



User Report

Measuring Technology

ZOLLER
expect great measures

WEMA Zerspanungswerkzeuge GmbH

»m μ Focus« – Measuring with Highest Precision

More Efficiency in Tool Production





Standard for grinding of rotationally symmetrical tools: **Florian Prem** (l.) and **Marcel Bedus** (r.) trust on the proven measuring technology from ZOLLER when measuring the cutting edge geometries of ground cutting tools.

»mpFocus« – Measuring with Highest Precision

More Efficiency in Tool Production

WEMA Zerspanungswerkzeuge GmbH in Pfaffenhofen benefits from proven and innovative optical measuring technology from ZOLLER. Above all, special tools with cutting edge geometries specifically adapted to materials require comprehensive quality assurance. Florian Prem is convinced of this. He is the third-generation Managing Director and responsible for technical development and process control at WEMA Zerspanungswerkzeuge GmbH in Pfaffenhofen, Bavaria. As Florian Prem emphasizes, it is absolutely essential to fully measure and check all

ground cutting edge geometries, especially for special tools. "This is the only way we can guarantee that the designed tools with their special cutting edges also meet the requirements placed on them. We have been able to adequately record and measure the main shapes and dimensions of the cutting edges on drills and milling tools using the measuring methods that have been standard for many years." WEMA has an inspection device from ZOLLER for this purpose, the »pomBasic«. The cutting edges of ground tools are inspected and measured using the incident

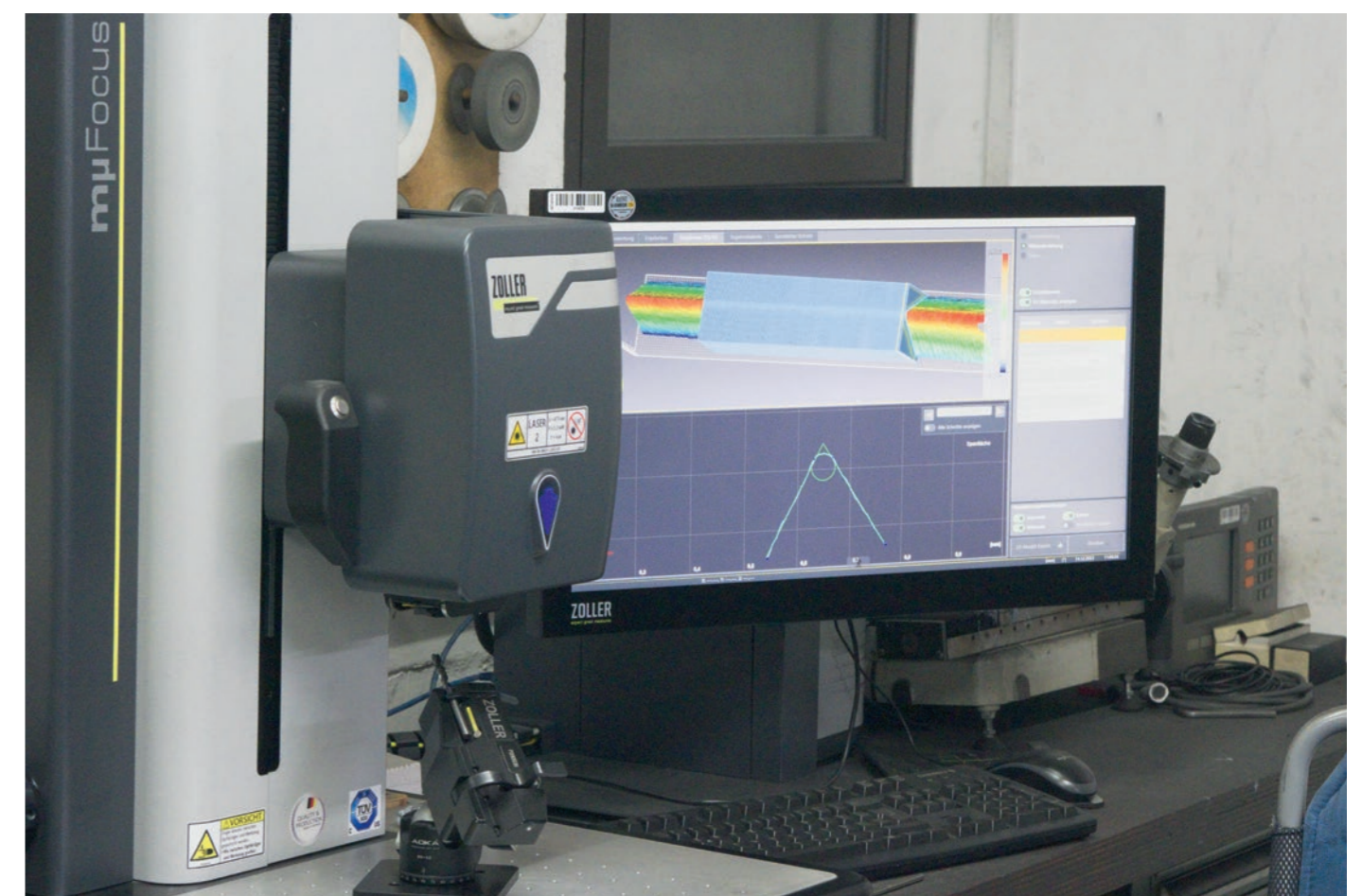
light method. In order to verify the contours and dimensions, the operator compares the geometries of the tool cutting edges on the large screen with a superimposed contour that is accurate according to CAD design and measures them with a superimposed ruler. This enables the operator to quickly and reliably determine whether the ground milling and drilling tools meet the specifications.

