

# VITA ZYRCOMAT® 6100 MS

Operating manual



VITA shade determination

VITA shade communication

VITA shade reproduction

VITA shade control

Date of issue: 02.19



VITA – perfect match.

**VITA**

## VITA ZYRCOMAT 6100 MS – developed and manufactured entirely in Germany



Dear Customer,

Congratulations and thank you for choosing the VITA ZYRCOMAT 6100 MS sintering furnace!

The VITA ZYRCOMAT 6100 MS is manufactured using the highest quality standards and is equipped with modern hardware and software – for easy and safe operation.

To be able to use the sintering furnace safely and effectively, please read these operating instructions completely before use.

This operating manual must always be kept close to the device.

It must be read and used by all persons who operate, clean and care for the system.

I hope you enjoy it and achieve great results!

### **Onur Yildirim**

Product manager for VITA dental devices and accessories, VITA Zahnfabrik

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### **Explanation of symbols:**

 System/technology info

 Note

 Please note

 Process

 Hotline and support

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## 1. The modular system

### Modular VITA ZYRCOMAT 6100 MS System



### Note:

- To operate the VITA ZYRCOMAT 6100 MS, use the VITA vPad comfort or VITA vPad excellence control unit.
  - VITA vPad comfort is a control unit for controlling one firing device.
  - VITA vPad excellence is a control unit for controlling up to four firing devices.

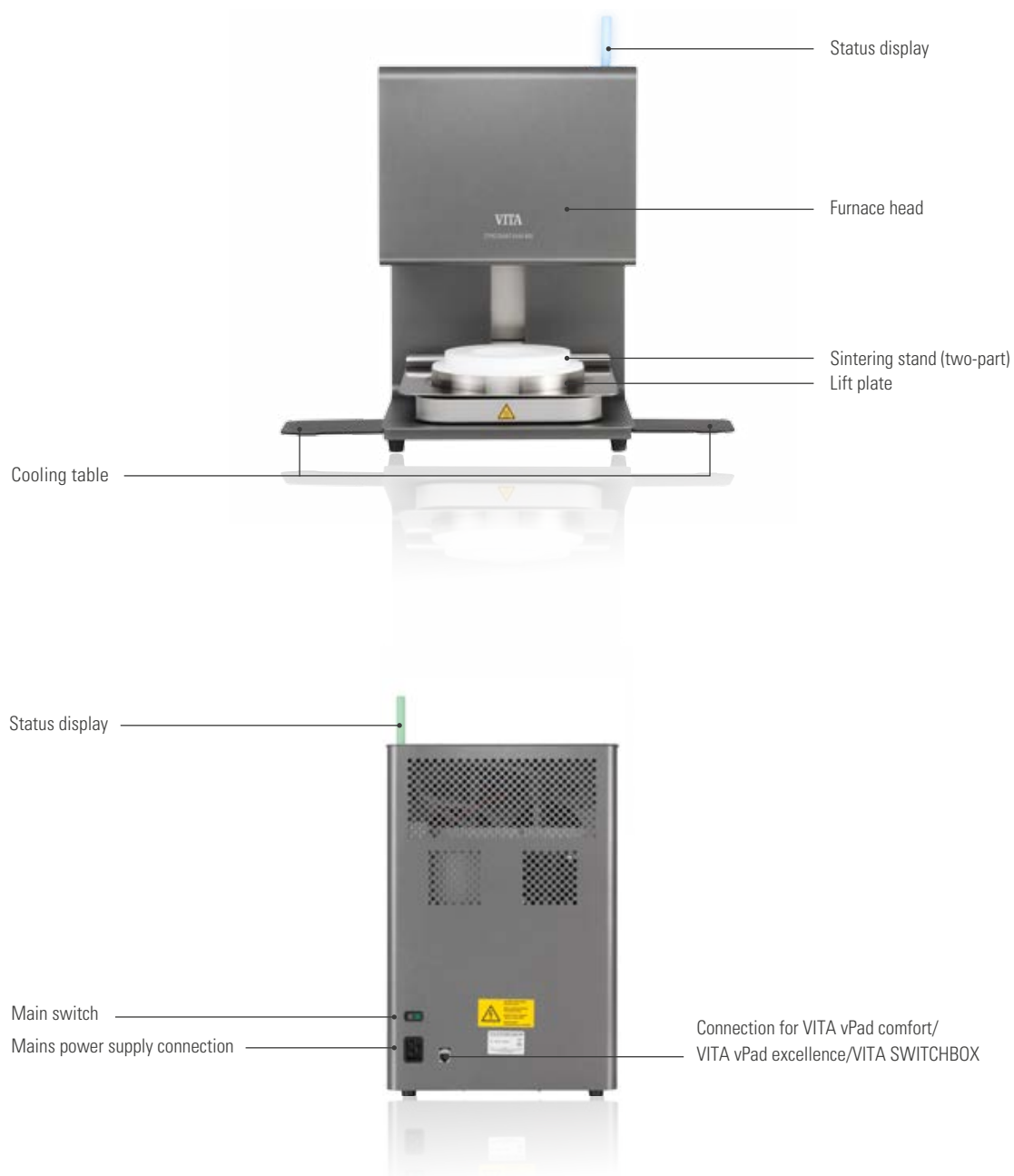
### Please note:

