

The logo for Zirkonzahn, featuring the brand name in a bold, white, sans-serif font with a registered trademark symbol, set against a dark background.

Zirkonzahn®

Human Zirconium Technology

A background image of a sintering furnace with bright orange and yellow flames. A horizontal white line is drawn across the middle of the image, separating the top and bottom sections.

SINTERING FURNACES

The brand new generation

ON FIRE FOR THE FUTURE!

Fire is a force of nature with practically infinite energy. It is fascinating and yet dangerous.

The evolution of mankind would never have happened without the energy of fire. Fire has always been and remains the symbol for heat, energy and passion. Only people driven by an inner flame can conceive innovation and create works of art.

A person who is being consumed by this inner fire will never be satisfied with the status quo but wants to be ready for whatever the future may bring, even before it happens – they are always one step ahead, on fire for the future.

People bursting with enthusiasm are capable of convincing others, laying the basis for their success.

Light your fire!



Armin Steger *Thomas Steger*

THE BRAND NEW GENERATION

All furnaces are real space savers and are built in a very compact way. Thanks to the high temperatures these furnaces are ideal for the material technologies of the future.

Various sintering programs and fast sintering programs are available for the sintering of zirconia and Sintermetall. Sintermetall can be sintered oxygen-free and dimensionally stable under high-vacuum and without the addition of shielding gas.

Despite ingenious firing technologies, the wearing parts are easily replaceable without the need for special technical assistance.



Zirkonofen 600/V2
sintering furnace



Zirkonofen 600/V3
sintering furnace



Zirkonofen 700
sintering furnace



Zirkonofen 700
Ultra-Vakuum
sintering furnace



NEW! Zirkonofen Turbo
sintering furnace



Sinterofen 300S
sintering furnace



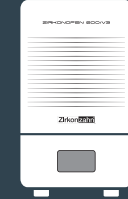
Accessories

TECHNICAL DATA

Zirkonofen 600/V2

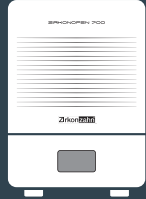


Zirkonofen 600/V3



<i>Size (W x H x D)</i>	28.5 x 60.5 x 43 cm	39.4 x 69.3 x 46 cm
<i>Weight</i>	44 kg	57 kg
<i>Electrical power</i>	700 W	700 W
<i>Combustion chamber capacity</i>	0.61	0.61
<i>Combustion chamber (W x H x D)</i>	6 x 10 x 10 cm	6 x 10 x 10 cm
<i>Temperature (max.)</i>	1700 °C	1700 °C
<i>Vacuum</i>	No	No
<i>Capacity</i>	approx. 60 zirconia elements (with sintering trays)	approx. 60 zirconia elements (with sintering trays)

Zirkonofen 700



Zirkonofen 700 Ultra-Vakuum



NEW! Zirkonofen Turbo



Sinterofen 300S



SINTERING PROCESSES

<i>Preset programs</i>	<i>Sintering furnaces</i>					
	<i>Zirkonofen 600/V2</i>	<i>Zirkonofen 600/V3</i>	<i>Zirkonofen 700</i>	<i>Zirkonofen 700 Ultra- Vakuum</i>	<i>Zirkonofen Turbo</i>	<i>Sinterofen 300S</i>
<i>ICE Standard</i>	✓	✓	✓	✓	✓	
<i>ICE Speed</i>	✓	✓	✓	✓	✓	
<i>ICE Slow</i>		✓	✓	✓	✓	
<i>Prettau® Standard</i>	✓	✓	✓	✓	✓	
<i>Prettau® Slow</i>		✓	✓	✓	✓	
<i>Prettau® 2 Standard</i>	✓	✓	✓	✓	✓	
<i>Prettau® 4 Anterior® Standard</i>	✓	✓	✓	✓	✓	
<i>Prettau® 4 Anterior® Speed</i>	✓	✓	✓	✓	✓	
<i>Metal Sintering</i>				✓*		✓
<i>Anatomic Coloured Standard</i>	✓	✓	✓	✓	✓	
<i>Anatomic Coloured Speed</i>		✓	✓	✓	✓	
<i>Zirkon Creative Standard</i>		✓	✓	✓	✓	
<i>Opaque Sintering</i>	✓	✓	✓	✓	✓	
<i>Turbo</i>					✓	
<i>Prettau® Turbo</i>					✓	
<i>Ultra Turbo</i>					✓	

