

ANALISIS KINERJA MESIN BUBUT DENGAN METODE OEE DAN FMEA PADA CV KEMBAR TEKNIKA

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ABSTRAK

CV Kembar Teknika merupakan perusahaan yang bergerak dalam bidang industri manufaktur pengecoran logam, nonlogam, dan permesinan. Di CV Kembar Teknika sering terjadi adanya kerusakan pada beberapa komponen mesin pada mesin bubut. Untuk kerusakannya, terjadi sebanyak 9 kali selama Bulan Januari-Februari 2023. Kerusakan atau kegagalan fungsi pada komponen sistem mesin bubut dapat membuat produksi menjadi tidak lancar. Penerapan yang digunakan pada penelitian ini yaitu dengan metode *Overall Equipment Effectiveness* (OEE) dan *Six Big Losses* yang bertujuan untuk memaksimalkan efisiensi penggunaan peralatan, dan memantapkan sistem perawatan preventif. Selanjutnya, untuk usulan perbaikannya menggunakan metode *Failure Mode and Effects Analysis* (FMEA). Berdasarkan hasil pengolahan data menggunakan metode OEE, didapatkan nilai OEE sebesar 37.10%. Nilai tersebut sangat kurang dari *standard worldclass* OEE yang telah ditetapkan, yaitu 85.4%. Pada hasil pengolahan data menggunakan metode *Six Big Losses*, didapatkan nilai kerugian terbesar pada *reduced speed losses* yaitu sebesar 59.62%. Kemudian pada hasil pengolahan data menggunakan metode FMEA, didapatkan nilai RPN yang terbesar akibat kegagalan karena kumparan rotor rusak yaitu sebesar 280. Sehingga pengendalian atau usulan perbaikannya yaitu dengan mengecek tegangan agar tepat dan suplai tegangan tetap stabil.

Kata Kunci: *Failure Mode and Effects Analysis, Overall Equipment Effectiveness, Six Big Losses, Total Productive Maintenance*

LATHE MACHINE PERFORMANCE ANALYSIS USING OEE AND FMEA METHODS ON CV TEKNIKA

ABSTRACT

CV Kembar Teknika is a manufacturing company specializing in metal casting, nonmetal casting, and machining. Damage to many machine components on the lathe is common at CV Kembar Teknika. The damage occurred nine times during January and February 2023. Damage or breakdown in the lathe system components can disrupt production. The Overall Equipment Effectiveness (OEE) approach and Six Big Losses were utilized in this study to maximize equipment efficiency and build a preventative maintenance strategy. Furthermore, for the proposed improvements using the Failure Mode and Effects Analysis (FMEA) method. Based on the data processing results using the OEE method, the OEE value is 37.10%. This result is significantly lower than the 85.4% world-class OEE threshold that has been established. The most considerable loss figure recorded in data processing utilizing the Six Big Losses approach is 59.62% in reduced speed losses. The maximum RPN number achieved from data processing using the FMEA approach is 280, related to failure due to broken rotor coils. As a result, the control or improvement plan ensures that the voltage is correct and the voltage supply remains stable.

Keywords: Failure Mode and Effects Analysis, Overall Equipment Effectiveness, Six Big Losses, Total Productive Maintenance

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