

Compact and Flexible Line for Feeding and Assembling 6 Different Components

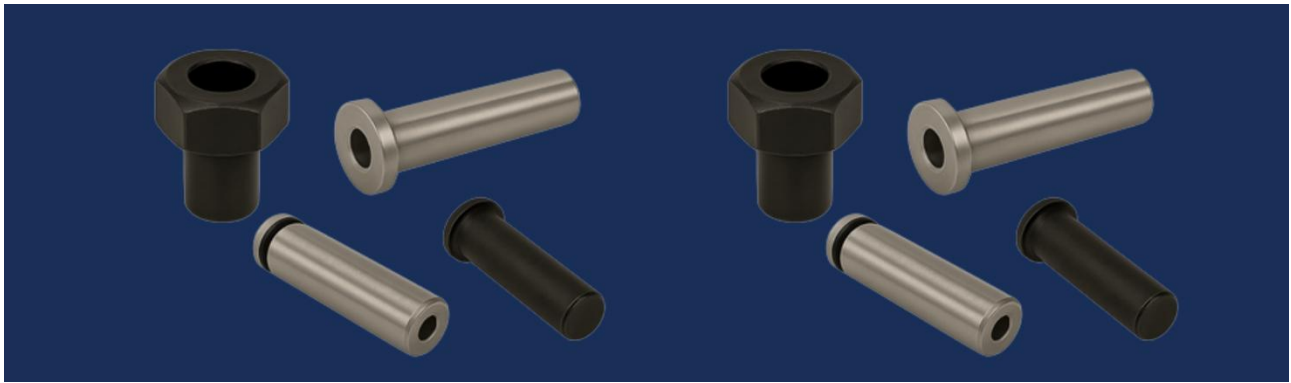


The industry

In the automotive sector, the ability to produce flexibly has become an **essential requirement** to remain competitive. Companies often have to manage an **increasing variety** of different components, **small batch sizes**, and **frequent format changes**, all within **limited production space**. In this specific project, the customer needed to assemble **six different parts**, each with about **six dimensional and geometric variants**. The **cylindrical shapes** of the parts, with their natural tendency to roll, made handling even more complex. In such a context, a **traditional system** would have required **long downtimes** for each product changeover, with a negative impact on productivity.

Handled Parts

The fed parts are **cylindrical**, therefore **unstable** and prone to **unwanted rolling** during handling. Moreover, the presence of **multiple dimensional variants** required a feeding system that could **adapt without mechanical interventions or continuous adjustments**. It was therefore crucial to have a solution capable of ensuring **correct orientation** and **continuous feeding**, regardless of part geometry.



The Configuration

To solve these challenges, a **compact, modular** and **highly flexible solution** was developed:

- **2 FlexiBowl® 800 units** in **standard operating mode** equipped with **Spike disk**, ideal for stabilizing components and simplifying the robot's pick-up operations.
- **2 FlexiBowl® 800 units** in **multiple parts feeding mode**, allowing the loading of different parts at the same workstation, avoiding constant configuration changes and **drastically reducing set-up times**.
- **Two robots:**
 - An **Epson SCARA robot** for handling the first four parts
 - A **Kawasaki anthropomorphic robot** for the last two, with a **larger working area** and **great operational flexibility**.



FlexiBowl® 800
Multiple Parts Feeding

The entire system — from **vision system** to handling and assembly — was **designed and built internally** by Sormec, ensuring a **continuous workflow**.

Results

The main advantage of this solution is the ability to **switch from one format to another without set-up time**, always maintaining **high picking and positioning accuracy** thanks to the vision system. The use of **FlexiBowl®** made it possible to eliminate **mechanical components** subject to wear or manual adjustments, while the **compact layout** made it possible to adapt the system even to **limited spaces**, without sacrificing **productivity (120 parts/hour)** or **accessibility**.

Key Points



Automotive



Assembly
Process



FlexiBowl®
800



Epson +
Kawasaki



6 parts in several
different variants