ANALISIS PERAWATAN MESIN JAHIT PADA CV CAHAYA SETIA MULIA ABADI MENGGUNAKAN METODE RELIABILITY CENTERED MAINTENANCE

(STUDI KASUS : CV Cahaya Setia Mulia Abadi)

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Abstrak

Penelitian ini bertujuan untuk menganalisis kerusakan komponen mesin jahit pada CV Cahaya Setia Mulia Abadi dengan menggunakan metode *Reliability Centered Maintenance (RCM).* Permasalahan utama yang dihadapi perusahaan adalah tingginya frekuensi kerusakan komponen mesin jahit yang berdampak pada peningkatan *downtime* dan keterlambatan produksi. Penelitian difokuskan pada mesin jahit yang menggunakan sistem listrik, karena sistem ini menunjukkan jumlah kerusakan tertinggi. Metode *RCM* diterapkan melalui beberapa tahapan, yaitu identifikasi sistem dan pengumpulan informasi, pendefinisian batasan sistem, penyusunan *Functional Block Diagram (FBD),* analisis *Failure Mode and Effect Analysis (FMEA),* dan *Logic Tree Analysis (LTA).* Hasil *FMEA* menunjukkan bahwa komponen jarum dan kampas rem dinamo memiliki nilai *Risk Priority Number (RPN)* tertinggi sebesar 280, menandakan bahwa kerusakan pada komponen ini sangat kritis. Total nilai *downtime* yang tercatat selama periode Maret–April 2025 adalah sebesar 634 menit. Berdasarkan hasil *LTA*, kerusakan tersebut dikategorikan sebagai jenis kegagalan yang memengaruhi keselamatan dan dapat bersifat tersembunyi. Penelitian ini merekomendasikan penerapan perawatan terjadwal berbasis analisis akar penyebab kerusakan serta peningkatan koordinasi antara teknisi dan staf perencanaan untuk meminimalkan *downtime* dan meningkatkan efisiensi produksi.

Kata kunci: Downtime,RCM, FMEA, LTA, Maintenance.

SEWING MACHINE MAINTENANCE ANALYSIS AT CV CAHAYA SETIA MULIA ABADI USING THE RELIABILITY CENTERED MAINTENANCE METHOD

(Case Study : CV Cahaya Setia Mulia Abadi)

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Abstract

This study aims to analyze sewing machine component failures at CV Cahaya Setia Mulia Abadi using the Reliability Centered Maintenance (RCM) method. The company's primary problem is the high frequency of sewing machine component failures, which leads to increased downtime and production delays. The study focused on electrical sewing machines, as these systems exhibit the highest number of failures. The RCM method was implemented through several stages: system identification and information gathering, defining system boundaries, developing a Functional Block Diagram (FBD), a Failure Mode and Effect Analysis (FMEA), and a Logic Tree Analysis (LTA). The FMEA results indicate that the needle and brake lining components of the dynamo have the highest Risk Priority Number (RPN) of 280, indicating that the failure is critical. The total recorded downtime during March–April 2025 was 634 minutes. Based on the LTA results, this failure is categorized as a safety-impacting failure and can be hidden. This study recommends implementing scheduled maintenance based on root cause analysis and improving coordination between technicians and planning staff to minimize downtime and increase production efficiency.

Keywords: *Downtime, RCM, FMEA, LTA, Maintenance.*

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