

# 3D Printers for Dental Applications

**DENTAL**



**rapidshape**



**Andreas Schultheiss** CEO

**Andreas Geitner** CTO

We launched our first printer 10 years ago. Since then, we have been contributing to extraordinary moments in the lives of others: The romantic exchange of rings at the altar, the moving sound experience with the right hearing aid, a radiant smile after a visit to the dentist. We are proud of this, and these moments continue to drive us.

The challenges of today are not necessarily those of tomorrow. Sensing the new ideas of our customers and having developed specifically for them, before they even express them to us themselves, will always remain our guiding principle.

And the next 10 years? The pandemic has taught us a lot. It's also taught us that planning for the future is possible, but not necessarily realistic. But one thing is clear: The world keeps turning and we all turn with it. It is our ideas and decisions that keep us moving forward.

# Shape Your Lab!



**D20+**  
Page 18

**D30+**  
Page 20

**RS cure**  
Page 32

**RS wash**  
Page 30

**RS cure XL**  
Page 34

**D50+**  
Page 22

**D90+**  
with cabinet or  
as inline  
Page 24

**D100+ ortho**  
with cabinet or  
as inline  
Page 26

**D100+**  
as inline  
Page 28



# We are Rapid Shape

From a start-up to  
an international  
respected company

A company from the south of Germany. 10 years ago, we decided to make our own 3D-printers. Thus, a virtue was made of necessity. Because the offers on the market were simply not satisfactory for our parent company Schultheiss GmbH, whose field of activity is heating and casting technology for processing precious metals. So, if nothing fits, then something suitable is made. That's how our first printers came about. Today, we employ over 175 people at seven locations in over five countries around the world.

Our claim

Not only to meet our customers' expectations, but to exceed them, that has always been our claim. We are constantly developing our products, as well as ourselves, and provide the best solutions for our customers. Thus, our product portfolio has grown enormously since the foundation in 2011.

Always a solution

3D-printing is supposed to save you time - not take it away. This is exactly where our patented solutions come in. For example, our printers have Automatic Separation units to save you the task of separating the printed parts from the build platform and start the next print job independently. In addition, the Automatic Refill unit ensures that there is always a sufficiently high level of print material in the reservoir. Manual refilling is no longer necessary. No idle time, no cleaning time.\*

The quality

Before each individual 3D-printer leaves our manufacturing facility, it undergoes several rigorous quality checks. One of the most important steps in this is printing. Validated print jobs are printed on each printer and then checked for dimensional accuracy. This ensures that the printers meet our high-quality standards and can be sent on their way to you.

Andreas Laboratory

Simone Customer Service

Chi Distribution

Robin Product Management

Placide Technical Service

\* More extras and a complete overview of our solutions can be found on page 18.



# All over the World

- Heimsheim **Germany** \_\_\_\_\_
- Raleigh, NC **USA** \_\_\_\_\_
- Tokyo **Japan** \_\_\_\_\_
- Suzhou **China** \_\_\_\_\_
  
- Curitiba **Brazil** \_\_\_\_\_



**Headquarter  
Heimsheim**

# Every Machine is an All-Rounder

It can happen  
that fast\*

## **2 surgical guides**

printed in ~ 20 minutes

## **4 indirect bonding tray**

printed in ~ 15 minutes

## **28 Permanent or temporary crown and bridge units**

printed in ~ 20 minutes

## **4 Grinding splints/trays**

printed in ~ 25 minutes

## **2 trays**

printed in ~ 20 minutes (horizontal)

## **6 trays**

printed in ~ 50 minutes (vertical)

## **2 master models**

printed in ~ 30 minutes

## **2 ortho models**

printed in ~ 25 minutes

## **28 gingiva mask units**

printed in ~ 20 minutes

## **4 cast partials**

printed in ~ 45 minutes

## **4 denture bases**

printed in ~ 65 minutes

\* All mentioned printing times  
are based on jobs done on  
a D20+ equipped with Force  
Feedback System.

Dental indications printed with the 3D-printer





# Why we are so fast

## Why DLP?

With so many 3D-printing technologies on the market, the question naturally arises as to why we chose Digital Light Processing (DLP) over any other technology. The answer is quite simple: Because only this technology enables us to print high-resolution parts with repeat accuracy over a long period of time, the handling is manageable, and in the end the system also remains inexpensive for you.

