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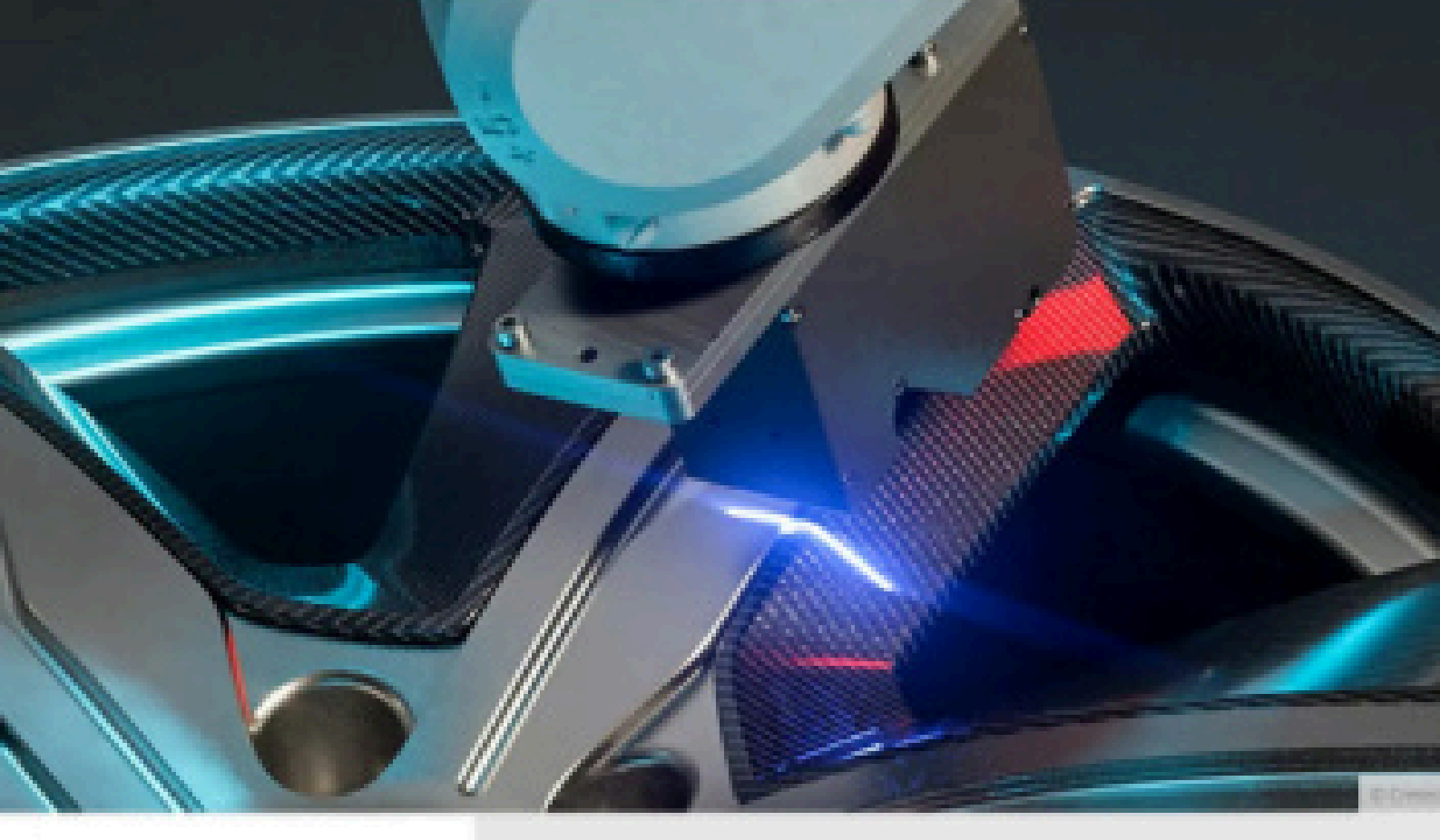


Automotive wheels: vision system inspects plastic blades

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Automotive wheels: vision system inspects plastic blades

A car manufacturer used Cretec's Q-Bic vision system to check whether plastic blades were positioned precisely within aluminium wheels. By the editorial team.



The Q-Bic vision system offers a complete turnkey solution for 360-degree quality control of numerous features on automotive wheels.

The feasibility study for the automotive company required the Q-Bic vision platform to detect defects unequivocally at numerous measuring points relating to the precise positioning of plastic blades fitted into aluminium wheels. The 3D vision system had to provide measured evidence that every blade met the specified permissible gap and height difference relative to the aluminium surface. Compared with a more elaborate inline solution, the compact Q-Bic platform offered convincing technological and economic advantages for industrial series production. Q-Bic stands for "Quality Inspection Cubicles".

Each wheel is placed manually or automatically in the vision system's drawer and moved into the measuring position. From above, a 20 MP camera records the wheel's exact centring, rotational position and type with an inspection accuracy of 0.3 to 0.15 mm. This also documents its flawless condition. A six-axis robot moves the 3D camera measuring head to the respective inspection positions.

Wheel inspection takes less than a minute

Cretec's measuring concept, patented for both inline and offline use, guarantees an accuracy per measuring point of less than 10 µm in all three dimensions during wheel inspection. Measurement accuracy is better than 100 µm. This ensures very high accuracy and flexibility, because each inspection feature can be adjusted individually at any time. The cycle time for a complete wheel inspection in Q-Bic is less than one minute.

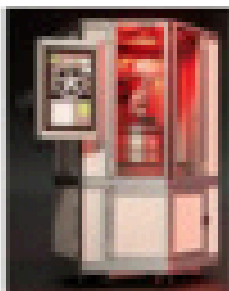
Vision system saves 50% of the time

Using the vision system, a wheel could already be inspected with around 50% less time during the feasibility study. Further time savings came from faster final project implementation and quicker, simpler installation and integration into production. Accelerated project delivery also proved to be an important economic factor. In the event of a complaint, the documentation provides the measuring-point data, all measured values and every wheel type. This supplies evidence that the wheel was in flawless condition when delivered.

The hexagonal design of the Q-Bic vision system provides excellent access from all sides and great flexibility in designing particularly compact, mobile solutions. Depending on the version, the complete Q-Bic module requires a footprint of only 0.8 m × 0.8 m or 1.2 m × 1.2 m, with a maximum height of 2 m. Integrated retractable wheels allow it to be moved quickly for delivery or relocation and connected to other Q-Bic units.

The complete solution economically automates numerous vision tasks simultaneously in a minimal space. Integration options include electrical equipment, controls, a high-performance PC, cameras, the VisionTube code verifier, a cobot or robot, different vision modules, intelligent lighting, a large touchscreen monitor, Industry 4.0 communication modules, OPC UA, IOTA and neural networks. A mains-independent power supply maintains operation during a power failure and prevents data loss. It even allows the system to be relocated while operating. Integrated high-performance PCs also make these solutions suitable for demanding tasks using artificial-intelligence algorithms.

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Q-Bic modules offer a wide range of capabilities. Control, data analysis and communication are combined in an autonomous system. Image: Cretec.

Zitierhinweis

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Autofelgen: Vision-System prüft Kunststoff-Blades

Ein Autobauer hat mit dem Vision-System Q-Bic von Cretec geprüft, ob Kunststoff-Blades in der Einpassung der Aluminiumfelgen exakt positioniert sind.

<https://www.k-zeitung.de/node/11144>

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