

Application Report



When the pictures started to move...

Quality vision system automatically selects inspection positions

For the first time in automation technology, the workpiece to be inspected does not move towards the quality vision system, but vice-versa. Thanks to an integrated controller with CoDeSys embedded on a Festo machine vision system linked to an axis gantry, the pictures are now starting to move.

Previously, vision systems used for quality inspection were installed rigidly at one point in the assembly process. The workpieces to be inspected were generally transported past the camera lens on a conveyor belt. The SBOC..Q quality inspection system from Festo turns this process on its head. The vision system is now part of a ready-to-install axis gantry and positions itself precisely at the workpiece to be inspected.

100% inspection

In a practical application, the vision system integrator JAM Automation from Radevormwald developed an assembly and inspection cell for an automotive supplier. In a first step, the machine presses nine sockets made of soft plastic into a flange plate made of harder plastic. In a second step, the vision system carries out a 100% inspection of the press-fitted plastic sockets. During this, the vision system travels automatically to each individual position of the sockets.

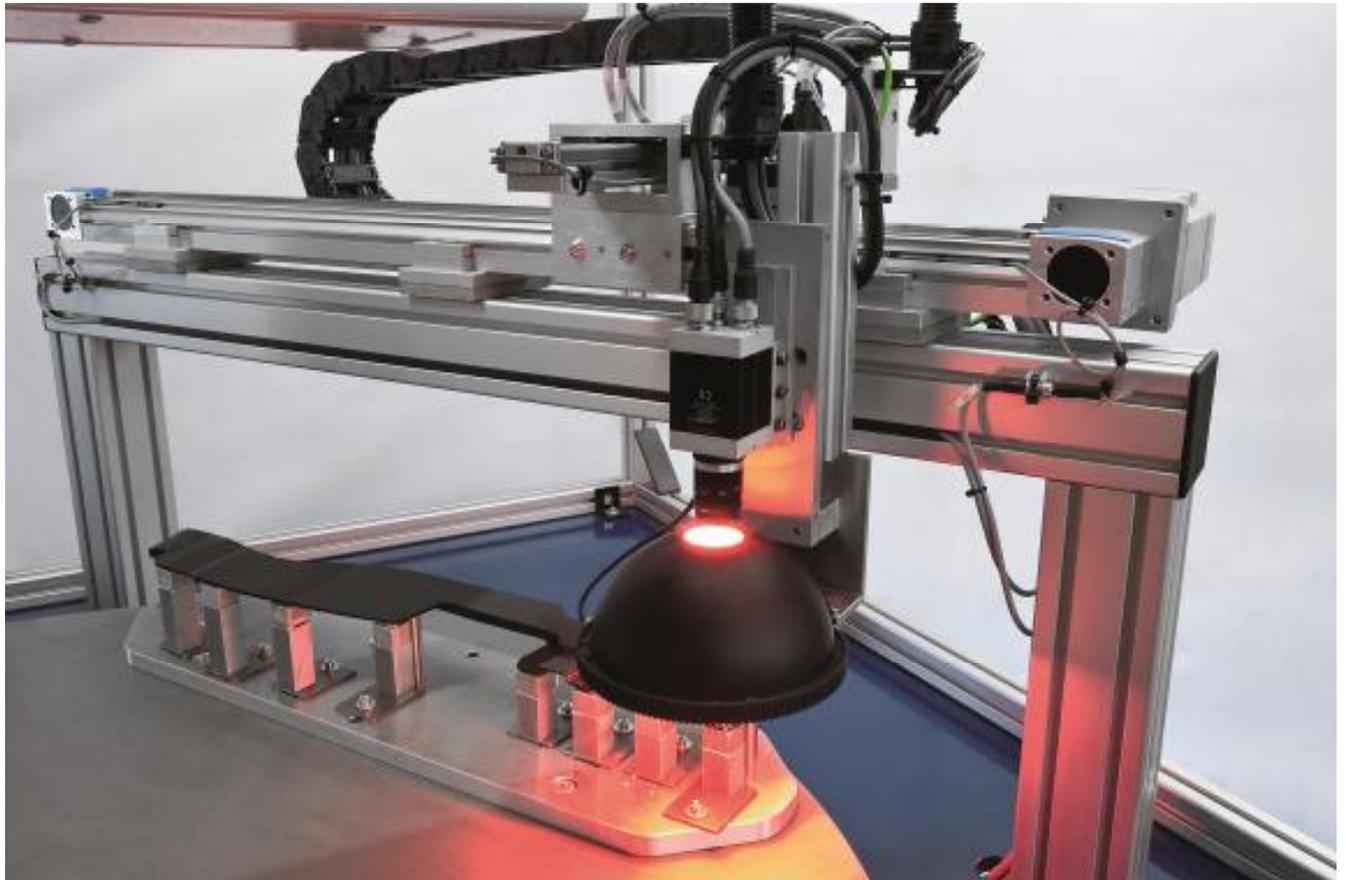


Getting the green light: 100% inspection of press-fitted plastic sockets in an assembly and inspection cell for an automotive supplier. The vision system travels automatically to each individual position of the sockets. (Photo: Festo)

Vision system as controller

The SBO..-Q vision system is installed as the front end of an electric cantilever-arm handling unit. It provides complete control of the handling unit, thanks to the integrated CoDeSys PLC with CANopen master functionality. No additional controller is required, which makes the overall machine less complex.

“Previously inspection operations of this kind were carried out only by manual visual means – which took much more time and resulted in an higher error rate,” explains Michael Voss, Managing Partner of JAM Automation. The machine allows manufacturing process to be documented seamlessly and statistics to be evaluated.



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(Photo: Festo)*

Ready-to-install handling unit

Festo delivers the cantilever-arm handling unit in ready-to-install, fully assembled and tested form directly to the customer’s machine – together with all design data and circuit diagrams and a comprehensive functional and price guarantee. JAM Automation was supplied not only with hardware in the form of a ready-to-install subsystem but a complete value-creation package. This complete solution meant less work for the customer’s own staff, simplifies the purchasing process and reduced system design costs and process costs. “‘Fit and forget’ is the objective for our customers,” explains Peter Löbelenz, Head of Festo’s Handling Technology Team for Germany and Europe in Esslingen.

Are there alternatives to a cantilever-arm handling unit in cases where a vision system for “moving pictures” is required? Voss says: “Fitting a vision system to a Scara robot would produce similar results, but the costs of the inspection function would be nearly three times as high.” Festo’s vision system with an integrated controller opens up new possibilities. “The moving vision system allows easy inspection, in particular of large workpieces, which are very difficult to handle with conventional conveyor systems, and could even be incorporated into a flexible standard test cell,” concludes Voss.