

ABSTRAK

Nama Mahasiswa : M. Fikri
NPM : 062330200302
Jurusan : Teknik Mesin
Program Studi : Diploma Tiga Teknik Mesin
Judul Laporan Akhir : Rekondisi Mesin *Bandsaw* Horizontal Krisbow Tipe KW15-52 di Bengkel Mekanik Jurusan Teknik Mesin Politeknik Negeri Sriwijaya (Pengujian)

(2026: xiii + 57 Halaman, 26 Gambar, 11 Tabel + 7 Lampiran)

Mesin *bandsaw* horizontal merupakan salah satu mesin perkakas yang digunakan dalam kegiatan praktikum pemotongan logam di Bengkel Mekanik Jurusan Teknik Mesin Politeknik Negeri Sriwijaya. Seiring bertambahnya usia pakai dan kurangnya perawatan, mesin *bandsaw* horizontal Krisbow tipe KW15-52 mengalami berbagai kerusakan, antara lain motor listrik mengalami *short circuit*, ulir drat ragum aus, *bearing as pulley* oblok, *V-belt* hilang, sistem hidrolik bocor, serta saringan tangki *coolant* hilang sehingga mesin tidak dapat beroperasi secara optimal. Laporan akhir ini bertujuan melakukan rekondisi dan pengujian untuk mengembalikan fungsi mesin sesuai kondisi operasionalnya. Metode yang digunakan meliputi inspeksi awal, studi literatur, wawancara dengan teknisi bengkel, identifikasi kerusakan, perencanaan perbaikan, pelaksanaan rekondisi, serta pengujian fungsi dan pengujian pemotongan. Rekondisi dilakukan melalui *rewinding* pada motor listrik, penggantian pada *bearing*, pemasangan kembali *V-belt* dan *pulley*, penggantian *gasket gearbox*, pembuatan ulang ulir ragum, penggantian *seal* hidrolik, pembersihan pompa *coolant*, serta *leveling* mesin. Hasil pengujian fungsi menunjukkan seluruh komponen yang telah direkondisi dapat bekerja dengan baik tanpa ditemukan gangguan maupun kebocoran pada sistem. Pengujian pemotongan menggunakan material Baja ST41 pada kecepatan potong 49 m/menit menghasilkan rata-rata waktu pemotongan 44 detik, sedangkan Aluminium 6061 pada kecepatan potong 64 m/menit menghasilkan rata-rata waktu pemotongan 20,33 detik, dengan selisih kelurusan hasil potong sebesar 0,05–0,35 mm. Hasil tersebut menunjukkan bahwa mesin telah kembali berfungsi dengan baik, mampu melakukan proses pemotongan secara efektif, serta memenuhi kebutuhan kegiatan praktikum. Berdasarkan hasil rekondisi dan pengujian, mesin *bandsaw* horizontal Krisbow KW15-52 dinyatakan layak digunakan kembali sebagai sarana praktikum pemotongan logam di Bengkel Mekanik Jurusan Teknik Mesin Politeknik Negeri Sriwijaya.

Kata Kunci: Rekondisi, *Bandsaw* Horizontal, KW 15-52, Pengujian, Perbaikan Mesin

ABSTRACT

***Reconditioning of the Krisbow Horizontal Bandsaw Machine Type Kw 15-52 at the Mechanical Workshop of the Mechanical Engineering Department of the Sriwijaya State Polytechnic
(Testing)***

(2026: xiii + 57 Pages, 26 Figures, 11 Tables + 7 Appendices)

M. Fikri

NPM. 0623302003022

***DIPLOMA THREE MECHANICAL ENGINEERING STUDY PROGRAM
MECHANICAL ENGINEERING DEPARTMENT STATE POLYTECHNIC OF
SRIWIJAYA***

The horizontal bandsaw machine is one of the machine tools used in metal cutting practicum activities at the Mechanical Workshop of the Department of Mechanical Engineering, Sriwijaya State Polytechnic. As its service life increases and due to lack of maintenance, the Krisbow horizontal bandsaw machine type KW15-52 experiences various damages, including short circuits in the electric motor, worn vise threads, loose pulley bearings, missing V-belts, leaking hydraulic systems, and missing coolant tank filters so that the machine cannot operate optimally. This final report aims to carry out reconditioning and testing to restore the machine's function to its operational condition. The methods used include initial inspection, literature study, interviews with workshop technicians, damage identification, repair planning, reconditioning, and functional and cutting tests. Reconditioning is carried out through rewinding the electric motor, replacing the bearings, reinstalling the V-belt and pulley, replacing the gearbox gasket, remaking the vise threads, replacing the hydraulic seals, cleaning the coolant pump, and leveling the machine. The results of the functional testing show that all reconditioned components can work well without any disturbances or leaks in the system. Cutting tests using ST41 Steel material at a cutting speed of 49 m/minute produced an average cutting time of 44 seconds, while Aluminum 6061 at a cutting speed of 64 m/minute produced an average cutting time of 20.33 seconds, with a difference in straightness of the cut results of 0.05–0.35 mm. These results indicate that the machine has returned to functioning properly, is able to carry out the cutting process effectively, and meets the needs of practical activities. Based on the results of reconditioning and testing, the Krisbow KW15-52 horizontal bandsaw machine is declared suitable for reuse as a means of metal cutting practicals in the Mechanical Workshop of the Mechanical Engineering Department of Sriwijaya State Polytechnic.

Keywords: Reconditioning, Horizontal Bandsaw, KW 15-52, Testing, Machine