



Component Checking System

RNA Automation has developed a machine based on the Festo Checkbox vision Inspection system to verify the quality of small component parts. A key benefit of the new machine is that it enables the inspection process to be switched very quickly from one type of component to another, with minimal disruption to production.

RNA Automation is a leading supplier of parts handling machinery for manufacturing applications. It specialises in the development of turnkey systems for orienting, feeding and conveying small components, to help parts manufacturers streamline their production processes. According to Andy Perks, Sales Manager for RNA Automation, "We already produce systems with integrated vision inspection facilities, but for this particular application we wanted a camera system that combined fast throughput capabilities with a high degree of product changeover flexibility. After surveying the market we realised that the Festo Checkbox system had exactly the right performance attributes. We were particularly impressed with its control software, which uses a learn mode to minimise programming and allows part changeovers to be accomplished very quickly and easily. As a consequence, we intend using Checkbox as the core technology for our latest-generation intelligent parts inspection machines."

The first user of the new machine is Tappex Thread Inserts Ltd. This company designs and manufactures an exceptionally wide range of brass and steel threaded inserts and fasteners for use in plastics, structural foam, composite materials, wood and metal. These small components are manufactured to very tight dimensional tolerances, and Tappex has built up an enviable reputation for the quality and consistency of its products by applying rigorous process control and post-production inspection procedures.

The quality control department at Tappex's main UK manufacturing facility in Stratford-upon-Avon uses a combination of visual and automated inspection systems to verify that manufactured parts are within specification, depending upon the type of insert. The company wanted a new vision inspection system primarily for inspecting inserts that will be fitted by robotic assembly systems, as these tend to be particularly sensitive to tolerances and can jam if their feed components are not perfect. Until now, it has relied mainly on visual inspection and conventional measurement equipment for these parts, which is obviously time-consuming and can never be 100% accurate. And although Tappex already uses automated vision inspection for some product lines, it can take up to eight hours to reconfigure the system to inspect a different part. As the company wanted to inspect some inserts in batch sizes as low as 10,000, perhaps switching parts up to three times a day, its existing system did not provide the flexibility needed for this application.

The new component inspection machine includes a vibratory bowl feeder, a Festo Checkbox vision system – comprising an integrated camera/conveyor and control unit

