

CONVEYOR SYSTEM TO REMOVE DENTS ON BEARINGS

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ABSTRACT

In today's scenario maintenance of any machinery is very important in view of downtime of machinery. The bearing sector is one of the example without which not single rotating machinery work. Due to which, to make defect free and with best quality bearing which can sustain up to its maximum life. As assured to customer to produce good and proper quality of bearing and supply them, but due to some reason the customer complaints increased on behalf of DENT marks on bearing which not good for machines. As we have observed on machines the height of output of bearings after grinding is too large and there is manually drop in skid. So to overcome this difficulty we have planned to make a device name CONVEYOR SYSTEM to remove dents on it and to reduce height of drop in into the bin. Due to which somehow we can decrease it on some extent.

Keyword : - Bearings, Conveyor, Lifting and Unloading system.

1. TITLE-1 Problem Definition

The main problem arises and also observed the customer complaint that is dent/marks on bearing which usually arises at exit of the machine when the bearing drops at some height and due to dropping of bearing from that height occurs the dents on bearing due to accident between bearing to bearing in the bin/basket.

Chun-Hsiung Lan (2003): This study is deals with The design of a multi-conveyor system in supporting machine loading and unloading has become crucial to management. However, through the mathematical model proposed in this paper, this issue becomes realistic and concretely, the overall relevant costs and the determination of the number of conveyors into the objective, but also develops a two-staged method for optimization the combined problem to reach a maximum profit. Additionally, the versatility of this study is exemplified through a numerical example. Moreover, the computerized sensitivity analyses are discussed in this study. This paper contributes an applicable scheme for production manufacturing in design, and provides a valuable tool to conclusively obtain the optimal profit of a given production quantity for operations research engineers in today's manufacturing for profound insight.

1.1 Problem arises during manufacturing

The main problem arising during manufacturing in between machines are:

- Face unclean
- Outer unclean
- AR face damage
- Face cut mark
- Bore chamfer missing
- Snap ring

- Groove missing
- Chamfer
- Shield missing
- Face damage
- Outer damage
- Face burning
- OD mark
- Face mark
- Cage damage
- Outer crack
- Reverse shield
- Ball missing
- Marking defect
- Double marking
- Dent/mark

1.2 Solution of Problem

As per observing the picture above we have observed the problem and we thought to decrease the height of the dropping of bearing due to which the accident between the bearings will be decrease at some extent. Apart from this we have also thought to attach the conveyor system due to which the height of dropping and transferring of basket both problem can cured. After design of this project it will be sure that the problems of dents and scratches arises on bearing outer rings will be reduce fully.

