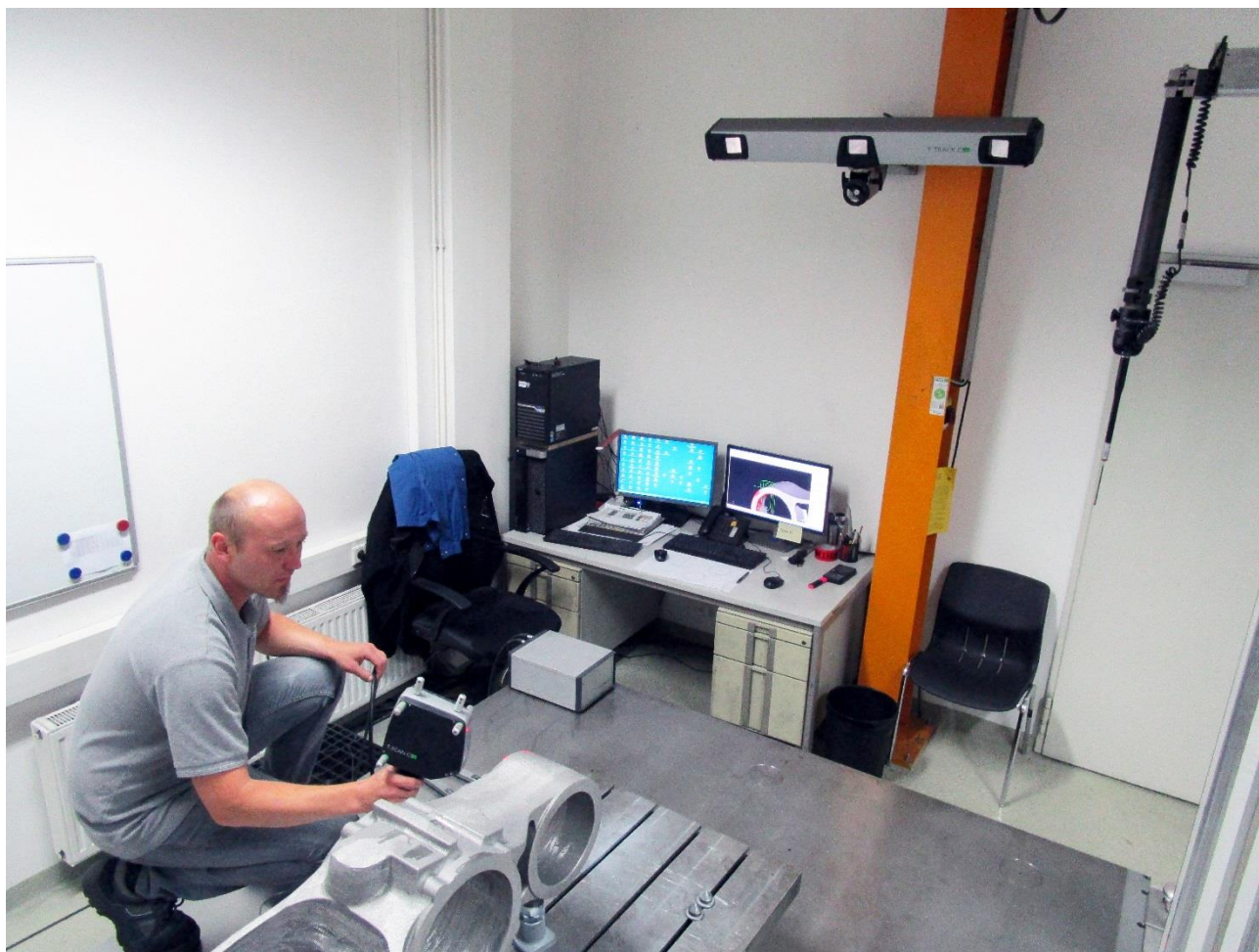


A Quick Fix

The company SLR Elsterheide has significantly sped up their measurement process with the ZEISS T-SCAN



SYSTEM / APPLIKATION	ZEISS T-SCAN CS
BRANCH	Casting house
CLIENT	SLR-Elsterheide GmbH, Elsterheide, Germany

TASK

Well-known companies such as Caterpillar Inc., the world's largest manufacturer of construction machinery headquartered in Peoria, USA, put their trust in the quality of the vehicle parts cast in the town of Elsterheide, Germany. SLR-Elsterheide GmbH is part of the SLR Group, which produced around 120,000 tons of nodular cast iron machine parts in 2016. The carbon in this particular type of cast iron has a nodular shape. Companies are very interested in nodular cast iron parts for industrial applications because of their outstanding mechanical properties and the relatively low cost of manufacture. As a system supplier for drive systems and components, the SLR Group's customers not only include companies from the construction machinery industry. It is active internationally, supplying its axle parts, gear housings and engine mounts to companies in the commercial



vehicle, agricultural machinery, rail technology and mechanical engineering industries. "Whether it's an excavator or a tractor, the vehicle almost always has a cast part from SLR," says the Head of the SLR Group, whose annual revenue totals 140 million euros.

