

Connect with **Global Technology** at IMTS 2008

Lindsey Snyder, Assistant Editor



The International Manufacturing Technology Show has come a long way from the National Machine Tool Builders' Exposition first held in 1927. The ancestral show attracted 12,000 people and took up 63,000 square feet; a pretty impressive size even for the roaring 20s. Eighty-one years later, today's show, known as IMTS, is expected to exceed seven times the audience size of its original predecessor. IMTS 2008 is at Chicago's McCormick Place September 8–13.

It's easy to get lost at a show so large and filled to the brim with potential buyers, partners, competitors and wide-eyed machine-techies. The McCormick Place complex in Chicago may seem daunting. It is after all one of the only venues in the United States large enough for a net 1.2 million square foot show. The complex consists of nine industry-specific pavilions intended to help guide

visitors through the large exhibition.

Here at *Gear Technology*, we think what better place to start your IMTS experience than the Gear Generation Pavilion located in the North Building, Hall B. Most major companies with gear-related specialties can be found there. Gear hobbers, gear shapers, shaving cutters, hobs, broaching equipment, grinding equipment and measuring equipment are found at this location. Don't forget to stop by the *Gear Technology* booth, B-7116, to meet the editors and renew your subscription.

The other pavilions include abrasive machining/sawing/finishing in the North building–Hall B; controls and CAD-CAM in the East building–Hall D; EDM in the East building–Hall D; machine components/cleaning/environmental in the East building–Hall D; metal cutting in the South building–Hall A; metal forming and fabricating/laser in the

North building—Hall B; quality assurance in the East building—Hall D; and tooling and workholding systems can be found in the West building—Hall F.

Global is the key theme at hand for modern manufacturing technology, and such is the focus of IMTS 2008. International attendees are offered free registration. Show organizers at the Association for Manufacturing Technology (AMT) felt an international theme was appropriate because IMTS appeals to members of the worldwide manufacturing community. The 2008 logo intends to communicate this idea by illustrating a globe with a spark on the horizon symbolizing new innovations, according to an IMTS press release.

“Spring-boarding off a tremendously successful IMTS 2006, this new theme and logo will set the tone for an even more exciting IMTS 2008,” said John Krisko, AMT director, exhibitions. “IMTS is truly a global event during which buyers and sellers from over 100 countries exchange business and technical knowledge. The logo’s symbolic contemporary globe image recognizes science and global presence. It is a futuristic, yet timeless design.”

Some gear industry companies in Illinois take extra advantage of the show’s proximity. Bourn and Koch is hosting an open house at its new facilities in Rockford. For information about transportation, contact Cathy Manske at cmanske@bourn-koch.com or (815) 965-4013 ext. 2305.

Fred Young, CEO of Forest City Gear, provides transportation to IMTS for any of his employees interested in attending. He offers this service so his employees can “look at the latest equipment, so we’re aware of all the newest technology that is available in the gear world,” Young says. “And so that our people have an understanding of what is available for them to help do their jobs properly. We try to involve our employees in the decision making

process to evaluate new equipment that is out there to make sure we have the latest technology.”

Take a look at what some gear-related companies will have on display at their booths, some of which can be found outside the Gear pavilion—for when you’ve exhausted yourself there.

Product Preview

Höfler

Booth B-7045



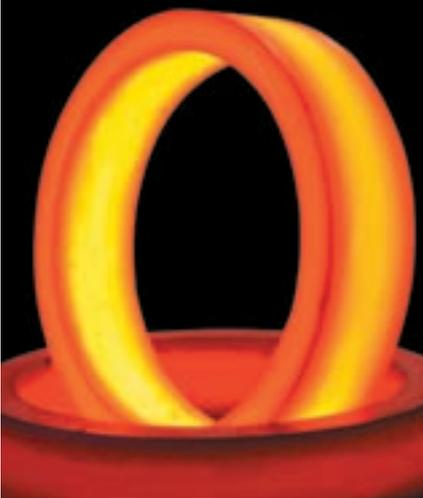
For the German company’s first run at the IMTS show, two very large machines are being exhibited: the Rapid 1250—a 50-inch gear grinder—and the HF 1250 hobber/gasher.

