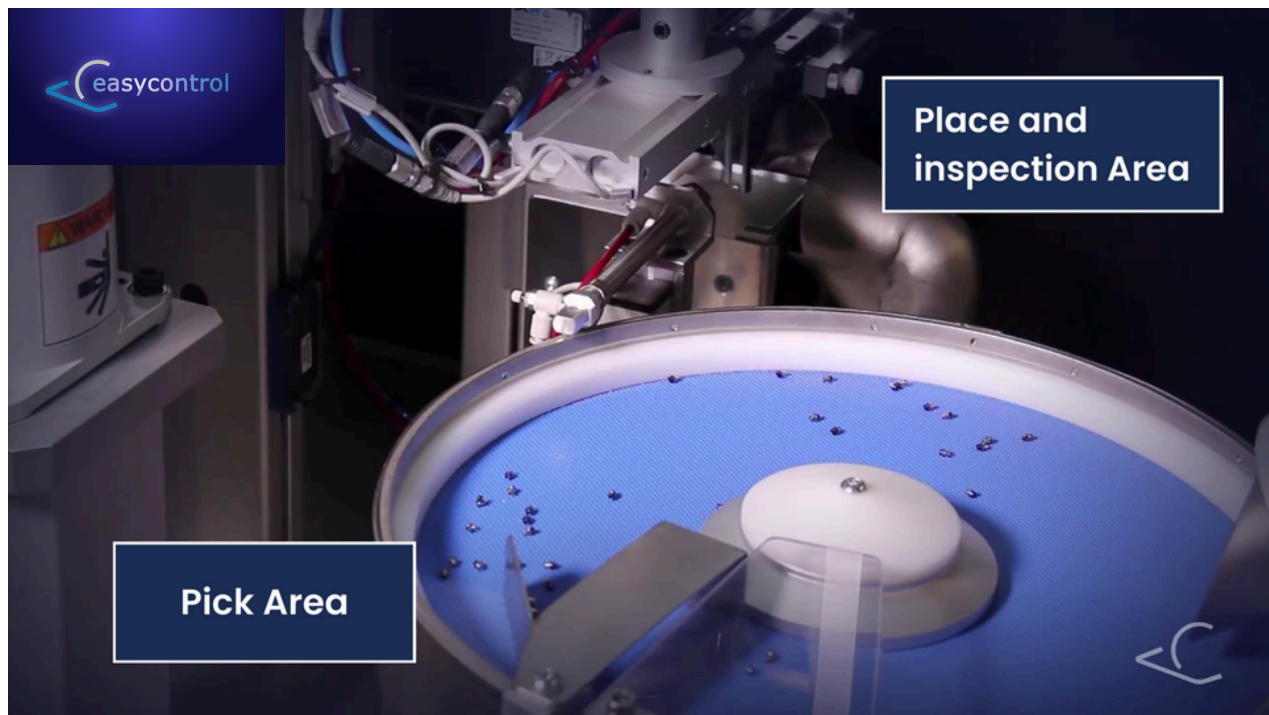


Ars Automation

Application notes

Automated Solution for Quality Control Process of Dental Screws and Metallic Components



Industry Insights

In the production of precision components for the medical industry, quality inspection plays a crucial role in ensuring every product meets high-quality standards. This process is particularly critical when handling a wide variety of parts with significant differences in size and shape. The challenge is to avoid damage to the components, prevent overlapping, and manage the process within a compact production layout, without relying on dedicated machinery for each individual part.

Handled Parts

The application involves feeding a wide range of metallic components, from small dental screws to larger metal clips and brackets, both flat and bent. The particular geometries of these parts make them prone to overlapping during the feeding phase. The solution needed to ensure precise separation and orientation, preventing damage and meeting strict quality standards.



Ars Automation

Application notes

The system configuration

To optimize the management of a heterogeneous range of components, an advanced solution integrating two FlexiBowl® models with an EPSON robot was implemented, ensuring precise handling and accurate positioning in the inspection area.

- FlexiBowl® 350: Designed for feeding small components, where high precision and extremely delicate handling are essential.
- FlexiBowl® 800: Suitable for larger metallic components, providing stable and efficient feeding for heavier or irregularly shaped parts.

The EPSON robot, programmed for rapid and precise movements, picks the components from the respective FlexiBowl® units and places them accurately in the inspection area. Here, a state-of-the-art industrial vision system analyzes each part in real-time, verifying its geometric conformity and surface quality, thereby reducing cycle times and improving overall productivity.



FlexiBowl® 350 – 800
Traditional Operating Mode

Results

The combined use of FlexiBowl® 350 and 800, the EPSON robot, and the advanced vision system significantly enhanced the system's adaptability. This configuration allowed for quick, automated transitions between different types of components without manual intervention, ensuring continuous production with minimal downtime.

Thanks to EasyControl's expertise, the robotic application provided high precision and reliability during quality inspections, while the compact layout optimized space utilization, making it an ideal solution for environments with limited capacity.

Key Points



Medical
Industry



Quality
Inspection



FlexiBowl
350 – 800



EPSON
Robot



Flexibility