



ENGEL at NPE 2012

ENGEL makes the difference

York, PA – January 4, 2012. ENGEL proves its expertise as a system solution provider at NPE 2012 – West Hall, booth 943 – with seven highly integrated and automated manufacturing cells covering a wide range of industries: from Automotive and Technical Molding to Packaging and Medical. “ENGEL makes the Difference” is the slogan at the ENGEL booth during the most important Plastics Tradeshow in North America, running from April 1st to 5th at the Orange County Convention Center in Orlando, Florida/USA.

“At ENGEL it’s not just about equipment”, says Mark Sankovitch, President ENGEL North America in York, Pennsylvania. “It’s about helping our customers bring their ideas to life – discovering new approaches, engineering innovations, and developing new process technologies. Only by doing so is it possible to achieve long-term cost advantages and increase competitiveness.” ENGEL North America is recording a strong demand for efficient injection molding process solutions. Investments are being made, especially in new technologies and energy-saving options. At NPE2012, ENGEL shows how high-quality injection molding parts can be produced efficiently and economically with solutions suited to each industry.

ENGEL automotive: a cockpit without buttons and switches

The vision of a vehicle interior without buttons and switches is becoming increasingly tangible. At the ENGEL booth, visitors to the show can take a seat in the automotive cockpit of the future. Various control functions can be activated through the center console in the simulation cell, which ENGEL is presenting in cooperation with Magna Exterior & Interior Systems (Munich/Germany). All you need to do is lightly touch one of the functional elements below the completely enclosed surface. Thanks to ENGEL clearmelt technology



and the integration of a capacitive foil using in-mold labeling, vehicle controls will be just as elegant as smartphone controls in the future. "This trend not only gives interior designers a new level of freedom; it also reduces the costs of producing functional elements," states Mark Sankovitch. "We are already talking to various OEMs and automotive companies. In four to five years the first vehicles will be equipped with this sensitive surface technology", adds Franz Füreder, Head of ENGEL automotive at ENGEL Headquarters in Schwertberg/Austria.

Center consoles with a sensitive surface will be manufactured in the ENGEL booth on an ENGEL duo 2050/350 injection molding machine. This is the first showing of this new machine size in North America, which brings the power of the duo large-scale machines – maximum power on a small footprint – to the lower clamp force range.

Several companies, in addition to Magna, are involved as ENGEL system partners for this project. The mold maker is Schöfer from Schwertberg/Austria; Hennecke from Sankt Augustin/Germany is the exclusive project partner for polyurethane technology and the functional foils are supplied by plastic electronic GmbH in Linz/Austria.

ENGEL medical: fully-integrated multiple-axis robot

Two exhibits from the ENGEL Medical Business Unit aim to achieve a greater output and reduce the costs per unit. "The cost pressure is constantly increasing, even in medical technology", states Christoph Lhota, Head of ENGEL medical. "Consequently we have two trends: On the one hand, the demand for high cavitation molds on large-scale machines is rising, and on the other hand, medical technology is experiencing an increase in requests for full-scale integration." An all-electric ENGEL e-motion 80H/80W/200 T WP US combi will be exhibited, producing components for auto-injectors in a two-component injection molding process with a servo-electrical 16+16-cavity index platen mold. The auto-injectors are a product of SHL (Scandinavian Health Ltd.), a Swedish producer of medical devices with its main production facilities in Taiwan and a subsidiary in Florida/USA. The mold making partner for this exhibit is Hack Mould Making, Kirchheim and Teck/Germany.



The manufacturing cell runs fully automated. An ENGEL easix multiple-axis robot will remove the parts and deposit them in trays. ENGEL easix, the multiple-axis industry robot which is completely integrated in the CC 200-control of the ENGEL injection molding machine, will be on exhibit for the first time in North America. The robot can be operated with the usual, simple injection molding machine commands, through full integration without Euromap 67-interface.

This sets the ENGEL solution apart from many other suppliers whose understanding of integrating multiple-axis industrial robots is that of simply mirroring the robot's user interface on the injection molding machine's display, without removing the need for the users to familiarize themselves with the two different control approaches. The ENGEL product developer's primary goal is this: if you can operate the injection molding machine, you can operate the robot, too.

In a second manufacturing cell for the medical industry, an all-electric ENGEL e-motion 310/110 T US injection molding machine will produce polystyrene needle holder for safety syringes using a 16-cavity precision mold from Fostag, Stein am Rhein/Switzerland. With the help of high speed automation, the finished parts will be removed from the mold and deposited with regard to their cavity-orientation. Defective mold cavities can be turned off individually without disturbing the balance of the system. ENGEL's partner for the automation of this exhibit is Hekuma, Eching/Germany.

ENGEL technical molding: Complex hollow parts in a single processing step

The exhibit provided by ENGEL's Technical Business Unit is also equipped with a fully integrated six-axis-robot. Complex 3-component hollow parts will be produced in a single processing step, on a compact tie-bar-less ENGEL victory 1050H/500W/220 US combi machine. The Multitube mold system, developed by ENGEL partner Pernoud from Oyonnax/France, ensures a high level of process integration. To produce sample parts like intake manifolds for 3-cylinder engines, the threaded bushings are first insert-placed into the mold and over-molded. The pre-molded part for injection of the second component will



be turned in the mold by an ENGEL easix robot before the third component -- a TPE seal -- is applied. To support multiple component injection molding, the victory machine is equipped with a piggyback unit and a third small injection unit. The finished component is removed by the multiple axis robot and deposited on an integrated conveyor belt. Because the robot works inside the extended safety guarding, the production cell requires only a relatively small footprint. The advantage of the system's high degree of integration is that the hollow parts are produced in a single process step, eliminating the need for finishing -- example, a welding process. Compared to legacy gas injection technology, the Multitube concept also ensures enhanced quality of the interior surfaces and consistent wall thicknesses.