- For controlling two or more VITA furnaces using the VITA vPad excellence, you will need a VITA SWITCHBOX with connecting cable.
- The VITA SWITCHBOX is an adapter for connecting two to four firing devices to the vPad excellence.

### Reference:

- For additional information on operating the VITA vPad comfort/excellence, please see the appropriate operating instructions (No. 10513, No. 10512); download via [www.vita-zahnfabrik.com](http://www.vita-zahnfabrik.com).

## 1.1 The sintering furnace



### Note:

- What? High quality sintering furnace for reliable sintering results.
- What for? For sintering VITA YZ zirconia, as well as all common  $ZrO_2$  and  $Al_2O_3$ -based framework materials.

## 1.2 Accessories



### Note:

- What? Supplied accessory set for comfortable sintering guidance.
- What for? For reliable sintering using the VITA ZYRCOMAT 6100 MS.

### Please note:

- Place the sintering dish in the center on the sintering stand. Double-level sintering is possible when you stack with the VITA sintering dish support.
- The maximum volume capacity of the sintering dish is set at a maximum of 40 units.
- Whenever you open the furnace, always ensure that all doors and windows are closed so that the sintering dish is not exposed to a cold air draft.





## **2. First use**

### **2.1 Start firing in just a few steps**

#### **VITA vPad excellence:**



**1** Connect the sintering unit and the control unit with the connecting cable.



**2** Connect the sintering unit to the power supply.



**3** Turn on the main switch.



**4** Now follow the guided initial setup.

#### **Note:**

- The guided initial setup explains the central steps (e.g., set status display, insert sintering stand, etc.) leading up to the first program start.

#### **Please note:**

- Please start the program only if the sintering stand is set up.

#### **VITA vPad comfort:**

#### **Note:**

- The VITA vPad comfort does not offer any guided initial setup.
- Before starting the program for the first time, please set the status display, insert the metal ring, turn it clockwise and let it engage. Then insert the two-part sintering base.

#### **Please note:**

- Please start the program only if the sintering stand is set up.

