

ABSTRAK

ANALISIS PERBAIKAN *DOWNTIME* AKIBAT MASALAH KUALITAS PADA *DIES* DI *LINE STAMPING* 500 TON MENGGUNAKAN PENDEKATAN *PREVENTIVE MAINTENANCE*

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Downtime yang disebabkan oleh kerusakan *dies* menjadi salah satu penyebab utama terganggunya proses produksi di industri manufaktur *stamping*. Masalah ini berdampak langsung pada kualitas *part* yang dihasilkan dan efisiensi produksi secara keseluruhan. Penelitian ini bertujuan untuk menganalisis penyebab utama *downtime* akibat kualitas *dies* pada *line stamping* 500 ton di PT Global Dimensi Metalindo serta merancang sistem *preventive maintenance* yang dapat mengurangi kerusakan dan meningkatkan kualitas produksi. Adapun rumusan masalah dalam penelitian ini meliputi identifikasi jenis cacat produk, penentuan akar penyebab kerusakan dengan metode *Root Cause Analysis* (RCA), dan penyusunan jadwal *preventive maintenance*. Metode penelitian menggunakan RCA melalui *fishbone* diagram dan analisis *5 Why* untuk mengidentifikasi akar masalah, serta membandingkan data kualitas *part* dan *downtime* sebelum dan sesudah implementasi *preventive maintenance*. Hasil penelitian menunjukkan adanya penurunan jumlah cacat produk dari 238 menjadi 169 kasus serta penurunan *downtime* sebesar 36%. Selain itu, kualitas *part* meningkat ditunjukkan dengan naiknya persentase *part* OK dari 97,18% menjadi 98,74%. Dengan demikian, penerapan *preventive maintenance* berbasis RCA terbukti efektif dalam meningkatkan keandalan peralatan, mengurangi *downtime*, dan mendukung peningkatan produktivitas di industri manufaktur.

Kata Kunci: *Downtime, Dies, Stamping, Preventive Maintenance, Root Cause Analysis*

ABSTRACT

AN ANALYSIS OF DOWNTIME REDUCTION DUE TO DIE QUALITY ISSUES IN THE 500-TON STAMPING LINE USING A PREVENTIVE MAINTENANCE APPROACH

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Downtime caused by die failures is one of the main factors disrupting the production process in the stamping manufacturing industry. This issue directly affects the quality of the produced parts and overall production efficiency. This study aims to analyze the root causes of downtime due to die quality issues in the 500-ton stamping line at PT Global Dimensi Metalindo and to design a preventive maintenance system that can reduce damage and improve production quality. The research problems include identifying types of product defects, determining root causes using the Root Cause Analysis (RCA) method, and developing a preventive maintenance schedule. The research method applies RCA through a fishbone diagram and the 5 Why analysis to identify core issues, followed by a comparison of quality and downtime data before and after the implementation of preventive maintenance. The results show a reduction in product defects from 238 to 169 cases and a downtime reduction of 36%. Additionally, part quality improved, indicated by an increase in OK parts from 97.18% to 98.74%. Thus, the application of RCA-based preventive maintenance is proven effective in enhancing equipment reliability, minimizing downtime, and supporting productivity improvements in manufacturing operations.

Keywords: *Downtime, Dies, Stamping, Preventive Maintenance, Root Cause Analysis*