* when using the Sinter Metal Furnace Adapter

Sintering time

Description

Hours
0 1 2 3 4 5 6 7 8 9 10 11 12



■ Heating-up ■ Holding time ■ Cooling ■ Vacuum program

Subject to change

ZIRKONOFEN 600



2 MoSi₂ heating elements

5

5 preset programs

ZIRKONOFEN 600/V2

Technical data

Size (W x H x D)	28.5 x 60.5 x 43 cm
Weight	44 kg
Electrical power	700 W
Combustion chamber capacity	0.6 l
Combustion chamber (W x H x D)	6 x 10 x 10 cm
Max. temperature	1700 °C
Vacuum	No
Capacity	up to 60 zirconia elements (with sintering trays)





2 MoSi₂ heating elements



New sintering technique

12

12 preset programs



Improved air circulation



Individual sintering programs on request

USB

Updateable via USB port



4.3" color touchscreen



Modern high quality full glazing

ZIRKONOFEN 600/V3

Technical data

Size (W x H x D)	39.4 x 69.3 x 46 cm
Weight	57 kg
Electrical power	700 W
Combustion chamber capacity	0.6 l
Combustion chamber (W x H x D)	6 x 10 x 10 cm
Max. temperature	1700 °C
Vacuum	No
Capacity	up to 60 zirconia elements (with sintering trays)



600/V2

600/V3

700

700 U-V

TURBO

300S



4 MoSi₂ heating elements



New sintering technique

12

12 preset programs



Larger combustion chamber



Modern high quality full glazing



Individual sintering programs on request

USB

Updateable via USB port



4.3" color touchscreen



Upgradeable to Zirkonofen 700 Ultra-Vakuum sintering furnace



Controlled cooling

ZIRKONOFEN 700

Technical data

Size (W x H x D)	48.4 x 69.3 x 54.5 cm
Weight	91 kg
Electrical power	2300 W
Combustion chamber capacity	0.8 l
Combustion chamber (W x H x D)	8 x 10 x 10 cm
Max. temperature	1700 °C
Vacuum	No
Capacity	up to 120 zirconia elements (with sintering trays)





4 MoSi₂ heating elements



New sintering technique

13

13 preset programs



Larger combustion chamber



Modern high quality full glazing



Individual sintering programs on request

USB

Updateable via USB port



4.3" color touchscreen



Upgradeable with special adapter for sintering Sintermetall



Controlled cooling



Oxygen-free sintering/
High Vacuum



Ideal for new material technologies



Sintering without shielding gas and residual oxides

ZIRKONOFEN 700 ULTRA-VAKUUM

UPGRADEABLE WITH SPECIAL ADAPTER FOR SINTERING SINTERMETALL

Technical data

Size (W x H x D)	48.4 x 69.3 x 54.5 cm
Weight	117 kg
Electrical power	2300 W
Combustion chamber capacity	0.8 l
Combustion chamber (W x H x D)	8 x 10 x 10 cm
Max. temperature	1700 °C
Vacuum	Yes
Capacity	approx. 120 zirconia elements or 25 Sintermetall elements

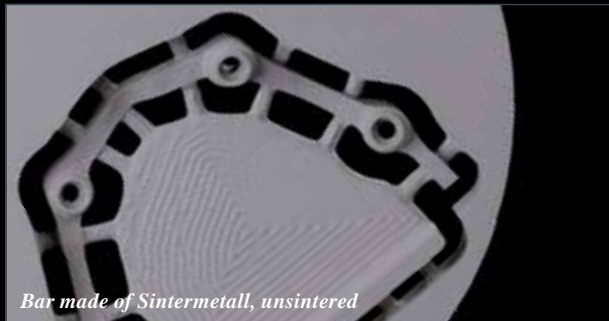




- *Sintering of Sintermetall without shielding gas and without residual oxides*
- *The Zirkonofen 700 Ultra-Vakuum sintering furnace can be easily upgraded*
- *Ready for use in a few simple steps*
- *Low maintenance, very robust*
- *Low consumption of the heating elements*
- *Sintering of up to 25 Sintermetall elements in one process*
- *Due to perfect temperature distribution in the furnace, a deformation-resistant sintering of up to 14-unit restorations is possible*

KIT SINTER METAL FURNACE ADAPTER

FOR SINTERING SINTERMETALL WITH THE ZIRKONOFEN 700 ULTRA-VAKUUM SINTERING FURNACE



Bar made of Sintermetall, unsintered



Bar made of Sintermetall, sintered



Copings made of Sintermetall



Zirkonofen 700 Ultra-Vakuum sintering furnace with Sinter Metal Furnace Adapter



ZIRKONOFEN



3 MoSi₂ heating elements



New sintering technique

15

15 preset programs



Larger combustion chamber



Modern high quality full glazing



Individual sintering programs on request



USB Updateable via USB port



7" color touchscreen



Quick sintering in one hour



Controlled cooling

NEW! ZIRKONOFEN TURBO

Technical data

Size (W x H x D)	36.5 x 69 x 48 cm
Weight	75 kg
Electrical power	3000 W
Combustion chamber capacity	0.6 l
Combustion chamber	Ø 9.5 cm
Max. temperature	1700 °C
Vacuum	No
Capacity	up to 90 zirconia elements (with sintering trays)



