

ICS 43.080.10



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

GB/T 44039.1-2024

**Road vehicles - Drawbar couplings and eyes for rigid drawbars
- Part 1: Strength tests for general cargo centre-axle trailers
(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 1 of GB/T 44039 "Road vehicles - Drawbar couplings and eyes for rigid drawbars". GB/T 44039 has issued the following parts.

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

This document has modified and adopted ISO 12357-1.1999 "Commercial road vehicles - Drawbar couplings and eyes for rigid drawbars - Part 1.Strength tests for general cargo centre-axle trailers".

The technical differences between this document and ISO 12357-1.1999 and their reasons are as follows.

a) MODIFY the scope of application, from "centre-axle trailers with axle load exceeding 3500 kg at maximum design total mass" to "general cargo centre-axle trailers with a maximum design total mass exceeding 3500 kg" (see Clause 1 of this document, Clause 1 of ISO 12357-1.1999), to be consistent with the

provisions of GB/T 3730.2-1996;

b) ADD the normatively referenced GB/T 3730.1 (see Clause 3 of this document);

c) DELETE the term and definition of centre-axle trailer (see 3.2 of ISO 12357-1.1999);

d) DELETE the requirements for flexible components (see 4.5 of ISO 12357-1.1999), to unify the test requirements;

e) DELETE the requirement that the number of dynamic test cycles for other materials shall be agreed between the manufacturer and the laboratory (see 6.3 of ISO 12357-1.1999), to facilitate the understanding and use of the standard;

f) ADD the requirement that the static load shall be maintained for at least 60 s after reaching the specified value (see Clause 7 of this document), to unify and standardize the test operation requirements.

This document has made the following editorial changes.

a) In order to coordinate with the existing standards, the name of the standard has been changed to "Road vehicles - Drawbar couplings and eyes for rigid drawbars - Part 1.Strength tests for general cargo centre-axle trailers";

Road vehicles - Drawbar couplings and eyes for rigid
drawbars - Part 1.Strength tests for general cargo centre-
axle trailers

1 Scope

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

This document applies to the strength test of drawbar eyes that meet the requirements of ISO 1102 and ISO 8755 and matching drawbar couplings that meet the requirements of ISO 3584 for general cargo centre-axle trailers with a maximum design total mass exceeding 3500 kg.

2 Normative references

The following referenced 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 3730.1 Terms and definitions of motor vehicles, trailers and combination vehicle - Part 1.Types

ISO 1102 Commercial road vehicles - 50 mm drawbar eye - Interchangeability

NOTE: GB/T 4781-2006 Commercial road vehicles - 50 mm drawbar eye - Interchangeability (ISO 1102.2001, IDT)

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 3584 Road vehicles - Clevis couplings - Interchangeability

NOTE: GB/T 32860-2016 Road vehicles - Drawbar couplings of interchangeability (ISO 3584.2001, MOD)

ISO 8755 Commercial road vehicles - 40 mm drawbar eye - Interchangeability

NOTE: GB/T 44041-2024 Road vehicles - 40 mm drawbar eye - Interchangeability (ISO 8755.2001, IDT)

3 Terms and definitions

For the purpose of this document, the terms and definitions defined in GB/T 3730.1, ISO 1176, and the following apply.

3.1

S-value

Vertical static load acting on the mechanical connection device of centre-axle trailers when the drawbar is horizontal and at its maximum design total mass.

4.1 The functions and structural dimensions of drawbar couplings and drawbar eyes

used for the test shall be reasonably matched.

4.3 The installation layout of the drawbar coupling and drawbar eye on the bench shall

be the same as its layout when installed on the vehicle and consistent with the installation requirements of the manufacturer.

4.5 The test conditions of drawbar couplings and drawbar eyes shall be equivalent to

the corresponding actual use conditions.

4.6 In the dynamic test, it is allowed to replace flexible components damaged due to

overload in the accelerated test.

5.1 Dc value is an equivalent determined based on the calculation results of the

longitudinal forces between the towing vehicle and the trailer, in kilonewtons (kN). Dc value is calculated according to formula (1).

where.

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