

Zirkonzahn®

ZIRKONOFEN TURBO

ZIRKONOFEN TURBO SINTERING FURNACE

Speed beyond any expectations





WATCH THE
VIDEO



A NEW ERA BEGINS

Driven by diligence, dedication and enthusiasm, we strive tirelessly to give our clients always and only the best.

We are aware of their requirements and we know our ambitions. It is the union of these two aspects that leads us to the best results. We never overlook any detail, searching for new solutions with meticulous attention until the finest point is set – only then can we be truly proud of our product.

Our constant search for perfection and innovation drives us day by day and we do not know what the word “rest” means.

No challenge is too tough for us and we have proved it again.

With the Zirkonofen Turbo, we start a new era together.

Andreas Steyer *Thomas Steyer*

PERFECTION THROUGH EXPERIENCE

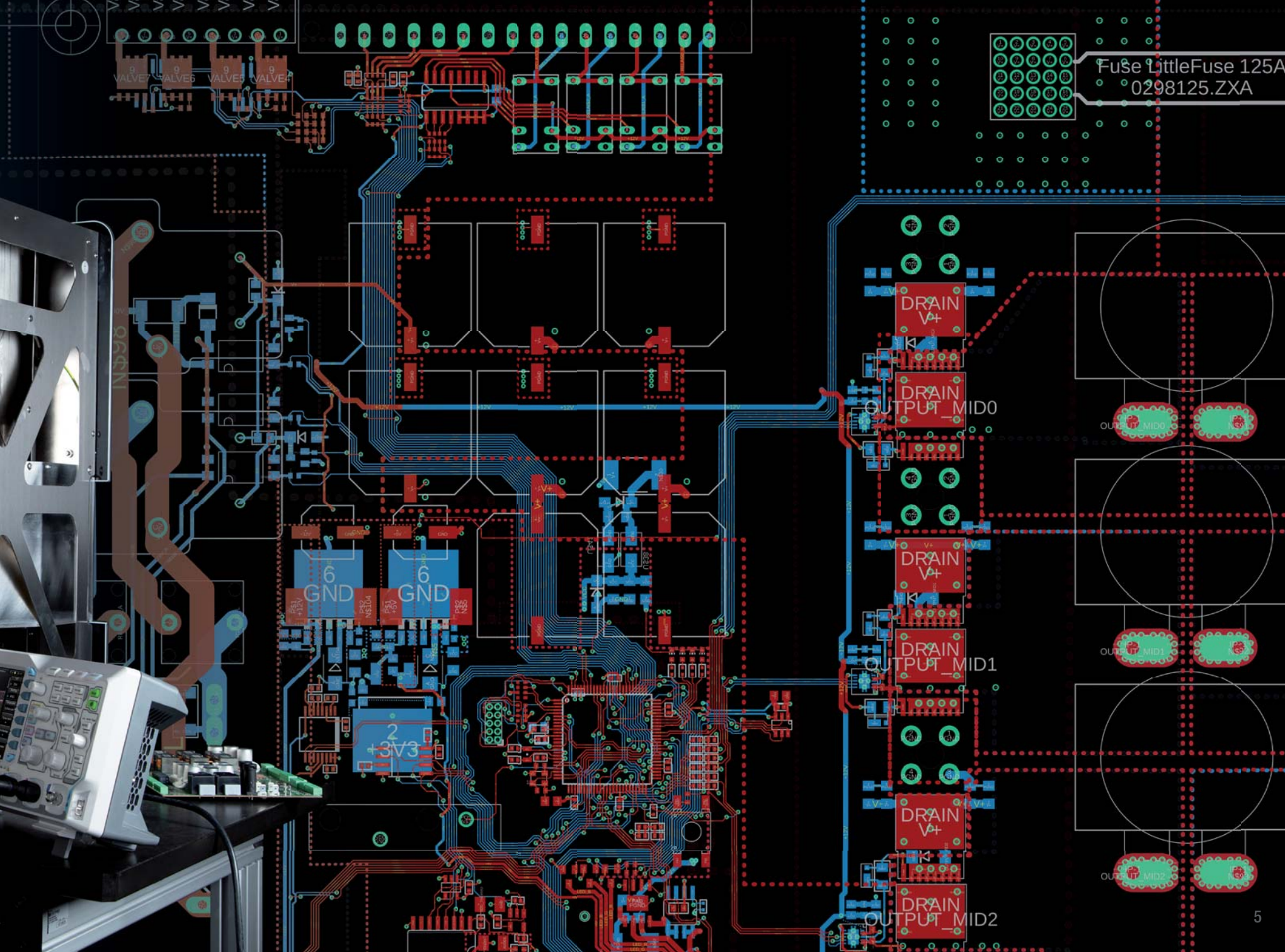
Our long-standing experience in the development of CAD/CAM milling units, scanners and sintering furnaces makes us the experts in this field.

With innovation and strong willpower, we develop holistic products that are perfectly integrated into the Zirkonzahn workflow.

The new Zirkonofen Turbo fully reflects this work philosophy.

The optimised electronics and the newly developed software make the furnace even more efficient, user-friendly and ideally suited to our materials. This further simplifies the manufacturing process of tailor-made restorations without compromising on accuracy, precision and quality.





