Zirkonzahn®

P4000 SYSTEM FOR 3D PRINTING

A complete, add-on package for Zirkonzahn's digital workflow

ALWAYS PUSH FORWARD, NEVER STAND STILL

We are constantly testing new technologies, paying attention to every detail in order to offer a product that convinces us in every respect.
With our P4000 system for 3D printing, we persist in our goal of providing our customers with targeted and practical solutions to simplify their daily workflows.
The distinctive features of our proven CAD/CAM philosophy characterise also our printing system: a complete open-system package specially conceived for the dental workflow, with pre-configured components that ensure perfect coordination across all work steps.

Smooth, thorough, eco-friendly and time-saving: that is the workflow for model production with our P4000 system!

A PRE-CONFIGURED PRINTING SYSTEM

Our new P4000 system for 3D printing is a practical solution for the production of resin dental models. The system, which comprises the P4000 Printer, the Zirkonzahn.Slicer software and the L300 Post-Curing Lamp, works ideally in combination with our resin Printer Resin Waterbased Beige. This new resin, which can be cleaned with water in an ultrasonic bath, is particularly fluid and shows low shrinkage values, producing highly stable printed objects. The complete system with pre-configured settings is particularly advantageous: dental practices and laboratories can benefit from a complete package designed specifically for the dental workflow, which ensures full compatibility across all components included, preventing the user from spending valuable time testing parameters or finding the most suitable resins and devices to use in combination with the printer.

ADVANTAGES

Space- and time-saving: compact with pre-configured settings

Low-costs and high-performance thanks to LCD technology

Eco-friendly: water-washable resin without the use of isopropyl alcohol or solvents

Short learning curve and intuitive user interface

TIME-SAVING THANKS TO THE MULTI-FUNCTION
The Zirkonzahn.Slicer software allows to print in two different resolutions: in this way, printing times for the areas that require less precision, such as the model base, can be reduced even further.

ZIRKONZAHN.Slicer

ZIRKONZAHN.SLICER SOFTWARE

P4000 PRINTER

L300 POST-CURING LAMP

PRINTER RESIN WATERBASED BEIGE

WHY PRINTING?

With printed models, it is possible to avoid undercuts and to reproduce all the aspects that are difficult to mill. The models appear very precise in shape, with no geometry limits. Moreover, the additive process (layer-by-layer production method) allows for less material wastefulness.

NO MATERIAL WASTE
For each printing process, the software calculates the amount of resin required. However, if the quantity is not sufficient, the resin can be easily added during the printing process.
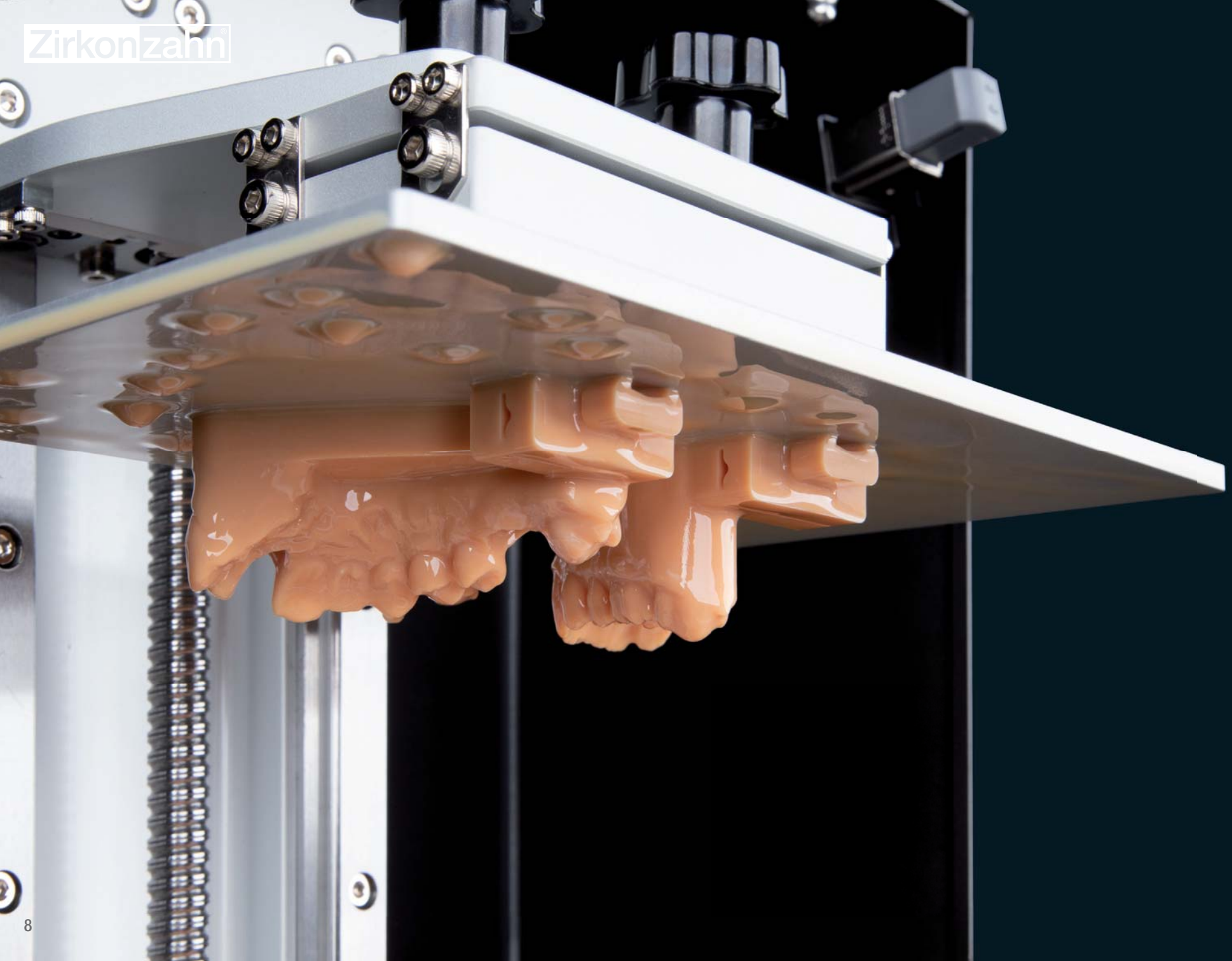
WHY LCD TECHNOLOGY?

