

ZEISS AICell trace

Process Monitoring. Inline Metrology. One single cell



Seeing beyond

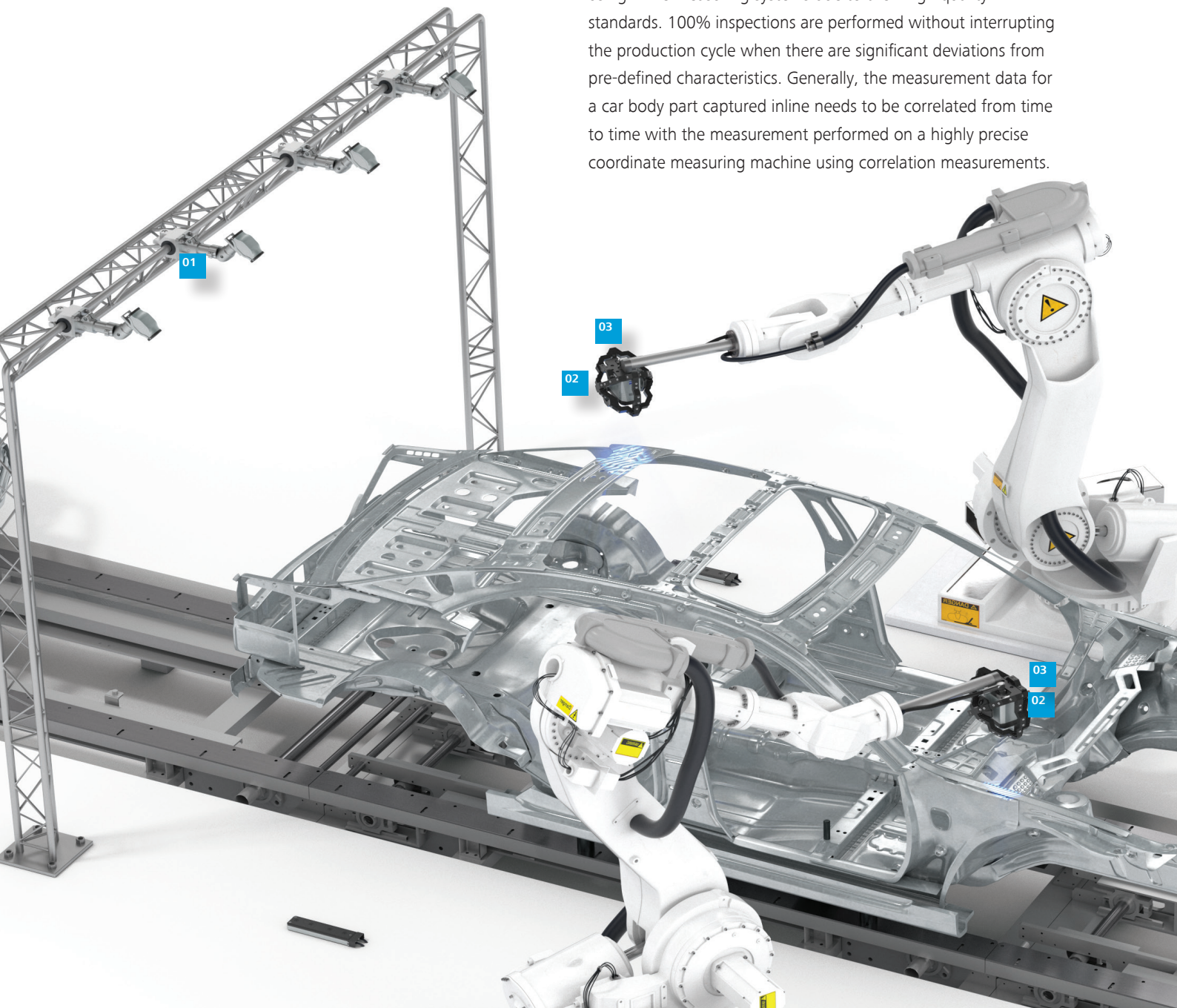
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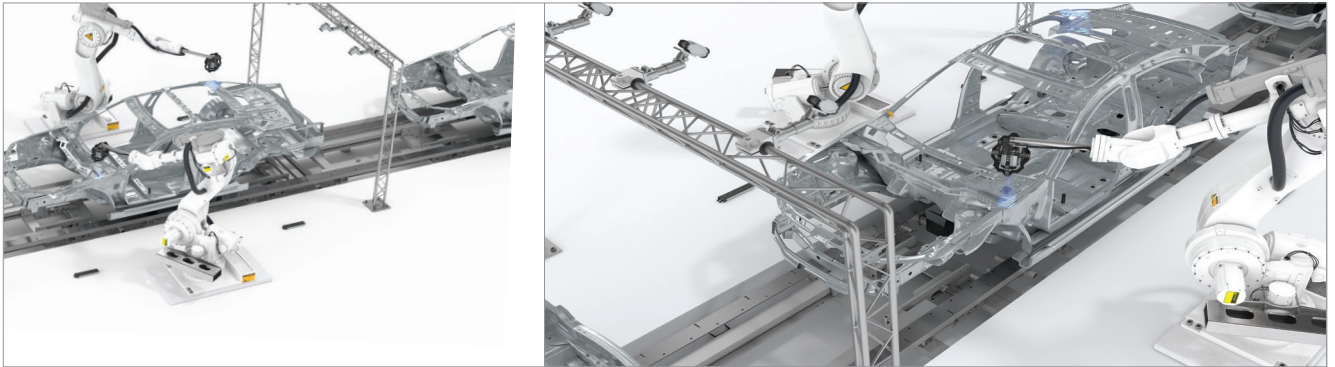
Process Monitoring. Inline Metrology. One single cell

