



**PurAit**  
Aidoin, portein

# Carousel **TURNSTILE GATES**

**Technical brochure**







**Pur-Ait Oy, Suutarila, Helsinki, FINLAND.**

Founded in 1977 as a family enterprise, Pur-Ait Oy is now Finland's largest manufacturer, importer, and marketer of fences and gates. In 2011, the company had 20 employees and a turnover of approximately EUR 5.5 million. Every year, Pur-Ait Oy manufactures and supplies nearly 200 kilometres of fence mesh and some 1,500 different gates. In addition, Pur-Ait Oy is a significant employer for Finnish subcontracting businesses and contractors.



# Pur-Ait Oy

## Durable Finnish quality

Our fences and gates are almost exclusively made from aluminium profiles manufactured by the Finnish Purso Oy. Aluminium is a malleable and light yet durable material with excellent corrosion resistance qualities. Even without surface treatment, it retains its appearance from year to year. These qualities of aluminium make it a superior gate material.

The majority of the sold fences and gates are manufactured at our production facility, which is located in Suutarila in Helsinki. Mesh-weaving operations are also carried out in Suutarila. Furthermore, our sales, administration, and logistics centre operate in these same facilities, to which you are welcome to come and take a look at our products. We also rely on Finnish expertise when providing our installation and maintenance services.

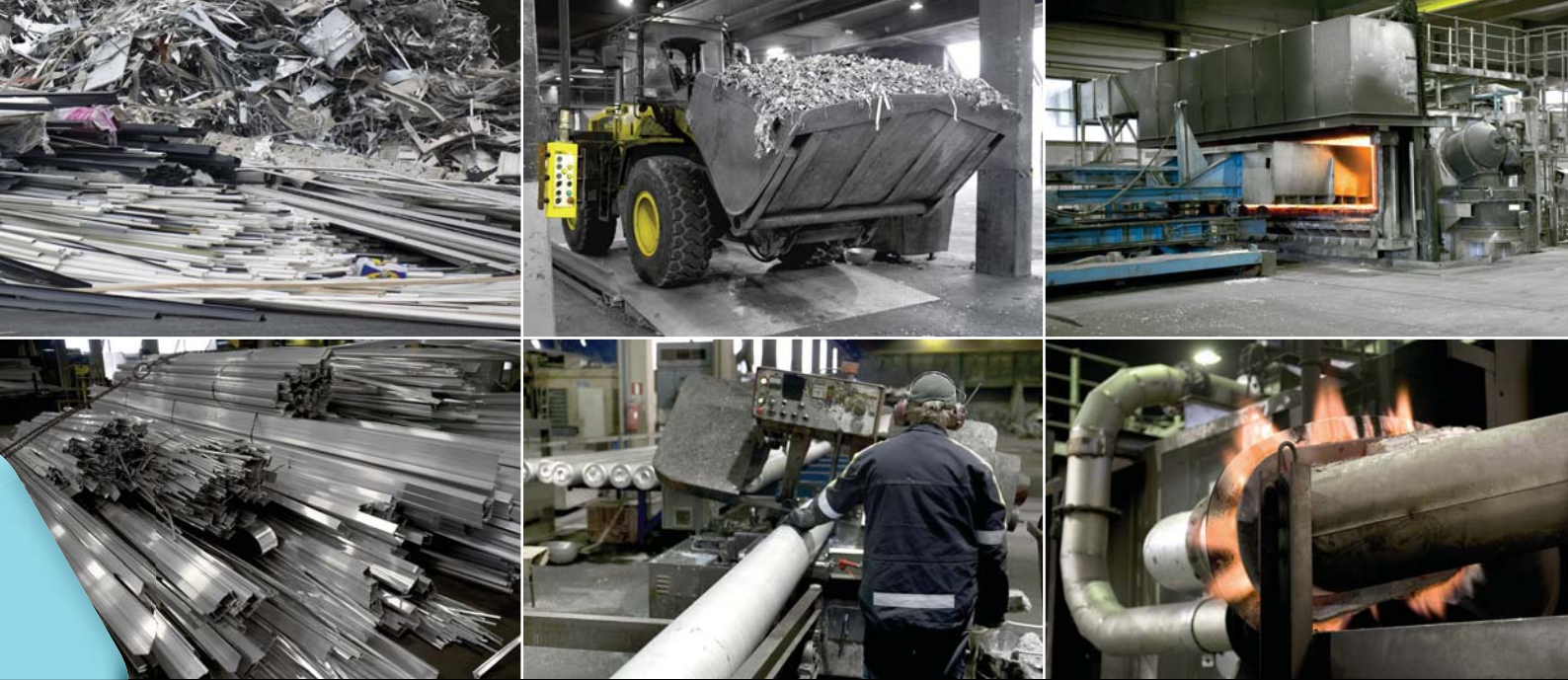
## Customer orientation

As a Finnish manufacturer, we know very well the requirements set by our operational environment, and how to utilise this in the design of our products.

