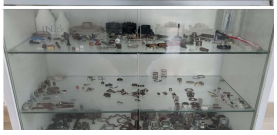
Components for which systems are available



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- FEEDING IN THE LATEST
- SIX BOWL FEEDERS FOR SOUTH INDIA
- STACKING & SINGULATION OF O RINGS

Elscint Ahead

Feeding In The Latest . . .

Monish Shete

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Welcome to the June edition of the Elscint Ahead Newsletter. In this edition, you can read about recently delivered projects. The first consisted of 6 bowl feeders supplied to a single customer in Kerala while the second was for a machine builder in Bangalore. As always, you can download the pdf version of this newsletter as also the back copies of the Elscint Ahead Newsletter.

Six Vibratory Bowl Feeders for a Machine Builder in South India

Elscint recently manufactured and supplied six large bowl feeders. The project required feeding various connector components—including housings, levers, covers, and seals—with relatively large dimensions

The Challenge: Oily Seals and Noisy Plastics While most of the components were made of hard plastic, two of the parts were rubber seals. These seals presented a unique feeding challenge: they were heavily coated in oil, causing them to stick to each other and to the sides of the bowl. Elscint applied its popular **Elscinthane PU coating** to all the bowls, customizing the finish based on the part:

- **Specifications & Design** The complete feeding system was designed with space-saving features and high-level functionality.
- The setup included -
- **Bowl Configurations:** Four parts utilized the **Model 400** drive with cast aluminum bowls, while the remaining two utilized the heavy-duty **Model 630** drive with stainless steel bowls.
- **Space-Saving Mounting:** Each bowl feeder was mounted on a separate single-post stand featuring a (+/-) 100 mm height adjustment and a circular mounting base plate to conserve floor space.
- **Acoustic Enclosures:** Every unit was fitted with a customized, circular mild steel enclosure topped with a see-through polycarbonate cover for easy monitoring.
- **Level Control:** A flap-type level controller arrangement was integrated to automatically signal the customer's system when the parts level in the bowl runs low.
- **Linear Tracks:** Each system fed into an 800 mm to 1000 mm long linear track for final orientation and transfer.

Acceptance Test (FAT). Thanks to the precise engineering and problem-solving the inspection was successfully concluded within just half a day, and the equipment was promptly dispatched to the customer's location. You can watch the video of all the bowl feeders here.

Elscint Automation
W-191 Bhosari MIDC
Pune 411 026. India Tel.: +91-8600122059
Email – sales@elscintautomation.com
Website – www.elscintautomation.com

Stacking & Singulation of thin O Ring with one end open

Component Open O-Ring, Ø20 mm × 0.8 mm

Output Achieved - 30 parts/min (2× target)

When a customer approached Elscint needing a reliable feed system for a uniquely tricky component — an ultra-thin O-ring with one open end — our engineering team knew this was not a standard application. What followed was a study in creative problem-solving, precision tooling, and the kind of results that speak for themselves.

The Component

The part in question was a small steel O-ring, 20 mm in diameter and just 0.8 mm thick, with one end open. Despite its modest size, this component presented a formidable automation challenge. Its extreme thinness made it prone to nesting and tangling, while the open geometry demanded consistent, repeatable orientation for downstream robotic pick-up.

The Challenges

01 Entanglement - Parts arrived in bulk and consistently clumped together, making single-file flow through the bowl nearly impossible without intervention.

02 Orientation - Each O-ring had to be presented with its open end facing precisely rearward — a non-trivial requirement for a thin, flexible steel component.

03 Fragility - The soft steel material demanded a gentle handling approach to avoid deformation during feeding, stacking, and presentation.

04 Throughput - The customer required a sustained output of 15 parts per minute — a rate that needed to be met consistently, not just in peak bursts.

Our Solution

Stage 1 — Disentanglement at Source - Custom wipers were designed and positioned at the base of the vibratory bowl to break up clusters of tangled O-rings before they could travel up the track. This single innovation was the key to achieving

Stage 2 — Controlled Singulation - With entanglement resolved, parts moved up the track in an orderly single-file stream, properly spaced and ready for orientation.

Stage 3 — Precise Orientation - Tooling within the bowl track oriented each O-ring so its open end faced away toward the bowl centre — the correct position for stacking and downstream presentation.

Stage 4 — Stack, Slide & Present - Oriented parts were guided onto a stacking row, maintaining consistent alignment. A pneumatic slide — actuated by a Festo cylinder — advanced the stack one part at a time, presenting a single O-ring, open side rearward, for pick-up by the customer's robot.

2× Target Output Exceeded - 30 Parts per Minute Achieved - 100% Orientation Consistency

Where the customer needed 15 parts per minute, Elscint delivered 30 — with correct orientation maintained throughout. The result was a robust, reliable system that integrated seamlessly into the customer's robotic assembly line.

Why It Matters

This project is a strong example of what sets Elscint apart. Off-the-shelf bowl feeders are not designed for components like this. Success required a thorough understanding of part behaviour, creative mechanical design — particularly the wiper system — and careful integration of stacking and pneumatic presentation mechanisms.

If your production line includes components that have been deemed "too difficult" for automated feeding, we'd like to hear from you. Difficult parts are where Elscint does its best work.

You can watch the video of the equipment.

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