

# Merging High Performance with Easy Handling: Ninja 500 and Z500



*The Ninja 400 and Z400 are already widely recognized in the market as models that combine easy handling with high performance. To further gain superiority in the category, we provide more values to customers by increasing the engine displacement and we make developments to enhance the products' marketability by upgrading the surface design and equipment. These developments are to enhance the products' marketability. We have improved engine performance by focusing on the low- to medium-speed range, and boosted marketability by incorporating a new full LCD meter display. On top of those upgrades, we have equipped the Z500, with a new LED headlight to reduce the light's physical size and so improve both surface design and nighttime visibility.*

## Introduction

Since the Ninja 250R entered the market in 2008 as our world model under this model series, we have been leading the market category while increasing the displacement. But rivals are also launching their own special new models into the market, heating up the battle for market share.

## 1 Purpose

The Ninja 400 and Z400 are already widely recognized in the market as models that combine easy handling with high performance. But to gain superiority in the category, we have upgraded the products through various improvements, such as increasing engine displacement and updating the surface design and equipment.

## 2 Specifications

We have increased engine displacement by increasing stroke length. There are two specifications: the full-power (FP) type with no power restriction, and the A2 license (A2) type for Europe with restricted output.

**Table 1** compares the principal features of the new Ninja 500 and Z500 and the previous models Ninja 400

and Z400. The Ninja 500 and Z500 follow the frame-related specifications of the popular previous models.

## 3 Features

### (1) Engine performance

To enable entry-level riders, who are the main customers, to further feel how easy these models are to ride, we made developments that focus on improving the sensation of power in the low- to medium-speed range from the perspective of increasing displacement while taking ease of handling into account, assuming acceleration when riding on general roads and freeways.

(i) FP specification

As shown in **Fig. 1(a)**, the output and torque of the Ninja 500 and Z500 exceed those of the Ninja 400 right across the range, showing improvement in their acceleration performance, yet their fuel economy has been kept as low as that of the Ninja 400.

(ii) A2 specification

While satisfying the output regulations, the Ninja 500 and Z500 have been developed to further enhance performance in the low- to medium-speed range. As shown in **Fig. 1(b)**, the performance of the Ninja 500 and Z500 exceeds that of the Z400 from the low-speed range to the output peak, so they are easier to handle in the

**Table 1 Comparing principal specifications with previous models**

Item \ Machine model	Ninja 500 with FP spec.	2023 Ninja 400 with FP spec.
Engine type	4-stroke water-cooled Parallel 2-cylinder DOHC 4 valves	←
Displacement [cm <sup>3</sup> ]	451	399
Bore × stroke [mm × mm]	70.0 × 58.6	70.0 × 51.8
Bench max. power [kW]	38.3 / 10,000 min <sup>-1</sup>	35.0 / 10,000 min <sup>-1</sup>
Bench max. torque [N · m]	42.6 / 7,500 min <sup>-1</sup>	37.0 / 8,000 min <sup>-1</sup>
Seat height [mm]	785	785
Machine mass [kg]	171	168

Item \ Machine model	Z500 with A2 spec.	2023 Z400 with A2 spec.
Engine type	4-stroke water-cooled Parallel 2-cylinder DOHC 4 valves	←
Displacement [cm <sup>3</sup> ]	451	399
Bore × stroke [mm × mm]	70.0 × 58.6	70.0 × 51.8
Bench max. power [kW]	33.4 / 9,000 min <sup>-1</sup>	33.4 / 10,000 min <sup>-1</sup>
Bench max. torque [N · m]	42.6 / 6,000 min <sup>-1</sup>	37.0 / 8,000 min <sup>-1</sup>
Seat height [mm]	785	785
Machine mass [kg]	167	167

normal range. The Z500's fuel economy has been improved to 26.2 km/L in WMTC mode from 25.5 km/L for the Z400.

## (2) Meters and lighting devices

With "exciting and a step above" as the key phrase, we upgraded the exterior design, including the meters and lights.

The new models have a standard specification meter display (**Fig. 2(a)**) and lights. The Z500 has a new type of headlight that was developed for this model. In addition, bikes equipped with the special edition specification come with a TFT meter display (**Fig. 2(b)**) to enhance the products' marketability and visibility. Furthermore, the bikes have a new smartphone linkage function to increase user convenience.

