

Styling Design of N BOX

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ABSTRACT

Designed to the grand concept of a “Green Mini Minivan,” the N BOX utilizes an FF center tank layout (a first for a kei car) in a new-generation platform based on the concept of “man maximum, mechanism minimum,” making it a “kei minivan” for families with young children.

Starting with the design concept “Relax Flex Mini Minivan,” the N BOX has achieved the sense of presence, space and utility of a family minivan. The exterior has the styling theme of a “sense of reassurance in a box that evokes a friendly feeling,” while the styling theme of the interior is “pursuit of spaciousness.” The colors and seat fabric further accentuate those characteristics.

1. Introduction

Since entering the automobile market in 1963 with a kei car,* Honda has offered unique products unlike those of any other manufacturer.

Kei cars have come to be used as a highly accessible means of transportation. The market for them has undergone a number of standard changes that have brought safety and product marketability to mature levels, and thus their market has further diversified and continued to grow. The core of the market presently is taller models: these so-called height wagons emphasize the space value.

As part of product development, Honda researched kei car users nationwide and determined that space value is what is needed by families with young children, which make up the biggest share of users.

Some new models are appearing that are over 1700 mm high (so-called super-height wagons), and Honda has become strongly aware of the importance of space value in kei cars.

As the research has continued, the product image of an “authentic family minivan in the kei car size (a Mini Minivan)” has taken solid form, and Honda has found three themes that define this image: “comfortable space,” “reassuring with a commanding view,” and “utility.”

With these themes in mind, Honda aimed to build a “Green Mini Minivan” with optimal packaging, quality and fuel economy (Fig. 1).

To realize this objective, Honda developed a new-generation kei platform based on the concept of “man

maximum, mechanism minimum” (MM concept) and characterized by a high-efficiency package and FF center tank, thereby achieving an automobile with as much or more interior space, utility, handling, and sense of presence as an ordinary minivan while conforming to kei car standard (Fig. 2).

*Kei cars (or k-cars) are automobiles meeting the smallest specifications in Japan’s unique automobile classification system. The enforcement regulations of the Road Transport Vehicle Law stipulate that kei cars shall be no longer than 3400 mm, no wider than 1480 mm and no higher than 2000 mm, with engine displacement of no more than 660 cm³, rated passenger capacity of no more than four, and cargo capacity of no more than 350 kg.



Fig. 1 Grand concept

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Fig. 2 Overview of N BOX

2. Design Concept

The design concept selected for the N BOX is “Relax Flex Mini Minivan.” This concept expresses the N BOX’s characteristics of plenty of interior space for relaxing and utility with abundant flexibility (Fig. 3).

The N BOX, however, was designed and developed not simply to be a spacious kei height wagon, but to be a minimum minivan with exceptional quality offering a sense of reassurance so that customers could use it with pride as a family car.

Every effort was made to create a functional and



Fig. 3 Design concept

timeless expression that would not lose its appeal so that families could continue to love and use it for many years.

3. Package Layout

Through Honda’s pursuit of a high-efficiency package, the N BOX’s Mini Minivan Package was newly developed to achieve more space than an ordinary minivan while keeping the kei size (Fig. 4).

With the three key elements making up the Mini Minivan package — reassuring with a commanding view, comfortable space and utility — Honda repeatedly tested the package as it established the specifications.

Details of each of the elements are described below.

3.1. Reassuring with a Commanding View

One highly regarded aspect of minivans is the commanding view afforded by their high eye points. Honda drivers tried various models before setting the eye point height of the N BOX at 1360 mm off the ground. This eye point, which rivals that of the STEP WGN, aims to ensure a commanding view and a sense of reassurance that the N BOX will not be towered over by other automobiles on the road. Honda found a good balance of forward and downward vision by having drivers, especially women who are the main users, test-drive models from kei cars to minivans. The N BOX is the only FF kei car with an eye point of the same height as an ordinary minivan.

The design stretches the distance from the eye point to the top edge of the front window, forming a roomy forward space that even ordinary minivans do not offer. The angle of the front window was made nearly vertical to form this space. Moreover, the A pillar was narrowed and the shape of the front window perimeter was designed to create a sense of spaciousness laterally expanding the forward field of vision and creating a panoramic view (Fig. 5).