SINTEROFEN 3005



Durable SiC heating elements



New sintering technique



Modern high quality full glazing



Individual sintering programs on request



Updateable via USB port



4.3" color touchscreen



Controlled cooling



Oxygen-free sintering/
High Vacuum



Deformation-resistant sintering of full arch structures



Sintering without shielding gas and residual oxides

SINTEROFEN 300S

FOR SINTERING SINTERMETALL



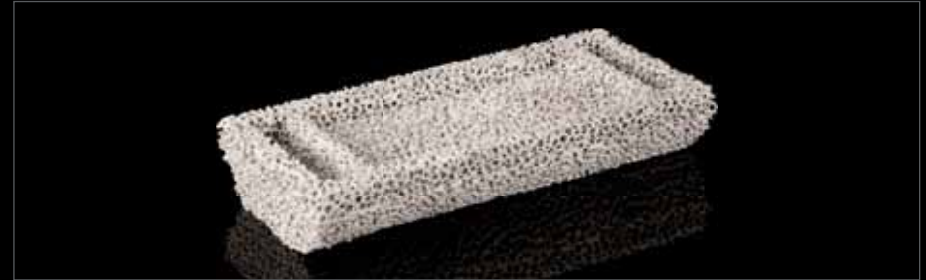
Technical data

Size (W x H x D)	54 x 44 x 70 cm
Weight	81 kg
Electrical power	2600 W
Combustion chamber capacity	0.7 l
Size sinter tube	75 x 150 mm
Max. temperature	up to 1350 °C
Vacuum	Yes
Capacity	approx. 50 Sintermetall elements, 2 bridges or 6 bars

ACCESSORIES



Sintering Tray Sintermetall (Sintering Powder Supreme) (ZBAC3901)
Tray for the sintering of Sintermetall structures with up to 5 elements in the Zirkonofen 700 Ultra-Vakuum sintering furnace; total capacity: up to 25 elements



Sintering Tray Sintermetall XL 300S (Sintering Powder Supreme) (ZBAC3911)
Tray for the sintering of Sintermetall structures (up to 5 elements) in the Sinterofen 300S sintering furnace; total capacity: up to 50 elements



Sintering Holder (ZBAC2188)
Suspension device for the sintering of Sintermetall structures (at least 6 elements) in the Zirkonofen 700 Ultra-Vakuum sintering furnace, fixed with Bar Carrier and Bar Carrier XL



Sintering Holder XL 300S (ZBAC2189)
Suspension device for the sintering of Sintermetall structures (at least 6 elements) in the Sinterofen 300S sintering furnace, fixed with Bar Carrier and Bar Carrier XL



Bar Carrier (ZBAC3801)

Fixing device for one bar in the Sintering Holder and Sintering Holder XL 300S



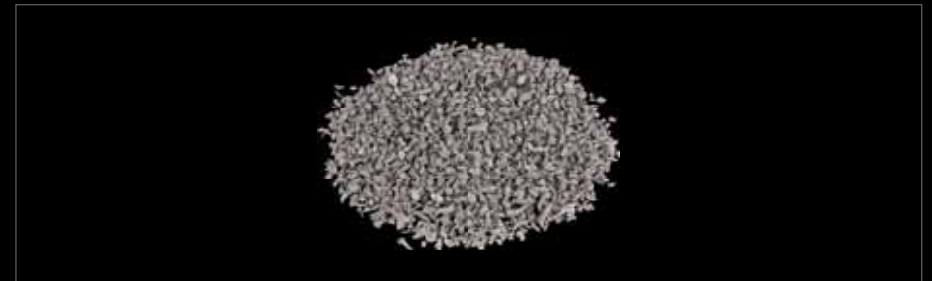
Bar Carrier XL (ZBAC3811)

Fixing device for up to 3 bars in the Sintering Holder and Sintering Holder XL 300S



Sintering Platform XL (ZBAC3871)

For an easy equipment of the Sintering Holder XL 300S and the well arranged storage of the sintering accessories



Sintering Powder Supreme (ZBAC3831)

Sintering powder for sintering Sintermetall without residual oxides

ACCESSORIES



Insert Tray Supreme (ZBAC3821)

*Can be filled with Sintering Powder Supreme and placed in the Sintering Holder/
Sintering Holder XL 300S for sintering without residual oxides*



NEW! Insert Tray Supreme Extended (ZBAC3841)

*For equipping the Sintering Holder XL 300S with smaller Sintermetall structures
and for filling it with Sintering Powder Supreme for sintering without residual
oxides; small and full arch structures can be sintered in one sintering process*



