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

GB/T 16491-2022

Replacing GB/T 16491-2008

Electronic universal testing machines

电子式万能试验机

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part

1. Structure and Drafting Rules for Standardization Documents" drafting. This document replaces GB/T 16491-2008 "Electronic Universal Testing Machine". Compared with GB/T 16491-2008, except for structural adjustment and Apart from editorial changes, the main technical changes are as follows:

- Changed the scope of application (see Chapter 1, Chapter 1 of the.2008 edition);
- Changed the requirements for the bending test device and added the requirement that "the distance between the bending supports should be adjustable" (see 5.3.4.2,.2008 edition 5.3.4.2);
- Changed the requirements for the zeroing and zeroing function of the force measuring system, and deleted the "zeroing" requirement (see 5.4.1.4,.2008 edition 5.4.1.4);
- Changed the requirements for the coaxiality tester of the inspection appliance, changing " $\pm 2\%$ " to " $\pm 1\%$ " (see 6.2, 6.2 of the.2008 edition);
- Changed the test conditions for the test of the test machine's resistance to transportation bumps (see 6.12, 6.12 of the.2008 edition);
- Changed the judgment rules for type inspection (see 7.3.2, 7.3.2 of the.2008 edition). Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents. This document is proposed by China Machinery Industry Federation. This

document is under the jurisdiction of the National Testing Machine Standardization Technical Committee (SAC/TC122). This document is drafted by: China Machinery Testing Equipment Co., Ltd., CTI Testing and Certification Group Co., Ltd., Jinan Xinguang Testing Machine Manufacturing Co., Ltd., Zhejiang Lixian Testing Instrument Manufacturing Co., Ltd., Chengde Jinjian Testing Instrument Co., Ltd., Kunshan City Innovation Technology Testing Instrument Co., Ltd., Shanghai Hualong Testing Instrument Co., Ltd., Shenzhen Wance Testing Equipment Co., Ltd., Suzhou Tuobo Machinery Equipment Co., Ltd., Zhejiang Xiyi Testing Machine Manufacturing Co., Ltd., Meters Industrial Systems (China) Co., Ltd., Jiangsu Mingzhu Testing Machinery Co., Ltd. The main drafters of this document. Jin Hongbo, Huang Qing, Wang Jianguo, Sun Baorui, Shen Yijiong, Zhang Xiangling, Tao Zecheng, Xu Wuben, Zhong Xin, Ye Jianrong, Wang Yixiang, Xiao Congyin, Zhu Anming. The release status of previous versions of this document and the documents it replaces are as follows:

---First published as GB/T 16491-1996 in.1996, first revised in.2008;

--- This is the second revision. Electronic universal testing machine

1 Scope

GB/T 16491-2022 is the Chinese national standard on electronic universal testing machines, in the field of testing. 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 30 December 2022 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 July 2023. Classification: ICS 19.060, CCS N71. 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 main parameter series, technical requirements, inspection methods, inspection rules, signs and packaging of electronic universal testing machines. This document is applicable to the design, manufacture and testing of electronic universal testing machines (hereinafter referred to as "testing machines") for testing the mechanical properties of metallic materials. test. The design, manufacture and inspection of the electronic universal testing machine for the mechanical performance test of non-metallic materials shall be carried out by reference.

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text. Among them, dated references For

documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 2611-2022 General technical requirements for testing machines

GB/T 13634 Calibration of standard force gauges for inspection of uniaxial testing machines for metallic materials

GB/T 16825.1 Inspection and calibration of static uniaxial testing machines for metallic materials - Part

1. Tensile and (or) compressive testing machines Inspection and calibration of force measuring systems

GB/T 22066-2008 Evaluation of computer data acquisition system for static uniaxial testing machine

GB/T 36416.1 Testing Machine Vocabulary Part

3.1 Terms and Definitions The following terms and definitions defined in

GB/T 36416.1 apply to this document.

3.1.1 The ability of the indicating device of the testing machine to effectively distinguish between two adjacent values to be measured.

3.1.2 The smallest change in input that causes an appreciable change in the output indication of the testing machine.

3.2 Symbols The following symbols apply to this document (see Table 1).