

ABSTRACT

The cover on the wheel hub functions to protect the most important components and support the weight coming from the body, so it must be designed as well as possible so that it can support the existing weight. The cover on the wheel hub also functions as a balance when driving, so the cover is made from strong material and does not corrode easily because this part often experiences mechanical stress. The problems that occurred at the Manufaktur Energi Nusantara (MEN) company made researchers want to develop a cover design for the single shaft wheel hub with the aim of increasing the strength of the cover in accepting pressure from the vehicle, driver and passengers. In this final research project, a simulation study was carried out using Solidwork software which functions to design covers and carry out static simulations in order to determine the deformation and stress values that occur in the single shaft wheel hub cover. The material used in designing the cover is Aluminum Alloy 6061 with a load value of 2177 N and 2912 N. The maximum deformation value obtained for the MEN cover is 0.272 mm, the strain value is 0.007, and the stress value is 730.805 N/m² with a load of 2177 N. Under loading 2912 N obtained a maximum deformation value of 0.111 mm, strain value of 0.003, and stress of 307.538 N/m². It can be concluded that the MEN cover has a higher static value than the YMMotor cover. There are influencing factors such as the thickness of the cover on the parts used as support points

Keywords: Static Load, Cover, Electric Scooter, Wheel Hub