

Marposs

OFFERS FAST GEAR MEASURING SYSTEM WITH M62

Marposs recently announced its M62 Scan, a universal gear inspection system that performs a very quick and efficient inspection of cylindrical gear tooth profiles in a production environment. The M62 Scan helps to relieve the workload of gear lab machines by enabling an interim check directly on the shop floor. The compact robust system can reach speeds of up to 50 mm/s, helping to improve production processes.

The M62 system uses a special shaped stylus with a universal ball point contact that scans the involute profile on the transverse section of each flank dynamically with part rotation. During inspection, the stylus is auto-retracted by the opposite gear flank, guaranteeing effectiveness and velocity of the process. In a very short time, the system can capture the entire involute profile of spur or helical cylindrical gears with no flanges, evaluating them according to international standards.

The main parameters considered include profile deviation, run-out, tooth thickness, tooth space, and pitch deviations. The system's stylus probe is driven by an electric actuator and can accommodate gears with external diameters of 20–180 mm, and 15–50 mm in height.

The M62 Scan is part of the Marposs' family of measuring instruments for dimensional and functional inspection of multiple types of gears. Utilizing highly precise tools and robust technology, Marposs' solutions for gear verification offer the appropriate method of measurement to control the manufacturing process in a shop floor environment. All the M62 systems are suited for the use of the *Gear AddOn*, a

dedicated software for gear analysis compatible with Microsoft Windows.

For more information:

Marposs Corporation
Phone: (248) 370-0404
www.marposs.com



ANCA

LAUNCHES GCX LINEAR TO MEET GROWING SKIVING CUTTER DEMANDS

The new GCX Linear offers a purpose-built solution for manufacturing and sharpening skiving cutters. With a five axis CNC grinder powered by LinX linear motor technology on X, Y and Z axes, the GCX Linear also comes with features specially designed for skiving cutters and shaper cutters.

"ANCA is responding to the increasing popularity of skiving and resulting surge in demand for skiving cutters. We want our customers to have a complete solution for manufacturing and sharpening skiving cutters and the GCX Linear will set the new benchmark for skiving cutter grinding," said Xiaoyu Wang, product

manager at ANCA.

"Dressing the complex wheel profile is critical, ANCA developed the latest acoustic emission monitoring system (AEMS). AEMS can be taught to pick up the right sound of perfect dressing even in a noisy production environment. Built upon supervised machine learning algorithm, AEMS ensures the wheel profile is dressed within micron accuracy with the least possible time while minimizing the reduction in size," Wang added.

The GCX Linear offers a comprehensive gear cutting tool package and was recently featured during the Motion + Power Technology Show in Detroit.

For more information:

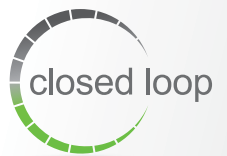
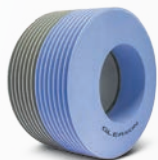
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Kennametal

EXPANDS CARBIDE END MILL LINE

Kennametal has announced the latest addition to its best-selling HARVI line of high-performance solid end milling tools, the HARVI I TE four-flute solid carbide end mill. The HARVI I TE delivers performance benefits in a broad range of materials, including steel, stainless steel, high-temperature alloys and cast iron — with tool life to match. And

thanks to significantly reduced cutting forces, this tool can be used on any machining center or mill-turn center in the shop.

“The HARVI I TE consistently outperformed competing four-flute end mills in both wet and dry machining tests on a variety of materials and applications, with



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unprecedented tool life in many cases,” said Bernd Fiedler, manager, solid end milling. “It performs exceptionally well on heavy roughing and finishing cuts alike — from deep cavities and full width slots to shoulder and dynamic milling.”

Kennametal engineers designed the HARVI I TE to address four key problems that plague more than 90% of all milling applications: chip evacuation, tool deflection, corner stability, and breakage due to radial cutting forces. The result is a tool that’s durable and versatile enough to tackle the lion’s share of milling applications.

“The HARVI I TE improves process stability, surface quality and chip evacuation,” said Fiedler. “Most importantly, it maintains these benefits even at increased feeds, speeds, and depths of cut — delivering maximum metal removal, tool life and productivity.”

For more information:

Kennametal Inc.
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www.kennametal.com



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Mitutoyo

INTRODUCES QS-L VISION SERIES

Mitutoyo America Corporation is pleased to announce the release of the QS-L Vision Series to its Vision Measuring System Line. The new scope series features a high definition and high-speed auto focus 3-megapixel camera, a four-quadrant LED ring light using high-intensity to provide better observation performance and an interchangeable objective lens zoom unit producing a very sharp image due to a high numerical aperture.

