

# COGNEX

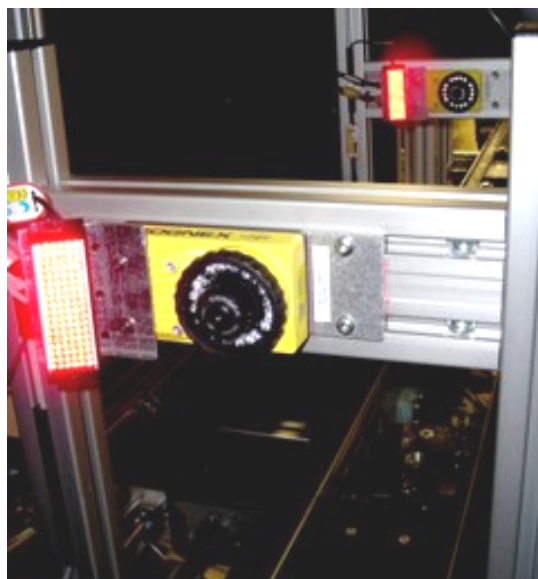
Vision for Industry®

## Reading and verification of codes at Borg Warner

Automotive parts: signed, sealed and delivered with 100% traceability

Being one of the biggest constructors and suppliers of automotive parts, Borg Warner cannot afford to make mistakes. They needed to guarantee the quality of a new high added value component and to be able to trace the product from cradle to grave.

They decided to turn to Cognex whose vision systems were already configured on many of their production lines and machines. The resulting project was directed by Alema Automation, a Cognex Partner System Integrator (PSI) for the southwest of France.



**The challenge:** Each piece needs to be marked and the precision and quality of the marking needs to be verified. Finally, it needs to be confirmed that each piece has gone through the necessary quality and safety controls before being delivered. The solution: VisionPro® software from Cognex along with the In-Sight® 5110 vision system, Cognex Partner Product ESO'CR from Esox, another Cognex PSI as well as micro percussion marking machines from Technifor, another trusted partner of Cognex.

### **Marked for Life**

Once off the production line each piece is marked with micro percussion: two lines of alphanumerical characters indicating the product reference, the batch number, the team identity and the manufacturing date.

Following this, a first vision station consisting of an 8500 card and VisionPro (the library of vision tools from Cognex), reads the characters thanks to the software ESO'CR. The information is then transferred to a Technifor engraver who converts them to Data Matrix and is marked on the other side of the piece. The ESO'CR software has proved to be of added value to the automobile industry. "It has allowed us to stay within our budget and our time frame," explained Olivier Skalinski, Project Leader at Alema.

In order to avoid any error and to guarantee the staying power of the marking, an In-Sight 5110, installed beside the micro percussion machine, verifies the content and the quality of the marking.

### **How can you be sure that each piece has been inspected?**

Once marked, the piece then undergoes a series of hydraulic testing with eight points of inspection. Once out of the testing phase, the piece then passes to a second In-Sight 5110 vision station where it needs to be established that the piece has successfully undergone all the necessary tests. Not an easy task.

### **Reliable reading regardless of the environment**

The pieces that arrive at the second vision post may be dry and clean or they may still be oily from the testing process. Despite the fact that the lighting and legibility conditions are completely different to those of the first reading station, the In-Sight 5110 is perfectly capable of reading the code on each piece without any extra configuration.

Alema was also obliged to take up another challenge: ensure that the In-Sight system can communicate with the factory data base containing the results of the testing phase. Alema developed a unique interface with this in mind enabling In-Sight to deliver a verdict for each piece: suitable (or not) for delivery.

Faulty pieces which are reparable are sent back to be fixed while the pieces that have been successfully checked and verified are directed to the packaging zone. For maximum security, Alema has installed a third In-Sight 5110 system at the entrance to the packaging area, which performs a final check and verification of the piece.

### **Record timing**

The application has been developed and installed by Alema in record time: two days to confirm that the system worked correctly on prototype pieces, then one week to install at the factory site, including personnel training in use and maintenance.

### **A winning combination**

The robustness of the In-Sight vision systems, their ability to cope with environmental changes in lighting and position allowed for the same material to be used on different work posts and also allowed Borg Warner to greatly reduce the amount of spare part stock kept at hand.

Another benefit, was the commitment of Alema Automation to the project in its entirety, (reading, marking and verification) thus avoiding any conflicts of interest between different suppliers. "Thanks to the comprehensive nature of the Cognex solution and to their partner network, we have a high performance, cost-effective solution at our disposal," concluded Stéphane Laval at Borg Warner. Following the success of this solution, Borg Warner aims to adapt other production lines and deploy the same solution in order to optimize this traceability throughout their production processes.