RESEARCH AND DEVELOPMENT OF ELECTRIC POWER STEERING SYSTEM MODEL FOR KIA MORNING CAR

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***Abstract*—This thesis focuses on the research and development of an electric power steering (EPS) system model for the KIA MORNING car. The study covers the general overview of the steering system, including its components and the advantages and disadvantages of hydraulic power steering (HPS) systems. The author also discusses the selection of the EPS system and its design for the KIA MORNING, highlighting the benefits of EPS in terms of ease of control and safety. The research concludes with a model of the EPS system for the KIA MORNING, providing a foundation for further development and practical application. The model does not include specific performance metrics or evaluations, but it offers a detailed description of the EPS system's components and operational principles.**

***Index Terms*—electric power steering, KIA MORNING, hydraulic power steering, steering system, modeling, vehicle control**

I. Introduction

The thesis provides an overview of the steering system, including its general functions and the different types of power steering systems, with a focus on hydraulic and electric power steering. The author explains the need for power steering to reduce the effort required for steering and improve vehicle handling. The study aims to develop a model of the electric power steering system for the KIA MORNING, addressing the limitations of hydraulic systems. The research covers the characteristics of the KIA MORNING and the selection of an appropriate EPS system for its design, emphasizing the benefits of EPS in terms of ease of control and safety [1]. Published articles on the methods and subject of this project provide context for this English summary [10].

II. Methods

The research involves a comprehensive review of existing literature on power steering systems, including books and online resources. The author also examines the specific characteristics of the KIA MORNING and selects an appropriate EPS system for its design. The study does not include numerical evaluations or performance claims, focusing instead on the theoretical aspects of the EPS system and its implementation [1].

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III. Results

The thesis presents a detailed model of the electric power steering system for the KIA MORNING, covering its components and operational principles. The author discusses the advantages of EPS over hydraulic systems, such as ease of control and safety, but does not provide specific performance metrics. The model includes a description of the EPS system's components, such as the electric motor, control unit, and hydraulic pump, and explains how these components work together to provide assistance to the driver. The model also covers the system's operation in different driving conditions, such as straight driving, turning, and braking, but does not include any measured evaluations or performance data [1].

IV. Discussion

The author compares the electric power steering system with hydraulic systems, highlighting the benefits of EPS in terms of ease of control and safety. However, the study does not include comparative performance data or detailed numerical evaluations. The discussion focuses on the theoretical advantages of EPS and its potential for improving vehicle handling and driver comfort. The author suggests that further research is needed to enhance the reliability and efficiency of the system, particularly in terms of signal processing and future improvements [1].

V. Conclusion

The research concludes that the electric power steering system is a suitable choice for the KIA MORNING, offering improved control and safety. The author suggests further research to enhance the reliability and efficiency of the system, particularly in terms of signal processing and future improvements. The model provides a foundation for further development and practical application, but it does not include specific performance metrics or evaluations. The study emphasizes the theoretical aspects of the EPS system and its implementation, highlighting the benefits of EPS in terms of ease of control and safety [1].

References

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