

Design and Development of an Articulated Driver Seat for Hatchback Cars



K. Nikesh

k.niki37@gmail.com
Ph. No: 0 99622 78963

Student's Name	K. Nikesh	PD (FT-2012)
-----------------------	------------------	---------------------

Academic Supervisor(s)	B. Rajatesh Nath and Vignesh Ravichandran
-------------------------------	--

Industrial Supervisor(s)	
---------------------------------	--

Keywords: Articulated Driver Seat, Ergonomically Comfortable, Aesthetically Pleasing, Hatchback Cars

Abstract:

Many of us spend the day in a sitting posture. The main purpose is accomplished when one looks at the seat as only to sit upon but while sitting in the driver seat, a multifunctional, ergonomically comfortable and aesthetically pleasing seat for driver of hatchback cars would be an idealistic solution. This project aims at addressing the needs of the user for comfortable sitting.

The design process started with primary research and an identified need in building up an articulated driver seat for hatchback cars. By implementing various design methodologies such as product study, literature review, environment study and market study, data was collected. Ethnography research was extended out along with personal interviews to identify the users aspirations and demands. A trend study was carried out on similar products from one era to another. The Quality Function Deployment (QFD) helped to attain the data for converting into technical voice and Product Design Specification (PDS) and make the outlines for design. With the assist of the derived PDS various concepts were generated using free hand sketches and doodles. In the developed concepts various issues and problems identified were addressed in order to get rid of the troubles faced by customers regarding ergonomic comfort and safety. The final concept was selected by weighted ranking method. The design was fine-tuned and modelled in the form of 3d images using CATIA and rendering was done using Keyshot software.

A 1:1 working prototype of the final selected concept was made to verify and validate the design ergonomically and functionally. The product user validation feedback obtained was positive and satisfactory.



Final model