

From Users For Users

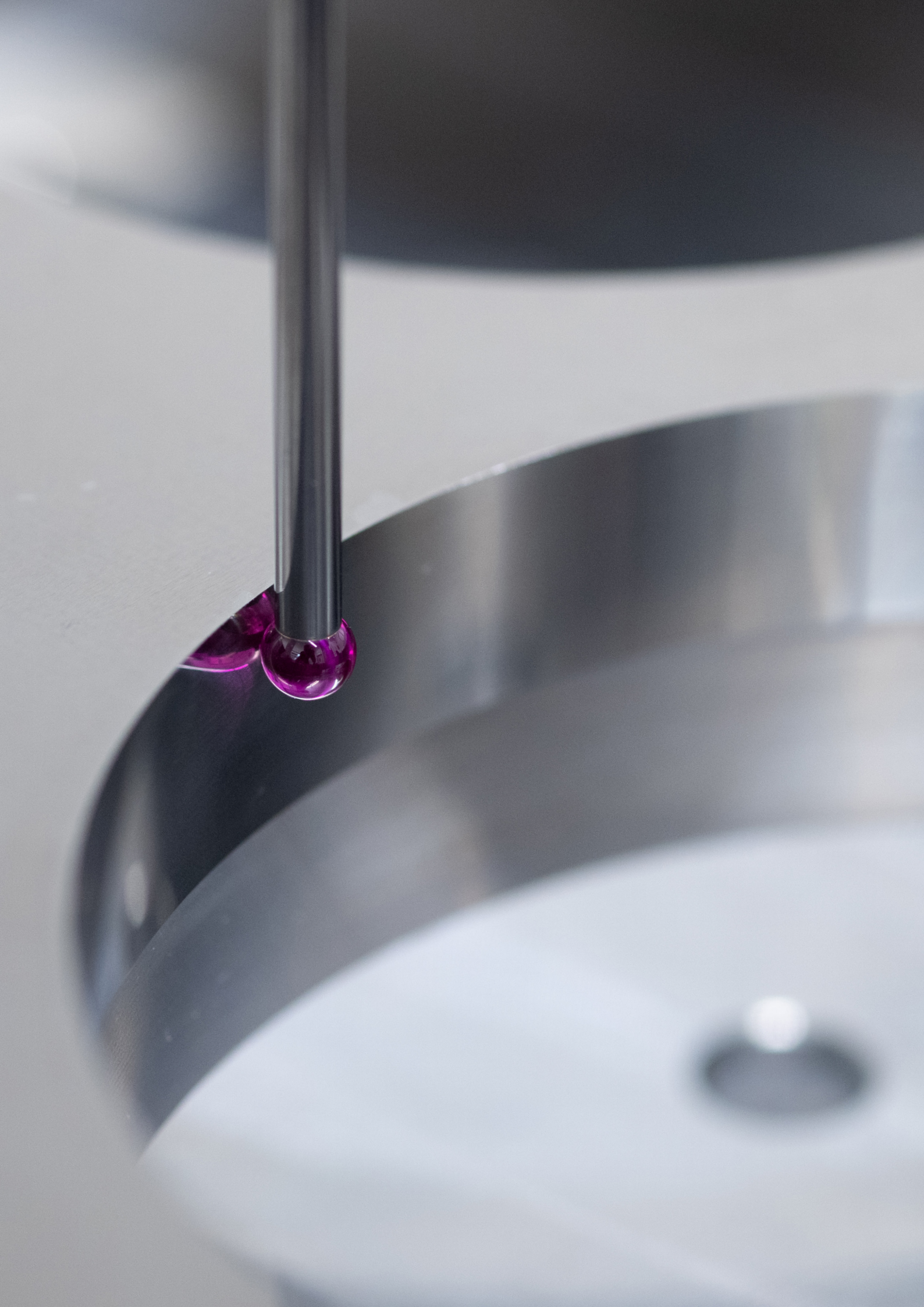


Seeing beyond

Röders GmbH / Soltau / Germany



**Ahead of everyone
else with uncompromising
precision**



Röders GmbH uses the ZEISS XENOS high-end measuring device for maximum accuracy in mechanical engineering

In Soltau, Lower Saxony, highly precise milling and grinding machines are produced in the mechanical engineering department at Röders GmbH. The tolerances here are sometimes so small that customers were arguing about measured values again and again. This cost a lot of time and therefore money. To be able to provide undoubted information more quickly, Röders GmbH has been relying on the most accurate measuring device in its size class since this year: ZEISS XENOS. Thanks to its unbeatable precision, discussions have been a thing of the past ever since.

Soltau, Harber district, industrial park. A modern building with large window areas is home to the assembly for the mechanical engineering department of Röders GmbH, a company that has been family-run for over 200 years and six generations. At the entrance, a friendly smiling portrait of the company founder Jasper Röders welcomes visitors and employees. The combination of tradition and innovation is characteristic of the family businesses, which are typical in Germany, and this is the case at Röders as well.

Around 1814, Jasper Röders establishes a pewter foundry in Soltau, producing tableware for the citizens of Soltau and the surrounding towns. His son Georg Andreas Röders continues the business but focuses on the production of barrel taps at a time when bottles did not yet exist. In turn, the grandson of the founder Georg Röders, with his foresight, once again adjusts the direction of the Röders company: Because he foresees the introduction of the liter measure in the German Reich, he produces liter measures in large numbers in advance – anticipating the massive demand that will follow. In the 20th century, Hinrich Röders preserves the tradition of pewter casting, at the same time adding new

business areas to it, including the first developments in high-speed milling. Röders' innovations were instrumental in the breakthrough of this machining process, which is now used worldwide. Thus, in just a few years, high-speed milling becomes the company's largest business field, already since 1995 also with automated machines for 24/7 operation under the current managing director Jürgen Röders.

