

Styling Design of BRIO

Akihiko OHHASHI*

Koichi TANAKA*

Tetsuo NARITA*

Maki ONIZUKA*

ABSTRACT

Wishing to build a new small car suited to the coming age, Honda started with the grand concept of a “Micro Metropolitan Jet” and developed the BRIO. The size of the Brio makes it easy to use in urban areas, makes it is more efficient, and offers a striking appearance and spacious interior.

The exterior design creates a presence with an advanced form based on the “Efficient Energetic Exterior” concept. The interior design concept of “Efficient Impressive Interior,” achieves a refreshing, high-quality ambiance. Furthermore, colors and fabrics were developed to better bring out those characteristics.

1. Introduction

To meet the growing need for cars in Asia, Honda launched the CITY in 1996 as an exclusive model for Asian markets. More than a decade later those Asian markets, and the user awareness in them, have changed so that people have more diverse needs from cars.

Honda began the current development process by taking another look back at our roots with hopes of build a new small car that is inexpensive, more suited for the coming age, and featuring strong environmental performance thereby offering more customers the joy of owning a car.

As part of the process, the development staff observed various Asian nations and performed thorough research on each from various angles such as their traffic conditions and user lifestyles. As a result they discovered three important themes: presence, a spacious interior, and good fuel economy. Following these themes, they set about to design a next-generation small car, with optimal packaging and quality as well as fuel efficiency, as a means of urban transportation.

Figure 1 shows the grand concept of the BRIO.

In order to achieve this goal they chose the platform of the JAZZ⁽¹⁾ which has a solid reputation as a compact car. In addition, the design uses a short body for easy turning while achieving a roomy interior and an outstanding presence thanks to putting ingenuity into every detail (Fig. 2).

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Fig. 1 Grand concept



Fig. 2 2011 Honda Brio

* Automobile R&D Center

2. Package Layout

With entry users as the main target, the development staff sought a high-efficiency package layout that would both provide a short body with good turning performance (in consideration of urban traffic conditions) and a roomy interior.

Taking the JAZZ platform as the basis, the wheelbase of the BRIO was shortened to 2,345 mm (155 mm shorter than the JAZZ), which reduced the minimum turning radius. It was also given a shorter overall length of 3,610 mm (290 mm shorter than the JAZZ), to distinguish the BRIO from the JAZZ.

Moreover, to give the form presence in Asia where there are many space-oriented small cars, the developers were particular about developing a low and wide form. To ensure sufficient headroom, they set a height of 1,485 mm (40 mm shorter than the JAZZ) and a width of 1,680 mm. In India, to accommodate poor road conditions, the height off the ground was raised 15 mm to make the total height 1,500 mm (Fig. 3).

One major issue was how to provide a spacious interior within a compact body size. The interior space was established not to maximize the interior overall, but to “emphasize roominess in places where people can actually sense it.”

The market research indicated that people in India have long legs relative to their total height. Therefore, the knee clearance of the front passenger seat was increased (60 mm more than the JAZZ) by making the instrument panel thinner, and back seat knee space was increased by narrowing the front seat back (Fig. 4).

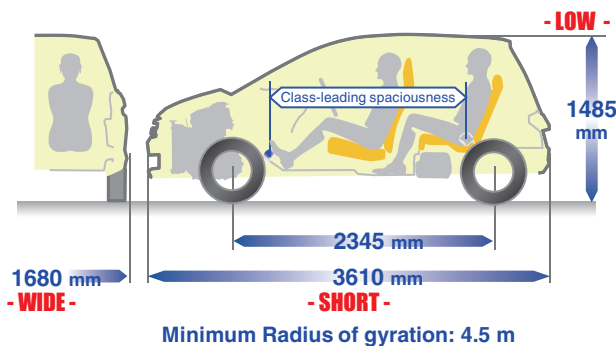


Fig. 3 Package layout

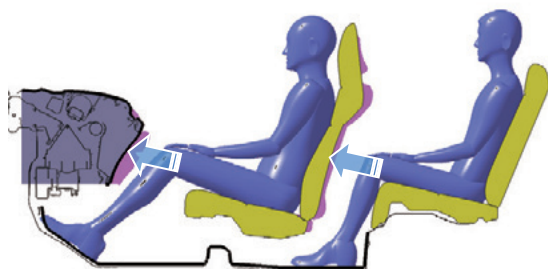


Fig. 4 Interior space

Additionally, comments from women who wear the traditional sari indicated a need for a wide back door opening to improve the back seat comfort. This was achieved by moving the center pillar forward without making it harder to access the front seat. In addition to the easy turning afforded by a short body, good visibility is ensured to increase driver confidence. By making the front pillars narrower in cross-section and lowering the bottom of the side windows, visibility to the front diagonals and farther down on the sides was expanded making it easier to make turns and drive on narrow roads (Fig. 5). In addition, a large glass hatch was used to ensure good visibility to the rear.

