

MiniLab



Accurate and efficient control of
critical glass container dimensions

- Reliable, accurate, and repeatable measurements
- Handles several production lines
- Automatic operation, simplified setup, low maintenance

MiniLab is a turnkey solution to control critical glass container dimensions while improving measurement frequency and accuracy.

MiniLab provides frequent measurement of a variety of glass container dimensions giving the glassmaker valuable feedback about the quality of the production and advance warning of any drift in the forming process. Its flexible and scalable design lets glass manufacturers integrate multiple devices to serve specific quality control requirements. It is built to withstand tough production environments and provide years of reliable service.

Benefits

- Fast and accurate measurement of a variety of critical glass container dimensions
- Increases the frequency and efficiency of the time consuming quality control tests
- Designed to withstand operation on the production floor

MiniLab components

MiniLab D Dimensional Control System

MiniLab D brings state-of-the-art vision technology and accurate servo-controlled handling to precision measurement of glass containers. Using high-resolution cameras and application-specific optics, MiniLab D is designed to measure the dimensional characteristics of glass containers. MiniLab D can measure containers of different sizes without requiring a job change.

MiniLab Wall Thickness Gauge

This gauge takes advantage of new and innovative technology to automate the measurement of the glass thickness for round and non-round containers. The multichannel thickness sensor follows the profile of the container at all times for optimum measurement.

Once installed and calibrated the gauge does not require any adjustment. When creating an article the user simply specifies the locations of the thickness measurements. For each location the thickness measurement is performed 360° around the container. Up to 10 locations can be specified. Those locations can be of different sizes and shapes.

The container is automatically placed in front of the thickness sensor at each measurement location defined for the article. During the container's 360° rotation a servo-controlled arm maintains the multichannel thickness sensor at the ideal distance from the glass surface for accurate measurement.

When creating an article the user specifies independent minimum and maximum thickness limits as well as acceptable thickness ratio for each measurement location.

MiniLab P Pressure and Capacity Control System

MiniLab P measures the maximum amount of internal pressure a container can withstand (meets the ASTM C-147 standard for internal pressure testing of glass containers). When equipped with the Capacity Gauge option, MiniLab P accurately measures the capacity of a container at several fill heights and overflow.

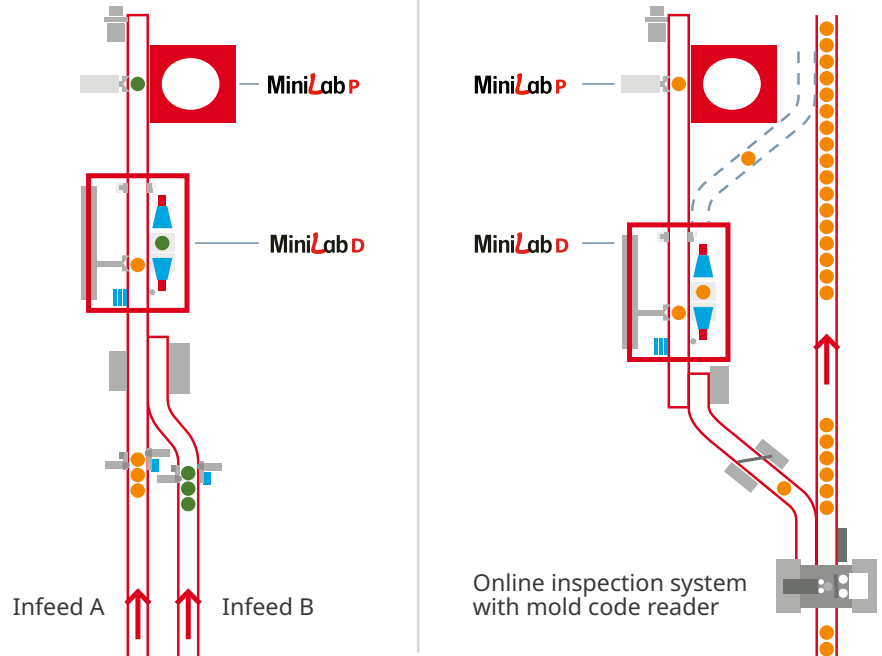
MiniLab P can test two containers of different sizes (with same finish size) without requiring a job change. Job change parts are minimal and a complete changeover does not require any mechanical adjustment.