## Speed and precision with Force Feedback technology

We are often asked why we are so fast ... Among many other reasons, our patented Force Feedback technology is instrumental in this. During the normal separation process of the exposed component layer from the reservoir bottom, undefined forces act. To avoid damaging the component, it is necessary to proceed slowly so that the layer is carefully detached from the reservoir surface.

We do not drive blind! With our Force Feedback technology, the forces on the component are measured. This allows the 3D-printer to always travel at maximum speed, albeit safely(!) for the object in question. In addition, support structures can be realized thinner and rework is simplified. The result is very fast print times with consistently high print quality.

- First-class image quality
- Detailed print results
- Durable and proven components
- Wide range of materials
- Cost-effective materials
- Easy handling
- Fast results
- Low entry costs

No  
idle time

No  
cleaning time

Highest quality  
is our standard

# Intelligent Connectivity

## Intelligent Connectivity

The Intelligent Connectivity feature enables communication between your printer and RS wash and RS cure post-processing devices. Once a connection is established between these devices, the printer can forward completed print jobs to the finishing devices for further processing. There, the cleaning and exposure process is carried out on the basis of the transmitted data. That means: Lower costs and higher process reliability.

## Post-processing devices

Our customers can rely on certified processes between material and system manufacturers. Not only 3D-printing, but also cleaning and post exposure are done automatically with validated parameters. The risk of incorrect processing is excluded. And it's automated!

**Workflow dentist**



# Our Solutions for increased Productivity

## Automatic Separation Module (ASM)

Increase your productivity by seamlessly printing adjacent jobs, without interruption. The Automatic Separation unit allows you to produce multiple print jobs in a self-determined sequence one after the other (Job Queues) without having to remove the build platform from the printer and detach the print job.\* Less downtime, more productivity.

## Automatic Resin refill

Is there enough material left in the reservoir? With the Automatic Refill unit, this question becomes superfluous. Modern sensor technology checks the filling level in the reservoir with split-second precision and automatically starts filling material via a connected material bottle if the filling level should reach a critical minimum mark.\*



\* Not available on all machine types.



# RFID – Tracking for your validated Workflow

Our products support advanced RFID technology to assist you with compliance and workflow tracking. All devices and consumables are equipped with RFID technology. After filling and inserting the material reservoir into the printer, simply scan the bottle and check on the printer display that you have selected the correct material and that the best-before date has not passed.

In addition, when the print process is started, it is automatically checked whether the material selected in the CAM software matches the material in the reservoir in order to avoid incorrect print jobs.



Material  
identification



The resin bottle is scanned at the printer. The material designation and the best-before date of the material immediately appear on the display of the printer.

**Workflow laboratory**



# D20+

The smart printer for laboratories






RS wash  
RS cure

More flexibility: The D20+ offers a flexible and certified 3D-printing solution for laboratories through its open material system with validated workflows. The printer not only features first-class quality, but also a large printing area and short production times. The optional high-speed Force Feedback technology further reduces your print times to a minimum.

Clean and cure your parts directly after printing with the RS wash and RS cure post-processing units for an optimal and validated end result.

Performance parameters	D20+
Building area	133 x 75 mm
Native pixel	+/- 34 µm
Max. part height	115 mm
Light source	385 nm UV LED
Resolution	HD 1920 x 1080 px
Dimension (W x H x D)	335 x 541 x 349 mm
Connections	WLAN, TCP/IP, USB
Control	7" LCD-Display, touch-screen
New features	Faster print speed Larger LCD screen Touch control

-  Tailor-made for small labs
-  Low acquisition cost
-  Open system

Optional Force Feedback

Material identification (RFID)

Certified auto calibration (ACCS)

Remote Access available





# D30+

The powerhouse thanks to automation






RS wash  
RS cure

The powerful D30+ has been setting new standards in quality and productivity for some time. Thanks to the integrated, patented Automatic Separation unit, your printed parts are automatically separated from the build platform after the printing process is finished and collected in a collection basket. The next print job is started immediately, without manual intervention. Fast and half-automated.

Clean and cure your parts directly after printing with the RS wash and RS cure post-processing units for an optimal and validated end result.

