

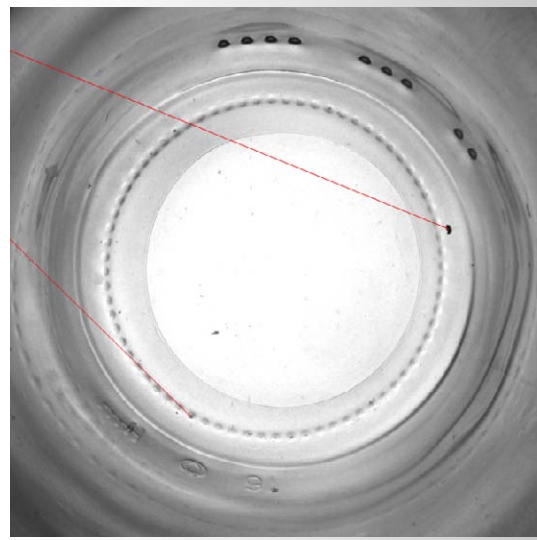


SYMPLEX MULTIKON ECO

Modular Inspection Systems for the
Container Glass Industry

PRODUCT SPECIFICATION

Camera shots
MULTIKON ECO



Base defects

Secure All-Round Inspection

Base and Finish Inspection

Sidewall Inspection

MULTIKON ECO

With the MULTIKON ECO system SYMPLEX provides the container glass industry with a high-level solution for secure online inspection.

The custom-tailored inspection system assures an all-round detection of most varied glass defects.

The modular design allows to fit the system to any situation, from stand-alone solutions to complete inspection lines.

SYMPLEX offers a flexible customer service on-site as well as remote.

MULTIKON ECO inspects:

- Sidewall
- Sidewall stress
- Base
- Base stress
- Finish
- Dimension

Furthermore:

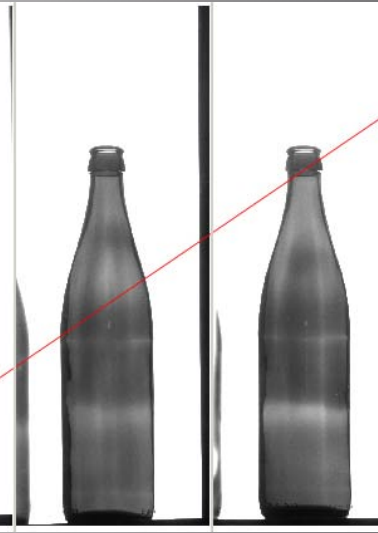
Mold number reading and statistical, mold number dated evaluation.

- Base blister
- Base inclusion
- Base tear
- Pre-mould shift
- Base stress
- Finish tear
- Finish blister
- Finish diameter deviation
- Sugary finish

- Finish chip
- Unfilled finish
- Finish sidewall defects
- Line over finish (LOF)
- Overpressed finish
- Bulge thickness
- Contamination
- Stuck glass particles

- Sidewall blister
- Sidewall inclusion
- Sidewall tear
- Bull's eye
- Sidewall stress
- Bird swing
- Dimensional deviation
- Overheight / Underheight
- Leaner

- Diameter deviation
- Bent neck
- Contamination
- Stuck glass particles



sidewall defects



Finish defects

Inspection

- Best possible inspection results
- Newest digital camera technology
- Inspection of containers of different colors with white LED lighting
- Contact-free straight-through transportation concept

Operation

- Minimum adjustment effort
- Quick job change because of software controlled automation
- Easy operating and monitoring
- High-resolution color touch screen
- Ergonomic graphical user interface

Line Integration

- Installation adaptable to production line situation
- Asynchronous operation without worm shaft
- separators or star wheels
- Real-time inspection
- Inspection of every container

Security

- Password protection, access rights
- Different users and user groups with different access levels
- Large self-monitoring and diagnostic functions

Networking

- Operation in a machine network, e.g. for production data exchange
- Powerful machine communication tools, e.g. to copy jobs from machine to machine
- Supervising and remote operating from separate workstation
- Central data backup on workstation, e.g. for all job and configuration specific presets
- Remote maintenance via Internet

Data Storage

- Storing of relevant data, e.g. reject rates, access status, test-results
- Numerous log file functions

Teach-In Modus

- Easy adjusting of inspection parameters
- "Teaching" the system with real defect specimen
- New operation concept
- Software guided adjustment
- Clearly arranged parameters
- Time and cost saving

