

ABSTRAK

Nama : Surya Hadi Lexsono
NPM : 062230200220
Jurusan : Teknik Mesin
Program Studi : D-III Teknik Mesin
Judul Laporan Akhir : Rekondisi Mesin Bubut *Celtic 355 – C 4* Di Bengkel
Produksi Politeknik Negeri Sriwijaya (Preventive
Maintenance).

(2025:xv + 78 Halaman + 34 Gambar + 17 Tabel + 2 Lampiran)

Laporan ini membahas proses rekondisi Mesin Bubut Celtic 355 – C 4 di Bengkel Produksi Politeknik Negeri Sriwijaya, yang mengalami penurunan performa akibat kerusakan pada sejumlah komponen utama. Tujuan utama kegiatan ini adalah mengembalikan fungsi dan kinerja mesin sehingga dapat digunakan secara optimal untuk menunjang kegiatan praktikum dan produksi mahasiswa. Metode yang digunakan meliputi observasi visual, wawancara dengan pihak berpengalaman, studi literatur, dan dokumentasi setiap tahap pekerjaan. Proses rekondisi dimulai dengan identifikasi kerusakan, yang mencakup komponen seperti spindle tool post, compound rest, carriage, ways, lead screw, feed shaft, pompa pendingin, serta chip pan barrier yang hilang. Tahapan selanjutnya meliputi pembongkaran, perbaikan, penggantian komponen, pembuatan chip pan barrier dari plat baja ST37 tebal 1 mm, pengecatan, pelumasan, serta pembersihan menyeluruh. Perbaikan juga disertai dengan preventive maintenance untuk mencegah kerusakan serupa di masa depan. Pengujian pasca-rekondisi dilakukan melalui uji fungsi komponen dan pengukuran kecepatan putaran spindle menggunakan tachometer. Hasil uji menunjukkan semua komponen berfungsi normal, kecepatan spindle berada dalam toleransi standar, dan kualitas hasil pembubutan meningkat. Rekondisi ini tidak hanya memperpanjang umur pakai mesin, tetapi juga meningkatkan keamanan kerja, kenyamanan operasional, dan efektivitas proses pembelajaran. Selain itu, proyek ini memberikan pembelajaran praktis bagi mahasiswa mengenai teknik rekondisi mesin, pemilihan material, penerapan metode perawatan, serta penerapan prosedur keselamatan kerja (K3). Dengan demikian, kegiatan ini berkontribusi langsung terhadap peningkatan kualitas sarana pembelajaran di lingkungan Jurusan Teknik Mesin Politeknik Negeri Sriwijaya.

Kata Kunci: Mesin bubut, rekondisi mesin, pembuatan *chip pan barrier* , 355 – C4

ABSTRACT

Reconditioning of Celtic 355 – C 4 Lathe Machine at the Production Workshop of Sriwijaya State Polytechnic (Preventive Maintenance)

(2025:xv + 78 Pages + 34 Figures, 17 Tables + 2 Attecchments)

Surya Hadi Lexsono
NPM. 062230200220

DIPLOMA – III MECHANICAL ENGINEERING STUDY PROGRAM
MECHANICAL ENGINEERING DEPARTEMENT
STATE POLYTECHNIC OF SRWIJAYA

This report presents the reconditioning process of the Celtic 355 – C 4 Lathe Machine at the Production Workshop of Politeknik Negeri Sriwijaya, which had experienced performance degradation due to damage to several key components. The primary objective of this activity was to restore the machine's function and performance so that it could be optimally utilized to support student practical training and production activities. The methods applied included visual observation, interviews with experienced personnel, literature review, and thorough documentation of each work stage. The reconditioning process began with damage identification, covering components such as the spindle tool post, compound rest, carriage, ways, lead screw, feed shaft, cooling pump, and the missing chip pan barrier. Subsequent steps involved disassembly, repair, component replacement, fabrication of a chip pan barrier from 1 mm thick ST37 steel plate, painting, lubrication, and comprehensive cleaning. Preventive maintenance procedures were also implemented to minimize the risk of similar failures in the future. Post-reconditioning testing was conducted through functional component assessments and spindle speed measurements using a tachometer. The results indicated that all refurbished components operated normally, spindle speed remained within standard tolerance limits, and the quality of turning operations improved. This reconditioning not only extended the machine's service life but also enhanced work safety, operational comfort, and the effectiveness of the learning process. Furthermore, this project provided students with hands-on learning experience in machine reconditioning techniques, material selection, maintenance practices, and occupational health and safety (OHS) implementation. Therefore, the activity directly contributes to improving the quality of learning facilities in the Mechanical Engineering Department of Politeknik Negeri Sriwijaya.

Keywords: Lathe, machine reconditioning, chip pan barrier manufacturing, 355 - C4