

- *Machine Vision inspection solution for Pharmaceutical Rubber Stoppers*
- *Suitable for laminated and non-laminated stoppers*
- *Up to 10 stoppers per second*
- *Wide product range 12-35 mm*
- *Wide color range*
- *Various inspection categories*
- *Top, bottom, outside and inside surface inspection*
- *Stamping and shape faults*
- *100% Quality control with a minimum defect detection 100 µm square*



The Rubber Stopper Inspection System is the world's fastest inspection system for pharmaceutical rubber stoppers. This system, the 3rd generation in its kind, is a result of 10 years development in automated high-speed rubber stopper vision inspection for quality control within clean-room conditions. This system design is flexible and can be adapted for specific customer needs.

- **Feeding**

The stoppers are manually loaded into a bunker feeder with a capacity of 85 liter. A bowl feeder orientates and separates the stoppers on to conveyor belt for the various inspections.

- **Inspection**

Cross-contamination detection by means of a high-speed color sensor, top, bottom side surface and inside inspection. The inspection is executed by means of high-resolution cameras with LED and/or Xenon lighting. This results in a stable 100% quality control with minimum defect detection 100 µm square for the following categories: inclusion of foreign particles, fibers, coating defects, bubbles, eccentricity, ovality, stamping and shape faults.

- **Sorting**

Each inspection position is equipped with a separate reject unit. The reject parts are collected into containers for each inspection position. Good parts are exactly counted and packed. The system is also equipped with sampling station to sort out good parts for offline manual inspection.

- **Human machine interface**

Labview HMI SCADA package with touch screen for machine set-up and control. By means of receipt selection, one for each rubber stopper type, all machine and inspection parameters and settings are automatically downloaded into the machine control.



Specification:

Inspection capabilities	Inspection	Top, bottom, outer surface, inner surface
	Inspection categories	Inclusion of foreign particles, fibers, coating defects, bubbles, eccentricity, ovality, stamping and shape faults, etc.
	Accuracy	Minimal defect size 100 µm square (3 x 3 pixels)
	Products types	13 to 35 mm, all colour, laminated and non-laminated rubber stoppers
	Speed	10 stoppers /sec
Hardware Inspection	Processor	PPT Vision C-series Impact™ machine vision micro system
	Camera	PPT9200 digital camera 1600 x 1200 Pixels
	Lens	Telecentric Lenses
	Illumination	Strobes LED or Xenon
Software	Siemens S7	Machine control
	PPT Vision Inspection builder	Product inspection
	National Instruments™ LabVIEW	Scada operator interface, batch entry, data logging etc.
Machine Hardware	Load	Manual or automatic from bulk into 85 litres bunker
	Transfer	Bowl feeder, suction wheel and conveyor belt
	Inspection	4 Inspection units, top, bottom, side (whole surface) and inside.
	Selection	Reject by means of high speed pneumatic reject stations for each inspection position.
	Sampling	Automatic sampling station for off line visual inspection
	Clean room	Class C, with HEPA down flow and pulse bar units
	HMI	15" Touch screen panel
	Control	Siemens S7 Profibus Machine control

