

Ars Automation

Application notes

Develop an innovative solution for spare parts assembly kits



Industry insights

In today's dynamic manufacturing landscape, the ability to optimize production layouts and embrace flexibility has become paramount for businesses to thrive. Industry 4.0, with its emphasis on continuous process improvement and technological integration, has ushered in an era where production lines must adapt swiftly to meet evolving market demands and technological advancements. Optimized production systems offer a multitude of advantages, including waste reduction, efficiency maximization, reduced production times, and lower operating costs. These benefits directly translate into improved profitability and a stronger competitive edge.

Handled parts:

Screws for kitting process



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The Configuration

FANUC's Authorized System Integrator, BHS Robotics, has developed an innovative vision-guided solution for efficiently sorting and picking of multiple SKU's on one machine. BHS has integrated these solutions for aftermarket parts kitting, assembly systems, and sortation. To automate these processes, a solution featuring two FlexiBowl® model 500 vibratory bowl feeders was implemented. These feeders efficiently handle parts of various sizes, ranging from small to medium. Additionally, a robot cell equipped with two Fanuc Scara SR-6iA robots was integrated. These robots boast a compact footprint while delivering speed and precision for handling parts within their 360-degree working envelope. Finally, the system incorporates an automatic Schunk gripper changeover mechanism, allowing for seamless adaptation to a wide range of part types and geometries. This combination of equipment creates a highly flexible and efficient automated kitting solution.



FlexiBowl® 500

Traditional Operating Mode

Results

In a groundbreaking move to enhance production efficiency and versatility, a project has successfully automated the kitting process, yielding remarkable results. The newly implemented system boasts remarkable adaptability, effortlessly handling a diverse array of components based on operator selection, eliminating the need for time-consuming manual reconfigurations. This robotic prowess is complemented by exceptional speed, achieving an impressive 80-90 picks per minute, far surpassing the capabilities of manual operations. Furthermore, the system exhibits remarkable scalability, designed to seamlessly accommodate an unlimited number of SKUs, catering to diverse product lines without limitations. This unwavering efficiency extends beyond regular working hours, as the system seamlessly operates unattended during off-shifts, maximizing productivity around the clock. To further streamline operations, the system incorporates automatic tool changing, ensuring smooth and rapid transitions between different component types, minimizing downtime and maximizing output. This transformative automation project ushers in a new era of flexibility and efficiency, revolutionizing the kitting process and propelling production capabilities to unprecedented heights.

Key Points



Kitting



Automatic Tool Changing



FlexiBowl®
500



FANUC
Robots



Wide variety of
components