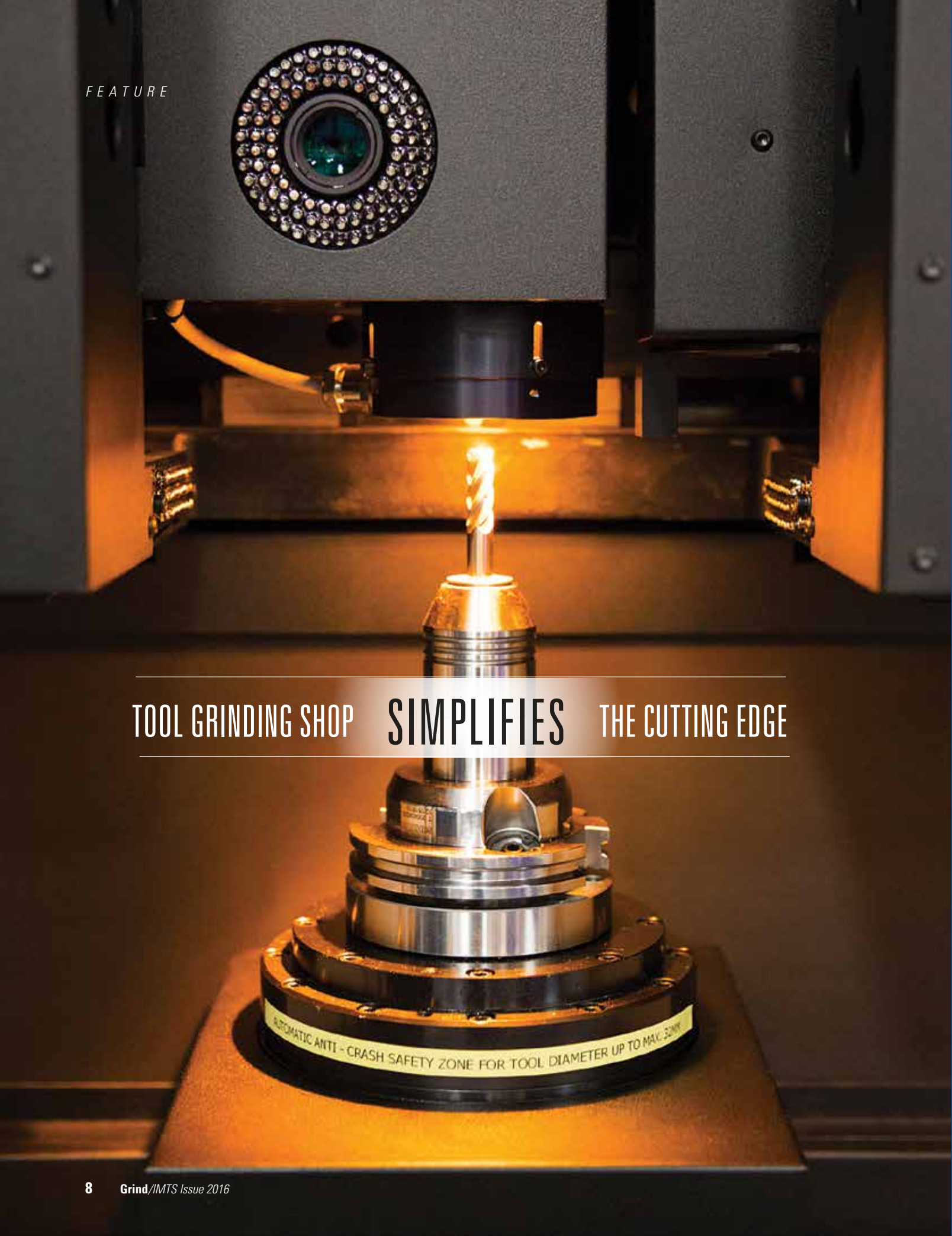


TOOL GRINDING SHOP SIMPLIFIES THE CUTTING EDGE

PROMAX Tools in Rancho Cordova, California, considered the advancement from manual to CNC tool grinding equipment a big deal, until the shop took its most recent major step forward concerning manufacturing technology. PROMAX simultaneously incorporated several advanced tool measurement systems that catapulted the shop's quality assurance and overall production to new levels.