Performance parameters	D30+
Building area	133 x 75 mm
Native pixel	+/- 34 µm
Max. part height	155 mm (with ASM 70 mm)
Light source	385 nm UV LED
Resolution	HD 1920 x 1080 px
Dimension (W x H x D)	480 x 690 x 410 mm
Connections	WLAN, TCP/IP, USB
Control	10" touch-screen
New features	Faster print speed Automatic Separation Module (ASM)

-  Automatic Separation Module (ASM)
-  User friendly
-  Open system

Resin temperature control

Integrated Force Feedback

Material identification (RFID)

Certified auto calibration (ACCS)

Remote Access available

Knowledge Center Access



# D50+

The workhorse  
for professional  
laboratories






RS wash  
RS cure

The D50+ is our new workhorse for printing any indication. With a print range three times (!) larger than the D30+ and the optional, patented separation unit, you can catapult the number of pieces per day many times over. Your printed parts are automatically separated from the build platform after printing is finished and collected in a big collection basket. The next print job is then started immediately, without manual intervention. An Automated Refill unit ensures that there is always a sufficient level of printing material in the reservoir.

Clean and cure your parts directly after printing with the RS wash and RS cure post-processing units for an optimal and validated end result.

Performance parameters	D50+
Building area	231 × 130 mm
Native pixel	+/- 30 µm
Max. part height	300 mm (with ASM: 100 mm)
Light source	385 nm LED
Resolution	4K 3840 × 2160 px
Dimension (W × H × D)	600 × 1660 × 570 mm
Connections	WLAN, Ethernet, USB
Control	10" LCD-Display, touch-screen

-  Automatic Separation Module (ASM)
-  Automatic Resin Refill unit
-  Open system

Automatic Separation Module (ASM)

Resin temperature control

Automatic door opener

Material identification (RFID)

Certified auto calibration (ACCS)

Integrated Force Feedback

Remote Access available





# D90+ with cabinet or inline

Efficient, automated,  
reliable – Perfect work-  
flow, maximum speed,  
and consistent quality



RS wash  
RS cure

As a stand-alone solution with connected cabinet or in conjunction with a production line, the D90+ reliably delivers perfect results, day after day. The integrated Automatic and patented Separation unit transports the finished print job after separation either to the connected cabinet with a large collection container or to a downstream conveyor system for direct post-processing. In this way, true in-sequence production is made possible without unnecessary downtime.

Clean and cure your parts directly after printing with the RS wash and RS cure post-processing units for an optimal and validated end result.

Performance parameters	D90+
Building area	232 x 137 mm
Native pixel	+/- 23 µm
Max. part height	80 mm
Light source	385 nm, ultra high power UV LED
Resolution	4K 3640 x 2160 px XPR
Dimension (W x H x D)	625 x 1593 x 443 mm
Connections	TCP/IP, USB
Control	10" touch-screen
New features	Automation functions High resolution projector Larger print area



Automatic Separation  
Module (ASM)



Designed for industrial  
continuous manufacturing



Optional with cabinet  
or conveyor belt



Automatic Resin  
Refill unit

Automatic Separation  
Module (ASM)

Storing for large quantity  
of printed parts

Automatic  
Resin Refill

AC controlled interior  
for continuous use

Certified auto  
calibration (ACCS)

Remote Access  
available








# D100+ ortho with cabinet or inline

Up to 24 ortho models in  
approx. 30 minutes\*

Industrial ortho model  
production at the next  
level

The D100+ meets the requirements with a wide pressure range and validated ortho-model as well as aligner precision. Long-lasting reproducible quality make it a 24/7 production unit with industrial projection system and internal cooling for system components. As a stand-alone solution or in conjunction with a production line, it delivers perfect results. For true in-sequence production without breaks and unnecessary down-time.

