

A Comparative Study of Standard, Casted, and Riveted Eye Design of a Mono Leaf Spring Using CAE Tools

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Abstract : The objective of the present study is to determine better eye end design of a mono leaf spring used in light motor vehicle. A conventional 65Si7 spring steel leaf spring model with standard eye, casted and riveted eye end are considered. The CAD model of the leaf springs is prepared in CATIA and analyzed using ANSYS. The standard eye, casted, and riveted eye leaf springs are subjected to similar loading conditions. The CAE analysis of the leaf spring is performed for various parameters like deflection and Von-Mises stress. Mass reduction of 62.9% is achieved in case of riveted eye mono leaf spring as compared to standard eye mono leaf spring for the same loading conditions.

Keywords : CAE, leaf spring, standard, casted, riveted eye

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