The first carbide roughing tool the shop designed and produced was like nothing else on the market. Competitors' carbide end mills were all based on old high-speed milling designs with standard 30-degree cutting angles, while PROMAX carbide roughing tools introduced European geometries to the high-performance cutting tool market.

To produce its innovative cutting tools, PROMAX looked to the latest grinding technologies, and at that time, CNC grinder technology had begun to revolutionize manufacturing. When the shop installed its first CNC grinder, the machine quickly garnered a reputation on the shop floor for accuracy and productivity. Even the shop's manual grinding machine operators were amazed at the newfound ability to walk away from a machine as it ran a preset program.

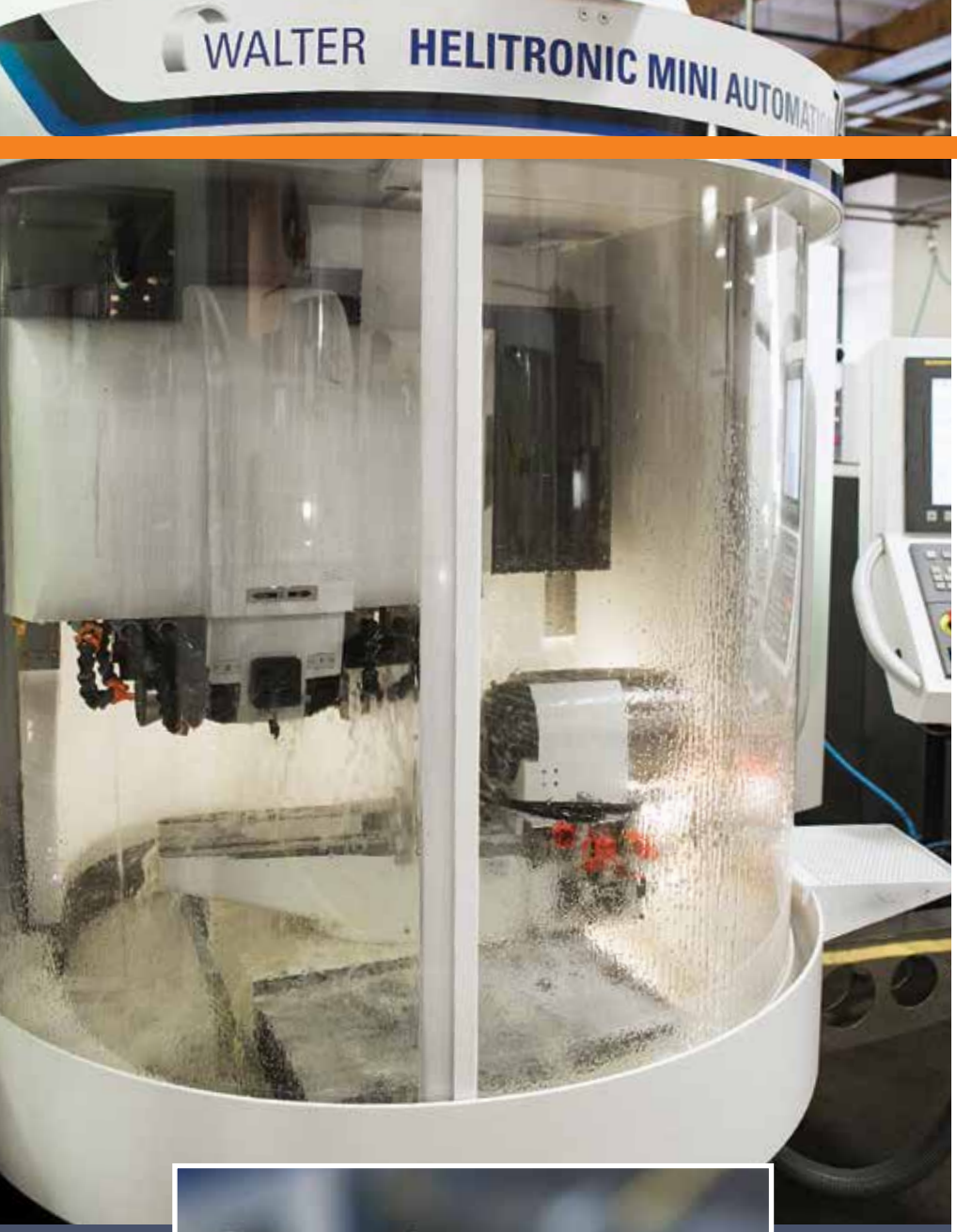
That shop's first CNC grinder was a WALTER from UNITED GRINDING and it helped PROMAX grow its line of solid-carbide end mills that soon caught the attention of a private label company. It wanted the shop to develop and supply a brand new line of cutting tools for them — with projections of about $750,000 worth of production needed in the first year to meet initial demand.