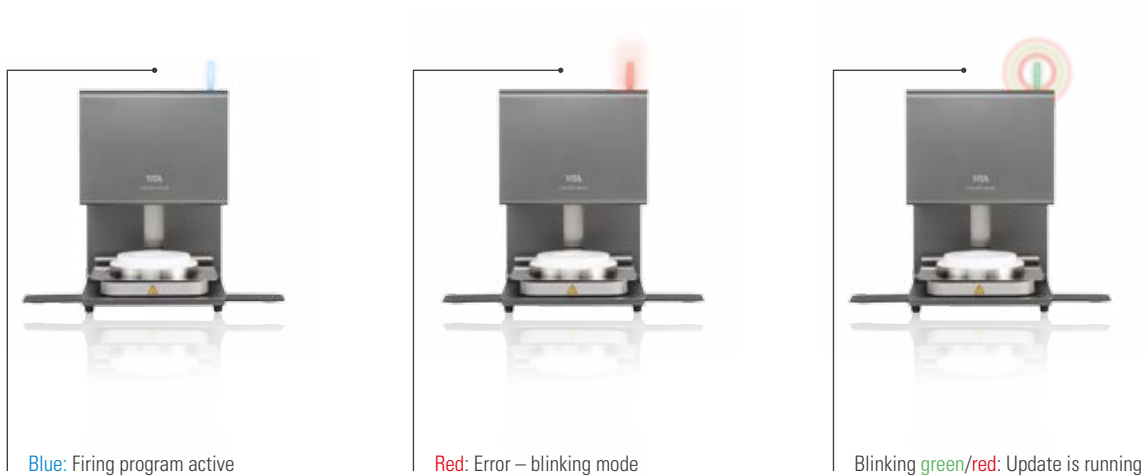
## 2.2 Set up sintering unit

- Please ensure that the following conditions are met.

### Please note:

- Set the device up in a dry, heated room. The distance between the sintering unit and the next wall should be at least 50 cm.
- When the temperature is below 15°C (e.g., after transport), leave the device to stand for approx. 60 minutes at room temperature before using it for the first time.
- Ensure that the unit is installed on a heat-resistant and non-flammable surface.
- The radiation and heating of the device is within a non-hazardous range. Nevertheless, heat sensitive surfaces of furniture and veneers may become somewhat discolored over time, due to the constant influence of heat. Therefore, maintain a minimum distance of 50 cm.
- Avoid direct sunlight on the device.
- Do not place flammable objects near the device.
- Do not place the control unit directly in the area of heat radiation of the sintering chamber.
- The distance between the sintering furnace and the control unit must be at least 20 cm.
- Set up the device in such a way that the main switch can be easily accessed and the power supply cable can be easily disconnected. Before using the device for the first time, please read the corresponding operating manual for the control unit.
- An electrical connection to distribution outlets with an extension is not permitted.

## 2.3 Status display



## 2.4 Switch off sintering unit and control unit

- When the unit is not in use, move the lift plate upwards and switch off the unit from the main switch.
- Closing the sintering chamber protects the insulation and prevents moisture absorption.

**3. Scope of supply/system solutions****3.1 Scope of supply VITA ZYRCOMAT 6100 MS**

Article	Scope of supply
VITA ZYRCOMAT 6100 MS	1x
Sintering stand	2x
Sintering dish	1x
Tongs	1x
150 g ZrO <sub>2</sub> spheres	1x
Status display/light bar	1x
Connecting cable for control unit (VITA vPad comfort or VITA vPad excellence)	1x
Power cable 1) 230 V EU 2) 230 V GB 3) 230 V CN 4) 230 V CH 5) 230 V ZA 6) 230 V AU 7) 230 V IL	1x
Warranty card for VITA device (applies for Germany only)	1x

**Note:**

- All VITA ZYRCOMAT 6100 MS components can be individually reordered.
- The following accessories can be ordered separately: side cover panels, FDS (Firing Data System) firing data management program for the PC, magnetic numbers 1 – 4.

**3.2 VITA System Solutions**



\*) Optional: Shading with VITA YZ COLORING LIQUIDS or VITA YZ SHADE LIQUIDS is an optional process step. This is not necessary with precolored YZ blanks.

\*\*) Optional: Veneering with VITA VM 9 is an optional process step and is not necessary for the monolithic restoration concept.

