

The "Unofficial Guide" to Gear Expo 2001

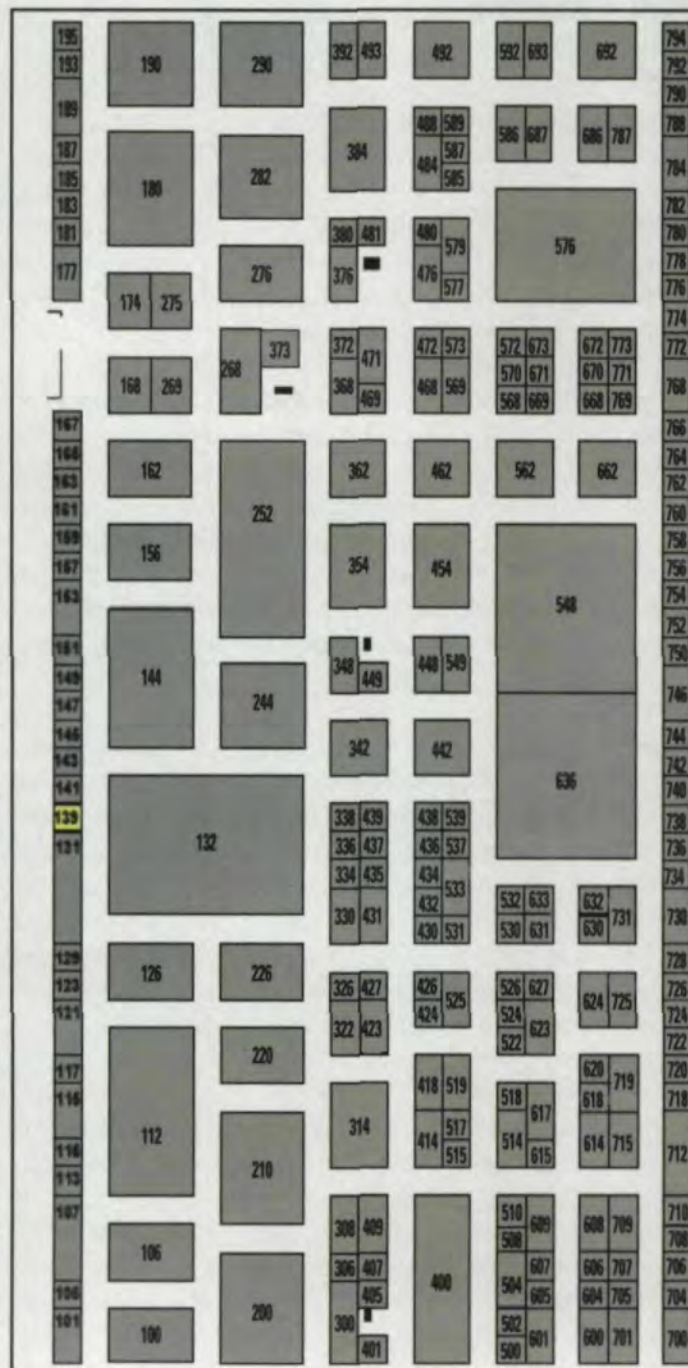
We've contacted many of the companies that will be exhibiting at Gear Expo 2001 to compile the following directory of exhibits. Use this directory to help plan your visit to the show, or to stay up-to-date on the industry's suppliers and technology. (Booth numbers are current as of August 20, 2001, but information is subject to change.)

Accurate Specialties Inc.—Booth #427. Accurate Specialties offers bronze components for the power transmission industry. The company specializes in gear bronze, producing finish-turned gear blanks, bushings and bearing materials from 1" to more than 48" in diameter. According to Accurate Specialties, spun-cast composite gear blanks offer exceptional value, and centrifugal cast components are available for critical applications and cost-effective production of low quantity orders. Standard tooling is often available, or near-net shape tooling can be designed to minimize cost and maximize value.

Accurate Specialties offers component design, alloy selection, casting and CNC machining. Tin, aluminum and manganese bronzes are produced in heats ranging from 200 lbs. to thousands of pounds.

Acme Gear Co.—Booth #472. Acme Gear offers more than 70 years of specialized manufacturing experience in prototype and mass production of high-quality, precision-ground or -cut gears. Acme Gear has experience with alloy and carbon steels, as well as high-tech materials. The company serves industries including printing, transit authorities, mining, centrifuge, industrial air conditioning, and aerospace.

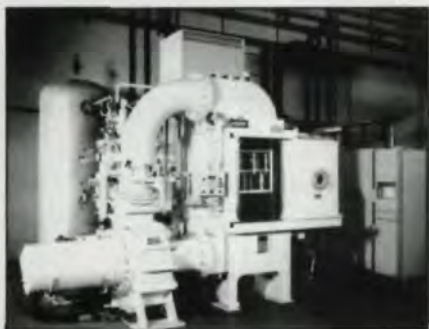
Acme Gear offers ground spur and helical gears up to 32.68" outside diameter; cut spur and helical gears up to 40"; worm gears up to 60"; worms from 8" to 36"; internal gears up to 32"; involute and square splines from 16" to 36";



GEAR EXPO 2001
OCTOBER 7 - 10, 2001
OAKLAND HALL, COBO CENTER, DETROIT, MICHIGAN

sprockets up to 36"; ratchets up to 48" with up to 10" face widths; and timing belt pulleys up to 35".

Acme Gear is ISO 9002 registered.