The tools were incredibly well received. Orders in the first year were double that of the projections. One CNC machine was simply unable to keep up with the skyrocketing demand, so PROMAX returned to its trusted grinding technology supplier and acquired a second WALTER machine from UNITED GRINDING.

Over time, PROMAX continued to add WALTER machines to its lineup, and today, the shop's floor is home to a total of 22 WALTER systems, including the HELITRONIC POWER, MINI POWER and MINI AUTOMATION grinders. But the shop's most recent and boldest technology acquisition to date was a single order for seven highly advanced WALTER HELICHECK optical CNC tool measuring systems.

The HELICHECKs support PROMAX's goal and manufacturing philosophy of always putting quality first above all else. Prior to the advanced tool measurement technology, the shop measured manually and used comparators to check its finished parts — a system that offered limited quality certification and traceability.

"When HELICHECK measurement systems first came on the market, we quickly realized the advantages of the new technology and incorporated it into our production process," said Mark Albertson, production manager at PROMAX Tools. "With our HELICHECKs precision and flexibility, we can guarantee the quality of our entire range of cutting tools along with the complete portfolio of our other products."



With our HELICHECKs precision and flexibility,
we can guarantee the quality of our entire range of cutting tools
along with the complete portfolio of our other products.

PRODUCTIVITY

Trust and support also sold PROMAX on WALTER's measurement technology. Through its long-standing relationship with UNITED GRINDING, the shop knows its supplier solves problems immediately when they arise. PROMAX works closely with Stefan Krannitz, measuring product specialist for UNITED GRINDING; Andrew Walenta, application engineer for UNITED GRINDING; and Ulrich Brändle, product manager metrology for WALTER.

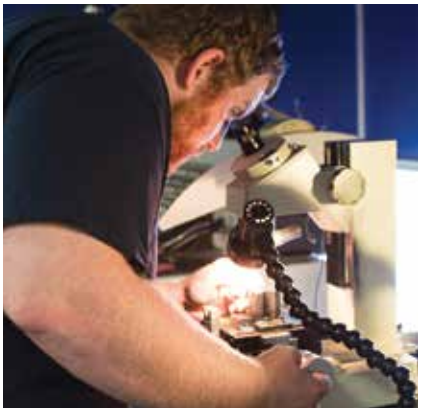
"We are manufacturing the best tools and the best products, and to do that we need the best equipment," commented Albertson. "We keep going back to UNITED GRINDING because they are a premium supplier. Their machines are well engineered and well designed."

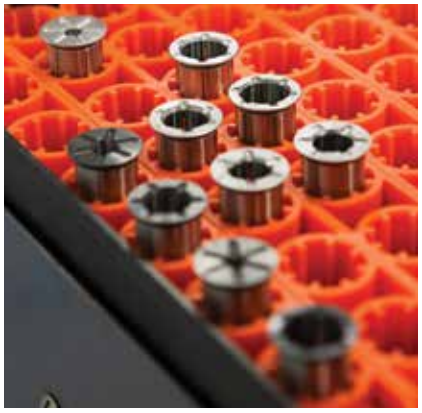
Of the recent HELICHECK acquisitions, the shop uses four HELICHECK PRO systems and two HELICHECK PLUS 4-axis CNC measuring machines with standard 400 power cameras. PROMAX's final new HELICHECK PLUS features powerful sophisticated camera technology, making it the most advanced of the group.

