

Gear Expo 2009

Product Preview

Lindsey Snyder, Assistant Editor



GEAR EXPO 2009 & FALL TECHNICAL CONFERENCE
INDIANA CONVENTION CENTER
INDIANAPOLIS, IN
EXPO: TUESDAY-THURSDAY, SEPT. 15-17, 10 A.M.-6 P.M.
FTM: SUNDAY-TUESDAY, SEPT. 13-15, 10 A.M.-6 P.M.

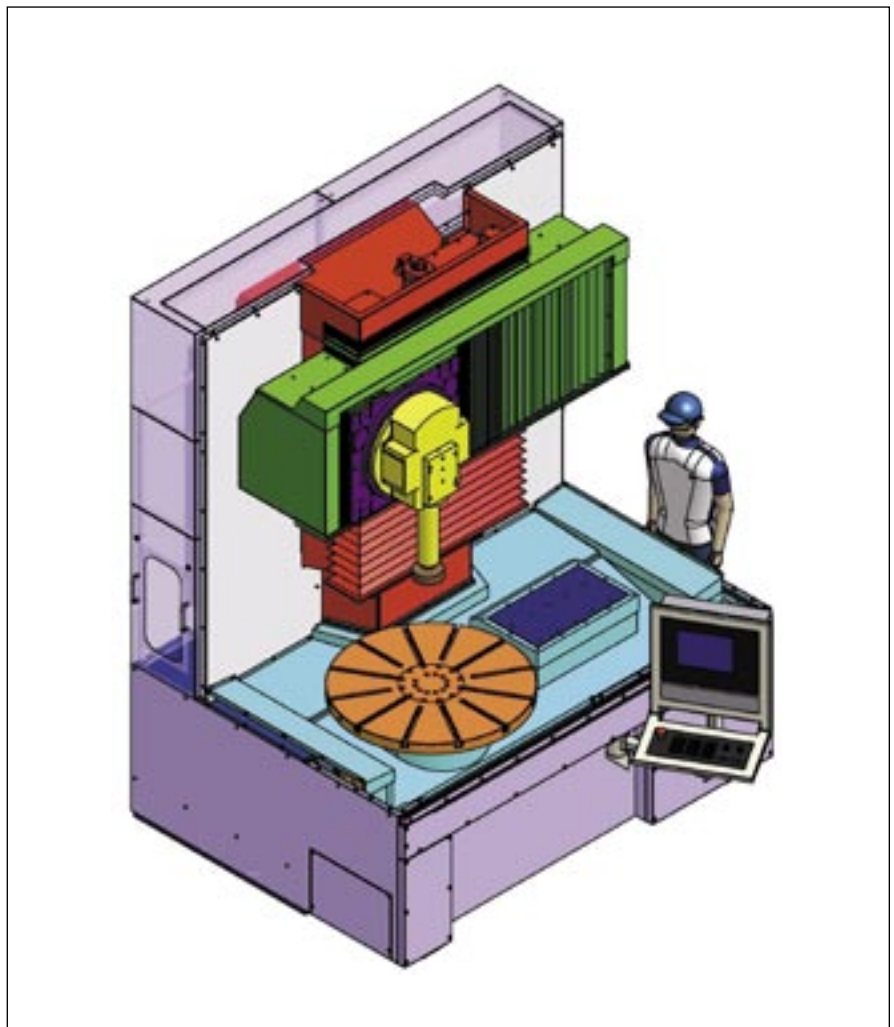
Sure, Gear Expo undoubtedly has a ton to offer attendees in education, research and networking alone, but what really draws the crowd in are the physical products and technology on display from exhibitors. Otherwise it would just be another technical meeting or social reception—and AGMA could save a few bucks on space to say the least.

There may be familiar faces in the crowd, but it's what everyone's looking at that is new and different. An expanse of shiny new tools and machinery with different features, gadgets, and designs compete to resonate with visitors long after the hall closes. Exhibitors have two years to make the most from product and technology advances, so visitors are more than simply reminded of the last Gear Expo. Here's a peek at what some exhibitors are hoping to wow with on the show floor:

Bourn & Koch Booth 741

In an effort to replace the legacy lines of Motch turning centers, Springfield vertical grinders, Blanchard vertical rotary surface grinders, Bullard

continued



Bourn & Koch will introduce its VBG platform of machine with the 1000VBG, a vertical OD/ID grinding machines that comes equipped with gear inspection software to ensure ODs and IDs are ground concentric to the pitchline of a gear.

turning products and Fellows mid-range mechanical stroking gear shapers, Bourn & Koch is introducing the "composite platform" machine, which is identified as a basic, low-cost common building block with innovative, no or low maintenance technologies and integral and linear motors with high preci-

sion feedback. The B&K 1000VBG CNC Vertical OD/ID grinding machine is the first of these machines to be released, debuting at Gear Expo.