FEATURES OVERVIEW



Turbo sintering of zirconia in 1h30



120 Round sintering chamber with room for up to 120 zirconia elements



4 MoSi₂ high-performance heating elements



Large sintering chamber with a capacity of 0.9 l



Over 1000 min. of sintering time per program



Baking Recovery function



7" colour touch screen



New, user-friendly software



Update via LAN or WiFi

1h30
ONLY



Heating rate of up to 120 °C/min



Cooling rate of up to 60 °C/min



Optimised cooling through fully automatic sintering platform



Maximum sintering temperature of 1700 °C



Control accuracy of +/- 2 °C at a final temperature of 1600 °C



Independent temperature calibration



Large number of pre-set programs



Creation of custom sintering programs



Compact, modern design with high-quality full glazing

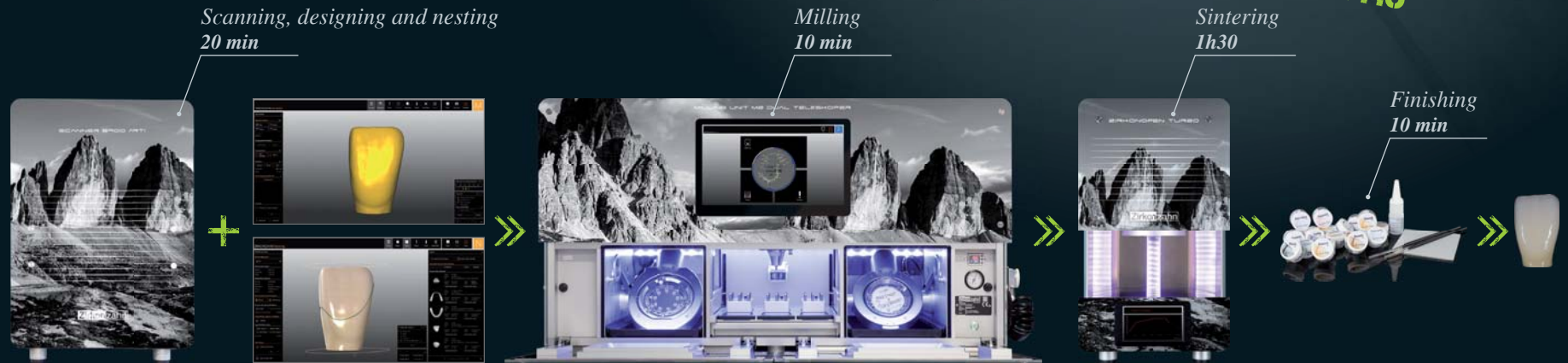
A FASTER WORKFLOW WITH ZIRKONZAHN

Manual colouring with Colour Liquids is no longer necessary with Prettau® Dispersive® zirconia, as this material is already provided with a smooth, natural colour gradient during the manufacturing process.

1. Scanning, designing and nesting the structure with a Zirkonzahn scanner and Zirkonzahn.Software
2. Milling process with our stand-alone milling units, equipped with fully automated 5+1-axis simultaneous milling technology
3. -81% of sintering time with the Ultraspeed program
4. After sintering, characterisation of restorations with ICE Stains Prettau® and ICE Stains 3D by Enrico Steger



**FINAL RESTORATION
IN 2H10**

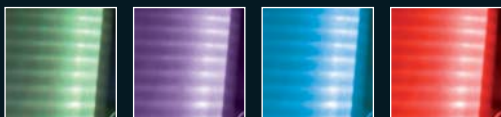




Heating elements and temperature sensor



Round sintering chamber



Status display via LED lighting

Green = idle mode

Purple = heating and holding phase

Light blue = cooling phase

Red = error

High-resolution 7" colour touch screen



1h30 ONLY

**-73%
ELECTRIC CONSUMPTION**



High quality full glazing with Securit glass UNI ISO 12150

Sintering tray for up to 120 zirconia elements

Automated sintering platform

SINTERING CHAMBER

2.

1.

3.

The round shape of the sintering chamber ensures optimum heat distribution and a uniform sintering of all zirconia elements. The chamber is equipped with 4 MoSi₂ high-performance heating elements that achieve high heating rates due to their modern control system.

Within our range of sintering furnaces, the sintering chamber of the Zirkonofen Turbo is the largest one, boasting a volume of 0.9 l. This permits sintering up to 120 zirconia elements or 3 full-arch bridges simultaneously.

4.

5.



1. TEMPERATURE SENSOR



2. HEATING ELEMENTS



3. SINTERING CHAMBER



4. SINTERING TRAY



5. SINTERING PLATFORM



6. ALUMINIUM CONTACT STRIPS



SINTERING ACCESSORIES

In the Zirkonofen Turbo, zirconia restorations can be sintered by means of special accessories, like the sintering trays and the ceramic plate.

The sintering chamber can contain up to 3 sintering trays stacked on top of each other, which permit sintering up to 120 zirconia elements in one single process.

If bridges are sintered with a sintering stabiliser, the ceramic plate must be used, which offers space for up to 3 full-arch bridges.

