Elscint Automation
W-191 Bhosari MIDC, Pune 411 026
Tel.: 27122059 Fax :+91-20-27122994
E-mail: sales@elscintautomation.com
Website: www.elscintautomation.com

Case Study – Elscint Heavy Duty Cage Stacking Machine

Industry – Bearing Industry

Component – Cages having diameter from dia 60 mm to dia 110 mm

Requirements –

1. **Speed – 60 pcs / Minute**
2. **Orientation – Stacked with one particular side up**

Vibratory bowl feeder Model - Model 400

Description –

Elscint has developed a very innovative machine called the Elscint Heavy Duty Stacking Machine. This Machine is useful for stacking items like Bearings Cages and such other components which need to be orientated & stacked. Components having a hole in between can be stacked with Elscint Stacking Machine. This can find applications in the Bearing, Battery and such allied Industries. The machine consists of a hopper feeder having capacity of 50 litres / 130 Ltrs, a vibratory bowl feeder, chain elevator and pneumatic indexing table.

The bearing cages are loaded in the hopper, below which an Elscint linear vibrator is mounted. There is a level controller placed in the vibratory bowl feeder which actuates the linear vibrator once the level of components in the feeder bowl goes down. This results in the hopper feeding more components into the bowl feeder. The vibratory bowl feeder is used only to circulate the bearing cages. There is a slight slit in the bowl feeder from where the chain elevator picks up the bearing cages and takes them upto a height of 2 metres. Then the bearing cages are again got down by gravity on a fixed plate. The bearing cages are orientated while moving down and are dropped onto metal magazines (numbering nine). The orientation is done is such a way that one stack is of correct side up component while the next stack is of correct side down components. This way, all the components which are taken up are oriented and stacked, thus improving the speed of the complete machine.

The Metal magazines are mounted on a Festo make Indexing Table. A Sensor with a time delay facility is mounted to sense the component level on the metal magazine. When the components are filled upto the level of the sensor, the chain elevator is switched off and pneumatic solenoid is operated and the indexing table moves to the next stage, bringing the empty magazines at the loading stations. At this point the Elscint chain elevator starts again and the stacking operation continues.





Elscint Automation
W-191 Bhosari MIDC, Pune 411 026
Tel.: 27122059 Fax :+91-20-27122994
E-mail: sales@elscintautomation.com
Website: www.elscintautomation.com

In case the components cannot be stacked properly due to their in built dimension, an Elscint Agitator Vibrator can be provided at the lower level, having an angular holder where the Components will be resting while being stacked. This Elscint Agitator Vibrator is timed to start and stop, which imparts the vibration to the stacked components. Due to these vibrations the components, which are not stacked properly, are given rotary movement get properly stacked.

This system uses Elscint Vibratory Feeder Model 250 or 400, Elscint Linear Feeder Model I or II, Elscint Hopper Feeder, Elscint Indexing Table and Elscint Agitator Vibrator. The models are determined based on the component size and speed requirement. Such other custom built Automation Systems can also be manufactured according to user requirements using the above Elscint Products.