Die Welt der Metallbearbeitung
The world of metalworking

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PRESS RELEASE

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EMO Hannover 2013 showcases innovations for the future of manufacturing

Bangalore, 23 January 2013. – EMO Hannover 2013, the leading global metalworking trade show, will take place from 16 to 21 September. Since its first edition in 1975, it has continuously expanded and strengthened its positioning as the world's largest and most important metalworking innovation forum. Exhibitors, visitors and journalists from around the world describe EMO Hannover using such terms as masterful engineering, a look at the future of manufacturing technology, leading through creativity, or technology for tomorrow's manufacturing. The public and the competition alike continue to be fascinated by the many exhibits that come together there. With the theme "Intelligence in Production" EMO Hannover 2013 pays tribute to the important role played by machinery, components, processes and services, along with technical innovation.

"Technical progress is not an end in itself. It is driven by global social and economic challenges," explains Dr. Wilfried Schäfer, Executive Director from EMO organizer VDW (the German Machine Tool Builders' Association) in Frankfurt, Germany, for the EMO press conference on 23 January 2013 in Bangalore. Global megatrends, including urbanization and infrastructure expansion, mobility, energy, health and nutrition, are among the factors precipitating technological progress, as are the more mundane daily issues

faced by manufacturing. “All industrial companies need to keep up with current trends to survive. They need to plan their development in advance and draw the right conclusions with regard to their innovation strategy and their products,” says Wilfried Schäfer. Exhibitors at EMO Hannover 2013 offer information, support and expertise. Worldwide social, business and technology developments determine the trends that will impact manufacturing technology.

Global megatrends drive technology development – Machine tools are a key contributor

Since 2009, a majority of the world’s population lives in cities, a trend that continues to rise. Modern infrastructure and powerful communication grids are needed to maintain the same quality of life. Growing cities engender new construction technologies that require the use of new materials and are supplied as prebuilt finished parts. Modern production facilities are also of necessity located in ever more densely populated regions, and must therefore meet stringent requirements with regard to emissions and use of land and resources.

One of the greatest challenges is to meet continuously rising energy demand affordably and with an eye to environmental concerns. This requires more intelligent and efficient environmental technology. Only cutting-edge, high-precision manufacturing methods can maximize performance and bring efficient technology to the factory floor. New strategies for energy recovery from renewable energy sources need to be buttressed by solutions for energy savings. This is where producers of manufacturing facilities can contribute. Blue Competence, the sustainability initiative for the European machine tool market, offers numerous examples of energy efficient solutions in industrial production. “It will therefore be discussed extensively at the ‘Smarter manufacturing’ conference,” says Schäfer. A special event will also be held at which EMO exhibitors present their solutions for energy efficiency.

There are many additional challenges arising from population growth and rising standards of living. For example, nutrition and healthcare must be assured. The availability of food and water is a question for production,

processing, packaging and distribution. Technical solutions from modern agricultural engineering, food processing and the packaging industry, expanded logistics chains that network maritime, air and rail transport, as well as software programs to optimize transportation grid capacity all shine a light on the path forward, and already require high-performance technologies in product development. It is machine tools that enable other sectors of mechanical and facilities engineering to meet constantly evolving challenges with timely and efficient solutions.

Rising standards of living engender increasing demands. These are evident in the growing desire for individual mobility, as well as for more goods and services. Scarce natural resources, rising raw materials costs and a greater awareness of environmental and climate responsibility are limiting factors. Effective manufacturing methods can produce high-tech products in large numbers at an affordable cost. Waste must be avoided, while seeking to achieve ever shorter product lifecycles and individualized production.

Further aspects are defined by demographic change and the aging population. On the one hand, demand for quality, affordable medical care is on the rise. Here again, technical solutions contribute to progress. Automation, new imaging methods, implants and prosthetics, self-diagnosis devices and data line monitoring are among the focus areas. In addition, the manufacturing sector needs to adapt to an aging employment pool. Age-related issues such as declining physical strength, reduced hearing and vision, or absences due to the age-related increase in illness must be met with technical solutions.

