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Calibration Specification for Measuring Equipment of Diameter of Micro and Small Hole

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(English Translation)

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9 Recalibration interval (7)

Appendix A Evaluation of Uncertainty in Measurement Results of Indication Error of Micro Aperture Measuring Instrument (8)

Appendix B Calibration Certificate Content (13)

Appendix C Internal Format of Calibration Certificate (14)

Introduction

JJF 1071 "Rules for Compiling National Measurement Calibration Standards", JJF 1001 "General Measurement Terms and Definitions", JJF 1059.1-2012 "Measurement Uncertainty Evaluation and Expression", JJF 1064-2010 "Coordinate Measuring Machine Calibration Regulations "Fan", JJF 1094-2001 "Characteristic Evaluation of Measuring Instruments", JJF 1130-2005 "Geometric Measuring Equipment Calibration" the Uncertainty Assessment Guidelines together constitute the basic series of specifications that support the development of this calibration specification.

This specification is the first release.

Calibration Specification of Micro Aperture Measuring Instrument

1 Scope

This specification is applicable to the calibration of micro-aperture measuring instruments, which are used to measure the range of (phi0.1~phi1)mm, Micropores with a depth not exceeding 3mm, a depth-diameter ratio not greater than 9.1 and a measuring range of (phi1~phi20)mm Measurement of small holes exceeding 150mm with a depth-diameter ratio not greater than 13.1.

2 Reference documents this specification refers to the following documents.

JJG739-2005 laser interferometer JJF 1251-2010 Calibration specification for coordinate positioning measurement system GB/T 11336-2004 straightness error detection GB/T 17421.2-2016 General rules of machine tool inspection Part 2: CNC axis positioning accuracy and repeatability Determination of bit accuracy for dated reference documents, only the dated version applies to this specification; for those without date references the latest version (including all amendments) is applicable to this specification.

3 Terms and units of measurement

3.1 Aiming and triggering when the sensor moves to the specified position specified by the measurement plan, it sends out the signal of "Aimed", this signal is activated the process of starting or ending the work of the relevant measuring mechanism and components of the measuring instrument.

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3.2 Aiming trigger measurement with aiming and triggering Measurements made using the principle of aiming and triggering.

3.3 microandsmalhole the general term for micropores and pores. Micro-hole refers to a hole with a diameter of less than 1mm, small hole refers to a diameter of not less than 1mm and Holes no larger than 20mm.

3.4 aspect ratio

The ratio of the depth and diameter of the hole.

3.5 size bridge gaugebridge the standard size body is formed by the gage block according to the U-shaped structure.

4 Overview

The micro-aperture measuring instrument (hereinafter referred to as the measuring instrument) uses the aiming trigger principle to measure the micro-aperture instrument.

The typical structure of the measuring instrument is shown in Figure 1.Its Z-axis guide and Y-axis guide are located under the table.

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