

# Perfect Packaging Solution

From NIS to SIS –  
the complete choice

Cold End Inspection –  
introducing new  
products

Technical Services –  
Partnership beyond  
the machine

**EMHARTGLASS**  
a **BUCHER** company

# NIS. Your solution for quality, ease of use and return on investment

Emhart Glass' NIS gets your glass container production fit for tough times.

## NIS does more with less.

More automation, more flexibility, more quality, more speed.

But at the same time less noise, less energy, less defects, and most important less container cost.

In difficult times, value is everything. So put your precious resources where they will generate most benefit.

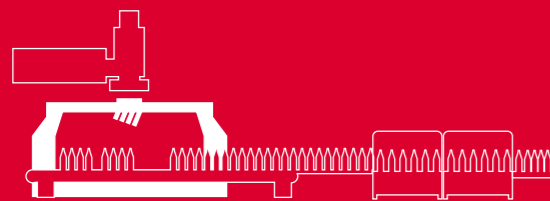
NIS delivers the best possible ROI for your glass container manufacturing.

[emhartglass.com](http://emhartglass.com)



Partnering for Perfect Packaging Solutions

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Would you like to receive regular Product News? Send mail to [registernews@emhartglass.com](mailto:registernews@emhartglass.com)

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Welcome to the first issue of Perfect Packaging Solutions, our new magazine produced especially for clients of Emhart Glass. Twice a year, we'll be bringing you all the latest Emhart Glass news, product introductions, research initiatives and quality developments. As the title suggests, every feature will highlight a different aspect of our mission: helping you achieve perfect packaging solutions. This first edition includes news of our recently opened Malaysian facility, our major new supply contract with Agenda Glass in



**Martin Jetter**  
(President Emhart Glass)

## Perfect Packaging Solutions

Germany and our innovative technology for chromatic inspection. We take a close look at the true cost of re-manufactured lines, and explain how our MiniLab system can improve your ROI through better offline testing. We also show how we're delivering on our ambition to be a true solution provider with a range of new service products. Times are tough – for you, and for us too. My message is simple: we're here for you. In good or bad times, Emhart Glass is 100% committed to helping customers achieve the best possible quality, performance and ROI in their glass container manufacturing. Today, more than ever, I'm confident that we have the products, services and expertise to help you to weather this storm and to emerge stronger. We hope you enjoy the magazine and look forward to working with you for many years to come.

With best wishes for your success.

Martin Jetter  
President

## Emhart Glass secures major new contract

Emhart Glass was recently selected by German bottle manufacturer Agenda Glas AG to provide a comprehensive range of glass-making equipment for its new plant in Saxony-Anhalt, including both Hot End and Cold End machines.

Agenda Glas is currently building a completely new facility in a new commercial and industrial zone to the east of Gardelegen, where the firm is based. Representing an investment of roughly €50 million, the new plant will have an annual output of 95,000 tonnes or 300 million bottles, and more than 80% of the first ten years' production is already contracted. Around 80% of production will be sold within Germany, and the rest exported.

No new glass plants have been built in Germany since more than two decades, but increasing demand for white glass bottles to contain spirits, milk, juice and food means that Agenda is in a position to step up production in its home country. The new plant will create 150 jobs.

Emhart Glass will supply three NIS machines (two eight-section 5" TG NIS machines and one twelve-section 6 1/4 DG machine) and nine FleXinspect machines (six FleXinspect T machines and three FleXinspect BC machines). Emhart Glass will also provide

state-of-the-art servo feeders, servo shears, FlexPusher, PPC and FlexIS equipment.

For Agenda, one of the decisive factors in selecting Emhart Glass was the new FleXinspect prototype, which will also be provided as part of the commission. The prototype is currently in development at Emhart Glass' Clearwater facility, which Agenda has visited recently in order to review progress.

As part of the agreement, Emhart Glass will also take responsibility for the theoretical and hands-on training of Agenda's production employees.

"I'm delighted that Agenda Glas have selected us to provide the equipment for their new plant," commented Martin Jetter, Emhart Glass President. "This commission proves that we can deliver every component of a truly modern glass-container production line, as well as the training and R&D expertise to support its operation for many years to come."

**Josef Bockhorst, CFO of Agenda Glas:** "Emhart Glass has carefully analysed and customized an innovative solution which will shape our need for sustainable profitability and quality. With our total new glass production we have been impressed by their informed advice as well as their offer for production support and technical assistance. •

## New Structure on Website

Emhart Glass is pleased to announce the addition of two new categories to the website:

- > Technical Services
- > Cold End Service Centers

We would like to invite you to visit [www.emhartglass.com](http://www.emhartglass.com)

## Veritas: Truth in Inspection ...

It does not seem that long ago that the first Veritas Inspection Machine was shipped. In fact, it was in August 2002, and only two Veritas iM machines (check, plug, dip and wall thickness inspection) shipped that year, one to Anchor Hocking in the United States and the other to San Miguel in the Philippines. Since that time, the Veritas iB (base and sealing surface inspection) and Veritas iC (sidewall and dimensional inspection) were added to the Veritas product line. In 2008, over 150 Veritas machines were manufactured, a good indication that the Veritas product line is now the world's standard. Repeat sales to customers are an important indication of a product's success as well as worldwide acceptance in today's challenging global environment. Global customers of glass container manufacturers expect the same quality of containers regardless of their manufacturing source, and we have seen re-

peat sales to customers in Mexico, UK, Philippines, Middle East, Europe, United States (including a greenfield project), Australia and South America. Just what has made the Veritas so successful? Customers tell us that it is the flexibility, inspection configurations, speed and reliability. Today, the success of the machines is demonstrated by the fact that two customers have an installed base of over 50 machines each, and in the Middle East over 60 machines have been shipped in the last two years. What is more interesting is that the number of new Veritas users continues to grow on a yearly basis, with five new major projects for new customers added in 2009 already.

