

---

# Visual inspection of bearing rings

## Case study

### Situation

One of the key players in bearings manufacturing contacted us with a case in which one of their plants in Central Europe inspects 100% of the bearing ring surface, looking for 15 types of defects on 14 different types of products. The inspection was originally performed manually - an employee had to check for multiple patterns, such as faulty laser engraving or a variety of barely visible surface defects on both diameters and faces of the product. Even a single overlooked defect could lead to a damaged reputation, claims, and fines by their customers.

### Searching for solution

In order to make the quality control more efficient, the company started searching for a machine vision system. The desired ROI was set to up to 20 months, the calculation included reduction of human labor, customer fines, and further benefits resulting from the digitization of the process.

Conventional vision systems, both the ones based on traditional machine vision and on deep learning, faced high amounts of false defect alarms connected with the presence of remnants of the liquid conservant on the products. The systems also had a tendency to overlook tiny defects, as these were as small as 0.5 mm. Tiny defects were also confused with dirt particles.

### Solution

Cognexa delivered a solution based on deep learning, the only solution on the market able to detect even the smallest defects on extremely glossy surfaces with false indications. The solution also performs a robust inspection of various defects of laser engraved signature.

### How could we help you optimize the manufacturing process?

Feel free to contact our Head of Sales Manufacturing - [Vladimír Teplík](#), who worked in the automotive industry for 25+ years, having served as high as VP Operations in charge of 17 500 employees, 21 manufacturing plants, and profitable growth of a \$ 1,6 billion. You can reach him via email [vladimir.teplik@cognexa.com](mailto:vladimir.teplik@cognexa.com) or phone number +420 602 433 583 and have a consultation (free of charge) about how your company could benefit from this or a similar solution.