

PRODUCTION TECHNOLOGY

NNPB process optimisation, regulation and digitalisation from HEYE

Based at Obernkirchen, Germany, Heye International GmbH is an international glass container industry supplier of production technology, high performance equipment and production know-how with more than five decades of experience in process optimisation, regulation and digitalisation of the NNPB process.

Industry expertise, combined with enthusiasm and a positive attitude, mirror the company's motto 'We are Glass People'. Its three sub-brands HiPERFORM, HiSHIELD and HiTRUST form the Heye Smart Plant portfolio, addressing the glass industry's hot end, cold end and service requirements respectively.



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HEYE PROCESS CONTROL 4.0

According to Hans Renders, Head of Product Management at Heye International, the Heye Process Control 4.0 (HPC) was the crucial milestone to initiate Industry 4.0 within the glass industry. Heye Process Control 4.0 is a closed-loop-solution for the press process of all plunger mechanisms within an IS-machine. Simultaneously, it keeps the gob weight stable. Its computer interface displays several forming events on selectable charts and allows users to improve parameter setting by comparing data.

Early detection of malfunctions increases production efficiency. The integrated plunger cylinders guarantee precise and consistent parison parameters for press-blow and NNPB production.

Sustainable process data management

The Heye Process Control is an essential closed-loop system for every glass manufacturer in order

to meet the high quality requirements of NNPB production.

Changes in customers' process requirements have driven Heye International engineers to modify the Heye Process Control (HPC) from solely a plunger sensor to a holistic solution. The data acquisition from different sensors and the regulation of process parameters are now realised in the Heye ProcessMaster in which the Heye Process Control becomes a subsystem.

HEYE PROCESSMASTER

The Heye ProcessMaster (HPM) is a modular central software solution which is used as a basis for most sensor solutions in Hot End production. HPM now makes it possible to implement single sensors as well as complex sensor systems.

These sensors are, for example:

- the Heye GobMaster for weight control of BB-process and additional information like gob-shape, temperature and dimensions;
- the Heye BlankMaster, which monitors different mould part temperatures and gob loading at the blank side; and
- stand-alone gob temperature sensor.

All collected sensor and machine data can be used inside the production process to regulate process parameters like gob weight, press duration or mould part temperatures.

All collected process data is stored in the HPM for seven days.

HEYE SMARTLINK

The collected data can be extracted via Heye SmartLink to be used by a third-party Manufacturing Execution System (MES) to get a long-term history of all relevant machine and process data. This generates a better understanding of the process and the machine behaviour and consequently to implement optimisations on process and machine.

USER INTERFACE

Heye maintains contact with its customers to set up user interfaces for a friendlier and more intuitive operation. Hence, the HPM gets a reworked user interface on each operating system update to let the operator feel more comfortable and familiar when handling the system. ■



Heye ProcessMaster: Overview of available functions according to customer-specific requirements



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