



Components for which systems are available

▶ FEEDING IN THE LATEST

▶ FEEDING OF STEEL BUSHES

▶ IMPROVING PERFORMANCE OF AN OLD VIBRATORY FEEDER
– TIGHTENING OF SCREWS

Elscint Ahead



Feeding In The Latest ...
Monish Shete

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There has been quite some bad news recently, first the RBI increasing rates for the 10th time in a row and secondly vehicle sales falling drastically in July in India. Hopefully, this will be the last increase in rates as a downward trend in business looks imminent. However, this makes it more and more imperative for all of us in the manufacturing industry to go for automating existing processes. Coming to this edition of the Elscint Ahead newsletter, the first news item is about a recently supplied bowl feeder for feeding of steel bushes in two rows along with an escapement while the second item is from the series on how to improve your present vibratory feeder. This is the 3rd item from the 10 part series.

Feeding of Steel Bush in Two rows with Escapement

Elscint recently manufactured a vibratory Bowl Feeder for feeding of bushes in two outlets. Additionally, Elscint provided a double escapement to release one bush from each of the rows simultaneously on receipt of a signal (from the customer's PLC). Further a sensor was mounted on both the outlet chutes ensuring that the bowl feeder was switched off once both the chutes were full. This was including the overflow arrangement which is provided in most Elscint bowls. As the customer's cycle time was much less (3 parts per minute per row) as compared to the speed of the bowl feeder (50 parts per minute per row), this ensured that the bowl feeder remained switched off most of the times, reducing not only the power consumption but also the noise level. The double escapement (to release one bush at a time) was designed in such a way that only a single Festo make cylinder was used for this purpose.



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Part 3 - Improving performance of an vibratory feeder - Tightening of screws

A vibratory bowl feeder is constantly vibrating. Due to continuous vibrations, there is a tendency for all the screws of the vibratory bowl feeder to get loose. This extends even to the screws by which the bowl is fixed to the vibratory drive unit. Hence, a part of the preventive maintenance procedure for any vibratory bowl feeder is to tighten the screws on a regular basis. There are four types of screws which need to be tightened –

1. The screws whereby the bowl is fixed to the vibratory drive unit (1 to 12 depending upon type of vibrator and the model)
2. The screws by which the springs are fixed to the drive unit (3 to 4 packs)
3. The screws which fix the magnet (2 places x 1 to 4 magnets)
4. The screws which fix the coils (2 places x 1 or 4 coils)

Tightening of all these screws on a regular basis will improve the performance of the vibratory parts feeder tremendously. The frequency of tightening of these screws should be around 1 to 8 weeks depending upon the usage, type and make of vibratory bowl feeder.

How to decide on the tightening frequency -

1. A half wave vibratory bowl feeder vis a vis a full wave one requires frequent tightening – 2 weeks for a

half wave vibratory feeder and 6 to 8 weeks for a full wave vibratory feeders

- the reason being that the vibrations are smooth in case of a full wave vibratory feeder
2. A fabricated vibrator base vis a vis cast iron base – 2 to 3 weeks for a fabricated base and 6 to 8 weeks for a cast iron one
 - the reason being that the fabricated base would have a lot of welding stresses which will result in the screws loosening out more frequently.
 3. Fabricated Stainless steel bowl vis a vis cast aluminium bowl - 2 to 3 weeks for a fabricated bowl and 6 to 8 weeks for a cast aluminium one
 - the reason being that cast aluminium bowls work more smoothly and are perfectly balance while fabricated bowls tend to be unbalanced and are more heavy.

Thus the best results are for a well made full wave vibratory bowl feeder having a cast iron base with a cast aluminium bowl. Such bowl feeders require very less frequent tightening of bolts / screws.

Read more - <http://blog.elscintautomation.com/post/Improving-performance-of-an-old-vibratory-feeder-e28093-Tightening-of-Screws.aspx>



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