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

GB/T 10910-2020

Replacing GB/T 10910-2004

**Agricultural wheeled tractors and field machinery. Measurement
of whole-body vibration of the operator**

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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 10910-2004 "Measurement of Whole Body Vibration of Drivers of Agricultural Wheeled Tractors and Field Work Machinery".

Compared with GB/T 10910-2004, the main technical differences between this standard and GB/T 10910-2004 are as follows except for editorial changes.

---Added the terms and definitions, symbols, measurement determination, calculation, and reporting of joint weighted acceleration [see 3.2, Chapter 4, 11.2.3, Chapter

Chapter 12 g), Appendix A, A.6, Appendix B, B.7];

--- Added symbols (see Chapter 4, 3.2 of the.2004 edition);

---Modified the requirements of the measurement system (see 6.1, 5.1 of the.2004 edition);

---The driver's weight requirements have been revised (see Chapter 8, 7.1 of the.2004 edition);

---Modified the requirements for the driver's seat (see Chapter 9, 7.2 of the.2004 edition);

---Revised the number of measurements, from 5 to 3 (see 11.2.3, Chapter 8 of the.2004 edition).

This standard uses the redrafting method to modify and adopt ISO 5008.2002 "Measurement of Whole Body Vibration of Drivers of Agricultural Wheel Tractors and Field Work Machinery".

Compared with ISO 5008.2002, there are technical differences between this standard and the clauses involved in these differences have passed the vertical single line at the outer margin.

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The technical differences between this standard and ISO 5008.2002 and the reasons are

as follows.

---According to GB/T 1.1-2009 on the "scope" compilation requirements, the 5 sub-clauses of the scope of Chapter 1 are rewritten into two paragraphs.

--- Regarding normative reference documents, this standard has made adjustments with technical differences to adapt to my country's technical conditions and adjustments.

The situation is collectively reflected in Chapter 2 "Normative Reference Documents", and the specific adjustments are as follows.

* Replace ISO 2041 with GB/T 2298, which is equivalent to the international standard (see Chapter 3);

* Replace ISO 5007.2003 (see Chapter 8) with GB/T 8421-2020 which is equivalent to adopting international standards;

* Replace ISO 2631-1.1997 (see 6.3) with GB/T 13441.1-2007, which is equivalent to the international standard;

* Replace ISO 5348 with GB/T 14412 which is equivalent to adopting international standards (see 6.2);

* Replace ISO 10326-1 with GB/T 18707.1 which is equivalent to adopting international standards (see Figure 1);

* Replace ISO 8041.2005 (see 6.1) with GB/T 23716-2009, which is equivalent to the international standard.

---Added the terms and definitions, symbols, measurement determination, calculation, and reporting of joint weighted acceleration [see 3.2, Chapter 4, 11.2.3, Chapter

G) in Chapter 12, A.6 in Appendix A, and Figure B.1 in Appendix B], used to determine whether the measurement results of the driver's whole body vibration conform to

The requirements of national standards.

---For manual test track measurement, the number of measurements is changed from 5 to at least 3, and the measurement accuracy can be met by 3 measurements.

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 Intelligent Agricultural Equipment Co., Ltd., Anhui Sizhou Tractor Manufacturing Co., Ltd.

Company, Luoyang Xiyuan Vehicle and Power Inspection Institute Co., Ltd.

1 Scope

This standard specifies the measurement of the whole body vibration experienced by drivers of agricultural wheeled tractors and field machinery on the standard test track

Methods (including vibration measurement, measuring instruments, safety protection, driver, driver's seat, tractor status, measurement site and operating conditions, and experimental reports).

This standard applies to the transmission of agricultural wheeled tractors and field machinery to the driver through the seat or floor on the standard test track.

Vibration measurement. This standard does not include the evaluation of the transmission of vibration through other means (such as passing the control device to the feet, or from the steering wheel to the hands).

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

GB/T 8421-2020 Laboratory measurement and limits of vibration transmitted by the driver seat of agricultural wheeled tractors (ISO 5007.2003, IDT)

GB/T 13441.1-2007 Mechanical vibration and shock Evaluation of human exposure to whole-body vibration Part 1.General requirements
(ISO 2631-1.1997, IDT)

Mechanical installation of GB/T 14412 mechanical vibration and shock accelerometer (GB/T 14412-2005, ISO 5348.1998, IDT)

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

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

ISO 13090-1 Mechanical Vibration and Shock Safety Guidelines for Human Testing and Testing Part 1.Human Testing under Mechanical Vibration and Repeated Impact

3 Terms and definitions

The following terms and definitions defined in GB/T 2298 apply to this document.

3.1

Whole body vibration

Vibration transmitted to the entire body of the driver through the floor between the seated driver's hips or the floor between the feet of the standing driver.

3.2

Joint weighted acceleration

After correcting the triaxial vibration acceleration received by the human body according to the prescribed frequency weighting method, the frequency weighting calculated by equation (1) is added

Root mean square value of speed.