ALD Vacuum Technologies Inc.—Booth #504. At Gear Expo, ALD Vacuum Technologies will introduce new advanced heat treatment processes for gears. According to the manufacturer, the processes provide superior case hardening, exceptional case uniformity, excellent reproducibility, bright parts after processing, no washing, no cleaning and a production rate of 2,200 lbs. of gears per hour at a very competitive cost. These benchmarks have qualified ALD's new processes and furnaces for the mass production of some of Germany's automotive transmissions.

The technology can be offered for case hardening or neutral hardening and tempering in one continuous process, either in a batch-type furnace or in a fully automated, continuous, in-line system with the application of a cold wall-quench chamber.

American Gear Manufacturers Association—Booth #300. The American Gear Manufacturers Association (AGMA) is a trade association representing more than 400 manufacturers of gears and related gearing and coupling products, as well as suppliers and consultants to the industry. AGMA has been approved by the American National Standards Institute (ANSI) as administrator of the technical advisory group for the International Standards Organization (ISO) standards. As secretariat of ISO Technical Committee 60, AGMA is the primary organization responsible for the development of gearing standards.

AGMA sponsors Gear Expo 2001, being held October 7–10, in Detroit. Gear Expo is international in scope and provides a biennial forum for the exchange of information on the range of machinery, supplies and services available for gear manufacturing. From software to hardware, from initial design through testing, exhibitors will be available to discuss solutions to problems associated with gear manufacturing.

American Metal Treating Co.—Booth #426. American Metal Treating Co., which specializes in induction hardening, will display samples of gear teeth that have been "single tooth contour hardened." The company invites you to stop by to discuss your current requirements. Technical staff will be on hand to help solve your distortion problems. Information on major advancements in induction hardening and capabilities also will be available.

Applied Process Inc.—Booth #449. Applied Process specializes in the austempering process, which, according to the company, can give your products extreme performance capabilities by making iron and steel tougher, stronger, lighter, quieter and more wear resistant. Stop by the company's booth to talk about austempering.

Arrow Gear Co.—Booth #392. Arrow Gear specializes in the design and manufacture of spiral bevel gears. According to Arrow Gear, the company's engineers try to develop gears that overcome noise problems and provide longer life at a lower cost. Staff members will be on hand to take your application requirements and recommend a gear design for the job.

ATA Gears Inc.—Booth #330. ATA Gears has recently increased manufacturing capacity for bevel gears up to 100 inches. ATA Gears is committed to the manufacture of spiral bevel gears. The company manufactures bevel gears ranging from 2–100 inches (50–2,500 mm). The company has a large stock of high-

quality raw material and modern production equipment, including in-house heat treatment. ATA can provide gear designs and strength ratings according to major international standards, including ISO, DIN and AGMA. ATA's quality system complies with ISO 9001 and is certified by Det Norske Veritas.

A/W Systems Co.—Booth #139. A/W will display a selection of cutter bodies and blades. The company will have straight bevel cutters, coniflex cutters and stick blades (high speed steel & carbide). A/W also will have bore gages, height gages, hobs, an assortment of diamond tools for hard turning and dressing, keyseat cutters, dove tails and an assortment of hardware.

Balzers Inc.—Booth #549. Balzers Inc., with headquarters in Amherst, NY, is part of the worldwide Balzers Surface Technology coating organization, which consists of 42 coating centers in 18 countries. Balzers U.S. operates nine coating centers in North America. Balzers provides a range of PVD wear-resistant, thin-film coatings for improving the productivity of cutting, forming and molding tools, as well as for improving the performance of precision components.

Balzers will introduce a new, improved version of titanium aluminum nitride, called Balinit Futura Nano. According to the manufacturer, this new coating has improved hardness and oxidation resistance and will be particularly beneficial in hobbing applications.



Barit International Corp.—Booth #372. Barit presents itself as "a one-stop solution provider" for all custom and

stock gear-cutting-tool needs, including hobs, broaches, shaper cutters, shaving cutters, milling cutters, master gears, rack-type cutters and bevel generating cutters. The company offers expedited delivery, detailed engineering and reverse engineering. Barit's staff members invite you to let them demonstrate how their commitment to quality, their technical expertise and their prompt, personalized service can give you a competitive advantage.

Bodycote Thermal Processing—Booth #468. Bodycote Thermal Processing is a part of the international metallurgical services provider Bodycote International plc. The North American network of plants includes nearly 60 heat treat facilities, nine testing facilities, six hot isostatic pressing facilities and three coating locations. Bodycote specializes in strategic partnerships either on-site at customer facilities or near them.

Commercial heat treating processes include carburizing, ferritic nitrocarburizing, induction hardening, brazing, salt-based processes, ion nitriding and others.



Bourn & Koch Machine Tool Co.—Booth #576. Bourn & Koch will exhibit with Presrite Corp. at Gear Expo 2001. A hobbing and grinding application will be demonstrated during show hours. Bourn & Koch manufactures gear hobbors, gear grinders, hob checkers, rotary transfer machines, extrusion milling machines, specialty machines and remanufacturing/retrofitting of Bourn & Koch and Barber-Colman gear hobbors, gear shapers, gear grinders, gear shavers, gear lappers, gear inspection machines and other machines.



Capstan Atlantic—Booth #615. Capstan Atlantic is a large East Coast producer of precision powder-metal gears. The company's capabilities include high-density, high-strength gears manufactured using its proprietary HP3 process. Specializing in a variety of applications, Capstan Atlantic provides solutions for the automotive, appliance, lawn & garden, power tool and power transmission industries. Capstan Atlantic

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VISIT US AT GEAR EXPO BOOTH #537

CIRCLE 131

can manufacture gears to AGMA class 9 quality. High-performance gears can be made by combining high-strength alloys and unique secondary operations. Parts can be made with selective densification to 7.8 grams/cc. Capstan Atlantic's facility includes presses ranging from 4-600 tons, and the company has in-house design, engineering and tooling capabilities, as well as a metallurgical and gear laboratory. The company manufactures

spur, helical and bevel gears and pinions, as well as parts with multiple gear types integrated into one part.

