Engel to highlight solutions for more efficient processes at Chinaplas

Innovative system solutions for more efficient processes and a greater competitive advantage are the focus of the Engel trade fair presentation at Chinaplas from 20 – 23 May 2013 in Guangzhou, China. Live on show: the new all-electric Engel e-mac injection moulding machine, demonstrating its capability in the manufacturing of electronic mass products. At Chinaplas, the new model series is celebrating its first airing in China.

[image_0]

During the four days of the fair, an **Engel e-mac 50/50** will be producing holders for semiconductor chips made of polyetherimide, an application that poses a tough challenge in terms of the injection moulding machine's precision. The holders measure 26 x 23 mm, but the critical factor above all others is the very thin wall thickness of just 0.65 mm and the mesh structure to be created with an inner edge length of 0.42 mm. Despite these exacting requirements and the hard-to-handle raw material, the Engel e-mac achieves a cycle time of just 19 s in this application. With an acceleration of over 20 m/s², the injection axis of the e-mac is said to be the world's fastest of its kind. Additionally, the synchronous movements of the drive axes ensure fast cycle times. Thanks to its compact footprint, the e-mac saves shop floor space. Additionally, it is very frugal in its use of resources. From injecting and metering to mould and ejector movements, all drives in the Engel e-mac are servo-electric. They are operated by an axis system solution involving a stabilised intermediate circuit. The braking energy is recovered and fed back into the grid. The e-mac series has four machine sizes with clamping forces of 50, 75, 100 and 180 t. Equipped with the **CC 200** control unit, the e-mac offers complete modularity and automation technology integration capability.

[image_1_right]

An **e-motion 440/160 T** plays the leading role in the company's packaging exhibition area at Chinaplas 2013. The all-electric injection moulding machine will be producing thin-wall technology margarine tubs in a two-cavity mould. Thanks to integrated in-mould labelling, the unit costs are very low. Ready-to-fill food packaging with decorations is manufactured in a single step. The project partner for IML automation is **Campetella** from Montecassiano, Italy. According to Engel, the latest generation of e-motion injection moulding machines achieves cycle times of well under 3 s and injection speeds of more than 500 mm/s.

[image_2]

Furthermore, Engel is presenting an innovative form of foil back injection in its automotive exhibition section. Visitors to the fair can take a seat in the automobile cockpit of the future and experience how vehicles will be even easier to use than smartphones by simple touch, feel and interact controls. Thanks to capacitive sensors, the company is already producing functional electronic elements with a totally closed, robust surface that do not need buttons or switches. Engel is demonstrating what this can look like in practical terms with the production of a centre console in a highly-integrated and automated production cell on a **duo 2050/350 pico** injection moulding machine – equipped with **ecodrive** servohydraulics and a swivel plate. While a preformed capacitive foil is back injected with PC/ABS on one side of the mould, the basic component is coated with polyurethane on the other to protect the surface and give it a premium appearance. Two **viper 20** and **40** type linear robots will take care of the component and part handling. Starting with capacitive foils and plastic pellets, ready-for-use controls for the vehicle interior are thus produced in a single step, while legacy methods would involve individually injecting and then assembling several different components. The technology, which the company is marketing under the name of **Sensitive Surface** in cooperation with its system partners, is based, among other things, on the Engel **clearmelt** process, and the **touchskin** technology by **Plastic Electronic GmbH** in Linz, Austria. Other partners involved in this project are **Hennecke** in Sankt Augustin, Germany (polyurethane processing), **Schöfer** in Schwertberg, Austria (mould making), and **Magna Exterior & Interior Systems** in Munich, Germany (application).

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In addition, Engel is demonstrating its system solution competency in elastomer processing by manufacturing dummies for babies in liquid silicon on a **victory 500/110 tech** injection moulding machine. To accommodate the production cell perfectly to match the product, volume and materials, Engel draws on its wide spectrum of hydraulic, hybrid and all-electric injection moulding machines, as well as injection units, feeders and metering pumps specially developed for elastomer processing. In many cases, tie-bar-less victory injection moulding machines offer benefits in LSR applications. Compared to other model series with tie-bars, the plate stiffness ensures superior mould support, thus reducing burr formation and improving the product quality. The victory machine on show at Chinaplas uses cold runner technology. The eight-cavity mould was provided by Engel partner **Elmet.** The machine was built at the company's production facility for small to medium sized machines in South Korea, which will be starting up production at its expanded production hall shortly before Chinaplas 2013 opens up to the public. The production capacity has been almost doubled from 650 to more than 1100 machines per year. It was just last year that Engel also extended its large-scale machine plant in Shanghai.

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http://www.gupta-verlag.com/general/news/technology/12713/engel-to-highlight-solutions-for-more-efficient-processes-at-chinaplas