**Emhart Glass encourages companies interested in moving to the new standard in automated inspection solutions to visit existing locations where Veritas machines are installed. •**

## Calendar of Events 2009

- |                    |   |
|--------------------|---|
| 13. - 16. May      | <a href="#">China Glass 2009</a>  |
| 08. - 11. June     | <a href="#">Mir Stekla 2009, Moscow, Russia</a>                             |
| 11. - 13. June     | <a href="#">Glass Art Society 39th Annual Conference, Corning, New York</a> |
| 23. - 26. June     | <a href="#">Expopack 2009, Mexico</a>                                       |
| 13. - 14. October  | <a href="#">Glass Problems Conference</a>                                   |
| 08. - 09. November | <a href="#">Glassman Dubai</a>  |



*In March this year, we opened our new facility in Malaysia, reaffirming our commitment to serving customers in Asia-Pacific and the rest of the world.*

The new plant replaces our existing Malaysian factory with a larger, more modern facility. It is located in Taman Preindustrial Cemerlang, Johor Bahru, and covers a total area of 6073 square metres. The factory was designed and built by local builders Panoramic Industrial Development, who also carried out the purchase of the land. Plan-

# Emhart Glass opens new facility in Malaysia

ning took place in 2007, with construction beginning in 2008. The foundations and steel structure took shape quickly, although summer saw some delays due to rain and manpower shortages. The main structure was completed in October 2008, and by the end of the year equipment was being moved in. Operations began early in 2009, and in March the plant was officially opened – on schedule and slightly under budget. Additional land is available at the site to support further expansion in the future.

The new site will also serve as a base for some of Emhart Glass' service engineers in the Asia-Pacific region. It includes a job shop and a warehouse, with space dedicated to training and demonstrations that should be fully equipped by the middle of this year. Training will be available for products including AIS, IS and Flex IS machines, T600, servo mechanisms, FlexPushers, mould design, drive systems, VertiFlow and InVertiFlow. Training will also be available on IS 3" TG section, AIS 4 1/4 TG section (by mid-2009), the T-600 and FlexIS cabinets, the 555 Feeder, the gob distributor and the 860 pusher. For Asian customers, the proximity of Johor Bahru means quicker and easier travel to the plant for pre-shipment acceptance testing, as well as lower transport costs for the finished machine. Emhart Glass will be able to offer support in local languages including Malay, Mandarin and Chinese, with localized

training provided during the same visit as acceptance testing. Clients will be able to meet their assigned Project Manager and Service Engineers in person, and resolve any issues face to face.

The main role of the new facility will be the assembly of new IS machines and cross conveyors, plus the fabrication of welded parts. However, machine sections will still be produced at Emhart Glass' facility in Sundsvall, Sweden, for assembly in Malaysia.

The expansion of the Johor Bahru facility is another chapter in the story of Emhart Glass' dedication to engineering excellence, internationality and partnership with customers. It secures our long-term commitment to delivering world-class machines from bases close to our current and future major markets. SIS, IS and AIS machines and other Hot End equipment assembled at the site will be subject to the same quality control as in all our other facilities, so that we can achieve the consistently high manufacturing standards for which Emhart Glass has been known for decades. •



- ☑ Training Room
- ☑ IS machine training
- ☑ Cold End training



☑ EGSB New Factory Launching Ceremony, 12 March 2009



- ☑ Modern facilities

- ☑ Assembly of new IS machines, cross conveyors and fabrication of welded parts



# NIS Machine Update



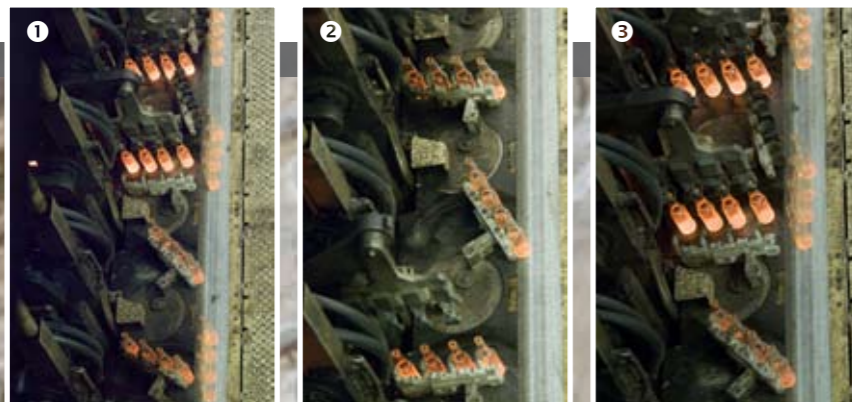
**Ian Green**  
(Director Product Management)

