Notes and safety

Metal heat treatment furnaces are safe to use like any other electrical device, if they are used in accordance with their intended use and the health and safety rules are followed. For safe use of the furnace, read all safety instructions!

Description of the meaning of the pictograms placed on the furnace

General warning sign

The sign is used as a general warning of a hazard.

Electric voltage warning sign

Warning against electric shock.

Hot surface warning sign

The sign is used to alert against hot surfaces that may be hazardous

Mandatory eye protection sign

A sign used to mandate the use of goggles or other eye protection.

Sign that requires the use of face protection

A sign informing about the obligation to use a protective mask or other face protection.

Sign that requires the use of protective clothing

A sign informing about the obligation to use protective clothing.

Mandatory hand protection sign

Sign indicating the need to wear protective gloves

"Read the manual" sign

Sign that requires reading the manual before starting work or before starting the machine or device.

Emergency shutdown procedure

In the event of a sudden stoppage of the device's operation and its power failure, disconnect the device's plug from the socket immediately. If the circumstances do not require the furnace to be completely disconnected from the power supply, then in order to stop the operation of the device in an emergency, it is enough to set the switch in the OFF position.

CAUTION! In the event that an emergency occurred and the furnace heated up after it was disconnected from the power supply, the device will still be hot inside, so follow the same safety rules as for the operation of the device.

Electrical safety

The furnace should always be serviced by an electrician. In case of any doubts, please contact the device manufacturer.

It is forbidden to make any changes to the electrical installation of the device. This will void the warranty immediately.

The furnace should be connected to an electrical installation appropriate for its power and appropriate fuses should be used.

The furnace must be connected to an installation equipped with a protective conductor (PE)

The furnace should be disconnected from the power supply for any service work in the chamber, such as vacuuming. Do not touch or replace the furnace's heating elements when it is connected to the power supply. Electric shock can lead to serious injury or death!

Never use an extension cord with a cross-section other than that required for the power of the appliance. This may damage the furnace or the extension cord used may melt.

Safe location of the furnace

The furnace must not be placed on flammable surfaces.

Nothing must obstruct the ventilation openings in the casing and the fan on the back of the furnace.

The base on which the furnace stands must be stable and strong enough to support the weight of the furnace and the charge in its chamber.

The furnace should be at least 30 cm away from walls and other surfaces.

The minimum distance from the ceiling is 90 cm.

The furnace must be located in a well-ventilated room. If any combustion process takes place inside, the stand should be equipped with a fume hood above the furnace. Avoid damp and very dusty rooms.

Under no circumstances should the furnace be operated with raised dust in the air, for example during grinding.

The room in which the furnace is located must be large enough to allow for problem-free heat dissipation from the device.

It is in the interest of the user to check that the charge put into the furnace does not generate any harmful fumes and the like.

It is in the interest of the user to ensure that the gases generated during the heating of the charge are safely removed from the furnace room.

Do not store any flammable substances in the room where the furnace is located.

The space around the furnace should be free from objects that may pose a threat to the safe use of the device.

Never place anything on the furnace and do not rest anything on its casing.

Safe use of the furnace

The surface of the oven casing heats up, posing a risk of burns. The oven should be protected from children and personnel who are not trained to operate the device.

Oven should be disconnected from the power supply when any work is being done in the chamber. When inserting material into the hot furnace, be careful not to touch the panels containing the heating coils, as this can result in electric shock.

Special caution should be exercised when opening the furnace door. Inside the chamber, there is hot air that quickly escapes when the door is opened. There is a risk of burns. Always open the furnace door carefully and wear appropriate non-flammable protective clothing, eye protection to shield against infrared and ultraviolet radiation, high-temperature gloves suitable for work in very high temperatures, and face protection to guard against hot debris.


Under no circumstances should salts and cyanides be heated in the furnace. Vapors produced by heating these substances are TOXIC.


Do not heat the furnace above the maximum temperature indicated on the nameplate.


Never leave the operating device unattended. There is a risk of fire.


Never use the furnace with the chamber door open.


Never allow the power cord to come into contact with the equipment casing. This can cause damage to the furnace and electric shock.


It is recommended to have a fire extinguisher for extinguishing electrical equipment and smoke detectors within reach.


When the furnace is turned off, the doors should be closed.


Regarding user's query, to determine if a particular material is suitable for heat treatment, it is advisable for the user to contact the supplier for clarification if they are unsure. The supplier can provide specific information about the material's properties and its compatibility with heat treatment processes.