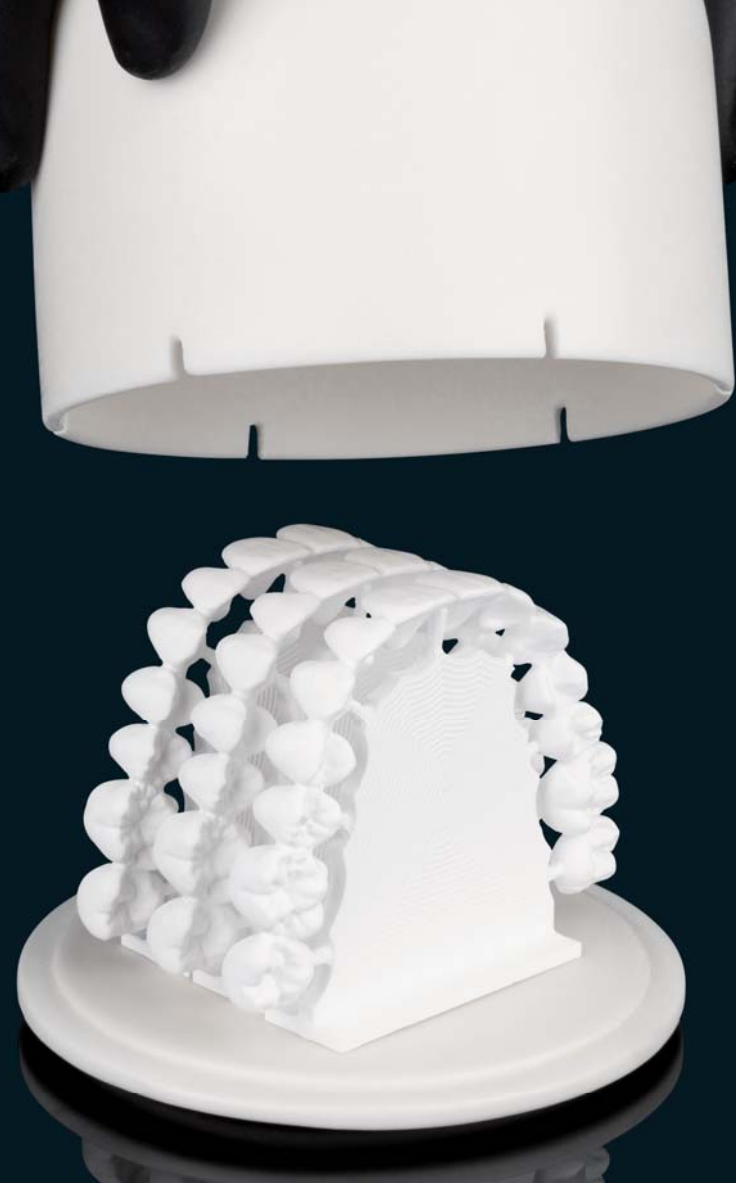


To avoid pressure marks on the zirconia elements during sintering, the elements must be placed on the sintering tray well apart from each other.

For a deformation-free framework, the base of the sintering tray should be covered with sintering granules.



The sintering chamber contains up to 3 sintering trays stacked on top of each other. In this way, up to 120 zirconia elements can be sintered in one sintering process.



To prevent discolouration or contamination of zirconia structures during the sintering process, it is recommended to cover the bridges with a ceramic protection cover. The new ceramic protection cover, with its curved shape, guarantees optimal heat distribution.

AUTOMATED SINTERING PLATFORM

The sintering platform is controlled by an intelligent electronic system developed in-house. This system monitors the temperature curve of the sintering chamber and controls the platform during the cooling phase.

If the sintering chamber does not cool down quickly enough, the platform moves automatically downwards, ensuring optimal cooling processes and perfect sintering results.





SINTERING PROGRAMS

The Zirkonofen Turbo includes a large number of pre-set programs that are perfectly matched to each kind of Zirkonzahn zirconia. This means that the heating, holding and cooling phases vary slightly depending on the material. In addition, the user can create personal sintering programs.

The Speed and Ultraspeed programs should not be used for sintering dental units with a wall thickness exceeding 4 mm. Therefore, when selecting the sintering speed, attention must be paid to the elements' wall thickness and weight.

1	SLOW PROGRAM – 12 h	HEAVY	≥ 5 g PER UNIT
2	STANDARD PROGRAM – 8 h	MEDIUM	3–5 g PER UNIT
3	SPEED PROGRAM – 3.5 h	LIGHT	2–3 g PER UNIT
4	ULTRASPEED PROGRAM – 1.5 h	SUPER LIGHT	≤ 2 g PER UNIT



 SHORTEST PROGRAM – 45 MIN

LARGE NUMBER OF PRE-SET PROGRAMS

PERSONALISED SINTERING PROGRAMS

CONFIGURATION OF PERSONALISED PROGRAMS ACCORDING TO THE FOLLOWING PARAMETERS:






Maximum heating and cooling rates

Temperature range	Heating rate
Room temperature – 300 °C	50 °C/min
300 °C – 1100 °C	120 °C/min
1100 °C – 1700 °C	60 °C/min
Temperature range	Cooling rate
1700 °C – 1200 °C	60 °C/min
1200 °C – 800 °C	40 °C/min
800 °C – Room temperature	30 °C/min

Caution: The Ultraspeed programs for Prettau® 3, Prettau® 3 Dispersive®, Prettau® 4 Anterior® and Prettau® 4 Anterior® Dispersive® are only suitable for sintering bridges with max. 3 units.

