

INTISARI

Unit alat berat sering digunakan untuk membantu pekerjaan pembangunan jalan tol. Salah satu unit yang efektif dalam pemindahan material adalah *dump truck*, khususnya Hino 500 FM 260 JD. Unit ini sering mengalami kerusakan tidak terduga pada bagian *housing flywheel* di lokasi penulis melakukan penelitian. Keadaan *hauling road* dan muatan berlebihan menjadi faktor utama kerusakan pada tapak *engine mounting* yang menopang *engine* dan transmisi, yang terhubung dari *chassis* kendaraan ke *housing flywheel*. Kerusakan ini menyebabkan kerugian bagi perusahaan karena target produksi harian terhambat, biaya *maintenance* yang mahal, dan waktu *maintenance* yang relatif lama.

Penelitian ini bertujuan meminimalisir kerusakan dan kerugian perusahaan dengan membuat dan memasang *part* tambahan berupa *support bracket* pada *housing flywheel* dan transmisi. Menggunakan beberapa perhitungan sebagai variabel utama, data *breakdown* unit *hauling* dianalisis untuk menurunkan potential *lost cost* perusahaan. Pemasangan *support bracket* pada unit dan *monitoring* selama beberapa bulan dilakukan untuk mengumpulkan data. Hasil penelitian menunjukkan bahwa pemasangan *support bracket* efektif dalam meminimalisir *downtime housing flywheel*, dengan potential *lost cost* perusahaan sebesar Rp.349.898.769,23 dalam waktu 3 bulan. Kesimpulan dari penelitian ini adalah bahwa faktor utama kerusakan adalah *hauling road* dan muatan berlebih, dan pembuatan serta pemasangan *support bracket* efektif dalam meminimalisir kerusakan dan menekan angka kerugian pada perusahaan.

Kata kunci: alat berat, *dump truck*, *housing flywheel*, inovasi *support bracket*, *lost cost*, *maintenance*.

ABSTRACT

Heavy equipment units are often used to assist toll road construction work. One unit that is effective in moving materials is a dump truck, especially the Hino 500 FM 260 JD. However, this unit often experiences unexpected damage to the flywheel housing at the research site. Hauling road conditions and overloading are the main factors for damage to the engine mounting treads that support the engine and transmission, which are connected from the vehicle chassis to the flywheel housing. This damage causes losses to the company due to hampered daily production targets, expensive maintenance costs, and relatively long maintenance times.

This research aims to minimize damage and losses to the company by making and installing additional parts in the form of support brackets on the flywheel housing and transmission. Using several calculations as the main variables, hauling unit breakdown data is analyzed to reduce the company's potential lost costs. Installation of the support bracket on the unit and monitoring for several months were carried out to collect data. The results showed that the installation of support brackets was effective in minimizing flywheel housing downtime, with a potential lost cost of Rp.349,898,769.23 within 3 months. The conclusion of this study is that the main factors of damage are hauling road and overloading, and the manufacture and installation of support brackets are effective in minimizing damage and reducing the number of losses to the company.

Keywords: *heavy equipment, dump truck, flywheel housing, support bracket innovation, lost cost, maintenance.*