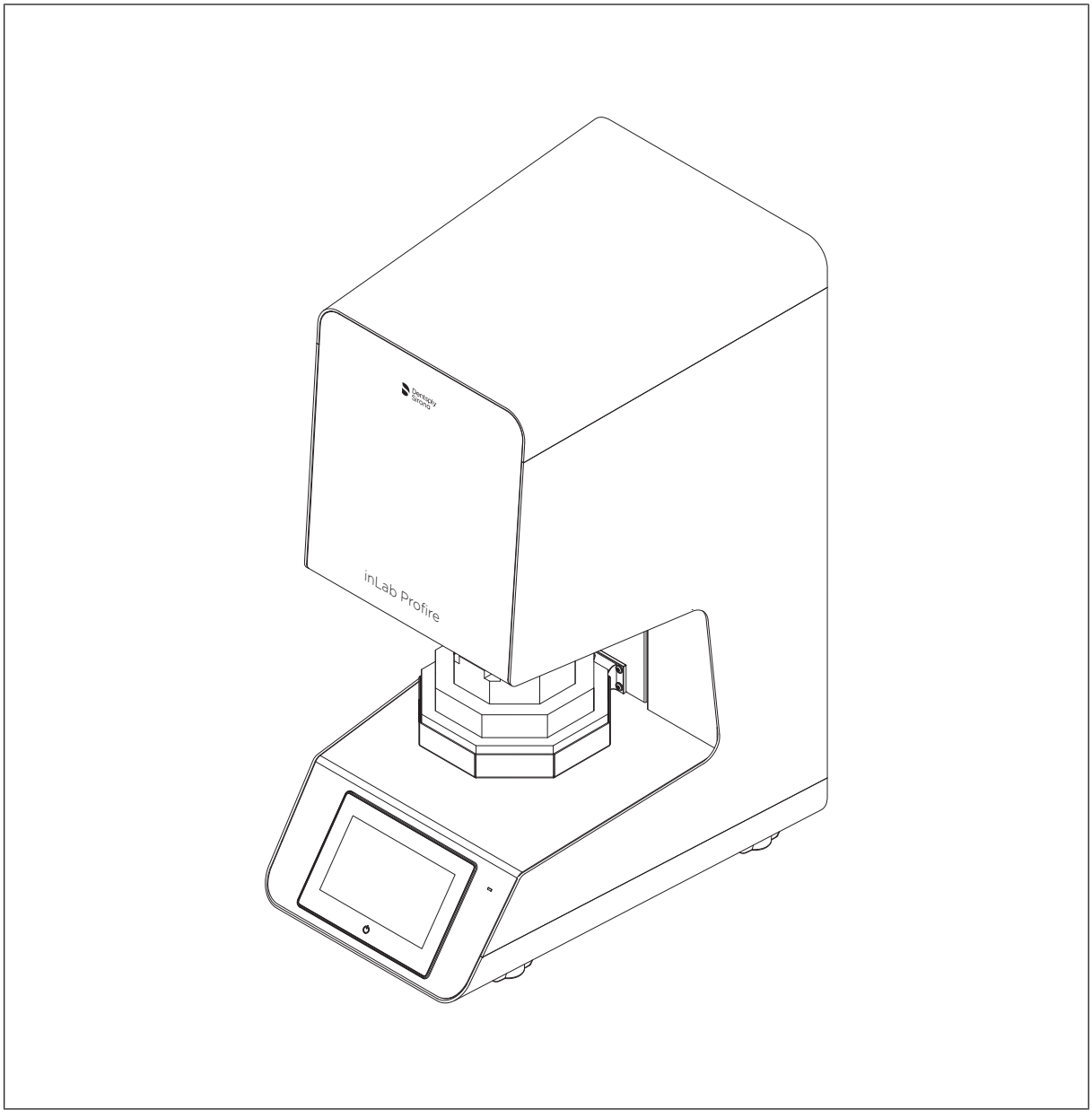
New as of: 05.2019

Dentsply Sirona

inLab Profire

Operating Instructions

English



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1 General data

1.1 Dear Customer,

Thank you for purchasing your inLab Profire high-temperature furnace from Dentsply Sirona.

It will support you with your work for many years, as it was developed and built with state-of-the-art technology.

Nevertheless, improper use and handling can cause damage and hazards. Please therefore read and follow these operating instructions carefully. Always keep them within easy reach.

Also pay attention to the safety instructions to prevent personal injury and material damage.

Your inLab Profire team

1.2 Contact data

Customer Service Center

In the event of technical queries, please use our online contact form at the following address:
http://srvcontact.sirona.com

Manufacturer's address

Sirona Dental Systems GmbH
Fabrikstrasse 31
64625 Bensheim
Germany

Tel.: +49 (0) 6251/16-0
Fax: +49 (0) 6251/16-2591
e-Mail: contact@dentsplysirona.com
www.dentsplysirona.com

1.3 General information about these operating instructions

Observe the Operating Instructions

Please familiarize yourself with the unit by reading through these Operating Instructions before putting it into operation. It is essential that you comply with the specified warning and safety information.

The Operating Instructions are stored on the unit and online at www.dentsplysirona.com/manuals.

Always keep the Operating Instructions handy in case you or another user require(s) information at a later point in time. Print out the Operating Instructions and note where they are stored on the unit or online.

If you sell the unit, make sure that the Operating Instructions are included with it either as a hard copy or on an electronic storage device so that the new owner can familiarize himself with its functions and the specified warning and safety information.

Online portal for technical documents

We have set up an online portal for the Technical Documents at www.dentsplysirona.com/manuals. From here, you can download these Operating Instructions along with other documents. Please complete the online form if you would like a hard copy of a particular document. We will then be happy to send you a printed copy free of charge.

Help

If you continue to have difficulties despite having thoroughly studied the Operating Instructions, please contact your dealer.

Original language

Original language of the present document: German

1.4 Limitation of liability

The content of these operating instructions was created taking applicable legislation and standards into account.

The unit was developed to be state of the art.

IMPORTANT

The manufacturer assumes no liability for damage resulting from:

- ➢ Disregard/nonobservance of the operating instructions
- ➢ Deliberate misuse
- ➢ Improper use
- ➢ Use of untrained personnel
- ➢ Use of nonspecialist staff (in the event of maintenance work, etc.)
- ➢ Technical changes to the unit that were not agreed with the manufacturer
- ➢ Use of spare parts that were not approved by the manufacturer

Responsibilities of the operator

The unit is used in a commercial context. Therefore, the operator of the unit is subject to statutory obligations concerning work safety. In addition to the safety notices in these operating instructions, the safety, accident prevention and environmental protection regulations that apply to the field in which the unit is used must be complied with.

The following applies in particular:

- The operator must learn about the applicable work safety regulations.
- The operator must ensure that all employees who handle the unit have read and understood these operating instructions.
- Furthermore, the operator must train personnel at regular intervals and teach them about the dangers that arise when handling the unit.
- The operator must supply personnel with the requisite protective equipment.
- The operator must have checks performed regularly to ensure that all safety equipment is complete and in working order.

1.5 Warranty

The sintering tray is excluded from the warranty as it is a consumable item.

1.6 Structure of the document

1.6.1 Identification of the danger levels

To prevent personal injury and material damage, please observe the warning and safety information provided in these operating instructions. Such information is highlighted as follows:

⚠ DANGER

An imminent danger that could result in serious bodily injury or death.

⚠ WARNING

A possibly dangerous situation that could result in serious bodily injury or death.

⚠ CAUTION

A possibly dangerous situation that could result in slight bodily injury.

NOTE

A possibly harmful situation which could lead to damage of the product or an object in its environment.

IMPORTANT

Application instructions and other important information.

Tip: Information for simplifying work.

1.6.2 Formats and symbols used

The formats and symbols used in this document have the following meaning:

✓ Prerequisite **1.** First action step **2.** Second action step or ➢ Alternative action ↳ Result ➢ Individual action step	Requests you to do something.
See "Formats and symbols used [→ 6]"	Identifies a reference to another text passage and specifies its page number.
• List	Designates a list.
"Command / menu item"	Indicates commands / menu items or quotations.