Companies around the world are facing these megatrends and their consequences for their business, with specific focus issues varying from market to market. Progress in the areas mentioned is often achieved through technological development and products that are manufactured by industry. “As a key technology for industrial production, machine tools are intimately involved in solving existing and future challenges, and ensuring progress in many areas,” states Wilfried Schäfer.

Megatrends also modify industrial production

New challenges with regard to machines, tools and components are also appearing in the manufacturing sector. Aspects such as efficiency, sustainability, communication and networking, new materials, flexibility, quality, new product designs and more play an important role here.

Machine efficiency is measured by the resources that must be committed to manufacturing a product. There is a strong focus on the productivity of manufacturing facilities. More efficient components such as drives and hydraulic power units, high-performance tools, optimized processes, all enhanced by smart control, provide support for intelligent manufacturing. They can achieve potential savings throughout the value creation chain. When combined with increased automation, of component handling or machine feeding for example, attractive offers can be achieved, covering the entire lifecycle of a machine or facility.

The quality of finished products must bridge the gap between rapidly rising individual consumer needs and the available resources. Not only are more goods and products in demand, but demand is also trending away from identical mass-produced items and towards individualized product characteristics. With modern manufacturing techniques, large quantities can be produced using ever less material and resources, with an eye also to individualized product variants. For example, demand for hip implants is on the rise, and modern imaging methods allow prostheses to be customized to the patient. For the manufacturing process, this means that only a single unit is produced with a specific geometry, and machines must be continuously reprogrammed and readjusted.

The use of high-precision machine tools also improves technical features, such as for extremely precise, closely toleranced surfaces. In this way, for example, clearances can be optimized in motors, generators or turbines. The better performance achieved for the product can generate high potential savings, even if the manufacturing process itself may be less efficient. Last but

not least, intelligent manufacturing planning means minimizing waste. For example, waste heat from machines can be utilized to heat office buildings.

“For all these factors, the intelligence of future production systems plays a key role,” says Wilfried Schäfer from VDW of the market’s development. Intelligence goes two ways. On the one hand, high-tech components can network and optimize themselves. The groundbreaking role of smartphones, together with decentralized, self-structuring networks, is also spreading through industry. Machine components and modules come with their own knowledge and optimal operating parameters, connect autonomously to supervisory control systems, and are ready to begin operation very quickly without manual intervention. On the other hand, the complexity of systems is growing because information is no longer available centrally. People who operate and maintain the machines, or plan production, must still be able to use and control these systems. Key words here include intuitive machine programming and decentralized diagnostics.

International exhibitors demonstrate how they meet these multiple challenges using intelligent technical solutions in widely varying forms at EMO Hannover 2013.

EMO Hannover 2013 – the world’s premier trade fair for the metalworking sector
From 16 to 21 September 2013, international manufacturers of production technology will be spotlighting “Intelligence in Production” at EMO Hannover 2013. The world’s premier trade fair for the metalworking industry will be showcasing the entire bandwidth of the sophisticated metalworking technology which is at the heart of every industrial manufacturing process. The fair will be presenting the latest machinery as well as efficient solutions, corollary services, means of achieving sustainability in production processes and much, much more. The principal focus of EMO Hannover is on metal-cutting and forming machine tools, production systems, high-precision tools, automated material flows, computer technology, industrial electronics and accessories. The trade visitors to EMO come from every major branch of industry, e.g. machinery and plant manufacturing, the automotive industry and its component suppliers, the aerospace sector, precision mechanics and optics, shipbuilding, medical technology, tool and die manufacturing, steel and lightweight construction. EMO Hannover is the most important international meeting point for production technology specialists from around the world. EMO Hannover 2011 featured a lineup of over 2,000 exhibitors and attracted some 140,000 trade visitors from more than 100 different countries. EMO is a registered trademark of the European Association of the Machine Tool Industries (CECIMO).

Texts and images from the EMO press conference can be found on the web at www.emo-hannover.de. You can also visit EMO at our social media pages


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