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High-Speed Inspection System Scans 6,000 Data Points a Second



Introduced at EMO, the Renscan5 high-speed inspection system from Renishaw delivers part inspection speeds up to 20 times faster than conventional technology, according to the manufacturer.

The Renscan5 uses the REVO two-axis, infinite positioning probe head to scan at 500 mm per second while allowing the coordinate measuring machine (CMM) to move in a single axis at a constant velocity. According to Renishaw, this eliminates major sources of CMM dynamic errors that have restricted scanning speeds to 10–20 mm per second in conventional metrology practice. Critical to large gear set manufacturers, the machine can verify fit and form of thousands of data points in a matter of minutes, the company says.

Barry Rogers, Renishaw's national sales and marketing manager, says, "There is no question this is a leap-frog in technology. REVO collects data at 6,000 data points a second, compared to one or two data points a second using touch trigger sensors or 200–300 data

points a second using current scanning technologies."

The REVO head performs most of the work in scanning part features, delivering speeds and accelerations beyond CMM capabilities while avoiding the dynamic errors incurred in moving the larger mass of the CMM at high rates of acceleration/deceleration.

According to the company's press release, the ultra-high-speed scanning system solves a production bottleneck for makers of complex parts that require large numbers of data points for process control and data variation.

Both the Renscan5 and REVO head can be installed on existing or new CMMs, due to a universal CMM controller developed by Renishaw.

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Internet: www.renishaw.com

Koepfer EMAG Machine Turns, Hobs and Deburrers

The VSC 250/400 DUO WF gear hobbing center from Koepfer EMAG offers complete soft machining of gears on a single machine.

According to the company's press release, the gear hobbing center turns, hobs and deburrs the soft component.

For dry machining, direct driven motor spindles facilitate the appropriate spindle speeds and torque rates. Unhindered chip flow to the chip conveyor keeps the temperature growth in the machine to a minimum. Process heat is eliminated with the removal of chips and not through the machine base.

Additional features include an overhead slide unit with a work spindle supported on both sides of the machine, a hydrostatic work spindle guideway that provides vibration damping properties during machining, and fluid cooling of components to ensure a high degree of thermal stability.

In addition, measuring stations and/or workpiece marking devices can be integrated into the automated workpiece flow.

For more information:
Koepfer EMAG
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Farmington Hills, MI 48335
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E-mail: info@usa.emag.com



Engis Machine Can Bore Finish 480 Gears Per Hour

The six-spindle SPM Series single-pass bore finishing machine from Engis can finish the bores on as many as 480 gears per hour with tool life routinely

exceeding 60,000 parts.

According to the company's press release, the bore finishing tools are capable of achieving bore geometries to within 0.0002" in standard, blind and semi-blind bores. The machines feature a series of pre-set barrel-shaped tools with a slow wearing diamond coating that pass once through the bore while the



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tool, part, or both, rotate. As the single-pass bore finishing tool need not expand or contract over the finishing cycle, the system maintains maximum control over bore size and finish.

A range of standard and customized single-pass bore finishing machines are configurable to a range of gear production processes. The SPM Series is designed for finishing parts with bore sizes up to 1.5", configurable in four-, six- or eight-spindle models.

Customized automation packages are available for both in-bound and out-bound product flow. Additional benefits include more predictable results, fewer rejects, less frequent part inspection and SPC values of more than 2.0 Cpk.

For more information:

Engis Corp.
105 W. Hintz Rd.
Wheeling, IL 60090
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Internet: www.engis.com

Power Plant Actuators Feature Bevel Gears

The MT Limitorque Actuation System of bevel gear operators from Flowserve Corp. are designed to perform in power industry valve applications.

Designed as a combination of a bevel gear operator torque housing with a new thrust base design, the series is suited for torque seated valve applications as well as applications involving elevated process temperatures. MT series bevel gears and thrust base housings are made of ductile iron.

Features include thrust bearings and drive sleeve/stem nut design. These combine to offer a rugged bevel gear operator for handling the seating and unseating forces of high pressure gate and globe valves found in power plants worldwide. The stem nut is shouldered in the drive sleeve to capture thrust forces within the thrust housing without transferring those forces to the torque housing.

The series is available in torque ranges to 8,000 ft.-lbs. and thrust ranges to 325,000 lbs.

For more information:
Flowserve Corp.
P.O. Box 11318
Lynchburg, VA 24506
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Brushes Tackle Internal Edge Burrs

The Bore-RX line of internal gear deburring brushes from Weiler can increase productivity of in-machine deburring in CNC machining centers.

Brushes can remove all burrs found at intersecting holes and other internal edges of the workpiece and can also be used for bore finishing applications.

The brushes provide a solution to the problem of removing internal edge burrs often met with inefficient tube or "bottle" brushes that lack filament den-

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sity. According to the company's press release, the Bore RX brushes have 10 times the filament density found in those other brushes, and this allows the Bore RX brushes to remove well attached burrs.

In addition, the new brushes operate at high rpms and rotate in both direc-

tions to avoid twisting. Off-hand deburring is eliminated as well, resulting in an increase in part-to-part consistency. Available in sizes ranging from $\frac{3}{4}$ –4" in wire or abrasive nylon filament, the brushes can be adapted for use in end mill holders or mounted with 3/8" collets.



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Superabrasive Machine Competes With Hard Turning

The Edgetek SATurn Superabrasive turning system from Holroyd employs CBN wheels to achieve productivity rates far in advance of those obtained with hard turning, according to the company's press release. They are designed to remove stock from the OD of cylindrical parts (including parts with slots, grooves and forms) in all types of materials—including sintered—at rates up to 40% faster than conventional lathes.

