Heller Machine Tools

MARKS 30 YEARS IN THE UNITED STATES

In 2012, Heller Machine Tools marked its 30th year of operations in the United States as a subsidiary of Gebr. Heller Maschinenfabrik, Nurtingen, Baden-Wurtemberg, Germany. Heller worldwide is a 600-milion-euro company with approximately 3,000 employees. The company specializes in designing and building high-precision flexible production systems for the powertrain operations of automotive and heavy-diesel industries, primarily. In 2012 the U.S. company expects to double sales over 2011, which was a record for the operation, and is about a third of the global total for Heller.

Heller has increased the U.S. content of the systems it produces, partly due to the cost advantages of producing the systems in the United State as compared to Europe. The company has helped to increase the amount of manufacturing technology produced and exported from Michigan, some systems shipping to China for major automotive companies and suppliers. More than 60 percent of the content of the systems produced at Heller Troy is sourced in Michigan.

The company is a full-line manufacturer in Michigan, designing, building, and servicing its machines from its 100,000-sq-ft facility in Troy. There are 130 employees at Troy working alongside 60 contractors. The company estimates it supports several thousand additional employees in 50 or more supplier companies in Michigan.

A specialty of Heller is the machining of compact graphite

iron, a very hard material cast into large diesel engine blocks. Machining CGI requires a very stable, heavy-duty machine tool, and Heller CGI machining centers have been placed in nearly all heavy-duty diesel engine and others.

Heller began its operations in the United States in 1982 in Elk Grove Village, Illinois, primarily as an importer and servicer of its crankshaft milling machines it was then selling to Ford, Deere, Caterpillar and Chevy Bay City plants. Its first generation of horizontal machining center, the BEA, was developed and first sold in 1986. Since then, the company has become the largest European manufacturer of horizontal machining centers. Originally, the company designed and produced its own CNC control for the machining centers. Now, most controls are Siemens or Fanuc, depending on customer preference.

In 1995, Heller management in Germany decided to move to the Detroit area as it was increasing its role as a supplier to the automotive industry. The thinking then was that "the auto industry will always need machine tools." So it built a plant in Troy, expanding it three times since 1996 to create more assembly space, engineering offices and service capability for repairs, machine rebuilds, and spare parts. The company has, in the last 30 years, shipped over 1,500 machining centers from its U.S. operations.

In 2000, Heller introduced the MC and MCH lines of machining centers, designed for production of heavy precision components. Heller also began producing flexible transfer lines at Troy, the first systems going to American Axle in Buffalo and Three Rivers, Michigan. In 2006, the company earned its first large flexible machining system order, comprised of 64 machining centers and ancillary equipment including automation. The system, for Detroit Diesel in Redford, Michigan, is producing that company's new generation family of three heavy diesel engines.

Since 2006, Heller has taken on multiple turnkey flexible system projects, which has accounted for its rapid sales growth in the United States to $200 million. The company is staffed today for all sales, proposal engineering, mechanical and electrical engineering, service and assembly functions—full service from Heller in Troy to the transportation industry.

Important to Heller in Germany as well as in Troy, apprenticeships in manufacturing are the source of future skilled employees. Currently, eight persons are engaged in manufacturing apprenticeships, from tooling to project management. The company in Troy also sponsors engineering internships with three candidates in various engineering disciplines. The company finds it is best to train and develop skilled workers from within rather than hiring from a competitor. For more information, visit *www.heller-us.com*.

Micro Precision

FOCUSES ON NADCAP ACCREDITATION

When it comes to industrial quality procedures, aerospace is one of the most demanding. Every component must be checked, tested and logged to an incredible level of detail and, just as importantly, all processes, procedures and standards documented to ensure traceability to a depth many engineers would find baffling. As a result of these quality demands, the vast majority of precision aerospace components are made in-house. Those that aren't, and there aren't many, are manufactured by companies prepared to have their products, processes and procedures regularly run through with a fine-tooth comb.

