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

JJG 151-2006

Replacing JJG 151-1991; JJG 260-1991; JJG 334-1993

**Verification regulation of metallic vickers hardness testers
(English Translation)**

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Table of Contents

1 Scope (1)
2 Citations (1)
3 Overview (1)
4 Metrological performance requirements (2)
4.1 Verticality of the spindle and the test bench (2)
4.2 Concentricity of the axis of the lifting screw and the axis of the spindle (2)
4.3 Test force (2)
4.4 Indenter (2)
4.5 Indentation measuring device (3)
4.6 Maximum allowable error of indication and repeatability of indication (3)
5 General technical requirements (4)
6 Measuring instrument control (4)
6.1 Verification conditions (4)
6.2 Verification items and verification methods (6)
6.3 Processing of verification results (9)
6.4 Verification cycle (9)
Appendix A Conversion Table of Angles Between the Opposite Edges of the Pyramids and the Opposite Edges (10)
Appendix B Vickers hardness tester test force record format (11)
Appendix C Vickers hardness test value verification record format (12)
Appendix D Vickers Diamond Indenter Calibration Record Format (13)
Appendix E Vickers Hardness Tester Certificate Internal Page Format (14)
Appendix F Vickers Hardness Tester Verification Result Notice Page Format (15)
Appendix G Format of Vickers Diamond Indenter Verification Certificate and Verification Result Notice (16)

6.4 Verification cycle (9)

Appendix A Conversion Table of Angles Between the Opposite Edges of the Pyramids and the Opposite Edges (10)
Appendix B Vickers hardness tester test force record format (11)
Appendix C Vickers hardness test value verification record format (12)

Appendix D Vickers Diamond Indenter Calibration Record Format (13)

Appendix E Vickers Hardness Tester Certificate Internal Page Format (14)

Appendix F Vickers Hardness Tester Verification Result Notice Page Format (15)

Appendix G Format of Vickers Diamond Indenter Verification Certificate and Verification Result Notice (16)

Metal Vickers hardness tester

1 Scope

This procedure applies to the first of the fixed metal Vickers hardness tester (test force range is 0.09807N to 980.7N) Sub-tests, subsequent tests and in-use tests.

2 Citations

This procedure refers to the following documents GB/T 4340.1-1999 (equivISO 6507-1.1997) Metallic Vickers hardness test - Part 1.

experiment method

GB/T 4340.2-1999 (idtISO 6507-2.1997) Metallic Vickers hardness test - Part 2.

Hardness test

GB/T 4340.3-1999 (idtISO 6507-3.1997) Metallic Vickers hardness test - Part 3 Calibration of standard hardness blocks JJG 144-2006 Standard Force Tester Verification Procedure Use of this procedure should take care to use the current valid version of the above cited documents.

3 Overview

The metal Vickers hardness tester (hereinafter referred to as the hardness tester) is suitable for the Vickers hardness measurement of various metal materials.

The Vickers hardness test principle is. a regular quadrangular pyramid diamond indenter with an angle of 136° at the top opposite faces the test force is pressed into the surface of the sample, and the test force is removed after a certain holding time. Test force divided by the surface pressure of the sample the quotient of the trace surface area is the Vickers hardness. In the actual operation, measure the diagonal length of the indentation and calculate the dimension according to formula (1).

Hardness value.

$HV=0.102$

$2F \cdot \sin \alpha^2$

Where. HV---Vickers hardness symbol;

---- the opposite angle of the indenter, 136° ;

F---test force, N;

d---the arithmetic mean of the two diagonal lengths d_1 and d_2 of the indentation, mm.

The Vickers hardness test is divided into three test force ranges (see Table 1).

Table 1 Dividing Vickers hardness test according to test force range

Test force range F/N hardness symbol test name $F \geq 49.03$ $\geq \text{HV5}$ Vickers hardness test