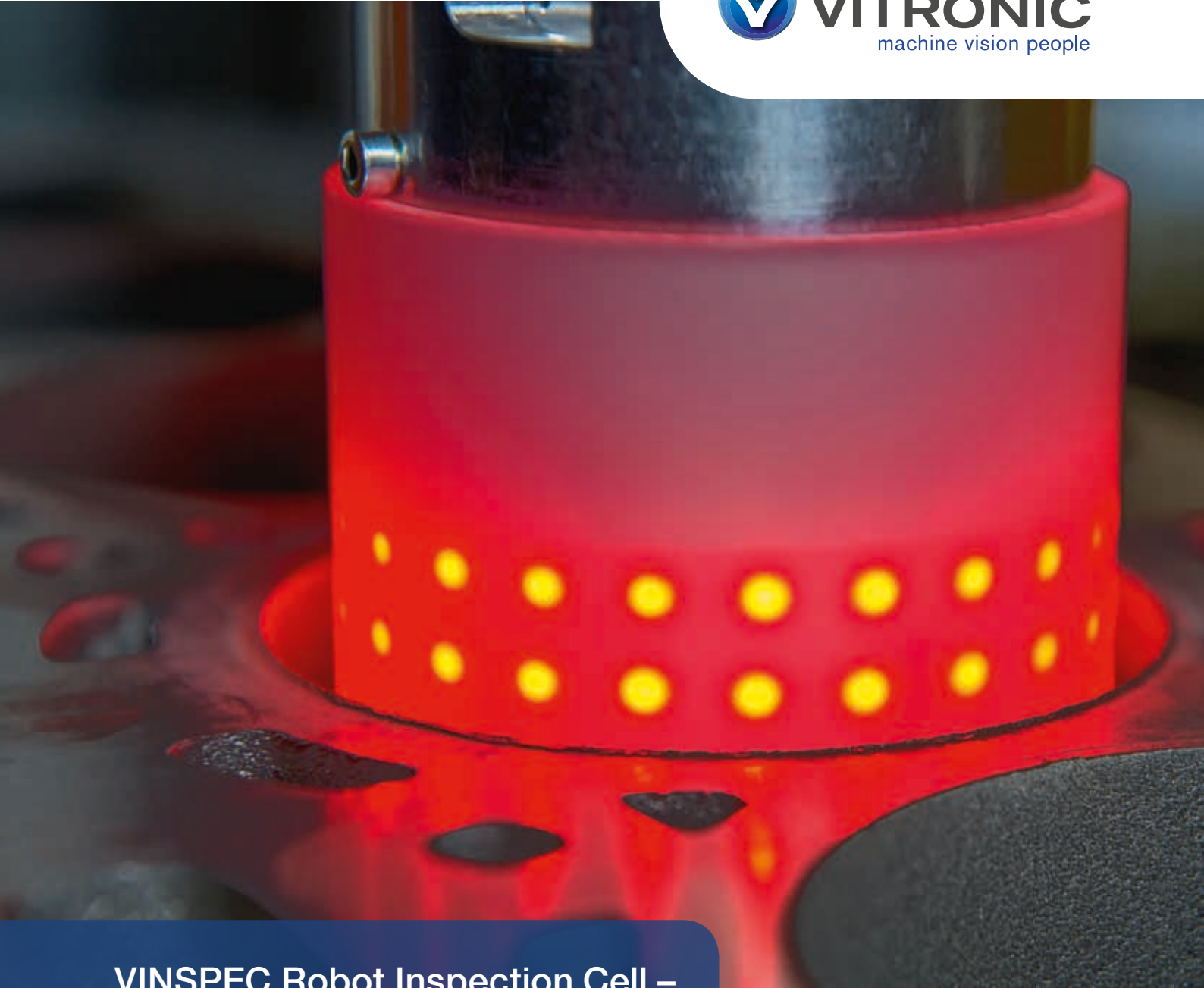




VITRONIC
machine vision people



VINSPEC Robot Inspection Cell – Optical Surface Inspection

VINSPEC inspection systems integrated into robot cell

VITRONIC supplies robot inspection cells with machine vision from a single source. Robot cells with VINSPEC surface inspection systems detect defects on visible, sealing and functional surfaces as well as contour errors and surface imperfections on metal components. Camera-based surface and contour inspection using VINSPEC enables the detection of defective components during the production process and their removal from production if necessary. This in turn enables a cost-effective quality inspection and reworking concept.

The flexible optical surface inspection systems from VITRONIC are used on numerous production lines in the automotive manufacturing and component supply industries, for example to inspect crankcases (e.g. cylinder bore surfaces) and cylinder heads. The robot inspection cells are also easy to integrate into existing production lines and conveyor systems and ensure the maximum output of good parts and a reduction in production costs thanks to the effective rejection of defective parts.



Optical inline surface and contour inspection

VINSPEC uses an internal inspection sensor to inspect machined surfaces, such as the surfaces of drilled holes. The flexible, optical inspection is conducted using robots by means of a customized robot gripper combined with 2D and 2½D sensor technology. In addition to a more objective defect classification in dimensional view, this provides a higher detection rate on surfaces that are not clearly visible with the goal of zero defects.

The system records even the smallest of defects using high-resolution matrix and line scan cameras. Intelligent image acquisition technology helps eliminate pseudo defects caused by dirt or water stains on components.

Confident handling of a variety of inspection tasks

One of the features that makes robot cells highly cost effective is that component parts can be changed during production runs without stopping, simply by changing the inspection software and robot program.

VINSPEC robot inspection cells at a glance

- Customer-specific concepts using standard solutions
- Economical due to the use of standard components such as robots
- Flexible expansion in case of new component types and inspection surfaces
- Can be integrated with existing production lines
- Proprietary camera and lighting technology specific to the inspection task
- Proprietary hardware, such as line scan cameras, enables fastest inspection times
- Automatic signal transmission to the handling and/or production control system when defined defect sizes are exceeded
- Documentation and archiving of inspection results and images as proof of quality
- Statistical analyses to achieve process optimizations

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