Our product range is versatile and extensive, and we complement it continuously with new products according to the needs of the market. Modern gate automation and access control are installed in an increasing number of gates supplied by us, in order to enable and control the opening and closing of the gate with various methods.

In addition to our standard product range, we can manufacture and supply special customer-specific solutions, even on a tight schedule. We use 3D modelling to support our design process.





90 per cent of aluminium waste is recycled back into production.

### Professional installation service

Our installation service works in close collaboration with our product development, which allows us to constantly improve our products. The fact that we manufacture our products ourselves guarantees timely and accurate deliveries. From our spare part inventory, we can supply new parts to replace broken ones even during the same day. Because we make the products we sell, we can also guarantee the future maintenance of our products.

Ease of installation is considered early on in the design phase, so that Purso fences and gates are easy to install even by the customers themselves. Installation instructions are included in the product delivery.

For best results, we also offer a professional installation service.

### Environmental responsibility

Aluminium is a valuable, recyclable material. All aluminium left over from the manufacturing process is separated from other metals and delivered for re-use. Aluminium can be recycled several times, which makes it a very environmentally friendly raw material. Other metal waste from the production process is delivered to our local co-operation partner that specialises in the recycling of metals.

The packaging material, of which our products need relatively little, is also mainly made from recycled materials.

All chemicals used in our production process as well as in the finishing treatment of our products have the smallest possible environmental impact. We use vegetable oil-based cutting fluids.







# Carousel turnstile gates

## Use

The Carousel turnstile gate is a great option for access control when you want to know who has passed through, when, and in which direction. To ensure reliable access control, only one person at a time can pass through the gate. The pass-through rate for turnstile gates with a card reader is 20–25 persons per minute, or somewhat less for bicycle gate models. If the gate is equipped with a freely revolving door, the pass-through rate can be as many as 30 persons per minute.

The pass-through rate of a gate can be increased using a remote reader and sensor, making the door open for each user without delay.

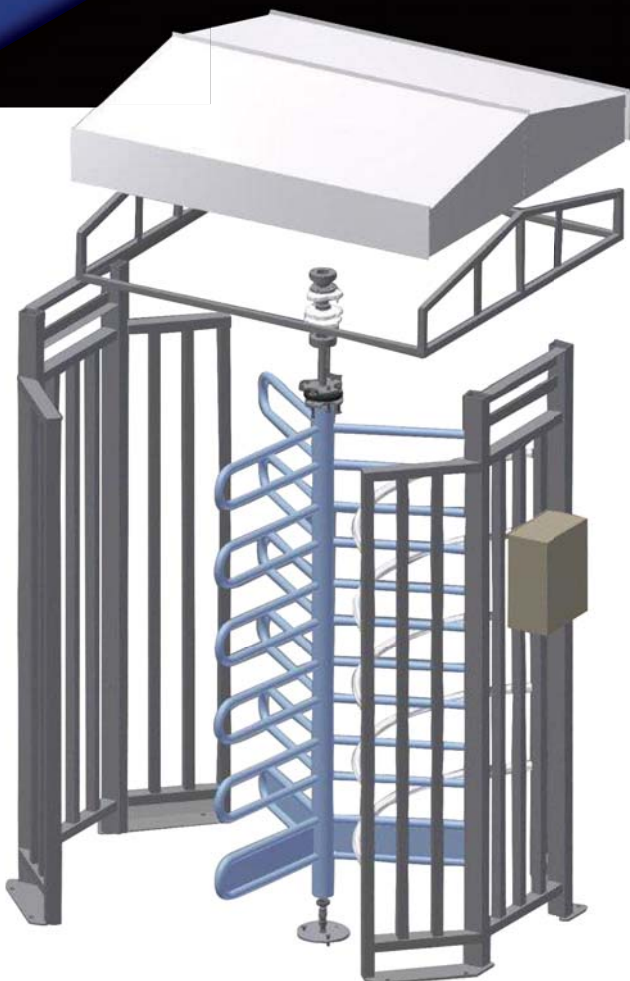
If the Carousel gate is equipped with a card reader and connected to an access control system, it checks each person's identity and makes sure they are authorised to pass. The access control system also records their time and direction of passing.

