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UNOFFICIAL ENGLISH TRANSLATION

The original article was published in German in IT & Production, a trade magazine published in Germany. Prepared for CRETEC. The German original remains the reference.



Premium wheels inspected 50 percent faster

The packaging-conference advertisement remains in German. Original publisher artwork, logos and advertisements are retained in their original language.

The QBIC modules from Cretec

Premium wheels inspected 50 percent faster

Cretec's QBIC modules provide a complete 3D machine-vision system. It has already proved its value in a feasibility study, reducing the time required for wheel quality control by 50 percent.

In the premium automotive segment, perfect appearance is an important part of a brand's image and marketing. The highest precision is required: visible surface defects must not detract from the appearance. The human eye can reach its limits, for example under slightly different lighting conditions. This is where 3D machine vision comes into play. A feasibility study for an automotive company tested machine-vision specialist Cretec's QBIC system for defect detection. A 3D scan was used to detect defects at several measuring points relating to the precise positioning of plastic blades fitted into aluminium wheels. Measurements had to show that every blade complied with the specified permissible gap and height difference relative to the aluminium surface.

The inspection process

Each wheel was placed 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.

Cretec's measuring concept, patented for inline and offline use, enables an accuracy per measuring point of less than 10 µm in all three dimensions during wheel inspection. Measurement system analysis (MSA) showed an accuracy better than 100 µm. The

Images on this spread: Cretec GmbH

The QBIC module is equipped with retractable wheels.





QBIC modules combine control, data analysis and communication in an autonomous system.

cycle time for a complete wheel inspection in QBIC is less than one minute.

The system achieved time savings

of up to 50 percent in the feasibility study. Additional time savings resulted from faster project implementation and comparatively rapid integration into production. For any complaints, the documentation records the measuring points, all measured values and every wheel type.

The small footprint and modular hardware and software give the system flexibility. The two versions require a footprint of only 0.8 m x 0.8 m or 1.2 m x 1.2 m, with a maximum height of 2 m. Integrated retractable wheels permit relocation. The system can also be connected to other QBIC units.

One system for many applications

The system automates a range of machine-vision tasks. Options include electrical equipment, controls, high-performance PCs, for example for AI algorithms, cameras, the VisionTube code

verifier, a cobot or robot, different vision modules, intelligent lighting, a large touchscreen monitor, communication modules (Industry 4.0, OPC UA or IOTA) and neural networks.

A mains-independent power supply ensures that data is retained even during a power failure. It also allows relocation while the system is operating. Complete QBIC solutions cover a broad range of applications: pick-and-place, registration and classification tasks, ID codes, inspection, 2D and 3D measurement, surface inspection, decision-making and sorting processes.

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- Anzeige -

Digitale Konferenz rund um Verpackungsmaschinen

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