



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

GB/T 8421-2020

Replacing GB/T 8421-2000

**Agricultural wheeled tractor, driver seat, laboratory
measurement of transmitted vibration**

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Foreword

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

This standard replaces GB/T 8421-2000 "Laboratory Measurement and Limits of Vibration Transmission in the Driver's Seat of Agricultural Wheeled Tractors".

Compared with GB/T 8421-2000, the main technical differences between this standard and GB/T 8421-2000 are as follows except for editorial changes.

---Adjusted the tractor vibration classification (see Chapter 1, 4.1 of the.2000 edition);

---Modified terms and definitions (see Chapter 3, Chapter 3 of the.2000 edition);

---Added symbols and abbreviations (see Chapter 4);

---Added measurement general rules (see Chapter 5);

---Complete the debugging requirements before the seat test (see 6.3.2, 5.3.1 of the.2000 edition);

---Adjust the tester's weight and increase the tester's posture requirements (see 6.4, 5.3.2 of the.2000 edition);

---The damping test has been improved (see 6.5.2, 5.5.1 of the.2000 edition);

---Added acceptance criteria (see Chapter 7, Chapter 4 of the.2000 edition);

---Adjusted the analog input vibration characteristics of different types of tractors (see Table 4,.2000 Edition Table 4);

---Added the seat mark (see Chapter 8);

---Modified the test report (see Chapter 9, Chapter 6 of the.2000 edition).

The translation method used in this standard is equivalent to the international standard ISO 5007.2003 "Agricultural wheeled tractor driver seat transmission vibration

Laboratory measurement.

The Chinese documents that have a consistent correspondence with the international documents cited in this standard are as follows.

---GB/T 2298 Mechanical vibration, shock and condition monitoring vocabulary (GB/T 2298-2010, ISO 2041.2009, IDT)

---GB/T 23716 Human body response to vibration measuring instrument (GB/T 23716-2009, ISO 8041.2005, IDT)

This standard was proposed by China Machinery Industry Federation.

This standard is under the jurisdiction of the National Tractor Standardization Technical Committee (SAC/TC140).

Drafting organizations of this standard. Zhejiang Sifang Group Company, Jiangsu Yueda Group Co., Ltd., Luoyang Xiyuan Vehicle and Power Inspection Institute Co., Ltd.

Division, Jiangsu Coastal Agricultural Machinery Inspection Co., Ltd.

1 Scope

This standard specifies a laboratory measurement and evaluation method for vibration reduction of the driver's seat suspension of agricultural wheeled tractors. This standard complies with

Requirements of GB/T 18707.1. This standard also specifies evaluation indicators based on test results, and clearly specifies input vibration, etc.

Level, involving three levels of rigid rear axles and agricultural rubber tire tractors without low-frequency damping cab units, less than 3600kg

Level 1, from 3600kg to 6500kg is level 2, and greater than 6500kg is level 3. Each type includes a group of tractors with similar vibration characteristics.

This method tests the damping effect of the seat suspension on the vertical vibration of the driver's whole body in the range of 1Hz~20Hz. This tester

The method does not apply to the vibration of the driver outside the seat (for example, the vibration of the driver's foot on the floor or control pedal or hand on the steering wheel).

Note. The test criteria of this standard are for the driver's seat of agricultural tractors for conventional design. Independent front or rear axle, or independent front and rear axles

Tractor, low-frequency cab suspension, these will produce very obvious different vibration characteristics. These vibration characteristics can be measured according to GB/T 10910, or

Use other methods to measure and evaluate seat suspension performance on this type of tractor.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this document.

For undated references, the latest version (including all amendments) applies to this document.

GB/T 13441.1-2007 Mechanical vibration and shock Evaluation of human exposure to whole body vibration Part 1.General requirements

GB/T 18707.1-2002 Laboratory method for mechanical vibration evaluation of vehicle seat vibration Part 1.Basic requirements

ISO 2041 Mechanical Vibration, Shock and Condition Monitoring Vocabulary

ISO 8041 Human response to vibration measuring instrument
(Humanresponse tovibration-Measuringinstrumen-
tation)

ISO 13090-1.1998 Mechanical Vibration and Shock Safety Guidelines for Human Testing and Testing Part 1.Mechanical Vibration

And human trials under repeated shocks

3 Terms and definitions

The following terms and definitions defined by ISO 2041 apply to this document.

3.1

Whole body vibration

The vibration transmitted to the driver's whole body through the driver's hips in the sitting state.