Dimensions Measured

- | | |
|--|----------------------------|
| – Height | – Pushup |
| – Weight | – Flange |
| – Off-level | – Knockout |
| – Lean | – Inside neck diameter |
| – Bent neck | – D-angle |
| – Finish dimensions for all finish types | – D-radius |
| – Burst pressure | – Wall thickness |
| – Capacity/Volume | – External body dimensions |

System configurations

- A typical MiniLab integrates MiniLab D and MiniLab P with the conveyors, gates, and control system.
- MiniLab is available in several layout configurations easily installed on your production floor or in your quality lab.
- MiniLab communicates with your factory information system for data gathering, archive, and review of production trends.



Off-line sampling

with sets of containers loaded by the operator

- Operator manually places the containers on the conveyor
- Accommodates containers from several different manufacturing lines
- Accommodates containers of different sizes (height, diameter, finish diameter)
- Accommodates pressure and non-pressure containers
- All measurement values sent to your factory information system

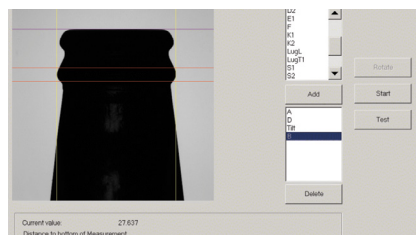
Online sampling

with containers diverted from the production line

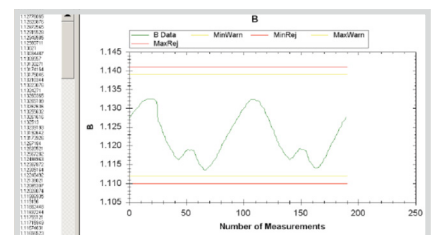
- Containers are automatically diverted from the manufacturing line by existing on-line mold code reader
- Fully automatic, no operator intervention required
- Accommodates pressure and non-pressure containers
- All measurement values sent to your factory information system



Container in MiniLab P



Graphical setup



Measurements 360° around the container

Specifications

MiniLab D power requirements

220-240 VAC, Single Phase

50/60 Hz, 20 Amps

MiniLab P power requirements

220-240 VAC, Single Phase

50/60 Hz, 20 Amps

MiniLab P water requirements

Pressure 2.4 to 4.14 bar [35 to 60 psi]

Flow 15 liter/min [4 GPM] average

Air requirements

Pressure 3.5 to 6.2 bar [50 to 90 psi]

Flow 70.6 liter/min [2.5 cfm] average

Ambient temperature

3.3 to 50 °C [38 to 122 °F]

Relative humidity

95% (non-condensing)

MiniLab D Dimensional Control System

Ware range diameter 45 to 145 mm [1.8 to 5.7 in.]

Ware range height 40 to 410 mm [1.57 to 16 in.]

Finish outside diameter Up to 145 mm [5.7 in.]

Finish inside diameter 15 to 45 mm [0.6 to 1.8 in.]

Wall thickness gauge

Up to 10 locations - 0.5 to 10 mm [0.02 to 0.4 in.]

Inside diameter/ID gauge

Up to 10 locations - 0.025 to 75 mm [0.001 to 2.95 in.] depth

Maximum diameter variation: 2.5 mm [0.1 in.]

Push-up gauge

1 measurement in center of container - Up to 70 mm [2.8 in.]

Maximum container weight

2.27 Kg [5.0 lbs.]

MiniLab P Pressure and Capacity Control System

Ware range diameter 45 to 145 mm [1.8 to 5.7 in.]

Ware range height 40 to 410 mm [1.57 to 16 in.]

Finish outside diameter 24 to 51 mm [.94 to 2 in.]

Finish inside diameter Min. 15 mm [0.6 in.]

Maximum container capacity

2.0 liter [67.5 oz.]

Maximum burst pressure

62 bars [900 psi]

Specifications are subject to change. Actual performance depends on specific application, container size, and line speed. Dimensions represent nominal machine size and are not for installation purposes.

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Bucher Emhart Glass is a company with a rich heritage and a tradition of excellence that we are proud to continue today. Our founders laid the foundations for automation in glass manufacturing, setting us on a course of marketleading innovations that has lasted for over a century. We created the industry-standard IS machine and have repeatedly delivered game-changing innovations in gob forming, container forming, automation, control and inspection.

Growing strategically through new branches, alliances and acquisitions, we have developed into a true global enterprise with the power to serve customers around the world with speed, responsiveness and understanding. Our global footprint provides the very best in established expertise, economical manufacturing, and hands-on client support.

Our work is underpinned by a profound and unshakeable belief in glass as a packaging material. And we back up that belief with investment in R&D. Driven by our clients' priorities, we continue to work towards new milestones in production speed, product quality, testing precision, and glass container strength. The ideas we have today will deliver the improvements of tomorrow.