
Release: No. 739, 2/12/2019

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100% quality in preforming: Innovative system opens up a new process step in steel and aluminum production

Reliably ensuring the satisfaction of automotive customers – innovation enables defect detection on blanks of any shape

The complex geometries of blanks have meant that until now surface inspections were not conducted in blanking lines. However, the blanking process poses critical challenges to product quality, specifically the condition of the coils supplied and surface defects that can occur during processing. A new system is now opening up another automotive supply line for automatic surface inspection: With intelligent automated quality control during blanking, customer satisfaction can now be reliably guaranteed for the first time.

Sourcing raw coils from various suppliers can result in different quality levels in the materials used for the blanks. The demanding process of blanking itself can also lead to defects (e.g. scratches, rolling marks, scoring) on stamped parts. Without automatic quality control, costly complaints often follow. Up to now, this challenge has usually been addressed through preventive downgrading. However safeguarding the quality in this manner leads to missed financial results. The challenge for inspection lies in recognizing the shape of the blanks. In the past, the lack of information about the geometry of objects made the detection of surface defects impossible.

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With Blanking Master, ISRA Parsytec offers the solution: The new system immediately recognizes the shape and any defects by means of surface inspection. The illumination from two sides, transmission for contour shape recognition and reflection for defect recognition, enables defect detection just within the mold. It is not necessary to know the shape of the part beforehand; the system recognizes the shapes of each individual object to be inspected, making the technology highly flexible. A preconfigured and at the same time adaptive software reliably detects and classifies all defects, followed by data-based sorting for further processing.

Achieving maximum quality with optical inspection

Conducting surface inspections after cutting the preforms cuts costs and increases yield, while having knowledge of the actual product quality avoids unnecessary downgrading. Offering reliable quality increases customer satisfaction and avoids complaints. Plus, a quick and easy installation contributes to a fast ROI. The online display of inspection results enables the users to draw direct conclusions on process quality, contributing to sustainable cost reduction and therefore increasing the total yield of production lines. In addition, the detection and classification of errors offer the possibility of eliminating root causes and preventing defects. This results in improved processes even before defects occur, leading to excellent products for high-quality applications.

Blanking Master is particularly suitable for qualifying free-form sheets and, therefore, ideally suited for automotive components. Due to the individually shaped punched parts per each customer's requirements, it

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is impossible to assign individual parts to another customer on the basis of the surface quality, even if that customer's quality requirements were met. Moreover, the supply of tested products with reliable quality is essential in the demanding automotive market, because end consumers are emotionally connected and accept nothing but a perfect new car.

In addition to the Blanking Master, ISRA Parsytec also offers a complete portfolio for the entire production chain of steel and aluminum. It incorporates the experience gained from over 750 surface inspection installations, resulting in automated quality assurance from the very first step in the production process. For example, SURFACE MASTER enables smart automatic optical surface inspection at all stages of production.

The *EXPERT⁶ⁱ* software modules complement the systems and use the inspection data collected to identify optimization potentials – the basis for quality-related decisions and the highest quality standards. The modules can compare the data with order-specific quality requirements and then derive knowledge-based recommendations. They analyze the progress and provide corresponding notifications, even if the deviations are still within the specified tolerance range, allowing for process correction before defects can occur.

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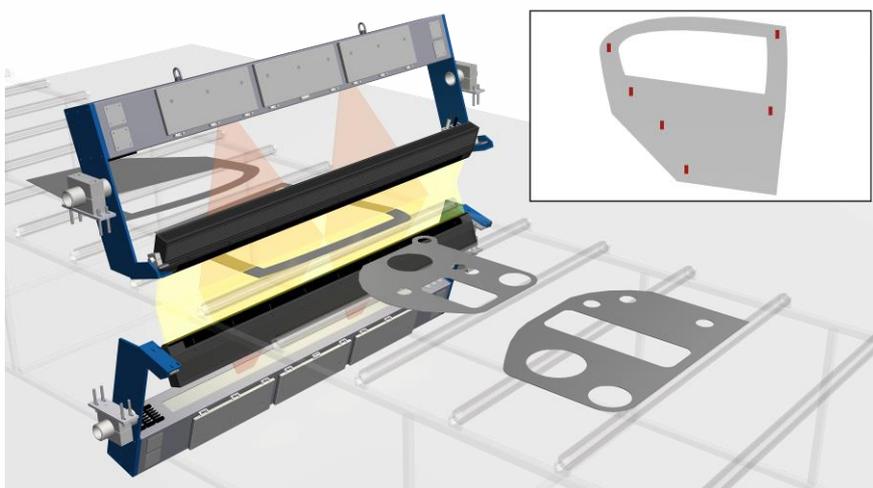


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The BLANKING MASTER system inspects the entire surface of the blanks and displays all surface defects on screen.

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