

Design and simulation of disc brake mechanism and automotive differential gearbox using SolidWorks software

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Abstract: This topic focuses on the design and simulation of the disc brake mechanism and differential gearbox of a car using SolidWorks software. The context for choosing this topic stems from the necessity to improve vehicle performance and driving safety by optimizing critical components. The objective is to build a detailed digital model to test the feasibility of the designs before actual production, thereby reducing product development time and costs. The research method is based on a combined approach of theory and empirical application, ensuring model accuracy. The expected result is to provide new technical solutions for the automotive industry, enhancing vehicle performance and safety.

Keywords: SolidWorks, Disc brake, Differential gearbox, Engineering design, Simulation