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Elscint Ahead

Components for which systems are available

Feeding In The Latest . . .

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Wishing you a very happy Holi! As usual this newsletter has two applications, the first is about feeding of a variety of barrels in the same bowl feeder. The difficulty lies in the fact that the orientation required was rolling and it was done with negligible changeover. The second application is about a recently supplied feeding system consisting of an heavy duty elevator along with a bowl feeder. You can download the pdf version of this newsletter as also the back copies of the Elscint Ahead Newsletter.

Feeding of Ceramic Barrels

Elscint recently supplied a vibratory bowl feeder for feeding of ceramic barrels used in manufacturing fuses. There were a variety of barrels which were to be fed in the same bowl feeder. The sizes ranged from dia 20 mm to dia 40 mm while the length was same i.e. 40 mm. Most of the barrels had the diameter less than the length, however, in one case, i.e. the largest one, the diameter was equal to the length. Wherever the diameter is equal to the length, there are complications in feeding of the same. The orientation required was “rolling” and speed or feed rate required was 30 parts per minute. Elscint designed a unique concept wherein the barrels were fed axially and then rolled out centrally. The advantage of this as against that of twisting each barrel to feed the same was that the changeover required was less as the length of all the barrels was the same. A small length chute was supplied along with the bowl feeder which was adjustable for the diameter of the barrel. A speed of more than 50 parts per minute was easily achieved for all the sizes of barrels. A cast aluminium bowl was used for this application duly coated with Elscinthane PU coating. You can watch the video of the bowl feeder.

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Heavy Duty Elevator Feeder with vibratory bowl feeder

Elscint, recently manufactured a 100 ltr. heavy duty hopper elevator along with a vibratory bowl feeder feeding of a bearing housing. The part was having a very critical orientation. The permutations and combinations in which the part could come out of the bowl feeder were 8 and this obviously resulted in less feed rate. However, the customer wanted a speed of 70 parts per minute. This was difficult to achieve in a bowl feeder. However, Elscint designed the bowl in such a way that most of the parts were turned in such a way that they would come in the correct direction.

Orientation – The component was having size 46 x 17 x 16 mm and as the length was 46 mm, it obviously resulted in lesser speed.

Hopper - As the bowl could accommodate just about 200 parts and the parts being very heavy (at 50 gms a part), 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 that at least 200 kgs of parts could be accommodated in this hopper. The hopper was designed such 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 the outlet chute which emptied into a window provided on the top of the vibratory bowl feeder enclosure. The window was provided with a returnable slat so that the parts falling down would not damage the bowl due to their fall. The slats were made of tool steel, hardened and ground for longer life and were replaceable.

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 400 Vibratory bowl feeder was used for this application, considering the size and heavy nature of the parts. Model 400 has a loading capacity of 30 kgs and has a total of 3 coils mounted on the periphery, making it most suitable for such applications.

Gravity chute - 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 the parts to slide down easily.

Stand - The vibratory bowl feeder and the gravity chute mounting was done on a single post stand with (+/-) 100 mm ht adjustment. The same 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 and dispatched to the customer's place in West India by a special vehicle.

You can watch the video of the equipment.

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