ABSTRAK

PENGENDALIAN KUALITAS KOMPONEN UNDER REAR PADA MOBIL D52 DI PT MANUFACTURING INDONESIA DENGAN METODE FTA DAN FMEA

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Penelitian ini bertujuan untuk menganalisis pengendalian kualitas pada proses produksi komponen under rear mobil D52 di PT Manufacturing Indonesia menggunakan metode Fault Tree Analysis (FTA) dan Failure Mode and Effect Analysis (FMEA). Hasil penelitian menunjukkan bahwa jenis cacat dominan adalah spot T/A (64%) dan spot meleset (36%). Berdasarkan analisis FTA, faktor penyebab cacat berasal dari aspek manusia, mesin, dan metode kerja, seperti operator terburu-buru, kurangnya keterampilan karyawan baru, kelelahan kerja, serta ketiadaan alat pendeteksi otomatis. Selanjutnya, melalui analisis FMEA diperoleh nilai Risk Priority Number (RPN) tertinggi sebesar 294 pada kegagalan proses akibat operator melewatkan check control dan tidak adanya sistem deteksi otomatis. Temuan ini menegaskan pentingnya perbaikan berupa penambahan alat pendeteksi (pokayoke), peningkatan pelatihan operator, serta pengelolaan beban kerja untuk mengurangi tingkat cacat. Dengan penerapan metode FTA dan FMEA, perusahaan dapat mengidentifikasi akar penyebab kegagalan, memprioritaskan perbaikan, dan meningkatkan konsistensi kualitas produk.

Kata Kunci: Pengendalian Kualitas, Under Rear, FTA, FMEA, RPN

ABSTRACT

QUALITY CONTROL OF UNDER REAR COMPONENTS ON D52 CARS AT PT MANUFACTURING INDONESIA USING FTA AND FMEA METHODS

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This study aims to analyze quality control in the production process of the D52 car under rear component at PT Manufacturing Indonesia using Fault Tree Analysis (FTA) and Failure Mode and Effect Analysis (FMEA). The results revealed that the dominant defects were spot T/A (64%) and spot misaligned (36%). FTA analysis identified defect causes from human, machine, and method factors, including operators working in a hurry, lack of skills among new or transferred workers, work fatigue, and the absence of an automatic detection system. Furthermore, FMEA analysis showed that the highest Risk Priority Number (RPN) was 294, caused by operators missing the check control process and the absence of an automatic detection tool. These findings highlight the need for improvements such as installing detection devices (pokayoke), enhancing operator training, and managing workloads to reduce defect levels. The implementation of FTA and FMEA enables the company to identify root causes of failures, prioritize corrective actions, and improve product quality consistency.

Keywords*: Quality Control, Under Rear, FTA, FMEA, RPN*

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