The heat treatment process should be carried out in accordance with the guidelines provided by the manufacturer of the specific material. Improper selection of the process can lead to damage to the furnace or accidents. It is important to carefully follow the manufacturer's instructions and recommendations to ensure the safe and effective heat treatment of the material.

The furnace should not be used for cooking meals, defrosting, heating rooms, drying, or similar purposes.

Even after disconnecting the furnace from the power supply for a long period, it may still remain hot. It is important to continue observing all safety precautions that apply when handling an operating device.

When the furnace is not in use, it is recommended to unplug the device from the power outlet.

The furnace is equipped with a safety switch that cuts off the power to the heating elements when the furnace door is opened. However, it is still important to turn off the power to the device during the insertion and removal of objects from the chamber, as well as during any service or maintenance work.

If a user notices that one of the furnace components is malfunctioning, it is advisable to discontinue using the device and contact the manufacturer for the replacement of the faulty component.

When cleaning the furnace chamber, it is recommended to use vacuum cleaners equipped with HEPA filters. Inhaling dust from ceramic products such as JM26 bricks or fibrous ceramics can be harmful. Using a vacuum cleaner with a HEPA filter helps minimize the release of fine particles and ensures a safer cleaning process.

Before using the furnace, it is important to check if the device is free from mechanical and electrical damage. Pay particular attention to the condition of the heating panels, temperature sensors, and control and power elements of the furnace.

The purpose of the furnace.

Mini Hell furnaces are designed for the heat treatment of metals. They should not be used for any other purposes than those specified in the instructions. The manufacturer does not assume responsibility for any risks arising from using the furnace in a manner not specified in the instructions. Many materials are not suitable for heating, and before proceeding with heat treatment, it is important to consult the material manufacturer to determine if it is suitable for heating and what recommended temperature ranges should be used for the process. If the user is uncertain about the safety of a particular material and the manufacturer has not provided such information, the heat treatment process should not be conducted.

Preparing the device for operation

The furnace is delivered on a pallet. After unpacking the device, it is important to check if it is free from any damages. The device should be placed in a well-ventilated room before proceeding with the initial startup process. The placement of the device must adhere to the safety guidelines mentioned in the instructions.

PID controller manual

1. If your kiln is equipped with Rex c100 temperature controller you can set temperature in the chamber by following those steps:
2. Press „**set**” button
3. To set the desired temperature, use the arrow buttons to navigate and select the desired temperature.
4. Save selected settings by pressing „**set**” button
5. Now kiln will start heating process

Initial startup.

The first startup of the furnace should be done with an empty chamber. This allows for the formation of a protective layer on the heating elements and familiarizes the user with the operation of the device.

The furnace should be programmed to 800°C and allowed to freely heat up to that temperature until no more water vapor and smoke from the combustion of organic binders binding the ceramic fibers are emitted from the furnace chamber. Then, the device can be turned off or the set temperature can be changed to continue with further operations of the device.

Once the smoke from the chamber subsides, it is advisable, while wearing appropriate heat-resistant protective clothing, along with eye, face, and hand protection, to open the furnace chamber after ensuring the power is switched off. This allows the operator to become accustomed to the blast of heat that accompanies the opening of the chamber.

Loading the charge into the furnace chamber

Before opening the furnace door, it is crucial to turn off the power supply using the switch on the device panel. Do not attempt to load the charge into the chamber when the power is still on, as it poses the risk of electric shock, which can result in severe injury or even death.

When placing material into the chamber, it is important to avoid hitting the walls of the furnace and the thermocouple.

Material should not be placed closer than 3cm to the heating element panels in the furnace.

The material inside the furnace must be stable and should not be allowed to move or shift within the furnace chamber.

Once the material is properly positioned inside the chamber, you can close the furnace door, secure it with the quick-release clamp, and then proceed to turn on the power supply to the device.

The material can be loaded into both the hot and cold chamber, but in both cases, it is essential to adhere to all the safety guidelines mentioned above for the proper and safe use of the device.

