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Breaking Metrology News:

AUTOMOTIVE SERVICE PROVIDER RELIES ON 3D LASER SCANNING

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'Thinking Outside The Bottle' – Hybrid Dental CT Scanner Performs 3D Measurement

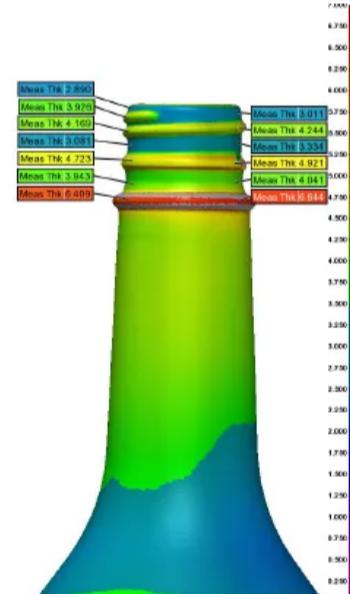
December 2, 2020

X-ray technology recently celebrated the 125th anniversary since its invention. Over the past decade computed tomography, using x-ray technology has increased its presence in many areas of manufacturing for the detection of porosity, cracks, and in more recent years complete dimensional inspection.

Despite the increase in demand for computed tomography, equipment remains expensive resulting in a plethora of 3rd party inspection service companies that rent time to companies that realize the benefits but cannot justify the capital expenditure to purchase an in-house machine.

X-ray technology has penetrated all aspects of the medical field where it has become a significant diagnosis tool including in the field of dentistry. Dental x-rays have become common practice to diagnose the necessary patient dental work.

Sazerac, a leading international spirits producer headquartered in the United States recognized that computed tomography could play a vital role in ensuring packaging quality and overall fit for purpose, but existing equipment costs and off the shelf capability did not exactly align. A routine visit to the dentist sparked an interest and resulted Alex Hagedorn, PhD, Senior Packaging Engineer, and Terry Marfleet, BSc ME, VP Procurement and Contract Manufacturing to question—"why can't dental CT technology be applied to the inspection of beverage packaging at Sazerac?"



Unlike conventional x-ray images, a 3D dental CT scan allows the prosthodontist to see the entire patient mouth while showing teeth alignment. The generated 3D images also allow accurate assessment of the jawbone's suitability for dental implants. Common with industrial CT scanners a full 360° image is generated using the same cone-beam x-ray technology. Unlike industrial tomography where the sample parts are placed on a rotary table and rotated in front of the cone beam, a dental CT scanner rotates around the stationary patients head.

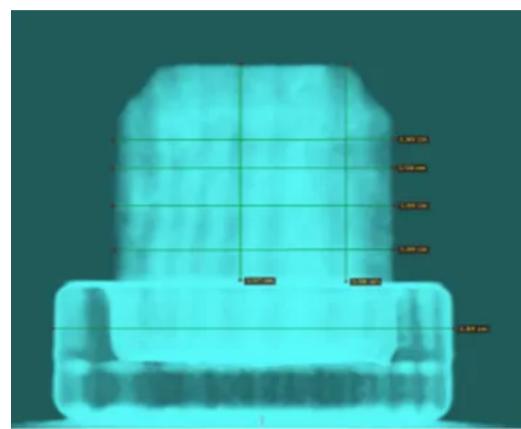
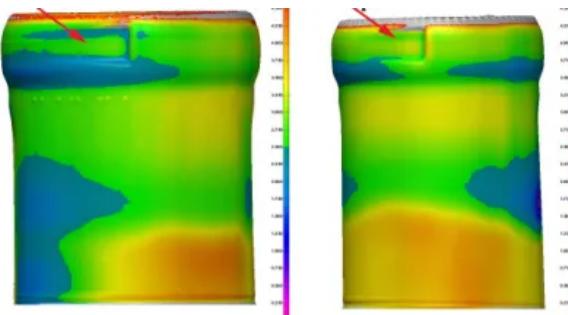


Following extensive research and discussions within the fields of x-ray inspection, dental equipment manufacturers, and metrology software developers, Sazerac initiated a project whereby a dental computerized tomography system was adapted to



address the beverage packaging 3D inspection needs. Alex says the 3D inspection machine is "a revolutionary method to assess and measure packaging, components, and assemblies."

