

# iM Series

## Pharmaceutical Vision Inspection System



The pharmaceutical industry strives for absolute quality on parenteral containers. Drug product manufacturers or contract packagers face increased pressure to prevent defects and minimize rejects of finished drug products.

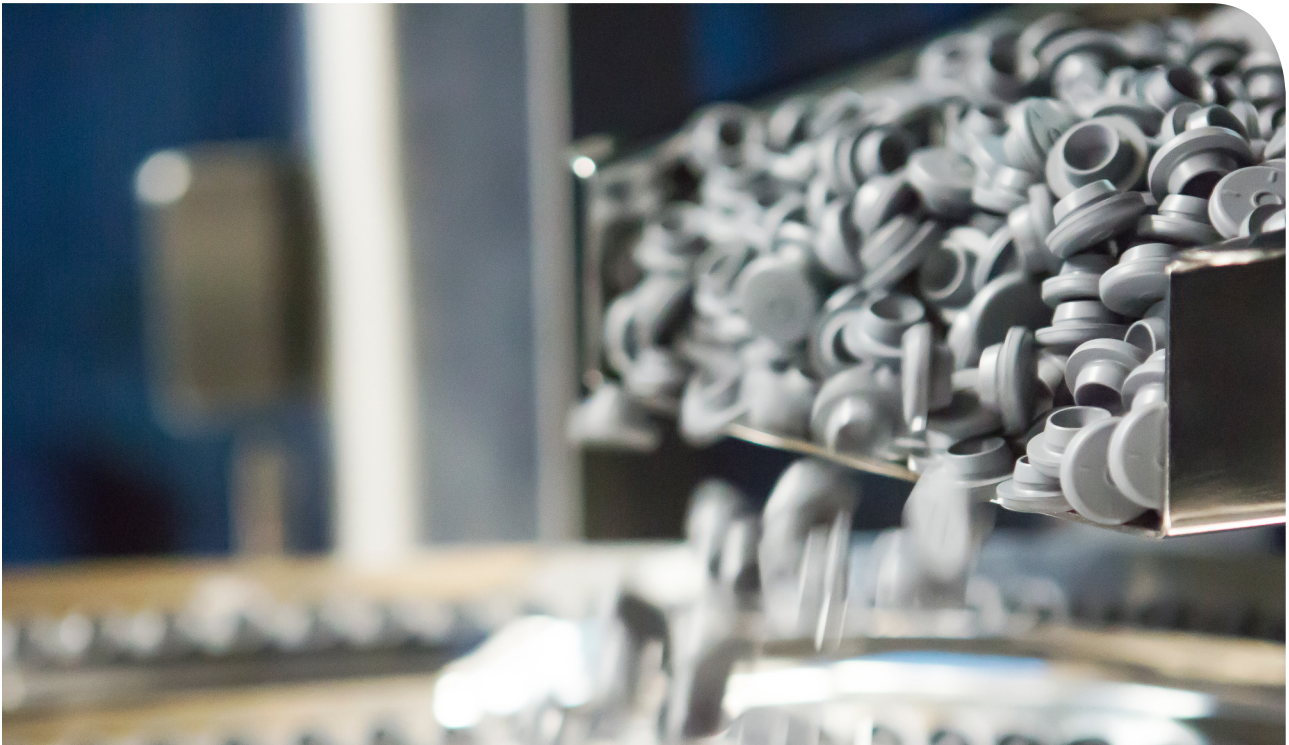
Almost 20 years ago, Simac Masic designed and built its first automated inspection machine for pharmaceutical rubber stoppers.

Now, the 7th generation iM Series assists in reducing costs of defects and contamination with 100% vision inspected stoppers and plungers. This vision inspection system targets component manufacturers as well as specific end-users.

It supports industry leaders further minimizing the risk of component-related issues in drug fill-finish operations.

# iM Series - System Overview

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## **Modular Designed System**

The Simac iM Series is a modular automated machine vision system and typically placed after product washing, before final packaging. The system continuously conveys the products through two vision stations and one metal detection station after which the parts are either accepted and presented for packaging or rejected.