“What’s really unique about it [the Rapid 1250] is that we have our new power stroke process,” says Ray Mackowsky, president of Great Lakes Gear Technology, the sales and marketing arm for Höfler in the U.S. and Canada. “It’s a very high-speed grinding strategy that we use. The machines we had a year ago, we’re actually producing 30–40 percent, sometimes 50 percent, faster grinding cycles.

“Now with this new power stroke strategy, we’re even more productive.”

The HF 1250 is equipped with carbide cutting speeds and power for heavy-duty applications, like coarse pitch. It produces gears from 15 to 1,250

continued



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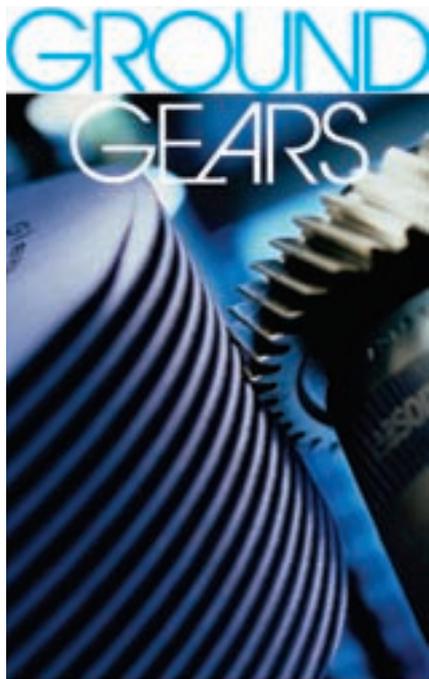
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mm in diameter, has an axial slide travel of 1,000 mm and features an 8,000 kg table load capacity. After the show, this unit is headed to HMC Inc. in Indiana to join the Rapid 6000 (world's largest) form grinder.

For more information:

Great Lakes Gear Technology
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Phone: (734) 416-9300
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www.greatlakesgeartech.com
www.hoffer.com

Gleason

Booth B-6902



Taking aim at improving bevel and cylindrical gear production, Gleason brings four new machines to IMTS.

The Genesis machines are a new series of gear production machines, and Gleason is displaying two of them. The Genesis Vertical Hobbing Machine is appropriate for dry machining. It features a small footprint and provides improved productivity for spur and helical gears up to 210 mm in diameter. The Genesis Threaded Wheel Grinding Machine is

designed for high production needs in which every second is imperative.

The P 600/800 G Profile Grinding Machine offers new software for profile grinding, which reduces manual setup and other time-consuming steps.



The Sigma 475 and 1500GMM Analytical Gear Testers provide complete bevel and cylindrical gear inspection featuring a three-dimensional scanning probe head. These testers are powered by new *GAMA* native software that covers a range of gear applications.

Gleason's booth will also exhibit cutting tools and workholding systems including hobs, shaper cutters, bevel blades and heads, replatable CBN and diamond grinding and dressing wheels, plated diamond rolls and milling cutters.

For more information:

Gleason Corporation
1000 University Ave.
P.O. Box 22970
Rochester, NY 14692
www.gleason.com



Sunnen

Booth B-7200

The VSS-2 Series 2 Single Stroke Honing systems have factory-aligned spindles that surpass DIN 8635 requirements for vertical honing machines. Applications include sizing bores 3.9–50 mm diameter in stamped parts, hydraulic valve bodies, gears and sprockets, parking pawls, rocker arms, turbocharger housings and other similar parts. Materials suitable for the machines are free-cutting materials like cast iron, powdered metals, ceramic and glass graphite.

“The VSS Series 2 sets a new standard for single-pass bore sizing efficiency,” says Phil Hanna, Sunnen product manager for machines. “If a part is best suited for single-pass honing, the VSS-2 provides a level of precision not available in other designs. And, with the new touch screen control, this machine is very operator friendly. No custom electronics or special training are needed, and the control is designed to interface with part handling automation systems.”

Three models of the VSS Series 2 are available to serve mid- to high production. The model 84 is an eight-station, four-spindle machine, the 86 has six spindles and the 64 is a six-station, four-spindle design. The 10 hp spindle drive operates at speeds between 100 and 2,500 rpm.

The work envelope is accessible from both sides of the machine. Other standard features include an electric rotary index table and tool holder. Optional features include floating or rigid adjustable tool holders, 12- and 16-port programmable rotary air unions for index output, base coolant evacuation pump, automatic lubrication system, work area light kit, stack light, tool alignment indicator and spindle crash

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"If a part is appropriate for single-pass honing, the VSS-2 delivers a value-priced, compact, customizable package," Hanna says.