From its elast/LIM-product program ENGEL will exhibit an ENGEL e-victory 310/130 LSR US, on which medical-technical membranes made out of liquid silicone will be produced. "The hybrid ENGEL e-victory machines with hydraulic, tie-bar-less clamp and all-electric injection unit are the future in the area of liquid silicone processing", says Leopold Praher, sales manager elast/LIM-machines at ENGEL AUSTRIA. "Precision is gaining in importance in this application area. A production free of post-processing, with low-grade flash, is required." Additionally, the hybrid ENGEL e-victory machine is equipped as standard with the energy-saving option ecodrive, which increases production efficiency. The membranes will be made out of LSR 50 Shore (A) from Shin-Etsu Silicones, Akron, Ohio/USA and manufactured at NPE using a 64-cavity mold with a cold runner block and a needle valve from ACH Solution, Fischlham/Austria. ENGEL partner ACH is also supplying the demolding device. The system runs fully automated.

ENGEL packaging: All-electric for high precision and short cycle times

ENGEL's packaging exhibits score a maximum on integration as well. In a two-component injection molding process and with in-mold labeling, lids for newly developed ice cream container will be produced with a thin-wall technique. An all-electric ENGEL e-motion 740H/310W/200 T combi US machine will be used for this process.



The ENGEL e-cap 3440/460 US, the second exhibit from the Packaging Business Unit, sets new standards in the caps-and-closures-market. Designed to achieve maximum output and process stability, the all-electric injection molding machine is extremely energy efficient and has low cooling water requirements. The machine bridges this challenging gap thanks to its all-electric drive technology, combined with a series of sophisticated features, such as the latest powerful, premium quality injection unit, increased ejector force and a reinforced clamping drive. "All-electric injection molding machines are constantly gaining in importance, above all in the field of high performance and high speed applications", stresses Walter Jungwirth, head of ENGEL business unit packaging. Cycle time less than 3 seconds and injection speeds of 450 mm per second are fully realizable now – a performance class which was previously reserved for energy-intensive accumulator machines. ENGEL machines combine highest precision with shortest cycle times and low energy consumption through constant technical developments.

ENGEL automation: More efficiency thanks to intelligence

The now complete series of ENGEL viper robots will not just be displayed on the other exhibits, but also as a stand-alone machine. Representing the new generation of ENGEL linear devices, an ENGEL viper 12 will be taking the trip to Florida. "This is the fastest robot in its load bearing class in international comparisons", says Johannes Brandstötter, Sales Manager for automation at ENGEL AUSTRIA. The viper robots impress with a high load bearing capacity, excellent positioning accuracy, and highly dynamic action. Thanks to intelligent software such as vibration control, or mass identification, the robots reduce their structure-borne vibration, even with longer axis dimensions, and optimize their movements and dynamic values to achieve better efficiency. What this means is: shortest cycle times and maximum productivity with low energy consumption.

Viper robots are not just utilized on ENGEL injection molding machines. "More and more plastics processors are ordering ENGEL viper robots for third-party injection molding machines, or to replace legacy equipment with the aim of improving productivity in



manufacturing”, says Brandstötter. Six sizes with nominal load bearing capacities of between 13 and 200 lbs (6 and 90 kg) are available.

Making full use of efficiency potentials

ENGEL has steadily developed from a manufacturer of injection molding machines to a system supplier. "Efficiency potential can only be realized when all system components interlock perfectly. For that reason, the number of system solutions delivered by ENGEL, including automation, is steadily increasing," says Mark Sankovitch. ENGEL focuses its research and development not only on the specific requirements of individual user industries but also on the different country markets.

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Mark Sankovitch, President ENGEL North America in York, Pennsylvania/USA (Picture: ENGEL)



The new ENGEL duo 350 brings the power of the duo large-scale machines – maximum power on a small footprint – to the lower clamp force range. (Picture: ENGEL)



The future of the automobile cockpit: vehicle control by touch and interaction without buttons and switches. (Picture: Magna)



Complex hollow parts in a single step: Because the robot works inside the extended safety guarding, the production cell only requires a relatively small footprint. (Picture: ENGEL)



Fit for High Performance: All-electric ENGEL e-cap injection molding machines. (Pictures: ENGEL)



The viper robots impress with a high load bearing capacity, excellent positioning accuracy, and highly dynamic action. The ENGEL viper 12 is the fastest robot in its load bearing class in international comparisons. (Picture: ENGEL)

ENGEL North America

From facilities in the United States, Canada, and Mexico, ENGEL North America provides its customers a single source for design and manufacture of injection molding machines for thermoplastics and elastomers, a full range of plastics processing technology modules, and a full scope of automation solutions. With eight production plants in Europe, North America and Asia (China, Korea), subsidiaries in 17 countries and representatives in over 70 countries, the ENGEL group provides its customers the global support they need to compete and succeed with new technologies and leading-edge production systems. For more information, visit www.engelglobal.com/na.



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