



28. Fakuma

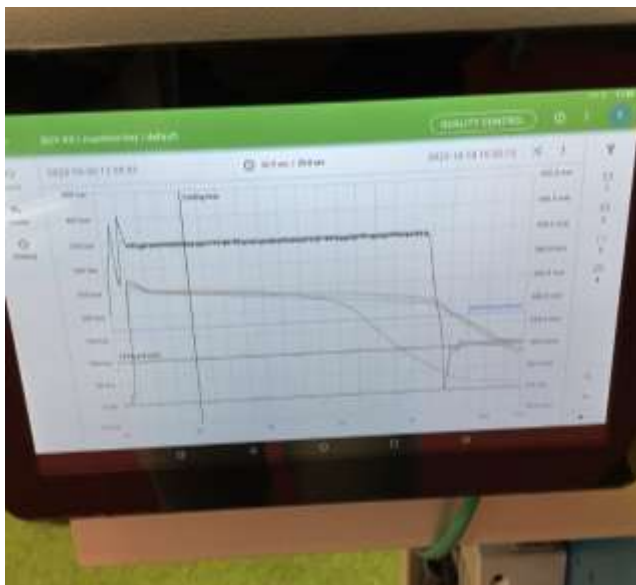
International trade fair for
plastics processing

17 to 21 October 2023 in Friedrichshafen

Executive Summary

At the Fakuma23 Plastic Injection Fair that we have participated on 20 and 21 October, several key themes were highlighted. We observed **'Data Driven Process Control'**, emphasizing the use of current data to better the injection process. **Artificial Intelligence's** role in **'Manufacturing Predictive Maintenance'** was another focal point, assisting factories to anticipate machine maintenance needs. Insights on **'Sustainability'** were also prominent, emphasizing the use of *recycled materials*, prioritizing *energy efficiency*, and the tracking of *CO2 emissions*. These concepts offer a clear view into the current advancements and trends shaping the plastic injection industry.





Company

Cavity Eye



Branch

Molding Monitoring
and Control Solutions

Key Benefits

Cavity Pressure Monitoring

Cavity Eye system consists of the one hand out of pressure sensors installed in the injection molding tool. The second part of the system includes hardware and software that evaluates information from the injection molding machine and the internal pressure curves of each cavity in the tool. Based on pressure data automated scrap selection, process performance monitoring and valve gate control can be performed. Comparing with the in-mold sensor control system which has been developed with Ascenix, cavity eye sensor used strain gauge instead of pressure sensor to measure cavity pressure. This is cost beneficial compared to our solution.

Possible Application Area

- Injection Molding Processes
- To be used as pilot case to compare and benchmark our existing cavity sensors.

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Company

Moldsonics



Branch

Ultrasonic sensor
technology for your plastics
processing

Key Benefits

Measure quality parameters without contact and without interfering with the process

- Non-contact and therefore no interaction with the running system
- Simple installation, just a blind hole with a diameter of 10 mm is necessary
- Condition monitoring by permanently measuring relevant parameters
- Cost savings and process knowledge through additional parameters which go far beyond pressure and temperature measurements

Possible Application Area

- Ultrasonic sensors can be used where temperature sensors are used.

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Company

GIMATIC



Branch

Gripping Systems With
Parameterized Control

Key Benefits

Servo Gripper - MPCF

- Direct control of the motor and embedded ABZ encoder driver.
- High resolution fingers' displacement.
- Embedded torque brushless motors with 24Vdc nominal voltage.
- Fully open connection to standard brushless servo drives from the market.
- The choice of the fieldbus is up to the customer.
- Smooth design for collaborative application.
- The elastic element allows secure grip of the piece.

Possible Application Area

- It can be used in the processes of soft material handling.
- There could be a joint study with pick & place and bin picking applications and servo grippers.

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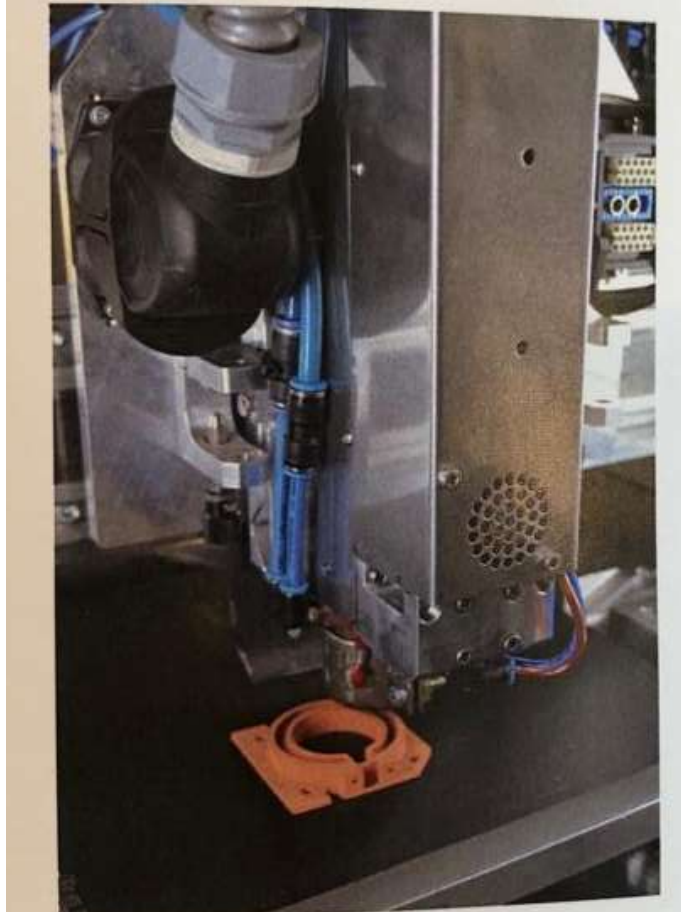
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Print head of a CEM printer



Company

Schunk



Branch

Rapid Prototyping and
Small Series Production

Key Benefits

Mobility

- Additive manufacturing of metal components by composite extrusion modelling
- The advantage of the 3D printing process: You can use the same materials as in the conventional metal injection molding process. However, the shaping is not tool-bound, but freely produced through the extrusion process. Layer by layer, we shape the complete geometry of your component in just a few hours, without the need for an expensive tool.

Possible Application Area

- Potential collaboration for Manufacturing Cu Alloy 3D printing parts

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Company

Engel

ENGEL

Branch

Digital Solutions in
Injection Molding

Key Benefits

Inject 4.0

- Central, digital data collection enables you to better plan capacity and increase the efficiency of your machinery. With the MES authentic you can replace your manual data collection with digital reports. The flood of information is streamlined, and processing times are shortened.
- By networking your injection molding machines, you can exchange information directly with software systems. Process data is digitally recorded and collected in real time. Through permanent production and process monitoring, you can permanently improve your production performance.
- Under the scope of Inject 4.0, there is IQ hold control system to minimize 50% percent tool modifications, clamping force optimizing to achieve 33% energy reduction.

Possible Application Area

- Plastic Injection Processes

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