2. Parts of our Project

- 1) Flat Chain Conveyor
- 2) KLT basket
- 3) Electric Motor
- 4) Base coloum

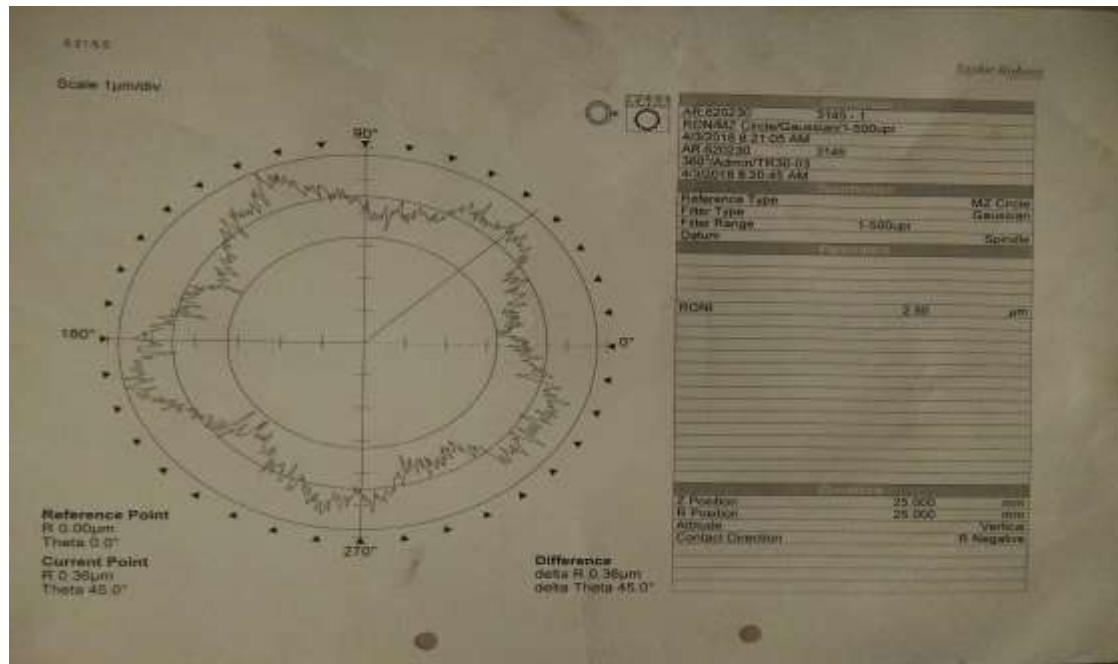


Chart -1 LAB Report:- Not OK Report-1

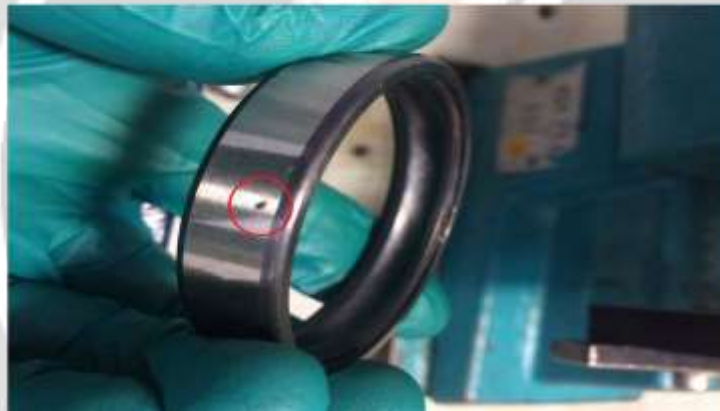


Figure 1 Problem arising during manufacturing

2.1 Parts specification

In today's industries the automation of any machines and technology of machines increases. In one of this one system name conveyor is the best part of any machine output system, for regular flowing of material from starting to end at end also up to dispatch. The term conveyor implies that the it takes the materials or any parts of material with automatic system either by motor or servo motor by means of little load. The main purpose of this conveyor is to bring smoothness and flexibility in the machine to give the proper methodology. A conveyor belt is the carrying medium of a belt conveyor system. A belt conveyor system is one of many types of conveyor systems. A belt conveyor system consists of two or more pulleys, with an endless loop of carrying medium—the conveyor belt—that rotates about them. One or both of the pulleys are powered, moving the belt and the material on the belt forward. The powered pulley is called the drive pulley while the unpowered pulley is called the idler pulley. There are two main industrial classes of belt conveyors; Those in general material handling such as those moving boxes along inside a factory and bulk material handling such as those used to transport large volumes of bearing components like outer race, inner race, cage, retainer, z-plate etc.

Table -1 Specification of conveyor:

3. Design

As per conveyor design we have make the model and reduces the drop height of bearing from the output of the machine and also due to this the results we have got is positive and OK results. The results is shown below.

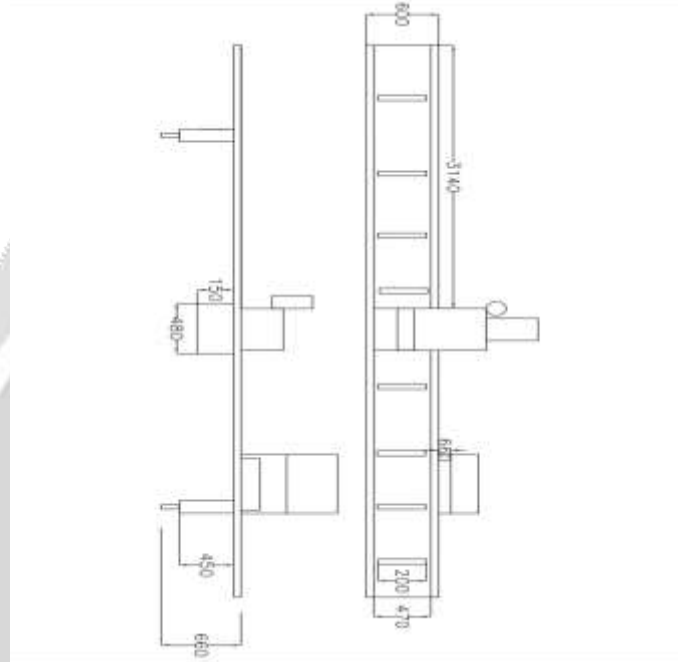


Figure ; -2 Design of conveyor

4. CONCLUSIONS

This research work has presented on the optimization of “ CONVEYOR SYSTEM TO REMOVE DENT ON BEARING”. Input parameters selected in the system is Conveyor speed, Motor, Bearing structure, the response was the dents reports which was well ok comparing previous reports. The conveyors parameters is well defined by using speed of bearing outputs.

- Best results of bearing obtained as taken the Roundness reports from Laboratory.
- Previous report taken without conveyor was 5pt roundness which is not OK and after conveyor system used the report roundness is ok upto its significant level.
- Also we have concluded that on some extent we can also decrease the customer complaint which was arises in previous years.
- The material handling which was bulky and irritating in skid to the operator is now become easily to handle and easy to operate.
- Now the customer complaint and hand work of labour is reduced.
- Operator work and helper work is reduced they feel free to work and enjoy the work.

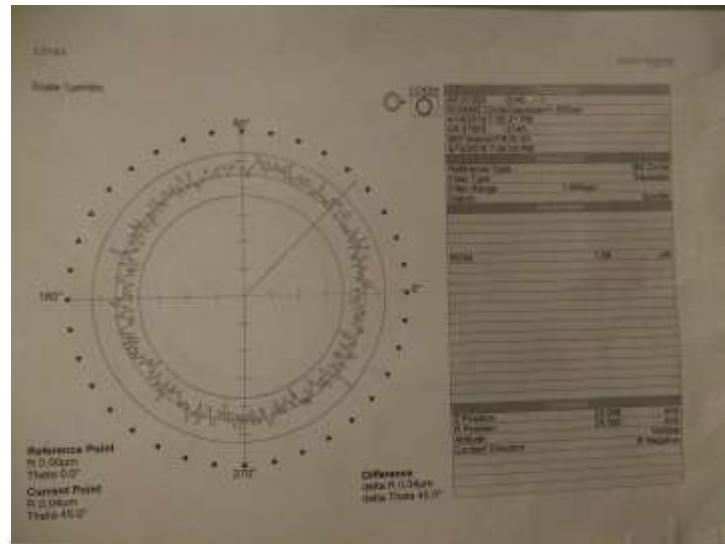


Figure Lab Report OK

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