

Veritas™ meets the challenge; sets a new standard for glass container inspection

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Container glass manufacturers are meeting the challenge to provide quality products at affordable prices and are beginning to win back market share from other container types. They have done this by improving processes in both forming and inspection by setting new standards for the industry. Emhart Glass, the world's leader in container forming and inspection also is setting new standards. This year, the company will introduce a new line of inspection systems designed for high speed, fast setup, easy operation, and reduced maintenance and cost. The Veritas Series sets a new standard in glass container inspection.

The container glass industry faces challenges; competition with other container materials forces industry to fight for survival. The sentence reads like a headline or opening statement common in many papers on the container glass industry. The statements are true, although maybe a little late. The container glass industry has changed and has become more competitive. Glass is winning market share back. Customers, facing ever-more-fierce competition for consumer sales, are turning back to glass to give them a competitive edge no other container type can offer. This turning back comes with stricter requirements for container quality and value. The glass these customers are buying today must be better than it was before and often has to have the same price – or less – than it did before.

Container glassmakers are meeting this challenge with process improvements that both improve quality and reduce costs. A key area of improvement has been in quality assurance, container inspection systems that are more accurate, easier to set up and operate, and cost less to maintain.

Just as glassmakers have had to remake themselves to compete, their suppliers have had to do the same. Emhart Glass, the world's leader in container forming and inspection systems, has been a part of this industry revolution. This year, Emhart Glass will introduce a complete re-making of its catalog of inspection tools. The new system is called Veritas and will encompass almost every inspection currently offered by the company, as well as new inspections, some available for the first time ever in an on-line inspection system.

Veritas is Emhart Glass' response to the changing requirements for automated, on-line glass container inspection. More than 40 years ago, Emhart Industries and Powers Manufacturing (which became part of Emhart Glass in 1983) invented some of the first automated inspection machines. Quickly, they set a standard for glass container inspection - a standard that remains today. Veritas will set a new standard. The idea behind the new Veritas series was to make the complex simple, to make a new product family that was modular, flexible and featured a clean, uncomplicated design. The result is a complete line of inspection systems that updates existing inspection technologies, adds new inspection technologies and incorporates flexible, precise state-of-the-art container handling techniques. The Veritas series is a new concept in container inspection machine technology, and the platform on which Emhart Glass will continue to base

future inspection innovation.

In 2002, Emhart Glass will unveil the first two modules of the Veritas series – the iM and the iB.

The Veritas iM raises the popular starwheel-based inspection handler to a completely new level of technology. This servo-motion machine has fewer parts, more flexibility and is simply easier to use than conventional starwheel-type inspection machines. Movement of containers through the machine can be precisely controlled. The elimination of expensive and costly to maintain gear motors and reducers also enables the Veritas iM to maintain all inspection stations throughout its ware range. Unlike other starwheel handlers that must reduce the number of inspection stations when larger ware is run, the Veritas iM maintains all inspections for all ware in its ware range.

Inspections, as well, have been improved. Both plug/ring gauge and dip/saddle/height gauge assemblies are servo driven. This enables higher operating speeds and more precise regulation of inspection start and finish. High intensity LED light sources, together with improved user interface setup tools, make check detection easier to setup and more reliable over time. Check detection optics are easy to position and lock down, and, since there are no moving carriages, optics are not vibrated out of position. LEDs also have much longer life than conventional filament-based or halogen light bulbs and maintain their light intensity throughout their long life. Mold number

reading – normally an option on other inspection machines – is standard on the Veritas iM. Perhaps the most significant inspection improvement, is the use of optical wall thickness inspection (an option on the Veritas iM). The Veritas iM is currently equipped with the VMA TM(C) thickness measurement system. However, the iM is designed to accept other manufacturers' optical thickness measurement systems when they become available. Optical wall thickness inspection completely eliminates the need to change sensing strips. Even calibration is not necessary. Measurement heads are permanently calibrated at manufacture. Setup takes only minutes. The only maintenance required is occasional cleaning of the exterior lenses on the measurement heads.

The Veritas iB, the second module to be released in 2002, consolidates a variety of machine vision inspections in a single, servo-controlled belt handler. The Veritas iB offers a flexible configuration of inspections,



The Emhart Veritas iM Machine

including sealing surface and base inspection, vision mold number reading, vision base stress, vision plug gauging and vision dip/saddle/height inspection. The vision mold number reader supports virtually all machine heel and dot codes, as well as digital alphanumeric codes. The Veritas iB solidifies Emhart Glass' position as the world's leader in machine vision inspection for glass containers. These systems are capable of extremely accurate defect detection with little or no loss of good ware. In recent testing – both under controlled laboratory conditions and under on-line production – sealing surface inspection was proven to be capable of detecting flange finish defects as small as 0.081mm and knockout defects as small as 0.135mm with a false reject rate of less than 0.03 percent.

The Veritas iB also offers vision plug inspection and vision dip/saddle/height inspection as machine vision alternatives to electro-mechanical go/n-go devices. These devices both inspect and provide measurement information at levels of accuracy and speed not possible with mechanical gauges.

All Veritas Series modules use intuitive touchscreen displays that have a common look and feel and are designed make inspection setup easier. The selection of various graphical icon-based inspection algorithms becomes simple, along with other software tool options that may be used for the job setup configurations. The interface makes subsequent changes simpler, which allows for a wide variety of container setups that can easily be saved and later recalled quickly for job changes. Job changes are also easier, since the software programmable adjustments are

automatic. The Veritas user interface also enables easy, secure, remote access through the use of widely-available web browsers, including Microsoft Internet Explorer and Netscape Navigator.

In 2003, Emhart Glass will release the Veritas iN, a non-contact machine offering vision inspections for (opaque and transparent) sidewall defects, dimensional gauging and sidewall stress inspection. Unlike other systems that either offer precision, but are difficult to maintain, or systems that are easy to maintain, but lack precision, the Veritas iN offers both precision and easy maintenance. All optics are designed to swing away easily to provide unparalleled access to machine components. Once a maintenance task is completed, optics swing back into fixed locations.

All modules in the Veritas series can be operated as single machines or as close-coupled systems that look and function as single inspection systems.

Helping container glass producers cost effectively meet stringent quality requirements in an increasingly more competitive packaging marketplace, Emhart Glass has a tradition of setting standards both for container forming and for container inspection. Like the container producers it serves, Emhart Glass has changed its products to better meet the needs of its customers. The new Veritas series of inspection systems meets the challenge. When we designed Veritas, we applied our more than 40 years of experience in the design and manufacture of container inspection systems – experience that has made Emhart Glass the world's leader in quality assurance solutions and a long-standing partner to the container glass industry. ■