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The miho Newton Optic 2 is an optical inspection system for precision level measurement. It inspects the cap using different criteria and carries out a date control at the same time.

Fill level Inspection: the mino Newton Optic 2 performs a precision fill level inspection that is hard to match. This precision level measurement is technically based on a special camera light construction (see p. 4). The images are evaluated by the image-processing system mino Vidios[®], that has been designed specifically by mino Inspektionssysteme for inspection tasks.

Cap inspection: the mino **Newton Optic 2** checks that **the cap fits exactly**. Furthermore, the **colour** and **logo** can be checked by using an additional camera.

The miho Newton Optic 2 is with all its technical ingenuity a very robust and low-maintenance system. Unlike for machines that use radiation or X-ray technology, no statutory requirements need to be observed.

miho



Inspection unit with lighting system



Newton Optic 2

Performance:

Fill level inspection

Precision

The miho **Newton Optic 2** determines the fill level in transparent containers with **the maximum level of accuracy**. An evaluation of underfilled or overfilled is made depending upon the inspection task.

Extensive level of competence

Filling contents

The bottle contents can be transparent, opaque and also foaming. Examples are: water, lemonade, beer, wine, spirits, oil, liquid and powder drugs, infusion solutions.

Types of bottles

Clear and coloured glass or plastic bottles (for example, PET) and containers are inspected. **Swing top bottles** can also be inspected.

Cap and date inspection

Cap inspection

The mino Newton Optic 2 checks that the cap fits **properly**. Here, images are taken from two directions that are set at a 90° angle. Only then can a safe inspection be guaranteed for a cap that is tilted regardless of the rotational position of the bottle.

The **colour** and **logo** of the cap are also inspected by using a separate camera from above, as well as any deformities ("**skewed cap detection**").

Date control

The miho **Newton Optic 2** checks the date codes on the top of the lid, at the side of the lid or on the bottle shoulder, if the print is on the side facing the camera. Here, more images are recorded using additional lighting.





Fill level inspection: Swing top bottles



Date control: date on the side of the cap

miho

Newton Optic 2

Construction and Technology

The technical centrepiece of the miho Newton Optic 2 is a complex optical system with the following main components:

CCD Cameras - variable lighting - mirror cabinet image-processing system miho Vidios[®]. The bottle is therefore recorded on several optical axes and with lighting that is adapted to the inspection task. As a result, 7 images per bottle taken from different perspectives are available through the evaluation by the electronic imageprocessing system.

Transmitted light is employed and there is also the option of reflective light. LED panels are used.

A wide range of **individual adaptations** is possible through the 6 independent lighting units.

Operation

It is operated via a **colour touchscreen** with plain text display. The test results appear fully visualized on the screen.

Rejection

The miho Newton Optic 2 can be combined with the reject system miho HSP, the servo-motor driven eccentric reject system miho ESF 2 or the linear reject system miho Leonardo M.

The installation of the reject head before the labeller with rejection behind the labeller is possible.



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