One key feature of the 1000VBG is gear inspection software that includes a circular geometry inspection system for inspecting roundness and runout. This

allows manufacturers to grind hardened gear IDs and ODs concentric to the pitchline of a finished gear. The machine is being manufactured to U.S. standards and European CE standards, and it is available in one meter, 1.5 meter and 2.5 meter versions.

In most cases, the composite platform design has 40 percent fewer parts than the old legacy designs, so purchase cost is significantly lower for customers. Bourn & Koch can stock the platform base units, columns and cross slides, which were previously the most expensive components with the longest leads on the older designs. Stocking the base units reduces the build cycle time by at least six weeks.

The composite platform machine can be constructed in four configurations: the vertical grinding machine with hard finish turning capabilities, a vertical turning center, vertical gear shaper, a rotary surface grinder or any combination of these.

For more information:

Star SU LLC
5200 Prairie Stone Parkway
Suite 100
Hoffman Estates, IL 60192
Phone: (847) 649-1470
Fax: (847) 649-0112
sales@star-su.com
www.star-su.com

Gleason Booth 715

In Gleason's approach to be the "total gear solutions provider," it is introducing various machines, tooling and the Gleason Global Services support system at Gear Expo, all for aiding various processes for bevel and cylindrical gear production and inspection from start to finish.

As part of Gleason's new genera-



**Your Only
Point of
Contact**

**for
Gear
Bronzes**

Concast® provides superior continuous-cast bar stock to ensure your finished product will deliver the utmost performance

Our expansive inventory supports implementing short run demands while facilitating ample supply for long run requests. Critical deadlines are successfully managed through our widespread distributor network and national warehouse.

- Readily available bar stock in solids and tubes
- Vast inventory of 903, 907, 863 Manganese Bronzes and 954, 955 & 959 Aluminum Bronzes
- Broad range of sizes from 1/2" to 16" diameter and custom lengths

Make Concast your only point of contact, call for more information about our capabilities.

Concast®
METAL PRODUCTS CO.

800 626 7071
724 538 3956 fax
sales@concast.com
www.concast.com

© 2008 Concast Metal Products Co.



Gleason's GP 300 ES gear shaper will be on display at Gear Expo.

tion of GP series machines, the GP 300 ES CNC Gear Shaping Machine exhibits high flexibility and is designed to improve cycle times for shaping spur and helical gears, internal and external, up to 300 mm in diameter. Instead of a mechanical helical guide, the GP 300 ES uses an electronic helical guide that features Siemens 840D CNC and proprietary software to apply the extra rotational motion on the cutter spindle required to produce any helix angle.

The 350GMM Analytical Gear Tester is representing the GMM Series inspection systems from Gleason at the show. Models are available for gears up to three meters in diameter, and standard features include a Renishaw 3-D probe head for total inspection of all gears and gear cutting tools. Analytical gear testers from Gleason all run on Gleason's *GAMA* software, which is based on Windows VB.NET. The software uses an intuitive user interface with input screens designed to be simple for programming workpiece and cutting tool data.

Many gear cutting tools are part of Gleason's booth, including the latest introduction, the Opti-Cut index inserts for gashing, hobbing and shaping large cylindrical gears. In compari-

son to traditional high speed steel cutters, Gleason says that Opti-Cut lowers cost-per-part by up to 50 percent. The tooling family is diverse with an array of cutter body sizes, inserts and geometries for meeting a variety of roughing and finishing, internal and external gear production needs.

For more information:

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

Gear Solutions From Drake

All Drake Gear Machines are shipped with the latest CNC controls, Gear Smart™ programming, field support and guaranteed performance.

