miho Allround
Optical 360° Inspection
1.1 Overview of functions

- 360° inspection of a fully equipped bottle after filling, capping or labelling
- inspects up to 5 labels
- cap inspection.
- fill level inspection (with extension modules, see 1.5)

1.2 Cap inspection (examples)

1.3 Label inspection

Expiry date and Barcode
Slanting labels
Loose labels
Creased labels
Incorrect position
Different colour shades

1.4 Vacuum inspection

Underfilled
Overfilled
Vacuum
Presence
Correct
Position
“Frothing”
for swing top bottles

1.5 Fill level inspection

Vacuum/Lid deflection
Gravity
Level

Newton HF 2
Standard procedure for PET and glass bottles
Newton X 2
For neck labels (paper/stainless), sleeves, cans
Newton Optics 2
For foaming liquids and swing top bottles
2 Technology

- at least four side cameras with a mirror cabinet create a 360° view of a processed image of the entire bottle
- top camera for inspecting the cap (optional)
- connection to special miho Fill Level Inspection Units
- latest computer technology miho VIDIOS®: An operating system developed for special requirements with network distributed image-processing
- up to 60,000 bottles/hour
- remote maintenance via the internet
- operating data-processing („Weltenstephan“ standard)

- touchscreen: intuitive user interface
- integration of miho reject systems (e.g. the linear reject system miho Leonardo M that safely rejects bottles standing up)

3 Advantages

- the simplest variant management: hundreds of configurations are easy to handle. For easy administration, three levels are available (see diagram on the right):
  1: Type (factory default configuration)
  2: Product
  3: Variant
- guided and graphical set-up of new label designs based on the processed image of a reference bottle. Inspection characteristics are created by copying an appropriate predecessor and are adapted step by step intuitively
- inspection of the presence and accuracy of the EAN barcode and expiry date (laser and inkjet)
- quick-start-guide for rapid introduction
- hygienic design
- separate inspection system, downstream from the labelling machine: There is therefore no pollution and no misalignment of remote cameras in the labelling machine when making changeovers or changing bottle-type
- simple upgrades to existing bottling-lines with minimal space requirements as a complete and integrated solution
- fill level inspection: can be combined with an optical, high frequency, infrared or X-ray fill level inspection

The four individual images of the side cameras (above) and the completely processed entire bottle-image, completely equalized (below)

Detection of “creased label“ faults on the basis of the miho image-processing platform miho VIDIOS®

Simple variant management

Easy teach-in of new reference labels
### miho modular product system for the complete inspection between the filler and packer

<table>
<thead>
<tr>
<th>Machine/Module</th>
<th>Inspection Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mho Allround / Basic</td>
<td>Labels, expiry date, barcode</td>
</tr>
<tr>
<td>2 mho Allround / Top</td>
<td>Cap</td>
</tr>
<tr>
<td>3 mho Allround / Vacuum</td>
<td>Vacuum (fruit juice - wide-neck bottles / glass)</td>
</tr>
<tr>
<td>4 mho Newton Optics 2</td>
<td>Fill level (foaming liquids), Cap (slanting cap)</td>
</tr>
<tr>
<td>5 mho Newton HF 2</td>
<td>Fill level (standard)</td>
</tr>
<tr>
<td>6 mho Newton X 2</td>
<td>Fill level (fill level obscured by label / in cans)</td>
</tr>
<tr>
<td>7 mho Newton IR 2</td>
<td>Fill level (after cooler)</td>
</tr>
<tr>
<td>8 mho Feeler</td>
<td>Sealing faults (PET)</td>
</tr>
<tr>
<td>9 mho UIP</td>
<td>Ultrasonic foaming machine for the sealing inspection (glass, PET)</td>
</tr>
<tr>
<td>10 mho MX</td>
<td>Filling pipe detection</td>
</tr>
</tbody>
</table>

### Installation Example 1:
Reference layout for bottling beer in returnable glass bottles, 0.3L - 0.5L, crown cork cap, 36 000 bottles/hour

### Installation Example 2:
Reference layout for bottling fruit juice in PET bottles, hot-fill with cooler, 15 000 bottles/hour

![Diagram of installation example 2]
5 Construction and dimensions

2: Electronic cabinet
1: Inspection head

1: Inspection head
2: Electronic cabinet