Ars Automation
Application notes

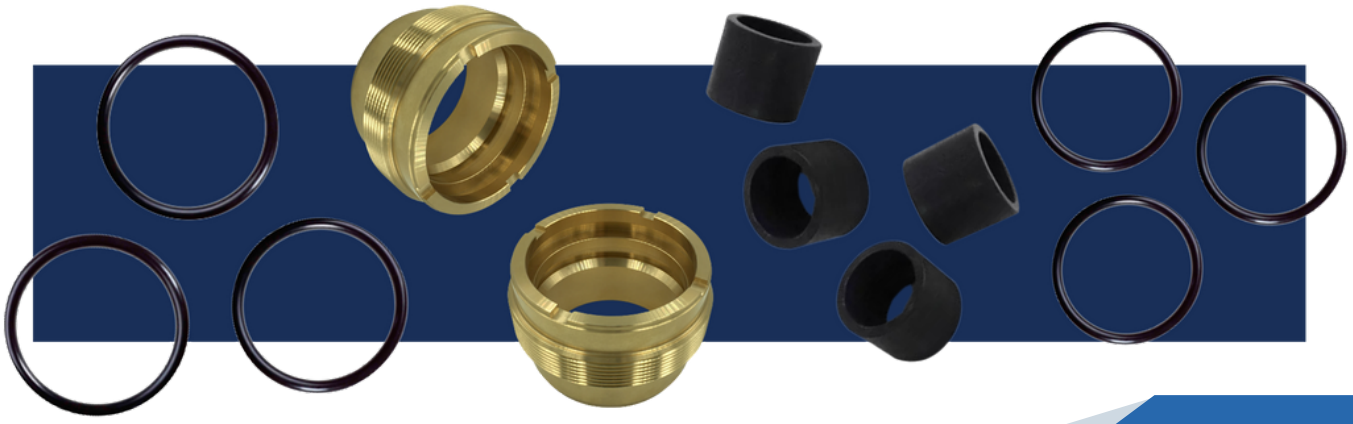
Case study: streamlining Press Loading for Hydraulic Component Production through Efficient Part Feeding: A FlexiBowl® Innovation

Industry insights

The hydraulic sector is highly demanding, requiring rigorous quality controls and adherence to high standards. The complexity of product design and the variety of materials involved further necessitate high-performing and flexible systems. Our partner, Ergonit, was tasked with the significant challenge of developing a solution for Interpump Spa to enhance both the quality control processes and efficiency of product handling.

Handled parts

The production process involved dealing with a variety of components, such as o-rings, bronze, and graphite parts, all differing in shape and material. A system capable of managing several different components in a compact layout was the need of the hour, necessitating flexibility, precision, and adaptability.



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The configuration

In response to these requirements, a robotic island was created for the press loading of hydraulic component assembly. The setup consisted of two FlexiBowl® 500 feeders, each with a 2-sector disc, and served by two hoppers dispensing different components.
The components were then handled by two collaborative Techman Robot (cobots) equipped with integrated cameras and dual End-of-Arm Tooling (EOAT) systems. This set up enabled the cobots to perform a pick and place task for the assembly process, ensuring a high level of quality.

FlexiBowl® 500

Multiple Parts Feeding

Quality Control

At each cycle, the cobots executed four optical checks and ultra-precise dimensional readings, thereby ensuring the accuracy of each assembly and guaranteeing that the product met Interpump's stringent standards.

Results

Featuring FlexiBowl® and Techman Robot cobots, this system ensures precise handling of diverse parts within a compact layout. With integrated cameras and dual EOAT systems, it guarantees precise component positioning and rigorous quality checks. The FlexiBowl® system's infinite recipe memory feature allows easy reconfiguration for feeding different components. This software-level capability eliminates the need for mechanical interventions, making the process flexible and adaptable through programming changes.

Key points

Hydraulic industry | Press Loading | FlexiBowl® 500 | Techman Cobots | Precise Insertion