



Ensured Quality

Test and inspection systems for the packaging industry

Testing and inspection

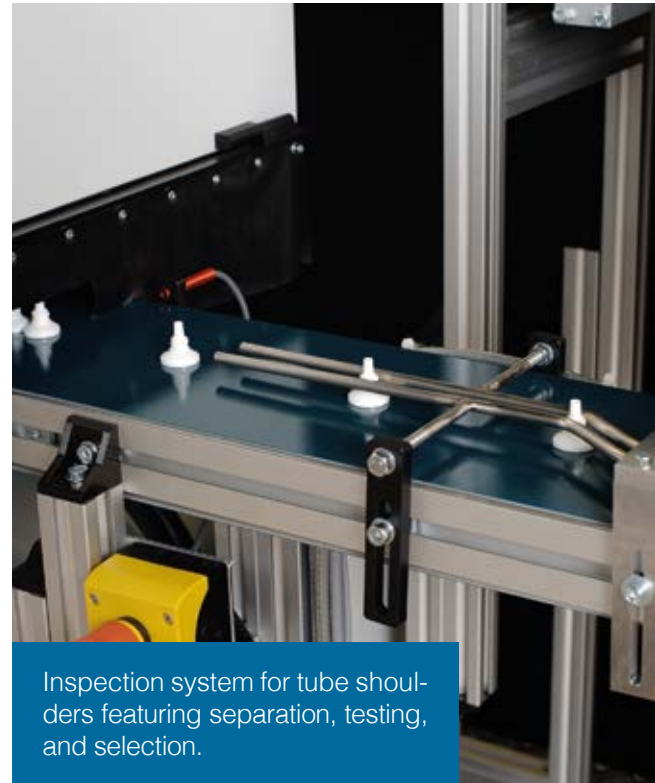
Complete Technology – completely developed in-house

Inspection cells or modules for checking the quality of prefabricated parts or introduction parts are crucial elements in fully automated industrial production lines. Since they have to ensure no faulty parts will proceed through the production process. Especially complex is the feed-in and feed-out of the parts, which have to be separated and put in the right position when passing the inspection cells. ibea has the command of all technologies required here. Ensuring a quick and trouble-free handling as well as a perfect 100% inspection of the parts.



Mature and state-of-the art

Most inspection methods are based on image processing. ibea uses its own multi inspection cameras, available in B&W, color or in a combined version. These systems have been continuously developed throughout the 20 years of our company history. They offer a realm of technical finesse. E.g. a modular RGB lighting that can be exchanged against white light or UV light. Naturally, an integrated light controller is included. Just as light modules like corona, beam splitters, and cloudy-day domes.



Inspection system for tube shoulders featuring separation, testing, and selection.

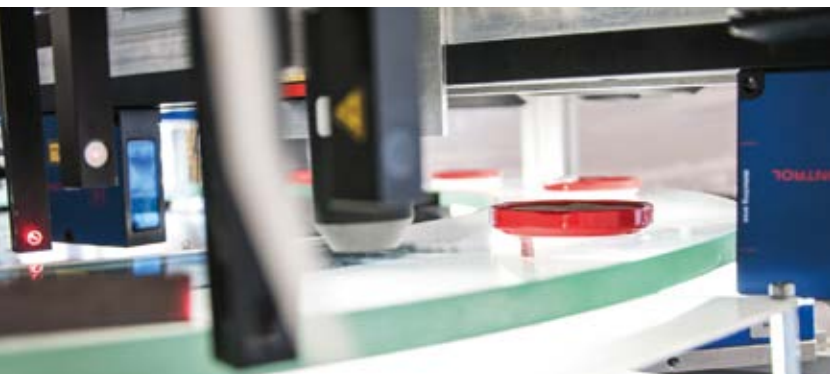
The image processing is supervised by a gear clock operated „Real Time System“ (RTS), which controls the image scan, illumination and up to 3 ejectors. It supports the asynchronous scanning of three lines with up to eight cameras respectively. Type and resolution of the cameras will be adjusted according to the individual requirements (high resolution cameras, line scan camera, B&W or color). The RTS allows for three separate ejectors with integrated ejector control.

These high-end features allow for safe and simple inspections when combined with the handling process. This also applies for changeover lines fitted with according mobile motors or zoom motors. All job-related data and light adjustments will be saved under the respective “Job” name and can be retrieved with a click.

Handling and integration

A specialist by the clients' request

Ever since our foundation in 1991 clients asked us to develop solutions that combine inspection with handling automation. So we did as requested, and became a specialist in handling systems, which are not only fit for the feed-in to inspections applications but also for further tasks, such as the packaging of products.



