

ABSTRAK
IMPLEMENTASI PERBAIKAN SISTEM KELISTRIKAN DAN
PENGUJIAN KINERJA MOTOR LISTRIK KAPASITOR
1 FASA PADA MESIN BOR DUDUK

(2026: xv + 50 Halaman + Daftar Gambar + Daftar Tabel + Lampiran)

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Penelitian Ini Bertujuan Mengimplementasikan Perbaikan Sistem Kelistrikan Dan Menguji Kinerja Motor Listrik Kapasitor Satu Fasa Pada Mesin Bor Duduk Setelah Dilakukan Perbaikan. Pengujian Dilakukan Melalui Pengukuran Arus, Tegangan, Dan Putaran Motor Pada Kondisi Berbeban Menggunakan Mata Bor Berukuran 4,5 Mm Dan 6 Mm. Hasil Pengujian Menunjukkan Arus Rata-Rata Sebesar 3,63 A Dan 4,74 A, Dengan Tegangan Kerja Stabil Sebesar 234 V. Putaran Pulley Motor Sebesar 1486,3 RPM Dan 1498,7 RPM, Sedangkan Putaran Chuck Bor Berada Pada Kisaran 281 RPM. Hasil Pengujian Menunjukkan Bahwa Seluruh Parameter Masih Berada Dalam Batas Kerja Yang Aman Dibandingkan Spesifikasi Nameplate Motor 220 V, 6 A, Dan 1420 RPM. Perbaikan Sistem Kelistrikan Berhasil Mengembalikan Fungsi Mesin Sehingga Motor Bekerja Stabil, Aman, Dan Memiliki Kinerja Yang Baik.

Kata Kunci: Sistem Kelistrikan, Motor Listrik Kapasitor Satu Fasa, Mesin Bor Duduk, Pengujian Kinerja.

ABSTRACT

IMPLEMENTATION OF ELECTRICAL SYSTEM REPAIR AND PERFORMANCE TESTING OF A SINGLE-PHASE CAPACITOR MOTOR ON A BENCH DRILLING MACHINE

(2026: xv + 50 Pages + List of Figures + List of Tables + Appendices)

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This study aimed to implement improvements to the electrical system and evaluate the performance of a single-phase capacitor motor used in a bench drilling machine after the repair process. Performance testing was conducted by measuring current, voltage, and motor speed under loaded conditions using 4.5 mm and 6 mm drill bits. The results showed average currents of 3.63 A and 4.74 A, while the operating voltage remained stable at 234 V. The motor pulley speeds were 1486.3 RPM and 1498.7 RPM, whereas the drill chuck speed was approximately 281 RPM. All measured parameters were within safe operating limits compared with the motor nameplate specifications of 220 V, 6 A, and 1420 RPM. The electrical system improvement successfully restored the machine's operation, enabling the motor to perform stably, safely, and efficiently.

Keywords: *electrical system, single-phase capacitor motor, bench drilling machine, performance testing.*