Chamfermatic Inc.—Booth #481. Chamfermatic, a manufacturer of gear deburring and chamfering machines, will be presenting its newest model, the Chamfermatic W.G. 2000, at Gear Expo. The machine is able to deburr, wash, dry and rustproof gears up to 14" in diameter

in one cycle. It comes standard with a 6" diameter, 3-jaw manual chuck, but it can be equipped with automatic air chucking. It also comes with a built-in filtration system and two deburring head assemblies. Additional deburring heads are available.

The Cincinnati Gear Co.—Booth #423. Cincinnati Gear manufactures high-performance gearboxes and power transmission components for industrial and marine applications. Gear capabilities include hobbing, cutting, grinding, shaving, turning, boring and inspection. Gears manufactured include spur, helical, double helical, internal and worms and worm gears. Services include engineering design, analysis and testing, as well as worldwide field service.

Cold Forming Technology Inc.—Booth #276. As one of North America's leading spline and thread rolling specialists, Cold Forming Technology is committed to supplying the highest quality products and services available in the industry. The company is ISO 9001 and QS-9000 certified in the design and manufacture of new and reground spline, thread and special form tools. It is also a primary supplier of "make complete" or "partial" prototype and pre-production spline rolled parts for the automotive, truck, rear axle and other industries. High volume production capacity is available for customers with capacity limitations. Cold Forming Technology also handles service parts, machine breakdowns or product development. The company's management says, "We do not compete with you, our customers, for pre-rolling machine operations."

Dura-Bar—Booth #448. Dura-Bar is a manufacturer of continuous cast iron bar stock, an engineered metal with noise and vibration damping properties. According to the manufacturer, continuous cast iron bar stock can be 3-10 times quieter than steel and 20-40% more machinable. The continuous casting process produces a uniform, fine-grained microstructure. Dura-Bar says that the

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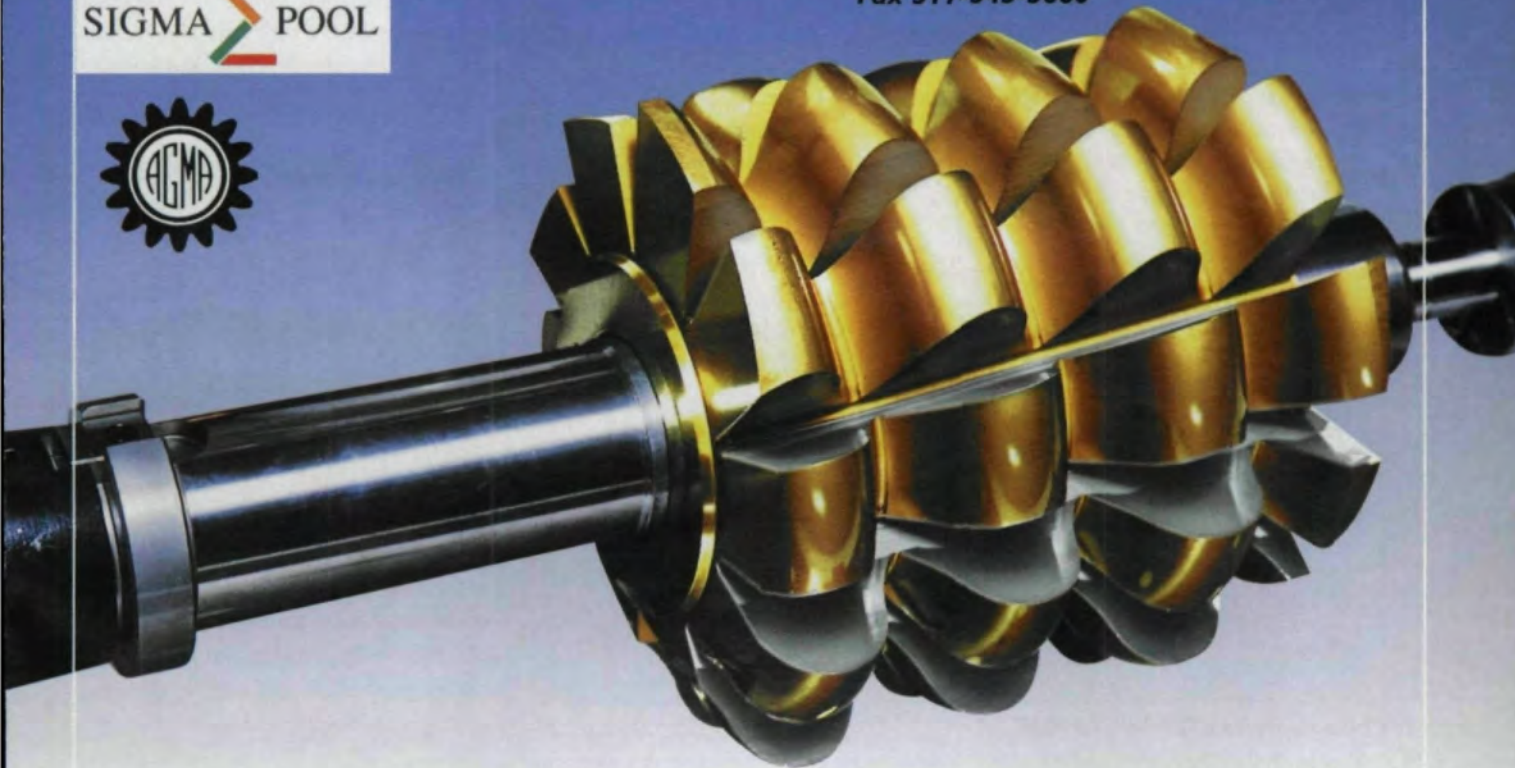
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VISIT US AT GEAR EXPO BOOTH #536.