Correlation-free measurements fundamentally and permanently alter inline measuring technology and the world of manufacturing. ZEISS AICell trace creates conditions to reduce the number of series measurements in the measuring room, making measuring and production for automotive manufacturers more efficient and bringing them significantly closer to the Smart Factory of tomorrow.

Real-time process monitoring

Car body production processes all over the world are monitored using inline measuring systems due to their high quality standards. 100% inspections are performed without interrupting the production cycle when there are significant deviations from pre-defined characteristics. Generally, the measurement data for a car body part captured inline needs to be correlated from time to time with the measurement performed on a highly precise coordinate measuring machine using correlation measurements.





*Tracking cameras identify the absolute position of the robots and their own location .
The ZEISS AIMax cloud 3D sensor generates point clouds for the real-time analysis of complex geometric features in a fraction of a second.
Carbon body with integrated LED tags is used to precisely identify the location and position of the AIMax cloud 3D sensor.*

This requires a lot of time and effort, and increases the workload in the measuring lab. The goal of correlation-free measurements is to significantly reduce the enormous workload in the measuring lab. ZEISS AICell trace is a correlation-free inline measuring cell for real-time process monitoring of complex characteristics and ramp-up support strategy with the first manufactured part. It consists of AIMax cloud 3D sensor, tracking cameras and a carbon body with LED tags, which forms a fixed unit with the sensor. Highly precise AIMax cloud performs inline measurements of features, such as bolts, holes and edges, in a fraction of a second. Tracking cameras identify the location and position of the sensor

by detecting the LED tags on the carbon cage.

The system accuracy of AICell trace is independent of the robot's ability to accurately locate the measurement sensor. This networked system makes it possible to acquire reliable and informative measurement and inspection data with the desired level of precision starting with the very first part. The correlation or comparison measurements in the measuring lab are kept to a minimum, which also reduces the workload in the measuring lab. With correlation-free measurements, ZEISS also enables more efficient structures and radically shortens the entire production ramp-up time.

01 Tracking cameras

The tracking cameras capture both the exact position of the robot and their own location.

02 3D sensor

ZEISS AIMax cloud 3D sensor measures characteristics which are difficult to evaluate, such as bolts, rivets, nuts under sheet metal. It is a high-precision analysis in a fraction of a second.

03 Carbon body

LED tags are integrated into a carbon body, which forms a unit with the sensor. LED tags are used to identify the location and position of the sensor precisely.



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