

Scrap Reduction in Printing Area

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INTRODUCTION

The Printing area is part of the New Solutions Manufacturing Line. The facility has dedicated many years in Medical Devices products and now it is adding Solutions products. The construction of this line began back in 2012 and on March of 2017 the first commercial lot was manufactured. The New Solutions Manufacturing Line consist of different areas; Mixing, Printing, Filling, Pouching, Sterilizing and Packing. In Mixing the solution is prepared. The Printing machine prints PVC bags with the product information. In the Filler machine bags are filled with the solution. In Pouching bags are placed and sealed in an over pouch. Pouched bags are steam sterilized in a sterilization chamber. Sterilized pouches are packed in boxes and shipped to customers.

The objective of this project was to reduce the scrap major offender of the Printing area by at least 5%. To do so, the major offender of scrap defect from the Printing area needed to be identified as well as its potential root cause so it could be mitigated. The scope of this project was limited to only mitigating the major offender of scrap defects in the Printing area, any other defect found was not being considered.

ANALYSIS APPROACH

To determine the major offender defect of the Printing area data was collected from all of the lots manufactured to the date. On 24-Aug-2017 data was collected from March 2017 to July 2017. On March 2017 the first commercial lot was manufactured in the New Solutions Manufacturing Line that is why the data starts from this day, and by the time the data was collected the information from the August lots was not yet tabulated. From the collected data only five offenders were found in the printing area, as showed in Figure 1, even though not all defects were seen in every month. From Figure 1 it can be seen that the mayor offender of scrap in the printing area is illegible barcode. Therefore, the project is focused on solving the illegible barcode defect.

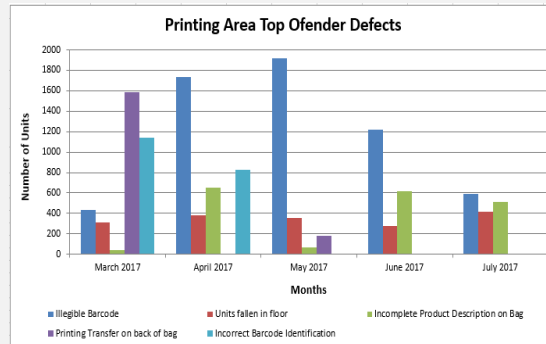


Figure 1
Printing Area Scrap Data

A fish bone diagram was created to identify the possible root causes for the defect of illegible barcode. Figure 2 shows the results of the Fish Bone.

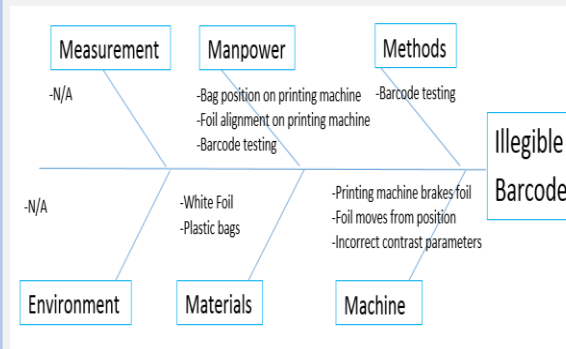


Figure 2
Fish bone Diagram

From the Fish Bone it was concluded that the possible root causes of an illegible bar code are: (1) foil alignment on printing machine, (2) printing machine brakes foil, and (3) foil moves from position. All of these three possible root causes are related to one another, therefore actions were implemented to mitigate these three possibilities.

RESULTS

To correct the three possible root causes two sensors were installed in the bar code station of the Printing machine. Figure 3 shows the position of the sensors installed. Sensor 1 stops the bar code station if it detects that the foil moves from position. This avoids an incomplete bar code on the bags. Sensor 2 stops Printing machine if there is no presence of foil. This avoids no bar code on the bags.

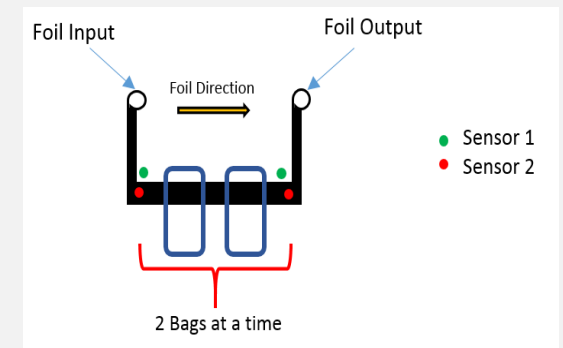


Figure 3
Bar Code Station on Printing machine

The implementation of these sensors provided an improvement on the illegible bar code defect. The sensors were implemented in mid-October and by mid-November a reduction of 9% was observed on the scrap for illegible bar code defect.