CIRCLE 132

material has none of the shrinkage, porosity and tool-wearing inclusions that frequently occur in traditional castings.

Dura-Bar material can be austempered, through-hardened, flame-hardened or induction-hardened for added wear resistance. It is available in ductile, gray or special alloyed irons, in round bars with diameters of 5/8" to 20" and lengths of 6' to 20'. It also is available in machined gear blanks.

Dura-Bar, a division of Wells Manufacturing Co., has a nationwide network of distributors that maintain inventories.

Euro-Tech Corp.—Booth #569. Euro-Tech Corp. sells a range of spline gaging and workholding products, including those manufactured by Frenco GmbH, such as Frenco's SPC-compatible indicating spline gages and a new version of its hand-held spline gage.

Euro-Tech will demonstrate URM gages simultaneously analyzing multiple shaft profiles (splines, gears, etc.) in eight seconds in the factory. The company will also exhibit Frenco spline gage systems completely measuring an internal or external spline over its length. Visitors also will be able to see Euro-Tech's hydraulic expansion gear arbors, chucks for quick-change hobbing or shaving, and inspection arbors. According to the manufacturer, runouts of these rupture-proof tools is less than 0.0001".

New products on display will include hob holding production arbors, Mytec hydraulic nuts and a Mytec arbor/chuck pressure control system.

Fairfield Manufacturing Co. Inc.—Booth #442. Fairfield Manufacturing Co. Inc. is a leading one-source supplier in the industry, offering a range of gear producing capabilities in North America. From 1–120 inches, Fairfield's products include loose custom gears (bevel, spur, helical, internal and external), custom mechanical assemblies, planetary axles, Torque-Hub planetary final drives and new Fairfield brakes. Services include design engineering, heat treating and testing.

Products displayed at the show will include loose and enclosed gears for applications in the rail, automotive, off-highway, mining, defense and marine industries.

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Fässler A.G.—Booth #190. Fässler A.G. is a leading company in the development, production and sales of dressing devices, gear honing and hard broaching

machines and the related tools and fixtures for hard gear finishing. The company's headquarters are in Dübendorf, Switzerland.

According to the company, its highly skilled staff members are experienced in honing technology and able to serve their customers by defining the most accurate and economic machining process available to suit customer needs.

Fässler A.G. will present new honing technology at Gear Expo 2001. With the Combi-Hone process, Fässler introduces direct honing as a combination of roughing and finishing. This process allows customers to hone parts directly into final quality after hobbing and heat treatment. According to the manufacturer, the process is economical and reliable.



Gear Technology—Booth #418.

Stop by our booth for a chance to win a custom-made, one-of-a-kind gear clock. We're offering free marketing consultations for companies trying to reach the gear industry. We'll give you secrets to reaching gear manufacturers or gear buyers—without overextending your budget. Learn about the industry-leading resources, *Gear Technology* magazine, *The Gear Industry Home Page™* and *powertransmission.com™*. See our special promotion on page 61 for more information. Also, we'll hand out free copies of our

first-ever CD-ROM buyers guide, the complete directory of the gear industry.

Gleason Corp.—Booth #132.

Gleason's new, 3,500 sq. ft., double-decker booth will debut four new machine models. The cylindrical gear program will include the P60 horizontal hobbing machine and the GP300ES electronic helical guide shaping machine.

For bevel gear production, Gleason

will introduce the Phoenix II 275HC bevel cutting machine. (*Editors' note: See the related article on the Phoenix II on page 13.*)

Also on display will be bevel and cylindrical cutting tools, workholding and a plasma screen running the latest application videos.

Great Taiwan Gear Ltd.—Booth #701. Great Taiwan Gear is a leading

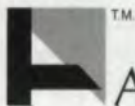


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CIRCLE 119

gear-related products supplier in Taiwan. The company is capable of handling customer needs for gear cutting tools, gears and gearboxes. According to the company, its "experienced team and modern equipment" can accommodate prototype to production runs, from one piece to thousands of pieces. Great Taiwan Gear manufactures a range of gears, from fine to coarse pitch.

Höfler Maschinenbau GmbH—Booth #210. Höfler will demonstrate the Helix 400K gear grinding machine, capable of grinding both internal and external spur and helical gears without machine changeover. The Helix 400K handles gears up to 16" in diameter and is equipped with an inspection system for profile, lead and spacing.

Also, the company will have staff on hand to discuss other gear grinding solutions, including Höfler's Porta machine for grinding internal and external gears up to 120" in diameter. The Porta comes with an 80" machine table capable of handling 77,000 lbs. The machine grinds internal and external gears without changing the grinding head. The Porta comes with an on-machine dresser and a built-in gear checker.

Inductoheat—Booth #620. Inductoheat is a global supplier of induction heat treating equipment and supplies, with equipment for heat treating crankshafts, camshafts, gears and other critical components.

ITW Heartland—Booth #342. For more than 60 years, ITW (Illinois Tool Works) has been a leader in the design, manufacture and service of functional gear inspection equipment and gear burnishing equipment. ITW Heartland offers a line of manual, semi-automatic and fully automated machines. This year, ITW Heartland will feature two machines.