**With more than 35 machines already ordered by customers in the UK, Germany, Spain, Russia, Japan, Thailand, and Venezuela, the NIS Machine has matured, and is now the benchmark for customers required to produce high quality containers at the lowest cost.**

It is ten years since the prototype 10 section NIS Machine was installed. During this period, improvements to the technology have been continuous, and many features have been added to the original design. These include:

- > 95 mm Quad Gob. This significant development enables users to produce in quad gob, containers up to 65 mm in diameter.
- > 12 Section
- > New Control Technology (FlexIS)
- > Improved Delivery Support
- > Improved pneumatic control modules incorporating the latest proportional valve technology (FPS), which allows multiple pressure settings for plunger up and plunger cooling
- > New zoned lubrication to optimise lubrication, and oil consumption
- > Additional options on mold cooling with the introduction of InVertiFlow on DG and TG configurations, and the addition of 360° auxiliary cooling on the blowside, to increase cooling capacity

**FlexPusher motion on NIS QG**



- > Full stroke plunger monitoring systems (PPC) for NNPB optimisation
- > New ware handling with the latest dual axes servo pusher
- > Tandem operation
- > Proportional Valves (FPS) for final blow, giving increase internal cooling potential
- > Temperature Control System (TCS), whereby individual blank halves, and plunger tip temperatures can be constantly monitored

All the above demonstrate the tradition of continuous improvement at Emhart Glass, and of course, many of the enhancements have, where possible, been introduced on the IS/AIS product lines. Whilst it is always interesting to learn about the features of machines, and have detailed descriptions of the technology that is involved in designing and manufacturing them, perhaps it is more important to understand how the technology is being used by the glass container manufacturer, and what is being achieved by the use of such technology.

It is interesting to look back at the trends the users of the NIS machine have shown over the last few years. These include:

- > Most of the machines supplied have been 12 section
- > All of the machines are quad gob capable, and there are currently at least nine NIS machines operating in quad gob, producing blow and blow, and NNPB containers
- > Several of the machines supplied are regularly being converted from DG to TG / TG to DG / TG to QG / QG to TG (Typically these conversions are being done in around six hours)

The flexibility built into the machine, whereby it is a truly convertible DG/TG/QG machine is clearly being used as a significant benefit in maximising flexibility, productivity, and cost reduction for the containers being produced. The servo technology, which of course, guarantees the reproducibility, force, and motion profiles of all the servo mechanisms, is also being used to optimise set-ups on the machine, by using features such as:

- > Blow mold "cracking"
- > Blank mold "cracking"
- > Blowhead lift
- > V Baffle operation to reduce settle wave in blow and blow production

## Confirmation of the benefits

With around 35 NIS Machines in operation, comprising of 8, 10, and 12 section operating in double, triple, and quad gob set-ups, the following can be confirmed:

- > Significant noise reduction
- > Significant energy savings
- > Increase in mold life due to alignment and servo technology
- > Ultimate solution for flexibility with any machine supplies currently capable of conversion to double, triple, or quad gob to double, triple, or quad gob, all of which can be done on less than an eight hour shift •



