Fraunhofer
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FRAUNHOFER INSTITUTE FOR MANUFACTURING TECHNOLOGY AND ADVANCED MATERIALS IFAM

1 *High-pressure die-cast shock tower with embedded RFID transponder.*
2 *Embedded transponder (enlargement of the shock tower).*
3 *Handling system for the automatic insertion of RFID transponders into the high-pressure die-casting mold, mounted to the release agent spraying robot.*

CAST TRONICS®

AUTOMATIC FEED OF RFID TRANSPONDERS DURING THE HPDC-PROCESS

Previously, the marking of castings occurred using optical coding methods such as barcodes or data matrix codes (DMC). In the course of the digitalization of foundry processes, RFID technology offers the possibility for the digital, radio-based, and robust labelling of castings – a key function for Industry 4.0 in the foundry.

The Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM has developed the *CAST*TRONICS® technology, which enables the direct embedding of RFID transponders using high-pressure die-casting. Within the scope of an EU-funded research project and in conjunction with the project partner AUDI, a proof-of-concept for a series-capable application was achieved, showcasing the advantages of RFID labelling:

- Direct and unique labelling of high-pressure die-castings
- Digitized traceability along the entire manufacturing chain – and even further
- High process stability ⇨ 100% reading ratio
- Faster and more robust labelling in comparison to needle embosser and DMC scanner

Böhmer Maschinenbau GmbH offers many years of experience in the automatization of foundry processes and supports the implementation of Industry 4.0 in series production. In this context, the automatic feed of RFID transponders offers a process-optimized and efficient solution.

www.casttronics.com

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