

HEYE INTERNATIONAL

on the smart road
to Industry 4.0



Adoption of the latest technologies is now crucial for the international glass container industry, says Mark Ziegler. Glass is constantly under pressure from other packaging materials, while attracting skilled people to work at the industry's factories is an increasing challenge. Heye offers customers a partnership on their individual path towards a smart plant, resulting in the creation of a highly automated and cost-effective glassworks.



Mark Ziegler
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Selection is key to defining the perfect path but some decision makers are still confused by the issues surrounding Industry 4.0 technologies. Combined with rising CAPEX challenges, this makes it absolutely necessary for plants to identify a partner when it comes to the selection of appropriate technology.

Not everything that is possible makes economic sense for a glass container plant. The glass people at Heye combine long-term process expertise and a passion for the material with advanced skills in the latest technology. Every possible solution is evaluated by



the company's process experts based on the decision criteria of financial ROI, workplace safety and influence on product quality.

SMART USER INTERFACES

The availability of smart user interfaces for operators has become especially important, as production employees with comprehensive process knowledge are increasingly difficult to find. The Heye Cockpit will become the central user access to the Heye SpeedMaster hot end control and process intelligence portfolio. The Heye SpeedMaster consists of three modules: E-timing; motion control (servo

and pneumatic actuators) and the process intelligence solution set, combining all process control closed loops.

The approach employed is user-centric. The cockpit integrates all relevant sub-systems at the hot end, plus the Heye PlantPilot. Features like the integrated article database make job changes as easy as possible.

Combined with precise mechanisms, the latest servo technology helps to achieve maximum production speed at high quality levels, especially for large beer lines etc. High production flexibility is another result of the technology. Glass plants with small cus-

tomers and many different jobs have two advantages. First, job changes can be performed in a very short time, as important parameters will be retrieved and the major parts of the machinery will be adjusted automatically in the future. Second, the operators can produce different bottles on one IS machine, by using multi-weight assortment technology. This makes the production of samples or short job runs extremely efficient.

PROCESS CONTROL AND CLOSED LOOP SOLUTION SET

As well as being the inventor of the NNPB process, Heye has

set the standard in closed loop production technology. A large set of closed loop solutions gives the customer a competitive edge. Heye offers operator assistance for gob loading and closed loops for gob form and weight.

Following the glass flow, on the blank mould side, closed loops for cooling and press duration/glass distribution are available. The swabbing robot eliminates one of the most important manual working steps, at the same time being the basis for precise, infrared-based temperature measurement on the blank side.

Closed loops on the blow side allow accurate, high speed ware handling. Dead plate cooling is controlled, creating the basis for proper bottle movement through the high speed pushers, while the closed loop for ware spacing is a second speed-relevant factor. Furthermore, both loops eliminate defects generated by a wrong ware handling set-up. Many of these solutions are already available, while others are in the prototype phase. In some areas, operator assistance is a good first step and in other areas, full closed loop systems are already in place.

CONNECTING THE HOT END AND COLD END

The Heye PlantPilot is a cornerstone in the field of data integration in the glass plant. By using internet-based technology, different machines or modules can be connected to manage the plant.

In addition, important analysis possibilities are offered to optimise the production process. Data integration between hot end and cold end helps especially to gain time. Via the

Heye Cockpit, the hot end operator has a perfect overview of the defect situation on the different cavities. By a future extension of the database to an expert system, recommendations for the correction of production defects can be given. As production companies have more and more challenges to find skilled people, these expert systems for glass forming will become an important success factor.

SUMMARY

In summary, the Heye smart plant concept combines different innovative solutions in major areas. All of them have become possible through a set of enabling technologies, from sensors and communication networks to robots. The Heye glass people are the correct partners to develop a common roadmap for the journey to a smart plant, a factory that will be able to produce high productivity containers at low cost, resource-efficiently and with a consistently high quality. ■



smart plant



Heye Cockpit



Heye SpeedMaster



E-Timing



Actuators



Process Intelligence



Heye PlantPilot



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