Bucher Emhart Glass launches new Scout inspection technology

Mike Rentschler* describes Bucher Emhart Glass's next generation container glass inspection technology, which will form the platform for all of its future improvements in inspection equipment.

Bucher Emhart Glass (BEG) has launched its latest inspection technology, Scout. More than just a software update, Scout offers its users better lighting, higher-resolution optics, faster and more powerful processing, advanced inspection algorithms and a simplified user interface, that helps to improve quality control and make inspection operators' work quicker and easier. It will form the platform for all of its future improvements in inspection technology.

Development

In 2008 BEG's engineers discussed the idea of a next-generation inspection machine based on a new technology platform. However, commercial priorities meant that FleXinspect, the firm's existing inspection product line, had to be launched first. After the successful launch and stabilisation period, BEG has gone back to its original concept and Scout is the result.

The brief for software developers was to take the best from existing technology while also meeting a host of new inspection algorithm requirements. That meant a top-to-bottom software rewrite that took around 18 months to complete. The development work focused on making life simpler for operators by boosting ease of use and automation, as no user should have to be a system experts to get the most from an inspection system.

Vision processioning computers have been updated to the latest industrial PC standards, providing the fastest, most reliable system available. Much of the new servo and computing technology is from fellow Bucher Industries Company, Jetter.

At the same time, the human-machine interface (HMI) has been radically changed, with a new, larger 21.5" high-definition multi-touch screen and a simplified navigation that makes it easier to set up jobs, identify defects and access key data.

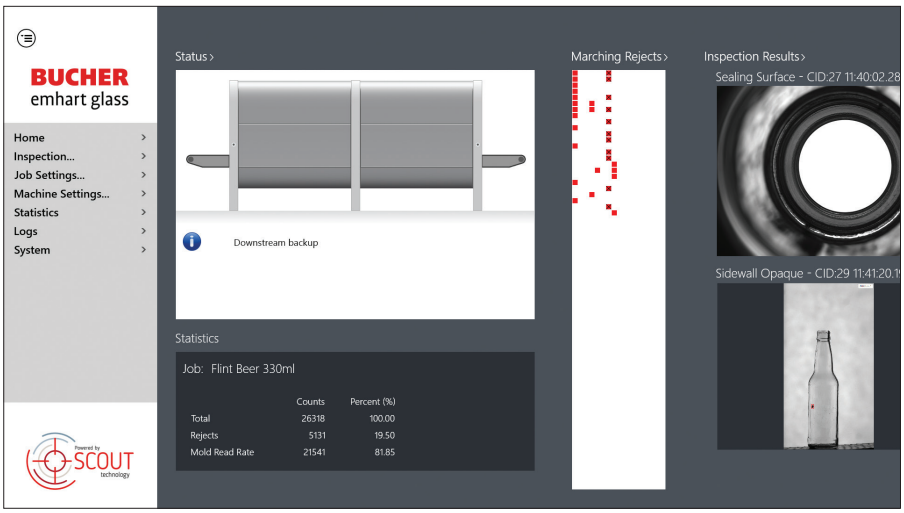
The new HMI is unique in the market and a major departure from what glass producers are used to. BEG's own inspection interface previously used a Microsoft Office-style navigation, with tabs and drill-down menus, but the new interface means the user is never more than two taps from their goal.

Streamlined interface

Users navigate the Scout system with the same tap, swipe, pinch and zoom gestures that we all know from using our smartphones and tablets. This emphasis on touch unlocks a new language for interacting with the underlying technology. While setting up a container, for example, the user can directly manipulate the on-screen image of it, zooming in or out and targeting the region they are interested in.

The streamlined interface is a help to customers in emerging economies, where highly skilled operators can be harder to find and retain.

While inspection operators in some areas may be electromechanical engineers, in other parts of the world they may have a lesser education or background. With Scout, BEG has aimed to create an interface that is accessible to as many operators as possible.



▲ Scout offers a simplified user interface, helping to improve quality control and make inspection operators' work quicker and easier.

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Deeper automation

Scout's other step forward is in terms of automation. If required, the machine can simply look at a container, learn what it is, and then perform a high level of inspection on it without any further action from the operators.

For expert operators, there are plenty of time-saving ideas. A prime example is the Super Classifier, which lets users control the quality limits for each defect type independently. Instead of going by size alone, Scout identifies and evaluates each flaw on its individual characteristics.

The Scout platform also allows BEG to make proprietary, in-house advances in image and inspection processing to improve the precision and reliability of base, sealing surface, sidewall and dimensional inspections, as well as mould-number reading. Enhancements to the suite of automated quality-control testing tools mean that BEG can now check the performance of its algorithms over large image sets to ensure that the machine and inspections perform at their optimal levels.

New life for older machines

Scout is offered as standard on all new FleXinspect machines and will be released for FleXinspect T and M later in 2016.

The technology can also be retrofitted to existing FleXinspect B, C, and BC machines, plus older Veritas iB and iC machines.

For current users of FleXinspect, the upgrade takes a few hours. Veritas owners can give their machines a new lease of life by keeping the existing shell but updating all the electronics inside it, effectively creating a FleXinspect in a Veritas frame. This takes a couple of days, but the performance boost means the reconfiguration will pay for itself within the first year of operation.

Scout has been in operation in live field trials since June 2015, working with multiple container types and glass colours, where reaction to both the interface and system performance has been universally positive.

Ready for the future

Now that BEG controls both the hardware and software used in its inspection technology, it can plan the next step in the evolutionary path: closing the information loop between container forming and container inspection. This brings the dream of fully automated glass-container manufacturing one step closer.

At present, inspection machines function as a filter that removes bad wares from the production line. In the future, they will play a larger role in controlling the actual quality of the container by acting as a precision sensing device that monitors and feeds back information based on process changes and conditions. In technology terms, this will be an evolutionary step – but the impact on the glass container industry will be revolutionary.

With the modular design of FleXinspect and the flexibility of Scout, BEG's inspection machines can now be expanded and upgraded with new technology to support successive furnace campaigns almost indefinitely. So machines being installed today could easily still be in use in 30 years' time. ■

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For more information and technical specifications on Scout, please visit www.scoutbyemhart.com