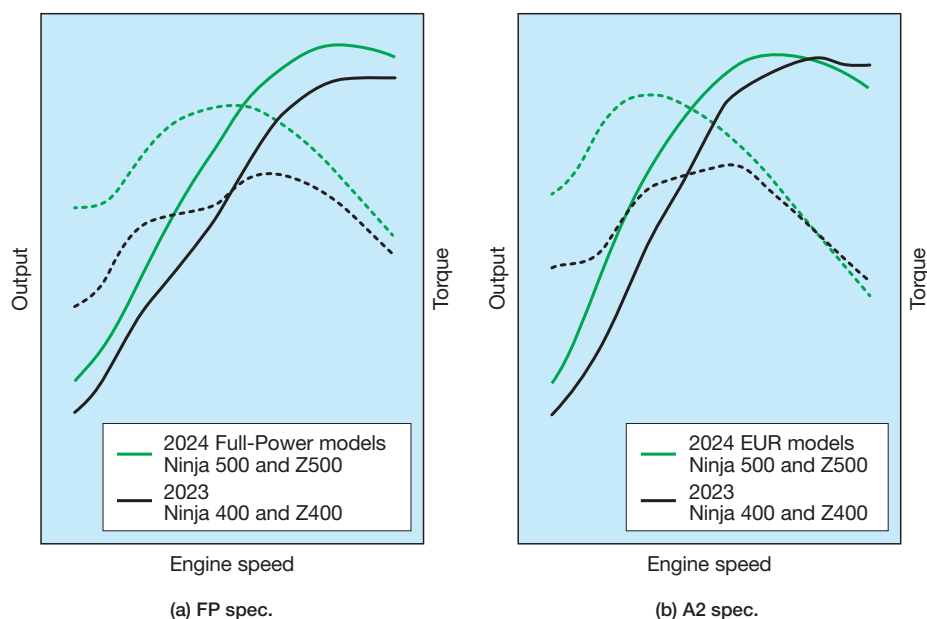


Fig. 1 Comparisons of performance curves

### (i) Meters

For standard-specification meters, we developed a new model of high-resolution, high-contrast improved black nematic (IBN) liquid crystal meter display to enhance the products' marketability (first adopted for this model).

### (ii) Headlight for the Z500

In the early stage of development, the design section, development riders, and suppliers set the goal of "balancing small size and brightness" and worked to achieve the goal under a common understanding. The result is a physically small headlight, which delivers an advantage in surface design and layout, with enhanced

nighttime visibility compared to the previous models as shown in **Fig. 3**.

### (3) Easy to handle

As with the engine characteristics, we have manufactured the frames by focusing on ease of handling.

#### (i) Lightweight frames

The frames of the Ninja 400 and Z400 are overwhelmingly light, which is their primary advantage. The Ninja 500 and Z500 follow those frames, and their weights have been kept to the level of previous 250-cc class machines, which leads to easy handling.



(a) STD



(b) SE

Fig. 2 Meter appearances

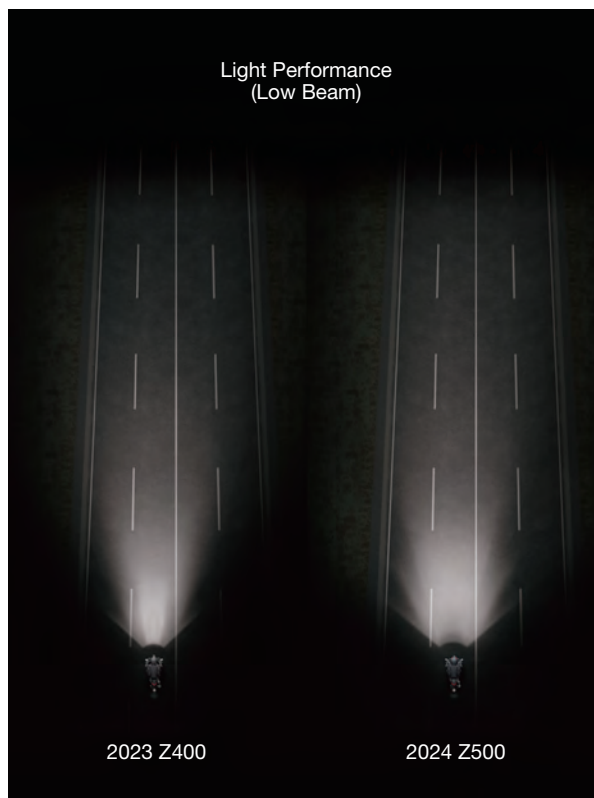


Fig. 3 Comparison of lighting performance

## (ii) Riding position

Regarding the riding position, the Ninja 500 and Z500 avoid an excessively sporty leaning-forward form, instead adopting a comfortable position that works best in a variety of situations and that is optimal as an all-round position. This received wide praise when used for the previous models as well.

## Conclusion

As with the previous models, we are sure these new high-performance, easy-to-handle models will satisfy a diverse range of riders including first-time bike owners, female riders, and riders who are jumping back onto the saddle after years away.

Minoru Makihara

### Contact

Kawasaki Motors, Ltd.

<https://www.global-kawasaki-motors.com/en/inquiry/>