Precise Rounding of Cutting Edges

To ensure that the specialists only work with precisely profiled grinding wheel sets during the grinding process, WEMA uses the tried-and-tested measuring device »smartCheck« from ZOLLER. This universal measuring device uses a projection to show the contours of the dressed grinding wheels. These can then be measured and documented using the enlarged display on the color screen. According to Florian Prem, however, it is essential to supplement the proven

measuring methods. "Our customers are increasingly demanding that we round the cutting edges of ground drills and milling cutters according to individual specifications. Of course, we have to document that we meet these specifications. This is only possible with innovative technologies. That's why we invested in the measuring device »mpFocus« from ZOLLER." Florian Prem can fully justify his decision in favor of ZOLLER technology: "Comparisons of different measuring machines and processes have clearly demonstrated ZOLLER's outstanding expertise. Measuring the cutting edges is quick, easy and reliable. With us, even apprentices can already work on the measuring machine »mpFocus«." At WEMA, Thomas Gruber mainly uses the measuring machine to verify and document cutting edge rounding. He only completed his training a few months ago and now works in the post-treatment of cutting tools department. He mainly rounds high-performance drills according to individual specifications with a wide variety of

Evaluate fast and reliably: When measuring the cutting edge rounding the optical measuring device »mpFocus« from ZOLLER displays a 3D graphic on the color screen with a color-coded height profile (top) and a 2D graphic of arbitrarily selectable cross-sections, in which the geometry of the cutting edge is measured with a repeat accuracy of less than 1 µm.



Thomas Gruber (l.) and **Florian Prem** (r.) benefit from short measurement cycles: The measuring device » μ Focus« enables consistent quality assurance for all cutting tools ground in small series and provided with defined cutting edge fillets.

roundings. He benefits extensively from the advantages of the measuring machine » μ Focus« from ZOLLER. "Operation is extremely simple. Above all, the measuring machine requires only minimal set-up work. I can quickly and easily position the tools to be measured and focus on the cutting edge." The enlarged display of the cutting edges on

