

Styling Design of New Tact, 50 cc Standard Scooter

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ABSTRACT

The development of a new scooter to be recognized as a next standard model has been required for the market of 50 cc scooter category in Japan, which is already in the status of its maturity, to respond to the requests from existing users providing features attractive enough as an entry model as well. Through the results from our market survey, it was found that flexibility in design to provide usability enhancements was considered to be more important than that for having features or uniqueness of a product. That is, the neutrally featured model, which is suitable to be the best partner for every individual user, was requested. Accordingly, the key word of the exterior design was defined as “relieved feeling” aiming at a creation of styling design based on logical consequences from the functions and usability, keeping away from embellishments. The model name was inherited from the first generation Tact, which was the first 50 cc scooter from Honda, because the goal the development for the first Tact was identical with that for our developing model. Because of that naming, it attracted the interests of many media people and made it easy to straightforwardly introduce the vehicle design concept to dealers and customers. Through this development, including coloring options selectable to fit a user’s preference and belongings, a scooter that pleasantly supports their lives with conveniences acting as a good partner was successfully established.

1. Introduction

The 50 cc scooter category grew in the motor-equipped bicycle market under Japan’s unique vehicle classification and licensing regulations. Due to the easy license acquisition, simple operation and low price, it is positioned as an entry category of motorcycles. Even now, there are steady demands and a variety of models being introduced in the 50 cc scooter market from various brands, catering to various customer needs. With the shift in the core user demographic from the younger generations to those in and over their 40s⁽¹⁾, explosive sales of a specific model as was seen in the 1980s and 1990s are rarely seen these days (Fig. 1).

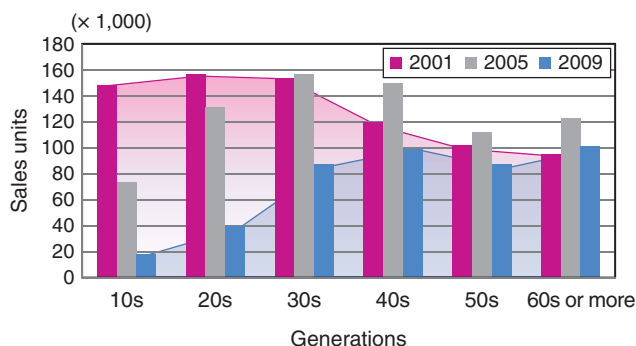


Fig. 1 Generation transitions of motorcycle buyers in Japan

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Nevertheless, due to the above-mentioned convenience of 50 cc scooters, there are still a considerable number of users who require and fondly use these products. We also consider that it is indispensable for the future motorcycle market to appeal their convenience to young people.

With the background mentioned above, the decision was made to develop a new standard scooter that is attractive as an entry model that also fulfills needs of existing users.

2. Market Survey

2.1. How Scooters are Used in Large Metropolitan Areas

In the case of this model, due to its positioning as a standard scooter, the product has to appeal to various customers. Therefore, we could not set conditions such as appealing to narrow-target users. We first conducted studies on actual 50 cc scooter users at dealers in heavily populated metropolitan areas, which allowed us to acquire information on Honda’s current standard scooters, Today (Fig. 2) and Dio (Fig. 3).

With Today, it was confirmed that many of its users focus on its price. This was more or less predicted as Today is the most inexpensive product of Honda. We were also able to gather information on the appeal of Today’s styling design, which significantly contributed to this project.

Although Today is a low-cost model, “cheap” image had to be avoided. Thus, it was developed to exude a

fashionable image to establish its own identity by applying features such as a cover-less handlebar, an independent headlight and meter design. However, the recent survey clarified that the intended styling design was not necessarily widely accepted. While there are young people who view the style as fashionable, there also are elderly people who like the conventional design having the handlebar covered with plastic parts. Similar voices were heard from a number of dealers.

With Dio, we were able to obtain many comments from repeat users, who are equally important targets as new customers are. They were asked to provide comments with the assumption of having to choose a 50 cc scooter from Honda products. At the time of the survey, high-price models with distinctive styling, such as Giorno (Fig. 4) and Zoomer (Fig. 5), were also available. However, when a so-to-speak ordinary model is pursued they said that the only option was Today or Dio. Moreover, some commented that for the above-mentioned elderly users the only option was Dio with a body construction and a design around the handlebar similar to the previous models.

