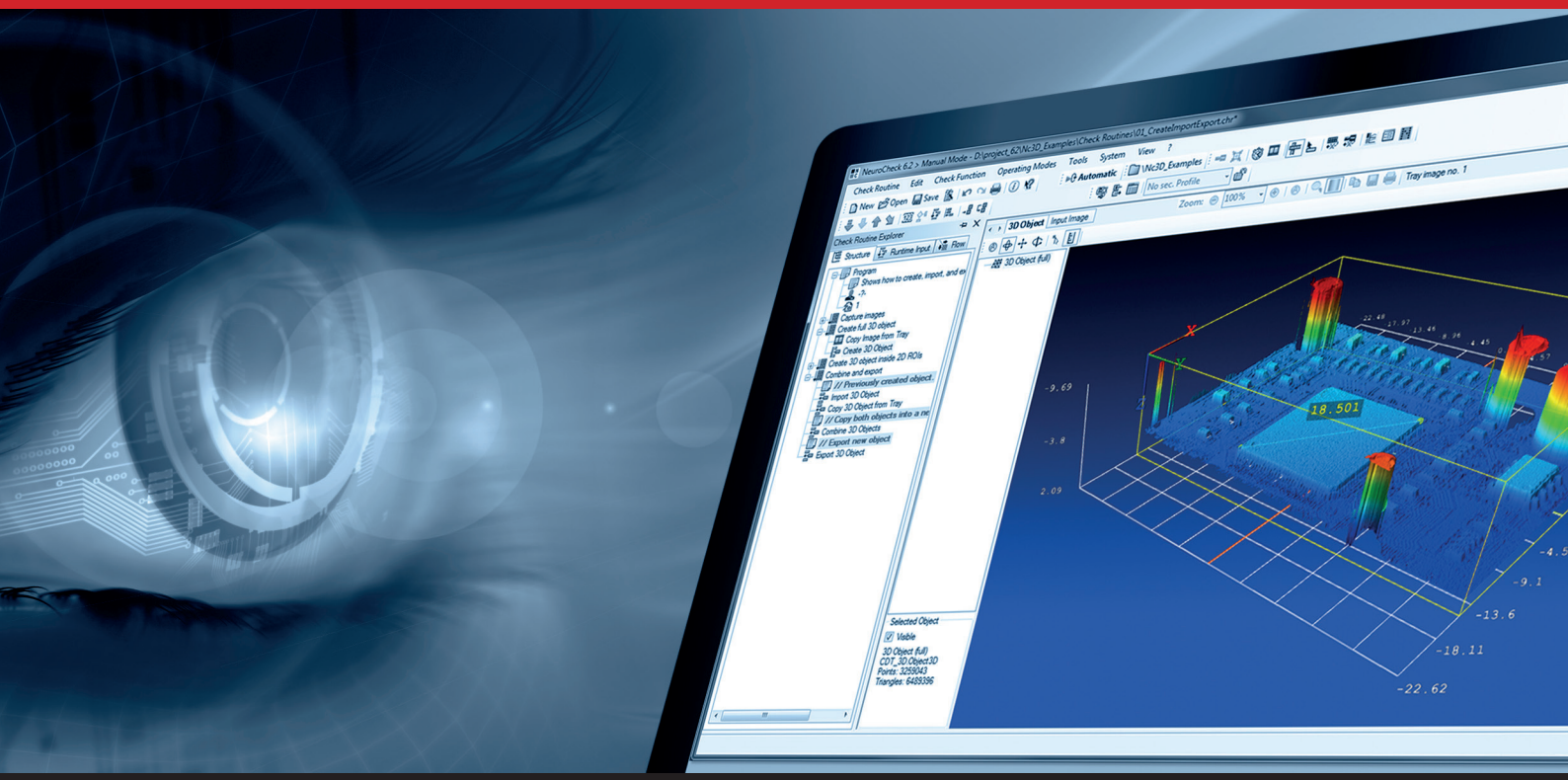


At a glance - Quality assurance with 3D image processing

3D image processing in sync with the production process
In-line systems work in the third dimension

Today, industrial image processing is used successfully across all stages of the value chain within production processes. Innovative 3D technologies enable the verification and objectification of manufacturing processes and thus create rapid quality control loops in sync with production.

The key to production-safe use is the availability of 3D sensors from a wide range of technologies.

NeuroCheck provides the platform for the integration of innovative sensor technology and thus the basis for high-performance system solutions:

- Laser triangulation
- Fringe projection
- Time-of-Flight
- Confocal microscopy
- Focus variation
- Light field technology
- Holography

With the 3D functionality of the NeuroCheck 3D-Xtension and beyond that the capability of expanding functionality via the open plug-in interface, versatile application solutions can be implemented in all industries with NeuroCheck.

