Custom Gear and Machine, Inc., of Roscoe, IL, recently purchased a Reishauer RZ400 gear grinder and, on one job, has seen the cycle time drop from 40 minutes to six minutes, according to Tim Rose, vice president of manufacturing, who runs the business with co-owners Dave Patterson and Mike Rasmann.

Rose explains, “We were looking to expand our gear grinding capability and the Reishauer RZ400 offered us many benefits, including 400 mm O.D., 10 mm root diameter, up to 999 teeth capability, helix angles to ±45 degrees and a z-axis of 300 mm, all features we could use on a daily basis. We also liked the easy access four-door configuration and serial interface, plus the machine’s auto wheel dresser and add-ons of materials and part handling devices.”

Custom Gear and Machine, Inc. was already running an older Reishauer grinder, but the company was seeking to improve its throughput and overall grinding department performance. The RZ400 has three features that helped achieve these goals. The machine has more than double the surface speed, going from 1,900 rpm to 4,000 rpm. It also has a seven-start grinding wheel versus a single-start variety. Also, the flushing and grinding integrity were significantly improved from the older machine with coolant pressure increasing from 30 psi to 300 psi.

Custom Gear and Machine, Inc., founded in 1994, is a full-service gear manufacturer, producing spur and helical gears to AGMA 8 thru 14 standards and up to 30" diameters typically, plus splined shafts to 54" in length. Its customers include builders of agricultural equipment, construction and off-road vehicles, machine tools, printing presses, food processing equipment, overhead cranes, materials handling devices, lift equipment, process equipment such as large water pumps and more.

Dennis Richmond, vice president for Reishauer, handles North American sales and service for the Swiss-based machine builder. Richmond says, “Our previous gear grinders at Custom only allowed them a 13" diameter, and they were looking to step up to a larger, 16" max
diameter. Plus, they were seeking other features we were able to offer. We use the Siemens numerical controls on our machines for a variety of reasons, especially the architecture’s ability to allow our engineers to customize the front ends. This simplifies the addition of new part programs and helps operators more easily navigate the programming and set-up. When the data input is completed for the current screen, for example, the operator is prompted to enter data for the next screen and so on, until the program is completed.”

Rose confirmed this point, adding that Custom Gear’s machinists are each responsible for the set-up, running and maintenance of their machine. “They take a real pride in making sure the jobs are done right and that the machine is always in great shape.”

One of the current machinists running the Reishauer RZ400, Daniel Warren, noted that he had not previously run a machine with a Sinumerik CNC from Siemens onboard, but explained, “I got great training from Reishauer and was up to speed very quickly. We were making parts within a few days after the installation, and I was completely comfortable with the easy operation of the CNC in less than a month.”

In describing the automatic wheel dressing sequence, Warren also noted how the CNC automatically adjusts the settings to compensate for the reduced wheel diameter after dressing, bringing the wheel to the correct point of contact with the subsequent workpieces every time.

Data such as gear configuration, fixture design and all tool settings are entered into the screens, including pitch, pressure angle, teeth and dressing steps. Once a new part pro-
gram is completed, the operator at Custom Gear can begin working through the Reishauer-designed man-machine-interface (MMI) set-up screens, which also function in the same manner. Reishauer further allows its customers to add their own HMI screens for features onto the Siemens CNC for data acquisition, training aids and even SPC protocol operations. This service enables the customers to have a common look across the screens on many machines in their shop. This is especially helpful in work cell set-ups where a single machinist is running multiple machines.

Reishauer also uses other aspects of the Siemens product and service package for added functionality, including Siemens motor and drive packages for building the control structure on its machines. According to Richmond, this allows a seamless integration between all drives and the numerical control unit (NCU). It also makes with its machines for customer work cell set-ups. Siemens uses the Profibus networking protocol, enabling Reishauer to link various control devices and other machine tools together, thus greatly reducing the field continued

For more information:
Kinefac Corporation
Kine-Spin/Barrett Division
156 Goddard Memorial Drive
Worcester, MA 01603
kvuona@kinefac.co
www.barrettinc.co

Kinefac
Centrifuge
CLEANS PARTS
WITH 350 GS FORCE

COMTOR SPLINE GAGES
Rugged, Reliable, Repeatable
...For 75 Years!

- Applicable to Spur and Helical Gears!
- Gage the Part at the Machine!

For all your gaging needs, Comtorgage it!

Analog Dial or Digital Readout

Internal or External Spline Measurement Made Easy!
Still using micrometers and pins method?
Comtor Spline Gages make pitch diameter measurement quick, easy and accurate!

Comtorgage Corporation
(Since 1928)
Ph: (401) 765-0900  Fax: (401) 765-2846
www.comtorgage.com
work integration and wiring time during installs. Reishauer uses Profibus to link the onboard Siemens Sinumerik 840D CNC to VFDs, other drives, electronic gearboxes and balancing systems for the grinding wheel on its machines.