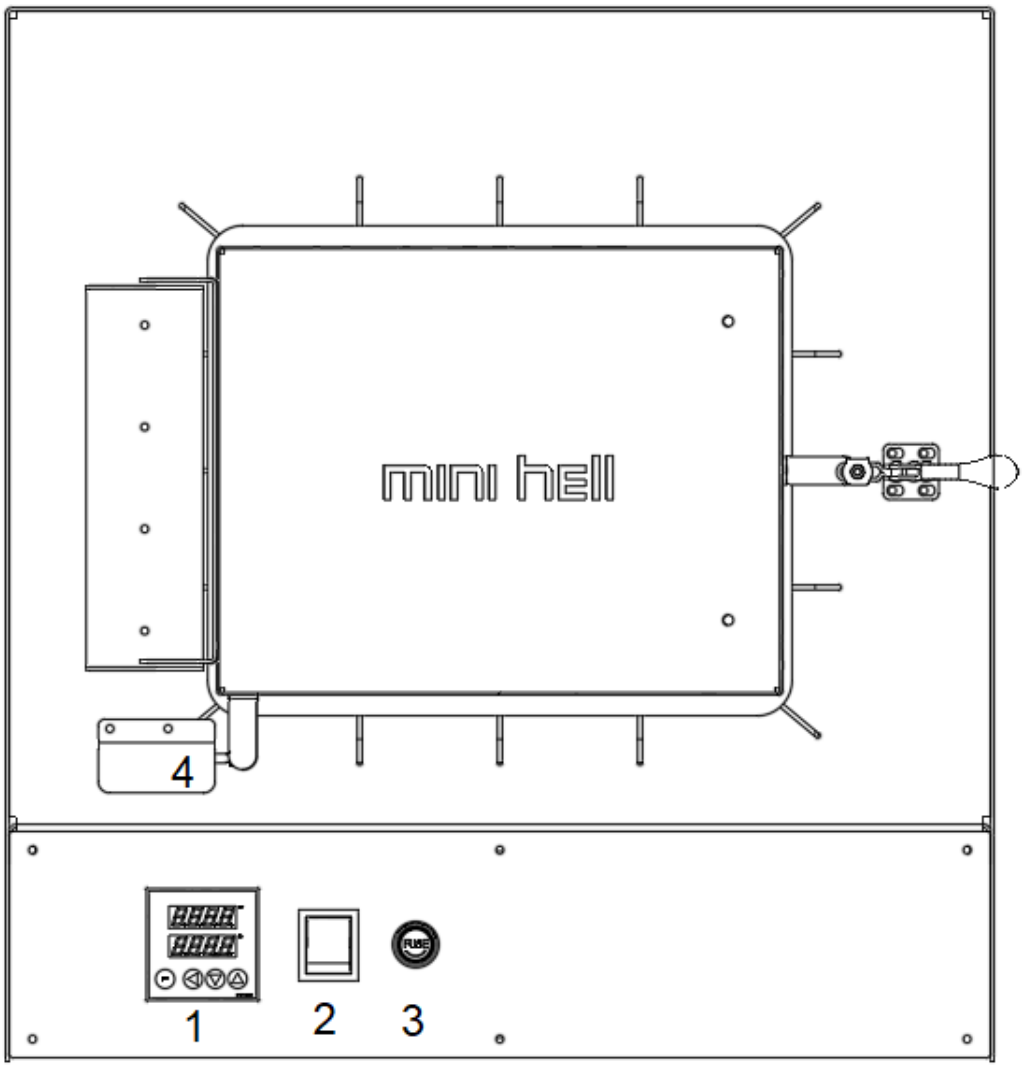
Removing the charge from the chamber and handling the hot furnace.

Removing the charge from the chamber must be done while wearing protective clothing, eye protection, face protection, and protective gloves that meet the requirements mentioned above in the instructions. Before opening the furnace door, turn off the power supply to the furnace using the switch on the control panel. Then proceed to open the furnace door.

When removing material from the chamber, it is important to exercise caution and avoid hitting any furnace components, as this can result in damage to the elements.

Once the material has been removed, it is important to immediately close and lock the chamber doors.

Elements of the furnace control panel.



1. PID controller

2.ON-OFF switch

3. 0,5A fuse

4. Door limit switch

Operating conditions of the furnace.

The temperature in the room where the furnace operates should be within the range of 5-40°C.

The optimal humidity level in the air should be between 40-60%.

The furnace should not be exposed to rain, wind, or other atmospheric conditions.

Special care should be taken to avoid dusty environments when using the furnace.

During periods when the furnace is not in use, the doors of the device should be closed and the plug should be removed from the socket.

Placing anything on top of the furnace is prohibited.