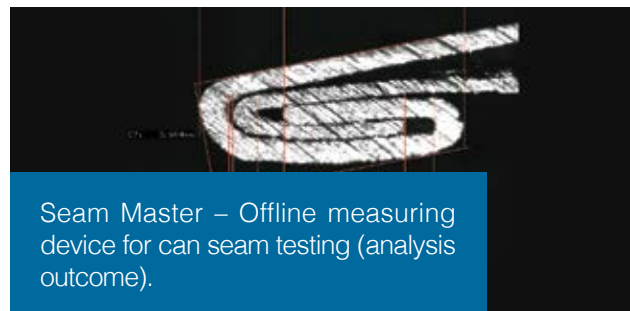
Today, ibea develops handling and inspection systems for a multitude of big and small work pieces. We are able to provide the right components for every application, integrating them into existing production processes, e.g.:

- Vibratory bowls
- Vibration feeders
- Spiral feeders
- Drum feeders
- Linear feeders
- Centrifugal feeders
- Continuous conveyors
- Step feeders
- Screw conveyors
- Carousel conveyors
- Conveyor belts
- Clocked carrier belts
- Tilt and turn units
- Vacuum grippers
- Rotary rotors
- Multi-axis robots

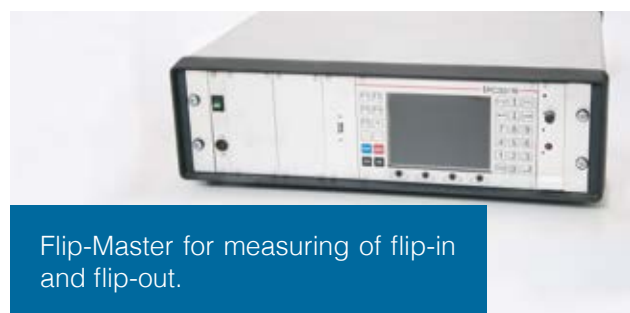


ibea testing and inspection systems will be installed according to our clients' needs.

Other ibea systems for the packaging industry



Seam Master – Offline measuring device for can seam testing (analysis outcome).



Flip-Master for measuring of flip-in and flip-out.



Cap Master – for measuring flip-in, flip-out, and the size of caps and compounds.

Leakage inspection systems

The intelligent way to test for leaks

The Vacuum/Pressure Measurement Systems VPMS and LPT 7000 by ibea are especially designed for leak-testing cans and ends. They are working with different measuring systems to determine if there is a leakage:

1. Measurement discrepancies in pressure – VPMS

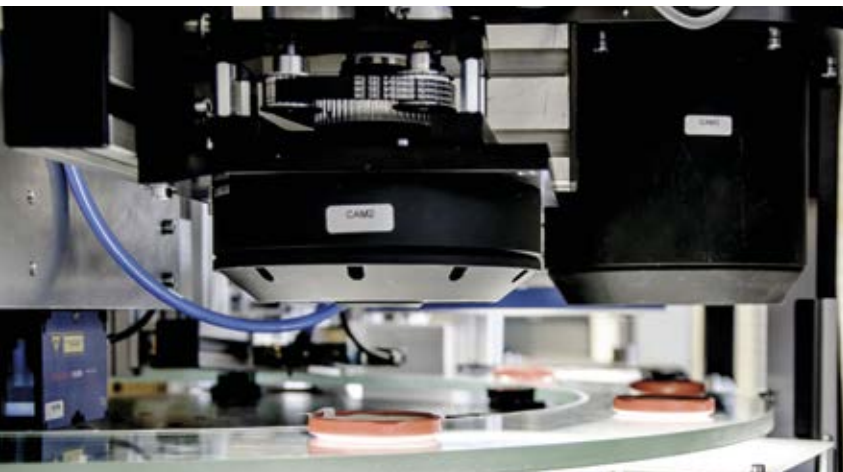
After application of vacuum or pressure a first gauging, via pressure sensor, is taking place before adhering to a stipulated waiting period and a second gauging. The difference of the two readings determines if the product is ok or has a leak.

2. Light-leak testing – LPT 7000

After putting a vacuum on the product it will be charged with very bright light on the outside. In the next step a picture will be taken of the hollow part of the product. If any light reaches the inside of the product it has a defect. Even very small defects can be detected by using this method, without waiting for different pressure values.

3. Thermographic measurement

During this application, generally known as heat-flow thermography, the product is temporarily heated at a defined point to create a heat flow into its immediate environment. In case of transitional defects thermal bridges occur, which can be recorded and analyzed by thermographic cameras.



ibea's systems ensure that only packaging complying 100% with the specifications is delivered.