The CNC Holroyd Edgetek SATurn system provides cutting speeds up to 12,200 meters/min. due to a high power, variable speed 37kW spindle motor operating at a maximum rpm of 9,000. CBN electroplated wheels provide a long wheel life. Holroyd said this combination is optimized by the new design of the coolant nozzle, which improves control of coolant direction and delivery rate to

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reduce risk of heat being transferred to the workpiece. The result is a machine that allows heavy stock removal on straight outside diameters or special form diameters to grinding machine tolerances on difficult materials of high hardness.

Paul Hannah, sales director for machine tools and rotors at Holroyd, says, "We already have major expressions of interest in our Edgetek SATurn machines from market leaders in both the automotive and aerospace industries. It's easy to see why. In one Beta site application, we have reduced the cycle time for producing automotive sprockets manufactured from sintered metals from one minute and 10 seconds per compound to just 22 seconds. At the same time, the SATurn CBN technology is cutting consumable parts costs, achieving a reduction from \$1 U.S. to just \$0.33 per component."

Options include a 30,000 rpm spindle version that provides ID capability for straight- or spherical-shaped bores and a robotic automatic part loading/unloading function. For high production environments, the automated system can also feature dual workheads mounted on an index table facing 180° from one another. This arrangement allows for in-cycle auto or manual loading.

For more information:

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Internet: www.renold.com

Frenco Adds Gage for Measuring Splines' Circumferential Backlash



Frenco has expanded its product line by starting to produce a circumferential backlash measuring instrument.

According to its press release, Frenco has offered such gages, but they've been provided by third parties. Now Frenco will be making the instrument itself.

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Also, Freenco has revised and optimized the gage's design to make its handling easier and more precise. Users can read direct measurement values from the dial indicator using a special probing method. According to Freenco, this feature lets users avoid converting the

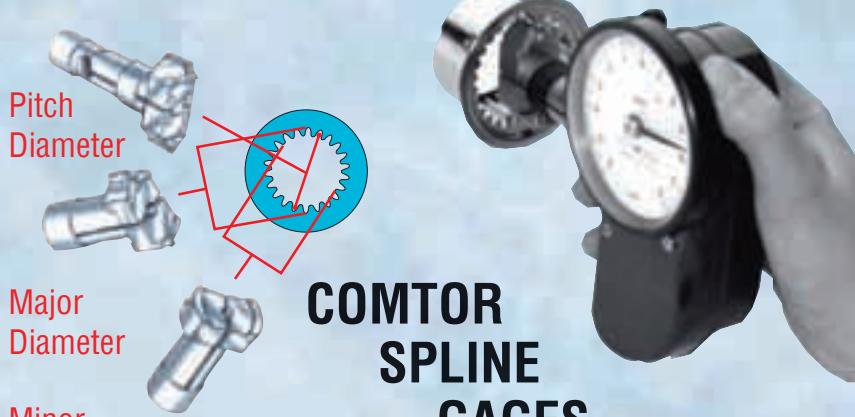
measuring value ratios, which is necessary with some other circumferential backlash gages.

Freenco offers its instrument with a setting arbor and an inspection one. The setting arbor is used to set up the instrument, the inspection arbor to check the

function of the instrument and its dial. Freenco says the arbors reduce the time and effort to monitor and maintain the gage. The inspection arbor, for example, can detect damage on the measuring instrument's teeth, damage that can lead to erroneous measurements.

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Internet: www.frenco.de, www.frenco.com



Rexnord's Gear Reducers Mount Directly on Driven Shaft

The new shaft-mounted Planetgear (SMP) reducers from Rexnord provide an alternative to traditional helical shaft mounted reducers and incorporate standard planet gear features.

According to the company's press release, the reducers' modular design and interchangeable components simplify a change in ratios with minimal spare parts stock. Their size and weight allows them to fit into applications where space is limited.

Because they are mounted directly on the driven shaft, there is no need for a low-speed coupling, chain drive or reducer mounting base. Their self-aligning gear train has at least six teeth in contact

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per reduction to share the load equally.

SMP reducers incorporate HydroAdvantage, a hydraulics removal system that works with the low-speed shaft. Applying a separating force between the end of the driven shaft and the reducer facilitates easy removal of the reducer.

The shaft mount configuration is available on the Orion, Titan, Jupiter and new Gemini and Hercules sizes with output torque ratings ranging from 280,000 lb.-in. to 2,900,000 lb.-in.

For more information:

Rexnord Corp.
P.O. Box 2022
Milwaukee WI 53201
Internet: www.rexnord.com

Stock Drive's Fastening Device Contains Only Two Parts

The Shaftloc rotating component fastening device from Stock Drive Products secures shaft mounted parts such as gears, pulleys and couplings to unmachined inch and metric shafting.

According to the company's press release, the Shaftloc consists of two slotted sleeves. The outer sleeve has a hexagonal head and is cylindrical on its outside diameter and threaded on its inside diameter. The inner-slotted sleeve is threaded on its outside diameter and cylindrical on the inside diameter. Threads are not symmetrical and create a continuous inclined surface. When the two sleeves are threaded into each other with a component placed between them, tightening the sleeves will cause the outer one to expand and the inner one to contract. Stock Drive Products adds that the shallow angle of the thread produces large amplification of forces, resulting in torque transmission capability between the component and the shaft.

Features include simplicity of design due to the two-part body, no marring of shafts, ease of repositioning or synchronizing and assembly, applicability to small shaft diameters, availability in stainless construction and utilization in stationary breadboard structures.

For more information:
Stock Drive Products
2101 Jericho Turnpike
New Hyde Park, NY 11042
Phone: (516) 328-3300
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