ENGEL at Fakuma 2008

Energise your Future

Friedrichshafen – October 2008. Energy costs in particular have increasingly become a factor of competition in recent years. ENGEL investigated to what extent injection moulders are feeling the effects in the scope of a survey. Energy-optimised, powerful products are in demand. ENGEL has offered a wide range of matching solutions for around 10 years. At this year's Fakuma in Friedrichshafen the latest developments were exhibited under the motto of "Energise your Future".

To be able to offer our customers solutions geared to reduce energy consumption, we - as a machine supplier - need to know our customer's starting position. Based on a survey covering around 100 injection moulders in various industries, ENGEL evaluated energy awareness and the effect of energy consumption on the decision to purchase.

In demand: energy-saving injection moulding machines

When asked to evaluate the greatest energy-saving potential, the injection moulding machine came first at 77.8 %. In line with this, energy efficiency is a major decision-making criteria in purchasing an injection moulding machine. This clear statement by users is a challenge to manufacturers; despite the high level of energy awareness demonstrated by injection moulders, energy measurements are rarely performed on machines and very little is done in the line of systematic efficiency improvements. Less than 8 % of all injection moulders today actually measure the energy consumed by their own production machines.

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The majority, that is 92.2 %, of all injection moulders never, or rarely, measure energy efficiency. Despite this, the majority (71 %) is working on energy saving projects. First and foremost, these projects are concerned with the use of heat energy in cooling water, or the heat dissipated by injection molding machines to heat office buildings or production shops. Measures to reduce peak power consumption, or to compensate for idle current are typical activities.

ENGEL's Response

ENGEL has offered an energy-optimised, powerful injection moulding system for over 10 years in the form of fully-electric injection moulding machines. The ongoing development of these designs and practical combinations of electrical and non-electrical drive components contribute regularly to extending the programme. On top of this, the ability to use the software to discover energy efficient process settings promises further potential savings. At Fakuma, ENGEL is exhibiting five products to give customers an overview of its range of energy-saving injection moulding machines and the latest developments in this sector. The highlight is the newly developed ENGEL duo 500 pico – a compact variant of the tried-and-trusted ENGEL duo large scale machine series. Besides this ENGEL will be presenting three fully electric machines and the ENGEL e-victory with servo-hydraulics.

The exhibits at Fakuma – reasons for energy efficiency

ENGEL duo 3550/500 pico

The exposed tiebars (no friction), the extremely short cycle time, optimised hydraulics (short stroke cylinders) and the flexible drive performance achieve considerable energy savings.

At Fakuma, ENGEL will be showing a typical packaging application. Manufacturing of a PP fruit hamper with a cycle time of less than 13 seconds will be demonstrated on the duo 3550/500 pico.

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ENGEL e-victory

The servo hydraulics on the ENGEL e-victory mean excellent efficiency as they are only active during movements and consume virtually no energy at all when idle. The servoelectric injection unit also contributes towards optimising efficiency. The clamping unit is locked hydraulically, and thus does not require holding force.

At Fakuma we will be demonstrating the manufacturing of a dual branch fitting on an ENGEL e-victory 310/120.

Fully-electric machines

As all main movements are driven servoelectrically, the machine uses virtually no drive energy when idle. On top of this, low idle current helps to a achieve a high power factor (0.95). Additionally, braking energy is fed back into the power network (ENGEL e-max).

An ENGEL e-motion 740/180 with a clamping force of 180 tons will be producing polypropylene margarine packaging to demonstrate that fully electric machines are perfectly suited for deployment in injection moulding for the packaging industry. High-precision parallel movements in particular – thanks to independently actuating electrical motors – mean that the machine is perfectly suited to fast high speed applications.

Manufacturing of COC vaccine receptacles using a mould by Köbelin/Eichstetten (D) on an ENGEL e-motion 200/55 demonstrates a further field of application for fully electric machines. The mould is designed for sterile production in a clean room for deployment in medical technology.

An ENGEL e-max 310/100 with a clamping force of 100 tons will be demonstrating the production of a PBT locks using a 32x mould by Möller/Schrems (A).

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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 a full range of technology modules for plastics processing as a single source supplier: Injection moulding machines for thermoplastics and elastomers, and automation, with the assurance that individual components are also competitive and successful in the world markets. With eight production plants in Europe, North America and Asia (China, Korea), subsidiaries and representatives in over 85 countries, ENGEL offers its customers the optimal global support they need to compete and succeed with new technologies and leading-edge production systems.

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