One of the machines will be a Model 3500 computerized gear analyzer that will be set up to demonstrate both center distance gear error and lead and taper gear errors. The second machine will be

a 2901V vertical automatic gear burnisher. This machine will demonstrate the effect that burnishing has in reducing nicks, burrs and heat-treat scale. ITW also will have a video display showing additional ITW machine models. The company invites you to stop by and see how ITW Heartland can help you in your gear processes. Also, ITW staff members can explain their turnkey system, which incorporates a burnisher, washer and checker all in one unit.

Kapp Technologies—Booth #244. Kapp offers a variety of machines for hard and soft finishing of parallel axis gears, threaded worms, rotor profiles and many other complex, accurate forms up to 500 mm in diameter. Machine processes include form grinding, generating grinding and Coroning using CBN, diamond or vitrified abrasives.

Niles grinders are also included in the product line for large diameter requirements, starting at 500 mm and going up to 4.2 meters. The new Niles 630 machine will be introduced at the show. The 630 is a high-quality form grinder fully equipped as a standard machine ready for the shop floor.

Kapp Technologies also offers a line of Kapp CBN-plated grinding wheels, worms and Coroning tools.

The Kapp Group consists of Kapp GmbH and Kapp 2 Technologies, both located in Coburg, Germany; Niles GmbH, located in Berlin; Kapp Technologies, located in Boulder, CO; Kapp Tec, located in Sao Paulo, Brazil; and Kapp Tools, located in Nagoya, Japan.

Koepfer America L.L.C.—Booth #290. Koepfer has served the gear industry since 1867. The company offers hobbing machines, automation, cutting tools and sharpening machines. Koepfer machines are designed for gears up to 180 mm (7.087") in diameter. Koepfer's automation can handle pinion gears, bore parts or shafts on one system.

The Koepfer KFS100 CNC hob sharpening machine is designed for hobs of high speed steel or carbide. Koepfer

also offers a hob sharpening service.

Koepfer cutting tools are manufactured from high speed steels, powder-metals and carbide. In addition, the company sells Saazor coarse pitch hobs—either solid or segmented—to 1.25 DP and Haug honing wheels, gears and dressing tools, which are suitable for all honing machines, according to Koepfer.

LeCount Inc.—Booth #143. LeCount expanding mandrels are designed for gripping on the inside diameter of parts to be inspected. Once a part is loaded on the mandrel, the unit is loaded between centers and the part is ready for inspection. The construction of the LeCount expanding mandrels incorporates the principle of parallel expanding jaws sliding uniformly on incline "ways." Controlled accuracy of manufacture produces precision holding devices with concentricity of 0.0001" T.I.R. or better.

According to LeCount, the "inclined way" expanding principle permits a wider range of diameters to be held accurately and securely. Type A step-jaw mandrels have a range of expansion, with 12 precision mandrels covering sizes from 3/8" to 7" in diameter.

The work is placed on the mandrel over the jaws, and the dog end of the mandrel is tapped lightly against a softer metal or wood block. The precision ground jaws expand readily and grip the work securely. Tapping the tailstock end of the mandrel releases the work. An arbor press isn't used.

Leistriz Corp.—Booth #709. Leistriz is a German machine tool builder specializing in whirling equipment. Whirling is a process for machining gear worms, screws and other related parts. Qualified technical staff will be on hand at the Leistriz booth to discuss your applications.

Liebherr Gear Technology Co.—Booth #548. Liebherr Gear Technology Co. is the North American access point to the Sigma Pool's range of gear manufacturing technologies and processes,

including gear hobbing, generating, shaping, inspection and testing.

Products exhibited at this booth will include Klingelnberg CNC gear cutting and measuring centers, Liebherr gear hobbing and shaping machines, and Oerlikon spiral bevel gear cutting, grinding, lapping and testing equipment.



M&M Precision Systems Corp.—Booth #144. M&M Precision will introduce the new Sigma 3 CNC gear inspection system, featuring 3-D probe technology, linear motor direct drives and four-axis generative motion, with Windows-based software. Also featured will be M&M Precision's new Microtop gear inspection system, featuring low-cost, shop-hardened, four-axis generative motion, with Windows-based software.

Metal Improvement Co.—Booth #510. Metal Improvement Co. is a premium provider of controlled shot peening, C.A.S.E.sm superfinishing, heat treating and related metal finishing operations with close to 40 service centers throughout North America and Europe.

Controlled shot peening is primarily used to improve metal fatigue properties. For gearing applications, the area of most concern is usually the gear root, which is subject to bending fatigue. Typical improvements in fatigue life for gears are

300%, 500% or more, according to the company, and typical improvements in fatigue strength range from 10-30%.

C.A.S.E.sm superfinishing removes the asperities left from shot peening to provide resistance to pitting failure through a superior gear flank finish.

The company invites you to visit its booth, where staff will be on hand to discuss your specific needs.

Metal Powder Products Co.—Booth #436. Metal Powder Products Co. (MPP), based in Carmel, IN, draws on the specialized powder metallurgy technologies and manufacturing capabilities of its operating units to provide custom-engineered, net-shaped products for a variety of industrial and off-highway applications. MPP provides a range of powder-metal material technology using ferrous, nonferrous, stainless steel and

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CIRCLE 191

aluminum alloys. MPP manufactures high-strength, high-density gears.

mG miniGears North America—Booth #522. mG miniGears specializes in the field of small- to medium-sized gears for mass production, with experience that blends the traditional technology of steel cutting and the latest technology of sintering. mG miniGears also has created its own research and development department, which is committed to experimenting with new applications for sintered gears. The support that mG offers its clients starts in the planning and designing phase, with calculation and development of gears or of entire kinematic mechanisms, and also includes choosing the best technology to obtain the desired results, producing and testing of prototypes, and mass producing of the product. mG miniGears concentrates especially in the areas of power tools, garden equipment, bicycles, motorcycles and automobiles.