**One of our latest 12 Section NIS machines recently supplied to one of our Japanese customers**

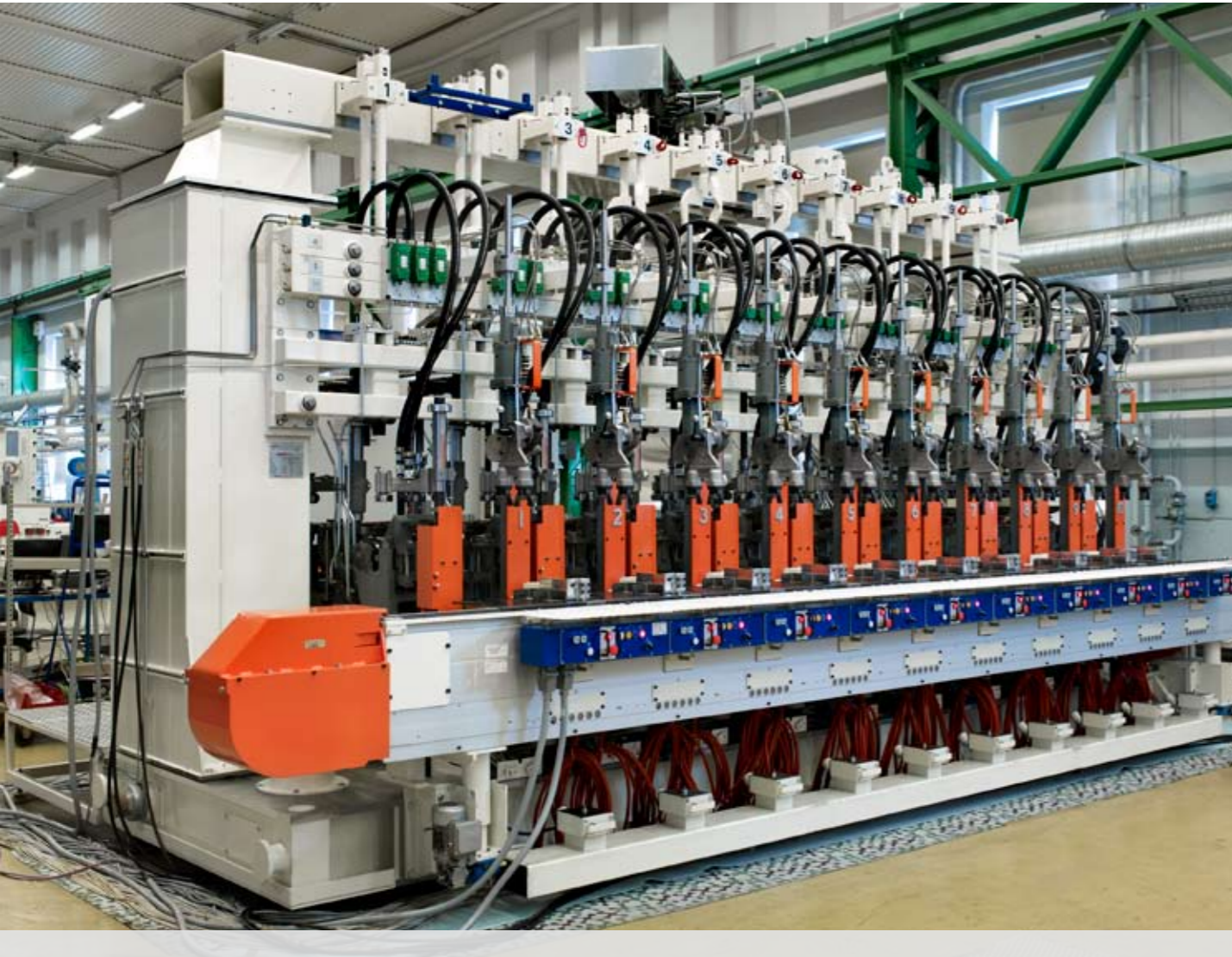
## Summary

Ten years of "maturing" has significantly enhanced the NIS Machine of today. The trend to 12 section, combined with triple and quad gob technology clearly defines the machine as the choice for the production of containers at the lowest cost.

The machine is now the "benchmark" for future technology development, and as with all technology and automation driven companies, Emhart Glass will continue to introduce new technologies and process automation to the NIS flagship.



# SIS Machine Package: one year on



*A year ago we introduced the standard IS (SIS) machine package in response to the problems that can be caused repairing or reconditioning used machines. The SIS machine package includes forming controls, a servo feeder with parallel shear, a servo gob distributor, suspended delivery, a dual axis servo pusher and one set of accessories.*

Leo Diehm  
(Product Director  
IS Machines)

Suspended delivery on SIS



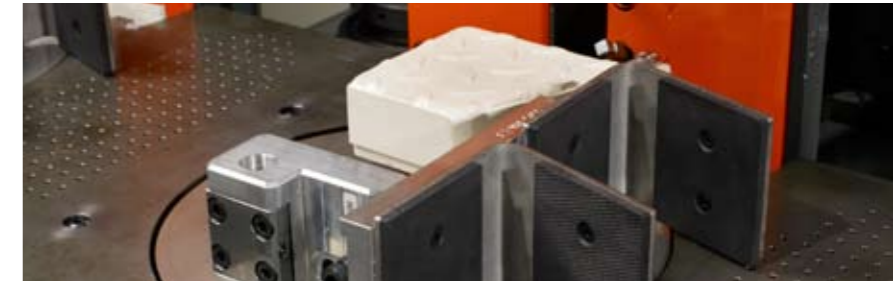
Twelve months later, we are delighted to hear our customers confirming that the SIS machine package does indeed offer a very attractive alternative to cumbersome remanufactured IS production lines. And sales to date of 20 packages throughout the world add weight to their words.

In container glass production, a high-performance production line such as a full-servo NIS 12-section quadruple gob or an AIS 12-section 4 ¼ TG may not always be the best choice. It may be that smaller double-gob production lines are enough to meet the customer's specific market requirements.

Also, it may be that capital expenditure is restricted to the point where the purchase of a new, sophisticated machine is not feasible, because the target return on investment cannot be achieved. Traditionally, the three possible ways forward are to repair and update the existing production line, to look for a cheap low-quality machine or to buy reconditioned equipment.

All three options have disadvantages, especially in the medium and long term: reduced

FlexPusher for SIS



equipment life, patchy spare-parts support and the almost inevitable need for more investment during the lifetime of the furnace. Increased downtime and lower pack-to-melt results will drive up cost of ownership even further. What seems like a prudent, economical choice at the time can end up as a makeshift, patchwork project that compromises profitability and performance for the life of the furnace!

But the problems don't end there. The so-called "smart" remanufactured line can lead to project specifications that are hard to manage, time-consuming and risky, as well as risking unclear project responsibilities. The expected life of the machine before major repairs are required may also be shortened.

By replacing standard mechanisms from feeder to ware transfer, the SIS machine package offers an extremely competitive alternative.

