

Elscint Automation

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Case Study – Elscint Vibratory Bowl Feeders for feeding of Fins

Industry - Engineering Industry

Requirements -

1. Feeding of 3 types of Fins (large as well as small)

Orientation – Cutout away from bowl centre

Speed / Feed Rate – 60 pieces / Minute

Accessories provided –

1. Elscinthane PU coating
2. Stand
3. Gravity chute
4. Noise Enclosures
5. Escapements
6. Level controllers

Vibrator Model –Model 250

Description -

Elscint manufactured a bowl feeder for feeding of fins. These fins are welded on tubes. The requirement was for feeding of two fins at a time. There were a total of three types of fins which the customer used at different points of time. The scope of work entailed providing changeover tooling for accommodating of the three types of fins. The maximum size of the fin was 60 mm width x 120 mm length while the minimum size was 15 mm width x 30 mm length. The thickness ranging from 0.8 mm to 3.00 mm. Elscint designed a bowl with least amount of changeover which accommodated all the three fins. Two bowl feeders were supplied, one clockwise while the other being anti-clockwise, each feeding one fin each. A very long gravity chute of 3 metres was provided to take the fins from the bowl feeder to the welding fixture of the customer. A small changeover was provided in this chute to accommodate the three sizes. An escapement mechanism was provided at the end of the chute to ensure that one component is released at a time. The standard Elscint escapement was used with slight modification to suit the different types of fins. The fins being metallic and the bowl being made of stainless steel, a lot of noise was expected, however, Elscint coated the bowl with its popular Elscinthane PU coating, thus reducing the noise level drastically. Additionally, a mild steel noise enclosure was provided which was lined with acoustic foam to reduce the noise level to a very manageable 70 Db. An acrylic top cover was provided for the noise enclosure. Hinges and knobs were provided on the same at strategic locations to ensure that the operator can see the component level as well as top up the bowl feeder. In addition to



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this, a low level indicator was provided on the control panel to ensure that the operator is made aware if the level of components in the vibratory parts feeder reduces. As is the normal practice with Elscint, a poka-yoke was provided by giving an extra sensor to sense any wrongly oriented component in the chute. However, due to the intricately made orientation tooling in the bowl feeder, the chance of a wrong component coming out are negligible. The customer works in an environment where he requires to continuously switch between his own generated genset power and the power provided by the state utility. As there is always a difference between the input frequency of the two, a frequency controller was provided to maintain constant output frequency and voltage. As usual, the Elscint vibratory feeders provided were CE approved, conforming to the stringent European safety standards. Another requirement of the customer was to have the control panel at a different location while the potentiometers and emergency switches be kept near the operator.

Further operation -

Feeding to Welding fixture