One of the key quality standards for the aerospace industry is Nadcap, managed by PRI, a non-profit organization set up to address the development of performance standards and the administration of quality assurance, accreditation and certification programs. Nadcap is described by PRI as "an international, independent manufacturing process and product assessment and certification service for the purpose of adding value, reducing total cost and facilitating relationships between subscribers and suppliers."

In short, it manages a set of common standards set by various bodies in the aerospace industry and then ensures that those certified comply fully with their requirements. Going far and beyond most company's in-house quality procedures, Nadcap adds another level of detail to what is already an exacting science. Nadcap accreditation is not impossible; it just takes a certain mindset and work ethic that can see the positives in terms of reputation, self-improvement, orders and, of course, the bottom line.

Hemel-Hempstead-based Micro Precision is one company that has taken the plunge and has successfully operated two Nadcap-approved processes for the last few years at its 20,000-square-foot production and testing facility. The company has held Nadcap accreditation for chemical processing (nital etch inspection) since 2004 and NDT (Non Destructive Testing?) (magnetic particle and liquid penetrant testing) since 2006.

Micro Precision supplies a number of leading aerospace OEMs and Tier One suppliers with a selection of components, including motor cores for aerospace pumps and generators and geared components for multiple applications throughout the airframe. Using its Nadcap-accredited facilities, it is able deliver its customers with a level of confidence that they would normally only see by manufacturing these components in-house.

So, why did Micro Precision seek Nadcap accreditation? Peter Skelton, general manager explains: "We actually handle a fairly significant amount of aerospace work and the post- manufacturing testing of these components is vital. We used to have to (subcontract) the testing out, which lead to inevitable lead time issues and a heavy reliance on third parties. Therefore the decision was made to get our own accreditation as we realized that there would not only be time benefits, but it would also allow us to manage costs more effectively.

"It is an onerous task," he continues, "but if I am honest, it is not that far removed from the quality procedures we already had in place. We have never been a 'get it out of the door quick' company; we believe in doing a job right the first time and to a quality level that wins us repeat orders. Nadcap simply put an official stamp on what we were already doing."

The Nadcap qualification process involves multiple steps, the first of which is an eAudit, where companies complete a preliminary questionnaire. Once this has been completed and approved, the supplier then has to send a hard copy of its quality control manual and procedures to the auditor 30 days prior to the audit visit. The audit then takes place and any subsequent remedial action is performed. Once this is satisfactory and any identified non-conformance reports (NCRs) have been closed the accreditation status is determined by the Nadcap management council and a certificate is issued.

It may sound straightforward, but the level of detail being assessed by the auditor is daunting. "To us it is also an ongoing process," Skelton elaborates. "The initial audit is just the start of it. We are then subject to regular re-approval audits, the frequency of which is determined by our test scores. If you get a good score, the frequency of audits gets longer. We are currently in the second 18-month cycle and if our scores are satisfactory, we will move on to a 24 month cycle, which is a long as it gets. So, not only are we Nadcap-accredited, we are performing to such a level that they are confident enough to audit us every two years, rather than annually."

Is it worth it? "I think that the Nadcap certificate certainly makes us more attractive to other aerospace customers," Skelton explains, "but its benefits are not restricted to this industry

alone. Nadcap accreditation speaks volumes, it means that you are doing something to an exacting standard for one of the most demanding industries in the world, and this is certainly an appealing facet for other industries. We also do NDT and chemical processing for Formula One teams; they don't have their own industry standards, primarily due to their highly competitive business model, but Nadcap certainly paints a positive message for them.

"We are certainly proud of how far we have got in the timescale that we have been doing the processing and to get to the 24-month audit window is no mean feat. A new set of checklists for conventional machining is also being prepared by Nadcap, but has yet to be mandated by the major stakeholders as yet, but you can be sure that Micro Precision is geared up to address this as and when it arrives."

