

# Emhart Inex: from quality control problem to process control opportunity



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EMHART INEX

GLASS CONTAINER MANUFACTURERS TODAY FACE THE PROBLEM OF TRYING TO MEET EVER-MORE STRINGENT QUALITY REQUIREMENTS WITH LIMITED RESOURCES.

IN THIS ARTICLE, EMHART INEX PRESENTS US WITH ITS RECENT INNOVATION - THE MINILAB STATISTICAL SAMPLING SYSTEM - DEMONSTRATING HOW IT CAN CHANGE THIS DIFFICULT SITUATION INTO AN OPPORTUNITY TO IMPROVE CONTAINER QUALITY AND PROCESS EFFICIENCY.

## QUALITY CONTROL

Clients demand tighter controls on the quality of the containers they receive. And glassmakers struggle to meet these demands with the same or fewer resources.

For some, these two issues represent a two-headed monster that is difficult or near-impossible to tackle. For others, these issues represent an opportunity to both improve container quality and process efficiency.

The difference, for many, can be discovered in their approach to statistical sampling of containers and the tools used.

For years, and even today in most glass plants, the centre for statistical sampling is the Quality Control (QC) lab. Samples, or set-outs, from each production line are gathered at set intervals throughout the day, then measured and tested using a range of devices with varying degrees of precision. Unless gathered from long-running jobs, test results are used to provide customers with historical quality control data and production managers with information that can be useful in future process control strategies. The whole statistical sampling process also is very labour-intensive, from personnel required to gather samples, to skilled technicians required to test sample containers, log, and report test results.

## STATISTICAL SAMPLING CHANGES

The Emhart Inex *MiniLab Statistical Sampling System* can significantly change the statistical sampling process. A scalable, configurable system, MiniLab produces more accurate test results in a shorter period of time in a less labour-intensive system. A complete MiniLab system installed on the production

floor can be configured to be fully automatic with minimal human intervention. Even in various semi-automatic configurations, the level of human intervention can be reduced to placing containers to be tested at an entry gate and programming mould numbers into a MiniLab controller. Actual testing and ware handling is performed automatically by the MiniLab test machines.

Depending on the configuration chosen, a MiniLab can be equipped with the following equipment:

- Emhart Inex ISIS Automatic Dimensional Gauging and Weight Measurement and Finish Profile Gauge (option) system;
- Emhart Inex MiniLab Pressure Plus (MLP+) sampling pressure tester and fill-point capacity measurement (option) system; and
- Emhart Inex Mould Code Reader.

The MiniLab system can be installed in an automatic or semi-automatic configuration, complete with its own conveyor system and ware control gates and sensors, or as stand-alone, QC lab equipment.

## KEY BENEFITS

The key benefit of a MiniLab system is reproducibility, regardless of the configuration selected. Since all measurements – from complete dimensional, finish, and weight measurements, to pressure and capacity measurements – are performed automatically, variability caused by manual handling and interpretation of data is virtually non-existent.

In a conventional QC lab setting, skilled technicians must set containers to be tested in or on test devices. In some cases, measurements are performed manually. Even with carefully detailed routines, repeatability of the test and accuracy of the test data can vary, depending on the skill level of the technician or the precision of the test device.

In a MiniLab system, containers are placed in test devices in the same position every time. Even in a lab environment, containers are placed at an entry gate in front of the ISIS or MLP+ and precision handling devices push containers into the machines. All movements within the machines are programmed in software and all tests are performed in the same



**Emhart Inex  
ISIS  
Automatic  
Dimensional  
Gauge and  
Weight  
Measurement  
System**

## MiniLab Graphic

### MINILAB

The Emhart Inex MiniLab Statistical Sampling System can be configured with the following equipment and inspections:

- ISIS Dimensional Gauging and Weight Measurement System.

- Standard measurement capabilities:

- Height
- External body dimensions
- Tilt
- Bent neck
- Weight
- Finish dimensions (crown, lug, and screw finish types supported)

ISIS also can be equipped with the following optional measurements and inspections:

- Inside neck diameter. Up to 10 diameter locations, 0.025 to 65 millimetres depth
- Maximum diameter variation: 2.5 millimetres
- Flange and knockout defect measurement
- Pushup

ISIS is capable of testing containers from two different production lines.

