

Experts in inspection

Hartford-Empire, the forerunner of Emhart Glass, was one of the first firms to explore the potential of automatic inspection during the 1940s. Six decades, two acquisitions and many innovations later, the company has emerged as a leading provider of inspection technology for glass container makers. Mike Rentschler discusses the firm's current range and the features and benefits of each model.

The Emhart Glass inspection products, marketed under the FleXinspect brand, include a machine for every need. Whether glassmakers want to renew their entire production line or simply replace an ageing machine on a 'drop-in' basis, the FleXinspect product line offers the ideal option.

BASE, FINISH AND MORE

With all options installed, the FleXinspect B can inspect a wide range of base and finish features at speeds of up to 600 containers/min. It can also scan mould codes cut into the heel or base of the container, allowing inspection results to be correlated to mould cavities. An additional camera can detect base stresses – a big plus for quality focused customers.

FleXinspect B is also available with vision plug and vision dip/saddle inspections, for accurate gauging without contacting the container finish at high speeds. An optional add-on kit enables accurate detection of serious defects such as wire edge.

The servo-driven belt handler of the FleXinspect B is specially designed to handle unusual shapes at high speeds with maximum stability, including containers with diameters of up to 170mm and any size of neck.

SIDEWALL SUPERIORITY

FleXinspect C is a standalone machine for inspecting the sidewall of glass containers for all types of defects including stress and dimensions. It comes equipped with six cameras as standard, with the capability to enhance functionality by equipping up to 18 cameras that acquire a total of 24 images and can operate at speeds of up to 600 containers/min.

FleXinspect T: Total inspection solution.

FleXinspect C can be combined with FleXinspect B into one machine.



As a container passes through the FleXinspect C, its image is acquired by these cameras searching for sidewall defects, stress-causing defects and shoulder defects (for complicated geometric shapes). The advanced LED illumination system ensures optimal lighting, enabling the FleXinspect C to isolate targeted problems – for example, separating transparent defects from opaque

defects.

Because the FleXinspect C only looks at the closest surface, it never relies on looking through the near side of the container to try and detect a defect on the far side. All standard dimensional inspections – container lean, neck lean, height and diameter – are provided as standard.

BRILLIANT COMBINATION

FleXinspect BC combines the traditionally separate B and C machines in a single unit, offering a smaller footprint and requiring only one spacing device for all inspections, eliminating the need for additional equipment on the infeed.

However, space is only part of the story. With sidewall, finish, base and mould code reading combined in a single unit, manufacturers can correlate all inspection results – including sidewall data – to the mould in which the container was produced. In combination with a shop floor data collection system, it makes for a powerful and reliable way to monitor and evaluate the production process➤



In terms of core functions, FleXinspect BC replicates the abilities of the FleXinspect B and C. It can be configured as a simple finish or base inspector with six views of the sidewall, or as a fully loaded inspection system inspecting for multiple types of defects with 24 cameras and 30 different views of finish, base and sidewall. It also features the reliable servo-driven ware handling of the FleXinspect B and the responsive LED lighting of the FleXinspect C. Thanks to a flexible, modular design, users can add additional options whenever they like – not necessarily when the machine is first installed.

TOTAL SOLUTION

The flagship FleXinspect T brings together all the inspection expertise built up at Emhart Glass over decades of innovation and improvement. Unlike the other machines in the range, it was not designed to improve on existing, conventional inspection techniques or to compete with products already in the market. Its approach is completely different.

FleXinspect T combines all the inspection functions that were previously handled by three different machines. It is changing the way glass producers think about container inspection – and fast becoming the leading candidate when they think about reinvesting in their inspection lines.

Thanks to its 840mm starwheel, FleXinspect T can accommodate containers of diameters up to 79mm, at speeds of up to 400 containers/min. It is supremely flexible and reconfigurable, with the facility to run as a basic stop-rotate check inspector, providing mould-correlated inspection results or a fully loaded inspection solution with the power to replace an entire cold end single line – or even two, depending on production speeds.

The FleXinspect T features a huge range of inspection functions. As a basic inspection machine, it includes 16 channels of modulated check inspection; heel/shoulder dot code mould code reading; and non-contact plug/ring/dip/saddle inspection. But when it is considered that users can also add sidewall, sidewall stress, sealing surface, wire edge, base, base stress, wall thickness, two-point out-of-round, dimensional lean and the ability to

read mould codes from the base of the container, it is easy to see how the FleXinspect T can claim to be the only inspection machine that manufacturers will ever need.

SIMPLY BETTER

Emhart Glass' latest machine innovation was designed with one goal in mind: To be one of the best stop-rotate-check inspection systems in today's market. Unlike the FleXinspect T, it is intended as a 'drop-in' replacement for many well-known inspection machines currently in use around the world.

Not all customers want, or need, to replace their entire inspection line. Mindful of this, Emhart Glass has developed the FleXinspect M to replace any one of manufacturers' existing machines, without requiring major changes to their production line. Designed to stand next to a cold end single line conveyor, the FleXinspect M can be installed almost anywhere. Existing machines used in today's glass plants from Emhart Glass or other machine manufacturers can all be replaced with the FleXinspect M – which can then often deliver higher speeds, improved accuracy and greater repeatability.

The standard equipment can carry out modulated check inspection; heel dot code mould number reading; and mechanical plug, ring, dip, saddle and height inspection. Available options include up to four heads of non-contact wall thickness inspection and base mould code reading. The standard machine is also equipped with two servo-driven modular rotate devices and can support up to five in total, if required by added inspections. Another configuration of the FleXinspect M allows the machine to be equipped with vision-based inspections. By utilising inspection developments from the FleXinspect T, the machine can now be equipped with vision plug, ring and dip inspections. By adding the optional sealing surface, base and base stress options, this machine has the ability to replace the older belt handling machines that are in today's glass plants.

In contrast with existing machines, the FleXinspect M features an extra-long, servo-driven infeed screw that extends over the existing single line conveyor and pulls ware on to the machine's own inspection conveyor and into the



Infeed screw of the recently introduced Type M machine. The 30° angle enables stable container handling.

starwheel. By swinging the infeed screw out of the bottle path, the machine can work as an active bypass conveyor – a major space and cost saver for plants who still want to be able to bypass their inspection machines.

BEST CHOICE FOR BETTER QUALITY

To ensure the highest quality standard, all FleXinspect machines come complete with an integrated precision conveying system. New users simply need to prepare their single lines to carry out a parallel transfer on to the inspection conveyor. Additional features such as fail-safe rejection, security logging, remote access and device hardware management are also available.

Whichever model is selected from the FleXinspect range, manufacturers can be confident they are getting a state-of-the-art inspection device that offers the accuracy, speed and flexibility needed to produce containers of the highest quality. ■

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