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

GB/T 9239.32-2017

Replacing GB/T 16908-1997

**Mechanical vibration -- Rotor balancing -- Part 32: Shaft and
fitment key convention**

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Foreword

GB/T 9239 "Mechanical vibration rotor balance" is expected to be divided into the following parts.

- Part 1. Application Note 1);
- Part 2. Vocabulary 2);
- Part 11. Balance procedures and tolerances for rotors with rigid properties 3);
- Part 12. Balance procedures and tolerances for rotors with flexible characteristics 4);
- Part 13. Field balance criteria for large and medium - sized rotors and safety protection 5);
- Part 14. Assessment of balance errors 6);
- Part 21. Description and evaluation of balancing machines 7);
- Part 23. Other protective measures for balancing machine shields and measuring stations 8);
- Part 31. Unbalanced machine sensitivity and unbalance sensitivity 9);

Part 3. Criteria for the balance of shafts and fittings.

This part is part 32 of GB/T 9239.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part of the GB/T 16908-1997 "mechanical vibration axis and the balance of the key with the standard", and GB/T 16908-1997 phase

In addition to editorial changes, the main technical changes are as follows.

- modified the standard name;
- removed the original standard of the original three terms (see the.1997 version of 3.1 ~

3.3);

- the transitional policy of the "half-key criterion" in Appendix B was deleted (see Appendix B of the 1997 edition).

This part uses the translation method equivalent to ISO 21940-32:2012 "Mechanical vibration Rotor balance Part 32. Shaft and mating flat

Value of the key criteria. "

In this part of the normative reference to the international documents have a consistent correspondence between the following documents.

--- GB/T 6444-2008 Mechanical vibration balance vocabulary (ISO 1925:2001, IDT)

This part of the National Mechanical Vibration, Impact and Condition Monitoring Standardization Technical Committee (SAC/TC53) proposed and centralized.

This part of the drafting unit. Changchun Institute of Mechanical Science and Technology Co., Ltd., Shanghai Xinke Testing Machine Co., Ltd., Beijing North heavy steam turbine Limited liability company, Zhengzhou Machinery Research Institute, Shanghai Schenck Machinery Co., Ltd., Shaanxi Electric Power Research Institute.

Introduction

It is often impossible or unbalanced to balance the rotor and its fittings after they are assembled. The parts of the rotor are not

With the same suppliers, so to separate them apart. The appropriate balance tolerances are specified for the rotor and the fitting, respectively, so that they are suitable

Of the keys are connected together, their components will meet the required balance tolerances and/or vibration limits. However, if the balance axis uses the key criteria

When the criteria for the balance fitting are not the same, it is entirely possible that the balance error of the component exceeds the allowable residual unbalance.

There are three methods for balancing the shaft and the link with the key.

--- full key criterion;

--- semi-key criteria;

--- No key criteria.

The international standard ISO 21940-32 adopted in this section harmonizes the key guidelines used throughout the world and describes the use of the key criteria

The balance of the parts of the marking method. When promoted, the fit of the shaft and the fitting will be formed so that they can be used by different suppliers

And the requirements of the balance tolerances and/or vibration limits of the rotor assembly can also be met after assembly.

Mechanical vibration - Rotor balance - Part 32.

Adjustment of the key to the balance between the shaft and the fitting

1 Scope

This part of GB/T 9239 specifies the sole criterion for balancing the individual components (shafts and fittings) of the rotor assembly with keys.

Is intended to allow all balanced components to be adaptable so that they can meet the balance of the overall balance of the rotor assembly after assembly and /

Vibration limit requirements.

This section specifies the use of a half-key when balancing a single component of a rotor assembly assembled with a key, which also specifies the use of a key

The marking method for the balanced part.

This part is applicable to rotors that are balanced on the bearings of the rotor itself or in the field. The key criterion also applies to measurements yet

The amount of residual unbalance and/or the amount of vibration of the rotor with the keyway.

This part is also applicable to a rectangular or square flat key that is parallel to the axis of the shaft and is also suitable for mounting on a tapered shaft

Keys, semicircle keys, wedge keys, pins and other special keys. The principle of the semi-key criterion also applies special keys and special keys for positioning.

2 normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article

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

ISO 1925 Mechanical vibration-Balancing-Vocabulary 11)

11) Revised standard number ISO 21940-2.

3 terms and definitions

The terms and definitions defined in ISO 1925 apply to this document.

4 semi-key criteria

This section specifies the semi-bond criteria to be used. In accordance with this semi-key criterion, when the balance of the non-mating piece has a keyway of the shaft, it is in its

The keyway should use a half key. When a suitable fitting is balanced on a balanced mandrel with a keyless, a compensated half-key should be used. If the heart

The shaft has a keyway, the method described in A.1.3 should be used. If there are two keyways in each cross section, the shaft and the fitting are used

A.1.4 describes the method. The axial position of the half-key center of gravity should be the same as the axial position of the center-of-gravity in the final assembly.

Note. Table 1 shows examples of various types of shaft keyways and rectangular or square full keys of equal section.

Appendix B gives the specific considerations for making semi-keys and the use of the keys. Figure 1 shows a pseudo-profile half-key group.

The use of semi-bond criteria for the key to connect the shaft and the balance of the fitting provides a unified method. It can eliminate the balance error and because of the use

Do not have the same residual unbalance and (or) vibration, and avoid the generation of internal bending moments in the assembly (which may be caused by

In the process of balancing the axis due to the use of full keys). See Appendix C for more information on the differences between key criteria.