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# 桑塔纳 2000 的机械式变速器设计

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## 摘 要

随着近些年来社会经济的进步,汽车已经不再是稀奇的物件,家家有汽车不再是一个想象。作为汽车的重要组成部分,变速器的任务是适应发动机特性,以高效、经济的方式将动力传递到驱动轮上,以满足使用要求;汽车变速器是对完成传输系统任务起重要作用的部分,以及决定整体性能的主要部分之一,直接影响到它的燃油经济性如何、是否可靠、和换挡能力强弱和传动效率高。由于结构更加紧凑、传动效率很高,工作可靠而生产成本却很低、使驾驶员的驾驶体验更好,机械式变速器被广泛应用于各种形式的车辆上。

本设计了桑塔纳 2000 的机械式变速器,首先介绍了汽车变速器的设计要求及国内外研究现状;然后在规定的条件下对变速器齿轮的结构参数、轴的结构尺寸等进行设计计算,绘制了 CAD 二维图纸,并应用三维建模软件 CATIA 进行了建模,最后设计了控制与同步机构结构,提高了整车性能。

**关键词:** 变速器; 齿轮; 同步器; 设计; 结构

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## ABSTRACT

With the social and economic progress in recent years, cars are no longer strange objects, and it is no longer an imagination to own a car. As an important part of the car, the task of the transmission is to adapt to the characteristics of the engine and transmit power to the drive wheels in an efficient and economical manner to meet the requirements of use; the car transmission is an important part of the task of completing the transmission system and decision. One of the main parts of the overall performance directly affects its fuel economy, reliability, shifting ability and transmission efficiency. Because the structure is more compact, the transmission efficiency is high, the work is reliable and the production cost is low, the driver's driving experience is better, the mechanical transmission is widely used in various forms of vehicles.

This design of the mechanical transmission of Santana 2000 first introduces the design requirements of automobile transmission and the current research situation at home and abroad; then under the specified conditions, the design calculations of the transmission gear structure parameters, shaft structure dimensions, etc. are drawn, and the CAD two is drawn. Dimension drawings, and use the three-dimensional modeling software CATIA for modeling, and finally designed the control and synchronization mechanism structure to improve the performance of the vehicle.

**Key words:** Transmission; Gear; Synchronizer ; Design; Structure

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