Mahr Inc.

EXPANDS WIRELESS GAGING PRODUCTS

Mahr Inc. has expanded its line of wireless gaging products to include a range of depth gaging products. Digital Depth Gage MarCal 30 EWR, MarCal Specialty Caliper 16 EWR and Universal Caliper 16 EWR all provide wireless data transmission of depth probe measurements.

"Taking measurements on the shop floor and transmitting them wirelessly speeds up the quality assurance process," said George Schuetz, director precision gages for Mahr Inc. "It also adds flexibility and a measure of safety by eliminating troublesome cables. This speeds setup and provides more efficient data processing, especially for quality control in production or incoming goods inspection."

Mahr's Digital Depth Gage Series, MarCal 16 EWR includes several gages designed for a variety of depth gaging tasks, including measuring groove widths and distance between grooves. All MarCal depth gage and caliper products offer IP67 resistance to dust, coolants and lubricants, and are easy to use with high contrast digital display, locking screw, zero reset function, and immediate measurement readout. Built to provide decades of quality service, the units include steel measuring surfaces, hardened steel slide and beam construction, raised and lapped guideways for the protection of the scale, and even include dirt wipers integrated in the slide.

Mahr's MarCal 16 EWR Digital Caliper line includes a universal model and several specialty caliper models. All offer precise depth measurement via an integrated depth rod with measuring ranges of 0 - 6 or 8 in. (0 - 150 or 200 mm) and resolution to 0.0005 in. (0.01 mm). Specialty calipers include jaws for measuring distance between bores and grooves, and stepped workpieces.

Integrated wireless data transmission simplifies the recording and documenting process, especially in the networked factory of Industry 4.0. With the touch of a button on the instrument, or keyboard, a timer, remote control, or foot switch, acquired data is sent from the gage to an i-stick radio receiver plugged into the USB port of the computer.

MarCom Pro 5.2 software enables fast and easy setup of measuring stations with wireless data transfer to the PC. The *MarCom* cell control is highly flexible. Measured values from connected devices can be automatically transferred into separate Excel columns, tables, or files ensuring the reliability of measurement data documentation. At the same time, the *MarCom* software ensures that readings can be passed on through an integrated virtual interface box to an SPC/CAQ software such as *Q-DAS* or *Babtec*.

For more information:
Mahr Inc.
Phone: (401) 784-3100
www.mahr.com

Erwin Junker

OFFERS SIMULTANEOUS GRINDING OF ID, OD AND FACES OF GEARS

Junker has introduced the JUMAT 6S 18-20S-18, the latest of Junker's JUMAT series of modular grinding machines, which is capable of grinding the ID, OD and faces of a gear simultaneously. Junker's newest technology features up to four cross-axis systems in one machine, and each grinding spindle operates on its own separate X- and Z-axis, which allows up to four grinding wheels to operate at once.

Another primary feature of the JUMAT 6S 18-20S-18 is its center clamping workholding, composed of a hydrostatic mount and precision chucks, which negates the need to adjust parts to grind other surfaces. Parts are also automatically loaded by the machine's internal loading system, reducing errors in the grinding process.

The obvious benefit of Junker's newest machine is the shortened grinding time by fully grinding a workpiece in a single operation. With up to four wheels operating simultaneously and unobtrusive workholding, the 6S 18-20S-18 can fully grind gears in one operation, cutting down on both setup and grinding time in the shop. Grinding time itself can be reduced down to 45–55 seconds depending on the user's requirements and the size of the gear. This makes Junker's machine ideal for high volume gear manufacturing operations.

As an additional benefit, the 6S 18-20S-18 takes up less floor space due to the reduced amount of equipment needed to grind parts. According to Junker's President and CEO, Horst Zemp, the JUMAT 6S 18-20S-18 can be utilized for numerous different applications, but ring gears are the most common. In addition, the machine is modular and Junker can accept customer-specific requests with a lead time of roughly 12 months.

For more information:
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Phone: (847) 488-0406
www.junker-group.com

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Schunk

INTELLIGENT GRIPPERS MEASURE, IDENTIFY AND MONITOR COMPONENTS

Schunk uses the exposed position of its grippers in the handling process to develop intelligent modules that can do much more than conventional pick and place. Intelligent grippers such as the Schunk EGL Profinet measure, identify and monitor gripped components and the ongoing production process in real-time. The information recorded by the gripper is passed on to the machine control system and can be simultaneously transferred to higher-level internal and external systems as well as cloud solutions for statistical process analyses.