The SIS 8-section 5 ½ DG Canary (Saint Gobain-Vicosa) project is a case in point. Chosen in place of the re-manufactured line

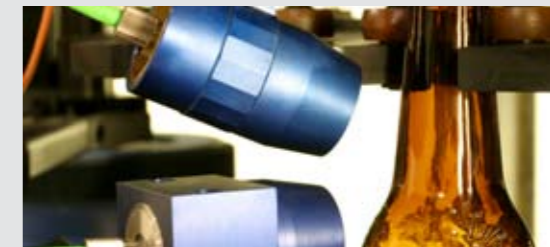
HOT END

COLD END

# New technology for inspecting Wall Thickness

*Until recently, chromatic inspection technology was constrained by large measurement heads. Now Emhart Glass, working with a European technology partner, has developed a new, much more versatile solution.*

When Emhart Glass decided to design a new inspection machine that would be bigger, better, and faster than the competition, we knew we had to look at every potential new technology. We were especially interested in new ways to inspect wall thickness.



Emhart Glass chromatic wall thickness sensor head

Since the introduction of the Veritas iM, Emhart Glass has offered a reliable, high-performing optical wall thickness inspection system. Still, it was difficult for us to ignore the growing industry "buzz" about a new method of measurement: chromatic technology.

We have now introduced the new system for the FleXinspect product line and in the beginning of July the system will be available on the Veritas as well. The primary advantage of our solution is the larger aperture, which makes the system much easier to set up than other non-contact measurement systems. It also offers a greater tolerance for angular misalignment, so we can measure a larger area on non-round containers than ever before.

After reviewing several chromatic measurement systems, we discovered that the technology did offer the accuracy and reliability we needed. However, there was a major drawback: the heads used for measurement were just too large to be used for a wide range of container sizes. If we were going to pursue this technology, we would need to find a solution that would work with the wide range of container sizes handled by our inspection machines.

The head itself contains precision lenses and no electronic components and is fully protected by an aluminum housing that helps secure it to the mounting brackets. With a greater standoff distance from the bottle, the head is the only part of the measurement system that is exposed to the harsh environment of the glass plant.

The good news is that we found such a solution. With help from Precitec Optronik GmbH, the German company that offers the Chrocodile measurement system, we have developed a special, proprietary chromatic measurement head that is small enough to work with a broad range of containers – small to large, round and non-round.

**We're excited about the prospects for our solution, and we're looking at how it can help glass plants measure and control glass thickness on completely new articles. We're certain that this is the measurement solution you will want in your plant. •**



originally envisaged, the SIS option offered:

- > 100% new equipment
- > Proven, state-of-the-art modern technology
- > A straightforward specification
- > A simple, problem-free project
- > Full spare-parts support
- > Standard documentation and training

## Summary

Taking everything into account, including the balance between initial investment and total cost of ownership, it seems that container manufacturers simply can't afford to ignore the SIS machine package option on traditional line repair projects.

The SIS package was delivered promptly and installed without incident. Production started on time, reaching a pack rate of over 90% after the first day.

The SIS is now for more than a half year profitable under glass and the personnel at the Canary Island plant as Vicasa are very happy with performance – and thankful that their managers went for the SIS option. Meanwhile, production specialists are exploring the potential of blow and blow, press and blow and NNPB production, and the client informs us that compared to the group production benchmark on a NNPB beer production, for example, considerable speed increases could be achieved. It is a doubtless proof of the SIS accomplishment receiving SIS re-orders from SIS users. The feedback it provides us is that re-manufactured "traditional" cumbersome IS production line repairs are abandoned. •



178 Ware Transfer



Control System



555 Servo Feeder



535 Gob Distributor



26 line valve block, 200 series mechanisms



Mike Rentschler  
(Product Manager Cold  
End Inspection Systems)

## FleXinspect: Today's solution for tomorrow's problems!

In 2001 Emhart Glass introduced a new product into the market that changed how many people thought of online inspection machines. These machines, loaded with new technologies, and fancy stylish cover sets were far different than any other used in the industry. It was also a big step for Emhart Glass to enter into the high end inspection arena dominated by French made rotary and side-wall machines. The launch of the Veritas product line has been very successful for Emhart Glass. Building on what we have learned from our customers and Veritas, Emhart Glass is ready to introduce the next line of machines that will set the new inspection standard. Veritas was only the beginning. The future now belongs to FleXinspect, a completely new series of inspection systems that follows a very simple formula: Flexible + Reliable = FleXinspect.



The most revolutionary example of this new inspection systems family is the FleXinspect T. True to its name, the FleXinspect is flexible. Look past its sleek exterior and you see the foundation upon which Emhart Glass will build its next generation of quality assurance solutions. When it comes to inspection, this machine knows no boundaries. With a truly modular design, the FleXinspect T has room to grow. A servo indexing rotary machine, the FleXinspect T can handle a much wider ware range than any other inspection machine, at very high speeds, and still has inspection capabilities unmatched in the industry. The FleXinspect T can be a simple check inspection machine to a fully-loaded, complete inspection solution. Emhart Glass is also proud to introduce its new Chromatic wall thickness measurement head jointly developed with its European based supplier of this new technology. For glass container manufacturers striving to meet stricter qual-

ity requirements, the FleXinspect will be a solution that both meets current needs, and also serves as a foundation for the user to build the inspection platform that their customers require.

The FleXinspect BC, which is similar in function to its Veritas counterparts the iB and iC, takes advantage of technologies garnered in the acquisition of ICS Inex in 2007. A multi-function, combined vision inspection system, the FleXinspect BC delivers mold-correlated data for better process control in a single machine footprint. Sharing the same modular design as the FleXinspect T, the FleXinspect BC also can grow as quality standards increase.