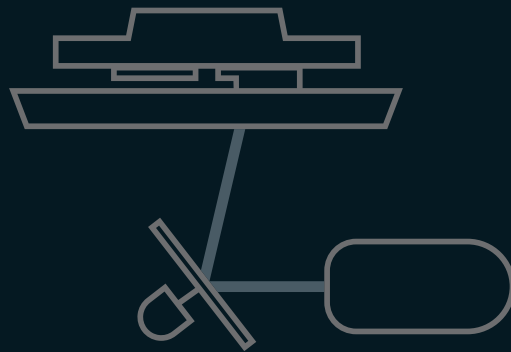Stereolithography (SLA), Digital Light Processing (DLP) or Liquid Crystal Display (LCD)?
When compared to Stereolithography, the benefit that both Digital Light Processing and Liquid Crystal Display share is build speed: whereas SLA technology uses a laser beam to cure the resin "point by point" or "line by line", DLP and LCD devices are based on a "layer by layer" production method. This means that an entire resin layer is solidified at once through light flashing,

permitting a faster production of objects and a higher definition of details and geometries.
With equal print time and detailed results, DLP technologies differ from the latest LCD ones in the light source used to cure the resin, with an impact on costs and printing precision.
DLP printers use a digital light projector consisting of micro-mirrors and lenses to reflect the light into the resin. LCD printers employ instead an array of LEDs that expose the light

through an LCD screen. The more straightforward process of LCD printers makes these devices more cost-effective.

SLA

(Stereolithography)
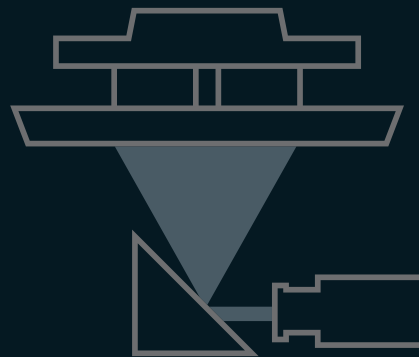
DLP

(Digital Light Processing)

LCD

(Liquid Crystal Display)

P4000 PRINTER

The P4000 Printer is a space-saving LCD printer characterised by a large printing volume. Depending on the structure and dimensions, the large printing volume allows the simultaneous production of up to twenty-one Geller models or fifteen full-arch models. The printer is conceived to process resins with a wavelength of 405 nm and for this reason it works ideally in combination with the Printer Resin Waterbased Beige. The resin vat is provided with state-of-the-art nFEP film permeable to oxygen for easy removal of the printed objects. In combination with the LED panel, it enables a distortion-free manufacture of dental objects in a short time.
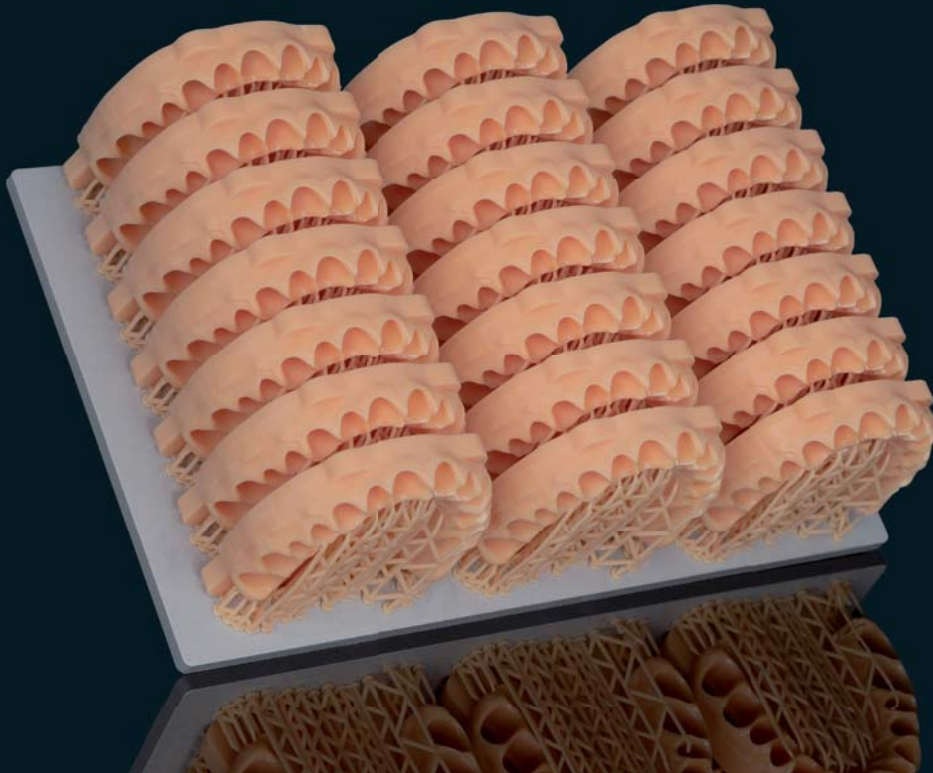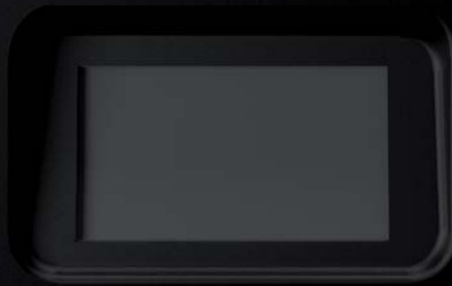
Dimensions (L x W x H)	29 x 33 x 47 cm
Printing volume (L x W x H)	20 x 12.5 x 20 cm
Weight	17.2 kg
Technology	LCD
Light source	405 nm ParaLED® 3.0 module
XY resolution	0.052 mm
Layer thickness	0.05 and 0.10 mm
Printing speed	up to 90 mm/hr
Operating voltage	100 – 240 V ~ 50 – 60 Hz
System	Zirkonzahn OS
Operation	5" touch screen
Software	Zirkonzahn.Slicer