SINTERING SPEEDS

Sintering speeds that can be selected using the different sintering furnaces:

Hours	0	1	2	3	4	5	6	7	8	9	10	11	12					
SLOW	[Bar chart showing SLOW program duration from 0 to 12 hours]													✓	✓	✓	✓	✗
STANDARD	[Bar chart showing STANDARD program duration from 0 to 8 hours]													✓	✓	✓	✓	✗
SPEED	[Bar chart showing SPEED program duration from 0 to 3 hours]													✓	✓	✓	✓	✗
ULTRA SPEED	[Bar chart showing ULTRA SPEED program duration from 0 to 1 hour]													✗	✗	✗	✓	✗
METAL SINTERING	[Bar chart showing METAL SINTERING program duration from 0 to 8 hours]													✗	✗	✓	✗	✓

- Slow program: suitable for heavy structures (over 5 g per unit)*
- Standard program: suitable for medium-heavy structures (3-5 g per unit)*
- Speed program: suitable for light structures (2-3 g per unit)*
- Ultraspeed program: suitable for super light structures (below 2 g per unit)*
- Metal Sintering program: suitable for all kind of Sinternit restorations.

* Recommendations. Errors and omissions excepted

8 HOURS

1,5 HOURS

SINTERING WITH STANDARD PROGRAM

SINTERING WITH ULTRASPEED PROGRAM

ZIRKONOFEN TURBO



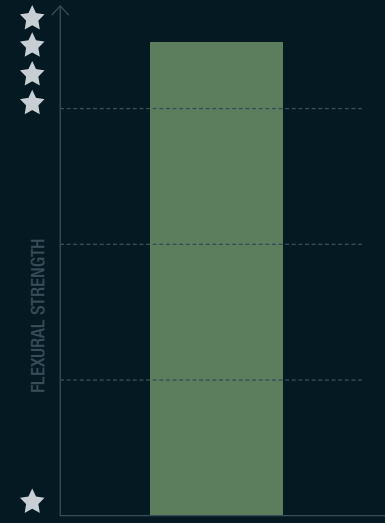
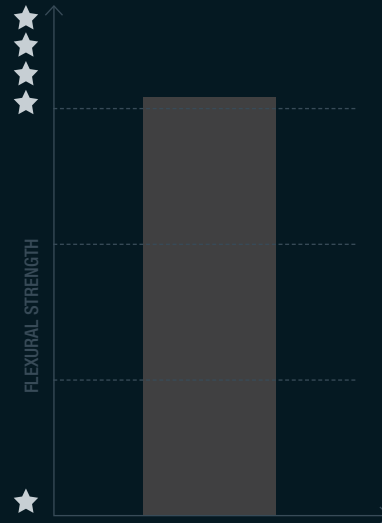
PRETTAU® 2 DISPERSIVE® ZIRCONIA
3-UNIT BRIDGE



100% perfect fit



100% identical colour



100% excellent flexural strength

8
HOURS



Prettau® 2 Dispersive® – Result with Standard program in 8 hours

15
HOURS



*Prettau® 2 Dispersive® – Result with **Ultraspeed** program in 1 hour 30 min*

*The restoration elements used for these comparisons have a weight of < 2 g and a wall thickness of max. 4 mm.
This means that they can also be sintered with the Ultraspeed program.*

FAST SINTERING PROGRAMS

The Zirkonofen Turbo is equipped with pre-set fast sintering programs perfectly adapted to each Zirkonzahn zirconia material.

The smaller and thinner the structure to be sintered, the shorter the required sintering time.

