

ENGEL at Plastpol 2022 in Kielce

Intelligent processes for improved efficiency and sustainability

Schwertberg, Austria – April 2022

Digitalisation and sustainability hand in hand – at Plastpol 2022 from 24 to 27 May in Kielce, Poland, ENGEL is presenting smart exhibits in Hall F (Stands 3 and 4) to show how important the automation and digitalisation of injection moulding processes are – not only for productivity, but also for improved energy and resource efficiency.

At Plastpol, ENGEL is premiering a production cell with an integrated ENGEL easix articulated robot. Lunch boxes made of polypropylene are being produced with the help of robots on an ENGEL duo 2460/400 injection moulding machine. The mould comes from a local mould manufacturing partner, A.D.Tech from Ozorków in Poland. Thanks to its dual-platen clamping unit, the duo combines high output on a comparatively small footprint.

Where ENGEL delivers the two systems, the machine and the robot, from a single source as an integrated system solution, both control units share a common database. In this case, the easix articulated robot can tune its movements to precisely reflect those of the machine. This means that the robot can start to move in while the mould is still opening and reduce the handling time by doing so.

ENGEL easix for the first time live at Plastpol

The robot and injection moulding machine control units follow a uniform control logic. This makes programming and operating easix articulated robots a totally easy experience for the operator. Anyone who has already worked with ENGEL viper linear robots, will immediately

feel at home when it comes to operating the easix articulated robot as the rotation motion is converted into linear motion.

The exhibit draws on the iQ weight control, iQ clamp control, iQ melt control and iQ flow control smart assistance systems to demonstrate why digitalising the injection moulding process is so important for greater sustainability.

Working together, iQ weight control and iQ flow control compensate for fluctuations in the injection moulding process, reducing the number of rejects by doing so. iQ weight control detects fluctuations in the melt volume and material viscosity, and adjusts the injection profile, switchover point and holding pressure to match. iQ flow control compensates for temperature differences in the individual cooling circuits to ensure constant temperature control conditions. As a consequence, repeatability and energy efficiency are boosted.

iQ clamp control and iQ melt control also ensure high product quality across the board. While iQ clamp control determines the optimum clamping force on the basis of mould breathing and automatically adjusts for this, iQ melt control adapts the plasticising time to reflect the current conditions.

Smart assistance is an essential characteristic of the smart factory. And the modular approach of ENGEL's inject 4.0 program makes it very easy for plastics processors to grasp the opportunities that digitalisation offers in this field. Each smart assistance system offers great benefits individually.

High speed couples with energy efficiency

As its second exhibit, ENGEL is presenting an ENGEL e-motion 740/160 injection moulding machine in Kielce producing plant pots made of PP in a cycle time of just four seconds. The partner for the mould and high-speed automation for this exhibit is Brink Automation (Harskamp, Netherlands).

The all-electric e-motion series stands for particularly energy-efficient, high-performance injection moulding. All main movements in this sophisticated machine solution are servo-electrically powered. And for this exhibit, too, the iQ weight control, iQ clamp control and iQ melt control smart assistance systems additionally boost production efficiency.

Another product from the inject 4.0 programme, e-connect.monitor with the module for ball screws in high-performance electrical machines, is also set to grab the attention of trade show visitors. This predictive condition monitoring system lets moulders monitor process-critical machine components during ongoing operation. As a result of the forecast on the remaining service life of the components, unplanned machine downtime can be minimised, and maintenance scheduled in good time to maximise machinery availability.

System solutions from a single source

In addition to injection moulding machines and robots, many processing technologies and digitalisation solutions at ENGEL are in-house developments. In one Expert Corner of its stand, ENGEL is highlighting the benefits this offers for injection moulders. As a system supplier, ENGEL bears the overall responsibility for the production cell, and this includes system components which are implemented in collaboration with partners. Operators can turn to ENGEL as a central point of contact to accelerate project engineering, start-up and service calls for manufacturing cells in active production.

As a long-standing partner, TMA Automation, based in Gdynia, Poland, is also exhibiting at Plastpol 2022. One of the automation specialist's focuses is on in-mould labelling processes in the mid-range performance segment. TMA Automation became a member of the ENGEL Group in March this year.

Lecture for students at 12 o'clock every day

In line with its long-standing tradition, ENGEL Polska is inviting students to a presentation at its booth at 12 o'clock on each day of the Plastpol fair. This year, one focus is on the topics of sustainability and the circular economy.

For many years, ENGEL has been one of the strong drivers of the circular economy for plastics. This is expressed equally in the form of ENGEL's strong social commitment and innovative technological strength. The aim of the research and development work is to open up a wider range of applications for processed plastic waste. One approach to doing this relies on smart assistance systems which reliably identify and compensate for fluctuations in the raw

material, even when processing recycled material. The digitalisation of injection moulding is essential for a value-preserving circular economy for plastics.

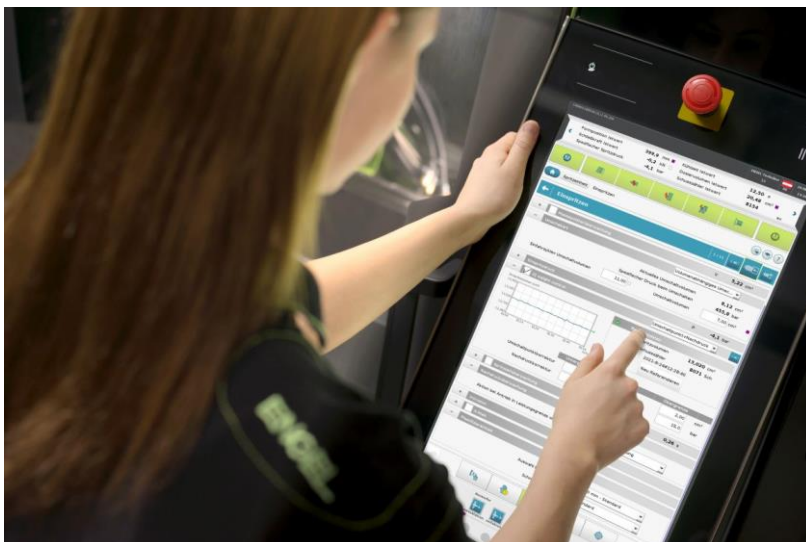
ENGEL at Plastpol 2022: hall F, stands 3 and 4



Premiere at the fair in Poland: Teamed with an ENGEL duo injection moulding machine, an ENGEL easix articulated robot is producing lunch boxes during the four days of the fair.



The all-electric ENGEL e-motion combines high performance with very low energy consumption.



Smart assistance helps the injection moulder to leverage the full potential of the injection moulding machine. The consequences are constantly high part quality and improved efficiency.

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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