New Personal Means of Mobility: The noslisu

Recently, electric vehicles (EVs) such as power-assisted bicycles and electric scooters have been attracting attention. They solve social issues and bring health and enjoyment but pose challenges such as stability, controllability, and loading capacity. To solve these problems, we have developed the noslisu—a three-wheel EV. The noslisu is a new type of EV developed by leveraging our motorcycle design technologies and long-term experience. The noslisu employs our proprietary two-wheel steering mechanism to combine the stability unique to three-wheel vehicles and natural controllability close to that of bicycles. It has been well received in the market since its launch in May 2023, and we expect to boost sales further with new specifications from around spring 2025.

Introduction

Recently, small electric vehicles (EVs) such as power-assisted bicycles and electric scooters have been gaining attention. These vehicles offer the benefits of being environmentally friendly, solving problems related to traffic congestion and parking lots, and delivering health and enjoyment. However, they pose challenges such as stability, controllability, and loading capacity. For example, small two-wheel EVs vehicles may be difficult to balance or inconvenient for carrying baggage. Four-wheel EVs, on the other hand, are large so may be difficult to maneuver or drive on narrow roads or sidewalks.

1 Development goals

We developed the noslisu — a three-wheel EV, to solve problems surrounding conventional electric vehicles. This three-wheel EV is intended to provide comfortable and easy transportation to a wide range of users by combining the stability unique to three-wheel vehicles and natural controllability close to that of bicycles.

Table 1 noslisu series specifications

Model	The noslisu	The noslisu e
Type	Power-assisted bicycle	All-electric vehicle
Driver's license	Not required	Regular driver's license
Vehicle weight [kg]	40. 0	41. 0
Maximum speed [km/h]	25	60
Riding distance [km]	47. 4	40. 0
Battery capacity [Wh]	504	504
Motor output [W]	250	4. 0k
Loading capacity [kg]	20	20
Recommended retail price	363, 000 yen	431, 000 yen

2 Specifications

The noslisu is a new type of EV developed by leveraging our motorcycle design technologies and experiences accumulated for a long time. This EV employs Kawasaki's proprietary two-wheel steering mechanism to combine the stability unique to three-wheel vehicles and natural controllability close to that of bicycles.

Table 1 lists the specifications of the noslisu series. The series offers two vehicle models: the noslisu with power-assisted bicycle specifications, and the noslisu e with all-electric specifications. For the power-assisted bicycle model, we will update the motor and battery specifications around spring 2025.

3 Features

One key feature of the noslisu series is Kawasaki's proprietary two-wheel steering mechanism*. This provides natural controllability that enables the vehicle body to move in synchronization with moving the handlebars, and delivers a stable ride less affected by road inclines and uneven surfaces.

*Patent application 2020-129765, patent application 2020-129766, etc.

(a) Link structure in which the wheels tilt in line with the body's lean

(b) Video of vehicle behavior (social media link)

Fig. 1 Two-wheel steering mechanism

4 Voices in the market

The noslisu series was sold exclusively through a crowdfunding service in 2021 and attracted tremendous interest. All fifty units of both the noslisu with power-assisted bicycle specifications and the noslisu e with all-electric specifications sold out by the evening of the launch day. They received high praise from supporters. Owing to such popularity, Kawasaki Motors Corporation Japan launched the series as regular products in May 2023.

We received the following feedback from crowdfunding supporters.

- Not only is the noslisu a fun bicycle to ride, but its power assist is strong and comfortable. The two-wheel steering mechanism allows me to turn corners more naturally and smoothly than I expected.

- The noslisu e is nimble and easy to maneuver even though it is all-electric. The maximum speed is sufficient and the battery lasts a long time. The three wheels make the vehicle stable and reliable.

We also received many reactions after launching the series as regular products in 2023. We realize that they are gradually growing in popularity, as we hear that some users have bought them for transportation after surrendering their driver's license.

5 Specifications of the next-generation model

We will significantly update the specifications as early as around spring 2025, based on more feedback and improvement proposals received since the launch in 2023. Major changes are as follows.

- Replacement of the rear hub motor with a center motor
- Increase in the battery capacity
- Repositioning of handlebar grips for a more comfortable riding posture
- Accessory enhancement

Fig. 2 Photo of all project members

Conclusion

The noslisu series is a new form of mobility from Kawasaki. The development concept is to deliver a comfortable and easy way to get around by combining the stability unique to three-wheel vehicles and natural controllability close to that of bicycles. We expect to boost sales further with the new models coming around spring 2025 for even better comfort, convenience, and performance. This project started when it was chosen in the Business Idea Challenge hosted by Kawasaki Heavy Industries' Innovation Department in the Corporate Planning Division at Head Office. It was then transferred to Kawasaki Motors, Ltd., where it was successfully commercialized and continues to be developed. Minor changes are planned around spring 2025. We have developed the project thanks to the cooperation, acceptance, and advice of many people who supported its promotion, and once again we would like to express our gratitude for this opportunity.

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