2 Safety instructions

The connection must be established in accordance with the directions provided in these operating instructions.

As manufacturers of dental and laboratory equipment and in the interest of the operational safety of your system, we stress the importance of having maintenance and repairs performed exclusively by our own personnel or through our authorized representatives. Furthermore, safety-critical system components must always be replaced with original spare parts.

We suggest that you request a certificate showing the nature and extent of the work performed from those who carry out such work; it must contain any changes in rated parameters or working ranges (if applicable), as well as the date, the name of the company and a signature.

Modifications to this system which may affect the safety of the operator or third parties are prohibited by law.

For reasons of product safety, this product may be operated only with original Dentsply Sirona accessories or third-party accessories expressly approved by Dentsply Sirona. The user is responsible for any damage resulting from the use of non-approved accessories.

If any devices not approved by Dentsply Sirona are connected, they must comply with the applicable standards:

- EN 62 368-1 for information technology equipment
- EN 61 010-1 for laboratory equipment.

⚠ CAUTION

Liability exclusion for any other use

The inLab Profire high-temperature furnace is exclusively intended for sintering oxide ceramics for use in dental technology. We are not liable for damages due to any other use.

The inLab Profire high-temperature furnace with integrated gas management system and associated accessories enable the sintering of pre-sintered non-precious metals.

⚠ CAUTION

Risk due to improper operation

The inLab Profire high-temperature furnace may only be operated by employees who are familiar with the content of these operating instructions. Signs and labels on the laboratory furnace must be kept in legible condition at all times. They may not be removed.

⚠ CAUTION

Risk due to incorrect setup

The inLab Profire high-temperature furnace may only be set up in dry rooms and must never be in contact with any liquids. Furniture items and other equipment in the vicinity of the furnace must not contain any explosive, flammable or easily ignitable materials. It is prohibited to keep or store ignitable or flammable gases or liquids in the room where the furnace is set up.

⚠ CAUTION

Damage resulting from unauthorized alterations

The inLab Profire high-temperature furnace may only be altered with our express prior approval. We are not liable for unauthorized alterations of any kind.

➢ Switch the unit off and disconnect the power plug prior to performing maintenance tasks.

⚠ WARNING

Separate circuit

The inLab Profire high-temperature furnace must always be connected to a separate circuit with at least a 16A fuse. The fuses must be of the **C** type.

⚠ WARNING

Fire hazard due to covering ventilation slots on the rear side of the casing

Covered ventilation slots can overheat the furnace and cause the covering object to ignite.

➢ Do not cover the ventilation slots on the rear side of the casing with objects.

➢ Maintain a minimum distance of 100 mm from the rear side of the casing to other objects.

Note on the prevention, recognition and elimination of unintended electromagnetic effects

This device is a piece of electrical equipment with a supply voltage below 1000 VAC and is intended for commercial use. It is to be installed in dental laboratories or other areas with a controlled electromagnetic environment. The applicable EMC requirements comply with EN 61326: 2006.

⚠ DANGER

Electrical power!

Risk of fatality posed by electric shock.

➢ Do not touch live cables and components with wet hands.

➢ Please observe the accident prevention regulations for handling electricity.

➢ Disconnect the power supply of the furnace before installation, maintenance, cleaning, and repair work, and ensure that the power will not be inadvertently switched on.

IMPORTANT

In the event of any work on the inLab Profire high-temperature furnace, personal protective equipment must be worn to prevent accidents and harm to health.

⚠ WARNING

Risk of burns due to hot surfaces!

Hot surfaces arise at some points on the inLab Profire high-temperature furnace. Use the necessary caution around the furnace, especially when the furnace is operated for extended periods.

- ➢ Do not reach into the casing or the furnace door during operation.
- ➢ Do not reach into the heating chamber. It may still contain residual heat from a preceding heating operation.
- ➢ First allow the furnace to cool down before maintenance, cleaning, and repair work.
- ➢ Wear heat-resistant safety gloves if work on hot components is necessary.
- ➢ Use suitable and sufficiently long removal tongs to remove and adjust the sinter.

⚠ WARNING

Risk of burns due to hot surfaces!

Once the program has ended and the furnace has shut down, the cooling fan will run until the interior temperature of the furnace has been reduced to normal. The power plug may not be disconnected prior to this point.

⚠ CAUTION

Handling the insulation material

The combustion chamber contains ceramic mineral fibers as insulating material (index No. 650-017-00-08), which are presumably classified as carcinogenic CAT 1B (Annex VI, EC 1272/2008). When working on the combustion chamber or replacing the door insulation, fiber dust can be released. The dust pollution can possibly be carcinogenic when inhaled as well as cause irritations to the skin, eyes and respiratory organs.
When replacing parts of the insulation, proceed as follows:
- Wear long-sleeved protective clothing
- protective glasses, FFP 2 respiratory mask and protective gloves
- Only use a vacuum cleaner with a fine particle filter (HEPA dust class H)

Abrasion of insulating material in the furnace door area may occur, which is visible as white dust. These deposits should:
- be wiped off with a moist cloth or
- be extracted with a vacuum cleaner with a fine particle filter (HEPA Dust category H),
- not be blown away with compressed air

First aid measures

- ➢ After inhalation: In the case of irritation, move yourself into a dust-free zone, drink some water and blow your nose. If the symptoms persist, please seek medical advice.
- ➢ After skin contact: In the case of contact with skin, immediately wash off with plenty of water and soap.
- ➢ After eye contact: Immediately rinse with an eye wash in a careful and thorough manner using plenty of water. Do not rub your eyes!

IMPORTANT

Always dispose of the insulating material in a closed container (see also the section on "Disposal").

⚠ WARNING

Risk of burns due to objects falling out

As there is a serious risk of burns in this case, it is essential to install a fire-proof table and floor covering.
I. For safety reasons, the furnace must be operated when standing. This is the only way that the user can quickly avoid any parts that fall out.
II. The operator of the site is responsible for providing the user with appropriate safety instructions.
III. If a fracture occurs during the sintering process as a result of a failure to adhere to the recommended drying procedure, there is a risk that hot objects will fall out as soon as the furnace door is opened.
IV. The furnace should only be loaded and unloaded using the crucible fork. For safety reasons, a trained user must be present when the furnace is being loaded or unloaded.

3 Technical description

3.1 Description of the furnace

The inLab Profire high-temperature furnace is used for processing sinterable ceramics and cobalt-chromium.

The product to be sintered is placed in the sintering tray and positioned on the bearing plate. After entering the heating parameters and pressing the start symbol, the electrically powered furnace door closes and the heating operation begins.

Once the heating program has been performed and the furnace has cooled down, the furnace door opens and the finished product can be removed.

Heating chamber

The product is sintered in the heating chamber.

It consists of two different ceramic insulating layers and is operated using $MoSi_2$ heating elements.

The outer insulating layer is designed for temperatures up to 1,200°C; the inner one for temperatures up to 1,700°C.

Furnace door

The furnace door consists of a ceramic door panel.

A slip clutch used in the drive mechanism prevents an excessively high contact pressure between the furnace door and the heating chamber.

Furnace casing

The furnace casing consists of a steel plate and is plastic-coated on the inside and outside.

Program controller

The program control system is fitted with a timer function based on week day and time.

Operating parameters and heating programs are stored in a nonvolatile memory and are retained even if there is a power failure.

The configured setpoint temperature is kept with a precision of ±1°C. A temperature sensor integrated into the heating chamber detects the chamber temperature near the product.

The furnace is prevented from overheating due to a defective temperature sensor using a thermocouple break protection.

3.2 Certification

CE mark

This product bears the CE mark in accordance with the provisions of Council Directive 2006/42/EC (machinery directive).

⚠ CAUTION

CE mark for connected products

Further products which are connected to this unit must also bear the CE mark. These products must be tested according to the applicable standards.

