LEAK DETECTION
and Inspection Machines
Experience and Innovation since 1971

WILCOMAT® X-Ray Lab
Particle Detection and technical Defects

WILCOMAT® X-Ray Lab for reliable visual inspection of pharmaceutical and medical products.

A low energy X-ray source, together with a highly sophisticated image recognition and processing technology, allow the reliable detection of smallest foreign particles of a wide variety of materials. The inspection can be performed at lyo cakes, powders, suspensions and emulsions.

The X-ray based system also detects glass defects under a vial crimp cap and functional defects such as poor needle alignment of syringes.

The WILCOMAT® X-Ray Lab performs inspection of vials, ampoules and syringes of different versions.

Key Benefits

- Foreign particle detection in lyo cakes, powders, suspensions and emulsions
- Inspection of glass defects (e.g. rim defects under the vial crimp cap)
- Inspection of functional defects (e.g. needle alignment inspection on prefilled syringes)
- Fast changeover, short retooling time (< 5 min)
- High flexibility with regard to object sizes an container dimensions

Additional important Features

- Detection of a wide variety of foreign particles (glass, metal, plastics and many other materials)
- High resolution X-ray detector to identify smallest particles (metal ≥ 70 µm)
- Low energy X-ray source to ensure product integrity (experience due to stability tests)
- Absolute safety conditions for users according to the low energy of the X-ray source (µW range)
- Easy cleanability (optional: wash in place)
- Compact design with excellent accessibility
- USB connection (data export, printer)
- Complete validation documentation available
- Combination possibilities with other inspection technologies such as head space analysis (HSA) and near infrared technology (NIR)

Detection Options

Foreign particles such as glass, metal fragments, plastics and other materials

Glass defects under the vial crimp cap

Functional defects such as bent needles in the needle shield

Mode of Operation

While passing through the low energy X-ray field, all particles are being magnified and mapped onto a high resolution image detector.

The CMOS detector converts the incoming X-rays into visible light and maps the resulting image onto the diode array of the image detector. The inspection results are immediately available and are instantly processed. This allows the system to be implemented within in-line applications of high production speeds.

Further Applications / Technologies of WILCO Systems

Application	Technology
Leak detection	Vacuum / pressure based technologies (V/P)
Headspace analysis	Laser absorption spectroscopy (HSA)
Residual moisture measurement at lyo products	Near infrared technology (NIR)
Product specific leak detection	Mass spectrometry (MS)
Propellant gas detection	Infrared laser system (AE/GD1)

Wilco AG is an innovative and reliable partner with more than 40 years of experience in quality assurance technologies and provides a worldwide support and distribution network.

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