	RS inline	models in 10 hrs.	models in 24 hrs.
Realistic (measured at the customer)	1 x D100+ 5 x D100+	300 1500	800 4000
Best Case (standardized, flat models)	1 x D100+ 5 x D100+	500 2500	1200 6000
Performance parameters	D100+ ortho		
Building area	338 x 190 mm		
Native pixel	+/- 44 µm		
Max. part height	80 mm		
Light source	405 nm, ultra high power UV LED		
Resolution	4K 3840 x 2160 XPR		
Dimension (W x H x D)	625 x 1593 x 443 mm		
Connections	TCP/IP, USB		
Control	10" touch-screen		
Versions	Cabinet Inline (Specifications on request)		

-  Automatic Separation Module (ASM)
-  Designed for industrial continuous manufacturing
-  Optional with cabinet or conveyor belt
-  Lowest cost per part
-  Automatic Resin Refill unit

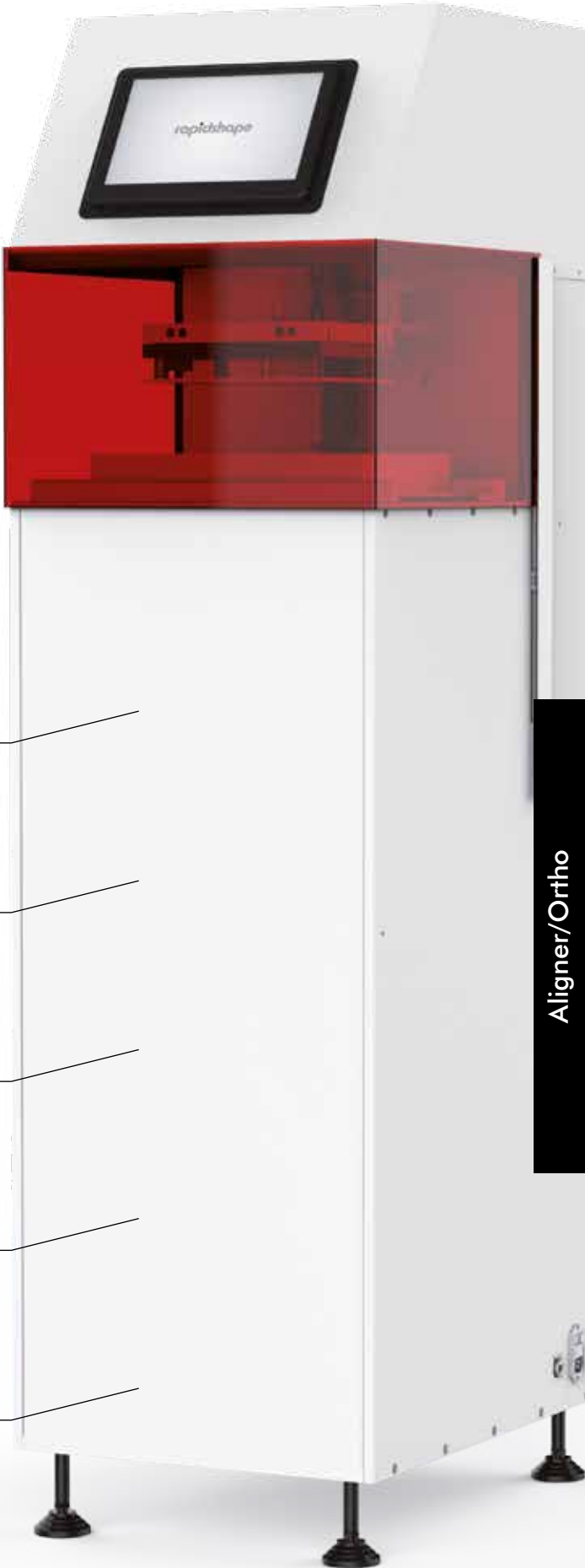
Automatic Separation  
Module (ASM)

Automatic  
Resin Refill

AC controlled interior  
for continuous use

Certified auto  
calibration (ACCS)