## **Inside & Bottom Inspection**

Parts are oriented from a hopper into a vibratory bowl feeder out onto an accumulation track. A rotating mechanical vacuum wheel presents the products for the first vision station. Here the inside and the bottom of the pharmaceutical stoppers are inspected for defects. Plungers are inspected with an endoscope camera for inside issues.

A pneumatic ejector blows failed components off the wheel and into a reject bin.

## **360° Side & Top Inspection**

Parts that pass first inspection, are placed on a second larger, rotating and uniquely developed ring. The second vision inspection station comprises a set of 5 cameras and strobes housed in a cabinet. At this inspection station images of the complete surface of the product are captured; all four sides and the bottom (stopper) or top (plunger).

## **Purpose Optimized**

To reduce footprint in clean room manufacturing environments, the cameras are mounted in a specially designed compact island. Telecentric lenses are used to capture high-contrast images with low geometrical distortion. Separate powerful processor systems check the detailed images to ensure high throughput.



### Third Inspection; Metal Detection

After visual inspection, the ring rotates the parts through a metal detector to ensure that the parts have not been contaminated with any (non-)ferrous material during production.

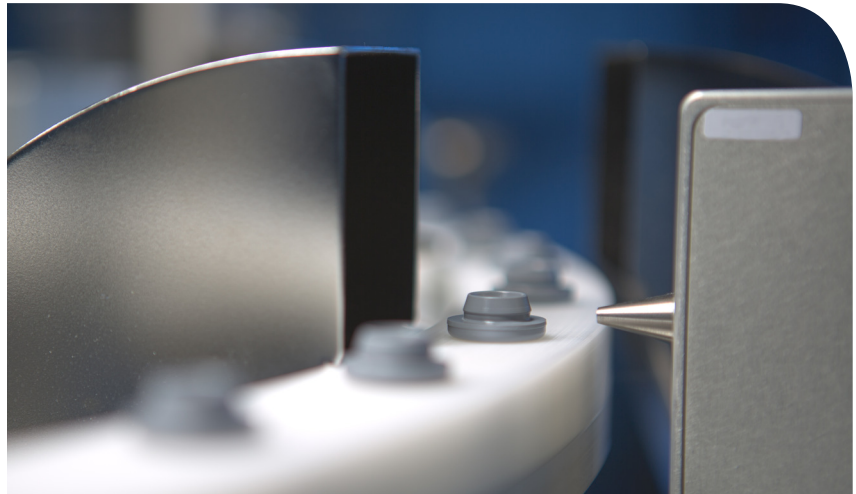
### Reject, Accept or Sample

The parts are then rotated until they reach a reject station. An intelligent Product Tracking System supports counting and correct ejection of the parts into separate and multiple accept, reject and QA sample stations.

Statistical data is gathered and all data is logged into a SQL-database which can be accessed by external applications.

### Technical Inspection Highlights

- Inspects defect sizes down to 43 x 43 µm
- 800 products per minute (or more)
- Top, bottom, 360°+ side inspection and unique inside (plunger) inspection
- Suitable for both stoppers and plungers via easy exchange sets
- Separate and multiple accept, reject and QA sample stations
- Metal detection down to 0.5 mm for surface and embedded particles (ferro and non-ferro)