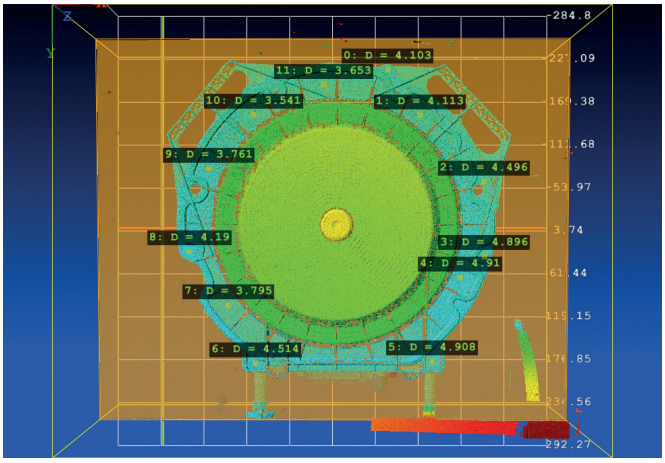
NEURO CHECK
Industrial Vision Systems

NeuroCheck 3D-Xtension - Application examples

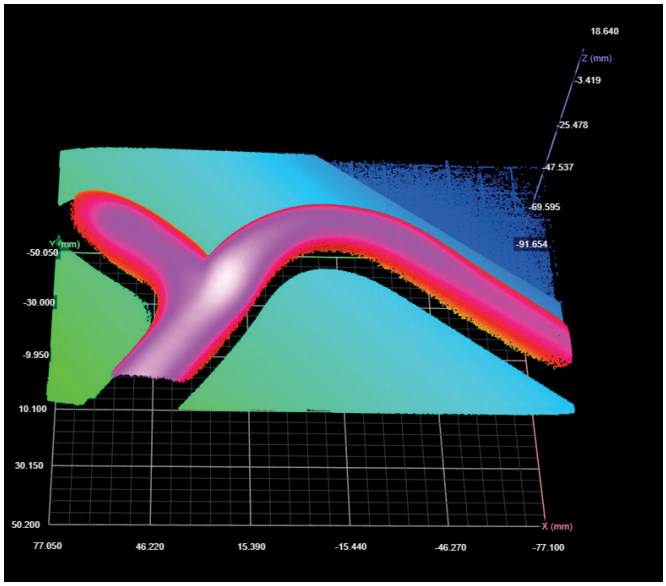
Everything tight - 3D position determination of a sealing cover

Before excess oil and other production residues are washed off a component in a washing process, its flange is closed with a sealing cover. The cover is intended to prevent washing liquid from penetrating into the interior of the component and impairing its function.

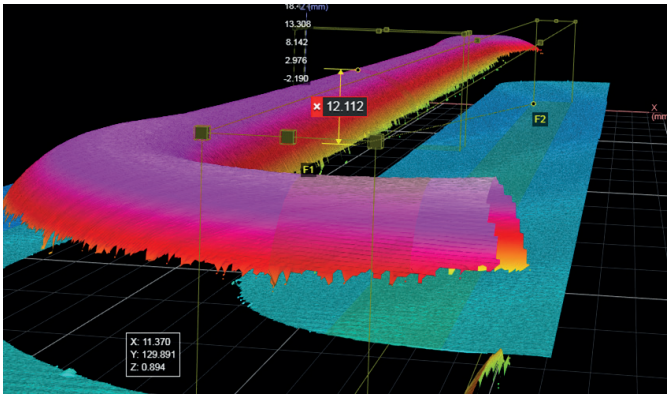
To check the correct fit of the sealing cover with a diameter of approx. 40 cm, the complete component surface is first recorded in 3D before the cover is installed. Reference points are set on the sealing surface of the component in order to determine the position. After the cover has been installed, reference points on the cover are measured and compared with the previously recorded positions. If the position deviations between the two measurements are within tolerance range, the cover is tight.



Everything correct - Highly detailed measurement of dispensing beads



Adhesive or sealant webs applied with dispensers must meet the highest quality requirements to ensure the function of the component. NeuroCheck offers suitable sensors to record and evaluate dispensing beads in great detail. In this application, the webs are examined and measured with regard to the application thickness, height and position in relation to a reference position. The test takes place directly after the dispensing process on the component surface.

