

# Flexible Feeding vs. Bowl Feeding

**Vibratory Feeder Bowls** have long been used to feed/introduce small components into automation systems. Even though the basic technology has not changed in years there have been some upgrades to improve performance. A significant improvement has been the implementation of vibration monitoring. This technology automatically adjusts the frequency of the bowl system to maintain a constant vibration which results in a consistent feed rate, regardless of the component level, or load, in the bowl. This eliminates the need for operators to make adjustments to the bowl controllers throughout their shift.

## Pros

- Higher Feed Rates
- May have lower initial investment cost.
- In most cases no guarding is required.
- Present part(s) in required orientation consistently.

## Cons

- Dedicated to a specific part or requires tooling changeover.
- Can be noisy and require sound enclosure.
- Tight tolerances required on parts.
- May still require automation for orientation.
- Typically tied to only one piece of automation.
- Usually can't be re-purposed for other projects down the road.

**Flexible Feeding Systems** are quickly growing in popularity largely due to their versatility. In most cases, several different components can be fed through the same flex feeding system with minimal changeover. In a recent application, QSI implemented a flex feed system and a robotic automation cell into a customer's insert mold machine. This has allowed the customer to run multiple molded products with only a mold change and replacing the components in the flex feed system. All other changes are performed automatically. One item that separates the QSI Flex Feed System from the rest of the field is that it allows for automatic recirculation and reorientation of the components. If they cannot be picked by the robot on the first pass, they simply recirculate and are presented to the robot again.

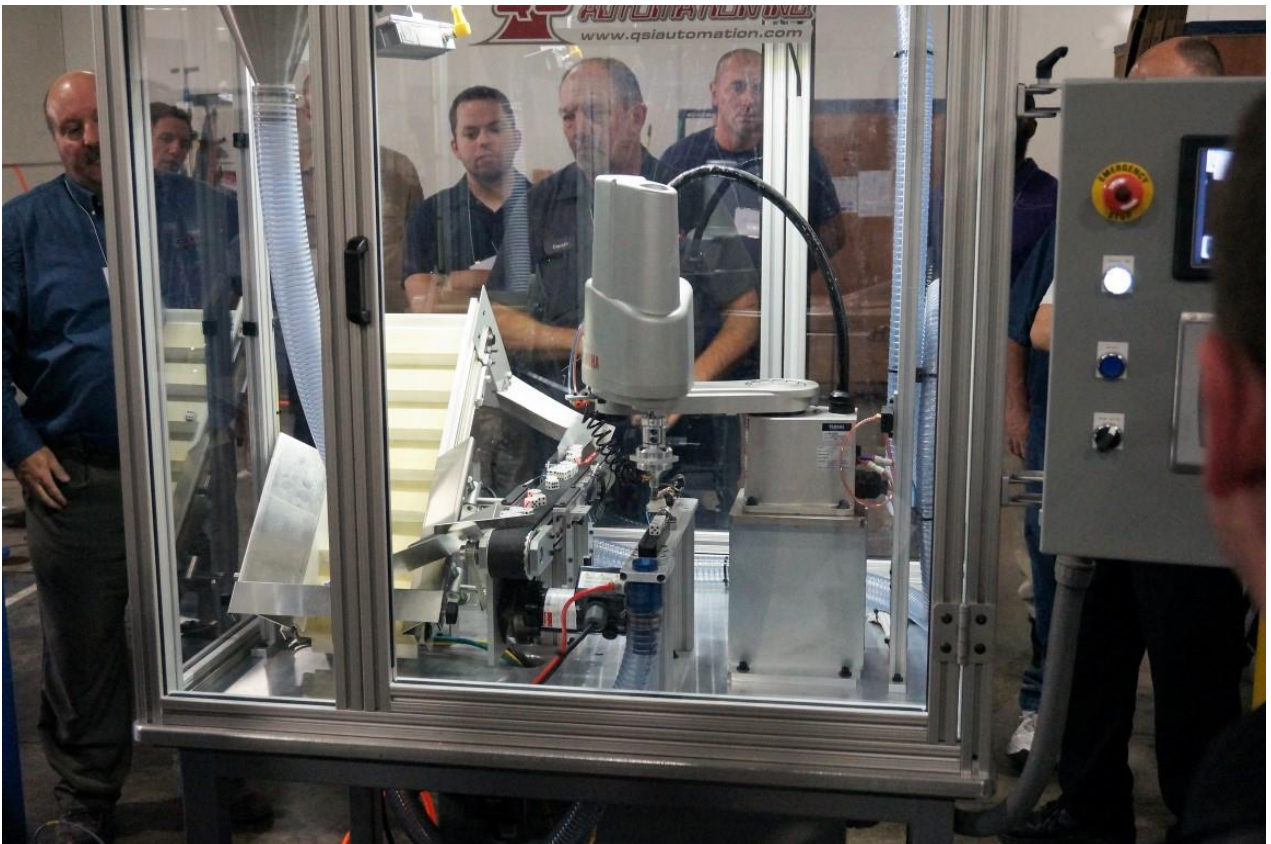
## Pros

- Can feed multiple types/sizes of parts.
- Minimal or no tooling changeover.
- In most cases a uniform footprint can be achieved when feeding parts of different sizes with the same system.
- Can be re-purposed for the next generation of parts.
- QSI Advantage – Automatic recirculation/reorientation of parts.

## Cons

- Typically, slower than feeder bowls.
- May have higher initial investment cost.
- Can require gripper/tooling changes.
- May still require automation for orientation.
- Typically tied to only one piece of automation.
- Usually can't be re-purposed for other projects down the road.

## Equipment on Display



[Link to QSI Website](http://www.qsiautomation.com)