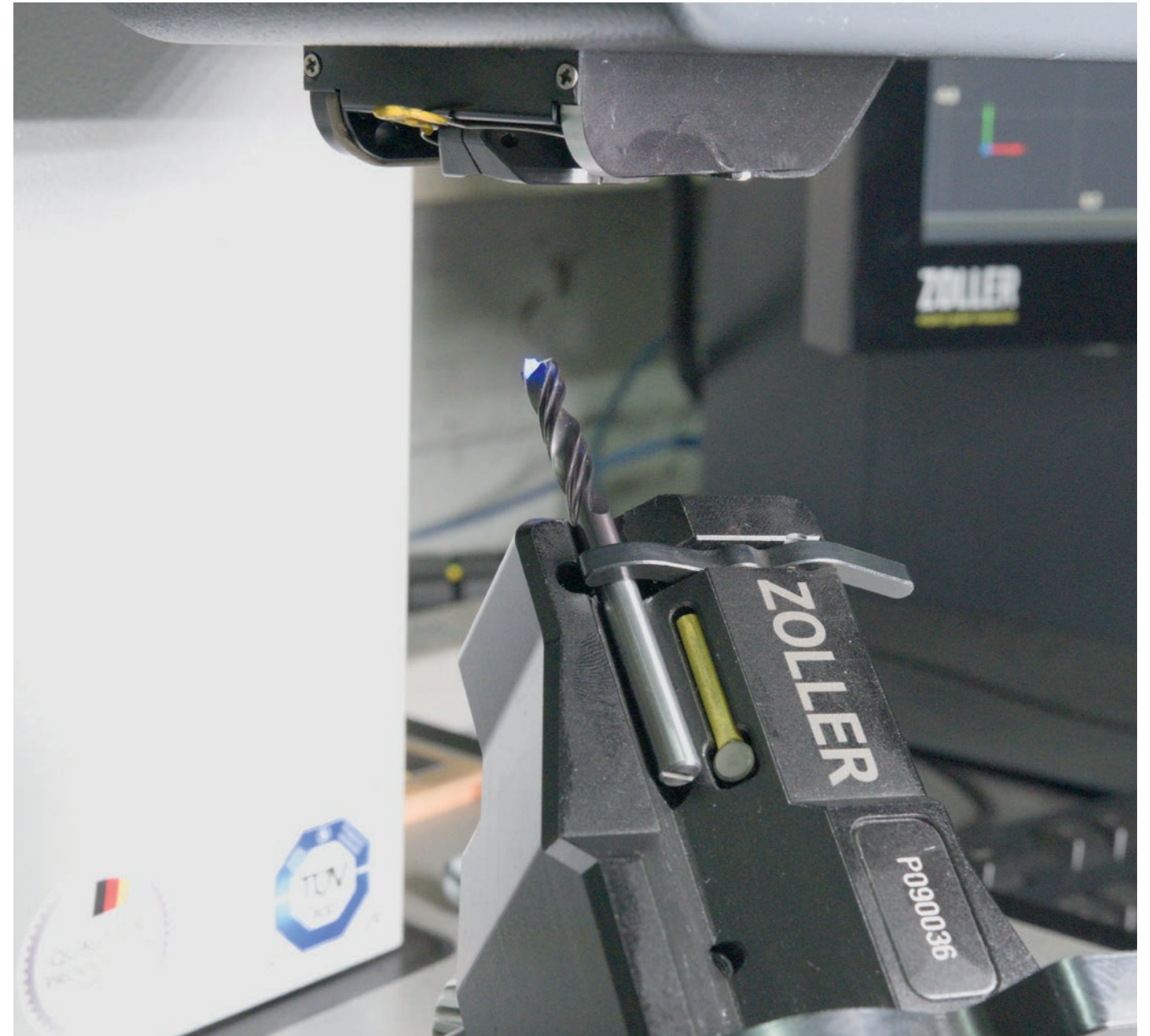
the screen is particularly helpful. The fully automatic measuring process only takes about one minute. "Afterwards, just a few clicks on the touchscreen and with the mouse are enough to view, analyze and document the measurement results," explains Thomas Gruber.

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Thomas Gruber (l.), Dept. Post-Treatment of cutting tools, and **Florian Prem** (r.), Managing Director, at the quality inspection on the ZOLLER » μ Focus«.

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These short measuring cycles ensure that he can fully measure and document every tool he has ground. For a detailed analysis of the cutting edge rounding, the measuring device provides a freely selectable number of cross-sections over the measuring range. The rounding can be measured and verified by comparing it with a circular shape displayed on the color screen.

High-Precision Measurements

As Florian Prem says, radii between 10 and 20 μ m are usually required. The measuring machine » μ Focus« from ZOLLER is able

