

ABSTRAK

PERANCANGAN DESAIN *CONVEYOR* UNTUK MENGURANGI KELUHAN *MUSCULOSKELETAL* PADA PROSES *LOADING* DENGAN ASPEK ERGONOMI

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Aktivitas *loading* dalam industri manufaktur sering kali melibatkan beban fisik yang tinggi dan postur kerja yang tidak ergonomis, yang berpotensi menimbulkan gangguan *Musculoskeletal* (*Musculoskeletal Disorders/MSDs*). Keluhan seperti nyeri pada punggung, bahu, dan tangan umum dialami oleh pekerja akibat gerakan berulang dan penggunaan alat bantu kerja yang kurang sesuai. Penelitian ini bertujuan untuk merancang ulang desain *conveyor* secara ergonomis guna meminimalkan risiko *MSDs* pada proses *loading*. Metode penelitian yang digunakan melibatkan pendekatan ergonomi berbasis antropometri serta analisis postur kerja menggunakan metode *Rapid Entire Body Assessment* (REBA). Data diperoleh melalui observasi langsung, wawancara, kuesioner Nordic Body Map (NBM), dan pengukuran dimensi tubuh pekerja. Berdasarkan hasil analisis, dilakukan perancangan *conveyor* yang mempertimbangkan tinggi optimal, jangkauan tangan, dan sudut kemiringan kerja. Evaluasi desain menunjukkan adanya penurunan skor REBA serta peningkatan kenyamanan kerja operator. Hasil penelitian ini diharapkan dapat menjadi acuan dalam penerapan prinsip ergonomi dalam desain peralatan kerja di lingkungan industri, serta memberikan kontribusi terhadap peningkatan produktivitas, efisiensi, dan keselamatan kerja secara menyeluruh.

Kata Kunci: Ergonomi, *Conveyor*, REBA, Gangguan *Musculoskeletal*, Proses *Loading*.

ABSTRACT

DESIGNING A CONVEYOR TO REDUCE MUSCULOSKELETAL COMPLAINTS DURING THE LOADING PROCESS WITH AN ERGONOMIC PERSPECTIVE

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Loading activities in the manufacturing industry often involve high physical loads and unergonomic working postures, which have the potential to cause musculoskeletal disorders (MSDs). Complaints such as pain in the back, shoulders, and hands are common to workers due to repetitive movements and the use of inappropriate work aids. This study aims to ergonomically redesign the conveyor design to minimize the risk of MSDs in the loading process. The research method used involves an anthropometry-based ergonomic approach and work posture analysis using the Rapid Entire Body Assessment (REBA) method. Data was obtained through direct observation, interviews, Nordic Body Map (NBM) questionnaires, and measurements of workers' body dimensions. Based on the results of the analysis, a conveyor design was carried out that considered the optimal height, hand reach, and working tilt angle. The design evaluation showed a decrease in the REBA score and an increase in operator work comfort. The results of this study are expected to be a reference in the application of ergonomic principles in the design of work equipment in the industrial environment, as well as contribute to improving overall productivity, efficiency, and work safety.

KEYWORD: *Ergonomi, Conveyor, Antropometri, REBA, Gangguan Musculoskeletal, Proses Loading*