We declare conformity for the inLab Profire ceramic sintering furnace on the basis of the following standards:

- Safety: EN 61010-1:2010 and EN 61010-2-010:2014
- EMC: EN 61326-1:2013
- Risk assessment and risk reduction EN ISO 12100:2010

3.3 Intended use

The inLab Profire high-temperature furnace is intended for commercial use in dental laboratories and may only be used for the sintering of sinterable ceramics and cobalt-chromium.

This unit must not be used for any other purpose. Any use beyond this scope – e.g. reasonably foreseeable misuse – is considered to be improper use. The manufacturer assumes no responsibility for any damage resulting from this. The user alone bears the risk in this regard.

Intended use also includes compliance with these Operating Instructions and the relevant maintenance instructions.

3.4 Foreseeable misuse

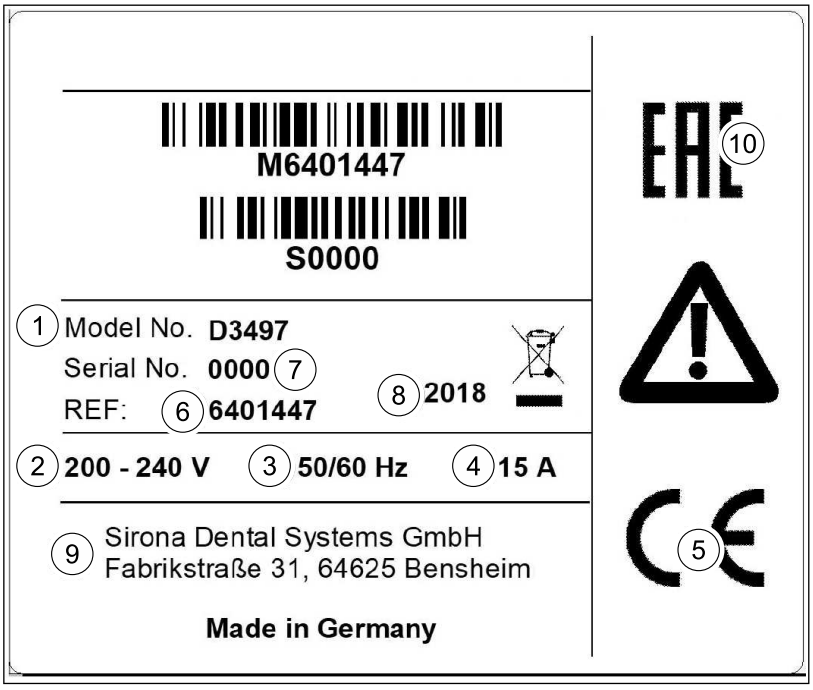
Reasonably foreseeable misuse includes:

- The deployment of untrained and inadequately qualified personnel.
- Using products that are not approved by the manufacturer.
- Using spare parts that are not approved by the manufacturer.
- Use that is not in accordance with the declaration of conformity.
- Technical changes and modifications to the unit that have not been approved by the manufacturer.

3.5 Technical data

Model designation:	inLab Profire			
Version	Zirconia only 13A	Zirconia + metal 13A	Zirconia only 15A	Zirconia + metal 15A
Type of protection against electric shock:	Class I (PE-connected)			
Protection type:	IP20 (Protection against the ingress of foreign bodies, but not against the ingress of water)			
Setup:	Indoors in dry area			
Height	up to 3,000 m			
Temperature range:	5°C to 40°C (41°F to 104°F)			
Relative humidity	80% to 31°C (87.8°F), linearly decreasing above this up to 50% at 40°C (104°F), no condensation			
Setup conditions:	100mm minimum distance to the unit			
Overvoltage category:	Overvoltage category II			
Pollution degree:	2			
Mode of operation	Continuous operation			
Dimensions of unit (W x H x D):	360mm x 780mm x 534mm			
Packaging dimensions (W x H x D):	720mm x 1300mm x 620mm			
Furnace chamber (diameter x height in mm):	2 trays ⌀120mm x 30mm	1x sintering bell jar system	2 trays ⌀120mm x 30mm	1x sintering bell jar system
Maximum sintering temperature:	1,650°C (3,002°F)	1,400°C (2,552°F)	1,650°C (3,002°F)	1,400°C (2,552°F)
Approx. weight without packaging:	64 kg			
Approx. weight including packaging:	80kg			
Optimum input pressure range for argon supply:	7+/-1 bar			
Maximum input pressure range for argon supply:	10 bar			
Rated line voltage:	220 V~ to 230 V~		200 V~ to 240 V~	
Rated power frequency:	50 Hz		50/60 Hz	
Maximum power consumption:	3,500 W			
Unit-based fuse:	16AT			
On-site fuse:	Connection to a separate electrical circuit with a 16 A fuse, type K, Z (other fuse types according to the country of use)			

3.6 Rating plate



1	Machine type/designation	6	Reference number Dentsply Sirona
2	Operating voltage	7	Serial number
3	Line frequency	8	Year of manufacture
4	Current consumption	9	Manufacturer specifications
5	CE mark	10	EAC mark

4 Configuration

4.1 Installation site

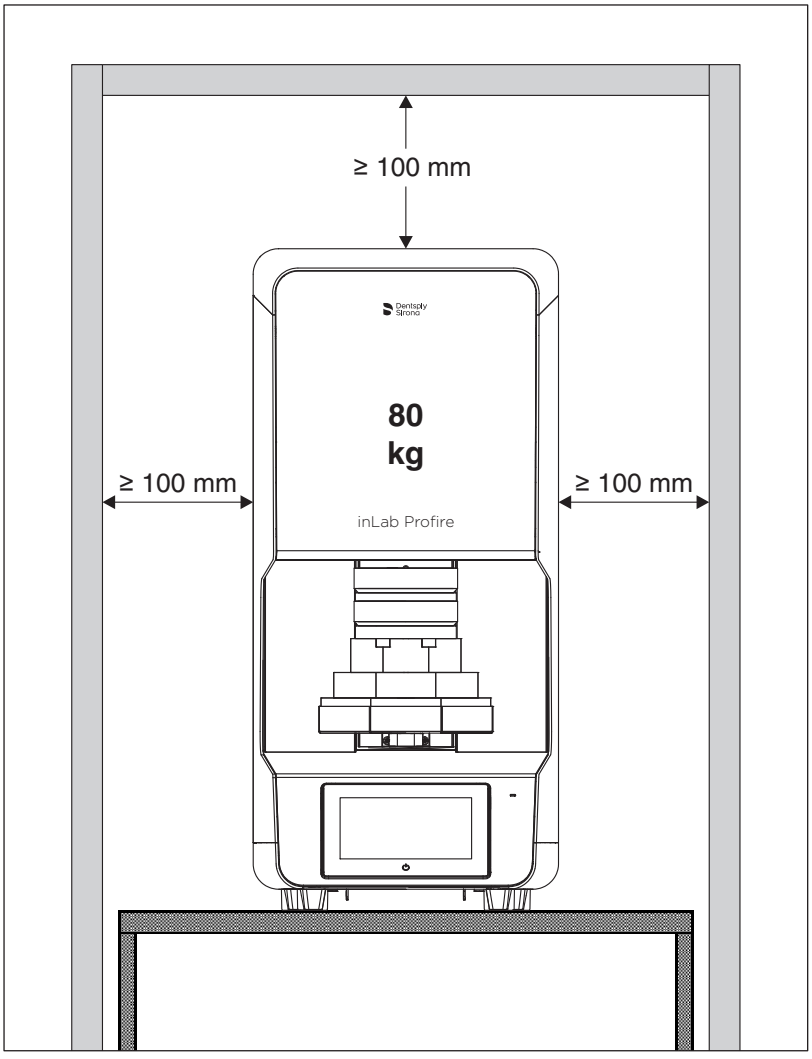
The inLab Profire high-temperature furnace is designed as a tabletop unit. For stability, a flat, horizontal, and fire-proof surface of at least 50 cm x 60 cm, which can support loads of up to 80 kg, is recommended.

Always place the furnace in dry rooms that are as dust-free as possible and remember that no liquids may get on the furnace.

