ICS 19.060
CCS N 71

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 3159-2026

Replacing GB/T 3159-2008

Hydraulic universal testing machines

液压式万能试验机

Issued on: February 27, 2026 **Implemented on: September 1, 2026**

Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. This document replaces GB/T 3159-2008 "Hydraulic Universal Testing Machine". Compared with GB/T 3159-2008, the main differences are in structural adjustments and editing. Aside from the logical changes, the main technical changes are as follows:

---The technical requirements for the Level 2 testing machine have been removed (see Chapter 5 of the.2008 edition);

---Added requirements and detection methods for zero-point drift (see 6.3.4, 7.4.2);

---Added requirements and testing methods for extensometer systems (see 6.4, 7.5);

---Displacement requirements and detection methods have been added (see

---The method for correcting noise detection results has been changed (see Table 6, Table 6 in the.2008 edition). Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee on Standardization of Testing Machines (SAC/TC122). This document was drafted by: Jinan Xinguang Testing Machine Manufacturing Co., Ltd., China Machinery Testing Equipment Co., Ltd., and Shandong Provincial Institute of Metrology. Research Institute, Zhejiang Yiyu Instrument Equipment Co., Ltd., Zhejiang Geotechnical Instrument Manufacturing Co., Ltd., Shenyang University of Technology, Chengde Precision Testing Machine Co., Ltd. The company, National Standard (Beijing) Inspection and Certification Co., Ltd., Jinan Zhongluchang Testing Machine Manufacturing Co., Ltd., and Topbo Testing Equipment Technology (Suzhou) Co., Ltd. The company, Zhejiang Lixian Test Instrument Manufacturing Co., Ltd., Shanghai Hualong Test Instrument Co., Ltd., Wuxi Dongyi Manufacturing Technology Co., Ltd., Shandong Weisheng Measurement & Control Technology Co., Ltd., Sansi Yongheng Technology (Zhejiang) Co., Ltd., Hangzhou Langjie Measurement & Control Technology Development Co., Ltd., Shandong University of Science and Technology Henan Transportation Vocational College, Jilin Construction Research Institute Technology Co., Ltd., Beijing Aerospace Metrology and Testing Technology Research Institute, Hefei Metrology Testing Center, Tiezheng Testing Technology Co., Ltd., Henan Jiaoyuan Engineering Technology Group Co., Ltd., Beijing Rubber Industry Research and Design

Institute Co., Ltd. Company, China Southern Power Grid Electric Technology Co., Ltd., Zhongke Qiyuan Xinda Digital Technology (Guangdong) Co., Ltd., Nanjing Process Equipment Manufacturing Co., Ltd. Limited Liability Company, Guangdong Jiayi Instrument Group Co., Ltd., and Lishui Valve Testing and Control Technology Co., Ltd. The main drafters of this document are. Wang Jianguo, Ren Xia, Li Wansheng, Ren Feiyu, Chen Ying, Zhao Yucheng, Zhao Haining, Wang Xinhua, Fan Zhigang, and Sun Yunhai. Ye Jianrong, Duan Zhuming, Cai Qingsong, Wang Xi, Wang Wei, Xiong Hongbo, Ma Yanchun, Wang Yupeng, Shao Jinggan, Zheng Yan, Huang Qigang, Xu Guang, Guo Chuanchen, Wu Zhenquan Ding Xiaoying, Cheng Ailing, Zhao Fanghua, Qin Qiushi, Deng Wei, Xiao Leishi, Zhong Fei, Chen Yihui, Qiu Ziting, Yin Lingxiang, Bai Zhongwen, Ji Cheng. The release history of this document and the document it replaces is as follows:

---First published as GB/T 3159-1982 in 1982, and revised for the first time in.1992;

---In the second revision in.2008, it was incorporated into GB/T 3722-1992 "Hydraulic Pressure Testing Machine" (GB/T 3722-1992). The next version release was GB/T 3722-1983.

---This is the third revision. Hydraulic universal testing machine

1 Scope

GB/T 3159-2026 is the Chinese national standard covering the hydraulic universal testing machine - the press that pulls, compresses and bends specimens in every materials laboratory, with its force accuracy classes, its speed control, its grips and its safety. Every tensile result quoted in the other standards of this batch was measured on one of these. It replaces GB/T 3159-2008. It was issued on 27 February 2026 and has been in force since 1 September 2026, replacing GB/T 3159-2008. The document is under the responsibility of the China Machinery Industry Federation. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the main parameter series and technical requirements for hydraulic universal testing machines, describes the corresponding testing methods, and stipulates the inspection procedures. Requirements for rules, markings and packaging, and accompanying technical documentation. This document applies to the manufacture of hydraulic universal testing machines (hereinafter referred to as "testing machines"). It covers hydraulic pressure testing machines and hydraulic tensile testing machines. The manufacturing process for testing the machine should be used as a reference.

2 Normative references

The contents of the following documents, through normative references within the text,

constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 2611-2022 General Technical Requirements for Testing Machines

GB/T 16825.1-2022 Inspection and Calibration of Static Uniaxial Testing Machines for Metallic Materials - Part

1.Tensile and/or Compressive Testing Inspection and calibration of the machine force measurement system

GB/T 36416.1 Vocabulary of Testing Machines Part

3 Terms and Definitions

The terms and definitions defined in GB/T 36416.1 apply to this document.

4.Main Parameter Series The main parameter of the testing machine is its maximum testing force. The specifications of the testing machine are classified according to this main parameter, which should be found in Table 1. Select. Table

1.Main Parameter Series of Testing Machine Testing machine main parameter series Maximum test force kN 50, 100,.200, 300, 500, 600, 1000,.2000, 3000, 5000, 6000, 10000

5.Grading of testing machines Based on the technical specifications of the testing machine, it is divided into two levels. Level

0.5 and Level

1.The technical specifications for each level are shown in Table 2. Table 4.