

ABSTRAK

PT. XYZ merupakan perusahaan yang bergerak di bidang manufaktur komponen otomotif dengan produk utama pegas. Mesin 1 merupakan mesin dengan durasi *breakdown* tertinggi pada tahun 2025 yakni sebesar 77.132 menit dan didukung data tahun 2023 sebesar 58.090 menit serta 2024 sebesar 57.154 menit yang menunjukkan kinerja mesin belum optimal. Penelitian ini bertujuan untuk menganalisis efektivitas kinerja mesin serta menentukan usulan perbaikan sistem perawatan. Metode yang digunakan adalah *Overall Equipment Effectiveness* (OEE), *six big losses*, dan *age replacement*. Hasil analisis menunjukkan nilai OEE berada pada rentang 34,04% hingga 75,83% dengan rata-rata sebesar 62,93% yang masih di bawah standar 85%, dengan *breakdown losses* sebesar 48,86% sebagai penyebab utama. Interval pergantian pencegahan dan pemeriksaan komponen menunjukkan *o ring seal* 14 dan 12 hari, *gasket flange* 15 dan 12 hari, *baffle* 42 dan 26 hari, *tube* 54 dan 37 hari serta *baffle holder* 130 dan 48 hari. Nilai *downtime* setelah usulan menunjukkan penurunan pada *o ring seal* sebesar 442 menit, *gasket flange* 420 menit, *baffle* 181 menit, *tube* 211 menit dan *baffle holder* 230 menit serta *availability* meningkat hingga di atas 99% sehingga mendukung SDGs 9, SDGs 12, dan SDGs 8 melalui peningkatan efisiensi dan keandalan sistem.

Kata kunci: OEE, *age replacement*, *preventive maintenance*, *downtime*

ABSTRACT

PT. XYZ is a company engaged in the manufacturing of automotive components with springs as its main product. Machine 1 has the highest breakdown duration in 2025, reaching 77,132 minutes, supported by historical data in 2023 of 58,090 minutes and in 2024 of 57,154 minutes, indicating that the machine performance is not optimal. This study aims to analyze machine performance effectiveness and determine proposed improvements to the maintenance system. The methods used are Overall Equipment Effectiveness (OEE), six big losses, and age replacement. The analysis results show that the OEE value ranges from 34,04% to 75,83% with an average of 62,93%, which is still below the 85% standard, with breakdown losses of 48,86% as the main cause. The preventive replacement and inspection intervals show that the O ring seal is 14 and 12 days, gasket flange 15 and 12 days, baffle 42 and 26 days, tube 54 and 37 days, and baffle holder 130 and 48 days. The downtime value after the proposal shows a reduction in the O ring seal by 442 minutes, gasket flange 420 minutes, baffle 181 minutes, tube 211 minutes, and baffle holder 230 minutes, while availability increases to above 99%, thereby supporting SDGs 9, SDGs 12, and SDGs 8 through improved efficiency and system reliability.

Keywords: OEE, age replacement, preventive maintenance, downtime