Nearly 400 Carousel turnstile gates manufactured by Pur-ait Oy have been installed all over Finland since 1986. We have also delivered gates abroad. The majority of the first gates supplied are still in daily use.





# Structure



## Structure

The sturdy frame and revolving door of the Carousel turnstile gates are manufactured from aluminium. The mechanical parts of the machinery are made from aluminium or stainless or coated steel. The machinery is entirely encased to protect it from the weather and vandalism. Cables are placed inside the frame structure. The passage is illuminated.

The colour of the three-wing revolving door is achieved using powder painting. The standard colour is light blue (RAL-5024). The other frame structures and the roof are untreated, but if desired, the entire gate or certain parts of it can be painted with any RAL colour.

The structure of the bicycle model of the turnstile gate is the same as that of the standard model, with the addition of a turning door that enables the passing of a bicycle. The turning door is equipped with Temec machinery, manufactured in Finland, and with direction-sensitive gate automatics.

Thanks to the aluminium structure, the gates are relatively light in weight: a fully equipped turnstile gate weighs approximately 110 kg, and a bicycle model approximately 125 kg.

◀ A turnstile gate consists of a frame, door, machinery, roof, and a control centre.





# Operation

## Operation

The turnstile gates are delivered as mechanically and electrically ready packages, which the customer can connect to their access control system. The Carousel turnstile gate can be controlled with all the usual kinds of card and key readers, and various monitoring systems.

The Carousel gate can receive an opening command from a card reader, via a push button, or from a control room. Different impulses are given for entering and exiting. The gate locks when the door has turned 120 degrees, i.e. when one person has passed through. If no-one passes through the gate after the opening impulse, the gate locks 10 seconds after the opening command. The gate can also be given a continuous opening or locking command from the control room, to allow free access or restrict access in one or both directions, at a certain time of day or permanently. The turnstile gate can be programmed to unlock the door in case of a power cut, allowing its use as an emergency exit.

## Taking a bicycle through the gate

In terms of personnel access, the Carousel bicycle model operates like a regular turnstile gate. In addition, it recognises if the person giving an authorised opening command has a bicycle. The bicycle gate opens only if a bicycle is standing in front of the bicycle passage. The gate also recognises which direction the bicycle is coming from, always opening the gate away from the bicycle.



# Installation

## Installation

The gate will be delivered to the installation site as a mechanically and electrically ready unit. The control centre is installed on the outside of the gate frame, in a separate housing. Generally the control centre is placed on the side of the gate on which the power supply is located. If the location of the power supply has not been pre-determined, it will always be installed on the right side of the gate, as seen from outside the gate.

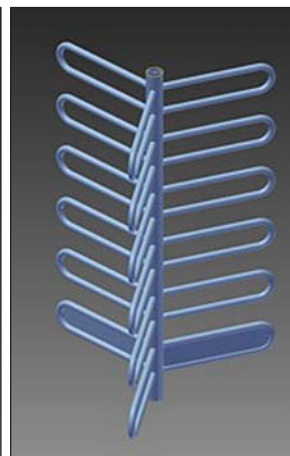
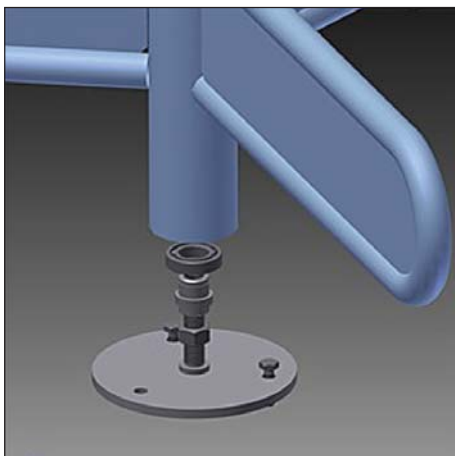
The Carousel turnstile gates are usually installed on a concrete foundation using bolts. Alternatively, the gate can be installed on a portable aluminium platform, allowing its use when the situation requires, for example on worksites. When installed on a fixed foundation, the turnstile gate is often equipped with a heater element that prevents the collection of snow and formation of ice in the passage.