Air filter system

The printing chamber is equipped with an air-cleaning system and a filter for resin vapours.

Heating system

To reach the optimal resin temperature and printing results, it is possible to heat the printing chamber.

The high precision of the Z-axis and the pre-configured parameters for the Printer Resin Waterbased Beige resin permit the positioning of models in any orientation, always achieving the best fitting results.

Printing of any geometries: fine details, smooth as well as uniform surfaces.
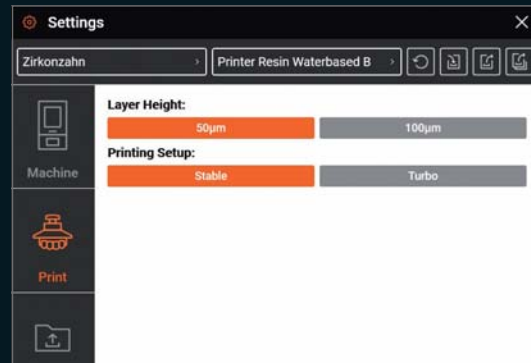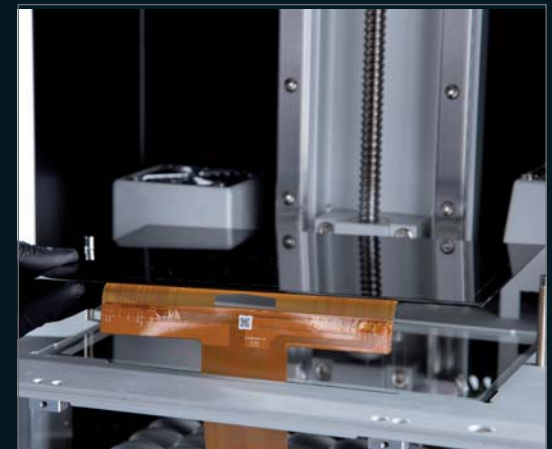

By increasing the layer thickness on the Z-axis, the printing time can be further reduced.

No additional time required for the simultaneous printing of several models.

Layer-by-layer printing, with short printing times

4K monochrome, high-precision display

Touch screen with intuitive user interface

Remote access and control

ZIRKONZAHN.SLICER SOFTWARE

Zirkonzahn.Slicer is compatible with the Zirkonzahn.Modellier and Zirkonzahn.Modifier software: the user can create the models via the Model Maker software module, available in both design software. The models can then be easily imported into the slicing software for further processing. Zirkonzahn.Slicer has been specifically conceived for the dental workflow and is supplied with pre-configured settings for a seamless and well-calibrated printing process. The pre-set parameters permit the generation of support structures for a wide variety of dental objects and the multi-resolution printing option further reduces printing times.

CHARACTERISTICS

Pre-set parameters for creating support structures for a wide variety of dental objects

Customisable print parameters

Placement of elements based on their geometry to optimise the available print area

Loading and processing of multiple models with no extra time needed

Print in multiple resolutions for reduced printing time
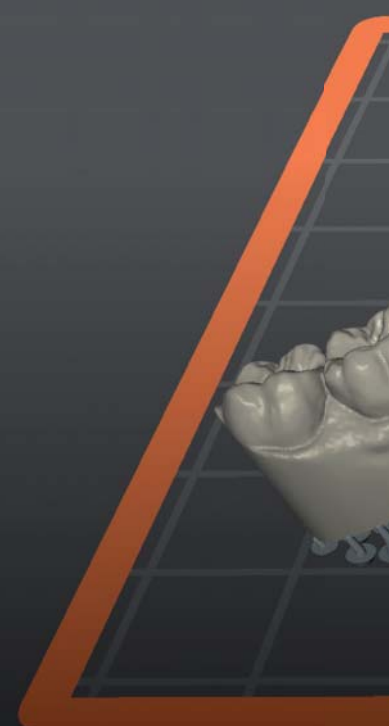
Time estimator and display of remaining time