3.2. Comfortable Space Surpassing that of a Minivan

To achieve minivan space in a kei car size, the space

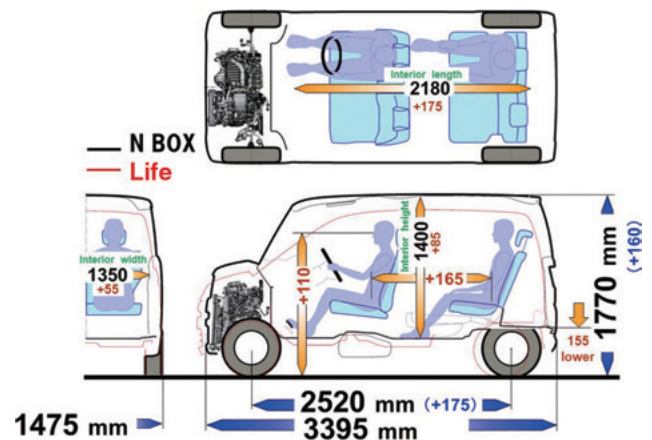


Fig. 4 Mini Minivan package

was constructed after researching the values of the first and second row seats of an ordinary family minivan of engine displacement class 2 L.

The new platform offers an interior length (catalog value) that is 175 mm longer than the Life thanks to such changes as shortening the engine room. The FIT's well-received center tank layout was used, which combined with the effect of extending the wheel base 100 mm, made it possible to expand the tandem distance (distance between front and rear seat passengers) by 165 mm over the Life.

Furthermore, the overall height was raised as high as possible (taking maneuvering stability into account), thus securing as much interior height as a high-end minivan. This achieved a roomy rear seat space that lets a child up to 140 cm stand up in the interior (Fig. 6).

3.3. Utility beyond Expectations

A study focused on family consumers in Japan found that many wanted to be able to carry a bicycle in their automobiles for those times when dropping off or picking up the child who bicycled to school. Honda's designers studied the cargo compartment and seat arrangement with the idea of making sure that a particular strength of this Mini Minivan would be that it is easier than ever before to load both people and bicycles. This study revealed that for family consumers, bicycles are the largest items that get loaded and unloaded on a day-to-day basis.



Fig. 5 Reassuring and commanding field of vision

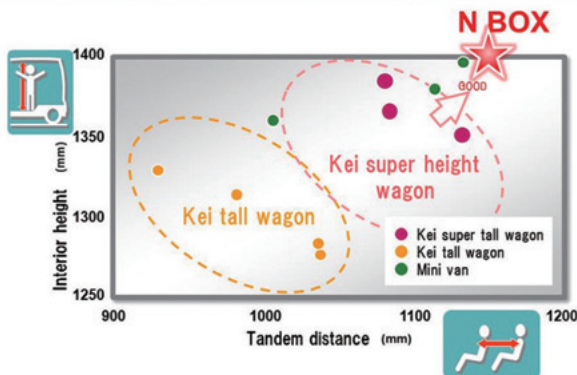


Fig. 6 Comfortable space

The interior length of the MM high-efficiency package and the low cargo compartment afforded by the FF center tank layout make it possible to easily load a bicycle.

And to take full advantage of these easy-to-use features, the rear side door on both sides is a sliding door that opens 640 mm, achieving class-leading ease of ingress/egress and accessibility (Fig. 7).

With one-motion dive-down, the rear seat folds up easily to ensure a large loading space for a bicycle. The height of the tailgate's lower edge is set low at just 480 mm above the ground, making it easy to load a bicycle. The cargo compartment is tall, at 1190 mm in the trunk area and 1155 mm over the folded seat back, so that a person can climb into the vehicle while loading the bicycle and then easily engage the stand. Loading and unloading a bicycle requires no effort at all, even on a daily basis.

The center tank platform also has a rear-seat tip-up mechanism so that with a single touch the user can open up a large space with the 1400 mm interior height from the floor beneath the rear seat to the roof. This allows many types of uses different from the trunk space such as a place to change clothes, or put hobby equipment like gardening tools and large musical instruments, or a dog carrier (Fig. 8).