The luggage compartment provides sufficient capacity for daily needs. As a module, it can hold one large suitcase (750 × 540 × 280 mm). With the seat down it can accommodate a folding bicycle (Fig. 6). In addition, the glass hatch is lightweight and easy to open and close which makes it easier to load cargo.

By incorporating the above ideas the development staff was able to build an interior more spacious than one might imagine from the outside, given the low, wide and short body appearance.

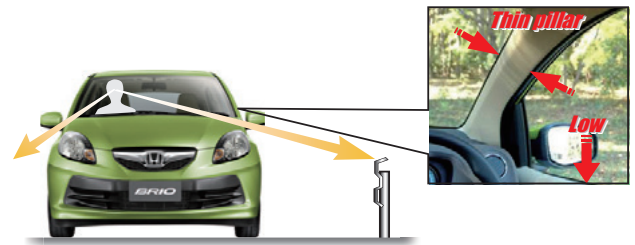


Fig. 5 Good visibility



Fig. 6 Luggage compartment

3. Exterior Design

The BRIO's exterior design concept is “Efficient Energetic Exterior” emphasizing its presence with an advanced form (Fig. 7). Figure 8 shows the concept sketch of the exterior design.

Under the theme of “Double Triangle Form” (Fig. 9) the design features a low and wide framework and projecting fenders. Within this, the design consists of two triangles representative of dynamic and sporty characteristics that are bounded by the side's character lines. The exterior design theme is apparent in the side view.

The “Dynamic Triangle” is a forceful mass that appears to sweep toward the nose, while the “Sporty Triangle” mass appears to be jumping back toward the rear fender. These two masses, piled one atop the other, seem to be sliding past each other toward the front and rear creating a pulsing side view suggesting a brisk and energetic drive. The surface structure joining the two triangles also projects an organic muscularity and increases presence.

Figure 9 shows the final rendering of the exterior design.

For the front view, a wide design imparting a sense of cruising stability was sought. To accomplish this, the fender was made to project from the short but sturdy, thick and strong front mask to bring out the front view’s dynamic character.

The headlights have a wide, cylindrical design presenting a bright and youthful expression. The front bumper has a wide opening better emphasizing the wide look and the stable stance. The front grill, additionally, has the feel of high quality and presence made prominent by using an accentuated surface structure suited to the body, and finished with high-quality chrome plating.

The rear view emphasizes the wide look by placing the round red lenses of the tail lights as far to the outside as possible. The form of the outside of the outer lens has

been given an edge to optimize the air flow and increase aerodynamic performance. The glass area of the glass hatch was maximized to take advantage of its ease of use from its light handling and its excellent visibility. On top of that, shaping the rear so that it looks like cut-off masses of material creates a rear view that is wide and evokes an advanced feel and an image of excellent aerodynamic performance (Fig. 10).

The door mirror is long from front to back making it look advanced. The surface is shaped to have a sharp edge which unifies it with the body giving a look of sharpness and speed. The design was improved through repeated wind tunnel testing ensuring that the door mirror both contributes to aerodynamic performance and adds product value to the exterior (Fig. 11).

Figure 12 shows the emblem design.

The character line uses a bold style with appealing motion as expressed by the arrows. Surfacing is by chrome plating and the accentuated surface structure, with both positive and negative faces, unites with the body and catches light to create a sparkle.