## 4. Technical data / Information







### 4.1 Specification

Dimensions (width/depth/height)	315 mm/500 mm/470 mm (closed)
Weight	27 kg (coated)
Housing	anthracite finish
Sintering chamber diameter	Usable diameter of 90 mm
Sintering chamber height	Usable height 70 mm
Sintering chamber temperature	Max. 1600°C
Electrical connection	230 V AC, 50 Hz
Power consumption	Max. 1500 Watt
Classification	Protection class 1
Application area	Approved for indoor operation only

### 4.2 Ambient conditions

- Please observe the following ambient conditions:
  - Use indoors
  - Ambient temperature 2 °C to 40 °C
  - Relative humidity 80 % at 31 °C
  - Max. height 2000 meters above sea level.
  - Fluctuations in nominal voltage are not greater than plus/minus 10% of the nominal voltage

### 4.3 Symbols

	Hazardous voltage	This pictogram warns the user about hazardous voltage. Before opening the instrument, always disconnect it from the mains current by unplugging the power plug.
	Residual voltage	After the back plate has been removed, a residual voltage of up to 400 V may still be present in components in the area of the power supply unit on the circuit board, even when the device is switched off.
	Hot surface	This pictogram warns the user about hot surfaces that can cause burns.
	Note	Do not place any objects in the area of the lift plate. For setting down firing objects, use the laterally extendable cooling tables.
	Separate disposal	This instrument and all accessories labeled with this symbol are subject to Directive 2002/96/EC (WEEE) and the applicable national regulations and may not be disposed of as unsorted municipal waste in the European Union (EU). Old units can be returned to VITA Zahnfabrik.
	CE marking	VITA ZYRCOMAT 6100 MS complies with the applicable regulations of the European Union (EU). The declaration of conformity can be requested from VITA (Regulatory Affairs Department) at: <a href="http://www.vita-zahnfabrik.com">www.vita-zahnfabrik.com</a>

## 4.4 Information

### Basic information on the instrument design

- The instrument is designed according to state-of-the-art technology and recognized safety standards.
- However, inappropriate use may endanger the health and safety of the user or third parties and lead to a risk of damage to the instrument and other material property.

### Unauthorized modes of operation

- Do not operate the control unit with sharp-edged or hot objects. This causes damage to the touch screen.
- The operation of the instrument with power sources, products, etc., which are subject to hazardous materials regulations or could have any negative impact on the health of the operating personnel when using equipment modified by the user, are not permitted.
- The unit may not be used without the sintering stand. The sintering stand must always be inserted in its designated recess on the bottom of the sintering unit. The unit may not be used with a flammable narcotic agent with air or nitrous oxide.
- The device is equipped with a fan. The fan is temperature-controlled. Activation, deactivation and speed of the fan are controlled automatically. The fan prevents excessive heating of the unit and contributes to the overall operational safety. The openings in the top cover of the sintering chamber, as well as the opening in the back cover, must not be covered or closed. The unit may not be used without the fan.

### Authorized modes of operation

- The insulation of the sintering chamber contains ceramic mineral fibers (Index No. 650-017-00-08), which are classified as a Cat. 2 carcinogen (Annex VI, EC 1272/2008). When working with the sintering chamber or exchanging the heating element, fiber dust may be discharged.
- Dust may be harmful if inhaled and cause irritation to the skin, eyes and respiratory system. When replacing parts of the sintering chamber, please observe the following instructions:
  - Wear long-sleeved protective clothing.
  - Wear safety goggles, as well as protective gloves.
  - Use a dust vacuum system or wear an FFP-2 respirator.
  - Once work has been completed, rinse the dust from unprotected skin using cold water.
  - Wash workwear separately from everyday clothing.
- The operation of the device is only permitted if this operating manual has been completely read and understood and the procedures described in it have been observed. Any other or additional use, e.g., processing of products other than those intended is considered misuse, as is the handling of hazardous materials or substances that are dangerous to personal health.
- Repairs and servicing of any kind may only be carried out by specially trained personnel.

### Please note:

- The manufacturer/supplier will not be liable for any damage resulting from such unauthorized use. The risk of such use is borne exclusively by the user.

