Design and Construction of a Training Model for a Car Windscreen Wiper and Washer Circuit

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***Abstract*—This thesis focuses on the development of a practical model for the electrical circuit of the windscreen wiper and washer system on cars. The model was designed to function as a real system, providing insights into the system's operation and contributing to the understanding of the windscreen wiper and washer system's components and functions. The model was created to mimic the real system's functions and was used for both theoretical and practical teaching purposes. The model successfully implemented various modes, including low, mist, intermittent, and wash modes, allowing for a better understanding of the system's behavior. The model provided a practical and visual representation of the windscreen wiper and washer system, support practical observation of the circuit and reinforcing theoretical knowledge. The model's limitations include its reliance on a power supply and the need for further testing to ensure long-term stability and reliability.**

***Index Terms*—wiper, wiper washer, electrical circuit, car system, teaching model, automotive engineering**

I. Introduction

The thesis provides an overview of the windscreen wiper and washer system on cars, including its historical development, functions, and types. The system has evolved significantly over the years, with modern cars featuring advanced wiper and wiper washer systems. The importance of this system in modern cars cannot be overstated, as it ensures clear visibility for the driver, enhancing safety and comfort. The need for practical models to support teaching and learning is emphasized, as they provide a hands-on approach to understanding the system's components and functions. The model developed in this thesis was designed to mimic the real system's functions and was used for both theoretical and practical teaching purposes [1]. Published articles on the methods and subject of this project provide context for this English summary [7].

II. Methods

The methods involved designing and constructing a practical model for the windscreen wiper and washer system. The model was created to mimic the real system's functions and was used for both theoretical and practical teaching purposes. The model included a power supply, control circuitry, and various components such as motors and relays. The control circuitry was designed to operate in various modes, including low, mist, intermittent, and wash modes. The model was tested to ensure its functionality and stability. The model's limitations include its reliance on a power supply and the need for further testing to ensure long-term stability and reliability [1].

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III. Results

The practical model was successfully developed and tested, allowing for a better understanding of the system's components and functions. The model was designed to operate in various modes, including low, mist, intermittent, and wash modes. The model's control circuitry was tested to ensure its functionality and stability. The model provided a practical and visual representation of the windscreen wiper and washer system, support practical observation of the circuit and reinforcing theoretical knowledge. The model's limitations include its reliance on a power supply and the need for further testing to ensure long-term stability and reliability [1].

IV. Discussion

The model provided a practical and visual representation of the windscreen wiper and washer system, support practical observation of the circuit. It allowed students to observe and measure the system's behavior, reinforcing theoretical knowledge. The model's implementation of various modes, including low, mist, intermittent, and wash modes, provided a comprehensive understanding of the system's behavior. The model's limitations include its reliance on a power supply and the need for further testing to ensure long-term stability and reliability. The model can be used as a teaching aid for automotive engineering students, providing a hands-on approach to understanding the windscreen wiper and washer system [1].

V. Conclusion

The thesis concludes that the practical model is intended as a teaching aid, providing a hands-on approach to understanding the windscreen wiper and washer system. The model can be used as a teaching aid for automotive engineering students, providing a hands-on approach to understanding the windscreen wiper and washer system. The model's limitations include its reliance on a power supply and the need for further testing to ensure long-term stability and reliability. Future work could focus on improving the model's durability and expanding its functionality to include additional features [1].

References

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