Schunk's aim is to create a more flexible process chain while at the same time providing detailed process data. In other words, the gripper itself detects a faulty component without additional external sensors and decides whether the part should be ejected from the process. If a component is gripped before and after a process step and there is an accumulation of NOK parts, a digital service uses the knowledge of the gripper to automatically analyze whether the fault was already present or whether process changes in the upstream station might have caused the damage to the component.

Schunk illustrates how this can be accomplished using the example of a high-speed de-paneling system from its subsidiary Schunk Electronic Solutions. The system separates small electronic circuit boards from a carrier plate called a panel. After they are separated, the "free" circuit boards are gripped and placed in their destination (e.g. a load carrier) by means of an axis system. Before the components are placed, they are usually measured and checked for quality. For this handling step, Schunk now uses an intelligent gripper, which has built-in sensors/functions for measuring and inspecting the quality of components during the gripping process. The measured data and information derived from it are passed on to the plant cell control system for further process control. The gripper sends the data not only to the cell control system, but also to an analysis tool on the HANA SAP Cloud. The tool continuously collects all data relevant for process optimization.

With a variable stroke and a variable gripping force between 50 N and 600 N, the EGL Profinet parallel gripper covers an extremely wide range of components. In a smart gripping process, the intelligent gripper uses its exposed position directly on the part. Using built-in sensors, it captures the data of the component as well as its size and elasticity. This data is processed in the gripper, making it possible to identify components, detect damage, and decide whether the component is good or bad. After processing, both the recorded information (e.g. good or bad component) as well as the measured data can be transferred via the Profinet interface to the plant control system for process control.This data may in turn be located on the company's own server or in an external location.

For more information:
Schunk
Phone: (919) 767-2013
us.schunk.com

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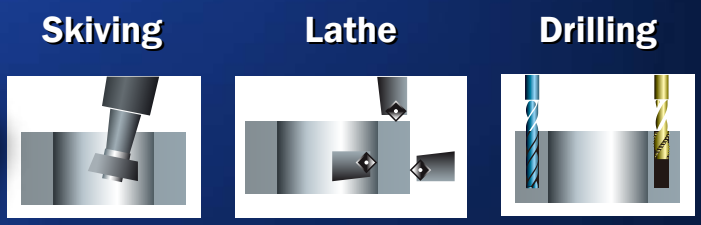

- High Efficiency Gear Skiving Reduces Work Time up to 1/5 (compared to gear shaping)
- Proprietary Technologies Used
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- Easy to Control Tooth Profile
- Compact, yet can Machine up to 450mm Diameter Part

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Nanol Technologies

LUBRICANT ADDITIVE PREVENTS HYDROGEN EMBRITTLEMENT

The Fraunhofer independent research institute has demonstrated that Nanol's lubricant additive has some completely new performance features. The patented lubrication additive, based on nano technology, was originally developed for fuel saving and wear protection in marine engines and industrial applications.

The latest testing now shows that the additive has additional positive properties as well, as it can prevent hydrogen embrittlement. Hydrogen embrittlement is the process by which metals such as steel become brittle and fracture when in contact with hydrogen.

The testing that demonstrated the new effect of Nanol's additive was conducted by a leading manufacturer of ball bearings. Further testing was also carried out at Fraunhofer Institute by Matthias Scherge.

"The latest research has added new features to the scientific picture of Nanol. Nanol must be considered a package with multi-functional properties including viscosity index improvement, friction modification, anti-wear properties as well as protection against hydrogen embrittlement," states Scherge, who has previously conducted several other laboratory tests on Nanol's additive.

Hydrogen embrittlement is a serious issue in several applications, and the newly demonstrated property opens completely new areas of use for Nanol's additive. So far, the additive has mainly been used by shipping companies in marine engines and power plants.

"We are now starting to penetrate new customer segments. Hydrogen embrittlement is a severe problem in for example wind power turbines. By using Nanol, the lifetime of components can be extended and service intervals prolonged," says Johan von Knorring, founder and CEO of Nanol Technologies.

Several other technologies are available to deal with the hydrogen embrittlement problem, including various coatings. According to von Knorring, Nanol's solution is both more reliable and effective in comparison.

