

Gear Expo 2007— You'll Be There, Correct?

“Eighty percent of success is showing up”
—Woody Allen

Jack McGuinn, senior editor

Woody Allen was talking about success in show business when he uttered those words, but you can visit any number of corporate meeting rooms and sales centers having nothing to do with the entertainment arts and find that quote emblazoned on the wall.

It's no stretch to believe the same can be said in support of exhibiting at Gear Expo 2007. Moaning and carping about exhibiting at trade shows have existed since perhaps the Columbian Exposition, but here we are in 2007 and another Gear Expo is upon us. And one premise remains etched in stone—you cannot win if you do not play. So it is that—as we go to press—there will be at least 159 companies setting up shop and selling their wares and services to attendees from around the globe.

Gear Technology was able to grab a few minutes with a small but representative sampling of this year's exhibiting companies. Call it what you will—a necessary evil, an invaluable sales and marketing opportunity, or simply a way to help support the worldwide gear industry—the following companies will be there with bells on and a whole lot more.



Company: Gleason Corp.

Booth: 422

Contact: Al Finegan, director of marketing

What's New: The 210-H Genesis hobber will make its first show appearance; capabilities-upgraded Sigma 175GMM CNC gear analysis machine; a new line of cutting tools for large cylindrical gear applications.

Why Gear Expo?: “The market in the U.S. has not been particularly good, and there hasn't been a whole lot of investment going on in this country and it's disturbing. So we're looking forward to it.”



Company: KAPP Technologies

Booth: 244

Contact: Bill Miller, vice president sales

What's New: The KX300P with a significant upgrade; i.e., flexible dressing of worm gears allowing for quicker setups, job runs and reduced lead time.

Why Gear Expo?: "It has become more and more a good venue for a lot of customers to see and touch the latest equipment. You have to be there. I always equate it to the family reunion where you have to go or they talk about you."



Company: Koepfer America

Booth: 122

Contact: Dennis Gimpert, Koepfer America president; Chris Otte, marketing

What's New: Redesigned Wahli 100 CNC machine for extremely fine-pitch applications (instrumentation, etc.); its enhanced velocity now provides spindle control even at very high speeds. Also, not in the booth, but a formal announcement will be made of the KFS250 hob-sharpening machine. Koepfer will share its booth with Emag and its VL 3 CNC vertical turning machine.

Why Gear Expo?: *Gimpert:* "We have great success at the shows. I think some people complain because they don't have equipment (at the show) and nobody wants to come into their booth and just stand around and drink a Coke. It is expensive, but if you do it intelligently, I think there's a return on it." *Otte:* "I think it's important for us to be there so that attendees can see our machine. They may have heard about or saw it in an ad, but now they can see it actually being demoed."

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Company: Great Lakes Gear Technologies, Inc.

Booth: 100

Contact: Ray Mackowsky, Great Lakes president

What's New: One-meter Höfler HS 900 hobber weighing in at approximately 50,000 lbs. Popular in Europe, it is part of the official introduction of Höfler hobbers to the U.S. market. Also on hand will be a sampling of the Escofier line of gear and spline roll-forming equipment. (The Great Lakes booth will also have a Fässler presence.)

Why Gear Expo?: "It's always been a good venue for us. All our principals—Hofler, Fässler—have always been exhibitors—through good times and bad—with leading-edge technology. I'm excited."

Company: DuPont North America

Booth: 514

Contact: Rob Johnson, DuPont North America gear team leader

What's New: Nothing specific regarding new materials. Booth personnel will be available to answer questions regarding existing resins, etc., as well as to work with customers with application-specific questions.

Why Gear Expo?: "We have a history of being there for many years; it helps develop new leads and provides us with a market presence. It also helps us find out what's on the minds of customers in terms of what they'd like to see."

KISSsoft
Calculative programs for machine design

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Analysis of spur and helical gear pairs according to AGMA2001
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Wizard for the sizing of maximum capacity gear sets with minimum weight and volume

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Company: Capstan Atlantic

Booth: 448

Contact: Rich Slattery, vice president engineering; Mike Smith, vice president sales and marketing.

What's New: Solutions Center presentation of four case studies by Slattery regarding Capstan's net shape capabilities and the conversion from wrought steel parts to parts made using powdered metallurgy. Featured are Capstan's patented HD4 and HD4R processes relative to high-dense, high-performance precision gearing applications. The presentations will address high-performance transfer case sprockets, crankshaft gears for lawn and garden applications; custom tooth shape for enhanced noise reduction; and transmission gears.

Why Gear Expo?: *Slattery:* "I'm there as a customer; I go to see presentations to see how technical information is presented about gears. I like to walk the show to make sure I'm up to speed on the latest gear processing equipment. *Smith:* "We participate for the exposure and because it allows us to present new technologies to a larger audience, as well as technical papers and workshops. It also allows us to support the industry as well."