Key features include:

- Instant Image Auto Focus: Height measurement is performed efficiently as non-contact measurement requires the workpiece to be lightly fixed to the stage. Additionally, in contrast to a laser-equipped microscope, measurement is less influenced by the surface roughness of the workpiece.
- Four-quadrant LED ring: Light LED sources are standard for all illumination methods. Color tone is kept constant even after illumination intensity adjustment so high color-reproducibility observation is possible. Additionally, four-quadrant reflected illumination is provided to enable contrast of surface features to be adjusted so that edge detection accuracy is maximized.
- Interchangeable objective lens zoom unit: The newly designed 7 \times -zoom unit and optional interchangeable objectives provide magnification from 13 \times –184 \times on the monitor. A wide range of measurement is covered: wide view measurement at low magnification to micro-measurement at high magnification.

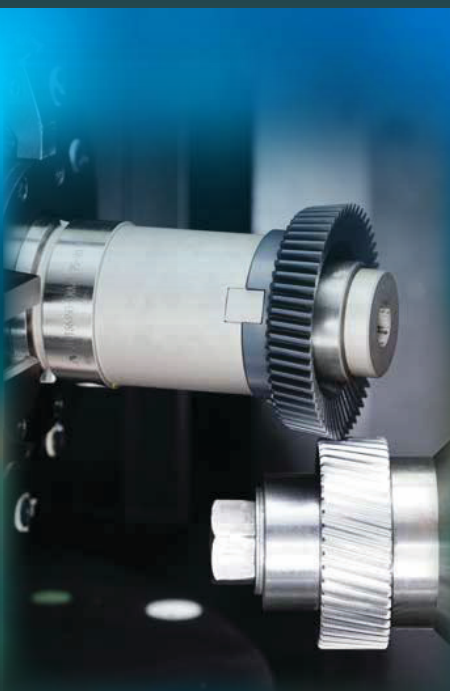
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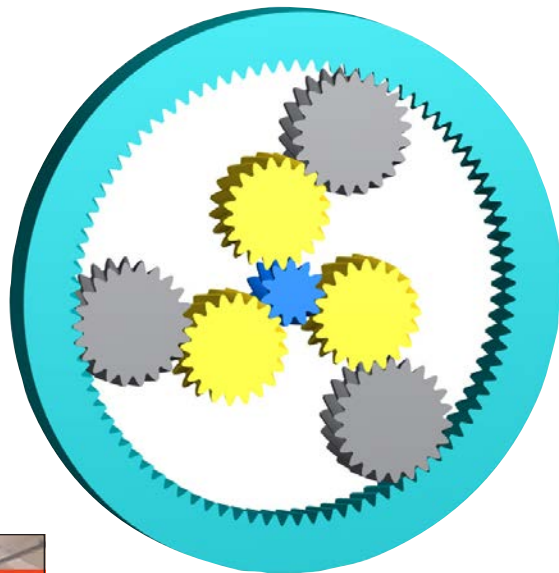
KISSsoft

OFFERS DOUBLE PLANETARY STAGE CALCULATIONS

Today, various types of planetary gearboxes are increasingly being used in the hybridization of drivetrains. Since the *KISSsoft Release 2019*, it is now possible to calculate double planetary stages (module ZA9). Due to their two intermeshing planets, double planetary stages achieve a subsequent reversal of the direction of rotation between the

two central gears. The application in speed ranges of 7,000–20,000 rpm requires an exact analysis of the teeth with regard to noise as well as an evaluation of the planetary bearings concerning their service life.

The engineer can first calculate the strength of all gears and



check the geometric assembly situation of the planets. Subsequently, all center distances can be varied in the fine sizing of the double planetary stage and the influences of the meshing forces on the bearings can be compared from all possible solutions. At the same time, the minimum bearing diameters of the planetary gears and the largest possible installation space for the ring gear can be defined. Finally, the planetary stage can also be displayed in a 3D graphic for a visual check.

For more information:

KISSsoft AG (A Gleason Company)
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Schunk

OFFERS 6-JAW POWER LATHE CHUCK

The Schunk ROTA NCR-A sealed 6-jaw pendulum compensation chuck has special seals at the jaw interface and the piston to keep the grease from being washed out and the clamping force from being gradually lost.

