

miho

Maxx

Empty Bottle Crate Inspection Machine



miho **Maxx** is a **Crate Inspection Machine** that monitors and sorts empty crates in accordance with different criteria achieving a level of performance that exceeds any level reached up until now.

The main function of the miho **Maxx** is the **differentiated and extensive sorting system** of both **crates** and **bottles**. The **crates** are sorted in accordance with certain criteria defined by the user and are diverted to different conveyors. One of these conveyors is usually used for crates where the **bottles** are unpacked using a robot and they are controlled, sorted and distributed to the different conveyors by the miho **Maxx**.

The **technical core piece** of this very differentiated inspection system is the state of the art miho **Vario Optic System**, whose components, namely a camera, mirror and lighting system, operate on a **flexible** basis and in **coordination with the special object being inspected**. Up to **40 images** are created by the miho **Maxx** for each crate, by using **different perspectives and alternative lighting**. This leads to a higher level of detection accuracy for the different crate and bottle features. The **accuracy detection of bottle-material** (glass or plastic bottles) and the **bottle-type** (plastic returnable bottles, non-returnable bottles, PET cycle bottles) has been **increased to nearly 100%** through the development of an **innovative UV fluorescent inspection process**. Even the detection of the **shape of neck rings** for PET bottles is now possible.

The **radical and open modular construction** of the miho **Maxx** does not only make **maintenance and servicing of the machine easy** but also allows the machine to be **upgraded easily**. The miho **Maxx** is therefore a high performance sorting and monitoring system that has a **solid construction** and is a **secure investment for the future**.

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miho Maxx: Main Features

- Extensive and very differentiated inspection of both the crate and the bottle using several different criteria.
- Differentiated sorting, in accordance with the criteria set by the user: on the one hand, the diversion of crates to the different conveyors, on the other hand, control of the unpacking of the bottles by, for example, a robot to different conveyors.
- Complete monitoring and protocols for the quality of the incoming empty bottles.
- Technology: The state of the art miho-Vario-Optic-System. For example, special alternative lighting, which leads to the reliable detection of special crate and bottle features.
- Extensive network: Ethernet connection to Office programmes. Can be maintained by remote control. (Analogue / ISDN).
- User friendly, for example, by intuitive graphical user interface based on Windows XP. Connection to a remote workplace.
- Extremely easy maintenance and service through its very solid, radical, modular and open construction; wear resistant, for example by using LED lighting. Low investment costs.

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miho-Vario-Optic-System

For a differentiated inspection of the complex object, the crate, **many different inspection criteria** must be fulfilled. We have developed the **miho Vario Optic System** to meet these differentiated objectives. The **first** thing is that it has a **system of many cameras** that make images of each crate to be inspected and these images are made at **different moments and at many different angles**. This therefore takes into account the many different aspects of the crate and bottle to be inspected. **Secondly, and most importantly**, it has a **completely new flexible lighting system**. This lighting system can **create just the right lighting individually for each inspection process** and can therefore significantly improve the quality and amount of data. This special image data is used by high performance computers to make a detailed assessment of the status of the crate and the bottle. This improved and large amount of image data that is available and which is especially optimized for that particular inspection process results in a very **high level of secure inspection and a very low level of false rejections**.

The up until now unique, variable lighting system for the **miho Vario Optic System** is achieved by using **LED's**. Here there are **three further advantages** of this method:

Disruptive external light from neighbouring lighting systems is no longer a problem, since the LED's are only activated for active cameras for some thousandths of a second.

The **life duration for the LED's is practically unlimited**, the lamps do not need to be replaced and this saves on costs.

The **intensity and light colour of the light system stays constant** and the inspection quality is not subject to any fluctuations (whereas light bulbs or fluorescent lamps change their intensity and light colour during their lifetime).



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Operation and Network

Operation and connection:

Intuitive user icons based on Windows XP.
Operation from a remote work place possible.
Connection to Office programmes through various data banks that can be configured individually and in accordance with the requirements of the user.

Changing type:

No mechanical adjustment is required.