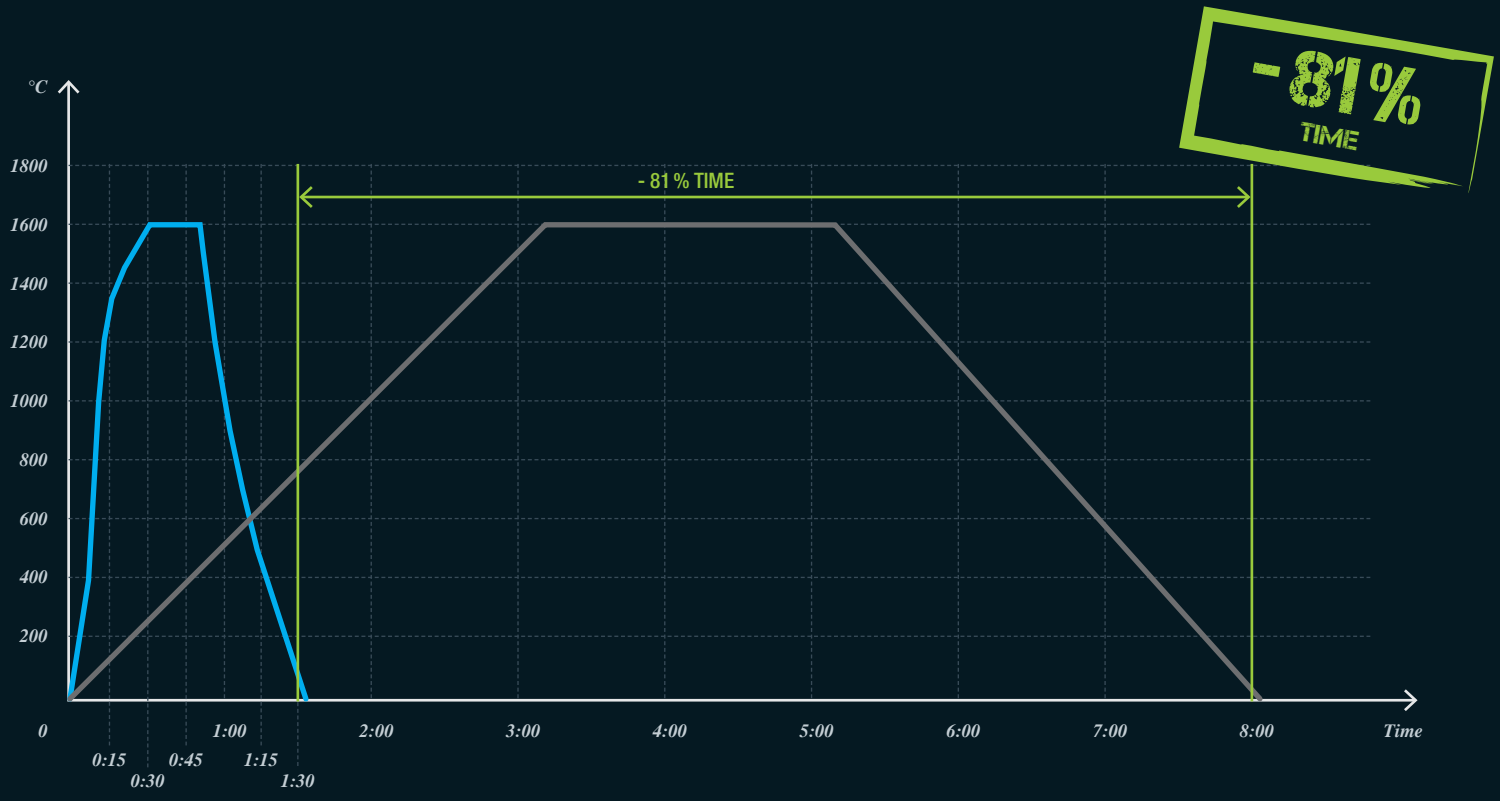
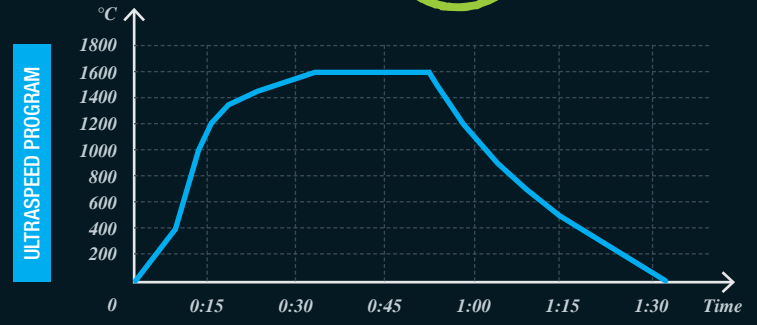
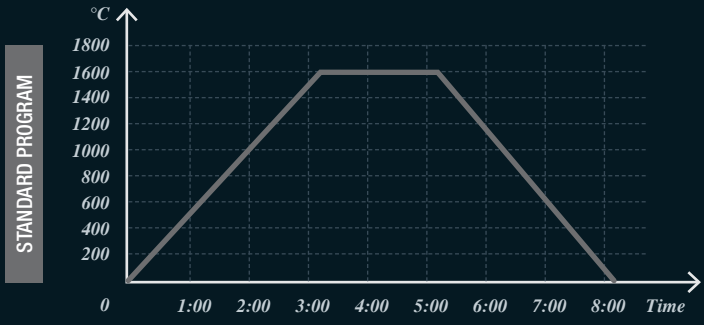
With this furnace, 4-unit bridges can now be sintered in approx. 1 hour and 30 minutes. This cuts processing time by 81 % and reduces electric consumption by 73 %. As a result, small zirconia restorations can be created and finished in 2 hours and 10 minutes only.

ONLY 1H-30
HOURS





-73%
ELECTRIC CONSUMPTION



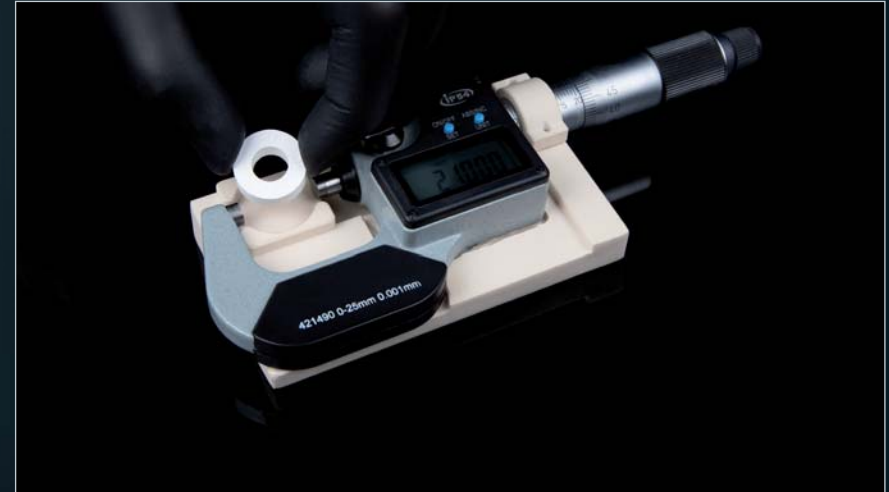
TEMPERATURE CALIBRATION



Every Zirkonofen Turbo is optimally calibrated before delivery, in order to achieve the best sintering results right from the first usage.

Thanks to the temperature calibration program, the user can check at any time the oven's temperature control accuracy of ± 2 °C at a final temperature of 1600 °C. If necessary, values can be corrected directly in the software.