For the operator, the FleXinspect BC features a fully re-tooled, easier to use human interface without sacrificing power. The FleXinspect BC will be able to process, correlate, and serve up to 24 images of each container inspected. As a high speed inspection machine capable of running round and non-round containers, the FleXinspect BC, when paired with the FleXinspect T, offers a cost-effective inspection solution that can be fully redundant. With inspection redundancy, the cold end no longer must rely on a single gauge or tool to sort and measure defective product from the line. This redundancy provided with the FleXinspect machines will help minimize the chance that defective containers will get into packed ware.

FleXinspect is more than a pretty face. Emhart Glass recognizes that a machine can have the best inspection capabilities in the world, but if it proves to be unreliable or too difficult to setup, it will not benefit our customers. When we started work on FleXinspect, we made reliability our primary focus. As glass plants run faster with fewer lines and higher speed machines, there is no time for down time. Machines must run 24/7 for long periods of time with minimal maintenance. FleXinspect has been designed to meet that standard. The formula, Flexible + Reliable, has been solved, and the solution is FleXinspect. •

# MiniLab: Return on Investment – Mission Impossible?



**Rick Otto**  
(Product Manager Mini-Lab)

*MiniLab is an offline testing solution from Emhart Glass that can improve performance and enhance ROI. The system consists of a flexible configuration of automatic sampling equipment, including the Emhart Glass ISIS Dimensional Measurement System and the MLP+ pressure and capacity tester.*

The system provides automated solutions for several of the normal routine dimensional and strength measurements performed by Cold End quality control personnel (such as height, weight, pressure, capacity and so on) and provides data to a factory information system. The MiniLab improves performance and ROI in three main ways: by reducing mold reject losses; by reducing reselect losses and labor; and by saving QC Plant floor labor.

Normal manual go-no-go measurements only provide pass or fail conditions. When used as intended, the MiniLab's precise measurement data will show when a particular mold is trending towards an out-of-tolerance event, allowing the issue to be corrected before any bad bottles are manufactured. We have provided MiniLabs to some of the most progressive glass container manufacturers. These companies understand that the more informed you are about your glass production process, the more your quality improves. This is why they have spent years refining their production methods, utilizing information from the MiniLab as an integral part of their process control.

Now our 'Mission' is to define and quantify how the MiniLab can save glass container companies money in more ways than just quality control labor reduction.

## Step 1

After a few meetings, we created an outline of the general routine any glass company must go through when it wants to supply bottles to their customer. The primary document is the bottle specification, which determines all the parameters that the bottle must meet in order to be accepted. The specification defines 'Critical', 'Major' and 'Minor' defects. Critical defects are classified as being a safety hazard with filling machine damage and or possible body injury. Major defects include functional problems that may affect the container's ability to protect the internal product or cause filling line stoppages without bodily injury. There is typically some defined quantity allowed in the pack, and there may be different Major defect levels for different types of defect, with different acceptable limits. Minor defects are usually cosmetic in nature and do not affect the function of the bottle.

## Step 2

Next, we looked at the defect categories and how the various defects were being detected. Critical defects are found with the online inspection equipment, with 100% of the bottles being inspected and none in the pack. Major defects are detected by QC manual sampling at thelehr and in the QC Lab. If the defect is large enough, some types of online inspection may also detect it. Minor defects are not normally a problem and can be detected by online equipment if they become too large.

## Step 3

We determined that we could ignore the Critical defects since they were being detected by the online equipment and Minor defects as well for similar reasons. The only way to reduce critical bottle losses through these defects is by avoiding them in the first place. Major defects all seem to fall into the dimensional or bottle strength categories. In addition, the method for detecting them was mostly manual, using instruments that provide only pass/fail (go-no-go) information. If more accurate measurements were needed, the bottle would require inspection using an optical comparator, which was time-consuming.

## Step 4

Since most dimensional and strength defects are detected manually with only pass/fail information available, we focused on the potential for cold-end savings using actual dimensional measurement values from the MiniLab. If you detect a mold trending toward the reject limit, then fix it before out of spec defects occur. We actually identified two to three other significant savings that could be made by preventing molds from going on to the reject list. In addition, we made saving calculations for four different bottle types, from commodity level (beer) to high-priced liquor and wine bottles, all with excellent savings results.

## Step 5

We created savings formulas for the discoveries we had made in step 4. The savings were so large that we decided to revisit the QC labor savings again, and duly discovered savings not previously considered for this area.

## Step 6

We documented all our results and created an ROI presentation illustrating our findings. In addition, interactive spreadsheets with all our calculations are available and can be used to determine each customer's unique savings. •



**MiniLab dimensional and pressure-capacity offline configuration**

# Partnership beyond the equipment



William Grüninger  
(Vice President Technical Services)

*In 2006 Emhart Glass added two new directions to its mission: stronger customer focus and the ambition to be a solution provider, not just a supplier of equipment. But what's the reality behind the rhetoric?*

## Stronger customer focus

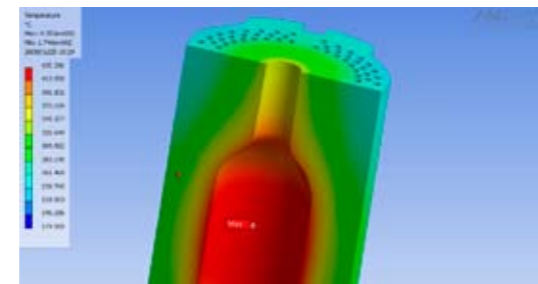
At the center of all our efforts – product development, manufacture, installation and startup – is the aim of making our customers' machines run efficiently so they get maximum return on their investment.

