

Surface inspection systems

- Surface inspection with line scan camera
- Continuous inline product quality control
- Dependent on product size error detection in μ -range
- Rejects reduction through process optimising
- Fast integration in the production process

The systems hardware and gauge heads positions can be sized and cascaded depending on product size and accuracy demands.

Failure

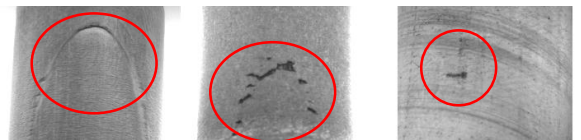
Different error types detectable e.g.:

- Grooves/striations
- Cavities
- Inclusions
- Rills
- Bubbles or elevations
- Faulty machining surfaces (bad grinding)
- Burrs

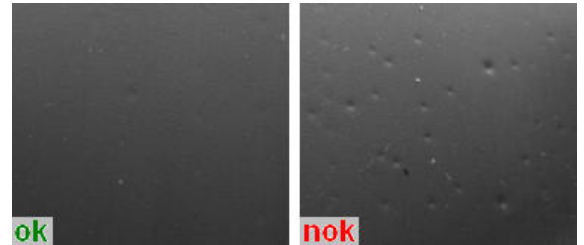


Application range

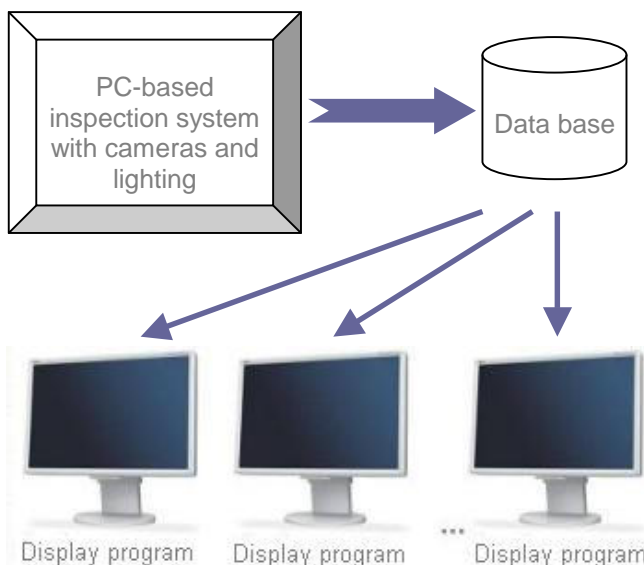
- Different sorts of tubes
- Cable / extrusion processes
- Round steel etc.



Failure examples in metallic surfaces



Example plastic surface



Features

- Economical high speed Vision System for 100% product check
- Failure detection in real time
- Failure classification
- Acceptable tolerance monitoring and alarm function
- Simple parameterization of different products
- Feet rate change independent
- Clearly arranged visualisation of measurement results in display program
- Retraceability in case of complaints

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Display program

For analysis of single failures and overall evaluation

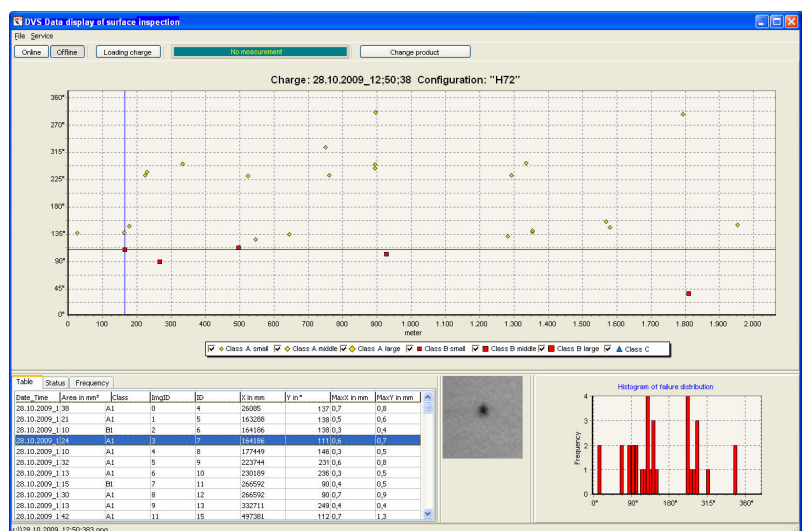
Visualising of:

- Type of failure/failure class chart
- Failure table, position, type and class of failure, failure spread and failure region
- Frequency distribution of failure type and class
- Image cutout with measurement function
- Batch status report

Quality improvement and cost reduction

Measurement results can in addition to product quality assurance also be used for production optimisation. This way process adjustments can be made and rejections be separated.

The graphically data representation with a interactive failure chart, visualising the individual failure types and their distribution over the product, enables failure trace back up to their origin in the process. The measurement results are clearly and understandably represented, with details about running meter (inch), position and failures.



Display program with interactive failure chart



Example camera positions cable surface inspection

Camera and lighting

Dependent on the device to be controlled and the types of failures different configurations in reference to type, number and position of cameras and lighting can be applied. Process-related line scan cameras or area cameras will be used.

Number and resolution of the cameras depend on product size and lowest failure size to be detected, thereby aiming at a technically and economically optimal solution.

Measurement system

The PC-based vision system can, depended on the requirements, be delivered in different variants. As 19"-PC-System to integrate in a control cabinet or as compact control cabinet with touch screen monitor or as touch panel PC-system. Because of the applied GigE camera technic large cable lengths can be realised, which makes it possible to put the control PC in a distant control room. The system components can be delivered with degree of protection.

The exact system requirements will be determined together with the client.

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