Defect Type	Blase	Stein	Good
1	96.0%	89.7%	3.1%
1	3.3%	4.6%	96.4%
1	0.0%	0.0%	100.0%
1	0.0%	0.0%	100.0%
1	0.0%	0.0%	100.0%
2	0.0%	0.0%	100.0%

PRODUCT SPECIFICATION



Multikon ECO-BS

- Base inspection
- Base stress inspection
- Finish reflexion
- Finish incident light
- Mold number reader (dotcode, alphanumerics)
- Special customer specific systems possible (only ECO – BS XL)

Multikon ECO-SW

- Sidewall inspection
- Sidewall stress inspection
- Six viewing directions for secure all-round inspection
- Six shoulder views optional
- Dimension control optional

Features

- Durable LED lighting equipment standard
- Dustproof encapsulation of all optic units
- Automated changeover without user modifications of the optic units
- Air-conditioned optic and electro units
- Ultra compact design
- Easy to maintain and low maintenance



MULTIKON ECO
inspection line

Separation MULTIKON ECO-VZ

- Defined separation of the incoming containers before inspection
- Buffering infeed jam
- Creating defined conditions independent of the line situation

Alignment MULTIKON ECO-AL

- Rotating containers to a defined position
- Linear service with free passage, synchronous to transport
- Creating ideal conditions for the sidewall inspection

Infeed control MULTIKON ECO-EK

- Simple inspection of the incoming production
- Automatic rejection of down and over-/underheight ware, as well as broken ware and sherds
- Allows continuous service without user intervention

Rejecter MULTIKON ECO-RE

- Rejecting defect containers

Reject confirm system

MULTIKON ECO-RC

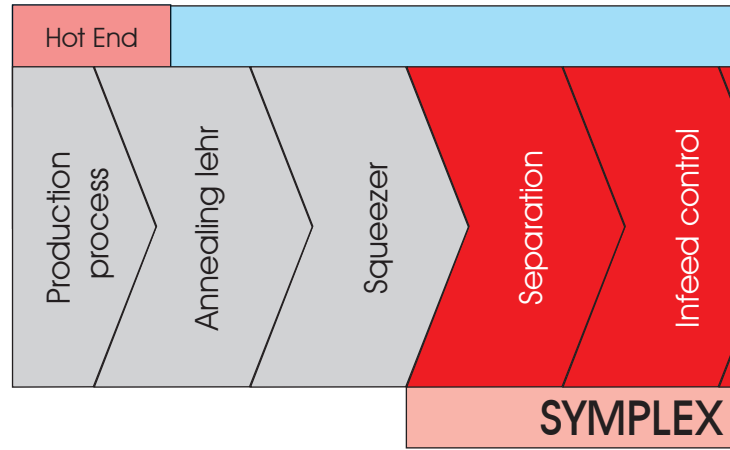
- Checking container stream at the inspection line end
- Identifying possibly not rejected containers
- Automatic line stop in case of error, not inspected or bad containers do not get to packaging

Server rack

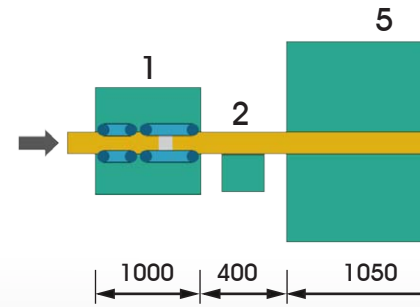
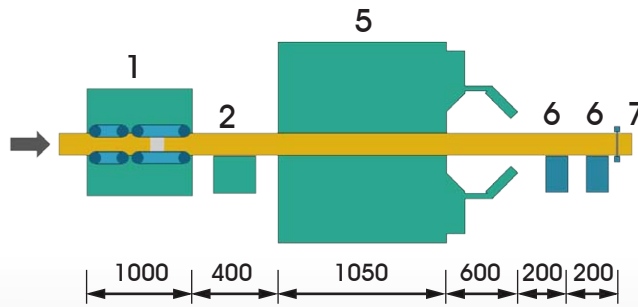
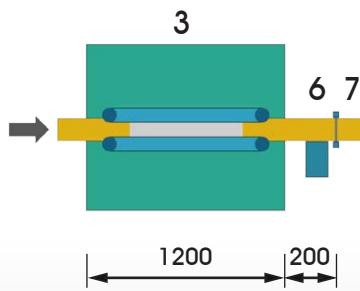
MULTIKON ECO-SR