## 4.5 Safety functions

The sintering unit has the following safety and monitoring features:

1. Temperature sensor monitoring
2. Power supply failure protection
3. Obstruction sensor
4. Temperature protection switch
5. Automatic temperature calibration

### **Temperature sensor monitoring**

Temperature sensor monitoring detects failure of the temperature probe in the sintering chamber. If a failure of the temperature sensor has been detected, the sintering chamber is prevented from heating up and an error message is displayed.

### **Power supply failure protection**

The instrument is equipped with power supply failure protection. This element prevents firing programs from aborting in the event of a short-term power failure. If the power failure time lasts less than 2 minutes, the current program will continue to run even though the display will remain out of service for the duration of the power failure. The current program is aborted if power is interrupted for more than 2 minutes. An error message is displayed once power is restored.

### **Obstruction sensor**

The vertical movement of the lift plate is controlled by computer. Any trapped objects are detected and the drive is switched off, if necessary. This prevents injuries caused by pinching. The system may still be operated without any restrictions after the drive is switched off.

### **Temperature protection switch**

The temperature protection switches are built into the housing of the sintering unit and prevent overheating of the sintering unit in case of malfunction of the heating control by switching off the heating. An error message is displayed if this type of malfunction occurs. The sintering system may not be used again until the system cools down. This can take some time.

### **Automatic temperature calibration**

The temperature is automatically calibrated each time the unit is switched on.

This temperature calibration takes into consideration and corrects all deviations occurring in the electronic components for temperature measurement and temperature control. This ensures a constant temperature of  $\pm 1^\circ\text{C}$ , even if the unit remains in continuous operation for a long period.

## 4.6 Cleaning the sintering unit and control unit

### Sintering unit

- Disconnect the unit from the power supply before cleaning.
- The housing must only be cleaned with a damp cloth and no cleaning agent. No flammable liquids or solvents may be used.
- The inside of the sintering chamber does not need to be cleaned.

### Control unit

- Clean the display at regular intervals with a screen cleaner.
- Screen cleaners are especially good since they do not cause any scratches, have an antistatic effect and prevent the control unit from getting dirty again.

## 4.7 Cleaning the sintering chamber

- In the speed mode, the fast heating puts a very extreme burden on the heating elements. Fast heating may also cause the smooth gray oxide layer on the heating elements to exhibit cracks.
- If this oxide layer peels off, it can reduce the operating safety of the heating elements. At the same time, splintered off particles of glass can contaminate the sintering platform or sintering dish.
- It is imperative to visually check for deposits of glass particles or glass dust at regular intervals. Use a vacuum system to suction off these contaminants. For health safety reasons, never use compressed air. If chipping of the gray oxide layer of the heating elements is discovered during this visual inspection, it is imperative to carry out a cleaning firing. The cleaning firing builds up the oxide layer and gives the surface back its smooth gray appearance.
- The cleaning firing is described in the operating manual of the VITA vPad comfort or the VITA vPad excellence. Consult the operating manual of the control unit for information about the cleaning firing.

### Please note:

- Damage to the display or the sintering unit resulting from improper use during operation or cleaning is excluded from the VITA warranty.

## 4.8 Sintering chamber insulation

The sintering chamber contains ceramic mineral fibers as insulation material (Index No. 650-017-00-08), which is classified as a Cat. 2 carcinogen (Annex VI, EC 1272/2008). When working with the sintering chamber or exchanging the firing muffle, fiber dust may be discharged. Dust may be carcinogenic if inhaled, irritating the skin, eyes and respiratory system. When exchanging parts of the sintering chamber, proceed as follows:

- Wear long-sleeved protective clothing.
- Wear safety goggles, as well as protective gloves.
- Use a dust vacuum system or wear a FFP -2 respirator.

Once work has been completed, rinse dust from unprotected skin using cold water. Wash workwear separately from everyday clothing.