Remote Access  
available



Aligner/Ortho

\*based on optimal build platform utilization

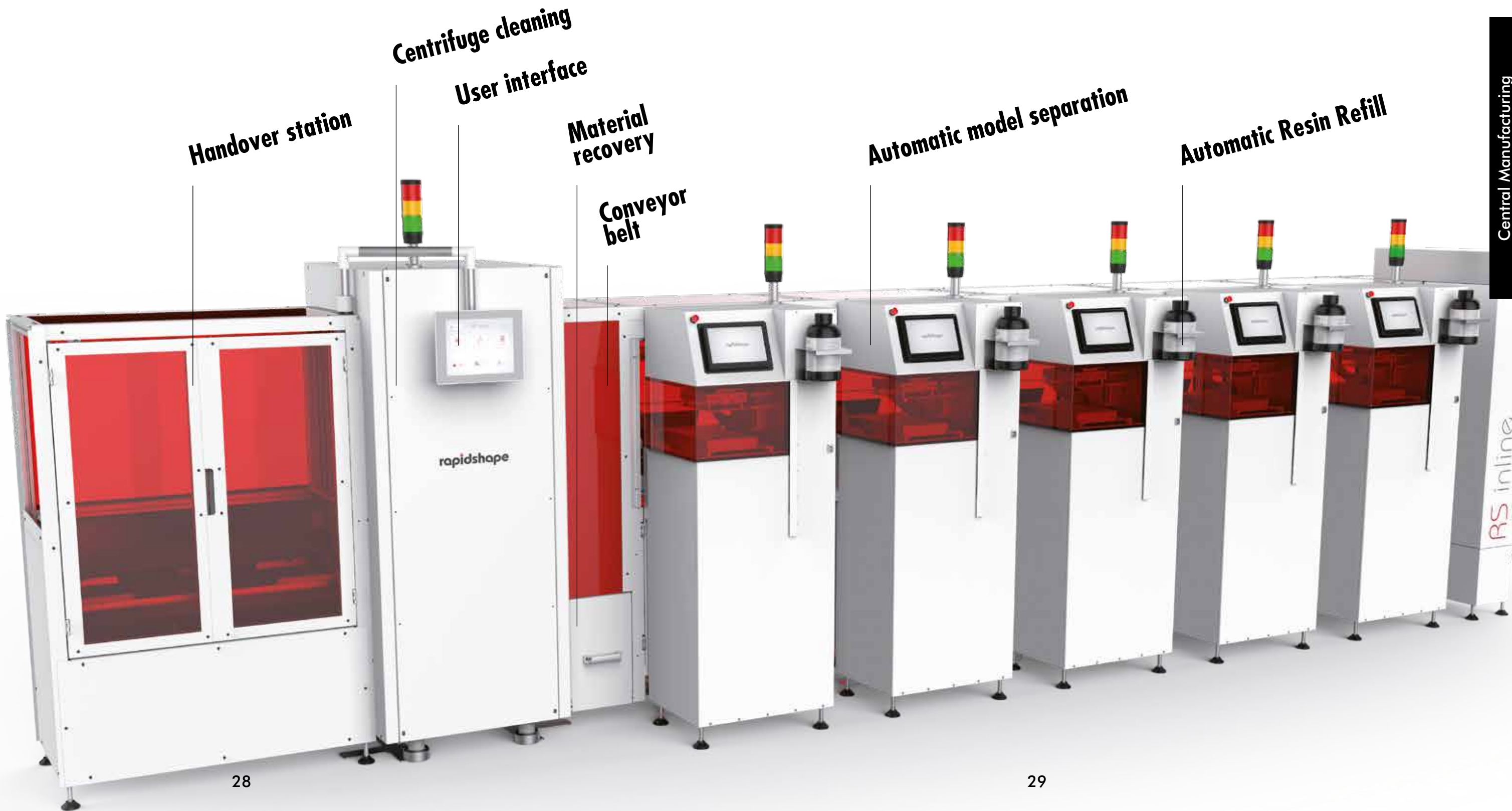


# RS inline

Scalable from 2-5,  
for 1-, 2-, or 3-shift  
operation

The fully automated system for up to 4,000 dental models per day for transparent aligners. Material recycling throughout the handling and cleaning process.

More than 90 percent of uncured material is recovered for 3D-printing.






# RS wash

For the perfect finish of your components – Automated and environmentally friendly cleaning

The RS wash automatic cleaning system excels thanks to its simple operation and process-controlled connection to your printer, for professional and validated post-processing of your printed parts.