The Schunk ROTA NCR-A consists of a central chuck piston, carrying three inner pendulums aligned at 120°. Each pendulum is connected to two base jaws. This ensures workpiece centering between six contact points, which can be adjusted in pairs. As the clamping forces are directed towards the chuck, optimum centering is achieved without redundant dimensioning of the workpiece. The chuck with its oscillating jaws perfectly adapts to the workpiece. In case of a conventional jaw clamping, this configuration ensures maximum roundness of the workpieces.

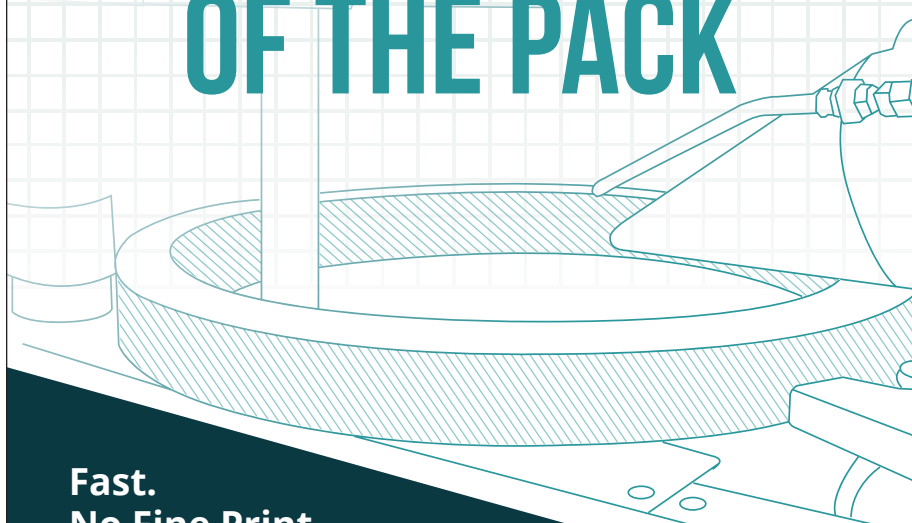
The Schunk ROTA NCR-A is available in sizes from Ø 190 mm to Ø 1,000 mm with maximum clamping forces between 36 kN and 300 kN, and jaw strokes from 6 mm to 25 mm. The power lathe chucks of sizes 190 to 225 are equipped with tongue and groove; from size 250 it is equipped with a versatile fine serration (1.5 mm × 60° or 1/16" × 90°). From size 630 on, the lathe chuck is prepared for the use on vertical lathes. Depending on the chuck size, the pendular compensation amounts between ±1 mm and ±6 mm, and the maximum speed is 600 rpm to 4,000 rpm.

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Seco/Warwick

INTRODUCES SUPER IQ FURNACE TO NORTH AMERICAN MARKET

Seco/Vacuum Technologies, Seco/Warwick Group's company, is pleased to introduce to the North American market Super IQ (integral quench furnace), the industry's next-generation carburizing furnace with more built-in features to simplify your life. The American premiere took place at ASM2019 in Detroit.

The Super IQ offers all the benefits of low-pressure carburizing with none of the added costs. The system combines clean processing with the exceptional performance of oil quenching using the most innovative integral quench furnace design in decades. With a Super IQ, users get super-clean parts while still getting the benefit of a simple atmosphere oil quench without any additional costs.

According to Jarosław Talerzak, vice-president business segment thermal, Seco/Warwick, "The concept for a new alternative to the integral

quench furnace was born of calls from heat treatment facility managers and owners demanding a cleaner, faster, more efficient method for carburizing.

We introduced the Super IQ this year with a multitude of benefits over traditional methods, especially productivity: Because the Super IQ operates at

