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

GB/T 9239.14-2017

Replacing GB/T 9239.2-2006

**Mechanical vibration -- Rotor balancing -- Part 14: Procedures
for assessing balance errors**

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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 14 of GB/T 9239.

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

This part of the replacement GB/T 9239.2-2006 "mechanical vibration constant (rigid) rotor balance quality requirements Part 2. balance error

Poor ", compared with GB/T 9239.2-2006, in addition to editorial changes to the main technical changes are as follows.

- extends to include rotors with flexible characteristics (see Chapter 1, Chapter 1 of the.2006 edition);

- Annex B is deleted from the information item (see Appendix B of the.2006 edition).

This part uses the translation method equivalent to ISO 21940-14..2012 "Mechanical vibration Rotor balance Part 14. Assessment of the balance error

Assessment procedures ".

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..1998, IDT)

GB/T 9239.1-2006 Constant quality (rigid) rotor balance - Quality requirements - Part 1. Tests for specification and equilibrium tolerances

(ISO 1940-1..2003, IDT)

Methods and guidelines for mechanical balance of flexible rotors (ISO 11342..1998, IDT)
GB/T 6557-2009

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 Schenck Machinery Co., Ltd., Shanghai Xinke Testing Machine Co., Ltd.

Division, Xiaogan pine forest International Measuring Instrument Co., Ltd., Zhengzhou Machinery Research Institute, Beijing North heavy steam turbine limited liability company.

Introduction

The rotor balance quality is evaluated by measuring on the rotor as required by ISO 1940-1 or ISO 11342. These measurements may be included

Contains many sources of error. These errors should be taken into account when these errors are sufficiently large to determine the equilibrium quality of the rotor as required.

The international standard ISO 1940-1 or ISO 11342 did not consider the balance error in detail, and more importantly, did not consider the balance

Error assessment. Therefore, this section gives examples of typical errors and provides the recommended error assessment procedures.

Mechanical vibration rotor balance

Part 14. Assessment procedures for balancing errors

1 Scope

This part of GB/T 9239 specifies the following requirements.

- a) Identify errors in the rotor unbalance measurement process;
- b) assess the identified errors;
- c) focus on the error.

This part of the balance of the balance after the balance and the balance of the quality of the user to determine the balance of the acceptance criteria.

Appendix A of this section lists the methods for reducing the primary typical error.

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 modifications) applies to this document.

ISO 1925 Mechanical Vibration-Balancing-Vocabulary11)

ISO 1940-1 Mechanical vibration - Constant (rigid) rotor balance - Quality requirements - Part 1. Tests for specification and equilibrium tolerances (Me -

chanicalvibration-balancequalityrequirementsforrotorsinaconstant (rigid) state-Part 1. Specifi-

cationandverificationofbalancetolerances12))

ISO 11342 Mechanical vibration Flexible rotor mechanical balance method and criteria (Meanicalvibration-Methodsand

criteriaforthemechanicalbalancingofflexiblerotors13))

ISO 21940-21 Mechanical vibration Rotor balance Part 21. Description of balancing machines Inspection and evaluation (Mechanicalvibra-

tion-RotorBalancing-Part 21. Descriptionandevaluationofbalancingmachines

11) Revised standard number ISO 21940-2.

12) Revised standard number ISO 21940-11.

13) Revised standard number ISO 21940-12.

3 terms and definitions

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

4.1 General requirements

Balance machine balance error is divided into.

- a) System error. the magnitude of the error and its phase angle can be evaluated by calculation or measurement;
- b) random variation error. the number of measurements under the same conditions, the magnitude of the error and phase angle changes are unpredictable;