For more in-depth analysis of user mind, researches

were also conducted on users in regional cities with high-volume scooter sales.

2.2. How Scooters are Used in Regional Cities

It has been confirmed by directly observing the market that the 50 cc scooters are used in a wider variety of ways and more closely tied to their day-to-day activities in regional cities than in the metropolitan areas.

In large cities, public transportation system is extensive and many convenient means of transportation are available. Meanwhile in some regional cities, availability of public transportation is limited. This is why 50 cc scooters are deeply rooted as one of the life lines that support day-to-day activities of the people.

A large number of public and private parking lots are provided around the railway stations, which are important hubs for transportation. In the rush-hours, scooter users flow into those parking lots one after another. They ride their scooters wearing business suits or school uniforms, with neatly organized belongings placed on the floorboards at their feet or in the utility space underneath the seats.

We saw many scooters in a parking lot of a collage. That



Fig. 2 Exterior view of the Today



Fig. 4 Exterior view of the Giorno



Fig. 3 Exterior view of the Dio



Fig. 5 Exterior view of the Zoomer

collage is located high on a hill and it was easily assumed that scooters are important means for the students. Many of the scooters there were old models. That implies those were mostly the ones handed down by their senior students from generation to generation. We also could observe that some of the vehicles were uniquely changed or attached with articles showing personally accented appearances.

At a parking lot in a vocational school, we recognized that most of the scooters parked there were of the models with fashion-oriented exterior designs, such as the Giorno. Perhaps reflecting the current trend, many of them were of a similar body color.

During busy shopping hours at a supermarket, we saw quite a few units of Today and Dio in the parking lot. Many of them were equipped with a basket in both the front and rear, or having an empty cardboard box on the floor board to increase carrying capabilities, completely irrelevant to the styling of scooter (Fig. 6). The users would fill these spaces with purchased goods to take home.

From those survey results, it was understood that the flexibility that encompasses a variety of demands for enhanced usability is the key factor for developing a scooter to be the next generation standard. It was considered more important than having a fashionable exterior design or exhibiting sporty features. Following technology advancements, it is unquestionable necessity to incorporate the enhancement of basic performances in our development. However, what we confirmed was that they are seeking a moderately featured scooter suited to own it as the best partner for their mobility needs.



Fig. 6 User using the Dio equipped with both of front and rear baskets for delivery

3. Concept

3.1. User Expectations and Development Goals

From the results of the market survey as described above, we clarified user expectations for a 50 cc standard scooter. For example, newness or an expression of

difference is sometimes perceived as unsettling by some elderly users. Also, housewives using a scooter mainly for shopping seek carrying capabilities regardless of the style of the scooter. In other words, how much that specific vehicle fulfills the requirements of their particular use is crucially counted as one of the important criteria for choosing their scooters.

As this particular vehicle was developed to be a next standard scooter, it was understood that the vehicle should have been meeting various requirements from wider range of users. To realize that, it was necessary to enhance the measures to cope with the requested factors from existing users to be a standard scooter, and make it attractive to the new customers as well. At the same time, it is also important that the vehicle is also able to win a favor from the people who do not have any positive affection towards abrupt changes in vehicle features. To create a product that can be included in customers' favorable purchasing options, it was required to consider, in objective and flexible manner, the attractive common features that can touch their minds.

3.2. Selection of Key Word

From the user expectations mentioned in the preceding paragraph, we chose "relieved feeling" as the key word of product development. This phrase sounds nothing about throbbing excitement. Nevertheless, the phrase reminds us of a considerate thought of caring while standing close to the people's lives, comprehensively enclosing all the functions and appearances of a product.

3.3. Concept

A vehicle called standard scooter is destined to be used as a means of transportation. It bears a responsibility as one of the necessary means for individual users' daily lives. In order to respond various needs from a variety of customers, the concept to be pursued in this development is to allow every user to use the vehicle with relieved feeling.

It is a matter of course to progressively apply benefits from technology advancements in the development. However it must not be in a way of compelling them to accept pre-designed values in the product. It is not what this model is intended to.

