



3D ultra-fast automated visual quality control system

(09 LU 70DB 3EIA)



Abstract

A Luxembourgish SME has developed a high-tech system for ultra-fast visual quality control. It was developed for small items but can be adapted to any application. A camera takes a multiangle photo of the part to check, which is then processed by an algorithm to identify the object defects in 3D according to numerous predefined criteria. This system enables the control of 100% of production parts unlike traditional operator manual check. Commercial agreement with technical assistance is sought.

Description

The system can be described as follows, divided into three different categories:

- The mechanical part, which consists of the specimen guidance and ejection mechanisms. For instance the objects to check are dispatched on several lines where those are processed in parallel. The objects are guided by rails and then fall off at the end of the rows. The quality check is performed during this free fall and the parts are kept or ejected according to the result.

- The optical unit, composed of CCD cameras, mirrors (to get multiple viewpoints) and flashlight devices to make image processing smoother has the specific objective to digitize the specimens.

- An acquisition system and a computer on which proprietary image processing algorithm runs constitute the data-processing part, core of the whole system.

This quality control installation has proven its ability to process with extended quantities of parts. As an example, one of the equipments currently developed reaches the target of 16,000 parts per minute. This specifically allows to control the entirety of the production which is a huge advantage compared to existing manual quality checks of sample lots.

The company would like to reach commercial agreement with technical assistance with any potentially interested company: the system is suitable at best for the food industry but could also benefit waste or pharmaceutical industries as well as the steel industry.

Innovations and advantages of the offer

- automated visual quality check of parts
- quick and compliant state-of-the-art processing software
- free fall check of specimens
- quality control of entire production

- ultra-fast processing allows extensive capacity
- adaptative system
- control independent of specimen position
- unlimited object defects setup
- easiness to insert in production lines

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For further information (including IPR status)

please contact:

Camillo Ferrari

Phone: +39 0732 626.511

Fax: +39 0732 626.939

Email: servizi2@meccano.it