“Reliably precise on every workpiece” – that is the promise that Röders GmbH makes to its customers today with its machines. They are used in production applications ranging from medical and dental technology to automotive design studies and prototype construction, the packaging industry, and the watchmaking industry. But the focus is on tool and mold making, especially injection mold making. And throughout, the demand for precision



Jürgen Röders, Managing Director Röders GmbH



Developer Silke Cohrs and measurement technician Sven Faber talking about the measurement process.

is of paramount importance: with the ongoing development of technology, the tolerances for the tools and molds produced are continually decreasing. Today, these are sometimes in the micrometer range – or even below. For the measuring technology, this is a challenge, especially on the part of the customer. To prevent time-consuming discussions about compliance with specifications from the outset and to obtain maximum certainty in just one measuring pass, Röders GmbH has been using the ZEISS XENOS high-end gantry measuring device since this year. It is used to inspect blanks, tools, and workpieces. It is one of the most precise measuring devices in the world, even for larger workpieces. Its unbeatable accuracy in the submicrometer range gives everyone involved the reassuring certainty that the machines produced by Röders GmbH offer exactly the precision they promise their customers.

The reference solution for tolerances in the submicrometer range

In the assembly hall, the milling and grinding machines that Röders GmbH is currently producing for customers are lined up, surrounded by employees in black and red work clothes. “We produce about 150 machines a year and

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Jürgen Röders, Managing Director Röders GmbH

deliver them to more than 50 countries,” Managing Director Jürgen Röders proudly reports. “We have been doing high-speed milling for more than 30 years, and it is fascinating to see how the process has evolved and how low the required tolerances have become.” He points to an RHP 500 that is nearly finished - a compact three-axis machine for medium-size workpieces where high surface quality is important. “This one is our premium class,” Röders says. “We are building this for a customer in the food industry, and it is used to create cutting dies for yogurt cup lids. In terms of the accuracy we have to achieve, we are in the submicrometer range.” Because high-speed milling has always required special precision, Röders GmbH has been relying on measuring technology from ZEISS for more than 40 years. “For example, we purchased a ZEISS PRISMO ultra CMM at an early stage,” reports Jürgen Röders. “An investment that has paid off. Because it can scale

along with the decreasing tolerances to this day.” The gantry measuring machine is therefore still in use at Röders GmbH. For special applications, however, Röders GmbH now supplemented its measuring technology with the high-end ZEISS XENOS measuring device. “For me, ZEISS was once again the supplier of choice,” says Jürgen Röders, “because firstly, we are impressed by the software and operation, which saves us a lot of time for employee training, and secondly, the ZEISS XENOS is simply the reference when it comes to measuring in the submicrometer range with a measurement volume of almost one cubic meter.”

Certainty with only one measurement pass

Sven Faber is a measurement technician at Röders GmbH and is pleased with the acquisition of the ZEISS XENOS. “You

might be surprised that the tolerance on a cutting die for yogurt cup lids is so low – we measure less than 0.8 μ , in some cases even 0.3 μ . But that is just what the market expects today. And not without reason. The more precisely the part is manufactured, the longer it remains in use. And the more accurately the measuring system measures, the more tolerance remains for production.” He places the cutting die milled in the RHP 500 into the ZEISS XENOS and starts the measuring program. In no time at all, the measured values appear on the screen next to the large gantry measuring device. “The ZEISS XENOS is a great relief for us,” says Faber. “We get exact, reliable results with it after just one measurement pass, which saves us measurement technicians a lot of time. No other measuring machine can accomplish that like this.” For him, the high-end measuring device is the ideal complement to the existing ZEISS PRISMO ultra. Many measurements, including incoming inspection, still take place on the latter, especially when it comes to measuring parts in lar-

ge numbers. ZEISS XENOS is used primarily when individual parts with particularly high accuracy requirements need to be inspected. “Due to its stable design, the ZEISS XENOS is able to ensure the positioning of the probes better than other measuring machines,” explains Sven Faber. “In addition, not the whole gantry is moved, there is only movement above the Y axis, so that overall, I get much better scattering behavior than with other measuring machines.”

Exact measurement results often basis for purchase decision

Röders GmbH is also pleased with the new ZEISS XENOS in the context of development. “For the further development of our machines, it is crucial that we can reliably detect deviations in our components down to the submicrometer range. The ZEISS XENOS is an excellent tool for this,” explains Silke Cohrs, Head of Development Precision HSC Machines at Röders GmbH. Customers who are considering ordering a machine from Röders GmbH have a legitimate interest in making sure that

the machine complies with the tolerances required for their application. “In the past, this has sometimes led to discussions,” reports Silke Cohrs, “for example, when customers have our measurements checked by external testing laboratories. However, they may not be able to achieve the required precision, which then leads to irritation.”

Since Röders GmbH has had the ZEISS XENOS, however, it is often sufficient for the customer to receive a calibration report from the measuring machine that certifies the accuracy: “The results are usually accepted immediately without reservation,” says Cohrs. „For the customer, such a measurement protocol is then often even an important basis for his purchase decision.”

Jürgen Röders agrees with her: “With the ZEISS XENOS, we can demonstrate more impressively than ever before the precision we achieve on our machines. This has a direct impact on our business success.”



Measurement technician Sven Faber inspects the measurement process on the ZEISS XENOS.

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