MiniLab Pressure Plus (MLP+). The MLP+ can perform the following tests on two different containers that have the same finish diameter:

- Internal pressure (destructive test)
- Fill-point capacity measurement (option)

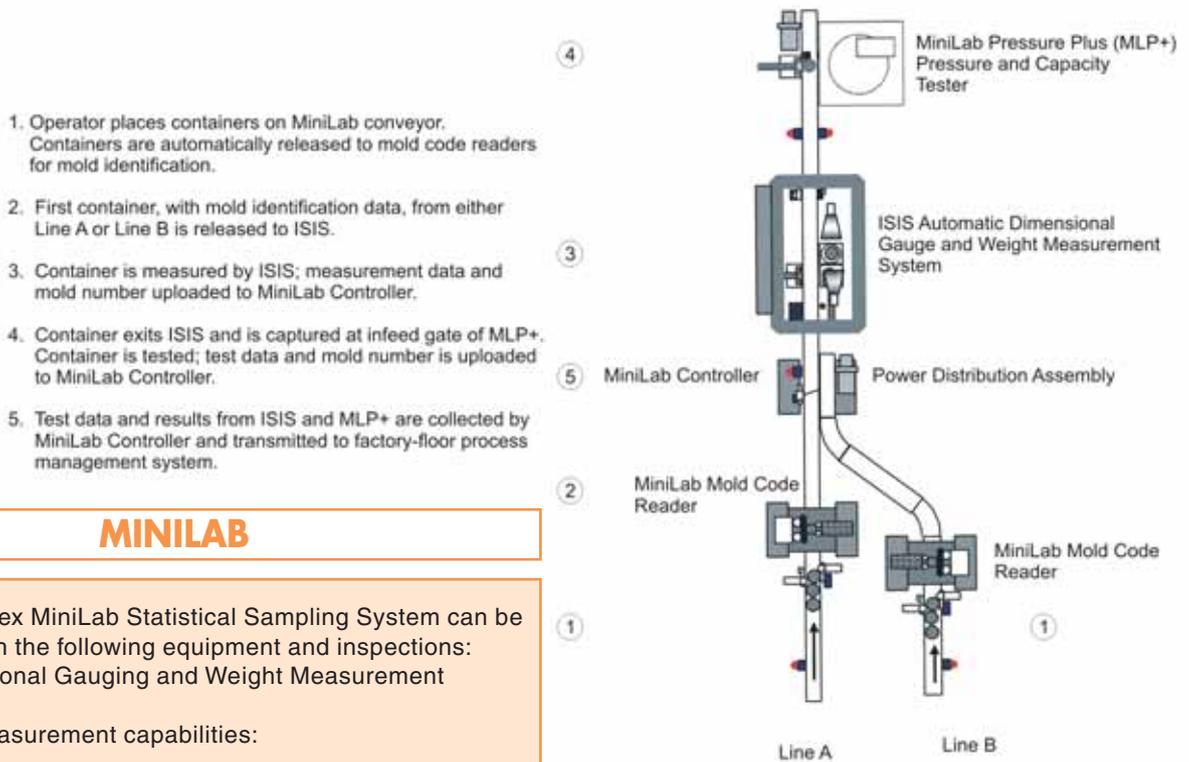
Standard accessories. MiniLab includes all necessary controllers, conveyors, gates, and sensors to route and track containers and to start and stop the system.

manner and with the same precision for each container tested.

Test results are available faster than with manual set-outs and testing, as well. For long job runs, having accurate, trendable data available allows operators to optimize container forming operations to improve both the pack rate and the quality of the final pack over time. For shorter runs, having test data available earlier in the production can help operators shorten the final workout time.

operator can oversee the MiniLab QC operations for two production lines. Even in less-automatic configurations, MiniLab helps reduce labour costs because a MiniLab system can be operated with fewer, less-skilled personnel. MiniLab also can be more labour-efficient in markets where there is a shortage of skilled QC technicians willing to work in the often-harsh glass manufacturing environment. MiniLab allows glass plant operators to make more effi-

### MiniLab Dual Infeed Off-Line Configuration



### LABOUR EFFICIENCY

In addition to providing repeatable, accurate test results, the MiniLab system can be a more labour-efficient strategy for statistical sampling. In a fully automatic, on-line, production-floor configuration, a single MiniLab system can be set up to test containers from two different production lines. One

operator can oversee the MiniLab QC operations for two production lines. Even in less-automatic configurations, MiniLab helps reduce labour costs because a MiniLab system can be operated with fewer, less-skilled personnel. MiniLab also can be more labour-efficient in markets where there is a shortage of skilled QC technicians willing to work in the often-harsh glass manufacturing environment. MiniLab allows glass plant operators to make more effi-

cient use of the labour available while maintaining a high-level of quality control. A MiniLab system from Emhart Inex can be a powerful tool that can help glass container manufacturers meet the demand for higher quality and improve process efficiency without adding labour or even with current staffing levels. A seemingly unsolvable problem thus becomes an opportunity to improve glass manufacturing operations.



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