Components for which systems are available

05/2026 | May | 2026

- FEEDING IN THE LATEST
- FEEDING OF PLASTIC RIVETS
- FEEDING OF BRASS INSERTS

Elscint Ahead

Feeding In The Latest . . .

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In this edition, you can read about two recently delivered bowl feeders. Both are smaller ones, having diameter of 200 mm only using Model 160. Smaller the bowl feeder, more complicated it becomes as there is less space to play around with for orientation. As always, you can download the pdf version of this newsletter as also the back copies of the Elscint Ahead Newsletter.

Feeding Plastic Rivets where head diameter equals length

When the head diameter of a rivet equals its length, orientation becomes a significant engineering challenge. Elscint recently resolved this "square geometry" issue for a client who was struggling with a failing Korean-made system that required constant manual intervention.

The Solution

By utilizing a stainless steel cylindrical bowl integrated with a high-precision machined track, we achieved seamless orientation where others failed. The system is powered by the Elscint Model 160 Drive Unit, known for its superior build quality and high-speed performance.

Key Features:

Precision Tooling: Machined tracks ensure parts don't tumble, despite their symmetrical dimensions.

Buffer Management: A 300 mm linear track ensures a steady, pressurized supply of rivets to the assembly point.

Reliability: The new system eliminated the need for manual clearing, offering truly "lights-out" operation.

The Result: A high-speed, maintenance-free solution that replaced a non-functional system, ensuring sustained ROI for the customer.

You can watch the video of the bowl feeder.

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Precision Orientation for Complex Brass Components

Elscint recently completed the design, manufacture, and successful commissioning of **three high-precision vibratory bowl feeding systems** for a prominent machine builder based in South India. This project involved the automated handling of three distinct, small brass components, each presenting unique geometrical challenges that required sophisticated mechanical tooling.

The Engineering Challenge

The primary objective was to achieve precise orientation of these parts before transferring them into a linear track for downstream processing. While the client's baseline requirement was a modest **20 parts per minute**, the physical characteristics of the components made orientation inherently difficult:

- **Component A (Rubber-Dampened Part):** This part featured a rubber dampener on one end and a slot on the other. Critically, the diameter was nearly equal to the height, a "square" geometry that typically makes stable orientation a significant hurdle in vibratory feeding.
- **Component B (Asymmetrical Brass Disc):** This disc required orientation based on a very subtle depth difference between its two surfaces. Identifying such minor dimensional variances at high speeds requires extreme precision in the bowl's internal tooling.
- **Component C (The Symmetrical Cup):** Similar to the first part, this cup's height-to-diameter ratio was 1:1. Differentiating the "open" end from the "closed" end when the dimensions are identical requires "intelligent tooling" to exploit the component's center of gravity and internal features.

Innovative Tooling & Performance

Despite these complications, Elscint's engineering team developed customized mechanical gates and orientation features that simplified the process. By leveraging the specific center of gravity and minute external features of each part, the "difficult" orientations were handled with seamless reliability.

The results far exceeded the initial project specifications:

- **Throughput:** While 20 PPM was requested, the systems achieved a consistent **60+ parts per minute** for all three components—a 300% increase over the required speed.
- **Turnaround Time:** Demonstrating our commitment to lean manufacturing, the entire project—from design to final testing—was completed within just **three weeks**.
- **Early Delivery:** The systems were dispatched well ahead of the contractual deadline, allowing the machine builder to proceed with their assembly schedule without delay.

Key Highlights of this Project:

Feature	Requirement	Achievement
Feed Rate	20 Parts Per Minute	**60+ Parts Per Minute**
Lead Time	Standard Industry Lead Time	**3 Weeks (Early Dispatch)**
Complexity	1:1 Aspect Ratios	**100% Orientation Accuracy**

You can watch the video of the 3 bowl feeders here.

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