PROMAX uses the HELICHECK PLUS — equipped with a 1,000 power CER camera — to measure its micro tools and edge-prepped tools. The machine also ensures that the finished cutting tool diameters are exactly within specification. With a special reflected light unit and diffuser, the system measures even the smallest of details.

During its edge prep process, PROMAX removes small amounts of raw material from cutting tool edges and imparts slight radii on them. After the process, tools make smoother connections with workpiece surfaces, resulting in higher part quality and better surface finishes.

Tool measurement and integration of the IIoT is the future of tool making ... Promax is on the cutting edge of these developments, and the shop has made an investment that prepares it for the next manufacturing revolution.





AUTOMATION

PROMAX's seven HELICHECK measurement systems operate autonomously. An operator loads the tool and walks away while the HELICHECK performs the measurement process. This autonomy allows the shop's employees to be more productive.

To further increase productivity, PROMAX also incorporated an automatic loading machine, which they consider to be an important advancement. With automation, an employee does not have to constantly stand in front of a machine to load parts. PROMAX runs as many of its 45 machines as possible over night to maximize the output of its 75 employees during their two shifts.

WALTER's grinding technologies boost PROMAX's lights-out operations because of their closed-loop, self-correction capabilities. Probes on the grinders check part geometries and provide feedback to the machine. The machine, in turn, uses the feedback to correct its program in the middle of a run without the need for operator input. This allows the shop to run a larger variety of parts unattended.

Thanks to the advanced WALTER equipment, the shop can run parts lights out with loose tolerances — where grinders need no adjustments over the course of a long run — as well as run those parts with extremely tight tolerances. In lights-out operations, a single WALTER grinder can crank out 240 half inch-diameter PROMAX cutting tools per day.

Another essential feature of WALTER's grinding technology is its HELITRONIC TOOL STUDIO CAD/CAM software that lets shops such as PROMAX generate a wide variety of cutting tool types with the aid of its input assistance wizard. The programmer inputs a few pieces of geometry data, and a stored database completes any missing data to form

a complete part creation program. The 3D live simulation feature then displays an exact graphic representation of the tool to be created.

Before HELITRONIC TOOL STUDIO, PROMAX would spend days trying to design a tool at the machine with special plastic and paper prototypes that simulated diamond wheels and carbide. Now, employees perfect tool programs from start to finish directly at their computers, and the shop is only limited by the imaginations of its designers.

UNITED GRINDING software also plays a significant role in PROMAX's latest business venture. The shop is now a member of the Germany-based CERATIZIT Group. CERATIZIT specializes in end mill production, and its lineup of products includes powder, rods, indexables and — due to its partnership with PROMAX — solid-carbide end mills and soon drills. PROMAX adapts CERATIZIT's German designs and tool geometries for the demands of the American market.

"Our software from UNITED GRINDING is integral to the redesign process," said Albertson. "We alter the designs digitally and let the software prove the concept before we use time and resources for prototype creation. Without the software, we would spend weeks in front of the machine to determine what design changes can and cannot be achieved."

In addition to an expanded product line, the future of PROMAX lies with adoption of intelligent manufacturing concepts — Industry 4.0 and the advancement of the Industrial Internet of Things (IIoT). Currently, five out of seven of PROMAX's HELICHECK systems are connected together and networked to a central database. The shop connected work stations in its engineering and design department to that database, so engineers can instantaneously access programs and reports from its HELICHECK measurement machines. This connectivity increases efficiency and provides the shop with a wealth of data to improve its production processes.

"Tool measurement and integration of the IIoT is the future of tool making," said Krannitz from UNITED GRINDING. "PROMAX is on the cutting edge of these developments, and the shop has made an investment that prepares it for the next manufacturing revolution."

Learn more
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