For more information:
Nanol Technologies
Phone: +358 40 732 0900
www.nanol.eu

CaseMaster Evolution Makes A Strong Case For Productivity, Speed And Consistency.

CaseMaster Evolution (CMe) multi-chamber vacuum furnaces are available in two (in-out) and three (straight-through) chamber configurations. CMe furnaces can be equipped with high pressure gas or oil quenching. Advantages of these systems include increased productivity, faster carburizing cycles, consistent processing of densely packed loads, and uniform quenching with less distortion.

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Carbodeon

PLATING IMPROVES ADHESIVE WEAR RESISTANCE

Nanodiamond material specialist Carbodeon has worked with metal finishing specialist CCT Plating to develop a new NanoDiamond enhanced electroless nickel plating with significantly improved performance in sliding applications.

Electroless nickel coatings offer many advantages over other coating types, such as excellent corrosion and abrasion resistance, creating an even coating thickness over complex geometries and at relatively low cost. A limitation to their performance has been that they don't perform well in tribological applications involving moving metal parts, where adhesive wear and galling tend to lead to rapid wear or failure.

Incorporating Carbodeon NanoDiamond into the coating solves this problem. Spherical diamond nanoparticles are specially treated to make them disperse in coating liquids and carry a positive electrical charge on their surfaces. In the plating process, the diamond particles behave similarly to positively charged metal ions and together with the coating material they co-deposit onto the component.

Metal-diamond composite surface treatments have already shown their value in abrasion resistant coatings, but in this latest generation of coatings the process has been optimized to better combat adhesive wear, which occurs mainly when the plated parts are in sliding contact with other metal parts.

The coating significantly reduces adhesive wear, but does not make the coating abrasive or increase the surface friction. The coatings can be used "as plated," which does not affect the substrate's heat treatment condition, or can be subjected to annealing for maximum performance.

The nanomaterial for the process can be obtained from Carbodeon, who can also implement the complete plating process in existing customer plating facilities. Alternatively, job plating or turnkey solutions can be carried out by CCT Plating in Stuttgart, Germany.

For more information:
Carbodeon
Phone: (358) 40 5566 765
www.carbodeon.net

THE KLINGELNBERG P-MACHINE

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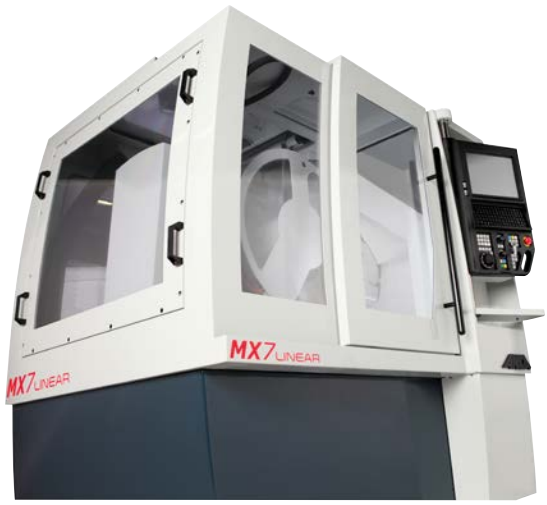
ANCA

MOTOR TECHNOLOGY IMPROVES CHIP EVACUATION ON GRINDING MACHINES



Highly polished flutes and gash surfaces improve chip evacuation and aid tool performance. The smoother surface enables swarf (or chips) to exit more freely, preventing chip packing and material build up during machining. ANCA has addressed this goal with innovations found only at the ANCA Group.

ANCA has equipped its rigid tool and cutter grinding machines with ANCA Motion's LinX linear motor technology to provide manufacturers a new, higher level of quality tool-making capability.

"Tools ground on our machines have a consistently high-quality cutting edge and surface finish," reports Simon Richardson, ANCA product manager. "Since the LinX motor technology was launched, customers have reported dramatically better results using the duel technologies.

"High quality tool surface finish is a great advantage when machining softer or ductile materials, chips can stick to the carbide. If the chips created are not removed faster than they are being produced, the tool may not perform effectively. However, a better surface finish on the flute prevents the swarf from sticking onto the flute face of the tool while reducing the amount of heat that is generated when machining."