For more information:

Sunnen Products Company
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www.sunnen.com

Jones & Shipman

Booth B-6760

A multi-wheel design and a stylized concept dressing unit are two new technologies emerging in soon to be released cylindrical and gear grinding machines on display from Jones & Shipman – Holroyd. The company is

also exhibiting three other machines and two wheelhead modules.

Some future developments on display from Jones & Shipman include a concept for the grinding/dressing area of a new model that has been proposed for the Holroyd series of next-generation gear and thread grinding machines. The family of machines is aimed at the high-end aerospace, performance car and master gear industries. The dressing/grinding concept features a twin diamond disc dressing unit that includes a full two-axis control, a 500 x 107 mm grinding wheel, and it has the capacity for 350 mm x 1,500 mm components.

Jones & Shipman is introducing the Ultramat MK II series of high-precision production cylindrical grinding machines, which feature a modular wheelhead system that is on display at IMTS. The wheelhead design on display features twin grinding wheels with the capacity for components up to 500 x 100 mm and an internal grinding spindle. The grinding wheels are placed back-to-back, but there are other available external/internal wheel configuration options designed for complex machining. The Ultramat MK II machines are directed towards high-end aerospace, performance car and precision mold, tool and die industries.

The Suprema 650 Easy cylindrical grinding machine, pictured here, has a universal wheelhead and grinding capacity of 300 m x 650 mm diameter between centers. The wheelhead allows both internal and external

grinding, but the machine is available with a plain straight approach and angle head option. Available table capacities include 1 m and 1.5 m. Other machines at the booth are the Dominator creepfeed series grinder and the TechMaster surface grinder family.

For more information:
 Jones & Shipman Precision Ltd.
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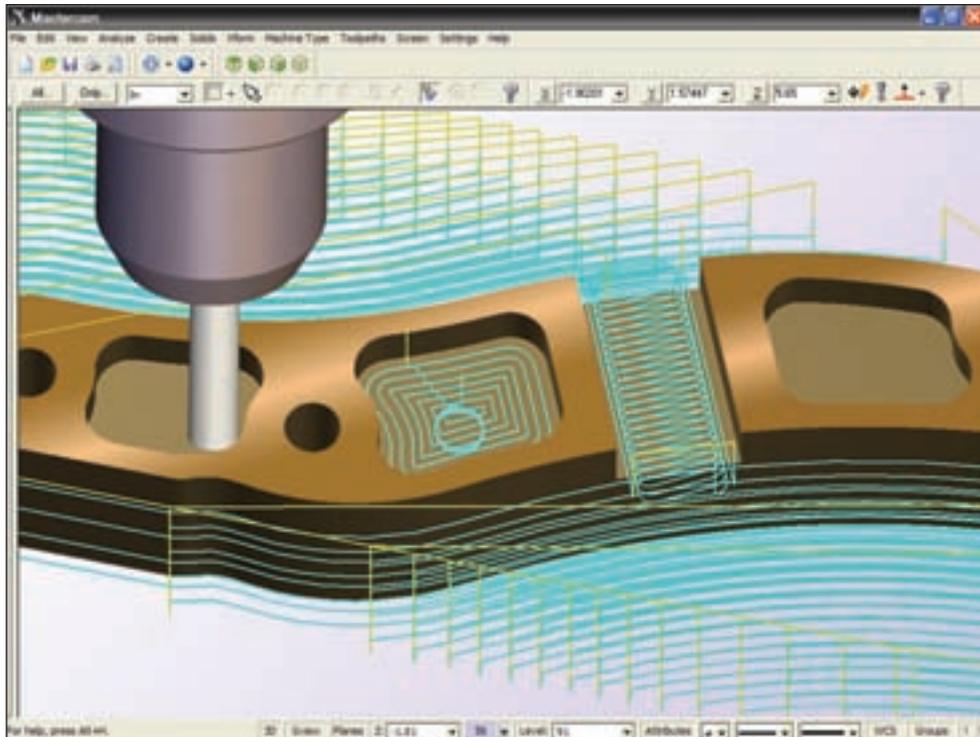
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Mastercam

Booth D-3027

CAD/CAM software developer CNC Software, Inc., is releasing its latest software *Mastercam X3*, including Feature Based Machining (FBM), 2D high-speed tool motion and improved toolpath generation.

