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Replacing JB/T 7361-1994

Rolling bearings - Test method for hardness of parts

滚动轴承 零件硬度试验方法

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Foreword

This standard replaces JB/T 7361-1994 “Rolling bearings - Test method for hardness of parts”.

As compared with JB/T 7361-1994, the main changes of this standard are as follows:

- IMPROVE the requirements for the test surface of the bearing parts (1994 version; 5.3 of this version);
- ADD the hardness test method types for the large-size bearing parts (SEE Table 2);
- MODIFY the expression form of the hardness test point position (6.2.5 of 1994 version; Table 4 of this version);
- MODIFY the distance from any indentation of the Rockwell and Vickers' methods to the sample edge AND the distance between the centers of two adjacent indentations (6.2.5.1 and 6.2.5.2 of 1994 version; Table 4 of this version);
- MODIFY the expression form of the number of hardness test points (6.2.6 of 1994 version; Table 5 of this version);
- MODIFY the interval of the ferrule test points (6.2.6.1 of 1994 version; Table 5 of this version);
- MODIFY the expression form of the test report (Chapter 7 of the 1994 version; Appendix C of this version);
- DELETE the Appendix “Conversion between Leeb hardness and Rockwell hardness” (Appendix A of 1994 version).

Appendix A and Appendix B of this standard are normative appendixes, AND Appendix C is an informative appendix.

This standard was proposed by the China Machinery Industry Federation.

This standard shall be under the jurisdiction of the National Rolling Bearing Standardization Technical Committee (SAC/TC 98).

The main drafting organizations of this standard: Wanxiang Qianchao Co., Ltd.

The participating drafting organizations of this standard: Luoyang Bearing Research Institute.

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Rolling bearings - Test method for hardness of parts

1 Scope

This standard specifies the hardness test method for the steel and non-ferrous metal bearing parts.

This standard is applicable to the hardness test of the steel bearing parts after quenching and tempering, the finished bearing parts, and the non-ferrous metal bearing parts.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For the dated references, the subsequent amendments (excluding corrections) or revisions do not apply to this Standard; however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 230.1-2004 Metallic Rockwell hardness test - Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T) (ISO 6508-1:1999, MOD)

GB/T 1184-1996 Geometrical tolerancing - Geometrical tolerance for features without individual tolerance indications (eqv ISO 2768-2:1989)

GB/T 4340.1-1999 Metallic materials - Vickers hardness test - Part 1: Test methods (eqv ISO 6507-1:1997)

GB/T 17394-1998 Metallic materials - Leeb hardness test

JB/T 1255-2001 Specification for heat-treatment of rolling bearing parts made from high carbon chromium steel

3 Symbols

The following symbols apply to this standard.

b_e: The effective width of the ferrule end face (the ferrule wall thickness minus the internal and external chamfer size);

D: Nominal outer diameter of the ferrule;

D_w: Nominal diameter of rolling body;

HRA: A scale Rockwell hardness;

HRC: C scale Rockwell hardness;

HLD: Leeb hardness as measured by D-type impact device;

HV: Vickers hardness;

R_a: Surface roughness.

4 Basic requirements of hardness test

4.1 Laboratory

Hardness laboratory shall be dry, clean, AND free from strong vibration or corrosive gas sources around. The indoor temperature is generally 10°C ~ 35°C; as for the test having higher accuracy requirements, the room temperature shall be controlled at 23°C ± 5°C, AND it shall be equipped with workstations, standard parts cabinets and dust cover and so on.

4.2 Test equipment

All kinds of hardness testers and standard parts which are used for hardness test shall be regularly verified.

5 Samples

5.1 Bearing parts shall be demagnetized before being subjected to hardness test.

5.2 The surface roughness R_a of the hardness test surface and the positioning surface of the bearing parts shall be as specified in Table 1.

Table 1

Test methods	Rockwell method	Vickers method	Leeb method
R_a (max) μm	0.8	0.32	2.0

5.3 The hardness test surface of the bearing parts shall be flat and smooth, AND be free from such defects as oil stains, especially the burns, decarburization, and cracks and so on.

5.4 The positioning surface of the bearing parts for hardness test shall be free from such defects as oxide scale, coarse scratches, burrs, bump damages and so on.

5.5 When measuring the Rockwell hardness and Vickers hardness of the bearing ferrule, spherical roller, and convex roller, the parallelism of the two end faces shall comply with the requirements of level 8 tolerance in Table B3 of GB/T 1184-1996.

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