ABSTRAK

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Program Studi	:	Teknik Industri
Judul Laporan Skripsi	:	Analisis Produktivitas Mesin *Moulding* Dengan Metode OEE dan *Root Cause Failure Analysis* (RCFA) di PT Otomotif
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Industri manufaktur dituntut dapat memenuhi kebutuhan dan keinginan pelanggan seperti kualitas produk yang bagus, harga yang terjangkau, serta waktu proses produksi yang sesuai dengan target. Pemeliharaan atau *maintenance* merupakan upaya yang dilakukan setiap perusahaan untuk menjaga mesin atau peralatan dalam kondisi yang selalu prima. PT. Otomotif adalah perusahaan yang berfokus pada bidang manufaktur otomotif kendaraan roda 4. Mesin *moulding* memiliki waktu *downtime* paling tinggi selama enam bulan dengan total *downtime* 10.265 menit. Mesin tersebut melebihi target *downtime* perusahaan yaitu 300 menit setiap bulannya yang mengakibatkan menurunnya produktivitas mesin sehingga dapat berefek terhadap tingkat efektifitas mesin yang rendah. Sehingga, penelitian ini bertujuan untuk mengetahui nilai efektivitas mesin moulding berdasarkan metode *Overall Equipment Effectiveness* (OEE) pada bulan Juli - Desember 2022. Berdasarkan *Japan Institute of Plant Maintenance* (JPIM), standar OEE produktivitas kelas dunia sebesar 85%. Nilai rata-rata OEE mesin *moulding* pada bulan Juli - Desember 2022 yaitu 62% Maka dari itu, efektivitas mesin *moulding* masih sangat jauh dari standar OEE kelas dunia. Untuk mendapatkan penyebab rendahnya nilai OEE dianalisis menggunakan *six big losses* serta dianalisis menggunakan *pareto chart, fishbone diagram* dan *root cause failure analysis* (RCFA). Nilai dari *sixbig losses* yang didapatkan yaitu, 6% untuk *breakdown losses,* 1,5% untuk *Setup & Adjustment Losses*, 2,5% untuk *Idling & Minor Stoppages Losses*, 27% *Reduced Speed Losses, 1,3*% untuk *Quality Defect Losses* dan 0,24% untuk *Yield Losses*. Berdasarkan pendekatan *fishbone* diagram dan *Root cause failure analysis* (RCFA), didapatkan usulan perbaikan untuk perusahaan yaitu perusahaan harus mengganti dan memodernisasi komponen mesin moulding dan memberikan jadwal TPM pengecekan dan perawatan mesin kepada operator dan *maintenance* untuk meningkatkan nilai OEE mesin *moulding*.

Kata Kunci: efektifitas mesin, *overall equipment effectiveness*, OEE, *six biglosses, root cause failure analysis*

ABSTRACT

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Title Thesis Report	:	*Productivity Analysis of Molding Machines Using the OEE Method and Root Cause Failure Analysis (RCFA) at PT Otomotif*
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The manufacturing industry is demanded to be able to meet the needs and desires of customers such as good product quality, affordable prices, and production process time that is in accordance with the target. Maintenance or maintenance is an effort made by every company to keep machines or equipment in top condition. PT. Automotive is a company that focuses on manufacturing automotive four wheeled vehicles. Molding machines have the highest downtime of six months with a total downtime of 10,265 minutes. The machine exceeds the company's downtime target of 300 minutes per month which results in decreased machine productivity so that it can have an effect on a low level of machine effectiveness. Thus, this study aims to determine the effectiveness of molding machines based on the Overall Equipment Effectiveness (OEE) method in July - December 2022. Based on the Japan Institute of Plant Maintenance (JPIM), the OEE standard for world-class productivity is 85%. The average OEE value of molding machines in July - December 2022 is 62%. Therefore, the effectiveness of molding machines is still very far from world-class OEE standards. To find the cause of the low OEE score, it was analyzed using six big losses and analyzed using Pareto charts, fishbone diagrams and root cause failure analysis (RCFA). The value of the six big losses obtained is 6% for breakdown losses, 1.5% for Setup & Adjustment Losses, 2.5% for Idling & Minor Stoppages Losses, 27% Reduced Speed Losses, 1.3% for Quality Defect Losses and 0.24% for Yield Losses. Based on the fishbone diagram approach and Root cause failure analysis (RCFA), a proposed improvement for the company is obtained, namely the company must replace and modernize the molding machine components and provide a TPM schedule for checking and maintaining the machine to operators and maintenance to increase the OEE value of the molding machine.

Keywords*: machine effectiveness, overall equipment effectiveness, OEE, six big losses, root cause failure analysis*