Midwest Gear Corp.—Booth #518. Founded in 1972 in Twinsburg, OH, Midwest Gear has been manufacturing high-quality products for both large and small manufacturers. Industries currently serviced include construction, agriculture, packaging, transportation, steel, automotive, paper and mining.

Midwest Gear's product offering includes spur, helical and herringbone gears. Pinions also are manufactured.

Services offered include tooth grinding to AGMA class 12 quality, tooth shaving, broaching and splining. Hard copy documentation of AGMA quality levels for gears up to 50" in diameter is available on Midwest Gear's Höfler gear checker. Inquiries for complete gear manufacture or just tooth grinding are welcomed.

Midwest Gear is located between Cleveland and Akron, minutes from Interstates 80, 271 and 480, in the heartland of industrial America.

Milwaukee Gear Co.—Booth #662. Milwaukee Gear is an established company with a variety of machining capa-

bilities. Engineering, heat treating and gear grinding expertise allow the company to design and manufacture spur, helical and internal parts. Milwaukee Gear can produce in-house carburized, hardened and ground parts to a pitch diameter of 63". Also, the company welcomes inquiries for needs that can't be met by standard catalog gear drives. The Milwaukee Gear design engineering team will work closely with customers to design and build custom gear drives to meet specific needs.

Mitsubishi Gear Technology Center—Booth #252. Mitsubishi will have a diverse array of gear production equipment, which should satisfy every sector of the gear industry, according to the manufacturer. Machines will include the GD20 "jobber hobber," the ST40 programmable lead shaper, and a fully automated GN20 dry hobber. Mitsubishi says filling out the lineup will be the latest synchronized honing and shaving machines, demonstrating cost-effective methods for gear finishing. Backing up all the equipment will be the Mitsubishi service pavilion. The Gear Technology Center is emphasizing customer service, and demonstrations will be given to show the company's "Service First" philosophy.

Nachi Machining Technology Co.—Booth #200. Nachi will present the newest version of its vertical roll-forming machine, the PFM610E, a semi-dry spline rolling machine.

Also, Nachi will focus on its DuAl brand hobs, which are specially manufactured and coated to be able to hob with or without coolant.

Other Nachi machines on display will include the HyB-35 gear checker, which is designed to inspect spiral bevel and hypoid gears by contact scanning the tooth surface, and the KN-151 gear hobbing machine, which has hob-head travel of up to 400 mm.

National Gear Metrology Center—Booth #627. The National Gear Metrology Center provides NVLAP-

accredited, NIST-traceable gear standards calibrations. The center currently provides calibrations on 12 different gear artifacts.

On-Line Services—Booth #480. On-Line Services offers a variety of standard deburring machines, from simple to complex. OLS can custom configure one of its standard bases to meet customers' deburring needs.

The Model 815 base is designed for high-volume production of smaller parts. It is a through-feed machine that is height-adjustable for incorporation into a manufacturing cell. The Model 2800 base is designed for deburring large parts.

OLS machines may be fitted with the OLS Auto Amp Compensation System, a technology that provides uniform brush pressure throughout the useful life of the brush. According to the manufacturer, that technology helps ensure consistent quality.

Perry Technology Corp.—Booth #600. Visit the company that calls itself "The Gear and Spline Experts" at Booth #600. Perry Technology invites you to bring your odd or unique gear or spline tooth forms to give the company's staff members a challenge and see how they can help with your machining requirements. Perry Technology manufactures for high or low production and can provide prototypes and fast delivery. The company's capabilities include CNC hobbing, shaping, grinding, turning and milling.

Precision Gage Co. Inc.—Booth #380. Precision Gage manufactures the Vari-Roll gear inspection system and the Vari-PC composite gear analysis system. The combined systems provide composite inspection of spur, helical, bevel or internal gears, as well as pinion shafts, worms and throated worms.

Presrite Corp.—Booth #576. Presrite Corp., a producer of minimum-draft, net- and near-net-shape forgings, will have a demonstration at its booth at Gear Expo 2001. Two Bourn & Koch

machines will show visitors how little hobbing and grinding are necessary with near-net forged tooth gears.

According to Presrite, its near-net gears are forged so close to desired tolerances that there is virtually no need for rough cutting: Hobbing and grinding of the gears is minimized. Near-net gears are designed to reduce gear costs while increasing their quality.

Presrite has invested in equipment and processes to help its customers save money and improve gear performance. The company's dedicated gear-forging facility is equipped with a state-of-the-art gear lab, high-capacity presses and the latest in machinery.

The booth demonstration will involve a Bourn & Koch 200H CNC hobbing machine and a Bourn & Koch 500VG CNC gear grinding machine.

Presrite forges net and near-net gears for a range of industries in countries around the world. Its parts are used in transmissions, engines and undercarriages of track-type tractors, excavators, wheel loaders and other off-highway vehicles. Presrite is an ISO 9002- and QS 9000-registered company.

Process Equipment Co.—Booth #362. Process Equipment Co. will demonstrate the ND430 "Next Dimension[®]" gear measurement system.

The ND430 uses a Renishaw[®] 3-D scanning probe head to measure tooth alignment, profile, index and root radius relative to other geometric features, such as bores, bearing journals and faces in its linearly, thermally and volumetrically compensated measuring envelope.

Analysis of the results can be viewed according to AGMA, ISO, DIN and user-defined standards. The company also will display information about its laser and capacitor discharge welding machines, used to join gears or other rotary components to like or dissimilar metals in high-production environments.