## Solution provider

For us, a 'solution' is a combination of equipment and the knowledge of how to use it. With that in mind, we created the new Emhart Glass sub-organization, Technical Services,

- > It is managed by a Vice President, demonstrating how important this function is for Emhart Glass.
- > It employs over 70 people in 16 locations. Wherever we have a sales presence, we have a technical presence too. This global footprint shows how close to customers Technical Services is.
- > It has four departments: Project Management, Customer Service, Customer Training, Process Customer Support
- > Within Customer Service, nine production specialists represent glass container production know-how. They work closely with the three engineers in Process Customer Support.

## New service products



Emhart Glass is about to release a wide range of new service products to support the needs of our customers. Each service can be tailored to individual customers' needs.

- > **Project Management: Your solution for a successful project**  
Information and consultancy to take project services to a level far beyond the simple handover of standard equipment documentations.
- > **Installation and Commissioning: Your solution for a correct installation**  
Everything from pre-start installation checks through to total outsourcing of installation and commissioning.
- > **Start-up Service: Your solution for reaching stable production efficiently**  
Our production specialists guide new machines into operation, ensuring they begin production as quickly as possible.

## > Production Assistance: Your solution for new horizons in container forming

Our production specialists have a total of over 170 years of production experience in all IS forming processes. They can help to resolve difficult production problems such as eliminating defects, speed-ups, light-weighting and more.

## > FlexIS Remote Service: Your solution for mastering your FlexIS control

Using remote internet access, our FlexIS specialists can assist with troubleshooting, job set-ups, software upgrades, remote diagnostics and other tasks.

## > Accessory Selection: Your solution for the right choice of accessories

Achieving the optimum mold setup usually involves a compromise between the mold interface, the right mold clamping and clients' quality requirements. We can help select the right accessories in every situation.

## > Mold Cooling Analysis: Your solution for controlled mold temperature distribution

VertiFlow has been the preferred mold-cooling technology for both blank and blow molds for many years. One of its major benefits is that the mold temperature distribution can be calculated with a high degree of accuracy.

## > Forming Simulation: Your solution for a stable forming process

Finding the right parison and plunger design can be a lengthy trial-and-error process that eats up valuable machine time. Our computer simulation can accelerate the process dramatically.

## > Container Producibility Analysis: Your solution for distinguished glass container production

Personalized container design is one of the major advantages of glass over other materials. With this service Emhart Glass helps its customers confirm the feasibility



of forming particular container features in the early design phase.

## > Mold Equipment Drawing Set: Your solution for an effective mold design

This service encompasses all mold equipment related services as described above and delivers a complete set of mold equipment set for sampling on a machine.

## > Technical Assistance Agreement: Your solution for sustainable improvements

A Technical Assistance Agreement is a methodology to improve the customer's production know-how, operation and/or organization. Within a standardized framework, customer-tailored targets and specific action programs are defined and conducted. •



# Strategic refocusing in the Hot End Service Group



David Brown  
(HE customer service manager)

Further updates on the development of the Global Hot End Customer Service Group will appear in future issues of Perfect Packaging Solutions.

*Most firms know that they need to become stronger and more efficient in order to achieve their goals. They also know that by measuring a range of factors and analysing the results, they can demonstrate that the organisation is moving in the right direction.*

All too often, however, organisations lose focus on the goal that they are aiming for. They lose direction during their journey, ending up with a result that, while positive, falls well short of what could have been achieved.

At Emhart Glass, our shared direction is towards closer partnership with our customers. Our focus is on fully understanding the challenges they face in producing high-quality containers through stable, efficient operations. While we naturally want to produce quality machines and systems – a key driver of success in the container manufacturing industry – we also want to play a much wider role.

To achieve this, the last 2 years have seen a wide-ranging development initiative in the Global Hot End Customer Service Group of our Technical Services division, aimed at refocusing our efforts on meeting customer needs. Beginning in 2007, and following long and careful analysis, we instigated a change programme with three themes: increasing capacity, developing capability and improving specialisation.

Firstly, we have added capacity. The Service Group, previously made up of more than 30 engineers, has been significantly enlarged and now totals more than 40 engineers. Secondly, the Service Group's skillset has been transformed. Previously, it included three production specialists who travelled around the world, assisting customers as required. However, as part of our refocusing,

we perceived that we needed to strengthen the production team in order to meet our customers' production challenges head-on and build better partnerships with them. Therefore, over the last two years we have recruited a number of highly skilled and experienced production specialists, bringing today's total to nine. All our new team members previously held senior production positions in our industry; some joined us from competitors. The effect has been to broaden the scope of our internal knowledge, and enhance the support we provide to customers in their everyday operations.

Finally, the Service Group has been divided into three sub-groups: systems engineers, mechanical engineers and production specialists. This allows us to focus more clearly on the challenges faced by customers in three distinct aspects of their operation: controls, mechanisation and production respectively.



