Top shelf challenges at the cold end

Many inspection machine producers claim to have the ability to run the odd-shaped, high-end glass articles found on the top shelves in many pubs and bars. However, Bucher Emhart Glass believes it has taken this to a new level with its FleXinspect product line.

Since the introduction of the FleXinspect inspection systems, Bucher Emhart Glass has focused on optimising its entire machine family to meet the inspection needs presented in today's glass market.

Although the advantage of having modular inspection flexibility is core to the machines design and purpose, there is an even greater advantage with the design that often goes unnoticed: The FleXinspect system's ability to handle unusual shaped ware in a wide ware range, from small, to tall, to wide or narrow.

This advantage is especially evident in the FleXinspect T, a fully servo motor driven rotary inspection machine designed to perform multiple inspections on glass containers.

The machine was designed to support all of the required inspections modules needed to detect the 'critical' defects being produced with today's hot end processes.

Container handling

The secret to precise container inspection is, and always has been, container handling. To accurately perform inspection on difficult to handle, non-round containers, the machine must maintain control of that container in all phases of the process.

That is why the engineering team at Bucher Emhart Glass continues to devote so much time and effort into ensuring that the FleXinspect product line excels in the glass container handling along with inspection.

Features to highlight when it comes to optimising container handling are brushless non-round container handling and FleX Orient – Vision-based container orientation using servo motor rotation.

Non-round containers

Why is this so important? It is no secret that non-round container handling

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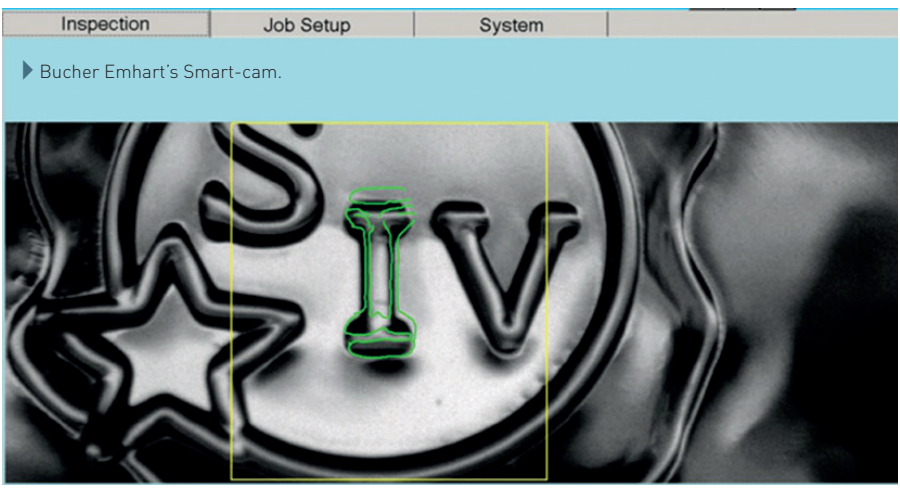

Bucher Emhart's Smart-cam.

within a rotary machine is often viewed as an artform. In the past, attention was placed on the mounting and positioning of bristle brushes that were installed randomly within a machine to help guide or align a bottle into the next inspection station or the machine exit.

In almost every plant that produces non-round containers, there is typically one person who is the resident expert on fine-tuning non-round handling.

As long as the expert is in the plant attending to the machine, everything seems to run fine.

When the expert is no longer present, the handling of the container in the machine starts to deteriorate. This becomes an endless cycle. As the day goes on, you regularly see someone working on a machine trying to optimise the handling by playing around with the position of brushes until everything is good again and the bottles handle properly. With inspection equipment of non-round containers this has always been a way of life.

A solution to this challenge is the flexibility of the guide rail system and the open frame design provided by FleXinspect T.

In today's machine, specially designed support rails are used instead of brushes for the container that is running. Unlike the bristles on the old brushes, these newly designed rails stay the way they are set until you change over to the next job.

No longer is someone required to replace or adjust the brushes as the bristles bend, break, and deform during the production run.

This is a big step in helping to reduce the amount of time lost by highly skilled maintenance people who are forced to continuously try to optimise the container handling. More importantly, it frees them up to perform other maintenance tasks within the plant.

FleX Orient

Machines designed to orient non-round glass containers have been around for years, but with more distinct shapes and heavily engraved bottles being introduced in today's high-end liquor markets, the need for these orientation devices continues to grow.

A recent development to expand the functionality of the FleXinspect T was the addition of a vision-based container orienter that can be trained to look for a specific feature on a glass container while it is being rotated and inspected.

As with all of the inspection elements that can be added to the FleXinspect T to customise the configuration for the specific need, the new FleX Orient can be installed on new or existing equipment to increase the machine's functionality.

By using intelligent camera imaging and coupling the results with the precision control of servo motor rotation devices, the machine can now be set to stop the container rotation in any orientation.

This new system can be equipped with a vision-based verification system at the exit of the machine to ensure that the container orientation is correct as it leaves the machine.

So whether the need is to confirm that the containers going into the box or onto the pallet are properly oriented, or that the containers are all facing the same direction for a more precise inspection on a downstream machine, FleXinspect T not only inspects the container but also performs the handling functionality required to ensure a perfect product every time. ■

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