1. Place the temperature calibration ring without the firing supports on the sintering platform and start the temperature calibration program.
2. Let the ring cool down to room temperature and measure the diameter with a measuring instrument.
3. Compare the measured value with the reference table, then enter and confirm the difference in the software.
4. If the temperature offset is more than ± 10 °C, perform a second temperature calibration to check the final sintering temperature.



OUR SUGGESTION:



To obtain the highest quality results with unchanged translucency, colour gradient or flexural strength values, it is essential to adapt the sintering program to the material and to the structure to be sintered.


If parameters are correct but the results are still unsatisfactory, a temperature calibration must be carried out.

 **Change custom temperature offset**

Change this Offset-value only after a performed calibration-cycle according the documentation of the "Calibration-Kit". A wrong offset-value can lead to a discoloration of the zirconia.

Temperature offset:


0  


 **Service**


Zirkonzahn Worldwide
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Statistics:

Temperature offset:	0
Number of sinter cycles:	60
Time heating elements:	147:36:16
Update available	

 Temperature calibration program

 Start cleaning fire

 Start update

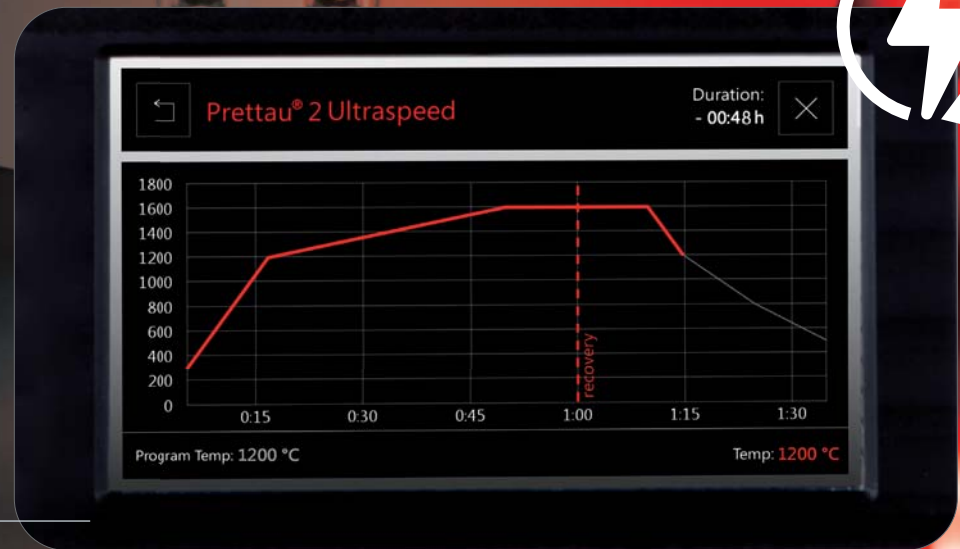
BAKING RECOVERY

With the new Baking Recovery function, unsatisfactory sintering results are nearly impossible!

After a power failure, the intelligent software checks whether the sintering program can be regularly completed without compromising the result or whether the sintering process must be suspended.

If the sintering program can be continued, the user can see on the screen in which phase of the program the interruption occurred. If the program cannot be completed, the software will inform the user.





DISPLAY

The Zirkonofen Turbo is equipped with a 7" touch screen for intuitive operation. Via the touch screen, the user not only can select, start and create his own sintering programs, but he can also install upgrades, add new functions and modify the settings.



LED LIGHTING WITH STATUS DISPLAY

The four different coloured displays show at a glance the current status of the Zirkonofen Turbo:

