

## ABSTRAK

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Judul Laporan Akhir : Rancang Bangun alat praktikum *shaft alignment* di lab *Maintenance and repair* (pengujian)

(M. Gian Verrell, 2024, 37 Halaman, 13 Gambar, 9 Tabel )

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Alat praktik shaft alignment di lab maintenance and repair digerakkan secara manual menggunakan *steering wheel*, yang membuat putaran poros tidak konstan dan hasil pengukuran tidak akurat. Diperlukan shaft alignment yang berputar secara otomatis yang digerakkan dengan motor listrik. Memungkinkan mahasiswa mempelajari maintenance dasar, seperti shaft alignment, sabuk dan *pulley alignment*, rantai, dan sprocket, sheaves alignment, getaran mesin, bearing, dan roda gigi. Metode manual memerlukan keterampilan tinggi dan seringkali menghasilkan hasil yang kurang akurat dibandingkan dengan metode digital. Di sisi lain, metode digital, seperti penggunaan alat *alignment* laser, menawarkan akurasi yang lebih tinggi dan kemudahan penggunaan, yang mengarah pada pengurangan kesalahan manusia dan peningkatan efisiensi operasional. Proses *alignment* mencakup beberapa langkah kunci, termasuk pengukuran awal, penyesuaian posisi mesin, pengukuran ulang, dan finalisasi. Dengan menerapkan *teknik shaft alignment* yang tepat, industri dapat mengoptimalkan kinerja mesin, mengurangi biaya pemeliharaan, dan memperpanjang umur mesin. Penelitian ini bertujuan untuk memberikan pemahaman komprehensif tentang prinsip dasar shaft alignment dan manfaat penerapan teknologi modern dalam praktik industry. Perbandingan antara penggerak poros manual dan otomatis serta pengaruh misalignment juga bisa dipelajari. Berdasarkan latar belakang diatas dapat diambil judul “Rancang Bangun Alat Bantu Praktik *Shaft Alignment* di Lab *Maintenance and Repair*”

**Kata Kunci** : *Shaft Alignment*, Motor Listrik, *Maintenance*

## ***ABSTRACT***

Name : M. Gian verrell  
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(M. Gian Verrell, 2024, 37 Page,13 Figure, 9 Tables )

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The shaft alignment practice tool in the maintenance and repair lab is moved manually using a steering wheel, which makes the shaft rotation not constant and the measurement results are inaccurate. An alignment shaft that rotates automatically is required which is driven by an electric motor. Allows students to learn basic maintenance, such as shaft alignment, belt and pulley alignment, chains and sprockets, sheaves alignment, machine vibration, bearings and gears. Manual methods require high levels of skill and often produce less accurate results than digital methods. On the other hand, digital methods, such as the use of laser alignment tools, offer higher accuracy and ease of use, leading to reduced human error and increased operational efficiency. The alignment process includes several key steps, including initial measurement, machine position adjustment, re-measurement, and finalization. By implementing proper shaft alignment techniques, industry can optimize machine performance, reduce maintenance costs, and extend machine life. This research aims to provide a comprehensive understanding of the basic principles of shaft alignment and the benefits of applying modern technology in industrial practice. Comparison between manual and automatic shaft drives and the influence of misalignment can also be studied. Based on the background above, the title can be taken as "Design and Construction of Shaft Alignment Practice Tools in the Maintenance and Repair Lab

**Kata Kunci** : *Shaft Alignment*, Electric Motor, *Maintenance*