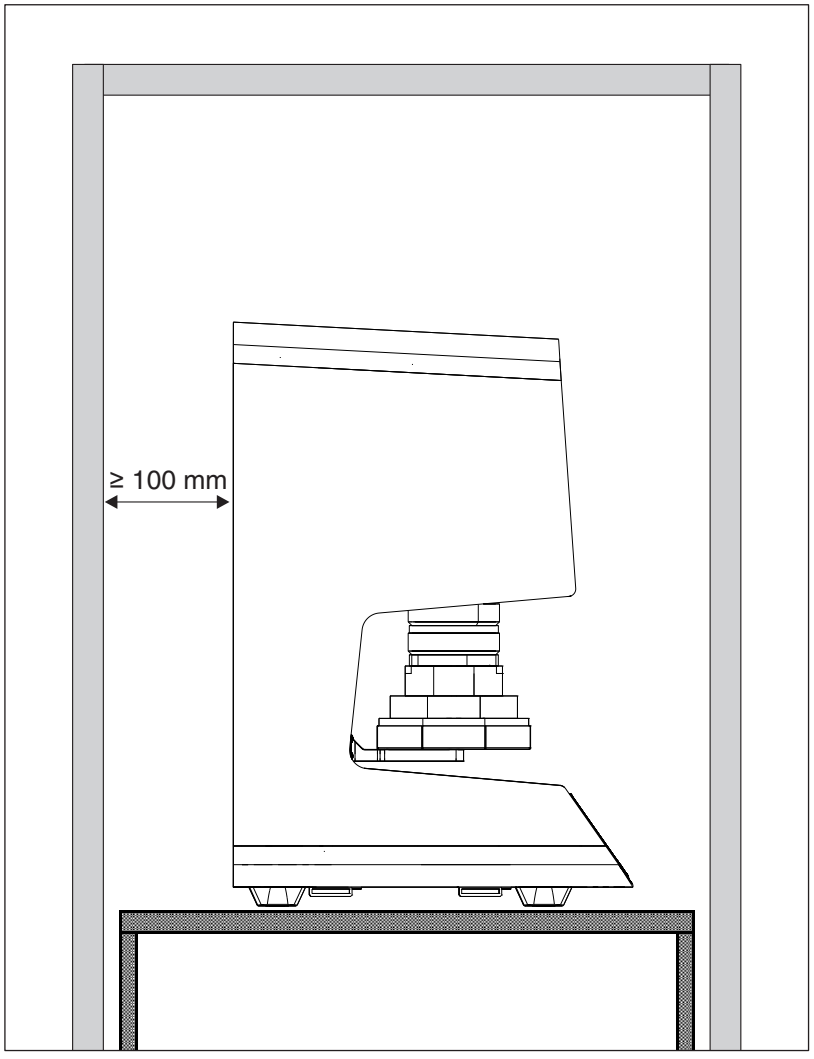
No readily flammable or ignitable gases or liquids may be stored in the setup locations. Do not place any flammable or ignitable objects in the vicinity of the furnace.

Maintain a minimum distance of 100 mm on all sides of the furnace for adequate cooling.

Never obstruct the ventilation slots!



Ensure an adequate distance between the rear of the unit and the wall in particular.



⚠ CAUTION

Risk of ignition!

Igniting of the floor covering due to hot shattering product tray.

➢ Ensure the floor covering has nonflammable surfaces.

⚠ CAUTION

Tipping loads!

Inadequate load-bearing capacity of the setup surface.

➢ When setting up the furnace, ensure adequate load-bearing capacity of the setup surface.

⚠ CAUTION

Risk of injury posed by carrying the furnace!

Physical strain / back complaints due to the furnace's heavy dead weight.

Injuries due the furnace falling down.

➢ Use at least two people to carry/move the furnace (max. 30 kg carrying capacity per person).

➢ Only lift and carry the furnace from underneath the unit.

➢ Ensure there is a nonslip foundation.

⚠ CAUTION

Risk of furnace overheating!

Overheating due to blocked air inlets.

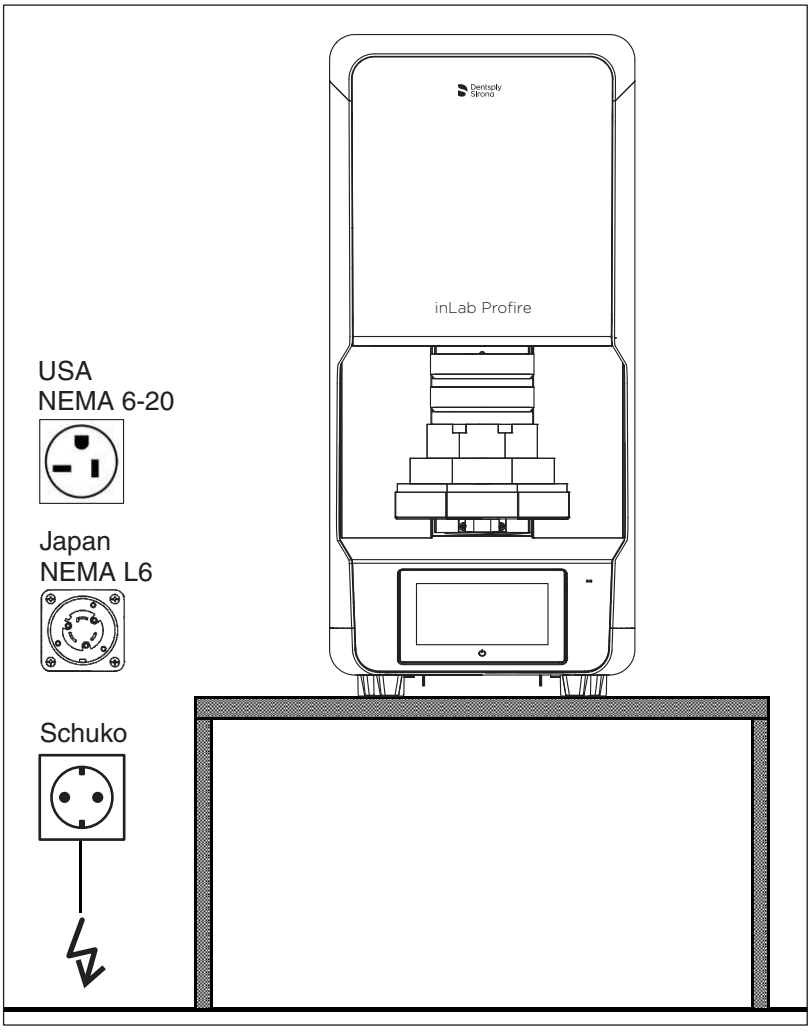
➢ Make sure that the ventilation slots on all sides of the furnace remain unobstructed.

4.2 Electrical connection

Building installation

The following electrical installation requirements are to be fulfilled for the inLab Profire high-temperature furnace:

- The furnace requires a separate electric circuit.
- The electrical building installation must be protected by a type K/Z circuit breaker with a rating of at least 16 A (other fuse types according to the country of use).
- The furnace requires the connection of a protective ground wire to the electric outlet for safe electrical operation.
- The distance between the electric outlet and the furnace must be selected so that the 2.0 m long power cord supplied with the furnace is sufficiently long. A cable extension is not permitted.
  The supply voltage must be in the rated voltage range (see Technical data [→ 13]).
- A separate building installation may have to be installed to meet this requirement in the USA and Japan. In the USA, the 240 V outlet must be designed for connecting a NEMA 6-15-type plug; in Japan, the 200 V outlet must be designed for connecting a NEMA L6 (L6-20J)-type plug.



Device

Do not adjust the line voltage!

The unit automatically adjusts to the line voltage.

⚠ DANGER

Electrical power!