Company: Forest City Gear

Booth: 116

Contact: Everett Hawkins, vice president of manufacturing

What's New: The company will use the show as a platform to tout its lean efforts over the last year or so, and how that has greatly improved both quality and thru-put in their operation. FCG will also share with attendees the number of latest technology machine tools they have acquired recently, demonstrating their dedication to continuous improvement.

Why Gear Expo?: "We look at the show as an opportunity to stress our strengths to customers, as well as our success over the last three years."

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Solutions Center Educates Gear Expo Attendees

In 2005, Gear Expo debuted its first Solutions Center, a forum that features short exhibitor presentations on gear-related topics. This year, AGMA says the Solutions Center will return with a slightly different format.

"Based on the success of the Solutions Center in 2005, we again gave exhibitors the chance to present short presentations at the Solutions Center. This year will also feature two keynote speakers—Monday will have Dr. Mike Bradley's 'Gear Market Report,' which was successful in 2005. On Tuesday, the keynote speaker will be Casey Selecman, an automotive industry expert from CSM Worldwide, presenting 'The Outlook for the Automotive Industry,'" says Kurt Medert, vice president at AGMA.

As of August 20, AGMA has scheduled 28 free Solutions Center presentations. All presentations will be held in the rear of the exhibition hall and are open to any show visitors.

Sunday, October 7

2:00 p.m. Gearspect. DO3PC User-friendly Gear Measurement in the Workshop Gearspect (Prague, Czech Republic) presents DO3PC, a gear measurement instrument designed for use in the workshop environment. European gearbox and automotive manufacturers requiring fast decisions and SPC about quality of splines and spur gear parameters such as gear profile, helix, pitch and deviations according to AGMA, DIN or JIS, are using DO3PC directly in the workshop. Although classified as a VDI class II instrument, measurement values using this strategy are compatible with the results obtained in the measurement room with class I gear measuring machines.

2:30 p.m. Fässler Corporation. *New Developments in Gear Honing.* The new developments in gear honing are focused on the use of ceramic bonded honing stones. The extremely high stock removal rates of this new

honing stone result in very short process times. In addition the new machine concept keeps idle time low.

3:00 p.m. Ticona Engineering Polymers. *Producing Precision Polymer Gears.* Staff and operating procedures are often the deciding factor in the production of precision engineering polymer gears. Learn how gear molders can adapt their molding environment and alter how they function so the gears they make are as uniform as possible from shot to shot and cavity to cavity. Get the most out of your molding machine, tooling and engineering polymer.

3:30 p.m. Kleiss Gears Inc. *The Importance of Measurement in Producing Precision Repeatability in Gearing.* Many people can produce plastic gears. Only a very few companies can produce an engineered polymer gear with dimensional control of less than .001". Kleiss' Douglas Felsenthal will discuss the advantage of CNC measurement in assuring that custom shapes are met. Knowing the interaction and relationship between tool cavity and final part are crucial in the repeatability process.

Monday, October 8

9:00 a.m. Omax Corporation. *Gear Making Applications for Precision Abrasive Water Jets.* Discussion of making gears with precision abrasive water jets.

9:30 a.m. Applied Process, Inc. *Austempered Ductile Iron (ADI) for Gears & Powertrain Components.* Properties and applications of ADI gears and powertrain will be discussed along with specific case studies. A review of AGMA 939-A07 Austempered Ductile Iron (ADI) for Gears Information Sheet will also be included.

10:00 a.m. Gleason Corporation. *How Are You Dealing With Bias Error?*

This presentation will define bias error, explain why it occurs, how to prevent it, and how to induce it when desired.

11:00 a.m. KEYNOTE PRESENTATION: Dr. Mike Bradley *Gear Market Report.*

1:00 p.m. Metal Improvement Company. *Shot Peening of Gears and Shafts.* The fatigue properties of power transmission components can be improved by the application of residual compressive stress from shot peening.

1:30 p.m. KissSoft USA LLC. *Accurate Bearing Calculation Considering the Load on the Single Ball/Rolls.* A new ISO 16281 Standard (or DIN ISO 281-4) describes the calculation method to check the load and pressure distribution on the individual balls or rolls of a bearing. Examples will be shown that illustrate the difference between the classical calculation method and the more accurate method included in the *KISSsoft* calculation program based on ISO 281-4.

2:00 p.m. Reishauer Corporation. *The Manufacturing and Application of Diamond and CBN Tools.* This presentation will describe the entire production process and include topics such as electroplating, superabrasive grain size selection, blank manufacturing, and final validation procedures. Optional design for diamond dressing tools based on customer specific applications will also be discussed.

