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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 39543-2020

Design and metrological characteristics of dial test indicators (lever type)

Issued on: December 14, 2020 **Implemented on: July 1, 2021**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1:1-2009:

The translation method used in this standard is equivalent to ISO 9493:2010 "Technical

Specification for Product Geometrical Quantity (GPS) Length Measuring Instrument Lever"

Design and measurement characteristics of indicator meters:

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

---GB/T 18779:1-2002 Product Geometrical Quantity Technical Specification (GPS) Part 1 of Measurement and Inspection of Workpiece and Measuring Equipment

Points: According to the rules for determining qualified or unqualified inspections (eqvISO 14253-1:1998);

---GB/T 18779:2-2004 Product Geometrical Technical Specification (GPS) Measurement and Inspection of Workpieces and Measuring Equipment Part 2

Points: Guidelines for the Evaluation of Uncertainty of GPS Measurement in Measuring Equipment Calibration and Product Inspection (ISO /T S14253-2:1999,

IDT);

---GB/T 27418-2017 Measurement Uncertainty Evaluation and Expression (ISO /IEC Guide98-3:2008, MOD):

This standard has made the following editorial changes:

---Modified the standard name:

This standard was proposed by China Machinery Industry Federation:

This standard is under the jurisdiction of the National Standardization Technical Committee for Measuring Instruments (SAC/TC132):

Drafting organizations of this standard: Guilin Guanglu Digital Measurement and Control Co:, Ltd:, Chengdu Tool Research Institute Co:, Ltd:, Guilin Measuring Tool and Blade has limited liability

Company, Chengdu Xincheng Measuring Tool Co:, Ltd:, Weihai Measuring Tool Factory Co:, Ltd:, Hanzhong Wanmu Instrument and Electric Co:, Ltd:, Jingjiang Measuring Tool Co:, Ltd:

Division, Dongguan Tema Electronics Co:, Ltd:, Liaoning Institute of Metrology, China Jiliang University:

1 Scope

This standard specifies the most important design and measurement characteristics of the lever indicator:

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 article

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

GB/T 24634-2009 Product Geometric Technical Specification (GPS) General concepts and requirements for GPS measuring equipment (ISO 14978:

2006, IDT)

ISO 14253-1:1998 Product Geometrical Technical Specification (GPS) Measurement and Inspection of Workpieces and Measuring Equipment Part 1: According to Regulations

The rules for determining qualified or unqualified inspections [GeometricalProductSpecifications(GPS)-Inspectionbymeasure-

mentofworkpiecesandmeasuringequipment-Part 1:Decisionrulesforprovingconformanceornon-

conformancewithspecifications]

ISO 14253-2 Product Geometrical Quantity Technical Specification (GPS) Measurement Inspection of Workpieces and Measuring Equipment Part 2: Measuring Equipment Calibration

Guidelines for the Uncertainty Evaluation of GPS Measurements in Product Inspection [GeometricalProductSpecifications (GPS)-

Inspectionbymeasurementofworkpiecesandmeasuringequipment-Part 2:Guidetotheestimation

ofuncertaintyinGPSmeasurement,incalibrationofmeasuringequipmentandinproductverification]

ISO /IEC Guide98-3 Measurement Uncertainty Part 3: Guidelines for Expression of Measurement Uncertainty (GUM:1995)

[Uncertaintyofmeasurement-Part 3:Guidetotheexpressionofuncertaintyin measurement

(GUM:1995)]

ISO /IEC Guide99 Common concepts and related terms (VIM) [Internationalvocabu-

laryofmetrology-Basicandgeneralconceptsandassociatedterms(VIM)]

3 Terms and definitions

The following terms and definitions defined by GB/T 24634, ISO 14253-1, ISO 14253-2, ISO /IEC Guide99 and the following apply to this document:

3:1

Leverage indicator table dialtestindicators(levertype)

The mechanical transmission system is used to convert the swing displacement of the lever probe into the angular displacement of the pointer on the dial, and the dial is used to measure the readings:

Measuring appliances:

4 Design features

4:1 Overall design characteristics

4:1:1 The overall design and manufacturing process of the lever indicator should be able to ensure that the measurement characteristics of the lever indicator in various operating directions are consistent with

The requirements of this standard:

4:1:2 Unless otherwise specified, the swing direction of the lever indicator stylus should be perpendicular to the stylus axis and in the same direction as the stylus swing direction:

In the same plane, as shown in Figure D:1: If it is used at other angles, the displayed value should be corrected (see Appendix D):