ABSTRAK

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Jurusan	:	Teknik Mesin
Program Studi	:	D–III Teknik Mesin
Judul Laporan Akhir	:	*Preventive Maintenance* Mesin *Rotary Grinding* dan *Polishing* di Laboratorium Mekanik Jurusan Teknik Mesin Politeknik Negeri Sriwijaya

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Mesin Rotary Grinding dan Polishing merupakan salah satu peralatan utama yang terdapat di Laboratorium Mekanik Program Studi Teknik Mesin Politeknik Negeri Sriwijaya. Mesin ini berperan penting dalam proses grinding spesimen yang digunakan untuk praktik Metalografi, sehingga keberfungsiannya sangat memengaruhi kelancaran kegiatan pembelajaran. Namun, dalam penggunaan sehari-hari, mesin ini mengalami berbagai permasalahan teknis, antara lain bearing yang macet dan tidak dapat berputar, V-belt yang getas dan retak, sistem pendingin yang tidak berfungsi, serta kondisi fisik mesin yang mengalami korosi. Permasalahan tersebut berdampak langsung pada penurunan efektivitas praktikum dan kualitas hasil pembelajaran mahasiswa. Penelitian ini bertujuan untuk melakukan preventive maintenance pada mesin Rotary Grinding dan Polishing agar dapat beroperasi kembali secara optimal. Metodologi yang digunakan meliputi observasi langsung terhadap kondisi mesin, wawancara dengan teknisi dan dosen pengampu laboratorium, serta pengumpulan data dari referensi pustaka yang relevan. Tahapan perawatan meliputi pembersihan seluruh komponen mesin, pelumasan bearing, pengecekan dan perbaikan sistem pendingin, penggantian V-belt dan bearing yang rusak, serta pengecatan ulang bagian mesin untuk mengatasi dan mencegah korosi. Hasil kegiatan preventive maintenance menunjukkan bahwa mesin kembali berfungsi dengan baik, putaran menjadi stabil, sistem pendingin bekerja optimal, dan kondisi fisik mesin terlihat lebih terawat. Selain itu, preventive maintenance terbukti mampu mengurangi risiko kerusakan mendadak, meminimalkan biaya perbaikan besar, serta menjaga konsistensi hasil praktikum. Dalam jangka panjang, upaya ini dapat memperpanjang umur pakai mesin, meningkatkan keselamatan kerja, dan memastikan keberlanjutan kegiatan pembelajaran di laboratorium tanpa gangguan yang berarti.

Kata Kunci: Preventive Maintenance, Rotary Grinding, Polishing, Metalografi

ABSTRACT

Preventive Maintenance Rotary Grinding And Polishing Machines In The Mechanical Laboratory Of The Department Of Mechanical Engineering, State Polytechnic Of Sriwijaya

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The Rotary Grinding and Polishing machine is one of the main pieces of equipment in the Mechanical Laboratory of the Mechanical Engineering Study Program at Politeknik Negeri Sriwijaya. This machine plays a crucial role in the grinding process of specimens used for Metallography practice, making its proper functioning essential for the smooth execution of learning activities. However, during daily use, the machine experienced several technical problems, including seized bearings that prevented rotation, brittle and cracked V-belts, a malfunctioning cooling system, and corrosion on its physical components. These issues directly affected the effectiveness of practical sessions and the quality of student learning outcomes.This study aims to carry out preventive maintenance on the Rotary Grinding and Polishing machine to restore its optimal performance. The methodology involved direct observation of the machine's condition, interviews with laboratory technicians and supervising lecturers, as well as the collection of relevant literature data. The maintenance stages included cleaning all machine components, lubricating bearings, inspecting and repairing the cooling system, replacing damaged V-belts and bearings, and repainting corroded machine surfaces to both improve appearance and prevent further deterioration. The results show that the machine now operates properly, with stable rotation, an optimally functioning cooling system, and a better-maintained physical appearance. Furthermore, preventive maintenance proved effective in reducing the risk of unexpected breakdowns, minimizing major repair costs, and maintaining consistent practical results. In the long term, these measures can extend the machine's lifespan, improve operational safety, and ensure the continuity of laboratory learning activities without significant interruptions.

Keywords: Preventive Maintenance, Rotary Grinding, Polishing , Metallography