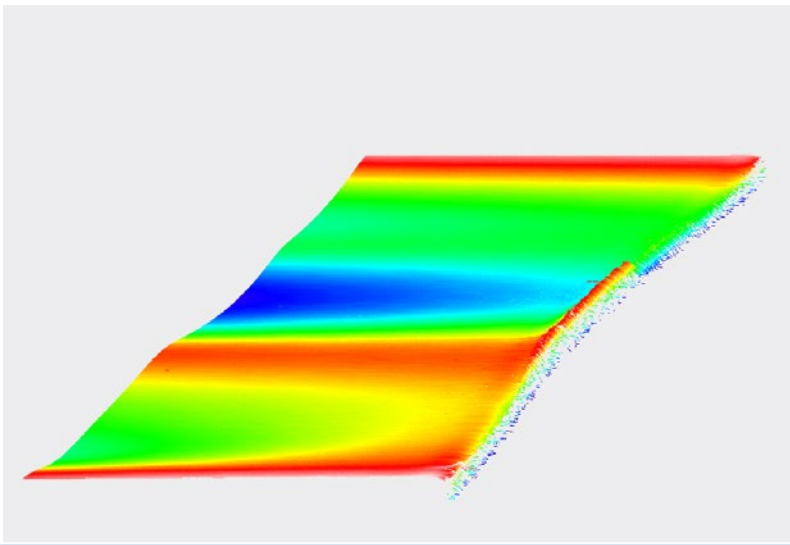
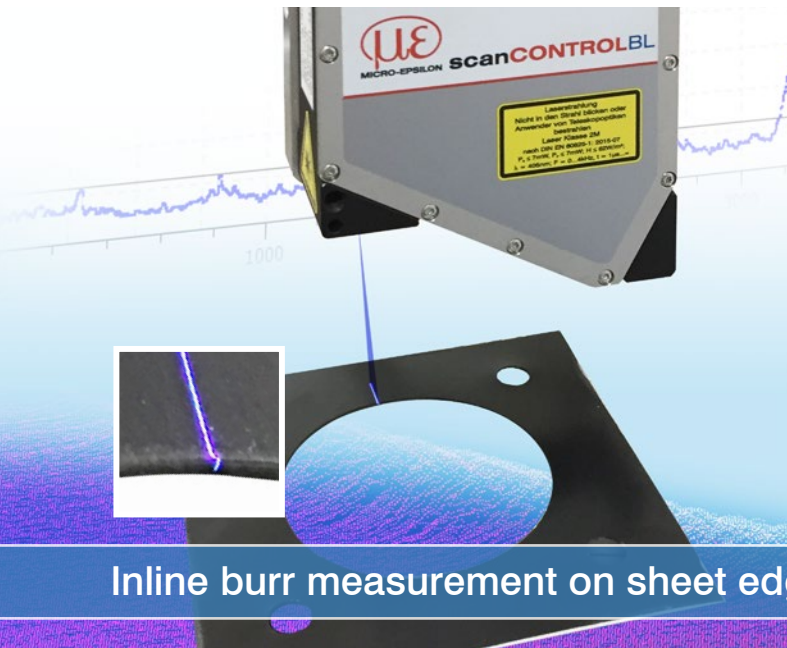




Inline burr measurement on sheet edges in car body manufacturing

In order to avoid corrosion, continuous and error-free corrosion protection is a critical factor in the painting process. On burrs induced by the punching and cutting process at the edges of raw material sheets, the thickness of the corrosion protection layer may be reduced for process-related reasons. These areas may corrode over time.

As the thickness of the applied painting on these burrs can only be determined under challenging limitations, it is a decisive advantage that the burrs are recognized early in the production process before the corrosion protection and other paint layers are applied.

In contrast to fixed solutions that enable a random test, Micro-Epsilon offers its scanCONTROL 2910-10/BL Plug & Play system which provides the required precision with its high point resolution of approx. $8\text{ }\mu\text{m}$ along the laser line in order to recognize burrs reliably even during inline measurements. The sensor mounted onto the robot is guided over the edges of the cut and punched sheet metal parts. The measurement profiles of the edge are the basis for determining and evaluating the height and width of the burr directly in the scanner. These values are then transmitted to the fieldbus via the 2D/3D Gateway.

Requirements for the measurement system

- Burr detection from $20\text{ }\mu\text{m}$ burr height
- Measurement accuracy $\pm 10\text{ }\mu\text{m}$
- Point resolution approx. $8\text{ }\mu\text{m}$ along the laser line
- Measuring range burr protection approx. $6\text{ mm} \times 6\text{ mm}$
- Measurement frequency up to 300 Hz

Ambient conditions

- Temperature up to $45\text{ }^{\circ}\text{C}$

System design

- scanCONTROL 2910-10/BL
- 2D/3D Gateway for fieldbus integration

Advantages

- Easy and straightforward parameter set up with scanCONTROL Configuration Tools
- Transmission of the measurement values directly to the common fieldbuses Profinet IO, EtherCAT and Ethernet/IP via the 2D/3D Gateway
- Smart sensor: calculation of burr height and width or direct OK/NOK evaluation in the scanner