The door is supported on lubricated bearings ► and will continue to turn easily year after year.

We recommend Pur-ait Oy's turnkey installation service, which provides the gate and associated fences as a complete installation.

You may also install the gate yourself. Only an authorised electrician is allowed to carry out the electrical work associated with the installation. Installation instructions and connection diagrams will be provided with the gate.

For further information about the gate, installation, and commissioning, please refer to the user manual, also supplied with the gate.







# Control centre

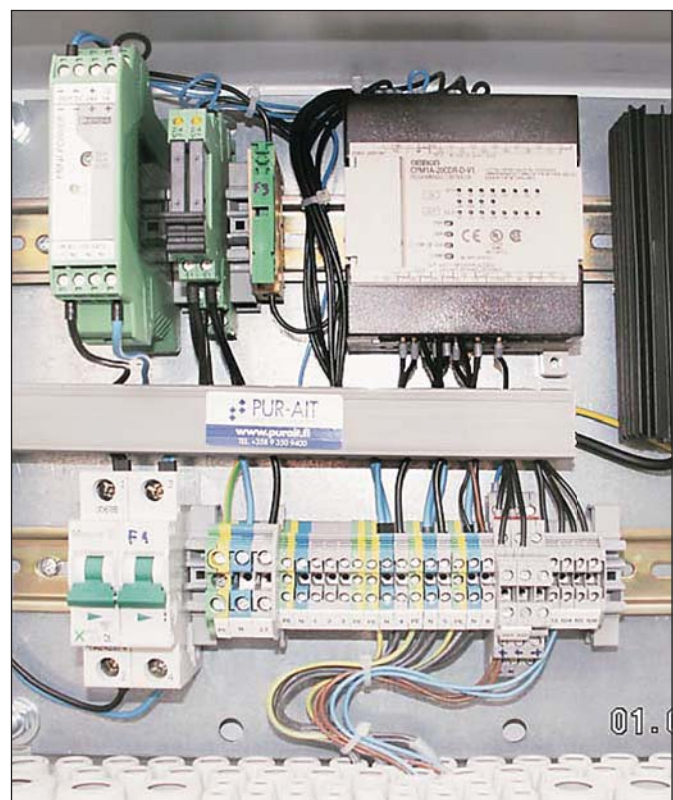
## Control centre

The control centre is located in a separate steel sheet housing on the outer side of the gate frame.

A 230-V cable for the lights and the locking mechanism runs from the centre to the roof structure. Cables for the sensors (operating voltage: 24 V DC) also run from the roof to the control centre. A 230-V, 10-A supply cable will be run to the control centre, with a separate supply cable for any lights. The readers (operating voltage: 24 V DC) and remote-control cables will also be connected to the centre. The required operating voltage of 24 V DC comes from a transformer located in the control centre. The gate light can be connected to the outdoor lighting on the site with a separate cable.

The control centre is equipped with programmable logics for various operating options. In the case of a power cut, the gate can be unlocked by opening the maintenance hatch in the roof and by locking the pulling magnet spindles with aluminium bushings.

