The key to perfect quality: 100% inspection without loss in cycle-times

Increasingly, more and larger glass surfaces are being used in the automotive industry in recent years. At the same time the demands on glass regarding its functionality and technical characteristics have increased, and as a result, also increased the quality requirements in the production processes. A particularly difficult challenge is screen printing on glass.

In addition to purely decorative color applications, silk-screen printing is also used in functional layering, such as placing defrosting wires in rear windows. Both the technical and optical demands for silk-screen printing in the automotive industry are high. Electrical conducting grids, such as those for rear window defrosters, require printing with consistent quality without distortion. Fully automatic inspection systems are the key to ensuring consistent, high-quality automation in this process.

The solution? PRINTSCAN - a system for automatic, optical, 100% in-line inspection of silk-screen printing processes applied to automotive glass.

Applications:
- 100% fully automated, optical, in-line silk-screen print inspection
- Detect defects in:
  - Logo printing
  - Missing dot grids
  - Interruptions in printed grids (rear window defrosters)

Advantages:
- Reduction of production costs, saving of resources
- Early recognition of defective semi-finished products (inspection immediately after printing, and before bending or lamination)
- Improved print quality by printing according to defined standards
- Early identification of repeat defects
- Increase of throughput, process optimization
Reduced costs, improved quality: reliable process control

PRINTSCAN is based on the experience of over 3,000 successfully installed and operating surface inspection systems and the transfer of proven printing inspection modules, already used in the film and paper industries, now applied in glass production. The new system inspects printed flat glass prior to bending, for defects such as:

- Pinholes and missing print
- Shorts
- Color splashes and misprints within the clear glass area
- Gaps, mousebites, of defroster wire grids
- Position and integrity of logos

Fully automated inspection ensures 100% inspection of the printed images with objective, reproducible results.

Efficiency through transparency and ease-of-use

PRINTSCAN is a 100% in-line inspection solution for quality and process control. It offers consistently reliable and uniform quality control of glass. In addition to its basic functions, the system offers a wide variety of useful tools. It helps to increase quality efficiently and effectively, and to improve the production process. Logging and reporting tools contribute to the generation of validated quality reports and provision of a reliable basis for understanding the production process.

The following tools are available:

- Graphical user interface that provides immediate feedback about the print quality of the current production.
- Visualization of print quality and real print image at a glance to provide operator direct process feedback.
- Set up a new job in less than 60 seconds.
- Collecting, archiving and reporting of quality data based on product, customer and/or quality grading.
- Warning/alarm for repeated and/or serious defects.

Process quality at a glance:
Fully-automated silk-screen print inspection for gaps and mousebites of rear window defroster wire grids

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