

Multivac Vision System (MVS): Visual Object Detection and Quality Inspection



MULTIVAC
BETTER PACKAGING



Efficient automation of production and quality assurance

The Multivac Vision System (MVS) is an innovative image processing system which has been optimized for the specific sanitary and technical requirements of the packaging industry.

The MVS is suitable for a wide range of detection and inspection applications. 100-percent quality control with maximum precision, even at high speeds, allows a wide range of automated solutions to be implemented. From the first to the last pack, without stopping or tiring, with absolute precision and safety, even in harsh industrial environments.

The combination of rugged, durable hardware and user-friendly software ensures that natural surfaces and homogeneous film and paper surfaces, including random or registered repeat color printed surfaces, can be detected accurately and reliably.

After analysis, the data can be transferred to the Multivac Line Control (MLC) or to interfaces with other Multivac systems for controlling additional processes.



MVS

Reliable.

The housing and technology of the Multivac Vision System have been developed and manufactured for long-term reliability. They meet the strictest hygiene standards for use in the food sector and in the medical industry.

Easy to use.

The simple user interface makes light work of any task, from teaching in new products to modifying or selecting existing recipes. Intuitive menu controls provide rapid access to all program levels. Different user levels with individual access rights ensure that only authorized personnel can access the various functions.

Quick to maintain.

The use of standard components minimizes costs and time in spare parts procurement, maintenance and servicing.

Integrated or separate.

As a standalone unit with the capability of being used by itself, the MVS has its own operating terminal. When used as an integrated system, the MVS is operated from the terminal of the higher-level unit (packaging machine, Multivac Line Control, etc.)

From a single source.

Plug & Play capability with all Multivac automation components and Multivac packaging machines with IPC control. A complete, hygienic package from a single source, delivering powerful performance and designed for seamless integration.



Visual object detection and quality inspection

Object detection:

- Position sensing (position, rotational position)
- Classification (patterns, colors, surfaces, positions)

Quality inspection:

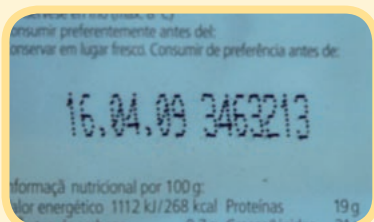
- Presence check (pack presence, fill level, completeness)
- Position check (contents, label, etc. in correct position)
- Pack-specific check (setpoint/actual value comparison based on individual criteria)
- Label inspection (detection, reading and verification of labels, prints, stamps, lettering, 1D & 2D barcodes, etc.)
- Cosmetic check (imperfections, contaminants, defects, surface damage, discoloration, packaging faults, etc.)



Pack-specific check



Presence check



Position check



Label inspection

The MVS comprises the following components:



Operating terminal

For standalone solutions only, otherwise integrated into the machine control system.

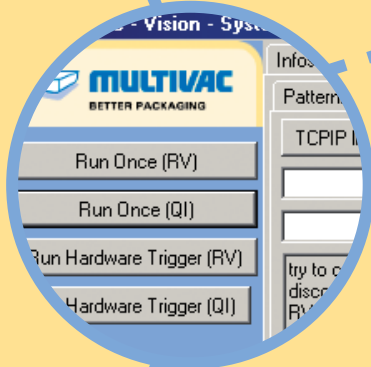


Image processing software

- State-of-the-art image processing algorithms
- Microsoft Windows® based
- Framework user interface

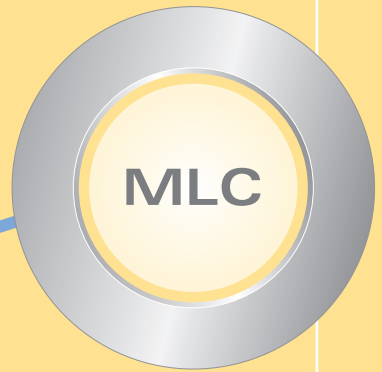


Image acquisition unit

- One or more cameras
- Lenses (from wide-angle to zoom)
- Optical filters (color filters, polarizing filters, etc.)

