

# EMO

## grows globally

Over 2,000 companies exhibited at the recent EMO show. CTE reviews some of the show news and products exhibitors offered.



**EMO 2007, HELD SEPT. 17 TO 22** in Hannover, Germany, was an enormous trade show held in a small German city. With hotels fully booked, some attendees “commuted” from 50 to 100 miles away by high-speed train, with others staying in private houses. EMO stands for Exposition Mondiale de la Machine Outil.

Attendees all converged on the Hannover Fairgrounds, where the metal-working trade show attracted some 166,000 visitors from 80 nations. The biennial show had 2,118 exhibitors—up 5 percent over the 2005 show—from 42 countries. Occupied floor space was up 12 percent, reaching 1.94 million sq. ft. More than 37 percent of visitors came from outside Germany, with the largest contingents of overseas visitors from India and the U.S. According to the official exhibitor survey, this year’s EMO show generated an order volume of EUR 4 billion.

The following are news announcements and reviews of products presented at EMO 2007.



The Walter F4080 octagon cutter accepts inserts with eight cutting edges.

**WALTER AG**, Tübingen, Germany, announced that its three product brands—Walter, Titex and Prototyp—exhibited together for the first time at EMO under the slogan, “The Power of 3.” In January 2008, the three companies will

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merge in Germany. Walter AG's headquarters will remain in Tübingen, while the German sales company will be based in Frankfurt am Main.

"We have now united everything under a single umbrella," said Peter Witteczek, president of Walter. "With our range of indexable insert, solid-carbide, HSS and PCD tools, we offer a one-stop product range around the globe." This allows Walter to cover almost 80 percent of all machining applications, he said.

Walter introduced a range of products:

The Walter F4080 octagon cutter, with eight cutting edges per insert and an approach angle of 43°, is available with wide and medium tooth pitches. One insert size is suitable for cutter diameters from 40mm to 160mm.

The PVD aluminum-oxide coating (PVD-Tiger) is now available on Tiger.tec WSM30 ISO indexable inserts for turning applications.

The Titex X•treme Plus solid-carbide drill offers a patented double coating. The new internally cooled drill covers diameters from 3mm to 20mm and is available for drilling up to 5 diameters deep.

The Prototyp Protostar Ti 40 solid-carbide endmill is for roughing and finishing titanium. The diameter range is 12mm to 25mm. It has unequal flute spacing, axial internal coolant supply, polished flutes and a surface-treated shank. (800) 945-5554.

## MAG INDUSTRIAL AUTOMATION SYSTEMS

LLC, Sterling Heights, Mich., elaborated on its new corporate identity at a press conference. President Robert Wassmer discussed how the business has unified its group of companies under the name MAG Industrial Automation Systems, or MAG IAS. With 2006 sales of \$1.5 billion and 26 locations worldwide, MAG IAS is one of the world's largest metalworking industry suppliers. The company has five groups: MAG Advanced Technologies (which includes its machine tool companies, such as MAG Cincinnati), MAG Powertrain, MAG Special Machines, MAG Maintenance Technologies and Infimatic (controls, sensors and software).

One MAG division, Maintenance Technologies, offers services for MAG equipment. "We can provide not only the usual type of support but also the technology that enables a machine to be operated economically," said John Boyd, managing director of MAG Maintenance Technologies Europe. The package starts with the machine and extends to tools, CAD/CAM programs and operating materials, such as coolant. The service package includes a system for customers to return machines to MAG Maintenance Technologies when they acquire new ones. While this package is new to the European market, MAG is already using a similar approach in the U.S. (800) 934-0735 ext. 5.

## ALLIED MACHINE & ENGINEERING CORP.,

Dover, Ohio, introduced its GEN3SYS high-penetration drilling system to the European market, after its debut in North America. According to AMEC, the system provides up to 35 percent faster penetration rates than competitive

drilling products, enhanced chip control, increased hole quality and improved surface finish. The company's AM200 coating provides up to a 50 percent increase in tool life compared with competitors' premium coatings, according to AMEC. The company also exhibited its i-Form custom indexable drill/form tool systems. The new line includes complex forms that were previously available only as brazed or solid-carbide tools. (800) 321-5537.



Mori Seiki

Workers hand scrape ways for a Dixi machine tool.

**MORI SEIKI CO. LTD.**, Nagoya City, Japan, introduced products from several divisions, including Dixi machines, which was purchased by Mori Seiki this past January. Dixi exhibited the JIG 1200 jig boring machine. Dixi's JIG jig boring machines and DHP machining centers are available in 4- and 5-axis versions. According to DIN/ISO 230-2, the accuracy of these machines is equal to or less than  $3\mu\text{m}$  for DHP models and equal to or less than  $0.99\mu\text{m}$  for JIG models. Also, the Dixi factory in Le Locle, Switzerland, is being converted and expanded to manufacture Mori Seiki NMV5000 DCG series vertical machining centers for the European market. This is the first Mori Seiki production site outside Japan.

