PBMS-AUTO Fully Automatic Preform and Bottle Measuring System

The PBMS-AUTO Fully Automatic Preform and Bottle Measuring System is a fully automatic instrument designed for measuring the overall dimensions & profile of preforms and bottles (PET/Glass bottles). This system integrates advanced technologies such as AI recognition, automated operations through gripping mechanisms or robotic arms, cloud data management, optical character recognition, and visual measurement software. It is designed to deliver efficient, fully automated, and unmanned high-performance measurement and inspection capabilities. By enabling manufacturers to effectively manage the quality of product packaging containers, it facilitates standardized measurement and inspection, automated sorting, and rapid, accurate quality data feedback—helping reduce production waste and minimize labor costs.

The PBMS-AUTO system features flexible combination function modules that can be configured according to different needs:
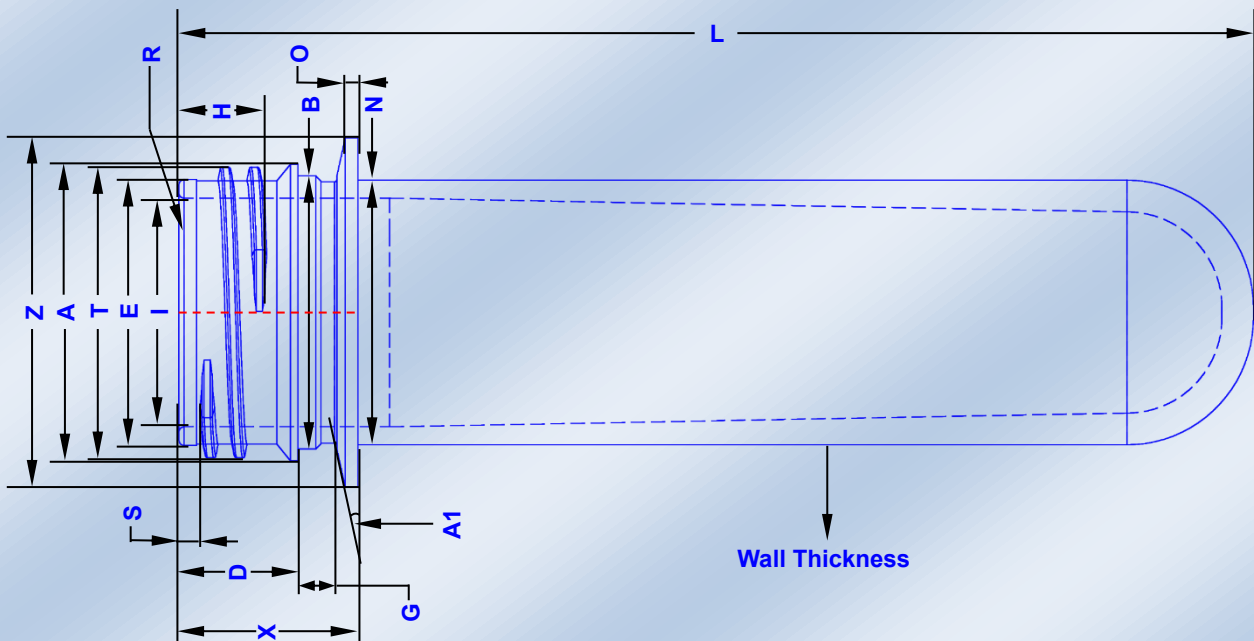
Standard Module: Used for measuring bottle body dimensions, finish inner diameter and perpendicularity, suitable for both bottles and preforms.

Thickness Measurement Module: Can be configured to measure either bottles or preforms (if both bottles and preforms need to be measured, two thickness measurement modules are required).

This modular design allows the PBMS-AUTO system to flexibly meet various measurement needs, providing a more comprehensive and accurate solution.
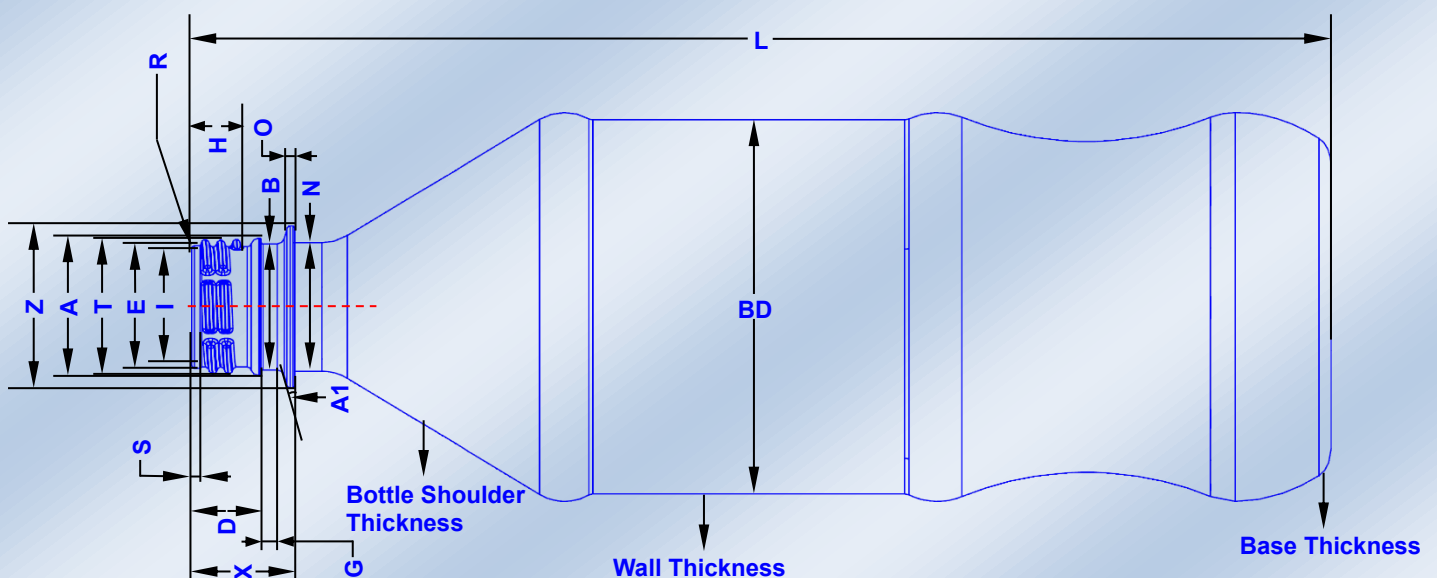
The parameters of the preform are as follows:

Wall Thickness

A - Tamper Band Dia.	B - PP Band Diameter	C - Thread Projection	D - Distance Tamper Band	E - Neck Dia.
G - PP Band Clearance	H - Distance Thread End	L - Overall height	O - OD Band Thickness	R - Seal Radius
S - Distance Thread Start	T - Thread Dia.	V - Thread Tip Width	W - Concentricity	X - Finish Height
Y - Thread Angle	Z - OD Band Dia.	A1 - OD Band Slope	I - Finish Inner Dia.	Preform Wall Thickness (Wall Thickness module is required)

The parameters of the bottle are as follows:

Bottle Shoulder Thickness

Wall Thickness

Base Thickness

BD

A - Tamper Band Dia.	**B -** PP Band Diameter	**C -** Thread Projection	**D -** Distance Tamper Band	**E -** Neck Dia.
G - PP Band Clearance	**H -** Distance Thread End	**BD -** Bottle body Outer Dia.	**L -** Overall height	**O -** OD Band Thickness
R - Seal Radius	**S -** Distance Thread Start	**T -** Thread Dia.	**V -** Thread Tip Width	**W -** Perpendicularity
X - Finish Height	**Y -** Thread Angle	**Z -** OD Band Dia.	**A1 -** OD Band Slope	**I -** Finish Inner Dia.
Bottle Shoulder Thickness (Thickness module is required)		Wall Thickness (Thickness module is required)		Base Thickness (Thickness module is required)

Standard Module
For measuring bottle outer dimensions, finish inner diameter and perpendicularity

Thickness Measurement Module

Technical specifications:

- Sample dia.: ≤ Φ115mm (other range by order)

- Finish dia.: < Φ52mm (other range by order)

- Bottle sample height range: 50-350mm (other range by order)

- Preform sample height range: 50-200mm (other range by order)

- Measure scope:

  Preform: Overall dimensions (Based on the module combination, it can measure wall thickness variation)

  Bottle: Overall dimensions (Based on the module combination, it can measure wall thickness variation)
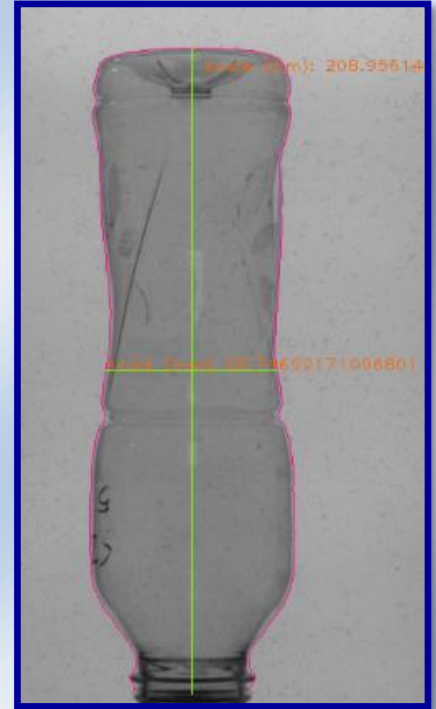

Finish dimensions measurement

- Display: 10" Touch Screen

- CCD Display: 15.6" Touch Screen

- Lighting: Parallel Backlight

- Measuring Accuracy: 0.01mm

- Repeatability accuracy: ±0.01mm (Finish inner dia. ±0.01mm, Wall Thickness ±0.01mm, Overall Height ±0.05mm, Preform body outer Dia. ±0.02mm, Bottle body Outer Dia. ±0.02mm, Concentricity / Perpendicularity ±0.05mm, Thread angle ±1°)

- Measurement time: The average rotating time of dynamic image is based on the motor speed. For example, if the speed of motor is 10 rpm, the measurement of the entire bottle body data takes about 6 seconds. For the measurement of Static images, it is about 1 to 2 seconds, and the same applies to the threads of the Finish.

- Storage Capacity: 64G

- Output Format: Csv, Excel (data only), PDF

- Interface Type: USB 2.0/3.0, Gigabit Network

- Operation System: Windows

- Languages: English / Chinese

- Power Supply: AC 110V / 220V   50Hz/60Hz

- Working Ambient Temperature: 10 - 36°C

- Working Ambient Humidity: 20 - 60% Rh, No Condensation

- Dimension: 1142 (L) x 1027 (W) x 1950 (H) mm

Body dimensions measurement

Optional：

- Bottle Wall Thickness Measurement Module
  (Thickness Measurement Range: 0.04mm to 1.4mm)

- Preform Wall Thickness Measurement Module
  (Thickness Measurement Range: 0.3mm to 8mm)

- Custom finish spacer

Custom-made Finish spacer