GS-G² Gear Grinders

- Grind 25mm to 350mm tip diameter
- CNC contour diamond roll dressing
- CNC direct drive torque motor work index
- DIN 2-3 quality capable
- Easy software

GS-H Gear Hobbers

- Up to 1800mm dia.
- Auto load & probe
- Power helix

GS-RM Rack Mills

- Auto load in a cell
- No pits or platforms
- 10-minute cutter change
- Compare to broaching

GS-TE-LM Worm Grinders

- Part lengths to 2m
- Diameters to 650mm
- Auto load available
- ZK, ZI, ZN, ZA to DIN 1-2 quality capable

CS-R Control Renewal

- New CNC for "Brain Dead" good iron
- Grinders, hobbers, mills
- Work done on your floor
- Only 2-weeks downtime

Drake
MANUFACTURING

Drake Manufacturing
Better Gears Faster™
Tel: 330-847-7291
Fax: 330-847-6323
www.drakemfg.com
info@drakemfg.com

See us at Gear Expo
September 15-17, 2009
Booth # 309
Indianapolis
Convention Center,
Indiana

Sigma Pool Booth 727

Liebherr and Klingelnberg are both exhibiting machines at the Sigma Pool booth. Liebherr's LC 180 CNC Gear Hobbing Machine features direct-drive cutter and table axes, a Siemens 840D

control and non-contact meshing system. Numerous combinations of drive speed and torque provide the capabilities to accommodate new cutting tool technologies, such as chamfer cutting. Chip augers and stainless steel liners are designed into the machine base and work area for efficient chip removal.

Klingelnberg's P26 Gear Measuring Center inspects parallel axis gears, bevel gears, cylindrical gears with external and internal teeth, worms and worm gears, rotors, camshafts and crankshafts. Features include temperature compensation and roughness measurement of the tooth flank. The P series gear measuring centers are available from 260 to 3,500 mm and are appropriate for use on workpieces up to 260 mm OD. The P26 uses the Gear Inspection Assistant (GINA) operator interface, and measuring programs are available for hobs, shapers and shaving cutters.

The P26 is compact with a small footprint. Linear motor drives are a new feature for the measuring axes. A workpiece temperature sensor minimizes the time taken for parts to cool down. A surface roughness probe for parallel axis and bevel gears is an optional feature that attaches to the standard probe head.

For more information:

Liebherr Gear Technology, Inc.
1465 Woodland Drive
Saline, MI 48176
Phone: (734) 429-7225
Fax: (734) 429-2294
info.lgt@liebherr.com
www.liebherr-us.com



Sigma Pool's booth will feature the Klingelnberg P26 measuring center.

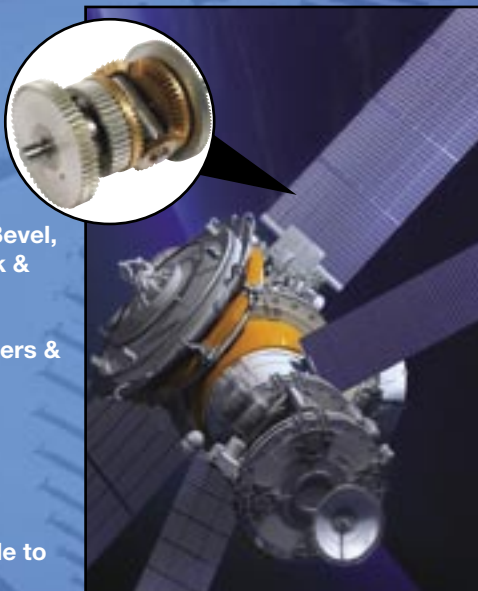
Standard Or Custom Parts From A Single Source

68,000 Drive and Automation Components
Ready-to-Deliver

GEARS & GEARBOX ASSEMBLIES

- Precision & Commercial Quality
- AGMA & DIN Specs.
- Fine to Medium Pitch
- Prototype & Production quantities available.
- Gear Types: Spur, Miter, Bevel, Worm & Worm Gear, Rack & Pinion, Helical & Internal.
- Gearheads, Speed Reducers & Differentials
- Inch & Metric
- RoHS Compliant
- In stock, modified or made to your specifications.

3D CAD | eSTORE
available at www.sdp-si.com



Our experienced team of
engineering and manufacturing
experts are ready to work for you.