Also, Mori Seiki announced that it will soon introduce a larger capacity version of the NMV5000 DCG 5-axis machining center: the NMV8000 DCG. The 800mm-dia. table has a loading capacity of up to 1,000 kg and is suitable for machining large molds and other complex workpieces, such as turbine blades. (847) 593-5400.

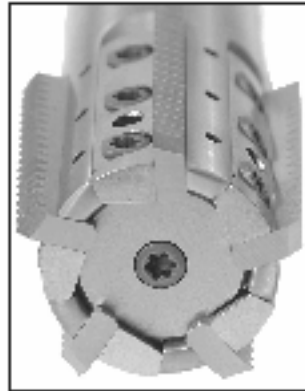
**SECO TOOLS AB**, Fagersta, Sweden, exhibited several tools, including the TP2500, the first grade with the company's DurAtomic coating in the ISO P15-30 applications range. The insert offers high wear resistance and is appropriate for turning steel, including near-net-shape machining and unmanned production, according to Seco. The TP2500 can also be applied in cutting stainless steel and cast iron (M20 and K30 machining operations). The MF5 geometry of the TP2500 inserts helps optimize chip control and improve coolant delivery to the tool/workpiece interface, according to the company. (800) 832-8326.

**HAINBUCH GMBH**, Marbach, Germany, introduced TOPlus IQ, an intelligent chuck that can determine and cor-



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Hainbuch

The Hainbuch TOPlus IQ clamping head with milled grooves enables flexible clamping.

rect holding power values. Its sensor technology can register differences in clamping force of 100 kg at a radial clamping force of 12 metric tons. Hainbuch cited high-speed machining and production of thinner-walled, more filigreed turned parts as reasons for using TOPlus IQ. While, in theory, radial clamping force can be calculated via the chucking mechanism of the clamping device, neither the condition of the clamping device nor the effects of the centrifugal force are included in the calculation, according to Hainbuch. These factors significantly influence and even falsify the calculated result. To solve this problem, Hainbuch designed to TOPlus IQ to take these factors into account, compare

the targeted and actual clamping force being used, and modify the force without unclamping the workpiece. (800) 281-5734.

**MASTERCUT TOOL CORP.**, Safety Harbor, Fla., exhibited its carbide tools. Among the products shown were fractional and metric endmills, routers, reamers, drills, countersinks and burs. According to Mastercut, it has the largest standard line of burs on the market. Besides burs for cutting metal, Mastercut showcased dental burs, some of which incorporate extremely intricate geometries. The 20-year-old company manufactures standard lines and specials, coats tools in-house (TiAlN, TiCN and TiN) and regrinds tools. *Information Services #326, (727) 726-5336.*

**TYROLIT KG**, Schwaz, Austria, exhibited its Genis line for external cylindrical grinding with vitrified-bond CBN grinding wheels. Genis products are for grinding cams, cranks and driveshafts and are fitted with a Wheel Memory microchip for data transfer. RFID technology enables wireless data transmission from the grinding wheel to machine control.

Tyrolit's Strato Ultra line for creep-feed grinding includes highly porous grinding wheels that reduce cycle times and minimize grinding burn, according to the company. At the same time, profile stability and wheel life increases. Main applications are deep grinding of turbine parts and

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The Sandvik Coromant CoroTurn HP system improves chip control and extends tool life by using high-pressure coolant.

**AB SANDVIK COROMANT**, Sandviken, Sweden, a unit of Sandvik AB, focused on documented savings that customers have achieved by working with the company on productivity and process automation programs. In 2006, those savings reached EUR 151 million, which represents the minimum total because it includes only savings that were formally documented, according to Sandvik Coromant. The company presented examples from 10 customers in different industry segments. One was Fimek AB, an auto parts manufacturer in Filipstad, Sweden, which achieved more than EUR

87,000 in savings in partnership with Sandvik Coromant.

Process optimization was also the theme for turning products introduced at EMO, including iLock for CoroTurn, an interface between indexable inserts and toolholders that suppresses insert movement to ensure stable machining. Another product, the CoroTurn HP (high pressure) system, a combination of Coromant Capto and CoroTurn, improves chip control and extends tool life from machines using high-pressure (1,015 psi or higher) coolant, according to Sandvik Coromant. Coolant is guided through the Coromant Capto coupling to the point where it is most needed. The system can be used in machines equipped with high-pressure coolant and Coromant Capto coupling.

Sandvik Coromant has added new indexable inserts, including GC1125 for parting and grooving steel, stainless steel, cast materials and high-temperature alloys. GC4215, for turning steel, increases productivity for wet and dry machining, according to the company. Another insert, GC4220, is for rough and finish milling at high temperatures when milling hard materials at high speeds. (800) SANDVIK.