Terry Grubb, managing director, says: "Micro Precision has been in business for over 30 years, quietly supplying subcontract and make-complete engineering work to some of the highest profile commercial engineering operations in the world - from the latest generation of aircraft to Formula 1 cars. We have grown organically by providing an absolutely top-class service, and this has now allowed us to make this latest investment in new machinery and factory expansion in order to satisfy demand.

"As engineering production becomes ever more streamlined and tolerances and materials become ever more exacting, our value to our customers is on the increase, mainly because of our quality and our flexibility. If a customer requires just one part, manufactured to the same tolerances and put through the same test regime as a larger batch would, then we can do it. Low-to-medium volume production is our current forte, and having continually invested in the very latest high-accuracy machines, the best people and the most exacting approvals such as Nadcap, we believe we are in the right position to provide the type of precision engineering today's growth sectors demand."

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Perly L. Hahn
(1948-2012)

Perly L. Hahn passed away on October 16, 2012. He is survived by his wife Gail and children Nathan and Melanie (Hahn) Dawkins. Also surviving are his mother, Doris Henderson, and three siblings (names unavailable). Hahn worked many years in the gear industry as a service engineer, dating back to the 1970s with Barber-Colman Company and later with the Pfauter Corporation. He subsequently moved on to Liebherr Gear Technology, Inc. (1986—2011), where he worked for 25 years until his retirement. However, Hahn continued working in the gear industry—with ITC—until his death. As a result of his long-term employment at Liebherr, along with his days at Barber-Colman and Pfauter, Hahn befriended many fellow workers who now mourn his passing. Everyone who knew Hahn testify to his wit and sense of humor. He will be sadly missed.

Klingelnberg
AWARDED DOCUMENTATION PRIZE

The Klingelnberg Group has received awards for the second year in succession for the quality of its operating instructions – this year with no fewer than four commendations. The company received prizes for all four of its submitted operating instructions.

"Due to the technical complexity of our machines, we naturally provide the users with very complex operating instructions, and precisely for this reason it is important to us that these are comprehensibly structured, formulated and illustrated in accordance with needs of our target groups," explains Pascal Kesselmark, head of technical documentation of the Klingelnberg Group.

Tekom (Gesellschaft für Technische Kommunikation e.V.) had previously awarded the company two prizes in 2011. The operating instructions for four machines were singled out for prizes this year: the Oerlikon spiral bevel gear cutting machine C 50, the Oerlikon tool grinding cell for bar blades B 27, the Oerlikon spiral bevel gear lapping machine L 60 and the Klingelnberg measuring center P 65.

Dr. Hartmuth Müller, CTO of the Klingelnberg Group, is absolutely delighted with the awards: "We regard them as a validation of our meticulous work in this area. For us it is not only a matter of simple compliance with the Machinery Directive, but far more a question of our responsibility towards the users: we supply instructions that enable safe utilization of the technology. Only then do they guarantee an intuitive and smooth

machine operation in conjunction with innovative control concepts."

Since 2005, Tekom has been awarding its renowned documentation prize, an independent prize recognizing user and operating instructions for consumer and investment goods as well as online help for software products. The reviewers take into account an extensive list of criteria that, with an eye on user-friendliness and operating safety, places special emphasis on: structure and text, illustrations, design/layout, safety instructions, navigation, scope, and a comparison between the documentation and the actual product.

Gleason and SMT

FORM STRATEGIC PARTNERSHIP

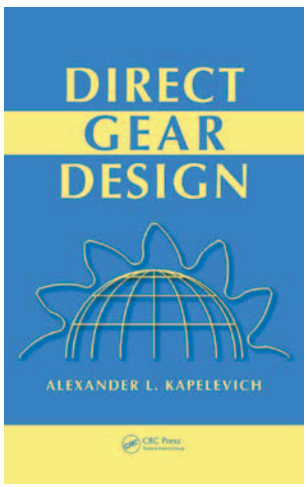
Gleason Corporation and Smart Manufacturing Technology (SMT) have formed a global strategic partnership to provide gear manufacturers worldwide a complete design to manufacturing system. Gleason and SMT will offer a system that seamlessly integrates SMT's premier System Design and Analysis Software (*MASTA*) with Gleason's software for Bevel Gear Design and Manufacturing (*CAGE*). Gear manufacturers will benefit from a fully integrated workflow when designing powertrains, gearboxes, transmissions and more. The first products from the cooperation will be available in the first half of 2013.

