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Safety Belt Reminder for Motor Vehicles

汽车安全带提醒装置

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Safety Belt Reminder for Motor Vehicles

1 Scope

This Document specifies the terms and definitions, requirements and test methods of seat belt reminder for motor vehicles.

This Document applies to the seat belt reminder for the driver's seat position and the passenger seat position in the same row with the driver's seat of the Categories M and N vehicles; and the seat belt reminder for the rear passenger seat position of the Categories M1 and N1 vehicles; the seat belt reminder for other seat positions can be implemented by reference.

2 Normative References

The provisions in following documents become the provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

GB 4094-2016 Motor Vehicles - Symbols for Controls, Indicators and Tell-Tales

3 Terms and Definitions

For the purposes of this Document, the following terms and definitions apply.

3.1 First level warning

A visual warning that is activated when the ignition switch or master switch is turned on (vehicle drive running or not), in the "ON" or "READY" state (or equivalent), and any passenger in the vehicle is not wearing a seat belt.

NOTE: Audible warning can be attached.

3.2 Second level warning

Visual and audible warnings that are activated when the vehicle is moving and any passengers in the vehicle are not wearing or opening their seat belts.

3.3 Safety-belt reminder

The system that warns the driver when any passenger in the vehicle is not wearing a seat belt, consisting of a detection device for not wearing a seat belt and two-level warnings (first level

4.2.2.2 The audible warning signal shall be easily recognized by the driver.

4.2.3 First level warning

4.2.3.1 When any passenger in the vehicle is not wearing a seat belt and the ignition switch or main control switch is turned on, in the "ON" or "READY" state (or the equivalent state), the first level warning shall be activated.

4.2.3.2 The first level warning described in 4.1.1 shall have a continuous visual warning signal, and the first level warning described in 4.1.2 shall have a visual warning signal that lasts no less than 60s.

4.2.3.3 The first level warning can be stopped when any of the following conditions are met:

- a) the seat belt that activates the warning is fastened;
- b) There is no longer a passenger in the seat for which the warning is activated.

4.2.3.4 After the first level warning is stopped, if the activation conditions described in 4.2.3.1 are met again, the first level warning shall be reactivated.

4.2.3.5 The activation of the first level warning shall be tested according to the test method of 5.1.

4.2.4 Second level warning

4.2.4.1 The driving conditions for the activation of the second level warning shall be any one or more combinations of the following conditions:

- a) The continuous forward driving distance of the vehicle exceeds the distance limit, and the distance limit shall not exceed 300m;
- b) The forward speed of the vehicle exceeds the speed limit, and the speed limit shall not exceed 15km/h;
- c) The forward travel time of the vehicle exceeds the time limit, and the time limit shall be no greater than 60s.

4.2.4.2 When the vehicle is not in normal operation and any door is opened or there is no passenger in the seat for which the warning is activated, the activated driving conditions listed in 4.2.4.1 above can be reset (recalculated by zeroing).

4.2.4.3 For the case of unfastening the seat belt described in 4.3.2 and 4.4.4, the activated driving condition described in 4.2.4.1 shall be measured and calculated from the moment when the seat belt is unfastened.

4.2.4.4 The second level warning shall include visual warning and audible warning signals lasts at least 30s, and each interval time of the audible warning signals shall be no greater than 3s (as

shown in Figure 1). When the first level warning is still activated, the second level warning shall replace the first level warning.

4.2.4.5 The second level warning can be stopped when any of the following conditions are met:

- a) the seat belt that activates the warning is fastened;
- b) the vehicle is not in normal operation condition;
- c) There is no more passenger in the seat for which the warning is activated.

4.2.4.6 After the second level warning is stopped, if the activation conditions described in 4.3.2 or 4.4.4 are met again, the second level warning shall be reactivated.

4.2.4.7 The activation of the second level warning shall be tested according to the test method of 5.2.

4.3 Seat belt reminder for driver and passengers in the same row

4.3.1 The seat belt reminder for the driver and the passengers in the same row shall meet the requirements of 4.2.

4.3.2 When the seat belt of any passenger in the front row is not fastened or the seat belt is unfastened while the vehicle is in normal operation, and the activation driving conditions described in 4.2.4.1 are met, the second level warning shall be activated.

4.4 Seat belt reminder for the rear passengers

4.4.1 The seat belt reminder for rear passengers shall meet the requirements of 4.2.

4.4.2 The visual warning shall have supplementary information indicating all rear seats, enabling the driver to identify the seat without a seat belt fastened when facing forward. This clause does not apply to vehicles with rear passenger detection device.

4.4.3 The warning signs of the seat belt reminders for the seats described in 4.1.1 and 4.1.2 may be shared.

4.4.4 For a vehicle with a rear passenger detection device, when any safety belt of passenger in the rear seat is not fastened or the seat belt is unfastened while the vehicle is in normal operation, and the activation driving conditions described in 4.2.4.1 are met, the second level warning shall be activated. For vehicles without rear passenger detection devices, when the seat belt is unfastened while the vehicle is in normal operation, and the activation driving conditions described in 4.2.4.1 are met, the second level warning shall be activated.

5 Test Methods

5.1 First level warning

- b) Drive the vehicle into a normal operating state and maintain it;
- c) Unfasten the seat belt of the driver's seat;
- d) Measure and calculate from the moment when the seat belt is unfastened. When the driving conditions determined in 5.2.1 are met, check the status of the seat belt reminder on the driver's seat.

5.2.3 Test on passenger seat in the same row with driver and rear passenger seat with passenger detection device

5.2.3.1 In the condition that the seat belt is not fastened before the vehicle is driven, the test of each passenger seat shall be carried out according to the following procedures:

- a) All passenger seat belts are not fastened;
- b) the driver's seat belt is fastened;
- c) Place a load of 40kg on the seat cushion, or place a dummy or person representing the 5th percentile adult female; alternative methods specified by the manufacturer and approved by the certification body can also be used to simulate the state of the passenger's riding the vehicle; and the alternative load shall not exceed 40kg;
- d) Drive the vehicle according to the driving conditions determined in 5.2.1;
- e) When the above driving conditions are met, check the status of the seat belt reminder for the seat.

5.2.3.2 In the condition that the seat belt is unfastened when the vehicle is running, the test of each passenger seat shall be carried out according to the following procedures:

- a) Place a load of 40kg on the seat cushion, or place a dummy or person representing the 5th percentile adult female; alternative methods specified by the manufacturer and approved by the certification body can also be used to simulate the state of the passenger's riding the vehicle; and the alternative load shall not exceed 40kg;
- b) All seat belts are fastened;
- c) Drive the vehicle into a normal operation state and maintain it;
- d) Unfasten a passenger seat belt;
- e) Measure and calculate from the moment when the seat belt is unfastened. When the driving conditions determined in 5.2.1 are met, check the status of the seat belt reminder for the seat.

5.2.4 Test on the rear passenger seat without passenger detection device

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