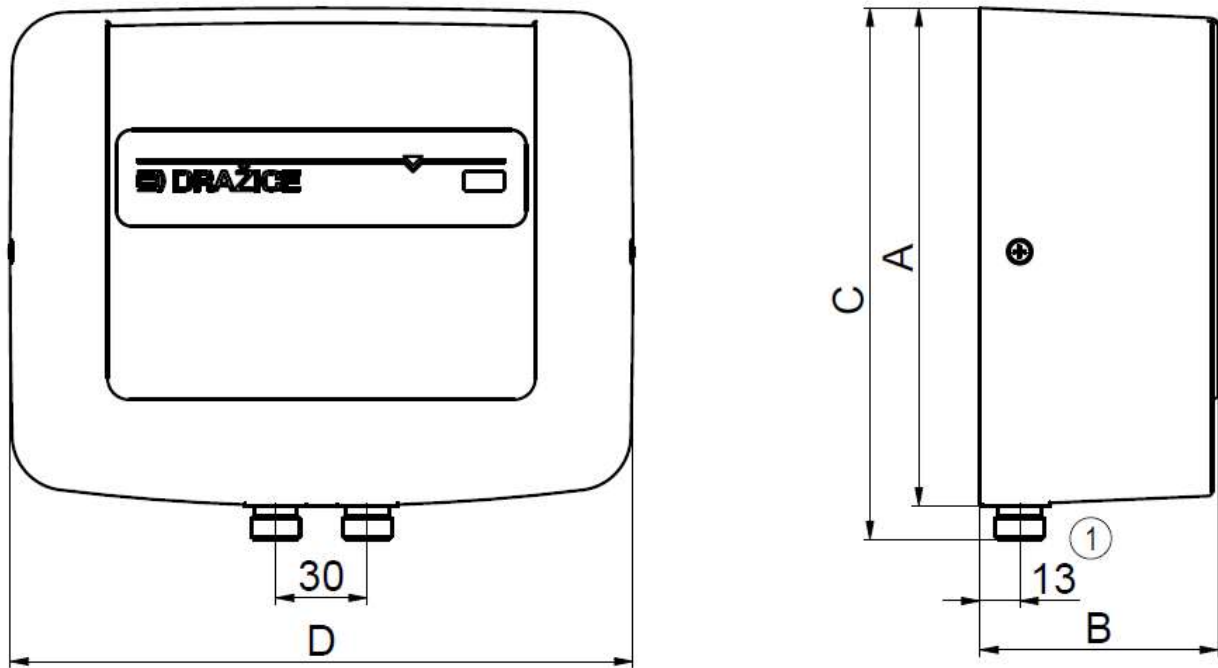


Figure 8

DISPOSAL OF PACKAGING MATERIAL AND NON-FUNCTIONAL PRODUCT

If the dimensions allow so, the symbols of materials used for production of packaging, components and accessories, as well as recycling symbols, are imprinted on all products. The symbols stated on products or in the accompanying documentation indicate that the electric or electronic products used shall in no case be disposed of together with municipal waste. To dispose of the product properly, hand it over at designated collection points where they will accept it free of charge. You will help to dispose of the product properly and maintain valuable natural resources, as well as prevent from potential negative impacts on environment and human health which might be the consequences of improper waste disposal. Seek further details from local authority or from the nearest collection yard. If this type of waste is disposed of improperly, fines may be imposed pursuant to national regulations. Should the appliance be put out of service definitely, the supply inlet should be cut off the power supply once disconnected; thus, the appliance will be useless.

The packaging that the product was delivered in has been paid for in form of a service fee for the provision of the return and recovery. 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 packaging to a waste disposal place determined by the municipality. Disassemble the discarded and unserviceable product after the operation terminates, and transport it to a waste recycling centre (collecting yard) or contact the manufacturer.



4 INSTALLATION REGULATIONS



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

The manufacturer shall not be held liable for any damages caused by unauthorised assembly. Should the product fail, do not hesitate to contact the nearest authorised service shop.

The warranty period for the product is indicated on the warranty card and is calculated from the date of sale of the product. The law on the provision of a free warranty repair of the product during the warranty period arises only on the condition that its electrical installation and commissioning was carried out by a company licensed to work on electricity. device. Introduction this company is obliged to enter and confirm on the warranty certificate (date, stamp and signature) before operation. The consumer loses the right to carry out a free warranty repair if the product was not listed into operation by the above-mentioned person, and this fact was not recorded in the warranty certificate.



Parts that require intervention in the electrical part of the appliance can only be replaced by a professional electrical repair shop! Failure to follow the manufacturer's instructions voids the right to warranty repair!

The product was issued with an EC declaration of conformity according to Act no. 22/1997 Coll. as amended. The product meets the requirements of the government regulations listed below, as amended:

- The product was issued with an EC declaration of conformity according to Act no. 90/2016 Coll. as amended. The product meets the requirements of the government regulations listed below, as amended:
- NV no. 118/2016 Coll., which establishes technical requirements for low-voltage electrical equipment (corresponds to Council Directive No. 2014/35/EU as amended).
- NV no. 117/2016 Coll., which establishes technical requirements for products in terms of their electromagnetic compatibility (corresponds to Council Directive No. 2014/30/EU as amended).
- The manufacturer reserves the right to minor deviations from the standard design that do not affect the function of the product.

18-4-2024