

Technical News Bulletin

St. Petersburg, January 2025



MiniLab Statistical Sampling System - FAQ

- Frequently asked questions for MiniLab Statistical Sampling System
- Automatically identifies the manufacturing line of origin and perform the measurements required for that container.
- For each container, the MiniLab sends a packet of information containing the manufacturing line of origin, the mold number and all the measurement values.

What measurements does the MiniLab perform?

The MiniLab performs the following measurements:

- External body dimensions
- External dimensions for a variety of finish types (crown, lug, screw-head).
- Lean, tilt, bent neck
- Weight
- Flange/Knock-out (option)
- Corkage (up to 55mm deep) (option)
- Push-up (up to 70mm) (option)
- Internal pressure (option)
- Internal volume (option)

What equipment performs the measurements?

- The MiniLab D Dimensional Gauge performs the dimensional and weight measurements.
- The MiniLab P Pressure and Capacity Tester measures the volume and the internal pressure.

Can the MiniLab D be installed in a stand-alone configuration (without a mold reader)?

Yes. In this case the operator manually enters the mold numbers of the containers at the MiniLab D.

Can the MiniLab D and MiniLab P Pressure and Capacity Tester be installed in a stand-alone configuration (without a mold reader)?

Yes. In this case the operator manually enters the mold numbers of the containers at the MiniLab D.

Can the MiniLab P Pressure and Capacity Tester be installed in a stand-alone configuration (without a mold reader or an MiniLab D)?

Yes. In this case the MiniLab Controller is equipped with a touch-screen monitor. The operator manually enters the mold numbers of the containers at the MiniLab Controller.

Why does the offline MiniLab have two in-feed conveyors?

The MiniLab is usually installed between two lehrs and is designed to handle containers from two manufacturing lines. Each infeed conveyor is dedicated to a manufacturing line. The MiniLab identifies the manufacturing line of origin of a container based on the infeed conveyor the container is placed on.

Can the MiniLab be installed between a beer line and a wine line?

The MiniLab is designed to handle containers from two manufacturing lines. The two containers manufactured on those two lines can be of different size and shape. The MiniLab will automatically identify the manufacturing line of origin and perform the measurements required for that container.

How much setup is required at job change?

The container parameters have to be set up initially. Those parameters are stored in memory and can easily be recalled at job change. Servo-controlled mechanisms are used in most of the system and do not require any mechanical adjustments. The stop/rotate mechanics for the heel code mold reader might need to be manually adjusted depending on the diameter of the container. The clamps and inserts in the MiniLab P Pressure and Capacity Tester might need to be changed for different finish size and profile.

What size containers can the MiniLab handle?

The MiniLab is designed for containers from 45 mm [1.75 in.] to 115 mm [4.5 in.] in diameter. Heights from 90 mm [3.5 in.] to 365 mm [14.35 in.] can be accommodated.

What kind of SPC package is provided with the MiniLab?

No statistical process control package is provided with the MiniLab at this time; however, Emhart can recommend several third-party SPC packages that other customers have used successfully with the MiniLab.

Can we collect the MiniLab measurement values for analysis in our SPC package?

Yes. For each container, the MiniLab sends a packet of information containing the manufacturing line of origin, the mold number and all the measurement values.

Please contact your Emhart representative for a copy of the protocol specification.

Do we need to place the containers in any particular order on the infeed conveyor?

If the MiniLab is equipped with a mold reader, it automatically identifies the mold number of origin of each container. You only have to verify that the containers are placed on the correct infeed conveyor.

We manufacture both pressure and non-pressure containers. Can we still use the MiniLab?

Yes. The pressure containers will be measured in the MiniLab P Pressure and Capacity Tester. Non-pressure containers will be either returned to the manufacturing line or automatically discarded.

We only manufacture non-pressure containers. Can the MiniLab be installed without the Pressure and Capacity Tester?

Yes.

What technology is used to perform the external dimensional measurements?

The MiniLab D Dimensional Gauge performs all the dimensional measurements. It uses high precision optics equipped with high-speed, high-resolution digital cameras.

What type of gauge does the MiniLab use to measure the push-up?

The MiniLab D Dimensional Gauge performs the push-up measurement. An acoustic gauge is used to perform this measurement. The gauge never touches the container.

How long does it take to install a MiniLab?

Installation and operator(s) training is usually completed in four to five days. The plant must verify that the following are available before installation: compressed air and power, as well as water, cullet chute, cullet conveyor, and water drain for the MiniLab P Pressure and Capacity Tester.

Does the MiniLab P Pressure and Capacity Tester provide a signal to control the cullet conveyor?

Yes. The MiniLab P Pressure and Capacity Tester provides a signal to activate the cullet conveyor for a short period of time when a container is being measured. This gives time for the water from the previous container to drain before the container is carried to the main cullet conveyor.

What is the purpose of the MiniLab Controller?

The MiniLab Controller tracks the containers on the MiniLab conveyor, correlates the information from the different devices, and provides one packet of information for each container, which then can be communicated to the customer's SPC package or information system.

When is a MiniLab Controller required?

The MiniLab Controller is required in the following configurations:

- All automatic sampling systems
- Off-line system with more than one measuring device
- Off-line system with at least one mold reader
- Off-line system with multiple infeed conveyors
- Off-line system with a MiniLab P Pressure and Capacity Tester

What communication protocol does the MiniLab support?

In configurations with a MiniLab Controller the MiniLab communicates using the XML protocol over a CAT5 network link. In all other configurations the MiniLab communicates over a serial RS422 line.

Please contact your Emhart representative for a copy of the protocol specification.

All illustrations show the MiniLab P Pressure and Capacity Tester in a right hand configuration. Can it be installed in a left hand configuration

Yes. The MiniLab P Pressure and Capacity Tester can easily be configured for right hand or left hand during installation.