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

**GB/T 44039.2-2024**

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**Road vehicles - Drawbar couplings and eyes for rigid drawbars  
- Part 2: Strength tests for special applications  
(English Translation)**

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### Foreword

This document was drafted in accordance with the provisions of GB/T 1.1-2020

Directives for standardization - Part 1.Rules for the structure and drafting of standardizing documents.

This document is part 2 of GB/T 44039 Road vehicles - Drawbar couplings and eyes for rigid drawbars. GB/T44039 has been published in the following parts.

- Part 1.Strength tests for general cargo centre-axle trailers;
- Part 2.Strength tests for special applications.

This document is modified in relation to ISO 12357-2.2007 Commercial road vehicles - Drawbar couplings and eyes for rigid drawbars - Part 2.Strength tests for special applications.

This document has made the following structural adjustments compared to ISO 12357-2.2007.

- a) 5.1 of ISO 12357-2.2007 has been deleted, and the corresponding content has been adjusted to 5.1.1, 5.1.2, 5.2.1 and 5.2.2 respectively;
- b) 5.1 and 5.2 correspond to 5.2 and 5.3 of ISO 12357-2.2007;

c) Figures 1~3 correspond to Figures 2~4 of ISO 12357-2.2007.

The technical differences between this document and ISO 12357-2.2007 and their reasons are as follows.

- a) The scope of application has been changed from "vehicle transport trailer with a vertical load exceeding 3500 kg at the maximum design total mass" to "vehicle transport trailer with a maximum design total mass exceeding 3500 kg" (see Chapter 1; see Chapter 1 of ISO 12357-2.2007), which is consistent with the provisions of GB/T 3730.2-1996;
  - b) The normative reference ISO 12357-1 has been added (see Chapter 1);
  - c) The requirements for flexible components (see 4.5 of ISO 12357-2.2007) have been deleted and the test requirements have been unified;
  - d) The requirement that the number of cycles for other materials should be agreed between the coupling manufacturer and the test laboratory (see 6.3 of ISO 12357-2.2007) has been deleted, and the test requirements have been unified;
- Road vehicles - Drawbar couplings and eyes for rigid  
drawbars -Part 2.Strength tests for special applications

## 1 Scope

This document specifies the general requirements, determination of Dc and V values, dynamic tests, static tests and strength requirements for drawbar couplings and matching drawbar eyes.

This document applies to the strength test of the drawbar eye and the matching drawbar coupling used in the following vehicle types.

- Rigid drawbar trailers, with a maximum design total mass exceeding 3500 kg and with a vertical static load acting on the towing vehicle exceeding 10% of the maximum design total mass of the trailer and/or greater than 1000 kg but not exceeding 2000 kg, and the combinations composed of the trailers;
- Vehicle transport trailers with a maximum design total mass exceeding 3500 kg and the combinations composed of the trailers.

This document is not applicable to the strength test of drawbar couplings and matching drawbar eyes as specified in ISO 12357-1.

## 2 Normative references

The provisions of the following documents constitute the essential clauses of this document through normative references in this text. Among them, for referenced documents with dates, only the versions corresponding to the dates are applicable to this document; for referenced documents without dates, the latest versions (including all amendments) are applicable to this document.

ISO 1176 Road vehicles - Masses - Vocabulary and codes

**NOTE:** GB/T 3730.2-1996 Road vehicle - Masses - Vocabulary and codes (ISO 1176.1990, IDT)

ISO 12357-1 Commercial road vehicles - Drawbar couplings and eyes for rigid drawbars - Part 1.Strength tests for general cargo centre-axle trailers)

**NOTE:** GB/T 44039.1-2024 Road vehicles - Drawbar couplings and eyes for rigid drawbars - Part

## 1 Strength tests for general cargo centre-axle trailers (ISO 12357-1.1999, MOD)

UNECE R55-01 Uniform provisions concerning the approval of mechanical coupling components of combinations of vehicles

## 3 Terms and definitions

For this document, the terms and definitions defined in ISO 1176 and the following apply.

### 3.1 S-value

The vertical static load acting on the mechanical connection device by a rigid drawbar trailer or semitrailer traction platform with the drawbar horizontal and at maximum design total mass.

### 3.2 rigid drawbar trailer

A trailer for which the towing device cannot move vertically (relative to the trailer), a vertical static load exceeding 10% of the maximum design total mass of the trailer

and/or greater than 1000 kg and not exceeding 2000 kg acts on the towing vehicle, and the axle or axle group does not coincide with the center of gravity of the vehicle (when uniformly loaded).

**4.1 The functions and structural dimensions of the towing beam, drawbar coupling,**

drawbar eye or special connection device used for the test shall be reasonably matched.

**4.3 The installation arrangement of the towing beam, drawbar coupling, drawbar eye or**

special connection device on the test bench shall be the same as the installation arrangement on the vehicle and consistent with the installation requirements of the manufacturer.

**4.4 The towing beam, drawbar coupling and drawbar eye may be tested individually or**

in combination. The T-type special connection device in UNECE R 55-01, which is only applicable to vehicle transport trailer combinations, shall be tested in combination.

**4.5 The test conditions of the towing beam, drawbar coupling, drawbar eye or special**

connection device shall be equivalent to the corresponding actual use conditions.

**4.6 In dynamic tests, it is permitted to replace flexible parts that are damaged due to**

overload in accelerated tests.

**4.7 The test load shall be applied by a dedicated device.**

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