

Pengembanganudukan gandar pada boogie kereta monorail = Development of axle support in boogie of monorail train

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Abstrak

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Dibutuhkan moda transportasi darat yang dapat memenuhi kebutuhan masyarakat modern. Kereta monorail adalah salah satu solusinya. Telah dilakukan perancangan boogie monorail, tetapi masih diperlukan perbaikan. Axle support merupakan bagian yang akan di-redesign. Proses redesign meliputi perubahan dimensi, fatigue design analysis, dan fatigue strength improvement study pada komponen flange hub, support ring, upper base, dan frame. Dari hasil redesign didapatkan total penurunan massa sebesar 4,9 % (9,11 kg) dari massa total. Dari hasil fatigue design analysis didapat bahwa komponen-komponen tersebut masih memenuhi kriteria fatigue design. Direkomendasikan beberapa alternatif peningkatan kekuatan fatigue pada komponen-komponen tersebut, antara lain heat treatment (carburizing), burr grinding, impact peening, dan ultrasonic impact peening

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It takes land transport modes to meet the needs of modern society. Train monorail is one of the solutions. Boogie monorail design has been done, but still needed improvement. Axle support is a part that want to be redesigned. Redesigning process includes dimensional changes, fatigue design analysis, and fatigue strength improvement study on the hub flange, support ring, upper base and frame. From the results obtained, redesigning has total mass loss of 4.9% (9,11 kg). From the results of fatigue design analysis found that the components still meet the criteria for fatigue design. There are some reccomended fatigue strength improvements for these components, such as heat treatment (carburizing), burr grinding, impact peening, and ultrasonic impact peening.