

Inspection takes a starring role

Hans Renders reveals how Heye is advancing the evolution of glass container inspection with its second generation starwheel inspection equipment SmartLine 2, which combines speed, reliability and flexibility to deliver accurate results.

Developed and manufactured at Heye International's dedicated Cold End Centre in Nienburg, Germany, the company's SmartLine 2 glass container inspection equipment can be configured in several different ways, with up to six inspection stations available.

The SmartLine 2 is equipped with Heye's Ranger 2 camera-based check inspection system, which is reputed to detect more than 99.8% of all critical defects on products including pharmaceutical mini-ware.

System operating principle

Each system inspects independently and does not have to be synchronised with others.

There is no influence between the systems and therefore no need to compromise one system in favour of another. This allows individual optimisation of all settings, eg lighting, camera position etc, on the respective type of crack. If one system is not available or is not optimally adjusted, the others are still fully functional.

Every container produced must be considered as a unique object and every concept of a crack test must take this into account. Therefore, the Ranger 2 uses 'Intelligent Cloud Masking', which makes any kind of 'teaching' superfluous after a job change.

Assuming that each container is unique, the Ranger 2 inspects each container for itself and sets one mask for each single container. Therefore, each container is its own reference and has no negative influence on following items, allowing for immediate adaptation should changes occur during production.

Mastering the 'non round'

Surveying container shapes that differ from the standard round container is one of the most common tasks in the glass container inspection industry. Although the range of inspectable container sizes and shapes is above average, Heye has made inspection of almost all imaginable shapes possible, no matter if they are angular, oval or simply round.

With a huge range of testable



Heye's Smartline 2 inspection and sorting machine for the hollow glass production industry.

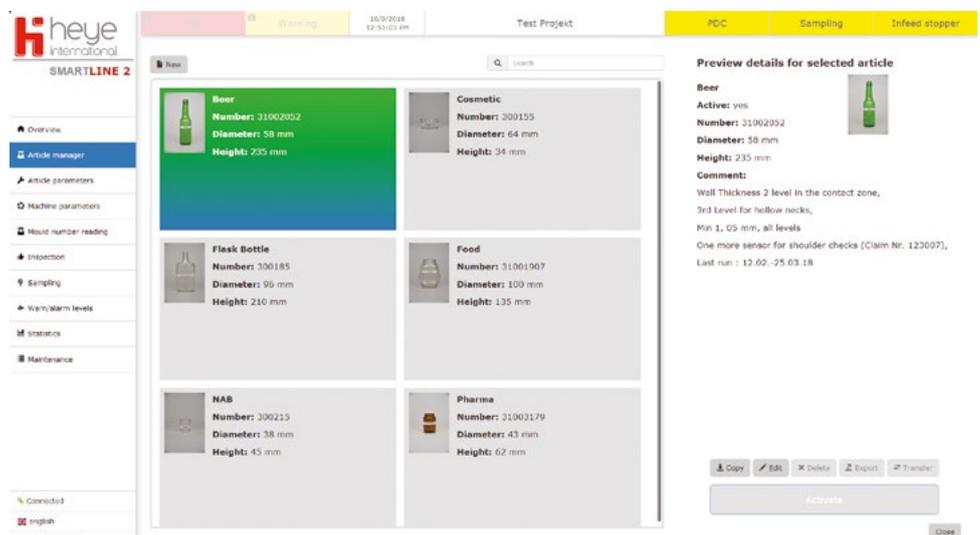
container sizes and forms, the SmartLine 2 matches the market approach to be a universal check inspection machine.

Improved job change times

The application of servo technology results in a high degree of flexibility. Fast and easy changes to an item's indexing positions and optimal use of

the servo torque for up to four rotation stations are possible. Optimised motion sequences allow faster reactions to changing process parameters. The SmartLine equipment's design and its large and easy-to-open hood provide more working space between the inspection stations. Job changes become much simpler.

The maximum article height accommodated is up to 450mm, with angular, oval and round containers processed. Thanks to the servo-driven starwheel, indexing positions from six to 48 are possible.



Job history can be customised for quality requirements, set-ups and reproducibility data.



The Ranger 2 camera-based check inspection system works with software for image processing to make a decision; 'container okay' or 'not okay'.

Intuitive interface

The design of the graphical user interface of SmartLine 2 has been conceptualised with a specialised engineering service provider. The main goal of the development was a practicable and fast operating interface. It achieves this with two-click-management, smart configuration and an overview of all the statistics an operator needs for easy-to-use handling.

In addition, job history can be customised for quality requirements, set-ups and reproducibility data.

Positive feedback

Feedback generated from Heye International customers has confirmed the SmartLine equipment's robustness and reliability. The mechanical design and drive system in particular are highlighted for their robust design, while the control system is praised for its reliable operation. ●



The graphic user interface of SmartLine 2 was designed for practicality and ease of operation.

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