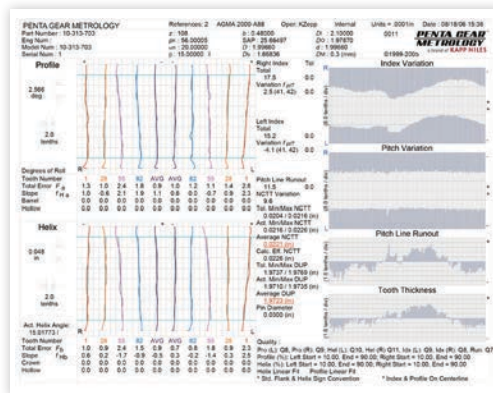


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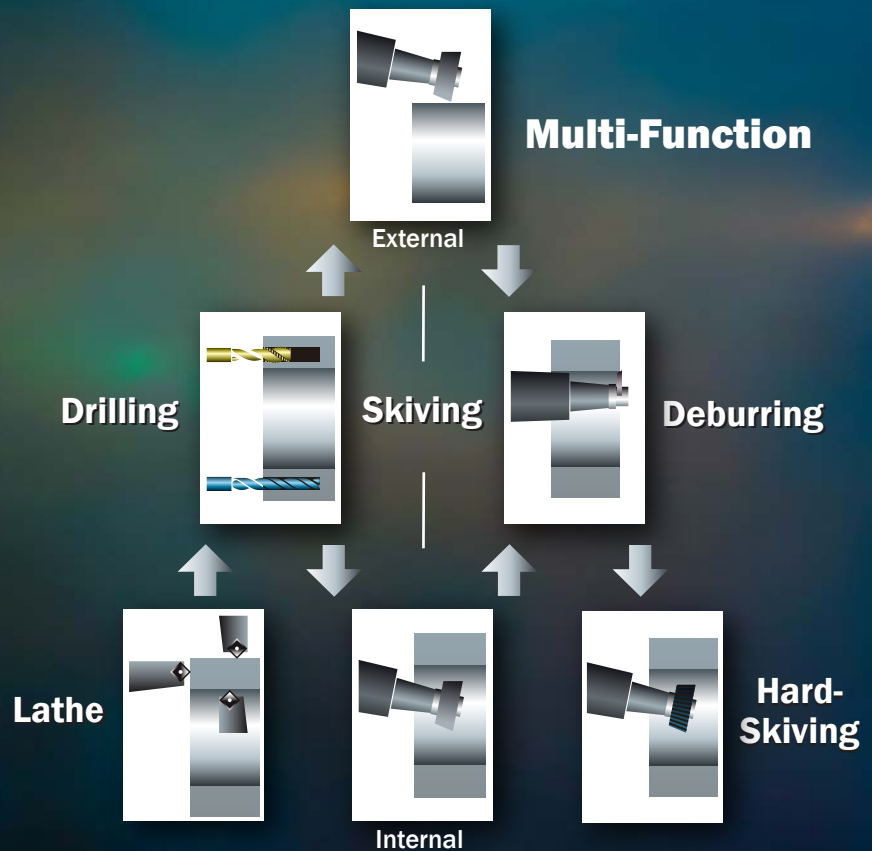
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higher temperature ranges, heat treaters can expect faster cycle times which translates into a more productive work center."

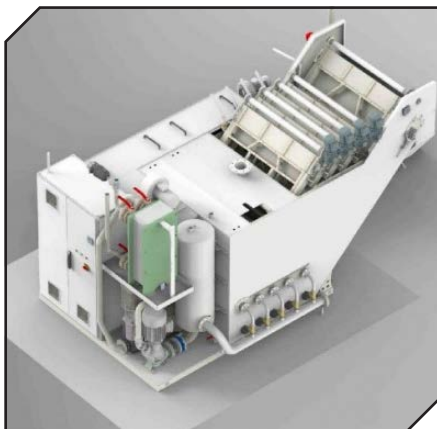
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Seco/Warwick
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www.secowarwick.com

Vomat

RELEASES UBF FILTRATION SYSTEM

The Vomat UBF concept is a vacuum band filter equipped to handle a wide variety of sludge materials, such as ceramic, HSS, brass, aluminum oxide, disc abrasion and more. It operates with oil as well as water-miscible coolants. If necessary, it can be combined with a Vomat fine filtration unit. It is currently available in three sizes with the following filtration capacities: 110 Gal./Min., 264 Gal./Min. and 528 Gal./Min. As with all Vomat designs, the UBF system has a small footprint for its capacity. Vomat filtration systems are distributed by Oelheld in the United States.



For more information:

Oelheld U.S., Inc.
Phone: (847) 531-8501
www.oelheld.com

Starrett

INTRODUCES AUTOMATED DIGITAL HARDNESS TESTERS

The L.S. Starrett Co. has introduced two new digital Rockwell/Superficial Rockwell Benchtop Hardness Testers (Nos. 3823 and 3824) with fully automated load/unload procedures, and

capable of providing highly accurate readings. The new Starrett Hardness Tester models utilize a closed-loop control unit with a load cell, a DC motor and an electronic measurement and control unit instead of traditional dead weights, enabling high accuracy measurements at all test loads up to 0.5%. The testers are part of a significantly expanded line of new hardness testing solutions that Starrett is now offering.

