

## ABSTRAK

Nama : Alfendo  
NPM : 0622230200248  
Jurusan : Teknik Mesin  
Program Studi : D–III Teknik Mesin  
Judul Laporan Akhir : Rekondisi *Metaserv Universal Polisher* di  
Laboratorium Mekanik Politeknik Negeri Sriwijaya  
(Perawatan)

**(2025: xiii + 68 Halaman, 29 Gambar, 11 Tabel + 6 Lampiran)**

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Mesin Metaserv Universal Polisher merupakan alat penting dalam preparasi metalografi di laboratorium mekanik, khususnya untuk menghasilkan permukaan logam yang rata, halus, dan siap dianalisis secara mikroskopik. Mesin ini mendukung proses pengamatan mikrostruktur logam dalam kegiatan praktikum maupun penelitian. Namun, mesin yang tersedia di Laboratorium Mekanik Jurusan Teknik Mesin Politeknik Negeri Sriwijaya mengalami penurunan performa akibat kerusakan seperti ketidakstabilan putaran, aus pada bearing dan v-belt, gangguan sistem pendingin, serta kerusakan pada panel kontrol.

Untuk mengatasi permasalahan tersebut, dilakukan rekondisi mesin yang melibatkan kombinasi antara perawatan korektif dan preventif. Perawatan korektif mencakup penggantian komponen rusak seperti bearing, v-belt, serta pengecatan ulang body mesin guna meningkatkan estetika dan ketahanan terhadap korosi. Sistem pendingin dan kelistrikan juga diperbaiki untuk memastikan pengoperasian yang aman dan stabil.

Sementara itu, perawatan preventif dilakukan melalui pembersihan menyeluruh (cleaning), inspeksi visual dan geometri (inspection), pelumasan rutin (lubrication), serta pengecekan fungsi saat mesin beroperasi (running maintenance). Langkah ini bertujuan mencegah kerusakan lebih lanjut dan menjaga performa mesin dalam jangka panjang.

Hasil dari kegiatan ini menunjukkan bahwa mesin kembali berfungsi dengan baik dan siap digunakan dalam proses pembelajaran. Strategi preventive maintenance diyakini dapat memperpanjang usia pakai mesin serta mengurangi risiko kerusakan mendadak di masa depan, sehingga mendukung kelancaran kegiatan praktikum di laboratorium secara optimal.

Kata Kunci: Rekondisi, Perawatan Korektif, Perawatan Preventif, Mesin Polisher, Metaserv Universal.

## **ABSTRACT**

### **Reconditioning of Metaserv Universal Polisher Machine (Maintenance Process)**

**(2025: xii + 68 pp. + 29 Figures + 11 Tables + 6 Attachments)**

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Alfendo

NPM: 062230200248

DIPLOMA–III MECHANICAL ENGINEERING STUDY PROGRAM

MECHANICAL ENGINEERING DEPARTMENT

STATE POLYTECHNIC OF SRIWIJAYA

The Metaserv Universal Polisher is an essential tool in metallographic preparation processes within technical laboratories, particularly for producing smooth and flat metal surfaces ready for microscopic analysis. This machine supports microstructural observation of metals during both practical laboratory sessions and research activities. However, the current condition of the machine at the Mechanical Engineering Laboratory of Politeknik Negeri Sriwijaya showed a significant decline in performance due to several issues such as unstable disc rotation, worn bearings and v-belts, a malfunctioning cooling system, and unresponsive control panels.

To address these problems, a reconditioning program was carried out involving both corrective and preventive maintenance strategies. Corrective maintenance included replacing damaged or worn components such as bearings, v-belts, and repainting the machine body to restore its aesthetics and corrosion resistance. Additionally, repairs were made to the cooling and electrical systems to ensure safe and stable operation. Preventive maintenance was also implemented, including thorough cleaning, visual and geometric inspections, periodic lubrication, and operational checks while the machine was running.

The results of this reconditioning effort indicated that the machine regained its optimal functionality and can now be effectively used for educational purposes. The implementation of preventive maintenance strategies is also projected to extend the service life of the machine and reduce the risk of unexpected failures in the future. Consequently, this reconditioning contributes significantly to sustaining laboratory practical activities and maintaining equipment reliability in an educational setting.

**Keywords:** Reconditioning, Corrective Maintenance, Preventive Maintenance, Polisher Machine, Metaserv Universal.