

5 Signs Your Production Line Needs Flexible Feeding

If you're seeing inefficiencies in your line, it may not be your robot, your PLC or even your cycle time strategy, it may actually be your adopted feeding system.



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Across the UK manufacturing landscape, the pressure is clear: higher product mix, shorter production runs, and increasing automation expectations. Yet, one bottleneck persists across many different sectors, from medical devices to precision engineering: part feeding.

Traditional feeding systems, especially low vibratory bowl feeders, were never designed for the demands of today's high-mix, low volume environments. They are rigid, part-specific and expensive to retool. If you're seeing inefficiencies in your line, it may not be your robot, your PLC or even your cycle time strategy, it may actually be your adopted feeding system.

Below, we look at five technical signs that your production line is ready for flexible feeding and how the Asycube Flexible Feeder, along with the Asyfill Smart Hopper and Eye+ cohesively address them.

Frequent Changeovers Are Killing Your OEE

One of the clearest indicators that a production line has outgrown its current traditional feeding choice is the frequency and cost of changeovers. Traditional bowl feeders rely on mechanically defined tooling to orient and present parts, which results in a physical modification for every new part. This introduces downtime, increases engineering overheads and ties capital expenditure directly to product variety.

Flexible feeding fundamentally evades this dynamic. The Asycube Flexible Feeder from Asyryl replaces the need for mechanical intervention with programmable motion, using controlled vibration across three axes (X, Y and Z) to influence part behaviour. Instead of redesigning tooling, engineers can adjust vibration parameters such as frequency, amplitude and sequence through software recipes.

This enables rapid transitions between products without physical intervention, aligning closely with the high-mix, low-volume production strategies increasingly adopted across UK manufacturing.

Your Parts Are Too Complex (or Too Delicate)

As product parts become more sophisticated, so too do the challenges associated with handling their individual components. Complex geometries, lightweight materials and delicate surfaces often lead to issues such as tangling, nesting or damage when processes through traditional feeding systems. Recirculating tracks and aggressive vibration can exacerbate these problems, particularly in sectors such as medical devices and electronics.

Flexible feeding systems address this through controlled, multi-directional motion. The Asycube's vibration platform allows parts to gently be separated and reorientated without the need for mechanical guides.

This approach, supported by technical research by Asyri, enables reliable singulation across a wide range of geometries while minimising the risk of surface damage. Platform variants, including those grooves or structured surfaces, further enhance passive orientation without introducing complexity.

The result is a feeding process that adapts to the part, rather than forcing the part to conform to the feeder.

You're Fighting Inconsistent Part Presentation

In many automated systems, inconsistencies in part presentation lead directly to reduced performance at the robot. Missed picks. Extended search times. Along with idle cycles are often symptoms of upstream instability rather than issues with the robot itself.

Flexible feeding systems integrate vision as a core component of the process. The Asycube is designed to work in conjunction with Eye+, Asyri's vision and control solution, creating a closed-loop system in which vibration and detection are continuously synchronised. Integrated backlighting enhances contrast, allowing the vision system to reliably identify part position and orientation even in challenging conditions.

By combining intelligent vision with adaptive vibration, the system ensures that parts are consistently presented in robot-ready states. This not only improves pick success rates but also stabilises cycle times, which is critical in high-precision manufacturing environments

Your System Relies on Pneumatics or High-Maintenance Components

Legacy feeding systems often depend on compressed air and mechanically complex assemblies, both of which introduce inefficiencies and maintenance burdens. Pneumatic systems, in particular, are energy-intensive and can be difficult to control with the level of precision required for modern automation.

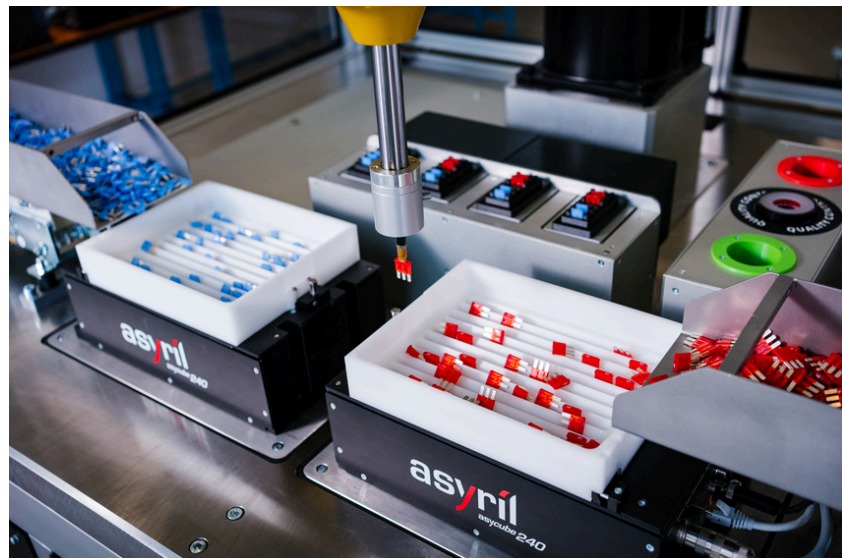
The Asycube platform is driven by advanced electromagnetic actuators based on voice coil technology. These actuators enable highly precise and repeatable motion without the need for compressed air. From an engineering perspective, this represents a shift towards software-defined control of part movement, where motion profiles can be tuned and optimised digitally rather than mechanically.

In addition to improving efficiency, this approach reduces wear, simplifies maintenance, and isolates vibration within the system, preventing unwanted transmission to surrounding equipment.

Your Feeding System Doesn't Scale with Automation

As UK manufacturers continue to invest in robotics, the limitations of traditional feeding systems become more pronounced. Integration challenges, limited communication capabilities, and large physical footprints can all hinder the scalability of automation projects.

Flexible feeding systems are designed with integration in mind. The Asycube supports standard industrial communication protocols and is compatible with major robotic platforms, allowing it to be deployed as part of a cohesive automation cell.



Its compact design reduces spatial constraints, while its digital configurability simplifies commissioning and ongoing optimisation.

Supporting this ecosystem, the Asyfill Smart Hopper provides a controlled and consistent supply of bulk parts to the feeding platform. By regulating part flow and minimising operator intervention, it ensures that the feeder operates under optimal conditions, further enhancing overall system reliability. Together, the Asycube, EYE+, and Asyfill Smart Hopper form a unified solution that scales with the demands of modern manufacturing.

The Bigger Picture: A Shift in Feeding Philosophy

The move towards flexible feeding is not simply a technological upgrade; it reflects a broader shift in how production systems are designed. UK manufacturers are increasingly operating in environments defined by variability, responsiveness, and constrained resources. In this context, systems that rely on fixed mechanical configurations are inherently limiting.

As highlighted in Asyri's technical papers, the combination of three-axis vibration and integrated vision enables a level of adaptability that traditional systems cannot match. By decoupling part orientation from mechanical tooling, flexible feeding allows manufacturers to respond more quickly to changing requirements while maintaining high levels of efficiency.

Final Thought

When a production line begins to struggle with changeovers, inconsistent feeding, or integration challenges, the issue often lies not in the automation itself, but in the way parts are delivered to it. Feeding is no longer a peripheral concern; it is a critical enabler of performance.

Flexible feeding systems such as the Asyri Asycube, supported by the Asyfill Smart Hopper and EYE+, represent a transition from rigid, hardware-driven processes to adaptable, software-defined solutions. For UK manufacturers seeking to remain competitive in an increasingly complex landscape, that transition is becoming essential.