Indicator of the amount of resin required for each object as well as for the entire printing process
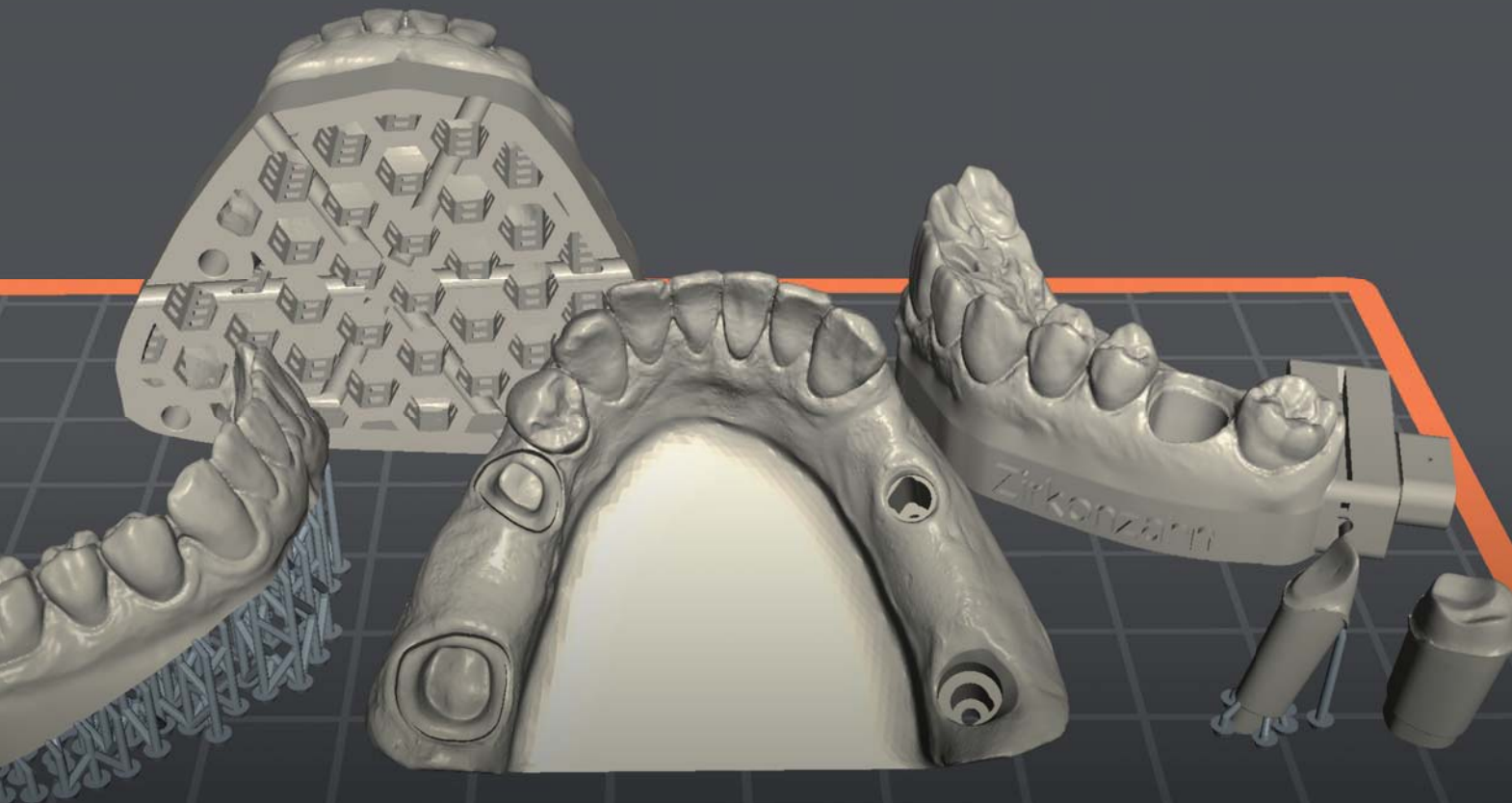
Remote control

Compatible with different resins

Compatible with STL and OBJ file types
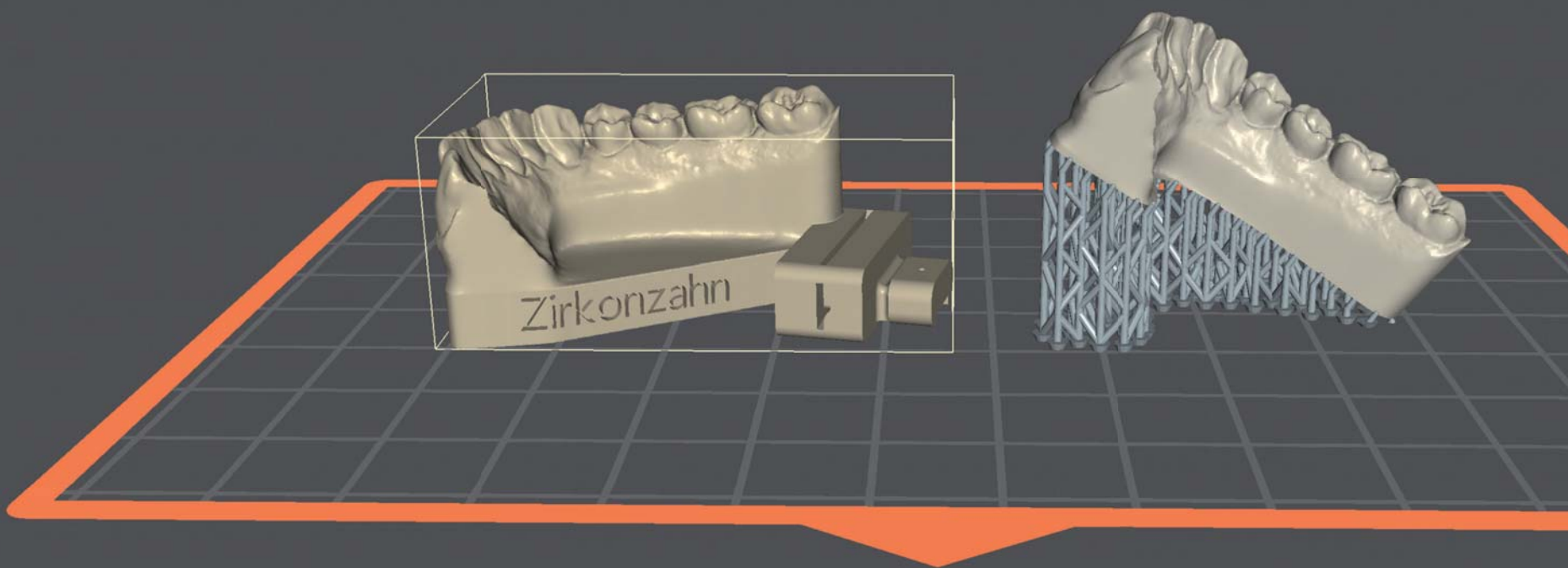
Connection via USB, WiFi or LAN cable

HONEYCOMB STRUCTURE FOR MORE STABILITY
If a particularly stable model base is required,
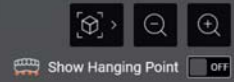a honeycomb structure can be generated in the
Zirkonzahn.Modifier software.

