glass WORLDWIDE

FleXinspect T with ID Read.

Speaking the same language…
the cold end contribution

In a series of articles that started in the September/October 2020 issue of *Glass Worldwide,* industry experts from Bucher Emhart Glass have discussed the importance of data being translated among the different systems in the glass container manufacturing process. In this final installment, Mike Rentschler discusses how cold end inspection systems are the ultimate smart sensors in the process. As noted in the first article in the series, speaking the same language is the key.

When stepping back and looking at everything in a glass plant that needs to work in perfect harmony to produce a quality product, it is evident there is an incredible amount of process data that has yet to be leveraged. At the cold end, multiple devices and gauges test and measure containers. Historically, these devices had a primary function: Remove defective articles from the line. Never before could these machines tell how bad or how good a container might be.

Today, inspection systems from Bucher Emhart Glass are key information generation tools. For those who want to automate and stabilise their processes, it is imperative that the critical information held within the data that these systems generate is not lost when translated into a workable data model.

When looking at cold end inspection equipment as smart sensing devices, it is possible to see the role that these machines play in the validation processes. For instance, in the forming process users may want to control a blank temperature to a specific range. Running blanks cold may create loading marks, drag marks or cold mould appearance defects, while running them hot may create

laps, wrinkles, pressure checks and washboards.

Using a smart sensing device at the hot end, the system measures the blank temperatures and feeds back information needed to increase or decrease the values to control the temperatures within a specified range. But that is only the first step in stabilising the process. The next step is to analyse the result and fine-

tune the control limits to ensure that the system provides the desired output. This is accomplished by using the data generated from the cold end inspection machines to validate the quality levels of each container.

Once inspected, the appropriate information goes to the Control Center. The Control Center then converts the inspection information into a workable data model that allows the hot end system to determine if a shift in the specified temperature range achieves a more consistent outcome. Knowing what the blank temperature was when the bottle was formed and correlating it to all of the detailed inspection ▶

Individual ID.
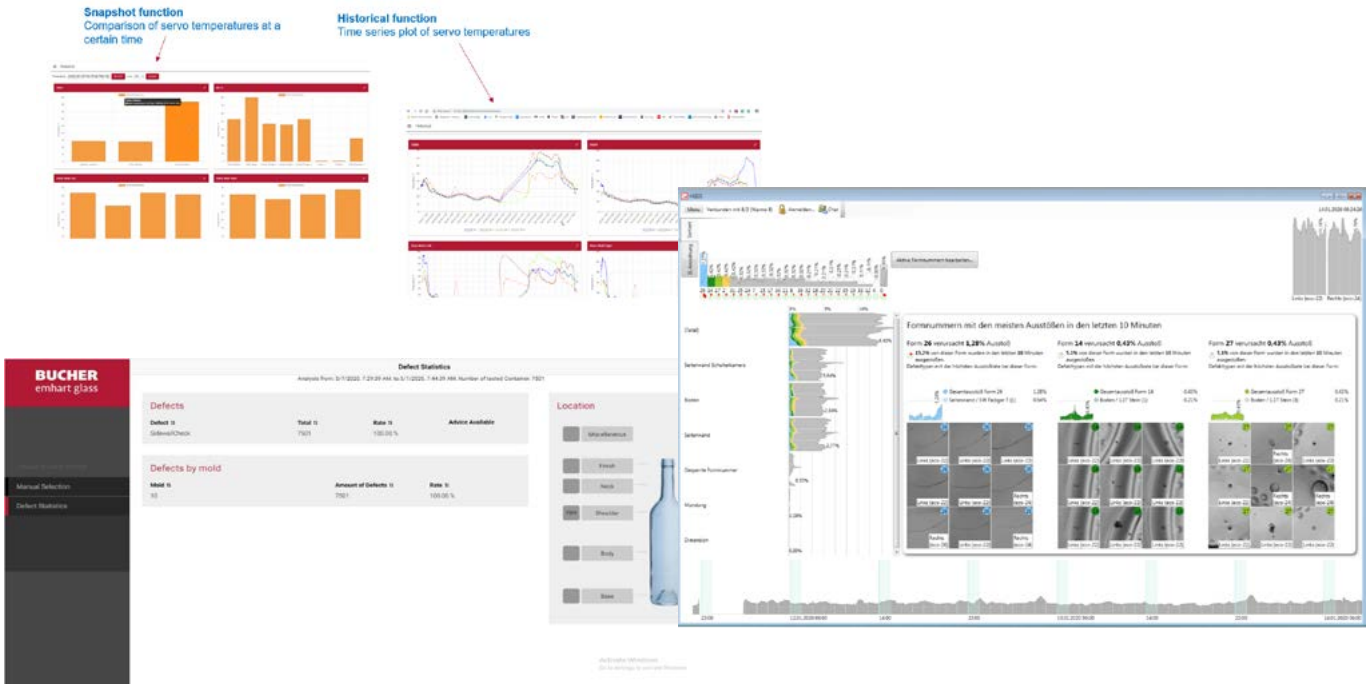
Control Center applications.

measurement characteristics of that same bottle, allows users to truly optimise the final product.

And this is just a small part of what can be possible.

It was not that long ago when every glass container manufacturing facility had opposing forces under its roof. The hot end was where bottles and jars were being created. The cold end was where they were being thrown away. Today, glass plants operate much differently.

They understand the importance of inspection and that the cold end equipment does more than just filter out the bad articles from the good.

The big push now is to capture as much data as possible from container inspection. Everything that can be measured is measured. Everything that can be stored is stored.

The next big push will be in the analysis of the information to make changes and tighten control of the processes. In reality, the industry

is only beginning to discover how it can leverage all of the information that the inspection process can provide. Nevertheless, what has become obvious is that every part of the process needs to work together in perfect harmony with the machines and sensors, all speaking the same language so that valuable information is not lost in the translation from one system to another.

This is the challenge that Bucher Emhart Glass is helping to solve by engraving each container with an individual ID and time stamp at the hot end that follows it through the entire production process from forming to inspection. The result is a data package that covers every aspect of the container's production and inspection. As noted in the first article in this series, this now enables big data analysis of the forming process, as well as allowing further data from the furnace and packing equipment based on the time stamp.

Having the ability to control and measure all aspects from the forming process and validate the results within the inspection area is what separates Bucher Emhart Glass from the rest of the industry. ●

Scout interface w/a DMX code, as read by the ID Read.

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