

A Study on Double Wishbone Suspension System

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Abstract

Advancements in science and technology, effective designs and newly advanced ways of manufacturing for the need to fulfill the customer expectations and provide them with better goods have led to these developments. With the invention and help of numerous mechatronic systems, there are technological advancements in various automobile sectors and thus given better performance output. A suspension system is responsible for the safety of both the vehicle and occupants by providing stability and a comfortable ride during its maneuvers. Without the help of any suspension system, it would have made it extremely hard for a driver to control a vehicle since all the shocks and vibrations would have been directly transmitted to steering without any damping. This project aims to design and build the suspension system for the upcoming Car. To be able to design a suspension system background research was performed to understand the suspension geometry. The suspension type used will be an unequal double wishbone. The suspension system is an essential part of any vehicle. It should be reliable and compact as well as provide better handling to the car. The suspension deals with a lot of forces when cornering, acceleration, braking, and bump conditions are applied during dynamic situations. This paper presents a methodology to design and build a suspension system for a passenger car.

Keywords

Double wishbone, Suspension system, optimal design, Finite Element Method and Computational Fluid Dynamics

Biographies

Dr. MdRakibuzzaman is an Assistant Professor at International University of Business Agriculture and Technology-IUBAT, Dhaka, Bangladesh. He awarded Ph.D. in Thermofluids and Energy from Soongsil University, Korea in 2018 under the supervision of Prof. Dr. -Ing. Sang-Ho Suh. He published 14 scientific articles in ISI and SCOPUS-indexed journals and international conferences. His research interests include Cavitation, Turbomachinery, Computational Fluid Dynamics, Multi-phase flow, Biomedical Engineering, etc. Dr. Rakibuzzaman is a member of the Institution of Engineers Bangladesh (IEB) and Korean Society for Fluid Machinery (KSFM) and was a local member of International Conference on Computational Heat, Mass and Momentum Transfer (ICCHM²T).

Ashikul Islam Nabil received his B.Sc. degree in Mechanical Engineering from the International University of Business Agriculture And Technology (IUBAT), Dhaka, Bangladesh in 2022. He has 4 months of professional training experience in Automobiles at AKIJ Motors. He also has training experience in Solid Works, Computer Aided Mechanical Design, and MS office programs. He also successfully completed the Prothom Alo debate competition. He also successfully completed a Book Reading competition organized by British Council. Furthermore, he develops innovative ideas, technologies, knowledge, and experience for positive contribution and tries to be a dynamic and versatile person in mechanical engineering that offers good potential advancement.

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