ZIRKONZAHN.Modifier   M_F

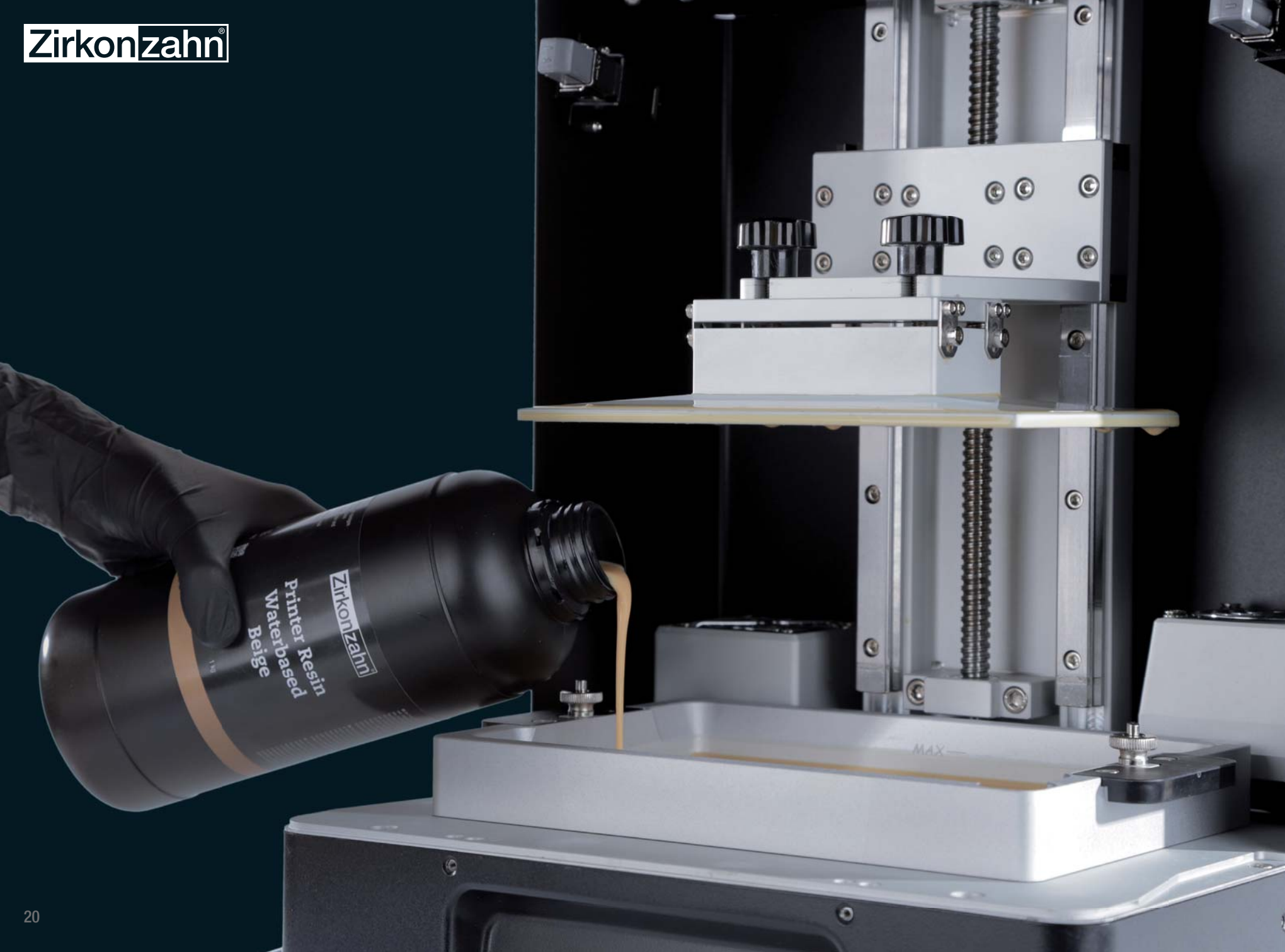File Name: Resin Vol: 21.92 ml

Zirkonzahn

Model with non-removable dies and ditched margin to check the fit of the restoration

Special connection for fixing the model in the Mini-Arti ZS1

Printed implant model with bar

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PRINTER RESIN WATERBASED BEIGE

The P4000 printing system with its components is open system, but works ideally in combination with Printer Resin Waterbased Beige.
This new resin, specifically conceived for the production of monochromatic models, is particularly fluid and shows low deformation or shrinkage values,
permitting the creation of highly stable printed objects. Thanks to its low viscosity levels, the resin can be easily post-processed.
It is not approved for intraoral use.

CHARACTERISTICS

Wavelength	405 nm
Weight	1 kg
Density	1.10 g/cm^3
Viscosity	60 – 100 cP
Surface hardness	76 Shore D
Flexural strength	65.7 MPa
Flexural modulus	1542 MPa
Glass-liquid transition (T_g)	65 °C
Cleaning	Water, ultrasonic bath

All specifications have been tested in a laboratory. Note that certain specifications may be subject to change without prior notice.