4. Selection of Base Model

For the platform of this model, the same platform applied to the 50 cc scooter Dunk⁽²⁾, which is already on the market, was employed (Fig. 7). This platform was developed afresh including the engine and all of the frame body structures to create a brand-new platform dedicated to the applications for 50 cc scooters, envisioning the enhancement of fundamental performances and usability. By using this platform, it was made possible to keep the cost increase minimum while receiving the benefit of providing relieved feeling to customers with having the latest technologies equipped to the vehicle.



Fig. 7 Body frame configuration and exterior view of the Dunk

5. Styling

Descriptions on the features of the vehicle exterior that contribute to provide users with relieved feelings are described below.

The first critical point in designing was to determine the perceptual body dimensions including seat height. These dimensions reflect the relieved feelings they can have when they are riding the vehicle relating to, for example,

maneuverability or ease of handling.

The next crucial point is whether or not the functions are adequately equipped to the intended use. These functions include allocations of storage spaces for individual requirements. Through these functions, users can feel relieved feeling in terms of their satisfaction in usability.

Another important design point is the exterior design that exhibits sturdy outlook of enduring a long term vehicle usage. It is not allowed to design a structure giving any impression that makes the customers feel the vehicle look easy to be broken, even though the developing vehicle is a scooter for a lower price range. That is, it should also be absolutely kept in mind to consider the customers' relieved feeling they have when they are in the process of purchasing.

Those factors mentioned above were required to be expressed in the styling design in a way by which it is perceived as an atmosphere producing relieved feeling.

5.1. Condition Setting

Prior to the individual examinations, we predeterminatively set several requirements in the process of styling design that provides relieved feeling to the users. The prepared concept board is shown in Fig. 8 and Fig. 9.

The conditions set at that time are as follows:

- (1) The vehicle should be compact enough for easy handling to be considerate of aged or female users who are of a part of the critical target user strata.
- (2) The handlebar should be in a higher position for ease of pushing and pulling when parking, etc. (Fig. 10).
- (3) Presuming use of the scooter by users of a variety of build, the floor board and the seat should be flat for flexible accommodation.
- (4) The front cover should be as upright as possible to prevent the optional front basket from sticking out when installed (Fig. 11).
- (5) The front fender should be of an easy to control, independent construction, so the rider can immediately see the direction the front wheel is turned to.

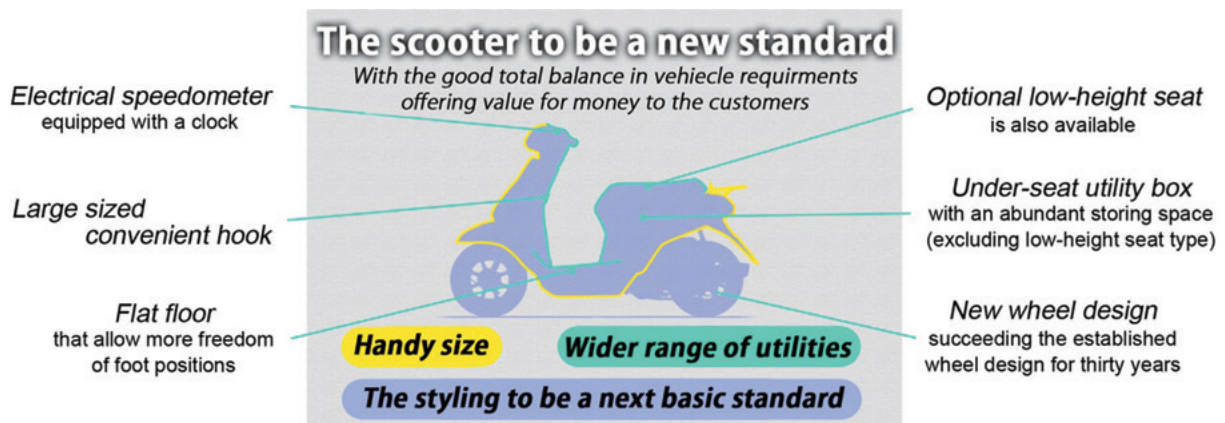


Fig. 8 Conceptual descriptions on specifications and equipment

- (6) The overall styling and the shape of each part should be such that one sees simplicity and solidness to avoid a fragile image.

It was determined that these conditions would serve as basis for the creation of its styling.

5.2. Design Method

The styling design was conducted keeping in mind the following key points.