Green = idle mode; ready for a sintering process

Purple = heating and holding phase; the sintering process is carried out

Light blue = cooling phase; the sintering chamber is being cooling down

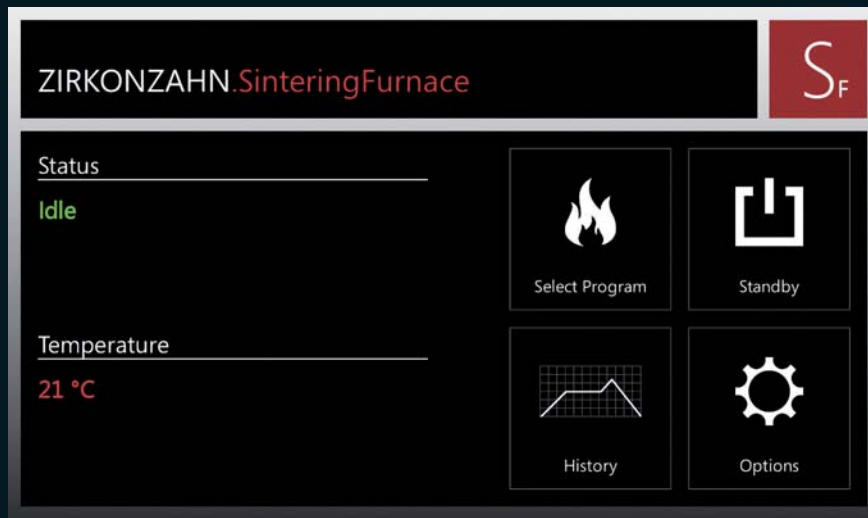
Red = error; a problem has occurred



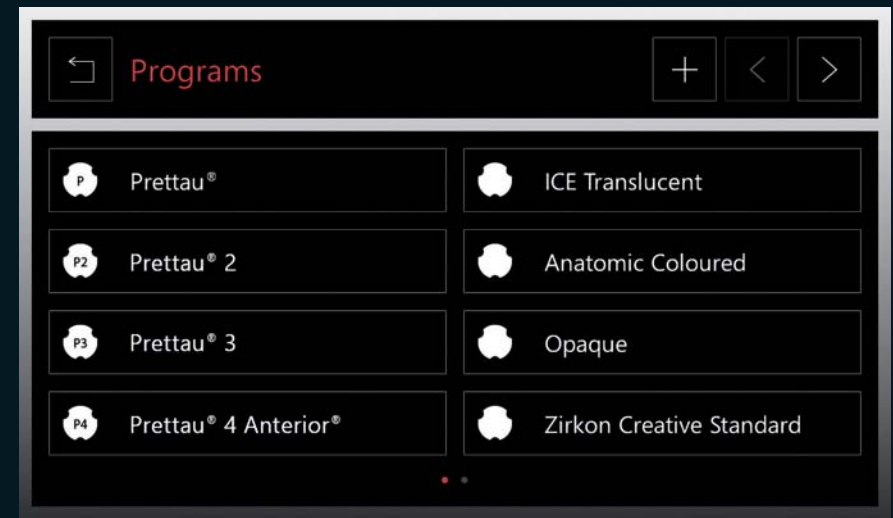
SOFTWARE

The software, developed in-house, has been re-designed especially for the Zirkonofen Turbo.

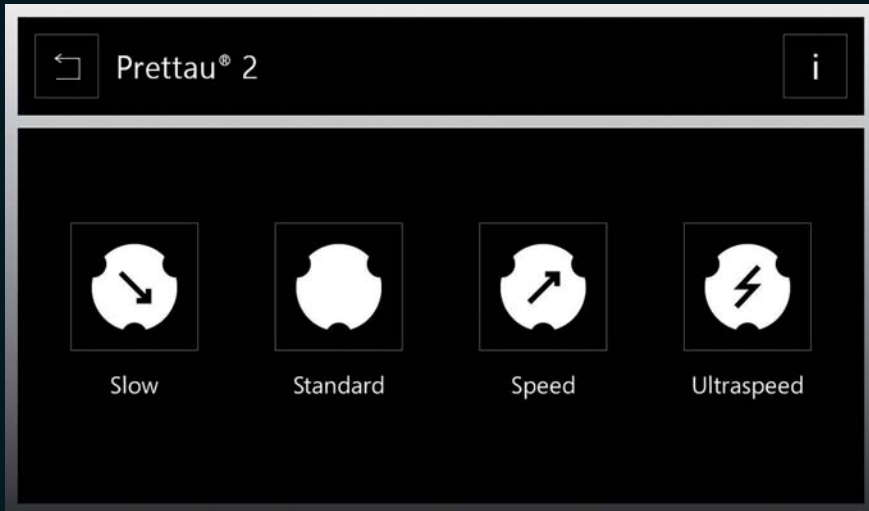
A wider range of languages is now available to the users. Via the Internet connection, they can download and install updates directly in the furnace, in order to always work with the latest functions and sintering programs. The software also permits the creation of individual sintering programs in addition to the pre-set ones and, based on the user behaviour, it recognises the most frequently used programs and saves them as favourites, for an easier selection when starting a new sintering cycle.



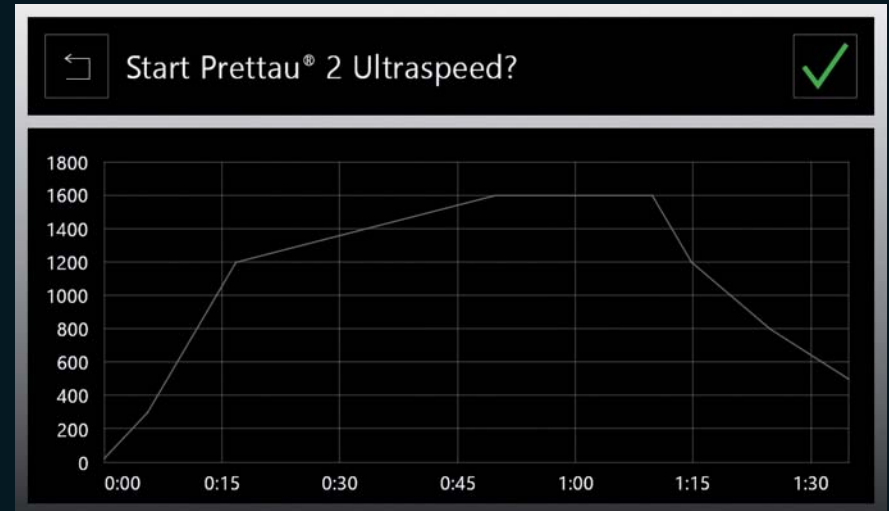
1. Start screen – Ready for a new sintering process



