

ENGEL at Interplastica 2020

Efficient and cost-effective for small batch numbers

Schwertberg, Austria – November 2019

At Interplastica 2020, from January 28th to 31st in Moscow, Russia, ENGEL AUSTRIA is showing how the smallest batch sizes can be efficiently and cost-effectively realised in injection moulding. The injection moulding machine manufacturer and system expert, headquartered in Austria, is presenting a highly integrated, assistance-supported production cell, a fully automated solution for the very fast switch of mould inserts. ENGEL guides its customers towards networked, self-optimising injection moulding production with inject 4.0.

Variant production with fully automated switch-over

With its focus on small batch sizes, ENGEL is picking up on the trend towards product individualisation and more variant diversity at Interplastica 2020. Examples include consumer goods such as writing instruments, technical parts in the automotive and electrical sectors, but also a range of medical technology products. Moulds with interchangeable inserts are often used in injection moulding in order to be able to cover high variant diversity in a cost-effective way. With this trade fair exhibit, ENGEL is taking this principle a step even further in collaboration with Braunform (Bahlingen, Germany) and other system partners. The system solution presented here supports the fully automated exchange of mould inserts in just one minute. The all-electric ENGEL e-motion 170/120 TL injection moulding machine is equipped with a mould featuring the fast-switch mechanism patented by Braunform.

During the fair, the machine is producing two geometrically different components of a calliper in rapid succession with a quick change. After just ten cycles, the injection moulding machine reports to the integrated ENGEL easix articulated robot that the batch is complete and unlocks the mould inserts. The robot first removes the last component that was produced, then

changes the gripper and replaces the mould inserts. A complete changeover process from good part to good part production takes just one minute.

One of the challenges of this application is that the two components have different shot weights. However, in order to produce a good part with the first shot after the change, the injection moulding machine continuously self-optimises with the aid of three intelligent assistance systems from ENGEL's inject 4.0 programme. While iQ weight control readjusts the melt volume for each individual shot, iQ clamp control determines the optimum clamping force and adjusts to it automatically. Based on the measured values determined by e-floMo, iQ flow control automatically adjusts temperature differences in the cooling water manifold circuit and adjusts the pump capacity at the e-temp temperature control units to match the current process conditions.

The extremely compact design of the production cell is particularly eye-catching. The easix robot at the centre is responsible for the complete handling of the mould inserts and component parts, marking and assembling the injection moulded parts, and ejecting the callipers. The injection moulding machine, the station for the grippers and mould inserts, the laser printer, the assembly device and the conveyor unit are arranged in a star shape around the robot. The tie-bar-less clamping unit of the e-motion TL injection moulding machine contributes to the space-saving arrangement of the individual components. Barrier-free access to the mould area makes it possible for the robot to move in very close to the clamping unit without restricting its motion.

Customer portal integrates smart service products

The modular approach of ENGEL's inject 4.0 range makes it easy for processors to leverage the efficiency and quality potentials that digitalisation and networking offer in production. Even individual solutions such as smart assistance systems offer considerable benefits.

On top of this, ENGEL has brought its smart service solutions along to Interplastica. At any time and anywhere, the e-connect customer portal offers an overview of the machine status, the condition of the monitored machine components, the processing status of service and support orders and the prices and availability of spare parts. e-connect.monitor for condition-based, predictive maintenance and e-connect.24 for 24/7 online support are integrated into the customer portal.

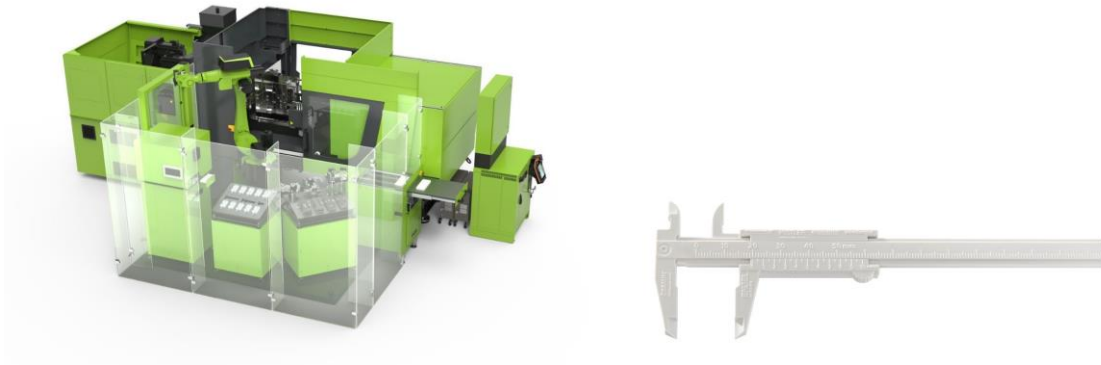
Tutorials on the machine display

A further ENGEL focus at the stand is the machine control unit. The CC300 control unit is being showcased in Moscow along with an upgraded control concept and new features. From the outset, smartphones have served as models for the development of the user interface. This is clear to see once again from the latest improvements. For instance, favourites can be created and edited incredibly easily and quickly in the new release. The new navigation offers even better orientation and, because tasks and components are now organised on the same page, machine operators can switch back and forth between tasks and components even faster.

ENGEL is taking another significant step forwards in development by providing tutorials on the CC300 control unit, and therefore directly at the workplace. The aim of these quick lessons is to support the system operator with unlocking the full potential of the injection moulding machines and systems solutions, without them needing to spend a great deal of time in training sessions or doing online research. The tutorials ensure that all employees in the factory are always brought up to the same level of knowledge.

The tutorials cover a wide range of topics. From guides on new features through to frequently asked trend topics, such as quality and throughput times. Visitors to the trade fair can click through the tutorials live and learn even more about the CC300 control unit's new features.

ENGEL at Interplastica 2020: Hall 2, Stand 21B23



ENGEL is integrating all the process units for fully-automated variant manufacturing on a very compact footprint. Two-part callipers are being produced during the show.



The CC300 control unit will be on show at Interplastica with an upgraded control concept and new features. ENGEL is taking the next big development step with tutorials that are available directly on the display.

Pictures: ENGEL

ENGEL AUSTRIA GmbH

ENGEL is one of the global leaders in the manufacture of plastics processing 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 nine production plants in Europe, North America and Asia (China and Korea), 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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