Thanks to automatic selection of the appropriate cleaning program and cleaning medium, cleaning the printed parts is not only process-safe and simple, but also environmentally friendly thanks to a 2-step principle with pre-cleaning and final cleaning. (patent pending)

Performance parameters	RS wash
Volume (W × H × D)	160 x 99 x 119 mm
Cleaning time	approx 6–8 minutes (depending on material)
Cleaning medium	Isopropanol, ethanol
Connections	WiFi/LAN
Dimension (W × H × D)	334 x 289 x 452 mm

-  Wireless connectivity to printer
-  Clean process, no handling of sticky resins
-  Reduced smell



Effective computer-controlled cleaning medium use

Intelligent Connectivity

Stackable with RS cure









# RS cure

For the perfect finish of your components: 360° curing at the touch of a button

The RS cure automatic exposure system cures your printed parts homogeneously from all sides thanks to powerful LEDs. The integrated vacuum technology enables excellent curing of the materials. Thus, the materials can be processed validated by many material manufacturers. The process-controlled connection to your printer ensures that the correct program is always automatically selected and that the mechanical properties and biocompatibility of the end product are achieved. The pre-settings are tested and validated in close cooperation with the material partners to ensure process reliability.

Performance parameters	RS cure
Volume (W × H × D)	117 x 102 x 179 mm
Curing time	approx 6–10 minutes (depending on material)
Connections	WiFi/LAN
Dimension (W × H × D)	243 x 269 x 419 mm
Version	with vacuum + inert gas environment

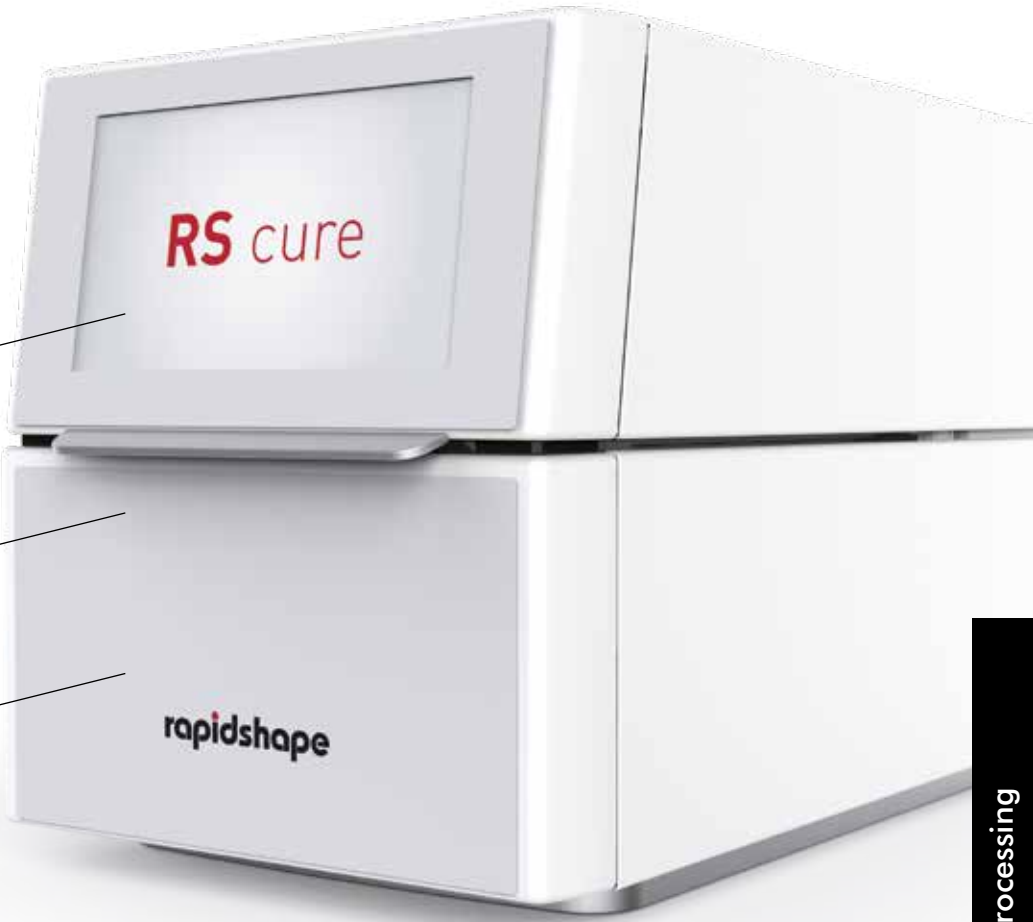
-  Wireless connectivity to printer
-  Validated process
-  Compatibel with various material suppliers
-  Works with vacuum



