

## Automotive Parts - Color code for wiring harness

### 1. Scope

This Standard specifies color coding for wire harness cables used in automobiles.

**Remarks:** The term wire harness cables refers to electric cables used in automobiles, which are specified in **JIS C3406** and **JASO D611**.

### 2. Applicable Publications

The following publications form a part of this Standard to the extent specified herein.

The latest issues of all publications shall apply.

|                  |                                                                     |
|------------------|---------------------------------------------------------------------|
| <b>JIS C3406</b> | Low-Voltage Cables for Automobiles                                  |
| <b>JIS Z8721</b> | Color Specification - According to Their Attributes Characteristics |
| <b>JASO D611</b> | Low-Tension Cables with Thin Wall Insulation for Automobiles        |

### 3. Color Codes for Cables

Color symbols and colors for grounds and markings used for wire harness cables shall be as specified in **5. Color Codes for Cables** of **JIS C3406** and the color codes for circuit cables shall be designated in accordance with **Table 1**.

**Table 1 Color Codes for Cables (Nominal size 5 or below)**

| Marking Color   |             |        |           |       |       |     |        |       |      |       |             |        |      |      |          |        |
|-----------------|-------------|--------|-----------|-------|-------|-----|--------|-------|------|-------|-------------|--------|------|------|----------|--------|
| Circuit         | Ground      | Symbol | Standard* | White | Black | Red | Yellow | Green | Blue | Brown | Light Green | Orange | Grey | Pink | Sky Blue | Purple |
| Charger         | White       | W      | N9        | ◎     | ◎     | ◎   | ■      | ◎     | ◎    |       |             |        |      |      |          |        |
| Starter & Earth | Black       | B      | N2        | ◎     | ◎     | ◎   | ◎      | ◎     | ○    |       |             | ○      |      |      |          |        |
| Illumination    | Red         | R      | 5R4/12    | ◎     | ◎     | ◎   | ◎      | ◎     | ◎    |       |             |        |      |      |          |        |
| Air Bag         | Yellow      | Y      | 7.5Y9/8   | ◎     | ◎     | ◎   | ◎      | ◎     | ◎    |       |             | ○      |      |      |          |        |
| Signal Light    | Green       | G      | 7.5G4/6   | ◎     | ◎     | ◎   | ◎      | ◎     |      |       |             | ○      |      |      |          |        |
| Others          | Blue        | L      | 5PB4/12   | ◎     | ◎     | ◎   | ◎      |       | ◎    |       |             |        |      |      |          |        |
|                 | Brown       | Br     | 5YR4/4    | ◎     |       |     | ◎      |       |      | ◎     |             |        |      |      |          |        |
|                 | Light Green | Lg     | 5G7/6     |       | ◎     | ◎   |        |       |      |       | ◎           |        |      |      |          |        |
|                 | Orange      | O      | 10R6/14   |       | ○     |     |        |       |      |       |             | ○      |      |      |          |        |
|                 | Grey        | Gr     | N6        |       | ○     | ○   |        |       | ○    |       |             |        | ○    |      |          |        |
|                 | Pink        | P      | 7.5RP7/8  |       | ○     |     |        |       | ○    |       |             |        |      | ○    |          |        |
|                 | Sky Blue    | Sb     | 10B7/6    |       |       |     |        |       |      |       |             |        |      |      | ○        |        |
|                 | Purple      | V      | 2.5P3/8   | ○     |       | ○   |        |       |      |       |             |        |      |      |          | ○      |

**Note \*** Typical examples conforming to **JIS Z8721**.

**Remarks** 1. ◎, ○, and ■ in the Table indicate the following:

◎ : Specified in **JIS C3406** preferably applied to nominal size 2~5

○ : Recommended but not specified in **JIS C3406**

■ : Not recommended for use

2. No marking is indicated when the same color is used for the ground and the marking.

3. The color shall be either black or white for nominal sizes 8 ~15, and black for size 20 and above.

## Explanatory Notes on Color Code for Wiring Harness

These explanatory notes serve to explain matters specified and described in the main text and related matters which do not constitute a part of this Standard.

### 1. Purpose and Background of Establishment/Revisions

#### 1.1 Purpose of Establishment

Combinations of color codes for wire harness cables and application circuits varied extensively among manufacturers, prompting the establishment of this Standard in 1973. The Standard is intended to facilitate application selection, check-up and maintenance procedures for specified circuits.

#### 1.2 Background of the Two Preceding Revisions

After 1982, the addition of new functions including systems to improve fuel efficiency and safety, contributed to the proliferation of wire harness circuits, exhausting the colors available for coding. Based on the actual use of cable colors, a total of 60 colors were added by the revisions.

