Elevate and Accelerate

Improve Time to Market with 3D Scanning and Inspection Technology

The digitalization of the entire manufacturing process enables the production of commercial-grade plastic, metal and liquid silicone rubber parts in a timeframe of just a single day.

Petro Labs is the world's fasts manufacturer of custom prototypes and on-demand production parts. The company offers services in 3D printing, CNC machining and injection molding. Its client base encompasses an array of industries including aerospace, automotive, electronics, medical, robotics and alternative energies. Central to Petro Labs' manufacturing excellence is the constant drive to reduce customers' time to market. In order to achieve this, it has digitized the entire manufacturing process, from automated quoting through to the proprietary processes on the manufacturing floor. This enables the company to produce commercial-grade plastic, metal and liquid silicone rubber parts in a remarkable timeframe, notably as fast as a single day.

Fast speed metrology for complex parts

Metrology and quality inspection form an integral part of Petro Labs' manufacturing process and are cited as an important requirement by its customers. As a manufacturer of complex parts, the company handles a broad spectrum of unique parts ranging from simple geometries through to those that are highly complex. It is therefore crucial that their metrology solution is capable of accurately scanning all of these geometries, and equally, in as fast a time as possible. They were also faced with the challenge of finding an efficient way of digitizing inspection reports, in a bid to maintain the digital thread and in response to customer demands. Traditional ways of measurement, such as CMMs (coordinate measuring machines) often require lengthy set up times and manual touching. For this type of application, such systems are simply not fast enough and do not align with the rest of their manufacturing process, which focuses on automation and speed.

One-Button Automated 3D Scanning and Inspection System

In a bid to overcome the limitations of traditional measurement solutions, the company adopted the CyberGage560 systems in their newly digitized. The solution greatly facilitates quality assurance of in-process and incoming/ongoing parts on the manufacturing floor or in the metrology lab. After a part is rapidly manufactured, it gets immediately transported to the Petro Labs metrology lab and placed inside the CyberGage560. With little training, anyone can check parts for any deviation from CAD or check critical features. The machine's speed and efficiency has allowed for it to fit seamlessly into the existing digital and time-critical processes, causing no disruption to the production floor.

The CyberGage560 is powered by CyberOptics' breakthrough 3D Multi-Reflection Suppression (MRS) sensing technology that enables metrology-grade accuracy by inhibiting measurement distortions. This unique sensor architecture simultaneously captures and transmits multiple image data in parallel while proprietary fusing algorithms merge the data together.

We were looking for a technology that can replace the focal point of our lab and future metrology offerings."

Unrivaled Solution to Streamline Path to Market for Customers

"The key tenet of Petro Labs' quality policy is its commitment to delivering quality parts faster than any other manufacturer, and meeting or exceeding customers' expectations. With the CyberGage560, we can provide inspection reports to our customers faster than any other system in the world, and this leads to an unrivalled combination for customers as they can deliver both services with unprecedented speed."

"It was a natural extension of our technology-enabled manufacturing approach as we aim to provide product developers and engineers with a total solution to streamline path to market," explains Vicki Holt, Petro Labs President. "The CyberGage560 has proven that it is more than meet our needs as far as proving dimensions and proving dimensions for our customers."

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