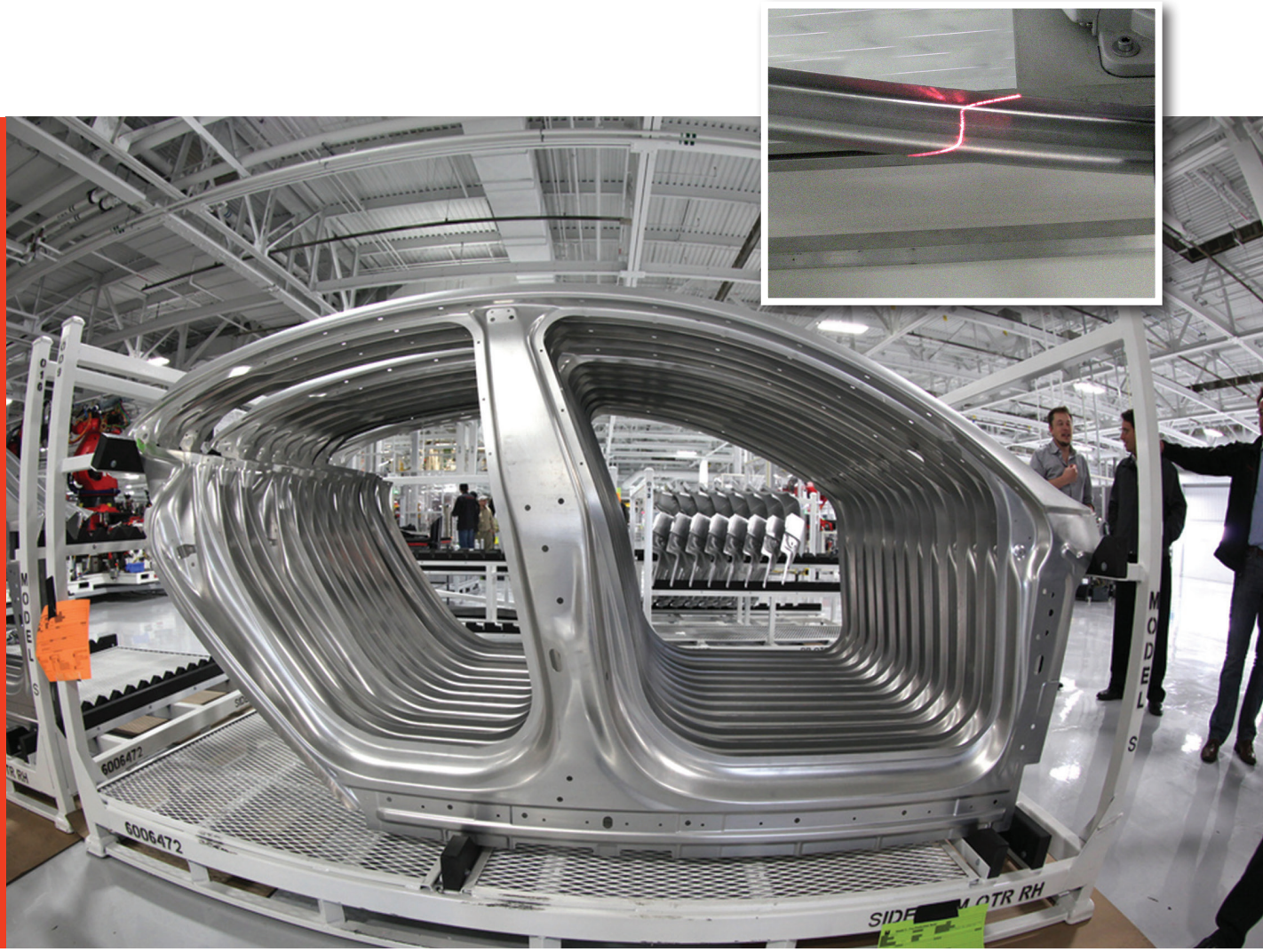
FCC PS

STROJOVÉ VIDĚNÍ A ROBOTIKA
PRŮMYSLOVÉ SYSTÉMY

INSPECTION OF MOULDINGS WITH CAMERAS BUILT INTO THE MOULD

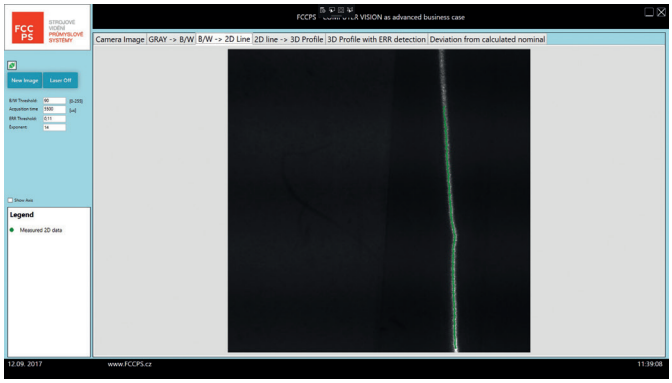


MAIN FEATURES

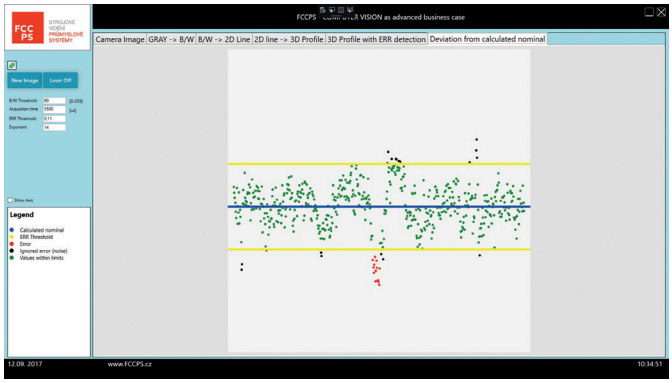
- DETECTION OF VARIOUS TYPES OF DEFECTS, FROM STRAINED POINTS TO VISIBLE CRACKS
- IMMEDIATE RESULTS OF INSPECTION FOLLOWING PRESS CYCLE
- INSTANT DEFECT VISUALISATION
- CONNECTION TO THE PRESS CONTROL SYSTEM
- MATERIALS FOR PRODUCTION REPORTS AND QUALITY MANAGEMENT SYSTEM

INSPECTION OF MOULDINGS WITH CAMERAS BUILT INTO THE MOULD

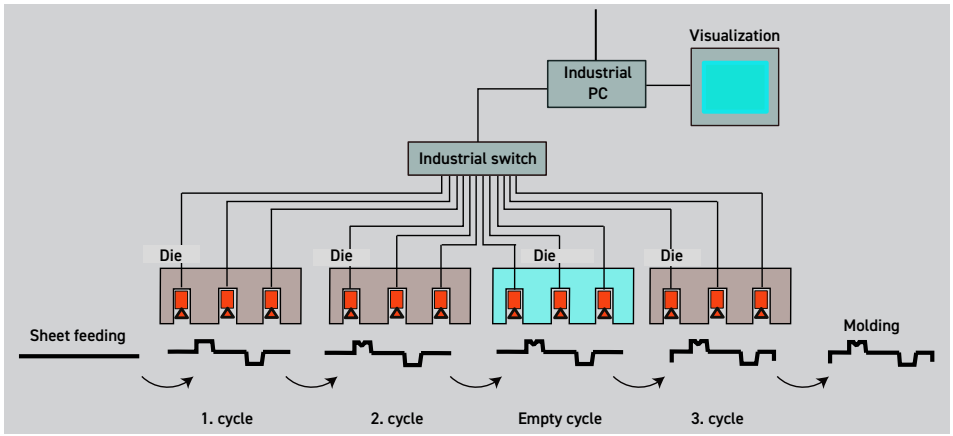
Parts moulded from sheet metal are nowadays the common basis of self-supporting structures, not only in the automotive industry. Therefore, their strength is not reduced by weakened areas, stress, and cracks which may occur during the moulding process.
Modern CAD software can simulate the stress of sheet metal in the mould and predict bottlenecks. It thus allows using the material to the limits of its strength parameters, hugely reducing costs in mass production. The prerequisite, however, is the production of absolutely flawless material, since even immaterial inhomogeneity can potentially cause a critical moulding defect. Therefore, the inspection of critical points of every finished moulding is an essential part of the moulding operation.
FCC prumyslove systemy (FCC industrial systems) has a long history of dealing with the detection of defects in moulded parts, and has developed several detection methods for this purpose. We deliver systems which control critical bends via cameras embedded in the mould.
To examine cracks and strains, two methods are used for the removal and evaluation of an image selected according to the nature of the assumed defect. An image can be captured in visible light, or alternatively using laser tracing. Captured images are evaluated with special software.
Cameras and laser illuminators are mounted in the stationary parts of the mould (stamper). Their location is chosen according to the nature of the detected defect. The cameras use Ethernet communication and are connected via a single connector panel, similarly to the outputs of other sensors located in the mould. Image processing and interpretation of results are carried out using an industrial computer which can be supplemented with a visualisation panel.



Laser trace with detected centre



Deviation from the mean calculated value



Scheme of linking stampers to the control system

Inspection of critical points directly in the moulding line captures moulding defects during the moulding process. This allows the elimination of defective parts prior to further processing. This reduces production costs.

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