



Press release



World Innovation for Injection Mould- ing of Technical Parts: ENGEL at K 2007

Schwertberg / Austria: September 2007 – ENGEL's full portfolio of machines and process technologies is represented in ENGEL's Technical Moulding division. Within this framework ENGEL will be demonstrating its new Exjection® technology at the world's leading plastics fair, K 2007, from 24th to 31st October in Düsseldorf, Germany, manufacturing long, thin-walled plastic sections on a fully-electric ENGEL e-motion machine, and seals on an ENGEL elast as demonstrations.

Exjection® is a global technological innovation that retains the advantages of the legacy technologies of extrusion and injection moulding while avoiding their disadvantages, thus supporting the production of profile-type plastic parts using injection moulding technology. Engel has been actively involved in the development of Exjection® technology, a process that supports cost-effective production of long sections with integrated fitting, closure, reinforcing and decor elements via a single injection point, and more or less in a single production cycle. Engel will be demonstrating the Exjection® method at K 2007 on a fully-electric Engel E-motion 200/55 injection moulding machine (clamping force 550 kN) with a mould for producing 930 mm thin-wall sections with a wall thickness of 1.2 mm.

World Innovation Exjection®

Injection moulding of long, thin-walled, plastic sections of a defined length is no longer restricted by the fluidity of the plastic in a cooled mould, thanks to the Exjection® process.



What the Exjection[®] process basically does in comparison to legacy injection moulding techniques is to move the mould that forms the section in sync with the injection movement at right angles to the machine's longitudinal axis. To fill the cavity, precise control of the melt flow, generated by the screw advance speed, and of the mould cavity move speed is required. The motion of the mould creates a continuous free cavity volume that is continually filled by melt flowing into it. To achieve defined compression of the melt and thus a holding pressure function for packing structures, or avoiding shrink marks, the melt is kept under pressure from the injection point. Constant mould cavity move speed ensures that pressure is built up near the sprue. This level of pressure replaces hold pressure functionality. This avoids shrink marks and helps to form surface structures clearly.

We chose the fully-electric ENGEL e-motion injection moulding machine for this process. Besides the main machine movements, the mould cavity is also driven synchronously with the injection movement by means of an electric servomotor and a ball screw. Excellent platen parallelism and uniform distribution of compression over a given area, as provided by the e-motion clamping units in the mould area, avoid the burrs on the one hand, and ensure that very little force is required to move the mould when clamping force has been built up.

ENGEL will be demonstrating the Exjection[®] method at K 2007 on a fully-electric ENGEL e-motion 200/55 injection moulding machine (clamping force 550 kN) with a mould for producing 930 mm thin-wall sections with a wall thickness of 1.2 mm. The patented Exjection[®] technology was developed by Hybrid Composite Products GmbH in cooperation with IB Steiner, both of Spielberg/Austria. Due to the innovative nature of this development and the huge expectations the industry has for the product, stainless steel supplier Böhler-Uddeholm AG, Vienna/Austria, standards manufacturer Hasco, Lüdenscheid/Germany, and coating specialist Oerlikon Balzers Coatings, Balzers/Lichtenstein contributed to the design and building of the development mould.



16-cavity Mould for Seals on an ENGEL elast

The second machine exhibited in the multi-faceted field of technical moulding is an ENGEL elast 280/150 VC with tiebar-less clamping unit. Using a 16-cavity mould by Ro-Ra Produktions GmbH, Attnang-Puchheim, the machine produces rubber seals. An ENGEL ERC 64/1-F takes off the finished parts from the 16 cavities.

Versatile Machines, Processes and Applications

Besides the tiebar-less ENGEL victory machine and the ENGEL elast rubber injection moulding machine, all ENGEL machine series are deployed in technical moulding – and this includes the fully-electric ENGEL e-motion, the compact, fully-electric ENGEL e-max and the dual-platen ENGEL duo large-scale machine.

ENGEL at K 2007 in Düsseldorf:
Hall 15 Booth 15 C 58 (main booth)
Hall 10 Booth 10 D 42 (automation technology)



ENGEL e-motion 200/55 injection moulding machine with a clamping force of 550 kN, exhibited at K 2007 to demonstrate the Exjection® process for manufacturing of long, thin-walled sections



930 mm thin-walled section with a wall thickness of 1.2 mm, manufactured using the Exjection® process on a fully-electric ENGEL e-motion 200/55 injection moulding machine with a clamping force of 550 kN



Rubber injection moulding machine ENGEL elast 280/150 VC with tiebar-less clamping unit



Seals, manufactured on an ENGEL elast 280/150 VC rubber injection moulding machine with tiebar-less clamping unit and a 16-cavity mould by Ro-Ra Produktions GmbH

Photos by: ENGEL



Engel Austria GmbH

The Engel brand denotes the world's biggest manufacturer of injection moulding machines and, at the same time, one of the world's leading plastics processing machine manufacturers. Today, the Engel Group offers its customers a single-source for a full range of plastics processing technology modules for: injection moulding machines for thermoplastics and elastomers, moulds and automation, with the assurance that individual components are competitive and successful on world markets. With eight production plants in Europe, North America and Asia (China, Korea), subsidiaries in 17 countries, and representatives in over 70 countries, Engel offers its customers the best-of-breed, global support they need to compete and succeed with new technologies, and leading-edge production systems.



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