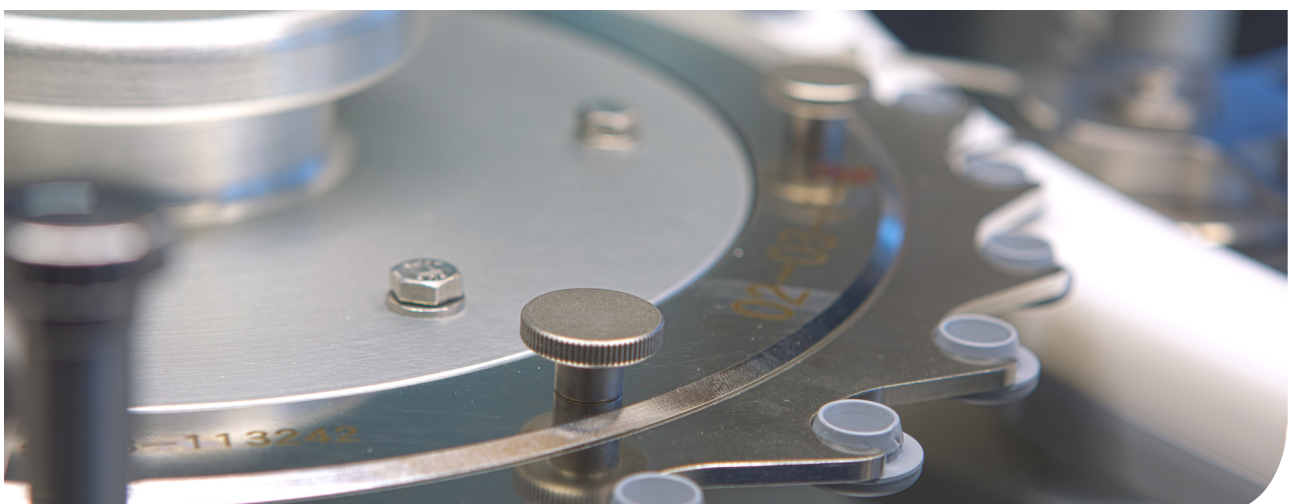
### Extra Benefits

- Suitable for ISO Class 5 environment (ISO 14644-1)
- Optional HEPA down flow and ionization bars
- Touch screen HMI
- Compact footprint for clean room efficiency
- Statistical Data API available
- Best-in-class false reject rate
- Very low ppm false accept
- FDA approved component handling
- GMP turn-key delivery
- FAT, SAT, PQ, OQ and IQ Validation Support
- Worldwide service support plan available

### Pharmaceutical References

We proudly work or have worked with the following companies (general references). We service a globally installed base.

- Aptar Pharma
- BD
- Boehringer Ingelheim
- Dätwyler Pharma Packaging
- Gerresheimer
- Nipro Corporation
- Novo Nordisk
- Pfizer
- Roche
- Teva Pharmaceutical
- West Pharmaceutical Services



### Improving quality with vision inspected components

Top-of-the-range pharmaceutical component suppliers supply 100% automatically vision verified products, free of visible defects and contamination.

This reduces end-of-line rejects and enhances product quality and patient safety.

100% vision verified components truly enable Ready-to-Use, Ready-to-Sterilize and Ready-to-Fill.

The iM Series checks for dimension-, moulding- and cosmetic defects like spots. Also contaminations (e.g. particles and fiber) are detected according to requirements.

### Simac's Technology Leadership

Simac Masic & TSS designs, builds and services **High End Automated Vision Inspection Systems** for **Pharmaceutical Companies** that use or produce **Primary Packaging Components** for Human (Injectable) Parenteral Drugs.

We supply turn-key inspection systems for in-line inspection of Stoppers, Plungers, Septa, Vials, Needles, Needle shields, Tip caps & Syringes.

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#### Simac iM Series line-up\*

	Simac SiM	Simac PiM	Simac CiM
<b>Application Component</b>	Stoppers	Plungers	Stoppers and plungers
<b>Max speed (parts/min)</b>	700	800	800
<b>Products sizes (Ø mm)</b>	12 to 35	-	12 to 35
<b>Products sizes (ml)</b>	-	0.5 to 100	0.5 to 100
<b>Cameras (#)</b>	6-8	7-8	7-9
<b>Dimension Control</b>	Optional	Optional	Optional
<b>Metal Detection</b>	Optional	Optional	Optional
<b>Film Detection (PTFE or others)</b>	Optional	Optional	Optional

\* iM Series design can be adapted for customer specific requirements

#### Contact us

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