The Starrett No. 3824 Hardness Tester has an automated Z-Axis. The user simply presses the START key, and



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FAX: +82.32.814.5381

the entire test process is automatically completed. The Starrett testers feature programmable scale conversions, dwell times, statistical capabilities and a test counter and are capable of testing in a wide range of 30 different Rockwell hardness scales for carbon steel, alloy steel, cast iron and non-ferrous metals.

Suitable for both internal and external testing via a dolphin nose design, the Starrett No. 3823 and 3824 Digital Testers are high precision testing solutions that meet ISO 6508-2 and ASTM E18 standards. They feature a built-in micro-printer, touch screen control on a high definition LCD display, USB output, and are furnished with PC-based software. For memory, a maximum of 400 items of test results are stored automatically. Testing capacity is 12" (300 mm) vertical and 8.8" (220 mm) horizontal. A full range of accessories from test blocks to anvils, to dust cover are also included.

Featuring a manual Z-Axis instead of an automated Z, the No. 3823 Digital Superficial Rockwell Hardness Tester is a good value alternative to the No. 3824

Tester. Both the Starrett No. 3823 and No. 3824 feature auto load test force control.

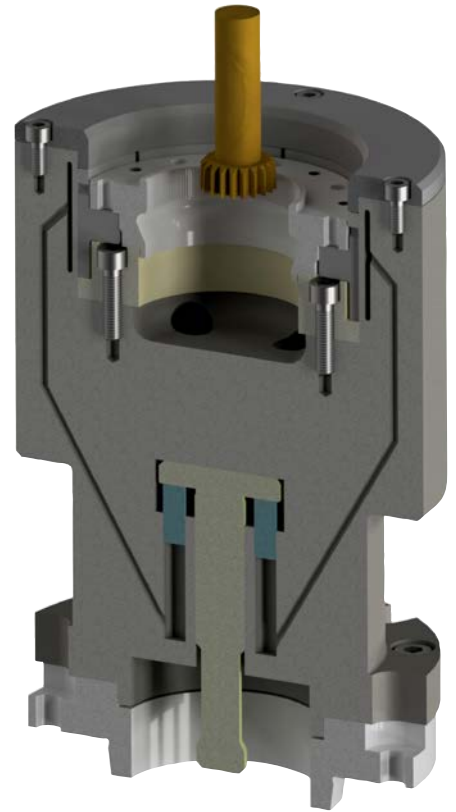
For more information:

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Phone: (978) 249-3551
www.starrett.com

Mytec HydraClamp

OFFERS POWER SKIVING
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BENEFITS

Skiving has been around for a long time, but recent advances in technology have improved the speed and effectiveness of this gear-making process making it a more viable manufacturing option for gear producers. It's long been recognized that skiving would be a much more productive process than shaping for cutting many internal gears. Mytec HydraClamp clamping tools are robust and rigid enough to minimize vibrations caused by the high spindle rpms and significant cutting forces generated by the



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new "Power Skiving" process.

Today's demands also include clamping very thin parts for the robotic gear boxes (flex spline gear box). Mytec HydraClamp clamping tools are designed to clamp components the entire length of the clamping area. If the component is irregularly shaped, we clamp around it to achieve the highest accuracy. View the graphic as an example of a clamping situation with such a component used in the robotic gear box. Note the external shape is irregular and the clamping area is very short. We designed a hydraulic chuck in combination with a changeable back stop and slotted collet. This gives the customer options to clamp different diameters and components with one hydraulic chuck. This hydraulic chuck is used to machine the spline in the "Gear Shaping" process on a Liebherr machine.

For more information:

Euro-Tech Corporation
Phone: (262) 781-6777
www.eurotechcorp.com

Liebherr

EXAMINES UNIVERSAL CHAMFERING

Johannes Weixler has developed a new universal chamfering application – with the dynamic mathematical assistance of colleagues.

"The chamfer has become a significant factor in both gear design and manufacturing. By implementing the ChamferCut technology, we are very well set up at Liebherr in the area of chamfering, too. When it comes to chamfering internal gears on ring gears or cluster gears with interfering contour, however, the procedure often reaches its limits," Weixler said. "Where the ChamferCut unit cannot reach, a tapered end mill can be used for deburring. The idea is to mount the tool directly on the machining head of the ChamferCut with its own drive and own swivel axis. The tapered end mill can then be controlled via the NC axes – and this is where our mathematicians came in."