### Please note:

- Cracks in the insulation cannot be avoided, due to the high temperature effect and rapid temperature change. These have no impact on the sintering result.



## **5. Additional information**

### **5.1 VITA warranty and consumer protection**

The VITA warranty and consumer protection document can be found on the homepage or at the following link:  
<https://www.vita-zahnfabrik.com/de/oefen/Vita-garantie-50694,27568.html>

### **5.2 Update messenger**

Software updates are available as a download at the VITA Zahnfabrik website. To automatically have the latest device information and updates e-mailed to you, an option to register is provided at [www.vita-zahnfabrik.com/update-messenger](http://www.vita-zahnfabrik.com/update-messenger).

### **5.3 Spare parts**

Spare parts must comply with the technical requirements specified by the manufacturer. This is only ensured when using original VITA spare parts.

### **5.4 Patents and trademarks**

VITA ZYRCOMAT® 6100 MS is a registered trademark of VITA Zahnfabrik. Other trademarks mentioned in this document are the property of the respective company.



## **5.5 Hotline and support**

### **We are here to help**

#### ▶ **Hotline Sales Support**

Mr. Udo Wolfner and his team (Internal Sales Department) will be glad to assist you with orders or questions about the delivery, product data and marketing materials.

**Phone +49 (0) 7761/56 28 84**

**Fax +49 (0) 7761/56 22 99**

**8:00 a.m. to 5:00 p.m. CET**

**Email: [info@vita-zahnfabrik.com](mailto:info@vita-zahnfabrik.com)**

#### ▶ **Technical hotline**

If you have technical questions concerning VITA product solutions, you can contact our technical specialists Mr. Ralf Mehlin or Mr. Daniel Schneider.

**Phone +49 (0) 7761/56 22 22**

**Fax +49 (0) 7761/56 24 46**

**8:00 a.m. to 5:00 p.m. CET**

**Email: [info@vita-zahnfabrik.com](mailto:info@vita-zahnfabrik.com)**

#### ▶ **VITA instruments service**

Please do not hesitate to contact us if you have any questions concerning VITA instruments.

**Phone +49 (0) 7761/56 21 11**

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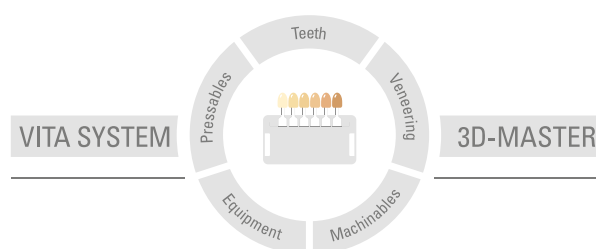
**8:00 a.m. to 5:00 p.m. CET**

**Email: [instruments-service@vita-zahnfabrik.com](mailto:instruments-service@vita-zahnfabrik.com)**

#### ▶ **Additional international contact information can be found at [www.vita-zahnfabrik.com/contacts](http://www.vita-zahnfabrik.com/contacts).**



Additional information on VITA ZYRCOMAT® 6100 MS  
can be found at: [www.vita-zahnfabrik.com](http://www.vita-zahnfabrik.com)



**Please note:** Our products must be used in accordance with the instructions for use. We accept no liability for any damage resulting from incorrect handling or usage. The user is furthermore obliged to check the product before use with regard to its suitability for the intended area of applications. We cannot accept any liability if the product is used in conjunction with materials and equipment from other manufacturers that are not compatible or not authorized for use with our product and this results in damage. The VITA Modulbox is not a required component of the product. Date of issue of this product information: 02.19

After the publication of this information for use, any previous versions become obsolete. The current version can be found at [www.vita-zahnfabrik.com](http://www.vita-zahnfabrik.com)

**VITA ZYRCOMAT® 6100 MS** is CE marked according to the EC Guideline 2006/95/EC, 2004/108/EC and 2011/65/EC.

The products/systems of other manufacturers mentioned in this document are registered trademarks of the respective manufacturers.

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