**ROLLOMATIC SA**, Le Landeron, Switzerland, introduced the Nano6 tool grinding machine for microtools. The company incorporated some of the principles used on the fully hydrostatic GrindSmart 6000XL machine, so the Nano6 is equipped with three hydrostatic axes—X, Y and Z—as well as a floating workhead. The machine features short axis

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The Rollomatic ProfileSmart is a 6-axis CNC wheel dressing machine. Dressing cycles are controlled by a wear monitoring system.

movements and a redesigned shank guide. The exterior coolant enclosure is physically disconnected from the machine bed, so peripheral disturbances are not transmitted to the bed. The hydrostatic oil is constantly chilled and maintained at a steady temperature, enhancing thermal stability.

The company also introduced ProfileSmart, a 6-axis CNC wheel dressing machine. The dressing cycle is controlled by the automatic dressing wheel wear monitoring system. Once the preprogrammed wheel profile is achieved, the machine automatically stops. The grinding wheel shapes are preselected with Rollomatic VirtualGrindPro software and wheel parameters are transferred via LAN network to the ProfileSmart unit. (866) 713-6398.

**EXTRUDE HONE CORP.**, Irwin, Pa., a Kennametal company, exhibited its ECLine, a new electrochemical machining system for deburring, radiusing and contour machining of components. The ECLine system is effective for medium- to large-volume production runs. The system selectively removes burrs, adds contours and creates a specific edge radius when required. The modular units allow users to customize their machines. Process data for the ECLine system and peripheral equipment can be stored and monitored for tolerance compliance during machining, increasing repeatability and reliability, according to Extrude Hone. An optional generator produces a pulsed processing current to improve surface finish. (800) 367-1109.

**EMAG GMBH**, Salach, Germany, exhibited the BA S03 vertical and the BA W04 and BA W06 horizontal machining centers for 5-axis machining of aerospace parts. The BA S03 is a monoblock enclosed on three sides and topped by a gantry. Rigidity is enhanced by the box-in-box design of the unit, according to the company. The BA S03 has ballscrew drives in the linear axes and direct drives in the rotary ones. **Information Services #331, (248) 477-7440.**

**SIEMENS AUTOMATION AND DRIVES**, Nuremberg, Germany, a division of Siemens AG, introduced a fire-extinguishing system that installs inside a machine tool. Called Sinorix al-deco, it was developed in response to the increas-



agent. If it drops below the quantity necessary for successful extinguishing, the Sinorix al-deco alerts the machine operator. (423) 262-2525.

**GF AGIECHARMILLES**, Geneva, Switzerland, a combination of its former brands Agie, Charmilles and Mikron, introduced several new products at EMO, including the Mikron HPM 600 3-axis machining center for high-speed cutting. New Step-Tec inline motor spindles have high-torque capacity for removing large volumes of chips. The 3-axis HPM series comes in three sizes—with an X-axis working range of 650mm, 900mm or 1,200mm. Two new 5-axis machining centers, the Mikron XSM 400 and Mikron XSM 400U, have a combination of standard drives in the X, Y and Z axes and direct drives on the 4th and 5th axes.

GF AgieCharmilles' new Form 2000/3000 sinker EDMs are for microelectronic and telecommunications applications, among others. The Form 2000/3000 range has X-, Y- and Z-axis travels of 350mm×250mm×350mm and 600mm×400mm×500mm, respectively. (847) 913-5300.

The next EMO will be from Oct. 5-10, 2009, in Milan, Italy.  $\Delta$

The Sinorix al-deco machine tool fire extinguisher has a pressurized hose system that bursts when the temperature exceeds 230° F.

ing use of highly combustible workpiece materials and unattended machining. The operating principle is based on pneumatics. A hose system in the machine acts like a linear fire detector. It is pressurized and bursts when the temperature exceeds 230° F. A valve connected to the hose releases an extinguishing agent when the pressure drops. A measuring probe monitors the available quantity of extinguishing

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#### Advantages

- Tool longevity does not necessarily result in a reject
- High quality threads, no chip segments throughout entire length of thread
- Reduction in cycle time - only 1 to 2 cutter profiles necessary for complete length of thread
- Cost effective production of multi-start threads: 2.5 mm diameter and above



### GFG-WFF Shell Type Thread Milling Cutters

#### Advantages

- Shorter machining times due to higher cutting speeds and feeds
- Increased tool life due to larger number of cutting edges
- High quality threads due to rugged construction
- Suitable for nearly any thread or profile
- Particularly advantageous for long run production of steel components
- Distinctly lower tooling cost per workpiece
- The inserts can be replaced/ground/changed



### GFA Solid Carbide Arbor Mounted Shell Thread Milling Cutters

#### Advantages

- Rapid and simple tool changing on machine
- Lower tooling costs, for large diameter threads (30-1000 mm)
- Existing arbors can be used
- High rate of metal removal due to large cutter diameter and high number of flutes



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