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**JJG**

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

**JJG 944-2013**

Replacing JJG 944-1999

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**Verification Regulation of Metallic Webster Hardness Testing  
Machines**

**(English Translation)**

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**Issued by: General Administration of Quality Supervision, Inspection and  
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## Introduction

The regulations drafted in accordance with the rules JJF1002-2010 "national verification procedures write rules" given.

The procedures in place JJG 944-1999 "Webster metal hardness tester", compared with JJG 944-1999, the main technical Changes are as follows.

- Increased introduction;
- References JJG 113-2003, GB/T 4340.1 and other documents (see Chapter 2);
- Modified formula (see 31, 1999 version 1.3.);
- The term "measuring indicator means" Replace the original term "indicator" (see 3.2 1, 1999 edition of 1.1);
- Increasing the instrument structure diagram, hardness type, main technical parameters and use (see 3.2.1 and 3.2.2);
- Canceled on "indenter displacement amount" of Technical Requirements (1999 edition 2.3);
- Increased "performance measurement indicating device" and "general performance" related to the technical requirements (see 4.2 and 5.2);
- Indication hardness test adds to the low hardness range indication testing requirements and revised the two adjacent indentation and the distance between the center and the center of the indentation hardness blocks from the edge of the technical specifications (see 6.4. 7.2, 1999 edition 4.7.2 and 4.7.3);
- Revised standard Vickers hardness test block surface roughness and surface parallel to

the surface of the support of technical indicators; according to Durometer hardness range and type of provision of uniformity standard Vickers hardness block (see Appendix A, 1999 edition of attachment Record A);

--- The "aluminum and aluminum alloys HW and HRE conversion table" to "aluminum alloy Webster hardness value (HW) and Luo Hardness value (HRE) conversion table "(see Appendix B, 1999 edition of Appendix B);

--- The "hard and soft steel and aluminum HW HRE conversion table" to "soft steel Vickers hardness value (HW) and Rockwell Hardness value (HRE) conversion table "(see Appendix C, 1999 edition of Appendix C);

--- Added Appendix D Webster Hardness test recording format;

--- Increased appendix E Calibration Certificate page style;

--- Added Appendix F test results in the notice page style.

## Metal Webster Hardness test procedures

### 1 Scope

The order applies to the measurement range (0 ~ 20) HW metal Webster Hardness (hereinafter referred to as hardness) of Initial verification, use and subsequent verification check.

### 2. References

This procedure references the following documents.

JJG 113-2003 standard metal Rockwell hardness block GB/T 4340.1 metallic materials - Vickers hardness test - Part 1. Test methods for dated references, only the dated edition applies to this procedure; undated reference documents Member, the latest edition (including any amendments) applies to this procedure.

### 3 Overview

#### 3.1 Principle

The basic principle of Vickers hardness test is the use of a shaped steel indenter, test force generated by the biasing spring Pressed into the surface of the sample, the pressure foot plane of bonding with the surface of the specimen closely, measuring the relative pressure needle pressure foot flat projecting length Degrees to 0.0125mm extension length represents a Vickers hardness units, symbols of HW. When the pressure needle projecting length when zero is defined as the full-scale 20HW, the Vickers hardness according to formula (1).

$$HW = 20 - L \cdot 0.0125$$

Where.

HW --- Webster hardness, HW;

L --- pressure needle extension length, mm.

**Note:** "HW" is a common symbol Vickers hardness, specific Vickers hardness values depending on the hardness scale, respectively, with the symbol HWA and HWB shows hardness values A and B Webster hardness measurements.

3.2 Structure and Type 3.2.1 hardness structure Hardness, part of the urging spring, measuring devices, indicating mainly by the press pin, shown in Figure 1.

3.2.2 durometer type and technical parameters Hardness of the type, purpose and main technical parameters are shown in Table 1.