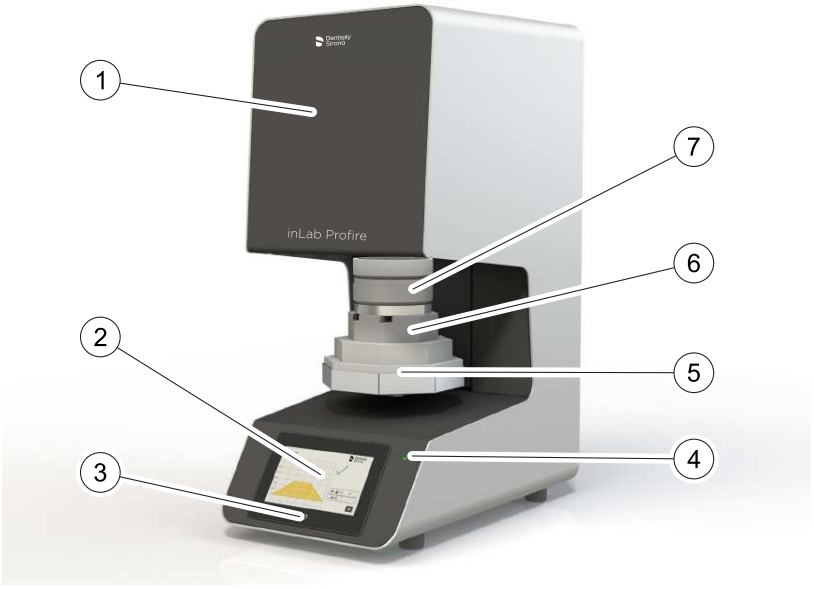
Risk of fatality posed by electric shock.

- ➢ Do not touch live cables and components with wet hands.
- ➢ Please observe the accident prevention regulations for handling electricity.
- ➢ Only connect the unit to a voltage supply source which conforms to the specifications on the rating plate.

5 Operation

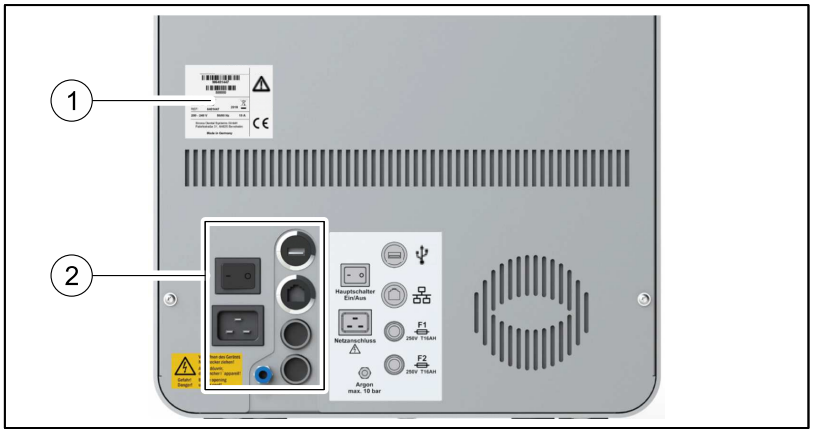
5.1 Controls

Front panel

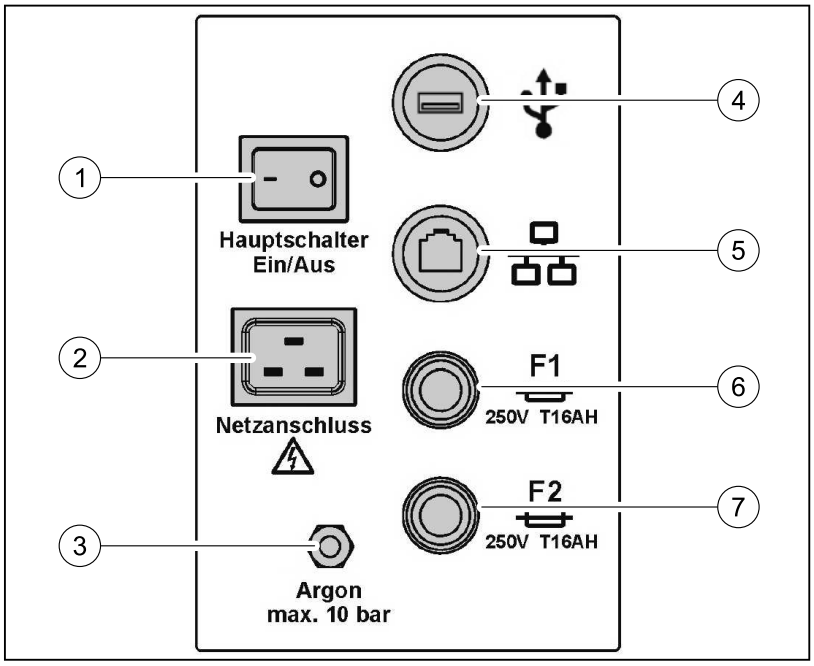


1 Basic unit
2 Control panel
3 Start button for the display
4 Status display
5 Door insulation / base carrier
6 Door insulation bearing
7 Sintering tray

Rear side



1 Rating plate
2 Main switches and connections



1 Main switch ON / OFF

2 Power connection

3 Argon port

4 USB port
(voltage supply: 5 V; rated current: 500 mA)

5 LAN port

6 Main fuse F1

7 Main fuse F2

5.2 Connecting the argon supply

⚠ DANGER

Danger posed by discharging gas!

Possible risk of fire and explosion as well as a risk of suffocation.

➢ When conducting any work on the furnace, the argon and voltage supply must be disconnected and the gas canister must be closed.

➢ When handling argon, observe the national safety regulations (e.g. in Germany: TRGS526, section 5.2.11 "Pressurized gas canisters and valves").

The sintering of non-noble metal (inCoris CCB) requires an oxygen reduced atmosphere. This is achieved using argon. Argon is a noble gas in a compressed gas cylinder.

The purity of the argon must be 4.6 = 99.996 vol. %.

- Provide your cylinder with a manometer as well as a pressure regulator.

The argon flow is set by default in the factory and is approx. 1l/ minute.

1. Connect the connecting hose included in the scope of supply with the inLab Profire high-temperature furnace (including metal) to the argon port of the furnace and the argon supply (gas canister).
2. Set the output pressure of the gas canister to 7+/-1 bar (optimum pressure).
   The maximum permitted pressure is 10 bar.

IMPORTANT

If the output pressure of the gas canister is set higher or lower than 7+/-1 bar, too little or too much argon will enter the sintering tray and the sintering process will fail!

3. Check the gas pipes and connected couplings for leaks and secure fitting.

IMPORTANT

The volume of one argon canister will be enough to flood an entire room if there is a malfunction. Ventilation in the floor area is recommended, because argon is heavier than air and settles on the floor.

4. Protect ducts and shafts against the ingress of gas.

5.3 Initial startup

1. Connect the connection cable for the power supply to the mains.
2. Switch the furnace on at the main switch.
   ↳ The unit door opens.
   ↳ The unit performs a self-test and closes the door again after the self-test.

3. Press the lift button to open the door.
4. Insert the door insulation (see Inserting the door insulation [→ 23]).

IMPORTANT
At temperatures below 15°C (e.g. following transport), allow the unit to stand for approx. 60 minutes at room temperature prior to start-up.

5.3.1 Burning-in insulation and sintering aids

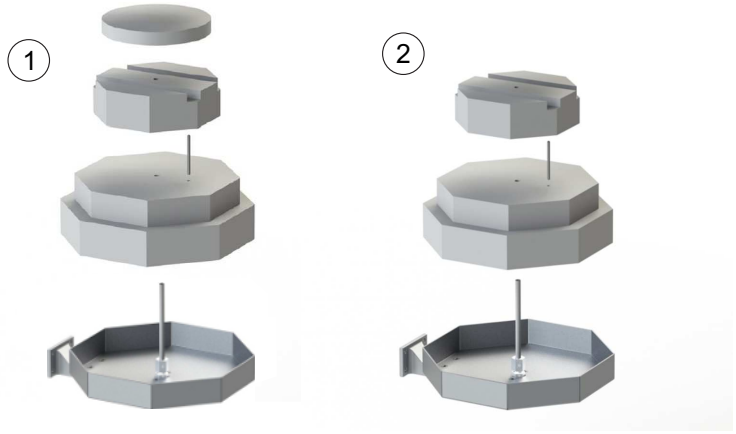
Tip: We recommend subjecting all sintering aids (sintering tray, sintering beads) to a gradual burning-in cycle before sintering for the first time.