SHAKE GENTLY!
Shake gently the resin bottle before use to ensure that the resin pigments are mixed homogeneously and to avoid the formation of air bubbles, which would affect the quality of the print result.
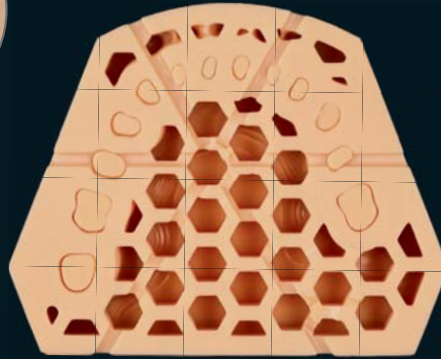
*With the special connection generated in the software,
the Geller model with removable dies can be fixed in the
Mini-Arti ZS1 to check opening, closing, protrusion,
retrusion and laterotrusive movements.*
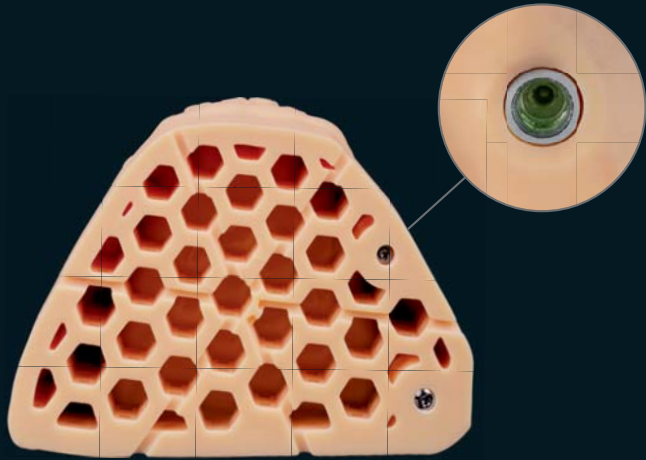
Model base with honeycomb structure and sockets for laboratory analogues

Model base with honeycomb structure for a particularly high stability
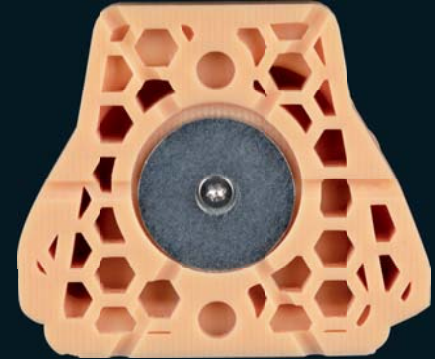
Model base with honeycomb structure and integrated JawAligner connection for plaster-free articulation

Model with non-removable dies to check the fit of the restoration

Geller model with removable dies

Model with special fixing connection for insertion in the Mini-Arti ZS1
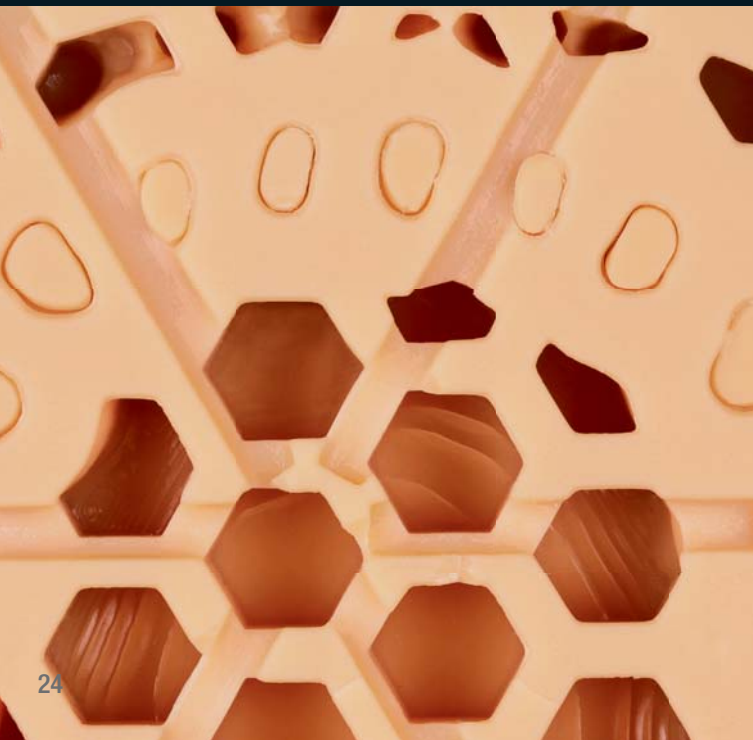
Via the new, innovative "honeycomb" function, in Zirkonzahn.Modifier it is possible to increase the stability of the model base by generating a honeycomb structure.

The high print precision enables the production of complex structures, such as Geller models with the necessary sockets for placing removable dies.

The dies for the Geller model are printed and cured separately.

L300 POST-CURING LAMP

Models made with Printer Resin Waterbased Beige can be cleaned with water in an ultrasonic bath, avoiding isopropyl alcohol, solvents and resin vapours. They are then cured in just thirty minutes in the L300 Post-Curing Lamp. The lamp is equipped with a turntable that rotates a full 360°, permitting a uniform curing of the models. Curing times can be set individually.

CHARACTERISTICS

Dimensions (L x W x H)	21.5 x 19.5 x 28.5 cm
Inner capacity (L x W x H)	17.5 x 14 x 18.5 cm
Weight	4.2 kg
LED specification	365 nm, 385 nm and 405 nm
UV light intensity	60 W total
Operating voltage	100 – 240 V ~ 50 – 60 Hz

OPTIMAL CLEANING
With the help of a brush with soft bristles, the inside of the model can be optimally cleaned in water.

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WORKFLOW WITH THE
P4000 SYSTEM FOR 3D PRINTING

THE SYSTEM IS FULLY INTEGRATED
INTO ZIRKONZAHN'S WORKFLOW

New! Detection Eye
intraoral scanner

SCANNING

*Scanning the oral situation with the
Detection Eye intraoral scanner or
scanning of an impression with a
Zirkonzahn scanner.*

Zirkonzahn scanner

DESIGNING

*Model design with the Model Maker
software module.*

POSITIONING

*Placement of the objects in the
Zirkonzahn.Slicer software and
generation of supports,
if necessary.*

PRINTING

Models printing with the Printer Resin Waterbased Beige resin and the P4000 Printer.

