IE 3610 Team 8 Project Proposal

Team 8, consisting of Braden Skaggs, Jacob Roberts, Ryan Nagao, and Youngjae Cho, has teamed with Dee Zee Inc. to work on a quality assurance project regarding the Ford Motors portion of their Des Moines facility. In March 2025, Dee Zee will meet with their Ford Motor Company partners regarding the Ppk of various parts that the operators have measured throughout the past four years. Dee Zee is working on consolidating various histograms and charts to show an improvement in the quality of their parts and their conformance to the required tolerances and specifications set by Ford Motor Company as well as the process control variables required by Ford Motor Company, a Ppk value that is set at 1.33 by both Ford Motor Company and Dee Zee themselves.

After analyzing historical data on two parts in particular and reviewing DeeZee’s processes we found many sections of these parts that fall under the 1.33 Ppk value set. Specifically, we found that 24 out of the 44 given measurement values (22 points x 2 parts) do not reach the targeted Ppk threshold. In discussion with the team from DeeZee, we also found that certain low Ppk measurements were associated with points that were susceptible to reproducibility variation for various reasons (an example being measuring the height of a point off a diagonal plane means variance in measurement based on part location).

Thus, we believe the best course of action is to perform a Gage Repeatability and Reproducibility study on DeeZee’s laser measuring system. This Gage R&R study will be conducted within the next few weeks at which point in time we will determine how to fix the conformity errors based on the results of that study.

Project Timetable

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| Task | Expected Completion | Status |
| Perform Gage R&R | 11/8 |  |
| Analyze Gage R&R Data | 11/12 |  |
| Provide Process Fix | 11/15 |  |
| Additional | 11/15 - 12/10 |  |
| Project Completion | 12/10 |  |

DeeZee Signature - \_\_/s/Andrew Theobald\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_