

PRESS RELEASE

Battenfeld Injection Molding Technology at K 2007

All-electric energy efficiency and precision down to the single-digit milligram range

Kottlingbrunn/Austria, July 2007 – Battenfeld is showcasing the capability of the latest evolutionary stage of its all-electric, completely servo-driven machine series with the **EM 110/300** Unilog B6 (110 t clamping force). The machine manufacturer's all-electric series was already introduced 15 years ago and presented for the first time at K '92. This latest performance class features significant innovations especially in the drive concept, combined with a particularly sensitive tool locking device on the clamping side which has also been further optimized. Thanks to the high efficiency of the new servo motors and energy recovery during the deceleration phases, the already modest energy consumption of this machine series has been reduced still further. High precision and repeatability, plus the facility for parallel movements provided with individual drives for all axes installed as standard, make this "all-electric" model stand out as a fast, energy-saving "high-precision injection molding machine". Low noise emission and special suitability for clean-room applications – last not least thanks to hydraulic oil being dispensed with – are further outstanding features of the Battenfeld EM, which is available with clamping forces ranging from 300 to 1,800 kN (30 to 180 t). At the K, Battenfeld will present this machine with an additional equipment package for Liquid Silicon Rubber (LSR) processing, manufacturing teats for baby bottles in a six-cavity mold within a cycle time of 25 s.

Another major high-precision theme is the production of micro precision parts, a field in which Battenfeld has special expertise and many years of experience in both machine technology and process technology concepts. On a **Microsystem 50** with 50 kN (5 t) clamping force and all movements servo-driven, a micro plug for electronic equipment will be manufactured fully automatically from polyoxymethylene (POM) in a two-cavity mold within a cycle time of 5 s. The mold will be supplied by Microsystems UK Ltd, Warrington/UK, a tooling partner of Battenfeld specializing in the construction of molds for micro-precision parts. The production cell presented in Düsseldorf operates with a new, redesigned drive for the injection unit with significantly increased injection dynamics, which has a positive effect on filling the cavities and thus achieving higher

reproducibility of the molded parts. At the same time, the user-friendliness and adjustability of this machine have been further optimized. The micro plug is fitted with two guide pins. These pins with a length of 5 mm and 0.6 mm in diameter are fed in unsorted, picked up individually by a Scara robot and then deposited at a transfer station. Here, a highly dynamic linear robot specially designed for this micro cell picks up four pins for each cycle and places them into the mold (two into each cavity). A camera system integrated in the production cell takes complete care of monitoring and locating the metal pins loosely fed in as well as monitoring their positioning in the mold and visual inspection of the finished parts. The shot weight per micro plug is no more than 16 mg. To mass-produce such light components with high precision inside the Microsystem 50, the melt prepared in a plasticizing screw system is injected into the mold with a plunger injection unit. Apart from consistent injection volumes, another crucial factor for precise, reproducible forming of molded micro parts is the dynamics of the injection unit in the acceleration, injection and deceleration phases, which ensures accurate process control.

Battenfeld Kunststoffmaschinen Gesellschaft m.b.H. is a global supplier of injection molding machines, automation equipment and turn-key manufacturing cells for plastics processing - complete systems from a single source, building on more than 60 years of injection molding experience. With 14 sales and service companies and agencies in more than 80 countries, Battenfeld offers its customers around the world optimal support in all aspects of injection molding technology. State-of-the-art manufacturing equipment and technology provide Battenfeld customers with a reliable basis for strengthening and expanding their market position.

Battenfeld Injection Molding at K 2007: hall 16, booth D22

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The all-electric Battenfeld EM Unilog B6, here with 110 t clamping force: in this latest performance class, high precision and repeatability have been combined with a redesigned drive concept offering a further increase in energy efficiency.



The completely servo-driven Battenfeld Microsystem 50 (with 50 kN clamping force) for micro injection molding: the significantly increased dynamics of the new, redesigned drive of the injection unit has a positive effect on the reproducibility of mass-produced molded micro parts.

Photographs: Battenfeld