

ABSTRACT

Ramadhan, Muhammad Idris. 2018. *The Assembly and Design of Steering and Brake System of "OSCAR" Energy Efficient Car*. The Final Project, National Institute Of Technology Malang, Faculty Of Industrial Tecnology, Mechanical Engineering Diploma III.

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Energy efficient car is a vehicle that designed to minimize fuel usage and produces low exhaust emission. As fossil fuel for energy source decreases a lot while the energy demand constantly rising makes energy becomes a real problem in most countries of the world including Indonesia.

The design of OSCAR Energy Efficient Car is applying the engine of 4 strokes SUPRA X 125 cc. For steering system assembly the writers are using *Steering Column with Long Stabilizer* to minimize driver movement when operating the wheels to create a good maneuver. OSCAR Energy Efficient Car has turning angle up to $15,88^{\circ}$ which resulted in rotate radius of 5.74 meter and 4 applied disc brakes where 2 disc brakes place in front and 2 others are place in rear with disc thickness of 7 mm and 110 trellis. The result of brake testing of OSCAR is proven able to slow down the car movement by 10 m.s with the maximum speed of 60 km/hour.

The purpose from "OSCAR" Energy Efficient Car creation are as requirement for passing the final project and expected to compete in *Kontes Mobil Hemat Energi (KMHE)*.

Keywords : The Design of Brake and Steering System of "OSCAR" Energy Efficient Car