

Industrial Research Project Title	Defect Reduction in Rear Door and Body Assembly Process for Sport Utility Vehicles
Industrial Research Project Credits	6
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Abstract

This industrial research project presents an analysis and an improved manufacturing process to reduce auto body defects that occur during the assembly process for sport utility vehicles. The study analyzes and identifies the rear door and body assembly process as the significant problem. By employing brainstorming of cause and effect diagrams methods, failure mode and effect analysis (FMEA), and analyzing the resultant data, the factors contributing to the mis-gap problem are identified.

The defects occur at the rear door placement on the auto body. This problem causes a need for additional assembly processes, which create additional production costs, without adding product value. This research project focuses on improving the process to reduce the occurrence of the mis-gap problem. Through variation reduction, product defects and production costs are decreased. The potential cause of the problem is the pierced hole at the patch-ASM-door-hinge and the method used to drill the hole. The results of the experiment study suggested that the process methods should be improved. The current method has a process capability index (C_p) of 0.44 and the new improved method has a process capability index (C_p) of 1.17

Keywords : Defect Reduction / Sport Utility Vehicles / Mis-Gap / Patch-ASM-Door-Hing /
Assembly Process / Drilling