#### 1.3 Background of the Current Revision (1999)

During the 10 years since the previous revision, various new functions have been added to automobiles to enhance safety, anti-pollution, energy conservation, as well as comfort and convenience. The implementation of advanced electronic systems incumbent to these improvements has led to a significant increase in the number of circuits used and the subsequent discrepancy between the relevant Standard and the actual condition of use. To promote uniform application among all car manufacturers, improve productivity of electric cable manufacturers, and facilitate identification procedures for maintenance check-ups, the Electric Cables Subcommittee of the Electric Equipment Committee began revisions to standardize color combinations for wire harness cables used in automobiles.

Prior to the revision, the committee members representing (eight) automobile manufacturers conducted surveys within their own companies of actual use of cable color combinations and the circuits affected. Committee members representing (six) electric cable manufactures investigated production of electric cables by color over the preceding six months. The results of the surveys served as the basis for this revision. As a result, unification among manufacturers was confirmed concerning circuits for chargers (ground color: white), starters/earths (ground color: black), and illumination (ground color: red). For signal circuits, the unified use of green was confirmed for signal lights. Measuring instruments were deleted from the Standard since the surveys indicated no unification in use of color codes. The little used colors of dark green and charcoal brown were deleted and purple was added. Easily confused combinations of marking colors were subject to readjustment.

The Standard format was also reviewed to correspond to **JIS Z8301-1996**. The original draft revision, was reviewed by the Electric Equipment Committee and the Standards Committee and was approved by the Standards Council of the Society of Automotive Engineers of Japan, Inc. in March, 1999.

### 2. Objective of Establishment

This Standard is intended to provide a design standard for color coding of wire harness cables and to provide uniform procedures to facilitate actual use and selection.

### 3. Pending Issues

The original intent of this revision was to achieve standardization and unification between application circuits and color codes for electric cables. However, surveys of automobile manufacturers revealed the use of separate standards by each manufacturer. This was due in part to the long interval since the last revision. Additionally, cable colors and color selection standards could not keep up with the increase in the number of circuits resulting from rapid advancements in electric systems. Conditions for signal and measuring instrument circuits were not at all standardized and varied too extensively, precluding any attempts at unification. It is left for the next revision to explicitly define all related circuits and complete standardization.

of color selection, etc.

#### 4. Name of Standard and English Title

The name of the Standard, to correspond to **Annex 1** of **JIS Z8301-1996**, was changed to *Automotive Parts - Color Code for Wiring Harness*.

#### 5. Scope (1 of the main text)

In the previous Standard, JIS C3406 was referred to in the text of **1. Scope**. Since such reference in the text is uncommon, and since **JIS C3406** concerns low-voltage cables for automobiles rather than wiring harness cables, it was deleted from the text. The Standard number only was included in the newly added Remarks for **1. Scope** and the number and name in **2. Applicable Publications**.

#### 6. Contents of Specific Items

##### 6.1 Applicable Standards (2 of the main text)

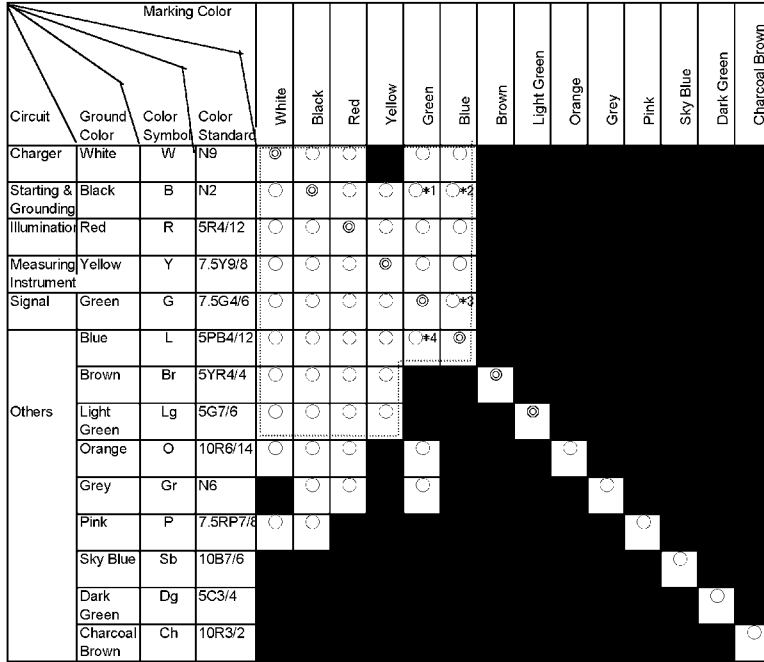
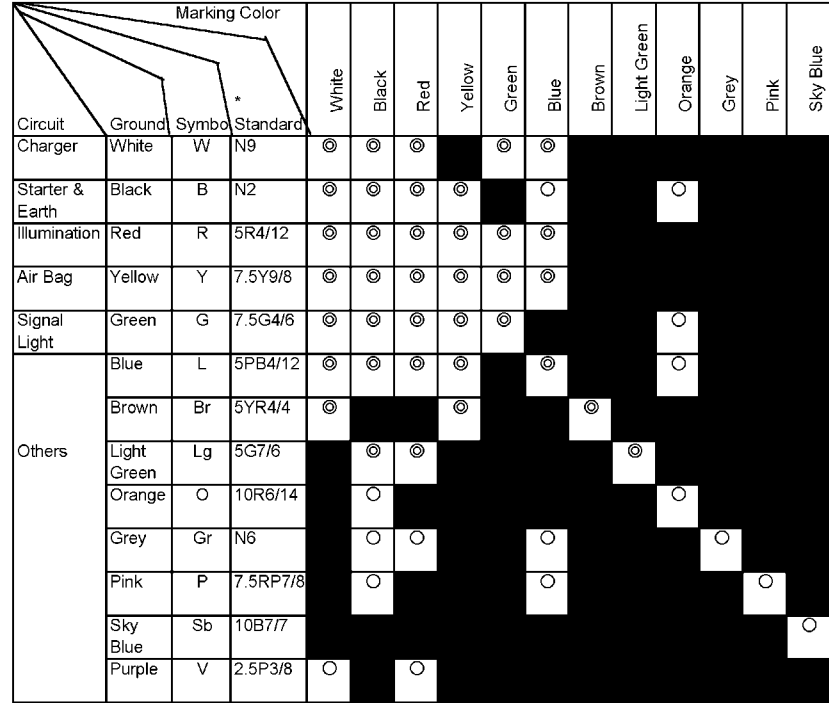
This item was added to conform to **JIS Z8301**. Also, **2. Purpose** in the previous Standard was moved to the **Explanatory Notes**.