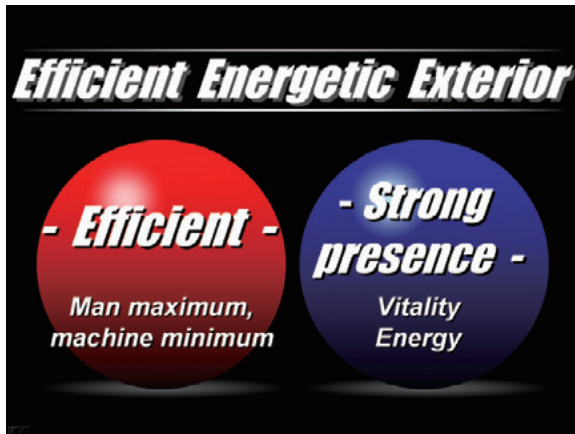


Fig. 7 Exterior design concept



Fig. 9 Final rendering

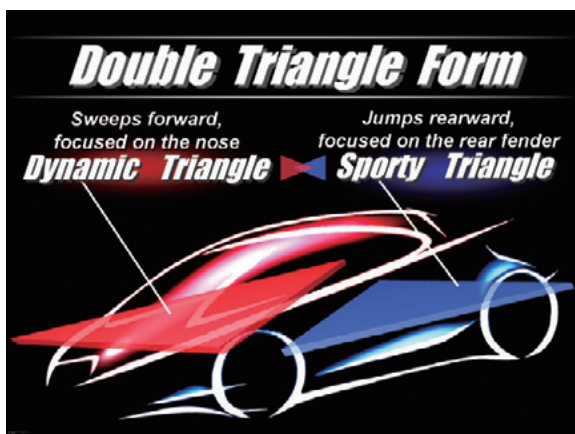


Fig. 8 Exterior design concept sketch



Fig. 10 Tail light

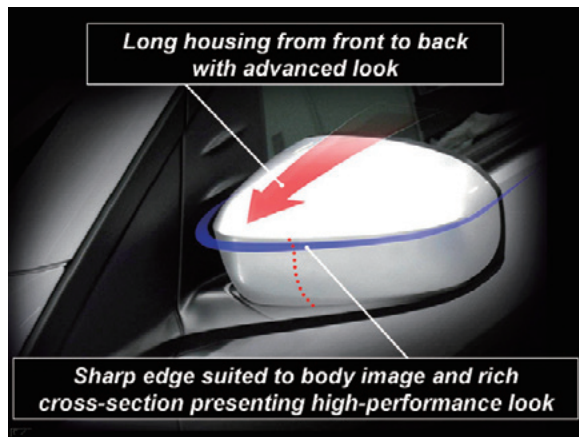


Fig. 11 Door mirror

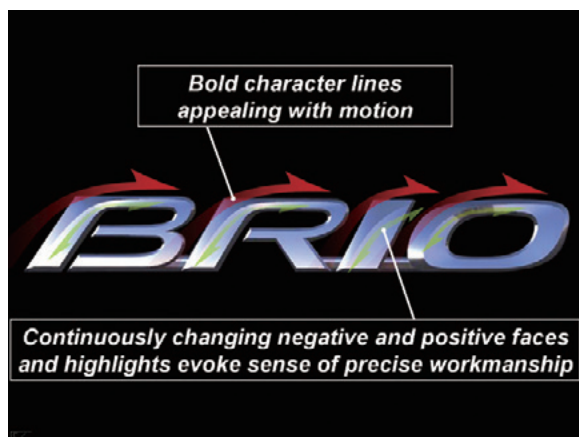


Fig. 12 Emblem design

4. Interior Design

The interior design was developed under the concept “Efficient Impressive Interior” and seeks to provide comfort and high satisfaction to those within. The attractiveness of a package seeking to create spaciousness within a compact body was maximized. Wasteful parts were removed and functional value was condensed into the cockpit area (Fig. 13).

The development staff worked with the designers to simplify the structural materials inside the instrument panel and reduce the number of components and lighten the BRIO. The aim was to achieve more spaciousness than the eye could see by eliminating as many things as possible without losing functionality like user-friendliness and storage. This was in response to the dissatisfaction of many Indian customers with long legs toward the lack of knee room in earlier generations of small cars built by other companies that had based their designs on Japanese kei cars.

Customers desire the joy of car ownership. Therefore, the functional value was condensed into the cockpit area of BRIO so that customers could experience for

themselves the great satisfaction that comes from driving a car (Fig. 14).

The independent three-eye meters emphasize three-dimensionality with ring illumination both day and night, and a 2 DIN sized USB audio system exclusive to the BRIO is provided. The piano black finishing of the audio system imparts an advanced feel with high quality and a feeling of integration with the instrument panel (Fig. 15).

Front seats have a sporty design. Their headrests provide firm support and are an integral part of the seats, while the seat backs are thinner to ensure knee clearance for rear seat passengers. Thick cushions in both front and rear seats provide a high quality, comfortable ride (Fig. 16).



Fig. 13 Interior design concept



Fig. 14 Final rendering



Fig. 15 Drivers cockpit



Fig. 16 Seat design

5. Color and Fabric Design

5.1. Exterior

Character colors were chosen to express a proud presence that would not be lost amongst other cars even though the BRIO body is small. Taking “Energetic Vivid Color” as the theme, high-impact, high-chroma colors were chosen with crisply sparkling highlights and vivid brilliance. Two character colors were based on the destination market (Fig. 17).