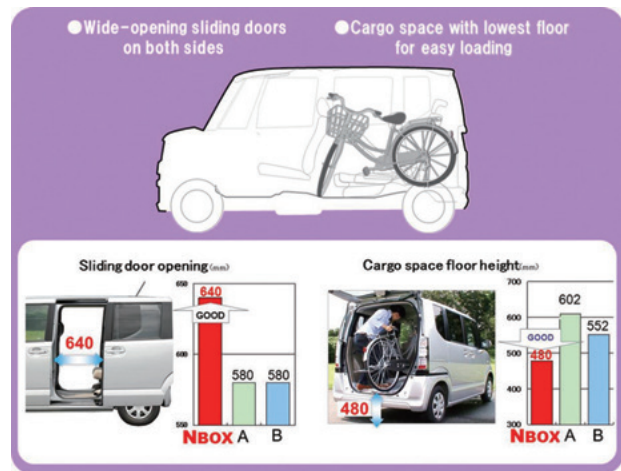


Fig. 7 Utility

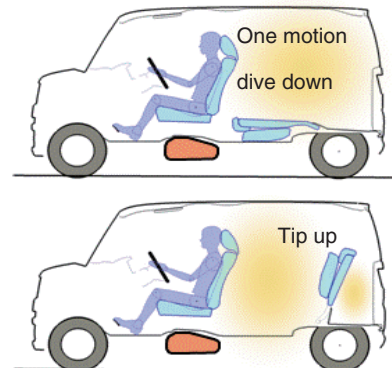


Fig. 8 Seat arrangement

4. Exterior Design

The exterior design is based on the theme “a strong and reassuring Mini Minivan form” in order to express the “Relax Flex Mini Minivan” design concept.

Though based on the box form that one associates with spaciousness, the model is more than just a box; it has a moderate amount of tension and roundness to make it seem friendly, and a cantilever window graphic that expresses the excellent panoramic field of vision. To provide reassurance as a minivan, the thick engine hood and the fenders that project outward express a sense of stability (Fig. 9).

The front view aims to express a sense of reassurance



Fig. 9 Exterior design concept



Fig. 10 Exterior rendering

and friendliness. To ensure this, the fenders project outward from the short but thick and sturdy front mask to express dynamism and stability. The panoramic window simultaneously expresses the good field of vision and the roominess of the interior.

Large-diameter cylinder reflector faces give the headlights a friendly expression. The front grill consists of a combination of a plated bar and a louver of the body color that conspicuously projects the same level of quality as an ordinary minivan.

In side view the long roof and wide side panel face express the spaciousness and sense of reassurance of a minivan. This was achieved by the A pillar that stands straight up, and a higher window position than in an ordinary kei car.

In rear view, the firm D pillar supports the long roof enabling both the excellent field of vision and the sturdiness of the box. With a wide rear gate, the hatch, which is the size of that of an ordinary minivan, emphasizes the excellent utility and ease of use, while the plated garnish creates an accent that projects quality. The blacked-out housing puts a graphic emphasis on the tail light giving it both a fresh and functional look (Fig. 10).

5. Interior Design

The interior was developed with the themes of “spacious feel, sense of enrichment and novelty” to provide the spaciousness and utility of a minivan but in the kei car class. Honda designed the instrument panel, door lining, seats and so on to appear larger, and studied the utility of the N BOX as a minivan (Fig. 11).

The middle tray extends to the right and left setting the base tone for the instrument panel that is modeled to impress as functional and wide. The meters, air conditioning panel, audio panel and other major information indicators and controls, and other functions are arranged to be intuitive at a glance and easy to use. The instrument panel’s upper surface has a wide visor to impart a sense of the automobile



Fig. 11 Interior design concept

rank of minivan, and a visual sense of reassurance while driving (Fig. 12).

A three-part meter design comes standard on all grades of the model.

The speedometer sits in the middle flanked by the tachometer on the left and information display on the right. Of the three parts, the speedometer has a fresh and clean image with a green scale on a white background. It has three ring-shaped lights on the periphery, with the middle one changing color from white to green when driving in eco-mode to inform the driver that he or she is saving fuel (Fig. 13).