To this end, load the furnace with the sintering aids and start the “Heating element cleaning” program.

Also perform the burning-in cycle with any new sintering aids supplied as repeat orders.

This procedure extends the service life of the sintering aids.

5.4 Inserting the door insulation

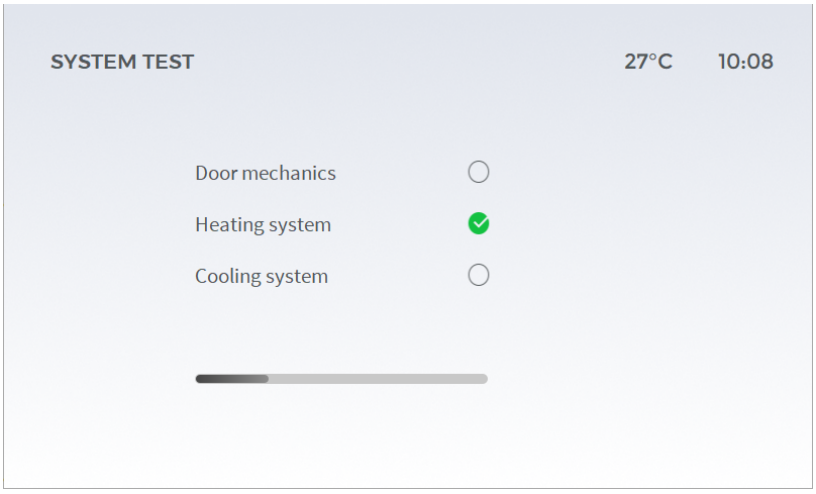


1 inLab Profire (zirconia only)

2 inLab Profire (including metal)

5.5 Explanation of the main screens

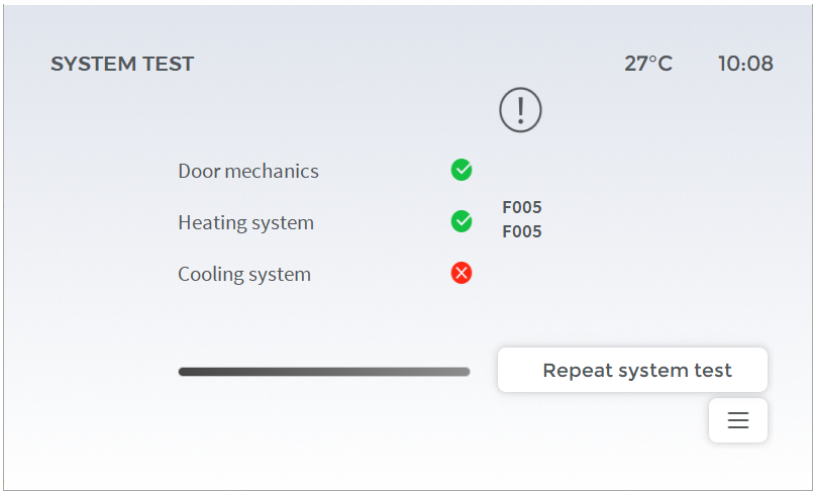
5.5.1 System test



After starting the unit, a system test is first performed. Please wait during this phase and do not switch the unit off.

Successfully passed tests are indicated with a green tick. The gray bar indicates the progress of the respective test.

System test error



If there is an error, the corresponding error code is displayed.

A red cross appears behind the failed function.

Follow the instruction on the screen.

IMPORTANT
Repeat the self-test if malfunctions arise. If the problem persists, please contact customer services.

5.5.2 Main menu

The following menu items are available for selection on the *"Main menu"* screen:

- *"Favorites"*
- *"Programs"*
- *"Settings"*
- *"Service"*

The *"Service"* area is only of relevance to service engineers.

5.5.3 Favorites

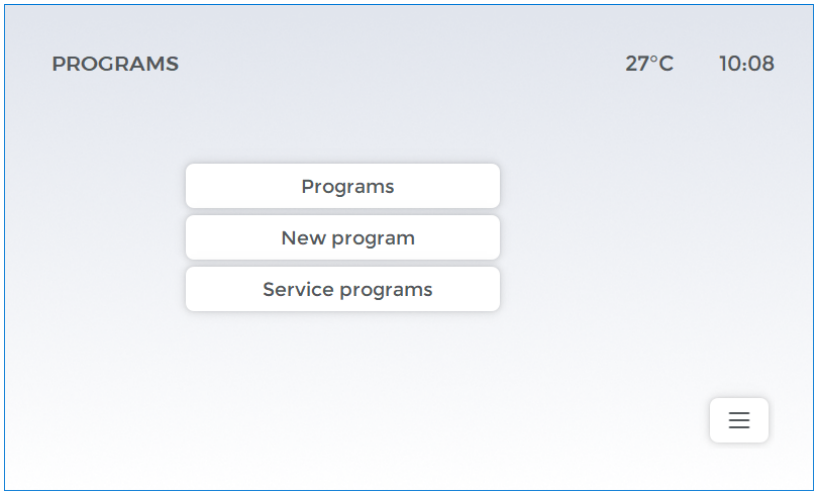
From the *"Main menu"* screen, you can switch to the *"Favorites"* screen. An overview of your favorite programs is displayed here.

You can remove these programs from the list. To do this, tap on the symbol near the relevant program.

You can add existing programs to and remove them from the favorites on the *"My programs"* screen.

You can select your favorite programs here and start them directly.

5.5.4 Overview of program options



From the *"Main menu"* screen, you can switch to the *"Programs"* screen. The following menu items are available for selection here:

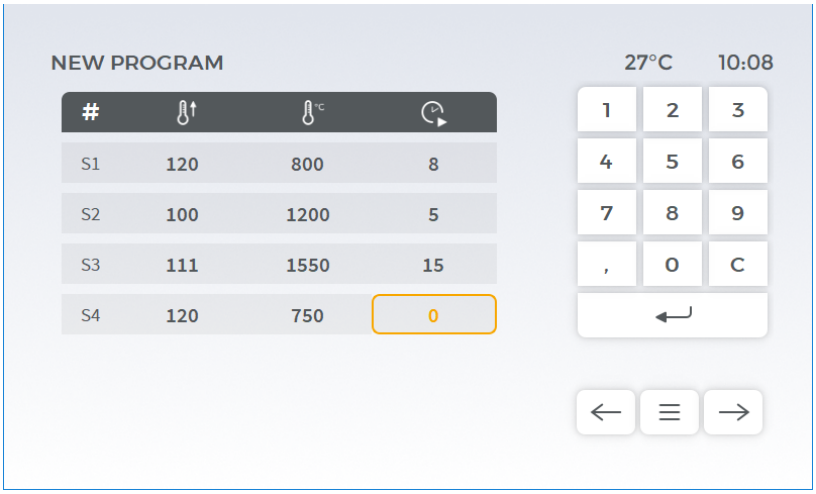
- *"Programs"*
- *"New program"*
- *"Service programs"*

5.5.5 Programs

Under the Programs menu item, you will find the overview of all the program lists stored in the system. These include:

- Favorites
- Fixed programs
- My programs

5.5.6 New program



You can switch to the *"New program"* screen via the *"Programs"* and *"My programs"* screens. You can create new programs here.

1. To create a new program, tap on the first field "rate of increase" in the next free line.
   ↳ The field obtains an orange-colored border.
2. Enter the rate of increase in °C/min. via the number field.
3. Tap on the input button to complete the input.

   ↳ The orange-colored border jumps to the next field "temperature".

4. Enter the temperature in °C via the number field.
5. Tap on the input button to complete the input.

   ↳ The orange-colored border jumps to the next field "duration of the first process step".

6. Enter the duration of the first process step in minutes via the number field.
7. Tap on the input button to complete the input.
   ↳ The orange-colored border jumps to the first field in the next line. The creation of the program is complete.