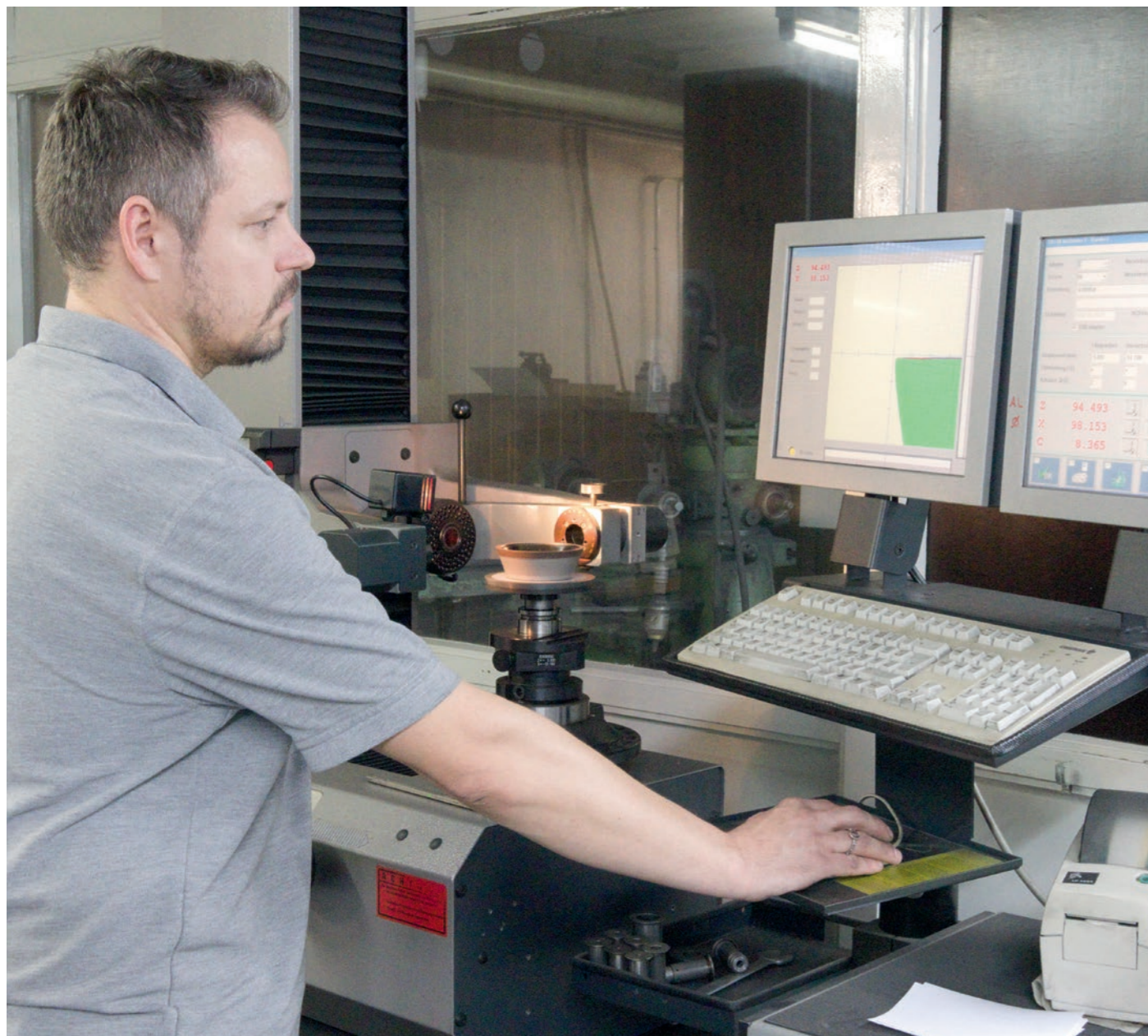
to reliably measure radii on cutting edges with a repeat accuracy of less than 1 μ m. To the advantages of quick and easy measurements on the measuring machine » μ Focus« Florian Prem adds: "We also have to meet increasingly stringent requirements when it comes to quality assurance. Whereas it used to be common and sufficient to measure every tenth or even twentieth tool, numerous manufacturing companies now demand that we measure and record every tool without exception. Of course, the simple, fast and reliable measurement on the ZOLLER measuring machine » μ Focus« is very helpful to us."

Highly accurate measurement of smallest geometries: With laser light the measuring device » μ Focus« precisely detects the cutting edge geometries even of drilling and milling tools with small diameters with a 10 x 10 mm measuring spot.

Another outstanding advantage emphasized by Florian Prem is that the features and functions of the ZOLLER measuring machines are tailored to the requirements of the users. His father Max Prem, owner and co-managing director of WEMA Zerspanungswerkzeuge GmbH, says: "We have had many years of excellent experience with ZOLLER measuring machines in particular. They are ideal for use in production. They meet the expectations of the specialist personnel and fit into the daily processes without any problems. In addition, we have an amicable working relationship with the medium-sized manufacturer. ZOLLER always listens to our wishes and suggestions. The specialists in

Pleidelsheim are constantly developing their measuring technology in line with needs and practical requirements." ZOLLER's measurement technology solutions also offer WEMA a number of individual, additional functions and options for documenting the measurement results directly integrated into their measuring devices and software. As Florian Prem confirms, the experts at ZOLLER continue to impress with their high level of expertise and qualifications. "When it comes to innovative and practice-oriented measuring technology for tool grinders and manufacturers, we have definitely chosen the right partner in ZOLLER," Florian and Max Prem agree.

Grinding tools process reliably: To measure complete grinding slide sets, Marcel Bedus uses the proven projection measuring device »smartCheck« from ZOLLER at WEMA.



WEMA - Tool Culture in the Third Generation

WEMA Zerspanungswerkzeuge GmbH, based in Pfaffenhofen, is known in the industry for maximum precision, short delivery times and attractive pricing, thus contributing to the international success of German machine, automotive and aircraft manufacturers. The company produces rotary tools made of HSS and solid carbide for drilling, milling and reaming on a large number of high-quality 5-axis tool grinding machines. The tool grinder receives orders from manufacturing companies in the metal, wood and plastics industries. On the other hand, the specialists at WEMA produce specially designed and ground tools in small and medium-sized series for globally active tool manufacturers. This complements the large tool manufacturers' comprehensive portfolio of standard tools.



Company headquarters of WEMA Zerspanungswerkzeuge GmbH in Pfaffenhofen.



ZOLLER Solutions

More speed, higher quality, safe processes – with ZOLLER, you increase the efficiency of your production. ZOLLER offers you outstandingly precise devices for adjusting, measuring and testing cutting tools, software, interfaces, cloud services and solutions for the automation of tool processes. You can combine all of this to create your individual system solution – on your way to the smart factory.

Presetting & Measuring

Tool Management

Inspection & Measuring

Automation

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