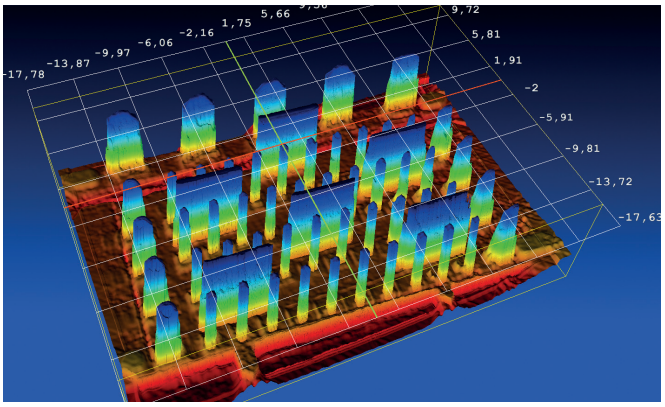


Everything in its right place - Pin connectors - pin position and pin height

The same sensor setup is not always suitable for the multitude of different connector types and the appearance of the pins. Low-lying pins in tight conditions cannot be tested using the typical triangular approach. A sensor based on light field technology is ideally suited for this.

NeuroCheck checks connectors for the following criteria:

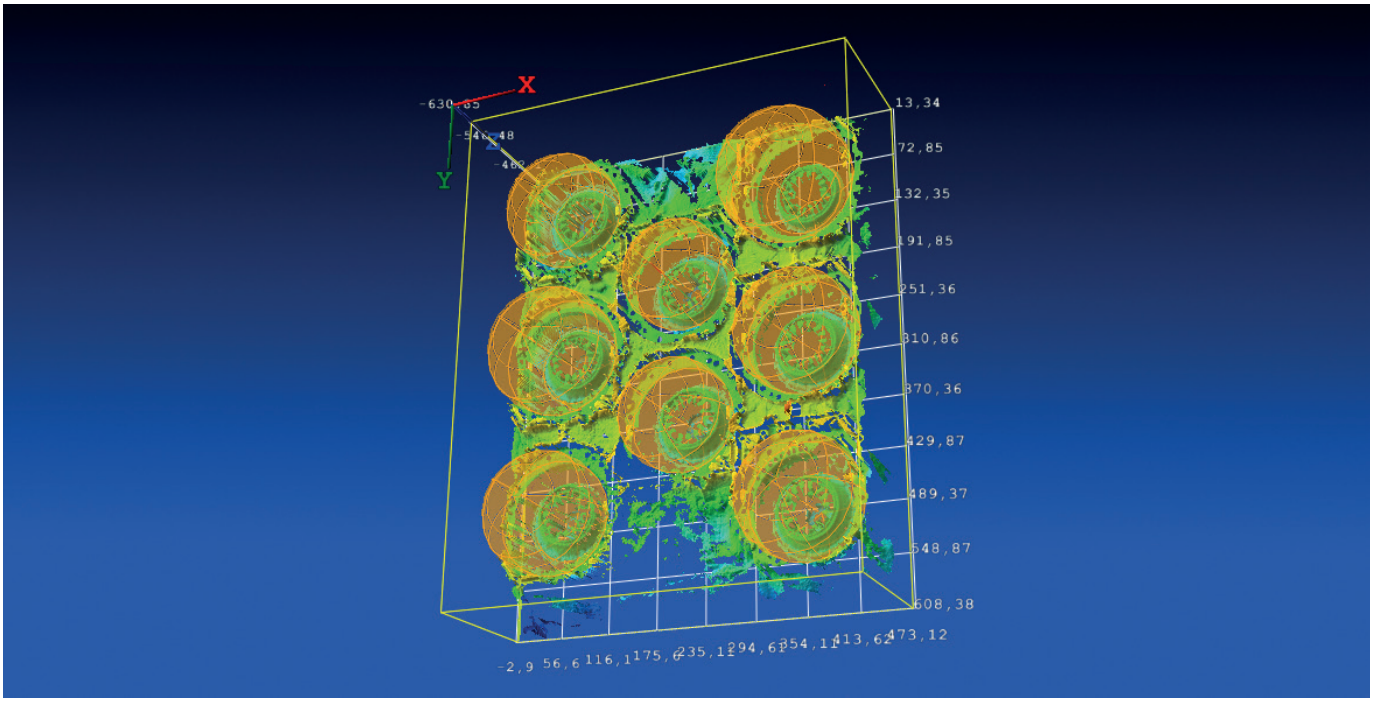
- The pin‘s wobble circle in relation to the coordinate system
- Height measurement of the insertion depth of the pins
- Detection of connector coding
- Spout failure on molded plastic



Everything under control - Pick and place of housing components

The housing parts shown are delivered on pallets to the material conveyor belt and processed further in the subsequent process steps. A robot picks up the components stacked on the pallet one after the other and places them on the belt. For a successful gripping process, the robot needs precise position information for each part.

With NeuroCheck 3D-Xtension, a 3D pick-and-place task can be implemented quickly and easily. Thanks to the flexible interfaces of the NeuroCheck basic software and the generalized calibration process, every common-type robot can be supplied with the required component coordinates to carry out the gripping process.



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