

ABSTRAK

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Program Studi : D-III Teknik Mesin
Judul Laporan Akhir : Rekondisi Mesin Shaping CMZ L-450
kode 411-1002 di Bengkel Teknik Mesin
Politeknik Negeri Sriwijaya (Pengujian)

(2025: xiii + 68 Halaman + 30 Gambar + 11 Daftar Tabel + 5 Lampiran)

Laporan akhir ini membahas proses rekondisi Mesin Shaping CMZ L-450 kode 411-1002 yang berada di Bengkel Teknik Mesin Politeknik Negeri Sriwijaya, yang sebelumnya mengalami kerusakan pada sistem mekanik dan kelistrikan sehingga tidak dapat digunakan untuk kegiatan praktikum mahasiswa. Rekondisi dilakukan sebagai upaya memulihkan fungsi mesin agar dapat kembali beroperasi secara optimal dan mendukung proses pembelajaran. Proses diawali dengan identifikasi kerusakan yang meliputi kabel motor listrik terbakar, baut toolpost patah, selang pompa oli bocor, pelatuk otomatis aus, sistem pengereman tidak berfungsi, serta baut ragam aus atau hilang. Setelah itu dilakukan perbaikan dan penggantian komponen menggunakan peralatan kerja bangku dan mesin perkakas yang tersedia di bengkel. Metode yang digunakan mencakup studi literatur, inspeksi langsung, wawancara teknisi, serta perhitungan teknis pembuatan komponen pengganti seperti baut toolpost. Tahap perbaikan diikuti dengan perencanaan perawatan preventif dan pengujian pasca-rekondisi untuk memastikan kinerja mesin sesuai standar. Hasil pengujian menunjukkan bahwa seluruh komponen yang diperbaiki berfungsi dengan baik; motor listrik bekerja normal, pelumasan mesin lancar, gerak otomatis meja beroperasi, sistem pengereman kembali berfungsi, dan ragam mampu menahan benda kerja dengan kuat. Dengan rekondisi ini, mesin kembali layak digunakan dalam praktikum permesinan, meningkatkan efisiensi pembelajaran, dan memperpanjang umur operasional mesin. Laporan ini diharapkan menjadi referensi bagi kegiatan perawatan dan rekondisi peralatan bengkel di institusi pendidikan maupun industri, khususnya dalam penanganan mesin shaping yang memerlukan presisi tinggi.

Kata kunci: Rekondisi, Mesin Shaping, Pengujian, Perbaikan, Komponen

ABSTRACT

Reconditioning of Shaping Machine CMZ L-450 code 411-1002 at the Mechanical Engineering Workshop of Politeknik Negeri Sriwijaya (Testing)

(2025: xiii + 68 pp. + 30 Figures + 11 Tables + 5 Attachments)

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DIPLOMA–III MECHANICAL ENGINEERING STUDY PROGRAM
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This final report discusses the reconditioning process of the Shaping Machine CMZ L-450 code 411-1002 located at the Mechanical Engineering Workshop of Politeknik Negeri Sriwijaya, which had previously experienced mechanical and electrical failures, rendering it unusable for student practicum activities. The reconditioning was carried out to restore the machine's functionality so it could operate optimally and support the learning process. The work began with identifying damage, which included burnt motor wiring, broken toolpost bolts, leaking oil pump hoses, worn automatic table drive pins, malfunctioning braking systems, and worn or missing vise bolts. These issues were addressed through repairs and component replacements using available bench tools and machine tools in the workshop. The methodology involved literature study, direct inspection, technician interviews, and technical calculations for manufacturing replacement components such as the toolpost bolt. The repair stage was followed by preventive maintenance planning and post-reconditioning testing to ensure the machine's performance met the required standards. The test results confirmed that all repaired components functioned properly: the electric motor operated normally, lubrication flow was stable, the automatic table movement worked as intended, the braking system was restored, and the vise securely held the workpiece during machining. Through this reconditioning, the machine became fit for machining practice once again, improving learning efficiency and extending its operational lifespan. This report is expected to serve as a reference for maintenance and reconditioning activities of workshop equipment in educational institutions and industries, particularly for handling shaping machines that require high precision.

Keywords: Reconditioning, Shaping Machine, Testing, Repair, Components