What initially appeared quite simple became a challenging mathematical task



from the perspective of his colleagues, Robert Würfel and Johannes van Hauth. Würfel remembers: "Johannes Weixler came to us with a request to convert his idea into a mathematical description and to solve it numerically. He wanted a constant feed, which can only be achieved through an uneven rotating speed of the workpiece. We originally wanted to use just one axis and faced the question: How do we achieve a nice chamfer that looks even from tip to foot?"

A mathematical model was created that van Hauth implemented in a test program for calculations. Since then, not only has a patent been registered for the

the secret is out

Introduced at the last EMO show in Germany, the new Scudding® machine, the Profilator S-150, is the high-end alternative to broaching machines for gear production.



The gear skiving machine is a vertical configuration, with the patented Scudding® head design and capable of machining 150mm (5.90") diameters both internal and external. Equipped with a Heidenhain encoder/resolver assembly and Siemens top-end CNC, this new machine features opposing workpiece and work tool spindles, A6 and HSK standard. With AC servo motor

drive on both X and Y axes, this sturdy performer offers a small footprint with BIG production capacity, all at a fraction of the price of a conventional broaching machine.

Call Walter (again, if you asked the secret previously) and he'll tell you all about this game-changing machine tool for the North American gear industry.



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concept of the end mill on the NC axis but also for the axial movements during milling. The reason: "This method is of interest for practically any customer with difficult geometries," said Weixler.

The background: The number of gears in gearboxes is growing, but at the same time the amount of space available is decreasing. Where space had to be allocated for four gears in the past, these days it is often seven gears. The gears are therefore becoming smaller and they are required to perform at a higher level, particularly at the edges, which is only possible with perfect chamfering. "Chamfering therefore extends the limits of possibility," he added.

With the new method, the ChamferCut unit can machine the upper and the lower gear. However, it cannot reach the middle one. "A tapered end mill is used for deburring here: first, a meshing sensor finds the tooth space and then the travel is calculated. Our milling tool only moves from the top down so there is no risk of collision. The swivel option enables it to reach all edges: tilted downwards, it can machine the bottom contour, while tilted upwards it is able to machine the top one," said Weixler. "Internal gears from ring gears can also be machined in the same way – even if there are contours on the inside. This means that a chamfer is possible on practically any gear."

Tapered end mill deburring is possible alongside the main tasks of gear hobbing, gashing, shaping, and skiving. A standalone solution – e.g. for retrofitting – is also feasible. For manufacturers with small batch sizes, a tapered end mill without the ChamferCut tools could also be of interest:

"ChamferCut tools are workpiece-specific and are only worth the investment for higher batch-size volumes," Weixler said. "The tapered end mill is a completely normal tool, made of carbide, a catalogue part. We offer a tool changer for the machine that can also exchange tapered end mill cutters. In addition, the tapered end mill is able to create variable chamfer shapes. With this broad range of possibilities, completely new perspectives are presented for many applications."

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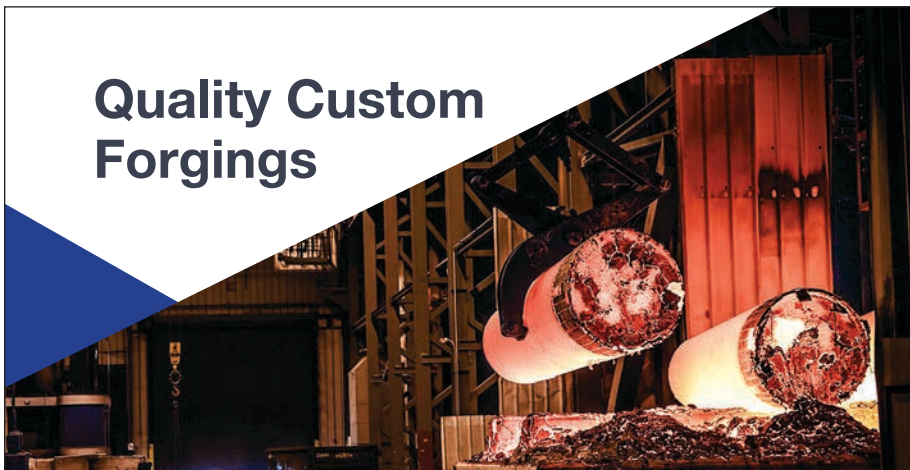
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