

## Measuring Safety-critical Components in the Automotive Industry

Quality evaluations using optical measuring techniques have become a daily business in the auto industry. Get to know an image processing system that is mainly used to make measurements of ignition initiator units for airbag gas generators.

The German company BHV-Automation GmbH has developed an image processing system that can be applied to a wide variety of applications and has found many interesting uses in the field. In one case, the system has successfully established itself for the measurement of ignition initiator units for airbag gas generators. It measures the plug contacts and other parts of the units.

### The basic task of the test consists of determining and checking:

- the position of the plug contact tips
- the torque angle of the tip unit
- the gap distance of the riveting
- the position/color and shape of the plug unit.

The allowed percentage of incorrect measurement was defined as  $< 0.05\%$  per ten thousand parts. All measured values are correct within  $1/100\text{th}$  mm. For this particular application example, the system manages 15 types. A custom development project was executed regarding the measuring of the tips. BHV developed a threshold value adjustment process that allows the system to measure tips which differ very strongly in their reflectance and their surface qualities.

The BHV-Ivision system uses Basler scout cameras, which have a Gigabit Ethernet interface. The system can manage several gigabytes of camera data. Because a GigE network can have cable lengths of up to 100 meters, customers don't need to deal with issues regarding the length of the system's cables. And because the GigE interface uses shielded Cat 6 cable and packetized data transmission, they no longer need to worry so much about cable placement. Also, interference-prone frame grabbers are no longer relevant. Due to their compact size, their industrial grade design, and their ability to transmit data at GigE speeds, Basler scout cameras are especially suitable for inspection systems.

### Typical system setup

The BHV-Ivision system is based on a platform concept, which offers high flexibility regarding its use and can be customized for individual needs. Customers receive a complete package of specified hardware and software. The evaluation system includes, among other things, an extensive SQL data base, a user-friendly menu to optimize or operate the system even during the inspection process, and an error management program. A color picture of the measurement process lets the user make a good visual evaluation during production.

Get an impression of the BHV evaluation system

For more information, please go to:  
[www.bhv-automation.de](http://www.bhv-automation.de)