CLEANING

Cleaning of the models in water with a brush and then in an ultrasonic bath.

CURING

Uniform curing with the L300 Post-Curing Lamp.

PS1 laboratory articulator

PLASTER-FREE ARTICULATION

Checking the patient's jaw movements through the plaster-free articulation of models in the PS1 articulator or in the Mini-Arti ZS1 using the new JawAligner PS1 or ZS1.

New! Mini-Arti ZS1

NEW ARTICULATION METHOD
The JawAligner PS1 and ZS1 allow for a plaster-free articulation of printed and milled resin models in the PS1 articulator, in the GS1 plaster articulator or in the Mini-Arti ZS1. The heights of the JawAligner ZS1 match those of the JawAligner PS1 Inclined and models can therefore be used in both articulators.

ZIRKONZAHN.SUPPORT

"Everything from a single source" is the principle that has always guided our company, allowing us to work without compromise, knowing every detail of our products and thus offering our customers an exclusive privilege: a thorough support service covering all technical and dental technical needs. Our international and multilingual support team, consisting of dental technicians as well as software and hardware experts, is at our customers' disposal for all matters.

THE ZIRKONZAHN SCHOOL
## "DIE ZIRKONZAHN SCHULE"

We dedicate all our efforts to develop the most sophisticated techniques in order to find the best solutions for our customers. All details are analysed, optimised, tested, then studied in collaboration with universities and institutions. All know-how acquired and learning concepts are implemented into our course and school programmes offered in the framework of our Zirkonzahn School.

We want to be the best teachers, to make our clients the best in their area!

More info about our course programme
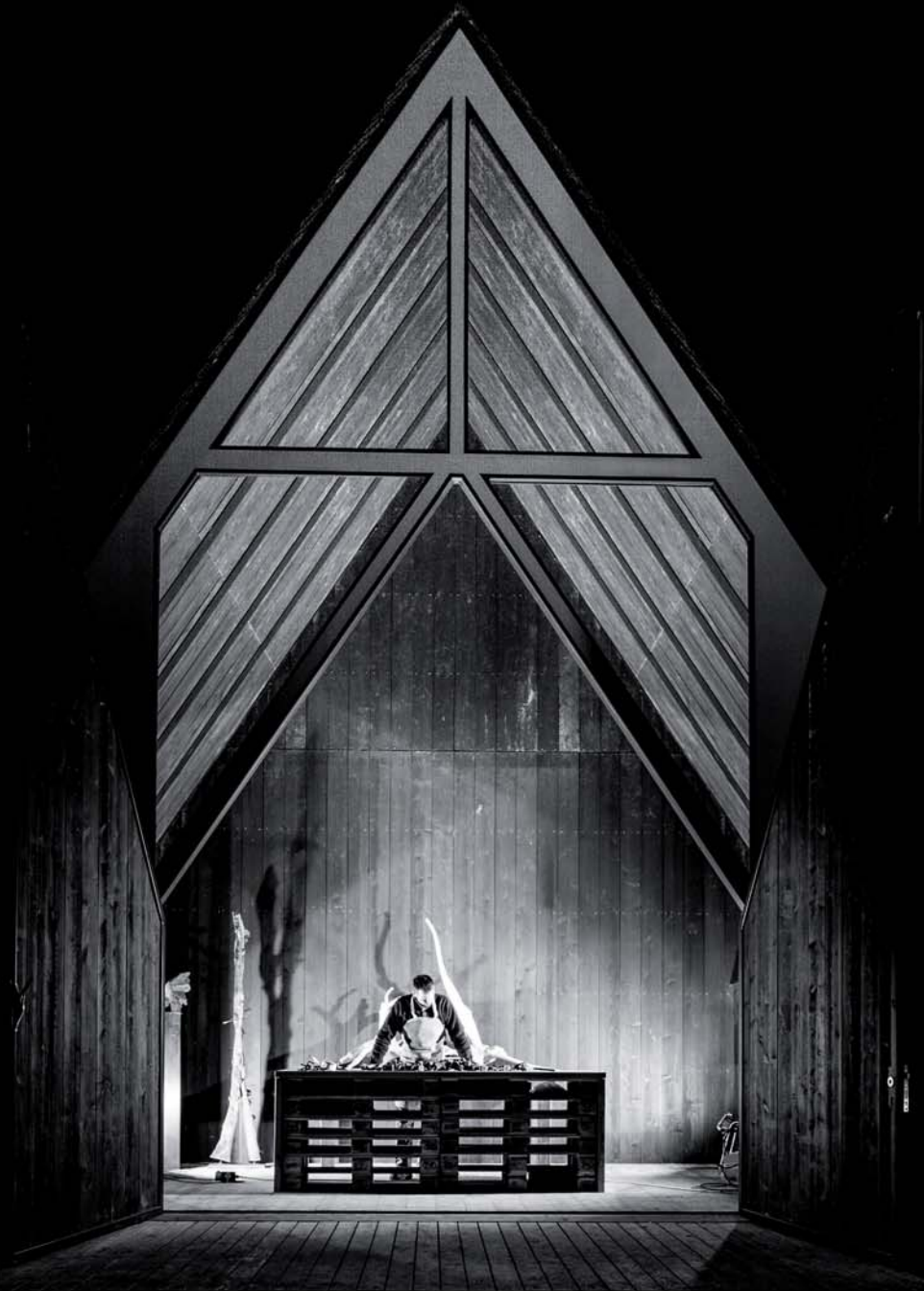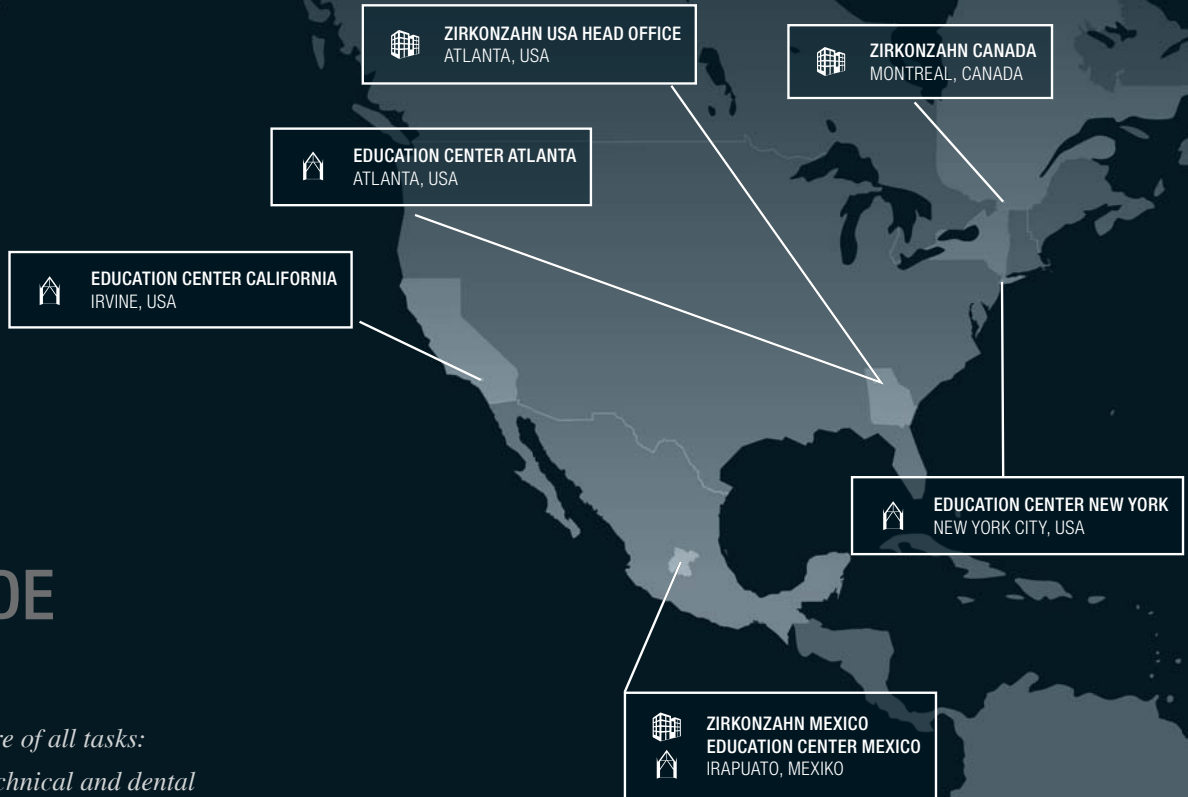
Zirkonzahn®