SDP/SI
Stock Drive Products/Sterling Instrument

ISO 9001:2000 Registered
Sterling Instrument AS9100B Registered



FREE
Inch & Metric
Catalogs

Tel. (516) 328-3300 | Fax (516) 326-8827 | www.sdp-si.com

KISSsoft Booth 615

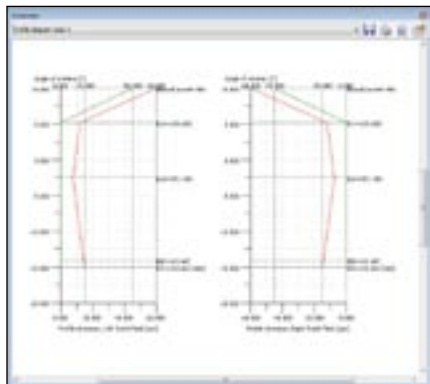
KISSsoft 08/2009 features improvements in the shaft and gear modules, as well as other areas.

A toolbar was added to speed up the shaft editor function. Copy and paste capabilities are useful for repeated parts. A list gives an overview of geometry, bearings and force elements. Outer and inner contour of the shaft can be exported or imported to the DXF format. Users can automatically determine documentation points in the shaft editor at a random position for displaying the most important results for deflection line, reaction forces, stress and more in the respective cross section.

Profile and flank line diagrams, called K-charts, are available in the cylindrical and crossed axis helical gear modules. The diagrams are created according to ANSI/AGMA 2000-A88, and they are the basis for quality assurance in gear manufacturing.

Local wear in KISSsoft 08/2009 is calculated from real contact situation and graphically presented combined with worn out flank. The material database was expanded to include 17 new material definitions of the company SABIC, and they include measured

continued



The latest software release from KISSsoft includes the ability to produce K-charts.

ORDER'S UP.

As simple as ordering lunch? Well, not quite, but close.

- Arrow Gear offers the broadest range of STOCK Spiral Bevel Gears.
- Up to 16 inch dia., lapped or ground, up to Q13 Rated, Immediate Delivery.
- Visit ARROWGEAR.COM for your stock gear solutions.

Now that's simple.

© 2009 Arrow Gear Company

ARROW GEAR COMPANY
www.arrowgear.com 630.969.7640

KHGEARS
Makes it Higher!

KHGEARS
www.khgears.com
CHANGE WE NEED

www.khgears.com
marketing@khgears.com
Tel: +86 756 5586 831

519170 South East of Shiqun Crossing,
Qianwu Town, Doumen District, Zhuhai City,
Guangdong, P.R.C.

wear parameters for dry-running conditions.

The measuring device position used to calculate measurement over balls or rolls is now determined by applying the ball or roll to the actual tooth form. This is an advantage because it can be applied to an arbitrary tooth form.

For more information:

KISSsoft, U.S.A., LLC
3719 North Spring Grove Road
Johnsburg, IL 60051
Phone: (815) 363-8823
Fax: (815) 363-8832
dan.kondritz@kisssoft.com
www.kisssoft.ag

Hydra-Lock Booth 617

The full line of hydraulic workholding solutions from Hydra-Lock is on display, featuring part holding solutions for cutting/machining, measurement/inspection/metrology, balance and assembly.

Special emphasis is being paid to the Conform-A Chuck and Conform-A Arbor products. They use a plastic material known as Hydra-Fibre, which allows the chuck or arbor to expand, up to 0.125 inches depending on size, and adjusts to hold thin-walled and out-of-round components without rounding. The Conform-A products can locate on a rough machined surface and establish an average center line. The chuck can support the weak component area and endure tool pressure by locating on the entire surface. Accuracies are typically within ± 0.001 inches.

For more information:

Hydra-Lock Corporation
25000 Joy Boulevard
Mount Clemens, MI 48043
Phone: (800) 634-6973
Fax: (586) 783-5007
weholdit@hydra-lock.com
www.hydra-lock.com

Why Grind and Groan? Just...

MegaHone.



Customized Solutions

Fässler Corporation
131 W. Layton Avenue, Suite 308, Milwaukee, WI 53207
Phone +1 (414) 769-0072 * Fax +1 (414) 769-8610 * Email usa@faessler-ag.ch
www.faessler-ag.ch



Hydra-Lock's Conform-A arbor.