360° illumination in one go

Certified auto calibration (ACCS)

Stackable with RS wash







# RS cure XL

A lot of space for many or extra large printed components. The solution for productive labs, that use one or more D50+, D90+, D100+ 3D printers

The RS cure XL is based on the proven post-exposure device, the RS cure, with high-performance LEDs, but with an extra large volume. The device is optimal for post-curing of especially large or numerous printed components. Thanks to the proven 360° luminous exposure and the modern vacuum technology, short post-exposure times are achieved with high quality. The RS cure XL is the perfect supplement to Rapid Shape’s full automated 3D-printers. The use of vacuum means, no gas is consumed during use, which significantly reduces the operating costs compared to conventional devices. The investment will amortize – depending on use – in less than one year.

Performance parameters	RS cure XL
Volume (W × H × D)	470 x 375 x 280 mm
Curing time	approx 6–10 minutes (depending on material)
Technology	high-power LED, multiple wavelengths, with vacuum (optional supplemental protective gas)
Control	Touchscreen
Connections	WiFi/LAN
Power Supply	220/230 V, 50/60 Hz, max. 2300 W
Dimension (W × H × D)	650 x 1050 x 800 mm
Weight	~ 150 kg

-  Wireless connectivity to printer
-  Validated process
-  Works with vacuum
-  Extra large volume

Excellent curing

Highest productivity

Constant process repeatability

Significantly reduced operating costs / no gas consumption



# We won't let You down

## Our service team

If you have problems with the technology, we won't let you down! Our technical Service Team is spread out internationally across 5 service hubs and will get any downtime up and running again. Whether remotely from the service workshop or directly at your site, we will find a way. You can reach our technical Service Team by phone, email, and WhatsApp, or you can use our online appointment booking system and book an appointment of your choice from the comfort of your home.

**5 service hubs worldwide**

**Over 1 million maintenance and service kilometers**

**Remote & On-Site**

**Robin Service Team**



# Our Experience is Your Value

No one is born a master

Extensive training in the use of our printers will help you to perfectly match the print results to your needs. Afterwards, you'll receive a training certificate and be ready to get started with your printer.

Get first-hand tips and tricks  
— at our headquarters in  
Heimsheim or at your location

# Knowledge is Power

We like to share

Get access to our knowledge, bundled in our Rapid Shape Knowledge Center! You can dial directly into the Knowledge Center with each product. When you scan the QR code on your device with your smartphone, you will be redirected to the mobile view of the Knowledge Center.\* There you can access informative brochures, technical documentation, as well as numerous tutorials and downloads. If you prefer to browse our Knowledge Center from the comfort of your PC, we can send you your individual access data by email.



\*Internet connection required

# Showroom at the Headquarter



Heimsheim, Germany

# For best Results

Our material partners



DeltaMed

DETAX



keystone

rapidshape



SAREMCO

straumann

VOCO

Rapid Shape and the leading material manufacturers combine their strengths for maximum flexibility and unlimited availability. This allows us to support a jointly validated workflow throughout. In close cooperation and at the highest level, new material parameters are created every day that are precisely matched to our products and that bring you the best possible end results.

Over 200 validated materials are available in our material library, each with a tested and approved set of printing parameters. You'll receive regular material updates for your material library to stay current and have the widest selection available.

Yet one thing always remains the same: You have the choice of which material you want to work with. With the free parameter sets, you can create and manage your own parameter sets.