Sintering tray for Zirkonofen 600 (ZBAA320I) and Zirkonofen 700 (ZBAA321I)

*The sintering trays with a temperature compatibility of up to 1700 °C are designed
in such a way that the heat can circulate optimally during sintering.*

Up to 3 sintering trays can be placed in the sintering furnace



NEW! Sintering tray for Zirkonofen Turbo (ZBAA322I)

*Up to 3 sintering trays can be placed in the sintering furnace. In this way up to
90 zirconia elements can be sintered in one sintering process*



Fine-grain sintering granules (ZBAA3251)

Sintering powder for sintering zirconia structures with a sintering tray

Size: 0.4 mm – 1.0 mm



Coarse-grained sintering granules (ZBAA3261)

Sintering powder for sintering zirconia structures with a sintering tray

Size: 0.3 mm – 2.0 mm



FAQ

How many different sintering programs can be installed in the furnaces?

Up to 15 sintering programs are already programmed ex works (see table on p. 6–7). Upon request, individual sintering programs can be programmed and saved on the furnace.

How fast can zirconia be sintered?

The sintering time depends on the compactness of the material structure, the selected sintering program and the sintering furnace. Massive frameworks must be sintered longer than thin, smaller structures. The sintering of a smaller zirconia structure takes about 4.5 hours. In the Zirkonofen Turbo sintering furnaces, specially designed for rapid sintering, it can be carried out much faster.

Why sintering with vacuum?

The vacuum function on the sintering furnaces is used to empty the combustion chamber, meaning to eliminate all oxygen from the combustion chamber and thus also from the zirconia and the Sintermetall pores. This increases the material density. When sintering Sintermetall under high vacuum, unwanted reactions of the material with oxygen are prevented.

Are two different sintering furnaces needed for sintering Sintermetall and zirconia?

No, both zirconia and Sintermetall can be sintered in the Zirkonofen Ultra-Vakuum sintering furnace. The Sinter Metal Furnace Adapter is used for sintering Sintermetall. The Sintermetall is thus hermetically separated from the normal zirconia combustion chamber. This ensures that no discoloration occurs during the subsequent sintering of zirconia.

Is it possible to sinter Sintermetall and zirconia at the same time?

No, because both materials require different firing temperatures, atmospheres and therefore different firing programs.

Is it possible to sinter different types of zirconia at the same time?

In principle, it is possible if the different zirconia types, e.g. Prettau® 4 Anterior® and ICE Translucent, are sintered at the same temperature. The required sintering temperature can be found in the instructions of use of the respective material.

Are four heating elements (Zirkonofen 700) better than 2 (Zirkonofen 600)?

The number of heating elements in a combustion chamber depends on the size of the elements and the speed at which the combustion chamber or the firing material have to

be brought to a specific temperature. With four heating elements a bigger combustion chamber can be used and also be heated at higher rates, rather than with two elements. With four heating elements, however, the electricity consumption is slightly higher (approx. 500 W per heating element).



Combustion chamber of the Zirkonofen 700 sintering furnace with MoSi₂ heating elements

Is a ceramic protection necessary when sintering zirconia?

The use of a ceramic protection cover is generally recommended, in order to avoid discoloration of the zirconia. Alternatively, also sintering trays with sintering granules

can be used. Depending on the size of the combustion chamber, up to three sintering trays can be stacked on top of each other. In this way, the amount of sintered material per cycle can be doubled or even tripled.

What are the consumable parts?

In the various sintering furnaces with conventional heating procedures the heating elements must be replaced after a certain time.

The average lifespan of the heating elements varies depending on the number and duration of the performed sintering processes, or rather on the final temperatures which have been reached during sintering and on the heating rates. On average the lifespan lies between 300 and 500 sintering cycles (when using the standard programs for ICE and Prettau® equally).

The embrittlement of the heating element's material rises through increased use. Due to the temperature differences that occur during heating up and cooling down, this can lead to breakage of the heating element. In addition, the contact surfaces of the heating elements can oxidise over time and thus reduce the electrical contact. It is therefore recommended to exchange also the contact straps on old heating elements (> 2 years), because they can wear out on the inner contact surfaces.

Also the temperature sensor wears out and must be replaced if broken. The replacement of the spare parts can be performed by the user himself in accordance with the instructions of use.

SINTERING FURNACES

Zirkonzahn USA Inc. – Phone +1 800 989 8931 – Phone +1 678 441 9419 – infousa@zirkonzahn.com

Zirkonzahn Worldwide – Via An der Ahr 7 – 39030 Gais/South Tyrol

T +39 0474 066 680 – F +39 0474 066 661 – www.zirkonzahn.com – info@zirkonzahn.com



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