Mahr Federal
Booth 515

The GMX 400 class I universal gear tester is for universal and specialized gear manufacturing processes featuring a four-axis power PC controller with automatic tailstock and 3-D scanning probe head. It analyzes a range of gear and gear tool applications with ODs up to 400 mm (15.75 inches).

The GMX 400 can be used as a stand-alone on the shop floor or in gear lab applications. The system is capable of correcting alignment errors using Wobble angle compensation software, single cycle measurement and multiple gear shaft analysis.

Mahr introduced a similar measurement system a few years ago, but this version has new features. "It has a new controller and is therefore faster than it was," says Pat Nugent, Mahr Federal vice president of metrology systems. "The biggest change is in the development of software since that time. That was why we were waiting to bring it back to the U.S. market. We felt that

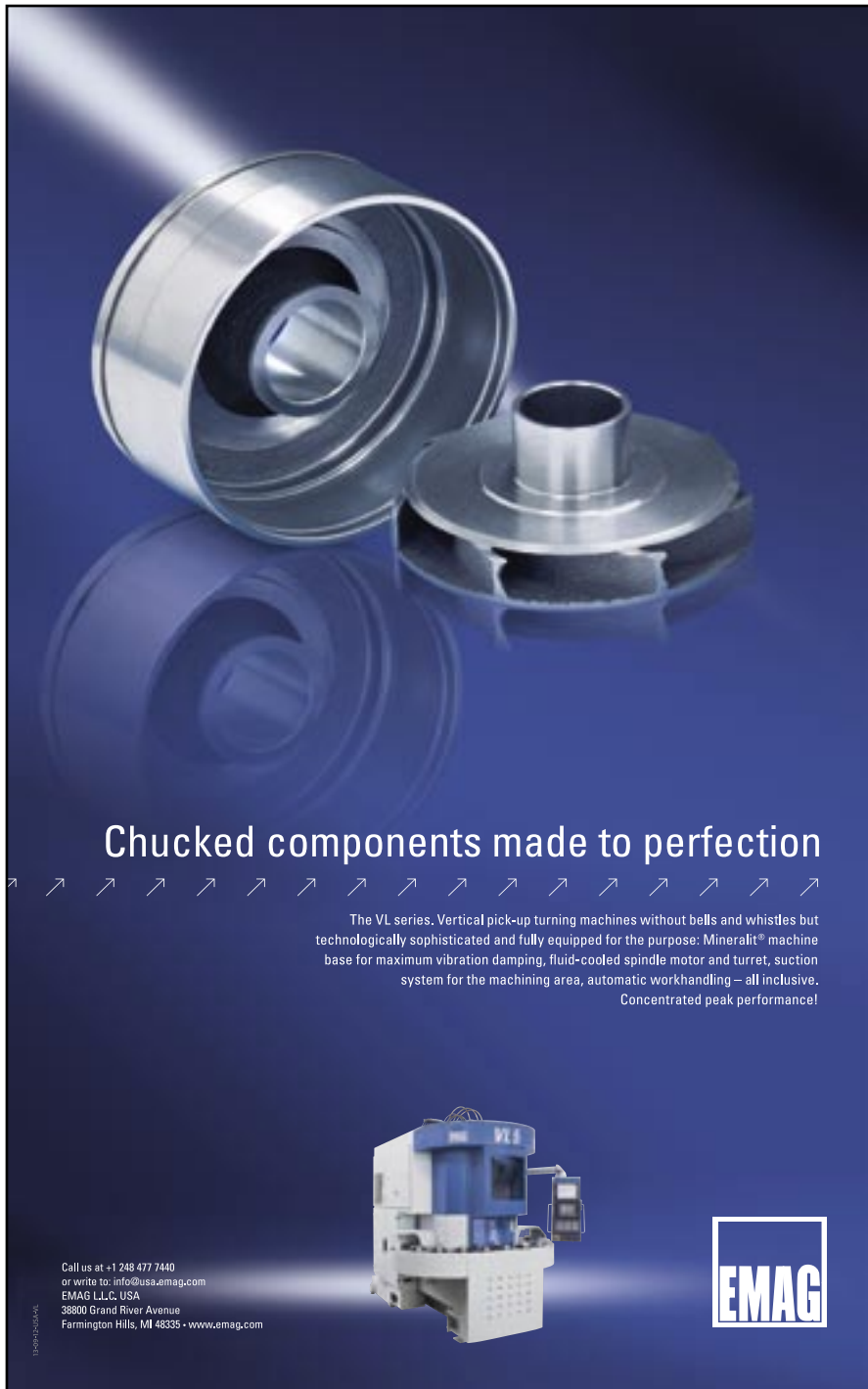


The GMX 400 analyzes gears and gear tools and will be on display in the Mahr Federal Booth at Gear Expo.

we needed substantially more software option packages and features within those packages. We believe that we now have those.”