Profile Engineering Inc.—Booth #476. Profile Engineering plans to unveil its Profile gear analyzer.

The analyzer replaces existing strip

chart recording systems and paper drive mechanisms. According to the company, operator-friendly software and a touch-screen system enhance the standard operation of the instrument, virtually eliminating training requirements for gear checking and calibrating—with no misleading algorithms, filters or error-eliminating programs.

Profile Engineering also will display, courtesy of Rockwell Automation, the

PC-4W Worm & Wheel Gear Analyzer[®] as an example of the company's speciality design and manufacturing capabilities.

Quality Transmission Components—Booth #434. Since 1985, Quality Transmission Components (QTC) has been a leading supplier of medium- and coarse-pitch metric gears throughout the United States, Canada and Mexico. A division of Designatronics Inc., QTC is

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CIRCLE 116

the exclusive North American distributor for Kohara Haguruma Kogyo K.K. (KHK Gear Industry Co. Ltd.) of Saitama, Japan. A leading, independent Japanese gear manufacturer, KHK produces more than 3,600 standardized, medium- and coarse-pitch metric gears and related items. KHK's modern, ISO 9001:1994 certified facilities utilize gear cutting and grinding equipment to serve the needs of many Japanese OEMs.

QTC's 456-page catalog, *Q410: The Handbook of Metric Gears*, contains a comprehensive technical reference section entitled "Elements of Gear Technology." The topics covered include the principles of involute gearing, gear dimension calculations, the definition of backlash, plastic gear design, elements of gear accuracy, principles of surface contact, methods of lubrication and methods for noise reduction.

The catalog's product section includes detailed specifications for QTC's offerings, including spur gears, helical gears, ring gears (internal and external), racks (straight, helical and flexible), miter gears (straight and spiral), bevel gears (straight and spiral), worms and worm wheels (standard and Duplex™), screw gears, involute splines (internal and external), ratchets and pawls, and gear couplings.

The products are offered in sizes from module 1 through module 10, in materials that include alloy steel, carbon steel, stainless steel, cast iron, aluminum bronze, brass, cast bronze, nylon and acetal. An inventory of KHK's product line is maintained at QTC's warehouse in New Hyde Park, NY. The warehouse replenishes its stock from the factory's inventory on a biweekly basis. In addition to its standard product line, QTC can supply build-to-print custom gearing in quantities from prototype to production.

Raycar Gear & Machine Co.—Booth #437. Raycar Gear & Machine is a privately owned gear manufacturer located in Rockford, IL. The company specializes in low-volume orders of 1–100 pieces. It manufactures many types of spur gears, helical gears, spline shafts, gear shafts and gear segments. According to Raycar, the company can fill all alloy requirements, including those for cast, ductile and unusual materials, such as nylon or phenolic.

Raycar's capabilities include hobbing, shaping, shaving, tooth chamfering and gear grinding, as well as general machining. The company can grind teeth on spur or helical gear up to 12" in diameter, offering up to AGMA class 12 quality. The company's NC hobbing machines allow hobbing of parts up to 16" in diameter. Raycar also can shape internal teeth when hobbing is not an option.

According to the company, "Quality is not an accident at Raycar." The company uses a Höfler ZP350 analytical gear analyzer to provide customers with gear charts. Raycar performs regular inspections after each operation, as well as a



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CIRCLE 130

final inspection before shipping.

Redin Corp.—Booth #384. Redin Corp. will demonstrate computer-controlled servo motion designed to virtually eliminate setup times in deburring and reduce costs associated with part changeover and tool setting.

According to the manufacturer, machine operators can be productive in minutes with a basic orientation on machine controls. A typical changeover consists of installing the workholding device, placing the appropriate carbide bit in the tool and selecting the corresponding part program. The programs are written and tested at Redin Corp. to ensure high performance control.

The machine operates on the principle of inverse kinematics. Motions are programmed based on the shape of the part being deburred. According to Redin, with eight axes of motion, the machine can handle the most difficult shapes and can repeat helical, elliptical and 3-D arcs with accuracy and precision.

Reishauer Corp.—Booth #692. Reishauer Corp. is a leading manufacturer of CNC gear and thread grinding machines. The company's gear grinders are designed and built to accommodate spur and helical gears up to 820 mm in diameter, with a maximum helix angle of +/- 45° and up to AGMA class 15 quality. Thread grinders are capable of grinding standard threads, worms, rotors, gages, taps and ball screws up to 2 m in length. Technical information on video display will be available on Reishauer's newest gear grinder, Model RZ 400.

Reishauer also represents the Richardson line of gear cutting machines, including a six-axis CNC hobbing machine, available in up to 500 mm capacity.

REM Chemicals Inc.—Booth #537. REM Chemicals says the REM® process is a cost-effective alternative to an engineered, machined surface in many applications where surface finish, increased wear and friction reduction are important considerations. The REM® process is an

isotropic surface finishing process that produces a nonlinear, low-Ra finish that improves wear properties and reduces friction. It is a chemical mechanical process that sequentially removes the "peaks" of a ground, cut or honed finish while leaving the "valleys" unaffected. According to REM, the result is a dramatically improved surface finish with little dimensional change of the part.

Russell, Holbrook & Henderson Inc.—Booth #471. Russell, Holbrook & Henderson is a leading manufacturer of fine-pitch gear cutting tools and metrology products, with more than 50 years of experience providing tooling solutions and services.

The company's Tru-Volute hobs, shaper cutters and master gears offer the highest level of quality and accuracy, according to the manufacturer. Class AAA and AA hobs in solid carbide and super high speed steel can be manufactured to AGMA, ISO, DIN and JIS hob standards.