- Network server to couple several machines of a factory
- Central storage for backups and data

PRODUCT SPECIFICATION



Example Solutions



Configuration: BS

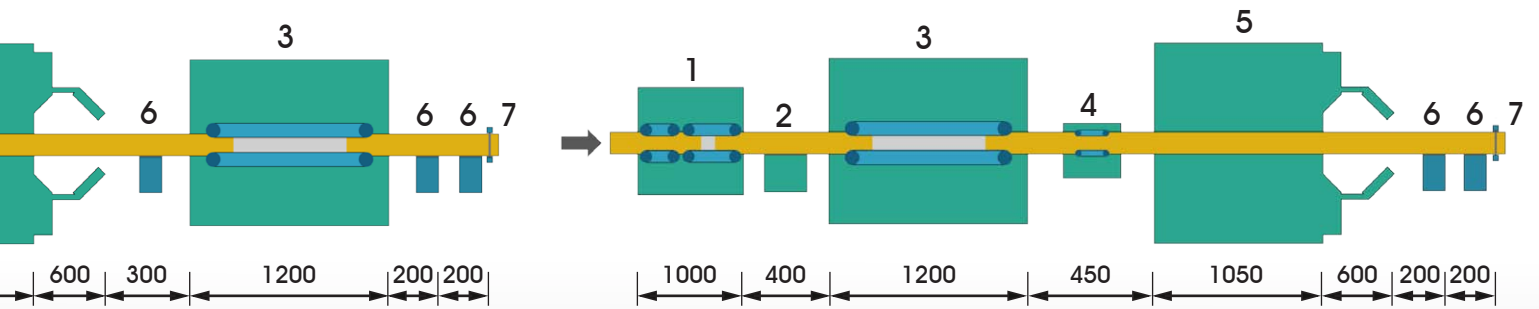
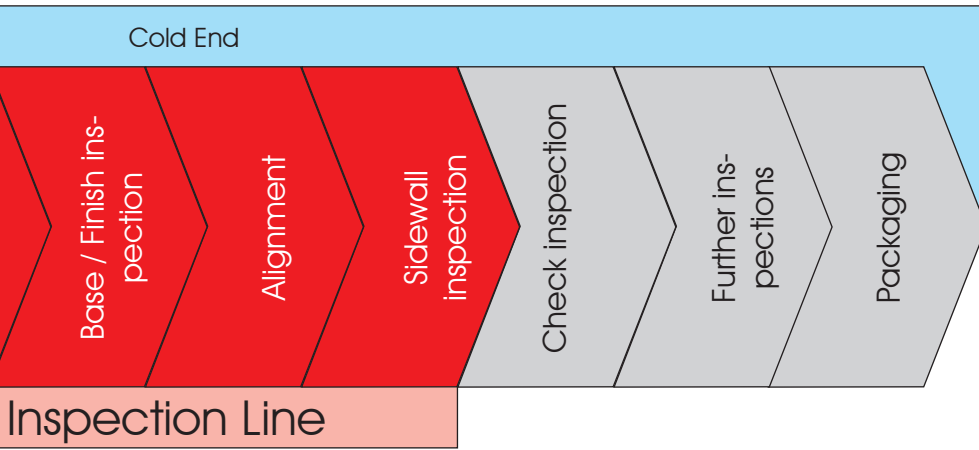
- Stand-alone solution
- Base / base stress inspection
- Finish inspection
- Mold number reader

Configuration: SW

- Stand-alone solution
- Sidewall inspection
- Sidewall stress inspection
- Dimension control

Configuration: Complete

- Complete
- Sidewall inspection
- Sidewall stress inspection
- Dimension control
- Base / base stress inspection
- Finish inspection
- Mold number reader



Configuration: SW-BS

line
inspection
stress inspection
control
stress inspection
section
number reader

Configuration: BS-AL-SW

- Expanded line
- Base / base stress inspection
- Finish inspection
- Mold number reader
- Alignment
- Sidewall inspection
- Sidewall stress inspection
- Dimension control

- 1 ECO-VZ: Separation
- 2 ECO-EK: Infeed control
- 3 ECO-BS: Base / finish inspection
- 4 ECO-AL: Alignment

- 5 ECO-SW: Sidewall and dimension control
- 6 ECO-RE: Rejecter
- 7 ECO-RC: Reject confirm system



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