The Mastercam Feature Based Machining evaluates the features of a part and automatically designs a machining strategy. Users select criteria for the type of FBM operation to employ, and the software detects the machining features. The FBM is equipped to set the correct toolpath options for closed, open, nested and through pockets, and it machines the pockets using 2D roughing, rest mill and finish operations.



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FBM also provides the option to make a separate finish toolpath for floors and walls and can activate or deactivate external machining, which is identified by the software. The FBM recognizes when facing is necessary, creates drilled, tapped, counterbore and countersink holes and performs deep drilling, spot drilling, pre-drilling, tool section and tool creation if these features are required. Other controls can drill blind, through, co-axial and split holes. Users can change any toolpath at any time.

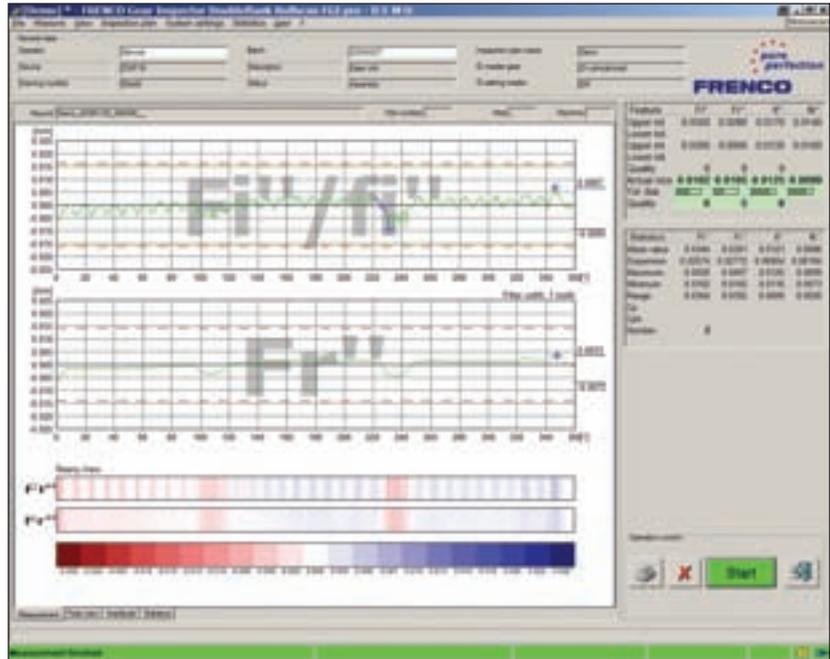
The X3 software brings high speed capability to 2D machining. These toolpaths allow low-stress motion without a high-speed machine. The peel milling feature removes material in layers and brings constant climb milling in rotational motion when a tool is not engaged. Other 2D modes include core milling, area milling for complex shapes, rest milling that removes excess material between cuts, blend milling that alters a toolpath between two shapes and controlled engagement, which allows users more control over tool engagement.

A *Mastercam* in *Solidworks* package will be featured at the company's booth, but it won't be immediately available for another month or so. This version of the X3 software integrates the *Mastercam* toolpaths into *SolidWorks*. Designers that use *SolidWorks* will be able to program parts with the *Mastercam X3* strategies.

For more information:

CNC Software, Inc.
671 Old Post Road
Tolland, CT 06084
Phone: (800) 228-2877
www.mastercam.com

Frenco/Eurotech
Booth F-2310



The measurement and evaluation software *Frenco Gear Inspector/FGI Pro* has been upgraded with new features. *FGI Pro* has an application-oriented development and can be used for retrofitted Mahr and Hommel instruments.

There are several measurement evaluation display options, including a comparison for series of measurements or a juxtaposition and evaluation for freely selectable measurements within a sequence, which helps detect deviations and other errors.

Measured values can be traced to the physical workpiece, known as positioning. For global companies, the output language can be programmed separately, in which measurement reports can be displayed and assessed in English, German, French, Spanish Portuguese, Hungarian, Polish and Russian. Measuring the coating thickness of partly coated gears is one of several special applications add-ons.



