

# SPOTLIGHT: High Precision Vertical Stacked Printing for Orthodontic Models

DenMat Holdings, LLC increases its output of orthodontic models by up to 4X with the NextDent 5100 and auto-stacking in 3D Sprint

Innovative products are the foundation of DenMat's existence. Robert Ibsen, DDS, founded DenMat in 1974 when he was unable to find adequate dental materials and products for use in his dental practice. His quest for the perfect materials, and the request of other dentists to use them, led to the founding of DenMat. Today, the company offers a myriad of products for the dental practice, including DenMat Laboratory that offers an array of restorative solutions and has been an early adopter of digital solutions for dentistry.

One solution that DenMat turned to for a range of innovative solutions is the NextDent 5100 digital dentistry solution from 3D Systems. The team in the laboratory uses the NextDent 5100 3D printer and the range and diversity of NextDent materials for the production of orthodontic dental models, crown and bridge solutions, implant models for diagnostics, and impression trays.

"The NextDent 5100 is a very simple and easy to use solution, and offers the precision and part quality that we need for our applications," said Oscar Buenrostro, Model Shop, Milling & 3D Printing Supervisor for DenMat. "We are using it for a wide range of applications and producing a high volume of parts running 24/7 through our lab."

Productivity, reliability and accuracy are critical for a high volume lab like DenMat, and every step of the process, from uploading the file and preparing it, to printing and post-processing, needs to be a simple and streamlined as possible. Oscar and his team rely on 3D Sprint, 3D Systems' advanced software for file preparation, editing, printing and management from a single, intuitive interface. Easy to use, 3D Sprint features automated part placement and support generation, and tools to modify the geometry without going back to the CAD data.

The auto-stacking feature in 3D Sprint for high precision vertical stacked printing of orthodontic models provides advanced productivity for a very high volume application. Integrating the NextDent 5100 3D printer, NextDent Model 2.0 material and a

## **CHALLENGE:**

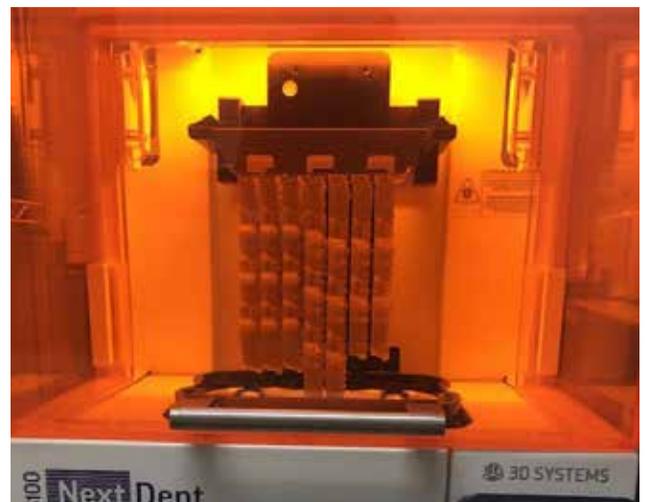
Productivity, reliability and accuracy are critical for a high volume lab like DenMat, and the team is continually innovating with digital dentistry solutions to increase output with high quality.

## **SOLUTION:**

DenMat turned to the NextDent 5100 from 3D Systems for a range of applications, and uses the auto-stacking feature in the solutions advanced software, 3D Sprint, for high precision vertical stacked printing of orthodontic models.

## **RESULTS:**

With auto-stacking, DenMat increased output of orthodontic models by up to 4X, producing up to 96 models in an 8 hour shift.



DenMat uses the auto-stacking feature on the NextDent 5100 digital dental solution to increase its production of orthodontic models by up to 4X.

proprietary, high precision stacked build in 3D Sprint®, the one-click automated solution has helped DenMat increase its output of orthodontic models, producing up to 96 models in an 8 hour shift. Employing this unparalleled solution results in increased productivity while reducing resource consumption including materials and labor.

Speaking to his experience with the 3D Sprint workflow, Oscar says,

*“Everything from the file preparation and placement is done within the software. Simply clicking through the pre-filled prompted steps. The software truly does all the work, saving on labor cost.”*

## 96 orthodontic models in an 8 hour shift

*Based on an example of printing 26 models in a single build:*

Load in of data:	1 min; 7 sec
Data repair:	1 min; 58 sec
Stacked arches:	1 min, 25 sec
Printer time:	2 hours, 11 min
Labor time spent on loading file, preparing printer:	2 min
Post processing:	3 min
<b>Total</b>	<b>2 hours, 34 min</b>



*DenMat produced a high volume of orthodontic models with auto-stacking on the NextDent 5100.*

*Each platform of 26 orthodontic models is produced in 2 hours and 11 min, allowing DenMat to produce 96 models in an 8 hour shift, including all preparation and post-processing time.*

To learn more about the NextDent 5100 3D printer, visit <https://www.3dsystems.com/3d-printers/nextdent-5100>



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