Russell, Holbrook & Henderson will introduce a new CNC hob sharpener at the show. Also, the company will present solutions in nanogear technology, with 0.01 module (2,540 DP) microgears. Other products to be presented include the company's GRT-04 dual-flank gear rolling tester with personal-computer analyzing software and DIN class 1 master gears (with less than 1.0 micron total composite error).

The company invites you to visit to discuss the latest hard hobbing, dry cutting, coating or gear production technologies, as well as its "ultra-precision" gears.

S.L. Munson & Co.—Booth #269. S.L. Munson & Co. is the exclusive North American distributor of Dr. Kaiser products. Dr. Kaiser specializes in the design and manufacture of precision rotary diamond dressers for the gear industry. Dr. Kaiser products are designed for continuous generating, single-tooth, spiral, bevel and plunge grinding applications. The products are offered in both natural diamond and

polycrystalline diamond (PCD) versions.

Schafer Gear Works Inc.—Booth #525. Schafer Gear Works is a QS9000/ISO9002 company specializing in gears. Products include hobbed, shaped, shaved, crowned, ground, internal, external, spur, helical, bevel and worm gears and worms, in many materials.

Hobbed spur and helical gears are manufactured from 3 to 200 pitch, in sizes up to 52" in diameter. Shaped gears are manufactured up to 36" in diameter.

According to Schafer Gear Works, the company strives to meet and exceed customer expectations through a market-driven philosophy. In addition to CNC machinery and testing equipment, Schafer has EDI to accept customer orders, SPC for quality assurance, bar coding and other software and hardware.

Besides gears, Schafer offers screw machine products and precision machined components.

Schütte TGM L.L.C.—Booth #141. Schütte products allow you to grind stick blades and standard tooling on the same machine. A video presentation of the WU305 CNC tool & cutter grinder will highlight the machine's ability. Custom demonstrations can be arranged on the days of the show, at the company's facility in Jackson, MI.

Service Network Inc.—Booth #336. Service Network Inc. offers the SN-Series and 2X-Series grinding machines. These internal and external production or multisurface CNC grinders are capable of producing the highest quality product, according to the manufacturer. Twin-spindle simultaneous bore and face grinders are available. The company can review specific applications and supply the equipment as well as develop the grinding process. SNI also provides Heald replacement parts, field service and modernization packages.

Since 1984, Service Network has designed and built precision grinding solutions. The company is located in Auburn, MA.

Star Cutter Co.—Booth #536. Star Cutter will display a CNC tool grinder. Other products are hobs, milling cutters, carbide preforms, gun drills, coolant drills and reamers, which can be either carbide head, solid carbide or PCD design. Also offered will be thin-film coatings used on cutting tools or wear parts, depending on the particular application. The company also will display imported Stieber chucks and Lorenz

shaper cutters and shaving cutters.

SU America Inc.—Booth #112. SU America of Oak Park, MI, will exhibit two machines at Gear Expo, with its North American distribution partner, Meritage Inc. A new Samputensili robotic bevel gear deburr/chamfer center and the Samputensili S372G gear grinding machine will be the focus of SU America's booth.

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CIRCLE 345

According to David Goodfellow, SU America's president, Meritage distribution representatives will be on hand with the Samputensili and Hurth-Modul specialists to give demonstrations, review applications, answer questions and present the products and services available through SU America.

Several gear cutting tool displays, including a new bevel cutter design, and DVD wide-screen presentations also will be exhibited. SMW Systems, a Meritage unit, will display a working model of its quick-change chuck for gear cutting machines.

SU has partnered with Meritage distribution, sales and service. Meritage has 30 office and showroom centers in North America, with approximately 200 certified machine tool sales engineers who represent additional and complementary lines of metalworking equipment.

Toolink Engineering—Booth #101. Toolink Engineering is the exclusive North American distributor of könig-dorn hydraulic arbors, chucks and other specialized workholding devices manufactured by König mtm in Wertheim, Germany. For more than 30 years, König mtm has manufactured customized tooling to meet customer specifications. Whether the application is turning, milling, grinding, balancing, drilling, measuring or inspection, König mtm can fabricate tooling that will hold the workpiece securely and accurately.

Visitors to the Toolink booth can inspect samples of the company's tooling, view a short movie showing the company's manufacturing facility in Germany, and discuss the tooling requirements of their companies.

Ty Miles Inc.—Booth #601. Ty Miles Inc. manufactures high speed broaching systems that can be integrated into an automated manufacturing cell or used as stand-alone machines. Miles broaching systems—vertical, horizontal and table-up—range from 2-ton to 30-ton force and from 12" to 72" stroke. The table-up models require no pits or plat-

forms, and part loading/unloading is done at operator waist height. Standard or interchangeable broach tooling includes fixtures, holders and broach cutting tools. Other services offered are broach sharpening and reconditioning, internal and external production broaching, and ballizing systems.

United Tool Supply—Booth #106. United Tool Supply manufactures the Unite-a-Matic, which the company refers to as "the gear industry's most accurate pitch diameter inspection gage." United Tool Supply has been in business for 30 years, with more than 6,000 units in the field. The company offers a variety of pitch diameter gages capable of measuring inside diameter, spline and shaft applications. The latest model, equipped with hydraulically controlled gear contact during measurement, will be on display. United Tool Supply offers gages in 0-3", 0-6", 0-9" and larger sizes.

Viking Forge Corp.—Booth #530. Viking Forge's precision forging technology can produce flashless and near-net forgings that the company says will eliminate fixturing problems and save machining time and expense. Ⓞ

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CIRCLE 136