ZIRKONZAHN WORLDWIDE

In our headquarters in Gais (South Tyrol, Italy) we take care of all tasks: from research and development, to customer support for technical and dental technical issues, all the way through the sale of our products.
To provide all our customers worldwide with the best possible support and access to our training, we have established additional offices and education centres in other seven countries.

ZIRKONZAHN USA HEAD OFFICE
ATLANTA, USA

ZIRKONZAHN CANADA
MONTREAL, CANADA

EDUCATION CENTER ATLANTA
ATLANTA, USA

EDUCATION CENTER CALIFORNIA
IRVINE, USA

EDUCATION CENTER NEW YORK
NEW YORK CITY, USA

ZIRKONZAHN MEXICO
EDUCATION CENTER MEXICO
IRAPUATO, MEXIKO

EDUCATION CENTRE POLAND
WARSAW, POLAND

STONEHENGE® – THE HOUSE OF LEARNING
HEIDEN, GERMANY

EDUCATION CENTRE HUNGARY
BUDAPEST, HUNGARY

ZIRKONZAHN NEULER
EDUCATION CENTER NEULER
NEULER, GERMANY

NEW!
ZIRKONZAHN CANINUS
DOBBIACO, SOUTH TYROL

ZIRKONZAHN IBÉRICA
EDUCATION CENTER IBÉRICA
BARCELONA, SPAIN

ZIRKONZAHN MOUNTAIN MONASTERY
CAMPO TURES, SOUTH TYROL

EDUCATION CENTER BRUNICO
BRUNICO, SOUTH TYROL

NEW!
ZIRKONZAHN PREMOLARIS
CAMPO TURES, SOUTH TYROL

ZIRKONZAHN
HEADQUARTERS
GAIS, SOUTH TYROL

ZIRKONZAHN MOLARIS I
MOLINI DI TURES, SOUTH TYROL

NEW!
ZIRKONZAHN MOLARIS II
MOLINI DI TURES, SOUTH TYROL

KLINIK DEMEDICI
MOLINI DI TURES, SOUTH TYROL

ZIRKONZAHN FOREST SCHOOL
PRETTAU, SOUTH TYROL

ZIRKONZAHN HELDENCAMPUS
MOLINI DI TURES, SOUTH TYROL

ZIRKONZAHN MILITARY SCHOOL
MOLINI DI TURES, SOUTH TYROL

ZIRKONZAHN FORGE
MOLINI DI TURES, SOUTH TYROL

ZIRKONZAHN SAFARI SCHOOL
MOLINI DI TURES, SOUTH TYROL

ZIRKONZAHN RANGER SCHOOL
MOLINI DI TURES, SOUTH TYROL

P4000 SYSTEM FOR 3D PRINTING

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