"We realized that having a highly rigid machine with a cylindrical linear motor that assures a smooth axis movement would greatly improve the final surface finish on the tool," Richardson continued. "The research and development team conducted many hours of test grinding to rigorously test our assumption of what surface finish quality we thought was possible."

An Alicona infinite-focus XL metrology machine in ANCA's Grinding Center of Excellence was used to verify the results to nanometer accuracy, finding that a surface finish roughness average as low as 164.7nm (which translates to 0.16 Ra) was achieved.

For more information:
ANCA Inc.
Phone: (248) 926-4466
www.anca.com

KISSsoft

INTRODUCES ROUGH SIZING AND UNBALANCE RESPONSE TO SHAFT CALCULATION

When you are defining dimensions for shafts, KISSsoft now provides options for sizing shaft dimensions with regard to strength, and for sizing the rolling bearings with regard to bearing service life. This really cuts down the time you need to design a gear unit. Here, you can specify which priorities are to apply during sizing. (New functionality within the basic package WPK)

The unbalance response can now be calculated on the basis of an eccentric mass when you're calculating the shaft's vibration. This calculation returns values for the resonating frequencies and the shaft's displacement, along with values for the additional forces to which the bearing is subjected because of the imbalance. To help perform a realistic calculation of vibration, you can now enter the damping values individually. (New module WA11)

For more information:
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www.kisssoft.ag

Kadia Inc.

ADDS DEEP HOLE DRILLING SOLUTIONS IN NORTH AMERICA

Brighton, Michigan-based Kadia Inc. has added an extra service to its portfolio by setting up a division to provide deep hole drilling solutions to manufacturers in the US, Canada and Mexico.

The development follows the company's appointment to sell and service the full range of deep hole drilling machines and tooling from TBT Tiefbohrtechnik, which was founded in southern Germany in 1966. Both Kadia and TBT are members of the multinational Nagel Group.

The agreement includes a license for Kadia Inc. to manufacture, stock, resell and regrind carbide-tipped gun drills locally in Brighton. The machines themselves will continue to be built at TBT's factory in Germany and are sold in either US dollars or Euros.

Dennis Tanis, executive vice president of Kadia's North American operation (established in 1984), commented, "We develop deep hole drilling processes for any size of manufacturing project, from firearms through automotive and petrochemical to medical drilling solutions.

In most cases these drilling systems are supplied based on standard TBT gun drilling machines with from one to six spindles. If a machine has more than two spindles, it is often equipped with automated loading and unloading by a gantry-mounted, or pick-and-place robot," he said.

Tanis said the company makes carbide tipped tools here for gun drilling and stock 250 different part numbers for immediate delivery in the size range 0.05 to one inch. TBT's range goes higher, however, to 1.65 inches diameter and also encompasses solid carbide, indexable insert and drills ground with a high speed chip breaker.

For more information:
Kadia Inc.
Phone: (734) 277-4060
www.kadia.com

Hexagon Manufacturing Intelligence

INTRODUCES GLOBAL S CMM PLATFORM

Hexagon Manufacturing Intelligence recently introduced its GLOBAL S Coordinate Measuring Machine (CMM) platform. The Global S measuring solution is the initial offering in Hexagon's Enhanced Productivity Series (EPS) featuring smart technologies such as user experience (UX) enhancements, measurement software and advanced "green" options. The EPS platform is designed specifically to simplify the creation, execution and analysis of measurement routines. The Global S CMM solution is a complete package utilized from start to finish in a Quality program, from the engineer creating the measurement routine to the operator executing the inspection program to the manager analyzing the data and improving processes in the production workflow. The Global S CMM impacts dimensional inspection operations with higher productivity in demand by industries such as automotive, aerospace, general mechanics and precision mechanics industries.

The Global S platform utilizes *PC-DMIS* CMM software for the collection, evaluation, management and presentation of manufacturing data. Leveraging software advancements, common tasks such as the selection of probe tips and importing files are now 3 - 8 times faster than existing solutions. Improvements such as feature sensor mapping allow the user to associate sensors to features more rapidly when importing inspection plans. Operators benefit from faster scanning measurement of non-predefined paths and optimized path trajectories for expedited part-program execution. Another innovation is the new "Inspect" option for program selection and execution. This easy-to-use interface within *PC-DMIS* allows "one click" measurement routine selection.

For more information:
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