Fig. 12 Instrument panel rendering



Fig. 13 Meters



Fig. 14 Interior rendering

The seat design aims for the sense of spaciousness and comfort of a minivan; both the front and rear rows are large, flat bench seats. While the flat appearance of the seat design creates a roomy feel, the subtle undulation of the seat backs and cushions provides sufficient hold so passengers feel comfortable and refreshed even on long drives. The right and left back seats also have independent center armrests making them as comfortable as the front seat (Fig. 14).

6. Color and Fabric Design

6.1. Exterior

Following the theme of “Relax Flex Mini Minivan,” the eight exterior colors available give the N BOX its friendly and fun look as well as a sense of fine quality reminiscent of a minivan.

The new color Cherry Shell Pink mimics the coloring of the shellfish *sakuragai*. The elegant, slightly pale pink color has the transparent texture of sunlight. The addition of this color gives the entire lineup a brilliant look and makes color selection more enjoyable.

The lineup also includes Premium Deep Rosso Pearl and Premium Bronze Pearl for a high-quality, grown-up look. Other choices are Cool Mist Metallic (the model’s appealing character color), HIDAMARI Ivory Pearl (with a friendly looking and gentle impression) and the basic colors Premium White Pearl, Alabaster Silver Metallic and Crystal Black Pearl (Fig. 15).

6.2. Interior

Honda designed the interior so that the person would be surprised by its roominess and comfort the moment he or she opened the door. With a simple and waste-free design, the aim is to project an image of a spacious room where one can relax.

Beige, with enough brightness to emphasize the spaciousness but also giving a modern impression of subdued chroma, is used throughout the interior. The seat fabric starts with a soft cloth base with a pearl print that projects elegant glossiness for a quality look. The result

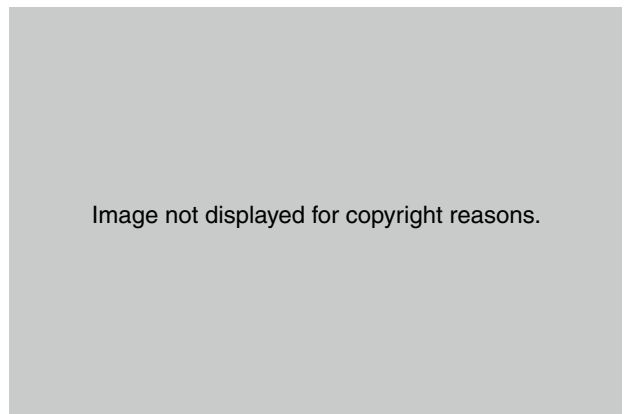


Fig. 15 Exterior colors

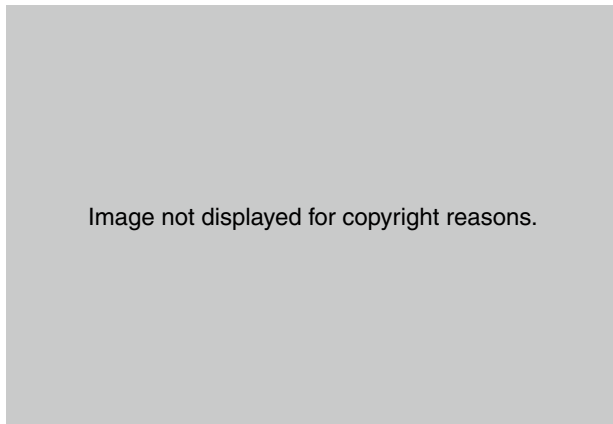


Fig. 16 Interior color material

is a high-quality interior that is reminiscent of an ordinary minivan and unlike any kei car available (Fig. 16).

7. Logo Design

The “N” in the car name was chosen to imply the ideas “New, Next, Nippon (Japan) and Norimono (vehicle)” in a new-generation kei series. The N BOX is the first in this series.

The logo design layout features a large letter N to leave a lasting impression of the N brand as a series (Fig. 17).



Fig. 17 N BOX logo

8. Conclusion

The N BOX was developed under the concept “Green Mini Minivan.”

It is Honda’s hope that many drivers with young children will choose the N BOX and that the N Series will expand in the future.

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