Interfaces:

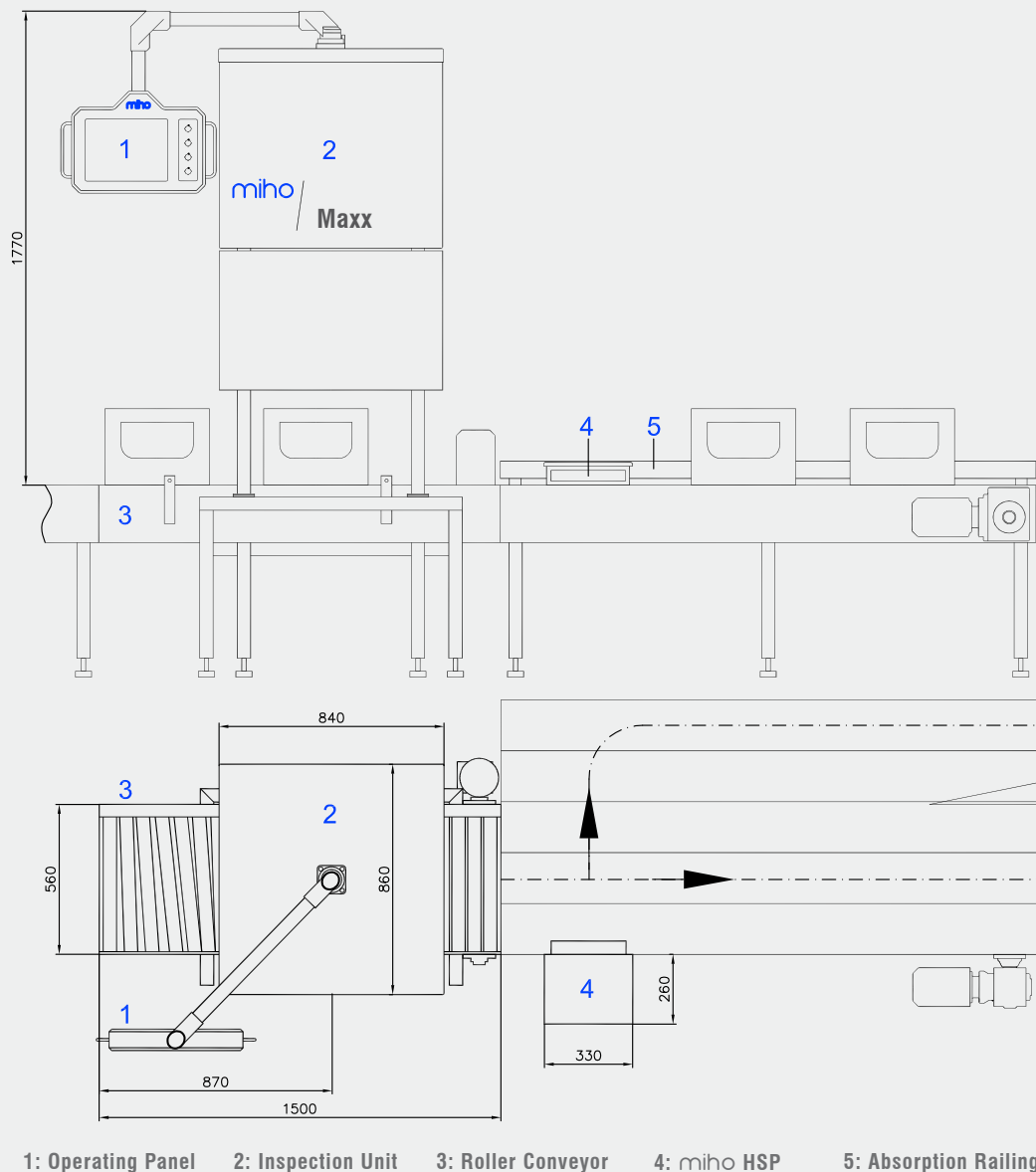
Network interface: Industrial Ethernet, TCP/IP.
Interface for the control of different reject systems.
Profibus interface for, for example, the control of the unpacker.

Remote maintenance:

Completely by remote control (Analogue, ISDN, DSL).

Reject systems:

miho HSP, miho Leonardo SK, Robot.





Maxx: Example of a concept for a sorting line

