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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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Towing devices for light-duty vehicle

轻型汽车牵引装置

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Foreword

Clause 4 and Clause 5 of this standard are mandatory; the remainder is recommended.

This standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

This standard is under the jurisdiction of the National Technical Committee of Auto Standardization (SAC/TC 114).

The drafting organisations of this standard are the China Automotive Technology and Research Center, Lingyun Industrial Corporation, SAIC-GM-Wuling Automobile, Pan Asia Technical Automotive Center, JAC Motors, the China Automotive Engineering Research Institute, Volkswagen (China) Investment, the Toyota Motor Research and Development Center (China), Daimler Northeast Asia Investment and BMW (China) Services.

1 Scope

China's mandatory national standard for the towing devices fitted to light-duty vehicles. Every car that breaks down on a motorway has to be pulled clear, and the point where the rope or the tow bar attaches is the one fitting on the vehicle that nobody thinks about until the moment it is needed. If it is missing, the recovery crew improvises with a suspension arm or a subframe and tears something; if it is present but weak, it fails under load and the

rope whips back at whoever is standing near it. This standard closes both possibilities by requiring at least one towing point at the front of the vehicle, by fixing how much static load that point must survive in relation to the vehicle's own permissible mass, and by requiring that after the test neither the device, nor its anchorage, nor the lamps, brakes and steering around it are damaged in a way that affects normal use. It also settles the practical details that decide whether a towing point is usable at the roadside: the opening must be wide enough for a rope or a bar to pass through, the edges must not cut, the device must not stick out beyond the body when it is not in use, and using it must not require a special tool. It applies to category M and category N1 vehicles up to a stated maximum permissible total mass, which is where the great majority of passenger cars and light vans fall.

This standard specifies the technical requirements for, and the test methods of, towing devices for light-duty vehicles.

This standard applies to category M vehicles and category N1 vehicles whose maximum permissible total mass does not exceed the value stated in the standard.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 3730.2 Road vehicles - Masses - Vocabulary and codes.

GB/T 15089 Classification of power-driven vehicles and trailers.

3 Terms and definitions

The terms and definitions given in GB/T 15089 and GB/T 3730.2, together with the following, apply to this document.

3.1 towing device

A component fixed or fitted to a vehicle which is connected by means of a device such as a tow rope, a tow cable or a tow bar, so that the vehicle can tow or be towed.

3.2 towing device anchorage

The component on the vehicle to which the towing device is connected.

4.1 General requirements

A vehicle shall have at least one towing device fixed to, or capable of being fitted to, its front.

If a towing device is fitted at the rear of the vehicle, that towing device shall comply with the technical requirements of this standard.

The outermost end of the towing device shall not project beyond the vertical projection of the outer contour of the vehicle onto the horizontal plane, except when the vehicle is in the towing condition.

The minimum internal dimension of the space provided by the towing device, through which the tow rope, tow cable or tow bar used for towing has to pass, shall not be less than the value fixed by the standard (see Figure 1).

The towing device shall have no edges or sharp points capable of causing any damage to the tow rope, tow cable or tow bar used for towing.

The structure and the shape of the towing device are decided by the vehicle manufacturer, but its use shall not require any special tool or any auxiliary means that is difficult to obtain.

4.2 Strength requirements

When tested in accordance with Clause 5 of this standard, the towing device shall be able to withstand a minimum static load F , calculated by Formula (1) from the maximum permissible total mass of the vehicle and the acceleration of gravity.

After every towing device fitted on the vehicle has completed the test specified in Clause 5, it shall meet the following requirements: a) the towing device and its anchorage shall not fail, fracture, or deform in a way that affects normal use; b) the other components installed near the towing device, such as the lamps, the signalling devices, the braking system and the steering system of the vehicle, shall show no damage affecting their normal operation.

5.1 Test conditions

The test shall be carried out using the same towing device on the same vehicle. The test vehicle shall be in the complete kerb mass condition specified by the manufacturer and shall be fixed in the horizontal plane.

The test is permitted to be carried out on a body or a chassis completely equivalent to the actual vehicle, provided that the method of fixing does not affect the strength of the towing device and that the loading condition of the towing device is consistent with that on the complete vehicle.

5.2 Static load test

A horizontal tensile static load and a horizontal compressive static load F are applied separately to the towing device, the direction of F being parallel to the longitudinal centre line of the vehicle.

Through the centre point of the working area of the towing device, and on the horizontal line

parallel to the longitudinal vertical plane of the vehicle, tensile and compressive static loads F are applied at the angles fixed by the standard in the vertical direction and in the horizontal direction (see Figure 2). Any one of these angles may be chosen for the tensile and the compressive test.

The point at which the static load borne by the towing device is applied shall lie within the working area of the towing device.

6 Transitional requirements for the implementation of the standard

For vehicle models already in production, this standard is implemented from twelve months after its date of implementation.