KRONES Linatronic 774-FBI
Says no to foreign particles in the bottle
No room for stowaways

Glass fragments in the product? A scenario as disastrous as unnecessary. Since there is a simple method you can use to protect yourself and your customers against this risk. Its name: Linatronic 774-FBI. The inspector checks bottles after filling and sealing. Using highly sensitive cameras and clever detection software, it detects even the smallest foreign bodies, particles, and contaminations. This way, you provide your customers and your product with the maximum safety. And you can be sure that only faultless products reach the point of sale.
Figures, data, facts

Applications
Foreign bodies control for filled glass containers with
- a diameter of up to 110 mm and
- a height of up to 400 mm

Service portfolio
- Up to 72,000 containers per hour

Design features
- Enhanced hygienic design:
  - Less space required because there is no table top
  - Rugged conveyor belts which repel dirt and moisture
  - Closed outer surface in the conveyor belt station
- Modular camera units designed for easy retrofit
- Long-life LED lighting
- Automatically adjustable conveyor belts and camera units
- Prevention of dirt deposits above the bottle flow

Example of a fully equipped Linatronic 774-FBI

Inspection units:
1 Lateral base inspection, module 1 (inlet)
2 Suspended bodies detection, module 1 (inlet)
3 Base dark field inspection
4 Base light field inspection
5 Suspended bodies detection, module 2 (discharge)
6 Lateral base inspection, module 2 (discharge)
Inspection modules
Detectors for lying particles

Lateral base inspection
- Detects non- and partially transparent foreign bodies on the base of the bottle
- Easy to clean
- No mechanical conversion work required when switching the formats

Method of operation
The unit consists of two modules – one module is located at the machine’s inlet and one at its discharge. Each module contains four cameras with VGA resolution. These cameras are arranged in such a way that together they show the entire base of the bottle. LED lights uniformly shine through the bottles. In order to safely incorporate the margins, the bottles are rotated by 90 degrees between the first and the second module.

Light field inspection
- Detection of flat particles at the base of the bottle
- No manual settings required

Light and dark field inspection
- Detection of flat particles at the base of the bottle

Dark field inspection
Method of operation
Both modules consist of one camera each with VGA resolution as well as an LED light. The cameras inspect the bottles from below – both with light field and dark field illumination. The light field module works with a patented optics unit and even detects flat particles lying on the base of the bottles.
Inspection modules
Detectors for suspended particles

Suspended particles detection unit

- Detects non- and partially transparent particles suspended within the bottle
- Works independent of the bottle contour

Method of operation

The unit consists of two modules – one module is located at the machine’s inlet and one at its discharge. Each module contains a camera with VGA resolution as well as an LED lamp shining through the entire height of the bottle. Each camera generates three different, overlapping images of the bottle. For gap-free, all-around inspection, the bottles are rotated by 90° between the first and the second module.

Optional equipment

- Cameras with SXGA resolution
- Filters for detecting film residues
Additional equipment
Test container program and rejection unit

Test container program
- Checks the mode of operation of all inspection modules
- Requires little time due to multi-functional test containers
- Starts automatically after a defined number of containers or a defined time period
- Automatically documents all test runs with time and date
- Rules out failures caused by inappropriate interventions
- Optionally works with reflective strips or a patented barcode system

Ecopush rejection unit
- Safely transports the containers to a rejection table
- Consumes absolutely no compressed air
- Works absolutely maintenance-free

Removes faulty bottles from the product flow both safely and quietly:
The Ecopush rejection unit
Operation and change-over

**Visualisation**
- 15-inch pivoting touch-screen
- Display of all relevant operating data including a rejection trend analysis with display of all camera images
- Operation and adjustments at individual access levels with user-defined transponders

**Documentation**
- Recording of all relevant operating and production data, e.g. changes to parameters and results of the test container program
- Saving of all data with time specification and operator name
- Possibility of transferring defined operating data to an operating data acquisition system (Weihenstephan protocol), to the customer’s network, or to the customer’s PC

**Remote Service**
- An authorised person can dial into the KRONES network via Internet/VPN
- Monitoring and operation of the inspector via Remote Services, including display of all parameters and camera images
- Optimisation of the inspection units, retrofitting of new container types
- Quick fault diagnosis
- Shorter downtimes and fewer on-site service calls thanks to the 24-hour Remote Service availability
- Practical training available using Remote Service
Your benefits

- **Safety for your product**
  Linatronic 774-FBI detects even the smallest foreign bodies and removes the affected containers from the flow of products. This way, you can avoid claims by customers and protect your products’ brand value in a sustainable manner.

- **Flexibility for the future**
  The inspector is characterised by its modular design. This way, you can select the inspection systems you want to use directly with our product specialists. And should your inspection requirements change at a later date, additional modules can be retrofitted easily.

- **No operator errors**
  Parameters, cameras, and belts are automatically adjusted and changed. Thus, the machine is perfectly protected against operator errors.

- **Low wear costs**
  The LED lights in all camera modules and the durable transport belts assure particularly low wear costs.

- **Hygienic design**
  In order to provide for the ideal hygienic conditions, Linatronic was designed completely using hygienic design: It makes due without a table plate and dirt deposits do not stand a chance on its slanted exterior surfaces. Belt lubricants, fragments and other types of contamination are removed immediately.

- **Extraordinary inspection results**
  The highly sensitive inspection modules have a success rate of 99.9% when it comes to detecting faults and contamination. Simultaneously, they keep the number of faulty rejections down to an absolute minimum. Intelligent DART inspection software provides this functionality. The side wall inspection system, for example, is not even confused by water droplets on the bottle.

- **Extremely short change-over times**
  When changing over to other container types, no handling parts need to be exchanged. Furthermore, the parameters are changed over and the heights of the camera and of the conveyor belts are adjusted automatically. This way, the entire change-over can be completed in a record time of just two to five minutes.

- **Rugged and hygienic conveyor belts**
  Durability and microbiological safety are the two most important features of the conveyor belts: Their enclosed surface protects them against traces of wear and prevents them from absorbing lubricants and liquids.

- **Uniform operating concept**
  All KRONES machines are equipped with a uniform operating concept in order to provide maximum user friendliness.
We do more.