For more information:

Mahr Federal Inc.
1144 Eddy Street
Providence, RI 02905
Phone: (401) 784-3275
Fax: (401) 784-3246
information@mahr.com
www.mahr.com



Kapp Group Booth 923

The Kapp KX 500 Flex Gear Center is being demonstrated by the Kapp Group. It grinds and measures external spur and helical gears of modules up to

10 mm (0.4 in) with a maximum OD of 500 mm (19.7 in) and gear width up to 520 mm (20.5 in).

The KX 500 Flex features a multi-station indexing table and optional twin-spindle dresser for dressing speed and flexibility. Automation options are

determined by customer requirements. The machine is designed for application-specific solutions such as continuous generating grinding with dressable or CBN plated worms, discontinuous profile grinding with dressable or CBN wheels or some combination of both these methods.

The Kapp booth is emphasizing education at Gear Expo with direct video and audio links to the facility in Boulder, CO where wet grinding of various workpiece types will be demonstrated. Hourly learning sessions are taking place on profile grinding, generating grinding and workholding setup. Kapp and Niles applications engineers are at the booth for answering specific questions pertaining to the learning sessions.

For more information:

Kapp Technologies
2870 Wilderness Place
Boulder, CO 80301
Phone: (303) 447-1130
Fax: (303) 447-1131
info@kapp-niles.com
www.kapp-niles.com



Work Holding Confidence

From large locomotive gears, to 6-F and 6-RT automobile transmissions, to turbine blades and today's most advanced military jet fighters, even the space shuttle arm, we have solutions for you. We are Hydra-Lock, and in addition to confidence, you will also see reliability and quality for all of your I.D. and O.D. applications.



From machining to measurement, inspection and metrology, to balance and assembly, Hydra-Lock designs, engineers and manufactures industry's best hydraulic work holding.

HYDRA-LOCK
CORPORATION

Originators and developers of Hydraulic Chucking
www.hydralock.com

Vehicle Industries | Gear Industries | Aerospace & Defense | Medical | General Engineering



The Kapp KX 500 gear grinder.

Emuge Corp. Booth 700

The Emuge System SG expanding-bush design workholding solution is used for hobbing, shaping and shaving for gear production as well as milling and inspection.

The solution is designed based on a series of short tapers that expand or contract in contact with axial force. The System SG can be designed for ID or OD clamping. It features a large surface area contact with the workpiece, which is capable of holding almost the whole diameter of the clamping area.

The System SG gives the workpiece a slight axial movement towards an end stop for stiff operation, and it handles higher transferable torque values typical of modern machining operations.

For more information:

Emuge Corp.
1800 Century Drive
West Boylston, MA 01583

Phone: (800) 323-3013
Fax: (800) 393-1302
info@emuge.com
www.emuge.com



System SG workholding from Emuge.

RESIDUAL STRESS MEASUREMENT

Take advantage of **PROTO** technology—the fastest residual stress measurement systems that consistently out-perform the competition. Residual stress affects crack initiation, crack propagation, stress corrosion cracking, distortion and fatigue life. **PROTO** has the accuracy, speed and technology to keep your product perfect right from the start.



EXCELLENCE IN THE FIELD AND IN THE LAB

PROTO'S comprehensive line of laboratory and portable residual stress measurement systems ensure the best system is available to successfully perform RS measurements on your components.



RESIDUAL STRESS CHARACTERIZATION AT FAILURE CRITICAL LOCATIONS... WHERE IT COUNTS

Improve quality, enhance fatigue life, and ensure that surface enhancements are being applied correctly. Even complex geometries such as those found on gears can be easily measured using our systems. Ensure that your components perform to their maximum potential with residual stress measurement.



(800) 965.8378 (519) 737.6330 protoxrd.com xrdlab@protoxrd.com