The focus was on a highly chromatic expression that asserts presence even with a compact body. Since metallic colors generally have low chroma in shaded areas, a paint was developed that can retain high chroma even in shaded areas.

Fresh Lime Metallic, a color for the Thai market, is a thoroughly transparent lime green that evokes the image of fresh green leaves. Rich highlights are expressed with high-luminance aluminum flakes. Organic yellow pigment and titanium oxide express a transparent brilliance and accumulation of color in the shade characterized by a color shift from yellow in the highlights to green in the shade.

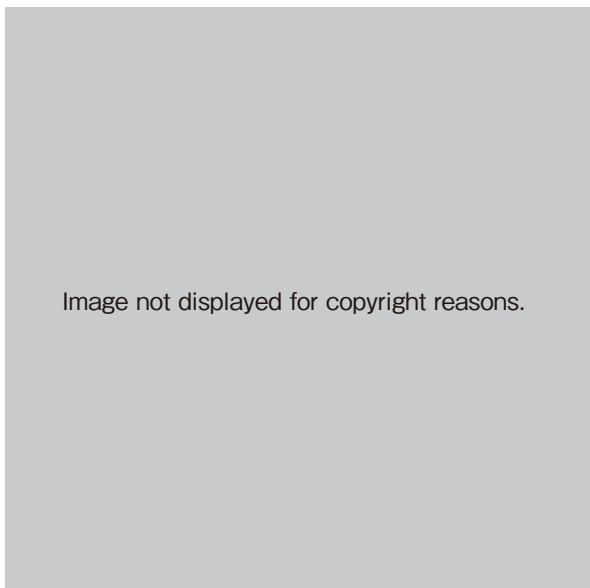


Fig. 17 Exterior character color

Energetic Blue Metallic, the color for the Indian market, is a high-chroma blue evocative of the clear, blue sky. The combination of high-luminance aluminum and super-high-chroma blue pigment makes it possible to have both highlight brightness and as much chroma as with solid colors. The color is characterized by refreshing silver highlights in a vivid blue.

The wide color lineup includes popular existing colors such as white, silver and black as well as colors suited to the tastes of the destination market (Fig. 18).

5.2. Interior

The interior color expresses the kind of quality the owner can take pride in, as well as excellent user-friendliness.

With “Efficient, Proud Coordinate” as the theme, it uses fine quality beige as a base and coordinates in a refreshing and rich way. The instrument panel has a two-tone color scheme of black and beige, and the points are elegantly decorated with a combination of brown coloring and vertical crepe surface texturing (Fig. 19).

A sporty check pattern resembling carbon cloth is used for the seat surface. Depending on the destination market and grade of the car, a monotone type and sportier two-tone type are available (Fig. 20). The most efficient method of weaving was studied and a simple pattern was selected that can be woven quickly with a dobby weaving machine. To reduce dyeing processes, thread of the cloth color was used effectively in some parts, making it possible to lower costs



Fig. 18 Exterior color lineup



Fig. 19 Interior color coordinate

significantly while producing a sporty and durable high quality surface material.

The fabric also has a smooth and pleasant feel, and excellent usability, being easy to clean of dust and pet hair (Fig. 21).

In India, where many women wear sari, this fabric makes it easier for them to get in and out of the car since sari are less likely to catch on the seat surface.



Fig. 20 Seat fabric (1)

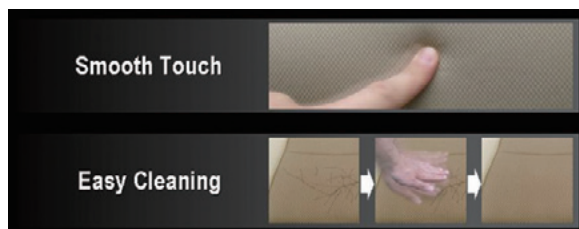


Fig. 21 Seat fabric (2)

6. Conclusion

The BRIO was developed under the concepts of “Efficient Energetic Exterior” and “Efficient Impressive Interior.” As a result, value that provides a sense of presence and advanced feel was condensed into the body to satisfy the needs of the owner.

Moreover, the development staff was particular about the aerodynamics of the entire body while enhancing fuel economy, thus they completed a small car with outstanding ease of use in urban areas and excellent drivability.

The name BRIO means “robust” or “vigorous” in Italian, and it is the hope of the development staff that the BRIO will be popular with many people thereby expanding the joy and vigor of car ownership.

Reference

- (1) <http://world.honda.com/Fit-Jazz/>

■ Author ■



Akihiko OHHASHI



Koichi TANAKA



Tetsuo NARITA



Maki ONIZUKA