Control centre ►







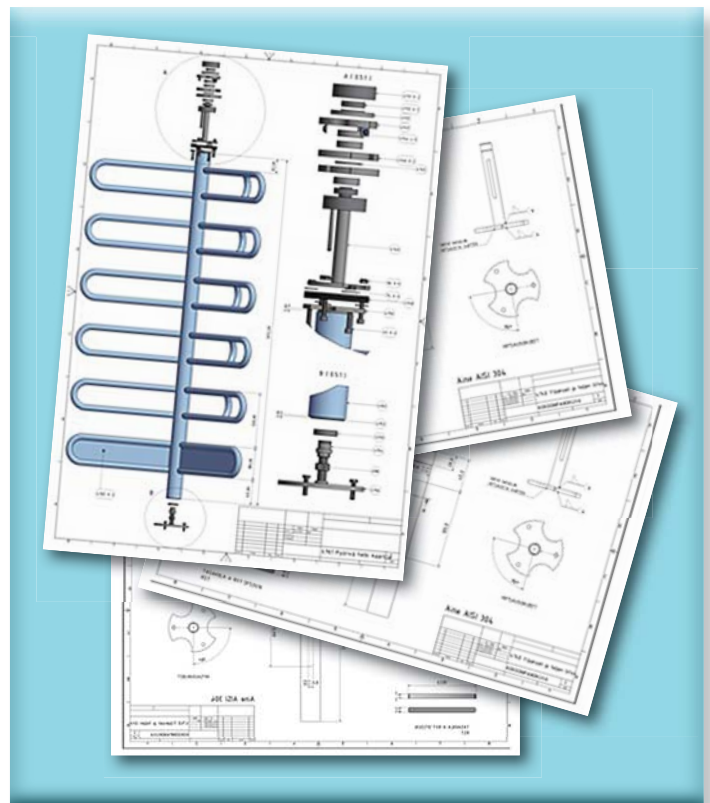
# Maintenance

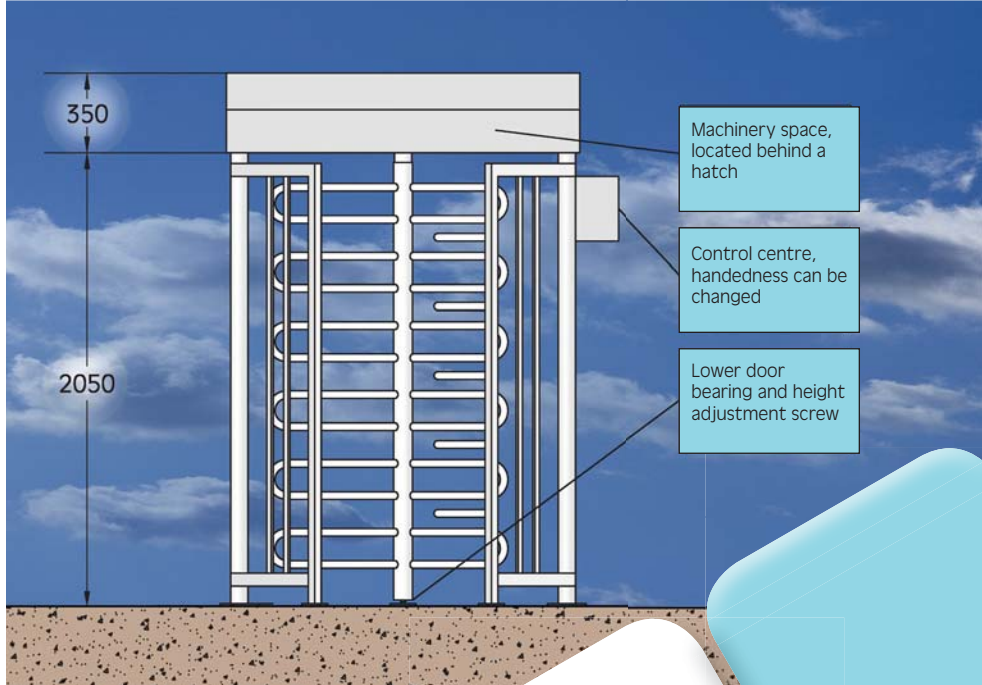
## Maintenance

Carousel turnstile gates from Pur-ait Oy are manufactured in Finland. Detailed documentation on the product structures facilitates the maintenance and repair of the product. Most maintenance procedures can be performed at the place of use.

The turnstile gate should be checked every spring and autumn. Checks and minor adjustments can be carried out by the property maintenance personnel. A list of items to be checked is provided in the user manual. If in doubt, please contact the manufacturer.

In order to facilitate maintenance work and the ordering of spare parts, the structural drawings for the gate are at users' disposal. ►

