

Resin 3D Printing in Dentistry for Precise Surgical Guides and Dental Implants

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Dr. LV Haoxin
Dental Doctor Clinic





The West Lake branch of the Dental Doctor clinic, located in Suzhou, China, turned to the expertise of the manufacturer RAYSHAPE to optimize its production processes and offer more precise solutions.

The main obstacle in dentistry, highlighted by the Dental Doctor clinic, is the manufacture and delivery of dental implants. Dental implants are safe, efficient and precise type of implantation's in the patient, serving to replace missing teeth. Implants have strong mechanical properties and do not damage the rest of the natural teeth that make up the dentition.

However, the problem lies in the high costs, the long manufacturing and integration time until they reach the patient.

When patients have good oral health and only need one or two implants, it is a relatively simple process. But when it is a major reconstruction, such as half of the teeth or the entire denture, it requires much more time, both for implantation and recovery.

After this problem was detected, the West Lake Dental Dental Clinic began to evaluate different possibilities. The goal was clear: to shorten surgery and model fabrication times, as well as reduce the accompanying surgical trauma.

Resin 3D printing is one of the leading additive methods in the dental industry, followed by metal fabrication. Specifically, the solution to the problem was found in the Shape 1 Dental 3D printer, from the manufacturer RAYSHAPE, with which they were able to create the surgical guides. Based on DLP technology, the machine is equipped with a UV light and has a print volume of 144 × 81 × 200 mm (5.76 × 3.2 × 7.87 inches). Combining high speed with high throughput at a reasonable price, this solution is ideal for integration into dental clinics and laboratories. It also includes the ShapeWare 3D printing software in dental version.

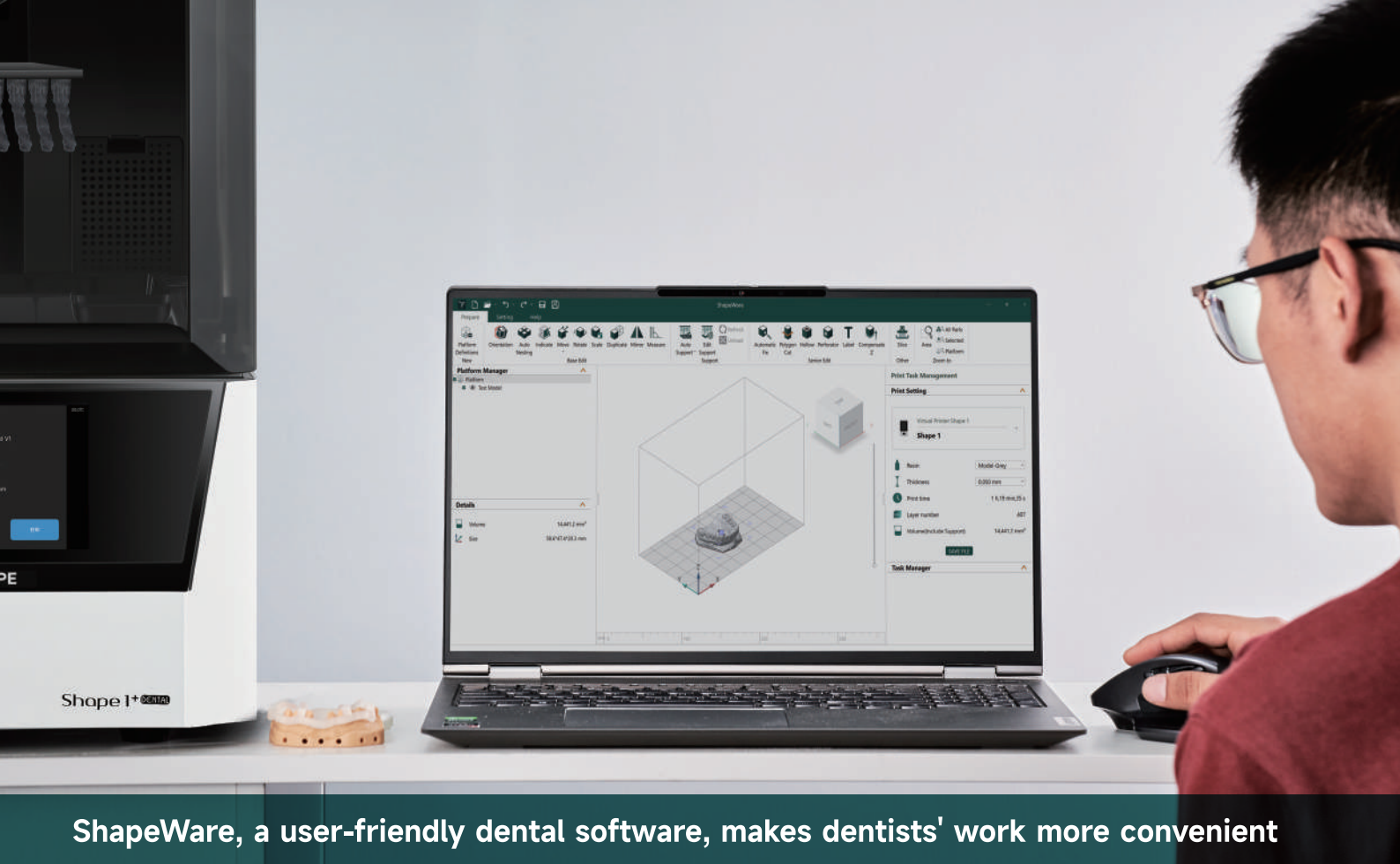


Dr. LV Haoxin, from Dental Doctor clinic, comments, **“The quality of the 3D printed parts from RAYSHAPE is great and the accuracy is what we expected.”**

With the adoption of the digital dental implant system equipped with RAYSHAPE’s DLP technology, the West Lake clinic is **optimizing the entire process of surgical guides and dental implants** tailored to each patient’s needs.

“The design of the guides is effective in reducing surgery time and decreasing postoperative reactions. The precise surgical guide helps us construct the junction between the restoration and the implant and precisely replace the design to achieve the desired result.”

Dr. LV Haoxin
Dental Doctor Clinic



ShapeWare, a user-friendly dental software, makes dentists' work more convenient

Integrating RAYSHAPE's DLP additive manufacturing systems has enabled the Dental Doctor clinic to leverage the benefits of the technology in its business. For example, at the operative level, it is now possible for the clinic to simulate how to place the implant and determine the position, depth and orientation with the help of the 3D printed guide. According to Dr. LV Haoxin, thanks to additive manufacturing, digital implantation adopts minimally invasive technology in a short time, so that patients can complete the surgery in a comfortable, relaxed and painless manner.

With this, Dental Doctor has become one of the first dental clinics in China to initiate technological, intelligent, and digital projects.

The Shape 1 Dental 3D printer used in this case has been upgraded to the Shape 1+ Dental version, with new and advanced features that allow better development of dental models.

[Learn more: Video link](#)

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