Precise pushing for smooth container handling

Downstream ware handling performance is directly proportional to the placement of containers transferred onto the conveyor. Jarmo Kammonen explains how Bucher Emhart Glass has honed the pusher motion of its ware handling products.

Ware handling is all about transferring containers that are still hot and fragile from the IS machine to the lehr. Container placement on the belt is the key to a better performance in downstream stages, reducing losses in the hot end coating tunnel during ware transfer and at the stacker.

To tackle these challenges Emhart Glass developed the FlexPusher, with the first installation taking place in July 2005. Since its introduction the FlexPusher has been supplied as standard on all new IS, AIS and NIS machines from Emhart Glass, and is fully integrated with the Emhart's FlexIS process control system.

Machine speeds have been continually increased and in 2011 a further development was released: the FlexPusher SP (special performance) offers enhanced performance for various shapes such as long neck beer, flasks, small ware and jars.

Dual row capability

The FlexPusher continues to evolve in response to new demands. In 2012 the technology was adapted to accommodate dual row ware handling. This technique is based on two rows of containers side by side on the conveyor belt, allowing the belt speed to be reduced by 50%. The dual row method offers improved handling of inherently unstable items such as smaller containers and allows more time for hot end coating.

Pusher fingers for round containers in triple and quadruple gob for both short and tall containers.

Ware handling development

When twelve-section quadruple-gob machines, and now also popular tandem machine installations with 48 cavities or more began turning out up to 800 containers per minute, a new challenge was set for systems further down the line. How to meet it? Testing of facilities and tailoring accessories such as pusher fingers has become imperative. Additionally, the layout of a glass plant makes a big difference for ware handling performance, particularly when working with non-round containers such as flasks where the orientation of the container on the flying conveyor chain is critical when entering into the ware transfer or the cross conveyor.

Some of the latest developments are for short containers going beyond 800bpm in triple or quadruple gob. A new pusher finger with a built-in bottle air guide was introduced to hold the container more securely and to place it more precisely on the machine conveyor chain. The Venturi effect – also called the Pocket Air – is adjustable from the Flex IS control and can be stored for the job.

Bucher Emhart Glass (BEG) now offers pusher fingers for round containers in triple and quadruple gob for both short and tall containers.

Test and verify

Using containers from customers and with rapid prototyping, the ware handling performance can be further increased and verified within a short time frame and well ahead of the start of production.

During 2021 BEG will be building a new ware handling test and training facility in Sweden that will permit trials on containers, starting with the FlexConveyor equipped with FlexPushers (standard FlexPusher, FlexPusher SP and Dual Row) through to the X-Transfer, Cross Conveyor and loading with the FlexStacker. Bucher Emhart Glass's testing process and products are designed to benefit glass producers and ensure good ware handling from day one. ●

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