

# PROINSPECT – INLINE SURFACE INSPECTION FOR DIE-CAST PARTS

## SURFACE INSPECTION

High quality criteria have to be met during production of die-cast parts. Machining of such parts leads to a number of defects that cannot be prevented, but have to be detected during quality control at the end of a production line. Quite often this is still a manual process, which has significant disadvantages in terms of stability, reliability and documentation. Machine vision provides a technology to perform automatic inspection directly in the production line. Quality control will be more stable and reliable. Appropriate documentation is generated automatically.

### Typical faults to be found

- Pores, Scratches
- Broken edges, missing elements
- Burrs

The PROFACTOR automatic inspection system consists of a camera (line-scan as well as matrix), LED light source, industrial PCs and the ProInspect image processing software. Images are recorded by the cameras, processed by the software and a final OK/NOK decision is sent to the production line using a field bus. Specific stations may be foreseen to visualize the faults. The inspection system itself can be automatic or semi-automatic.

### Specification

- Resolution: 0.05 – 0.1 mm/Pixel
- Faults: detectable if larger than 0.3 mm
- Cycle time: 0.5 - 30 s depending on the part size
- Image recording: mostly line-scan cameras
- Light source: LED

These values are guidelines and may change substantially depending on the application. Images may also be recorded multiple times under different illumination to distinguish dirt from actual faults and also improve contrast for the detection of scratches.

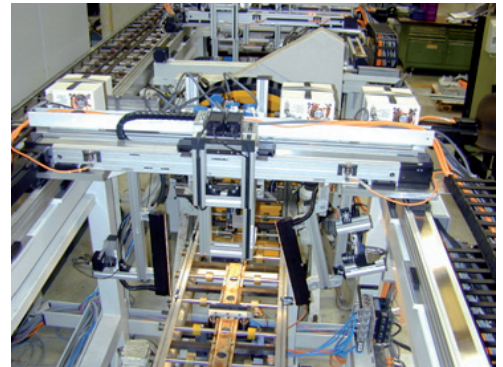
### Software

- User defined regions of interest
- Different quality criteria for each region
- Integration of multiple images and cameras
- Intuitive GUI

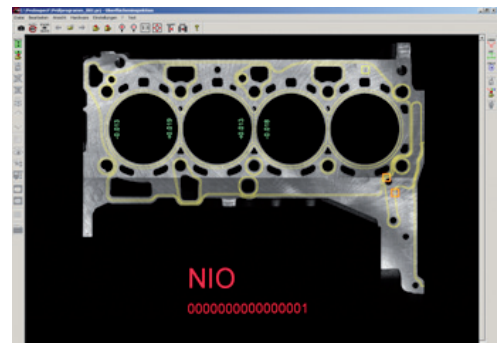
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Automatic inspection system during construction



Visualization

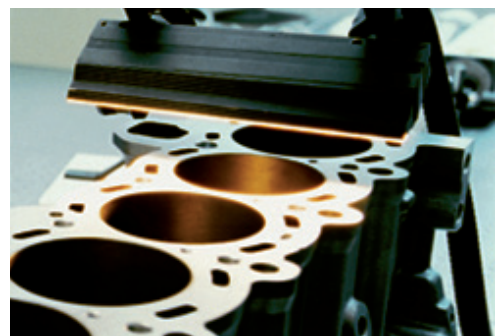


Image recording with a line-scan camera

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