Today the family-run company has around 700 employees. Its roots go back to the early 1980s: the SLR Group's main factory was first built in St. Leon-Rot, a small city in southwest Germany, in 1981. Located near Dresden, SLR-Elsterheide GmbH produces nodular cast iron parts and has an automatic molding facility. It joined the SLR Group in 2009. Many of the 280 employees working at this site fill orders for quality-conscious customers from Europe, the US, China and Japan. That the SLR Group continues to thrive in a country like Germany where wages are relatively high is primarily the result of their sharp focus on quality. This is evident in the company's reject rate of just 0.5 percent, which is remarkably low for this sector. The quality assurance employees in Elsterheide were looking for a digital solution to further increase the quality of their products as well as the number of nodular cast iron and gray cast iron parts that could be inspected. They wanted a system to replace a coordinate measuring machine that had become a bottleneck in the quality assurance process.

SOLUTION AND PRODUCT

Multiple suppliers presented their solutions before the company made its decision. As Bernd Macijewski, Measuring Lab Manager in Elsterheide, explains, the decision proved an easy one: "The T-SCAN CS from ZEISS best meets our requirements when it comes to precision, ease-of-use and portability."



Scanning a component



System setup on site

The hand-held ZEISS T-SCAN CS laser scanner enables the metrology engineer to perform quick, intuitive and highly precise 3D scans. The hand-held scanner, tracking camera and touch probe are perfectly matched, ensuring the modular system can be used for a wide variety of applications. The exceptional scanning speed and the precise measurement results are particularly impressive. The surface of the component is probed using non-contact measurements: the laser line generated in the hand-held scanner completes the job in next to no time. 210,000 points are captured every second, more than with any other conventional



method. Since the tracking camera detects the position of the scanner, 3D surface data can be calculated via triangulation. Contact measurements for additional individual points can be performed using the touch probe, enabling the metrology engineer to capture characteristics such as extremely deep boreholes or difficult-to-access recesses.

The data acquired with the ZEISS T-SCAN CS give the operator a detailed look at the actual condition of the scanned workpieces. Since this can be compared with the nominal parameters stored in the CAD model, serious deviations are identified quickly. Even those employees less familiar with metrology technology notice when a characteristic exceeds tolerance thanks to the comprehensive, user-friendly false-color comparison on the screen.

The ZEISS T-SCAN CS also meets even the most demanding ergonomic requirements, making scanning even larger components a breeze. Thanks to the light, compact scanning housing, it is also easy to capture data in difficult-to-reach areas with the ZEISS system. The intuitive, straight-forward operation further expands the range of applications and user groups.

RESULT / BENEFITS FOR THE CUSTOMER

All it took was two days to introduce the system and instruct employees on site, and three days to conduct the PolyWorks training course for evaluating digitized, 3D data captured with optical measurements. Then the company was able to start using the device for quality assurance and inspection. "Any remaining issues were cleared up quickly as we used the system in our day-to-day work," says Bernd Macijewski, describing the roll-out phase for the innovative ZEISS T-SCAN CS in Elsterheide. Since 2014, two of the site's employees have been using the ZEISS solution to ensure the quality of cast parts manufactured in serial production. "Now we are monitoring a lot more components," says the Quality Manager, immediately highlighting another benefit: "When inspecting new component samples, we are now three to five times faster than with the coordinate measuring machine." This increase in efficiency has also had a positive effect on the reaction times for special measuring jobs, and thus all the workflows in the measuring lab. Not only that: inspecting more components in the measuring lab in Elsterheide has meant no additional costs for third-party measurements. "It used to be the case that, during particularly busy periods, we had to commission third-party measuring labs because we simply could not handle the measurements ourselves," says Macijewski.



ADVANTAGES / STATEMENT

- **More workpieces inspected**
- **First sample inspection is now three to five times faster**
- **System rolled out quickly**

"Introducing the ZEISS T-SCAN CS has definitely paid off. Thanks to this digitization system, we perform our quality assurance and initial sample inspections more quickly, more precisely and more cost-effectively."

Bernd Macijewski, Measuring Lab Manager, SLR-Elsterheide GmbH

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