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

GB/T 43149-2023

Design and metrological characteristics of height gauges

高度卡尺的设计和计量特性

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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 is equivalent to ISO 13225.2012 "Product Geometric Technical Specification (GPS) Length Measuring Instruments. Height Caliper Design and Measurement Properties". This document has made the following minimal editorial changes.

---In order to coordinate with the existing standards, the name of the standard is changed to "Design and Measurement Characteristics of Height Calipers". Please note that some content in this document may be subject to patents. The publisher 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 Standardization Technical Committee for Measuring Tools and Measuring Instruments

(SAC/TC132). This document was drafted by: Chengdu Xincheng Measuring Tools Co., Ltd., Guilin Guanglu Digital Measurement and Control Co., Ltd., Zhejiang Changxing Yufeng Precision Machinery Co., Ltd., Dongguan Tema Electronics Co., Ltd., Hanzhong Wanmu Instrument and Electric Co., Ltd., Harbin Measuring Tools and Cutting Tools Group Co., Ltd., Jingjiang Measuring Tool Co., Ltd., Suzhou Guoliang Measuring Tool Technology Co., Ltd., Qinghai Measuring Tools and Cutting Tools Co., Ltd., Shenzhen Dongye Precision Instrument Co., Ltd. Co., Ltd., Chengdu Tool Research Institute Co., Ltd. The main drafters of this document. Dai Chao, Li Daming, Yan Liexue, Yang Jun, Yang Zhongyi, Zhao Geng, Yu Xiaoxia, Qin Xiangdong, Zhao Yonghai, Ma Shibin, Sun Yunchen, He Yixian.

This document is a Geometric Product Specification (GPS) standard and is considered a universal standard for GPS (see ISO 14638). In general GPS matrix, it affects the size and distance under standard chain links. The GPS master plan given in GB/T 20308 provides the General principles of GPS systems. The basic rules for GPS given in ISO 8015 apply to this document, while the default rules given in ISO 14253-1 apply to applications based on This document establishes specifications unless otherwise stated. For detailed information on the relationship of the standard to other standards and the GPS matrix model, see Appendix D. Design and metrological characteristics of height calipers

1 Scope

GB/T 43149-2023 specifies the design and metrological characteristics of height gauges, equivalent to ISO 13225. A height gauge is the instrument that transfers a dimension from a surface plate to a workpiece, and it is used in every inspection room in the country; its accuracy depends less on the scale than on things the user cannot see - the flatness and mass of the base, the stiffness of the column, the geometry of the measuring jaw and the play in the slide. The standard therefore specifies the design before it specifies the tolerances. It sets the design features - the overall design and designation, the main dimensions, the types of indicating device, the protection rating, the measuring jaw or stylus, the base and the manufacturer's declared characteristics - then the metrological characteristics, with the operating conditions, the slide lock, and the maximum permissible errors, with an informative annex on the error test. It took effect on 1 April 2024.

This document specifies the most important design and metrological characteristics of height calipers (with mechanical or digital display).

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document.

GB/T 24634-2009 Product Geometric Specification (GPS) General concepts and requirements for GPS measuring equipment (ISO 14978. 2006,IDT) ISO 14253-

1 Geometric Product Specification (GPS) Measurement inspection of workpieces and measuring equipment Part

1.Verification of compliance with specifications workpieces and measuring equipment-Part

3 Terms and definitions

The following terms and definitions as defined in GB/T 24634-2009 and ISO /IEC Guide 99 apply to this document.

3.1 Height caliperheightgauge The ruler frame with measuring claws can move relative to the scale on the ruler body (or column), and the movement is along a direction perpendicular to the reference plane of the base.