

Lower energy consumption, greater flexibility and robust series processes **ENGEL shows cost-efficient production solutions at FIP 2026**

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At FIP 2026, taking place from 02 to 05 June 2026 in Lyon, the ENGEL Group shows how processors can design their production more space-efficiently, use mould concepts more flexibly, reduce unit costs and bring new applications to series maturity cost-efficiently. ENGEL presents production solutions with a tie-bar-less victory electric 220 injection moulding machine, an all-electric WINTEC e-win 1800, digital assistance systems from the inject AI product family and clearmelt for the integrated surface finishing of large-format components.

Tie-bar-less victory electric 220 creates more freedom in the mould space

At the exhibition stand, ENGEL shows an electric tie-bar-less victory electric 220 production cell with 2,200 kN clamping force, which celebrated its world premiere at K 2025. The machine combines the advantages of tie-bar-less design with the dynamics of electric drive technology. For processors, this means more usable space in the mould area, high precision and productive manufacturing on a small footprint.



Image 1: The tie-bar-less ENGEL victory electric creates more freedom in the mould space, facilitates automation and set-up and enables cost-efficient production with high precision.

An electrical distribution box made of polycarbonate is produced in a family mould with two cavities. The cycle time is 60 seconds. The part weight is 41.2 grams for the box and 23.5 grams for the lid.

Removal is handled by an ENGEL viper 12 linear robot, which places the components on a conveyor belt. The robot is fully integrated into the CC300 machine controller. In combination with iQ motion control, the movement is adapted to the mould opening process, which further reduces cycle time and energy consumption.

The tie-bar-less design simplifies set-up, improves accessibility for operators and automation and increases flexibility in mould design. At the same time, the machine offers economic advantages. The compact design reduces the machine length by around 200 mm. At the same time, larger moulds can be used than on tie-bar-guided machines of the same clamping force class. This means that a mould can be operated on a victory electric 220 that would require around 3,200 kN with a conventional design. All main movements are electric via servo motors with ball screws. The integrated recovery of braking energy reduces energy consumption. The machine on display is also equipped with assistance systems from the inject AI product family, including iQ weight control plus and iQ process observer.

All-electric WINTEC e-win 1800 for standardised solutions

A further exhibit is an all-electric production solution with a WINTEC e-win 1800 with 1,800 kN clamping force. The compact machine produces Appetitiv trays made of PP with a part weight of 175 grams in a cycle time of 60 seconds. A viper linear robot handles removal from the mould and places the parts on an automatic discharge conveyor.



Image 2: The all-electric WINTEC e-win stands for high repeatability, low energy consumption and cost-efficient series production in standard-oriented applications.

The mould from ASM France used here offers particular potential. Adapters for different part layouts can be inserted into the mould. This allows the production solution to be adapted to changing requirements. This reduces mould costs and increases flexibility in production planning.

The all-electric drive technology of the e-win ensures high repeatability, stable shot weights and consistent component quality. Since energy is only required during the actual movements, energy

costs can be reduced compared to hydraulic machines. As no hydraulic oil is required, maintenance effort and the risk of downtime are also reduced. Process control is supported by digital assistance systems. iQ clamp control automatically optimises the clamping force to the actually required value and reduces it by up to 35%. This protects the mould and saves energy. iQ hold control automatically optimises the holding pressure time, which shortens cycle times by up to 14% and leads to faster series production. iQ weight control automatically compensates for fluctuations in melt viscosity within the same shot. This increases process stability and reduces scrap by up to 50%.

Increased system availability and lower costs through AI-supported assistance systems

At the Expert Corner, ENGEL shows how digital assistance systems and AI-based functions create measurable added value along the entire production process. They already support product development and mould trials by helping to optimise processes earlier and prepare series start-ups more reliably. In ongoing production, intelligent assistance systems and shopfloor management solutions ensure stable processes and high productivity. Assistance systems such as iQ weight control, iQ clamp control, iQ flow control, iQ melt control and iQ motion control intervene directly in the process and automatically optimise quality- and efficiency-relevant parameters.



Image 3: ENGEL inject AI shows how processes can be stabilised with digital assistance systems, scrap reduced and systems used more efficiently, while effectively countering the shortage of skilled workers.

In addition, monitoring and remote maintenance tools increase transparency in operation and help to secure the long-term availability of machines and systems. The iQ process observer uses AI support to analyse more than 1,000 process parameters simultaneously, detects deviations at an early stage and provides specific recommendations for action. This concept is complemented by the ENGEL Virtual Assistant and by AI-based applications such as the part finder for identifying spare parts via photo. This reduces scrap, increases system availability and improves the use of machine and personnel resources.

Expert Corner for rotary tables and index plates

A further focus at the exhibition stand is the area of rotary tables and index plates. ENGEL thereby addresses the need of many processors for compatible, long-term available solutions for multi-component applications. The ENGEL index plates are designed so that existing mould concepts can continue to be used in many cases. This reduces the technical and economic effort involved in follow-up investments and increases planning security.

Digital insights into the duo 5500 combi M for large-format parts

With a digital twin, ENGEL shows at FIP the potential that the duo 5500 combi M two-platen injection moulding machine opens up for the development of large-format plastic parts. The machine is available for customer trials in the ENGEL technical centre in St. Valentin. With 55,000 kN clamping force, 3.5 x 3.5 metre platens, 6.6 metres platen distance, mould weights of up to 150 tonnes and shot weights of up to 42 kilograms, it creates the prerequisites for testing large parts under realistic conditions. This shortens development times, reduces technical risks and creates a robust basis for later series production.

clearmelt integrates surface finishing into the process

ENGEL shows how large-format parts with a high-quality surface can be manufactured cost-efficiently using the clearmelt process as an example. In this process, the injection-moulded part is overmoulded with PUR directly in the mould. Surface finishing is thus integrated directly into the injection moulding process, corresponding to coating in the mould. For processors, this reduces the need for downstream process steps, shortens the production chain and improves the reproducibility of surface quality.

At the exhibition stand in Lyon, the ENGEL Group shows how precision, cost efficiency and process stability can be specifically improved for different production requirements with the appropriate machine, automation and process solutions.

Visit us at FIP, Stand N04-O03

Images: ENGEL

ENGEL AUSTRIA GmbH

ENGEL is one of the global leaders in the manufacture of injection moulding machines. 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 together with automation, with individual components also being competitive and successful in the market. With eleven production plants in Europe, North America, Mexico and Asia (China, Korea and India), and subsidiaries and representatives in more than 85 countries, ENGEL offers its customers the excellent global support they need to compete and succeed with new technologies and leading-edge production systems.

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