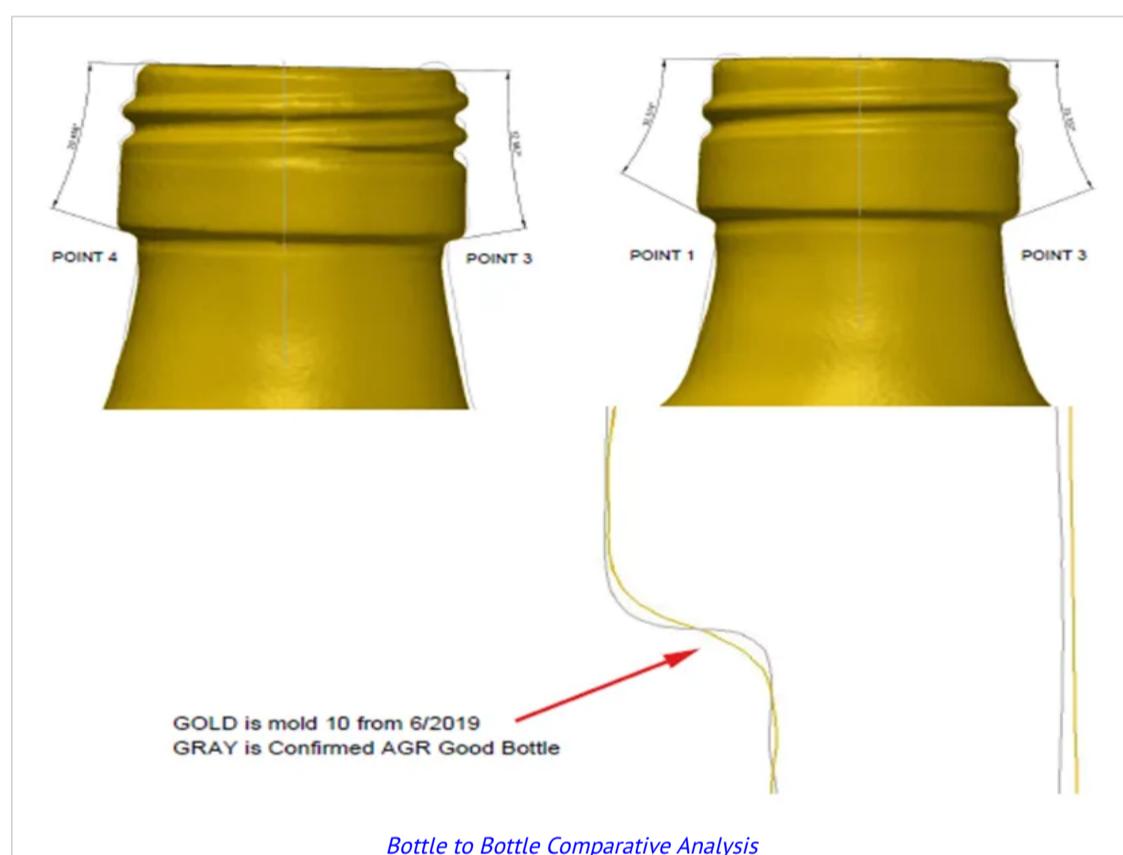
The new CT scanner has eliminated the multiple pieces of measuring equipment used to measure packaging and components. The voxel data output from the CT scanner imports directly into standard point cloud metrology software creating both 2D and 3D inspection reports of sample measurements. Within the software the generated inspection data can be compared directly with the original design intent of the sample part.



Capability to measure glass and plastic now exists either as a system or at a component level. Specifically, thickness, material consistency, visual imperfections and dimensional measurements, including GD &T, allow a quick determination if material and process set-up are compliant to specifications. The system is an industry first allowing the complete non-destructive inspection of packaging provides the measurement virtually without ever cutting/slicing or opening the containers.

"From project kick-off, following completion of the research phase, to having a fully functional inspection machine was just 30 days" stated Alex. We are now performing a full 3D

container inspection in just 30 minutes, previously these would have taken days or longer due to the need to cut the sample parts before measurements could be performed.



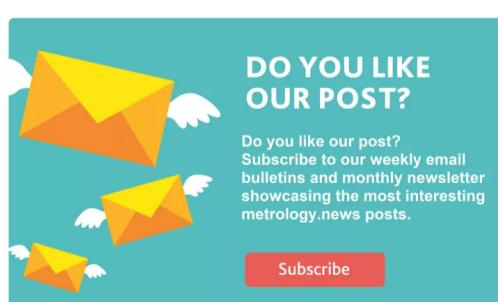
Due to the short measurement times the system can support engineering design as well as perform root cause quality issues and aid manufacturing with the set-up process.

For more information: www.sazerac.com



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