An open system with  
over 200 validated  
materials included





# All Doors open for You

Our workflow partners

exocad

dental wings

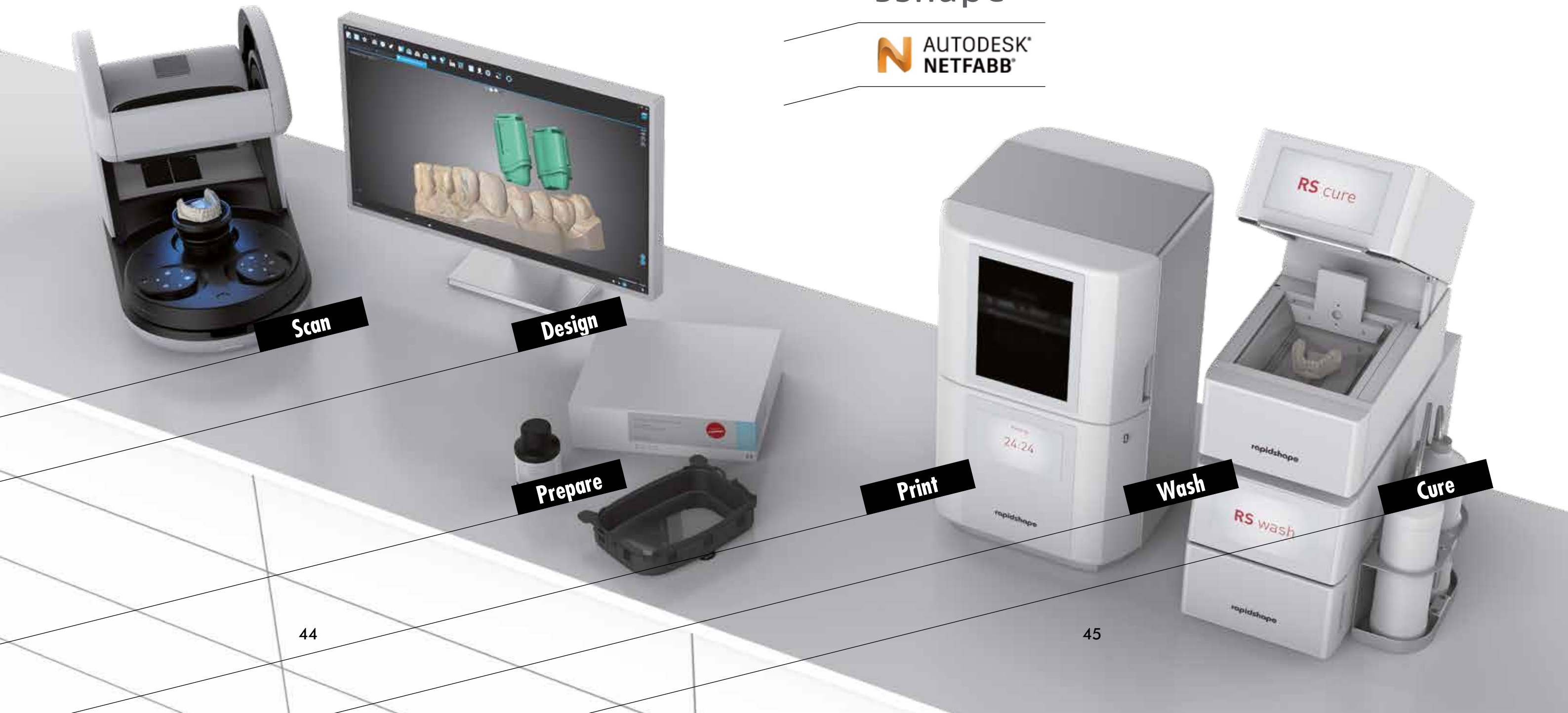
straumann  
group  
Digital Solutions

3shape

AUTODESK  
NETFABB

While the production of 3D-printed parts is always subject to the same workflow, with our strong workflow partners, all avenues are open to you. With the latest version of our Netfabb CAM software, we offer a seamless connection to Dental Wings, 3Shape, and Exocad. That means: Design parameters, data transfer, and print preparation functions are preconfigured and automated.

Material pre-selection, part orientation and positioning on the build platform, adding necessary support structures, and the final creation of the print data - our software does it all for you. What else is there to do? Press "Start."



# We'll accompany You on Your Path

## Satisfied customers

clearcorrect

COREFRONT

  
LAXMI DENTAL GROUP

ORTHOS

 proto3000

 straumann

Over 4,500 satisfied customers worldwide can't be wrong. This is the best proof of quality and service. We maintain a trusting relationship with our customers. Many have been with us since our company was founded in 2011 and know how passionate we are about developing high-quality 3D-printing machines. Our success is based on this passion, the comprehensive expertise of our engineers and that of all our employees.

We would be happy to advise you individually about your requirements.

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**„Breaking new ground  
and growing your  
business is always  
exciting. Growth  
requires making wise  
decisions, having a lot  
of courage and using  
reliable partners  
to support you.“**

Andreas Schultheiss  
Founder and CEO



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