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

GB/T 13564-2022

Replacing GB/T 13564-2005

Roller opposite forces type automobile brake tester

滚筒反力式汽车制动检验台

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1 Scope

GB/T 13564-2022 is the Chinese national standard on roller opposite forces type automobile brake tester, in the field of road vehicles engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 9 March 2022 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 October 2022. Classification: ICS 43.180, CCS R17. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the

dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Document specifies the requirements for classification and model, technical requirements, test methods, inspection rules, and marking, packaging, transportation and storage of roller opposite forces type automobile brake tester. This Document applies to the design, production, inspection and use of the roller opposite forces type automobile brake tester; and the roller opposite forces motorcycle brake tester can use it as a reference.

2 Normative References

The provisions in following documents become the essential 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/T 191 Packaging - Pictorial Marking for Handling of Goods GB/T 13306 Plates

GB/T 13384 General Specifications for Packing of Mechanical and Electrical Product JT/T 1279 Axle (Wheel) Weighing Instrument for Motor Vehicle Detection

3 Terms and Definitions

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

3.1 Roller opposite forces type automobile brake tester A device for detecting the braking performance of an automobile by measuring the opposite force of the wheel braking force acting on the main roller.

3.2 Roller opposite forces type automobile lift loading brake tester A device for detecting the braking performance of an automobile by measuring the opposite force of the wheel braking force acting on the main roller, and by using a lifting device to raise the axle under test to a specified height, increase the static axle load of the axle.

3.3 Main roller The roller that is driven by the motor and is directly driven to rotate through the deceleration mechanism.

3.4 Auxiliary roller The roller that is parallel to the main roller and is driven by the main roller to rotate through a synchronizing device.

3.5 Resolution of a displaying device The smallest difference between the displayed indications that the displaying instrument can effectively identify.

3.6 Third roller The roller that is independent and located between the main roller and the auxiliary roller, and is used to detect the linear speed of the wheel under test.

3.7 Rated loading capacity The maximum axle mass of the automobile under test that is allowed to be carried by the roller opposite forces type automobile brake tester.

3.8 Slip adhesion coefficient of roller The ratio of the wheel braking force to the wheel load measured by the roller opposite forces type automobile brake tester, when the test wheel of the roller adhesion coefficient tester locks and slips on the busbar on the main roller.

3.9 Idling dynamic zero error The maximum zero deviation value displayed by the instrument of the roller opposite forces type automobile brake tester under the no-load stable operation state.

3.10 Differences between indications value The absolute value of the differences between the indications value of the braking force measured by the left and right roller groups at the same test point.

3.11 Equate position roller The position on the roller surface or extension of roller axis that is close to the roller side.

3.12 Slip rate shall be no greater than 2mm.

5.4.2 The third roller

5.4.2.1 The third roller shall rotate flexibly without sticking.

5.4.2.2 The slip rate when the drive motor automatically stops shall be 25%~35%.

5.4.2.3 The third roller shall be in reliable contact with the wheel under test. When the wheel under test is braking, the third roller shall not lose contact with the wheel under test due to jumping.

5.4.3 Displaying device The digital display shall be stable, with no missing segments or flickering. For the brake tester used by a single machine, the retention time of the measured data shall be no less than 8s.

5.4.4 Electrical system

5.4.4.1 Electrical system response error The electrical system shall have the filtering function to eliminate invalid signals such as rack vibration and electromagnetic interference; and the response error of the electrical system of the brake tester shall not exceed $\pm 3\%$.

5.4.4.2 Data sampling The sampling frequency of brake force shall be no lower than 100Hz.

5.4.4.3 Data processing Under the condition that the third roller stops and control does not work, the continuous sampling time of the braking force is no less than 3s. The maximum braking force shall be screened and displayed in all sampling points collected in the whole process of braking detection.

5.4.4.4 Safety protection 5.4.4.4.1 The electrical system shall be able to withstand the

withstand voltage test of 50Hz, 1.5kV, which lasted for 1min; and shall not appear breakdown, arcing and other phenomena. 5.4.4.4.2 The insulation resistance of the electrical system shall be no less than 5MΩ. 5.4.4.4.3 The electrical system shall be equipped with fuses or circuit breakers according to the size of the load; the drive motor control shall be provided with overload and phase failure protection devices. 5.4.4.4.4 The electrical system shall have reliable grounding devices and obvious grounding signs; and the brake tester shall be reliably grounded during installation and use. 5.4.4.4.5 The electrical system shall be provided with a manual button for emergency stop.

5.5 Special requirements for loading brake tester

5.5.1 Loading device The loading brake tester shall have a rack lifting device; and can end the lifting action accurately and reliably at the specified lifting height.

5.5.2 Lifting height error The allowable error of the lifting height of the loading brake tester is 0mm~5mm.

5.5.3 Lifting height difference between left and right roller groups When the loading brake tester is lifted to the specified height, the lift height difference between the left and right roller groups shall be no greater than 2mm.

5.5.4 Lifting stability

5.5.4.1 Under a load of no less than 50% of the rated loading capacity, when the loading brake tester is lifted to the highest point, the drop in 10 min shall be no greater than 2mm.

5.5.4.2 The front, rear, left and right directions of the lifting rack of loading brake tester shall be provided with adjustable limit devices.

5.5.4.3 The loading brake tester shall run smoothly when it is lifted and lowered, and there is no sticking phenomenon.

5.5.5 Weighing Requirements The axle (wheel) weight gauge installed in combination with the loading brake tester shall meet the requirements of JT/T 1279.

5.6 Appearance quality

5.6.1 The outer surface of the brake tester shall be smooth and clean, and there shall be no obvious bruises or scratches; the coating surface shall be uniform and strong in adhesion.

5.6.2 Bolts and nuts shall be surface-treated and connected firmly.

5.6.3 Solder joints of weld assembly shall be flat and uniform; and there shall be no defects such as welding penetration, cracks, and de-soldering, and the welding slag shall be removed.

5.6.4 The gas circuit and oil circuit of the brake tester shall be well sealed, and there shall