

High Performance system for checking the visual Defects in plastic blow moulded bottles

High resolution cameras provide all round inspection. Easy to define tolerances allow the user to decide which bottlesneed to be accepted and which need to be rejected

Salient features

- Each bottle is inspected for, surface defects, like spots, material inclusions, color smears, color shade variations. Sealing surface defects like Flashes, Ovality and diameter variations. Defects on the bottom surface of the bottle like holes, and trantsparent bottom.
- All the product data is stored in a database and can be retrieved at any time.
- Password protected multilevel, user access control is provided.

- The reports generated by the system can be accessed from anywhere through the internet.
- The system changes over quickly to inspect new products changeover, involves simply selecting the required product from the system library using the touch screen.
- The large monitor displays the image of the bottles as they are passing through the system.

Stand Alone System integrates directly into the production process. High throughput inspection up-to 11,000 bottles per hour.

Hardware

- The system consists of a conveyor, 6 cameras with optics and illumination,
- Enclosure, data processor, and mechanism for ejection of the rejected product.
- The bottles are transported through the system with the help of two conveyors.

Process

- The bottles are picked-up from the flat conveyor on the blow moulding machine by a clamp conveyor.
- From the clamp conveyor the bottle is transferred to the flat belt conveyor.
- As the bottles pass through the system, the high speed cameras capture images of the bottle form all directions.
- The High-speed data-processor processes the images received from the cameras in real time.
- Defective bottles are ejected from the system with the help of a blow off device.

Inspection

- Full 360° view is captured by the help of 4 cameras. Each bottle is inspected for surface defects, like spots, material inclusions, color smears, color shade variations, thin wall sections, holes etc.
- 5th camera inspects the bottle for, diameter, ovality and material insert defects.
- 6th camera detects defects in the bottom of the bottle.
- Defective bottles are ejected from the conveyor, with the help of a blowoff device.
- The large monitor displays the image of the bottles as they are passing through the system







Multiple cameras provide all round inspection, Detailed statistical reports can be generated in excel

SetUp

- In a few simple steps the users can , easily Add/teach a newproduct to the software.
- The systems has advanced Learn capability, just by passing a few'good' bottles, and a few 'defective' bottles, the system can automatically set the parameterswhich define the criteria for acceptance or rejection.
- Further customization is possible, the user can;
- Choose the defects to be detected, Define the tolerances for each defect, Define the area to be inspected.
- All the user settings are saved in a database.
- The system can be setup for hundreds of different bottles.
- The system has password protected user access levels.

Reporting

- The results of the last 100 bottles are Displayed onscreen.
- The inspection results are stored in the database product wise.
- The software will generate reports on the Number of bottles inspected per day Number of defective bottles per day Number of defective bottles classified as per defects.
- Surface defects, Neck flash, Color shade variation, Molding inside the mouth, Diameter/Ovality, Die Line, Bottle width variation, Bottle Height variation, optionally neck diameter

Excel Report

- The photos of the defective bottles are stored, in the database, they can be recalled for review anytime in the future.
- Inspection reports with bar chart with complete inspection summary can be generated.
- Reports can be exported to Excel.
- System can be configured to automatically generate an Excel reports at a predefined time, and send over the network.







Typical Defects detected by the system

Bottom Thin Wall



Bottom Contamination



Specifications

MODEL	: Optomech - bottle inspection system Standard		
SPEED	: Up to max 11,000 bottles per hour		
BOTTLE SIZE	: Height (Min/Max)	50/ 200 mm max	
	: Width	110 mm Max	
	: Depth/Dia	95 mm Max	
	Min gap between bottles : 25mm		
ACCURACY	0.1 mm For bottle height of 50 mm.		
DEFECTS DETECTED:	Sealing surface: Flashes; Short molding; Diameter, Ovality variation		
	Bottle base: Holes, dark spots.		
	Bottle outer surface: Dark spots, holes, thin wall.		
MACHINE SIZE :	Length : 2100mm	Width:1000mm	Height:1440mm
	Weight: 150 Kg		
CONVEYOR :	Main conveyor : Belt V	Vidth : 100mm	Length: 2420mm
	Clamp conveyor : Belt v	vidth: 60mm	Length: 480mm
	Conveyor Height (Adjustable) : 810mm		
	Belt Speed: Upto 30 m/min		
UTILITIES:	Electric: Voltage and Current: Ac 415 v 3 phase, 5A.		
	Compressed Air : 6-10 Bar, oil free clean air, Push in connection 6mm.		
OPERATING	Temperature : +10 °C to +40°C		
CONDITIONS :			
	Humidity : 40% -90% RH, non-condensing.		
	Humidity : 40% -909	% RH, non-condensing.	



Sealing Surface Defect



Bottle shape deformity



Surface Thin Wall

Machine Dimensions



Fully Extended



Minimum Height

About Optomech

OptomechEngineers Pvt. Ltd. was founded in Hyderabad, India in the year 1981.

Optomech has over 30 years of experience of successful development, manufacturing, servicing and marketing of products involving vision technology for quality inspection.

We are closely oriented towards the needs of the market. We are one of the leading providers of the vision technologies for quality inspection. Renowned companies place their trust in the solution and services provided by the Optomech. For us at Optomech, 'Professional After - Sales Service' is not just a simple catch phrase; instead, it is our company philosophy. We accompany you all the way from the initial consultation up to final installation and training - and beyond. You benefit from our many years of experience and will be able to deal with the challenges encountered when implementing the new technology.

Optomech has its own manufacturing facility, spread over 10,000 sqft of buildup space, and is supported by a dedicated team of Engineers. At Optomech we always put the customer first, and **Your Quality is Our Vision**.

Do you have any custom inspection requirements? Contact us today !





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