##### 6.2 Color Codes for Cables (3. of the main text)

The following points were subject to revision concerning color codes for electric cables:

- a) Color symbols, and color for grounds, and markings, conform to **5. Color Codes for Cables** of **JIS C3406**.
- b) The description given in parenthesis in the title for **Table 1** was changed to "Nominal Sizes of 5 or below".
- c) The circuit names and color combinations in the table were specified as follows:
  - 1) "Starting and grounding circuits" were changed to the "Starter and Earth". The ground color black was retained from the previous Standard. The marking color green was deleted because it is confused with blue. Orange was added.
  - 2) Unification for measuring instrument circuits was difficult because of the extensively diversified range, such as for meters, and because of the increased number of circuits. Therefore, they were placed under the category Others. The Air Bag category was newly specified with the ground color yellow.
  - 3) Since unification has been attained only for signal light circuits, the title was changed to "Signal Light" and the ground color green was retained. The marking color blue was deleted because it is confused with green. Orange was added.
  - 4) For the category Others, the ground colors dark green and charcoal brown were deleted because of low rates of actual use. Purple, with a higher rate of use, was added. Also, marking colors whose rates of use were low or were not clearly distinguishable were deleted and orange was added. In total, six colors were added and 12 were deleted.
  - 5) Writing of **Remarks 1** was revised in part and ※ marks in the previous Standard which indicated "color which should be avoided for the same wiring portion" were deleted.
  - 6) **Remarks 2** was added to explain markings with the same color as grounds.

Comparison Table of JASO D607 "Color Code for Wiring Harness"

| Application Provision     | Former (JASO D607:82)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | New (Proposal for Revision)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name of Standard          | Color Code for Wiring Harness                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Automotive Parts – Color Code for Wiring Harness                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1. Scope                  | To specify the color code for automobile wire harness cables (automobile low-voltage cables specified in JIS C3406)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | To specify color coding for wire harness cables used in automobiles. To define wire harness cables in "Remarks" which is newly added                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. Purpose                | This Standard aims to prepare color code design standards for wire harness cables so as to ensure standardization.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Item 2. Applicable Publications was added and the Purpose of Establishment was moved to the Explanatory Notes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3. Color Codes for Cables | <p>Table Color Code for Cables (up to 5mm<sup>2</sup>)</p>  <p><b>Remarks:</b> 1. ◎, ○, and ■ in the Table indicate the following:<br/> ◎: Specified in JIS 3406<br/> ○: Specified in JASO D608<br/> ■: Not recommended for use<br/> □: Desirable color code range for cables greater than 2 mm<sup>2</sup><br/> *: Should not be avoided for the same wiring portion (*1, *2, *3, and *)<br/> 2. The color code for cables of 8 to 15mm<sup>2</sup> is black or white, and black for cables of 20mm<sup>2</sup> or greater.</p> | <p>Table 1 Color Codes for Cables (Nominal Sizes of 5 or below)</p>  <p><b>Note*</b> Typical examples conforming to JIS Z8721</p> <p><b>Remarks:</b> 1. ◎, ○, and ■ in the Table indicate the following:<br/> ◎: Specified in JIS C3406, preferably applied to nominal sizes 2 ~5<br/> ○: Recommended but not specified in JIS C3406<br/> ■: Not recommended for use<br/> 2. No marking is indicated when the same color is used for the ground and the marking.<br/> 3. The color shall be either black or white for nominal sizes 8~15, and black for nominal size 20 and above.</p> |