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

**GB/T 44126.2-2024**

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**Road vehicles - Test of braking systems on vehicles with a maximum  
authorized total mass of over 3.5 t using a roller brake tester - Part 2:  
Air over hydraulic and purely hydraulic braking systems  
(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 44126 Road vehicles - Test of braking systems on  
vehicles with a maximum authorized total mass of over 3.5 t using a roller brake tester.

GB/T 44126 has been published in the following parts.

-- Part 2.Air over hydraulic and purely hydraulic braking systems.

This document is modified in relation to ISO 21069-2.2008 Road vehicles - Test of  
braking systems on vehicles with a maximum authorized total mass of over 3.5 t using  
a roller brake tester - Part 2.Air over hydraulic and purely hydraulic braking systems.

This document has made the following structural adjustments compared to ISO 21069-  
2.2008.

-- Chapter 2 is added;

-- Chapter 3 corresponds to Chapter 2 of ISO 21069-2.2008;

-- Chapter 4 corresponds to Chapter 3 of ISO 21069-2.2008;

-- Chapter 5 corresponds to Chapter 4 of ISO21069-2.2008.

The technical differences between this document and ISO 21069-2.2008 and their

reasons are as follows.

- The scope of application of the standard is changed to clarify the content of the standard (see Chapter 1);
- The normative reference GB/T 15089 is added to clarify the specific vehicle models to which it is applicable (see Chapter 1).

The following editorial changes were made to this document.

- Appendix B of ISO 21069-2:2008 has been deleted because it does not contain specific technical content;
- Note 2 of 4.4.2 in ISO 21069-2:2008 has been deleted because this part does not contain specific technical content.

## 1 Scope

This document specifies the terms and definitions, test methods, test conditions, test equipment, and data processing for the test of brake systems using a roller brake tester.

This document is applicable to tests on vehicles of categories M2, M3, N2, N3, O3 and O4 as specified in GB/T 15089, with a maximum authorized total mass of more than

**3.5 t and equipped with air-over-hydraulic and purely hydraulic brake systems using a**

roller tester.

## 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.

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

### 3 Terms and definitions

The following terms and definitions apply to this document.

#### 3.1 braking force

The force generated between the tire tread and the rotating drum during braking, that is, the reaction force generated by the roller brake tester to cause the wheel to rotate.

#### 3.2 braking force imbalance

The difference in braking force between the left and right wheels on the same axle.

**NOTE:** The braking force imbalance is expressed as a percentage of the braking force value on the larger

side.

#### 3.3 braking force variation

The difference between the maximum and minimum braking force of the single-side wheels measured under constant driving force.

**NOTE:** The braking force variation is expressed as a percentage of the larger braking force value on one

side.

#### 3.4 roller brake tester

The testing equipment that is composed of two pairs of left and right power-driven rollers and is used to test the braking performance of vehicles.

**NOTE:** The axle wheels are driven and supported by rollers, and the braking force between the single

wheel/double wheels and the driving roller is measured and evaluated simultaneously or separately.

### 4 Symbols

See Table 1 for general symbols and definitions, and Table 2 for special symbols and definitions for air-over-hydraulic braking systems.

## **5.1 General**

The characteristics of the roller brake tester shall comply with the provisions of Appendix A.

The braking system performance test shall be carried out as follows.

- regulatory requirements;
- data provided by the vehicle manufacturer;
- instructions for the roller brake tester.

**5.2.1 Clean the vehicle tires and adjust the tire pressure according to the vehicle manufacturer's recommendations.**

**5.2.2 For the motor vehicle brake test required by the nation, the brake tester shall be**

kept clean, the inspector shall be certified by the technical service department, and the static axle load shall be measured using additional equipment when the tester is not in operation. After the test, the vehicle information and measurement values shall be recorded.

### **5.3.1.1 Overview**

For air-over-hydraulic and purely hydraulic braking systems, connecting the measuring device increases the risk of leakage when measuring the hydraulic system. Therefore, it is particularly important not to use additional pressure sensors for the calculation of the braking strength.

If the braking force increases predictably with increasing pressure, the brake test is performed under full or partial load conditions.

### **5.3.1.2 Air-over-hydraulic braking system**

The schematic diagram of the air-over-hydraulic braking system is shown in Figure 1. For the front axle, an air pressure measuring device is installed before the air-over-hydraulic converter. The output hydraulic pressure is calculated on the basis of the measured air pressure and the air-over-hydraulic conversion coefficient according to