Positive industry reaction received

XPAR Vision and Bottero used the recent glasstec exhibition to launch BoX, described here by Paul Schreuders and Gianclaudio Borsarelli as the next step in the glassmaker's search for automation and better repeatability of the forming process.

The recent glasstec 2012 exhibition in Düsseldorf confirmed that international trade fairs have moved away from their original function of providing potential customers and in turn, making potential suppliers better known. In a globalised world, there are no unknown suppliers or customers; what drives people to a trade fair is the product.

Customers expect their supplier to become increasingly innovative, to come up with creative solutions to maximise quality and output in order to meet demand. Glassmakers face challenging times, trying to comply with the expectations of their customers and in their ambition to achieve this innovative edge, are looking towards their suppliers for help.

In order to assist glassmakers to face their challenges, XPAR Vision and Bottero used glasstec 2012 to launch the BoX.

The BoX was exposed as a huge black cube of more than 3.5m x 3.5m furnished as a theatre, wherein audience members were provided a relaxing seat and a movie about the key functionalities of the BoX were shown. This movie can now be downloaded from www.xparvision.com and www.bottero.com.

The BoX reduces process and product variations dramatically and automatically, independent of operators. Furthermore, it automatically corrects for so-called uncontrollable factors such as ambient temperature fluctuations (eg day/night rhythm and forehearth temperatures). The result is a much higher quality of both forming process and container. Due to the fact that the operator has been freed up from firefighting all the time, quality is boosted.

Tested and proven for 18 months on location, the BoX is a next step in the glassmaker's search for automation and better repeatability of the forming process. It is by far the most revolutionary step taken in this industry towards automation. The advantages are considerable: Increased pack-to-melt, improved consistency and predictability, improved glass distribution and glass thickness distribution and reduced critical defects. Applying the BoX is easy and requires little training.

BoX made its public debut at the recent glasstec exhibition.

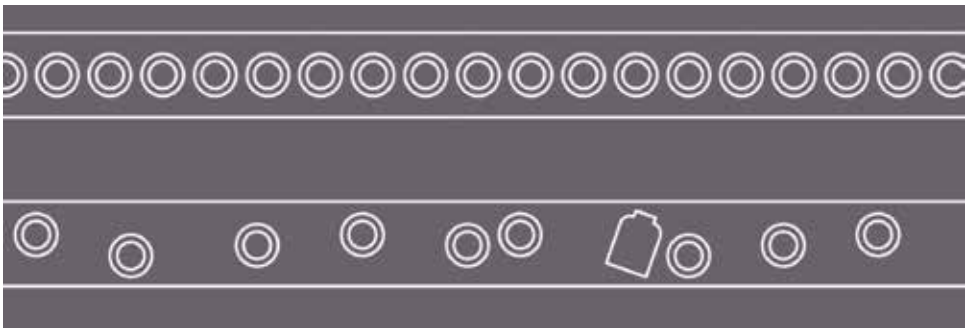

Figure 1: Stable ware spacing between all sections/cavities.

WARE SPACING

Ware spacing is the distance between bottles on the conveyer belt. The more even this distance, the better the transport on the conveyer belt. Better, stable transport means less fallen and stuck ware on the belt, less coating hood jams and reduced levels of fallen

Figure 2: Stable glass distribution across all cavities.

ware in the annealing lehr. Properly organised transport is also a precondition for speed increases.

Even more importantly, with properly organised transport, the shop floor remains free from glass and is therefore safer. Furthermore, the operator's workload reduces significantly, allowing him to focus on other forming process parameters.

The BoX automatically controls and optimises ware spacing. The result is stable ware spacing between all sections/cavities (figure 1). After a job change, the ware spacing module takes control and ware spacing is optimised automatically. Simply press the start button and the BoX takes control. As proved by several customer trials, the accuracy of this automated control loop goes beyond that achieved by the best operator/specialist.

GLASS DISTRIBUTION

Glass distribution is the distribution of glass within the bottle. It tends to drift over time, for example due to fluctuating ambient temperatures (day and night rhythms) and fast changes in the cooling capacity of IS machines due to weather changes. In addition, unwanted changes in the forehearth are common causes of change in glass distribution. Less variation in glass distribution means less quality problems related to glass distribution, as there are thick/thin bases, thin spots, thin necks etc. Also, the IS machine will run more smoothly, as the number of outliers reduces due to stable glass distribution.

The aim of controlling glass distribution is to achieve stability across all cavities and to make glass distribution independent from ambient temperature fluctuations (day/night) and from feeder (glass) temperature fluctuations, whereby human interaction is excluded.

Unlike the ware spacing module, controlling glass distribution goes beyond current operator and specialist capability and brings the forming process as a whole to a higher level of control (figure 2). As such, this control loop is the key towards the future of operating an IS machine.

The success and the interest raised by the BoX during glasstec 2012 has shown clearly that glassmakers are at the research of helpful tools to increase automation and reach higher productivity targets. In other words, what makes the difference is the process-based product. The BoX has all the features to meet this demand. It represents a revolutionary step forward in that continuous process that started in the glass container industry when for the first time, one computer became the interface for all electronic controls of an IS machine. For the first time, quality control works in a closed loop with the forming technology and can correct and keep itself under control, without the need for human intervention. ■

ABOUT THE AUTHORS:
Paul Schreuders is Chief Executive Officer at XPAR Vision and Gianclaudio Borsarelli is Hollow Glass Business Unit Leader at Bottero

FURTHER INFORMATION:
XPAR Vision BV, Groningen, The Netherlands
tel: +31 50 316 2888
email: schreuders@xparvision.com
web: www.xparvision.com

Bottero SpA, Cuneo, Italy
tel: +39 0171 310611
email: claudio.borsarelli@bottero.com
web: www.bottero.com