Modular structure, flexible application

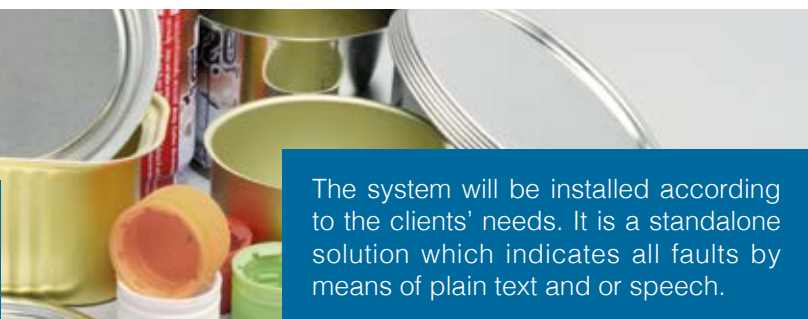
Construction of this system as a clock rotor or as a rotary rotor, its principle of measurement, and the number of testing stations per system depend on the clock speed of the production line. ibea systems are able to manage clock rates up to 3,000 ppm.

Highest performance, smallest size: Ultra Compact ViS

With the Ultra Compact ViS we have succeeded in reducing the size of our compact vision inspection system significantly. For the complete PC system is now an integral part of the imager a second computer rack is no longer needed. Thus, the Ultra Compact ViS single-lane inspection system consists only of the imager, the attached monitor, keyboard, and mouse. It is therefore easily integrated to existing production lines and only requires a very small area for installation.



Special systems for the inspection of packaging



The system will be installed according to the clients' needs. It is a standalone solution which indicates all faults by means of plain text and or speech.

For up to 4 lanes: Compact ViS

Developed for normal spatial conditions the Compact ViS comes with a rack housing for the electronics control. Its components comply with the highest industrial standards, ensuring system stability in a rough production environment. By means of internal testing systems, remote diagnosis settings and functions can be checked from anywhere in the world.

Products

- TO caps
- 2-piece/3-piece cans (round/rectangular)
- Can bottoms and -ends (also aerosol)
- Easy-peel packaging
- Crown corks
- Aluminum closures
- PET caps
- Fish cans
- Similar products

Test criteria

- Density, defect of compound
- Seam-, pin defects
- Surface anomalies (Lacquer anomalies, eyeholes, scratches, dent, inclusions, cracks)
- Shape, size accuracy
- Décor (print layout, color, scratches)
- Sealing
- Other anomalies

Pattern Checker

The Pattern Checker is a special system developed by ibea for the inspection of flat products such as continuous webs or printed metal sheets. The main task was to have a high-quality detection combined with an intuitive operating software as well as offering a maintenance-free and long-lasting solution.

Specifications

- ibea line scan illumination, up to 5000 W/m²
- Sheet speed up to 6 m/sec. at max. 3 m width
- High resolution camera with resolution from 2.000 to 8.000 pixels, B&W or color
- Up to 4 cameras in addition possible
- Images from parts or overlapping areas possible
- Automatized start/stop-event recording
- Color measurement with ibea line scan illumination possible
- SAP connection possible
- Easy teach-in of "good" production
- Setup during running line possible
- Complete statistic with indicator browser included

Inspection areas

- Surfaces
- Printings/Scene recognition
- Fitting displacements
- Color fidelity (R/G/B)
- Contrast
- Decor deviations such as: stains, scratches, gaps, missing decor, wrong decor, blurs and others

ibea – product quality systems

Testing methods applied by ibea systems

- Standard image processing applications:
inspection by camera of surface, texture, geometry, shape and dimensional accuracy, color, 2D and 3D measurement, holographic imaging, roughness, measurement of position and torsion, leak tightness
- Image processing, special applications:
Heat-flow thermography by direct application of heat or ultrasonic initiation for structure checks, crack detection or the detection of other anomalies; UV light for fluxing agents or coating checks – crack detection, X-Ray
- Acoustic inspection:
initiation by a hammer system
- Eddy current measurement:
castings

What ibea systems inspect

- Ceramic tubes, ceramic insulators
- NoX sensors
- Sprinkler glasses, Sprinkler bodies
- Glass ampoules, plastic ampoules
- Syringes, syringe parts
- Laparoscopes, Biopsy forceps
- Catheter, Artery tubes
- Toothpaste caps or shoulders
- Blister packaging, before sealing:
two-sided and for filling
- Tablets – color, cracks, size
- Silicone sealings and plastic sealings
- Metal packaging
- Plastic packaging
- Heavy ceramics and fine ceramics

Put our know-how to the test

Feel free to send us samples of your faulty products that need inspection. Please give us a short description of your conveying system, possibly including photographs. Please also include conveyor speed and part rate. We will prepare a comprehensive offer specified to your needs, including needed accessories – all for an attractive price!

About ibea

ibea develops and implements inspection systems for a perfect quality check – modular, future-proof, and flexible. It is our aim to ensure a trouble-free production around the clock. Our focus is on producing systems, which are stable and maintenance-free. As a systems integrator we offer you comprehensive professional service from consulting to implementation.