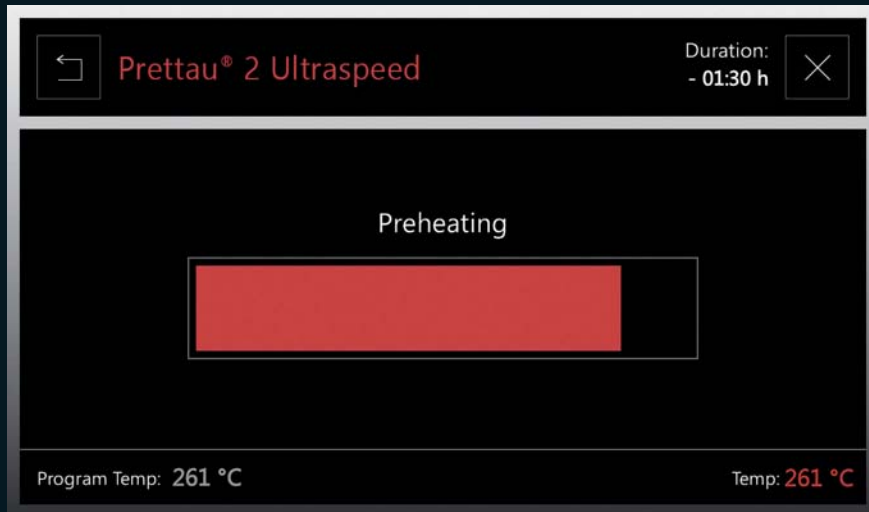
2. Selection of the appropriate zirconia



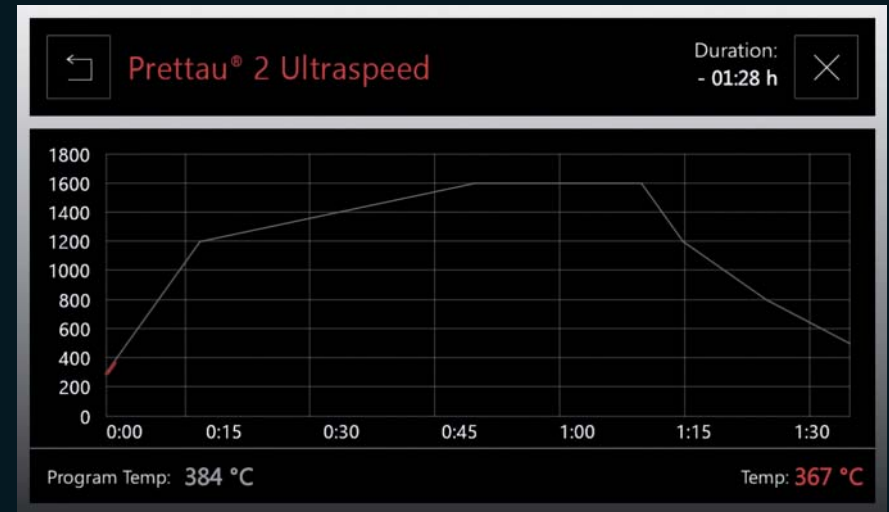
3. Selection of the sintering speed



4. Preview of the sintering program with temperature curve



5. Status display – Heating phase



6. Sintering program with temperature curve

SOFTWARE

Back

Recently used programs

Create a new program

Select zirconia

Favourites

Action	Settings
1 Heating	Time: 1h 19 min - Rate: 20.00 °C/min - Temp: 1600 °C
2 Holding	Temp: 1600 °C - Time: 1h 0 min
3 Cooling	Time: 1h 19 min - Rate: -20.00 °C/min - Temp: 20 °C

The bottom screenshot shows the 'Programs' menu with 'ICE Translucent', 'Anatomic Coloured', 'Opaque', 'Zirkon Creative Standard', and 'Custom Program 01'.

TECHNICAL DATA

Size (W x H x D)	39 x 69 x 49 cm
Weight	65 kg
Electrical power	3000 W
Mains voltage	200–240 V~ / 50–60 Hz
Sintering Chamber Capacity	0.9 l
Sintering chamber (Ø x H)	Ø 10,5 x 10,5 cm
Max. temperature	1700 °C
Materials	Zirkonzahn zirconia, zirconia from other manufacturers
Vacuum	No
Capacity	Up to 120 zirconia elements (with sintering tray) or up to 3 full-arch bridges (with ceramic plate)



*Stainless steel
casing*



*Customisable
glazing*



ACCESSORIES



New! *Sintering tray Speed Zirkonofen Turbo (ZBAA3221) – The trays have been specially designed to ensure perfect heat distribution during sintering and for use in combination with the Ultraspeed program. Up to 3 sintering trays can be placed in the furnace. In this way up to 120 zirconia elements can be sintered in one sintering process.*



Fine-grain sintering granules (ZBAA3251)
Special powder for sintering zirconia structures with sintering trays.
Size: 0.4 mm – 1.0 mm



Coarse-grain sintering granules (ZBAA3261)
Special powder for sintering zirconia structures with sintering trays.
Size: 0.3 mm – 2.0 mm

IN COMBINATION



New! Ceramic plate Zirkonofen Turbo (ZBAA9441) – Sintering support to avoid contact stains on the framework. It can contain max. 3 full-arch bridges. It cannot be used with the Ultraspeed program.



New! Ceramic protection cover Zirkonofen Turbo (ZBAA4671) – For optimal colour fidelity of the zirconia structures during sintering. The curved shape serves for optimal heat distribution inside the protection cover. It cannot be used with the Ultraspeed program.



New! Tweezers for Zirkonofen Turbo (ZBAC9082) – Stainless steel tweezers for removing the sintering tray from the sintering chamber (included).



New! Temperature calibration ring for Zirkonofen Turbo (ZBAC9081)
Content: 10 rings for temperature calibration of the Zirkonofen Turbo sintering furnace. A micrometer screw (or similar) to measure the ring diameter is required.

Zirkonzahn®

ZIRKONOFEN TURBO

ENGLISH

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