Lighting unit

- Light source and spectrum according to application (cold light, LED, infrared light, UV light, etc.)

Applications

Depending on your individual requirements, we can configure a Vision System for object detection or quality inspection or a combination of both applications.

Typical applications of the Multivac Vision System include:



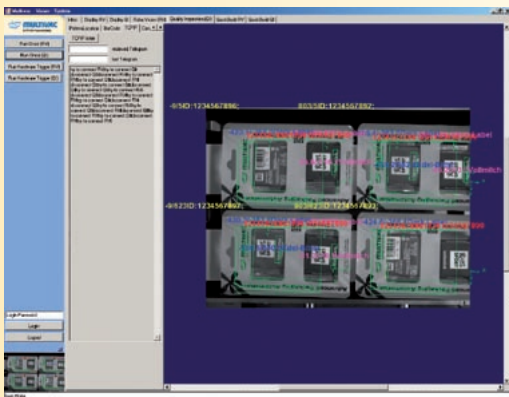
Robot-based pick & place applications

The position and rotational position of the objects to be picked are determined and sent to the control unit of the pick & place system. Fast and accurate for all product types, with varying textures and geometries, dry or wet surfaces. Simultaneous detection and sorting of different objects is also possible. Pick & place operations - both cartoning and product placement in trays - are executed with absolute accuracy.

Multiple Multivac handling modules can be controlled by the Multivac Vision System, the Multivac Line Control or both. An equal distribution of the workload between multiple robots of the same type (load balancing) is also possible.

Final pack inspection

When used at the exit from a packaging machine, the Vision System can perform an immediate and reliable final pack inspection. Nature and completeness of contents, position and correct printing of a label, a barcode printed directly on the film or the best-before date - all packs which are outside a user-defined tolerance range are accurately detected.



Technical data

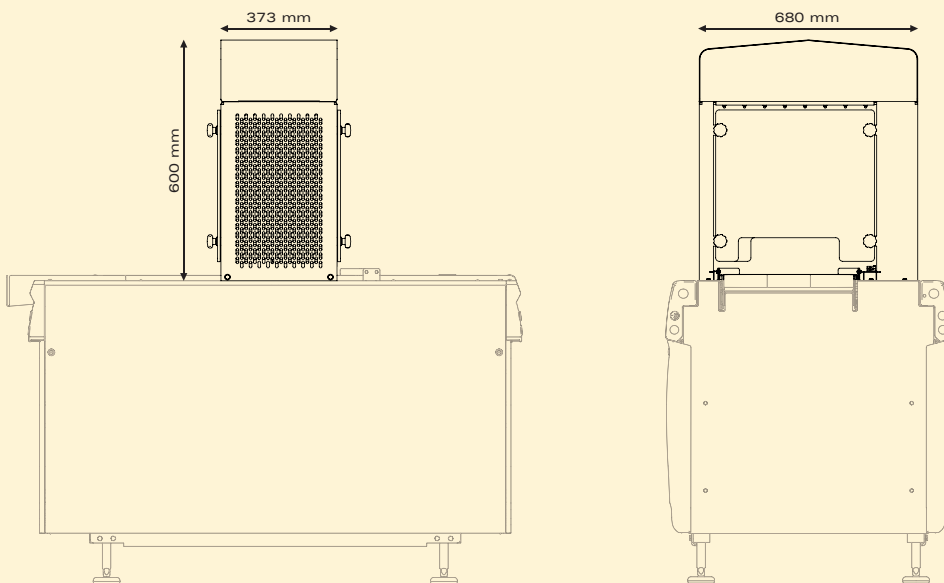
Dimensions*

Length: 680 mm
Width: 373 mm
Height: 600 mm

Connections

Electricity: 230 V, 50 Hz, approx. 1.0 kW

* depending on the required camera acquisition range



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