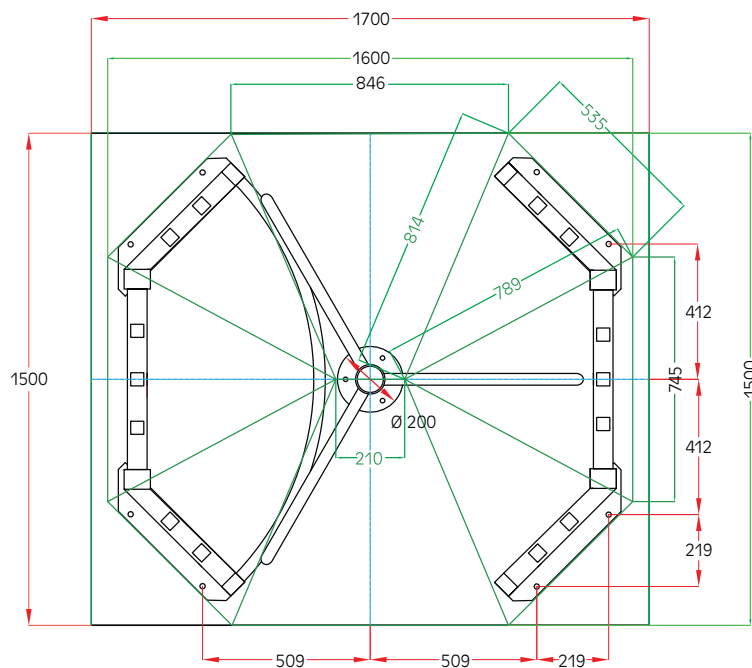




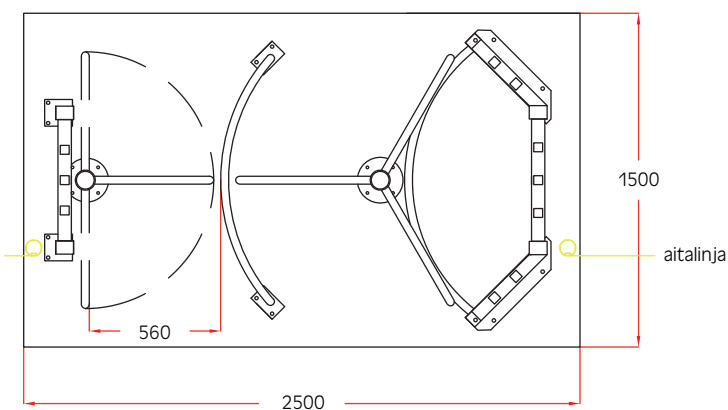
▲ Turnstile gate main components.



# Dimensions



▲ Carousel dimensions



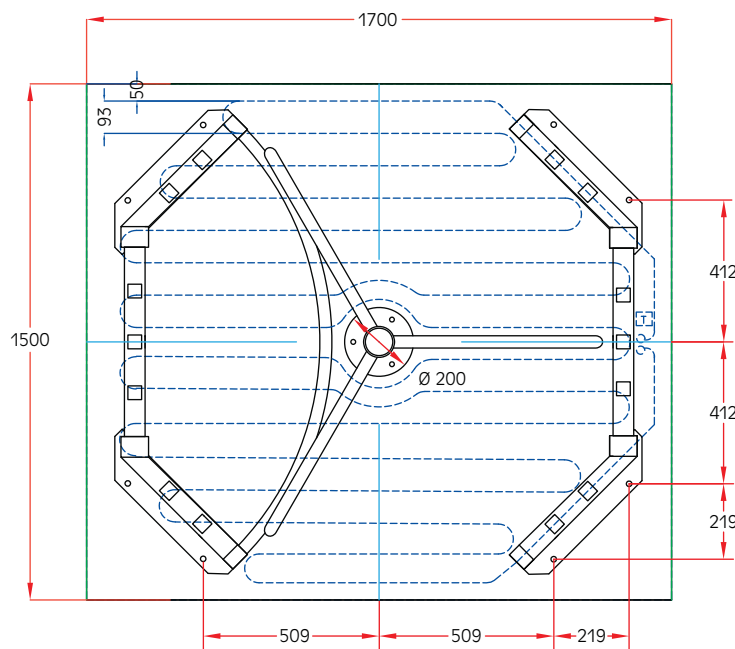
▲ Bicycle gate dimensions





▲ Gate heater element before casting.

# Heating



▲ Carousel heating

- cable TASH 3: 230 V, 28 m, 630 W
- thermostat: +3/-7 °C, Eberle DTR 3102
- ground fault current protection device: 230 V, 25 A
- distribution box, IP 66
- the locations of the fastening bolts must be marked
- installation depth: 50 mm
- the slab must be insulated from below and on the sides
- ground fault protection device and distribution box to be located in the electric space, and the thermostat to be located outside under the roof
- the cold ends of the heating cable (MCMK), which run up to the power supply, are to be placed in pipes



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