John J. Perrotti, president and chief executive officer of Gleason Corporation said, "We have great respect for SMT's capabilities and are excited about the integration of *MASTA* and *CAGE*, and providing designers and manufacturers of gears and power transmission drives with exciting new opportunities to enhance their processes and products. This is the first step in our partnership with SMT and we look forward to exploring other areas of mutual cooperation."

David Beedan, operations director of Smart Manufacturing Technology, adds, "Gleason Corporation has a distinguished history as the world leader in gear technology and we are delighted to be entering into this partnership to enhance the capabilities of both *CAGE* and *MASTA* to provide the user with a fully integrated design-to-manufacturing solution."

Kapelevich

TO RELEASE DIRECT GEAR DESIGN BOOK IN 2013



Direct Gear Design (Hardcover; 328 pp.; CRC Press) by Dr. Alex Kapelevich, will be available for online purchase—at both CRC Press ($129.95) and Amazon ($117.58) March 12, 2013. *Direct Gear Design* presents Kapelevich's copyrighted, alternative "direct gear design" approach and compares it to traditional methods. It covers all theoretical and practical matters of advanced gear geometry and outlines various optimization techniques for custom gear drive performance maximization. It explains asymmetric gear design and its benefits for various applications and provides real-world examples of direct gear design implementation. Direct Gear Design includes information on macrogeometry of gear, tolerancing and tolerance analysis, gear measurement, gear fabrication technologies and tooling and much more. Kapelevich is a consultant at AKGears, LLC and a regular contributor to *Gear Technology*. To order, visit *www.crcpress.com/product/isbn/9781439876183*; or *www.amazon.com/s/ref=nb_sb_noss?url=search-alias%3Daps&field-keywords=kapelevich*.

ANCA

WINS EXPORT AWARD

ANCA has won the Large Advanced Manufacturer category in Australia's Governor of Victoria Export Awards for the seventh time. According to the company, 2011 was an exceptional year of growth for ANCA, an Australian owned and based market leader in CNC tool and cutter grinder design and manufacturing. Pat Boland, co-founder and director of ANCA, made the announcement.

ANCA makes a significant investment to the Australian economy with 98 percent of its products exported globally with major markets in Germany, Japan, China and the United States. ANCA has defied the odds to achieve success on a global scale in a sector traditionally dominated by German and Swiss companies.

The award is one of the most prestigious business awards in Victoria rewarding the most successful and innovative exporters with the stamp of international success.

ANCA reported almost 20 percent export sales increase FY2011/2012, with significant success developing the Chinese, South American and Indian markets. As the EU continues to struggle, ANCA had its most successful trade show at the EMO exhibition with the highest sales ever achieved in its 38 years and has launched new machines and software into the market to remain at the forefront of machine tool technology.

Boland said "This award is an endorsement of the hard work and innovative thinking of the team at ANCA. We continue to push the boundaries, developing even more flexible and sophisticated products and identifying new untapped global markets to sell to. I am proud of the success of our business and our amazing talent that enable us to be the market-leading business we are today.

"Given that we are based in Australia but sell to the world, we have to be the best of the best. Our investment in research and development from the beginning has instilled a culture of excellence where we continue to seek out new and better innovations for our customers."

The business continues to invest heavily in research and development, create industry firsts and has built a specialist team of around 350 at its head office in Bayswater, Melbourne. Founded in 1974 the business is a market leading manufacturer of CNC tool and cutter grinders.