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

**GB/T 9239.23-2022**

Replacing GB/T 12977-2008

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**Mechanical vibration - Rotor balancing - Part 23: Enclosures  
and other protective measures for the measuring station of  
balancing machines**

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### foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules for Standardization Documents" drafting.

This document is part 23 of GB/T 9239 "Rotor Balance for Mechanical Vibration". GB/T 9239 has issued the following parts.

- Part 12. Balancing methods and tolerances for rotors with flexible characteristics;
- Part 14. Evaluation procedures for balance errors;
- Part 21. Description and evaluation of balancing machines;
- Part 23. Protective covers and other protective measures for the measuring station of the balancing machine;
- Part 32. Key criteria for shaft and mating balance.

This document replaces GB/T 12977-2008 "Balancer protective cover and other protective measures for measuring stations", and GB/T 12977-

Compared with 2008, except for structural adjustment and editorial changes, the main technical changes are as follows.

- Changed the terms and definitions guideline reference document, changed "GB/T 6444 and GB/T 2298" to "ISO 21940-2" (see Chapter 3, Chapter 3 of GB/T 12977-2008);
- "Excessive vibration" has been added to the category of mechanical hazards (see item

1.7 in Table 1);

--- Change "many rotors during balancing" to "all rotors during balancing" (see 5.1.2, 5.1.2 of GB/T 12977-2008);

--- Changed the requirements for the rotor, adding "possibility of no winding" [see 5.1.2a), GB/T 12977-2008 on the basis of the original

5.1.2a)];

--- Changed the protection level, deleted level 0, and retained the four protection levels A, B, C and D (see Table 2, GB/T 12977-2008

table 2);

---Change "thrust device should prevent" to "thrust device should prevent" (see item 1.2 of Table 3, Table 3 of GB/T 12977-2008

Item 1.2);

---Change "has been classified as level 0 protection" to "has been classified as level A protection" (see item 1.4 of Table 3, GB/T 12977-2008

Item 1.4 of Table 3);

--- Change "qualified energy per unit area" to "qualified penetration strength" (see Table A.2, Table A.2 of GB/T 12977-2008).

This document is equivalent to ISO 21940-23.2012 "Mechanical Vibration Rotor Balancing Part 23.Protective cover for the measuring station of the balancing machine

and other protective measures".

The following minimal editorial changes have been made to this document.

--- Added a reference to informative Appendix B in the text (see 5.1.3);

--- A reference to informative Appendix C has been added to the text (see 5.1.4).

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

## Introduction

GB/T 9239 "Mechanical Vibration Rotor Balancing" aims to standardize the general basis, test methods, key parameter evaluation criteria, and evaluation of balancing machines.

Regulations and safety protection, etc., are proposed to be composed of the following parts.

--- Part 1.Application Guidelines 1). The purpose is to establish the application basis of the

balancing machine.

--- Part 2.Vocabulary 2). The purpose is to standardize the vocabulary of balancing machines.

--- Part 11.Balancing methods and tolerances for rigid rotors 3). The purpose is to determine the tolerances of the balancing method for rigid rotors.

--- Part 12.Balance methods and tolerances for rotors with flexible characteristics. The balancing method of the rotor for the purpose of determining the flexibility characteristics

Laws and Tolerances.

--- Part 13.medium and large rotor site balancing guidelines and safety protection 4). The purpose is to give medium and large rotors on-site

Balance guidelines and safety precautions.

--- Part 14.Evaluation procedures for balance errors. The purpose is to standardize the evaluation procedure of balance error.

--- Part 21.Description and evaluation of balancing machines. The purpose is to standardize the description and evaluation methods of balancing machines.

--- Part 23.Shields and other protective measures for the measuring station of the balancing machine. The purpose is to standardize the protection of the measuring station of the balancing machine

Covers and other protective measures.

--- Part 31.Machine imbalance sensitivity and imbalance sensitivity 5). The purpose is to determine the imbalance sensitivity and imbalance

sensitivity.

--- Part 32.Key criteria for shaft and mating balance. The purpose is to determine the key criteria for shaft and mating balance.

Although the designers, manufacturers and users of balancing machines have tried their best to minimize the dangers arising from the use of balancing machines themselves,

Yes, it is more necessary to strengthen the safety of the work site, especially for the protection of the rotor to be balanced. Operator or workshop work area of a balancing machine

There may be potential hazards around the area, such as. rotor parts or unbalance correction mass flying off when people touch the balancing machine parts or rotor

When the rotor jumps or breaks from the support frame.

1) It is proposed to revise GB/T 29714-2013 "Guidelines for the Use and Application of

Mechanical Vibration Balance and Balance Standards".

2) It is proposed to revise GB/T 6444-2008 "Mechanical Vibration Balance Vocabulary".

3) It is proposed to revise GB/T 9239.1-2006 "Mechanical Vibration Constant (Rigid) Rotor Balance Quality Requirements Part 1.Specification and Inspection of Balance Tolerance".

4) It is proposed to revise GB/T 28785-2012 "Criteria and protection for on-site balancing of large and medium-sized rotors with mechanical vibration".

5) It is proposed to revise GB/T 19874-2005 "Mechanical Vibration Machine Unbalance Sensitivity and Unbalance Sensitivity".

Dedicated balancing machines, such as those used in mass production in the automotive industry, usually include all necessary protection measures

This method can be considered by the manufacturer of the balancing machine because the workpiece and the working conditions of the balancing machine are known. However, for the general balance

The manufacturer of the balancing machine is usually unknown to the workpiece to be balanced, so it is difficult to control it, and the basic protection measures are limited to

obvious hazards, e.g. shaft end drives or endless belt drives. However, the balancing machine manufacturer must provide sufficient information to allow the user to evaluate the balance

Hazards that may arise from the rotors in the machine and the intended use of the balancing machine. In conjunction with this information, balancing machine users must state that their rotors may

The dangers generated, so that the manufacturer of the balancing machine can provide equivalent protective measures, or the user can independently equip protective measures that meet the requirements.

For rotors that are unknown in advance, a good evaluation is required, e.g. using balancing machines in balancing services and repairs. Table A.2

Typical values are indicated for different sized balancing machines. It is up to the user to check that the protective measures for each type of rotor to be balanced protect all

Danger.

The requirements recommended in this document are usually provided to provide appropriate protection measures for the operator of the balancing machine and the staff on the workshop site.

apply. However, there are applications where recommended guards or other protective measures may be expensive or time-consuming to apply, requiring