



▶ FEEDING IN THE LATEST

▶ BOWL FEEDER FOR RECTANGULAR PLASTIC PART

▶ SINGULATION & GATE SORTING



Elscint Ahead

Components for which systems are available

Feeding In The Latest . . .
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Welcome to the June edition of the Elscint Ahead Newsletter. The first news story of this edition is about a recently supplied bowl feeder to the Czech Republic. The second news story is about a complete automation supplied for eddy current testing. As usual you can download the [pdf version](#) of this newsletter as also the back copies of the [Elscint Ahead Newsletter](#).

Bowl feeder for rectangular plastic part shipped to Czech Republic

[Elscint](#) recently manufactured and supplied a vibratory bowl feeder for feeding of a plastic part which did not rest on its base properly. The reason was that the base was at a 34 degrees angle. The part was such that the permutations and combinations in which it could come were more than 8 and only one type was to be used. The length of the part was 70 mm and speed required was more than 30 parts per minute. This was a challenge which most bowl feeder manufacturers in Europe were not ready to take. Elscint took this up and achieved a speed of more than 35 parts per minute. A cast aluminium bowl was used with the tooling being in stainless steel. A linear track was attached in front of the bowl feeder. The track was completely machined from stainless steel. The required speed with the orientation was achieved by tilting the parts such that two types of the parts (2 out of 8) could be used instead of 1 out of 8. This helped increase the speed. The equipment was completed with the committed date and dispatched by airfreight to the customer location in the Czech Republic. [You can watch the video here.](#)



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Heavy Duty Elevator with bowl feeder for singulating & gate sorting of heavy parts

Elscint recently manufactured a 100 ltr. heavy duty hopper elevator along with a vibratory bowl feeder and a singulating and gate sorting mechanism for Eddy Current testing of various parts. The parts ranged from diameter 30 mm to 75 mm and ht / length varied between 15 mm to 150 mm. There were basically two families of parts, one where the diameter was between 50 mm to 75 mm with the ht varying from 15 mm to 30 mm and second, where the diameter as between 30 mm to 50 mm with the length varying from 100 mm to 150 mm.

Orientation – The parts where the diameter was more than the height were taken in flat orientation. Here too some parts had a small boss on one side, orientation was done w.r.t. this boss. The other family of parts where the diameter was less than the length were oriented in lengthwise direction. This ensured that all the parts were fed in the same bowl with the least changeover tooling.

Hopper - A 100 Ltr. Stainless Steel Hopper was designed with the loading height at about 600 mm from the ground level where the parts could be dumped. The requirement was to ensure than 500 kgs of parts could be accommodated in this hopper. The hopper was designed that more than this quantity was easily accommodated.

Elevator - The elevator was made of mild steel slat chain belt conveyor with a 450 mm width. The parts moved up the slates and then fell down from a outlet chute which emptied into a window provided on the top of the vibratory bowl feeder enclosure. The window was provided with a returnable flap so that the heavy parts falling down do not damage the bowl due to their fall.

Safety features - The moving parts of the Elevator were completely enclosed and concealed as a safety precaution with a top see through polycarbonate cover with hinges for easy loading of parts into the elevator. The Gearbox was fitted with a torque arm with a limit switch to ensure that the motor would trip in case of overload. There was a level controller in the bowl which provided feedback to the motor when to start / stop.

Construction of the Elevator -The construction was in M.S. Square tubular structure. The total weight of the equipment being more with the chain belt itself being 60 kgs, this was required to be sturdy and robust.

Vibratory bowl feeder - Model 630 Vibratory bowl feeder was used for this application, considering the size and heavy nature of the parts. Model 630 has a loading capacity of 60 kgs and has a total of 4 coils mounted on the periphery, making it most suitable for such applications. Easy changeover was provided for the various parts inside the bowl feeder. The bowl feeder was provided with double coating to ensure that the noise level is less. With the enclosure, the noise level was restricted to less than 74 Db.

Noise Enclosure - The vibratory bowl feeder was provided with a circular noise enclosure lined with acoustic foam and with a top polycarbonate cover.

Gravity chute with Escapement / Singulator - After coming out of the bowl feeder, the parts slid down on a gravity chute fixed at an angle of 30 degrees, making it easy for all the parts to slide down easily. On the gravity chute itself, two cylinders were fixed for singulation / escaping of one part. The cylinders were provided separate slides so that the heavy parts do not affect them. The parts were stopped between the cylinders for checking / eddy current testing. After the testing was complete, one was released.

Gate Sorting Mechanism - Thereafter, a gate sorting mechanism was provided for ensuring the OK parts go into the correct Bin and the NG into the other bin kept for the same. This was done based on the feedback received from the Eddy Current testing results. This too was done with on a Festo make cylinder.

Stand - The vibratory bowl feeder and the gravity chute mounting the escapement, gate sorting as well as the electrical panel was mounted on a single robust stand which was duly powder coated and provided with levelling pads with provision for grouting the same.

Construction - The complete construction of the equipment was robust and heavy with excellent build quality which is the hallmark of Elscint products. The equipment along with the complete electrical panel was completed in record time and dispatched to the customer's place in South India.



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