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▶ FEEDING IN THE LATEST

▶ ELSCINT VIBRATORY BOWL FEEDER FOR ENGINE VALVE COLLETS

IMPROVING PERFORMANCE OF AN OLD VIBRATORY FEEDER – TUNING THE VIBRATORY FEEDER

# Elscint Ahead



Components for which systems are available



*Feeding In The Latest . . .*

*Monish Shete*

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October has started on a sad note about Steve Jobs death. He truly was an icon and visionary, to say the least. Hopefully, there will be somebody to emulate him at Apple. Coming to this edition of the Elscint Ahead newsletter, the first news item is about a recently supplied bowl feeder while the second item is from the series on how to improve your present vibratory feeder. This is the 5<sup>th</sup> part from the 10 part series.

## Elscint Vibratory Bowl Feeder for feeding Engine Valve

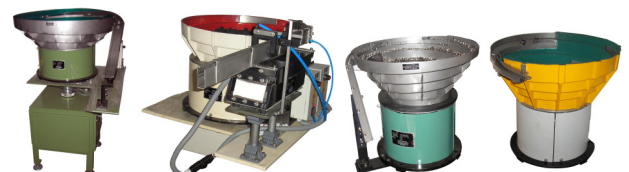
Elscint recently completed an order which required two collets to come out side by side in the opposite orientation. The Engine Valve Collets are used as a pair to hold the inlet and exhaust valves in the engine. These are used widely in all four-stroke internal combustion engines. Collets are very small parts (5 to 10 mm in length) with one side slightly tapered at just 5 degrees and half cut. Feeding and orienting them is always a challenge. However, Elscint has designed a bowl which not only orients and feeds the collets but also a very high speed of almost 80 to 100 collets per minute is achieved per bowl feeder. This is more than sufficient for the automatic assembly of the engine valves. In this case, two Model 250 vibratory bowl feeders were used, one clockwise and one anti-clockwise.

The orientation tooling for both the bowl feeders was the same. After the bowl feeders, the collets were passed through a gravity chute and a singulator / escapement was provided which held back the collets while a single one was released on receipt of a signal from the customer. Further, Elscint also provided feeding of the rest of the parts, namely, the spring valve and the retainer valve spring. The collets being very small, all the parts had to be machined with high accuracy and tooling too had to be very accurate.



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## Improving the performance of an old Vibratory Bowl Feeder - Tuning of the Vibratory Feeder

As time passes, over a longer duration, the vibratory feeder needs to be retuned to ensure that it performs to its optimum performance. For tuning the vibratory feeder, the following procedure needs to be followed.

1] Remove the cover of the drive unit of the bowl feeder.

2] Start the bowl feeder and with the help of the regulator set the input voltage to 80% of the rated voltage of the coil for the model you have selected (refer to technical data table above)

3] Slowly loosen the bottom screw of one of the spring packs. As this screw is being loosened there will be a change in the feeding speed of the workpieces. If:

- The feeding speed decreases, install additional springs. To start with add one spring in one spring pack, if this is not adequate then add one by one additional springs in the remaining spring packs. Repeat this procedure if feeding speed is not adequate.
- The feeding speed increases, remove springs from the spring pack. To start with remove one spring from one spring pack, if this is not adequate then remove one by one springs from remaining spring packs. Repeat this procedure if feeding speeds are not adequate.

4] If feeding speeds on the periphery of the bowl are irregular, then:

Remove one spring from the slow feed zone.

Add one spring to the fast feed zone.

5] If the feeding speed is irregular on a track which is in between two spring packs, then you may add or remove the spring behind the irregular spot. This is to be seen with respect to the hand of the bowl.

(read more at <http://blog.elscintautomation.com/post/Improving-performance-of-an-old-vibratory-feeder-e28093-Tuning-of-the-bowl-feeder.aspx>)



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