Fig. 9 Conceptual descriptions on styling



Fig. 10 Styling sketches of front and rear quarter view for new standard scooter concept

- (1) To keep the overall size compact, the rear end should be of a short-tail type in which the space is minimized between parts including the lighting instrument.

Firstly the clearance was minimized between the external body parts and the inner parts such as the frame body. Especially in the tail light located at the rear end, which significantly affects the impression of overall size, the concentric, multi-step reflector is applied to achieve compactness (Fig. 12).

- (2) The overall proportion should be such that the rear end is slightly raised from the horizontal base line to provide a moderately swift impression.

To create a "just right" image that is not too aggressive or dull, the upper line at the end of body is set almost horizontally and the lower line slightly rising toward the end. An accented line in the middle of body side that runs between the above-mentioned lines makes the styling agile and dynamic (Fig. 13).

- (3) To create a high-quality and tough image, the external body parts should be basically of a simple yet shapely

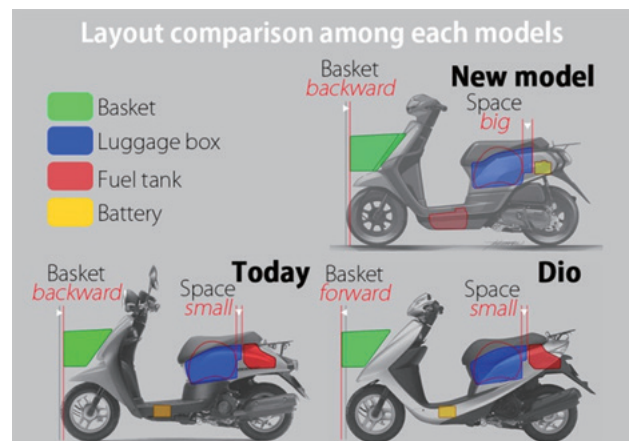


Fig. 11 Comparison of utility space arrangement of developed model with those of the Today and the Dio



Fig. 12 Exterior views of rear end of body including combination lamp assembly representing a short tail

surface composition.

To simplify surface contour, it was decided to use fairly large outer body parts. It should however be noted that the draft angle (one of the preset conditions for demolding) tends to become critical in a largish body part. Thus, creative measures were taken such as gradually changing the roundness on the edge lines to satisfy the draft angle requirements, to create a simple yet shapely surface. To reinforce the “tough” image, each accented line is emphasized, and the end fold made thicker. By the effect of the accented line of the end fold, the simple surface enclosed by the accented line becomes compact and dynamic in form (Fig. 14).

- (4) With regards to scratching on painted surfaces, colored plastic parts should be used where they are more likely to have contacts in situations such as parking or loading luggage.

From the standpoint of user-friendliness in day-to-day use, the above-mentioned consideration is a significant benefit. Colored plastic parts, which are more scratch-resistant, are applied to the leg shield and the floor board that are prone to contacts when parking, and to the rear body where a contact is unavoidable when loading



Fig. 13 Exterior design scheme of the Tact



Fig. 14 Intensified expressions of rigidity applied to exterior part

luggage on the rear carrier or when accessing the helmet box. Moreover, the colored plastic parts are shaped in such a manner that they protrude further than the painted parts to protect painted surfaces from scratches (Fig. 15).

- (5) To create a high-quality feel of its appearance when seen from front, a multi-reflector headlight in which the right and left turn signal lights are integrated should be applied.

Regarding the configuration around the handlebar, the model applies a handle bar covered with plastic parts, which is a common design for 50 cc scooters, and a multi-reflector headlight integrated with turn signal lights. As there are virtually no cut lines in the lens of a multi-reflector headlight, the design of the reflector can play a key role in creating a high-quality image; however, due to reasons such as regulation compliance and retention of practical luminance, the level of freedom with its design is relatively limited. With this model, a coherent and dynamic styling was achieved by emphasizing the accented line that run from the lower end of the headlight to the upper end of right and left turn signal lights. With this, we were able to create a lighting instrument with a high quality feel while satisfying the functional requirements (Fig. 16).

- (6) To make the speedometer easy to read at a glance, highly legible letters should be laid out in an easy-to-read manner while paying attention to the color placements.

Considering the targeted elderly users, large letters are used where the layout permits for quick transmission of information. With respect to the overall color scheme, the number of colors is reduced to simplify the appearance of the meter (Fig. 17).