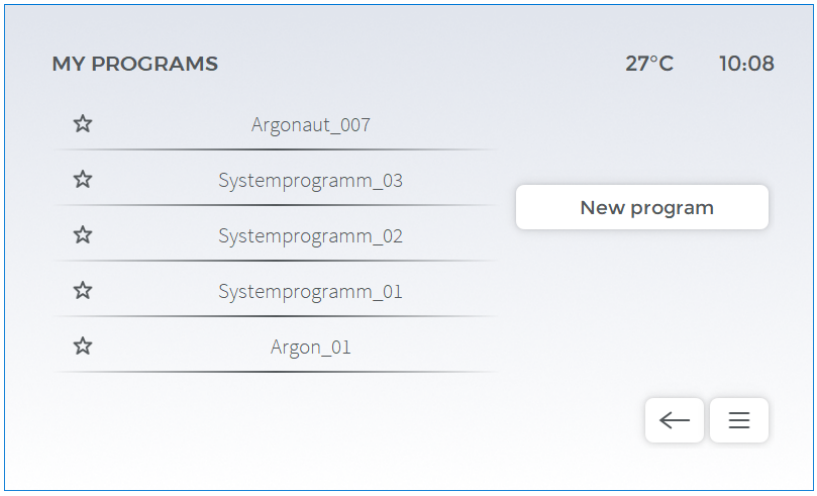
Tap the "Next" button after creating the program.

5.5.7 Service programs

Tip: Backing up the programs is recommended. If you have entered your individual programs, it is recommended to back up the programs to an external storage medium. To do so, follow the description in section 5.6 “Backing up my programs [→ 28]”.

For more information, refer to the chapter entitled “Care and maintenance [→ 38]”, under the “Service programs [→ 38]” section.

5.5.8 My programs



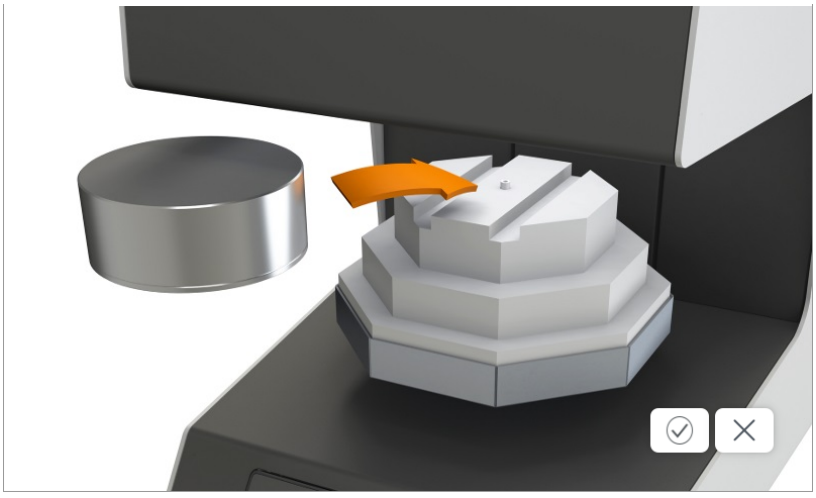
From the *"Programs"* screen, you can switch to the *"My programs"* screen. An overview of the last programs is displayed here.

You can add these programs to or remove them from your favorites. To do this, tap on the symbol near the relevant program. In this process, the symbol changes its color from white to dark-gray, or from dark-gray to white.

A white symbol means that the program is not available as a favorite.

A dark-gray symbol means that the program is available as a favorite and can be selected through the *"Favorites"* screen.

5.5.9 Material change



The *"Material"* screen is displayed to you if you are switching from a zirconia to an argon program. Please replace the sintering tray system and make sure that the gas supply is secured.

After the material change, confirm the correct insertion of the relevant sintering tray for metal or zirconium dioxide by tapping on the "Confirm" button.

5.6 Data transmission via USB stick

You have the option to transmit your data, for example, as a back-up copy to a USB stick.

IMPORTANT
Prior to the data transmission ensure that the USB stick (min. USB 2.0) is not password protected.

- Insert the USB stick into the rear of the unit and wait until there is a prompt on the display.
- The USB stick is automatically detected as the storage medium and you gain the following options:
  - “Firmware update”
    Tap here to update the unit firmware.
  - “Update configuration”
    Tap here to update the unit configuration.
  - “Load my programs”
    Tap here to transmit the programs stored on the stick to the unit.
  - “Backup my programs”
    Tap here to back up the programs created by you.
  - “Backup data”
    Tap here to create an entire backup of the unit.
- Following successful data transmission, remove the USB stick again and perform a restart.

5.6.1 Restarting the unit

To perform a restart, switch the unit off at the rear and wait approx. 30 seconds until the green LED no longer lights up or flashes.

Now switch the unit back on at the main switch (1).

5.6.2 ON/OFF button on the touch display

To preserve the touch display, switch off the display using the ON/OFF button (2).

The unit remains ready for the next sintering and does not need to be restarted once the display is switched on.

5.7 Explanation of the symbols

Control symbols

Main menu

Tap on the button to switch to the main menu.

Move forwards

Tap on the button to go to the next possible step.

Move backwards

Tap on the button to go back to the previous step.

Start program

Tap on the button to start the selected program.

Stop

Tap on the button to stop the running process.

Open furnace door

Tap on the button to open the furnace door.

Close furnace door

Tap on the button to close the furnace door.

Activate pre-drying

With this function you can pre-program a pre-drying phase for every process.

By tapping on this button just one time, you activate a pre-drying period of 15 minutes. The first quarter of an hour is displayed on the symbol.

In the event of repeated tapping on the button, the pre-drying time is extended by another 15 minutes. You therefore have the option of setting the pre-drying time to 15, 30, 45, or 60 minutes.

Pre-drying active (15 minutes)

This button is displayed if pre-drying has been activated. In this instance, the pre-drying time is 15 minutes. Tap once more on the button "Activate pre-drying" to increase the pre-drying time to 30 minutes.

Pre-drying active (30 minutes)

This button is displayed if pre-drying has been activated. In this instance, the pre-drying time is 30 minutes. Tap once more on the button "Activate pre-drying" to increase the pre-drying time to 45 minutes.

Pre-drying active (45 minutes)

This button is displayed if pre-drying has been activated. In this instance, the pre-drying time is 45 minutes. Tap once more on the button "Activate pre-drying" to increase the pre-drying time to 60 minutes.

Pre-drying active (60 minutes)

This button is displayed if pre-drying has been activated. In this instance, the pre-drying time is 60 minutes. Tap once more on the button "Activate pre-drying" to deactivate pre-drying.

Auto-start time setting

With this function, you can set when the furnace should start with the sintering.
Tap on the button to open the settings dialog. Here you can set the exact time and date. The furnace will begin with sintering at this set point in time.

Following successful setting of the auto start time, the symbol is shown with an orange border.

Tap on the “Start program” button to activate the auto start at the set time.

Following successful activation, the button is shown with an orange border.

Favorite inactive

This symbol is displayed on the left next to a sintering program.
If the symbol is white, this sintering program is not a favorite and the program is also not displayed in the favorite list.
If you want to add a program to the favorites, then tap on the symbol. It now becomes a dark-gray color to indicate that the program has been added to the favorites.

Favorite active

This symbol is displayed on the left next to a sintering program.
If the symbol is dark-gray, this sintering program is a favorite and the program is also displayed in the favorite list.
If you want to remove a program from the favorite list, then tap on the symbol. It now becomes a white color to indicate that the program is no longer a favorite.

Argon

This symbol is displayed if a program with argon has been selected. The symbol is labeled with argon.

Interaction symbols

Confirm

Tap on the button if you want to perform the displayed operation.

Reject

Tap on the button if you do not want to perform the displayed operation.

Unit symbols

Rate of increase in °C/min or °F/min

This symbol is displayed to you when configuring a new program. In the column underneath this symbol, you can set the rate of increase of the temperature in degrees Celsius per minute.

Temperature in °C or °F

This symbol is displayed to you when configuring a new program. In the column underneath this symbol, you can set the temperature in degrees Celsius.

Current temperature in °C or °F

This symbol indicates the current temperature of the furnace in °C.

Time specification end of the sintering operation

This symbol indicates the time when the furnace is expected to be finished with the process.