This change initiative is already delivering real benefits. The partnerships between Emhart Glass and many customers have grown closer, and operational challenges are being dealt with more effectively than ever before. To sustain that success, we will continue to grow and develop our team into the future. The direction is set, and the journey goes on. •

Installation of an IS machine at a customers site

## How snails make PET look pale

### What to chose, glass or PET?

*This question has now been answered for the health conscious by a recently published study.*

Within the scope of a research project funded by the German Environment Agency, German biologists investigated the hormonal activity of mineral water contaminated with so-called endocrine disruptors, or environmental hormones. "We knew certain food stuffs may be contaminated with single substances that act like hormones", Prof. Jörg Oehlmann says, who is the head of the project at the Goethe University in Frankfurt am Main. "However, in reality we are not dealing with a single compound but a complex mixture of different environmental hormones", Oehlmann continues. To assess these so-called cocktail effects, the scientists did not focus on certain single chemicals but measured the over-all hormonal activity in mineral water instead.

"At the beginning of our work we did not expect such a massive hormonal contamination in a food stuff that is subjected to such rigorous controls," Martin Wagner, primary researcher of the study, says. "However, we realized that if you look at mineral water with respect to estrogen-like chemicals it has got the quality of sewage waste water."

Estrogen is the female sex hormone, and estrogen-mimicking industrial chemicals like bisphenol A have been linked to several chronic diseases, e.g. obesity, diabetes type 2, cardiovascular disease, prostate cancer, and breast cancer. For example, breast cancer patients are generally advised to avoid

estrogenic compounds as they can promote the disease. The mineral water tested contained estrogenic compounds in 60% of the samples, and highest overall contamination was found in laminated carton and PET packaged water. Glass bottled mineral water was also found to be contaminated with estrogenic compounds, however overall levels were lower. The source of the glass bottle contaminants is unknown, but compounds are presumed to originate from before the filling, e.g. from plastic piping or storage tanks.

The study excludes glass as a source of estrogenic compounds. In a second experiment, Wagner and Oehlmann raised a special type of snails, the New Zealand mud snail, in either glass or PET bottles. After 8 weeks, the snails were examined for number of embryos, as this is sensitive to estrogenic compounds. There was a striking difference between glass-raised snails that had normal embryo numbers, and PET-raised snails, that grew up to twice as many embryos.

This experiment clearly shows that PET bottles can leach estrogen-like chemicals. However the scientists cannot yet assess whether the estrogenic activity in mineral water comprises a risk for human health. "We are cautious with such an interpretation since we have no information about the uptake and elimination of the compounds in the human body. Still our results demonstrate that the exposure to estrogen-like chemicals may be much higher than known so far." Oehlmann says. Which compounds cause the estrogenic contamination is not yet revealed. Oehlmann's team is currently working on their identification. •



☞ New Zealand mud snails living for 8 weeks in glass bottles developed the normal number of embryos. When kept in PET plastic bottles the snails had more embryos, a sign of hormone-like substances leaching out of the bottle. (photo: University of Frankfurt)

## Soda Ash Prices and Trends

Global soda ash production is at 48 million tons in 2008<sup>1</sup>. Major producers are: China (35%), US (12%), Russia (6%) and India (5%). The glass container industry consumes about 12 million tons.

In 2008 supply shortness led to increase in soda ash prices. At the same time, it encouraged suppliers to engage in acquisitions and capacity expansions – in particular in China and India. The economic slowdown has reversed the situation as shown below, at least for the Asian market.

<sup>1</sup> Glass International: "Competitive situation predicted for soda ash market" April 2009

### Market Trends

#### Asia

- > Recession has caused demand in China to drop by 20-25% and operating capacity to go down to 75%-80%.
- > China is exporting into India at dumping prices.
- > India's soda ash dealers expect price to drop by 20%-30% in the near future.

#### US

- > The US price rise is explained by the rise in export demand for natural soda ash.
- > Natural soda ash makes only 26% of total production and prices are competitive versus the synthetic one. Only supply is limited.

#### Europe

- > Long-term contracts are in decline. Instead, for the first time quarterly and six month contracts have been introduced. •

### Current regional prices

#### Soda ash Prices <sup>(1)</sup>

	Q1 2009	Q4 2008
<b>China</b>	\$ 250-295/tonne FOB China	down from
<b>(dense &amp; light)</b>	\$ 290-310/tonne CIF Far East	\$ 300-375/tonne
<b>India</b>	\$ 290-310/tonne (dense) \$ 280-300/tonne (light)	\$ 320-400/tonne
<b>Europe</b> <b>(dense &amp; light)</b>	\$ 250-330/tonne	
<b>South America <sup>(2)</sup></b>	\$ 240-320/tonne (CFR)	
<b>USA <sup>(3)</sup></b>	\$ 185/tonne	\$ 160/tonne

Sources:

- (1) Industrial Minerals (IM): "GHCL soda ash growth", March 1, 2009  
 (2) Glass International April 2009: "Competitive situation predicted for soda ash market"  
 (3) Purchasing: "Soda ash prices spike", March 12, 2009



### Conclusion

Glass container production will benefit from the decrease in soda ash prices. Buyers have this time the negotiation power. Only, the current price development – as understood by industry experts - is driven by the lack of demand rather than measures at improving production efficiency of soda ash producers.



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a **BUCHER** company

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