For more information:

Euro-Tech Corporation
N48 W14170 Hampton Avenue
Menomonee Falls, WI 53051
Phone: (262) 781-6777
Fax: (262) 781-2822
www.eurotechcorp.com

Reishauer Corporation

Booth B-7005

The RZ 303C precision gear grinding machine is being displayed by Reishauer. The machine uses gearless planetary drives, acoustic sensing for alignment of dressing diamonds and low noise shifting—which prevents excitation on gear teeth by a random surface structure.

The chief column that carries the spindle and slide rotates 180 degrees from the grinding position, 90 degrees in order to change the wheel and another 90 degrees to dress the wheel. The wheel uses the machine axis during the dressing cycle to modify root, flanks



and tip with minimum passes imparted to the gear while grinding.

For more information:
 Reishauer Corporation
 1525 Holmes Road
 Elgin, IL 60123
 Phone: (847) 888-3828
 Fax: (847) 888-0343
www.reishauer.com



Hardinge

Booth A-8032

The Kel-Vita universal ID/OD grinding machine from Kellenberger, a member of the Hardinge Group, can handle workpieces as long as 1,000 mm, has eight wheelhead configurations and low-friction linear rails. Three models are offered—the Kel-Vita 600, Kel-Vita 800 and Kel-Vita 1000, with the between-centers capacity represented by the model numbers. Each version reaches a height of 175 mm.

Users can design the machine configuration using the different grinding wheelhead types. UR and URS wheelheads have a swiveling design with one internal and two external

grinding wheels. In one chucking the grinder is capable of external diameters, opposed faces, bores, tapers, polygons, tapered non-rounds and thread grinding. Up to 500 mm OD grinding wheels can be used. The longitudinal axis is capable of 20 m/min rapid traverse and 10 m/min on the in-feed axis. The machine's control supports cylinders, radii, chamfers, cones, tapers, non-round ODs and IDs, contours and outlines.

For more information:

Hardinge Inc.
1 Hardinge Drive
Elmira, NY 14902-1507
Phone: (607) 734-2281
Fax: (607) 734-3886
www.hardinge.com

SMW Autoblok

Booth F-2040

The D-Chuck by SMW Autoblok is a new quick jaw change diaphragm chuck for hard turning gears. The elastic deformation of the diaphragm provides constant, adjustable clamping force contributing to greater precision, reduced maintenance and longer chuck life, according to the company's press release. The quick jaw change system utilizes the ABS Coupling, licensed from Komet, for improved rigidity and accuracy. The jaws can be changed in less than one minute, offering fast changeover between jobs. Matched jaw sets can also be used on different D-Chucks. In order to compensate for

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the centrifugal force caused by the jaws during operation, counter balance weights connected to the clamping jaws are mounted underneath the diaphragm.

“The D-Chuck combines the characteristics of flexibility and accuracy for a combination not matched by any other diaphragm chuck,” says Sidney N. Roth, president of SMW Autoblok. “The diaphragm has been

tested for several million actuations with no failures.”

For more information:

SMW Autoblok Corp.
285 Egidi Drive
Wheeling, IL 60090
Phone: (847) 215-0591
Fax: (847) 215-0594
gdowns@smwautoblok.com
www.smw-autoblok.com



Drake Manufacturing:

Booth B-7407

With several machines onboard, Drake Manufacturing is promoting its grinding and gear processing technology. Drake engineers are available to discuss solutions to specific grinding and gear production challenges. Some of Drake’s machine and software solutions include gears and cutting tools, e-steering, threaded parts and ballscrews.

The machines on display include the Linear Motor External Thread Grinders, which grind threads, splines, key slots, rings and other forms in one setup. It has auto load/unload features and 180 degrees power helix.

The Linear Motor Internal Thread Grinder grinds threads on internal diameters of parts such as ball nuts, steering nuts and spindles. It offers size control to +/- 0.0002 inches. The Linear Motor Worm Grinders grind single and multi-start worms—ZK, ZI, ZN, SA or free form. These grinders are capable of six arc second indexing.

The Linear Motor Profile Gear Grinders CNC finish grind gears to AGMA 14 with one setup and have a fast changeover. This machine

handles small batch production well. Steering Rack Milling Machines will also be on display. This auto-load production cell machine can mill racks in 35 seconds to a 0.4 Ra finish.

For more information:

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