Usulan Manajemen Perawatan Mesin Menggunakan Metode *Reliability Centered Maintenance*

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ABSTRAK

PT Mitra Rekatama Mandiri adalah perusahaan yang bergerak di bidang produksi logam, non logam dan permesinan. Di PT Mitra Rekatama Mandiri sering mengalami kerusakan komponen mesin terutama mesin bubut dan *milling*. Sedangkan untuk kerusakan komponen mesin terjadi 15 kali dalam 7 bulan (Agustus 2022 sampai Februari 2023). Untuk komponen mesin bubut, waktu perbaikan terbesar adalah gear cepat panas dengan waktu 2 jam dan waktu perbaikan terbesar komponen mesin *milling* adalah *gear* aus dengan waktu 1 jam. Hal ini cukup merugikan perusahaan, sehingga perlu dilakukan perbaikan. Aplikasi/penerapan yang digunakan dalam penelitian ini adalah metode *Reliability Centered Maintenance* yang sebelumnya diidentifikasi kegagalan komponen mesinnya dengan menggunakan *Failure Mode and Effect Analysis*. Metode RCM bertujuan untuk merencanakan jadwal perawatan yang optimal dan total biaya perawatan yang dikeluarkan, untuk meningkatkan produktivitas. Berdasarkan hasil pengolahan data FMEA, 3 nilai RPN komponen tertinggi adalah *gear* aus (nilai RPN 80), *bearing* aus (nilai RPN 70) dan *gear* cepat panas (nilai RPN 56). Untuk komponen yang perlu segera diperbaiki adalah *gear* aus. Hasil Interval Perawatan Optimal (Tm) pada kumparan rotor dijadwalkan setiap 48 hari, baut dan mur setiap 11 hari, V-belt setiap 27 hari, bearing setiap 47 hari, gear mesin bubut setiap 56 hari, spindel setiap 19 hari, dan *gear* mesin *milling* setiap 56 hari. Total biaya perawatan (Tc) untuk semua part adalah Rp 8.479.563.

Kata kunci: *Failure Mode and Effect Analysis*, Komponen, Mesin Bubut, Mesin *Milling*, Perawatan, *Reliability Centered Maintenance*

Proposed Machine Maintenance Management Using the Reliability Centered Maintenance Method

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ABSTRACT

PT Mitra Rekatama Mandiri is a company engaged in the production of metal, non-metal and machinery. At PT Mitra Rekatama Mandiri, machine components often experience damage, especially lathes and milling machines. Meanwhile, damage to engine components occurred 15 times in 7 months (August 2022 to February 2023). For lathe components, the biggest repair time is fast-heat gear with 2 hours time and the biggest repair time for milling machine components is gear wear with 1 hour time. This is quite detrimental to the company, so it needs to be repaired. The application/implementation used in this study is the Reliability Centered Maintenance method which previously identified failure of the engine components using Failure Mode and Effect Analysis. The RCM method aims to plan optimal maintenance schedules and total maintenance costs incurred, to increase productivity. Based on the results of FMEA data processing, the 3 highest component RPN values are gear wear (RPN value 80), worn bearings (RPN value 70) and gear heats up quickly (RPN value 56). For components that need to be repaired immediately are worn gear. Results Optimal Maintenance Interval (Tm) on rotor coils scheduled every 48 days, bolts and nuts every 11 days, V-belts every 27 days, bearings every 47 days, lathe gears every 56 days, spindles every 19 days, and milling machine gears every 56 days. The total maintenance cost (Tc) for all parts is IDR 8,479,563.

Keywords: Failure Mode and Effect Analysis, Components, Lathes, Milling Machines, Maintenance, Reliability Centered Maintenance

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