Result symbols

Process successful

This symbol is displayed once the process has successfully ended.

Process failed

This symbol is displayed if the process has been ended with an error.

Warning symbols

Warning against heat and hot parts

Error symbols

Notification-level error (4-digit error code) Process continues

Minor error (3-digit error code) Process continues / Work must be checked

Serious error (2-digit error code) Automatic process stop / Work is very unlikely to be of use

5.8 Sintering aids

IMPORTANT
Only use sintering aids approved by Dentsply Sirona. You can find usage tips in the information pamphlet of the respective sintering aid.

5.8.1 Burning-in insulation and sintering aids

Tip: We recommend subjecting all sintering aids (sintering tray, sintering beads) to a gradual burning-in cycle before sintering for the first time.

To this end, load the furnace with the sintering aids and start the “Heating element cleaning” program.

Also perform the burning-in cycle with any new sintering aids supplied as repeat orders.

This procedure extends the service life of the sintering aids.

5.9 Preparations for sintering ZrO2

Recommendation for the filling of the sintering tray

1. Fill the sintering tray with a whole bottle of sinter beads for ZrO2 (REF 6126457).
2. Place the parts to be sintered with the chewing surface facing downward on the sinter beads. In doing so, ensure that the parts to be sintered and the sintering tray do not come into contact with each other.
3. In the case of larger restorations, ensure that all parts of the restoration through sinter beads are supported by gently pressing into the bead bed.

Positioning the sintering tray in the inLab Profire

- Position the split support disc centrally on the door insulation. A recess is present for the tip of the guide pin.

  Position the sintering tray on top of it.

- You can load and unload the tray with the sinter fork (1). For this purpose, there are recesses in the door insulation.
  The tray (2) with the split support disc should be positioned at the end of the fork.

Positioning a second sintering tray in the inLab Profire - only for classic mode

- **Position an unsplit support disc on the first sintering tray. You can then place the second sintering tray on it.**

IMPORTANT
Stacking two sintering trays is not permitted for speed-sinter processes! Only use in “Classic” sinter mode!

5.10 Preparation for sintering sinter metal

Filling the sintering tray

1. Fill the sinter metal tray with a whole bottle of sinter beads for sinter metal (REF 6413640).
2. Place the parts to be sintered with the chewing surface facing downward on the sinter beads. In doing so, ensure that the parts to be sintered and the sintering tray do not come into contact with each other.
   We recommend bedding in the restorations approx. half way into the sinter beads.

Positioning the sintering tray in the inLab Profire

- Position the base plate of the sinter metal tray on the door insulation. Carefully place the sintering tray with the restorations and the cover centrally on the base plate and the sintering bell over it. Also position this in the middle so that the intermediate space between the sintering bell and sintering tray maintains the same distance overall.

- You can now load and unload with the sinter fork.
  For this purpose, there are recesses in the door insulation.
  The base plate should always be positioned at the end of the fork.

5.11 Speed sintering mode

⚠ WARNING

Risk of burns if used incorrectly!

The inLab Profire high-temperature furnace opens at temperatures >1000°C (1832°F).

➢ The internal company safety regulations for working on laboratory furnaces apply.

➢ Always stand when loading the furnace.

➢ Always wear long trousers and closed shoes during loading.

5.12 Pre-drying

The recommendation for pre-drying may vary depending on the material manufacturer. Please follow the instructions of the respective material manufacturer.

The pre-drying process takes place at a constantly preset temperature of <90°C. Due to the fact that the temperature is measured in the furnace chamber, the displayed temperature is >100°C when pre-drying is activated.

The 15 minute pre-drying is only suitable for pre-drying of individual restorations with a maximum of one unit. In the case of several restorations and restorations with units >1, we recommend pre-drying of >30 minutes.

6 Care and maintenance

The inLab Profire high-temperature furnace does not require any special care. The casing may be cleaned with a mild detergent.

IMPORTANT

Damage to the heating unit!

➢ Make sure that the heating chamber does not become dirty. The heating unit could be damaged.

IMPORTANT

Service life reduction due to coloring liquids!

➢ During the sintering process, coloring liquids may seriously reduce the service life of the heating elements.

➢ When using coloring liquids, performing the pre-drying in an external unit is recommended.

6.1 Service programs

Depending on the frequency of use, a cleaning cycle should be performed. This helps to remove contamination caused by liquids and other impurities that become deposited in the insulation.

Depending on the frequency of use, a regeneration cycle should also be performed, which is necessary for regenerating the heating elements.

Service 1	Temperature check (only in conjunction with the test kit)
Service 2	Heating chamber cleaning
Service 3	Heating element cleaning

6.2 Furnace chamber insulation

The furnace chamber insulation consists of very high-quality fire-proof material. Crack formations in the furnace chamber insulation resulting from heat strain are to be expected due to the effects of high temperatures and sudden temperature changes. They will not affect the sintering result or the function and quality of the furnace.

7 Faults and error messages

Safety

⚠ DANGER

Electrical power!

Risk of fatality posed by electric shock.

- ➢ Work on electrical systems must only be performed by electrical specialists.
- ➢ Disconnect the power supply of the inLab Profire high-temperature furnace before installation, maintenance, cleaning, and repair work, and ensure that the power will not be inadvertently switched on.
- ➢ Do not touch live cables and components with wet hands.
- ➢ Please observe the accident prevention regulations for handling electricity.

⚠ WARNING

Hot surfaces!

Serious burns to limbs.

- ➢ Do not reach into the casing or the furnace door during operation.
- ➢ First allow the inLab Profire high-temperature furnace to cool down before maintenance, cleaning, and repair work.
- ➢ Wear heat-resistant, thermally insulated safety gloves if work on hot components is necessary.

NOTE

Property damage due to defective repairs to electrical cables!

Malfunctions and defective electrical components possible.

- ➢ Do not repair any defective cables or plugs.

8 Decommissioning

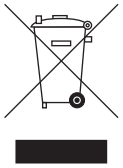
Decommissioning may be due to two reasons:

- For the purpose of reinstalling at another location.
- For the purpose of ultimate disposal.

If the inLab Profire high-temperature furnace is to be set up at a different location, decommissioning must be well prepared. All structural components and fasteners must be carefully disassembled, labeled, and, if necessary, packaged for transport. This ensures that when the time for reinstallation arrives, all the parts can be correctly assigned and reattached in the correct place.

1. Switch the furnace off.
2. Disconnect the furnace from the power supply.
3. Disconnect all connections from the furnace.

9 Disposal



In accordance with Directive 2012/19/EU and national disposal regulations regarding old electrical and electronic devices, please be advised that such items must be disposed of in a special way within the European Union (EU). These regulations require the environmentally friendly recycling/disposal of old electrical and electronic devices. Such items must not be disposed of as domestic refuse. This has been expressed using the icon of the “crossed out trash can”.

Disposal procedure

We feel responsible for our products from the first idea to their disposal. For this reason, we give you an option to return our old electronic and electrical devices.

If you wish to dispose of your devices, please proceed as follows:

In Germany

To initiate return of the electrical device, please send a disposal request to enretec GmbH. You have the following options here:

- Use the ‘Returning an electrical device’ button under the ‘eom’ menu item on the enretec GmbH homepage (www.enretec.de).
- Alternatively, you can also contact enretec GmbH directly.

  enretec GmbH
  Kanalstraße 17
  16727 Velten, Germany

  Phone: +49 3304 3919-500
  E-mail: eom@enretec.de

In accordance with the national disposal regulations regarding old electrical and electronic devices (ElektroG), as the manufacturer, we assume the costs for disposing of the electrical and electronic devices in question. Disassembly, transport and packaging costs shall be borne by the owner / operator.

Prior to disassembly/disposal of the unit, it must be prepared professionally (cleaned/disinfected/sterilized).

If your unit is not permanently installed, it will be collected from the practice. If it is permanently installed, it will be picked up curbside at your address by appointment.

Other countries

For country-specific information on disposal, contact your local dental dealers.

We reserve the right to make any alterations which may be required due to technical improvements.

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