ABSTRAK

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Judul Laporan Akhir	:	Rekondisi Mesin Gergaji Potong Hidrolik *Behringer* Ks 200 Hy Di Politeknik Negeri Sriwijaya (Pengujian).

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Laporan akhir ini membahas tentang proses rekondisi dan pengujian mesin gergaji potong hidrolik Behringer KS 200 HY yang berada di Bengkel Produksi Jurusan Teknik Mesin Politeknik Negeri Sriwijaya. Mesin tersebut sebelumnya dalam kondisi tidak berfungsi akibat beberapa kerusakan pada sistem motor listrik, sistem hidrolik, hilangnya pompa coolant, serta kondisi body mesin yang mengalami korosi dan penumpukan kotoran. Kerusakan tersebut menghambat kegiatan praktik mahasiswa dan menurunkan efektivitas proses pembelajaran di bengkel produksi. Oleh karena itu, dilakukan proses rekondisi guna mengembalikan performa mesin mendekati kondisi awalnya. Tahapan rekondisi diawali dengan proses pembongkaran menyeluruh untuk mengidentifikasi kerusakan pada setiap komponen. Selanjutnya dilakukan perbaikan dan penggantian komponen yang rusak, seperti pembuatan ulang teflon pada pompa hidrolik, penggantian seal hidrolik, penambahan sistem kelistrikan motor tiga fasa, serta pemasangan pompa coolant baru. Selain itu, dilakukan pembersihan dan pengecatan ulang body mesin untuk mencegah korosi dan meningkatkan estetika. Setelah proses perakitan selesai, mesin diuji melalui tiga metode pengujian, yaitu uji visual, uji fungsional, dan uji operasional. Pengujian operasional dilakukan dengan memotong beberapa jenis material logam, yaitu besi hollow 25x4 mm, profil U 80x40 mm, dan besi pejal berdiameter 40 mm. Berdasarkan hasil pengujian tersebut, dapat disimpulkan bahwa proses rekondisi berhasil mengembalikan fungsi dan kinerja mesin secara optimal. Mesin gergaji potong hidrolik Behringer KS 200 HY dinyatakan layak digunakan kembali untuk mendukung kegiatan praktik mahasiswa. Rekondisi ini memberikan manfaat dalam meningkatkan efektivitas pembelajaran, memperpanjang umur pakai mesin, serta mengoptimalkan fasilitas bengkel produksi di lingkungan Politeknik Negeri Sriwijaya.

Kata kunci: Rekondisi, Pengujian, Mesin Gergaji Potong Hidrolik, Behringer KS 200 HY, Teknik Mesin.

ABSTRACT

Reconditioning The Behringer Ks 200 Hy Hydraulic Cut-Off Saw Machine At The State Polytechnic Of Sriwijaya

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This final report discusses the reconditioning and testing process of the Behringer KS 200 HY hydraulic cut-off saw machine located in the Production Workshop of the Department of Mechanical Engineering, Sriwijaya State Polytechnic. The machine was previously in a non-functional condition due to several damages to the electric motor system, hydraulic system, loss of the coolant pump, and the condition of the machine body which experienced corrosion and dirt buildup. These damages hampered student practical activities and reduced the effectiveness of the learning process in the production workshop. Therefore, a reconditioning process was carried out to restore the machine's performance to near its original condition. The reconditioning stage began with a complete disassembly process to identify damage to each component. Next, repairs and replacement of damaged components were carried out, such as remaking the Teflon on the hydraulic pump, replacing the hydraulic seal, adding a three-phase motor electrical system, and installing a new coolant pump. In addition, the machine body was cleaned and repainted to prevent corrosion and improve aesthetics. After the assembly process was completed, the machine was tested through three test methods, namely visual testing, functional testing, and operational testing. Operational testing was conducted by cutting several types of metal materials, namely 25x4 mm hollow steel, 80x40 mm U-profile, and 40 mm diameter solid steel. Based on these test results, it can be concluded that the reconditioning process successfully restored the machine's function and performance to optimal levels. The Behringer KS 200 HY hydraulic cut-off saw was declared suitable for reuse. This reconditioning provides benefits in improving learning effectiveness, extending the machine's lifespan, and optimizing production workshop facilities at the Sriwijaya State Polytechnic.

Keywords: Reconditioning, Testing, Hydraulic Cut-off Saw, Behringer KS 200 HY, Mechanical Engineering.