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Project Title: Reducing Defects at IFS Assembly

Research Symposium Abstract

This project addressed the quality problems on a crucial assembly line at Reyco Granning LLC. Located in Mt. Vernon, MO, Reyco Granning manufactures suspensions for the heavy-duty transportation industry. From October 2016 through January 2017, Reyco Granning had 67 defects on the IFS main assembly line that resulted in over \$22,000 in scrap, rework, and replacement costs. Because the IFS area accounts for 40% of the plant's business, it is essential that IFS products remain profitable and satisfy customers in order for the entire company to succeed.

The purpose of this project was to measure the line's current performance, identify the occurring defects, determine the root causes of the defects, and provide recommended countermeasures to improve the process. To do this, the project consisted of three phases: define, measure, and analyze. The define phase focused on understanding the problem, the assembly line process, and what is critical in order to satisfy the customer. The measure phase strategized and collected the data needed to identify the defects. The measure phase also collected data needed to determine the current performance of the line in terms of first pass yield and defects per unit. The analyze phase studied the occurring defects and determined the defects' root causes through the use of statistical tools and the knowledge of experienced workers.

The project determined that 7 defect types accounted for 96% of defects recorded in the collected data and 70% of defects recorded in the available historical data. To address these 7 defect types, the project created a detailed implementation plan with 14 proposed countermeasures. These countermeasures will be implemented by the company this summer

with the goal of reducing defects per unit by 50% and improving first pass yield by 50%. If the countermeasures are successful in meeting this goal, the project's estimated annual savings will be \$33,000 in scrap costs and 53 rework hours saved per year.