2:30 p.m. Comtorgage Corporation. *Hand-Held Gaging for Gears & Splines.* Overview of various gage designs offered by Comtorgage for measuring: between pin dimensions, over pin dimensions, major diameter, minor diameter, outside diameter, bore and keyway widths.

3:00 p.m. Thermotech Company. *Introduction to Direct Gear Design®.* Direct Gear Design® is an alternative approach to traditional design and analysis of involute gears. It separates gear geometry definition from the generating rack and tool selection to achieve higher gear transmission performance for a particular product and application. Direct Gear Design allows for significant increase in gear load capacity, efficiency and reliability; reduced size, weight, noise, and vibration of gear transmissions.

3:30 p.m. Midwest Thermal-Vac, Inc. *Latest Advancements in Vacuum Carburizing with High Pressure Gas Quenching.* Higher pressures with different gas mixtures are allowing this new technology to perform even better than first expected.

4:00 p.m. Felss LLC. *Spline Forming with Frequency Modulation.* This unique and patented manufacturing process reduces the forming forces by up to 50%. In comparison with other forming processes, frequency modulation spline forming provides economical and technical advantages. The presentation will develop them and explain the process.

Tuesday, October 9

9:00 a.m. ORT Italia. *Advancements in Spline Rolling Technology.* Latest technical innovations in cylindrical progressive spline rolling technology.

9:30 a.m. Eltro Services, Inc. *Plasma Nitriding of Gears.* Overview of patented pulsed plasma surface enhancement technologies to plasma nitride, nitrocarburize and oxy-nitride. All types of ferrous-based gears. Homogeneous case and properties and tip and root per gear tooth. No dimension or core hardness change.

10:00 a.m. Capstan Atlantic. *Net Shape Processing of*

High-Performance Gears. A series of case studies focusing on net shape processing alternatives for gear manufacturing. Alternative systems for 8620 carburized and 4140 induction heat treated gears will be evaluated.

10:30 a.m. KissSoft USA LLC. *A Customer Perspective on Gear Software: Develop In-House or Purchase?* Charles Schultz, vice president of engineering, Brad Foote Gear Works, Inc., will present a customer's perspective highlighting the pitfalls of developing and maintaining custom gear design software versus adopting commercially available software solutions from KissSoft. Actual software examples of both solutions will be incorporated.

11:00 a.m. KEYNOTE PRESENTATION: *The Outlook for the Automotive Industry.* Casey Selecman, manager, North America Power Train forecasts, of CSM Worldwide

1:00 p.m. Gleason Corporation. *Measurement Traceability for Gears.* The increasing influence of ISO standards on business and industry has resulted in revised definitions for many fundamental terms. One such revision applies to the term "traceability," which now involves estimation of measurement uncertainty. This presentation will clarify the new definition and outline an approach to its proper implementation.

1:30 p.m. S.L. Munson/Dr. Kaiser. *Diamond Dressers for Gear Industry.* Discussing different types of dressing products used in the gear industry.

2:00 p.m. ECM USA, Inc. *Fatigue Strength Property Improvement on Gearbox Components by Using Low-Pressure Carburizing, Low-Pressure Carbonitriding and Gas Quenching.* ECM will present a comparison study on several processes: Conventional

carbonitriding and carburizing with oil quenching, low-pressure/carburizing and carbonitriding with gas quenching. A complete metallurgical analysis and mechanical properties results will be discussed. ECM will show how the optimization of carbon enrichment and the mastering of the gas quenching can improve fatigue strength.

2:30 p.m. Chamfermatic. *Gear Deburring: Latest tooling and machinery in gear deburring.*

3:00 p.m. Seco/Warwick. *Increasing Production Time in Vacuum Carburizing Furnaces.* Pit and Rotary Hearth Furnace systems are effective furnace systems for both heat treating and handling gears. Atmosphere furnaces are very forgiving and produce good metallurgical results when heated by either natural gas or resistance heating elements. Each system provides unique benefits in material handling and plant production work flow.

3:30 p.m. Frenco Euro-Tech Corporation. *Technical Spline Seminars and the Holy Grail: One Does Exist.* You can search a lifetime for the holy grail and never find it. If you search for a technical spline seminar you will find only one. Norbert Weiss from Frenco will explain how manufacturers and suppliers can be on the same page, settle gaging and design disputes, educate operators on spline gaging and discuss all technical aspects of splines and standards, all in a simple one- or two-day seminar.

4:00 p.m. Eldec Induction USA. *Simultaneous Dual Frequency Induction Gear Hardening.* A presentation describing the evolution of utilizing simultaneous dual frequency induction hardening techniques, and how it applies well to gear hardening requirements.