Mike Rasmann, vice-president of operations at Custom Gear, concludes, “Our investment in the new Reishauer gear grinder has expanded our capability, allowed us to produce more parts for more existing customers and even opened some new business doors for us. With the added benefit of increased safety on the machine, it was a win-win situation for us, all around.”

Rose echoed this sentiment, adding, “It’s a great machine. When we have any need for assistance on the machine, including parts and especially application engineering, we know the answer is just a phone call away. Reishauer has been there for us on many occasions. This is a big reason we’ve done business with them for 15 years and will continue to do business with them in the future.”

For more information:
Custom Gear and Machine, Inc.
5466 East Rockton Road
Roscoe, IL 61073
Phone: (815) 389-6065
Fax: (815) 389-4548
sales@cgearinc.com
www.cgearinc.com

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

Siemens Energy and Automation
Motion Control Business
390 Kent Avenue
Elk Grove Village, IL 60007
Phone: (847) 640-1595
Fax: (847) 437-0784
Siemensmtbumarcom.sea@siemens.com
www.siemenscnc.com
FANUC Heavy Duty Robots
HANDLE LARGE CASTINGS

At the International Robots, Vision and Motion Control Show in Chicago, FANUC Robotics presented heavy-duty and compact assembly robotics that emphasized the company’s latest six-axis technology. Demonstrations included intelligent assembly and Certified Education Robot Training (CERT) units.

The M-200iA/1200 super heavy-duty robot is able to lift parts weighing up to 3,000 lbs.

This is the second in FANUC’s line of heavy-duty robots designed to handle truck, tractor, automotive frames and other large castings. The M-2000iA/1200 has a rigid arm design with a vertical lifting stroke of 6.2 m for transferring extremely heavy items.

The machine was equipped with iRVision 2-D error proofing and Dual Check Safety Speed and Position Check software, demonstrating its high capacity.
payload and wrist, by loading and unloading a machine tool bed in front of a 2-D camera. The M-2000iA/1200 operates with the company’s latest R-30iA controller with integrated intelligent functions such as vision and force sensing.

“This machine has the highest payload and the strongest wrist compared to all other electric six-axis robots available today,” says Ian Orr, product manager at FANUC. “It can support a 1,350 kg payload with a 0.6 m offset from the faceplate and full articulated motion at the wrist. One M-2000iA/1200 robot can handle a super heavy part, which previously required dual robots, conveyors, lifts and other fixed automation.”

FANUC also presented a six-axis, parallel-link robot designed for small part handling, high-speed picking and assembly applications. The M-1iA is a lightweight and compact robot that provides higher speeds and accuracy compared to traditional assembly robots, according to the company’s press release. The robot can be installed in a variety of orientations and has a three-axis wrist for flexibility.

“Assembly customers require higher speeds and accuracy to meet their production goals,” says Nishant Jhaveri, product manager at FANUC. “The M-1iA’s flexibility and speed far exceed the capabilities of other vertically-articulated or SCARA-type robots.”

During the exhibition, FANUC demonstrated a CERT mobile training unit with a LR Mate 200iC robot equipped with iRVision 2-D. The robot located blocks with holes, inserted pegs into the holes at 30, 60 and 90 degree angles and then removed the pegs from the block.

The CERT program, launched in 2008, certifies instructors at educational institutions to train their students to program FANUC robots, and is available to qualified high schools, community colleges and universities. It is now being used in schools across the country. “CERT has proven to be a very effective program for training students to be qualified for successful
careers in high-tech manufacturing,” says Kevin Ostby, vice president, customer resource center. “In just over a year there are literally hundreds of students across the country learning to use a FANUC industrial robot while getting practical knowledge of how math and science are applied in manufacturing.”

For more information:
FANUC Robotics America, Inc.
3900 W. Hamlin Rd.
Rochester Hills, MI 48309
Phone: (248) 377-7570
www.fanucrobotics.com

Ohio Broach and Machine Company introduces a line of CNC Shaper machines that machine multiple surfaces in seconds, and various parts can be fixtured for machining with repetitive cuts in one shaper cycle. The machine head uses CNC controls to oscillate a tool up and down at 600 cycles a minute while the machine axes feed work into the tool. This combination of tool and axes feed can produce a multitude of form on parts.

The CNC Shaper machines are customized individually for customer requirements. They are suited for machining small and medium sized parts with special intricate forms, shaping blind hole forms in addition to out-

continued

CNC Shapers

MACHINE MULTIPLE SURFACES QUICKLY
side shapes and forms against shoulders or other obstructing features. They can be used for gear manufacturing and in the medical, electrical and aerospace industries.