- (7) To express sportiness in the wheel areas, a wheel that symbolized a spoked wheel should be applied.

The wheel of the first-generation Tact has been used in various Honda scooter models for nearly 30 years



Fig. 15 Arrangement of colored parts on the Tact

and has been regarded as a highly functional, universal design. A decision was made to renew the wheel design at this occasion of a new standard scooter development. Thus developed is the functional and simple wheel that symbolizes a spoked wheel that is applicable to scooters of various styles (Fig. 18).

With these methods employed, a styling design that culminated from the requirements of function and user-



Fig. 16 Design concept for headlight and accented lines surrounding turn signal lights



Fig. 17 Simplified speedometer design for good visibility



Fig. 18 Steel wheel with spoke like radial pattern

friendliness, rather than decorative, was achieved. We believe that we created a model that can become an indispensable partner in day-to-day activities for the users and that the users can feel good about using it.

6. Naming

The product name Tact was originally of a model launched in 1980 and the originator of Honda 50 cc scooters (Fig. 19). Its production continued for 22 years until 2002, spanning seven generations.

As mentioned earlier, this project is of a development of a new standard scooter model that is neither Today nor Dio, and not merely renewing an existing model. Thus, no name was assigned to it at the beginning of its development. As the styling design progressed, some began saying “This is Tact, isn’t it?” and the name “Tact” naturally started to appear in the idea sketches.

Given such development of events, we reviewed the press release statement of the first-generation Tact⁽³⁾. Seen in that text were phrases such as rich, quality feel; compact body; easy-to-use devices; and clean-cut styling that matches a wide variety of fashion. Although the historical background and the way the idea is expressed are different, the targeted product concept of the first-generation Tact was applicable to the new development almost entirely.

After this, the product name Tact, which used to be synonymous to Honda’s 50 cc standard scooters, became regularly used among the product development team members. No objections were raised, and it was later decided to use it as its formal name.

As mentioned above, Tact was not the originally intended name; rather, it came naturally afterwards because what the new model was aimed at coincided with that of the first-generation Tact. The naming had a big impact and drew attention from the media, and the model concept was conveyed straightforwardly to users and the dealers. We came to believe that there was no other name that better suited the model.



Fig. 19 Exterior view of the Tact of the first generation in 1980

7. Colors

Color is the finishing touch for a product to appeal the charm to users. When considering what color scheme suited the concept of this model, we reached the conclusion that the individual user who would ride it for day-to-day activities should be at the center of attention, not the scooter.

Based on this, a total of six colors were selected (for the initially released model line up at January, 2015) while keeping in mind that the product should complement user's lifestyle (Fig. 20).

- (1) Candy noble red: A red with a high-quality feel that is deep yet pronounced highlights
- (2) Pearl jasmine white: A neutral and gentle white with the glossiness of a pearl
- (3) Poseidon black metallic: A black with blue metal flakes that evokes the deep sea
- (4) Delicate blue metallic: A light blue with a bright tone with a balanced intensity
- (5) Force silver metallic: A very bright, high-quality silver without being too shiny
- (6) Mahogany brown metallic: A brown with a good balance of slight reddishness and subtle brightness



Fig. 20 Color variations of the Tact

None of these color tones tries to draw attention to itself. A neutral color palette was selected based on the colors' ability to complement the user, regardless of the user's outfit, location or situation. A variety of colors are offered so that the user can choose one that suits his or her preference or belongings. All six colors have a metallic feel that create beautiful contrasts of highlight and shadow to elegantly accentuate the simple yet dynamic surfaces.

8. Conclusion

A new 50 cc standard scooter was developed. It was named Tact, since its concept overlapped with that of the first-generation Tact. A desirable styling design was achieved by focusing on users and pursuing user-friendliness.

The design was intended to make its functions visible to users: easy to mount or dismount, easy to handle when parking, the body is compact yet strongly built, and the riding position is highly flexible to accommodate various body sizes. With this, the concept of this model is well conveyed to evoke "relieved feeling" from users. The role that the styling design played in this model was not merely a creation of its external shape, but a medium to comprehensively inform the customer of the outstanding characteristics of the product called Tact. We hope that it will be utilized by many users as their good partner to provide comfortable support in making life more convenient.

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