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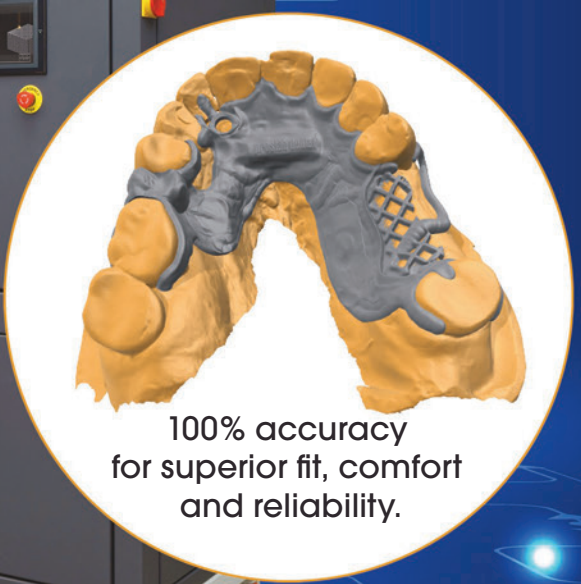
Proslab launches total accuracy with breakthrough laser printing technology.



100% accuracy
for superior fit, comfort
and reliability.

proslab dental
innovative technology

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Total accuracy for partial dentures: The next generation in 3D laser printing technology has arrived in Australia

Partial dentures have been a mainstay of the dental industry for many years and for good reason. They are an affordable, tried-and-tested treatment. Until now, dimensional change during the manufacture of RPD's has been a difficult technical challenge due to the reliance on traditional techniques such as 'lost wax'. But thanks to some forward thinking by Damian Synefias from Proslab Dental, the challenge has been met and answered.

In an Australian first, a unique 3D laser printer built in the UK by global specialists Renishaw is now up and running at Proslab's high-end Melbourne facility and is ready to provide superior quality and output. Renishaw's additive manufacturing systems use metal powder bed fusion technology to build complex components direct from digital CAD files.

That may sound like a mouthful, but the breakthrough to unquestionable accuracy has important benefits. For prosthesists, it means that they are now able to enhance their offering in terms of their reputation, service quality and customer service.

For patients, an accurate partial denture that fits perfectly first time and is immediately comfortable will definitely put a smile on their face.

As Damian from Proslab explains, "We have been manufacturing cobalt chrome frames for a long time now and after bringing in the scanning, designing and digital workflow many years ago, the casting process was always our problem area. There was no other accurate technique to finally finish off the process we had in scan and design.

"With the help of Renishaw and the state-of-the-art AM 400 laser printer, we are now in a position to produce the most accurate 'casting' for the patient that there is. It allows us to be more confident in our work with none of the dimensional change in the framework that we had become accustomed to from traditional techniques."

3D printing, which is also known as additive manufacturing, is fast becoming a natural progression for those companies who are willing to tackle innovation with an open mind.

Figure 1. Laser printing produces proven accuracy.

Figure 2. Laser printing is great for crown and bridge.

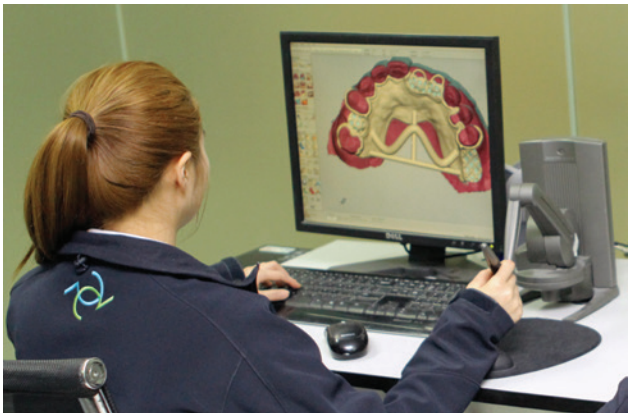

Figure 3. Haptic control delivers consistent thickness.

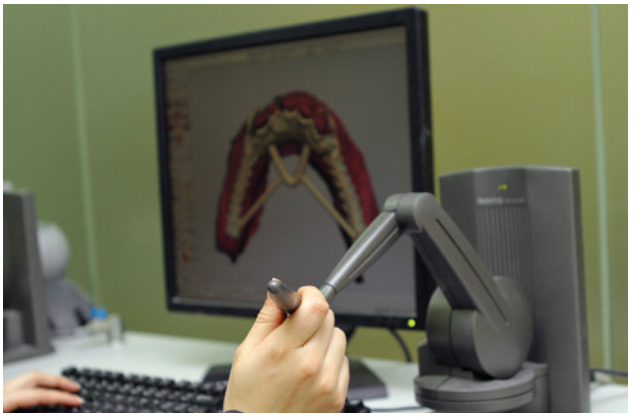

Figure 4. Controlled waxing enables premium results.

Many of the constraints seen in more traditional manufacturing methods such as casting may soon be a thing of the past. Being able to create complex geometries and mass customisation, at a commercially viable cost, is a real driver for Australian industries which are often hamstrung by scale compared to their overseas counterparts.

Renishaw's laser printing is a pioneering additive manufacturing process capable of producing fully dense metal parts directly from 3D CAD files using a high-powered fibre laser. Parts are built up from a range of fine metal powders that are fully melted in a tightly controlled atmosphere, layer by layer, in

"Accurate-fit laser printed Removable Partial Dentures are now a reality..."

thicknesses ranging from 20 to 100 microns. After closely testing the options in the market, the accuracy that Renishaw is able to deliver has provided a clear edge.

The CE marked metal powder is laid down in 40 micron thick layers and comes direct from Renishaw, so there are no third party suppliers to add cost, complexity or error. Of course, total accuracy means that a better fit in the patient's mouth is assured, along with superior comfort and reliability.

Proslab are renowned for their keen interest in technological solutions and were the first to bring in CAD/CAM processes for metal frames for dentures almost 15 years ago. This addition to their portfolio once again shows that they are willing to lead the way with the type of investment that creates better patient outcomes and pushes the industry forward.

Servicing Dental Prosthetists

From the perspective of the dental specialists using this service, the benefits of laser printing at Proslab are many. The process is far more efficient and more accurate than traditional methods that were previously responsible for introducing human error into the equation. The digital workflow cycle is now complete and turnaround times are greatly reduced, with a five-day timeline being the new norm.

"While we started as a traditional lab, we are now one of the leading labs servicing Dental Prosthetists in Australia and New Zealand offering a true one-stop service. We do everything in house. Nothing's outsourced. We even have our own delivery drivers," Mr Synefias said.

Another major advantage is Proslab's design expertise; skeletal intricate design keeps the gingival areas free of alloy contact which provides a premium self-cleansing appliance for the patient.

Proslab Dental's design areas digitally wax using a touch sensitive force feedback haptic device. Designing with a mouse doesn't give this sort of feedback. This device allows you to design in a more even and controlled environment as if you were feeling the model with a wax knife (Yes, you can actually feel the model and the digital wax through the pen itself!).

"3D printing is the way of the world now," Mr Synefias said. "This is a natural progression for us. The industry is embracing the benefits of digital workflow and I think if you're not on board, you'll really struggle because things are moving so quickly."

For more information, contact Damian Synefias at Proslab Dental on (03) 8809-0500 to learn more or to get started.