All axes of the CNC Shaper machines are servo-controlled, ball screw driven and controlled through the CNC interface. The main slide ways use a preloaded linear roller system for quick, accurate axis movement. Two models are available: the OB-VM16-2 and the OB-VM20-2. Both have a two-inch standard stroke as an available option.

“The new CNC Shaper machines offer manufacturers capabilities that are more efficient than traditional EDM machines, which are slower and more expensive,” says Jeffrey Frantz, sales manager for Ohio Broach and Machine Company. “One new shaper machine can now do the work of two or three standard cutting machines. This translates into less capital outlay, lower inventories, reduced lead and production time and less labor.”

For more information:
Ohio Broach and Machine Company
35264 Topps Industrial Parkway
Willoughby, OH 44094
Phone: (440) 946-1040
Fax: (440) 946-0725
jfrantz@ohiobroach.com
www.ohiobroach.com

D.C. Morrison
REDESIGNS KEYSEATER FOR RIGIDITY

The 3” Keyseater from D.C. Morrison has been redesigned with a back support bracket twice the length of the older models, so it demonstrates improved rigidity and allows for more accurate keyways in a variety of materials, even those that are typically difficult to cut.

A hydraulically-actuated overhead support is a new addi-
WE’VE EXPANDED WITH A NEW LOCATION.
OUR NEW GEAR GRINDING AND MANUFACTURING FACILITY HOUSES ONE OF THE LARGEST GRINDERS IN NORTH AMERICA.

The ZP 40 grinding machine features the ultimate in design construction with true hydrostatic guideways and rotary table. The work table is direct drive. Nodular cast iron is used for the machine beds, columns, and all sub-assembly housings, for stability. The machine accuracy is therefore assured for a long lifetime.

The ZP40 is designed to profile grind spur and helical external and internal gears using dressable corundum or sintered grinding wheels. An integrated measuring device further increases machine’s flexibility. The ZP machine can be set up to accommodate application-specific requirements for maximum flexibility, high precision and optimum productivity.

It is specifically designed to accommodate shaft pinions, mating bull gears and internal ring gears.

Extended capacity for gears and profiles is:
- Internal and external gear grinding up to 4m (160") OD x 1.5m (60") face.
- The ability to inspect lead, profile and spacing up to 4m (160")
The reliability of wind turbines depends highly on the accuracy of critical parts such as pinion cages and housings of planetary gears. Leading manufacturers around the world rely on Carl Zeiss MMZ CMMs with VAST Active Scanning and CALYPSO software to verify critical components and ensure part quality.

Effective wind energy starts with high part accuracy.

The reliability of wind turbines depends highly on the accuracy of critical parts such as pinion cages and housings of planetary gears. Leading manufacturers around the world rely on Carl Zeiss MMZ CMMs with VAST Active Scanning and CALYPSO software to verify critical components and ensure part quality.

www.zeiss.com/mmz

For more information:
D.C. Morrison
201 Johnson Street
Covington, KY 41011
Phone: (888) 246-6365
Fax: (859) 581-9642
dcmorrison@fuse.net
www.dcmorrison.com

Slater

DOUBLES BROACH HOLDER LINE

The Rotary Braoching Tool Holders line for CNC, screw and swiss lathe machines and milling machines from Slater Tools Inc. has been expanded to offer 38 broach holders. The tools are used to put hex and square shaped holes into metal parts such as for aerospace applications and orthopedic bone screws.

According to Peter Bagwell, engineer and marketing manager for Slater Tools, Slater broaches are often used to make gears with spline shapes. “The expand-
ed use of rotary broaching tool holders in new and used CNC machines has created the need for a larger variety of function and adaptability in these tool holders,” Bagwell says.

“Rotary Broaching tools can be used to make various gear forms with smaller diameters and shallow depths. Broaching can be done on a CNC machine, lathe or mill, and most often costs less than performing secondary operations,” Bagwell says. “The most popular gear forms are serrations, splines and involute forms.”

The Swiss type holders include new diameter sizes and some include longer shank lengths. They are suitable for applications where the form being broached is less than 0.050 inches in diameter.

For more information:
Slater Tools Inc.
44725 Trinity Drive
Clinton Township, MI 48038
Phone: (586) 465-5000
Fax: (586) 465-3030
direct@slatertools.com
www.slatertools.com

“Improving Gear Quality”

Preferred Choice - Complete Satisfaction

“...Have not found anything that has all of the attributes that the Next Dimension has...”
Stephen Fernung, Remy Inc.

“...PECo’s customer service has been extraordinary...”
Kevin Streck, Lubrizol

“...The ND 300 can check profiles on 64 to 120 DP gears, that really got my attention...”
Mitch Gerhardt, Gerhardt Gear